

# APPENDIX A:

## DHHL SOUTH POINT RESOURCES MANAGEMENT PLAN

# SOUTH POINT RESOURCES MANAGEMENT PLAN KAMĀ'OA-PU'U'EO AHUPUA'A

FINAL  
OCTOBER 2016



*A self-sustaining, healthy and safe community where the 'āina--  
inclusive of the people and resources within it--  
and native Hawaiian culture and values thrive.*



HAWAIIAN HOME LANDS TRUST  
DEPARTMENT OF HAWAIIAN HOME LANDS





(Clockwise from top left) Green Sand Beach; Lua o Palahemo; Eroded area near Pu'u Ali'i; Canoe mooring holes.

## Acknowledgements

Mahalo nui loa to all the kūpuna and community members for welcoming the planning team into their community and providing their mana'o for this project.

We sincerely appreciate the time and effort contributed by the community towards this plan.

# **SOUTH POINT**

## **RESOURCES MANAGEMENT PLAN**

**FINAL**

**OCTOBER 2016**

**PREPARED FOR:**



**HAWAIIAN HOME LANDS TRUST**  
DEPARTMENT OF HAWAIIAN HOME LANDS

**PREPARED BY:**



## KALAE PLACE-NAME CHANT\*

Translation by Mary Kawena Pukui. March 27, 1966

*Nani ka mana'o i hiki mai  
E naue a e 'ike ia Ka-lae.  
Ka-lae kaulana o ka 'aina  
E 'alo ana i ke ehu o ke kai.  
Noho ana Ka-'ilio-a-Lono  
Ho'oipo ana me Ka-lupe-nui  
O ke Koko-a-Makali'i  
He ali'i no 'oe e Kalalea  
Ka'ana nei me Wahine-hele  
Hele no a ia Ka-puhi-'ula  
Ki'ei i Ka-lua-o-ka-'iole  
Noho Poho-a-Hina i ka la'i.  
'Au'au i ka wai o Palahemo  
Kahi wai 'awili me ke kai.  
Ui a'e ka mana'o o na hoa  
E 'ohu i ka lei kauna'oa  
Nonono 'ula wena i ka la  
I ahona i ka lau 'ilima  
Noho mai Makalei i ke kapu  
La'au pi'i ona a ka i'a.  
Ha'ina ia mai ka puana  
No makou no a pau.*

A wonderful thought arose,  
To travel and to see Kalae.  
Kalae, the famous point of land  
Facing the foamy sea.  
There abides Ka-'ilio-a-Lono  
Making love to Ka-lupe-nui.  
There too, Koko-a-Makali'i  
And the chief, Kalalea.  
Sharing (the scene) with Wahine-hele,  
Going on to Ka-puhi-'ula,  
Peering down Ka-lua-o-ka-'iole,  
Poho-a-Hina reposes in the calm.  
Bathe in the water of Palahemo  
Where fresh water mixes with the salty.  
Thoughts turn to the companions  
Adorned with leis of *kauna'oa*,  
Reddened by the sun,  
Cooled only by *'ilima* leaves.  
*Makalei* abides in the *kapu*,  
That wood that attracts fish.  
This concludes our song in honor  
Of every one of us.

\*This chant was given to Mary Kawena Pukui in 1935 by her aunt, Keli'ihue Kamali, a *kahunalapa'au* who lived in Waiohinu Village.



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## ACRONYMS AND ABBREVIATIONS

AIS	Archaeological Inventory Survey
AMP	Archaeological Monitoring Plan
ARP	Archaeological Recovery Plan
BTP	Burial Treatment Plan
CIA	Cultural Impact Assessment
CUA	Commercial Use Authorization
DHHL	Department of Hawaiian Home Lands
DAR	Division of Aquatic Resources
DLNR	Department of Land and Natural Resources
DOBOR	Division of Boating and Ocean Recreation
DOFAW	Division of Forestry and Wildlife
DPR	Department of Parks and Recreation
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
GE	General Excise
HFD	Hawai'i County Fire Department
HHC	Hawaiian Homes Commission
HHP	Hawai'i Heritage Program
HPD	Hawai'i County Police Department
ICRO	Information & Community Relations Office
LMD	Land Management Division
NHDPP	Native Hawaiian Development Program Plan
NHL	National Historic Landmark
NPS	National Park Service
OHA	Office of Hawaiian Affairs
PO	Planning Office
SHPD	State Historic Preservation Division
SIHP	State Inventory of Historic Places



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## EXECUTIVE SUMMARY

South Point—more commonly referred to as Ka Lae by local people—is a special and unique place for the people of Ka‘ū and for residents from other regions of Hawai‘i Island. For many, this treasured wahi pana is the connection to the past and the future, providing a source of pride and identity for the Ka‘ū community and for many Hawaiian families. Its significant cultural landscape tells of the very early native Hawaiian settlement of the area. It is believed that Ka Lae is the site where Polynesians from the Marquesas Islands first arrived in Hawai‘i, which is estimated to have occurred as early as A.D. 124. Recognizing its historical and cultural importance, approximately 710 acres of this area has been designated as a National Historic Landmark (NHL) because it provides “the longest and most complete record of human occupation in the Hawaiian Islands.” Important cultural sites within the NHL include Pu‘u Ali‘i, Kalalea Heiau, Lua o Palahemo, canoe mooring holes, and Lua Makalei. In addition to its cultural significance, Lua o Palahemo is a unique natural resource; several types of anchialine pool shrimp are known to exist in this anchialine pool, including ‘ōpae ‘ula and the endangered *Vetericaris chaceorum*. Additionally, rare plants such as the endangered ‘ohai also exist within this sacred ‘āina.

Mo‘olelo shared by kūpuna depict South Point as a place of remarkable beauty and great cultural significance. Sadly, however, over the years South Point has been desecrated and exploited by off-road vehicle enthusiasts, thoughtless actions of visitors, and sports fishermen despite the presence of iwi kūpuna and sacred sites. The lack of on-site management and enforcement by the Department of Hawaiian Home Lands (DHHL) has allowed unrestricted vehicular access to continue and has resulted in miles of deep, wide, and extremely severe erosion scars, ranging from several feet to over eight feet in depth. The people of Ka‘ū are pleading to “let the land heal” so that what is left of this fragile ecosystem can be shared with future generations. The issues at South Point can no longer be neglected; DHHL needs to make a strong commitment to actively manage and restore this sacred and treasured place for the people of Ka‘ū.

This resources management plan identifies specific near- and long-term management actions for lands held under the Hawaiian Homes Land Trust located within the ahupua‘a of Kamā‘oa-Pu‘u‘eo, Ka‘ū District, island of Hawai‘i. This plan focuses on South Point and coastal lands extending northeast towards Mahana Bay. It is intended to guide future actions to steward the land and resources of this area. South Point is envisioned as **“a self-sustaining, healthy and safe community where the ‘āina—inclusive of the people and resources within it—and native Hawaiian culture and values thrive.”**

An earlier management plan was completed for South Point in 1983 by PBR Hawai‘i, but unfortunately, the ongoing issues of this area still have not been addressed three decades later. Many Ka‘ū community members are frustrated that there has been no progress for the management of South Point resources. There is general skepticism within the Ka‘ū community about the DHHL’s ability to manage these Trust lands effectively. However, the need to protect and preserve the natural and cultural sites of South Point was identified as a priority project in

DHHL's Ka'ū Regional Plan that was adopted by the Hawaiian Homes Commission in 2012. Thus, this plan is an effort to address some of these long-standing issues.

This plan was developed based on information gathered from consultations with DHHL beneficiaries, and Ka'ū kūpuna and kama'āina knowledgeable about South Point. These community members provided their mana'o to assist the planning team in formulating recommended projects and strategies. Community outreach included two public meetings, a series of small group "talk story" sessions, and an interactive five-hour community "SpeakOut" event. During these community consultations, community members shared their vision, concerns, and ideas for management strategies. Many issues discussed in the 1983 plan were again raised during consultations for this plan, and some of the projects and strategies presented in this plan reflect similar recommendations from the previous plan. In addition to community members, Kamehameha Schools and some of the agencies and organizations who work to preserve and protect cultural and natural resources were also consulted.

Major concerns expressed by the people of Ka'ū include:

- Over the past several decades, there has been a lack of management by DHHL—in terms of presence, response to problems and enforcement.
- South Point has become a playground for both local people and tourists who drive off-road and tear up the landscape with no regards to the land and its resources.
- Unrestricted vehicular access to the area has left severe scars on the landscape.
- Many visitors also have no knowledge of the resources and fragile ecosystem of the place.
- There is a potential liability to DHHL if people are injured from these unregulated activities on DHHL lands.
- There is a lack of sanitary amenities such as toilets and waste receptacles on-site.
- Local fishermen rely on resources for subsistence, but there is alleged overfishing from "outsiders" and sports fishermen.
- There is a lack of economic opportunities available in Ka'ū, but there are potential opportunities to generate revenue at South Point from visitors for the Trust and its beneficiaries.
- The land has been exploited by individuals providing illegal shuttle services who care only about economic gain even at the expense of the land and resources.

Four management goals associated with the vision for South Point were identified:

- (1) **Natural & Cultural Resources Management:** Restore, preserve, and protect cultural and natural resources.
- (2) **Native Hawaiian Culture, Knowledge, & Traditional Practices:** Perpetuate native Hawaiian culture, values, history and language for future generations.
- (3) **Health & Safety:** Provide a safe, clean, and friendly environment.
- (4) **Economic Self-Sufficiency:** Generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families.



Sixteen projects and strategies associated with the above goals were identified for the South Point area. Of the 16 projects, six projects were selected as priority projects:

- (1) Restore and protect important cultural sites and natural resources within the DHHL's property.
- (2) Manage vehicular access at South Point.
- (3) Provide sanitary amenities and signage at South Point.
- (4) Institute a parking fee for South Point.
- (5) Plan, design and construct a service road and a pedestrian path to Mahana Bay.
- (6) Provide training and technical assistance to local people to become legal business entities on DHHL lands.

The main near-term priority for DHHL is to gain site control by managing vehicular access. Implementing other recommended actions to protect the integrity of resources without first establishing on-site presence at South Point to enforce management policies would be a waste of financial resources and effort. An environmental review process will need to be completed for this plan before projects can be implemented, as implementation will involve use of State funds and actions within a National and State historic site. Other regulatory compliance requirements may include clearance by the State Historic Preservation Division, Federal Section 106 Review, and a County Special Management Area (SMA) Use Permit.





*"He ali'i ka 'āina, he kauwā ke kanaka."  
The land is chief, the people are its servants.  
-Mary Kawena Pukui*

# 1

## INTRODUCTION





# 1. INTRODUCTION

South Point is envisioned as **“a self-sustaining, healthy and safe community where the ‘āina—inclusive of the people and resources within it—and native Hawaiian culture and values thrive.”** South Point—or more commonly referred to as Ka Lae<sup>1</sup> by local people—is a special and unique place for the people of Ka‘ū and for residents from other regions of Hawai‘i Island. For many, this treasured wahi pana is the connection to the past and the future, providing a source of pride and identity for the Ka‘ū community and for many Hawaiian families. Its significant cultural landscape tells of the very early native Hawaiian settlement of the area. It is believed that it is the site where Polynesians from the Marquesas Islands first arrived in Hawai‘i, which is estimated to have occurred as early as A.D. 124. Recognizing its historical and cultural importance, approximately 710 acres of this area has been designated as a National Historic Landmark (NHL) because it provides “the longest and most complete record of human occupation in the Hawaiian Islands.”

Through the Hawaiian Homes Commission Act, 1920 as amended, approximately 200,000 acres of ceded lands were set aside to be held in a land trust for the use and benefit of native Hawaiians of 50 percent or more Hawaiian blood. The Act was established by Prince Jonah Kūhiō Kalaniana‘ole with the vision of returning native Hawaiians to their lands in order to preserve their values, traditions, and culture.

This Resources Management Plan provides a vision and guide for lands held under the Hawaiian Homes Land Trust located within the ahupua‘a of Kamā‘oa-Pu‘u‘eo, Ka‘ū District, island of Hawai‘i. Unlike other state agencies such as the Department of Land and Natural Resources (DLNR) that has the responsibility to protect and manage lands held in public trust, the Department of Hawaiian Home Lands (DHHL) has the responsibility to manage trust lands for the betterment of native Hawaiian beneficiaries<sup>2</sup>.

However, there has been a lack of management of South Point by DHHL, who has not prioritized “resources” management and stewardship of the land. There is general skepticism within the Ka‘ū community about DHHL’s ability to manage these Trust lands effectively. A lot of “planning” for Ka‘ū has occurred during the past 30+ years, including an earlier management plan completed for South Point in 1983 by PBR Hawai‘i, but many Ka‘ū community members are frustrated with processes that have resulted in little to no progress. They feel that the same issues and concerns have been discussed meeting after meeting but no actions have been implemented. Unfortunately, the ongoing issues of this area still have not been addressed three decades later. Thus, this plan is an effort to address some of these long-standing issues.

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<sup>1</sup> South Point and Ka Lae is used interchangeably in this Plan. It refers to the general study area.

<sup>2</sup> Beneficiaries are defined as all native Hawaiians (individuals having at least 50 percent or more Hawaiian blood) and their successors. This includes: existing lessees (residential, agricultural, and pastoral); applicants on the Wait List; and native Hawaiians who have not applied for a homestead award.

Over the years, the lack of on-site enforcement by the DHHL at South Point has allowed for unrestricted vehicular access to continue and has resulted in miles of deep, wide, and extremely severe erosion scars, ranging from several feet to over eight feet in depth. This sacred and treasured place for the people of Ka'ū has been desecrated and exploited by off-road enthusiasts, thoughtless actions of visitors, and sports fishermen despite the presence of iwi kūpuna and sacred sites. The people of Ka'ū are pleading to "let the land heal" so that what is left of this fragile ecosystem can be shared with future generations.

Critical management actions must be taken in the best interest for the 'āina and protection of resources for future generations and not for economic benefit of individuals at the expense of the land and its resources. The issues at South Point can no longer be neglected; DHHL needs to make a strong commitment to actively manage and restore this wahi pana.



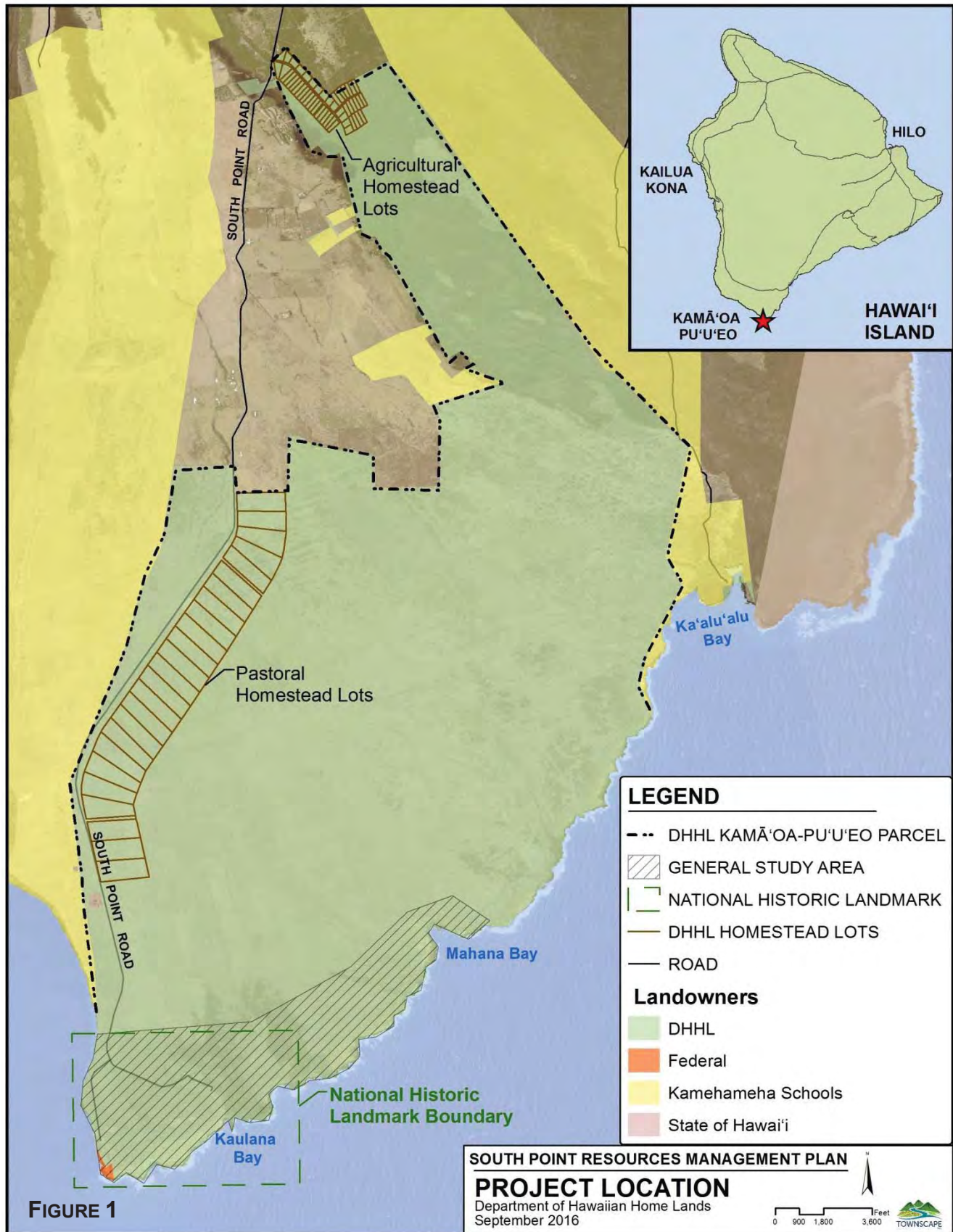
Ka Lae is a treasured wahi pana for the Ka'ū community and for many Hawaiian families.

There is no defined boundary line for the project area, but this plan focuses on South Point and the coastal lands extending northeast towards Mahana Bay. The general study area is located within the approximately 11,266 acres of DHHL Kamā'oa-Pu'u'eo property and includes National Historic Landmark lands that are also designated as "Special District<sup>3</sup>" by DHHL (Figure 1).

This Resources Management Plan is organized into three parts: Chapter 1 provides background information with an overview of the historical and cultural landscape of South Point; Chapter 2 describes the approach undertaken to develop this Plan; and Chapter 3 presents recommended projects and identifies priority projects to be implemented for South Point.

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<sup>3</sup> The most southern section of land located at South Point is designated as Special District in the DHHL Hawai'i Island Plan. Areas designated as Special District require special attention and additional study due to unique features and resources.





## 1.1 VISION AND CORE VALUES

### VISION

A self-sustaining, healthy and safe community where the ‘āina—  
inclusive of the people and resources within it—  
and native Hawaiian culture and values thrive.

### CORE VALUES

CULTURAL & NATURAL RESOURCES MANAGEMENT	We value stewardship and effective management of our cultural and natural resources to sustain them for future generations.
NATIVE HAWAIIAN CULTURE, KNOWLEDGE, AND TRADITIONAL PRACTICES	We value perpetuating the Hawaiian culture and traditional practices for our keiki and kamali‘i.
HEALTH & SAFETY	We value the health and safety of beneficiaries, the Ka‘ū community, and visitors to our ‘āina.
ECONOMIC SELF-SUFFICIENCY	We value capturing economic opportunities to improve the ‘āina, which is inclusive of the people and the resources.

## 1.2 PURPOSE

The DHHL Ka‘ū Regional Plan that was adopted by the Hawaiian Homes Commission in 2012 identified the need to protect and preserve the natural and cultural sites at South Point as one of its five priority projects. South Point has become a playground for both the local people and tourists who drive off-road and tear up the landscape with no regards to the land and its resources. Unrestricted vehicular access to the area has left severe scars on the landscape. The damage to this wahi pana is substantial; a web of deeply eroded paths with scars as deep as eight feet covers much of the landscape to Mahana Bay.

The purpose of this Resources Management Plan is to guide future actions to steward the land and resources at South Point. This plan also serves as a guide for DHHL's Planning Office to allocate funds towards projects in this area. The DHHL General Plan and Ka'ū Regional Plan are general in nature. Thus, this Resources Management Plan is intended to be more detailed for South Point and articulates specific implementation actions for the management of this area in the near- and long-term.



*I love South Point because...*

*“It is wahi pana, a sacred and spiritual treasure, a source of pride for our community and for many Hawaiian families. It was their first home in the islands before moving north.”*

## 1.4 PREVIOUS PLANS FOR SOUTH POINT

A management plan was developed for South Point by PBR Hawai'i in 1983 called the "Kamā'oa-Pu'u'eo Management Plan." Many of the same issues and concerns raised in the 1983 plan were shared by participants who were consulted for this Resources Management Plan. However, some new challenges, such as social media serving as a major contributor to the popularity of recreational activities at South Point, have emerged.

The 1983 Plan provided general guidance on management of the 11,000+ acres at Kamā'oa-Pu'u'eo with an emphasis on homestead development and related infrastructural needs. The Plan also presented recommendations for: cultural resources management; recreational resources management; the reuse of the abandoned Morse Field Barracks for beneficiary uses directly related to fishing activities at Kaulana Bay; and the reuse of the thirty separate structures of the Barracks to support fishing and camping activities, such as comfortable shelters for semi-permanent camping and boat storage. The primary objective for the Barracks was to provide an "exclusive economic benefit" to beneficiaries. The plan suggested that native Hawaiian fishermen be allowed to camp at the nearby Barracks during the fishing season so that they could take maximum advantage of the boat launch facilities at Kaulana Bay. The Barracks would also offer fishing related economic opportunities such as retail gasoline, food and supply sales, and boat repair activities to be operated by native Hawaiians. The following recommendations were suggested (some of which are also recommended as part of this plan):

### Cultural Resources Management

- Notify the State Historic Preservation officer of any development proposals within the National Historic Landmark area and allow 90 days for their review and comment.
- Require all General Lessees to fund an adequate archaeological assessment prior to initiating any activity that might disturb potentially important historic sites.
- Assist in the establishment of a South Point Advisory Committee to monitor the condition of historic sites and to develop an interpretive program for the area as a whole.
- Assist in the establishment of a passive interpretive center near the National Register plaque at South Point to inform users of the area's historic and cultural significance.

### Recreational Resources Management

- Hire an area manager to monitor recreational activities at South Point and to assist in the implementation of other DHHL land management programs.
- Issue a public statement from the Hawaiian Homes Commission (HHC) banning the use of motorcycles and other off road vehicles on Hawaiian Home Lands.
- Post no littering signs at critical locations to remind users of the revocability of public access if misuse of the area persists.
- Assist the County in establishing a regular refuse removal program with receptacles provided by the DHHL.
- Consider the feasibility of restricting coastal access to beneficiaries through a limited access program.



## 1.5 RELATIONSHIP TO PREVIOUS DHHL PLANS

### DHHL GENERAL PLAN

The DHHL General Plan, approved by the Hawaiian Homes Commission in 2002, is the overarching statewide plan that guides future plans for DHHL lands and policies for resources management with a long-term perspective. The General Plan is part of the DHHL's three-tiered planning system with it being the first tier, followed by Strategic Program Plans and Island Plans in the second tier, and the Regional and Development Plans in the third tier.

There are seven categories of goals and objectives in the General Plan to meet the DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians." The seven categories of goals are: Land Use Planning, Residential Uses, Agricultural and Pastoral Uses, Water Resource, Land Resource Management, Economic Development, and Building Healthy Communities.

The following are long-range goals and objectives in the DHHL General Plan that are relevant to South Point and that are reflected in this plan:

#### **Land Use Planning**

##### Goal:

- Utilize Hawaiian Home Lands for uses most appropriate to meet the needs and desires of the beneficiary population.
- Develop livable, sustainable communities that provide space for or access to the amenities that serve the daily needs of its residents.

##### Objectives:

- Provide space for and designate a mixture of appropriate land uses, economic opportunities and community services in a native Hawaiian-friendly environment.

#### **Land and Resources Management**

##### Goal:

- Be responsible, long-term stewards of the Trust's lands and the natural, historic and community resources located on these lands.

##### Objectives:

- Preserve and protect significant natural, historic and community resources on Trust lands.
- Manage interim land dispositions in a manner that is environmentally sound and does not jeopardize their future uses.
- Allow native Hawaiian use of natural resources on Trust lands for traditional and cultural purposes.

- Enforce governmental health and safety standards and protect life and property from the effects of natural hazards and disasters on Hawaiian home lands.

### **Economic Development**

#### Goal:

- Provide economic opportunities for beneficiaries within areas designated for their use.
- Generate significant revenue to provide greater financial support towards fulfilling the Trust's mission.

#### Objectives:

- Assist native Hawaiian entrepreneurs by supporting opportunities for business education, training, financing, planning and leasing.

### **Building Healthy Communities**

#### Goal:

- Establish the homestead associations to manage and govern their communities.
- Establish self-sufficient and healthy communities on Trust lands.

#### Objectives:

- Build partnerships with public and private agencies to ensure reliable and adequate delivery of services to homesteaders.
- Establish and implement a planning system that increases beneficiary participation in the development and use of Hawaiian home lands and improves communications between DHHL and the beneficiary community.

## **DHHL HAWAI'I ISLAND PLAN**

The Hawai'i Island Plan is in the second-tier of the three-tiered DHHL planning process, with a 10-year perspective for its landholdings on Hawai'i Island. The DHHL Hawai'i Island Plan assesses the potential use of the 116,963 acres of land owned by the DHHL on Hawai'i Island and recommends optimal use for the land to meet the needs of beneficiaries.

The majority of the Kamā'oa-Pu'u'e'o lands in the Hawai'i Island Plan is designated for General Agriculture use. The most southern section of land located at South Point is designated as Special District. Areas designated as Special District require special attention and additional study due to unique features and resources.

## **DHHL NATIVE HAWAIIAN DEVELOPMENT PROGRAM PLAN**

The 2012 DHHL Native Hawaiian Development Program Plan (NHDPP) identifies priority programs and services that should be provided for beneficiaries in the 3 to 6 year timeframe. It is one of the five existing Strategic Program Plans for the DHHL that provide a statewide plan focusing on a specific topic.

The purpose of the NHDPP is to “improve the general welfare and conditions of native Hawaiians through educational, economic, political, social, cultural, and other programs.” The NHDPP identifies the need to provide more than a land lease to “rehabilitate” a native Hawaiian family. It focuses on two areas of development: Individual Development and Community Development. Strategies identified by the NHDPP to increase the ability of beneficiaries to achieve self-sufficiency include providing educational opportunities through scholarships and technical assistance programs in homesteading. It also focuses on providing grants, technical assistance and training to homestead associations and beneficiary organizations to assist in Community Development.

## **DHHL KA‘Ū REGIONAL PLAN**

The DHHL Ka‘ū Regional Plan, finalized in May 2012, is one of 21 regional plans that the DHHL is developing with the consultation of its beneficiaries. The Regional Plans are part of the third tier of the DHHL’s three-tiered planning system. The third tier focuses at the community and regional level to identify issues and opportunities to guide the future direction of homestead lands within the two to four year time frame. It applies the goals, policies, and land use designations from the General Plan and Hawai‘i Island Plan specifically to the Ka‘ū region.

The Ka‘ū Regional Plan prioritizes projects to be implemented for the region within the next three years. Two projects identified with respect to South Point are:

- Develop Vehicular Roadway(s) and Pedestrian Pathways within the Coastal Area of Ka Lae (to manage access to Kaulana Bay, the fishing grounds at Ka Lae and protect sensitive resources)
- Protect and Preserve Cultural Sites in Kamā‘oa

The two projects were combined into one project in the Ka‘ū Regional Plan. Beneficiaries identified protecting and preserving cultural sites and natural resources in Kamā‘oa as one of the top five community priority projects.

Phases outlined for this priority project consisted of: updating the Historic Landmark Designation; developing a Circulation Plan; pursuing partnerships; developing signage and educational programs; obtaining funding; and constructing roads, fencing, and educational signage.

## 1.6 OVERVIEW OF CULTURAL AND NATURAL RESOURCES

South Point is a special and unique place for the people of Ka‘ū and for residents from other regions of Hawai‘i Island. For many, this treasured wahi pana is the connection to the past and the future, providing a source of pride and identity for the Ka‘ū community and for many Hawaiian families. This section provides a review of cultural and natural resources at South Point.

### Cultural Resources

South Point is a significant and unique cultural landscape that tells of the very early native Hawaiian settlement of the area. It is believed that this place is where Polynesians from the Marquesas Islands first arrived in Hawai‘i, which is estimated to have occurred as early as A.D. 124. Excavation work conducted by Bishop Museum and the University of Hawai‘i-Hilo in the 1950s revealed remains of a house site and many artifacts at Pu‘u Ali‘i, including coral and stone abraders (files used to make fish hooks) and many different types of large fish hooks. Excavation work was also conducted for two other sites during this time in the South Point area: Wai‘ahukini and Lua Makalei. Radiocarbon dating suggests that occupation first occurred at Wai‘ahukini then at Pu‘u Ali‘i. It is believed that fishermen abandoned the site at Pu‘u Ali‘i before different fishhook features, found at the other two sites, were adopted. This area’s historical value as a fishing spot is supported by the presence of a ko‘a (an ancient fishing shrine to the fishing god Ku‘ula) at the Kalalea Heiau; salt pans; and canoe mooring holes. Another prominent site at South Point is Lua o Palahemo, which is a culturally and naturally significant resource.

All of the cultural resources described above are located within the approximately 710-acre<sup>4</sup> area that was registered as a **National Historic Landmark** in 1966. The area was formally nominated for placement in 1971 as a historic district on the National Register of Historic Places because of its significance as the site of one of the earliest Hawaiian settlements and “the longest and most complete record of human occupation in the Hawaiian Islands” (see Appendix A for the National Register of Historic Places Inventory Nomination Form).



Canoe mooring holes (left) and Kalalea Heiau (right).

<sup>4</sup> Listed as the “South Point Complex.” According to the State Register of Historic Places, it consists of Tax Map Keys 9-3-001: 001, 007, 011.

## **Wahi Pana**

South Point is located within the ahupua'a of Kamā'oa-Pu'u'eo. **Kamā'oa** is described by Mary Kawena Pukui as: "a plain near Ka Lae (South Point), Ka'ū, Hawai'i, a place noted for red dust; people jumped from a cliff (kau-maea-lele-kawa) near here into a dust heap in imitation of the sport of leaping from a cliff into water." A popular saying refers to **Palahemo**: *I 'ike 'oe iā Ka'ū a puni, a ike 'ole 'oe iā Palahemo, 'a'ole 'oe i 'ike iā Ka'ū*, "if you have seen all Ka'ū, but have not seen Palahemo, you have not seen Ka'ū." Handy and Handy (1991) explains the meaning of this saying is that one can see the point where the two boundaries of Ka'ū meet when one looks up to the summit of Mauna Loa from Palahemo.

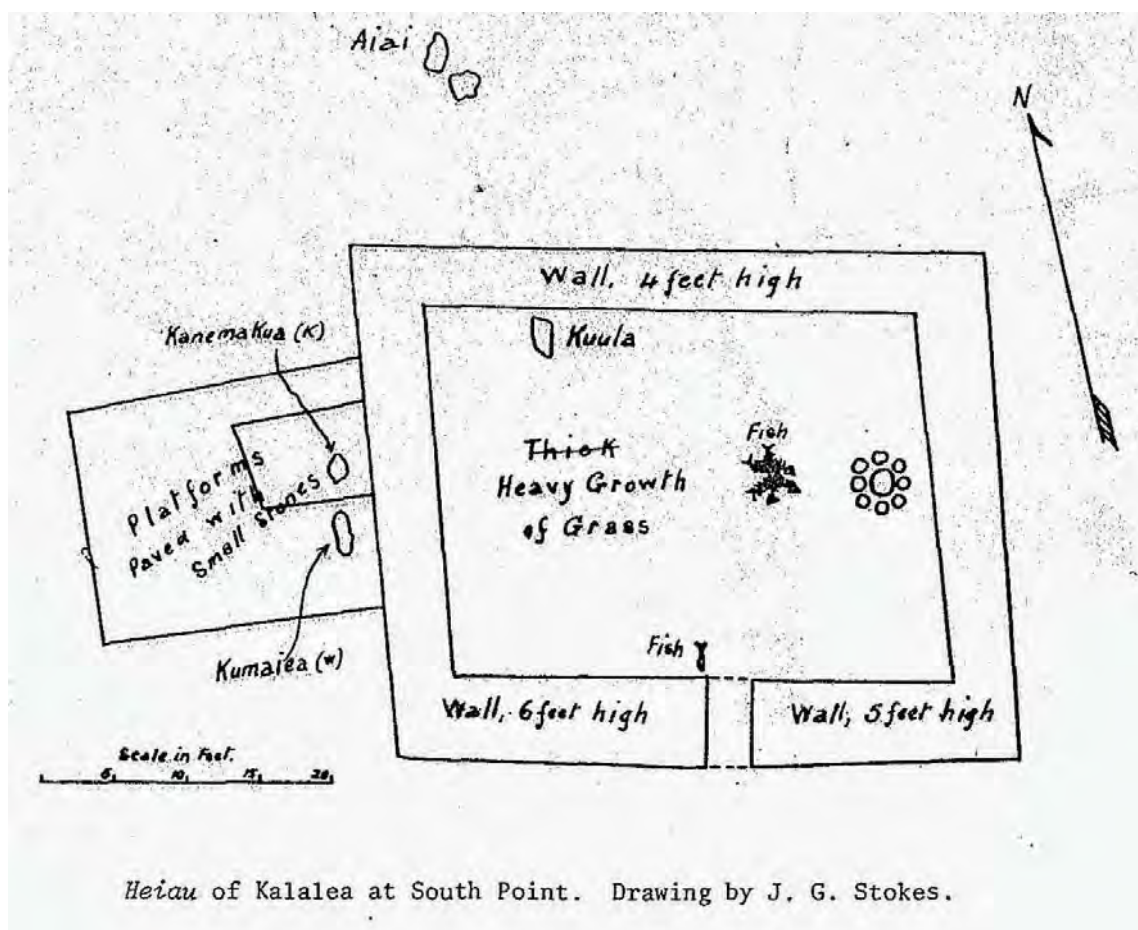
Selected wahi pana or place names within the ahupua'a of Kamā'oa as described by Pukui are provided below.

<b>Hala'ea</b>	The name of the current coming from the east at Ka Lae, which meets a current from the west named Kāwili; the two currents go out to sea together. Hala'ea was named for a chief. A stone on the shore nearby, Pōhaku-o-ke-au (stone of the time), is believed to turn over in strong seas, an omen of coming change. Proverbial saying for not returning home: <i>ua kū'ia paha e ke au o Hala'ea</i> , which means perhaps [he] is dragged away by the current of Hala'ea.
<b>Ka Lae</b>	South Point, Hawai'i, the southernmost point in all the fifty states. A rock in the sea here called Pōhaku-wa'a-Kauhi (Kauhi canoe stone) is believed to have been a canoe from Kahiki. Literal translation is "the point."
<b>Kaulana</b>	Coastal area. Literal translation is "[boat] landing."
<b>Lua-Mākālei</b>	Lava tube shelter near South Point, believed to be the site of a large settlement. Literal translation is "pit [of] Mākālei."
<b>Pala-hemo</b>	A deep water hole inland from South Point, believed to be connected underground to the sea and haunted by a mo'o of the same name; in times of rain it was taboo to bathe there. A water hole that never went dry and was a source of fresh water for inhabitants.
<b>Papa-kōlea</b>	A beach three miles northeast of Ka Lae, famous for its sand consisting predominantly of green olivine crystals. Literal translation is "plover flats."
<b>Pinao</b>	A bay on the Ka'ū side of South Point. Literal translation is "dragonfly."
<b>Pu'u Ali'i</b>	Sand dune. Literal translation is "royal hill."
<b>Wai-'Ahukini</b>	Lava tube shelter and pool on the Kona side of South Point, believed to have been occupied by fishermen between A.D. 750 and 1250 or 1350. Fishhooks found here are similar to those in the Marquesas. Literal translation is "water [of] 'Ahukini" (a supernatural woman).





Salt pans near Pu'u Ali'i. Photo by H. Powers in 1930.



## Mo'olelo

In *Majestic Ka'ū: Mo'olelo of Nine Ahupua'a*, Marion Kelly describes the people of Ka'ū as independent and known for their dignity. Even though ruled by various ali'i the people of Ka'ū were known to usurp rulers that were abusive. Three chiefs whose deaths were attributed to the abuse of their people are: Koihala, Kohā-i-ka-lani, and Halaea. The latter is directly associated with the South Point area. A version of the story is told by Kelly of a greedy chief who would always demand more fish from his people in Ka'ū.

When the greedy chief's canoe approached them, the fishermen separated so their canoes were on both sides of the chief's canoe. The chief called out, "*He 'i'a no?*" [Do you have fish?]. The fishermen replied, "*Ae*" [Yes]. When the chief demanded, "*Hō mai ka 'i'a!*" [Throw the fish here!], from both sides the fishermen threw so many fish into his canoe so quickly that it swamped before the chief realized what was happening. The fishermen quickly paddled away, not stopping to look back. The chief, alone in the swamped canoe, was swept away on the swift current that carries his name, Hala'ea. This is the inside current that sweeps past South Point and there is no land from there on.

## Archaeology

Some of the known historic properties within the DHHL's Kamā'oa-Pu'u'eo parcel are listed below with their assigned State Inventory of Historic Places (SIHP) numbers<sup>5</sup>.

**Table 1. Historic properties within the DHHL's Kamā'oa-Pu'u'eo**

SIHP Numbers	Description
Site 50-10-76-10230	Mahana Archaeological District
Site 50-10-76: 05295-05318	Kipuka Kinau Historic District
Site 50-10-76-4140	South Point Complex
Site 50-10-76-04733	Hanalua Bay Complex
Site 50-10-76-04734	Papakolea Complex
Site 50-10-76-05257	Kapalaoa Bay Village
Site 50-10-76-10277	South Point-Kamā'oa Agricultural System
Site 50-10-76-10887	Moilele Heiau
Site 50-10-76: 05257-05394	Various WWII Military Sites and Pre-contact sites

<sup>5</sup> ArcGIS data of the historic properties' location were not available; therefore, a map was not produced for this plan.



A report by Emory and Sinoto (1969) provides a map (Figure 2) that identifies the approximate locations of archaeological and historical sites within the area referred to as the South Point Complex (Site 50-10-76-4140). A description of the sites is provided in Table 2.

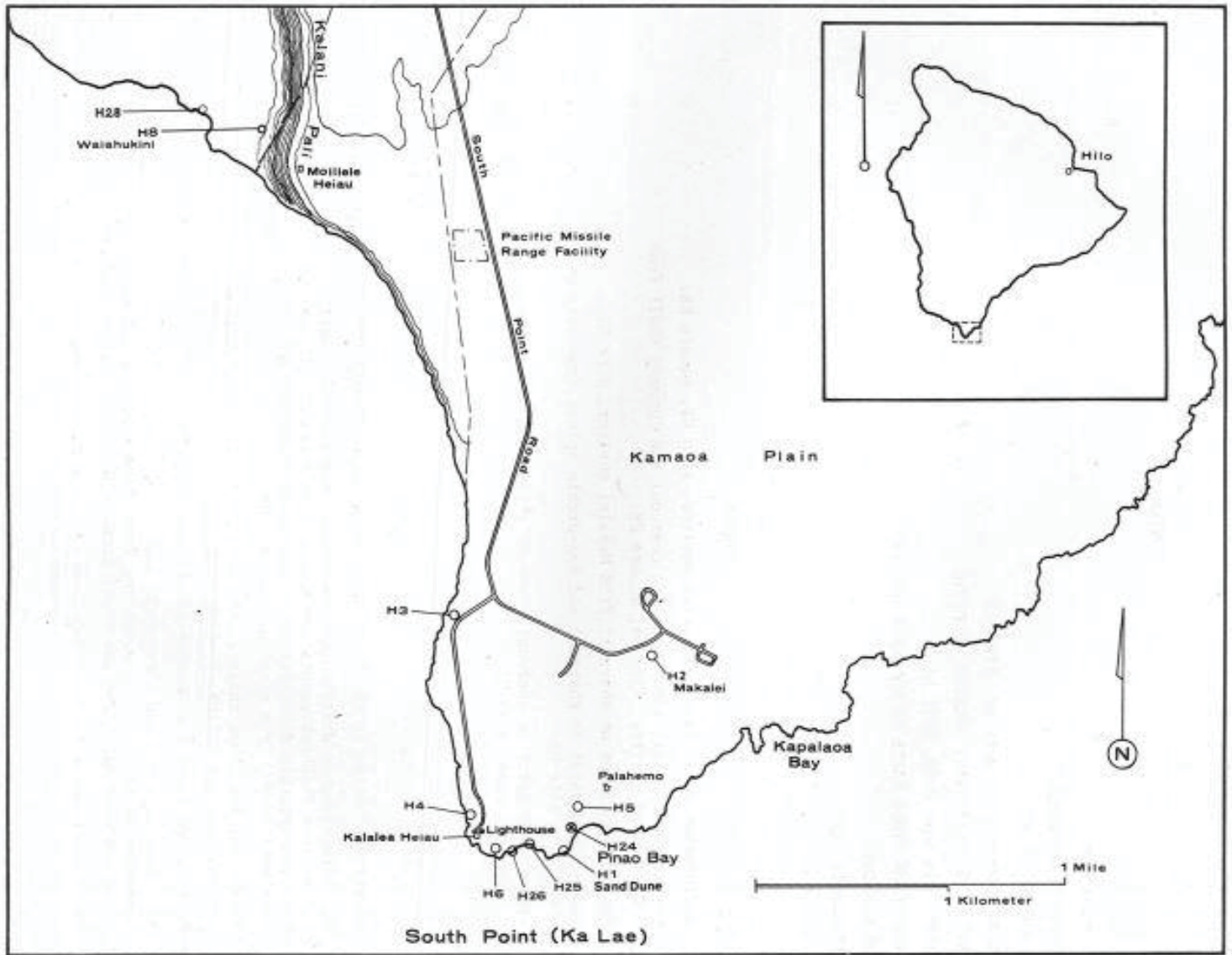
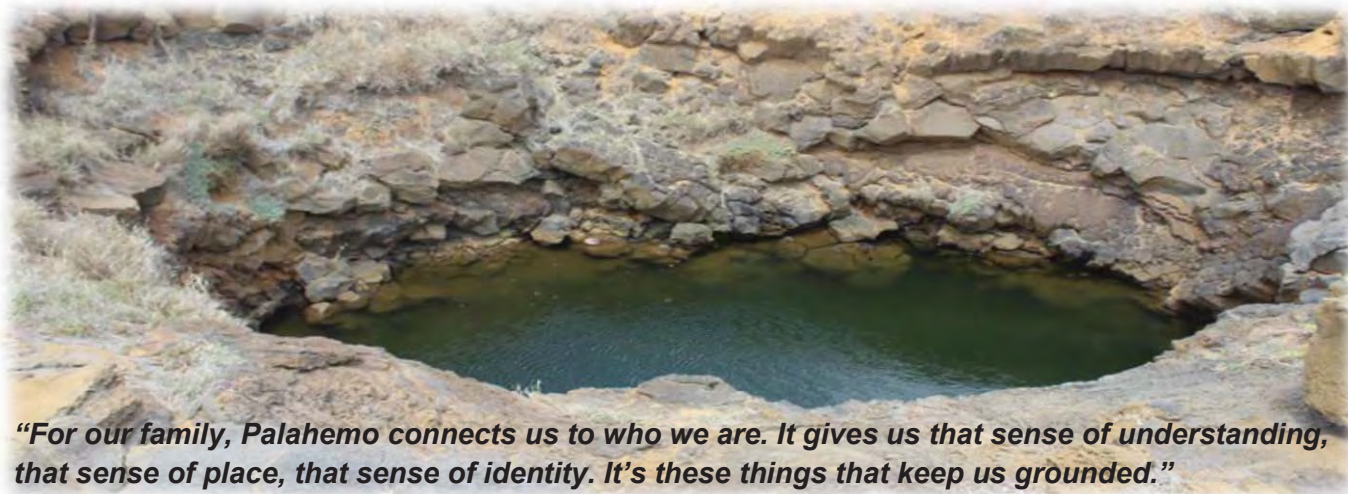


Figure 2. Map of archaeological and historic sites by Emory and Sinoto (1969)

**Table 2. Description of archaeological and historic sites within the South Point Complex**

Name	Description
Pu'u Ali'i (H1)	An ancient fishermen's establishment marked by midden deposits and slab paving stones and covered by a sand dune which was used subsequently as a burial group preceding European times. It was excavated by the Bishop Museum and University of Hawai'i between 1953 and 1967.
Lua Makalei (H2)	A large depression with two lava tube caves extending from it at opposite ends is located approximately one mile inland from the lighthouse. It measures 100 feet deep, 50 feet wide, 30 feet high. Eight terraced platforms are located inside the entrance. Studied by Bishop Museum archaeologists from 1967 to 1968, who believed it was the site of a large settlement.
Ka Lae (H4)	A large house yard 50 by 50 feet, 70 square feet of which were excavated in 1954 by the Bishop Museum and University of Hawai'i, revealing coral-pebble floors, fireplaces, artifacts and midden material.
Northeast of Pu'u Ali'i (H5)	A house site located on the west bank of a small gully. A burial was located beneath it. Marked by a slab pavement. Excavated by Bishop Museum in 1955.
Pinao Bay (H24)	A house site marked by a pavement of slabs. Excavated by Bishop Museum and University of Hawai'i in 1965 and described in detail in the printed report "Pinao Bay Site" (Wallace, 1969).
West of Pu'u Ali'i (H25)	A buried habitation site excavated by the University of Hawai'i in 1965.
Canoe Mooring Holes (H26)	About 80 mooring holes drilled in the west ledges of the point.
Kalalea Heiau	A well-known fishermen's heiau. A wall enclosure 35 by 43 feet.
Lua o Palahemo	Palahemo pool (lua) with a grind stone. A very important source of brackish water and a famous bathing place. It is said no one has seen Ka'ū who has not seen Lua o Palahemo.



*"For our family, Palahemo connects us to who we are. It gives us that sense of understanding, that sense of place, that sense of identity. It's these things that keep us grounded."*

## Natural Resources

A biological reconnaissance survey was conducted for DHHL's Kamā'oa-Pu'u'eo parcel in 1993 by the Hawai'i Heritage Program (HHP; formerly a program with the Nature Conservancy of Hawai'i). The survey may not provide an accurate picture of the current natural resources at South Point given the date of the report, but it presents a historical overview of the natural resources that were once, or may be still remaining, in the South Point area.

The 1993 HHP report identified three significant areas: Lua o Palahemo; the coastal zone extending approximately 0.25 mile inland; and a lama forest patch (located outside of the project area for this resources management plan). Rare native flora and fauna found within the project area as documented by the HHP report are presented in Table 3.

**Table 3. Rare native flora and fauna in the South Point area**

Scientific Name	Common Name	Federal Status
<b>Invertebrates</b>		
<i>Antecaridina lauensis</i>	Anchialine pool shrimp	--
<i>Calliasmata pholidota</i>	Anchialine pool shrimp	--
<i>Halocaridina palahemo</i>	'Ōpae 'ula	--
<i>Procaris hawaiana</i>	Anchialine pool shrimp	--
<i>Vetericaris chaceorum</i>	Anchialine pool shrimp	Endangered
<b>Mammals</b>		
<i>Lasiurus cinereus semotus</i>	'Ope'ape'a, Hawaiian Hoary Bat	Endangered
<b>Birds</b>		
<i>Buteo solitarius</i>	'Io, Hawaiian Hawk	Endangered
<i>Numenius tahitiensis</i>	Kioea, Bristle-thighed Curlew	Endangered
<b>Plants</b>		
<i>Sesbania tomentosa</i>	'Ohai	Endangered
<i>Portulaca villosa</i>	'Ihi	Proposed Endangered
<i>Solanum nelsonii</i>	Pōpolo, 'ākia	Proposed Endangered

### *Lua o Palahemo and Anchialine Pool Shrimps*

As described in the book titled "Hawaiian Anchialine Pools," Lua o Palahemo is a water-filled lava tube with a collapsed roof; the opening is about 30 feet in diameter and the pool of water is approximately 60 feet deep. The lava tube is located at the bottom of the pool, with one end of the tube reaching 600 feet towards the sea and the other end extending about 300 feet mauka towards the original source of the lava.

Lua o Palahemo is the only example of a high salinity anchialine pool to exist in the Hawaiian Islands, and contains a combination of anchialine pool organisms that is not found anywhere else in the world. According to the 1993 HHP study, five species of anchialine pool shrimp



Photo Credit: Mike Yamamoto

'Ōpae 'ula.



are found at this site: *Halocaridina palahemo*<sup>6</sup> (most commonly referred to as ‘ōpae ‘ula), *Procaris hawaiana*, *Antecaridina lauensis*, *Calliasmata pholidota*, and *Vetericaris chaceorum*.

‘Ōpae ‘ula is traditionally used as bait to catch ‘ōpelu (*Decapтерus spp.*). The *Antecaridina lauensis* and *Calliasmata pholidota* are indigenous to Hawai‘i (native but also found elsewhere), but the other three shrimp species found in Palahemo are endemic to Hawai‘i, meaning they are only found in Hawai‘i. The *Vetericaris chaceorum* was previously known to be found only at Lua o Palahemo until recently when it was discovered at Manukā. It was listed as an endangered species in 2013 under the Endangered Species Act because of its limited distribution.

During the 1993 HHP study, the pool’s clarity was noted as poor and the major threats identified for the anchialine pool included: contamination or degradation of its water via pollution, increased soil run-off, or human misuse; disturbance of the pit crater, including modifications and filling; and introduction of alien aquatic organisms.

### Plants

The 1993 HHP report found that the majority of the DHHL parcel was covered with alien vegetation such as: buffelgrass (*Cenchrus ciliaris*) grassland, *Lantana camara* and koa haole (*Leucaena leucocephala*) shrubland, and kiawe (*Prosopis pallida*) or Christmas berry (*Schinus terebinthifolius*) forest (see Figure 3). Buffelgrass was the predominant alien vegetation covering the coastal areas. Other alien species observed along the coastline included: Australian saltbush (*Atriplex semibaccata*), Bermuda grass (*Cynodon dactylon*), pigweed (*Portulaca pilosa*), beach wiregrass (*Dactyloctenium aegypticum*), swollen fingergrass (*Chloris barbata*), balsam pear (*Momordica charantia*), pitted beardgrass (*Bothriochloa pertusa*), common sandbur (*Cenchrus echinatus*), and Henry’s crabgrass (*Digitaria ciliaris*).

Native vegetation throughout the DHHL parcel was confined to a relatively narrow strip along the shoreline that included coastal shrublands and grasslands dominated by species such as: ‘aki‘aki (*Sporobolus virginicus*), ‘akulikuli (*Sesuvium portulacastrum*), *Fimbristylis cymosa*, ‘ilima (*Sida fallax*), and nehe (*Lipochaeta integrifolia*).

Two rare plant species were found within these plant communities: the now federally listed endangered ‘ohai (*Sesbania tomentosa*) and the proposed endangered ‘ihi (*Portulaca villosa*). Other species included: pa‘u o Hi‘iaka (*Jacquemontia ovalifolia* ssp. *sandwicensis*), kipukai (*Heliotropium curassavicum*), *Panicum fauriei* var. *latius*, naupaka kahakai

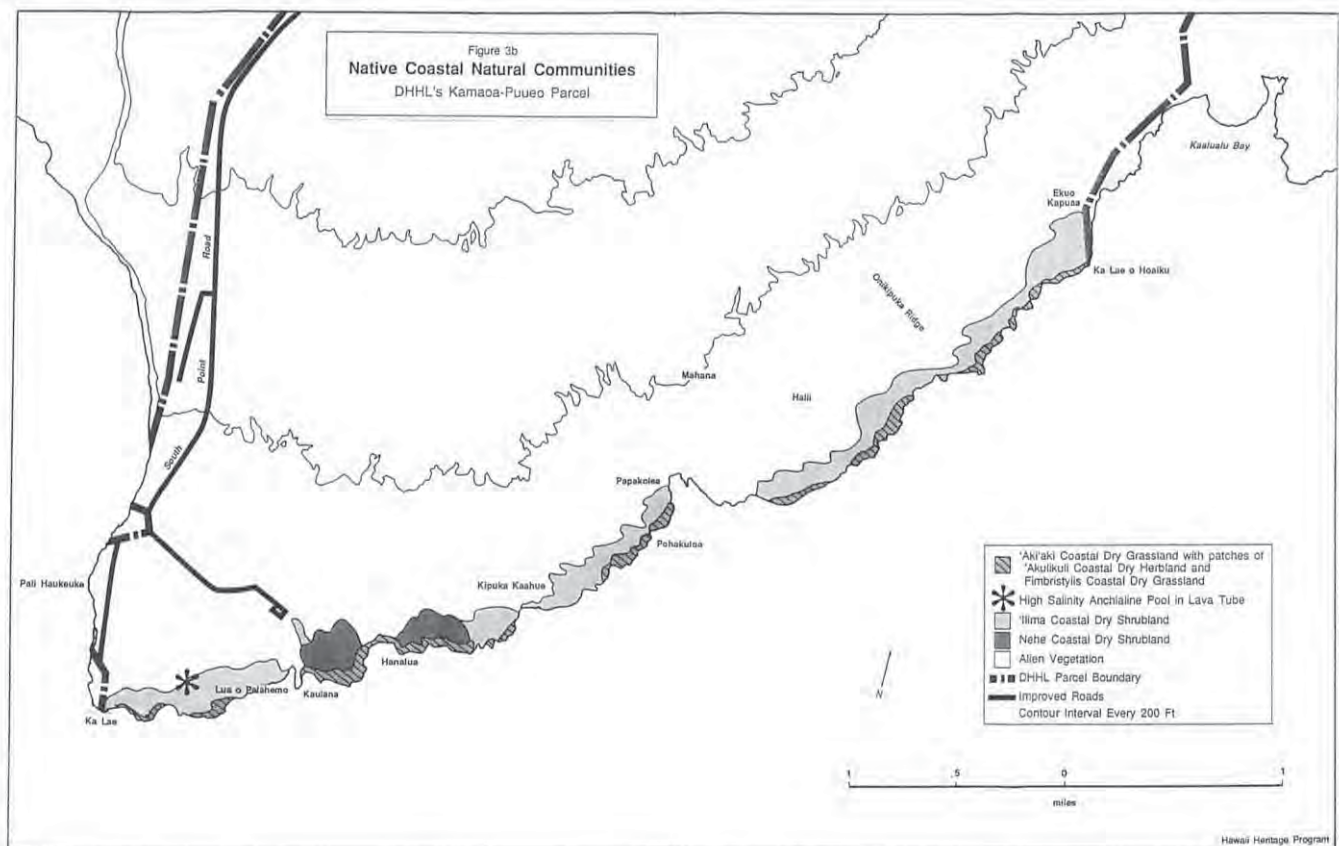


‘Ohai found at South Point.

<sup>6</sup> It is believed that ‘ōpae ‘ula (*Halocaridina palahemo*) from Lua o Palahemo belongs to a different species than *Halocaridina rubra*.

The proposed endangered pōpolo or ‘ākia (*Solanum nelsonii*), which has only been found in Hawaiian coastal habitats, was collected from the DHHL’s parcel coastline in 1929, but was not encountered during the 1993 HHP survey. A total of approximately 250 individuals of ‘ohai were seen in 1991 at Ka Lae, Hanalua, and Mahana. Of the 250 plants, more than 70 individuals were spotted at Ka Lae; however, only two individuals of ‘ohai were found a year later. Also, more than 250 individuals of ‘ihi were seen along the coast at Hanalua and Mahana in 1991, and has been previously recorded at Ka Lae.

### Figure 3. Map of the native coastal vegetation



The 1993 HHP study reported the federally listed endangered ‘**io** or Hawaiian Hawk (*Buteo solitarius*) present at South Point. Specimens collected from the vicinity of South Point in 1979 also suggested that the endangered ‘**ope‘ape‘a** or Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) may have been present. Other birds that have been observed at South Point are migratory birds: the endangered **Kioea** or Bristle-thighed Curlew (*Numenius tahitiensis*), the Kōlea or Pacific Golden Plover (*Pluvialis fulva*) and the ‘akekeke or Ruddy Turnstone (*Arenaria interpres*).





*"Ka Lae is a part of our 'ohana.  
Wahi pana such as Ka Lae  
are our connection  
to our past and our future"*

# 2

## PLAN DEVELOPMENT METHDOLOGY



## 2. PLAN DEVELOPMENT METHODOLOGY

This Management Plan was developed based on significant information gathered from consultations with Ka'ū community members knowledgeable about South Point. These community members provided their mana'o to assist the planning team in formulating recommended projects and management actions (as described in Chapter 3). State agencies and organizations, including DLNR SHPD, Division of Aquatic Resources (DAR), and Land Division, and Kamehameha Schools, were also consulted.

This chapter provides the context through which projects and management actions were developed. It describes the community consultation process, and summarizes the vision, concerns, and ideas shared during the community consultations. It also identifies the opportunities and challenges for South Point.

### 2.1 COMMUNITY CONSULTATION PROCESS

A major focus of this plan was directed towards beneficiary and stakeholder consultations. Consultations consisted of two community meetings and a series of “talk-story” sessions with DHHL beneficiaries, and with kama'āina and kūpuna connected to Ka'ū. An initial community meeting was held in July 2015 at the beginning of the project to introduce the planning process, timeline and schedule, and the planning team. Approximately 70 people attended the meeting of whom 50 identified themselves as DHHL beneficiaries.

#### “Talk story” sessions

The initial community meeting was followed by a series of “talk story” sessions. Approximately 30 individuals participated during the five small group “talk story” sessions that were conducted between August and September 2015. While DHHL provided guidance on who to contact for the “talk story” sessions, family members and associates of those who were contacted were welcomed to invite others to participate.

The main objectives of the “talk story” sessions were to identify: (1) the community's vision for South Point, (2) major concerns for the place, and (3) potential strategies to address the issues identified. Other types of information such as local knowledge of resources and cultural practices were also gathered. The following questions were used to guide discussions during the “talk story” sessions:

- What is your connection to South Point?
- What is the importance of South Point to you and your 'ohana?
- What do you want South Point to be like for your children and grandchildren?
- What are some of the major problems or issues for South Point?
- What are some possible solutions to these problems and issues?
- How can we address some of the concerns and issues?
- What immediate changes would you like to see at South Point?



## Community "Speakout" event

The "talk story" sessions were then followed by a community "SpeakOut" event in December 2015. The "SpeakOut" event was an interactive five-hour event that was meant to provide an opportunity for beneficiaries to identify specific management activities in order to achieve the management goals identified earlier from the "talk story" sessions. Booths at the "SpeakOut" event were organized around four themes:

- Cultural and Natural Resources Management
- Economic Self-Sufficiency
- Health and Safety
- Native Hawaiian Culture, Knowledge, and Traditional Practices

Boards at each of the booths included informational exhibits and preliminary ideas for management strategies based on the "talk story" sessions. The boards were also designed to gather additional information that explored how and where strategies could be implemented. DHHL staff and the planning consultants facilitated, listened to and recorded participants' comments at the "SpeakOut" event. Approximately 40 people attended this event of whom 25 identified themselves as DHHL beneficiaries.



Beneficiaries provide their input during the community "SpeakOut" event.

## 2.2 RESULTS OF COMMUNITY CONSULTATIONS

This section provides a summary of the vision, concerns, and ideas that emerged from the community consultation process, and is organized by:

- Connection to South Point
- Vision
- Major concerns and issues
- Immediate actions

Many of the major concerns and issues identified during the outreach process for this Management Plan were similar to issues described in the 1983 South Point Plan.

### Connection to South Point

All of the participants who were consulted shared unique connections to South Point, and many of them shared childhood memories of fishing and camping at this place: “The old days, we used to do a lot of camping. That’s why the family [is] always together. Before you can camp like a whole week, but it’s different now.” They described how they learned how to drive here. Consultations also revealed a common portrayal of South Point as no longer being the pristine place that they once remembered. “So what I’ve seen before, 1927, way back, used to be really beautiful. I wish we could bring it back to that time,” said a kupuna.

One of the community members explained: “South Point is our foundation. For me, I never did leave the Hawaiian Islands. I never go to the mainland ‘cuz no reason why. I happy over here. I content here.” A kupuna described a spiritual connection to the place: “I find my spiritual self there. Down there is so sacred. I can go and talk to the wind.” She later shared her childhood memories of fishing and “plucking” limu kohu from Kaulana Bay.

We go right in the front where Kaulana Bay stay. You sit right in the corner. There’s a pond right there when the tide go over. And I used to sit right there and you could just sit down there and pluck your limu. My mother used to say *‘you no pull, you pluck the limu.’* There’s still limu. We always go there and pluck limu. I find my spirits, really spiritual needs down there.

Another kupuna shared memories of gathering salt along the coast, and explained that there used to be small ponds all along the shoreline. They used to walk to Ka’alu’alu Bay where the salt was “glassy.” When they would run out of salt, one could go to the ocean and get a rock and boil it. Many participants who were consulted also felt deeply about their connection to Palahemo. An individual shared their experience with gathering ‘ōpae from Palahemo:

Before the sun come up, they all around the pond. You go look before the sun come up, they all red around here. [Use] mosquito nets to scoop it out [and] throw it in a bucket so we go out for ‘ōpelu.”



Another individual recalled spending time at Palahemo as a teenager when nobody would drive there. She described Palahemo as the piko:

For our family, it connects us to who we are. It gives us that sense of understanding, that sense of place, that sense of identity. It's these things that keep us grounded.

Childhood memories of swimming at Palahemo were also shared by one of the participants who was consulted:

My mother guys use to tell me: 'eh the red dirt, wash your guys feet off before you guys jump inside.' We don't just go jump out the car and go jump inside. Kinda like it was one sacred hole. And then my mother wouldn't let us jump inside two at a time. Used to have the legend when we small kids the kūpuna would tell us the same thing: no jump inside if get two twin brother or two twin sister, you don't jump in together because one of you not gonna come back out. So even when we was growing up, we was kinda scared so we just jump one by one. That's one legend we went respect growing up. For us, it was always one sacred hole. It was clean before, but now, you don't know what get in there anymore. The time from the earthquake, I noticed was green already, 5 or 6 years ago, maybe more, the water wasn't circulating anymore.



Two teenagers spending time at Palahemo.

## Vision

Community members envisioned South Point as a place of education and learning, particularly for youth and future generations. All of the participants consulted referred to a summer camp that was once held in the 1990s as providing educational and cultural value for the children. They expressed wanting to see a similar program at South Point again.

I really like that some of our kids went. They learned about Palahemo. It was clean and they camped. It was a two week program [where] they learn culture, Hawaiian games, Hawaiian chanting, lau hala; even something like that would be good. That was a good program. It was well kept. The kids would go and walk the beach the first thing in the morning [to] pick up the rubbish.

An individual added that an educational program at this place would be beneficial for the Ka'ū community and shared how his son would appreciate such an opportunity. He further explained that today the children are losing their Hawaiian culture, including respect for the environment, because of the lack of the education within the school system. The following is a vision shared by a kupuna for the future use of the barracks area:

I'd like to sit down there. There's so much things that's really good. A museum. The tourists come down. And for the kūpuna, they can go down and sit down and weave or do something, tell story. Get nice places down there to do all this kind of stuff. We can improve [it] but it's gonna take time, but we can do it. There's something for the kūpuna. There's something for our kamali'i. Teach them about our ocean. Teach them how to respect.

Another use for the existing concrete foundations at the barracks was also suggested. A kupuna envisioned camping grounds for DHHL beneficiaries and their families. She described a summer camping permit system similar to the one offered by DHHL at Keaukaha.

Many people who were consulted also described the place as providing economic opportunities for the local people. Ideas for potential economic opportunities included: providing interpretive community-led guided tours of South Point and sharing the Hawaiian culture with visitors; providing a shuttle ride to Green Sand Beach; vending Hawaiian handmade crafts; and offering cultural programs to visitors. Funds generated from these economic opportunities would be used to finance infrastructure improvements and support restoration and preservation projects.



Cliffs at South Point.

Consultations also revealed that a pathway near Ka Lae was desired by some of the participants. The following vision was shared by a kupuna:

We always had a walkway, but no more. That's why I said, the lighthouse to Kaulana, we should have a walkway. That was part of our plan, a walkway and for the handicap too where the wheelchair can go.

A kama'āina from Ka'ū explained that the community would like to see cultural sites restored and protected because of their cultural importance and function in the ecologically important coastal areas. The kama'āina further stated that "South Point is a wahi pana where we can go to as a resource to gain that spiritual satisfaction."

## Major Concerns and Issues

### DHHL

One of the major recurring issues identified by the community during the small group "talk story" sessions was the lack of management by DHHL at South Point—in terms of presence, response to problems and enforcement. "We [are] doing their job for them, [that is] basically what we [are] doing," a community member asserted. All of the participants consulted were concerned that DHHL would be held liable for injuries resulting from illegal recreational activities at South Point.

***"Hawaiian Home Lands is not managing [South Point] very well."***

Community members expressed their dissatisfaction with DHHL. They pointed out the lack of results from past planning efforts: "It's another meeting to another meeting, and we never resolve nothing for the last ten years. It's not new. It's getting old already. It's getting really frustrating."

***"Twenty-nine years have gone by and not even a water hose. Nothing has been done. We want answers."***

A beneficiary explained that "the people out here don't really trust Hawaiian Homes because they never proof nothing." Questioning how the outcome of this management plan would be any different from previous planning efforts, a beneficiary asked "how much is the Department willing to get involved with this?" Community members emphasized numerous times that they have been waiting a long time and would like to see something implemented now and not in the next twenty years.

A kupuna expressed sentiments that were common to many of the participants.

Hawaiian Homes should put its foot down. It's time they [DHHL] should step in. Need to tell the community: We find that you folks not taking care of the 'āina so we putting a stop temporarily, just to see the 'āina get healed. We all gotta heal the 'āina. I don't mind, starting from the fork down, but the road is good 'til the barracks. Makai side, all by the shoreline, that all needs to be healed. You guys came, you guys seen. You cannot just come say everything is fine. It is not fine.



### ***Existing uses***

Consultations revealed that South Point is accessed by beneficiaries, kamaʻāina and tourists for various types of recreational and subsistence activities, which include:

- Sightseeing
- Fishing (including access to Kaulana Boat Ramp)
- Cliff diving
- Off-roading with ATVs, dirt bikes, and four-wheel drive vehicles
- Camping
- Shuttle operation to Mahana Bay

It is difficult to separate the uses that are common to DHHL beneficiaries and kamaʻāina, but tourists generally access the area for sightseeing purposes, particularly to visit Green Sand Beach. A community member described how the place is often overcrowded with people, especially during a 3-day weekend: “starting Thursday or Friday morning, you are going see all the traffic come, see all the truck with their trailers and ATVs and motorcycles and it’s not the people from here. It’s from all over.”

One of the most contentious uses is the current shuttle service operation. A participant who was consulted shared the following sentiments, which were generally felt by many community members:

If Hawaiian Homes would just talk to those guys down there, you guys just making money you not giving back, you gotta leave. You gotta be real stern. They not doing any justice for the Hawaiian people. They had a stand by Mahana selling liquor down there. They need to be told, either you contribute to something, not just make the money and not pay their taxes. I think it is so unfair. What about the people that want to go there and do the [shuttle] tour too? They cannot. They stop ‘em. They need to go or contribute to something down there. Put a toilet there. The drivers, those kids are young. They don’t have a license.

The negative impacts resulting from unrestricted recreational uses are increased litter, unsanitary conditions, erosion, damaged historic and cultural sites, and increasing competition for coastal resources. A kupuna revealed that they no longer gather limu kohu from Kaulana Bay because everyone would “shishi” there.



Dirt bike riders use Palahemo as a jumping point.



Some community members deeply felt the need for a radical approach such as stopping anything with wheels: “if they wanna go in, walk in; no driving.” A kupuna recommended a management strategy where DHHL should:

Temporarily close it, 6 months to a year. In that time, let the limu grow. Things will be beautiful. The ocean will get fish coming back and we can open it up again. If they destroy, then close it off again.

Other recommendations to improve management on-site included hiring security guards to monitor and control visitors. A security guard at the split in the road that goes towards Ka’alu’alu was also suggested. An individual cautioned hiring from within the Ka’ū community for security guards because there could be conflict of interests for some families. Others felt that completely shutting the place down was not needed, but simply the need to educate the public about this area.

***“You can have somebody before the gate and just record what car is coming in here.”***

A beneficiary explained that we would not have this “pilikia” if there was enforcement. They recalled a time when there was a staff person from DHHL who would enforce rules at South Point. Other suggestions included: partnering with Kamehameha Schools to pay for security; installing a fence approximately 300 feet mauka from the shore starting at Kaulana Ramp to Green Sand Beach and then allowing ranchers in the abutting properties to manage that section of the land along the fence line; working with car rental companies to make sure that visitors do not drive to Green Sand Beach; and developing and installing signage to avoid inadvertent damage to resources.

### ***Unrestricted Vehicular Access***

Unrestricted vehicular access to South Point has resulted in significant damage to the natural and cultural resources. There are visible scars on the landscape, including a web of paths and roads with ruts as deep as eight feet. The soil is compacted and eroded from Kaulana Bay to Mahana Bay, where cultural layers are exposed in areas at about one to two feet below the top layer. A community member described her recollection of the place:

South Point was never like this. One road in, one road out. Only one. There was only one road to going out to Green Sand. The land was pretty much flat.



Cultural layers are exposed in eroded areas.

Unrestricted vehicular access has also contributed to the erosion occurring at Lua o Palahemo, which is currently green primarily from dust erosion and algae. Palahemo is used as a jumping point by dirt bike riders. A community member explained: “The only place they could tear it up is right here at South Point, wasn’t managed by nobody. They feel free to ride where they like. Before only get one or two roads. All [happened] in the last ten years when ATVs became a fad.” Participants who were consulted suggested that most of the issues with off-roading are caused by non-Ka’ū residents.

When DHHL staff are not present, vehicular access and parking is not controlled. A community member commented that:

People should park up above and then walk in. People should not be able to park near the cliff by the blowhole. It is dangerous.

Some participants recommended having one good road to shuttle everyone from Kaulana Bay to Mahana Bay, but the majority of the participants who were consulted also felt the need to ban vehicular access and to only allow people to walk in if they really wanted to see Green Sand Beach. Constructing rest stations along the path for visitors was suggested.

***“It’s not people from here [and that] there are people from all over renting jeeps that’s going in there.”***



Palahemo is green from dust erosion and algae.



Photo Credit: William Keoni Fox

Tourists drive all over South Point and often get stuck.





Vehicles parked all over the place, even close up to the cliff (*top*); South Point is scarred with a web of paths and roads from many years of unrestricted vehicular access (*bottom*).

## Public Safety

Public safety concerns at South Point are related to: sanitary conditions, fire hazards, ocean conditions (strong currents), and the overall health and safety of the public. Emergency response time is approximately thirty minutes since the nearest fire station is located in Nāʻālehu.

There are currently no toilets at South Point with the exception of two portable toilets that are located near the fish hoist parking area. Consultations revealed that a local community organization is paying for the rental and maintenance of these toilets. Participants who were consulted said that Kalalea Heiau has been used as a toilet by the public and as a source of stones for constructing barbecue sites. There are also no waste receptacles at South Point and trash accumulates throughout the area.



Pile of trash near Mahana Bay.

Fire hazard is a major concern, particularly for DHHL pastoral lessees that risk losing their cattle. A pastoral lessee commented that a positive aspect of a fire is that it would clear out all of the thick lantana that usually covers the place. He recalled South Point being very dry about

seven years ago and shared how he wanted to stop people from going into the area because more traffic meant increased risk of fire. The DHHL beneficiary also further explained that a lit cigarette or a vehicle could easily spark a fire because of the dry conditions at South Point. Creating fire breaks was recommended as an important tool to control the fires. A “backfire” strategy was also shared as a possible way to contain them.



Existing signs at South Point with graffiti.

Many visitors are not familiar with the ocean conditions and the strong currents at South Point, as there is a lack of signage on-site. There are also no lifeguards present. Suggested community recommendations included: having certified lifeguards stationed at Mahana Bay; providing first aid equipment on-site; installing signage such as “CAUTION: Strong Current” and “No Climbing and Cliff Diving” at Green Sand Beach; providing lifesaving equipment along the coast for bystanders to use; and working with the Hawaiʻi Fire Department to store a jet ski on-site as a way to improve





Hike to Mahana Bay provides almost no shade.



Popular cliff diving area at South Point.

emergency response options.

Some of the community members shared that the majority of the visitors struggle with the long and strenuous hike to Mahana Bay. The hot and windy environment is generally not favorable for most hikers, as the place offers no shade. Shuttle service providers view their role as providing a public service. “We help people with strokes and injuries. The ambulance used to come down here. They no can go in, [so] we gotta go get them for them and bring them out for them.”

Another individual described it as:

People [with] broke leg. I drive them out. People with dehydration, bad dehydration. We help out as much as we can. The Hawaiian Home Lands benefit from all these little things. It’s not little, it’s helping people.

However, some of the other participants who were consulted were (1) concerned with the safety of the public that uses the shuttle service and (2) the liability risk assumed by DHHL if visitors are involved in an accident while using the illegal shuttle service. In regards to providing facilities such as toilets for South Point, many of the community members suggested that revenue generated from the shuttle service should pay for these amenities.

Community members shared that the local people and tourists continue to cliff dive despite several signs that read “Danger: No Cliff Diving Allowed.” A staff from the Ka’ū Hospital commented that many people are brought in for medical assistance because of incidents from cliff diving at South Point. Removing the existing ladder used for cliff diving was suggested, but participants who were consulted shared that active management presence is needed in order to effectively enforce the no cliff diving rule. They explained that trespassers could easily replace the ladder if the existing one is removed (for example, the ladder was replaced with a newer one and installed adjacent to the hoist by the public in March 2016). Cliff divers can also swim around the cliff and climb back up on the rocks if the ladder was removed.

## ***Tourism***

Two main attractions besides its natural beauty that draws people worldwide to visit this area are: the southernmost point in the United States and Green Sand Beach. Community members shared that many people learn about South Point from the Internet through social media sites and from advertisements by the tourism industry. A community member commented:

Green Sand [Beach] is the biggest play in this. Everybody wants to go see Green Sand [Beach]. How you gonna run away from that one when they get advertisement, newspaper, TVs, all the hotels, they advertise all that for tourists.

Participants who were consulted explained that visitors tear up the landscape at South Point, and often get stuck because they are unfamiliar with which roads to drive on. Many hikers to Green Sand Beach suffer from heat stroke and exhaustion because they were either unfit or unprepared with adequate attire and/or fluids.

Suggested recommendations included: improving signage to warn visitors of the length and condition of the hike to Green Sand Beach; developing handouts to pass out to visitors (and kamaʻāina) to educate them about the history and resources of South Point; installing signage such as “dust off your feet before you leave” to protect the natural resources; and working with the tourism industry, such as car rental companies, hotels, and tour operators to make sure that rules are followed at South Point .



Photo Credit: William Keoni Fox

Green Sand Beach is a top attraction for visitors. Visitors drive to the top of the hill which is dangerous.



A general theme shared by all of the participants who were consulted was the need to capitalize on the tourism industry. Ideas for generating revenue included: providing guided tours and educating visitors about the place; an ecotourism shuttle tour to Green Sand Beach; and instituting an entrance fee/parking to South Point, similar to Hanauma Bay and Volcanoes National Park. In regards to the ecotourism business, some community members felt that ecotourism is a misused term. An individual stated: “What they [are] doing down there is not ecotourism. Ecotourism is when you do not disturb the ecosystem, so shuttling people in and out is not ecotourism.” Free admission for kūpuna and possible ways to provide a kama’āina rate or provision for local people who are connected to the place were suggested in regards to an entrance fee for South Point. Many community members also emphasized that while there is a need to control the tourists, the local people should not be restricted from accessing their own resources.



Visitors at South Point on a typical weekday.

### ***Fishing***

The two prevailing currents converge at Ka Lae, which is why this area has such rich fishing grounds. Community members described the ocean as their “icebox” and how they rely on the resources to provide food for their families. One individual commented on the value of the coastal resources: “For us, it’s different. We are spear diving for food.” A kupuna shared how she would buy fish caught at South Point from kids because she is no longer physically capable of fishing. She further explained that it also provides a source of revenue for the children.

Ka'ū residents recalled shore fishing, throwing net, picking limu, and harvesting salt along the coast. A common practice that was described by all of the participants was gathering 'ōpae at Palahemo early in the morning. They shared how one would gather 'ōpae before the sun comes up in order to later use as bait for 'ōpelu. A kupuna shared that it is rarely practiced now since the water is so dirty at Palahemo and that the 'ōpae are not as abundant anymore. A community member shared that spear divers typically go off of what is referred to as "Broken Road." The road was originally constructed by the County in 1955 to service aku and 'ahi boats at South Point; however, it was severely damaged several months later during kona storms.

All of the participants who were consulted felt deeply concerned about "outsiders" overfishing at South Point, kama'āina not from Ka'ū. They shared how sport fishing competitions attract world class divers to this area and that fish are often left to spoil. A local fisherman expressed sentiments that were common to all of the participants: "People come and take take take and we gotta live in the mess." Local people cannot be stopped from accessing this area because fishing is their livelihood, but recreational fishermen must be managed.



Families rely on the rich fishing grounds for subsistence.

Local fishermen also access this area to launch their boats from Kaulana Ramp. It is the only publicly accessible launch area between Miloli'i in South Kona and Pohoiki in Puna. The State DLNR's Division of Boating and Ocean Recreation (DOBOR) is responsible for managing and operating the Kaulana Ramp. Consultations revealed that the community would like improvements completed for the boat ramp, such as improving the road from the barracks to the boat ramp, designating a parking area for the boat trailers, and extending the ramp further. A community member shared



Existing boat ramp at Kaulana Bay.

that there were previous plans in the 1980s to improve the boat ramp, but the plans were not implemented due to a lack of funding. However, some people expressed concerns that



improving the boat ramp may attract more fishermen to the area; thus increasing competition for ocean resources.

Consultations revealed that present-day fishermen have adopted a technique at South Point where large garbage bags are used as a sail to take a fishing line out further to deeper fishing grounds. Some community members who were consulted shared their concerns about the potential environmental impact when garbage bags are accidentally detached from the fishing line and drifted into the ocean from the strong winds. Another concern related to fishing is the use of Kalalea heiau by fishermen as an anchor for their tents.



Fishermen park close to the cliff (*left*); Heiau used as an anchor for a fisherman's tent (*right*).

The majority of the fishermen are currently accustomed to driving and parking their vehicles close to the cliff or shoreline, but some participants felt that fishermen should not be allowed to drive all over. A kupuna suggested that:

Cars should not be allowed to drive in. [The blowhole area] should be blocked off and have people walk down. Park up and walk down. They only going there to fish. They can walk down with their cooler.

Another community member recalled their childhood memories of fishing at South Point:

We went to the cliff and park above. We never went down where everybody stay parking now. We just stayed above and we walked in and we carry our fishing gear in. Each kid had a job to do and each one would bring the water.

### **Stewardship**

Many community members felt deeply about the need to use revenue generated from South Point to pay for the management of the place, including hiring security guards, and to support restoration and preservation activities. Some people suggested the idea of funneling revenue from the entrance fee and/or the Green Sand Beach shuttle service to a community association that would steward the place. Seeking funding from the Office of Hawaiian Affairs was also suggested.

A community member shared his feelings regarding the need to restore the place:

We are willing to go over there and do 'em. We waiting over here. We willing to spend our time and donate our time and put whatever we gotta put over there. I did it when I was small kid, my dad and all the old timers. They did the rock wall right around the light house, all the way to the blowhole. Use the rock to protect the area. It's only simple. We willing to put our labor and time out there with no payment.

A kupuna explained that not just one group should serve as the caretakers of the place, but that everyone needs to help out. Many individuals expressed interest in being stewards of South Point, but some community members acknowledged that there is a lot of jealousy amongst people in the community.

Challenges to do something like that, cannot have too much jealous Hawaiians. [Need to] learn to work together and respect each other. Need to have trust, get to trust each other.

An individual further explained that:

When you become a caretaker, you got the hammer. You can tell people where to come and where people cannot come and that's not going to be fair. Just a handful gonna benefit. So if this is one community thing, lets get all the hands together.

All of the participants who were consulted expressed the value of the previous curatorship at South Point, which provided both educational and cultural programs (including Hawaiian chanting, lau hala, games, and hula) and on-site presence for the area.

The curatorship get in the past did good down there. They did pretty decent. Sometimes it was maybe a little controlling, [but] they had the presence down there. The guys living down there; they were down there so everybody behaved a little better. They were living down there, but illegal too, but they were taking care of the place. They would go scold people but then after a while the Department just kicked them out. They had the summer camp for the kids in the 90s.

### ***Economic Hardship in Ka‘ū***

Consultations revealed a lack of economic opportunities available in Ka‘ū. A community member commented: “It’s simple. People in Ka‘ū don’t have no jobs, simple as that.” He further explained that after the closing of the sugar plantations, it has been difficult for this community to find employment. Some local people have found opportunities at South Point by selling beverages and jewelry to visitors, and offering a shuttle service from the barracks to Mahana Bay for a fee. In response to a suggestion to “control the tourists entering into South Point,” a kama‘āina commented that if you “stop the tourists, you stop our payroll.”

The majority of the community members agreed that a shuttle service would be acceptable if it is formalized with DHHL, provided that some of the funds generated from that operation are reinvested into the ‘āina (such as providing toilets for the place). Some community members have expressed wanting to see an ecotourism venture be established at South Point. A beneficiary explained a benefit of an ecotourism business is that it would create salary positions that would pay workers regardless of how many tourists are shuttled in and out of Mahana Bay. Funds generated from the business would go back to the community through jobs but also by developing infrastructure for South Point. An individual explained that there are many talented kids with no place to go, but South Point would guide them towards economic self-sufficiency:

Make job for them so they don’t have to drive to Kona, spend 2 hours driving in the traffic. Our kids born and raised here. They would love to just be working here and go down to the beach and not gotta work Saturday and Sunday just to make it happen, and if they can just save their expense on their cars that can go for them to pay for their own mortgage on a house or just vacant land. They don’t have to travel. Get lot of opportunity down here.



Ice cream vendor parked near the fish hoist area (*left*); Jewelry and crafts sold near the fish hoist area (*right*).

In general, community members believed that charging people to visit South Point was a good idea. It would generate money needed for restoration projects at South Point. “If people don’t mind paying to go Volcano, they shouldn’t mind paying to come over here.” Majority of people felt that charging an entrance fee similar to Volcanoes National Park (\$15) was fair for South Point, but a local resident expressed that “as a kama’āina from Ka’ū, I think it’s my birth right.”

Some community members stressed that economic development cannot just benefit one person or individual, but that revenues generated from activities at South Point need to be reinvested into the ‘āina, including the restoration and preservation of the cultural and natural resources at South Point.

### **Immediate actions for South Point**

Participants who were consulted generally all expressed the need for DHHL to show presence and enforcement at South Point. The majority of participants felt deeply about prohibiting vehicular access “to let the land heal” and to gain site control. The following are some of the immediate actions identified and suggested by some of the community members:

Close the shoreline. Close the entrance to Green Sand. You’re going to have to put somebody down there. You gotta show presence down there. The pavement, the paved road that goes right to the barracks, fence all of that pavement. Nobody goes below the pavement, that anything with a wheel. With foot traffic, you can’t do that much damage. Right at the ‘Y’.

We can put a date, how long it is going to be closed and why it is going to be closed and then we can open it once in a while. Maybe couple days, leave it open, and see how people act. If they going come in rough and destroy it, then say if you going destroy it then we will close it all off, we may not reopen it. But I would like to see it close and then that would give us chance to work on our path by the ocean. The breeze is so beautiful and a small place where you can park and walk and a little station where you can have water and people down there can make money and sell ice water from the bottom. I think that would be good and that would help the tourists.

Bring the media in now. Let them know what is going on, what’s occurred in the last 10 to 15 years and where we at now. If you bring the news article, this spread nationwide and the problems would be heard outside of our district. Right now, everything that is happening is only within our district.

We gotta do it now, not later...Use the rock to protect the area [Pu’u Ali’i and Palahemo].



Control the jeeps. We trying tell them to read the signs, signage. The damage is people don't know where to drive. Just one road, too much and that is where the problem is.

There are no toilets. There's a big need for them, but putting toilets in, would that give them the OK? Or should we just block it off? Put it by the gates. If you are closing it down, then would you still put toilets there?

Need to stop the rentals first...Hawaiian Homes need to talk with the rental companies.



Community members who were consulted during the outreach process felt deeply about DHHL taking immediate management action for the South Point area. The picture above shows ruts as deep as eight feet that cover the landscape, which is a result of the lack of management during the past several decades.

## 2.3 OPPORTUNITIES AND CHALLENGES

Based on the community consultations, the planning team identified opportunities and challenges for South Point and DHHL, which provided a context through which projects and management actions were developed.

The following are **opportunities** for South Point and DHHL:

- One of two **green sand beaches** within the U.S. is located at Mahana Bay and attracts many visitors to the area daily, which could provide **ecotourism** opportunities for DHHL beneficiaries.
- The entire coast has great **natural beauty**, which provides scenic views for sightseeing.
- There are potential **economic opportunities** that could be developed from this popular **tourist destination**.
- There are **Ka'ū community organizations and associations** who care about South Point and are interested in serving as stewards of the place.
- **Native habitat** could be restored to support the integrity of the **coastal ecosystem** at South Point.
- In addition to the **significant cultural and natural resources**, the historic significance of the place provides opportunities to offer interpretive experiences and **'āina-based learning** for youth and future generations.
- Approximately 700 acres are located within the **National Historic Landmark**.
- **Existing infrastructure** remaining from the military could be reused as a foundation for future gathering places.
- The **rich ocean resources** provide local families with basic needs.

The following are major **threats to resources** and **challenges** for South Point and DHHL:

- **Pu'u Ali'i** is vulnerable to **erosion** and threatened by large storm events that may reclaim burials located at this site.
- The **geographic isolation** of the area makes it challenging for DHHL to control access into the area. There are also **multiple access points**.
- DHHL has **no police powers** which makes it challenging for DHHL to enforce rules.
- There are currently **no enforcement staff** on the island that could assist with on-site management and to improve DHHL's presence at South Point.
- The area is subject to increased **fire risk** because of the dry and windy conditions.
- Some **individuals rely on economic opportunities** at South Point; however, there is **potential liability** for DHHL should these illegal activities continue to occur.
- South Point Road is used by fishermen to access the **State boat ramp** at Kaulana Bay.
- The rich fishing grounds at South Point attract fishermen to this area, particularly for **sport fishing tournaments**.
- People worldwide know about this place because it is widely featured and/or mentioned on the **Internet**, particularly through **social media sites**.

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"It is wahi pana,  
a sacred and spiritual treasure,  
a source of pride  
for our community and  
for many Hawaiian families."

# 3

THE PLAN





### 3. THE PLAN

Table 4 presents a summary of projects and strategies associated with the four management goals identified for the South Point area. The priority projects are highlighted in **bold**.

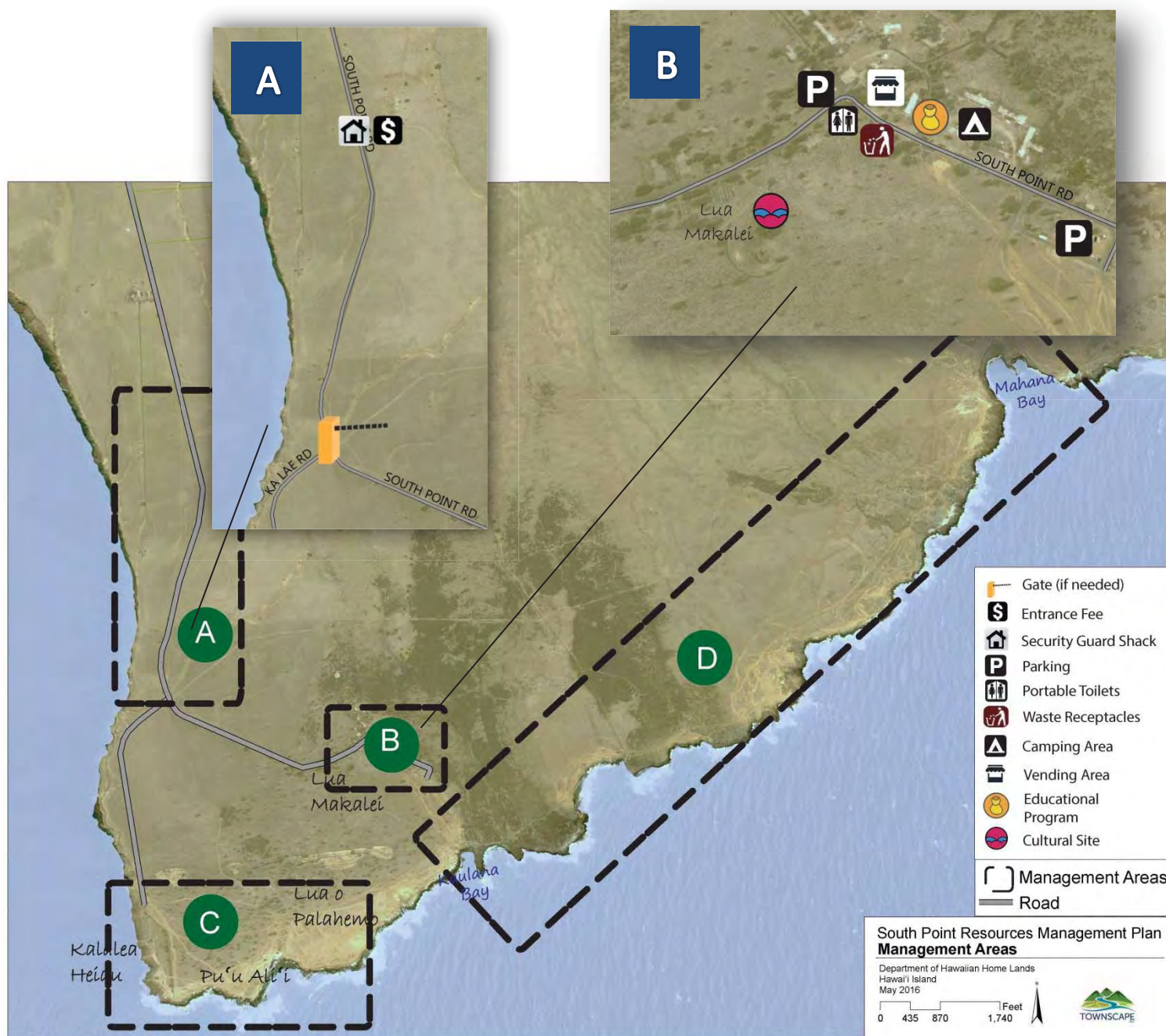
**Table 4. Summary of goals, projects and strategies**

<b>SUMMARY OF GOALS, PROJECTS AND STRATEGIES</b>	
<b>Goal 1: Restore, preserve, and protect cultural and natural resources.</b>	
1.1	<b>Restore and protect important cultural sites and natural resources within the DHHL's property.</b>
1.2	Plan, design, and construct a walking path that guides visitors around the cultural and natural resources near South Point.
<b>Goal 2: Perpetuate native Hawaiian culture, values, history and language for future generations.</b>	
2.1	Provide opportunities for 'āina-based educational programs at South Point.
2.2	Design and implement a permit system to allow for 'ohana camping at South Point.
2.3	Plan, design, and create an area to serve as a gathering place for the local community.
<b>Goal 3: Provide a safe, clean, and friendly environment.</b>	
3.1	<b>Manage vehicular access at South Point.</b>
3.2	<b>Provide sanitary amenities and signage at South Point.</b>
3.3	<b>Plan, design and construct a service road and a pedestrian path to Mahana Bay.</b>
3.4	Develop and implement a public education campaign to increase awareness and to deter unpermitted recreational activities.
3.5	Improve access to lifesaving equipment for the local community and visitors.
3.6	Improve access to Kaulana boat ramp and launching area.
3.7	Develop and implement a fire management plan.
<b>Goal 4: Generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families.</b>	
4.1	<b>Institute a parking fee for South Point.</b>
4.2	<b>Provide training and technical assistance to DHHL beneficiaries to become legal business entities on DHHL lands.</b>
4.3	Provide opportunities/programs that engage visitors in the history and culture of the place.
4.4	Seek alternative sources to fund resource protection projects for South Point.

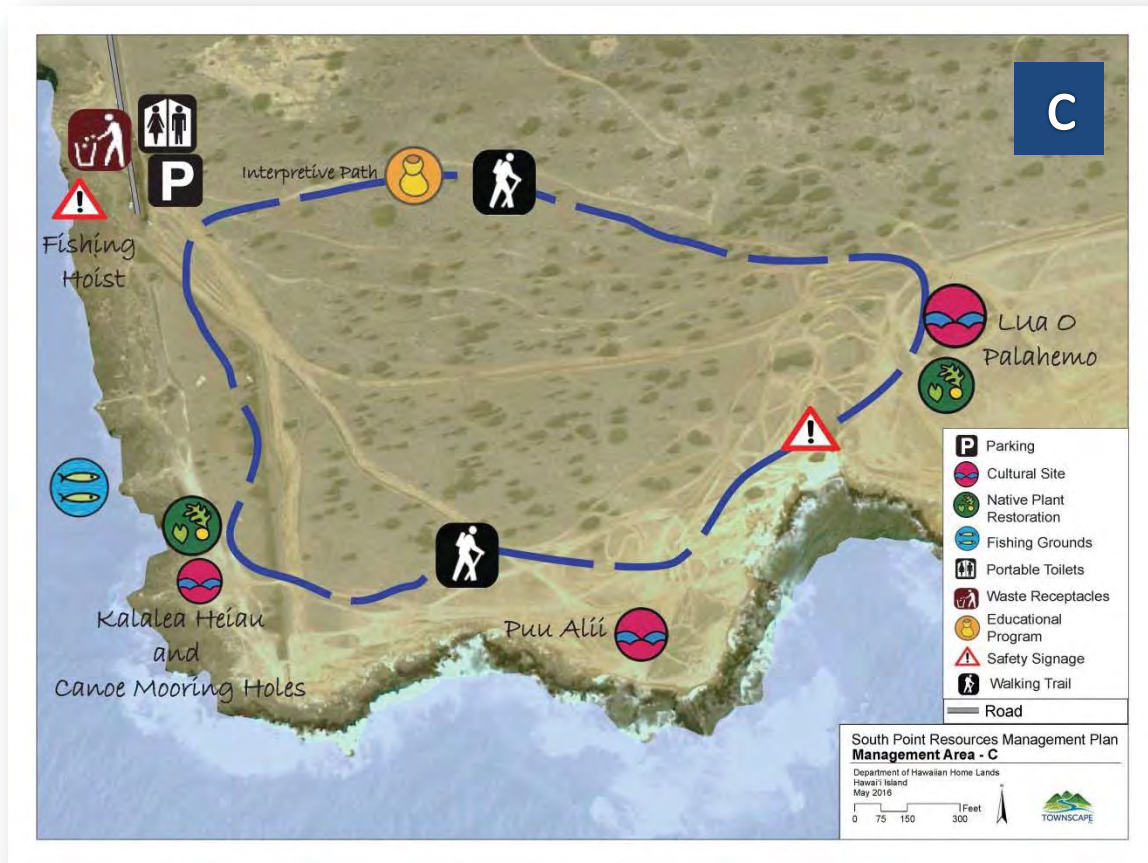
The projects and strategies identified for South Point are clustered in four primary management areas, as shown in Figure 4. The location of these management areas are:

- A – Entrance to South Point
- B – Barracks area
- C – Ka Lae (fish hoist to the southern point and includes Pu'u Ali'i and Palahemo)
- D – Kaulana Boat Ramp to Mahana Bay

**Figure 4. Management Areas**









### 3.1. PROJECTS & STRATEGIES

This section provides brief narratives of recommended projects and strategies for the South Point area. Some of these projects and strategies reflect similar recommendations described in the earlier management plan developed by PBR Hawai'i in 1983. Of the 16 projects and strategies identified, six were distinguished as priority projects (shown with an underline). In-depth project descriptions for the priority projects are included in the subsequent section.

#### **Goal 1: Restore, preserve, and protect cultural and natural resources.**

##### **Project 1.1: Restore and protect important cultural sites and natural resources within the DHHL's property.**



Marine debris found along the coast at South Point.

Cultural sites and natural resources will be protected from unintentional damage through education and enforcement. Interpretive displays and pamphlets will be designed and developed in consultation with the Ka'ū community knowledgeable about the area's history and resources. The displays and pamphlets will be used to inform and educate visitors of the important resources of South Point, which include but are not limited to the following: Palahemo, Kalalea Heiau, Pu'u Ali'i, Pinao Bay, and the canoe mooring holes. Signs that illustrate best practices for sustainable fishing will be placed near popular fishing areas. Protective barriers will be constructed

and installed at various sites to protect resources from further destruction. The endangered 'ohai (*Sesbania tomentosa*) is also present in the South Point area and will be protected with a fence or rock barrier to avoid disturbance from off-road vehicles and foot-traffic. However, damage resulting from off-road vehicles should not be an issue once vehicular access is managed at South Point. Native plant restoration programs and beach clean-ups will be conducted as a series of DHHL-organized community work days and/or incorporated as an 'āina-based educational program (as described under Project 2.1).

**Project 1.2: Plan, design, and construct a walking path that guides visitors around the cultural and natural resources near South Point.**

Plan, design and construct a walking path that could connect some of the major cultural and natural sites within the National Historic Landmark: Kalalea Heiau, the canoe mooring holes, Pu'u Ali'i, Pinao Bay, Lua o Palahemo, and possibly Lua Makalei (although this site may be too far from the others). An interpretive display with a map of the walking path may be provided near the designated parking area(s). The walking path could be used as part of a self-guided or community-led tour. The pathway may be too far for some kūpuna to walk, but it would be detrimental to the cultural and natural resources if vehicular access is allowed through this area. A low-impact vehicle such as a golf-cart could provide kūpuna and disabled tourists access to this area in the future.



Caution barricade tape used as a temporary measure to protect Pu'u Ali'i.

## **Goal 2: Perpetuate native Hawaiian culture, values, history and language for future generations.**

### **Project 2.1: Provide opportunities for ‘āina-based educational programs at South Point.**

South Point could serve as a culturally driven place-based learning classroom. Students can learn about the historical, cultural and geographical importance of the place; and interact with cultural practitioners, kūpuna, and Ka‘ū community members. South Point could provide the space to allow for intergenerational learning. Programs may be offered as a summer week-long program by Ka‘ū community organization(s) or through partnerships with school groups. During the community outreach process, many people spoke of a Hawaiian summer camp that was held at South Point and expressed that they would like see it held there again. Students may develop a stronger sense of kuleana and the need to mālama the place as a result of these ‘āina-based educational programs at South Point.

### **Project 2.2: Design and implement a permit system to allow for ‘ohana camping at South Point.**

A specific area at South Point could be designated for DHHL beneficiaries and their extended family members to camp. Beneficiaries will need to obtain a permit from DHHL similar to a system implemented at Keaukaha Beach Park during the summertime. Strict rules, including the prohibition of alcohol, drugs, and open fires, would be established. Some of the guidelines for camping could include restricted noise levels, trash removal, no tolerance for fighting, and cleaning the area before leaving. Camping could be limited to summer months when children are not in school, which would also avoid “permanent” campers, or camping could be permitted only on weekends during the year. The barracks was suggested as a possible camping area during the community outreach process. Reuse of the existing concrete foundations at the barracks as camp sites was suggested.

### **Project 2.3: Plan, design, and create an area to serve as a gathering place for the local community.**

Plan, design, and create an area to provide a gathering place for kūpuna, DHHL beneficiaries, and kama‘āina. This place could also be used to host visitors. It could be the piko of South Point where Hawaiian culture, knowledge and education are perpetuated. Classes and demonstrations (such as showcasing the culture of fishing with handicrafts and weaving nets) would be held at this place. Locally produced Hawaiian arts and crafts could be sold. Several people during the community outreach process identified the barracks as an appropriate site to serve this purpose, mostly because the area already has established infrastructure such as sewer lines, and the water tank above the barracks was also identified as once servicing the barracks. Another appropriate place suggested was near Kalalea Heiau and the coastline surrounding Pu‘u Ali‘i. A pavilion type structure that would be open with ‘ōhi‘a posts suitable for the windy environment was envisioned.

### **Goal 3: Provide a safe, clean, and friendly environment.**

#### **Project 3.1: Manage vehicular access at South Point.**



Unrestricted vehicular access at South Point has resulted in extremely severe erosion scars.

Vehicular access will be limited to specific parking areas at South Point: near the barracks and fish hoist area. Only vehicles with boat trailers will be permitted to drive beyond the parking area to Kaulana Ramp. Vehicular access will not be permitted to Green Sand Beach. A staff person will be stationed at the security booth that will be installed on South Point Road (approximately three-fourths of a mile north of the fork) to control vehicular access. Two other security staff to regulate vehicular access and compliance with rules are recommended. Should after-hours activities at South Point prove to be detrimental to the surrounding environment, DHHL will strongly consider installation of an entrance station in the

future to prevent these activities from occurring. An entrance station may consist of several features at one or more locations along South Point Road and could include a gate, security booth, signage, or other features that may be needed for the appropriate management of vehicular access. Security staff should also serve as park rangers—providing basic education and information of the cultural and environmental resources of the place. Other access points to South Point may be controlled in partnership with Kamehameha Schools.

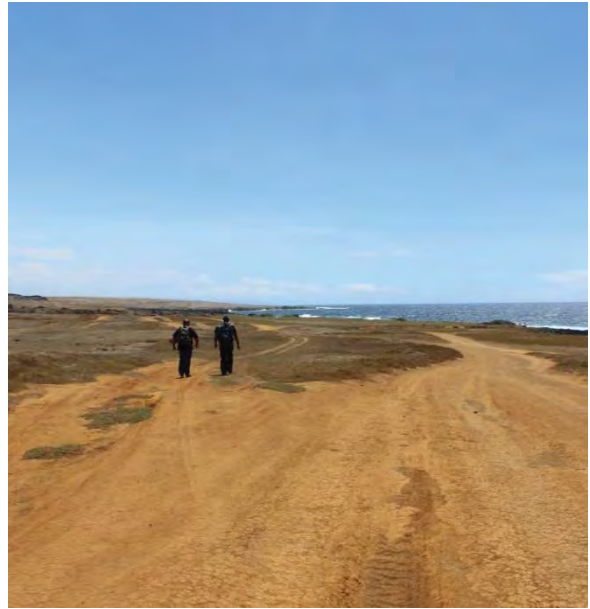
#### **Project 3.2: Provide sanitary amenities and signage at South Point.**

Portable toilets and waste receptacles will be placed near the barracks and the heavily-visited fish hoist area. Additional portable toilets and trash bins should be placed near Kaulana Bay and Mahana Bay as there are none provided along the 2+ mile hike; however, the lack of unimproved roadways is a challenge for maintenance vehicles to maintain the toilets and trash bins. At this time, DHHL will only be able to provide these sanitary amenities where improved roadways are located and accessible by vehicles. Safety and regulatory signs that inform the public of rules, prohibited uses, and hazardous areas and conditions specific to South Point will be installed at strategic locations. A large entrance sign will be installed to improve public awareness of the place as a National Historic Landmark and property managed by DHHL. Additionally, portable toilets and waste receptacles should be labeled with a sign that reads “COURTESY OF THE DEPARTMENT OF HAWAIIAN HOMELANDS” as a tactic to improve DHHL’s visibility and presence.



### **Project 3.3: Plan, design and construct a service road and a pedestrian path to Mahana Bay.**

Plan, design and construct a designated service road and a coastal pathway to Mahana Bay, as there is currently no designated path or road to Mahana Bay. The coastal path will allow the general public to access the area, but will only serve foot-traffic; while the service road will provide access for emergency and maintenance vehicles only. Portable toilets and waste receptacles would be deployed near Mahana Bay should a service road exist. Otherwise, trash and defecation will continue to be an issue near Mahana Bay since access for maintenance vehicles will be a challenge. The exact alignment of the routes will not be finalized until further technical studies such as an AIS and preliminary engineering report and consultation with SHPD are conducted.



Long, hot hike to Green Sand Beach.

### **Project 3.4: Develop and implement a public education campaign to increase awareness and to deter unpermitted recreational activities.**



Review on Yelp promoting shuttle service to Mahana Bay.

A public education campaign could be implemented to increase public awareness of the place. The campaign could target non-Hawai'i residents and kama'āina (specifically users that engage in illegal recreational activities at South Point). It would: (1) send a clear message of DHHL's official policies, strict rules and permitted uses of the area; (2) educate the public about the history and resources present at South Point and major threats affecting these sensitive resources; and (3) address misinformation circulating on the internet, including reviews, videos and photos that advertise Green Sand Beach, cliff diving at Ka Lae, and the illegal shuttle service.

For example, Kamehameha Schools reached out to hiking bloggers by sending "cease and desist" requests to ask them to remove any mentions of access to a hike on Kamehameha Schools' properties from their blogs. Similarly, DHHL could reach out to the public when

information of any illegal use at South Point is shared on the Internet. Some key social media sites include Yelp, YouTube, Instagram, Twitter and Facebook. Key words to search for on Yelp are *Papakolea Green Sand Beach*, *South Point Cliff Dive*, and *Ka Lae*; and hashtags for Instagram are *#SouthPoint* and *#GreenSandBeach*. DHHL could work in partnership with a local community group to serve as a “cyber neighborhood watch” to report any misinformation circulating on the Internet.

### **Project 3.5: Improve access to lifesaving equipment for the local community and visitors.**

People are exposed to dangerous ocean conditions, particularly with the strong current at South Point. Lifesaving equipment such as life rings or rescue tubes could be placed at various locations near the coast to ensure the safety of both visitors and the local people. Vandalism and stolen equipment is a concern, but these actions should be minimized with security staff present on-site (as recommended by Project 3.1). Bystanders can have access to rescue equipment if needed at popular swimming areas, such as Pinao Bay and Mahana Bay, since there are currently no lifeguards on-site. DHHL could consider working with the Hawai‘i County Fire Department (HFD) to provide a personal rescue watercraft (such as a Jet Ski) at the Nā‘ālehu Fire Station; it could provide HFD with an additional rescue equipment to use depending on the type of rescue needed.

### **Project 3.6: Improve access to Kaulana boat ramp and launching area.**

Improvements to Kaulana boat ramp and launching area could include: constructing a paved access road from the barracks to the boat ramp; constructing a designated parking area for trailers, and restoring the extension area. Further consultations with Ka‘ū community members and fishermen would be required. There are some concerns that significant improvements to the boat ramp would attract more fishermen to Ka Lae, thus increasing competition for resources. The existing small concrete boat ramp is approximately 20-foot wide. It was built in 1963 and improved in 1972. A FEIS was completed for proposed improvements to Kaulana Bay in 1981; however, these improvements were never made due to some local opposition at that time.



Boat trailers parked near Kaulana Bay.

**Project 3.7: Develop and implement a fire management plan.**

A fire management plan, particularly to address areas with sensitive cultural and natural resources (including endangered plants) and public safety concerns should be prepared for South Point. The environment at South Point provides ideal conditions for starting a wildfire: dry vegetation and a heat source such as ignition from motorized vehicles, burning campfires, or cigarettes. The strong trade winds of this area can aid in spreading the wildfire at a faster pace. Human lives and nearby property are at risk from wildfires in this area. However, improved management of South Point can reduce the risk of potential fires.

**Goal 4: Generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families.****Project 4.1: Institute a parking fee to South Point.**

A parking fee will be instituted at South Point in order to sustainably fund and offset various costs associated with managing this area. It is recommended that all of the revenue from the proposed parking fee be allocated directly for resources management projects and infrastructure improvements for homestead lessees in Ka'ū—"Keep funding in Ka'ū."

The fee collected should be used to finance the capital and operational costs involved with managing vehicular access to South Point and to fund resource restoration and protection efforts. The fee would be collected at the security booth located on South Point Road. It is recommended that DHHL beneficiaries, Ka'ū residents and volunteer stewards be allowed free parking.



Parking fees could be collected at the security booth on South Point Road.

**Project 4.2: Provide training and technical assistance to DHHL beneficiaries to become legal business entities on DHHL lands.**

DHHL will provide training sessions and technical assistance for beneficiaries interested in conducting business at South Point. The training sessions will cover requirements needed to engage in business activities “legally” as a business entity. The training sessions and technical assistance would be a coordinated effort between DHHL’s Land Management Division (LMD) and Planning Office (PO). The LMD would provide information related to the requirements and documents needed for vendors to conduct business on DHHL lands, while the PO would help to coordinate the logistics of the service. This project will focus on partnering with other organizations that have the existing capacity to provide training opportunities to beneficiaries in Ka’ū. Some of the main components of the training sessions would include: reviewing DHHL requirements for vendors wanting to conduct business on DHHL lands; registering a business in the State of Hawai‘i; and applying for a General Excise (GE) Tax License.

**Project 4.3: Provide opportunities/programs that engage visitors in the history and culture of the place.**

Programs that share the Hawaiian culture and special resources of the place could be offered to visitors. These programs may consist of: cultural practitioners showcasing their work and offering workshops; guided educational tours highlighting major cultural and natural sites at South Point; or hands-on restoration and conservation work such as removing invasive plants and assisting with native plant propagation. These programs could build cultural and environmental awareness about the sensitive resources at South Point. Various community organizations could offer these programs while charging a fee to support operational costs.

**Project 4.4: Seek alternative sources to fund resource protection projects for South Point.**

Alternative sources of funding to implement projects at South Point should be explored by DHHL. DHHL could consider seeking funding opportunities from government grants, philanthropists or conservation organizations.



### 3.2. PRIORITY PROJECTS

This section provides details on the six priority projects that were identified for South Point. The top priority for DHHL is to gain site control by managing vehicular access. An active presence on-site is required to enforce management policies because of South Point's geographic isolation. Implementing other recommended actions to protect the integrity of the resources without first establishing on-site presence would be a waste of money and effort. The six projects are not presented in any order of priority.

***“For my family, Ka Lae is a part of our ‘ohana. Ka Lae is a kupuna who is calling out to us for help and we bear the relationship, we gain knowledge, strength and guidance as native Hawaiian descendants and cultural practitioners.”***

#### **Priority Project #1: Restore and protect important cultural sites and natural resources within the DHHL's property.**

There are many important cultural sites and natural resources that are susceptible to inadvertent disturbance and intentional damage at South Point.

##### Education

One of the best ways to prevent human negative impact is through education. Interpretive displays will be installed at various locations to provide information on the history and resources found at South Point. It is recommended that additional consultation regarding interpretive display information and specific placement be conducted with the community and SHPD. Informational brochures with information about the cultural and natural resources will also be developed for visitors. These brochures could be distributed by the staff person at the security booth upon entry to South Point. It is recommended that the staff person managing vehicular access also serve the role of a park ranger—providing basic education of the cultural and environmental resources and informing users of rules and conditions of the place. These educational outreach activities should be implemented simultaneously as vehicular access is managed.

In the long-term, visitors would gather at a visitor/heritage center where they would be briefed on protocols and the history and resources of South Point. Visitors would then have the opportunity to walk along a designated path as part of a community-led guided tour or a self-guided tour.



(Clockwise from left) Example of: (1) an interpretive display at Lapakahi State Historical Park with information on the park's history and resources; (2) an interpretive display kiosk at 'Akaka Falls State Park; and (3) an interpretive display at Pu'ukoholā Heiau National Historic Site.

Interpretive displays should be provided for the following sites, including but not limited to: Lua O Palahemo, Kalalea Heiau, Pu'u Ali'i, and the canoe mooring holes. Additional displays encouraging best management practices for fishing should be placed near popular fishing spots to increase awareness about impacts of overfishing. Interpretive displays and brochures should include mana'o from knowledgeable Ka'u community members, and should be developed in partnership with the greater community. An example of a brochure for Lapakahi State Historical Park in North Kohala is provided on page 54.



Sample sign from DHHL Kailapa Hawaiian Homestead on sustainable gathering.

Based on consultations with SHPD, an Archaeological Inventory Survey (AIS) would need to be conducted before decisions could be made about where, how and what types of interpretive displays would be permitted within the National Historic Landmark at South Point. The AIS process would include consultation not only with the community, but the National Park Service since they are the federal agency with oversight of the National Historic Landmark.

### Protective Barriers

In addition to providing education, another measure to protect resources would include the construction and installation of protective barriers to prevent further destruction.

### *Native Plants*

The endangered 'ohai (*Sesbania tomentosa*), found at several locations along the coast at South Point, needs to be protected with a fence or rock barrier to avoid disturbance from off-road vehicles and foot-traffic. Although damage resulting from off-road vehicles should not be an issue once vehicular access is managed at South Point, it is critical that immediate action is taken to prevent further habitat degradation. An ongoing restoration program for native plants should include manually removing weeds near the native plant communities and extensive propagation and outplanting. Populations of the 'ohai are currently critically low compared to historic populations and will most likely require ongoing human intervention to reestablish a healthy population at South Point. It is recommended that DHHL work in partnership with

organizations such as DLNR DOFAW Plant Extinction Prevention Program and U.S. Fish & Wildlife Service to assist with ongoing resource protection. A long-range management plan should be developed to control invasive plants and to restore native plants. An updated survey of fauna and flora should be conducted to gain a better understanding of current conditions. DHHL could also organize a series of community work days in partnership with the local Hawaiian homestead association and utilize future 'āina-based educational programs to support native plant restoration efforts.



Photo Credit: William Keoni Fox

Temporary rock barrier placed around a patch of the endangered 'ohai.



## Lā'au (Plants)

As you walk through Lapakahi, you will see plants which are sources of food, building materials, medicines, and various implements. Many of these plants were brought to Hawai'i on the Polynesian voyaging canoes and are called canoe plants. See how many of these plants you can find.



**Milo.** The native cotton plant grows well in arid coastal areas. The seeds are covered by reddish-brown fibers that resemble cotton. It has a bright yellow flower and the leaves are used to make dyes. What you see in the park is a hybrid created to improve disease resistance and drought tolerance.



**Milo.** This is a popular shade tree planted around Hawaiian homes on the coast. It has heart-shaped leaves and yellow flowers that bloom throughout the year. The round fruit contains the woolly seeds. The wood is polished and made into bowls and canoe paddles.



**Hinahina kakahai.** Grows close to the ground on rocky surfaces. The leaves are grayish green with fine silky hairs. The tight rosettes of leaves contain small white fragrant flowers. The hinahina is used in lei-making and also has a medicinal value.



**Ilima.** Found on all islands, this low-growing shrub is common in coastal, dry areas. The small leaves can reflect the harsh sun and tolerate salt spray. Ilima flowers bloom year round. The buds and bark of the root have medicinal values.



**Niu (Coconut).** The niu is one of the most important plants brought on the canoes because of its many uses. The fronds are woven into baskets and mats while the nut is a source of food and drink. The husk fibers are spun into cordage and bowls are made from the inner shell.

## Marine Life Conservation District

The 146 acres offshore of Lapakahi were designated a Marine Life Conservation District (MLCD) in 1979 because of the rich diversity of coral and fish along this North Kohala coast. The boundary of the MLCD extends 500 feet from the shoreline and an abundance of coral and fishes are found near this boundary at a depth of about 60 to 80 feet. The Lapakahi shoreline is mostly rocky lava outcrops with a few coral rubble beaches.

Swimmers and snorkelers should stay within Koa'e Cove as strong currents exist just beyond the MLCD boundary. Always use caution in the ocean and do not touch or take any marine life, coral, or sand.

## COMMON FISH &amp; CORAL AT LAPAKAHI



**Lau'ilawili nukumuku 'oi'oi**  
Forcepsfish  
These butterflyfish are recognized by their long snouts used for probing crevices for small invertebrates. They can sometimes be seen swimming upside down on cave ceilings.



**Lau'i pala**  
Yellow Tang  
One of the most iconic fish in Hawai'i, these brightly colored surgeonfish are seen as individuals or in schools. They graze on algae, including algae on the shell of the green sea turtles.



**Ko'a**  
Cauliflower Coral  
This coral is found in high energy environments where it thrives due to its rugged skeletal structure. When a lava flow reaches the sea it is typically the first coral to colonize the new lava.

## USE CAUTION IN THE OCEAN!



## E Komo Mai

Come inside our village and experience life on this leeward coastline of Kohala. Let the beating of the waves against the shore and the feel of the wind blowing down the slopes, take you back in time.

You are discovering Lapakahi as the early settlers did more than 700 years ago. As they sailed into Koa'e Cove, they rejoiced at the opportunity to safely land their canoes. The rolling hills and gulches sheltered this cove from the strong Kohala wind. The sea was rich in food and the soil nurtured their crops. Black stone walls and golden thatched roofs soon appeared on the landscape. Smoke from cooking fires filled the air. Canoes sailed from the beach and returned laden with fish.



As the village prospered, the 'ohana (families) moved inland to grow their crops of kalo (taro) and 'uala (sweet potato). 'Ohana along the shore (makai) traded fish for kalo from the uplands (mauka). Pa'akai (salt from the sea) was taken mauka while olona plants were brought makai to make nets and fishing line. A trail curbed with stones connected mauka and makai and the people of Lapakahi travelled this trail exchanging the riches of the land and sea. This connection made Lapakahi a true ahupua'a (traditional mauka to makai land division).

Lapakahi was a place of the maka'ainana, the fishermen and farmers. They worked hard to sustain the resources and support their 'ohana. We will never know everything about these people of Lapakahi, but what they left behind gives us an insight into their daily lives.

PARK HOURS: 8:00am to 4:00pm  
No park entry after 3:30pm  
Closed State Holidays

FOR INFORMATION, CONTACT:  
Dept. of Land & Natural Resources  
Division of State Parks  
(808) 327-4958 (Kona Parks Office)  
(808) 961-9540 (Hilo District Office)

Website: [www.hawaiistateparks.org](http://www.hawaiistateparks.org)

LAPAKAHI  
STATE HISTORICAL  
PARK

North Kohala,  
Hawai'i Island

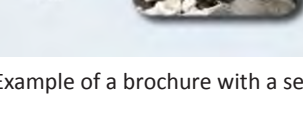


The trail through Lapakahi village consists of 2 loops. Starting at the trailhead, the main 0.5-mile loop takes you to a canoe hālau, salt-making pans, and the major walled habitation complex along the shoreline of Koa'e Cove. Learn more about life at Lapakahi by continuing on the second 0.3-mile loop to the north.

- 1. Curbed Trail.** A stone-lined trail begins here and runs upslope. It links the mauka (upland) and makai (seaward) portions of the ahupua'a.
- 2. Burial Site.** This large rock-filled platform contains multiple burials.
- 3. House Site.** Originally built as a housesite, this site was abandoned in the early 1800s and later used as a burial site.
- 4. Hālau Wa'a.** A thatched roof covered this long, walled enclosure where the canoes were stored. The canoe landing is located nearby.



- 5. Historic House.** This is a reconstructed housesite built with a bamboo frame and pili grass thatching. The house was occupied into the early 1900s.
- 6. Kū'ula.** Whether his catch was large or small, the fisherman always gave a portion to the fishing god who lived in this stone. In return, he received fish in abundance.
- 7. Well.** A well was dug to provide a dependable supply of water. The lowering of the water table in the late 1800s may be one reason the people left Lapakahi.
- 8. Salt Making.** Sea water was poured into hollowed-out stones and the sun evaporated the water, leaving pa'akai (salt crystals). Salt was used to preserve fish and season food.



- 9. Hale (house).** These stacked rock walls are the remnants of a large residential complex that housed many 'ohana. The walls supported a pole frame structure and a roof of thatched pili grass.
- 10. Papamū.** The game of konane (checkers) is played on this stone board. Game pieces are black and white pebbles.
- 11. Shoreline Fishing.** At Koa'e Cove, the fisherman launched and landed their canoes. They used the luhē lure made with a cowry shell and rock sinker to catch the he'e (octopus).
- 12. Hālau Wa'a.** Only the rock walls remain from this structure where additional canoes were stored near the shore.
- 13. Maa (family heiau).** This religious site was where prayers and offerings were made by an 'ohana.
- 14. Koa' (fishing shrine).** Offerings were left at this site to ensure an abundance from the sea. It may have also served as a marker for fishermen to line up their fishing grounds with places on shore.



- 15. Heiau.** This religious site with its impressive retaining wall is located on a promontory overlooking Koa'e Cove. The walls have been recently restored.

- 16. Hale.** The floor of these houses are paved with 'il'i'ili (rounded basalt pebbles) that would be covered by lauhala mats. In the wall is a waihona kukui (lamp stand). The oil from the kukui nut was burned in a stone bowl for light.

- 17.** From this bluff, the fishermen watch the changing signs of the ocean. The presence and movement of every bird, fish, and marine mammal is important. When schools of aku were spotted, nets were laid from the canoes to surround and catch the fish.

- 18. Hale.** The scatter of marine shells on the floors of these houses are from past meals. A variety of shellfish complemented the diet of fish and poi.

- 19. Rock Shelter.** At various times, rock shelters were used for habitation and protection from the wind and rain. The early settlers probably lived in such shelters before building their thatched hale.

No one remembers when these walls were built or the people who first lived here, but they probably came for the abundance of the sea. As the population grew, people moved to the uplands to grow kalo (taro) that was pounded into poi and traded for fish.

Help preserve Hawai'i's past for the future.  
*E mālama no kēia mau aku*  
Follow in the footsteps of those who came before.

Enjoy your visit to Lapakahi, but please show respect and help us preserve this special place.

- Do not move rocks...
- Stay on the designated trail and do not short-cut.
- Do not climb or sit on the rock walls as they can collapse.

Example of a brochure with a self-guided Interpretive Trail Loop for Lapakahi State Historical Park.



### *Lua O Palahemo*

Palahemo was identified as one of the most biologically significant areas within the DHHL's parcel in the 1993 Hawai'i Heritage Program study. As identified by the study, the main threats to Palahemo relate to water quality and alien species. One of the main factors affecting water quality is erosion caused by off-road vehicles. Man-made substances may also degrade water quality, such as use of pesticides, herbicides, trash dumping, sunscreen and bathing with soap can all contaminate anchialine pools. Alien fish and prawns introduced into this rare anchialine pool may disrupt the delicate ecosystem by competing with native inhabitants, such as the endangered anchialine shrimp *Vetericaris chaceorum*.

The following actions are recommended for Lua o Palahemo:

- Construct a protective barrier, such as a fence or rock wall, to discourage illegal motorized vehicular access around or near the pool;
- Install an interpretive display about the history and resources found at this location;
- Ensure that alien fish and prawns are not introduced into the anchialine pool;
- Prohibit swimming in this anchialine pool; and
- Debris clean-up and replanting native vegetation around the area.



Rock wall in North Kohala, NPS photo.

Based on consultations with DLNR DAR, it is critical that alien fish and prawns are not introduced into Lua o Palahemo to protect the anchialine shrimp. It is recommended that DHHL partner with agencies such as DLNR DAR and USFWS to provide ongoing monitoring of the aquatic resources at Lua o Palahemo.

### *Pu'u Ali'i*

Burials at Pu'u Ali'i are threatened by large storm events and sea-level rise. Pu'u Ali'i is vulnerable to erosion as it is unvegetated and located close to the shoreline. An inadvertent burial was found near Pu'u Ali'i in December 2015 by kama'āina and was reported to DHHL and SHPD. The burial was kept in place and buried with sand from a nearby beach. It is believed that surface run-off caused by winter storms exposed this area. Over time, the ocean may reclaim burials located in the Pu'u Ali'i complex. As a result, re-location of the iwi kūpuna might be a consideration. However, re-location should be considered as a last option as preservation in place is generally preferred. Extensive consultation with lineal descendants of this area and the Hawai'i Island Burial Council would be required should re-location of iwi kūpuna be considered.

A rock wall barrier around the perimeter of Pu'u Ali'i and installation of an interpretive display were suggested by the community to prevent further damage to the site. However, an Archaeological Inventory Survey for Pu'u Ali'i may need to be conducted prior to the

construction of a rock wall barrier in order to determine its approximate extent, as the size of this cultural resource is unclear. Further studies as outlined in Table 5 may be needed depending on actions taken for Pu'u Ali'i. An interim plan to protect Pu'u Ali'i may be needed since some of these studies may take some time to complete.

A recommendation in the previous 1983 management plan for South Point that was also suggested during community consultations for this plan was the establishment of an Advisory Committee for South Point. The Advisory Committee would consist of a broad range of participants, including DHHL beneficiaries, local homesteaders, cultural practitioners, local kūpuna, environmental stewards, and community fishermen. The Advisory Committee would serve as a voice for the Ka'ū community and help with the implementation of the plan.

### **Impacts as a result of this Priority Project**

Actions proposed by this priority project will protect resources at South Point.

### **Limitations**

While interpretive displays and protective barriers would protect resources from inadvertent disturbance, resources would not be protected from looting. Some projects may require extensive time and effort.

### **Project Partners**

Community-based organizations will play a critical role in the long-term success of implementing actions described in this priority project. Community-based organizations could seek grant funding from Office of Hawaiian Affairs to support community restoration events and programs serving the Native Hawaiian community. Entities such as the Big Island Plant Extinction Prevention Program and The Nature Conservancy could provide volunteers needed to assist in ongoing projects such as restoring native plants and removing weeds. Local school groups could use South Point as a "living classroom" while helping to restore and protect resources. Agencies such as USFWS and DLNR DAR and DOFAW could provide guidance on mitigation measures to protect endangered species on the property.

**Table 5. Description of further studies that may be required**

<b>Plan</b>	<b>Description</b>
Burial Treatment Plan (BTP)	A BTP provides a proposed treatment plan for all burial sites, including iwi kūpuna stored at Bishop Museum, identified during the AIS, and found inadvertently on-site during ground-disturbing activities. Requires consultation with lineal and cultural descendants; Hawai'i Island Burial Council; and SHPD. Subject to Native American Graves Protection and Repatriation Regulations (NAGPRA) [43CFR10].
Preservation Plan	A Preservation Plan describes the historic properties present at a site and details the measures that the property owner will use to protect and preserve those resources.
Section 106 Consultation	Section 106 Consultation involves extensive consultation with SHPD, the Advisory Council on Historic Preservation, and native Hawaiian organizations.
Archaeological Inventory Survey (AIS)	An AIS provides historic and archaeological background research, location and maps of historic properties found on the site, and an interpretation of the significance of the sites. There may be subsurface testing to identify and document subsurface historic properties.
Cultural Impact Assessment (CIA)	A CIA is required for an EA or EIS to assess the impact of the proposed undertaking on the cultural practices and beliefs of a particular cultural or ethnic group. The CIA includes (1) background research including an examination of historical documents, Land Commission Awards, historic maps, and existing archaeological information; and (2) interviews with persons knowledgeable about the present cultural practices in the project area and its surrounding area.
Archaeological Recovery Plan (ARP)	An ARP documents and recovers detailed information from an archaeological site or historic property that has been determined to be significant under the State or National Register criteria. It includes in-depth research questions relevant to the site; detailed mapping, in-depth descriptive data, and excavations specifically designed to recover information relevant to the research questions. Laboratory analysis such as radiocarbon testing is conducted on recovered cultural materials.
Archaeological Monitoring Plan (AMP)	An AMP must be submitted and approved by SHPD prior to allowing work to proceed at a site where there is a potential for subsurface cultural materials or human burials to be present in an area where development activities will occur. An AMP includes a review of known archaeological sites in and near the project site, an assessment of the likelihood of encountering cultural materials and a description of the monitoring procedures that will be conducted during construction.



**Estimated Costs**

Item	Estimated Range of Costs (in 2016 dollars)
<b>One-time Costs</b>	
Interpretive displays	\$6,500 - \$10,000, <sup>7</sup> plus shipping and handling and installation costs
Protective barrier around Palahemo	\$10,000 - \$20,000 depending on availability of labor and type of materials
Protective barrier for Pu'u Ali'i	\$10,000 - \$20,000 depending on availability of labor and type of materials
Burial Treatment Plan	\$8,000 - \$20,000+ depending on project area
Cultural Impact Assessment	\$60,000 - \$70,000
Archaeological Inventory Survey	\$50,000 - \$100,000+
Other studies	To be determined.
<b>Annual Operations Costs</b>	
Restoration and preservation activities, including native plant restoration and beach clean-up	\$10,000 - \$50,000 depending on availability of volunteer labor

**DHHL Action**

Action Step	Action	Implementation Timeframe
1	Develop interpretive displays in partnership with the community for resources at South Point.	6-12 months
2	Organized community work days and/or partner with organizations for ongoing management projects such as beach clean-up and restoring native plant communities.	ongoing
3	Issue a curatorship agreement with a community organization to steward cultural resources at Ka Lae.	6-12 months
4	While interpretive displays are being developed, contract with a company to conduct an AIS for areas in the vicinity of resources, including but limited to Pu'u Ali'i and Lua o Palahemo, where interpretive displays are proposed.	12-18 months
5	At the same time that an AIS is being conducted, start discussions with lineal descendants and Hawai'i Island Council Burial about options of re-locating iwi kūpuna.	6-12 months
6	If re-locating iwi kūpuna is preferred, contract with a company to conduct a Burial Treatment Plan.	12-18 months
7	After an AIS is completed, reviewed and approved by SHPD, install interpretive displays, construct a protective wall for Palahemo and Pu'u Ali'i	3-6 months

<sup>7</sup> Assume the need for ten (10) displays. Costs vary for high pressure resin laminate panels with horizontal aluminum frame and/or wooden frame with 'ōhi'a post systems.

## Priority Project #2: Manage Vehicular Access at South Point.

The lack of any management presence at South Point has resulted in the degradation of natural and cultural resources, primarily from the illegal use of motorized vehicles. On-site presence and enforcement by DHHL staff and/or by a qualified third-party is needed to effectively manage vehicular access throughout South Point. Restoration and preservation activities should be conducted only after vehicular access is managed. If vehicular access is not controlled, any actions to protect resources would be a waste of money and effort. Several management methods used at various popular sites, which could be applied to South Point in order to help DHHL gain site control, are described in Table 6.



Unrestricted vehicular access at South Point has resulted in deep, wide, and extremely severe erosion scars, ranging from several feet to over eight feet in depth.

**Table 6. Management methods for various sites**

Location	Method	Security Staff
State Hawai'i Loa Ridge hiking trail	The State Hawaii Loa Ridge hiking trail is located above a private residential community. In order to access the hiking trail via the private residential community, visitors need to stop at the security officer's shack where the security officer records visitors' driver's license number, car model, and license plate number. Then, the security officer explains the rules that must be followed before they issue a parking permit to the visitor. Visitors have to return the parking permit upon exiting the community. Once all ten parking permits have been issued, other visitors are denied vehicular access through the community to the hiking trail. Only after parking permits are returned from visitors, vehicular access is then permitted again for other visitors. The total daily traffic volume at this location is unknown, but visitor demand (which varies based on the time and day) is significantly less than at South Point.	1
City and County of Honolulu's Hanauma Bay Nature Preserve	There are 300 parking spaces at Hanauma Bay. Once the parking lot is full, the lot is closed. A "LOT FULL" sign is placed by the security officers at the entrance. It is reopened once parking spaces become available. A \$1.00 parking fee is charged per vehicle. Then, to access Hanauma Bay, each visitor pays a fee of \$7.50 <sup>8</sup> and is required to watch a 9-minute educational video prior to entering the park. After watching the video, visitors have the option of signing their name on a list so that they do not have to watch the video again for one year when entering the park. The park is closed one day a week to let the resources "rest."	2-3
Hawai'i Volcanoes National Park	Park Rangers are located at the entrance station where they collect an entrance fee of \$15.00 <sup>9</sup> for each vehicle entering into the park. Park rangers also provide visitors a brochure containing a map with relevant information about the important resources at the park.	2-3
Ka'ena Point State Park Reserve	Vehicle access to a section of Ka'ena Point State Park is restricted by a locked gate. Anyone wanting to drive a vehicle beyond the locked gate must obtain a free permit from the State DLNR Division of State Parks. Permits must be renewed annually and, among other conditions, require drivers to stay on designated access roads. Users with a permit have access to the combination on the gate lock that changes once a week. The gate combination is available online using a permit holder's login account and/or by phone.	0

<sup>8</sup> Based on fees listed on the City and County of Honolulu's website as of March 7, 2016<sup>9</sup> Based on fees listed on National Park Service's website on March 7, 2016



## Potential Management Approach for South Point

A potential management approach for South Point includes a combination of strategies from the four sites described earlier, which includes:

- the use of security staff;
- visitor control based on parking spaces available;
- instituting a parking fee; and
- installing an entrance station<sup>10</sup> (if needed).

Vehicular access will be limited to specific parking areas at South Point: near the barracks and fish hoist area. Only vehicles with boat trailers will be permitted to drive beyond the barracks parking area to Kaulana Ramp.

Vehicular access will not be permitted to Green Sand Beach except for emergency and maintenance personnel and security staff. The public, including shoreline fishermen, will be required to remain on paved roads and park at designated areas.



View of possible location to install the security barrier gate at South Point Road.

A staff person will be stationed at the security booth that will be installed on South Point Road<sup>11</sup> (approximately three-fourths of a mile north of the fork) to control vehicular access. Either DHHL staff or personnel from a third-party security firm would man the security guard booth. DHHL may also consider conducting educational outreach activities to inform users of rules. Should after-hours activities at South Point prove to be harmful to the surrounding environment, DHHL will strongly consider installation of an entrance station in the future to prevent these activities from occurring. A heavy-duty security gate (if needed) would be installed near the fork to control after-hours access when security staff are not present (see Figure 5).

Should DHHL need to install an entrance station to prevent environmentally detrimental night time activities after testing voluntary compliance, several management options for providing after-hours vehicular access for fishermen with boat trailers may include:

- Have 24-hour security staff presence to manage access (entrance station may not be needed if 24-hour on-site security staff is provided)
- Close the entrance station at 6 p.m. Individuals who wish to access the area after-hours will be required to obtain an annual special use permit from the DHHL District Office and

<sup>10</sup> An entrance station may consist of several features at one or more locations along South Point Road and could include a gate, security booth, signage, or other features that may be needed for the appropriate management of vehicular access.

<sup>11</sup> Based on consultations with the County of Hawaii, South Point Road starting at the first pastoral homestead lot is owned by DHHL.

will have to arrive prior to 6 p.m. to register with the security staff person on-site. Vehicles remaining inside the gate will not be able to leave until the gate opens the following day. Alternatively, a lock combination could be provided to fishermen to access South Point after-hours (similar to the permit access used for Ka'ena Point State Park Reserve on O'ahu as described in Table 6). Non-compliance with rules and conditions for after-hours use would be strictly enforced.



Figure 5. First Priority Area: At South Point Road



Heavy-duty security barrier gate at Ka'ena Point State Park Reserve.



Example of a prefabricated guard booth.

The role of the security staff should also serve as park rangers—providing basic education and information of the cultural and environmental resources of the place. Ideally, the security staff at the station would perform the following tasks (in order of sequence):

- (a) Ask people regarding the purpose of their visit.
- (b) Inform visitors that this area is Hawaiian Home Lands.
- (c) Inform visitors that certain recreational activities are not permitted at the site.
- (d) Record information from the driver of each vehicle: State Driver License number; and License Plate number, make and model of the vehicle.
- (e) Require the driver to sign (1) an agreement that they understand rules and permitted uses and (2) a liability waiver.
- (f) Issue a numbered parking pass to the driver and ask that they return the pass before leaving.

Understanding that the tasks outlined above will be time consuming, a license recognition camera system may be used in lieu of “task d” to minimize potential traffic jams on South Point Road. Information recorded would be provided to the police department when needed if visitors do not adhere to the rules. The numbered parking pass discussed in “task f” above would be one approach to control the number of visitors based on available parking spaces near the barracks. For example, if there are 50 parking stalls available, there would be 50 parking passes numbered from 1 to 50. Once all 50 parking passes have been passed out (meaning that the parking area would be full), vehicles would not be allowed to enter past the security guard booth until parking spaces become available. When a visitor returns a parking pass to the security staff, then the security staff would be able to give that pass to another visitor. In order to ensure that kama’āina are guaranteed parking, some parking passes could be designated for kama’āina only. Alternatively, the security staff at the booth and at the parking areas could coordinate via radio regarding available parking spaces.

In the long-term, the security staff person at the security booth would (1) collect a parking fee from visitors entering into South Point (refer to Priority Project #4 for discussion on fees) and (2) distribute an informational brochure that would include a map showing the designated roads to the parking areas and pathways leading to the interpretive trail, along with information on prohibited activities and areas. Ideally, a parking fee would be instituted simultaneously with the implementation of the entrance station and booth described earlier. However, establishing an appropriate fee structure could take some time and since gaining site control of South Point is the highest priority for DHHL, the parking fee could be administered at a later time if it would delay implementation of the security



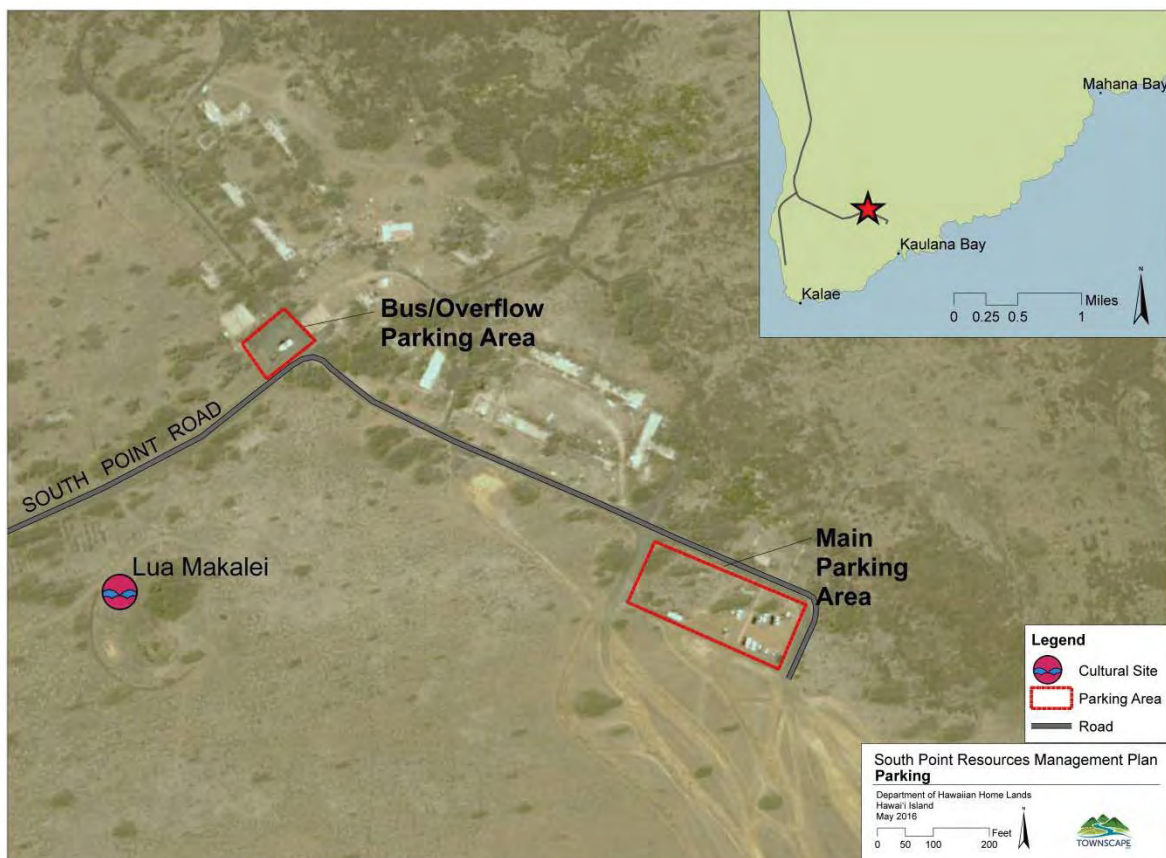
View of the smaller parking area near the barracks.



system.

Two other security staff to regulate vehicular access and compliance with rules are recommended. The second security staff person would regulate the area near the main visitors' parking zone located south of the barracks (see Figure 6) and to patrol the area, including from Kaulana Bay to Green Sand Beach at several times throughout the day, to ensure compliance with rules. The security staff may consider patrolling the area using a bike or ATV-type vehicle on designated, unimproved pathways. As stated earlier, only vehicles towing a boat to launch from Kaulana Ramp will be permitted to drive beyond the designated parking area. Future non-boat trailer parking may be considered near Kaulana Ramp should improvements such as a paved road be made near the boat ramp.

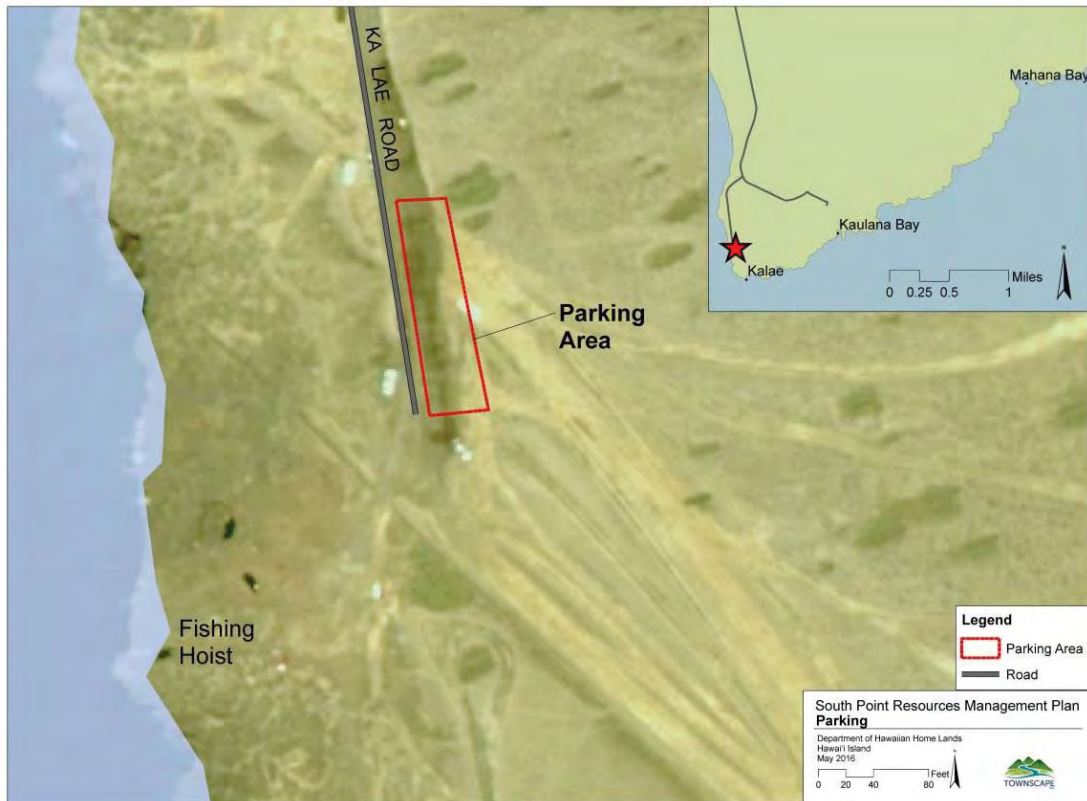
The main visitors' parking could accommodate approximately 85 vehicles<sup>12</sup>. A smaller parking area located north of the main parking area would serve as overflow parking and/or parking for buses and larger vehicles. This overflow parking area could accommodate approximately 19 vehicles, or fewer depending on designated spaces allocated for bus parking.



**Figure 6. Second Priority Area: Near the Barracks**

<sup>12</sup> Parking spaces are estimated based on ArcGIS calculations of the area. The main parking area and overflow parking area are approximately 37,000 square feet and 8,100 square feet, respectively. Actual parking spaces may vary assuming there may be lower efficiency for unpaved parking without striping.

The third security staff person would regulate the area near the fish hoist (see Figure 7) to ensure that vehicles do not drive beyond the designated parking zone and that visitors comply with rules such as no cliff diving. The parking area will be located towards the end of Ka Lae Road on the east side and could accommodate approximately 14 vehicles<sup>13</sup>. It is recommended that the ladder near the hoist be removed only after on-site enforcement is provided. Removal of the ladder prior to any on-site enforcement will be a waste of time and effort since the ladder could be easily replaced by the public.



**Figure 7. Third Priority Area: Near the fishing hoist**

As South Point Road becomes regulated, the public may find alternative vehicular routes to access this area through existing lessees' properties and/or Kamehameha Schools' lands. A location on DHHL's property was identified, in collaboration with Kamehameha Schools, approximately two miles northeast of Green Sand Beach where large boulders could be placed to restrict vehicular access from the other routes besides South Point Road. Access from other routes such as Ka'alu'alu must be managed, but priority should be placed on South Point Road since it is used by the majority of visitors. In addition to providing security staff, DHHL should partner with Hawai'i County Police Department and DOCARE to provide enforcement.

<sup>13</sup> Parking spaces are estimated based on ArcGIS calculations of the area. The parking area is approximately 6,100 square feet. Actual parking spaces may vary assuming there may be lower efficiency for unpaved parking without striping.

**Impacts as a result of this Priority Project**

Limiting vehicular access at South Point to a specific parking area will prevent many of the illegal and unpermitted activities from occurring. It would prevent further degradation of resources and “allow the land to heal.”

Restricted vehicular access may limit the number of visitors who can assess the area since a certain level of physical fitness is required. However, it would indirectly help to reduce impacts to the resources since potentially fewer people will access the place. Limited vehicular access will be unfavorable for many local shoreline fishermen as they have been accustomed to driving close to the pali with their fishing gear; however, requiring fishermen to walk from the designated parking areas to their fishing spots may also indirectly help to replenish marine resources as there are issues with overfishing and “unlimited taking” which is currently practiced.

At the same time, some unintended consequences from the implementation of this priority project may include:

- If DHHL needs to install an entrance station in the future, then shoreline fishermen and fishermen launching their boats from Kaulana Ramp<sup>14</sup> will be restricted to hours when the entrance station is open unless after-hours access for fishermen is provided
- If DHHL needs to install an entrance station in the future, local people including surfers and cultural practitioners who access the area after-hours will have to park outside of the entrance station and walk in
- Individuals who rely on income generated from the current illegal shuttle service operation will lose a source of income
- Potential traffic jams on South Point Road near the security booth
- If DHHL needs to install an entrance station in the future, individuals may park along South Point Road to access the area when the entrance station is closed

**Limitations**

DHHL has no police powers, which makes it challenging for DHHL to enforce rules at South Point. The Hawaii County Police Department (HPD) and DOCARE have limited enforcement abilities<sup>15</sup> at South Point because HPD can only enforce County laws and DOCARE can only enforce DLNR rules and regulations on State DLNR lands.

<sup>14</sup> Kaulana Ramp is a State boat ramp managed by DLNR DOBOR. Based on discussions with a Harbor Agent at DOBOR, they are not aware of any rule requiring DHHL to provide 24-hour access to the boat ramp.

<sup>15</sup> Trespassing on private property is a petty misdemeanor and may be sentenced up to 30 days in jail (HRS 701-107 and HRS 708-814).



**Estimated Costs**

Item	Estimated Range of Costs (in 2016 dollars)
<b>One-time Costs</b>	
Gate	\$7,000 - \$20,000 plus installation cost
Solar-powered security camera	\$8,000 - \$12,000 plus monthly cellular data plan, assuming no AC power and internet service is available
Prefabricated guard booth	\$5,000 - \$8,000
<b>Annual Operations Costs</b>	
Contract for 3 security officers (from 6 a.m. to 6 p.m.)	\$329,000 - \$342,000 <sup>16</sup>
Salary for 3 permanent DHHL enforcement positions	\$165,000 - \$225,000 <sup>17</sup> depending upon experience

**DHHL Action**

The sequence of actions that will need to occur in order to control vehicular access to South Point is summarized in the table below.

Action Step	Action	Implementation Timeframe
1	Issue a public statement and formally notify public agencies (including County of Hawaii Department of Public Works and State DLNR DOBOR and SHPD) and adjacent landowners that DHHL will be controlling vehicular access to South Point because of the damage that has resulted from unrestricted vehicular access.	3-6 months
2	Contract with a company to install an entrance station and security booth on South Point Road.	6-12 months
3	Contract with a security firm to enforce new policy since creating new DHHL positions for enforcement and management may take at least 18 months.	6-12 months
4	Remove the ladder at the fishing hoist.	3-6 months
5	While a security firm is being procured, create new DHHL positions for enforcement and management at South Point.	6-24 months
6	While a security firm is being contracted and begins to manage vehicular access, carry out the interim plan for the loss of income to some individuals (i.e. provide technical training and assistance to DHHL beneficiaries to become "legal" business entities on DHHL lands. See Priority Project #6 for project description.)	6-12 months

<sup>16</sup> Estimate rounded to the nearest thousand; based on a \$25-\$26 hourly billing rate for 12 hours every day for 365 days ([(\$25 - \$26) hourly billing rate x 12 hours per day x 365 days x 3 staff).

<sup>17</sup> Based on existing DHHL Forester salary of \$55,000 to \$75,000.

## Priority Project #3: Provide sanitary amenities and signage at South Point.

The purpose of this priority project is to provide a safe and sanitary environment at South Point. There is a need for portable toilets, trash receptacles, and improved signage.

### Potential Management Approach for South Point

#### *Portable toilets and trash bins*

There are currently two portable toilets located near the cliff by the fish hoist, but there is a need for additional toilets at South Point. At minimum, two additional toilets should be provided near the hoist and at the designated parking area by the barracks. More toilets may be needed in the future depending on the volume of visitors. The company servicing the existing portable toilets confirmed that the current usage exceeds the capacity of the two toilets. Relocation of the existing portable toilets from the lower area near the fish hoist to an area closer to the end of the road (just above the existing location) was recommended for maintenance purposes (see photo to the right). A permanent restroom facility for South Point is not recommended because it would involve high capital costs; therefore, it would not be cost effective. DHHL would also have to maintain the facility or contract a third-party to maintain it daily, which would be costly. Other problematic issues may include vandalized and damaged



Existing portable toilets and trash near the fishing hoist.



Relocation of existing portable toilets.

fixtures. Composting toilets are also not recommended since consultations with a facilities manager for Kamehameha Schools and a staff person at Hawai'i Volcanoes National Park revealed that the composting toilets at their sites have not worked because: (1) any level of heavy use results in problems with disposing of the filled-up containers of "organic" material; and (2) there are no Hawai'i-based companies that know how to repair the fans/circulation systems in composting toilets.

Since there are currently no waste receptacles provided at South Point, two management options for DHHL are:

- (1) Install trash bins at the designated parking zones near the barracks and above the fish hoist area; or
- (2) Implement a “carry in, carry out” policy.

Waste receptacles will need to be maintained frequently since an accumulation of trash may increase odors and attract rodents. If DHHL chooses to provide trash bins at South Point, DHHL will need to consider who will maintain them. Future security staff at South Point could be tasked with removing the trash when the trash bins are full. However, if trash bins are installed before there is a security staff person present at South Point, then DHHL will need to partner with the local community and/or contract with a company to provide these services. On the other hand, implementing a “carry in, carry out” trash policy saves money used for waste collection, which could then be spent on site restoration and preservation activities.

Additional trash bins (and portable toilets) should also be placed near Kaulana Bay and Mahana Bay as there are none provided along the 2+ mile route. The lack of current improved roadways would be a challenge for maintenance vehicles to access the trash bins and toilets at these two suggested locations; therefore, at this time, DHHL will only be able to provide these amenities where improved roadways are located and accessible by vehicles. Low-impact vehicles could be used in the future after the service road (as described for Priority Project #5) is constructed to maintain the waste receptacles at Mahana Bay. In the interim, community clean-up workdays should be organized in areas where waste receptacles are not provided.

As a tactic to improve DHHL’s visibility and presence, portable toilets and trash bins (if provided) should be labeled with a sign that reads: “COURTESY OF THE DEPARTMENT OF HAWAIIAN HOME LANDS.”

### *Signage*

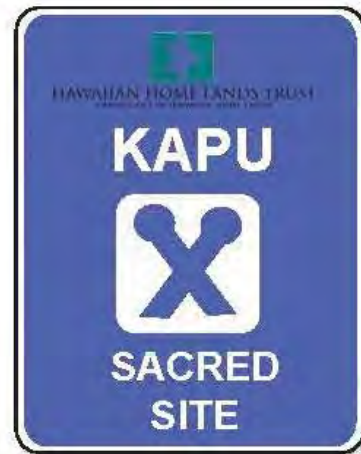
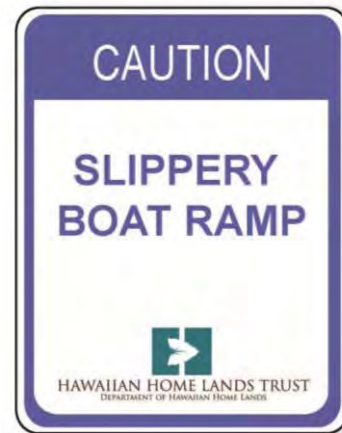
A large entrance sign will be placed at the fork on South Point Road that says “DEPARTMENT OF HAWAIIAN HOME LANDS” and “NATIONAL HISTORIC LANDMARK.” The purpose of this sign is to remind the public that they are entering into (1) private property managed by DHHL and (2) a nationally designated area for its cultural and historical significance. While there is an existing plaque recognizing the area as a National Historic Landmark, it is not visible to the public.



Examples of entrance signs.



Below are suggested signage for various locations at South Point; however, additional community consultation regarding the signage options and specific placement is recommended.



## Impacts as a result of this Priority Project

Providing toilets and trash bins will help to create a clean and sanitary environment. Installing portable toilets should positively impact the environment at South Point with less human waste throughout the area. DHHL will need to assess whether more toilets would be appropriate depending on the volume of users.

Providing waste receptacles should reduce the amount of litter found on-site, although installing trash bins will require more grounds maintenance and money to be spent on trash collection. Implementing a “carry in, carry out” policy would redirect funds and staff resources to other necessary management projects, but litter may continue to be found throughout the site. Installing regulatory and informational signage will inform the public about rules and unpermitted uses, which should reduce damage resulting from lack of knowledge.

## Limitations

Visitors and local people may not abide by the rules, and continue to engage in unpermitted activities, litter, and urinate/defecate throughout the site despite improved signage and access to sanitary amenities. If installed, waste receptacles may need to be maintained throughout the week to prevent overflowing. Portable toilets and trash bins are limited to locations that can be accessed by maintenance vehicles.

## Project Partners

If DHHL chooses to provide waste receptacles, one or more local community organizations may be able to assist with maintaining the trash bins in the near-term until a company has been contracted for such services.

## Estimated Costs

Item	Estimated Range of Costs (in 2016 dollars)
<b>One-time Costs</b>	
Four (4) waste receptacles – steel bins chained to steel posts	\$2,800 (assume security staff will provide maintenance)
One (1) entrance sign <sup>18</sup>	\$1,400 - \$3,400 plus installation
Twelve (12) regulatory signs <sup>19</sup>	\$1,000 - \$2,000 plus installation
<b>Annual Operations Costs</b>	
Rental and maintenance of six (6) to ten (10) portable toilets <sup>20</sup>	\$14,400 - \$24,000

<sup>18</sup> Prices vary depending on size. Assume use of redwood or cedar sign (without the costs for wall, poles, and/or installation).

<sup>19</sup> Pole-mounted aluminum signs (.063 mm thickness, UV Laminated) and steel poles. Price varies depending on total number of signs, but estimated cost provides 5 @ 12"x18"; 3 @ 24"x18"; and 4 @ 12"x9".

<sup>20</sup> Includes weekly maintenance.

## DHHL Action

The sequence of actions that will need to occur in order to provide sanitary amenities and signage at South Point is summarized in the table below.

Action Step	Action	Implementation Timeframe
1	Contact the Ka'ū community group that is paying for the two portable toilets near the fish hoist at South Point and assume financial responsibility for the portable toilets with the provider.	3-6 months
2	Contract with the same or different provider to place additional portable toilets at the hoist and parking area near the barracks.	3-6 months
3	Decide to (1) implement a "carry in, carry out" policy or (2) purchase waste receptacles and install at South Point.	3-6 months
4	Contract with a company to design and develop regulatory signs. Signs may be installed by DHHL staff.	6-12 months
5	Contract with a company to develop and/or local contractor to install a large sign at the entrance.	6-18 months



Example of an entrance sign for a National Historic site.



## Priority Project #4: Institute a parking fee for South Point.

The purpose of this priority project is to sustainably fund and offset various costs associated with managing South Point. It is recommended that all of the revenue from the proposed parking fee be allocated directly for resources management projects at Ka Lae and for infrastructure improvements for homestead lessees in Ka'ū—"Keep funding in Ka'ū."

Monies from the fee could be used to:

- Finance the capital and operational costs involved with managing vehicular access to South Point
- Fund restoration and preservation activities, such as educational signage, cultural site barriers, and native plant habitat restoration
- Provide grants to non-profit organizations who perform stewardship at South Point

Determining the parking fee has implications that go beyond funding for DHHL. If fees are set high enough, people may be less willing to pay. Therefore, fees could be used to reduce the volume of visitors based on DHHL's "Limits of Acceptable Change"<sup>21</sup> for South Point, a concept used by the National Park Service (NPS). Although specific fee amounts<sup>22</sup> will be determined at a later time after an analysis is completed to evaluate an appropriate fee structure for South Point, it is recommended that DHHL beneficiaries, Ka'ū residents and volunteer stewards be allowed free parking.

According to DBEDT, there were approximately 1.5 million visitors to Hawai'i Island in 2015 and visitor numbers are projected to increase by 2.4 percent in 2016. Based on the visitor numbers, significant revenue could potentially be generated from the parking fee that could be reinvested into the protection and preservation of resources at South Point. However, placing a "cap" on the daily number of visitors to South Point could be considered to avoid further exploitation of resources and to let the 'āina "heal."

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<sup>21</sup> LAC studies: (1) the ecology and resources of the different environments within a particular national park, (2) the potential impacts of various kinds and intensities of human activities on these different environments. Park managers then decide the LIMITS OF ACCEPTABLE CHANGE - that is, the extent and degree of "acceptable impacts" - for the various parts/environments of the park, and thus the related type and intensity of human activities that will be permitted in each area of the park.

<sup>22</sup> Some factors to examine when considering fee amounts and projecting potential revenue may include: costs related to the management of the place and the restoration and preservation of resources; market demand and Hawai'i trends in tourism; willingness of visitors, kama'āina, and DHHL beneficiaries to pay; and entrance and/or parking fees instituted by other large public parks.

During the community SpeakOut event, thirteen participants provided feedback on how much DHHL beneficiaries, Hawai'i residents and non-Hawai'i residents should pay to visit South Point (see Figure 8). Through the outreach process, the consensus was that it should be free for beneficiaries,<sup>23</sup> while both Hawai'i and non-Hawai'i residents should pay some sort of fee (with the fee for

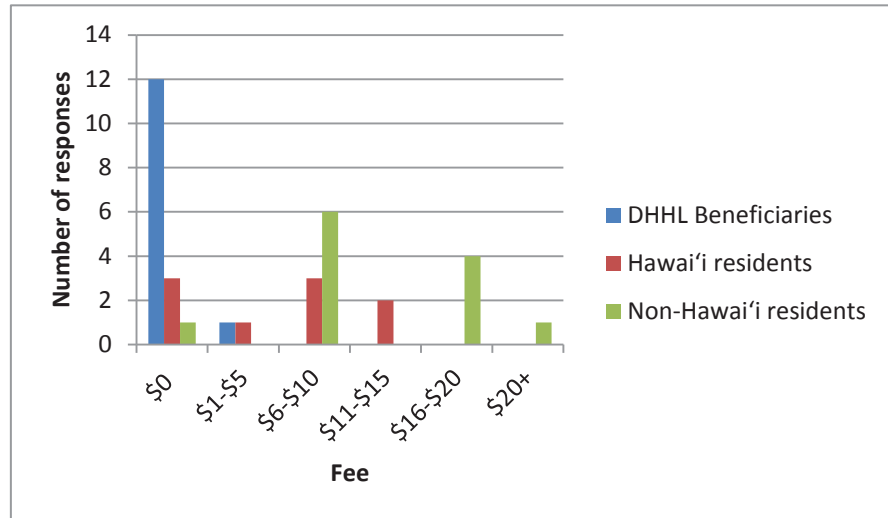


Figure 8. Community members' feedback on fees

Hawai'i residents being lower than the rate for non-Hawaii residents; and tour buses and vans paying a higher fare). The verification process between Hawai'i residents and non-Hawai'i residents can be easily confirmed with proof of a Hawai'i State Driver's License or Identification Card. There is no existing identification card for beneficiaries; therefore, different fees for Hawai'i residents and beneficiaries would be difficult to implement.

There are different fee structures at various city, state, and national parks in Hawai'i, some of which could be applied to South Point. The entrance and/or parking fees<sup>24</sup> for five parks are noted below. Some of these parks charge per vehicle while others charge per person entering into the place. The parks offer different amenities such as a visitor center, paved roads, shuttle service, or hiking trails.

<sup>23</sup> All participants except for one responded that beneficiaries should not have to pay. The one participant suggested that everyone should give back and suggested a fee between \$1 to \$5 for beneficiaries.

<sup>24</sup> Based on current fees in March 2016.

**Table 7. Summary of fees for five parks**

<b>Location</b>	<b>Description</b>	<b>Hours</b>	<b>Fees</b>
<b>Akaka Falls State Park</b> (Island of Hawai'i)	A 0.4-mile self-guided loop to scenic vista points overlooking Kahuna Falls and 'Akaka Falls. The paved route is not wheelchair accessible.	Vehicle gate/parking area opens daily from 8:30 a.m. to 6 p.m.  Open to walk-ins between sunrise and sunset.	\$5 per vehicle or \$1 per person for walk-ins.  No charge for Hawaii residents.  Commercial PUC vehicles <ul style="list-style-type: none"> <li>• 1-7 passenger vehicles: \$10</li> <li>• 8-25 passenger vehicles: \$20</li> <li>• 26+passenger vehicles: \$40</li> </ul>
<b>City and County of Honolulu's Hanauma Bay Nature Preserve</b> (Island of O'ahu)	Admission fee is required to access the Education Center and exhibit area. Visitors are required to view a video with information about the place and resources at the theatre prior to accessing the beach. A snack bar is located near the visitor center. Visitors can walk down to the beach or take the tram for \$1 down to the beach and \$1.25 up to the visitor center. Lifeguards, information kiosk, outdoor showers, restrooms, snorkeling equipment and storage lockers (for rent) are located at the beach level.	Summer: 6 a.m. to 7 p.m.  Winter: 6 a.m. to 6 p.m.  Open daily except Tuesdays.  Closed on Christmas Day and New Years Day.	\$1.00 parking fee plus \$7.50 entrance fee per person.  No entrance fee for Hawai'i residents.
<b>Hawai'i Volcanoes National Park</b> (Island of Hawai'i)	A national park that encompasses two active volcanoes. There are miles of hiking trails, ranger-led hikes, weekly activities, overnight camping, and paved roads to scenic points. The park also offers ranger talks and guided tours.	Open 24 hours a day year-round, including all holidays.  Visitor Center opens daily from 9 a.m. to 5 p.m.  Museum open daily from 10 a.m. to 8 p.m.	\$15 per vehicle or \$8 per person for walk-ins (valid for 7 days).  Groups: Non-commercial groups entering the park in a bus or vehicle with a capacity of 16 persons or more will be charged \$8 for each person.  A Commercial Use Authorization (CUA) is required for all commercial tours that enter the park. \$200 fee for one-year authorization or \$300 fee for two-year authorization. In addition to the CUA fee, entrance fees separated based on non-road based and road based guided tours.



Location	Description	Hours	Fees
<b>Pu'uhonua O Hōnaunau National Historical Park</b> (Island of Hawai'i)	A historical park that contains traditional Hawaiian sites along a one-mile trail. Annual cultural festival held at this site and cultural demonstrations available daily. Park rangers are available to provide an oral history of the place. Along with information about the park, the sale of books, videos, and handmade crafts are available at the visitor center.	Opens at 7 a.m. and closes 15 minute after sunset.  Visitor Center is open from 8:30 a.m. to 4:30 p.m. every day of the week.	\$5 per vehicle or \$3 per person for walk-ins (valid for 7 days).  \$25 Hawai'i Tri-park Annual Pass <sup>25</sup>  A CUA is required for all commercial tours that enter the park. Fees are: \$200 for the CUA and \$3 per person upon all entry into the Park (including walk-in and bike tours)  Educational Fee Waiver Application available for school groups.
<b>Waimea Valley</b> (Island of O'ahu)	A 0.75-mile paved path through World Class Botanical Gardens and Historical Sites to a waterfall area. This area is managed by a nonprofit company. A golf cart shuttle transportation to the waterfall is available for an additional fee of \$6 one-way or \$10 round trip.	Open daily from 9 a.m. to 5 p.m., 7 days a week.  Closed on Thanksgiving and Christmas Day.	<u>Non-Hawai'i resident</u> Adult: \$16 Senior/Student: \$12 Child (ages 4-12): \$8  <u>Hawai'i resident/Military</u> Adult: \$10 Senior/student: \$8 Child: \$6 Individual Annual Pass: \$50 Family Pass: \$10

### Potential Management Approach for South Point

Monies generated from the parking fee will be reinvested into the management, restoration and preservation of resources at South Point. The staff person at the security booth, in addition to providing educational material about the place, will collect the parking fee per vehicle entering into South Point. Ideally, the fee will be instituted simultaneously with the implementation of the security system (as described by Priority Project #2); however, the fee could be administered at a later time after the security system is implemented, if it will take some time to establish an appropriate fee structure.

It is important that specific guidelines are set for revenue generated from the parking fee, including that **100 percentage of the revenue from the proposed parking fee be allocated directly to Ka'ū so that it sustains resources management activities and supports infrastructure improvements for homestead lessees.**

<sup>25</sup> Allows access for 1 full year from date of first use at Pu'uhonua o Honaunau National Historical Park, Hawai'i Volcanoes National Park, and Haleakala National Park.

Table 8 provides the potential annual revenue that could be generated and reinvested into Ka'ū. The annual revenue provided in the table is based on four possible fees assuming different numbers of estimated vehicles visiting per day. For example, if DHHL charges a fee of \$10 per vehicle for non-Hawaii residents and assuming there are approximately 200<sup>26</sup> vehicles each day that visit South Point, the total annual revenue would be \$730,000 (assuming that South Point would be open for vehicular access year-round). This revenue would be able to fund the security staff needed to gain site control of the place, which is a top priority for South Point. As noted earlier, DHHL beneficiaries, Ka'ū residents and volunteer stewards would not be required to pay a fee.

**Table 8. Potential annual revenue from instituting a parking fee**

Annual Revenue					
Number of vehicles		Fee per vehicle			
		\$5	\$10	\$15	\$20
	100	\$182,500	\$365,000	\$547,500	\$730,000
	200	\$365,000	\$730,000	\$1,095,000	\$1,460,000
	400	\$730,000	\$1,460,000	\$2,190,000	\$2,920,000
	500	\$912,500	\$1,825,000	\$2,737,500	\$3,650,000

Fee options that are available at other public parks should be considered for South Point. These options include:

- Providing fee waivers for volunteer projects involving resources management, but requiring a Right of Entry from DHHL's Land Management Division
- Providing educational fee waivers for school groups
- Requiring vehicles with 10 or more passengers and commercial tour companies to apply for a permit from DHHL and to pay a higher fee

DHHL may consider providing an annual report on revenue generated from the parking fee and allocation of the monies. The report should be easily accessible to the public for review in order to increase transparency of how funds are being reinvested into Ka'ū.

<sup>26</sup> Approximately 240 vehicles were observed on Tuesday, May 10, 2016 between 6 a.m. and 6 p.m. Approximately 25 to 30 cars per hour were observed during peak hours between 10 a.m. and 4 p.m.

### Impacts as a result of this Priority Project

Instituting a parking fee will generate funds to support costs associated with managing South Point. It would also allow the place to become self-sufficient so restoration and preservation projects can be funded based on revenues from the parking fees.

For example, assuming a billing rate of \$26 per security person, the cost to hire three security guards from 6 a.m. to 6 p.m. is:

$$\$26 \times 36 \text{ hours daily}^{27} \times 365 = \$341,640$$

Therefore, the cost of hiring three security staff person could be covered with 100 vehicles per day if a parking fee of \$10 per vehicle is charged (which would generate an annual revenue of \$365,000). Initially, non-Hawai'i residents will be resistant to having to pay a parking fee because people have been accustomed to accessing the area for free.

### Limitations

Proof of Hawai'i State Driver's License or Identification Cards can be used to distinguish Hawai'i residents from non-residents, but there is currently no form of identification to distinguish beneficiaries from others.

### Estimated Costs

Item	Estimated Range of Costs (in 2016 dollars)
<b>One-time Costs</b>	
Assessment of an appropriate parking fee.	\$5,000 - \$10,000 if contracted with a consultant. Alternative option is for the DHHL Planning Office to conduct the assessment.
One(1) parking fee sign	\$300 - \$500 to design, construct and install.

### DHHL Action

Action Step	Action	Implementation Timeframe
1	Contract with a company (or DHHL staff) to conduct an assessment of an appropriate parking fee. If possible, this assessment should commence before DHHL begins the process of contracting with a security firm to manage vehicular access at South Point.	6-12 months
2	DHHL Fiscal Office to assist with the establishment of policies and procedures for fee collections.	6-12 months
3	Once an appropriate fee structure has been determined, contract with a company to develop a sign to place at the security booth where the parking fee will be collected.	6-12 months

<sup>27</sup> Assume three guards per day.



## **Priority Project #5: Plan, design, and construct a pedestrian path and service road to Mahana Bay.**

The purpose of this priority project is to minimize impact on the cultural and natural landscape while ensuring the safety of visitors. A designated coastal path for foot-traffic and a service road to provide access for emergency and maintenance vehicles to Mahana Bay are recommended. Bicycle access on the coastal path once it is constructed could be considered by DHHL. Routes for both the coastal path and service road are shown conceptually on page 42; the exact location of the routes will not be finalized until further technical studies such as an AIS and preliminary engineering study and consultation with SHPD are conducted. An unimproved path should be designated for use by security staff and/or park rangers and emergency response personnel in the interim until a service road is constructed. After a service road has been constructed, then portable toilets and waste receptacles could be deployed near Mahana Bay. However, until a service road exists, trash and defecation will continue to be an issue near Mahana Bay since access for maintenance vehicles will remain a challenge.

DHHL should consult with NPS Ala Kahakai and Na Ala Hele when determining the exact location of the coastal path. Use of signage and trail markers are recommended in order to maintain the natural setting of the place; however, use of low-impact paving material such as volcanic cinders should be considered to prevent soil erosion. Use of low-impact paving material is also suggested for the service road, but gravel and/or asphalt pavement may be more cost effective than cinder for the service road in the long-term. Construction costs for both cinder and gravel pavement are lower than asphalt although higher annual maintenance costs are anticipated.

### **Impacts as a result of this Priority Project**

A pedestrian path and service road to Mahana Bay would:

- (1) Reduce impacts to resources;
- (2) Improve accessibility of emergency and maintenance vehicles to Mahana Bay; and
- (3) Improve the overall health and safety of visitors by encouraging visitors to stay on a designated pathway and reducing the risk of injured and lost hikers.

Local people and fishermen who are accustomed to driving in this area may be resistant to this initial change of not allowing vehicular access beyond the designated parking area at the barracks. However, with the large number of existing users, the natural and cultural resources are at risk if no changes or improvements are made to this area.

**Estimated Costs**

Item	Estimated Range of Costs (in 2016 dollars)
<b>One-time Costs</b>	
Planning and designing cinder path	\$50,600 <sup>28</sup>
Planning and designing service road	\$150,000 - \$250,000 <sup>29</sup>
Construction of cinder path	\$506,000 <sup>30</sup>
Construction of gravel or asphalt service road	\$1.5 - \$2.5 million <sup>31</sup>
Additional studies	To be determined
<b>Annual Operations Costs</b>	
Cinder path maintenance	\$25,300 <sup>32</sup>
Service road maintenance (for gravel pavement)	\$75,000 <sup>33</sup>

**DHHL Action**

Action Step	Action	Implementation Timeframe
1	Contract with a company to plan and design path and service road.	12-36 months
2	Contract with a company to construct the access path and service road.	12-36 months

<sup>28</sup> Assume 10 percent of construction cost.

<sup>29</sup> Assume 10 percent of construction cost.

<sup>30</sup> Assume a path of 12,000 feet by 10 feet wide.

<sup>31</sup> Assume a service road of 12,000 feet by 20 feet wide.

<sup>32</sup> Assume 5 percent of total construction cost.

<sup>33</sup> Assume 5 percent of total construction cost.

## **Priority Project #6: Provide training and technical assistance to DHHL beneficiaries to become legal business entities on DHHL lands.**

The intent of this priority project is to assist beneficiaries interested in conducting business to become legal business entities so that they can engage in future business opportunities at South Point. The training sessions and technical assistance would be a coordinated effort between DHHL's Land Management Division (LMD) and Planning Office (PO). The LMD would provide information related to the requirements and documents needed for vendors to conduct business on DHHL lands, while the PO would help to coordinate the logistics of the service. The LMD and the PO would also work with other service providers to provide the training sessions and technical assistance. These services could be conducted as a series of workshops over a period of time. Some of the main components of the training sessions would include:

- (1) DHHL requirements for vendors wanting to conduct business on DHHL lands
- (2) How to register a business in the State of Hawai'i
- (3) How to apply for a General Excise (GE) Tax License

Past training and technical assistance by DHHL has been primarily geared for homestead associations in the form of non-profit leadership training (through the DHHL Native Hawaiian Development Program). DHHL also provides financial literacy services through their HALE program: Homebuyer Education classes and Foreclosure Prevention Management. However, this project will focus on partnering with other organizations that have the existing capacity to provide training opportunities to beneficiaries in Ka'ū.

### **Impacts as a result of this Priority Project**

This priority project would improve the capacity of beneficiaries to start their own business and would provide some economic opportunities for beneficiaries.

### **Limitations**

The training sessions and technical assistance would only be available for beneficiaries.

## Project Partners

Entity	Potential partnership opportunity
State Department of Commerce and Consumer Affairs, Business Action Center <sup>34</sup>	Provide in-person assistance during DHHL-held training and technical assistance workshops to answer any specific questions.
Hawai'i Small Business Development Center (SBDC) <sup>35</sup>	Provide technical assistance with services such as developing a business plan.

## Estimated Costs

Item	Estimated Range of Costs (in 2016 dollars)
<b>One-time Costs</b>	
Training workshops and technical assistance	\$5,000 - \$10,000 assuming services would be provided by existing DHHL staff.

## DHHL Action

Action Step	Action	Implementation Timeframe
1	DHHL PO to contact and coordinate with partner agencies and organizations for this priority project.	3-6 months
2	DHHL PO to plan, schedule, and publicize a series of training and technical assistance workshops for beneficiaries.	3-6 months
3	DHHL LMD to develop a list of requirements for vendors wanting to conduct business on DHHL lands.	3-6 months
4	DHHL PO and LMK to conduct workshops and provide technical assistance (as needed).	3-6 months
5	DHHL to issue disposition to an entity for a vending area.	6-12 months

<sup>34</sup> A staff person from the State Business Action Center is available on the first and third Thursday of the month at the Hilo office and once a month at the Kona office to assist people with registering their business and applying for a GET license.

<sup>35</sup> The Hawai'i SBDC is a program of the University of Hawai'i at Hilo funded in part through a cooperative agreement with the U.S. Small Business Administration.



### 3.3. REGULATORY COMPLIANCE REQUIREMENTS

The environmental review process will need to be completed for this resources management plan because implementation of projects will involve the use of State funds and actions within a National and State historic site. The **Environmental Assessment (EA)** process will provide the public with additional opportunities to review and provide feedback on the plan in relation to impacts of the environment. There is an early consultation process and a 30-day comment period initiated after the publication of the Draft EA when the public can provide their input. If a finding of no significant impact (FONSI) is determined for the Final EA, then no further action is required. However, if the Final EA concludes that the plan will have significant impacts on the environment, then an Environmental Impact Statement Preparation Notice (EISPN) is issued and an **Environmental Impact Statement** will need to be prepared. The EA/EIS scope will need to include data and analysis on: historical and cultural importance of South Point; special environmental factors, including harsh (hot, windy) climate, erodible soils, rough ocean currents; traditional beneficiary and community uses of South Point resources; more recent impacts from off-road vehicles and tourists; proposed/planned management actions per the Resources Management Plan; and potential impact of the planned management actions on residents, beneficiaries, tourists, and natural and cultural resources.

Given the importance of the natural and cultural resources of South Point and the potential significant impacts, both positive and negative, of some of the management measures included in the Management Plan, preparation of an EIS should be considered. Some of the potential significant impacts include but are not limited to: limited vehicular access particularly for fishermen, income of some local families, and parking fees for visitors. As part of the consultation process for the EA/EIS, DHHL will need to consult with other entities including but not limited to: the County of Hawaii Department of Public Works, State DLNR DOBOR and SHPD, and Kamehameha Schools.

Other studies such as a **Cultural Impact Assessment (CIA)**, an **Archaeological Inventory Survey (AIS)**, a **biological reconnaissance survey**, and/or an **user/traffic study** will most likely be required as part of the environmental review process in order to determine the social, cultural, and natural physical effects of the proposed actions. The CIA scope will need to include an examination of historical documents, Land Commission awards, historic maps, and existing archaeological information to identify traditional Hawaiian land use activities. The CIA will also need to identify present uses of the cultural resources, practices, and beliefs associated with the parcel through interviews with kūpuna and persons knowledgeable about the present cultural practices in the project area.

Based on discussions with SHPD, a full AIS has not been completed for the South Point area and may be needed before SHPD can make a determination about significant environmental effects resulting from proposed projects. The AIS scope will need to include data on the project's area past land use; pre-contact and historic settlement patterns of the Kamā'oa-Pu'u'e'o ahupua'a and the Ka'ū district; field inspection of the project area to identify surface historic properties and possible subsurface testing. Consultations with knowledgeable individuals regarding the project area's history, past land use, and the function and age of the historic properties documented within the project area.

For activities involving the National Historic Landmark, **Section 106 Review** is mandated by the National Historic Preservation Act. The Act requires federal agencies to consider the effects of their undertakings on historic properties. For the South Point area, the National Park Service is the federal agency with oversight of the National Historic Landmark. The Section 106 process involves extensive consultations with SHPD, the Advisory Council on Historic Preservation, and native Hawaiian organizations.

Improvements located within the Special Management Area will require a **Special Management Area Use Permit**, which is administered by the County of Hawai'i in accordance with Chapter 25 ROH, as amended.

### 3.4. IMPLEMENTATION BENCHMARKS

It will take many years to achieve significant improvements to the natural and cultural landscape at South Point, but performance measures will be used to gauge progress towards increased stewardship and management of South Point. Table 9 provides some of these benchmarks for South Point.

**Table 9. Implementation Benchmarks for South Point**

IMPLEMENTATION BENCHMARKS FOR SOUTH POINT	
<b>GOAL 1:</b> <b>Restore, preserve, and protect cultural and natural resources.</b>	Increase number of volunteer hours participating in site stewardship programs at South Point.
	Increase total area of South Point with healthy native plant communities.
	Increase percentage of significant stewardship site areas restored and protected; integrity of significant cultural and natural sites at South Point.
	Increase percentage of area undisturbed from vehicular traffic.
<b>GOAL 2:</b> <b>Perpetuate native Hawaiian culture, values, history and language for future generations.</b>	Increase number of people engaged in traditional and cultural practices at South Point.
	Increase number of people engaged in the 'āina-based educational programs at South Point.
<b>GOAL 3:</b> <b>Provide a safe, clean, and friendly environment.</b>	Reduce number of injuries from recreational activities at South Point.
	Elimination of trash and unsanitary conditions throughout South Point.
	Reduce number of people engaging in prohibited activities at South Point.
<b>GOAL 4:</b> <b>Generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families.</b>	Fund resources management costs through revenues from parking fees and alternative sources.
	Provide for DHHL beneficiaries and family members to engage in economic activity permitted by DHHL at South Point.

## REFERENCES

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- Pukui, Mary Kawena, Samuel H. Elbert, and Esther T. Mookini. 1974. *Place Names of Hawai'i*. Honolulu: University of Hawai'i Press.
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- U.S. Army Engineer District Honolulu. 1981. *Final Detailed Project Report and Environmental Statement for Kaulana Bay Navigation Improvements*.



U.S. Fish & Wildlife Service. 1999. *Recovery Plan for Multi-Island Plants*.

Yamamoto, Mike N., Thomas Y. Iwai Jr., and Annette W. Tagawa. 2015. *Hawaiian Anchialine Pools*. Honolulu: Mutual Publishing.

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# APPENDIX A

NATIONAL REGISTER OF  
HISTORIC PLACES INVENTORY  
NOMINATION FORM



NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY - NOMINATION FORM

(Type all entries - complete applicable sections)

COUNTY: Hawaii	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

## 1. NAME

COMMON:

South Point Complex

AND/OR HISTORIC:

## 2. LOCATION

STREET AND NUMBER:

Extreme Southern Point of the Island of Hawaii

CITY OR TOWN:

18 miles (via road) southwest of Naalehu, Hawaii

STATE

Hawaii

CODE

COUNTY:

Hawaii (Kau District)

CODE

## 3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input checked="" type="checkbox"/> District <input type="checkbox"/> Site <input type="checkbox"/> Object	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Both	<input type="checkbox"/> Occupied <input checked="" type="checkbox"/> Unoccupied <input type="checkbox"/> Preservation work In progress	Yes: <input type="checkbox"/> Restricted <input checked="" type="checkbox"/> Unrestricted <input type="checkbox"/> No

PRESENT USE (Check One or More as Appropriate)

<input checked="" type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input checked="" type="checkbox"/> Government <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Military <input type="checkbox"/> Museum	<input type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other (Specify) "Proposed" State Park	<input checked="" type="checkbox"/> Comments Lighthouse and Grazing Land
---	--	--	--	---

## 4. OWNER OF PROPERTY

OWNER'S NAME:

U. S. Coast Guard 14th District

Other Owner: State

STREET AND NUMBER:

1347 Kapiolani Blvd.

of Hawaii (Hawaiian Homes)

CITY OR TOWN:

Honolulu

STATE:

Hawaii 96814

CODE

## 5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC:

Real Property Division, Hawaii State Tax Office

STREET AND NUMBER:

75 Aupuni Street

CITY OR TOWN:

Hilo

STATE:

Hawaii 96720

CODE

## 6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY:

National Survey of Historic Sites and Buildings, NPS, Washington, D.C. 1962  
Hawaii Archeological Site Survey 50-HA-B20-1,2

DATE OF SURVEY:

☐ Federal☐ State☐ County☒ Local

DEPOSITORY FOR SURVEY RECORDS:

Bernice P. Bishop Museum

STREET AND NUMBER:

1355 Kalihi Street

CITY OR TOWN:

Honolulu

STATE:

Hawaii 96819

CODE

SEE INSTRUCTIONS

STATE:

COUNTY:

ENTRY NUMBER

FOR NPS USE ONLY

-4-



9. DESCRIPTION

CONDITION	(Check One)				
	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input checked="" type="checkbox"/> Fair	<input type="checkbox"/> Deteriorated	<input type="checkbox"/> Ruins
	<input type="checkbox"/> Unexposed				
(Check One)			(Check One)		
<input type="checkbox"/> Altered			<input checked="" type="checkbox"/> Unaltered	<input type="checkbox"/> Moved	<input checked="" type="checkbox"/> Original Site

DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE

The South Point Complex area is an open, windswept land covered with grass and used as a grazing area for cattle. At the extreme tip of the land is the light house operated by the U.S. Coast Guard. The coastline along the western shore consists of an extremely rugged cliff with a sheer drop of 30-50 feet to the water. The remains of a former military base used during World War II are located a short distance inland. The area is generally accessible via secondary road and a jeep trail follows the southern shore line.

The complex includes the following:

1. Puu Alii sand dune site (HASS-50-HA-B20-1) from which the earliest recorded date of 124 A.D. for Hawaii has been obtained through the carbon 14 method of dating. This house site with fire hearth was excavated by the Bishop Museum in a sand dune along the coast a few hundred feet east of the light house.
2. Makalai Cave Shelter, (HASS-50-HA-B20-2) was also excavated by the Bishop Museum. This large rock shelter contained material datable to 1750 A.D. The cave is situated about  $\frac{1}{2}$  mile inland from the seashore surrounded by a former military base.
3. Kalalea heiau is a fisherman's heiau of a small court type which has been venerated for years and is still used today by the Japanese fishermen. A stone resembling a humanoid face which is the fish god is situated just outside the heiau.
4. This area has been used for hundreds of years by fishermen as attested by the hundreds of mooring holes pierced in the lava ledge overlooking the sea. Each hole belongs or belonged to an individual family. The sea currents meet at South Cape and the turbulence brings schools of fishes, making it excellent but dangerous fishing. These mooring holes were used to attach the native canoes to while fishing in this cross current.
5. Numerous carved and natural salt pans attest to the extensive task of salt manufacturing which occurred here in times past.
6. The Pohakuokeau Stone, or "stone of the times" or "stone of the region" is also in this area. A huge natural boulder, it is supposed to turn over when the reigns change.

Within the near vicinity are many additional early settlement sites which are important in Polynesian archeology.

The plaque is in the State Parks office in Honolulu.

SEE INSTRUCTIONS

# SIGNIFICANCE

## PERIOD (Check One or More as Appropriate)

- ☒ Pre-Columbian      ☒ 16th Century      ☒ 18th Century      ☒ 20th Century  
☒ 15th Century      ☒ 17th Century      ☒ 19th Century

## SPECIFIC DATE(S) (If Applicable and Known)

## AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

- |   |   |   |  |
|---|---|---|--|
| <input checked="" type="checkbox"/> Aboriginal<br><input checked="" type="checkbox"/> Prehistoric<br><input checked="" type="checkbox"/> Historic<br><input type="checkbox"/> Agriculture<br><input type="checkbox"/> Architecture<br><input type="checkbox"/> Art<br><input type="checkbox"/> Commerce<br><input type="checkbox"/> Communications<br><input type="checkbox"/> Conservation | <input type="checkbox"/> Education<br><input type="checkbox"/> Engineering<br><input type="checkbox"/> Industry<br><input type="checkbox"/> Invention<br><input type="checkbox"/> Landscape<br><input type="checkbox"/> Literature<br><input type="checkbox"/> Military<br><input type="checkbox"/> Music | <input type="checkbox"/> Political<br><input type="checkbox"/> Religion/Philosophy<br><input type="checkbox"/> Science<br><input type="checkbox"/> Sculpture<br><input type="checkbox"/> Social/Humanitarian<br><input type="checkbox"/> Theater<br><input type="checkbox"/> Transportation | <input type="checkbox"/> Urban Planning<br><input type="checkbox"/> Other (Specify)<br><hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |
|---|---|---|--|

## STATEMENT OF SIGNIFICANCE

The South Point Complex is a group of sites which provides the longest and most complete record of human occupation in the Hawaiian Islands. The Puu Alii Sand Dune Site which has given the earliest recorded date (124 A.D.) for the State of Hawaii, was a fisherman's habitation later covered by sand and used as a burial ground. The Makalei Cave Shelter contained material datable to 1750 A.D. and the Kalalea Heiau is a fisherman's heiau (temple) of the small court type. Other sites include mooring holes for attaching native canoes, numerous carved and natural salt pans, and the Pohakuokea Stone which allegedly turns over each time a reign changes in Hawaii.

SEE INSTRUCTIONS

# 9. BIBLIOGRAPHICAL REFERENCES

Dorothy Barrere, Hawaiian Aboriginal Culture, Bishop Museum 1961, 9  
 Emory, Bonk, Sinoto, Hawaiian Archeology: Fishhooks, Bishop Museum  
 special Publication 47, Honolulu, 1959, 6-7  
 Sunset Discovery Book, Hawaii - A Guide to All the Islands,  
 Menlo Park, Calif. 1961, 46

## 10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY				O R	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES			
CORNER	LATITUDE				LONGITUDE			
	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds	
NW	18°	55'	43"		155°	41'	44"	
NE	18°	55'	43"		155°	39'	53"	
SE	18°	54'	48"		155°	39'	53"	
SW	18°	54'	48"		155°	41'	44"	

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 710 Acres

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES		
STATE:	CODE	COUNTY

## 11. FORM PREPARED BY

NAME AND TITLE:		Arthur F. Hewitt, Jr., Chief Ranger	
ORGANIZATION		National Park Service	
STREET AND NUMBER:		Hawaii Volcanoes National Park	
CITY OR TOWN:		DATE May 6, 1970	

## 12. STATE LIAISON OFFICER CERTIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National ☐ State ☐ Local ☐

Name \_\_\_\_\_

Title \_\_\_\_\_

STATE	Hawaii 96718	CODE
NATIONAL REGISTER VERIFICATION		

I hereby certify that this property is included in the National Register.

Chief, Office of Archeology and Historic Preservation

Date \_\_\_\_\_

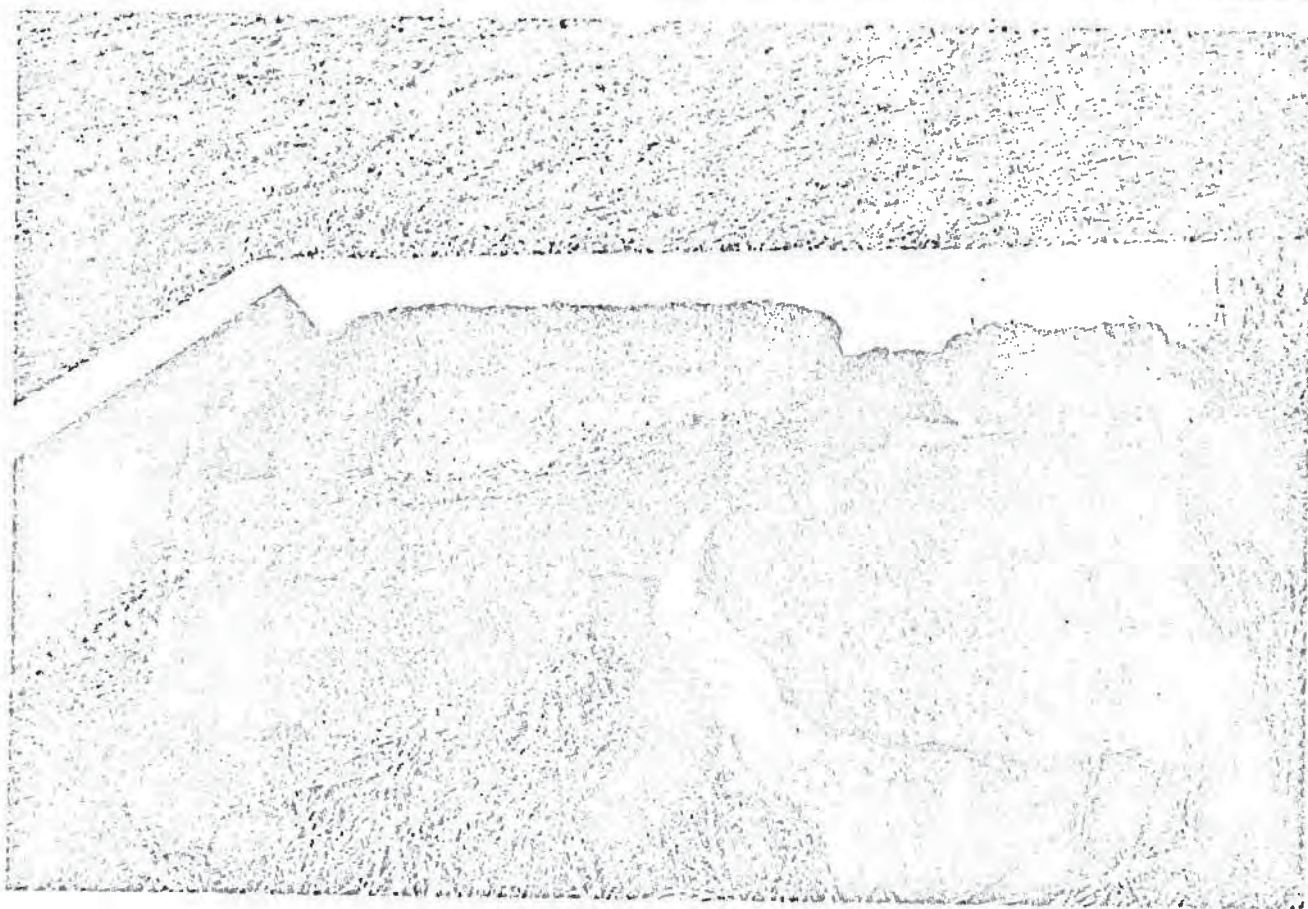
ATTEST:

Keeper of The National Register

Date \_\_\_\_\_

SEE INSTRUCTIONS





UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY PHOTOGRAPH FORM

(Type all entries - attach to or enclose with photograph)

STATE Hawaii	
COUNTY Hawaii	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

1. NAME
COMMON: South Point Complex
AND OR HISTORIC:

2. LOCATION	
STREET AND NUMBER:	
Extreme southern point of the Island of Hawaii	
CITY OR TOWN:	
18 miles (via road) southwest of Naalehu, Hawaii	
STATE: Hawaii	COUNTY: Hawaii (Kau District)

3. PHOTO REFERENCE
PHOTO CREDIT: Bishop Museum
DATE OF PHOTO: 1962
NEGATIVE FILED AT: Bishop Museum

4. IDENTIFICATION
DESCRIBE VIEW, DIRECTION, ETC.
Salt Pans

SEE INSTRUCTIONS





UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
NATIONAL REGISTER OF HISTORIC PLACES  
PROPERTY PHOTOGRAPH FORM

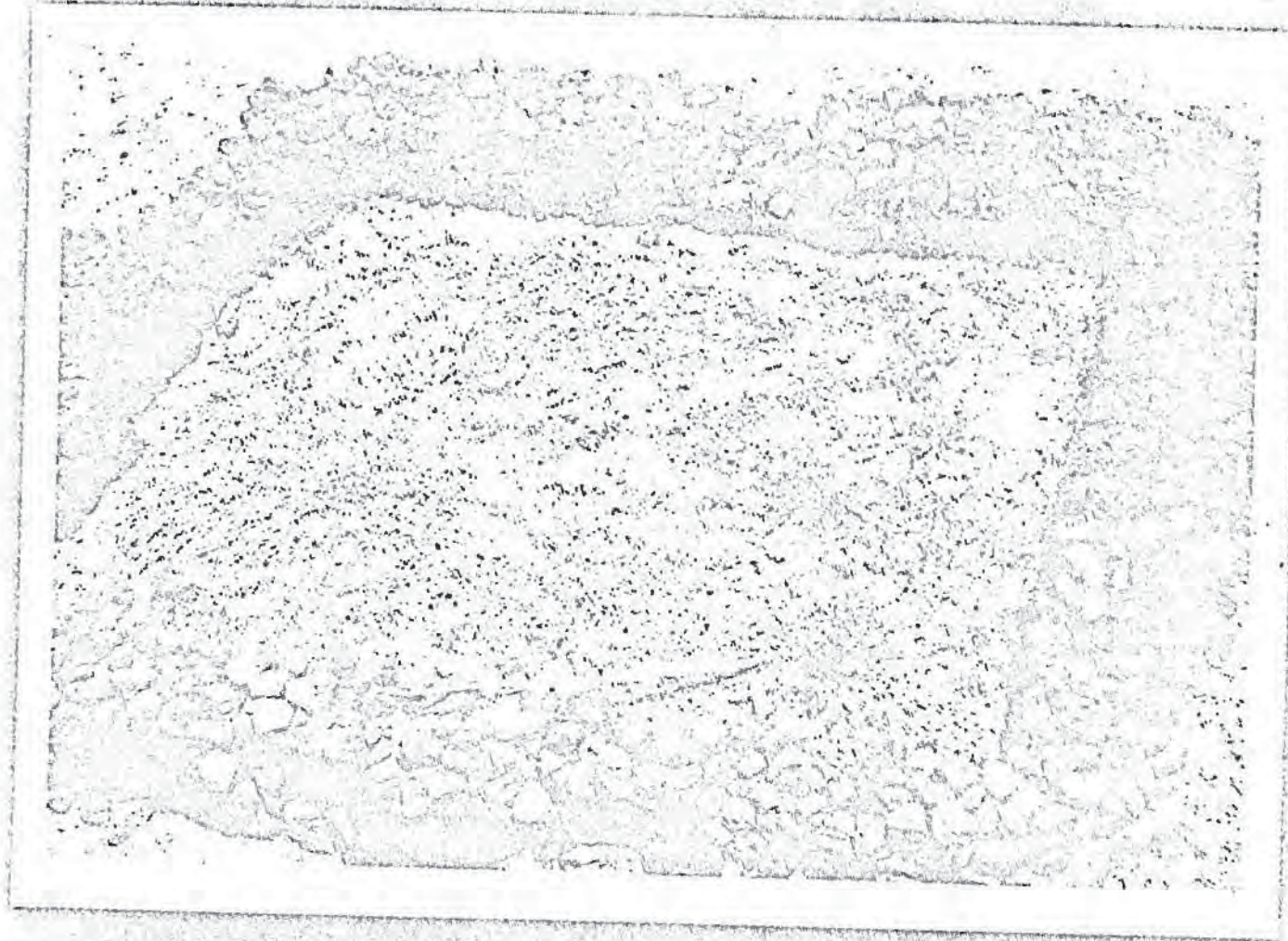
(Type all entries - attach to or enclose with photograph)

STATE	
Hawaii	
COUNTY	
Hawaii	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

SEE INSTRUCTIONS

1. NAME			
COMMON: South Point Complex			
AND/OR HISTORIC			
2. LOCATION			
SITE AND LOCATION			
Extreme southern point of the Island of Hawaii			
CITY OR TOWN			
1 1/2 miles (via road) southwest of Maalehu, Hawaii			
STATE	COUNTY	COUNTY	COUNTY
Hawaii	Hawaii (Kau District)		
3. PHOTO REFERENCE			
PHOTO CHECKED: Bishop Museum			
DATE OF INSPECTION: 1962			
DATE OF PHOTOGRAPH			
4. PHOTOGRAPHIC DESCRIPTION			
Bishop Museum			
5. PHOTOGRAPHIC DESCRIPTION			
Mooring Holes			





UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
PROPERTY PHOTOGRAPH FORM

(Type all entries - attach to or enclose with photograph)

STATE Hawaii	
COUNTY Hawaii	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

SEE INSTRUCTIONS

1. NAME	
COMMON: South Point Complex	
AND/OR HISTORIC:	
2. LOCATION	
STREET AND NUMBER:	
Extreme southern point of the Island of Hawaii	
CITY OR TOWN:	
18 miles (via road) southwest of Maalehu, Hawaii	
STATE:	COUNTY:
Hawaii	Hawaii (Kau District)
3. PHOTO REFERENCE	
PHOTO CREDIT: Bishop Museum	
DATE OF PHOTO: 1962	
NEGATIVE FILED AT:	
Bishop Museum	
4. IDENTIFICATION	
OFFICIAL VIEW, PUBLICATION, ETC.	

Fisherman's Heiau (Kalalea Heiau)





# SEE INSTRUCTIONS

Form 10-301  
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

## NATIONAL REGISTER OF HISTORIC PLACES

### PROPERTY MAP FORM

(Type all entries - attach to or enclose with map)

#### 1. NAME

COMMON: South Point Complex  
AND/OR HISTORIC:

#### 2. LOCATION

STREET AND NUMBER:

Extrema southern point of the Island of Hawaii

CITY OR TOWN:

18 miles (via road) southwest of Nalehu, Hawaii

STATE:

Hawaii

CODE

COUNTY:

Hawaii (Kau District)

CODE

#### 3. MAP REFERENCE

SOURCE:

Ka Loe Quadrangle, Island of Hawaii-(Kau District) 7.5 minute series (USGS Topo)

SCALE:

1:24,000 Approx-1 inch = 2000 Feet

DATE: 1962

#### 4. REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. Property boundaries where required. Rectangles drawn on map
2. North arrow. Drawn on map
3. Latitude and longitude reference. Noted on map

STATE <u>Hawaii</u>	
COUNTY <u>Hawaii</u>	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

## NATIONAL SURVEY OF HISTORIC SITES AND BUILDINGS

1. STATE <b>Hawaii</b>	2. THEME(S). IF ARCHEOLOGICAL SITE, WRITE "ARCH" BEFORE THEME NO. <b>Theme XVI - Indigenous People and Cultures</b>
3. NAME(S) OF SITE <b>South Point Complex</b>	4. APPROX. ACREAGE <b>710 acres</b>
5. EXACT LOCATION (County, township, roads, etc. If difficult to find, sketch on Supplementary Sheet) <b>South Cape, the extreme southern point of the Island of Hawaii, in the Kau District</b>	
6. NAME AND ADDRESS OF PRESENT OWNER (Also administrator if different from owner) <b>U. S. Government (U.S. Coast Guard) and the State of Hawaii</b>	
7. IMPORTANCE AND DESCRIPTION (Describe briefly what makes site important and what remains are extant)	

**Significance**

This area contains a group of sites that document the longest and most complete record of human occupation in the Hawaiian Islands. Included in this complex are the following sites:

1. **Puu Alii Sand Dune Site (HASS-50-HA-B20-1)**. From this site the earliest recorded date of 124 A.D. for the State of Hawaii has been obtained through the carbon 14 method of dating. The house site with a fire hearth was excavated in the 1950's by the Bishop Museum. The site is located in a sand dune a few hundred feet east of the Coast Guard light house. This area was once a large fishermen's habitation and workshop that was later covered by a sand dune and subsequently used as a burial ground. The site is located on the coast approximately a quarter of a mile east of the lighthouse at South Point.

2. **Makalai Cave Shelter (HASS-50-HA-B20-2)**. This site, located about three-quarters of a mile inland from the Puu Alii Sand Dune site, is a great depression in the ground with two large lava tubes extending from it at either end. The tube on the north, which was used as a habitation site, has stone terracing at both sides of the entrance and on the main floor. This large rock shelter was also excavated by the Bishop Museum and contained material dating back to 1750 A.D. The site is surrounded by a former military base.

3. **Kalalea heiau**, adjacent to the lighthouse, is a fishermen's heiau of the small court-type which has been venerated for years and is still used by fishermen today. A stone resembling a humanoid face, that served as the fish god, is situated just outside of the heiau.

8. BIBLIOGRAPHICAL REFERENCES (Give best sources; give location of manuscripts and rare works) **Kenneth P. Emory, William J. Bonk, and Yoshihiko H. Sinoto, Hawaiian Archaeology: Fishhooks (Bernice P. Bishop Museum Special Publication 47, Honolulu, 1959), 6-7; Sunset Discovery Book, Hawaii - A Guide to All the Islands (Menlo Park, Calif., 1961), 46.**

9. REPORTS AND STUDIES (Mention best reports and studies, as, NPS study, IIABS, etc.)

**Dorothy B. Barrère, "Hawaiian Aboriginal Culture" (Bishop Museum, 1961, a NPS typescript), 9**

10. PHOTOGRAPHS • ATTACHED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	11. CONDITION <b>Good</b>	12. PRESENT USE (Museum, farm, etc.) <b>Lighthouse &amp; Grazing Land</b>	13. DATE OF VISIT <b>April 1962</b>
14. NAME OF RECORDER (Signature) <b>Paul J. F. Schumacher</b>	15. TITLE <b>Regional Archeologist</b>	16. DATE <b>July 17, 1962</b>	

\* DRY MOUNT ON AN 8 X 10 1/2 SHEET OF FAIRLY HEAVY PAPER. IDENTIFY BY VIEW AND NAME OF THE SITE, DATE OF PHOTOGRAPH, AND NAME OF PHOTOGRAPHER. GIVE LOCATION OF NEGATIVE. IF ATTACHED, ENCLOSE IN PROPER NEGATIVE ENVELOPES.

(IF ADDITIONAL SPACE IS NEEDED USE SUPPLEMENTARY SHEET, 10-317a, AND REFER TO ITEM NUMBER)



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL SURVEY OF HISTORIC SITES AND BUILDINGS  
SUPPLEMENTARY SHEET

This sheet is to be used for giving additional information or comments, for more space for any item on the regular form, and for recording pertinent data from future studies, visitations, etc. Be brief, but use as many Supplement Sheets as necessary. When items are continued they should be listed, if possible, in numerical order of the items. All information given should be headed by the item number, its name, and the word (cont'd), as, 6. Description and Importance (cont'd) . . .

STATE

Hawaii

NAME(S) OF SITE

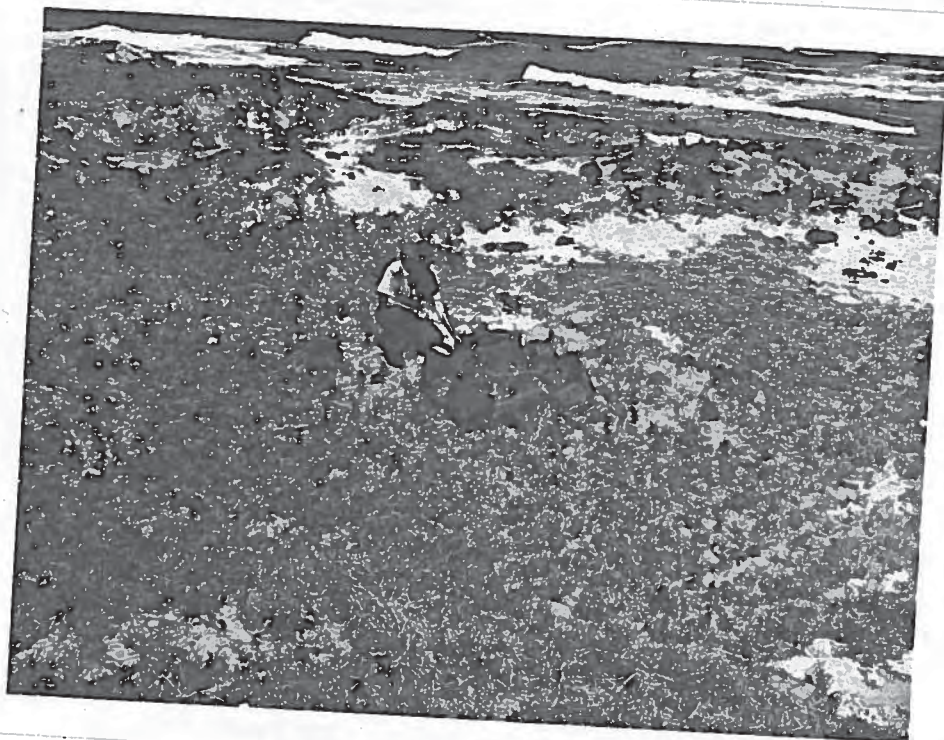
South Point Complex

7. Importance and Description (continued)

4. Mooring Holes. Attesting to the fact that the area has been used for hundreds of years by fishermen are the many mooring holes that have been pierced in the lava ledge overlooking the sea. These holes belonged to individual families and were used to attach their canoes while fishing in the powerful cross currents. The sea currents meet at South Cape and the turbulence brings shoals of fishes, making an excellent but dangerous fishing ground.

5. Salt Pans. Numerous carved and natural salt pans indicate the extensive scale of salt manufacturing that occurred at South Point in times past.

6. The Pohakuokeau Stone ("stone of the times" or "stone of the region") is also situated in this area. Legend states that this huge natural boulder turns over each time a reign changes in Hawaii.



South Point Complex: Fire Hearth  
Inside Dwelling at Pua Alii Sand Dune  
Site, South Cape, Island of Hawaii  
Hawaii

April 1, 1962

Paul J. F. Schmacher  
Neg. 2828 - Western Region



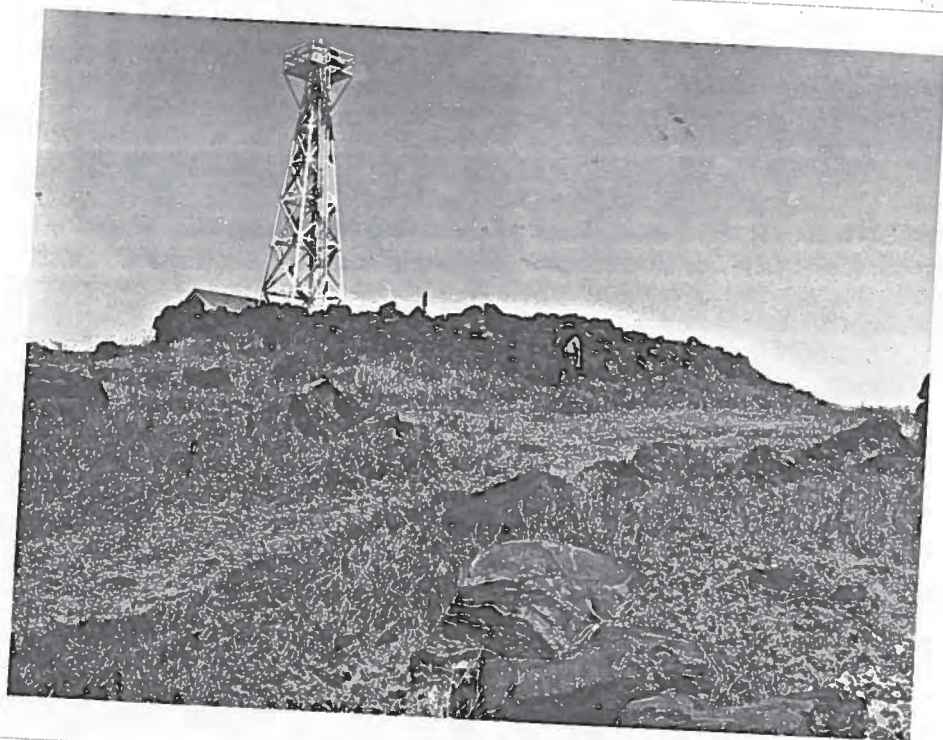


South Point Complex: Makalai Cave  
Shelter, South Cape, Island of Hawaii,  
Hawaii

April 1, 1962

Paul J. F. Schumacher  
Neg. 2830 - Western Region





South Point Complex:  
Kalalea (Fishermen's) Heiau,  
South Cape, Island of Hawaii,  
Hawaii

April 1, 1962

Paul J. F. Schumacher  
Neg. 2822 - Western Region

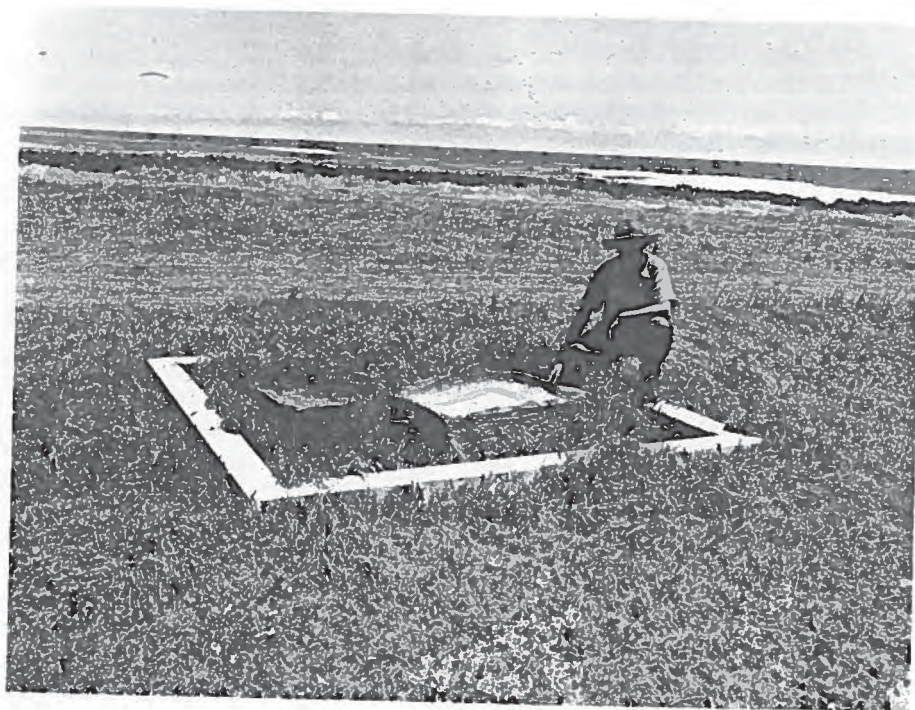


South Point Complex:  
Canoe Mooring Holes,  
South Cape, Island of Hawaii,  
Hawaii

April 1, 1962

Paul J. F. Schumacher  
Neg. 2823 - Western Region





**South Point Complex: Salt Pans,  
South Cape, Island of Hawaii,  
Hawaii**

**April 1, 1962**

**Paul J. F. Schumacher  
Neg. 2820 - Western Region**





# **APPENDIX B**

NOTES FROM  
COMMUNITY OUTREACH PROCESS





## **COMMUNITY MEETING NOTES**

### **SOUTH POINT RESOURCE MANAGEMENT PLAN**

July 29, 2015

6:30 p.m. to 8:30 p.m.

Nā'ālehu Community Center

**Attendance:** Fifty-seven participants signed in at the meeting. Please refer to the end of the meeting notes for a list of attendees. Several participants did not sign in.

**DHHL Staff:** Deputy William Aila, Kahana Albinio, Andrew Choy, Uncle Louis Hao, Kaleo Manuel

**Consultants:** Townscape, Inc.—Angela Faanunu, Gabrielle Sham, Bruce Tschuida

#### **Purpose of this meeting:**

The purpose of the meeting was to introduce the planning consultants selected to work on the South Point Resource Management Plan and to share with the community the planning process and schedule for the project.

The meeting began at 6:30 p.m.

#### **Opening Pule:**

Auntie Leolani Hao gave the opening prayer.

#### **Welcoming and Introductions:**

Mr. Kaleo Manuel welcomed the participants and thanked them for attending the meeting. He introduced the DHHL staff and consulting team.

#### **Presentation**

Mr. Manuel shared the agenda with the participants. He briefly described the purpose of the meeting. Mr. Andrew Choy provided an overview of the DHHL Planning System and shared that one of the priority projects identified from the Ka'ū Regional Plan was to protect and preserve the cultural sites and natural resources in Kamā'oa. Mr. Kahana Albinio presented the current DHHL Month-to-Month Right of Entry Permits at DHHL and the other requests received for non-homestead use of DHHL Lands at South Point.

Mr. Bruce Tschuida provided a brief introduction of Townscape, Inc., an environmental and community planning company. Bruce shared examples of prior projects completed by



Townscape, Inc., including North Kohala Development Plan, Honu‘apo Resource Management Plan, and Wai‘anae Sustainable Communities Plan.

Ms. Gabrielle Sham shared the planning process and schedule for the project. The project will be completed within one year. An assessment report based on existing background material and site visit observations has already been completed. Townscape will start their initial stakeholder outreach process, which will begin with one-on-one and small group meetings. The stakeholder outreach process is very important and stakeholders are encouraged to participate in order to plan for the future of South Point. The Preliminary Draft Plan is tentatively scheduled to be completed by the end of this year. When it is completed, stakeholders will have an opportunity to provide comments and feedback. The Preliminary Draft Plan will be revised based on the DHHL beneficiary and stakeholder consultation. The Draft Plan will be distributed for stakeholders to review early next year and it will also be presented to the Hawaiian Homes Commission. After revising the Draft Plan based on beneficiary and stakeholder consultation, the Final Plan is expected to be completed by the end of May 2016. Upon completion, it will be presented to the Hawaiian Homes Commission for approval.

Ms. Sham explained that it is difficult to delineate a boundary line on a map as the “project area” for this project because there are many factors that affect the condition of resources that may not always conform to specific boundary lines. Therefore, in lieu of a map with boundary lines, special places at South Point have been identified. The Ka‘ū Regional Plan also identified these resources as needing special attention. Additional resources may be added to the map based on input from the consultation process.

A summary of the questions and comments is provided below. Responses provided by DHHL staff and consultants are provided in italics.

#### Planning Process

- Who are the “stakeholders” when referring to stakeholders’ consultation?
  - *DHHL has an obligation to serve its beneficiaries. Beneficiaries are the primary stakeholders in all DHHL decisions. We know Ka‘ū is unique from other communities and we will try to include other community members during the stakeholder outreach process. DHHL has a website (<http://dhhl.hawaii.gov/po/special-area-plans/south-point/>) where the public can access for more information about this process.*
- Is this planning process only for people of Ka‘ū—or what about beneficiaries from other areas and other islands?
  - *Yes, “all” beneficiaries can be involved, but it is customary to pay homage to the “host” community first and we will consult with Ka‘ū folks first.*
- Does DHHL already have a “vision”?
  - *No, the “vision” has to come from the community. We are starting the visioning process now.*
- What happened to the General Plan or Regional Plan. Why are we doing this plan?

- *Both the General Plan and Regional Plan still exist, but the General Plan is very broad and articulates Statewide policies. This plan will incorporate the broad policies of the General Plan, but also articulate the specific implementation actions DHHL should take in the near and long-term specific to South Point.*
- Where is the money coming from? How much money are you paying the consultants for this Plan?
  - *\$100,000 has been put aside for this planning process.*
- The community needs to decide.
- “Enough talk already. Where’s the ACTION?”
- This planning process is just going through the motions. We’ve been waiting too long! We want to see something done. We need help. We need a budget. Everything is eroded.
  - *The Planning Office at DHHL is constantly fighting to get money for budget. If we don’t have a plan, then the Department cannot allocate any money for the Planning Office towards projects for South Point. If a fence is what we need in the short term to protect Palahemo, then we can get it done now. But hiring staff for on-site presence is a long term goal because we will need to find the budget for that.*

#### Infrastructure

- What about water for South Point? For the last 29 years, DHHL is still working on the water issue. “They change Chairman. They don’t follow-up. Same thing happening here. Same discussion.”
  - *Water issues will be taken into consideration in the Plan. Without a Plan, DHHL cannot do anything. Therefore, it is important to create a plan that states what the community wants.*
- There are no restrooms, but lots of people visiting South Point.
  - *We will need to find solutions for both the short- and long-term.*

#### Natural and Cultural Resources

- “In 2013, the Ka‘ū Hawaiian Homes Association sent in an application [about curatorship], and no answer til this day. Why? You guys don’t answer us yet? Not even one hello. How many people apply for curatorship?”
  - *The Ka‘ū Hawaiian Homes Association has been the only curator applicants. DHHL did respond in the past. The area is a historic site and is subject to many regulations that must be adhered to. The Department needs to know the details of what is being proposed and HOW it will be implemented.*
- If an archaeological study is needed, who will fund it? What is the cost?
  - *The Department can look into doing some short-term studies.*
- What about returning iwi kūpuna?
  - *Representatives from Bishop Museum spoke up about the importance of culture and preservation of artifacts. They also expressed willingness to work with DHHL to create a museum to display the artifacts from South Point.*

- “I wanna thank you for coming here to talk to us about the resources. Our people, we’ve been waiting for too long. What is it gonna take until someone gets hurt. This is wrong. We wanna see something done... We need help. If there is a budget, where is the money going? A lot of the money is gonna come out of our pockets. We learned to drive down there. It’s something that’s precious. I aloha you because your roots are from here.”
- It seems like the Department has no control. Legally, can the Department control access?
  - Yes.
- In response to the hearing comments from the community about DHHL not taking action for the past three decades, Deputy Aila commented that he is willing to take action now and allocate funds for immediate action to put up a temporary fence for Palahemo: “What’s stopping us from taking wire down and putting it up at Palahemo? Let’s do it. What I’m hearing is, ‘Do Something!’ What I’m hearing, this is an emergency. If you want gates, we go put up gates.”
- Fencing the area will destroy the beauty of the land.

#### Issues and Potential Solutions

- Controlled access is needed. An entry fee could be charged to generate income to pay for facilities and management. There needs to be a presence.
- Have a chance to have this place for our kids. We need educational programs. Let’s save South Point!
- “No more insurance. No more nothing. No signs and everything. We had one problem before. You gotta get somebody to be assigned to that place.”
- What are the boundaries for the DHHL parcel? We need to put up signs notifying the public that it is private property.
  - *If the community wants signs, what kind of signs would you want? Signage can be a way for the community to share stories from the place to elevate the significance of the place. It is important for the community to share with us what they want to see happen at South Point. DHHL has put up signs for no jumping because DHHL kept getting calls from Ka‘ū Hospital. “At the end of the day, what is it that’s important to you [community] so that we as a department can kako ‘o that.”*
- The way to control access is where people enter South Point at the beginning of the road as they enter South Point. “There is nothing there to stop anyone right now. It’s just a ticking time bomb down there before something happens. We want to manage, but we gotta have insurance to protect ourselves.”
  - *South Point Road is a government road. Sections of the road are under the jurisdiction of the County of Hawai‘i. If the community wants signs put up, we need to work with the community to see what kind of signs the community would want to put up. Signage can be used to share stories of the place to elevate the significance of the place.*
- Consider having one good paved road with access by path to cultural sites.
- An elderly man spoke up that he wanted to work with the person assigned to the land, not with the DHHL planners. “The Chairman [of DHHL] don’t do nothing.”



- One individual pointed out that the community is so divided. “We need to get together. We have to be serious about this thing. We have to come together as one. It’s a hard thing to come together. Is it for ourselves or our kamali‘i. We have to do something. When we leave here. We are rich people. Are they [DHHL] taking care of us? No. How do you help us?”
  - *The community needs to participate in this planning process.*

Participants were asked to share their “favorite personal memory and/or experience with South Point.” Responses included the following:

- “We spent a lot of our childhood at South Point. We’re born and raised in Ka‘ū, a lot of childhood memories. We never had to put up fence. Our kūpuna taught us how to take care.”
- “So what I’ve seen before, 1927, way back, used to be really beautiful. I wish we could bring it back to that time.”
- “I was raised in Pahala but we were raised down in South Point. We used to go fishing. There’s a lot of heiau around. All they told us...keep away from that. So we knew, to keep away. I don’t even really know...I was 11 years old. We went fishing..and I still go down there. That’s our right. Maybe what we can do is what kind of Hawaiian plants. Hawaiian landscape. But I really would like to see our Hawaiians go back to South Point. They belong there... That’s ours. We’re gonna stay strong. They listen to us.”
- Ka‘alualu Ranch used to be down at South Point and they were the curators down there. “If you want to see change, let the land be.”
- “We as children. The ground wasn’t dirty. We were taught...you could see the ‘ōpae ula. And there was the pōhaku from my tūtū. What we picked up we fed, we gave back. When the ocean was so rough, the stars lit up and was so mālie. There’s so many things we can do. Everything was understood.”
- “My dad used to stay there and look up at Mauna Kea.”
- ‘Ōpae ula can be found at Palahemo. “Before the sun comes up, to get ‘ōpae to catch for bait for opelu.”

The meeting was adjourned around 8:15 p.m.

Meeting Attendees (from sign in sheet)

Melvin Yokoyama (sp?)  
Joseph A. Akiu Sr.  
Joseph Akiu Jr.  
Eugene K. Beck Sr.  
Christine K. Beck  
Hettie Rush  
Kavelle Kamei  
Clifford Kamei Jr.  
Nora Kuahiwinui-Lance  
Don Lance  
Jackie Kaluau  
Moanekeale Freitas  
Eddie Kuahiwinui  
Dolly Kailiawa  
Darlyne P. Vierra  
Cynthia Baji  
Mark McCoy  
Lani Kekoa  
Shelley Reyes  
Greggory Rush  
Clayton Tayamen  
Ronald T. Kodani  
Jeffrey Kekoa  
Wade Baji  
Maelene Kaapana  
Cornlia Kuahiwinui  
William Kekoa Jr.  
Walter Wong Yuen  
Donald Garo  
Thomas Kaniko  
Bea Kailiawa  
Anna Cariaga  
Mara Mulrooney  
Charmaine Wong  
Dave Kaawa  
Tammy Kaawa  
Talai Ke  
Kama Dancil  
Kathy Hashimoto  
Paul Makuakane  
Rudolph H. Kaupu  
Janice Javar  
Megan Javar  
Jaron Garcia  
Claudine Gomez  
Gilbert Medeiros Jr.



## COMMUNITY SPEAKOUT NOTES

### **SOUTH POINT RESOURCE MANAGEMENT PLAN**

December 12, 2015

11 a.m. to 4 p.m.

Nā‘ālehu Community Center

**Attendance:** Approximately 40 people attended this event of whom 25 identified themselves as DHHL beneficiaries.

**DHHL Staff:** Deputy William Aila, Andrew Choy, Uncle Louis Hao, Kaleo Manuel, Bob Freitas, Ulu, Julie Cachola

**Consultants:** Townscape, Inc.—Angela Faanunu, Gabrielle Sham

### **Purpose of the SpeakOut:**

The purpose of the SpeakOut was to offer an opportunity for the community to provide their feedback using an informal and interactive “open house” format.

Community members were asked to fill out a note card that read “**I love South Point because...**” Responses shared by the community members are listed below.

- It is a place to heal and relax.
- It’s a good place to camp out; also it has a great fishing spot. Now all we need is water.
- Wahi pana. I live in Ka‘ū, lifelong resident and often visit there thru out the year.
- Growing up we visited, camped and fished the area. We also just went swimming and just hung out.
- It’s a place for Ohana...camping...fishing...swimming we need to heal the land for our mo‘opuna’s in Ka‘ū.
- Born and raised in Ka‘ū, South Point is my home. A place to play, fish for food.
- It is a wahi pana, a sacred and spiritual treasure, a source of pride for our community and for many Hawaiian families. It was their first home in the islands before moving north.
- Because I’m a lessee and South Point is my lively hood and also my dad’s twin died at South Point during birth and was buried there.
- It reminds me of spending summers with my tūtū and papa.
- I am at its mercy.
- Because it is the kingdom of the Hawai‘i Islands.
- I claim my 2<sup>nd</sup> birth rights at Kaulana.
- We need to: bring water and open up new agriculture land at Kamā‘oa; relocate existence Ag-lot lessees; repair road from Barracks to boat ramp. Also need boat parking lot close to boat ramp.



- Its history. Its beauty and because its awesome size, meaning being part of the biggest ahupua'a on the Big Island "Hawai'i nei"
- It is a special and sacred place for Hawaiians.

DHHL staff members and the consultants facilitated, listened, and recorded participants' comments at each of the four booths:

- Cultural and Natural Resources Management
- Economic Self-Sufficiency
- Health and Safety
- Native Hawaiian Culture, Knowledge, and Traditional Practices

### **CULTURAL AND NATURAL RESOURCES MANAGEMENT**



The cultural and natural resources management section of the SpeakOut gathered additional information that explored HOW and WHERE strategies would be implemented. Notes for this section are guided by the figure above.

### **Closing the Road**

- Set a time limit from 6 a.m.-6 p.m. or from sunrise to sunset (but local fishermen should be allowed to stay all night because "this is their land")
- Several people indicated that they wanted the road to close. However, further discussions with some of the community members showed that the opinions of how closing the road would be implemented varied and changed after visualizing the scenario on the map.
- Initially, an individual felt that that the road at South Point should be shut down before the fork in the road where the road veers off to Ka Lae Point and the other to the

Barracks. This point is indicated by a green dot in the figure above. While discussing this issue, it became apparent that if people cannot park before the fork in the road, there would have to be a round-about of some sort to re-direct traffic back to the top, as well as signs further up the road to warn vehicles that the road ends. It was suggested that such a sign be put up outside of Uncle Tommy's house.

- It also became apparent while looking at the map that the distance from the fork in the road to Ka Lae Point is rather long. This individual then said that maybe cars should be allowed to go through to Ka Lae and also to the Barracks. Thus, instead of closing off the road at the fork, there might be an educational booth that also serves as a monitoring check point where someone there would ask questions such as:
  - Where are you going?
  - What are you doing?
- At the educational booth, brochures such as the ones shown from North Kohala could be given out to vehicles. Brochures would discuss in detail about the existing threats for South Point. Visitors can also be informed of what they can and cannot do. For example, if visitors intend to visit Mahana Bay, they are to be informed that they cannot drive there and can only walk in.
- Another individual stated that it would be expensive to produce these brochures but if money is generated and people are charged for visiting, then revenues generated could cover these costs.
- The road to Mahana was suggested to be closed entirely.
- One individual pointed out that gates will not work because they will be torn down.
- Others pointed out that if access is closed, others will come in through KS property, therefore, DHHL needs to consult with KS on this issue.
- DHHL to define fines for offenders.
- Monitoring/educational booth was suggested to be a grass shack in the old Hawaiian style with 'ōhi'a posts and should be located before the fork in the road.

### **Parking Areas**

- If vehicles are allowed to go through the fork in the road, then the parking areas above the hoist area would need to be expanded, as well as at the Barracks. A person would need to be present at both locations to ensure that no one drives off the road. Though signs are great, many people don't adhere to them.
- Another individual felt that additional parking should be created right above Lua Makalei below the road to the Barracks. The same individual suggested that a cultural center be built near the Barracks and right below the bend in the road by the Barracks. Lua Malakei was also recommended to be used during Makahiki.

### **Trail**

- Individuals placed red dots on the map to indicate important cultural sites at South Point. Most of these dots cluster around Ka Lae point. In discussing a possible trail, it was easier to see where the resources were on the map. It was suggested that a walking trail begin where the current parking lot exists above the hoist. At this point, a large sign with

a map of the trail was suggested. This trail would hit the major sites along this coastline. Some of the major sites to be included in this trail were identified as:

- The heiau
- Mooring hole
- Pinao Bay (Previous fishing village with a white sandy beach and burials)
- Pu'u Ali'i
- Lua Makalei (though this site might be far from the others)
- Palahemo (This site is significant because from this point you can see Old Ka'ū—one can see Mauna Loa all the way to Puna and then to Kona)
- Others suggested that a walking guided tour would be appropriate that is focused on providing information/education about the place.
- A kupuna pointed out that a walking trail would be too far for the elderly to walk and would prefer to see a scenic road that goes from the hoist area, down along the coast towards Pu'u Ali'i, Palahemo, then back up to the Barracks.
- The trail itself was recommended to be a Hawaiian trail made of 'ili'ili and/or beach rocks.
- **Virtual Tour idea introduced** ---One community member really liked this idea. This option might be great for people who cannot go on the trail but can read about it. This approach may also help reduce impact on resources. Some points pointed out included:
  - Have UH students develop a small video/ small class projects about significant sites at South Point and the critical issues the place faces.
  - Use drones to follow visitors and take pictures/recordings of their experience that can be purchased at the end of their experience.

## Signs

- Most people liked the displays with signs from other projects on Hawai'i Island. Community members shared some of the features that should be included on the signs:
  - Should have pictures
  - Place Names i.e. Ka Lae, with proper pronunciation of words.
  - Mo'olelo
  - History i.e. first landing, burials, theories of settlement, plantation era
  - Current threats
  - Some signs should also have information on the natural resources and about proper fishing method, pictures of 'opihi/fish and appropriate catch sizes like those shown in the examples provided from North Kohala. Simple sayings should also be used such as "Catch too much today, no more fish tomorrow." Ka'ū resources also taste different from that of other places (for example, nenua has a strong taste depending on what they eat. This is the type of information that is unique to the resources of the place that need to be highlighted.
  - Sign should also identify who is paying for the sign (i.e. DHHL).
  - Type of sign:
    - Posts will rust.
    - Rocks in a heiau style with a sign on top of the rocks would be appropriate.



- Big rock/flat boulder with a sign glued on top is also appropriate.
- Consider the weather that is often windy and unforgiving.
- Where signs go:
  - Should be a sign at the information booth/guard house
  - A sign about where the hoist is
  - A sign at the start of the trail
  - One individual felt that a sign should be placed at the fork of the road to Ka Lae that says, “Hawaiian Historic Landmark, not “National Historic Landmark.”

### **Cultural Center/Pavilion**

- Several people suggested the Barracks as the appropriate site for a cultural center mostly because this site has already established infrastructure (i.e. sewer lines). The water tank above the barracks was also identified as once having provided water for the Barracks so waterlines are present.
- One elderly man suggested finding the piko for South Point (by asking others from South Point) and using that location as the site to build a pavilion for cultural purposes. However, he used the term, “fishing village” instead of a cultural center to reiterate the importance of South Point as historically consisting of fishing villages and as the first place of settlement into the Hawaiian Islands. He identified the piko of South Point as the heiau and the coastline surrounding Pu‘u Ali‘i to the fishing moorings. He envisioned a pavilion-type structure that would be open with ‘ōhi‘a posts and built with the windy environment in mind. The space would be utilized to showcase the culture of fishing of the area (i.e. handicrafts, weaving nets, etc.).

### **Museum**

- One individual suggested a museum to hold all the artifacts and information relevant to South Point. This structure would be around the site of the Barracks because of existing infrastructure. It would also be a secured building that can be locked. Historical information should be made available that includes the history of South Point that spans from first Hawaiian settlement, the Plantation Era, the military occupation, and current threats. The museum was also suggested to be something that serves the local people of Ka‘ū and to employ 5 to 10 people from Ka‘ū.
- John Kalua‘u was recommended to facilitate this process and have it run by local community members to empower local people.
- Materials for building the museum should be local products and should have low maintenance and operating costs (i.e. Semi open with windows).
- Have an open area for education, festivals, and gatherings.
- Building should have all solar panels and off the grid.
- Highlight cultural resources & fragile environment of the coastline.
- Fees to support this facility.
- Museum was suggested to be located near the barracks and next to Lua o Makalei to be used for the Makahiki festival.

### **Native Plants & Vegetation**

- Connect with TNC and school kids about native plant restoration.
- One kupuna suggested laying down ‘a‘a all along the area from Pu‘u Ali‘i to Kaulana Bay to keep the soil down from being blown away and then plant coconut trees and naupaka along the coast line. He suggested 3 lines of trees all the way down. He also suggested planting coconut trees all over South Point.

### **Other important sites pointed out**

- Broken road and associated pali that the place overlooks.
- At the bottom of Pu‘u Ali‘i, there are house sites and the house sites were thought to have been possible temples. This is also where Kalaniopu‘u was buried.
- Graves site near Pinao Bay, but the burials this individual saw were buried upright so did not think the graves were Hawaiian.
- Pinao Bay- this used to be a fishing village.
- A site to the left of Lua Makalei (indicated by red dot) used to be a pitch farm for tar (crude oil) for the military.
- The runway also used to be covered with a landing mat. Planes used to send milk, beef, pork to O‘ahu from Ka‘ū and even bring in the mail.
- The gulch down by Pinao Bay flows with water when it rains so no structures should be placed in that area.

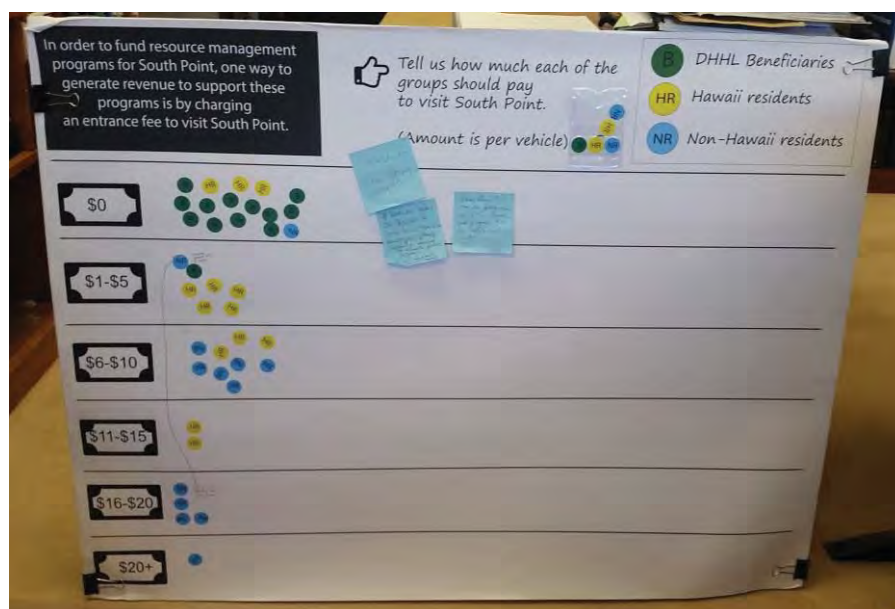
### **Other measures & comments**

- The coastline along Pu‘u Ali‘i is eroding. A rock wall should be built to protect this coastline.
- Put a toilet at Pinao Bay
- Build a stone wall around Pu‘u Ali‘i.
- Build a rock wall around Palahemo. People can only walk in to Palahemo—no cars, post signs, and no sunscreen allowed (in swimming at Palahemo).
- “Involve Ala Kahakai and TNC. Get native plants growing again.”
- “Just close the whole area. Fence it off. To go in, you walk.”
- “Close area. Put security guard.”
- “ATVs-have someone to monitor but shut down the place, educate, give them warnings.”
- “Too many ATVs ruin the landscape and ‘āina. No businesses at the area in the past. Currently, operators take money to transport visitors.”
- The Barracks “should be used by the people.”
- “Put in fence from fork in the road along South Point Road all way down to the cultural sites and up towards the Barracks. Put that as pastoral lots and introduce cattle. These can be used for fire prevention because the cattle eat the grass but helps by having someone on the land.”

## ECONOMIC SELF-SUFFICIENCY

### Entrance Fee

- If you charge an entrance fee or make one road to Mahana Bay, it is hard to enforce. There are lots of mauka roads from Discovery Harbor coming down. Hard to enforce.
- If it is tour group, they should be charge more. People of Ka'ū should be giving the tour. Guided tours.
- Charge by the person not by the vehicle. Think about a tour bus or tour van.
- Economic is ok, but portion of the money needs to be used to take care of the place.
- Charge entrance fee by person or more for larger vehicles like a bus or van.
- The amount we charge should be based on the level of attraction. For example, at the National Park Service (NPS), you know what you are going to see. NPS has an elaborate road system so they can charge more. Point A on the map would be the best place for a booth.
- Take 20 percent from whoever is going business on DHHL lands.
- Should have a different fee for Ka'ū residents.
- Charging people is dumb. You have to create industries for them to create their own businesses. (How do you create an industry?)
- In general, economic activity is OK, but revenues generated cannot just go into people's pockets. A significant portion of it should be re-invested into the management of the place.
- In general, beneficiaries should not be charged an entrance fee (see figure below). One person felt that everyone should give back including beneficiaries. The majority of the participants felt that both non-Hawaii and Hawaii residents should pay some sort of entrance fee (with non-Hawaii residents paying more than Hawaii residents). Larger tour buses and vans should be charged more. Revenue generated from the entrance fee should be placed back into the resources.





- Hard to enforce/verify who is a DHHL beneficiary or who is not. DHHL beneficiaries do not have a “card.”
- Most southern place: that is the attraction.

### **Economic opportunities**

- History tours of the area; make pamphlets of what you can offer to the public.
- Sell anything made in Hawaii.
- Shuttle service, but gotta fix road first. Have bathrooms and lifeguards on duty.
- Education programs
- Lot of the shuttles not done legally. No shuttle service.
- Economic cannot just benefit the person or individual.
- Who will be there to charge the entrance fee? Should be DHHL.
- Economic opportunities for beneficiaries only.
- 100% economic self-sufficiency to support management program.
- Sell Hawaiian crafts.
- Economic dependence on farming and healing arts, medicinal arts, mele, hula events, language arts, mo‘olelo, teach Hawaiian.
- The shuttle service should be contracted out. Minimum requirements: license, insurance, safety permit, proper equipment.
- Economic self-sufficient for management program of the place, not for individuals.
- The whole idea is about “rehabilitation.” Make Hawaiians be able to function in the 21<sup>st</sup> century. The culture is not destroyed if you do it.
- Make the condition of the Hawaiian better. Modern lifestyle is cumulative effect on culture, not replace culture.
- Being on the land is the “primary” benefit to beneficiary. Not “job” opportunities but “entrepreneurial activities.” Would like to see raising of limu, moe, aquaculture, modern 21<sup>st</sup> century aquaculture.
- Since the plantation closed, people do anything for money, whether legal or not, like the tours.
- Tours needs to be regulated. DCCA, GET.
- Turn management over to local 501(c)3....(other notes of places?)
- Ranger position, not security guard.
- Internships.
- This is an industry we want to see here.
- “Establish a fishing village.” What does a 21<sup>st</sup> century village look like?
- Not regulate, enhance it.
- Let the beneficiaries access the social/business networks they have.
- We don’t want welfare. We want to be profiteers.

## Route to Mahana Bay



- No clear consensus on a preferred route to Mahana Bay (see figure above), but people did identify factors to consider when identifying a preferred route such as: scenic views, impact on coastal resources, most convenient for emergency access, need for a road for maintenance and management purposes.
- Route C (makai) would be better for taking tourists and making money, but Route A (mauka) would be better for emergency access.
- Put up no trespassing sign by boat ramp, near the Route C on the map.
- Route A is best. It is furthest away from the coast, less impact, less erosion. At least compacted gravel would be nice.
- The Chairman doesn't follow-up. When the new Chairman comes in, no follow-up.
- The shoreline road would allow more people to access the shore for activities like fishing. They are going to go to the shore anyway regardless if there is a road or not.
- Burials along routes A and B. Stay on route C because it is impacted already.
- By route A on the map should be the "check-in" area.
- Route C should be a walking trail with rest stops.
- Block the road at B and by fish hoist.
- Shut the road down now.
- Walk in, no shuttle service.

## Land Management/Other items

- 3-4 fishermen on a regular basis use the boat ramp.

- Green Sand Beach is not really safe. People have to climb down. Best to close it down, but it is human nature that people are going to climb down.
- How does the plan affect the use of the land by beneficiaries?
- The protection of cultural sites is separate and apart from managing the Trust's resources.
- Any use of the property by "subordinate" managers may be legal.
- What are you actually managing? Tourist, beneficiary use of the area, or responsibilities as a landowner?
- As the landowner, DHHL has the responsibility to take care of the property anyways.
- The Plan has to clearly articulate the benefit to beneficiaries. Raising food on land, businesses, and subsistence activities. Cultural activities.
- Allow people to do what they do naturally.
- Appeal to Ka'ū's independence. Go for it alone. They're independent spirit.
- How do we account for all the players: tourists, residents, and community?
- There are days you let the land rest.
- Mark the trail (Ala Kahakai).
- The road should be a maintenance road for fires, fire break not public access.
- Ka'ū is a treasure.
- No public access road, but it can be a road used by a shuttle service. But it should not be open to everyone.
- Turn the barracks into a camping group. Follow Keaukaha camping ground rules. Vacation days only. No fire pits, no fire. Permit should be fee. Camping site should have running water.
- Knock down the hoist.
- Dark parts above barracks have cultural sites, heiau, and iwi.
- Need a fishing program.
- Resting stations.
- Ka'ū group should manage the campground. DHHL should provide training opportunities to increase capacity.
- If people want to pick up rubbish "clean-up" day, then require them to invite and notify the Hawaiian community.
- Medicinal plants grow around the barracks (ilima, etc...) opportunity for la'au lapa'au.
- Control the vehicle access.
- Look at NPS and DLNR as models for management.
- Shut-it down, but have open process to bid for the right to provide shuttle service. (driver's license, legal vehicles, insurance, safe practices-not crowd in 20 people in one car).
- Put a gate up mauka to block access from KS lands.
- Set up larger enforcement staff with Nelson money.
- 6-month period of enforcement activity. Minimum 3 staff: at fork of road, by fish hoist, by KS access point.
- You will make plenty of money off of DHHL land for long time. Now time to reinvest into the land.

## HEALTH AND SAFETY

- Improvements to the Kaulana Bay boat ramp are needed. There are many roads from the barracks to the boat ramp, but most people use the one to the right (if facing makai). The road should be paved about 30 feet wide. The boat extension area is so shallow. There should also be a designated parking area for the boat trailers. One community member suggested one acre for the parking area for the boat trailed, but mentioned that by improving amenities, it would also attract more people to go fishing at South Point.
- A community member shared that they use quads to check out fishing spots along the coast before driving their truck to the fishing area. They commented that they would like stop the dirt bike and ATV riding from continuing in the area, but would still like to continue to ride their quads for fishing purposes.
- Tourists should be prohibited from driving all over the place, but some locals still want to drive along the coast to fish. A lot of the tourists do not know where to go.
- If people are going to volunteer and take care of the place, they shouldn't be charged to go in.
- People should only "take what they can eat." Some people catch so much fish that it goes to waste when it's stored in the freezer for too long from freezer burn. Is it possible to limit fishing to every other week per person? Sport fishing is an issue.
- Even if the fishing hoist is removed, people will still go cliff diving and find other ways to climb back up. Cliff diving is part of the recreational activity for locals. Tourists will just follow the locals even if the hoist is removed. A community member commented that she did not even notice that there were no jumping signs posted.
- Put up safety and rescue tube from the hoist to Kaulana Bay (i.e. Pinao Bay).
- Store safety equipment (i.e. jet ski) locked up nearby since current response time for emergencies take a long time. May have to work out an agreement with nearby lessee to store and "watch over" equipment on their property.
- There are graves everywhere and too many tourists visiting that area.
- Can we designate an area for dirt bike riding only?
- A community member mentioned enjoying driving to Green Sand Beach with the family, but would not walk in. They usually take a mauka route, which is what most of the locals take. She mentioned going through a lessee's property to access Green Sand Beach.
- A community member felt that the area to Green Sand Beach should be closed off to vehicles, but at the same time, what if a kupuna wanted to visit the place one last time and cannot walk in.
- A lot of people go to South Point for "mudbogging" after it rains.
- Does DHHL have the deed for this property? Do a title search.
- Putting trash cans in is important, but who will maintain them?
- Hire someone to monitor the area in addition to putting up signs (i.e. no dirt bike riding). Could start showing presence at least once a week, then more frequently.
- Putting in lua is important, but must consider where the maintenance truck can access it.
- Native plants such as 'ohai are located at South Point and 'ōpae can be found at Palahemo. Partnership opportunities with TNC and USFWS.
- Would like to see showers near the barracks. It should be a fishing village area.



- A pavilion for camping that is open to beneficiaries. Beneficiaries should apply for a camping permit.
- Place a sign near Uncle Tommy's house.
- There is a lot of money to be made from shuttling tourists, but it needs to be controlled first. **Money made from that service should also be given back to resource management of the land.**
- Consider improving the road in sections. One area to consider is from the barracks to Kaulana.
- Need a gate by Bishop Estate and DHHL land by Ka'alu'alu.

Community members were asked "What types of management activities would be important at South Point?" The following responses were written on the post-it notes:

- Designated trail path for people to walk
- Shut um down, no need put gate.
- Different languages for signs for tourists; or put different language on pamphlet
- On-site manager for the area; community members may want to volunteer such as lifeguards and nurses on site.
- Dig a big trench to stop vehicular access
- Signage to give respect for place and safety
- Restrooms! Yes!
- Close 1 day a week to let resources rest.
- Trash receptacles- strategic places.
- Water safety: lifeguard; County fund
- "House rules"-main one!-need now: speed limit, pick up 'opala, respect homesteaders
- Gate at top of Ka Lae right by Uncle Tommy's lot
- Having safety devices (rope/floatation) situated along coastline from cliffs to Kaulana Bay.
- Giving permission for fire rescue to store a jet ski on homestead land.
- Drinking water access for sanitation.
- Use microorganisms for lua.
- Fund a position such as a "range" that is not DOCARE, but specific to South Point. Have them monitor the area to help people follow rules/laws.
- Guided horseback/donkey riding from Kaulana to Green Sand Beach
- Volunteer at the shack. If you love what you doing, do it for free. Try it one year then see how it works.
- Concession licenses: percentage goes to resource management. Needs to be Hawaiian organization.

## Infrastructure at South Point



- Trash bins: Put in trash bins near the fishing hoist and Kaulana Bay.
- Lua: Lua should be places near the hoist, Kaulana Bay, barracks, Mahana Bay, and half way from Kaulana to Mahana Bay. (Note: Maintenance truck must be able to access the lua; Currently maintenance trucks would not be able to access the lua near Kaulana and Mahana Bay.)
- Parking: Parking areas should be by the barracks (as it is now) and near the fishing hoist (on the mauka side of the road).
- Security shack/gate: Majority of the community members suggested placing the security shack near the fork on South Point Road. One person suggested placing the security shack at the start of DHHL's property near Uncle Tommy's house.
- Shower facilities
- Portable lua (maintenance truck must be able to access them to maintain lua)
- Shut the road first. Then, pave road in sections. There is a lot of money to be made at South Point.
- Water
- Trash bins
- Road for boat ramp

## NATIVE HAWAIIAN CULTURE, KNOWLEDGE, AND TRADITIONAL PRACTICES

### Comments on the Proposed Interpretive Walking Trail



- Why is Palahemo and Pu'u Ali'i on the map? Why would you put that out for everyone to see? The tourists are only interested in seeing 2 things: The fishing hoist and the Green Sands Beach (Mahana). Why would you put these [sacred] cultural places on a map—that will only make them interested in seeing it.
- Why isn't Mahana Bay on the map? Need to focus on where the tourists want to go—facilitate them getting there safely, without destroying our resource and without them getting hurt.
- Route C doesn't make any sense because there's nothing to see once you leave Palahemo. It's just a long, hot, uphill walk.
- Route A opens up a whole new area—please do not consider Route A. We don't need a whole new area opened up for cars, 4-wheelers to come in.
- Route B makes the most sense. When they get to Palahemo, the people who are physically fit and want the exercise can go to the Barracks through Route C; the people who are not physically fit can continue on Route B.

### Camping at the Barracks

- Camping at Barracks is OK as long as there are guidelines. It should be only for summer time—so the kids can be a part of it. It should be for all Hawaiians. We want to have a say in it. The buildings are all there. There's a number of people that go down there—a lot of arguments, family against family.
- Guidelines for Camping at the Barracks:

- Noise limit
- Contain your rubbish
- Haul your rubbish out or give someone a job and have them do it.
- Kids need to be contained in barracks
- Animals need to be controlled (they mess all over the place)
- This is where water comes in
- Bring trash bags for rubbish
- Clean the area before you leave or you will be charged for the labor and time it takes for someone else to clean up your mess.
- There are many strange plants growing down there that should be inspected so we know what they are; so they are not invasive/detrimental to area.
- Plants such as 'Uhaloa are found near the Barracks.

### **Kaulana Bay for Fishermen**

- Kaulana Bay should be returned back to the fishermen. We have agriculture, farming, ranching, but nothing on the ocean. We need to take care of the ocean resources because this is how we feed our families.
- We got \$1.3M from Akaka to improve boat ramp, but people complained and went against the improvements, so we got nothing. Kaulana Bay improvements were supposed to improve the road too. The plan was to construct a break water in alignment with the [lighthouse?]. There would be a loading dock on the breakwater so people could launch their boats safely. When you get close to the shoreline, it gets really dangerous. The next boat ramp is in Miloli'i and Punalu'u, but they are private ramps. The water comes in perpendicular? Crosses the ramp. There's a drop that is 30-feet down. These are private ramps. Kaulana is a State ramp. In the Kaulana Boat Ramp EIS, it identifies where there is fresh underwater. We had to prove that Kaulana Boat Ramp would benefit Native Hawaiians. Need to repair the road to Kaulana and need signage.

### **Mahana Bay—Where the tourists all want to go**

- There is one family that takes tourists from the Barracks area to Mahana Bay. On the average, they have 10 trucks that make at least ten (10) trips to Mahana per day. They charge about \$15.00 to \$20.00 one way; \$30.00 to \$40.00 roundtrip. The families depend on this income to feed their family.
- Lots of people getting hurt.
- They need to take care of the place.
- Put in a toilet.
- There's no water there and tourists often pass out, dehydrated. When tourists go in, we kind of time them and wait for them to come back. If they're not back within a certain time, we go in.
- The road is getting worse. Lots of jeep rentals—they all go in on their own. They need to be monitored. We need to control access and have set roads. There are 5 different roads and now we're down to 1 road.



- Someone should get liability insurance.
- Need to fill holes/repair existing road to Mahana.
- Need signage.
- Access permit—so we know how long they're staying there, when they will be coming out.
- There should be manned informational booth/shack—if there are kupuna in the group who don't want to hike down, they can hang out around the informational shack, talk story with our local kupuna. It's not safe for all hikers. It's really hot and they don't think to bring water with them. A manned informational booth (not just an interpretive display/map) will give them information so they know what to expect.
- Maybe have limited shuttle service for kupuna—with golf carts.
- Need to let the land heal; prohibit cars going all over the place. Land needs to heal.
- Check the people, make sure they are alright to handle the hike.

### **Fishing Hoist**

- People jump from the hoist and dive in. They don't realize how high it is; they don't realize how dangerous it is.
- Remove the hoist—there's no need for it anymore. Before there was 6 to 7 hoists that would service 15 to 18 boats. People would use the traditional mooring holes. But there's too much wind.
- People pole fish over the cliff. They use big trash bags as a sail to take their line out. But this is not good because the wind breaks the trash bag off and it goes in the ocean. DLNR was supposed to stop it.

### **KS Lands**

- Should be fenced off. They should be responsible for their area.

### **Additional Comments**

- A traditional cultural practice is Makahiki.
- William Viernes knows the iwi.
- In the cave, Lua o Makalei, they found fishhooks.
- People used to dance hula on the platform [location?]
- John Kalua'u is a lessee. I support him to take care of the land.
- Sean Naleimaile has done archaeological work.
- Violet Hausen has done archaeological studies for the Bishop Museum
- All burials are good above \_\_\_\_\_?, but the lava covered it up.
- The Heiau, Palahemo and Pu'u Ali'i should be kapu to tourists; it should be for cultural practitioners.

**In-depth Interviews (2 respondents)**

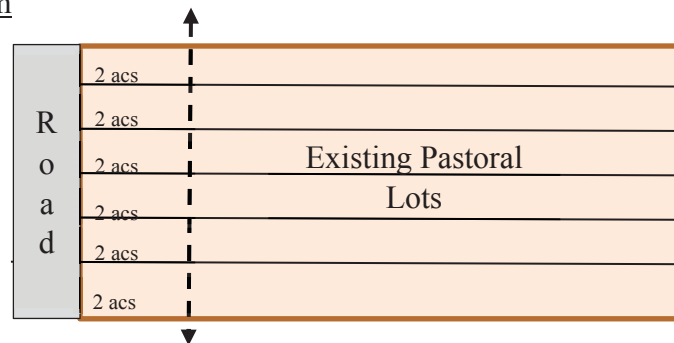
[Staff Note: We were able to engage in a deeper discussion with two people. The discussions naturally covered more ground, beyond the scope of the speak-out materials. The notes below capture highlights of these talk story sessions.]

**Guy who knew about water?? First guy that spent time at the booth**

- Water line from Ha‘ao Springs to the Water Tank has asbestos in it and poses a health problem. County water comes from Ha‘ao Springs to the chlorination sites. There’s an 8-inch pipe and 2 storage tanks. Nā‘ālehu, Honu‘apo, and South Point are chlorination sites(?). The only way the pipe can be changed is through the County.

There’s a moratorium on any development along the water line because there’s too many people on the line. The area between Oceanview and the Kamehameha land is Pu‘u‘eo which is supposed to have 52 [Ag?] lots. Lift the moratorium and put people on the 52 lots, but relocate them to the pastoral land area. The pastoral lots are long and narrow. Each lot is right on the road. Cut out 2 acres from each lot for agricultural uses (see conceptual diagram). Either exchange the pastoral lots for the ag lots or carve out some of the pastoral area for agricultural lots because it has more soil. The area that is planned for the 52 lots is rocky land with a lot of Christmas berry. It’s not good land for agriculture, but could be used for pastoral; the pastoral lots would be better for agriculture. It carves out 2 acres from each Pastoral Lot along the road for the 52 Ag Lots.

**Conceptual Diagram**



- There would be 52 lots, 2 acres each. Lessees would be required to build a house. DHHL provides a “rural road” and water. [Not sure how Pastoral lessees would access their lots if the 52 lots are along the road. Not sure whether this would work for 52 lots.]

**18-year old Granddaughter of one of the leaders**

[Staff Note: This girl was really mature for her age. She had to move to the mainland with her parents, who didn’t want to live in Ka‘ū. She loves living in Ka‘ū so she moved back and lived with her grandfather. She will attend UH, Hilo and hopes to get a job that allows her to live in Ka‘ū. In addition to asking her the standard questions, we asked her specific questions related to “Next Gen” activities.]

- Comments on the Proposed Interpretive Walking Trail: Why is Palahemo and Pu‘u Ali‘i on the map? Why would you put that out for everyone to see? The tourists are only interested in seeing 2 things: The fishing hoist and the Green Sands Beach (Mahana). Why would you put these [sacred] cultural places on a map—that will only make them interested in seeing it.
- Everyone camps at Ka‘alu‘alu. It’s farther inland from the coast and there are shady trees. It’s also a surf spot. It’s between DHHL lands and KS lands.
- Some people my age like to go mud-bogging with quads after a big rain. Most of the dirt roads have gates and locks so this is the only place we can go. We take the long road by the pasture, between KS and DHHL lands.
- There are restrictions around Pinao Bay. [Where’s Pinao Bay?] No one knows about Pinao Bay—it’s what we call it. It’s the flat area [mauka of Pu‘u Ali‘i?]. The mud-bogging there is too much. They cause a ruckus—they have the toys to do it. This place is where we take our kids because there’s a reef that makes a protected area where it’s safe for the kids. But the mud-boggers come in and then the dust comes in. Then you have conflicts over the dust—and this conflict escalates, then you have people who don’t like each other.
- If you want to stop the 4-wheeling, you need to find a place where people can go 4-wheeling, where they can go with their quads.
- Regarding traditional, cultural practices, I don’t see too many practitioners, but I see that there are people who are trying to bring it back—certain families.
- I love living in Ka‘ū. My best time as a kid was riding a quad with my grandfather. He would drive along the fenceline (to check the fenceline), then we’d go swimming.
- I have lived in other places outside of Hawai‘i which is why I appreciate this place so much now. I want to live here. It’s not too crazy; it’s simple living.

Adrienne Kekoa Davis  
Ross K. Esperon Sr.  
Napualani Young (Office of Rep. Creagan)  
Gary Davis  
Blossoon F. DeSilva  
Jamie M. Kawauchi  
Daryl Kaluau  
Corinna Kuahiwinui  
Naviel K. Kaawa  
Stephanie Tabbada  
Dennis Santiago







## COMMUNITY MEETING NOTES

### **SOUTH POINT RESOURCES MANAGEMENT PLAN**

August 16, 2016

6:30 p.m. to 8:30 p.m.

Nā'ālehu Elementary and Middle School Cafeteria

**Attendance:** Seventy-nine participants signed in at the meeting of whom 30 identified themselves as DHHL beneficiaries. Please refer to the end of the meeting notes for a list of attendees. Several participants did not sign in.

**DHHL Staff:** Kahana Albinio, Andrew Choy, Louis Hao, Kaleo Manuel

**Consultant:** Gabrielle Sham (Townscape, Inc.)

#### **Purpose of this meeting:**

The purpose of the meeting was to gather input and feedback on the Draft South Point Resources Management Plan.

The meeting began at 6:30 p.m. with Auntie Leolani Hao providing the opening prayer. Then, Mr. Andrew Choy welcomed the participants and thanked them for attending the meeting. He introduced the DHHL staff members and consultant. Ms. Gabrielle Sham presented a slideshow that provided an overview of the draft management plan.

Questions/comments from meeting participants on the draft management plan presentation:

#### Access

- Like Volcano National Park Service, families who access the area for food are given a pass so no need to pay. What IDs are you going to accept as "local resident"?
- If you close access/gate from 6 a.m. to 6 p.m., what happens to local families who fish at night? Need to feed families. Need to access for night fishing.
- Closing at night will affect camping and fishing.
- Think of alternative plan for blocking the access at night.
- 90% of fishermen go fishing during the day/night based on weather.
- Generation to generation fishing, camping down there. What about that?
- Illegal to block off access to boat ramp.
- Can't limit fishermen to a certain time; fishermen use the boat depending on the tide.
- Is the plan going to close down the boat ramp? There are fishermen that need to access boat ramp.
- What are your plans to control access from Ka'ala'alu? Without managing that access, this plan is not going to work.

- Allow special permit for fishermen. Vandalism occurs. Need to lock gate at certain times for security.
- With a special permit...I working with weather. How does permit work? Kūpuna need access for health and well-being. How long will it take to get a permit? If it takes too long, it prevents people from fishing.
- If the gate is locked at night, what about for emergency access? Is there a landing area for helicopters?
- Fishermen- want to park as close as possible. Provide “kupuna parking.” Now I gotta carry my gear down. Inconvenient.
- We are here to protect this area- so keiki can get back there.
- On mainland federal land, free access with Indian card. Remember people that live here.
- Would the gate limit access to all? Especially shoreline.
- Get people born and raised here. Get them a “card” for no charge/access.
- There are multiple accesses at South Point for different purposes. Need to assess impacts of this plan to these purposes.

#### Security/Enforcement

- What is the fee amount?
- Should have 24-hour security; revenue from fee should provide 24-hour security.
- What are the credentials for security? Why are we going to have someone not from Ka‘ū to enforce and secure? Contract local company for security.
- Is it possible for 24-hour security to educate and inform? Educate new comers and locals from other places don’t respect place/area.
- Security can help with education.
- Have 24-hour security...it limits “freedom” to access.
- We need security down there. Stop vandalism, tires slashed.
- We have Association. They can volunteer time to enforce. Use community to enforce. Take care as ‘ohana, work together and monitor.
- What would be the job of security? Would they only scold them?
- Security should not give special privileges. Got to be reputable.
- Change security to 24/7.
- Need security for liability.

#### Signage/Sanitary Amenities

- The plan recommends putting in bathrooms at the fish hoist and barracks, but toilets should be put in by boat ramp and Green Sand Beach too.
- ATVs running rampant. Please take “Kapu” off signs. No one knows what that means except for Hawaiians.
- People need permission from DHHL to put signs. No one cannot just put up signs. Who gave you permission to put up signs [to another participant]?

#### Economic Opportunities

- The plan says that the service road to be used exclusively by one entity, but more groups of people should be able to access the road.
- Does the shuttling have to be bid upon? Have you received bids?
- I don't have enough money to bid. Let community decide.
- Give local people here a chance. We know the roads and know where to protect.
- Locals always lose. We cannot beat people from outside. Give preference to Ka'ū.
- I see investments and revenue made. What comes back to Ka'ū? Don't use Ka'ū people. What amount of money goes back to Ka'ū people?
- Clearly state in the plan that money generated will be spent on the Ka'ū people.
- In North America, there are legislature measures that require hiring a percentage of locals/minority.
- If procurement processes could specify items such as using "locally sourced" materials, what else "can" procurement do? Can we ensure that money stays here?
- What is the specifics of the training program?
- Is there access to grants for training?
- If I have to go college to learn business, takes too long. I miss out on opportunities.
- This is a National Historic Landmark. Too much emphasis on economics. He ali'i ka 'āina, he kauwā ke kanaka.
- We want all revenues so that it sustains Kalae. Give 2 to 5% to State.
- How do you prioritize Ka'ū issues? There are many issues. Would the resources generated be used for Ka'ū like water?
- I don't want homesteaders to play politics. There are many things that need funding Statewide. We need to make sure and guarantee that a percentage goes to Ka'ū. Plan can provide resources. Stipulate in writing we want a percentage of money generated here at South Point.
- Keep funding in Ka'ū.
- If homesteading is priority, why use outsiders for vending? Use beneficiaries.
- We don't want a percentage of revenue. We want all the revenue. Pay for resource management and homestead. This could fund it all.

#### Education

- We need to educate people when they go there. Presence. If no presence, this isn't going to work.
- Put a Welcome Center- educate tourists.
- Make Visitor Center a higher priority. It would solve many existing issues such as traffic, toilet usage, and educating visitors.
- Talk about education....South Point sits in Kamā'oa ahupua'a. This plan should be called Kamā'oa, not just South Point.

#### General

- Consult with DLNR and Coast Guard since they own some of the land near the fish hoist.
- A lot of concerns is stop the bleeding.



- Regarding the HHC meeting in Hilo, a participant suggested checking with the County (Ron Whitmore) to provide a satellite meeting in Ka‘ū for folks who cannot make it to Hilo.
- How many of the 25 awarded lots have lessees living on them? How many of them are at tonight’s meeting?
- Make sure we never repeat the mo‘olelo about the greedy chief Hala‘ea.
- Make sure SHPD is on board with the plan.
- Can you narrow down amount of paths down at South Point?
- Talk with County about road improvements on South Point Road.
- Not appropriate to plan without looking at other plans, such as the Ka‘ū Community Development Plan.
- Is the trail planned consistent with Na Ala Hele Trail?
- Can you have a cap on number of visitors?
- When Green Sands fall down, will you still care about the land?
- Air tours: FAA routing air tours; huge impact on everyone.
- Rock wall would be more permanent solution. Build those, old way to do it.
- Was there specific catalyst that started this conversation?
- I would prefer no management at all- only leads to pilikia.
- DHHL need to take care of problem, control ATV.
- Do what is right for the community.
- Document archaeological sites.
- We got to look into what is in the best interest for the ‘āina, where we gather food, as a community we put that in there, I support the plan. 1<sup>st</sup> step to manage area, not in it as individuals making money; our children can learn from this.

The meeting was adjourned around 8:30 p.m.

Meeting Attendees (from sign-in sheet)

1. Joseph Akiu Sr.
2. Marian Alcosiba
3. R. Alcosiba
4. Michael Alexander
5. Lesly Awong\*
6. Cynthia Baji\*
7. Christine Beck
8. Bruce Boyd
9. Chris Brown
10. Richard Creagan
11. Shalan Crysdale
12. Ian Chun
13. Kama Dancil
14. Melkinley (sp?) K. Davis Jr.\*
15. Elsa K. Dedman
16. Kalani DeGito\*
17. Keoni Fox\*
18. Carol Flores
19. Jashia Freitas-Moses
20. Ben Gauereen (sp?)
21. Claudine Gomez\*
22. Colleen Gundaker\*
23. Pernell Hanoa\*
24. Sophia Hanoa
25. Kathy Hashimoto
26. Dave Kaawa\*
27. Garry Kaawa\*
28. Nohealani Kaawa
29. Tommy Kaawa
30. Christine Kaehuaea
31. Bea Kailiawa
32. Doley Kailiawa\*
33. Darryl K. Kaluau
34. Jackie Kaluau\*
35. Clyde Kaneshiro
36. Dean Kaniho\*
37. Tissy Kaniho
38. Yvonne Ke
39. Charmaine Keanu\*
40. Maile Keanu
41. Adrienne Kekoa Davis\*
42. Jeffrey Kekoa\*
43. William Kekoa Jr.\*
44. Corinna Kuahiwinui
45. [illegible] Kuahiwinui\*
46. David Kuahiwinui

47. Hazel Kuahiwinui\*
48. Eddie Kuahiwinui\*
49. Paul Kuahiwinui
50. Rodney Kuahiwinui Sr.
51. Rodney Kuahiwinui Jr.
52. Stella Kuahiwinui\*
53. Susan Kuahiwinui Jr.
54. Saydi Llanes
55. Joni Mae Makuakane-Jarrell\*
56. Nona Makuakane
57. Paul Makuakane
58. Gilbert Medeiros Jr.\*
59. David Meru (sp?)\*
60. Officer B. Morishita
61. Ella M. McComber\*
62. Donald D. McComber\*
63. Sherraine Nihipali Sesson
64. Cindy Orlando
65. Noela Pritchard\*
66. Edward Rau
67. John R. Replogle
68. Guy Sesson
69. Jody St. Joseph
70. David Taylor
71. Keola Taylor
72. Noelle Taylor
73. Richard Taylor
74. Harlen P. Tayamen\*
75. Kim Vilorio\*
76. Darlyne P. Vierra
77. Walter Wong Yuen
78. Melvin Yokoyama
79. Bradley K. Young\*

\* Indicates participants who identified themselves as DHHL beneficiaries on the sign-in sheet

**Comments received after the August 16, 2016 community meeting are provided below.**

<b>Date</b>	<b>Comments</b>
8/9/2016	<p>Mahalo for your hard work in designing a plan for the restoration and protection of Ka Lae, the famous South Point of Ka'u.</p> <p>I am very impressed by the draft plan. I would like to make a suggestion which might not have been mentioned in the plan. I would like to suggest that the DHHL look into the possibility of extending water service to South Point, i.e., bringing water down to SP from the top of South Point Road by underground pipe. The Federal Government might be willing to finance this since it's a "shovel-ready" project that will benefit tens of thousands of people every year, including native Hawaiians.</p> <p>Having fresh water at South Point will allow for proper, sanitary toilets and for the creation of a small oasis visitor center at the old WWII barracks located near the boat ramp. Fresh water will allow the establishment of a Ka'u themed cafe serving locally grown coffee and quality Ka'u food products such as pastries, fresh fruit, and local organic honey. You could have outdoor seating in a tropical garden. Local musicians and hula dancers could provide entertainment. The creation of modern visitor facilities at South Point can only be made possible with a reliable supply of fresh water. These facilities will create dozens of jobs for Ka'u residents.</p> <p>I look forward to your reply.</p> <p>Best of luck in your work on the South Point Project.</p>
8/14/2016	<p>Thank you for your email. I understand that the South Point Project poses a lot of challenges. Thank you for your hard work.</p> <p>In my first email I forgot to mention that I didn't find anything about bicycle traffic in the draft plan. There will be many visitors who will want to ride mountain bikes to the Green Sand Beach. Will there be a designated lane for them on either the main road or the walking path? If they are forced to travel on the road, they will have a bad experience because of all the dust created by vehicular traffic and having to share a narrow road with large vehicles. I hope the material used for the road will keep dust at a minimum. Right now the red dust (powder) is horrible; in some places it's 6" deep. I just hiked to the Green Sand Beach in June and am well aware of the condition of the roads. I also noticed that some cement barriers at the start of the road had been pushed to the side, or maybe were never placed in a position to block vehicular traffic.</p> <p>Thanks for considering my suggestions.</p>



	Mahalo & aloha.
8/16/2016	Remember this: you can please some of the people some of the time, you cannot please all of the people all if the time!
8/16/2016	<p>I walked out of your meeting tonight very upset! I thought this meeting was suppose to be about protecting an restoring the land. But what I hear is all about making money. Before you can put an info structure up you need to protect and restore the land if the land is not restored you will have nothing to see. I live in Ka'u all my life born an raised! An I'm worried about the fishing grounds I was raised on from fishing to picking opihi an crabing to throwing net to even diving. This is something I want my kids to learn on! We travel from south point to Kaalualu how do expect my kids an I to carry all our fishing supplies coolers an food! All the way in an all the way back out! My second concern your trying to put a time frame on the boat ramp, I will give u an example what's going to happen if the gate open from 6 to 6 but one morning high tide is at 5 an by the time 6 comes the tide is low! South point is unpredictable how do you expect me to launch my boat on low tide the boat ramp down there is not like every other boat ramp you can only launch an come in with what the tide is. Only experience fisher men's from Ka'u know how to get in an out on that ramp safely! In order for my full opinion I would like to you to call me it would be better that I verbally talk to you rather then me email you! Please consider all I say an please give me a call! I do have 262 acres lease land from DHHL down south point that goes to the waters edge changes will happen with or without my opinion but I feel I could help make change for the better.</p> <p>Thank you!</p>
8/16/2016	<p>You folks did a great job at the Kau Meeting. You had new comers that haven't gone or participated in any of the meetings through out the year. There's always the ones that don't really care, just leave it open and never mind preserving it. The gal that spoke up and said she didn't want presence at South Point was a family member of the shuttlers that occupy the point area.</p> <p>Just a couple things, don't lose sight of the real issue, cleaning and preserving South Point. My boy graduated from Kamhameha at Kea'au, and his heart is in keeping the Aina pure.</p> <p>Preserving that area and cleaning is the most important. The vending will come in later. We believe any vendor needs liability insurance and valid driver licenses and vehicle insurance, those people at South Point do it carry any such insurances. They bring food with out operating in a clean kitchen! Watch out hep A!</p> <p>We will be putting a bid for concessions at South Point, when the time is right. We need to know what you folks expect from us. We need you folks to manage that land , look where self management has gotten our Aina.</p> <p>Thanking you all, your team did a great job!</p> <p>Thank you.</p>
8/17/2016	Aloha to you all, I wanted very much to say this last night but did

not want to color the plan. Thank you very much for all your effort and hard work! It is a good plan and it addresses all the major issues that were brought to your attention as to why we needed help to protect our sacred Kalae. There are of course some things that need a little tweaking or minor additions or subtractions but nothing that can not be addressed as the need arises! It is a well thought out plan that allows for additions or enhancements to it as time moves forward. You all reacted to our concerns in a very timely manner; you saw the gravity of human impact on the land, cultural sites, ecosystem and the natural resources of the area for this, again, I thank from the bottom of my heart.

Back to work:

1)The Elderly getting to fishing spots: provide hand carts for their okana. two wheeled garden cart?

2)Emergency evacuation? put in the one way spikes on exist road. if you try enter you get flat tires.

3)I would definitely look in to the Air Tours curtailment. When at Kalae people want and need to experience the aina in all it's glory and vastness not be listening to or being watched by air traffic. Man needs Nature to be healthy!

4) The camping issue is addressed by one way spikes on road, out but not in. I feel the camping issue can be addressed as the plan moves along and as needs arise. It would at some point be an addition to the plan. A rough plan should work for now.

5) Parking Fee: you called it; Entrance fee is what it is. Everyone must pay something. Local Ka`u residents would have a \$20.00 yearly immediate family pass. DHHL beneficiaries would receive a \$15.00 dollar check once a year to purchase their Kalae Beneficiary Yearly Pass. Use or no use their individual call. Everyone else pays \$10.00 per vehicle entry. It is going to take funds to protect and maintain this Sacred Wahipana. Local fishermen these are the commercial people would be allowed the \$25.00 yearly fee. People are funny ; if you give them a puppy they won't take care of as they would if you charged them even \$10.00 for it. Same with a pocket knife; you always make the person you are gifting it to give you some money even if it's only .05 cents. You say it's for luck but it is to draw attention to the fact that you just received something special. Same with entrance fees!!!

6) Funds; I do believe Kalae is capable of generating substantial revenue. Capitol will be required to get this off the ground. If it can be donated that would be lovely. You may need to find a philanthropist who could put down the capitol and be repaid without interest over a period of time. Possibly a conservation organization. Or could DHHL just fund it and be repaid and that be a special fund for this type of project else where on DHHL lands in the State. I feel that once the establishing of the Preserve is done the huge the at least 90% of the funds should go back into the Kamaoa DHHL property development and distribution of lands to

	<p>beneficiaries. I believe DHHL has an incredible opportunity to do something so spectacular for the Aina, the</p> <p>beneficiaries, the people of the State of Hawaii and Visitors that at this moment is incomprehensible to most. That young man last night talking about the shuttles and by the time he is educated all the spots will be gone. That's what he knows of Kalae; shuttles and roads everywhere and I need to get mine. Where as my memory of Kalae is one road we stayed on because it was not our land; it was very wild and covered in vegetation depending on weather and season it was green or brown. I believe for the sake of the Aina, our Kahuna want to see the Aina become what it once was and this is totally doable with Aloha Aina and time.</p> <p>Again thank you so much for this opportunity to be part of this great undertaking.</p>
8/17/2016	<p>My Name is [REDACTED] my great grandfather was [REDACTED] and pres of legislature and minister of Finance my Family, Kekoa &amp; ka'upu are Hawaiian</p> <p>it seems between outside culture and our own state county gov there is an increasing limitation of Hawaiians to Hawaiian Lands</p> <p>The idea of enclosing South Point and Charging for entrance and limiting access flies in the face of Native Hawaiian Gathering Rights</p> <p>the Aina doesn't need more government fences and fee's</p> <p>aloha and mahalo</p>
8/17/2016	<p>I glanced on the South Point plans &amp; was wondering is there any Hawaiian Cultural right to access with-out paying fees? Is it DHHL obligation to help out its Hawaiian citizens &amp; community? I didn't go to the DHHL meeting in Naalehu but those who went cleared up some of my questions. The access is from 6AM to 6PM theirs also good night fishing around the hoist area, will DHHL allow night fishing in the future following the Mahina? I did see in the plan the access road DHHL plan to build hopefully it's close to fishing coastline areas but the hiking path looks closer to shoreline. I see the plan allows for camping but not near the coast line to fish, maybe in the future designate an area on shoreline to camp &amp; fish. I notice the plan is more of a tourist sight just like Volcano National park even they allow access at night, I am for the plan just oppose the charges &amp; time of access. Maybe in the plan DHHL can add an addendums for local access outside the operating hours for Hawaiian Cultural right to access case by case basis &amp; keep a tracking system who goes in &amp; out.</p>

	DHHL can put a time limit for night fishing at least locals can access the fishing areas.
8/18/2016	I appreciate the timely response after looking more into the plan cost wasn't much of a concern. Hopefully night access can be resolved. I know some that went to the meeting was concerned about \$ & invest in the Community. I hope in the future when revenues are increased DHHL can support the Local community organizations. Overall I am all for this plan & preserving Hawaiian Historic Site.
8/26/2016	<p>Thanks for all the work that you have done.</p> <p>I like the toll booth, the parking, the gate with security personnel, regulating vehicle traffic, closing of the gate after hours will help.</p> <p>Installing toilets is a big plus for health concerns.</p> <p>I do not think that shuttling tourist should be one of the the main focus on this management plan.</p> <p>Kaleo mentioned the money from the shuttle will go in to a general fund, so what good does that do for Ka'u.</p> <p>The dept should allow only eco tours instead of shuttle, everybody walks in and out.</p> <p>There will be at least 90 % less impact on our fragile eco system.</p> <p>Can a non profit do the eco tours and give 100% of revenue to benefit Ka'u?</p> <p>Protecting and preserving our natural and cultural resources were the most important concerns of our community in the two meetings I held last year.</p> <p>I would prefer that the dept focus on how, or what is the first steps in working with SHPD to the surveying, locating and then protection of historical, archaeological, and cultural sites. Then focus on on the preservation of these sites for future generations.</p> <p>The dept. needs to develop policies for Kama oa so they can be enforced by the security personnel, Ka'u police, sheriff dept. or DLNR enforcement.</p> <p>The dept needs to be in control by setting these rules/policies and be consistent in the enforcement.</p> <p>At our association meeting this past Wednesday August 24 a member asked me to do a letter to the Dept and commissioners to kick out the illegal shuttle people. They made their family members park at the barracks.</p> <p>I hear a lot of complaints but about them blocking the road to kaulana while they stop tourist traffic.</p>



	<p>A member mentions their house being stoned at night after the memorial day blocking of the road to Mahana.</p> <p>Many times you guys mention about helping Beneficiaries start their own businesses. Only two of the shuttle guys are beneficiaries the rest are not by blood quantum.</p> <p>Beneficiaries: 50% Hawaiian, Hawaiian On The Waitlist, A Lessee</p> <p>There may be other true Beneficiaries from Ka'u who may want to do a tour group.</p> <p>I would like Kaleo's or your input about our association doing a letter to the Dept and Commissioners to kick out the illegal shuttle operation?</p> <p>If Ka'u Hawaiian Home Lands Association needs to be the bad guys in this situation then we the members may have to deal with the repercussion.</p>
9/1/2016	<p>When making plans for DHHL the Dept. should not make plans for DLNR trust lands. They should focus on maintaining lands under DHHL so that beneficiaries will know which lands they are beneficiaries of.</p> <p>The land above millineum high tide of 50 ft. is or should be managed by DLNR as well as the boat ramp and the fishing hoist. The cost to manage these lands will take away from DHHL funds. DLNR should manage these lands or funding from DLNR should be given to DHHL to manage these lands.</p> <p>The parking area is good. This will keep vehicles only in a certain area. The road to Mahana should not be used due to erosion from vehicles on lands that DHHL manages for beneficiaries. Gates and security staff will help alleviate the erosion problem.</p> <p>A trail should be put in place or planned with the Ala Kahakai Trail that the Dept. of Interior is planning to have from Upolu Pt. to HVNP. This will help to cut the cost for DHHL.</p> <p>The Hawaiian Home Lands Commissioners should be provided with more information before accepting this plan that DHHL is proposing. There are many loose ends that need to be answered.</p> <p>When will DHHL start fulfilling their responsibility to the beneficiaries by putting them on the land.</p> <p>"He ali'i ka 'aina; he kauwa ke kanaka" The land is a chief, man is it's servant.</p>
9/1/2016	<p>See attached comments (4 pages) from National Park Service, Hawai'i Volcanoes National Park.</p>
9/2/2016	<p>I would like to submit the following comments on the subject plan:</p> <ol style="list-style-type: none"> <li>1. As stipulated in multiple statutes and case law DHHL has the primary responsibility for stewardship and security of most of the lands in the management area. Deficiencies in management were described and recommendations for improvements were made in a previous referenced report</li> </ol>

	<p>released approximately thirty years ago, yet few if any of the recommendations have been implemented. During this time rapidly increasing unregulated public use of these lands has occurred and DHHL has failed to adapt and meet its basic trust responsibilities. This has resulted in severe degradation of resources, poor sanitation, increasing health and safety hazards and exposures the agency and State of Hawaii to significant liabilities. Therefore, critical elements of the the plan must include an assessment of the factors causing this chronic management lapse and corrective measures to improve management, oversight and accountability.</p> <p>2. The plan and its development process appears to lack any engagement with adjacent property owners or coordination with other agencies that have planning and management responsibilities. For example, there was no apparent communication with the County of Hawaii and no reference the recently completed Comprehensive Development Plan (CDP) for the District of Kau that addresses the South Point area. This is a major deficiency in the plan.</p> <p>3. It is unclear what the boundaries of the management plan are, and how they were set.</p> <p>4. Data presented on the status of natural resources, including but not limited to that for endangered species based on outdated and reports and probably inaccurate. For example, the critically endangered ohai plant, <i>Sesbania tomentosa</i>, described as present is now probably extinct in this area.</p> <p>5. A new comprehensive survey of fauna and flora should be conducted.</p> <p>6. Maximum priority should be assigned to identifying and protecting the remaining pockets of threatened and endangered species from off road vehicles and poaching. Species nearing extinction and cannot wait for action.</p> <p>7. The plan only proposes collection of sewage and solid wastes and hauling them off site for disposal. The plan should include waste avoidance and minimization, and consider alternate, more sustainable management methods such as composting toilets.</p> <p>8. It is probably unethical and unlawful for the state to set race-based contracting and procurement preferences for Native Hawaiians. However, the procurement system can and should establish criteria and contract specifications that would benefit local people and help to meet goals for improving sustainability and land stewardship. Examples could include preferences for locally sourced products and services; materials that are recyclable and/or have recycled material content, low emitting equipment and use of native plants in landscaping.</p>
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	<p>9. I agree that establishing control of the site and implementing measures to reduce off-road vehicle damage should be highest priorities. However, placing entry gates and eventually guards could have unintended consequences. Such personnel must have the skills, knowledge, equipment and authority to enforce applicable laws and regulations. Without this such a “security presence” may actually increase liabilities.</p> <p>10. At the present time given the total lack of DHHL staffing at South Point achieving the most of the goals of the Plan may be impossible. Until staffing can be hired and engaged DHHL should consider use of volunteers for many of the implementation activities, particularly educating visitors. Many local people are interested in preserving this area and would be willing to help.</p> <p>11. Contact should be made with tourism agencies to ensure that correct information about Green Sands Beach, it’s accessibility issues and preparations that visitors need to take is presented.</p> <p>12. The plan should include a map showing ownership of the site and surrounding parcels.</p> <p>Thank you for the opportunity to comment. Please contact me if you have questions.</p>
9/2/2016	See attached comments (8 pages) dated September 2, 2016.







HAWAIIAN HOME LANDS TRUST  
DEPARTMENT OF HAWAIIAN HOME LANDS

# **APPENDIX B:**

## **PRE-CONSULTATION LETTER & AGENCY RESPONSES**

Aloha ,

At the request of the State of Hawai'i's Department of Hawaiian Homelands (DHHL), Townscape, Inc. (TSI) is preparing an Environmental Assessment (EA) in accordance with Hawaii Revised Statutes (HRS) Chapter 343 for the implementation of the 2016 DHHL South Point Resources Management Plan (RMP), located in the district of Ka'ū, on the Island of Hawai'i. Future implementation of the RMP is a use of state lands and therefore triggers HRS Chapter 343. DHHL is proposing to implement the RMP in order to protect and restore natural and cultural resources on DHHL lands at South Point. The project area is located in the ahupua'a of Kama'oa-Pu'ueo, Tax Map Key (TMK) parcel number: (3)-9-3-001:003 (See Map).

The RMP was developed between June 2015 and October 2016 based on information gathered from consultations with community members from Ka'ū. Consultations consisted of two community meetings and a series of talk-story sessions. Through the outreach process, four major goals were identified for South Point which included the following: 1) Restore, preserve, and protect cultural and natural resources; 2) Perpetuate native Hawaiian culture, values, history and language for future generations; 3) Provide a safe, clean, and friendly environment; and 4) Generate revenue in order to sustainably fund cultural and natural resources activities and provide economic opportunities for DHHL beneficiaries and their families. The RMP is available on-line at: [https://dhhl.hawaii.gov/wp-content/uploads/2017/06/DHHL-South-Point-Final-Plan\\_101916\\_to-DHHL\\_low-res.pdf](https://dhhl.hawaii.gov/wp-content/uploads/2017/06/DHHL-South-Point-Final-Plan_101916_to-DHHL_low-res.pdf).

Unregulated access to DHHL lands at South Point has compromised the integrity of its heritage sites and of coastal ecosystems. Specifically, heavy use of recreational trucks, ATVs, and motor bikes has not only destroyed sacred sites but has resulted in widespread soil and sand erosion. The unregulated use of off-road vehicles, coupled with the site's exposure to the prevailing winds, has left the natural and cultural resources of South Point in critical condition. To address these threats and accomplish the RMP goals, the plan proposes several priority projects for South Point which are clustered in 4 main areas and include:

- A: The installation of an entrance gate at the intersection of Kalae Rd. and South Point Rd, and a security booth 0.75 miles north of the intersection along South Point Rd;
- B: Two designated parking areas at the "Barracks" near the Kaulana Boat Ramp and at Ka Lae;
- C: A pedestrian path and an emergency access road extending from the "Barracks" to Mahana (Green Sands) Bay;
- D: A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites.

We are requesting early comments on any issues, policies, or regulations that your agency or organization would like to see addressed in the Draft Environmental Assessment related to the proposed actions. Please submit any comments by July 23th, 2017. If no response is received by this date, we will assume that your entity has no comments during this early comment period, but please be assured that you may also submit comments on the project when the Draft EA is published. Should you have any questions, please contact the undersigned at (808) 227-8855, or via email at [faanunu@townscapeinc.com](mailto:faanunu@townscapeinc.com).

Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.

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DAVID Y. IGE,  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER M.D.  
DIRECTOR OF HEALTH

**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
**WASTEWATER BRANCH**  
919 ALA MOANA BOULEVARD, SUITE 309  
HONOLULU, HI 96814

July 11, 2017

In reply, please refer to:  
File:

LUD - 3 9 3 001 003 Initial Cons EA  
South Point Res Mgmt-ID3470

Ms. Angela Fa'anunu, Ph.D.  
Townscape, Inc.  
Environmental and Community Planning  
900 Fort Street Mall Suite 1160  
Honolulu, Hawaii 96813

Dear Ms. Fa'anunu:

Subject: Initial Consultation for the preparation of an Environmental Assessment for the  
South Point Resource Management Plan, Kau, Hawaii Island  
TMK (3) 9-3-001: 003

Thank you for allowing us the opportunity to provide comments for the subject document.  
The subject property is located in the critical wastewater disposal area as determined by the  
Hawaii County Wastewater Advisory Committee.

Portable toilets are not allowed for permanent use for public facilities and parks. A permanent  
comfort station should be constructed with an individual wastewater system (IWS) that is  
approved by the Department of Health. The design and construction of an IWS shall comply  
with applicable provisions of our Hawaii Administrative Rules, Chapter 11-62, "Wastewater  
Systems."

Should you have any questions, please contact Mark Tomomitsu of our office at  
(808) 586-4294.

Sincerely,

A handwritten signature in black ink, appearing to read "Sina Pruder".

SINA PRUDER, P.E., CHIEF  
Wastewater Branch

LM:rs

c: Ms. Laura McIntyre, DOH-EPO, via email  
Ms. Amy Cook, DOH-WWB's Hilo Staff, via email  
Mr. Dane Hiromasa, DOH-WWB's Kona Staff, via email



October 5, 2017

Sina Pruder, P.E. Chief  
Wastewater Branch,  
Hawai'i State, Department of Health.  
P.O. Box 3378,  
Honolulu, HI 96801-3378

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Ms. Pruder,

We received your letter dated July 11, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island. Thank you for sharing your concerns to ensure that the public and their surroundings are protected from potential developments in Hawai'i with regards to wastewater management.

We would like to address some of the concerns that you raised which included the following:

- (1) **"The property is located in a critical wastewater disposal area as determined by the Hawai'i County Wastewater Advisory Committee."**
- (2) **"Portable toilets are not allowed for permanent use for public facilities and parks. A permanent comfort station should be constructed with an individual wastewater system (IWS) that is approved by the DOH. The design and construction of an IWS shall comply with applicable provisions of our HAR Chapter 11-62, "Wastewater Systems."**

We acknowledge that the project area is located in a critical wastewater disposal area, per the Hawai'i County Wastewater Advisory Committee. We would like to address Comment (2) above in three parts: First (1) to clarify the land tenure of the project area as it pertains to public use as indicated in the above comment, "for public facilities and parks"; second (2) to address the treatment of non-domestic wastewater as specified in the Hawaii Administrative Rules (HAR) Chapter 11-62 and; third (3) assessing potential negative impacts of the development of a comfort station in a culturally sensitive location.

- (1) The project area, which includes approximately 11,000 acres, more or less of Kama'oa-Pu'ueo, is under the jurisdiction of the Department of Hawaiian Homelands (DHHL). The Hawaii Organic Act 1900, stipulates that "Public Lands" includes all lands in the Territory of Hawai'i classed as "government or crown lands prior to August 15, 1895 or acquired by the government upon or subsequent to such date by purchase, exchange, escheat, or the exercise of the right of eminent domain, or in any other manner, with 5 exceptions. One of the five exceptions includes: (1) lands designated in section 203 of the Hawaiian Homes Commission Act, 1920, hereafter referred to as Act 1920. Section 203 (1), of Act 1920 states that "Certain public lands designated "available Lands" include (1) Kama'oa-Pu'ueo on the island of Hawai'i (all 11,000 acres, more or less). The principle purpose of Act 1920 is:

- (1) Establishing a permanent land base for the benefit and use of native Hawaiians (as defined by Act 1920), upon which they may live, farm, ranch, and otherwise engage in commercial or industrial or any other activities as authorized in this Act.

Thus, the designation of the project area as “Available Lands” differs from other “Public Lands” administered by state agencies for the State of Hawai‘i. As such, the use of project area lands is NOT intended for the general public of the State of Hawai‘i but for the benefit and use of native Hawaiians as defined by Act 1920 and the Hawai‘i State Constitution. The United States and the State of Hawai‘i have a fiduciary duty to faithfully administer the provisions of Act 1920 on behalf of the native Hawaiian beneficiaries of the Act. Therefore, the use of available lands, such as the project area, differs from the use of lands for public parks on state and county lands in that the facilities provided by the DHHL on these lands, are to address the needs of native Hawaiians, NOT those of the general public.

- (2) The RMP for South Point proposes the addition of and maintenance of porta-potty toilets on the project area at South Point. The RMP for South Point identifies three locations where porta-potty toilets might be situated on the Project area. Of these locations, two are within the State Conservation District, and one is in the Agriculture District:

1. Site 1- Near the hoist on the South-west corner of Ka Lae (Conservation District)
2. Site 2- Near the Barracks (Agriculture District)
3. Site 3- Near Mahana Bay (Conservation District)

HAR Chapter 11-62 administers wastewater systems in the State of Hawai‘i. Subchapters 2 and 3 of the law specifies the provisions for non-domestic wastewater. Under HAR Chapter 11-62-07-1 (Requirements for non-domestic wastewater), “Any building or facility which is located within the state agricultural land use district, country agricultural zoned districts or conservation districts may be exempt from the provisions of subchapters 2 and 3 for its non-domestic wastewater provided that the buildings or facilities are essential to the operation of an agricultural enterprise or consistent with the conservation district use intent. Therefore, the proposed porta-potty facilities fall under this category of exemption.

We would like to clarify that HAR Chapter 11-62 does NOT prohibit the use of porta-potty facilities for non-domestic wastewater.

- (3) As Ka Lae is the site of first settlement of the Hawaiian Islands by early Polynesians, there are numerous archaeological and cultural resources in the project area many of which are unknown and exist below the surface of the ground. The installation of a comfort station would require extensive sub-surface excavation. During the excavation, there is a high potential for disturbing sub-surface resources which may include the potential for inadvertent discover of iwi kupuna. On the other hand, portable toilets do not require any ground disturbance and would minimize potential impact to these cultural resources. Furthermore, waste products collected by the portables would be disposed of off-site away from sensitive resources and processed via a county waste water treatment plant. The utilization of portables would minimize impact to both the near shore water environment and to archaeological and cultural resources which conforms to Hawai‘i Revised Statute (HRS) Chapter 343.

Based on the provisions of the Hawai'i State Constitution, the Hawai'i Homes Commission Act 1920, the Hawaii Organic Act 1900, HAR Chapter 11-62, and HRS Chapter 343, the proposed porta-potty facilities in the RMP for South Point are consistent with and abide by these provisions.

Please let me know if you have any questions or concerns.

Mahalo Nui,

Angela Fa'anunu, PhD.

Townscape, Inc.



DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
File:

LUD-3 9 3 001 003 Cons EA  
South Point Res Mgmt-ID3702

November 2, 2017

Angela Fa'anunu, Ph.D.  
Townscape, Inc.  
Environmental and Community Planning  
900 Fort Street Mall, Suite 1160  
Honolulu, Hawaii 96813

Dear Dr. Fa'anunu:

Subject: Initial Consultation for the preparation of an Environmental Assessment for the  
South Point Resource Management Plan, Kau, Hawaii Island 96737  
TMK (3) 9-3-001: 003

The Department of Health (DOH) acknowledges receipt of your letter dated October 5, 2017. The proposed use of portable toilets at the subject project site will receive domestic wastewater from residents, visitors, and tourist to the proposed project site and therefore, shall not be exempted under Hawaii Administrative Rules (HAR), Section 11-62-7.1(c)(2) which is provided for facilities generating non-domestic wastewater that are located in certain agricultural and conservation districts. Section 11-62-03, HAR, defines domestic wastewater as waste and wastewater from humans or households operations that is of a type that is usually discharged to or otherwise enters a treatment works or any individual wastewater system. Wastewater discharged to a portable toilet is considered domestic wastewater and is subject to the provisions of Chapter 11-62, HAR, Subchapters 2 and 3.

Section 11-62-06(a), HAR states that all buildings and places of assembly generating wastewater shall be connected to a wastewater system. Furthermore, Section 11-62-06(c), HAR requires that all wastewater systems shall be designed, constructed, and maintained in accordance with HAR, Chapter 11-62. A portable toilet is not a wastewater system that complies with the provisions of Chapter 11-62, HAR, Subchapter 3 and therefore, may not be approved by DOH.

Furthermore, the provisions of Sections 11-62-01 and 11-62-02, HAR specifies that that the use and disposal of wastewater and wastewater sludge does not contaminate or pollute any valuable water resource, does not give rise to public nuisance, and does not become a hazard or potential hazard to the public health, safety, and welfare. The proposed use of portable toilets for the subject project is determined to generally not satisfy these objectives.

Dr. Angela Fa'anunu  
November 2, 2017  
Page 2

In closing, portable toilets will not be approved by the DOH for use at the subject project. Although you have cited challenges in using composting toilets for the subject project, you may want to reconsider other types of wastewater system that are available.

Please be informed that the proposed wastewater systems for the development may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices. In addition, all wastewater plans must conform to applicable provisions of the Chapter 11-62, HAR, "Wastewater Systems."

Should you have any questions, please contact Mr. Mark Tomomitsu of our office at (808) 586-4294.

Sincerely,



SINA PRUDER, P.E., CHIEF  
Wastewater Branch

LM/LIM

c: Ms. Laura McIntyre, DOH-EPO, via email  
Ms. Amy Cook, DOH-WWB's Hilo Staff, via email  
Mr. Dane Hiromasa, DOH-WWB's Kona Staff, via email



**TOWNSCAPE, INC.**

Environmental & Community Planning

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November 30, 2017

Sina Pruder, P.E. Chief  
Wastewater Branch,  
Hawai'i State, Department of Health.  
P.O. Box 3378,  
Honolulu, HI 96801-3378

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Ms. Pruder,

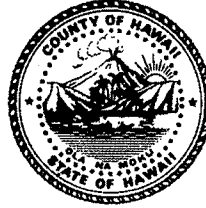
We received your letter dated November 2, 2017, indicating that portable toilets proposed for the Resources Management Plan for South Point, Ka'ū District, Hawai'i Island, will not be approved by the Department of Health. Furthermore, your letter recommended considering alternative wastewater systems for the site.

We have taken your comments and recommendations into consideration and are seeking alternative wastewater systems for South Point. We hope to consult with you soon to discuss more appropriate wastewater systems that satisfy the requirements of the DOH.

Sincerely,

Angela Fa'anunu, PhD.  
Townscape, Inc.

**Harry Kim**  
*Mayor*



**Wil Okabe**  
*Managing Director*

**Barbara J. Kossow**  
*Deputy Managing Director*

**County of Hawai'i**  
**Office of the Mayor**

25 Aupuni Street, Suite 2603 • Hilo, Hawai'i 96720 • (808) 961-8211 • Fax (808) 961-6553  
KONA: 74-5044 Ane Keohokalole Hwy., Bldg. C • Kailua-Kona, Hawai'i 96740  
(808) 323-4444 • Fax (808) 323-4440  
Email: [harry.kim@hawaiiicounty.gov](mailto:harry.kim@hawaiiicounty.gov)

July 11, 2017

Angela Fa'anunu, PhD.  
Townscape, Inc.  
900 Fort Street Mall Suite 1160  
Honolulu, HI 96813

Dear Dr. Fa'anunu,

Re: Environmental Assessment for South Point Resources Management Plan,  
Ka'u District, Hawai'i Island

Thank you for the opportunity for an early review and input.

It is well understood that the points given on the compromising of the heritage site and coastal ecosystems did and continue to occur. It is regrettable that there's always a few that do so and measures need to be taken to curb such negative behavior.

Thank you for allowing me to enjoy the peace, warmth and beauty of the area all of these years. Your preventive measures will still allow me to do so.

Much Aloha,

A handwritten signature in black ink that reads "Harry Kim". The signature is fluid and cursive, with the first name "Harry" and last name "Kim" clearly distinguishable.

Harry Kim  
Mayor





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Environmental & Community Planning

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October 5, 2017

Mayor Harry Kim,  
Mayor's Office, County of Hawai'i.  
25 Aupuni Street,  
Hilo, HI 96720.

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Mayor Harry Kim,

We received your letter dated July 11, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island.

Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are protected from potential developments in Hawai'i County. We value your insight and participation and invite you to consider reviewing the Draft Environmental Assessment when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.

DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
EMD/CWB

07006PCTM.17

July 10, 2017

Dr. Angela Fa'anunu  
Townscape, Inc.  
900 Fort Street Mall, Suite 1160  
Honolulu, Hawaii 96813

Dear Dr. Fa'anunu:

**SUBJECT: Comments on the Initial Consultation for the Preparation  
of an Environmental Assessment for the South Point  
Resources Management Plan  
Kau District, Island of Hawaii, Hawaii  
TMK: (3) 9-3-001:003**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated June 23, 2017, requesting comments on the subject project. The DOH-CWB has reviewed the document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. The Department of Hawaiian Homelands (Applicant) may be responsible for fulfilling additional requirements related to our program. We recommend that they also read our standard comments on our website at:  
<http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. The Applicant may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, the Applicant must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). The Applicant can open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. They will be asked to do a one-time registration to obtain their login and password. After they register, they can click on the Application Finder tool and locate the appropriate form. They can then follow the instructions to complete and submit the form.

3. If the Applicant's project involves work in, over, or under waters of the United States, it is highly recommended that they contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.

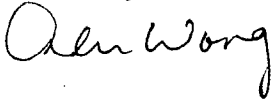
4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
  - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project

planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at: <http://health.hawaii.gov/cwb>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



ALEC WONG, P.E., CHIEF  
Clean Water Branch

CTM

c: DOH-EPO [via e-mail only]





**TOWNSCAPE, INC.**

Environmental & Community Planning

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October 5, 2017

Alec Wong,  
Clean Water Branch,  
Hawai'i State, Department of Health.  
P.O. Box 3378,  
Honolulu, HI 96801-3378

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Mr. Wong,

We received your letter dated July 10, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island.

Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are protected from potential developments in Hawai'i County with regards to water quality. We have carefully considered your comments in the preparation of the Draft Environmental Assessment so that the proposed project is in compliance with Hawai'i Administrative Rules (HAR) Chapters 11-54 and Chapter 11-55.

We value your insight and participation and invite you to consider reviewing the Draft Environmental Assessment when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.

Harry Kim  
Mayor



Paul K. Ferreira  
Police Chief

Kenneth Bugado, Jr.  
Deputy Police Chief

## County of Hawai'i

### POLICE DEPARTMENT

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998  
(808) 935-3311 • Fax (808) 961-2389

July 26, 2017

Ms. Angela Fa'anunu, PhD.  
Townscape, Inc.  
Environmental & Community Planning  
900 Fort Street Mall, Suite 1160  
Honolulu, Hawaii 96813

SUBJECT: INITIAL CONSULTATION FOR THE PREPARATION OF AN ENVIRONMENTAL  
ASSESSMENT FOR THE SOUTH POINT RESOURCES MANAGEMENT PLAN,  
KA'Ū DISTRICT, HAWAII'Ī ISLAND

Dear Dr. Fa'anunu:

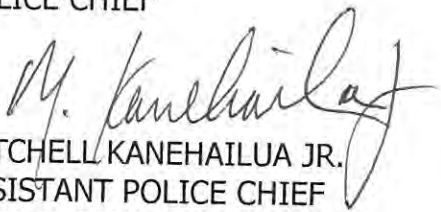
Staff has reviewed the request for the environmental assessment for South Point. At this time, we have no comments or concerns.

Thank you for allowing the Hawai'i Police Department the opportunity to provide input into this assessment.

Should you have any questions or concerns, please contact Captain Kenneth Quiocho, Commander of the Ka'ū District, at (808) 939-2520.

Sincerely,

PAUL K. FERREIRA  
POLICE CHIEF

  
MITCHELL KANEHAILUA JR.  
ASSISTANT POLICE CHIEF  
AREA II OPERATIONS

KQ/jaj  
RS170620



**TOWNSCAPE, INC.**

Environmental & Community Planning

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October 5, 2017

Paul Ferreira,  
Hawai'i Police Department,  
Hawai'i County.  
349 Kapi'olani Street.,  
Hilo, HI 96720

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Mr. Ferreira,

We received your letter dated July 26, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island.

Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are safe from potential impacts of proposed developments. We value your insight and participation and invite you to consider reviewing the Draft Environmental Assessment for this project when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII**

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657

July 26, 2017

Ms. Angela Fa'anunu, PhD.  
Townscape, Inc.  
900 Fort Street Mall, Suite 1160  
Honolulu, HI 96813

Dear Ms. Fa'anunu:

**Subject: Pre-Environmental Assessment Consultation  
South Point Resources Management Plan  
Tax Map Key (3) 9-3-001:003**

We have reviewed the subject Pre-Environmental Assessment Consultation and have the following comments.

Please be informed that the Department maintains and operates existing water system facilities within the subject parcel and near the proposed emergency access road.

The Department cannot provide any new service from the existing water system for parcels within the service limits. Extensive improvements and additions, which may include, but not be limited to source, storage, booster pumps, transmission, and distribution facilities, would be required. Currently, sufficient funding is not available from the Department for such improvements and no time schedule is set.

Should there be any questions, please contact Mr. Ryan Quitoriano of our Water Resources and Planning Branch at 961-8070, extension 256.

Sincerely yours,

Keith K. Okamoto, P.E.  
Manager-Chief Engineer

RQ:dfg

copy – State of Hawai'i, Department of Hawaiian Home Lands

*... Water, Our Most Precious Resource ... Ka Wai A Kāne ...*

The Department of Water Supply is an Equal Opportunity provider and employer.





**TOWNSCAPE, INC.**

Environmental & Community Planning

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October 5, 2017

Keith Okamoto,  
Department of Water Supply,  
County of Hawai'i.  
345 Kekuanaoa Street, Suite 20,  
Hilo, HI 96720.

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Mr. Okamoto,

We received your letter dated July 26, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island.

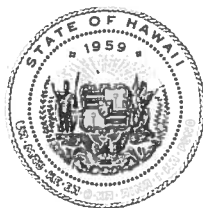
Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are safe from potential impacts of proposed developments. Thank you for bringing to our attention that the Department of Water Supply is unable to provide new service from the existing water system for parcels within the project area.

We value your insight and participation and invite you to consider reviewing the Draft Environmental Assessment for this project when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET, ROOM 330  
HONOLULU, HAWAII 96813

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA  
FIRST DEPUTY

JEFFREY T. PEARSON  
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  
KAIHOLAWA ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Date: July 25, 2017  
DAR # 5565

MEMORANDUM

TO: Bruce S. Anderson, PhD  
DAR Administrator

FROM: Ryan Okano, PhD , Aquatic Biologist

SUBJECT: Initial Consultation for the Preparation of an Environmental Assessment for the South Point Resources Management Plan, Kau District, Hawaii Island

Request Submitted by: Angela Faanunu, PhD, Townscape, Inc.

Location of Project: Ka Lae (South Point), Kau, Hawaii Island

Brief Description of Project:


At the request of the Department of Hawaiian Homelands (DHHL), Townscape, Inc. is preparing an Environmental Assessment in accordance with the Hawaii Revised Statutes Chapter 343 for the implementation of the DHHL South Point Resources Management Plan (RMP), Located in the district of Kau, on the Island of Hawaii. DHHL is proposing to implement the RMP in order to protect and restore natural and cultural resources on DHHL lands at Ka Lae.

(continued on following page)

Comments:

☐ No Comments ☒ Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved:  Date: 7/25/17  
Bruce S. Anderson, PhD  
DAR Administrator

DAR# 5565

Brief Description of Project

Priority projects of the RPM include:

- (1) Restore and protect important cultural sites and natural resources within the DHHL's property.
- (2) Manage vehicular access at South Point.
- (3) Provide sanitary amenities and signage at South Point.
- (4) Institute a parking fee for South Point.
- (5) Plan, design and construct a service road and a pedestrian path to Mahana Bay
- (6) Provide training and technical assistance to local people to become legal business entities on DHHL lands.

DAR# 5565

Comments

The Division of Aquatic Resources (DAR) recognizes the need for better management of natural resources at Ka Lae and commends the Department of Hawaiian Home Lands (DHHL) and Townscape, Inc. for composing a comprehensive Resources Management Plan (RMP) for Ka Lae.

From an aquatic resources perspective the anchialine ponds and near-shore marine habitat is of great importance to DAR. Based on our review of the RMP it seems that you are well aware of the significance of these natural resources. DAR also identifies one of the major perceived threats to both aquatic habitats is sedimentation caused by erosion of the numerous dirt roads that litter the coastline between the Fish Hoist and Mahana Bay.

Sedimentation is likely to be curtailed by the RMP's Priority Project #2: Manage Vehicular Access at South Point. However, limited vehicular traffic between the Fish Hoist and Mahana Bay will restrict access to yet another prime fishing grounds. In this day and age of private landownership fishermen already run into a great number of issues pertaining to access.

Please do not misinterpret our sentiment as mentioned above we agree that something must be done about the erosion and sedimentation caused by the dirt roads. However, we recommend a more balanced approach. Please take this as only one of many potential solutions. Maybe construct the Emergency Access Road closer to the coastline and install a series of permeable parking lots at select fishing grounds. Priority for parking could be on a first come first serve basis or permit system. Thus preventing erosion and still allowing access for fishermen. We at the DAR understands the challenges with finding a balance, we also struggle with conserving aquatic natural resources and allowing take, both of these facets define Hawaii's culture. However, if a balance can be established these two often conflicting goals can be attained, as it was in the old days.

If restraining the take of natural resources is one of your goals, curbing vehicular access is likely to have a limited impact. After all Kaulana Boat Ramp is located within the area of interest and those with boats can continue to harvest with no additional limits, which may ultimately further perpetuate disparity within our society. With the support of the community, an alternative solution may be to partner with DAR in establishing another tier or rules and regulations pertaining to the take of natural resources. There is a suite of existing management tools to select from, but as mentioned earlier only with community backing can this occur.

(continued on following page)



DAR# 5565

Comments

DAR appreciates the effort to reestablish native vegetation. However, a more strategic planting plan may facilitate attaining multiple goals. In the case of Lua O Palahemo, an additional native vegetative boundary could be considered. A strategically planted native vegetation boundary upland of Lua O Palahemo may not only increase the presence of native plants, but also limit the amount of sediments flowing into the pool. Strategic planting plans can also be implemented at other sensitive sites. Another example may be to establish native vegetation boundaries in areas where water tends to flow. Native vegetation boundaries can reduce flow rates allowing sediments to drop out of the water. Another benefit will be that the plants of this boundary will receive the needed hydration to persist in this environment. Within this proposed system a series of ponding basins can be included. this would increase percolation and limit the entry of sediment laden water into the marine environment.

In developing your construction plan to install a gate, security booth, parking area, emergency access road, and other amenities we ask that Best Management Practices be included in an effort to reduce erosion and sedimentation.

Again we would like to commend DHHL and Townscape, Inc. for composing such a comprehensive RMP for Ka Lae. Thank you for providing DAR with the opportunity to comment on your RMP. If you have any questions pertaining to our comments please feel free to contact us. We look forward to the opportunity to comment on your work as you move into the Environmental Assessment stage.



October 5, 2017

Bruce Anderson, Ph.D.  
Division of Aquatic Resources,  
Hawai'i State, Department of Land & Natural Resources,  
1151 Punchbowl St., Rm. 330  
Honolulu, HI 96813  
[DLNR.aquatics@hawaii.gov](mailto:DLNR.aquatics@hawaii.gov)

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Mr. Anderson,

We received your letter dated July 25, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island. Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are safe from potential impacts of proposed developments.

Thank you for your thorough review of the RMP for South Point and recognizing the efforts of the plan to protect and manage the natural and cultural resources at Ka Lae. We have carefully considered the comments that you provided concerning sedimentation, vehicular access, fishing, and native vegetation management in the project area, into the preparation of the Draft Environmental Assessment report for this project.

We would also like to address a concern that DAR expressed that the management of Vehicular Access, as proposed in the RMP, might “**restrict access to yet another prime fishing grounds.**” We would like to clarify that the right to access and mode of transportation access are two separate issues and that the RMP does NOT restrict the right of people to access and extract fish and marine resources from “prime fishing grounds” on the coastline of Ka'ū. The DHHL recognizes and upholds “the right of way” of people as stipulated in Hawai'i Revised Statute (HRS) Chapter 7-1. Thus, the RMP proposes that fishermen and women may continue to fish along the coastline of the project area. Consultations with kūpuna from Ka'ū indicate that historically, people exercised their right to access and extract marine resources at Ka Lae on foot. Thus, managing vehicular access and promoting pedestrian access, is consistent with the historical use of the project area for fishing. To clarify, the RMP is not restricting access to fishing grounds, but rather the use of motorized vehicles in off-road areas that are very likely to contain sensitive ecological and cultural resources. Use of motorized vehicles along existing roads, including vehicular access to the Kaulana Boat Ramp, will still be permitted.

Assessments of the project area identified the off-road use of vehicles within the project area, as the greatest threat to the natural and cultural resources at Ka Lae as off-road vehicular use has

exacerbated the natural rate of soil erosion and run-off and has literally left scars on the land. Vehicles that go off-road may also accidentally run-over sensitive resources. These resources support customary and traditional practice of subsistence, cultural, and religious purposes of native Hawaiians which are protected by the Hawai'i State Constitution, Article XII, Section 7. Managing the MODE of TRANSPORTATION of vehicular access at South Point, thus protects the resources that support the practices protected in the State Constitution.

We value your insight and participation and invite you to consider reviewing the Draft Environmental Assessment for this project when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
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

REF: OCCL: AJR

COR: HA-17-253

JUL 17 2017

Angela Fa'anunu, PhD.  
c/o Townscape, Inc.  
900 Fort Street Mall Suite 1160  
Honolulu, HI 96813

**SUBJECT: INITIAL CONSULTATION FOR THE PREPARATION OF AN ENVIRONMENTAL  
ASSESSMENT FOR THE SOUTH POINT RESOURCES MANAGEMENT PLAN**  
Ka'u District, Island of Hawai'i  
TMK(s): (3) 9-3-001:002, 003, 011, 001, 012 & 007

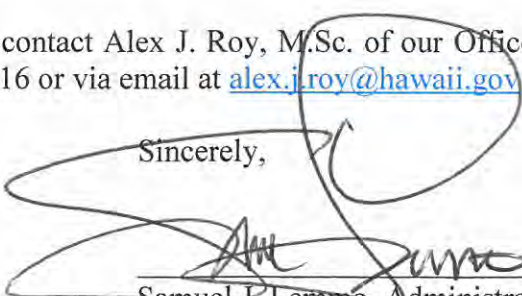
Dear Ms. Fa'anunu,

The Office of Conservation and Coastal Lands (OCCL) is in receipt of your letter regarding a preliminary Environmental Assessment (EA) for the proposed *South Point Resources Management Plan*. For reference the coastal portion of the project area is located within the State Land Use Conservation District *Limited* and *Resource* Subzones.

The OCCL recognizes that the *Department of Hawaiian Homelands* (DHHL) has authority over the development and management of the project area (i.e., subject parcels) and therefore we have no comments or regulatory requirements to present at this time. However, since the OCCL has regulatory authority over submerged lands situated makai (seaward) of the shoreline, we ask to remain involved in the EA process to determine if there may be potential impacts to coastal resources or the nearshore area.

If you have any questions please contact Alex J. Roy, M.Sc. of our Office of Conservation and Coastal Lands staff at 808-587-0316 or via email at [alex.j.roy@hawaii.gov](mailto:alex.j.roy@hawaii.gov)

Sincerely,

  
Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

CC: HDLO  
County of Hawaii – Planning Dept.





**TOWNSCAPE, INC.**

Environmental & Community Planning

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900 Fort Street Mall Suite 1160 · Honolulu, HI 96813 · PH: (808) 536-6999 · FAX: (808) 524-4998 · [www.townscapeinc.com](http://www.townscapeinc.com)

October 5, 2017

Samuel J. Lemmo,  
Office of Conservation and Coastal Lands,  
Department of Land and Natural Resources.  
P.O. Box 621,  
Honolulu, HI 96809

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka‘ū District, Hawai‘i Island.**

Aloha e Mr. Lemmo,

We received your letter dated July 17, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka‘ū District, on Hawai‘i Island. Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are safe from potential impacts of proposed developments.

Since the DLNR’s Office of Conservation and Coastal Lands has regulatory jurisdiction over submerged lands makai of the shoreline, we invite you to consider reviewing the Draft Environmental Assessment for this project when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa‘anunu, PhD.  
Townscape, Inc.

**Harry Kim**  
Mayor



**Darren J. Rosario**  
Fire Chief

**Renwick J. Victorino**  
Deputy Fire Chief

**County of Hawai'i**  
**HAWAI'I FIRE DEPARTMENT**  
25 Aupuni Street • Suite 2501 • Hilo, Hawai'i 96720  
(808) 932-2900 • Fax (808) 932-2928

July 21, 2017

Angela Fa'anunu, PhD.  
Townscape, Inc.  
900 Fort Street Mall Suite 1160  
Honolulu, Hawai'i 96813  
Email: [faanunu@townscapeinc.com](mailto:faanunu@townscapeinc.com)

Dear Ms. Fa'anunu:

**SUBJECT:** Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.  
TMK (3) 9-3-001:003

We are in receipt of your letter dated June 23, 2017 in regards to an Environmental Assessment and Anticipated finding of no significant Impact for the above listed subject.

The Hawai'i Fire Department has no issues or comments with regards to the request for an Environmental Impact – South Point Resources Management Plan, Ka'ū District and Anticipated finding of no significant Impact as noted above.

If you should have any questions, please feel free to contact my office at (808)932-2911.

Mahalo,

DARREN J. ROSARIO  
Fire Chief

KV/ds





**TOWNSCAPE, INC.**

Environmental & Community Planning

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900 Fort Street Mall Suite 1160 · Honolulu, HI 96813 · PH: (808) 536-6999 · FAX: (808) 524-4998 · [www.townscapeinc.com](http://www.townscapeinc.com)

October 5, 2017

Daren Rosario,  
Hawai'i Fire Department,  
County of Hawai'i.  
25 Aupuni St., Suite 2501  
Hilo, HI 96720

**Subject: Initial Consultation for the preparation of an Environmental Assessment for the South Point Resources Management Plan, Ka'ū District, Hawai'i Island.**

Aloha e Mr. Rosario,

We received your letter dated July 21, 2017, with comments for the Environmental Assessment for the South Point Resources Management Plan, in the Ka'ū District, on Hawai'i Island. Thank you for participating in this pre-consultation process to ensure that the public and their surroundings are safe from potential impacts of proposed developments.

We value your insight and participation and invite you to consider reviewing the Draft Environmental Assessment for this project when it is completed.

Please let me know if you have any questions or concerns.  
Mahalo Nui,

Angela Fa'anunu, PhD.  
Townscape, Inc.

# APPENDIX C:

## FAUNA & FLORA REPORT



# ***Biological Survey for Kama‘oa Ahupua‘a Resources Management Plan***

**By Ron Terry, Ph.D., Patrick J. Hart Ph.D., Layne Yoshida, B.A.,  
Jen Lawson, B.A. and Jen Johansen, B.A.  
Geometrician Associates, LLC**

**Prepared for Townscape Inc. and the Department of Hawaiian Home Lands**

**January 2018**

## ***Introduction***

This report presents the findings of a biological survey conducted on a portion of a property identified as TMK (3) 9-3-001:003 within the Kama‘oa Ahupua‘a at South Point, Ka‘ū District, Hawai‘i Island. Conditions on a broad level were investigated within a 3.15-mile long, 0.5-mile wide corridor stretching from Ka Lae (or South Point) to Mahana Bay (Green Sands Beach), and at an intensive level along various existing and proposed trails, roadways, parking areas, and other discrete sites within and mauka of this corridor (Figure 1) that are planned as part of a proposed Resources Management Plan. The goals are to protect the area’s resources and serve DHHL beneficiaries by enabling environmentally sustainable economic and social activities. Specifically, proposed physical infrastructure in this plan includes:

- A: Entrance gate at the intersection of Kalae Rd. and South Point Rd, and a security booth 0.75 miles north of the intersection along South Point Road.
- B: Two designated parking areas at the “Barracks” near the Kaulana Boat Ramp and at Ka Lae.
- C: A pedestrian path and an emergency access road extending from the “Barracks” to Mahana Bay.
- D: A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites.

The scope of work requested by Townscape and DHHL included botanical and fauna studies to document vegetation, flora and fauna, threatened or endangered plant species, critical habitat, and the potential for any threatened or endangered animal species to be currently using any habitat within the study area. To address this, Geometrician Associates proposed to conduct the following activities.

- Conduct a 100 percent botanical survey of the study area including Areas A-D above, as well as walking transects spaced 100 feet apart to inventory vegetation types, record all plant species and specifically identify any rare, threatened and endangered plant species, providing handheld GPS locations and flagging as appropriate.
- Conduct a vertebrate faunal assessment consisting of a bird survey at multiple times and an assessment of the habitat and standard mitigation measures for the threatened or endangered vertebrate fauna that may be present. Dusk and dawn observations are to be conducted for Hawaiian hoary bats, but with presumption that bats are present whether or not visually detected. Although aside from Hawaiian hoary bats, all mammals found in the area are deleterious in terms of conservation of native plant and animal species, any non-native mammals observed will also be noted.

The results of these surveys are documented in this descriptive report, which also provides photos and maps of existing vegetational communities and threatened or endangered plant species. This report also analyzes the impacts of the proposed action, and recommends certain measures to minimize harm and maximize ecological benefit.

## ***Ecological Context***

Several factors influence the flora, vegetation and faunal habitat of the study area. The geographic region known as South Point was built by Mauna Loa lavas flowing south into the ocean. The land is truncated abruptly on the west side by a massive seacliff that marks a deep normal fault (Wolfe and Morris 1996) (Figure 2a). Pu‘u o Mahana on the east is a large littoral cone formed when an ancient lava flow entered the sea (Figure 2b). Green olivine crystals have weathered out of the cone, creating the feature known as Papakolea or Green Sands Beach within Mahana Bay (Figure 2c). The lava in the study area varies in age from about eight thousand to tens of thousands of years before the present. Where visible on the surface, the lava consists of both ‘a‘a (clinkery) and pahoe-hoe (smooth and ropy) lava, with ‘a‘a more common (Figure 2d). The oldest flows are heavily mantled with Pahala ash, the product of explosive volcanic eruptions from 16,000-31,000 years ago, presumably primarily from Kilauea. According to the U.S. Geological Survey, Hawaiian Volcanoes Observatory:

Pahala ash is a mixture of altered glass, rare vitric (glassy) shards, Pele’s hair, pumice, and olivine crystals. It is derived from ashfall deposits, weathered and reworked ash, and sediments. The ash is comprised mostly of sand and silt-sized fractions. Ancient soil horizons are present in some localities.

The appearance of the ash is greatly influenced by climate. In dry areas, it is friable, in places compact, but it is mostly sandy, loose, and dusty. In higher-rainfall areas, the ash appears clay-like. The ash deposits from Ka‘alu‘alu to South Point appear to be loess, reworked and redeposited by wind (USGS-HVO: 2009).

Elevations in the study area range from sea level to about 150 feet above sea level, and the entire area is essentially coastal. Average annual rainfall is about 21 inches throughout the study area (Giambelluca et al 2013). The orientation of the coastline is almost parallel to the predominant trade winds, which are usually very breezy in this area. Salt spray generally only affects areas within roughly a hundred feet of the shoreline, with the significant exception of the area west of Mahana Bay.

A final important variable is the history of human disturbance. The shoreline areas of Kama‘oa are celebrated as the site of early Polynesia landings and settlement in Hawai‘i and were used continuously for centuries for fishing, gathering and settlement. The land was overrun by wild cattle in the 19<sup>th</sup> century and later fenced and utilized for ranching. Today, some light grazing occurs in the mauka portions of the study area (Figure 2e). In modern times, the area has experienced heavy off-road vehicle traffic as part of fishing and tourism. As evident in the aerial image in Figure 1, a network of unpaved roads is present from South Point to Mahana Bay. Although generally a single track in areas with rough lava, the roads widen and multiply in areas with deep yellow loess, as off-road vehicles venture into virgin territory as roads become too rutted and deep (Figure 2f). Aside from this significant scarring and a few parking areas, there is little other actual disturbance of the surface of the land. More insidious are the hundreds of patches of marine debris.

In the *Manual of the Flowering Plants of the Hawaiian Islands*, Gagne and Cuddihy (1990) classified the natural, pre-human vegetation in areas with a similar range of geology, elevation and rainfall within a number of categories including Coastal and Lowland Herblands, Grasslands and Shrublands. Much of the extent of these vegetation types in Ka‘ū and throughout the Hawaiian Islands has been eliminated by ranching, farming and urban development. Even where undisturbed, these ecosystems have been profoundly altered by the complementary forces of invasive plants, feral ungulates and wildfire.

According to a 1993 report by The Nature Conservancy concerning the broader area:

Prior to human settlement, the native ecosystems of Kamaoa-Puueo were more diverse and abundant. Coastal dry shrublands and grasslands including such dominant plants as a native sedge (*Fimbristylis cymosa*), pili grass (*Heteropogon contortus*), ‘ilima (*Sida fallax*), nehe (*Lipochaeta integrifolia*), and others probably bordered the shoreline and extended upslope. The lowland setting was probably a mix of native grasslands, shrublands, and forests, and may have supported much more forest cover than the current modified setting (p. 5).

In Ka‘ū, the quality of habitat for native animals is primarily determined by vegetation and the degree of disturbance. Native shorebirds and waterbirds are found along the shoreline, especially in less populated and disturbed areas. Native forest birds are found in the montane forests above the mosquito belt (generally above 4,000 feet in elevation), where native plant resources are still present. Native insects are highly associated with native vegetation. Hawai‘i’s only native land mammal, the Hawaiian hoary bat (*Lasiurus cinereus semotus*), is somewhat unique in that it appears to have adapted to urban and agricultural land uses fairly successfully, probably because of high levels of insect prey found there. These bats are solitary and roost in tall shrubs and trees, which are more prevalent on the South Point side of the study area.

### ***Existing Biological Literature: Coastal Ecosystems***

Several overview resource reports included biological surveys of the Ka‘ū shoreline, including South Point and/or nearby, analogous areas. All provide relevant information on the flora, vegetation and habitat to be expected at South Point. Most pertinent are the following sources:

- *Ka‘u Coast, Island of Hawai‘i Reconnaissance Survey* (National Park Service 2006). This reconnaissance-level, two-day biological survey conducted at the request of Congressman Ed Case covered 20,365 acres along 27 miles of shoreline on the southeast coast of Kā‘u. The specific purpose was to evaluate and provide a recommendation as to whether a special resource study should be prepared for the area for consideration to be included as part of the National Park system. Waikapuna – about seven miles east of Mahana Bay in the South Point study area – was the southernmost land unit considered. The NPS determined that the area would be a suitable addition to the National Park System, but the feasibility of acquisition was left only partially assessed.
- *Report to the Twenty-Fourth Legislature, 2007 Regular Session, from the South Kona-Ka‘u Coastal Conservation Task Force* (Hawai‘i Department of Land and Natural Resources [DLNR] 2006). The stated purpose of the Task Force was ... “to review, analyze, and report to the legislature on the impacts being made on the fragile and historically essential coastal lands and near shore marine areas of South Kona and Ka‘u...and to identify issues and solutions...”

The Task Force coordinated with and followed up on the NPS work, but covered a broader area extending further southwest, beyond Waikapuna and South Point and into South Kona. No new information concerning biological resources was contained in this general report, which focused on policies to discourage development and promote conservation.

- *Warshauer Coastal Species List 2003*. Rick Warshauer, a highly experienced botanist who has worked in native Hawaiian ecosystems for some five decades, including time with the U.S. Geological Resources, Biological Resources Division, conducted a biological survey of various locations on the Ka‘ū coast, including areas as near to the study area as Ka‘alu‘alu, about three miles east of Mahana Bay. His work resulted in a summary species list.
- The Nature Conservancy of Hawaii prepared a *Biological Reconnaissance Survey of the Department of Hawaiian Home Lands, Kamaoa-Puueo Parcel* for DHHL in 1993. A list of species, maps of vegetation types and identification of general areas containing rare, threatened or endangered species was included.

Studies of the coastal ecosystem zone in the dry Ka‘ū coast have indicated variable numbers of native species in different areas. The NPS reconnaissance stated that researchers found 14 species of coastal strand plants, with natives including naupaka (*Scaevola taccada*)<sup>1</sup>, ‘ilima (*Sida fallax*) and pōhuehue (*Ipomoea pes-caprae*), all of which are very common in Hawai‘i. The South Kona-Ka‘ū Coastal Conservation Task Force report did not contain detailed botanical information, but it noted that native shoreline species were present in the South Point to Mahana Bay area. Studies of the Waikapuna to Ka‘alu‘alu area itself by Warshauer in 2003, as well as various surveys of Waikapuna conducted by Geometrician in 2015-2016, found a total of 32 native species in the coastal zone. The botanical findings of both of these studies are integrated into the discussion of current survey findings, below, but it is worth noting that the studies found two rare, threatened or endangered (RTE) species. These were the rare shrub maiapilo (*Capparis sandwichiana*) and the endangered herb ‘ihi (*Portulaca villosa*), both found in the coastal ecosystem. The Nature Conservancy noted several areas that contained the endangered ohai (*Sesbania tomentosa*), a low shrub with attractive red flowers, near South Point and Mahana Bay. This plant has also been observed in Kamilo (Megan Lamson, Hawaii Wildlife Fund, pers. comm. to R. Terry, April 2017). The report also noted that individuals of *Portulaca villosa*, a low herb that has since been added to the endangered species list, were present in several locations.

Native wildlife has also been documented from coastal Ka‘ū, including several endangered species, particularly where brackish ponds are present. Notable are several waterbird species, including the endangered Hawaiian coot or ‘alae ke‘oke‘o (*Fulica alai*), and the Hawaiian goose or nēnē (*Branta sandwicensis*), a wide-ranging, friendly bird seen in a variety of environments throughout the island. For many years, the largest population of nēnē on Hawai‘i has occurred in Hawai‘i Volcanoes National Park (USFWS 2004). Because of the extremely dry nature of the study area and the lack of ponds (with the exception of the anchialine pond Lua o Palahemo – see Figure 2g), waterbirds have not been documented from this area.

Although waterbirds are uncommon in the drier parts of coastal Ka‘ū, shorebirds are often abundant due to excellent the rocky shoreline, sandy beach and tidepool habitats. Migratory birds that might be expected include the ruddy turnstone or ‘akekeke (*Arenaria interpres*), the wandering tattler or ‘ulili

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<sup>1</sup> In general, except where necessary for clarity, Latin plant names in this report are given after the first use of a common name. Refer to Table 1 for a full list of native plants with common names, family and Latin name.



(*Heteroscelus incanus*), the Pacific golden-plover or kolea (*Pluvialis fulva*), and the bristle-thighed curlew or kioea (*Numenius tahitiensis*). All are reasonably common in Hawai‘i. Although the kioea is not commonly seen on the Big Island, South Point happens to be noted as one of the places it can be seen (Hawaii Audubon Society 1997).

Several threatened or endangered seabirds also merit discussion because they utilize terrestrial habitat on the Big Island and may be harmed by common human activities and structures. The Hawaiian Petrel (*Pterodroma sandwichensis*), the Hawaiian sub-species of Newell’s shearwater (*Puffinus newelli*), and the band-rumped storm-petrel (*Oceanodroma castro*) have been recorded over-flying many areas on the Island of Hawai‘i between late April and the middle of December each year. The Hawaiian petrel and band-rumped storm-petrel are listed as endangered, and Newell’s shearwater as threatened, under both federal and State of Hawai‘i endangered species statutes. The primary cause of mortality in these species in Hawai‘i is thought to be predation by alien mammalian species at the nesting colonies. Collision with man-made structures is another significant cause. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. Disoriented seabirds may collide with manmade structures and, if not killed outright, become easy targets of predatory mammals. Although they may fly over various coastal locations in Ka‘ū, no suitable nesting habitat for any of these seabird species is documented to be present in the study area. A wide variety of other seabirds usually associated with O‘ahu, Kaua‘i and the Northwestern Hawaiian Islands may occasionally be seen ranging into coastal Ka‘ū. A non-migratory shorebird found in high-cliffed coastlines throughout Ka‘ū is the black noddie or noio (*Anous minutus*), which are seabirds that nest in small colonies in low lava cliffs and forage for fish at sea.

The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) is often found in alien as well as native vegetation in a variety of locations throughout the island of Hawai‘i. This is the only native mammal or vertebrate in Hawai‘i other than birds. These solitary bats are widely scattered and roost almost undetected in tall shrubs and trees.

### ***Current Vegetation and Flora of Study Area***

In order to investigate the flora and terrestrial vertebrate fauna of the study area, our team of biologists spent approximately 16 personnel days during the summer of 2017 walking specific areas of expected impact – two parking areas, four miles of pedestrian paths and surrounding areas, the proposed 2.5-mile long emergency road and surrounding areas, and the entire shoreline trail and surrounding land from 2,000 feet north of South Point to 1,000 feet southeast of Pu‘u o Mahana (a walking distance of approximately 4 miles). In addition, our team walked north-south transects, spaced 100 feet apart, from the shoreline to distances ranging from a quarter to a half mile from the shoreline, from South Point to Mahana Bay. Although no direct impact upon most of this area apart from where paths and parking areas was expected, some visitors may wander into the area, and there was a need to assess its general sensitivity.

Previous work by The Nature Conservancy (1993) had noted in addition to a mixed alien grassland/shrubland dominated by alien plants, five native terrestrial coastal communities:

- ‘Aki‘aki Coastal Dry Grassland
- ‘Akulikuli Coastal Dry Herbland
- *Fimbristylis cymosa* Coastal Dry Grassland
- ‘Ilima Coastal Dry Shrubland
- Nehe Coastal Dry Shrubland

These native coastal communities were often interfingering and overlapping, but an attempt was made to map them in Figures 3a and 3b of the 1993 report, which are reproduced in Figures 1b and 1c of this report. The communities extended continuously from Ka Lae to Mahana Bay, with a variable width of up to a quarter mile. Essentially the same vegetation types are present in the same areas a quarter century later, except that many areas have been more heavily dissected and trampled by roads. TNC mapped rare plants in Figure 3b of the report, which is reproduced as Figure 1d in this report. Some of the patches of rare plants are no longer found, and where they are found, they are less extensive.

As illustrated by photos in *Figures 2a-z*, the vegetation zones had the following characteristics:

‘Aki‘aki (*Sporobolus virginicus*) Coastal Dry Grassland (Figures 2i-k). This community is found throughout the main and Northwestern Hawaiian Islands. ‘Aki‘aki is an indigenous grass found throughout the tropical and subtropical Pacific. The dominant plant in this community is far from rare, but less common species may also be included. As in the 1993 survey, it is well developed between Ka Lae and Mahana Bay, especially in ‘a‘a, but also in ash deposits and sometimes pahoehoe. This species, along with mau‘u ‘aki‘aki (*Fimbristylis cymosa*), is the dominant in the first band of mauka of the ocean. This zone transitions to various other types inland. Other plants that are found in this zone, as noted in the TNC survey, include mau‘u ‘aki‘aki, nehe (*Melanthera integrifolia*), ‘ilima, pa‘ū o Hi‘iaka (*Jacquemontia ovalifolia*), kipukai (*Heliotropium curassavicum*), ‘akulikuli (*Sesuvium portulacastrum*) and *Panicum fauriei* var. *latius*. A number of other natives including hau (*Hibiscus tiliaceus*) and naupaka are also sparingly present. In the 1993 survey, the endangered ‘ihi (*Portulaca villosa*) was seen in the ‘Aki‘aki Coastal Dry Grassland in one location; this was not relocated in our survey. As with every coastal vegetation zone, vehicular traffic is a threat. Because of its location very near the sea, marine debris also overwhelms many areas. A number of alien species, including Australian saltbush (*Atriplex semibaccata*), Bermuda grass (*Cynodon dactylon*), and pigweed (*Portulaca pilosa*), are common in this zone, and may represent a threat to the native species.

‘Akulikuli (*Sesuvium portulacastrum*) Coastal Dry Herbland (Figures 2l-m). Like the ‘Aki‘aki vegetation type, this community is very common throughout the Hawaiian Islands. It is dominated by prostrate mats of ‘akulikuli and is usually found in sandy, ashy or rocky areas where spray and wash from the sea bring in large quantities of salt that restrict the growth of other plants. Consequently, rare plants are generally not found here, although it interfingers with other communities, and various coastal plants can be found mixed in as well. Australian saltbush favors similar areas, particularly in the more mauka parts of where the effects of salt spray and wash are not as prevalent.

*Mau‘u ‘Aki‘aki (Fimbristylis cymosa) Coastal Dry Herbland* (Figure 2n). This community, also common throughout the Hawaiian Islands, often occurs as the first band of vegetation in pahoehoe landscapes that offer relatively few handholds for vegetation to take root. It is not very diverse, often having the sedge mau‘u ‘aki‘aki and little else, although the common shoreline plants listed above may be scattered within it or transition into it. In both the 1993 TNC and the present survey, no rare taxa were observed within this type. Threats are similar to the first two communities.

*‘Ilima (Sida fallax) Coastal Dry Shrubland* (Figures 2o). This type is also common throughout much of the Hawaiian Islands. As stated in the 1993 survey, it is “variable in stature and species make-up, ranging from simple stands of ‘ilima with few other associates, to variable assemblages of coastal plants in complex mosaics, with ‘ilima most prominent. Rare plants have been reported from some examples of ‘ilima shrubland. At Kamaoa-Puueo, ‘ilima shrubland extended from near sea level to locations up to ...975 feet [in elevation] inland, on both ash and ‘a‘a substrates.” It borders the communities listed above, often lying just mauka of them. In addition to the plants associated with the above communities, kauna‘oa (*Cuscuta sandwichiana*), pili grass (*Heteropogon contortus*), koali ‘awa (*Ipomoea indica*), and nehe are often found within this community. This is also the community in which most of the individuals of ‘ohai (*Sesbania tomentosa*) were located, although some was found nearby in alien grasslands as well.

*Nehe (Melanthera integrifolia) Coastal Dry Shrubland* (Figure 2p). Much less common than the other four, this native coastal community is dominated by one of several species of *Melanthera*, generally *M. integrifolia*, and is found on O‘ahu, Moloka‘i, Maui, and Hawai‘i. It is found in the study area on ‘a‘a flows and immediately adjacent ash substrates, and like the ‘Ilima Shrubland, is found mauka of the other three types. There is often a mosaic of different types and no clear dividing lines. Associated native plants include those found in other types listed above, plus occasional kakonakona grass (*Panicum torridum*) and the sedge *Mariscus phleoides*, and the relatively rare koali pehu (*Ipomoea tuboides*).

By far the most common vegetation was referred to in the 1993 TNC report as *Mixed Alien Lowland Dry Grasslands* (Figure 2q). This remains common today, and where vehicular damage in the coastal areas has increased, so too has this invasive type, as it tends to fill in damaged areas. Alien grasslands are maintained by fire and grazing regimes, to which they are generally better adapted than native species. The 1993 TNC report opined that if these disturbing factors were removed, “...it is likely that the alien grasslands would develop eventually into either shrubland or forest.” The most common grass in the study area is buffelgrass (*Cenchrus ciliaris*), with much lesser amounts of pitted beardgrass (*Bothriochloa pertusa*), Bermuda grass (*Cynodon dactylon*), Guinea grass (*Panicum maximum*), and others. Mixed in with these grasses, and occasionally dominating in patches, especially where ‘a‘a is present, are kiawe, koa haole, sourbush, Sodom apple (*Solanum linnaeanum*) and lantana (Figure 2r). It should be noted that ‘ilima, ‘uhaloa, kakalaioa and some other native plants can be found mixed in the alien grasslands.

A list of all plant species observed is contained in Table 1. It should be noted that a few other native species are likely to be present but for various reasons were simply not observed in this effort.

No plant critical habitat is present in the study area (<https://ecos.fws.gov/ecp/report/table/critical-habitat.html>). Only one plant species currently listed as threatened or endangered (T&E) under the Endangered Species Act of 1973, as Amended (16 USC 1531-1544), was detected in our surveys: ‘ohai or *Sesbania tomentosa* Hook & Arnott (Figures 2s-u). This plant was found in basically all of the areas noted in the 1993 TNC report, although probably at reduced frequencies. Most plants were contained within roped-off and signed enclosures, with plants sometimes sprawling outside and isolated individuals located nearby. Locations of these plants have been provided to DHHL. Although clearly threatened by a variety of factors, management actions are helping to preserve these fragile populations.

Previous surveys of the shoreline from South Point to Waikapuna (Warshauer 2003) have identified the herb *Portulaca villosa*, which was listed as endangered in October 2016. A survey by The Nature Conservancy (1993) found it in several areas on the subject property, including at Papakolea (west of Mahana Bay), at Ka Lae, and near Hanalua Bay. This small herb may be difficult to spot in dense vegetation, particularly if there are dry conditions and/or it is not flowering. Abundant individuals of *P. pilosa*, a common non-native, were observed. Although they were mat-forming, with reddish or purplish leaves, with weak, non-woody stems, all characteristics that are much more common in *P. pilosa* than *P. villosa*, none of them had flowers, the color of which, when combined with other characteristics, is generally diagnostic. Although 16 partial days of observation by five observers did not reveal this endangered herb, it is probably present.

The 1993 TNC report noted that *Solanum nelsonii*, a rare and endangered coastal plant, was collected in 1929 in an “‘a‘a desert east of South Point, just above sea level.” This species was not encountered in the TNC survey, nor in the present survey.

The rare sprawling shrub maiapilo was noted in several closely spaced patches in just one rocky area near Hanalua Bay, mauka of the four-wheel drive roads and footpaths. The location of this patch has been provided to DHHL. This rare plant had not been seen in the 1993 TNC survey.

### ***Fauna and Native Animal Species Habitat of the Study Area***

The faunal survey was limited to an opportunistic survey for by sight and sound as we travelled through each area; no systematic trapping or counts were undertaken.

#### ***Birds***

Birds were identified by calls, songs, and visual observations by a team led by ornithologist Patrick J. Hart, assisted by other team members. Seventeen species of birds were detected during the surveys, including five native species and twelve non-natives (Table 2).

The most common landbirds overall were mynas (*Acridotheres tristis*), skylarks (*Alauda arvensis*), and zebra doves (*Geopelia striata*). These birds were found in all areas of the project site, with the skylarks being more abundant in the buffelgrass grasslands and the mynas and zebra doves in areas with trees and shrubs. On June 7, a single short-eared owl or pueo (*Asio flammeus sandwichensis*) was detected on a transect near Pu‘u Ali‘i. The federally endangered Hawaiian hawk or ‘io (*Buteo solitarius*) was not detected during the surveys but it is likely to occasionally be found on the project site. The lack of tall trees makes it very unlikely that these birds nest in the area.



The area has no true waterbird habitat, and we did not observe Hawaiian goose or nēnē (*Branta sandvicensis*), Hawaiian stilts (*Himantopus mexicanus knudseni*), or any of the native duck or moorhen species, all of which are endangered species.

On June 11, a single ‘iwa or great frigatebird was detected just off-shore of South Point (Figure 2v). Black noddies or noio were also seen off the tall cliffs north of South Point. No other seabirds were detected; however, most Hawaiian seabirds frequent offshore areas, and the lack of detection does not signify absence. Seabirds that may use the airspace over the property include the endangered Hawaiian petrel or ua‘u, the threatened Newell’s shearwater or ‘a‘o, and the endangered band-rumped storm-petrel or ‘ake‘ake. The petrels and shearwater hunt over the ocean during the day and fly to higher elevations at night to roost and nest. Hawaiian petrels presently nest on the southwest rift zone of Mauna Loa, but based on elevation and vegetation, no part of the study area to be suitable habitat for these seabirds.

The only truly valuable bird habitat in the property is for shorebirds in the coastal zone. Migratory birds were only seen during the one observation undertaken on August 20, just outside the summer migration period. On that visit, we observed several wandering tattlers or ‘ulili and a number of Pacific golden-plovers or kolea. In other years we have frequently seen ruddy turnstones or ‘akekeke and even on occasion a bristle-thighed curlew or kioea. All are reasonably common in Hawai‘i, but the kioea is not commonly seen on the Big Island.

#### *Mammals, Reptiles and Amphibians*

Although no systematic bat surveys were performed, and no bats were observed (most observations took place between 8 am and 4:30 pm outside the time in which bats are usually observed, with a single dawn and dusk observation period), these bats have been observed in many areas of Ka‘ū (see PBR 2006). The 1993 TNC similarly failed to detect Hawaiian hoary bats, but it stated that the species may exist in the area because of previously collected specimens. This wide-ranging if endangered species should be presumed to be present at least occasionally and to roost in some parts and of the study area.

As they lack conservation value, non-native mammals, amphibians and reptiles were not inventoried, although cattle, mongooses and mice were seen. The current scope does not allow detailed discussion, but goats, pigs, cattle, mongooses, rats, mice, cats and various lizards have some potential to interact negatively with native flora and fauna.

#### *Other Biological Resources Not Covered in Report*

Although this report does not focus on invertebrates, it should be briefly noted that 23 species of invertebrate are currently listed as threatened or endangered in the State of Hawai‘i (U.S. Fish and Wildlife Service 2017). These include a spider, an amphipod, a moth, snails, picturewing flies, yellow-faced bees and damselflies. Most of the listed species are restricted to other islands, or found at substantially higher elevations or wetter habitats on the Big Island, or with specific host plant species that are lacking in the area. With the exception of yellow-faced bees, none of these species has a high potential to be present in the study area.

Coastal invertebrate fauna on the southern half of the Big Island includes several rare, threatened or endangered species from two groups: damselflies (the endangered *Megalagrion xanthomelas*, or the orangeblack Hawaiian damselfly), and yellow-faced bees (the endangered *Hylaeus anthracinus* and the rare species *Hylaeus flavipes*). The estuarine marshes of the Kāwā spring system and Honu‘apo support documented damselfly populations, which may also be present at Ka‘alu‘alu. *Hylaeus anthracinus* is known to be restricted to small patches of habitat on each island, including South Point on the Big Island (Karl Magnacca, U.S. Geological Survey Biological Resource <http://www.xerces.org/hylaeus-anthracinus>). It is considered likely that additional sites may exist. In *Insects of Hawaii* (Daly and Magnacca 2003), *Hylaeus flavipes* is noted as being found on the islands of Hawai‘i, Maui, and Lana‘i. They have recently been collected in the Ka‘ū Desert and at Kaulana near South Point. Host plants are known to include plants from the genera *Dodonaea*, *Jacquemontia*, *Myoporum*, *Scaevola*, *Sesbania*, *Sida*, *Sophora*, *Leptecophylla*, *Tournefortia* and *Tribulus*. A number of species from some of these plant genera are widely known in the study area and elsewhere in coastal Ka‘ū. Our field studies were not intended to assess invertebrate fauna, but for the record we will note that we did not observe any threatened, endangered or rare species. No damselflies were seen. Numerous plants in the host genera were opportunistically examined, but no members of the *Hylaeus* genus were observed.

Also beyond the scope of this biological survey but deserving mention is that anchialine pond, nearshore and marine ecosystems may actually be the most valuable biological asset in coastal Ka‘ū. Aside from day-tripping tourists, fishers and gatherers are the most frequent and consistent visitors to the area, drawn by the abundance of shellfish, limu, sea urchins, reef fish and even pelagic fish that can be obtained in the area. Coastal waters and beaches of Ka‘ū are well-documented feeding areas for the endangered green sea turtle (*Chelonia mydas*), nesting areas for the endangered Hawaiian hawksbill turtle (*Eretmochelys imbricata*), and haul-out areas for Hawaiian monk seals (*Monachus schauinslandi*). The water surrounding the entire Big Island are critical habitat for the Hawaiian monk seal.

The Nature Conservancy’s 1993 report noted the biological importance of the anchialine resources, including rare native ‘opae ula, at Lua o Palahemo, which was threatened by pollution, eutrophication and the introduction of alien fish. At the time, TNC noted:

It is a unique biological site, containing a combination of anchialine pool organisms that is not found anywhere else in the archipelago, or the world. One of the shrimps found at Lua o Palahemo, *Halocaridina palahemo*, is unique to the site. Other shrimps at the site, including *Vetericaris chaceorum*, *Antecaridina lauensis*, *Calliasmata pholidota*, and *Procaris hawaiana*, are known from very few sites worldwide. In short, Lua o Palahemo comprises the largest concentration of candidate endangered anchialine pool organisms in the world.

Since that time, *Vetericaris chaceorum* and *Procaris hawaiana* were listed as endangered species.

## ***Findings and Recommendations***

In addition to its special geological and cultural values, the flora and fauna of the Ka Lae to Mahana Bay corridor represent outstanding natural resources that merit substantial conservation actions. The strand vegetation is diverse and unique and includes rare, threatened and endangered species. Where

the vegetation is not damaged by human activity, it offers excellent habitat for migratory shorebirds, pueo and native insects.

The proposed management plan actions that eliminate most vehicular use in the shoreline portion of the corridor and restrict vehicles in the study area to the minimal levels necessary for maintenance and emergency response will significantly improve the environment and enhance and preserve the unique flora and fauna. The areas chosen for the infrastructure necessary to support the management plan, including parking lots, emergency road, guard booth and gate, do not contain valuable native vegetation, flora or animal habitat, and are suitable for their proposed uses.

Although several very challenging environmental issues will still affect this coastline – invasive species and marine debris being foremost – most other adverse effects attributable to human use can be avoided or minimized with effective and adaptive management. Finding the solution to restore rutted areas will require experimentation, and the most effective techniques will likely end up being labor and cash intensive. If effectively managed, hiking, fishing and gathering should not be incompatible with preserving and restoring the flora and fauna. We offer the following ideas for consideration.

- The roped-off preservation areas for *Sesbania tomentosa* appear to be effective in minimizing trampling and are likely responsible for saving most individuals of this species in the area. Additional areas should be roped off, and similar habitat should be prepared for outplanting, and similarly protected.
- With good management, new endangered plants may emerge on their own, and it will be necessary to monitor the vicinity of protected areas to determine if footpaths require rerouting, particularly near Mahana Bay.
- Excluding the public from certain areas should be carefully balanced with providing a high-quality hiking experience in which management actions are not unreasonably intrusive.
- The public should be educated through sensitively designed and placed signage about the natural resources so that they know how to limit ecological damage as they hike, swim, fish and gather.
- Both endangered species individuals and patches of high quality vegetation should be monitored for trampling and illegal plant collection. The data should be used to inform adaptive management in terms of protection, restoration and education activities.
- It may be necessary at some point to set an upper limit on the number of hikers in the area.

## **Limitations**

No biological survey of a large area can claim to have detected every species present. Some species are cryptic in juvenile or even mature stages of their life cycle. Dry conditions can render almost undetectable plants that extended rainfall may later invigorate and make obvious. Thick brush can obscure even large, healthy specimens. Birds utilize different habitats in different seasons and only a fraction of the birds present in any given year will be detected during the course of limited observations. The findings of this survey must therefore be interpreted with proper caution; in summary, there is no warranty as to the absence of any particular species. However, the recommended mitigation measures should effectively protect against degradation of biological resources.

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**Table 1. Plants Observed in South Point Study Area**

Scientific Name	Family	Common Name	Life Form	Status
<i>Abutilon grandifolium</i>	Malvaceae	Hairy Abutilon	Herb	A
<i>Achyranthes aspera</i>	Amaranthaceae	Achyranthes	Herb	A
<i>Anagallis arvensis</i>	Primulaceae	Scarlet Pimpernel	Herb	A
<i>Alternanthera pungens</i>	Amaranthaceae	Khaki Flower	Herb	A
<i>Alternanthera sessilis</i>	Amaranthaceae	Sessile Joyweed	Herb	A
<i>Amaranthus spinosa</i>	Amaranthaceae	Spiny Amaranth	Herb	A
<i>Ambrosia artemisiifolia</i>	Asteraceae	Common Ragweed	Herb	A
<i>Argemone glauca</i>	Papaveraceae	Pua Kala/Prickly Poppy	Herb	I
<i>Atriplex semibaccata</i>	Chenopodaceae	Australian Saltbush	Herb	A
<i>Boerhavia coccinea</i>	Nyctaginaceae	Boerhavia	Herb	A
<i>Boerhavia repens</i>	Nyctaginaceae	Alena	Herb	I
<i>Bothriochloa pertusa</i>	Poaceae	Pitted Beardgrass	Grass	A
<i>Caesalpinia bonduc</i>	Fabaceae	Kakalaioa	Vine	I
<i>Capparis sandwichiana</i>	Capparaceae	Maiapilo	Shrub	E
<i>Casuarina equisetifolia</i>	Casuarinaceae	Ironwood	Tree	A
<i>Cenchrus ciliaris</i>	Poaceae	Buffel Grass	Grass	A
<i>Cenchrus echinatus</i>	Poaceae	Sandbur	Grass	A
<i>Chamaecrista nictitans</i>	Fabaceae	Partridge Pea	Herb	A
<i>Chenopodium murale</i>	Chenopodiaceae	Goosefoot	Herb	A
<i>Chloris barbata</i>	Poaceae	Swollen Fingergrass	Herb	A
<i>Cleome gynandra</i>	Brassicaceae	Spider Flower	Herb	A
<i>Crotalaria sp.</i>	Fabaceae	Crotalaria	Herb	A
<i>Cucumis dipsaceus</i>	Cucurbitaceae	Hedgehog Gourd	Vine	A
<i>Cuscuta sandwichiana</i>	Convolvulaceae	Kaunaoa Pehu/Dodder	Vine	E
<i>Cynodon dactylon</i>	Poaceae	Bermuda Grass	Grass	A
<i>Cyperus polystachyos</i>	Cyperaceae	Cyperus	Sedge	I
<i>Dactyloctenium aegyptium</i>	Poaceae	Beach Wiregrass	Grass	A
<i>Desmodium tortuosum</i>	Fabaceae	Florida Beggarweed	Herb	A
<i>Emilia sp.</i>	Asteraceae	Emilia	Herb	A
<i>Euphorbia hirta</i>	Euphorbiaceae	Hairy Spurge	Herb	A
<i>Euphorbia prostrata</i>	Euphorbiaceae	Prostrate Spurge	Herb	A
<i>Euphorbia tirucali</i>	Euphorbiaceae	Pencil Tree	Herb	A
<i>Fimbristylis cymosa</i>	Cyperaceae	Mau‘u ‘Aki‘Aki	Sedge	I
<i>Furcraea foetida</i>	Agavaceae	Mauritius Hemp	Shrub	A
<i>Heliotropium curassavicum</i>	Boraginaceae	Hinahina	Herb	I
<i>Heteropogon contortus</i>	Poaceae	Pili Grass	Herb	I
<i>Hibiscus tiliaceus</i>	Malvaceae	Hau	Shrub	I
<i>Ipomoea indica</i>	Convolvulaceae	Koali ‘Awa/Morning Glory	Vine	I
<i>Ipomoea tuboides</i>	Convolvulaceae	Hawaiian Moon Flower	Vine	E
<i>Indigofera suffruticosa</i>	Fabaceae	Indigofera	Shrub	A
<i>Jacquemontia ovalifolia</i>	Convolvulaceae	Pa‘ū o Hi‘iaka	Vine	I
<i>Lantana camara</i>	Verbenaceae	Lantana	Shrub	A
<i>Leucaena leucocephala</i>	Fabaceae	Haole Koa	Shrub	A
<i>Macroptilium atropurpureum</i>	Fabaceae	Macroptilium	Vine	A

<i>Macroptilium lathyroides</i>	Fabaceae	Cowpea	Shrub	A
<i>Mariscus phleoides</i>	Cyperaceae	None	Herb	E
<i>Megathyrsus maximus</i>	Poaceae	Guinea Grass	Herb	A
<i>Melanthera integrifolia</i>	Asteraceae	Nehe	Herb	E
<i>Merremia aegyptia</i>	Convolvulaceae	Merremia	Vine	A
<i>Momordica charantia</i>	Cucurbitaceae	Balsam Pear	Vine	A
<i>Neonotonia wightii</i>	Fabaceae	Glycine	Vine	A
<i>Panicum fauriei</i> var. <i>latius</i> *	Poaceae	Panicum	Grass	E
<i>Passiflora foetida</i>	Passifloraceae	Love in a Mist	Vine	A
<i>Pluchea carolinensis</i>	Asteraceae	Sourbush	Shrub	A
<i>Portulaca oleracea</i>	Portulacaceae	Pig Weed	Herb	A
<i>Portulaca pilosa</i>	Portulacaceae	Portulaca	Herb	A
<i>Prosopis pallida</i>	Fabaceae	Kiawe	Tree	A
<i>Scaevola taccada</i>	Goodeniaceae	Naupaka	Shrub	I
<i>Schinus terebinthifolius</i>	Anacardiaceae	Christmas Berry	Shrub	A
<i>Senna</i> sp.	Fabaceae	Senna	Tree	A
<i>Sesbania tomentosa</i>	Fabaceae	'Ohai	Herb	End
<i>Sesuvium portulacastrum</i>	Aizoaceae	'Akulikuli	Herb	I
<i>Sonchus asper</i>	Asteraceae	Sow Thistle	Herb	A
<i>Solanum linnaeanum</i>	Solanaceae	Sodom Apple	Shrub	A
<i>Sida fallax</i>	Malvaceae	'Ilima	Shrub	I
<i>Sida rhombifolia</i>	Malvaceae	Broom Weed	Herb	A
<i>Sporobolus virginicus</i>	Poaceae	'Aki 'Aki Grass	Herb	I
<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Jamaican Vervain	Shrub	A
<i>Thespesia populnea</i>	Malvaceae	Milo	Tree	I
<i>Tournefortia argentea</i>	Boraginaceae	Tree Heliotrope	Tree	A
<i>Tribulus cistoides</i>	Zygophyllaceae	Nohu	Herb	I
<i>Tribulus terrestris</i>	Zygophyllaceae	Puncture Vine	Herb	A
<i>Verbena litoralis</i>	Verbenaceae	'Owi	Herb	A
<i>Tridax procumbens</i>	Asteraceae	Coat Buttons	Herb	A
<i>Waltheria indica</i>	Sterculiaceae	'Uhaloa	Herb	I

Status: A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species

\* Tentative ID: all material was dry and sterile

**Table 2. List of Bird Species Found Within Study Area**

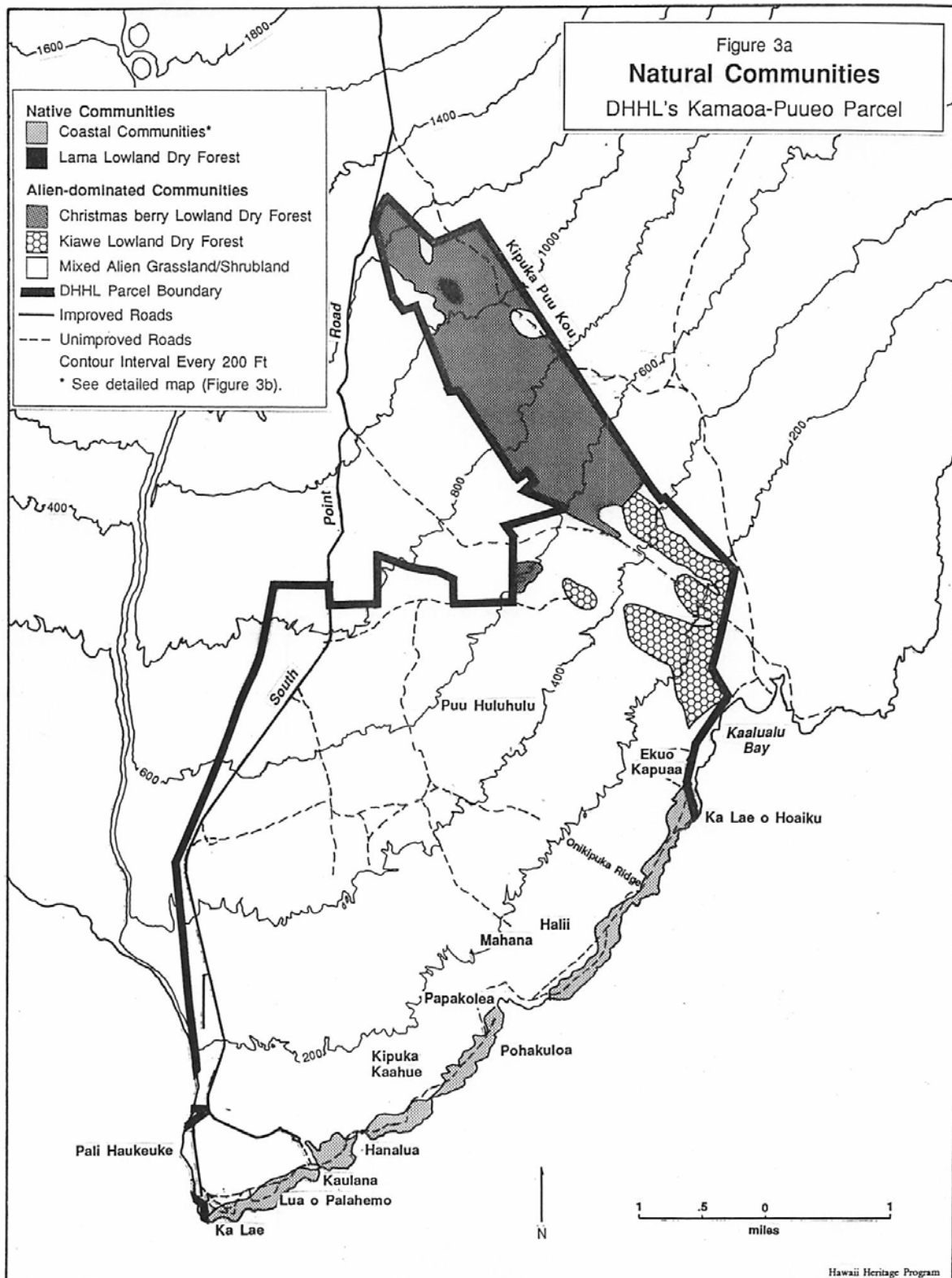
<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Acridotheres tristis</i>	Common Myna	Alien Resident
<i>Alauda arvensis</i>	Eurasian Skylark	Alien Resident
<i>Anous minutus</i>	Black noddy	Indigenous Resident
<i>Asio flammeus sandwichensis</i>	Hawaiian Short-eared Owl, Pueo	Endemic Resident
<i>Carpodacus mexicanus</i>	House Finch	Alien Resident
<i>Columba livia</i>	Rock Dove	Alien Resident
<i>Fregata minor</i>	‘Iwa, Great Frigatebird	Indigenous Resident
<i>Geopelia striata</i>	Zebra Dove	Alien Resident
<i>Heteroscelus incanus</i>	Wandering Tattler, ‘Ulili	Migratory Resident
<i>Lonchura punctulata</i>	Nutmeg Mannikin	Alien Resident
<i>Paroaria capitata</i>	Yellow-Billed Cardinal	Alien Resident
<i>Passer domesticus</i>	House Sparrow	Alien Resident
<i>Pluvialis fulva</i>	Pacific Golden-plover, Kolea	Migratory Resident
<i>Serinus mozambicus</i>	Yellow-Fronted Canary	Alien Resident
<i>Sicalis flaveola</i>	Saffron Finch	Alien Resident
<i>Streptopelia chinensis</i>	Spotted Dove	Alien Resident
<i>Zosterops japonicus</i>	Japanese White-Eye	Alien Resident



**Figure 1a. Location Map, Ka Lae to Mahana Bay Study Area**



**Figure 1b. The Nature Conservancy Natural Communities Map**



**Figure 1c. The Nature Conservancy Native Coastal Natural Communities Map**

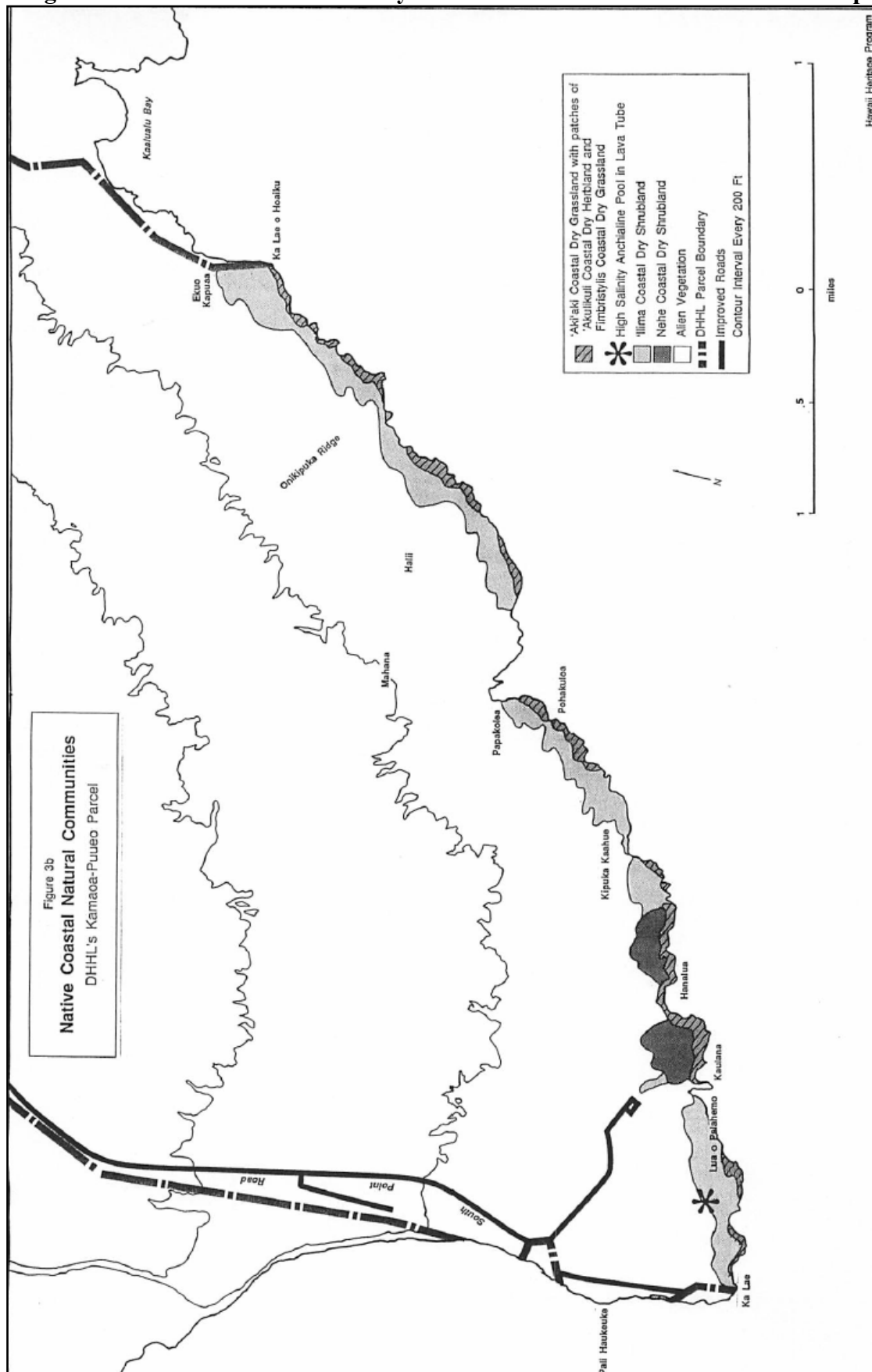
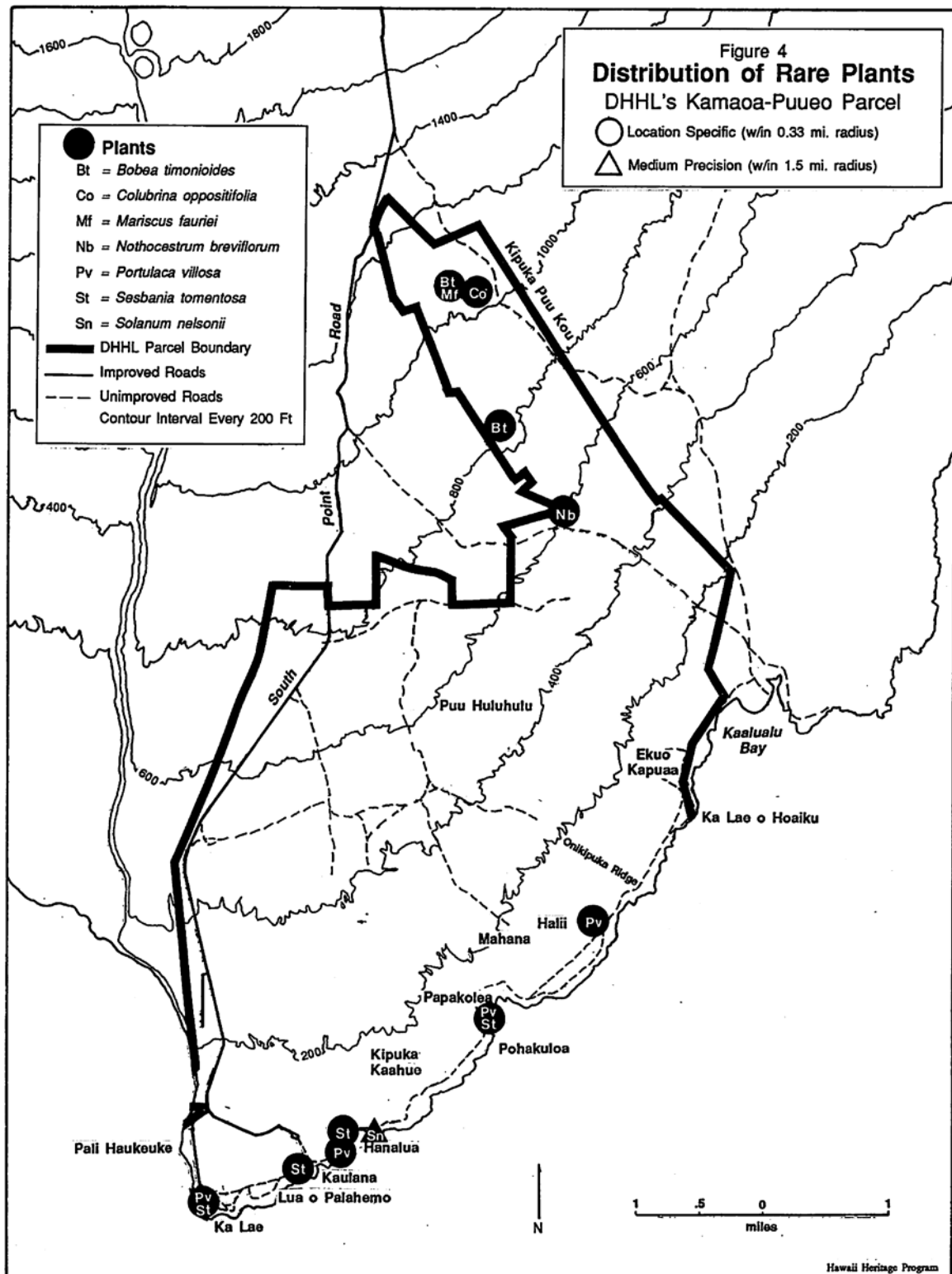


Figure 1d. The Nature Conservancy Rare Species Map





**Figure 2a-b. Project Site Photos**



a. South Point ▲ ▼ b. Pu'u o Mahana





**Figure 2c-d. Project Site Photos**



c. Green Sands Beach (Papakolea) ▲ ▼ d. 'A'a lava flow on shoreline





**Figure 2e-f. Project Site Photos**



e. Fencing for cattle grazing near proposed emergency road ▲ ▼ f. Rutted roads to Mahana Bay





**Figure 2g-h. Project Site Photos**



g. Lava wall preventing road access and landscape damage ▲ ▼ h. Lua o Palehemo

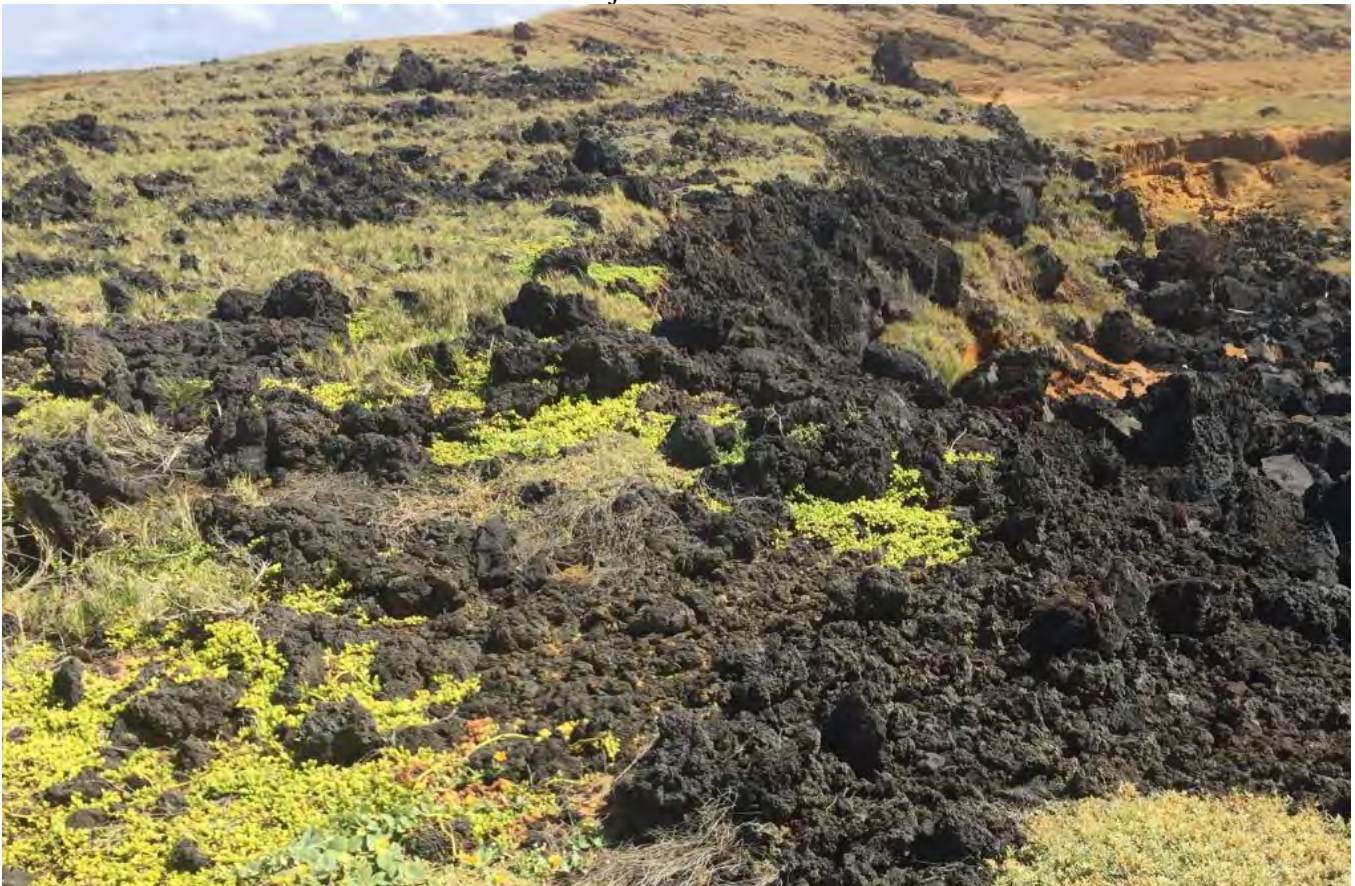




**Figure 2a-b. Project Site Photos**



i. 'Aki'aki on sand substrate ▲ ▼ j. 'Akulikuli/'Aki'aki zone border





**Figure 2k-l. Project Site Photos**



j. Marine debris in 'aki'aki zone ▲ ▼ l. 'Akulikuli and pa'ū o Hi'iaka





**Figure 2m-n. Project Site Photos**



m. 'Akulikuli patch and motorcycle damage ▲ ▼ n. Mau'u 'Aki'aki

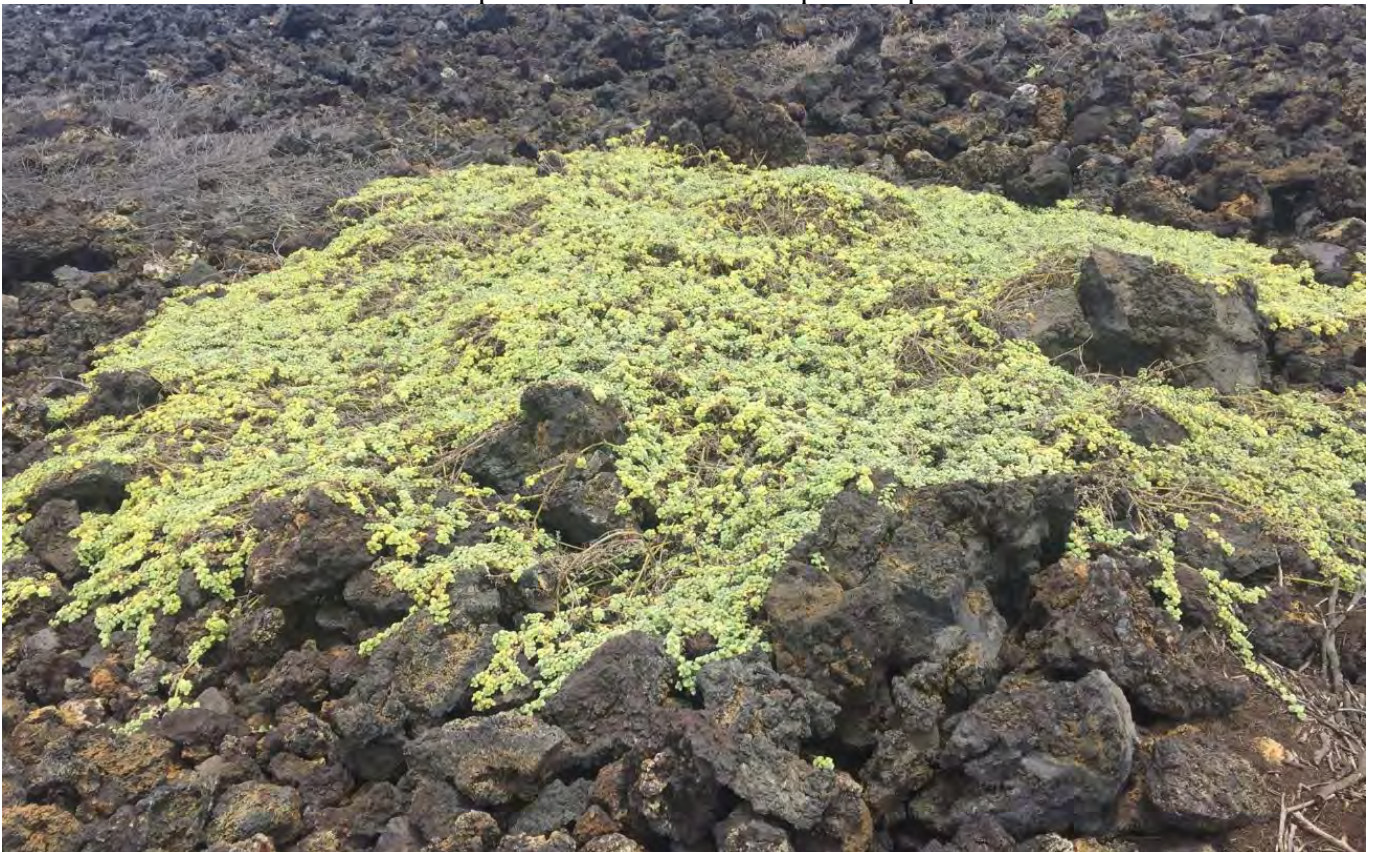




**Figure 2o-p. Project Site Photos**



o. 'Ilima patch with nehe ▲ ▼ p. Nehe patch





**Figure 2q-r. Project Site Photos**



q. Mixed dry grassland ▲ ▼ r. Koa haole zone on 'a'a





**Figure 2s-t. Project Site Photos**



s. Healthy 'ohai patch on 'a'a ▲ ▼ t. Protected 'ohai patch near Mahana Bay





**Figure 2u-v. Project Site Photos**



u. 'Ohai barely surviving near South Point ▲ ▼ v. 'Iwa or frigate bird



# APPENDIX D:

## ARCHAEOLOGICAL INVENTORY SURVEY (AIS)

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**Draft**

**Archaeological Inventory Survey Report for the  
South Point Resources Management Plan Project,  
Kamā‘oa Ahupua‘a, Ka‘ū District, Hawai‘i Island,  
TMKs: [3] 9-3-001:002, 003**

**VOLUME 1**

**Prepared for  
Townscape Inc.**

**Prepared by  
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Sarah Wilkinson, B.A.,  
and  
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## Management Summary

<b>Reference</b>	Archaeological Inventory Survey Report for the South Point Resources Management Plan Project, Kamā‘oa Ahupua‘a, Ka‘ū District, Hawai‘i Island, TMKs: [3] 9-3-001:002, 003 (Bautista et al. 2017)
<b>Date</b>	December 2017
<b>Project Number(s)</b>	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KAMAOA 3
<b>Investigation Permit Number</b>	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological fieldwork permit number 17-08, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-282.
<b>Agencies</b>	SHPD; Department of Hawaiian Home Lands (DHHL)
<b>Land Jurisdiction</b>	Department of Hawaiian Home Lands (DHHL)
<b>Project Location</b>	The project area is located within DHHL lands at Ka Lae or “South Point, Kamā‘oa Ahupua‘a, Ka‘ū District, Hawai‘i Island (TMK: [3] 9-3-001:002, 003). The project area is depicted on a portion of the 1995 Kalae U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
<b>Project Description</b>	<p>DHHL has prepared a resources management plan (RMP) for its property in South Point on Hawai‘i Island. The intent of the RMP is to protect and restore natural and cultural resources located on the property. To address threats to these resources and accomplish the RMP goals, the plan proposes several priority projects for South Point which are clustered in four main areas and include the following:</p> <ul style="list-style-type: none"> <li>A. The installation of an entrance gate at the intersection of Kalae Road and South Point Road, and a security booth 0.75 miles north of the intersection along South Point Road;</li> <li>B. Designated parking areas at the “Barracks” and at Ka Lae;</li> <li>C. A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites;</li> <li>D. A pedestrian path and an emergency access road extending from the “Barracks” to Mahana Bay/Green Sand Beach.</li> </ul> <p>This archaeological inventory survey (AIS) investigation addresses proposed projects B, C, and D.</p>



<b>Project Acreage</b>	The overall project acreage, comprising the three proposed trail/road corridors, connecting portion of existing South Point Road, and two associated parking lots is 17.8 acres (7.2 hectares)		
	<b>ID</b>	<b>Acreage</b>	<b>Hectarage</b>
	Ka Lae Walking Loop	2.4	0.9
	Ka Lae Walking Loop Parking	0.7	0.3
	Green Sand Beach Pedestrian Path	6.2	2.5
	Green Sand Beach Parking	0.8	0.3
	Emergency Road	5.8	2.4
	South Point Road	1.9	0.8
	<b>Total</b>	<b>17.8</b>	<b>7.2</b>
<b>Historic Preservation Regulatory Context</b>	<p>This AIS investigation fulfills the requirements of HAR §13-276 and was conducted to identify, document, and assess significance of any historic properties. This document is intended to support the proposed project's historic preservation review under Hawai'i Revised Statutes (HRS) §6E-8 and HAR §13-275, as well as the project's environmental review under HRS §343. It is also intended to support any project-related historic preservation consultation with stakeholders such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups.</p> <p>The project area is located entirely within DHHL lands. Therefore, identification and treatment of human skeletal remains discovered during this AIS are undertaken in compliance with the applicable provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations.</p> <p>On 1 March 2017 representatives of SHPD, DHHL, and CSH attended a site visit at the project area to discuss the proposed project and determine appropriate AIS methodology. The methods used to complete this AIS fieldwork followed those agreed upon during this site visit.</p>		
<b>Fieldwork Effort</b>	<p>Fieldwork was conducted 5 June 2017 through 11 August 2017 by CSH archaeologists Amanda Lawson, B.A., Samantha Sund, B.A., McKenzie Wildey, B.A., Zachariah Royalty, B.A., Jonas Madeus, B.A., William Folk, B.A., and Olivier M. Bautista, B.A., under the general supervision of Hallett H. Hammatt, Ph.D. This work required approximately 86 person-days to complete. Fieldwork consisted of 100% pedestrian inspection, an extensive subsurface testing program, and photo documentation of previously recorded sites located along the Green Sand Beach Pedestrian Path.</p>		

<b>Consultation</b>	<p>Consultation is ongoing for the project under an environmental assessment (EA) being prepared in compliance with HRS §343. The EA includes an ongoing cultural impact assessment (CIA). The results of the current investigation will be utilized in these ongoing efforts.</p> <p>Consultation regarding a newly identified burial site (State Inventory of Historic Places [SIHP] # 50-10-76-30730) will be undertaken by DHHL in compliance with the applicable provisions of NAGPRA.</p>
<b>Historic Properties Identified and Historic Property Significance</b>	<p>Five historic properties were newly documented within the project area:</p> <ul style="list-style-type: none"> <li>• SIHP # 50-10-76-30726 is a large historic ranching enclosure;</li> <li>• SIHP # 50-10-76-30727 is a historic ranching boundary wall;</li> <li>• SIHP # 50-10-76-30728 is a rock mound of unknown age and function;</li> <li>• SIHP # 50-10-76-30729 is a pre-Contact temporary habitation complex;</li> <li>• SIHP # 50-10-76-30730 is a subsurface pre-Contact human burial site.</li> </ul> <p>In accordance with HAR §13-275-6, all of the newly identified historic properties are assessed as significant under Criterion d for their information content. SIHP # -30730 is also assessed as significant under Criterion e for its inherent importance to the Hawaiian people as a burial site.</p>
<b>Effect Recommendation</b>	<p>In accordance with HAR §13-275-7, the project effect recommendation is “effect, with proposed mitigation commitments.”</p>
<b>Mitigation Recommendations</b>	<p>Pursuant to HAR §13-275-8, CSH recommends preservation of SIHP # -30730. The details of this preservation will be determined by NAGPRA consultations with stakeholders. No further work is recommended for SIHP #s -30726 through -30729. Sufficient information regarding the location, function, age, and construction methods of these sites has been generated by the current archaeological inventory survey investigation to mitigate any adverse effect caused by proposed development activities.</p> <p>CSH recommends a program of archaeological monitoring where project-related ground disturbance is to occur in the vicinity of known archaeological sites along the three proposed routes. Monitoring locations and conditions should be delineated and detailed in an archaeological monitoring plan (AMP) prepared in accordance with HAR §13-279-4 and accepted by SHPD.</p>

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Townscape, Inc. (TSI) and on behalf of the State of Hawai‘i Department of Hawaiian Homelands (DHHL), Cultural Surveys Hawai‘i, Inc. (CSH) has completed this archaeological inventory survey (AIS) for the South Point Resources Management Plan project, Kamā‘oa Ahupua‘a, Ka‘ū District, Hawai‘i Island, TMKs: [3] 9-3-001:002 and 003. The project area is located at Ka Lae (“South Point”) on Hawai‘i Island. It is accessed by South Point Road from Highway 11. The project area is depicted on a portion of the 1995 Kalae U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2009 aerial photograph (Figure 3).

TSI at the request of DHHL is preparing an environmental assessment (EA) in accordance with Hawai‘i Revised Statutes (HRS) §343 for the implementation of the DHHL’s 2016 South Point resources management plan (RMP). DHHL’s property at South Point comprises large portions of Kamā‘oa and Pu‘ueo Ahupua‘a.

The RMP was developed between June 2015 and October 2016 based on information gathered from consultations with community members from Ka‘ū. Consultations consisted of two community meetings and a series of talk-story sessions. Through the outreach process, four major goals were identified for South Point which included the following: 1) restore, preserve, and protect cultural and natural resources; 2) perpetuate Native Hawaiian culture, values, history and language for future generations; 3) provide a safe, clean, and friendly environment; and 4) generate revenue in order to sustainably fund cultural and natural resources activities and provide economic opportunities for DHHL beneficiaries and their families.

Unregulated access to DHHL lands at South Point has compromised the integrity of its heritage sites and of coastal ecosystems. Specifically, heavy use of recreational trucks, ATVs, and motor bikes has not only destroyed sacred sites but has resulted in widespread soil and sand erosion. The unregulated use of off-road vehicles, coupled with the site’s exposure to the prevailing winds, has left the natural and cultural resources of South Point in critical condition. To address these threats and accomplish the RMP goals, the plan proposes several priority projects for South Point which are clustered in four main areas and include the following:

- A. The installation of an entrance gate at the intersection of Kalae Road and South Point Road, and a security booth 0.75 miles north of the intersection along South Point Road;
- B. Designated parking areas at the “Barracks” and at Ka Lae;
- C. A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites;
- D. A pedestrian path and an emergency access road extending from the “Barracks” to Mahana Bay/Green Sand Beach.

This AIS investigation addresses proposed projects B, C, and D. The parking lot locations described in Item B are herein referred to as “Ka Lae Loop Parking” and “Green Sand Beach Parking.” The cultural interpretive walking trail at Ka Lae described in Item C is herein referred to as the “Ka Lae Walking Loop.” The pedestrian path and emergency access road described in Item D are herein referred to as the “Green Sand Beach Pedestrian Path” and “Emergency Road,”



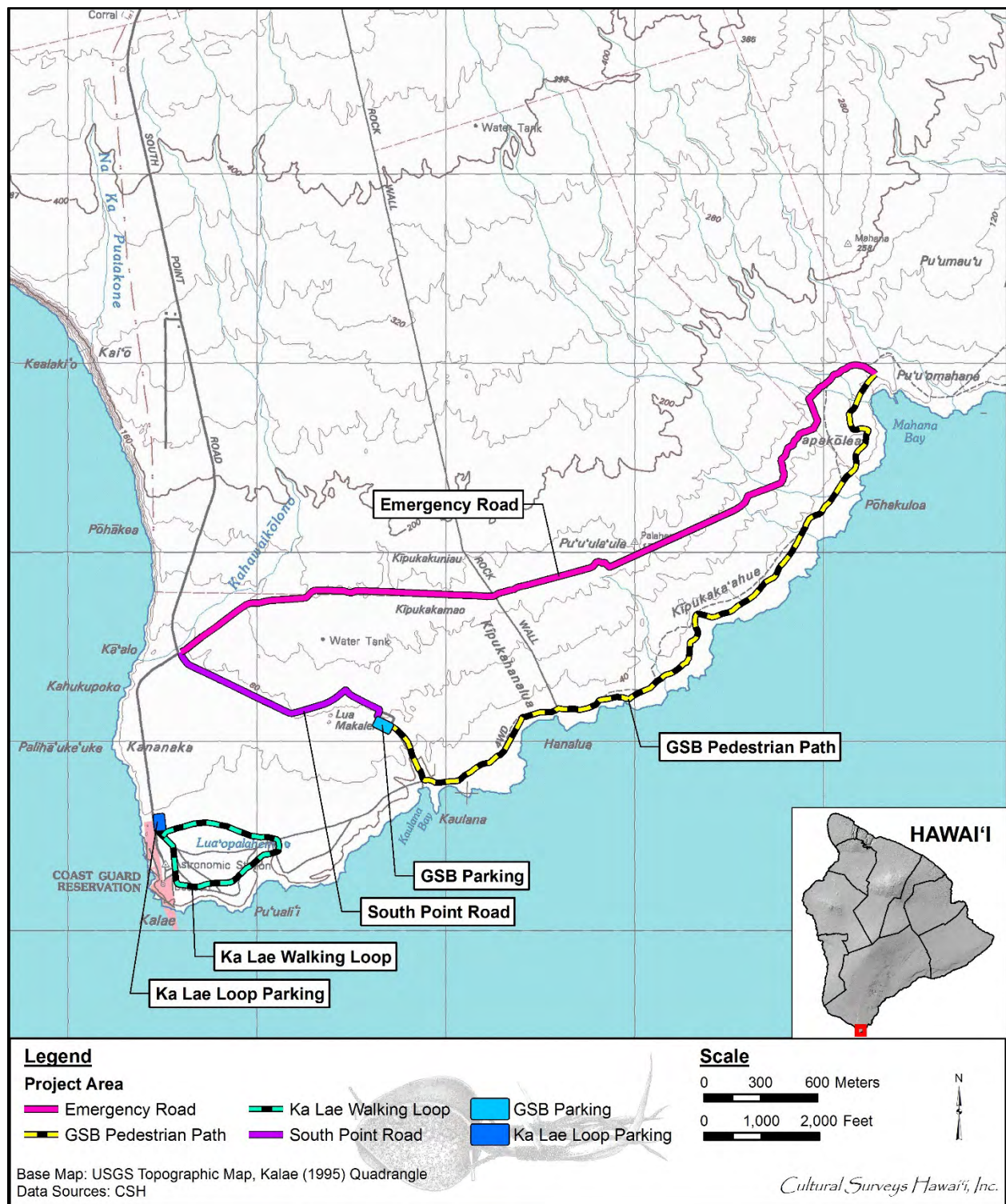


Figure 1. Portion of the 1995 Kalae USGS 7.5-minute topographic quadrangle showing the location of the project area

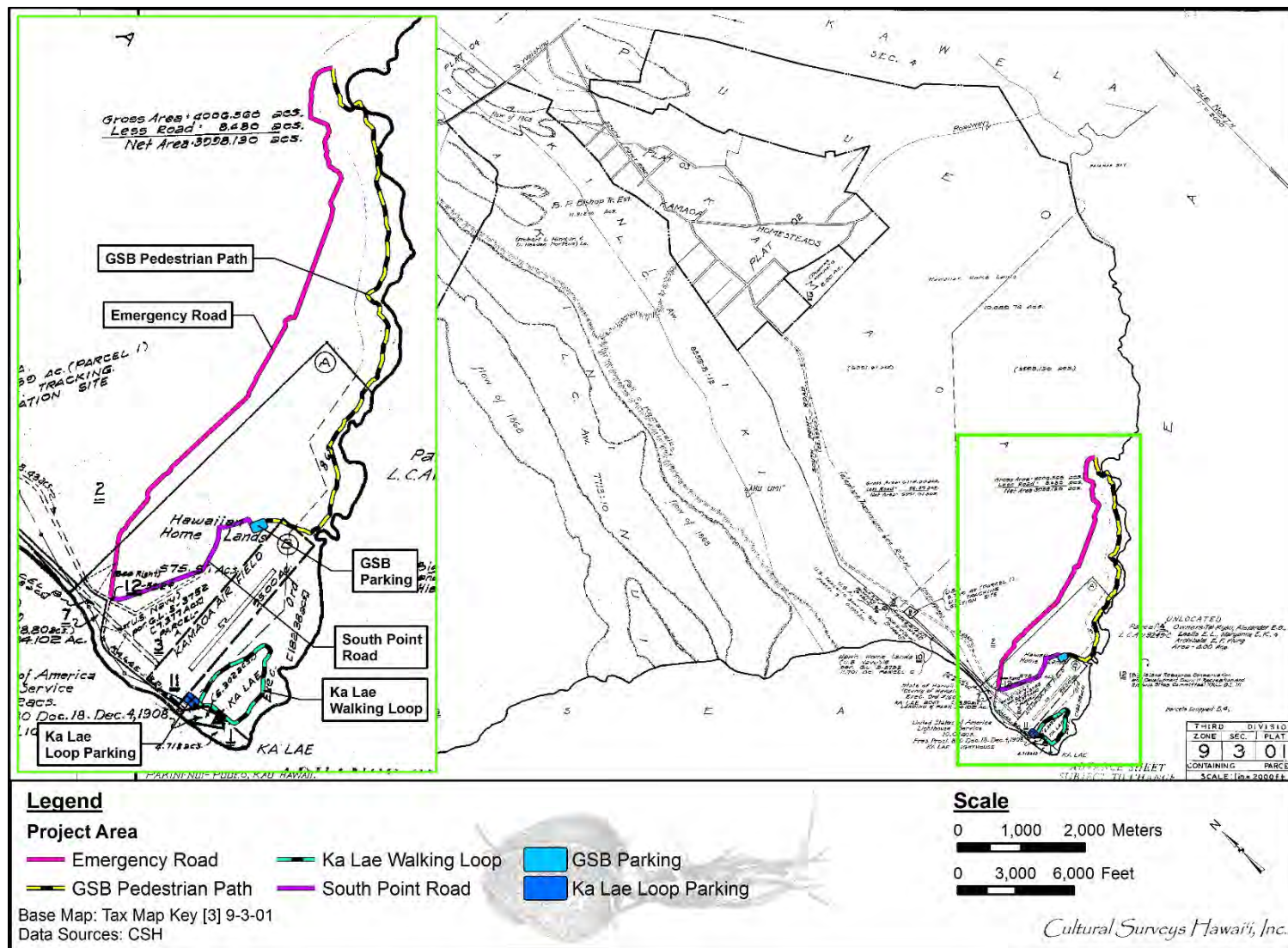


Figure 2. Tax Map Key (TMK) [3] 9-3-01 showing the project area (Hawai'i TMK Service 2014)



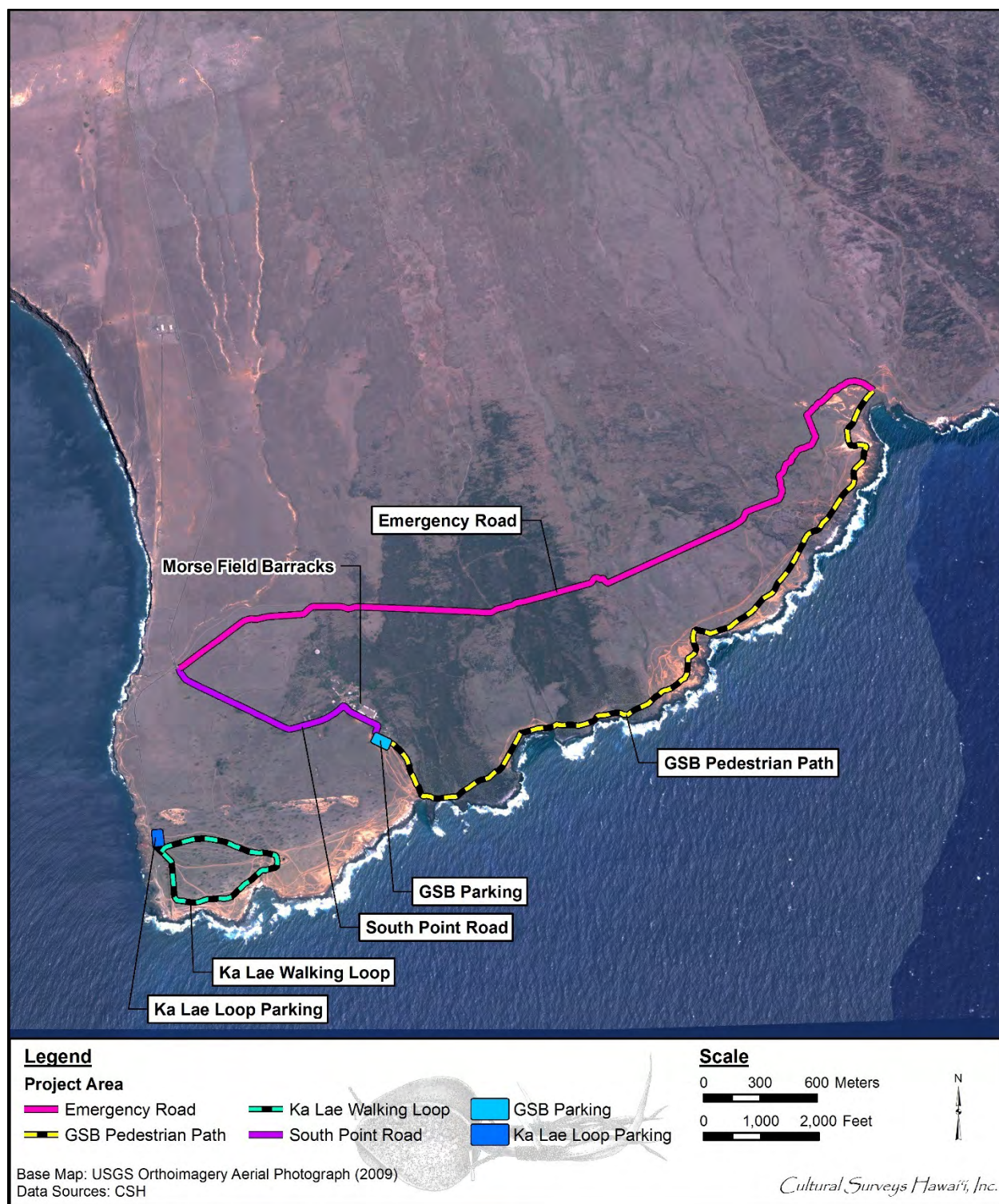


Figure 3. Aerial photograph of the project area (USGS 2009)

respectively. The segment of the existing South Point Road corridor connecting the head of the Green Sand Beach Pedestrian Path at the Green Sand Beach Parking area and the beginning of the Emergency Road was also surveyed. These individual components of the project area are depicted on Figure 1 through Figure 3.

The Ka Lae Walking Loop, Green Sand Beach Pedestrian Path, and Emergency Road corridors were selected with the objective of avoidance of archaeological features. As such, the proposed routes follow existing trails or roadways to the extent possible. Furthermore, the Ka Lae Walking Loop was devised in consideration of the DHHL property boundary with other state and federal lands (Figure 4). The “Barracks” are defined in the RMP as “the abandoned Morse Field Barracks,” which are located along South Point Road just *mauka* (inland) of the proposed Green Sand Beach Parking area (see Figure 3). Impacts to the Morse Field Barracks structures are not currently proposed and therefore are not included within the current project area.

Table 1 provides the dimensions, elevations, and acreages/hectarages of the component portions of the project area. In total, the project area comprises 17.8 acres (7.2 hectares). The overall combined length of the project area corridors is 11.43 km (7.10 miles).

Given the size of this AIS report, it is organized as two volumes: present Volume 1 is the overall report, while Volume 2 contains Appendices.

Table 1. Project area component dimensions and area

ID	Dimensions	Elevation AMSL (above mean sea level)	Acreage	Hectarage
Ka Lae Walking Loop	1.62 km (1.01 miles) long x 6 m (20 ft) wide	6-10 m (20-33 ft)	2.4	0.9
Ka Lae Loop Parking	70 m (230 ft) long x 40 m (131 ft) wide	9-11 m (30-36 ft)	0.7	0.3
Green Sand Beach Pedestrian Path	4.13 km (2.56 mi) long x 6 m (20 ft) wide	2-21 m (7-69 ft)	6.2	2.5
Green Sand Beach Parking	80 m (262 ft) long x 40 m (131 ft) wide	19-23 m (62-75 ft)	0.8	0.3
Emergency Road	4.43 km (2.75 miles) long x 4-6 m (13-20 ft) wide	22-50 m (72-164 ft)	5.8	2.4
South Point Road	1.25 km (0.78 miles) long x 6 m (20 ft) wide	22-29 m (72-95 ft)	1.9	0.8
<b>Total Area</b>			<b>17.8</b>	<b>7.2</b>



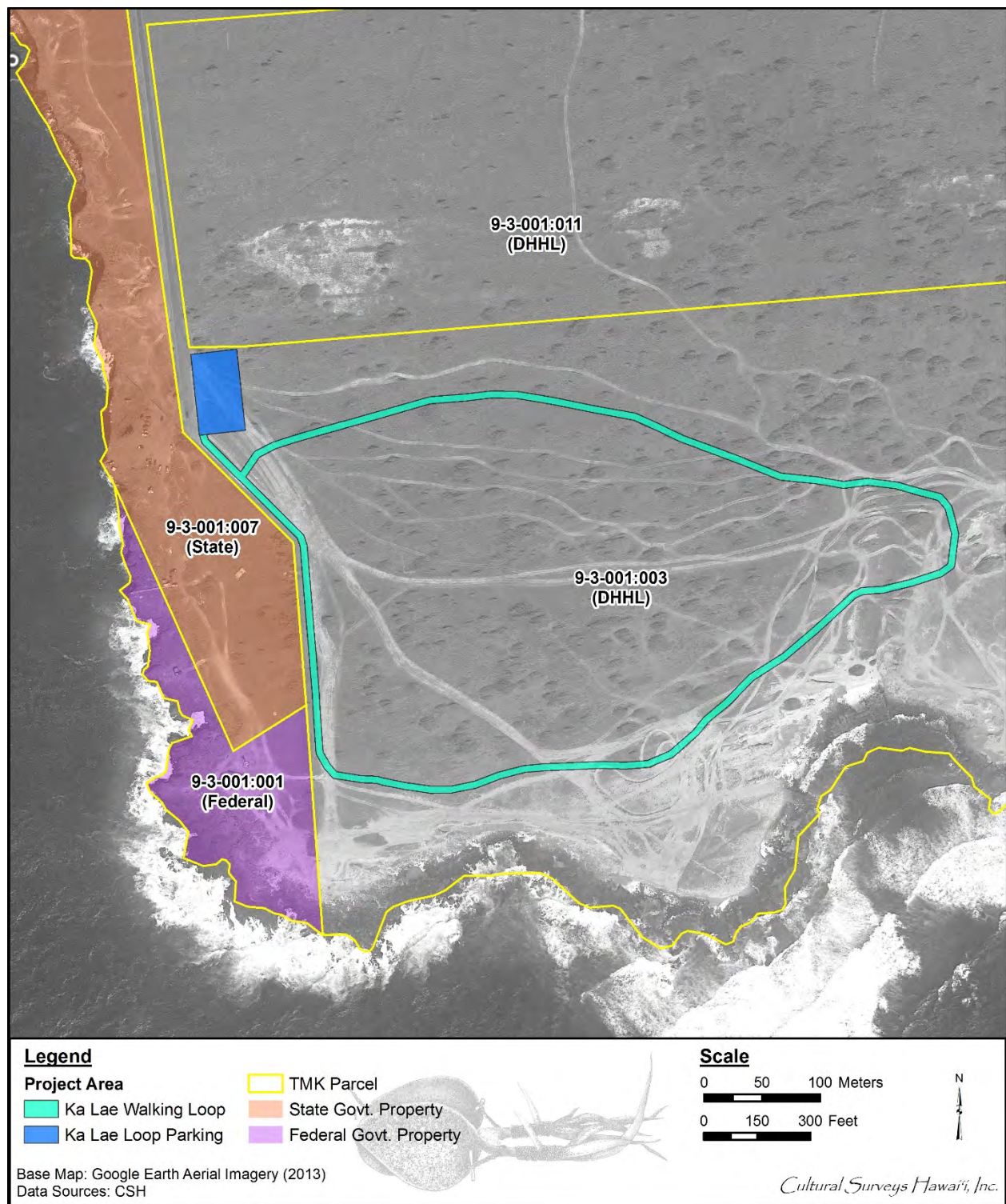


Figure 4. Aerial photograph of the project area (Google Earth Imagery 2013) showing land jurisdiction boundaries in the vicinity of the Ka Lae Walking Loop

## 1.2 Historic Preservation Regulatory Context and Document Purpose

This AIS investigation fulfills the requirements of Hawai'i Administrative Rules (HAR) §13-276 and was conducted to identify, document, and assess significance of any historic properties. This document is intended to support the proposed project's historic preservation review under HRS §6E-8 and HAR §13-275, as well as the project's environmental review under HRS §343. It is also intended to support any project-related historic preservation consultation with stakeholders such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups.

The project area is located entirely within DHHL lands. Therefore, identification and treatment of human skeletal remains discovered during this AIS are undertaken in compliance with the applicable provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations.

On 1 March 2017 representatives of the State Historic Preservation Division (SHPD), DHHL, and CSH attended a site visit at the project area to discuss the proposed project and determine appropriate AIS methodology. The methods used to complete this AIS fieldwork followed those agreed upon during this site visit.

## 1.3 Environmental Setting

### 1.3.1 Natural Environment

The project area is located in the *ahupua'a* (traditional land division) of Kamā'oa, which is a large land segment on Mauna Loa, occupying the southernmost portion of the island of Hawai'i. It is bordered by Pākini-iki Ahupua'a to the west, the Pacific Ocean to the south, Kawela Ahupua'a to the east, and Kiolaka'a Ahupua'a to the north. Kamā'oa is described in *Place Names of Hawaii* as a "plain near Ka Lae" (Pukui et al. 1976:81). The landscape is open grassland with some exposed lava flows and outcroppings sloping gently to moderately *makai* (seaward), that is generally south. Given its geographic location, Ka Lae is exposed to high winds and strong ocean currents along the coastline.

The vicinity of the project area receives a relatively low mean annual rainfall of approximately 500–760 mm (20–30 inches). No perennial streams are present, though natural drainages formed by storm runoff are common. Surface water throughout the area is generally limited to scattered anchialine pools such as Lua o Palehemo, located approximately 40 m east of the proposed Ka Lae Walking Loop; no such features are present in the project area. The project area ranges from approximately 20 m (66 feet [ft]) back from the coast along the Green Sand Beach Pedestrian Path up to 1.1 km (3,610 ft) back from the coast along the Emergency Road, at ft 2–5 m (7–164) AMSL (above mean sea level). The Green Sand Beach Pedestrian Path passes a number of bays and small inlets along the coast, including Kaulana Bay, Hanalua Bay, and the famed Mahana Bay where the beach commonly known as "Green Sands" is located. The coastline exhibits significant erosion wherever soil or sediment is exposed to the wind and/or surf.

Vegetation within the open grassland areas consists predominately of buffelgrass (*Cenchrus ciliaris*), with scattered lantana (*Lantana camara*), koa haole (*Leucaena leucocephala*), kiawe (*Prosopis pallida*), and Christmas berry (*Schinus terebinthifolius*) in the *mauka* areas. Closer to the coast, the buffelgrass is intermixed with the following alien species identified for the RMP:

Australian saltbush (*Atriplex semibaccata*), Bermuda grass (*Cynodon dactylon*), pigweed (*Portulaca pilosa*), beach wiregrass (*Dactyloctenium aegyptium*), swollen fingergrass (*Chloris barbata*), balsam pear (*Momordica charantia*), pitted beardgrass (*Bothriochloa pertusa*), common sandbur (*Cenchrus echinatus*), and Henry's crabgrass (*Digitaria ciliaris*). Predominant native species identified along the coast for the RMP include 'aki'aki (*Sporobolus virginicus*), 'akulikuli (*Sesuvium portulacastrum*), *Fimbristylis cymosa*, 'ilima (*Sida fallax*), and *nehe* (*Lipochaeta integrifolia*). The RMP also notes the presence of a number of endangered species at Ka Lae; of these, only one (*pa'u o Hi'iaka*; *Jacquemontia ovalifolia* ssp. *Sandwicensis*) was encountered during the AIS. Typically, vegetation upon the exposed lava flows within the project area is also variable dependent on distance from the coast; in *makai* areas, the lava is lightly vegetated with the species coastal species listed above, while *mauka* areas are typically densely vegetated with *koa haole* and lantana.

Prominent landmarks in the vicinity of the project area are cinder cones or *pu'u*. Pu'u' Ula'ula is a cinder cone located just *mauka* of the proposed Emergency Road, and Pu'u o Mahana is the cinder cone located at Mahana Bay. Distinctive lava formations and natural lava tube openings of variable size are common throughout the area. Lua Mākālei is a large, well-known lava tube located approximately 75 m south of South Point Road and 250 m west of the proposed Green Sand Beach Pedestrian Path Parking lot. The locations of Pu'u Ula'ula, Pu'u o Mahana, and Lua Mākālei are visible on the modern USGS 7.5-minute topographic quadrangle map (see Figure 1).

The project area crosses 11,000-30,000-year-old Tephra deposits from Mauna Loa (type Qt), with an area of "Kau Basalt" lava flows of similar source and age near its eastern end (type Qk; Figure 5). Atop these older volcanic flows and deposits within the project area are several broad bands of younger Kau Basalt dating to 5,000–11,000 years (type Qk10; see Figure 5). These intermittent bands of younger lava comprise the highly distinct 'a'ā ridges within the project area.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Sato et al. (1973), the project area contains soils from the Kaalualu and Pakini series, and the miscellaneous land types "Lava flows, aa" and "Very stony land" (Figure 6). The predominant soil type, present intermittently throughout the project area, is Pakini very fine sandy loam (PKB) (see Figure 6). This soil type, commonly referred to as "Pahala Ash," is described as follows:

... well drained very fine sandy loams that formed in volcanic ash. These soils are nearly level to gently sloping. They are on Mauna Loa at an elevation ranging from near seal level to 1,000 feet and receive from 20-40 inches of rainfall annually. Their mean annual soil temperature is between 72 and 75 degrees. The natural vegetation consists of Japanese tea, sandbur, cocklebur, lantana, bermudagrass, and piligrass. These soils and Kaalualu, Kaimu, Kamaoa, Naalehu, and Punaluu soils are in the same area.

Pakini soils are used for pasture

This soil is in the South Point area. The dominate slope is 5 percent. [Sato et al. 1973:44]



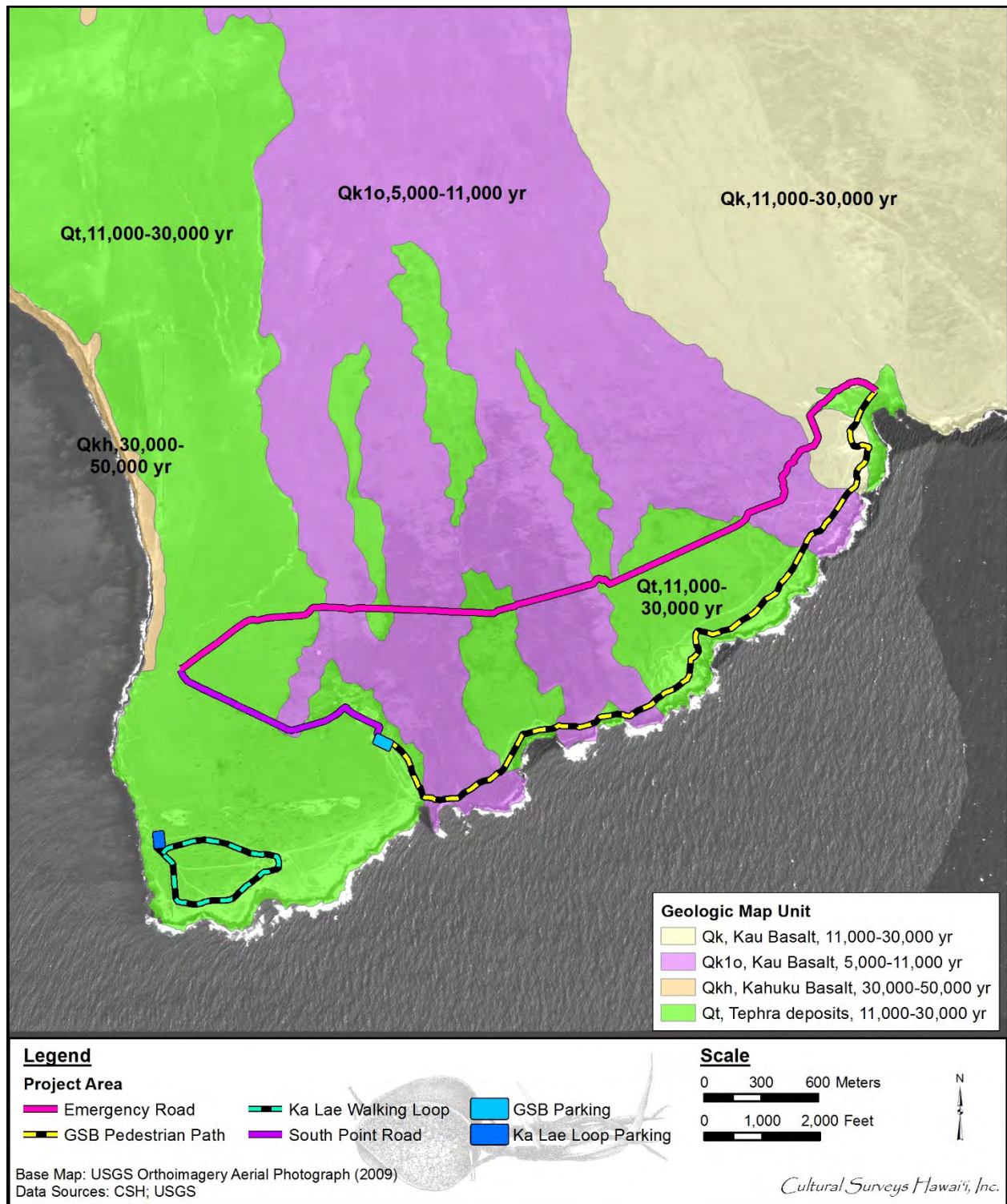


Figure 5. Aerial photograph of the project area (USGS Orthoimagery 2009) overlain with geological data (Sherrod et al. 2008), indicating geological map units in the vicinity



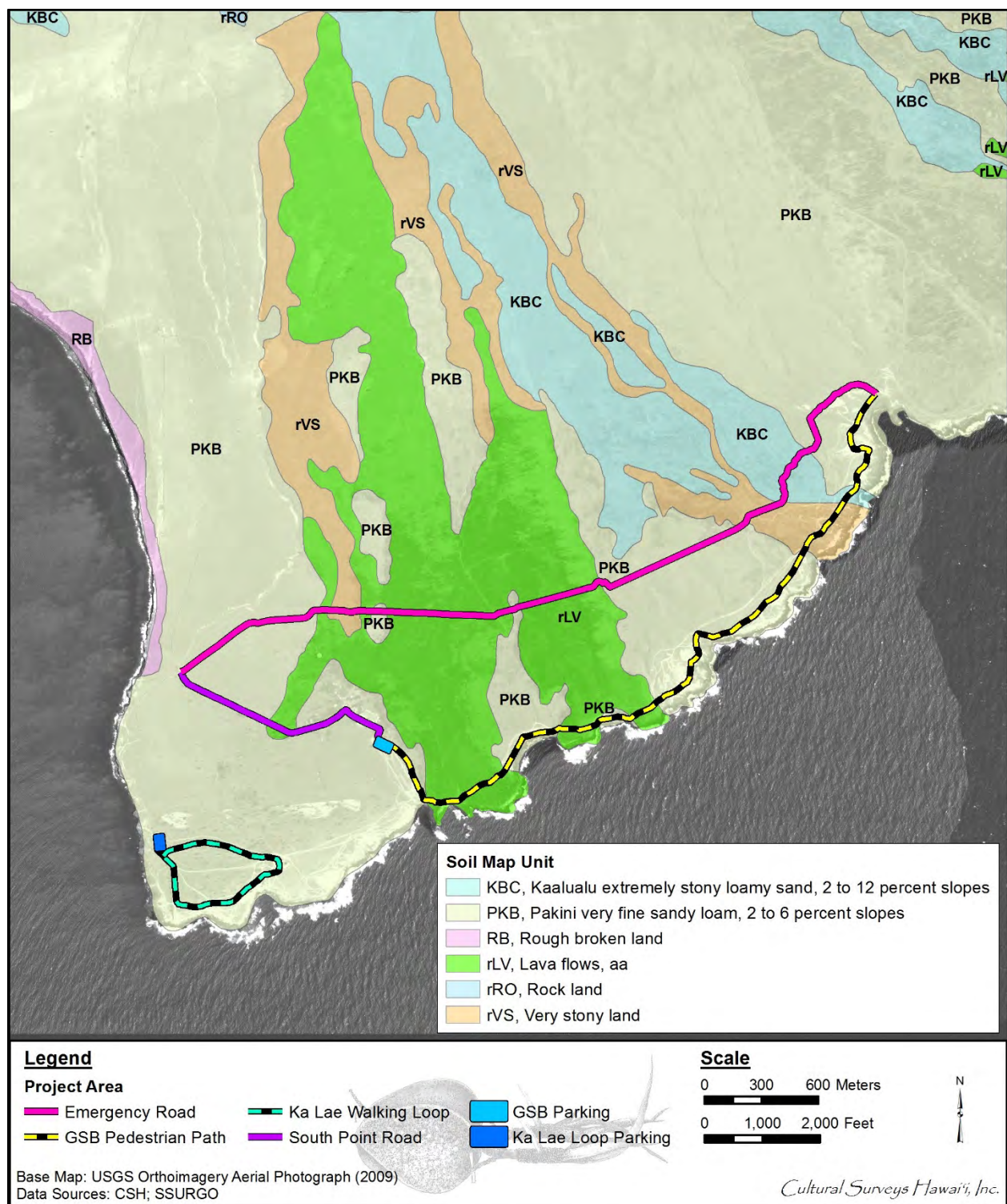


Figure 6. Overlay of *Soil Survey of the State of Hawaii* (Sato et al. 1973), indicating soil types within and surrounding the project area (USDA SSURGO 2001)

An area of Kaalualu extremely stony loamy sand (KBC) is crossed by the eastern portion of the project area (see Figure 6). This soil type is described as follows:

. . . well drained loamy sands that formed in volcanic ash. These are gently sloping to moderately sloping soils in coastal areas at an elevation ranging from near sea level to 1,000 feet. They receive 20 to 40 inches of rainfall annually, and their mean annual soil temperature is between 73 and 75 degrees. The natural vegetation consists of Lantana, Bermuda grass, and Japanese tea . . .

Kaalualu soils are used for pasture.

This soil is in low coastal areas on Mauna Loa at South Point. [Sato et al. 1973:21]

The 5,000–11,000-year-old ‘a‘ā lava flows crossing the project area appear as “Lava flows, aa” or rLV on Figure 6. This miscellaneous land type is described as “having practically no soil covering and is bare of vegetation, except for mosses, lichens, ferns, and a few small ohia trees . . . This lava is rough and broken. It is a mass of clinkery, hard, glassy, sharp pieces piled in tumbled heaps,” (Sato et al. 1973:34). The project area crosses a second miscellaneous land type called “Very stony land” or rVS at its eastern end adjacent to the area of KBC soil, and in one relatively small area along the western end of the Emergency Road corridor (see Figure 6). Very stony land (rVS) is described as follows:

. . . very shallow soil material and a high proportion of Aa lava outcrops. The dominant slope is between 10 and 15 percent. Between the lava outcrops and in the cracks of the lava, the soil material extends to a depth of 5 to 20 inches . . . The vegetation ranges from a sparse cover in dry areas to dense stands of ohia and tree fern in areas of high rainfall. The erosion hazard is slight.

This land is used for pasture and watershed and wildlife habitat. Adapted pasture plants and yields are similar to those of surrounding soils. [Sato et al. 1973:52]

### 1.3.2 Built Environment

The lands of Ka Lae have been used continuously since the pre-Contact era. Archaeological sites and modern ranching features are present throughout the greater area. As previously noted, the proposed Green Sand Beach Pedestrian Path and Emergency Road corridors (and to some degree, the Ka Lae Walking Loop) were designed to follow existing unimproved Jeep trails to facilitate avoidance of archaeological sites. Many of these trails are the result of unmanaged vehicular access by local residents and tourists for recreation. This activity has denuded the landscape and negatively impacted natural and cultural resources in the area.

The project area is accessed via the existing paved South Point Road. The lands adjacent to the project area have experienced some prior development, particularly associated with military occupation at Morse Field (the former military airfield alternatively known as South Cape Airport, South Point Air Force Station, or Kalae Military Reservation). Morse Field included an airstrip, numerous buildings, utility infrastructure, and access roadways. Remnants of the former military outpost include numerous concrete building foundations, a water tank still in use by area ranchers, and asphalted areas including roads and parking areas, some of which are being used by local residents providing vehicular tours to Green Sand Beach. A concrete boat ramp and informal parking areas are present and in active use at Kaulana Bay. Southwest of the proposed Ka Lae

Walking Loop on federal land at Ka Lae Point is the U.S. Coast Guard Light Beacon and Heiau o Kalalea. Moving north along the *pali* (cliff) on state land is another recreational area used by fishermen and tourists, with additional remnants of military structures and a long, jointed rock wall delineating the federal and state lands with the DHHL property.

## Section 2 Methods

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### 2.1 Field Methods

CSH completed the fieldwork component of this AIS under archaeological fieldwork permit number 17-08, issued by the SHPD pursuant to HAR §13-282. Fieldwork was conducted 5 June 2017 through 11 August 2017 by CSH archaeologists Amanda Lawson, B.A., Samantha Sund, B.A., McKenzie Wildey, B.A., Zachariah Royalty, B.A., Jonas Madeus, B.A., William Folk, B.A., and Olivier M. Bautista, B.A., under the general supervision of Hallett H. Hammatt, Ph.D. This work required approximately 86 person-days to complete.

On 1 March 2017 representatives of SHPD, DHHL, and CSH attended a site visit at the project area to discuss the proposed project and determine appropriate AIS methodology. The methods used to complete this AIS fieldwork followed those agreed upon during this site visit. In general, fieldwork included 100% pedestrian inspection of the project area, GPS data collection, an extensive program of subsurface testing, thorough documentation of features identified within the project area, and photo documentation of previously documented site areas immediately adjacent to the project area.

#### 2.1.1 Pedestrian Survey

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of cultural resource identification and documentation. The pedestrian survey followed standard archaeological methods. The pedestrian survey was accomplished through systematic sweeps spaced 2-5 m apart within the project area limits, defined as the trail/roadway corridors and parking lot areas. During the pedestrian survey, potential archaeological sites were marked using photos and Trimble ProXR GPS (sub-meter horizontal accuracy). Following the pedestrian survey, archaeologists returned to the marked points to complete site documentation as applicable.

Where a new historic property was encountered, the determination of its boundary was based on factors including apparent age, architectural style, and the spatial and functional interrelationships of both natural and man-made features.

#### 2.1.2 Subsurface Testing

The subsurface testing program involved excavation of 135 shovel test pits throughout the project area. The subsurface testing program followed the methods agreed upon during the 1 March 2017 site visit with SHPD and DHHL. Exploratory shovel testing occurred at regular intervals along the proposed road/trail corridors where sediment was present (i.e., not across areas of exposed lava bedrock). Pits measured approximately 0.5 m in diameter and terminated at either bedrock or upon the physical limits of excavation within the pit (typically at about 1.0 m below surface; had cultural layers been encountered the pit would have been expanded areally to accommodate thorough documentation). The purpose of the testing was to determine the potential for encountering subsurface cultural materials within the project area.

Shovel test locations were selected prior to the fieldwork. Along the proposed Ka Lae Walking Loop and Green Sand Beach Pedestrian Path, shovel tests were plotted every 50 m in areas of sediment. Along the proposed Emergency Road, shovel tests were plotted every 100 m in areas of sediment. In addition, four shovel tests locations were selected for each proposed parking lot to



provide representative coverage within each area. Shovel testing was not conducted along South Point Road, as no improvements are presently proposed in this location. Shovel test locations were plotted in CSH's geographic information system (GIS), and transferred to Garmin 60CSx GPS units for identification of the predetermined test locations in the field. Once identified in the field, shovel test locations were adjusted slightly as needed based on local conditions. Completed test locations were recorded using the Trimble ProXR GPS.

Shovel test pits were excavated using hand tools. In general, shovel test pits measured approximately 0.5 m in diameter. All excavated sediment was screened through 1/8-inch mesh. Screened sediment was deposited on a tarp adjacent to the pit.

In addition to the exploratory shovel testing, two test units were excavated by hand at archaeological features in an attempt to clarify their age and function. These test units measured 1.0 by 1.0 m (1.0 square [sq] m) and were excavated and recorded one level (or stratum) at a time to bedrock. All sedimentary materials were screened through 1/8-inch mesh. Removed architectural rock materials and screened sediment were deposited on a tarp adjacent to the pit for backfilling. The locations of the completed test units were recorded using the Trimble ProXR GPS.

A stratigraphic profile of each shovel test pit and 1.0 m by 1.0 m test unit was drawn and photographed. The observed sediments were described using standard USDA soil description observations/terminology. Sediment descriptions included Munsell color; texture; consistence; structure; plasticity; cementation; origin of sediments; descriptions of any inclusions such as cultural material and/or roots; lower boundary distinctiveness and topography; and other general observations. Where stratigraphic anomalies or potential cultural deposits were exposed, these were carefully represented on test excavation profile maps.

Upon documentation, test pits were backfilled using the excavated sediments and tamped down in an attempt to return to the surface to its original appearance. Test units were also backfilled with excavated sediments, and the dismantled architectural rock materials were returned to their original locations as best as possible.

The general results of the exploratory testing program are provided in Section 5.3.3 of the present volume. The complete set of STP profile photos and drawing are provided in Appendix C in Volume 2. The full results of the testing at archaeological features is provided in Section 5.3.2 of the present volume.

## 2.2 Laboratory Methods

No diagnostic materials were encountered during AIS fieldwork. Therefore, laboratory studies were not necessary.

## 2.3 Photo Documentation of Previously Identified Sites

SHPD during the 1 March 2017 site visit requested limited documentation of previously recorded archaeological sites located outside of but immediately adjacent to the project area corridors; specifically, along the Green Sand Beach Pedestrian Path where a number of large site complexes are present. This documentation included photographs taken in each cardinal direction from fixed stations or "photo points" along the corridor, and brief descriptions of the features visible in the photos. This information will be used to produce interpretive signage to be installed along the proposed trail, with the intent to both inform the public about the cultural history of the

area and to keep pedestrians on the specified path. The photo points were also recorded using the Trimble ProXR GPS.

## 2.4 Disposition of Materials

No artifactual or natural materials were collected during the current AIS. All data generated during the course of the AIS are stored at the CSH offices in Hilo, Hawai‘i and Waimānalo, O‘ahu.

## 2.5 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai‘i, the Hawai‘i State Archives, the Mission Houses Museum Library, the Hawai‘i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai‘i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database (Waihona ‘Aina 2000).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of cultural resources in the project area.

## 2.6 Consultation Methods

Consultation is being undertaken for the project to comply with HRS §343 governing environmental impact statements. Presently, consultation with community, agency, and Native Hawaiian organizations has been initiated and is ongoing by the project proponents of the EA. To date consultation has included public meetings held by DHHL and Townscape, Inc., and preparation of a cultural impact assessment (CIA) by Townscape, Inc. The results of the current investigation will be utilized in these ongoing efforts.

Consultation regarding a newly identified burial site (State Inventory of Historic Places [SIHP] # 50-10-76-30730) in the vicinity of Pu‘u Ali‘i will be undertaken by DHHL in compliance with the applicable provisions of NAGPRA.

## Section 3 Traditional and Historical Background

The district of Ka‘ū is the southernmost and largest district of Hawai‘i Island, comprising nearly 30 *ahupua‘a* (a land division usually extending from uplands to the sea). The project area is located within Kamā‘oa Ahupua‘a (also called Kamā‘oa-Pu‘ueo), and more specifically in the ‘ili ‘āina (smaller subdivision of an *ahupua‘a*) of Kalae (Ka Lae). Located immediately east of Kamā‘oa is Kawela Ahupua‘a. Immediately west of Kamā‘oa are Pākini Iki and Nui Ahupua‘a. Pākini Nui contains the Pali o Kamamalu (or Kūlani), a vast cliff that effectively divides the *makai* halves of leeward and windward Ka‘ū.

### 3.1 Traditional Background

#### 3.1.1 *Wahi Pana* (Place Names)

*Wahi pana* (“legendary place”; Pukui and Elbert 1986:376) or “place names” are an integral part of Hawaiian culture. “In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there which has meaning for the people of that time” (McGuire and Hammatt 2000:23). The *wahi pana* are then passed on through language and oral tradition, thus preserving the unique significance of the place. Hawaiians named a wide variety of objects and places, including points of interest that may have gone unnoticed by persons of other cultural backgrounds. Hawaiians have named taro patches, rocks and trees that represented deities and ancestors, sites of houses and *heiau* (places of worship), canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place (Pukui et al. 1976:x).

The primary compilation source for place names in this section is the online database of Lloyd Soehren’s (2010) *Hawaiian Place Names*. Soehren has compiled all names from the mid-nineteenth century land documents, such as Land Commission Awards (LCA) and Boundary Commission Testimony (BCT) reports. The Boundary Commission testimony lists boundary points for many (but not all) of the *ahupua‘a*. The names of ‘ili ‘āina or ‘ili kū (a nearly independent ‘ili land division within an *ahupua‘a*) are compiled from the testimony in Māhele Land Commission Awards, from both awards successfully claimed and from those rejected.

The Soehren database includes place name meanings from the definitive book on Hawaiian place names, *Place Names of Hawaii* (Pukui et al. 1976). Where Pukui et al. (1976) do not provide a translation, Soehren often suggests a meaning for simple names from the Hawaiian Dictionary (Pukui and Elbert 1986). Thomas Thrum (1922) also compiled a list of place names in the 1922 edition of Lorrin Andrews’s *A Dictionary of the Hawaiian Language*, although these meanings are considered to be less reliable than those in *Place Names of Hawaii*. Oftentimes these place names can be found on historic maps. Table 2 presents the meanings of select place names within Kamā‘oa adapted from Soehren (2010) and Pukui et al. (1976); many of the place names are depicted on USGS topographic quadrangle maps (see Figure 1). According to Soehren (2010), Kamā‘oa contains over 30 ‘ili ‘āina or ‘ili kū; only Kalae is included in Table 2 as this is the ‘ili in which the project area is located.

Table 2. Select place names in Kamā'oa Ahupua'a (adapted from Soehren 2010 and Pukui et al. 1976)

Place Name	Meaning
‘Alalākeiki	Cave; literally, “child’s wail” (believed to be heard here)
Hala‘ea	The name of the current coming from the east at Ka Lae (South Point), Hawai‘i, which meets a current from the west named Kāwili; the two currents go out to sea together. Hala‘ea was named for a chief. A stone on the shore nearby, Pōhaku-o-ke-au (stone of the time), is believed to turn over in strong seas, an omen of coming change
Hāli‘i	A broad area inland, between Pu‘u Mau‘u and Ka Lae Pa‘akai; literally, “strewn”
Hāli‘ipa‘akai	The name may apply to a cave at the shore near Mahana or to a small point containing the cave. The name may refer to the making of sea salt; literally, “salt strewn.”
Hanalua	A bay located below Kīpuka Hanalua
Ka Lae	Point known as “South Point” (literally “the Point”); according to Pukui et al. (1976:71), “southernmost point in all the fifty states. A rock in the sea here called Pōhaku-wa‘a-Kauhi (Kauhi canoe stone) is believed to have been a canoe from Kahiki [Tahiti].”
Kalaepa‘akai	Point where salt was probably made; literally, “the salt point”
Ka‘ahue	Cave at the shore of a small bay and a <i>kīpuka</i> inland
Ka‘alo	Place at the mouth of Kahawai Kolono; bend in the coast west of South Point, Hawai‘i; fishing is good here in calm weather; a pier built here some years ago against the advice of local Hawaiians was soon destroyed by the elements; literally, “the avoidance”
Kahawai o Lono	Stream; a large dry gulch washed by downpours, which extends to the sea [at Ka‘alo] just above South Point. Lono was embodied in the rain cloud, and in the sound of thunder; misspelled “Kahawai Kolono” by USGS; lit. stream of (the god) Lono
Kahukupoko	Point; a small point
Kalalea	<i>Heiau</i> ; well-preserved fishing shrine at Ka Lae, Hawai‘i; it was taboo to women. Offerings are still placed there. A stone nearby is called Pōhaku-o-ke-au, which may be translated ‘stone of the current’ (referring to intersecting currents; see Hala‘ea) or ‘stone of the times,’ referring to the belief that the stone turned over if there was to be a change in government; lit. “prominent”
Kamā‘oa	<i>Ahupua‘a</i> ; plain near Ka Lae (South Point), Ka‘ū, Hawai‘i, a place noted for red dust; people jumped from a cliff (Kau-maea-lele-kawa) near here into a dust heap in imitation of the sport of leaping from a cliff into water ( <i>lele kawa</i> ); no translation



Place Name	Meaning
Kamā'oa Homesteads	Homestead; located in upland Kamā'oa
Kananaka	Place at the shore above Pali Hā'uke'uke
Kapu'uone	Surf; ancient surfing area on the east side of Ka Lae; lit. "the sand hill"
Kaulana	Bay; a small boat launching ramp was constructed here; lit. "[boat] landing"
Kāwili	Current; a current coming from the west to Ka Lae; see Hala'ea; lit. "twist"
Kīpuka Hanalua	<i>Kīpuka</i> (clear place within a lava bed where there may be vegetation) located above Hanalua Bay, northeast of Ka Lae
Kīpuka Ka'ahue	<i>Kīpuka</i> located above Ka'ahue Cave
Kīpuka Kamao	<i>Kīpuka</i> located below Kīpuka Kuniau, elev. 120 ft to 160 ft
Kīpuka Kuniau	<i>Kīpuka</i> located above Kīpuka Kamao, elev. 160 ft to 200 ft
Kīpuka Mali	<i>Kīpuka</i> located at elev. 700 ft
Kīpuka Pu'u Kou	<i>Kīpuka</i> located at elev. 900 ft
Lalahala	Cove; lit. "pandanus tree branch"
Lua Mākālei	Cave; a very large lava tube designated Makalei Shelter, Site H2, by Bishop Museum; lit. "pit of Mākālei"
Lua o Palahemo / Palahemo	Pit; a famous water hole east of Ka Lae and near the shore, believed to be connected underground to the sea and haunted by a <i>mo'o</i> (water spirit) of the same name; in times of rain it was taboo to bathe there; lit. "pit of Palahemo [loose dab of excreta]"
Lua Keananolo	Cave located at the shore north of Ka Lae
Mahana Bay	Bay; a bay formed in an eroded littoral cone, breached by the sea
‘Ōnikinalu	Cove located below ‘Ōnikipuka Ridge
‘Ōnikipuka Ridge	Place near the shore above ‘Ōnikinalu
Pali Hā'uke'uke	Point located at the shore below Kananaka; lit. "sea urchin ( <i>Colohocentrotus atratus</i> ) cliff"
Papakōlea	Place; beach 3 miles northeast of Ka Lae, Hawai'i (adjacent to Mahana Bay) famous for its sand consisting predominantly of green olivine crystals; lit. "plover flats"
Pōhakuokeau	Stone; a stone located just outside the stone wall on the east side of the Coast Guard station, near Kalalea <i>heiau</i> ; lit. "stone of the current" (referring to intersecting currents; see Hala'ea) or "stone of the times" referring to the belief that the stone turned over if there was to be a change of government
Pohokinikini	Place located at elev. 500 ft; lit. "many hollows"

Place Name	Meaning
Pu'u Ali'i	Place; a small sand dune east of Ka Lae; archaeological site designated H1 by Bishop Museum and described in several reports by K.P. Emory, W.J. Bonk, Y.H. Sinoto, M. Kelly; lit. "royal hill"
Pu'u Huluhulu	Knoll located elev. 600 ft; lit. "shaggy hill"
Pu'u Maemae	Knoll located near Pākini Iki-Kāma'oa boundary at elev. 960 ft; site of a group of wind driven electrical generators
Pu'u Mau'u	Point located east of Mahana Bay, of less than 40 ft elev; lit. "grass hill"
Pu'u o Mahana	Cone; a littoral cone breached by the sea forming Mahana Bay. Source of olivine crystals forming the famous Green Sands beach at Papakōlea
Pu'u 'Ula'ula	Knoll; site of Palahemo trig. station, elev. 175 ft; also called Pohakuloa; lit. "red hill"

### 3.1.2 'Ōlelo No'eau (Proverbs)

Mary Kawena Pukui is known as one of the greatest contributors to the preservation of the Hawaiian language, a scholar, and ethnographer. Hawaiian knowledge was shared by way of oral history and many often competed in poetic battles of wit to see who could ascribe the most *kaona* (layered hidden meaning) to the simplest phrase. The following section draws from Pukui's (1983) *'Ōlelo No'eau: Hawaiian Proverbs and Poetical Sayings*. There are numerous *'ōlelo no'eau* about Ka'ū, and even specific places in the vicinity of the project area; included are select proverbs that help to describe the *'āina* (land) of Kamā'oa and Ka'ū. The *'ōlelo no'eau* is first told in Hawaiian, followed by an English translation and Pukui's description of the translation as applicable.

Pukui et al. (1976) note one additional proverb regarding Lua o Palahemo that does not appear in Pukui's 1983 work: "*E ho'i Ka'ū i Pala-hemo,*" meaning "go back to Ka'ū and Palahemo" which Pukui et al. (1976:176) note is "an insult, since Pala-hemo means 'loose dab of excreta', a name given because markings on the walls of the hole suggesting excreta."

Proverb #1257:

*I puni ia 'oe o Ka'ū a i 'ike 'ole 'oe ia Palahemo, 'a'ohe no 'oe i 'ike ia Ka'ū.*

If you have been around Ka'ū and have not seen Palahemo, you have not seen the whole of the district. [Pukui 1983:136]

Proverb #1292:

*Ka hālau a 'Ī.*

The house of 'Ī.

The descendants of 'Ī, who extended through Hāmākua, Hilo, Puna, and Ka'ū. One of these was 'Īmakakoloa, who was condemned to death by Kamehameha. According to the historian Kamakau, 'Īmakakoloa was put to death in Kamā'oa. But according to the people of Ka'ū, a junior kinsman of similar appearance was substituted at the execution. [Pukui 1983:141]

Proverb #1506:

*Ka nui e pa'a ai i ka hue wai.*

The size that enables one to carry a water bottle.

Said of a child about two years old. In Ka'ū, where fresh water was scarce and had to be obtained from upland springs, every person who went helped to carry home water. When a child was about two, he was given a small gourd bottle for carrying water. [Pukui 1983:163]

Proverb #1559:

*Ka 'ū, 'āina kua makani.*

Ka'ū, a land over whose back the wind blows. [Pukui 1983:168]

Proverb #1576:

*Ka ua kūnihi a Ka'upena.*

The rain of Ka'upena that turns aside.

Ka'upena was a seeress of Kamā'oa Plain, in Ka'ū. Whenever rain approached, she called it to come to her home and to leave the homes of her neighbors alone so that their crops would not be ruined by a too-early rain. The rain obeyed. [Pukui 1983:170]

Proverb #1609:

*Kau 'ino na wa'a o Ka'alu'alu*

The canoes hasten ashore at Ka'alu'alu.

Said of those who hurry away from the scene of trouble. Ka'alu'alu is a beach in Ka'ū, Hawai'i, where fishermen hastened away from Hala'ea after unloading their fish onto his canoe. [Pukui 1983:174]

Proverb #1610:

*Ka 'ū, I Palahemo.*

In Ka'ū, at Palahemo.

Palahemo is a pool near Kalae in Ka'ū. Salt water is found under the fresh water, and any disturbance, like the dropping of a heavy stone, reverses the water, so that the salt water rises to the top. This place is famed in songs and chants. [Pukui 1983:174]

Proverb #1620:

*Ka 'ū lepo 'ual'ula.*

Ka'ū of the red earth.

Said of the natives of old Ka'ū, who were one vast family. Because of pride in their own people and homeland, Ka'ū people intermarried until they were of one blood and as one with their homeland. [Pukui 1983:175]

Proverb #1629:

*Ka 'ū mākaha.*

Ka'ū of the fierce fighters.

The district of Ka'ū, Hawai'i, was known for its fierce and independent warriors. Kohhāikalani, Koihala, and Hala'ea, selfish and oppressive chiefs, were each destroyed by rebellious subjects. [Pukui 1983:176]

Proverb #1630:

*Ka 'ū malo 'eka, kua wehi.*

Ka'ū of the dirty loincloth and black back.

The soil of Ka'ū is not easy to till. The farmers there squatted on their haunches and worked the soil with short digging sticks. The sun darkened the backs of the workers. [Pukui 1983:176]

Proverb #1695:

*Ke hele mai la ko Ka 'ū;  
He iho mai la ko Palahemo;  
He hōkake a 'e la i Manukā;  
Haele loa aku la i Kaleinapueo.*

There come those of Ka'ū; those of Palahemo descend; those of Manukā push this way and that; and away they all go to Kaleinapueo.

Said when one tries to find out something about another and meets with failure at every turn. [Pukui 1983:182]

Proverb #1762:

*Ke kula wai 'ole o Kamā'oa.*

The waterless plain of Kamā'oa.

The plain of Kamā'oa, in Ka'ū, was well populated, but its people had to go upland for their water supply. [Pukui 1983:189]

Proverb #2068:

*Mai ka uka a ke kai, mai kāhi pae a kāhi pae o Ka 'ū, he ho 'okāhi no 'ohana.*

From the upland to the sea, from end to end of Ka'ū, there is only one family.

The inhabitants of old Ka'ū were of one family. [Pukui 1983:225]

Proverb #2939:

*Wili i ke au wili o Kāwili.*

Swirled about by the swirling Kāwili.

Said of a confusing, bewildering situation. Kā-wili (Hit-and-twist) is a current at Ka Lae, Ka'ū, that comes from the Kona side and flows out to the ocean. It is the rougher of the two currents that meet off Ka Lae. [Pukui 1983:321]



### 3.1.3 Traditional Accounts of Ka'ū

The district of Ka'ū is large (encompassing over 600,000 acres) and geologically and climatically complex. It is not surprising that Ka'ū came to be known as a land of fierce and independent people, a “fatal land to chiefs.” These characteristics are expressed in David Malo's (1951) delineation of the responsibilities of the *ali'i* and of the treatment meted out to those who abused their power:

It was the king's duty to seek the welfare of the common people, because they constituted the body politic. Many kings have been put to death by the people because of their oppression of the *maka'āinana* [populace].

The following kings lost their lives on account of their cruel exactions on the commoners: Koihala was put to death in Kau, for which reason the district of Kau was called The Weir (Makaha) [*Mākaha*, “fierce Ka'ū”].

Koha-i-ka-lani was an *ali'i* who was violently put to death in Kau. Halaea was a king who was killed in Kau. [Malo 1951:195]

Significantly, all five of the *ali'i* (chiefs) Malo lists as having lost their lives at the hands of their own people are from the island of Hawai'i and of the five, three are Ka'ū chiefs. Notable, too, is the specificity of the charges against abusive *ali'i*, the references to specific features of the Ka'ū landscape and the decisive clarity with which Ka'ū justice is meted out. Malo (1951) describes the death of Koihala:

The work with which [Koihala] made the people of Kau sweat and groan was the building of the heavy stone walls about several fishponds, of which are mentioned those at the coast of Hilea, at Honuapo and Ninole. He also robbed the fishermen of their fish. The story is that he compelled his canoe men to paddle him about here and there where the fleets of fishing canoes were. The wind was bleak and his men suffered from the wet and cold, he being snugly housed in the *pola* [platform or high seat between the canoes of a double canoe]. One day he had his men take his canoe out towards the south cape where there was a fleet of fishing canoes. His own canoe, being filled with the spoils of his robbery, began to sink; and he called out for help. The fishermen declined all assistance; his own men left him and swam to the canoes of the fishers, leaving him entirely in the lurch. He was drowned. [Malo 1951:202]

Malo (1951) also describes the end of Koha-i-ka-lani, another Ka'ū chief:

In the account I have of [Koha-i-ka-lani], he kept his people ground down by hard work. It is said that he would start his people off on a long tramp into the mountains to cut *ohia* [*ōhi'a*] timber for images, and before the work was done, order them at the work of carving stone images in some other direction. But no sooner had they settled to the new job than he sent them back to finish their uncompleted work in the mountains. Finally, he set off on a tour with all his wives and retinue, and ordered the serfs, his common people, to meet him at a specified place with a supply of food. When the people came to the appointed place with their burdens of food, the king and his party had moved on and the king had left word directing the people to carry the food to a place many miles distant. On arriving at the next place, the

people, who had been smarting under the affliction, found themselves again ordered to bear their heavy loads to a place many hours' journey distant. Their patience exhausted, they consumed the food, filled the bundles with stones and, on arriving at length in the presence of the king, laid the bundles at the king's feet with feigned humility. But when the bundles were opened the man that was in them broke forth. The king and his court were killed and covered with the stones. [Malo 195:202–203]

Other versions of Koha-i-ka-lani's end are recorded. In Jules Remy's (1868) telling, recounted by Kelly (1980), he is named Kohaokalani:

Kohaokalani was, according to tradition, the most important chief on the island, and reigned in royal state at Hilea. He it was who built the heiau situated on the great plain of Makanau. The sea-worn pebbles may still be seen, which Kohaokalani had his people carry up to the height, about two leagues from the shore. These pebbles were intended for the interior pavement of the temple. The people, worn out by the great difficulty of transportation, tired of the yoke of royalty, and incited by disloyal priests, began to let their discontent and discouragement show itself. A conspiracy was soon formed by these two classes leagued against the chief, and a religious ceremony offered an occasion to rid themselves of the despot.

The temple was completed, and it only remained to carry a god up there. The divinity was nothing but an ohia tree of enormous size, which had been cut down in the forest of Ninole. At the appointed day, the chief priests and people set to work to draw the god to his residence. In order to reach the height of Makanau, there was a very steep pali to be ascended. They had to carry up the god on the side towards Ninole, which was all the better for the execution of their premeditated plan. Arrived at the base of the precipice all pulled at the rope; but the god either by the contrivance of the priests, or owing to the obstacles which the roughness of the rock presented, ascended only with great difficulty. 'The god will never come to the top of the pali,' said the kahuna [priest], 'if the chief continues to walk before him; the god should go first by right of power, and the chief below, following, to push the lower end; otherwise we shall never overcome his resistance.' The high chief Kohaokalani, complied with the advice of the priests, placed himself beneath the god, and pushed the end from below. Instantly priests and people let go the cord, and the enormous god rolling upon the chief, crushed him at once. The death of Kohaokalani is attributed chiefly to the kahuna. [Kelly 1980:73–75]

Pukui and Green (1995) describe the death of Hala'ea:

A greedy chief was Hala'ea. Every day he visited the fleet of fishing canoes and took for himself and his retainers all the fish he could find. Then he held a feast, carousing and often wantonly wasting the food that remained. As for the fishermen, they were obliged to catch the fish without ever having any to take home to their families. Day after day, they ate herbs for food.

This conduct of the chief greatly vexed the people, and they sought means to rid themselves of his oppression. Never did they go out upon the ocean without hearing on their return the voice of their chief crying, 'The fish is mine! Give me the fish!'

At last came the season for 'ahi, the tuna, and a proclamation was made, summoning the head fishermen to accompany their chief to the fishing grounds. So they gathered together and prepared their canoes, looking after the nets, the bait, and whatever else was required for the expedition. Also, they held a council at which it was agreed to deposit all their fish in the chief's canoe and themselves return to the shore without even a backward glance. At the day appointed, everything was in readiness from Wai'ahukini to Keauhou.

When the first canoe-load was conveyed to the chief's canoe, even then the voice of the chief could be heard protesting, 'Bring me the fish! Bring me the fish!' But when the second, third, fourth, fifth, and succeeding canoes had deposited their loads into the chief's canoe and he saw there was danger of swamping the canoe with their weight, he called out, 'The chief has fish enough!'

'Not so!' cried the men. 'Here is all the fish that the chief desires!' They piled in the last load, and the canoe began to sink rapidly. The chief looked about for help, but there was no canoe at hand and no man to show compassion; all had gone back to land.

So perished Hala'ea in the sea, surrounded by the objects of his greed. [Pukui and Green 1995:74-75]

Whether factual or apocryphal, these accounts are worth citing in full as they form a preliminary sketch of a special Ka'ū character, and also underscore the critical importance of resources such as fish.

Samuel Kamakau, in *Ruling Chiefs of Hawai'i*, first mentions Ka'ū as he recounts the unification of rule over the island of Hawai'i under 'Umi-a-Liloa during the later sixteenth century. Kamakau's characterization of the Ka'ū chief 'Ī-mai-ka-lani seems to describe not only a single man but also the land and people of Ka'ū:

I-mai-ka-lani was the chief of Ka-u. He was blind, but noted for his strength and skill in battle. Many chiefs who had fought against him were destroyed. He was skilled in striking left or striking right, and when he thrust his spear (*pololu*) to the right or to the left it roared like thunder, flashed like lightning, and rumbled like an earthquake. When he struck behind him, a cloud of dust rose skyward as though in a whirlwind. 'Umi-a-Liloa feared I-mai-ka-lani. . . 'Umi was never able to take Ka-u. The war lasted a long time . . . After I-mai-ka-lani became blind the fight between him and 'Umi continued . . . After I-mai-ka-lani's death Ka-u became 'Umi-a-Liloa's. [Kamakau 1961:18-19]

Kamakau also details the shifts of power within Ka'ū and of control over districts that included Ka'ū through generations of rulership on the island of Hawai'i. Power, apparently, did not necessarily transfer from a ruler to his descendants:

When Lono-i-ka-makahiki of Hawaii, died, his children and his descendants did not become rulers of the government. Lono had sons by Ka-iki-lani-kohe-pani'o, named Keawe-hanau-i-ka-walu and Ka-'ihi-kapu-mahana. They did not become their father's heirs. The rule went to Kanaloa-kua'ana's descendants, but not the whole of Hawaii, only Kohala, Kona, and Ka-u. [Kamakau 1961:61]

Keawe was the son of Keakea-lani. His father was Kanaloa-kapu-lehu . . . Keawe was a famous ruler of Hawaii and was the ancestor of chiefs and commoners on that island . . .

During Keawe's reign the whole of Hawaii was not united under him, for his rule was only over Kohala, Kona, and Ka-'u . . . During Keawe's reign, Ka-'u was set aside for his son, Kalani-nui'i-a-mamao, and chiefly tabus were given to him. The chiefly tabu then belonged to the chiefs of Ka-'u, and the *wohi* tabu to the chiefs of Kona [a *wohi* chief was exempt from the prostration taboo, or *kapu moe*] . . .

Before [Keawe] died he commanded that the government belong to his sons, Kalani-nui'i-a-mamao and Ke'e-au-moku; Ka-lani-nui'i-a-mamao to be the ruling chief of Ka-'u and Ke'e-au-moku of Kona and Kohala. [Kamakau 1961:64–65]

In the passages just cited, the contiguous districts Kohala, Kona, and Ka'ū form a triumvirate under a single ruler. However, such unions were subject to power shifts as, according to Kamakau, in later times rule over Ka'ū was consolidated with that of Puna:

Ka-lani-'opu'u and Keoua were the hereditary heirs to the land of Hawaii, for it had belonged to their father, Ka-lani-nui-'i-a-mamao, and [his brother] Ka-lani-ke'e-au-moku; but Alapa'i had seized it through force of arms and had slain the inheritors.

. . . a great battle was fought [between Ka-lani-'opu'u and Alapa'i] at Kualoa and Mokaulele all the way to Mahinaakaka, at which Ka-lani-'opu'u almost lost his life . . . Ka-lani-'opu'u's men were victorious that day, and the chief realized how powerful his following was in chiefs and fighting men and how strong he himself was to break men's bones with his hands.

After this battle Mahinaakaka, Ka-lani-'opu'u ruled over Ka-'u and Puna, for he was a native of Ka-'u. There were the birth sands of his ancestors. [Kamakau 1961:76–77]

Kamakau's account suggests something of the precariousness of the inter-district power combinations by the ruling *ali'i* during traditional Hawaiian times in Ka'ū and other districts. How perilous these shifting consolidations and loyalties could be for the people of a district and the fierceness of a Ka'ū *ali'i* are illustrated in an episode Kamakau recounts concerning Ka-lani-'opu'u, "native of Ka-'u," who in 1754 "became ruler over the island of Hawaii" (Kamakau 1961:78):

It was I-maka-koloa, a chief of Puna, who rebelled [against Ka-lani-'opu'u] . . . He seized the valuable products of his district, which consisted of hogs, gray tapa cloth ('*eleuli*), tapas made of *mamaki* [*Pipturus* spp.; a bark cloth plant] bark, fine mats made of young pandanus blossoms ('*ahu hinalo*), mats made of young pandanus



leaves (*'ahua*o), and feathers of the *'o'o* [black honey eater; *Moho nobilis*] and *mamo* [black Hawaiian honey creeper; *Drepanis pacifica*] birds of Puna. [Kamakau 1961:106]

In Hilo Ka-lani-'opu'u built the heiau of Kanowa at Pu'ueo and after dedicating it he went to stay at 'Ohele in Waiakea while his army went to fight in Puna. The fight lasted a long time, but I-maka-koloa fled and for almost a year lay hidden by the people of Puna . . . A certain man, a *kahu* [honored attendant] of the chief named Puhili, said, 'I-maka-koloa is being hidden by the natives of Puna, but if the chief consents I will go with my god and find him.' 'Go with your god', said the chief. Puhili went until he came to the boundary where Puna adjoins Ka-'u, to 'Okī'okīaho in 'Apua, and began to fire the villages. Great was the sorrow of the villagers over the loss of their property and their canoes by fire. When one district (*ahupua'a*) had been burnt out from upland to the sea he moved on to the next. This was Puhili's course of action, and thus it was that he found I-maka-koloa where he was being hidden by a woman *kahu* on a little islet of the sea . . . As soon as he was found, Puhili stopped his god from eating up the houses of Puna. [Kamakau 1961:108]

The chief Ka-lani-'opu'u ruled Ka'ū during the eighteenth century just before the first European visitors began to record their early impressions of the land and its people.

### 3.1.4 Traditional Accounts of Kamā'oa and Surrounding *Ahupua'a*

Few traditional accounts have been identified that mention Kama'oa specifically. The Legend of the Gourd, translated by Caren Loebel-Fried (2010), describes how the people of Kama'oa came to be called the "Children of the Gourd:"

Long ago in Ka'ū, Hawai'i, there lived a young man and woman who loved each other very much. Although they were both from families of ali'i, their parents did not approve of the relationship. And so one night after darkness fell, they ran away together.

There were many from the community who loved the young couple, and followed to help them. And so, on becoming man and wife, the couple also came to be chief and chiefess to these people. The group walked for many days on the sunny Kamā'oa Plain, along the flank of Mauna Loa, on a journey to a new life.

One day at sunset, the chief saw on the horizon a group of rising stars called Huhui. He knew the stormy season was near, and so they built huts to shelter themselves. Then winds from the south blew with drenching rain and booming thunder. The land would soon be ready to plant with seeds for food. When it became known that the chiefess was pregnant, the people were filled with joy.

But the chiefess became very sick and died. Filled with grief, the chief and community wailed and cried. One clear night after the period of kapu, the chief laid his wife's body to rest in a burial cave. On the day the chiefess had been due to give birth, a tiny vine sprouted from her piko, her navel. The vine meandered out of the cave and crept through the forest with leaves sprouting from its stem, tendrils

grabbing onto roots, moa, and 'ala 'ala wai nui plants. The vine snaked its way onto the plain, its tendrils like tiny fingers clinging to ruts in the pāhoehoe lava.

All through the season of storms, the vine traveled up the coast of Ka'ū through many ahupua'a. It grew through Pākini-iki, Pākini-nui, and Kahuku. It crept through the tiny district of Kī'ao, the larger district of Manukā, and into Kapu'a where it sprouted a white blossom. The sun peeked out from behind the clouds and shined brightly. The changing winds swept the blossom away, leaving a tiny, green gourd. The sun helped the gourd grow a little bigger every day.

On a lava ridge above the vine, there stood the hut of a fisherman. This fisherman spied the gourd on the rolling plains below. Wanting it for an ipu holoholona to store his fishing gear, he cared for the gourd, checking it every day until it grew big and fat. After the stem began to wither, he squeezed and thumped the gourd, testing it for ripeness.

Back in Kamā'oa, the chiefess visited her husband in a dream. She cried, 'Auwe! Auwe! I am sore and bruised!' The chief awoke and rushed to the burial cave. There he discovered the vine and followed its winding path through the forest and onto the Kamā'oa Plain. He marveled at the tendrils clinging so firmly to cracks in the lava. The wind pushed him, the leaves waved him on, and as night fell, the vine led him into a shallow valley. Sheltered from the wind, he lay down, touched the vine tenderly, and slept.

In the morning, the wind whistled in his ear, waking him. The day was hot and windy. The sun pounded on his head as he followed the vine. Exhausted, he asked, 'Where are you leading me, my dear wife?'

And then he saw the gourd.

He ran and swept the gourd up into his arms, cradled it like a baby, joyfully rocking it back and forth.

Just then the fisherman spied the stranger holding the gourd. He shouted, 'Let go of that gourd! It belongs to me!' The chief tried to explain, but the fisherman argued, only relenting after seeing the source of the vine in the burial cave. He wished the chief well.

The chief brought the gourd home and wrapped it in layers of soft kapa cloth. The next morning, he discovered the gourd had cracked, and into his palms fell two seeds. Suddenly, the seeds began to grow. Two warm soft balls covered with downy hairs quickly filled his hands, sprouting arms and legs. Soon he held in his arms two baby girls. He joyfully hugged the twins and they giggled, grabbing his fingers and holding so tightly, the chief remembered the tendrils of the gourd vine. He knew these girls would be strong and grow up with firm ties to their people and their land.

And so the twins grew to be powerful women and great warriors who had many children of their own. The years and generations followed and the twins of the gourd became ancestors to many people. Like the gourd vine, the family spread and

settled all over the Kamā'oa Plain. Near the shore lived fishermen, in the valleys and up the slopes of Mauna Loa lived farmers. The fishermen and farmers traded and shared food from the land and the sea. Soon descendants of the twins numbered in the thousands. And the people called themselves, 'The Children of the Gourd.'  
[Caren Loebel-Fried 2010:1–36]

Ka'ū is often associated with the goddess Pele, because of the presence of an active volcano there (Mauna Loa). Westervelt (1916) relates an account of Pele's depredations of the lands of Kahuku, a large *ahupua'a* just west of Pakini Nui. Pele was angered by some young chiefs there; in retaliation she caused intense heat, smoke, and earthquakes, and "floods of lava, obeying the commands of the goddess, spread out over the land of the chiefs so that from the mountain to the sea the luxuriant lands became desolate" (Westervelt 1916:25).

Haumea, the Hawaiian goddess of fertility and childbirth and mother of Pele and other deities, is also noted indirectly by Soehren (2010) in association with Ka'ū—specifically, with the Lua Mākālei. In her book *Hawaiian Mythology*, Martha Beckwith (1970) provides the context for what may have been the basis of the naming of the cave in Kamā'oa:

Myths told of Haumea center about themes concerned with food supply for the life of man and marriage and birth for the increase of the family stock. By rebirths she changes herself from age to youth and returns to marry her children and grandchildren. She lives as a woman in Kalihi valley and transforms herself into a growing tree in which she conceals her husband from those who are leading him away to sacrifice. She secures for a chiefess a painless delivery in childbirth and receives in reward 'the tree of changing leaves' out of which gods are made. She is possessor of the stick Makalei which attracts fish. With the stick (or tree) Makalei is associated a tree of never-failing food supply. [Beckwith 1970:297]

Fornander (1917:590–591) references Kahuku and Pākini in the context of a contest of composing and reciting chants:

*Na pu'u e napu'u  
Na Puulena i Kauhako i Pakini,  
Lele mai ka okai makani mai lalo o ka lua.*

*He makani lawe i ka waa lawaia,*

*Na pu'u e napu'u  
Na Puulena i Kahuku i Pakini,  
Lele mai ka okai makani mai lalo o Kailua.*

*He makani lawe I ke kapa lawaia la e,*

The hills, yea, the hills.

The hills at Pu'ulena, at Kauhako, at Pakini  
The wind from below, from within the hole  
sweeps up.

It is the wind that carries away the  
fishermen's canoes.

The hills, yea, the hills.

The hills at Pu'ulena, at Kahuku, at Pakini  
The wind from the lower end of Kailua  
sweeps up.

It is the wind that carries away the  
fishermen's clothes. [Fornander 1917:590–  
591]

While this poetic account appears to be largely word play, it emphasizes the power of the winds off-shore of Ka Lae.

### 3.1.5 Traditional Settlement Patterns

Handy and Handy (1972) provide a discussion of the early settlement of Ka'ū:

Legendary and archaeological studies both justify the assumption that Polynesian settlers from Kahiki (which means 'a foreign land,' not necessarily Tahiti) were migrant chiefs who came not less than a thousand years ago and colonized Ka'ū.

Our opinion is that these earliest settlers found Manuka [an *ahupua'a* of Ka'ū bounding Kahuku to the west] habitable, although it is now, along with the whole adjacent coastal area, a desolation of recent and older lava. This seems a reasonable assumption in view of the fact that large sections of these adjacent areas, including Kahuku and Pakini subdistricts, are known to have been cultivated garden spots before their partial devastation by historically dated lava flows; while others were traditionally so referred to prior to 1800. In connection with this first settlement it is worthy of note that Manuka and Ka'ū are names of Samoan origin (Manu'a and Ta'ū are neighboring Samoa islands) . . .

Eastward of Pakini the windswept plain which slopes very gradually up from South Point toward Mauna Loa is the *ahupua'a* of Kama'oa, the homeland of one group of early settlers, who in historic times have called themselves the 'clan of Pele.' [Handy and Handy 1972:545]

There is general agreement that Ka Lae is one of the earliest settled areas in the Hawaiian Islands, though there is less consensus regarding the timeframe of its initial settlement. Kirsch (1985:81–87) proposes settlement by the fourth or fifth century AD, and notes that South Point would have been an attractive locale given its direct proximity to abundant deep-sea fishing grounds. Archaeological studies in the general region clearly indicate pre-Contact permanent habitation settlement along the coast as well as within inland portions of South Point. Archaeological research conducted in the upland South Point region (Cordy 1986; Cordy 1987; Spear and Rosendahl 1987; Tomonari-Tuggle and Tuggle 1991) signify a distinct inland settlement typically focusing on agricultural subsistence. Radiocarbon dates from a lava tube site located approximately 6 miles northwest of the project area in the Wai'ōhinu area indicate occupation between AD 1420 and 1655 (Robins et al. 1992). An organized upland field system is known to have been present in Ka'ū, but has not been investigated in any systemic way. Part of the greater Ka'ū field system, the South Point-Kamā'oa Agricultural System (SIHP # 50-10-76-10277) was identified by Price-Beggerly (1987) using aerial photography (see Section 4.1.15).

An overall regional settlement pattern proposed by Ross Cordy (1990) includes three zones: 1) Coastal Zone with high density; 2) Intermediate Zone with possible low density; and 3) Inland Zone with high density. This pattern agrees with the site density recorded at coastal Ka Lae (Zone 1) by Ladd (1969), Emory (1970), Cleghorn (1984), and Landrum (1984) (see Section 4.1), and in other areas of coastal Ka'ū (e.g., Borthwick and Hammatt 1991); and reflects the site density indicated in the upland Robins et al. (1992) project area (Zone 3). A zone of low site density (Zone 2) was described by Borthwick and Hammatt (1991:20) between Zones 1 and 3, and is reflected in Landrum's (1984) findings in closer proximity to the current project area.



## 3.2 Historical Background

### 3.2.1 Early Historic Period

Lt. James King, sailing off the island of Hawai'i during the 1779 voyage of Captain James Cook, summarizes Ka'ū at the first European encounter:

The coast of Kaoo [Ka'ū] presents a prospect of the most horrid and dreary kind: the whole country appearing to have undergone a total change from the effects of some dreadful convulsion. The ground is every where covered with cinders and intersected in many places with black streaks, which seem to mark the course of a lava that has flowed, not many ages back, from the mountain Roa [Mauna Loa] to the shore. The southern promontory looks like the mere dregs of a volcano. The projecting headland is composed of broken and craggy rocks, piled irregularly on one another, and terminating in sharp points. [King 1784:104]

The only onshore exploration at Ka'ū involved a search for freshwater:

When [Mr. Bligh] landed, he found no stream or spring, but only rain-water, deposited in holes upon the rocks; and even that was brackish, from the spray of the sea; and that the surface of the country was entirely composed of flags and ashes, with a few plants here and there interspersed. [King 1784:545]

King's account suggests a distinct contrast with Native Hawaiian thinking. It is interesting to speculate that where King saw only a horrid drear desolation, the first Hawaiian settlers sailing along the same coast centuries before and encountering similar effects of tremendous lava flows must have envisioned a potentially rich existence.

Archibald Menzies, a surgeon and naturalist on the 1794 voyage of Captain George Vancouver, in an account of an excursion from Kona across Ka'ū to the top of Mauna Loa, confirmed that the potential was in fact fulfilled. Menzies describes

a fine fertile valley [where he] put up for the night at a village called Kioloku, on a rich plantation belonging to Keawe-a-heulu.

. . . This was by far the most populous village we had yet met with since we left Kealakekua. Towards the dusk of the evening, there fell some showers of rain which gave a gay and refreshing look to the most enchanting scenes of rural industry with which we were surrounded. The economy with which these people laid out and managed their ground and the neatness with which they cultivated their little fields made the whole valley appear more like a rich garden than a plantation. A stream of water which fell from the mountain through the middle of it was ingeniously branched off on each side to flood and fertilize the most distant fields at pleasure. [Menzies 1920:184–185]

This abundance was not isolated as, continuing on his way east through the *ahupua'a* of Honu'apo, Menzies found the following:

. . . the people everywhere busily employed in their little fields, many of which were here cropped with plantains and bananas that had a ragged appearance from having little or no shelter, yet they bore fruit tolerably well. We seldom observed

these vegetables cultivated so low down on the western side of the island, where they generally occupy the verge of the forest, a situation which for shelter seems more congenial to their tender feelings. We observed here that they suffer many of their fields here and there to lay fallow, and these in general were cropped with fine grass, which they cut down for the purpose of covering their new planted fields of taro or yams to preserve them from the powerful heat of the sun. [Menzies 1920:185–186]

In 1823, Rev. William Ellis, journeying like Menzies from Kona through Ka'ū, recorded his impressions of the land, demonstrating a willingness, similar to that of Menzies, to look and let the land speak for itself. He describes the valley of Wai'ōhinu (located approximately 10 miles northeast of the project area) as open toward the sea, and on both sides adorned with gardens and interspersed with cottages, even to the summits of the hills.

A fine stream of fresh water, the first we had seen on the island, ran along the centre of the valley, while several smaller ones issued from the rocks on the opposite side, and watered the plantations below.

Our road, for a considerable distance, lay through the cultivated parts of this beautiful valley: the mountain taro, bordered by sugar-cane and bananas, was planted in fields six or eight acres in extent, on the sides of the hills, and seemed to thrive luxuriantly. [Ellis 1963:133–134]

Ellis' account confirms the upland luxuriance that had made the *ahupua'a* of Wai'ōhinu a center for the *ali'i* of Ka'ū. As Ellis continued his journey he moved closer to the coast—along the “foot of the mountains, in a line parallel with the sea, and about a mile and a half from it” (Ellis 1963:134)—and his journal illumines areas where western eyes had previously descried only a “prospect of the most horrid and dreary kind.” Travelling northeast toward Punalu'u, Ellis found the countryside “more thickly inhabited [as his walk continued] . . . The villages along the sea shore, were near together, and some of them extensive” (Ellis 1963:136). Specific villages Ellis mentions include Honu'apo, described as an “extensive and populous village” where more than 200 Hawaiians turned out for a sermon; Hōkūkano, possessing a freshwater spring; and Hilea, the site of numerous fishponds (the walls of which, perhaps, were the work with which the ill-fated *ali'i* Koihala had made the “people of Kau sweat and groan”) and where the *konohiki* (headmen of an *ahupua'a*) reported “hogs, fish, taro, potatoes, and bananas in abundance.” Ellis also notes the intervening broad stretches of rough 'a'ā between the habitation areas. These flows had been made traversable by waterworn boulder paths. Ellis thus reveals that the desolate coastline described 44 years earlier by James King was in fact the site of a well-populated, organically developed, active culture and economy where habitation centers, though isolated, were accessible to each other and to the resources of land and sea.

William Ellis in 1823 may have been the first missionary to visit Ka'ū. During the 1830s Protestant missionaries based in Kona and Hilo made occasional tours into Ka'ū, but a permanent missionary presence was not installed until the early 1840s when Catholic and Protestant missions were established in the district. In 1841 a Catholic priest, Father Marechal, arrived in Ka'ū and within a few months could boast of 900 converts. The following year, 1842, the Protestant minister John Paris reached Ka'alu'alu (located approximately 3.5 miles northeast of the project area) by schooner where he found,

The shore was lined with hundreds of natives as our little boat neared the shore. I was taken up by a great strong native Samson, whose entire dress was a malo [male's loincloth] and who was tattooed from head to foot. He looked fierce but set me gently down on the pahoehoe amid a crowd of natives . . . Then came greetings from the multitude, some kissing my hands and some taking hold of my feet. A joyful 'Aloha ino!' with a low wail, rose from the aged ones. [Paris 1926:89]

Paris' account of the profusion offered in welcome by the Ka'ū natives illustrates the abundant resources available in the district:

. . . two strong men, tattooed from head to foot, came in bearing a huge whole hog, baked entire minus hair and entrails. These bearers were followed by others, dressed in the same style bringing calabashes of various sizes filled with fish, poi, potatoes, then came melons, bananas, and sugar cane, and little gourds filled with goat's milk. All was spread out in royal Hawaiian style, a dozen kukuis [nuts from the Candlenut tree, *Aleuris moluccana*] burning and kahilis [feather standards] waving to and fro. [Paris 1926:90]

Paris settled in Wai'ōhinu where he founded a church and school. Later, in 1843, a stone church was also built at Punalu'u to the northeast. Cordy (1986:21) postulates that around this time a settlement shift was occurring from coastal to inland regions, the result of depopulation and of efforts to gain access to the government road and to populate the economic center of Wai'ōhinu.

Mission station reports and censuses and accounts by visitors to Ka'ū during the mid-nineteenth century document the changes to the district brought about by natural forces and by the pressures of an increasing western presence. A visitor to Wai'ōhinu and its environs in 1849 anonymously published an account describing the devastating effects of a drought and fire that had occurred three years earlier:

[W]e noticed many a tall, stately trunk, branchless and lifeless standing monument-like, all over the country. On enquiry we ascertained that they were the remains of a noble forest, which, with the whole surrounding country, were burnt in 1846. In that year a severe drought visited the Island, the streams dried up, the grass withered, and fire swept over the whole district. [Sailor in Kelly 1980:89]

The author also describes an area above the settlement at Wai'ōhinu that, apparently undamaged by the 1846 fire, probably represents the idyllic setting that had drawn the Ka'ū *ali'i* to the *ahupua'a*:

[W]e ascended the hills back of the mission, and when we had reached an elevation of about 5,000 feet were repaid with one of the richest scenes it was our privilege to look upon. Below us lay, fashioned by the hand of nature, within a range of ten miles, six lovely terraces, on which one thousand dwellings might be placed, each of which should have a prospect of the sea, the rocky shore, the lava and the verdant upland. To each of these farms might be attached, of from 100 to 1500 acres of land, now lying utterly waste, that would repay bountifully the labor of the husbandman. The grass, with which most of the land was covered, grows luxuriantly and attains the height of two or three feet. On this land we saw some noble upland kalo, and a number of very large banana trees. Several crystal springs

take their rise on the summit, and might send, if rightly directed, a portion of their treasures through every man's fields. Behind this noble series of hills, timber abounds. So that there is to be found every thing desirable to make a rich farming country, and in a circuit of some fifteen miles, might be abundantly grown the best products of the temperate, with the rich and varied fruits of the tropic zones. But alas the farmers are wanting, the land lies in all the wild luxuriance of nature desolate, there are no passable roads, except foot paths, to it, and no harbor at which vessels could lie in safety, is found within many miles. [Sailor in Kelly 1980:89]

Noticeably missing from this account is mention of any Hawaiians occupying and utilizing this verdant land “now lying utterly waste.” Early census data provide insights into the dramatic shift in population between the 1830s and 1850s. An 1831-1832 census of Ka'ū, the first taken within the district, records a total population of 5,800. In 1835 the total population is counted as 4,766. The first official government census, taken in 1847, records the population as having dropped to 3,010. Reverend John Paris would write in an 1848 mission station report (Paris 1848:3), “Since the year 1845 the work of depopulation of Kau has gone on with fearful rapidity.” He notes, during the years 1845 and 1846 (Paris 1848:3), a “distressing famine and fire which overran the country,” the same disasters the anonymous visitor of 1849 mentioned. By the time of the 1853 government census only 2,210 people are recorded in Ka'ū. Figure 7 depicts the population of Ka'ū at this time, and indicates a population of only about 150 people at Ka Lae, mostly just *mauka* of the western portion of the proposed Emergency Road.

### 3.2.2 The Māhele and the Kuleana Act

In the mid-nineteenth century, during the time of Kamehameha III, a series of legal and legislative changes were brought about in the name of land reform (see the works of Jon Chinen 1958, 1971 for a thorough and well-written explanation). Previous to the Māhele, all land belonged to the *akua* (gods), held in trust for them by the paramount chief, and managed by subordinate chiefs.

Following the enactment of a series of new laws from the mid-1840s to mid-1850s, Kamehameha III divided the land into four categories: Crown Lands reserved for himself and the royal house; Government Lands for the government; Konohiki Lands claimed by *ali'i* and their *konohiki* (supervisors); and *kuleana*, small plots claimed by the *maka'āinana* (commoners) (Chinen 1958:8–15). These claims are described in Land Commission Award (LCA) testimony from the claimant and witnesses. A Royal Patent (RP), which quitclaimed the government's interest in the land, was issued on most Land Commission Awards (Chinen 1958:14). In some cases, more than one RP number was issued for an LCA, especially in cases where there were several widely separated *'āpana* (lots), such as an award with agricultural land in one *ahupua'a* and a house lot in another.

*Ali'i* were required to pay a commutation fee to the government for their confirmed Konohiki Land titles; this payment could be in cash or in the return of land to the government or crown. Many *ali'i* elected to return substantial portions of their awarded lands to avoid the one-third commutation cash fee. The Kuleana Act of 1850 allowed *maka'āinana*, in principle, to own land parcels where they were currently and actively cultivating and/or residing. In 1851, certain Government Lands became available for purchase in lots of 1 to 50 acres in fee simple; this new category of land ownership became known as Royal Patent Grants or Land Grants.



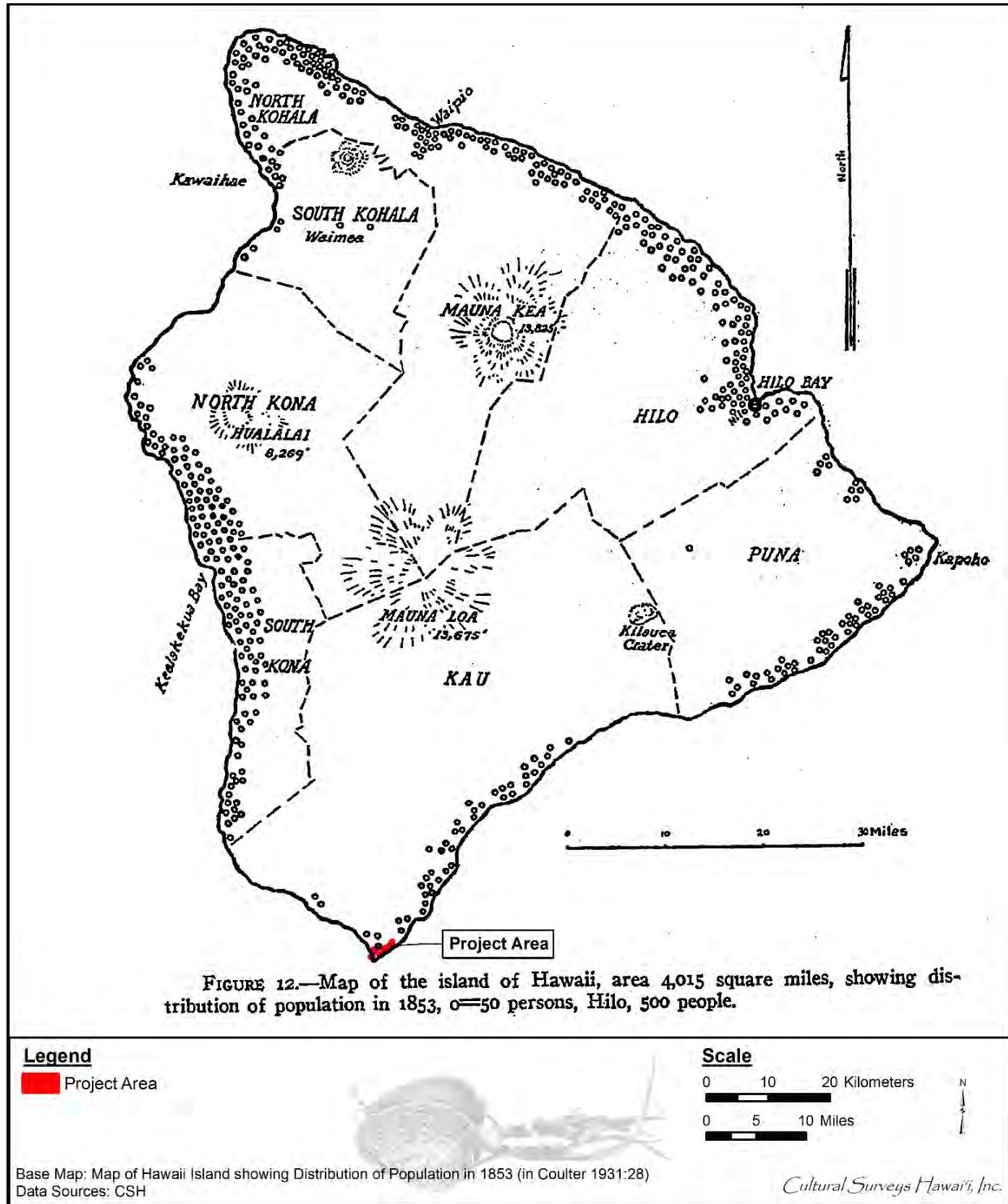


Figure 7. Map of Hawai'i Island showing population as of 1853 (Coulter 1931:28)

Table 3. Land Commission Awards (LCAs) in Kamā‘oa Ahupua‘a, Kalae ‘Ili

LCA #	Awardee	Royal Patent #	Acreage	Land Use
9249	Kaoo	–	5.5	One ‘ <i>apana</i> : one house lot, three sweet potato <i>kihāpai</i> (fields)
9249B	Molaolao	5115	7.75	One ‘ <i>apana</i> : four sweet potato <i>kihāpai</i>
9249C	Kuaipalahalaha	7098	4.0	One ‘ <i>apana</i> : five sweet potato <i>kihāpai</i>

In the Māhele, Kamā‘oa Ahupua‘a was granted to Leleiohoku who returned it in commutation for lands elsewhere. Kamā‘oa was then retained by the Government. According to Māhele records, a substantial number of LCAs were claimed within Kamā‘oa; many of these claims comprised ‘*apana* spanning multiple *ahupua‘a*, and many of them were not awarded. Given that almost all these claims were made a significant distance from the current project area, of particular relevance are the claims made within the Kamā‘oa ‘*ili* of Kalae. In Kalae ‘*ili* three *kuleana* claims were made, and all were awarded. These claims, summarized in Table 3, appear related and indicate a single house lot with some small-scale cultivation of sweet potato. The translated awards documents are provided in Appendix A in Volume 2. The specific locations of these awards are unknown; all are described in testimony as being bound by “konohiki” land. The modern tax map includes a notation categorizing LCA 9249-C as “Unlocated,” and does not depict nor provide any notation for LCAs 9249 or 9249B (see Figure 2), or any other LCAs in Kamā‘oa. However, an approximate location for LCA 9249C is provided on a 1914 map (Figure 8), in the boundaries of Morse Field between the proposed Emergency Road and Green Sand Beach Pedestrian Path.

Waihona ‘Aina (2000) lists over 300 Land Grants in Ka‘ū, most dating to the 1850s. An 1885 map of Ka‘ū (Figure 9) indicates the majority of Land Grants in the South Point area (including a number in Kamā‘oa) were located well *mauka* of the project area. One coastal Land Grant (1852 to Kepio) is present at Ka‘alu‘alu Bay to the northwest.

### 3.2.3 Mid- to Late 1800s

By the middle of the nineteenth century, imported livestock roaming freely throughout pasturelands of Ka‘ū were creating new aggravations. Ka‘alu‘alu had become a focus of activity as the export of agriculture and livestock began to dominate the Ka‘ū economy; at the same time, about 1852, an improved, 7-mile-long cart road was constructed between the harbor and Wai‘ōhinu. In the 1850s Rev. Henry Kinney (cited in Kelly 1980) commented on the “hundreds of goats salted and dried” as well as “upland taro, potatoes and onions” which previously had to be hauled “on the backs of men” overland to Hilo and which could now be taken to the harbor and shipped.

Ranching activity in Ka‘ū commenced sometime after the middle of the century when Princess Ruth Ke‘elikolani started Ka‘alu‘alu Ranch with cattle brought from Waimea. Cattle continued to be shipped out of Ka‘alu‘alu at least until the 1920s. Organized cattle ranching was focused at Ka‘alu‘alu, Kahuku, and Kapāpala (within the easternmost portion of Ka‘ū).

While cattle and other livestock were significant elements of the new western economic focus imposed upon Ka‘ū during the nineteenth century, it was agriculture that had the most extensive

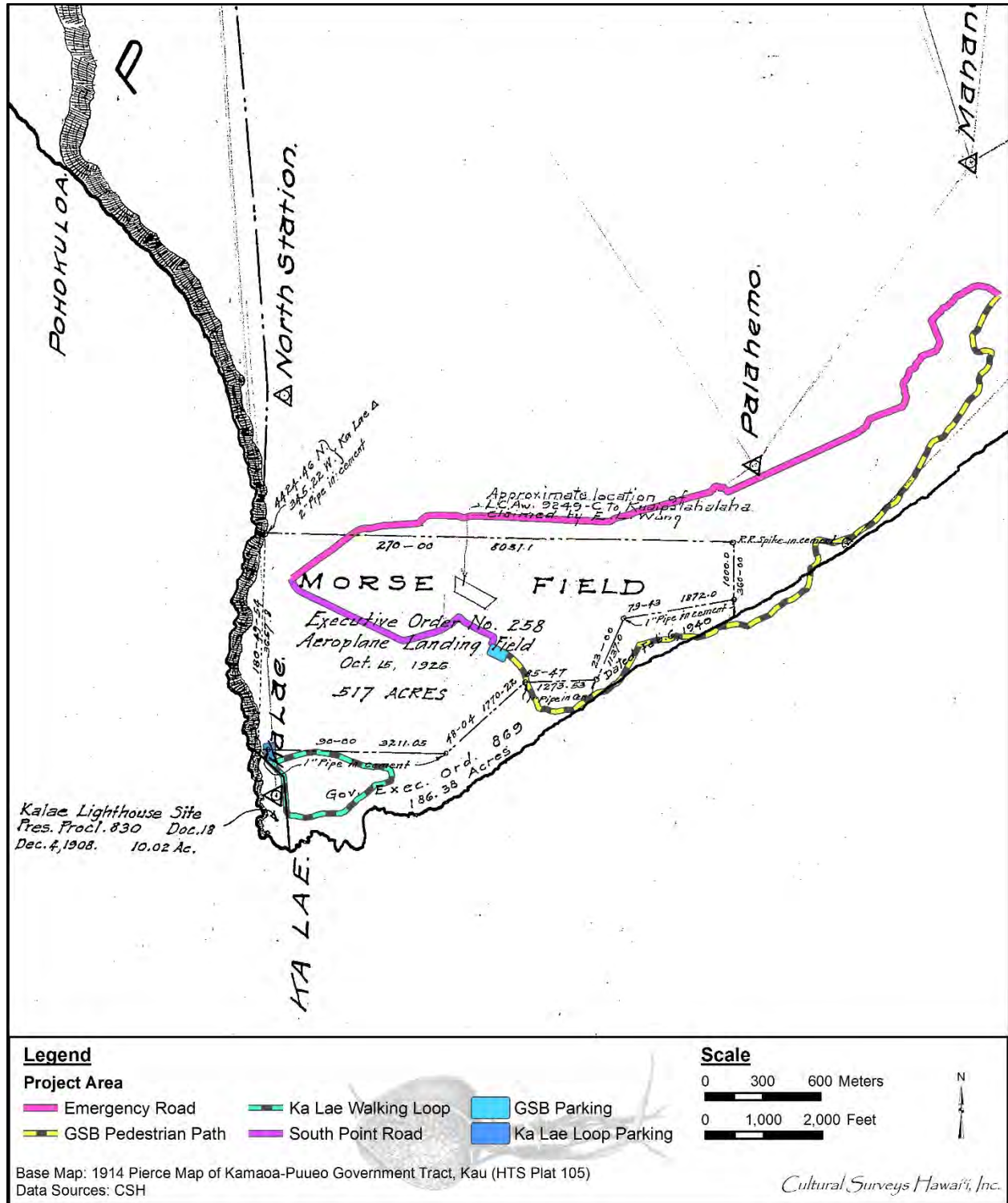


Figure 8. Portion of R.F. Pierce's adaptation of Walter E. Wall's 1914 map of Kamaoa-Puueo Government Tracts, showing the approximate location of LCA 9249-C, the Kalae Lighthouse Site, and Morse Field

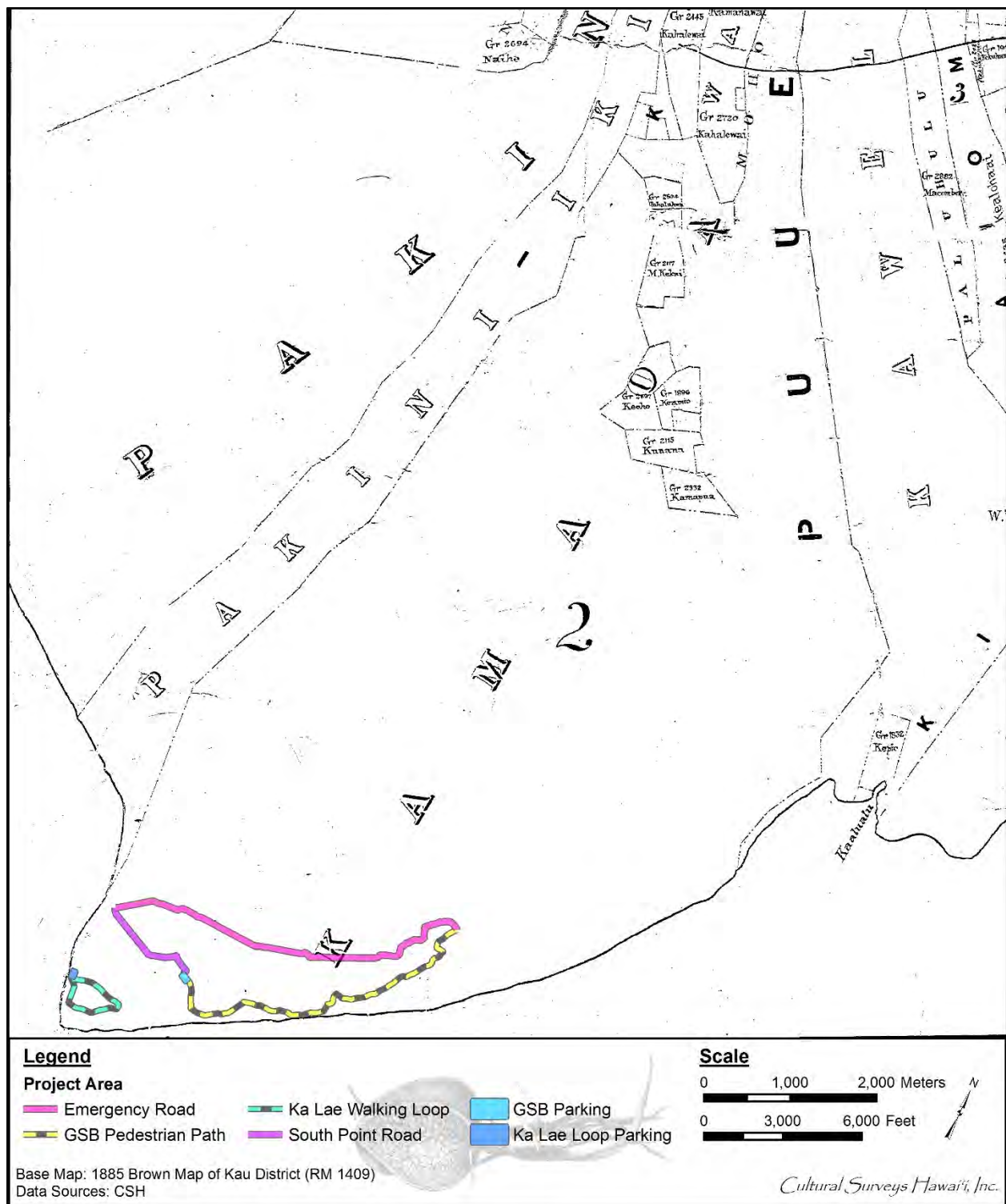


Figure 9. Portion of J.F. Brown's 1885 map of Ka'u, showing the location of Land Grants



impact on the land and people. Among new agricultural pursuits attempted in Ka'ū was wheat growing:

But it proved difficult to co-ordinate the size of the wheat crop with the requirements of the flour mills; difficult also to coordinate the output of the mills with the demands of the market, domestic and foreign. The business did not become a permanent one. [Kuykendall 1966:150]

Contributing to the failure of wheat production was the harvesting of *pulu*, a soft, flossy, yellow wool on the base of tree-fern leaf stalks (*Cibotium* spp.) used for stuffing mattresses and pillows. During the 1860s *pulu* constituted the major export crop from Ka'ū. A mission station report written in 1860 by W.C. Shipman relates the ruinous effect upon the native population of participation in the *pulu* trade:

The effect—on them is not good; not that the pulu is not a source from which they might secure comfort to themselves and families, but the actual result is the reverse. They are offered goods to almost any amount, to be paid for in pulu; this to a native is a strong temptation to go into debt. Consequently many of them are deeply in debt and almost all to some extent. The policy of the traders is to get them in debt and to keep them there so long as possible . . . [T]hey are almost entirely under the control of their creditors, and are compelled to live in the pulu regions, at the peril of losing their houses and lots, and whatever other property they may possess. Thus their homes are almost in reality deserted, ground uncultivated. [Shipman 1860:4]

Life in Ka'ū during the 1860s was further disrupted and devastated by the forces of nature. A sequence of major earthquakes and eruptions of Mauna Loa beginning in March 1868 resulted in many deaths and losses of property and livestock. These disasters were only a prelude to an earthquake in early April that precipitated a tidal wave that destroyed coastal villages, dislodged a cliff side at Kapāpala blanketing the land below and burying a village, and opened the Great Crack at Kīlauea, emptying the crater's lava lake into Punalu'u and Keauhou. A subsequent lava flow, this time in western Ka'ū, buried all of Wai'ahukini Valley west of the great *pali*.

Apparently great natural disasters could not hinder the pace of foreign business interests in Ka'ū. In 1868, the same year as the great earthquake, Alexander Hutchinson established the Naalehu Sugar Company and built a mill at Nā'ālehu just east of Wai'ōhinu. More enduring commercially than either wheat or *pulu*, sugar cultivation would become the major industry within Ka'ū, appropriating the focus of life in the district.

During the mid-1870s Waiohinu Plantation was established by John Nott and Company. This operation was bought out in 1877 by Alexander Hutchinson who at the same time founded Hilea Plantation. By the end of the 1870s, sugar mills were operating at Nā'ālehu, Hilea, and Honu'apo. Though Hutchinson died in 1879, his name survived in the Hutchinson Sugar Company which during the remainder of the nineteenth century continued to expand and consolidate existing plantation operations in Ka'ū.

Another plantation operation, the Hawaiian Agricultural Company, was established in Pāhala in 1876 by a consortium of Honolulu businessmen. A decade later the company controlled almost 10,000 acres of cane land and constituted the largest plantation in the Hawaiian Islands.

The social landscape of Ka'ū was also altered by the sugar companies. During the 1870s, Chinese laborers were brought in by Alexander Hutchinson. By the time of the 1884 government census there were 568 Chinese in the district. Japanese laborers were imported beginning in the latter 1880s and Filipinos began arriving during the first decade of the twentieth century.

### 3.2.4 1900s

Change within the Ka'ū district during the remainder of the nineteenth century and into the twentieth century centered around the activities of the two sugar operations, Hutchinson Sugar Plantation and the Hawaiian Agricultural Company. Wharves for shipping the sugar were constructed at Honu'apo and Punalu'u. Most remarkable upon the physical landscape must have been the systems of flumes and railways for transporting the cut cane from fields to mills. Railway lines ran from Nā'ālehu and Hīlea to Honu'apo and from Punalu'u to Pāhala. Railroads continued to operate in Ka'ū until the 1940s.

At Ka Lae, ranching persisted as the economic mainstay, with little other activity until its development as an air field. The 1914 map (see Figure 8) indicates the December 1908 Presidential Proclamation for the Kalae Lighthouse site located west of the proposed Ka Lae Walking Loop. It also depicts the boundaries of Morse Field as established by an October 1926 Executive Order, overlapping the project area and LCA 9249C and intended to include a future "Aeroplane Landing Field" (see Figure 8). An 1826 map (Figure 10) details the area at Ka Lae set aside for the development the landing field. This map depicts the 'a'ā lava flows cutting through "open pasture land," Lua Mākālei, Lua o Palahemo, a handful of scattered structures in the vicinity of the lighthouse and west along the coast to Kaulana Bay, and a dashed line extending west from Kaulana Bay/Kapalaoa Bay Village that likely represents a trail or road of some kind (see Figure 10). The 1930 USGS topographic map (Figure 11) provides another look at the Ka Lae area prior to the development of Morse Field and the airstrip beginning in 1940. A road is shown extending in a straight line along the *pali* to the lighthouse; it is the only road clearly marked within the Ka Lae area.

Table 4 provides a timeline of notable construction and other events at Morse Field, developed using a history offered on the State of Hawai'i's (2017) Hawaiian Aviation website. The 1954 USGS aerial photo (Figure 12) depicts the Morse Field barracks and abandoned airstrip, as well as a number of other roads in the area resulting from the military reservation development. These roads are clearly indicated on the 1962 USGS topographic map (Figure 13), along with a series of coastal Jeep trails and a rock wall extending *mauka* from Hanalua Bay. A 1978 aerial photo (Figure 14) illustrates very little change in the landscape at Ka Lae following the development of Morse Field, aside from possible signs of vehicular impact along the coast.

### 3.2.5 Contemporary Land Use

By the 1960s and 70s, commercial interests in Ka'ū began to look beyond the mainstay sugar had provided for almost a century. Macadamia nut growing and resort development were attempted. Ranching continues in the grasslands of Ka'ū, while coffee production has emerged as a new crop in former cane lands at higher elevations. In 2006, Apollo Energy Systems erected 14 wind turbines along the *pali* in Pakini Nui that are visible from the project area.

By 1970 DHHL acquired the Kamā'oa-Pu'ueo Tract. Very little development has occurred in recent years within the project area environs. However, the landscape has experienced severe impacts caused by unregulated tourism and recreation (see Figure 2).

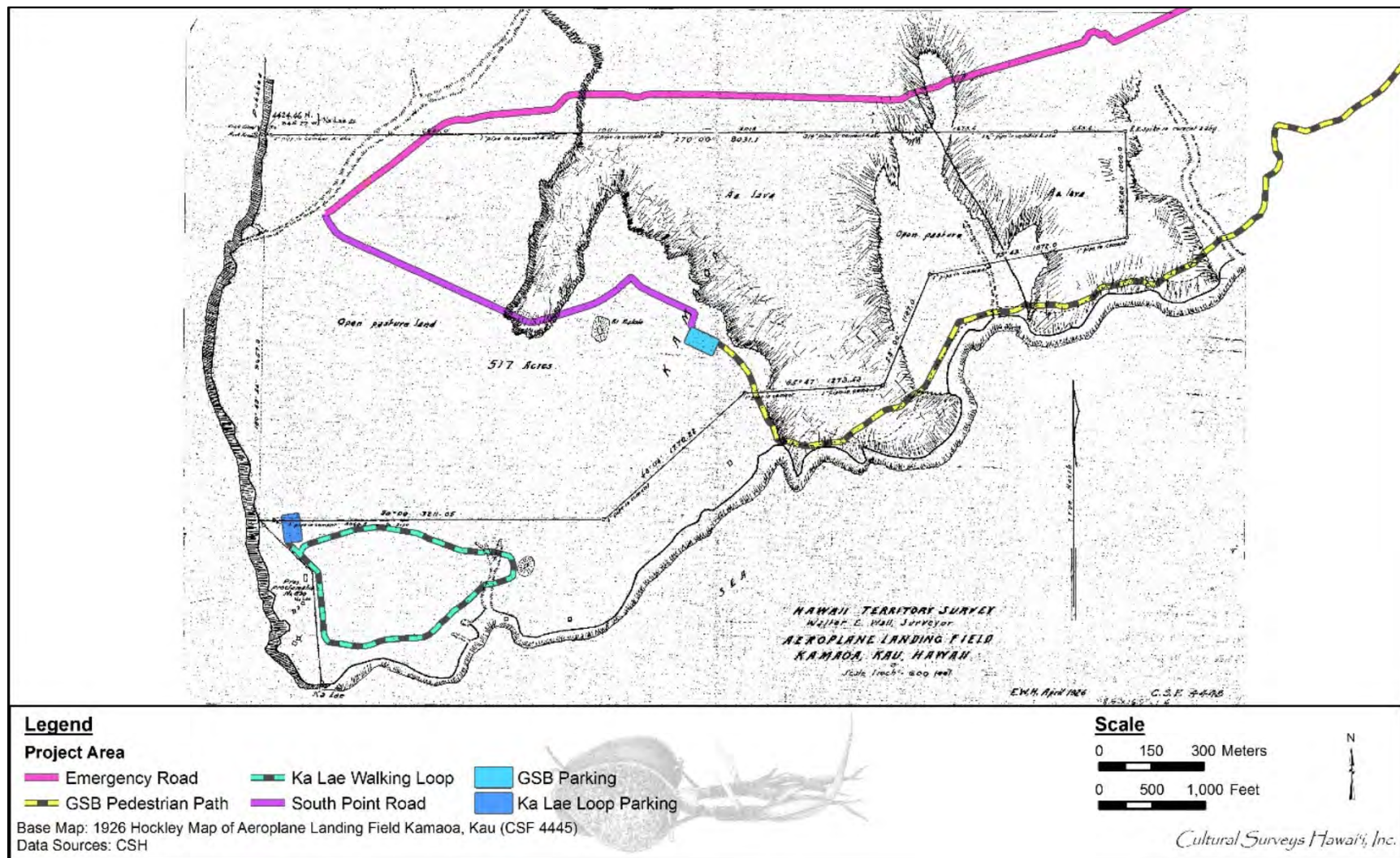


Figure 10. E.W. Hockley's 1926 map of Aeroplane Landing Field at Kamaoa, Kau, showing the natural terrain and features discussed in the text



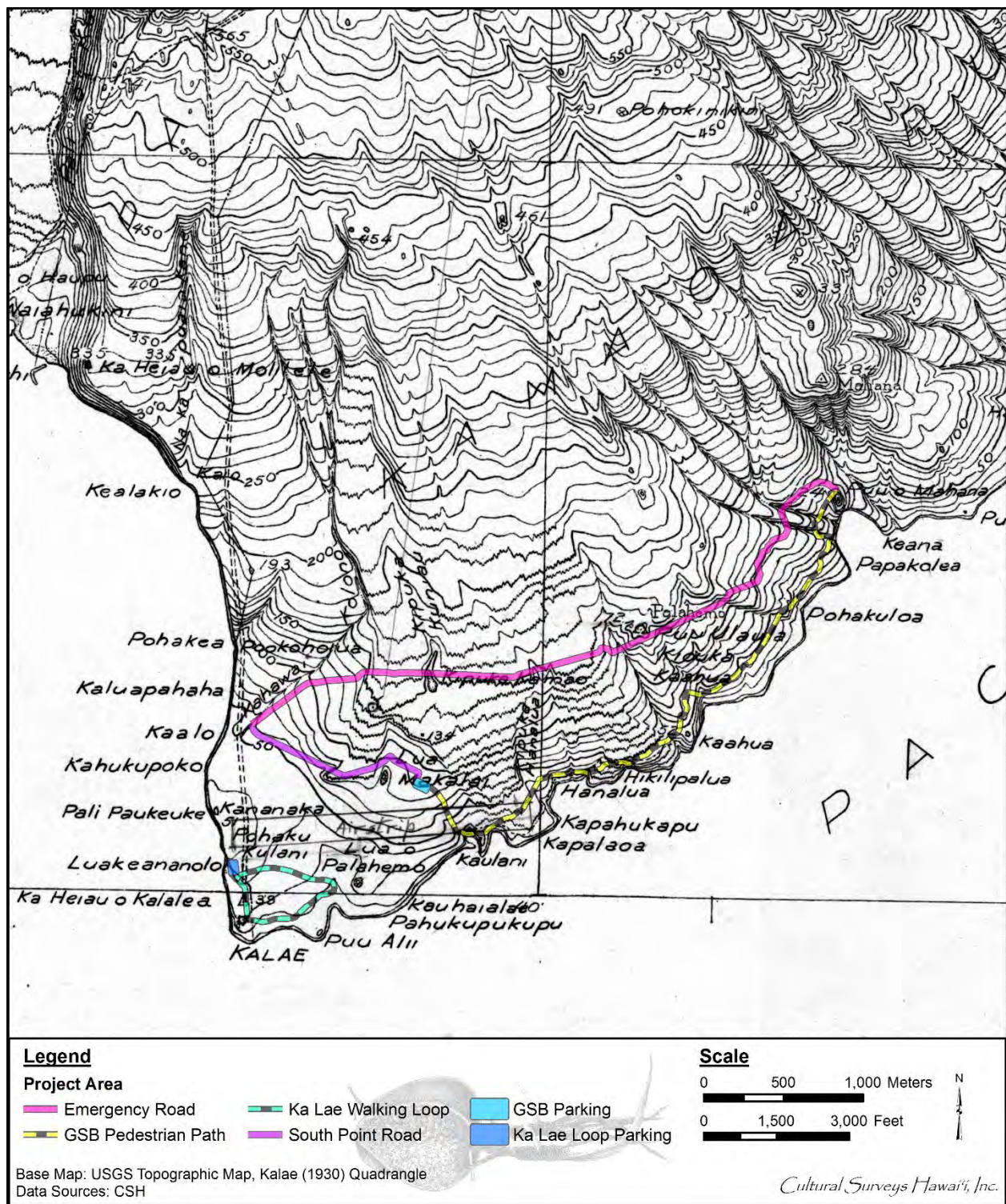


Figure 11. Portion of the 1930 Kalae USGS 7.5-minute topographic quadrangle showing the project area and features discussed in the text



Table 4. Notable events at Morse Field (adapted from State of Hawai'i 2017)

Year	Description
October 1926	Governor's Executive Order 258 sets aside 517 acres in Ka Lae for a U.S. Air Service military reservation airplane landing field
February 1940	Governor's Executive Order 869 sets aside 182.38 acres for an addition to the Kalae Military Reservation (see also Presidential Executive Order 4635)
1940	Construction begins on five buildings, runways, and access roads at Morse Field
December 1941	Construction of Morse Field airstrip runways suspended; all adjacent landing areas demolished and the strip destroyed as a precautionary measure against enemy use; construction of gasoline storage facilities and water line completed; mobilization buildings more than half finished
1946	Upon termination of World War II, Morse Field is declared surplus by the military
July 1947	Act 32 of the 1947 Territorial Legislature places Morse Field (South Cape Airport) under management of the Hawaii Aeronautics Commission
October 1947	Rancher James Glover surveys the airport, finding it to be of no value aside from the corrugated roofing materials. Glover is in favor of keeping the airport open for export of his slaughtered cattle, and offers to maintain the airport at his own expense and to keep it open at all times as an emergency landing strip.
November 1947	Hawaii Aeronautics Commission applies to the Civil Aeronautics Administration for the South Cape Airport, in accordance with Section 16, Paragraph 555.5 of the Federal Airport Regulations, and upon acquisition enters into an agreement with Mr. Glover.
January 1948	U.S. Army granted a right of entry into Morse Field; Hawaii Aeronautics Commission retains the strip as an emergency landing field
1948-1952	Hilo Airport staff makes quarterly trips to Morse Field to perform minor maintenance and repair work.
April 1952	Airfield is inspected and found to be in poor condition due to erosion of its steel grid runway. Hutchinson Plantation agrees to assist in renovation.
August 1952	Morse Field is restored to the Territory of Hawai'i by Presidential Executive Order.
July 1953	Due to ongoing maintenance issues, airfield is condemned as unsafe and closed to all operations.
October 1954	Territorial Director of Aeronautics makes request to abandon the airport to the Civil Aeronautics Administration.
April 1955	South Cape Airport is abandoned by the Territorial government.

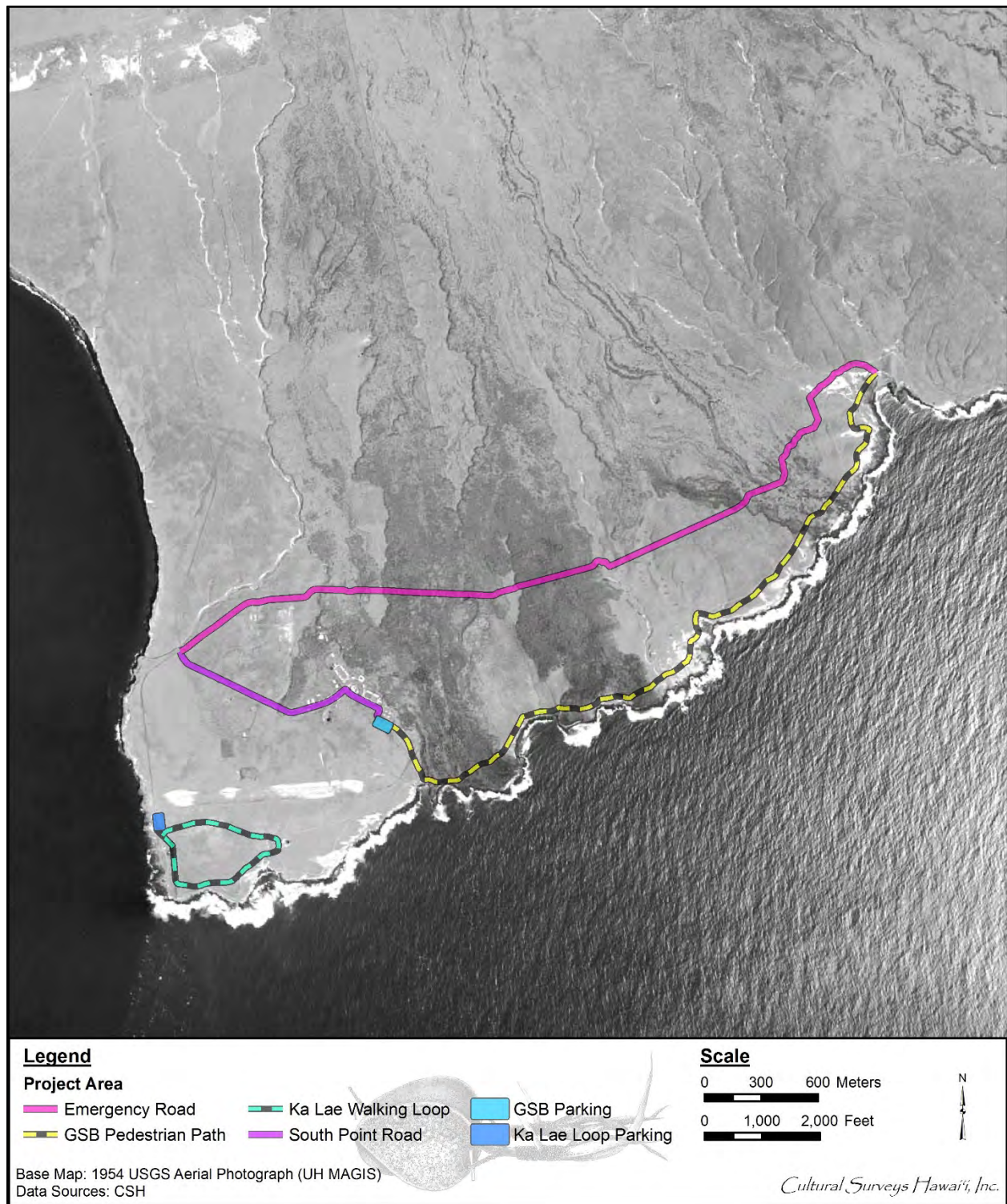


Figure 12. Portion of the 1954 USGS aerial photo showing the project area and features discussed in the text





Figure 13. Portion of the 1962 Kalae USGS 7.5-minute topographic quadrangle showing the project area and features discussed in the text



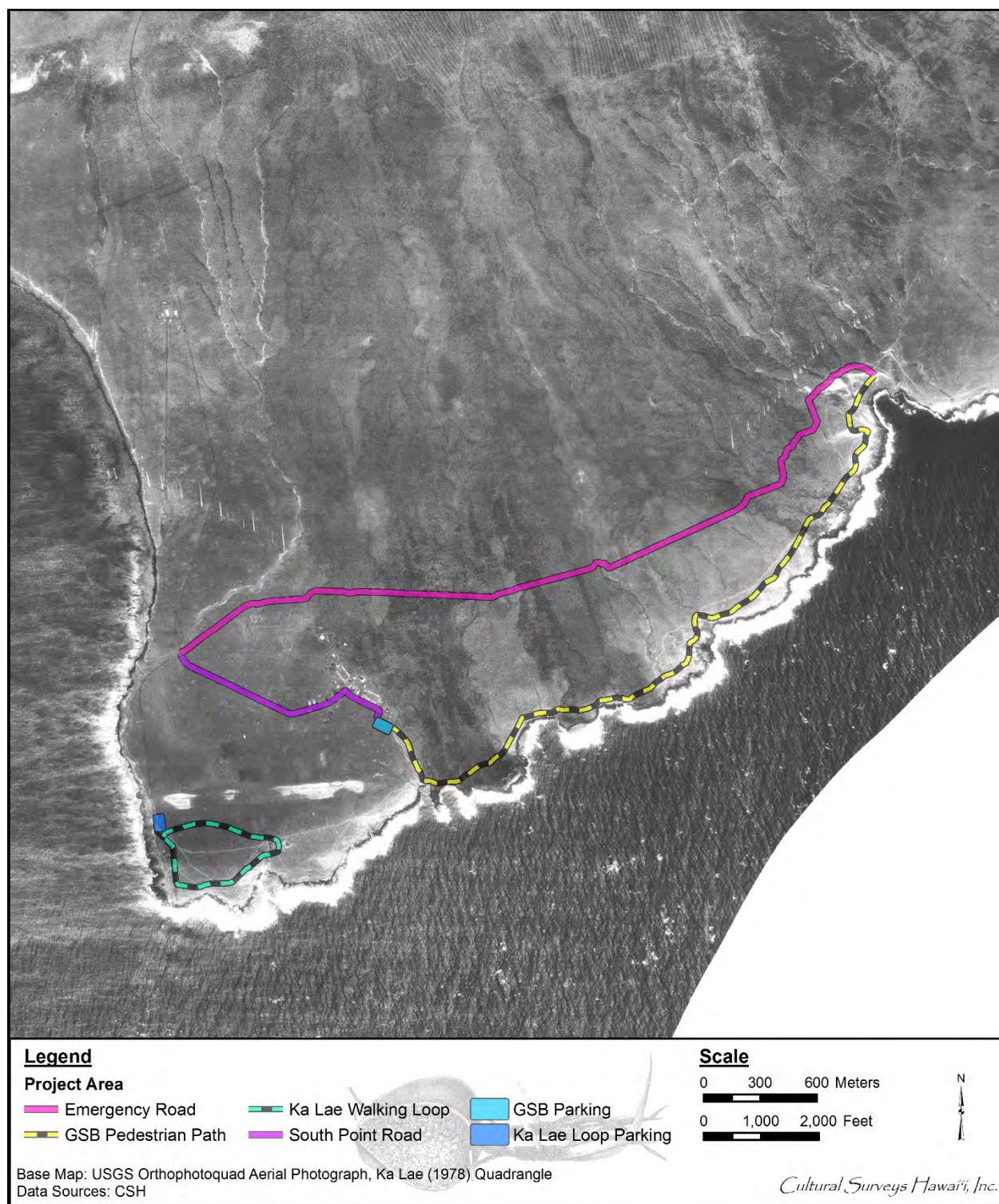


Figure 14. Portion of the 1978 USGS orthophotoquad aerial photo, Ka Lae Quadrangle, showing a general lack of continued development in the vicinity of the project area



## Section 4 Previous Archaeological Research

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This section provides detailed discussions of the previous archaeological research that has occurred in the vicinity of the project area (Section 4.1); the historic and archaeological districts in which portions of the project area are situated (Section 4.2); and the previously documented archaeological sites located in proximity to the project area (Section 4.3). A summary of the background research and predictive model for the current fieldwork is given in Section 4.4.

### 4.1 Archaeology of Ka Lae

Numerous archaeological studies have been conducted at Ka Lae, in the vicinity of the South Point RMP project area. These studies have ranged greatly in scope and geographical extent, from focused investigations of single archaeological sites to intensive surveys of extensive coastal to upland transects. The present study is somewhat unique in that, while its corridors cross a wide geographical area, they are quite narrow and therefore provide a limited picture of the overall archaeological record in the area. Its configuration does, however, allow the project area to cross or come into direct proximity with a significant number of previous study areas. Research into these past studies helps to contextualize the results of the present AIS within the greater Ka Lae landscape.

While many of the significant archaeological and cultural sites at Ka Lae have been previously documented, the body of existing research presents a number of notable challenges. First and foremost is the availability of the past research. The early work undertaken by Emory, Sinoto, and Bonk for the Bishop Museum has not all been published and is archived in various locations (such as the University of Hawai'i in Hilo and Bishop Museum Archives on O'ahu—both of which were visited for this AIS), or has been lost. Also of concern is the considerable age of many of the past investigations. The most recent published and available study in the area dates to 1991 (Pietruszewsky), with about half of the remaining available work occurring throughout the 1980s and the other half between 1954 and 1979. These previous investigations range in quality and detail of documentation, and utilized dated site location methods. Also of note is that a number of the previous investigations describe archaeological features already in remnant and/or impacted states. Some of the best documentation of large-scale geographical and archaeological sites areas at Ka Lae comes from Landrum (1984)—a study that is now over 30 years old. Given the significant and ongoing natural, anthropogenic, and/or bovine impacts at Ka Lae, it must be considered that archaeological features have for the most part continued to degrade.

Table 5 summarizes the previous archaeological studies that could be obtained during the present research, and their locations are depicted on Figure 15. A brief description of each archaeological study is also included in this section.

#### 4.1.1 Bonk 1954

Between 1953 and 1958, the Bishop Museum and the University of Hawai'i conducted sporadic fieldwork at South Point under the supervision of Dr. Kenneth P. Emory (Kelly 1969:1). William J. Bonk first began fieldwork at South Point as a graduate student and then later as a professor for the University of Hawai'i (Kelly 1969:3–4). Unfortunately, the results of the fieldwork have either gone entirely unpublished or are lacking in detailed information. Over time, a few of Bonk's site numbers, Bishop Museum site numbers, and SIHP numbers have become cross-listed and

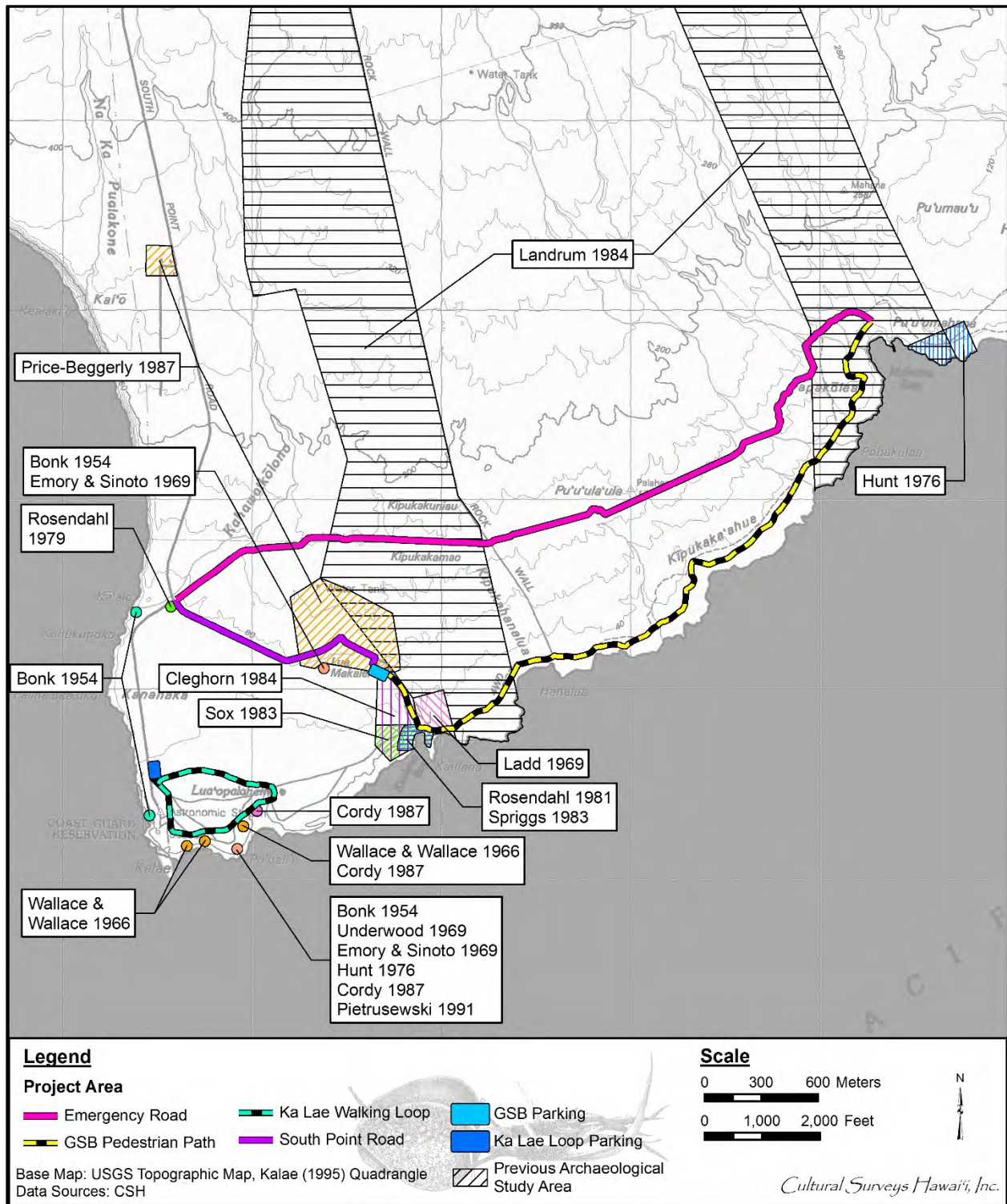


Figure 15. Portion of 1995 Kalae USGS topographic quadrangle, showing previous archaeological studies in the immediate vicinity of the project area

Table 5. Previous archaeological studies in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP # 50-10-76)
Stokes 1906 (1991)	Survey	<i>Heiau</i> of Hawai'i Island	Documented Kalalea Heiau (later designated SIHP # -03607)
Bonk 1954	Excerpt from a preliminary report on the excavations at South Point	Ka Lae	Four cultural resources documented: H1, Pu'u Ali'i; H2, Lua Makalei; H3, a house site; H4, the "Flag Pole Site"; (later designated SIHP #s -03605, -03606, -03900, and -03901, respectively)
Emory and Sinoto 1969	Radiocarbon dating	Pu'u Ali'i (H1), Makalei Shelter (H2), Waiahukini Shelter (H8)	Estimated dates of occupation: H1, AD 1000-1350; H2, AD 1600-1850; H8, AD 750-1850 (SIHP #s -03605, -03606, and -10847, respectively)
Underwood 1969	Skeletal analysis	Pu'u Ali'i (H1)	Analysis found 97 individuals represented in skeletal series
Wallace and Wallace 1966	Excavation	Ka Lae	Three sites documented: H24, Pinao Bay; H25, stone pavement; H26, buried midden; (later designated SIHP #s -03908, -03909, and -03910, respectively)
Ladd 1969	Survey and mapping	Kapalaoa Bay Village, South Point Complex	Mapped Kapalaoa Bay Village complex, site H29 and B20-18 (later designated as SIHP # -03911); suggested boundaries of South Point Complex
Emory 1970	District inventory	Kamā'oa Ahupua'a	Inventoried sites SIHP #s -03605, -03606, -03607, -03608, -03609, -03610, -03900, -03901, -03902, -03903, -03904, -03905, -03906, -03907, -03908, -03909, -03910, -03911, -03912 (not shown on Fig. 15)
Hunt 1976	Hydration-rind date sequencing	South Point	Estimated dates of occupation: Pu'u Ali'i, AD 967-1395 (SIHP # -03605) and Mahana Bay, AD 935-1737
Rosendahl 1979	Archaeological clearance for National Historic Site Monument	Ka Lae National Historic Site Monument (SIHP # -04140)	No historic properties identified

Reference	Type of Study	Location	Results (SIHP # 50-10-76)
Rosendahl 1981	Archaeological reconnaissance survey	Kaulana Bay Harbor	Five previously identified features (SIHP # -03911 Features A–E) located; one new feature identified: Feature F, a pavement
Spriggs 1983	Field inspection and literature review	Kaulana Bay Harbor	No historic properties identified
Sox 1983	Preliminary reconnaissance	Kaulana Bay Harbor	No historic properties identified
Cleghorn 1984	Archaeological reconnaissance survey and auger testing	Kaulana Bay	Ten sites identified: 50-Ha-B20-20, -21, -22, -23, -24, -25, -26, -27, -28, and -29 (no SIHP numbers assigned)
Landrum 1984	Archaeological reconnaissance survey	Three <i>mauka-makai</i> transects of Kamā'oa Ahupua'a	Kaulana transect identified SIHP #s -5257 through -5318; Mahana transect identified SIHP #s -5319 through -5325; Ekuo Kapua'a transect identified SIHP #s -5326 through -5333
Cordy 1987	Observations and investigations	Pinao Bay	No historic properties identified
Price-Beggerly 1987	Archaeological inventory survey	Morse Field and Pacific Missile Range Facility	Inventoried three sites with 28 features, SIHP #s -10274, -10275, -10276; also identified SIHP # -10277, South Point-Kamā'oa Agricultural System
Pietruszewski 1991	Osteological examination	Pu'u Ali'i	No historic properties identified

entangled. Since the original fieldwork remains unpublished, it is occasionally impossible to determine which site numbers are correct.

In 1954, Bonk published a short excerpt from a preliminary report (that was never published) on the Bishop Museum excavations at South Point (Bonk 1954; see Figure 15). In this excerpt, Bonk summarizes his findings from site H1, Pu'u Ali'i burial ground and house site (SIHP # 50-10-76-03605), site H2, Lua Mākālei (SIHP # -03606), site H3, a house site (SIHP # -03900), and site H4, the "Flag Pole Site" (SIHP # -03901). None of these sites are within the project area but are in relative proximity to the Ka Lae Walking Loop, the Emergency Road, and South Point Road.

#### 4.1.2 Emory and Sinoto 1969

In 1966 and 1967, Emory and a team of scientists collected radiocarbon samples from habitation sites H1 (SIHP # -03605), H2 (SIHP # -03606), and H8 (SIHP # -10847) (Emory and Sinoto 1969;



see Figure 15). Sites SIHP # -03605 and -03606, Pu'u Ali'i and Lua Mākālei, are in proximity to the Ka Lae Walking Loop and South Point Road, while SIHP # -10847, Waiahukini shelter, is located about 1.5 miles to the northwest. The team collected 70 radiocarbon samples and analyzed fishhook sequences. Their results assert that Waiakuhini shelter was first occupied around AD 750 to AD 1850, Pu'u Ali'i was occupied from AD 1000 to AD 1350, and Lua Mākālei was occupied from AD 1600 to AD 1850.

#### **4.1.3 Underwood 1969**

As part of their fieldwork and excavations in the 1950s and 1960s, the Bishop Museum collected skeletal remains from the Pu'u Ali'i Sand Dune site (H1, SIHP # -03605). The Pu'u Ali'i Sand Dune site is located to the south of the Ka Lae Walking Loop. In 1965, Underwood examined and analyzed the skeletal remains (Underwood 1969; see Figure 15). Underwood found the skeletal series represented at least 97 individuals, but only 20 of those skeletons were complete or nearly complete. Underwood concludes the skeletal series likely represents a single *'ohana* (family), and that the series accrued over the span of one to 20 years.

#### **4.1.4 Wallace and Wallace 1966**

In 1965, Bishop Museum excavated three sites: Pinao Bay (H24, SIHP # -03908), a stone pavement (H25, SIHP # -03909) and buried midden (H26, SIHP # -03910) (Wallace and Wallace 1965; see Figure 15). All three sites are located to the south of the Ka Lae Walking Loop. Wallace and Wallace (1966) concluded the Pinao Bay habitation site sustained only one or two households at a time and activity there centered on fishing. The stone pavement site (H25, SIHP # -03909) was probably a fishing shrine, and the buried midden (H26, SIHP # -03910) represents a temporary habitation site associated with fishing.

#### **4.1.5 Ladd 1969**

In 1969, Bishop Museum conducted an archaeological survey and mapping of Kapalaoa Bay Village (Ladd 1969; see Figure 15). The study also aimed to delineate the boundaries of the South Point National Historic Landmark (NHL). A portion of the current project area (Green Sand Beach Pedestrian Path) is located in Ladd's 1969 survey area. Previously, Kapalaoa Bay Village had been assigned Bishop Museum numbers H29 and 50-Ha-B20-18. Ladd (1969) did not assign the site an SIHP number. The Kapalaoa Bay Village site consists of three separate lava bubble shelters, as well as walls, platforms, clearings, and mounds. Ladd (1969) concluded the village site was occupied during the pre-Contact and historic periods, and could have sustained up to 35-40 people at its peak. The Kapalaoa Bay Village complex would later be designated as SIHP # -03911. Ladd's map of Kapalaoa Village is included in this section (Figure 16).

#### **4.1.6 Emory 1970**

In 1970, Kenneth P. Emory published an inventory of archaeological sites in Kona, Ka'ū, and 'Anae-ho'omalū for the County of Hawai'i Planning Department. Emory's 1970 inventory is not included on Figure 15, as the study was a sweeping district inventory without a defined project area. Many of the sites inventoried in the South Point region are in or near the current project area: SIHP #s -03605, -03606, -03607, -03608, -03609, -03610, -03900, -03901, -03902, -03903, -03904, -03905, -03906, -03907, -03908, -03909, -03910, -03911, and -03912. These sites include Pu'u Ali'i, Lua Mākālei, Lua o Palahemo, Kalalea Heiau, Pinao Bay, Kaulana Bay,



Figure 16. Map of Kapalaoa Bay Village from Ladd (1969; jacket)

Kapalaoa Village, the canoe mooring holes, multiple habitation sites, and cultural deposits (see Section 4.3).

#### **4.1.7 Hunt 1976**

Emory and Sinoto's 1969 report documented radiocarbon testing conducted at three sites at Ka Lae. The results from their 1969 study were not in total agreement; therefore in 1976 Terry L. Hunt performed hydration-rind dating on basaltic glass artifacts gathered from previous archaeological excavations at Pu'u Ali'i (SIHP # -03605) and at the eastern point of Mahana Bay beyond the current project area (Hunt 1976; see Figure 15). Hunt's (1976) hydration-rind dating results from Pu'u Ali'i indicated an occupation from AD 967 $\pm$ 63 to AD 1395 $\pm$ 27. The sites at Mahana Bay indicated an occupation from AD 935 $\pm$ 50 to AD 1737 $\pm$ 23. Hunt (1976) draws three conclusions for the Mahana Bay residents subsequent to AD 1600: that occupants advanced their cultural adaptations to the terrestrial ecosystem, that economic and social differentiation developed, and that a portion of the population shifted from coastal to upland habitation by the 1500s.

#### **4.1.8 Rosendahl 1979**

In 1979, Margaret L.K. Rosendahl cleared and excavated the site for the Ka Lae National Historic Site (SIHP # -04140) monument installation (Rosendahl 1979; see Figure 15). The monument site is located outside the project area to the west of the South Point Road and the Emergency Road. Rosendahl aimed to determine the presence or absence of any cultural deposits at the monument installation site, and to excavate the foundation needed to support the 800-pound concrete monument. No cultural material was found and the site was cleared for construction.

#### **4.1.9 Rosendahl 1981**

In 1981, Paul H. Rosendahl, Inc. (PHRI) conducted an archaeological reconnaissance survey of Kaulana Bay Harbor to determine the presence or absence of significant archaeological remains within the project area for proposed harbor improvements (Rosendahl 1981; see Figure 15). A portion of the current project area (Green Sand Beach Pedestrian Path) passes through Rosendahl's (1981) survey area. The survey documented five previously identified features of SIHP # -03911 (Features A–E), as well as one new feature (Feature F, a pavement). The six features include a subsurface cultural deposit, three platforms, and two pavements. Rosendahl proposed three plans for recommended mitigation: Plan 1, a more intensive archaeological survey including test excavations and data recovery; or Plans 2 and 3, continued in-place preservation. Rosendahl's (1981) site map of Kaulana Bay is included in this section (Figure 17).

#### **4.1.10 Spriggs 1983**

In 1983, Matthew Spriggs on behalf of University of Hawai'i's Anthropology Department conducted a literature review and field inspection that addressed five areas of concern for the proposed Kaulana Bay Boat Ramp project. A portion of the current project area (southwestern section of the Green Sand Beach Pedestrian Path) is in direct proximity to Spriggs' 1983 survey area (see Figure 15). Spriggs (1983) was concerned that Rosendahl's 1981 survey did not cover the entire boat ramp project area, that a traditional Hawaiian canoe ramp remained undocumented, that subsurface testing should be required within the project area before construction, that blasting during construction would impact surrounding archaeological sites, and that there should be continuous

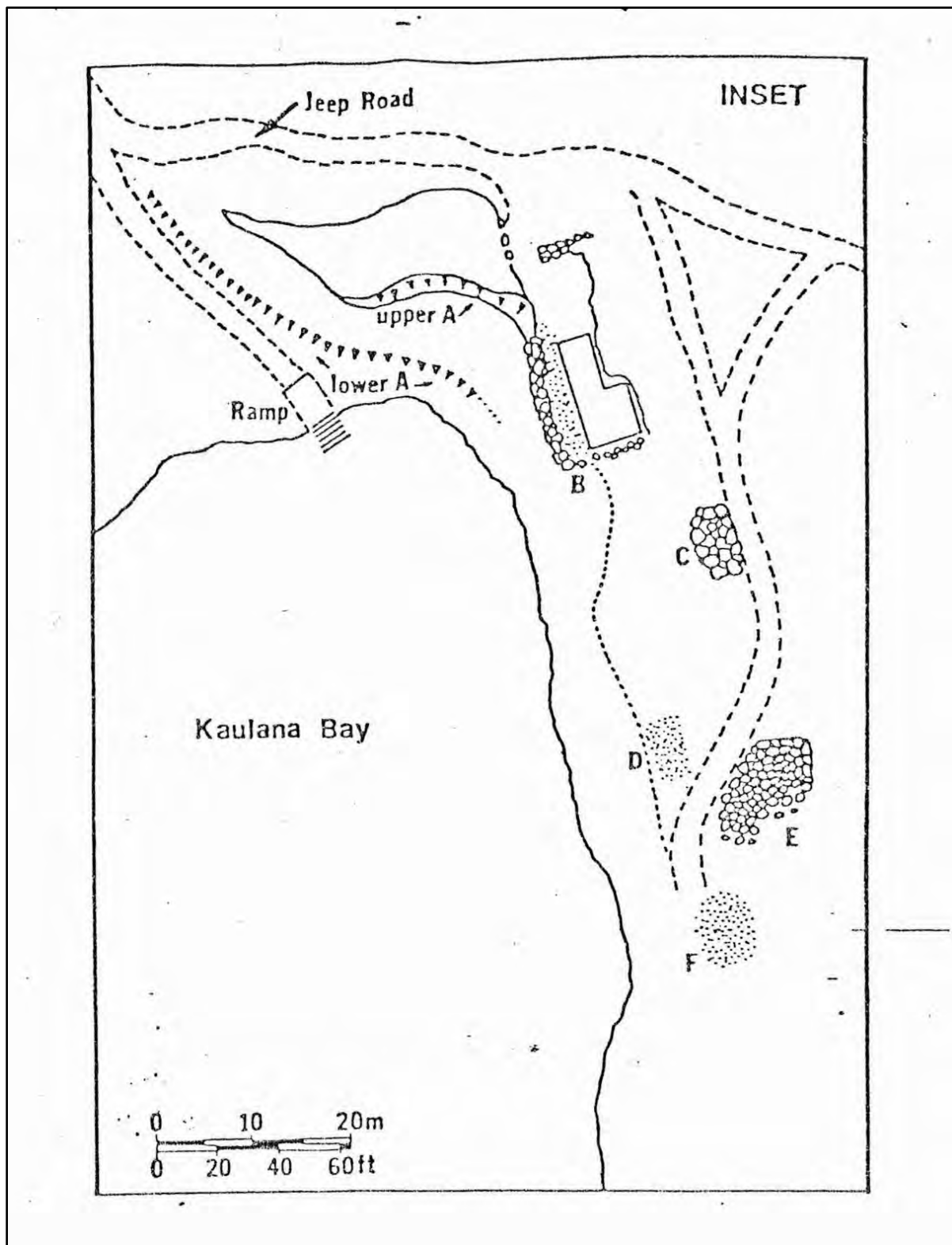


Figure 17. Map of Kaulana Bay from Rosendahl (1981:53)



custodial supervision to preserve the cultural resources of the Ka Lae Historic District. No site numbers were assigned.

#### 4.1.11 Sox 1983

In 1983, David Sox conducted preliminary reconnaissance of a portion of Kaulana Bay Harbor construction easement that was outside Rosendahl's original 1981 reconnaissance survey. Sox's 1983 survey area abuts a portion of the current project area (southwestern section of the Green Sand Beach Pedestrian Path; see Figure 15). As part of the trip, Sox investigated the purported traditional Hawaiian canoe ramp reported by Spriggs in 1983. Sox concluded the canoe ramp was an unmodified natural lava flow formation (aside from the bait cups cut in to the surface of the flow). Sox's (1983) investigation of the construction easement site revealed no new historic properties except for a line of boulders thought to be associated with World War II Army Air base activities. No site numbers were assigned.

#### 4.1.12 Cleghorn 1984

In 1984, Paul L. Cleghorn conducted an archaeological reconnaissance survey of 18 acres at Kaulana Bay Harbor at the request of the State of Hawai'i Department of Transportation and the Department of Anthropology at the Bishop Museum, for the proposed Kaulana Boat Launching Facility. Cleghorn's (1984) survey area was adjacent to the current project area (western section Green Sand Beach Pedestrian Path; see Figure 15). Cleghorn aimed to identify and evaluate any cultural resources that may be impacted by the construction of the boat launching facility.

Cleghorn (1984) documented ten sites in the project area (sites 50-Ha-B20-20 through 50-Ha-B20-29) which were never assigned SIHP numbers. The sites included a habitation complex, stone mounds, a raised roadbed, temporary shelters, a hearth, platforms, bait cups, and midden, ranging from pre-historic to historic (see Section 4.3.1). Cleghorn (1984) also conducted 21 subsurface auger tests in the proposed parking lot and roadway areas, as well as an excavated control stratigraphic profile along the erosional face of the coast. Cleghorn (1984) recommended either in situ preservation of these sites or intensive data recovery. Cleghorn's map of Kaulana Bay is included in this section (Figure 18). Additionally, Cleghorn (1984) noted dredged material had been dumped on areas and sites previously surveyed by Ladd in 1969 (Figure 19).

#### 4.1.13 Landrum 1984

In 1984, Bishop Museum conducted an archaeological reconnaissance survey of three *mauka-makai* transects (called Kaulana, Mahana, and Ekuo Kapua'a transects) within Kamā'oa Ahupua'a (Landrum 1984; see Figure 15). Portions of the current project area (Green Sand Beach Pedestrian Path and Emergency Road) cross through the Kaulana and Mahana transects, while the Ekuo Kapua'a transect is located well outside the project area to the east. In the Kaulana transect, Landrum identified 62 sites with 344 features: SIHP #s -5257 through -5318; Figure 20 and Figure 21 are Landrum's (1984) maps of Kaulana transect applicable to the current project. In the Kaulana transect *mauka* of Kaulana Bay, Landrum (1984) also identified ranching structures including a large enclosure he labeled the "bullpen" and a "ranch wall" (see Figure 21); these features were not assigned site numbers or discussed as archaeological features. The Mahana transect yielded seven sites with 24 features: SIHP #s -5319 through -5325; Figure 22 is Landrum's (1984) map of Mahana transect applicable to the current project. The Ekuo Kapua'a transect yielded eight sites with 24 features: SIHP #s -5326 through -5333. The sites identified range from pre-Contact to



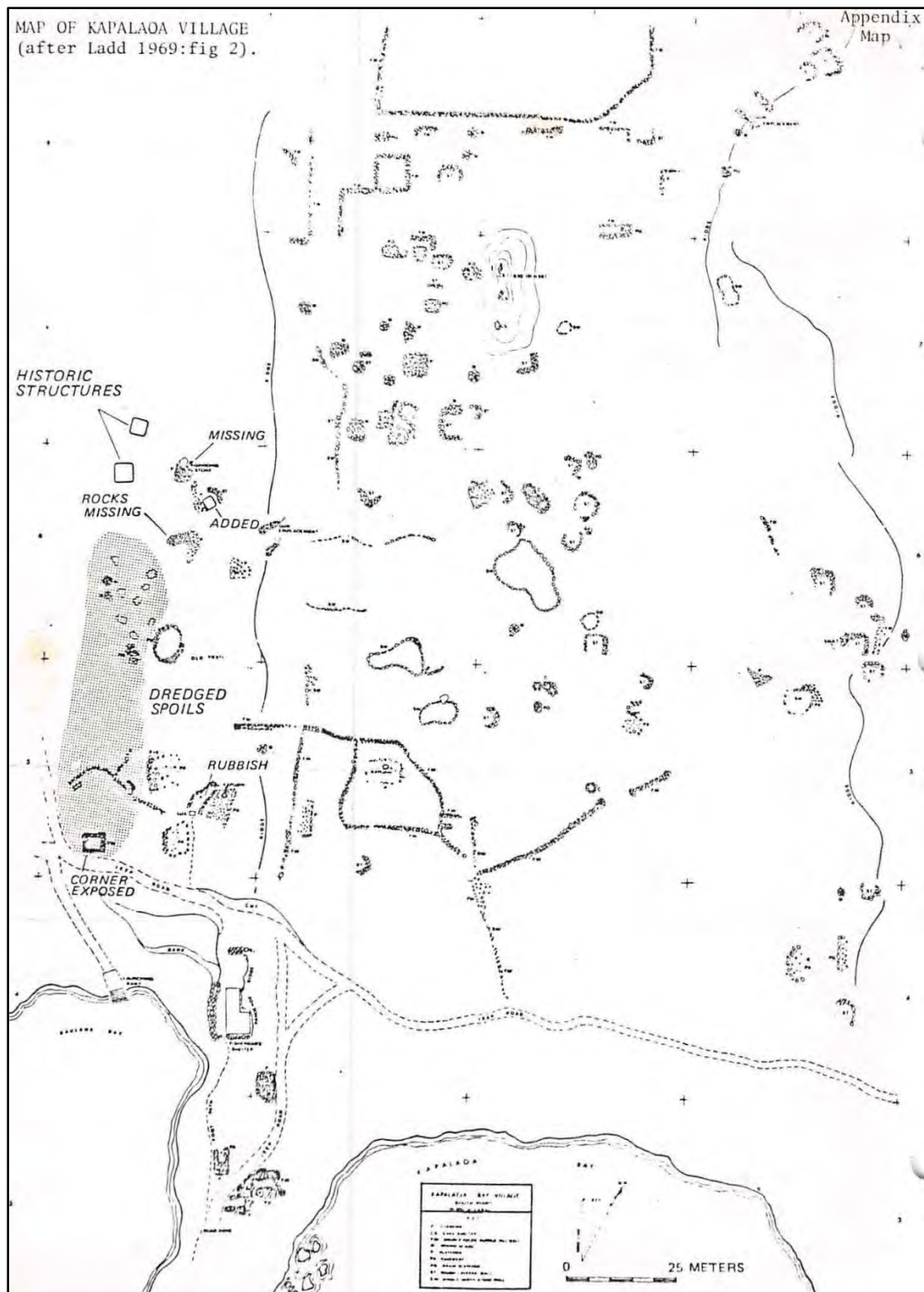


Figure 19. Cleghorn's (1984; appendix) updated map of Kapalaoa Village (from Ladd 1969) showing the location of dumped dredge spoils

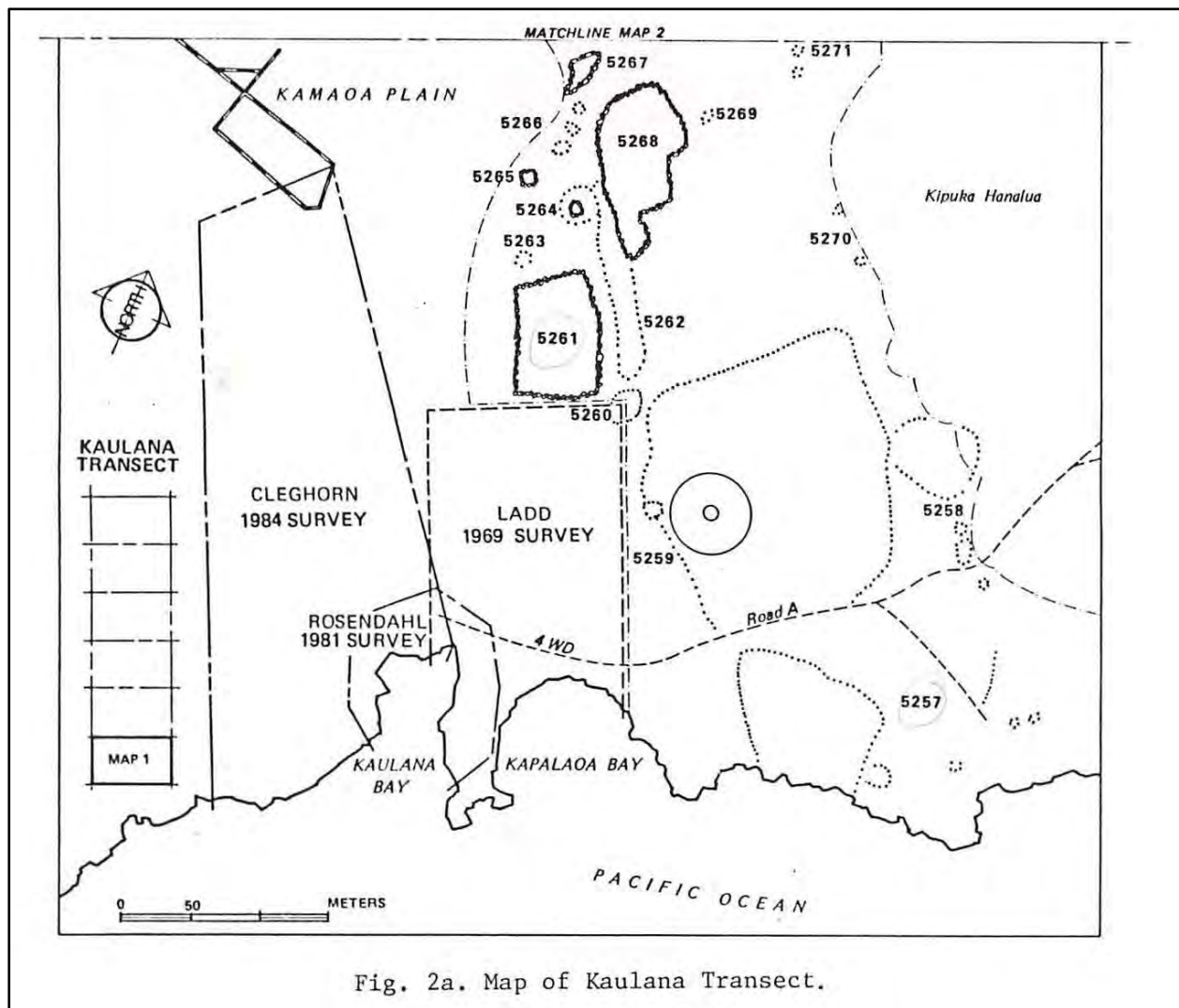


Figure 20. Map 1 of Kaulana Transect from Landrum (1984:13), in vicinity of proposed Green Sand Beach Pedestrian Path and parking lot at Kaulana and Kapalaoa bays



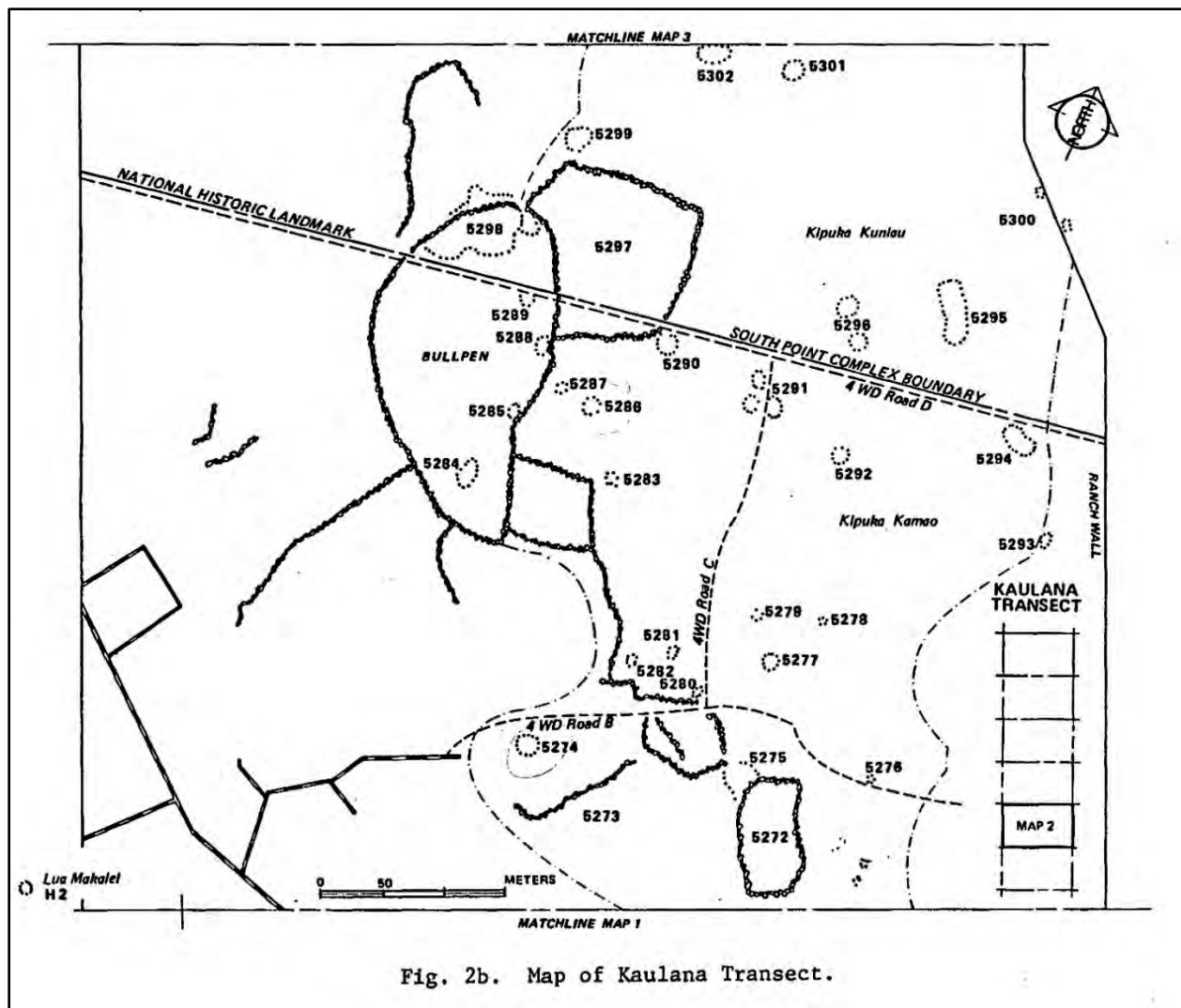


Figure 21. Map 2 of Kaulana Transect from Landrum (1984:14), in vicinity of proposed Emergency Road

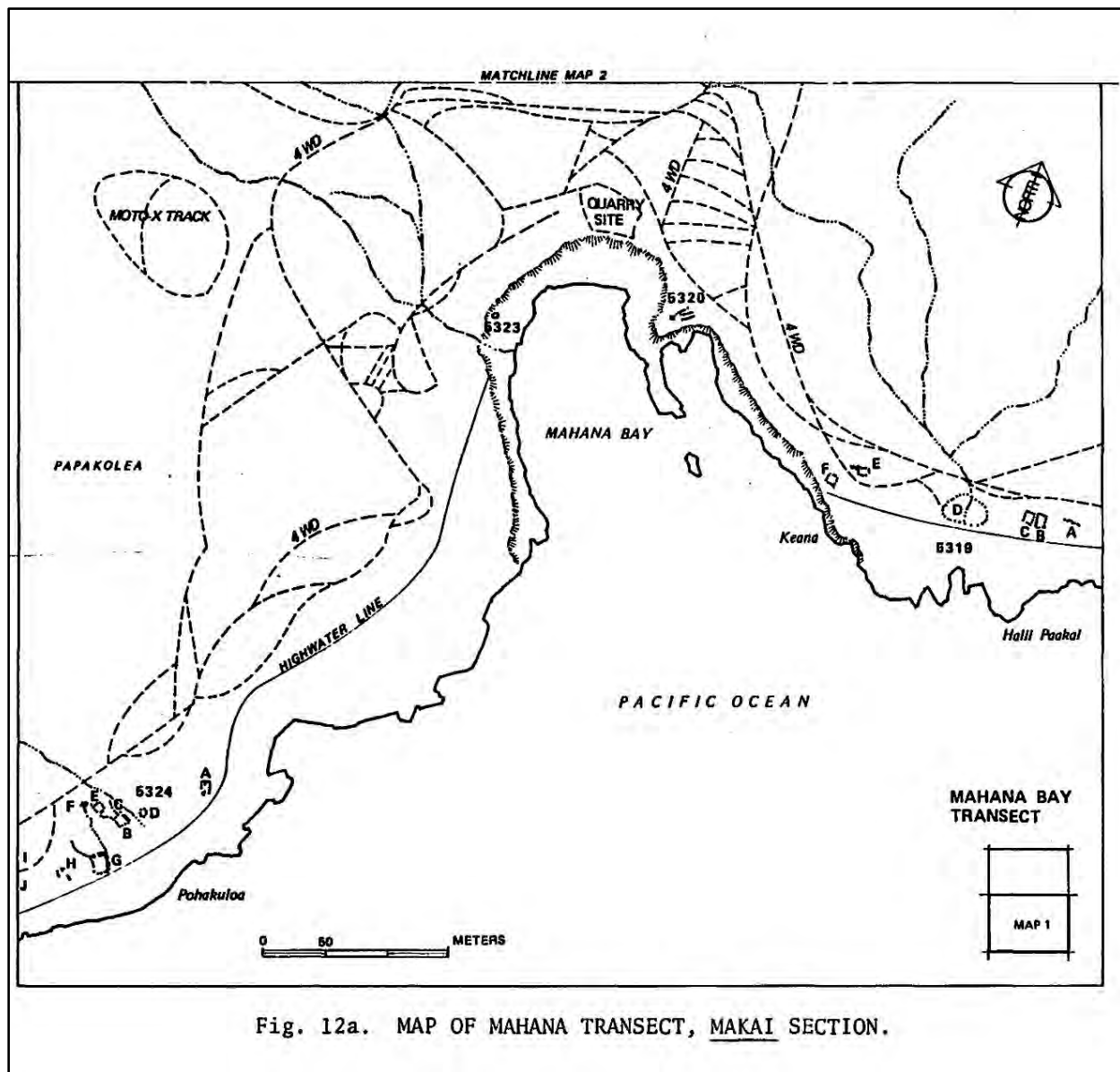


Figure 22. Map 1 of Mahana Transect from Landrum (1984:72), in vicinity of proposed Green Sand Beach Pedestrian Path and Emergency Road at Mahana Bay

historic in age. The sites documented by Landrum (1984) in proximity to the current project area are discussed further in Section 4.3.

Landrum (1984:105–106) proposed a settlement model specific to the Kaulana area based on his findings. Landrum (1984:107–109) makes six recommendations to preserve the integrity of the area: provide the presence of a full-time ranger, conduct further archaeological reconnaissance surveys, limit vehicular traffic to a designated corridor, fence off archaeological features, recover data from eroding coastal sites, and remove cattle from areas with archaeological sites. Additionally, Landrum nominated the Mahana Archaeological District and the Kīpuka Kuniau National Historic and Archaeological District to the National Register of Historic Places (NRHP).

#### **4.1.14 Cordy 1987**

In 1987, Ross Cordy, with the assistance of the 'Ohana o Ka Lae and DHHL, visited South Point and Pinao Bay (TMK: [3] 9-3-001:002) to resolve cattle damage to historic sites (Cordy 1987; see Figure 15). Cordy documented three existing sites along the coast: H1 (SIHP # -03605), H24 (SIHP # -03908), and H5 (SIHP # -03609). All three sites are located to the south of the Ka Lae Walking Loop. Cordy noted the presence of two burials eroding out of site H5, SIHP # -03609.

#### **4.1.15 Price-Beggerly 1987**

In 1987, the International Archaeological Research Institute, Inc., conducted archaeological investigations at the former Pacific Missile Range Facility and Morse Field for the U.S. Army Engineer Division, Pacific Ocean Corps of Engineers (Price-Beggerly 1987; see Figure 15). Portions of the current project area (South Point Road and Green Sand Beach Parking lot) are located within Price-Beggerly's (1987) Morse Field project area. The Pacific Missile Range Facility is located outside the current project area, approximately 1.5 miles to the northwest. Price-Beggerly conducted a surface survey, mapped three complexes, examined 13 erosional profiles; and excavated ten trenches, 26 auger test units, and one coastal profile. Three archaeological site complexes with 28 features were identified at Morse Field; these three sites are indicated as Complex A, B, and C located along the northern side of the Barracks facilities (Figure 23). These complexes, which range from pre-Contact to historic in age, were assigned as SIHP #s -10274, -10275, and -10276 (see Section 4.3). Price-Beggerly (1987:130–131) recommends further archaeological research and excavation if these sites were to be subject to development. At the Pacific Missile Range Facility, no archaeological sites were documented, but a traditional Hawaiian agricultural field system was identified from aerial photographs and designated as the South Point-Kamā'oa Agricultural System (SIHP # -10277). Price-Beggerly (1987:128) recommended archaeological research of this field system.

#### **4.1.16 Pietrusewsky 1991**

In 1991, Michael Pietrusewsky examined skeletal remains that were being curated at the University of Hawai'i, Hilo. The remains were collected from the H1 site of Pu'u Ali'i (SIHP # -03605), Mahana Bay, and other miscellaneous sites outside the current project area (Pietrusewsky 1991; see Figure 15). The skeletal remains from H1 were found to represent at least eight different individuals. The skeletal remains from Mahana Bay were found to be the remains of one infant. Pietrusewsky noted that all the burials were to be reinterred, but no further information about a burial treatment plan was provided.

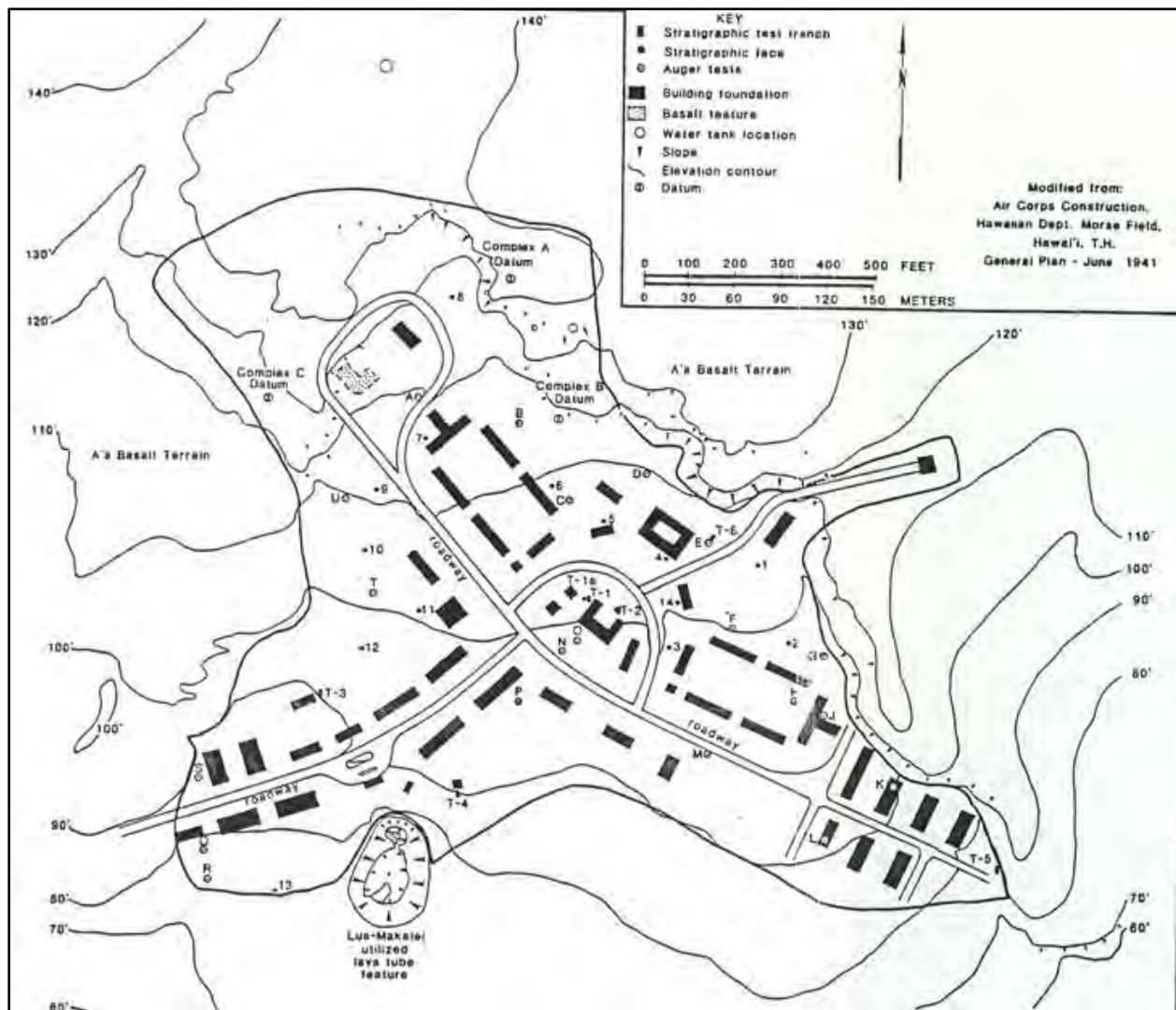


Figure 23. Map of military facilities at Morse Field, from Price-Beggerly (1987:3)



## 4.2 Historic and Archaeological Districts

The project area crosses three historic and archaeological districts: South Point Complex National Historic Landmark (NHL) (SIHP # 5010-75-04140), Mahana Archaeological District (SIHP # 50-10-76-10230), and Kīpuka Kuniau Archaeological District (SIHP # 50-10-76-10231). This section provides descriptions of these districts based on the information contained on their Hawai‘i and/or National Register nomination forms (see Appendix B in Volume 2 for select pages) as well as from discussions in previous archaeological studies. The locations of these districts are depicted on Figure 24.

### 4.2.1 SIHP # 50-10-[76]-04140, South Point Complex National Historic Landmark

The South Point Complex was first established as a National Historic Landmark (NHL) and registered with the National Register of Historic Places (NRHP) on 15 October 1966 (National Register 1966). In 1962, Regional Archaeologist Paul J.F. Schumacher nominated the South Point Complex as a NHL in a National Park Service document (see Appendix B in Volume 2). According to the NPS document, six sites made up the entirety of the South Point Complex: Pu‘u Ali‘i (SIHP # 50-10-76-03605), Lua Mākālei Cave Shelter (SIHP # 50-10-76-03606), Kalalae Heiau (SIHP # 50-10-76-03607), the Canoe Mooring Holes (SIHP # 50-10-76-03608), the salt pans near Kalalea Heiau (no SIHP #), and the Pohakuokeau “Stone of Times” (no SIHP #). The assigned theme is listed as, “Theme XVI – Indigenous People and Cultures.”

In 1969, Edmund J. Ladd was tasked with defining new boundaries of the South Point Complex. Ladd’s report states:

With the foregoing in mind, we are now prepared to suggest two boundary alignments for 1) a minimum protection zone for the National Historic Landmark which includes all of the sites listed in the National Park Service document plus the area of the Kapalaoa Village site; and 2) an ideal conservation zone which will include all of the above mentioned sites plus the site of the heiau Molilele on the edge of the Pali-o-Kulani. (Fig. 3). Suggested as a part of the ideal conservation zone, are the villages of Waioahukini and Kailikii (see Fig. 3). [Ladd 1969:34]

In 1970 Arthur Hewitt, Chief Ranger for Hawai‘i Volcanoes National Park, submitted a new nomination form for the South Point Complex to the NRHP that included a map of the proposed boundaries for the complex, indicating an area of approximately 710 acres. These boundaries reflect Ladd’s recommendation to include the Kapalaoa Village site, but the boundaries do not include the Molilele Heiau, Waiahukini, or Kailikii. This nomination form, including Hewitt’s map, is included in Appendix B in Volume 2. The boundaries suggested in the 1970 nomination form reflect the current boundaries of the South Point Complex.

On 8 October 1971, the South Point Complex was registered with the Hawai‘i Register of Historic Places (HRHP) (see nomination form in Appendix B in Volume 2). The South Point Complex was designated as a high value site with national significance. The official themes of the site are listed as “Hawaiian Site, Religion, Transport and Travel, Maritime and Native Uses of the Sea, Natural Resource Usage.”

The inventory record for the South Point Complex could not be located at the SHPD library in Hilo, but the SHPD site database indicates one was prepared on 8 September 1987. The SHPD site

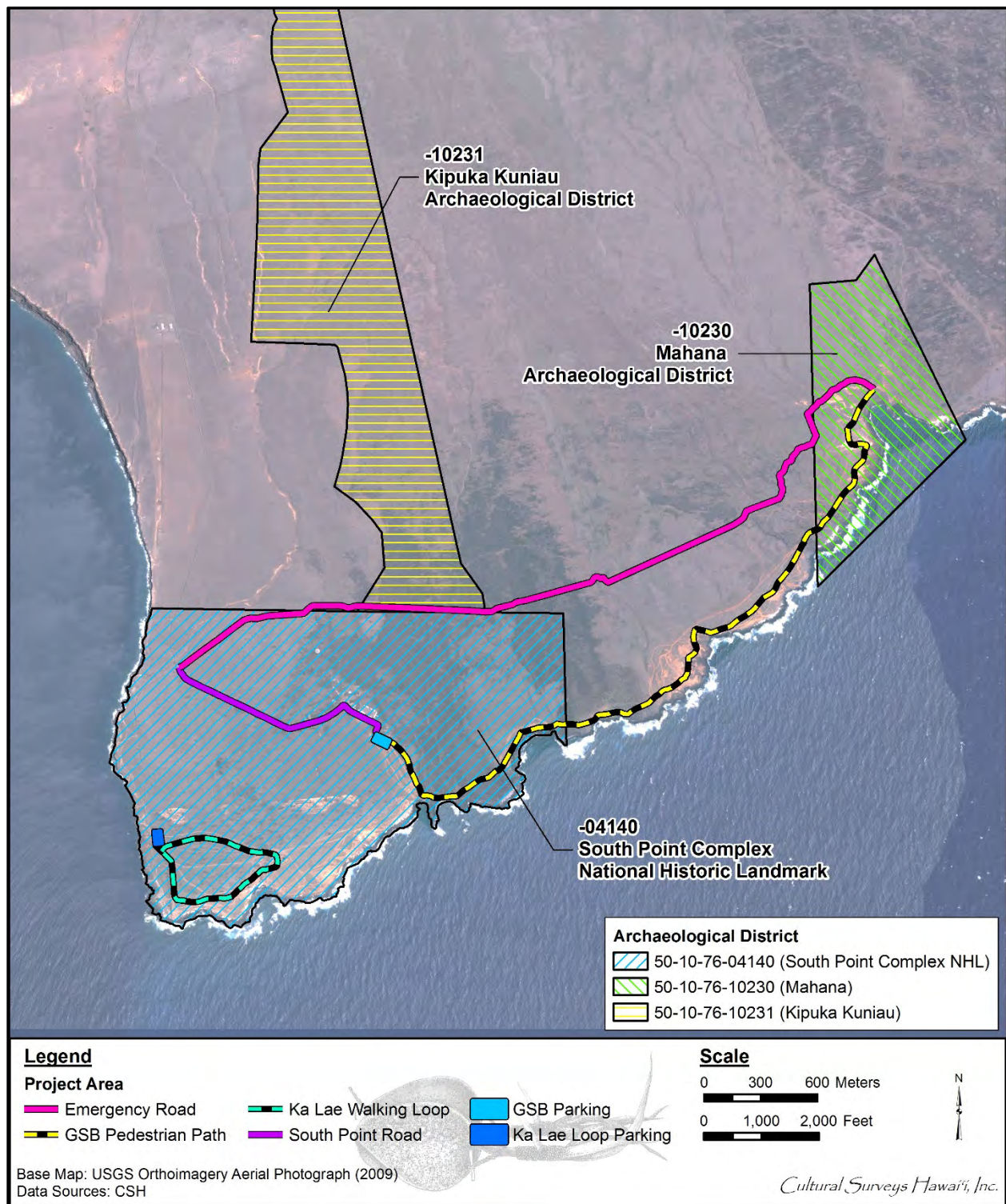


Figure 24. Portion of 2009 USGS Orthoimagery aerial photograph, showing the locations of historic and archaeological districts in relation to the project area

database states the South Point Complex is a “major habitation area of great research value.” The assigned SIHP # 50-10-75-04140 for the South Point Complex was designated with an incorrect USGS quad number; Quadrant 75 designates Puu Hou located east of the *pali*, while Quadrant 76 designates Ka Lae in which the complex is entirely situated.

The South Point Complex is recognized for its rich and significant archaeological resources. The 1970 NRHP nomination form (see Appendix B in Volume 2) asserts, “[T]he South Point complex is a group of sites which provides the longest and most complete record of human occupation of the Hawaiian Islands.” Early excavations from the 1950s revealed a plethora of traditional fishhooks that were used to establish a relative chronology of fishhook types (Emory et al. 1959). Price-Beggerly (1987:55) notes, “[E]arly research in this area stimulated and challenged previous theories on the origin and migration of the Polynesians who settled Hawai‘i.” Unfortunately, a bulk of the fieldwork conducted in the 1950s and 1960s, in what is now the South Point Complex NHL, remains unpublished.

#### **4.2.2 SIHP # 50-10-76-10230, Mahana Archaeological District**

The Mahana Archaeological District was listed on the NRHP on 14 October 1986 (National Register 2017). The nomination form for the Mahana Archaeological District was prepared by Jim Landrum in September 1984 (see Appendix B in Volume 2). The inventory record for the Mahana Archaeological District (SIHP # 50-10-76-10230) could not be located at the SHPD Hilo library, but the SHPD site database indicates one was prepared on 8 September 1987.

Six sites are included in the Mahana Archaeological District. These sites represent traditional Hawaiian coastal settlements in the South Point region, ranging from pre-historic to historic occupation. The boundaries given by Landrum were based on the boundaries of his 1984 survey as well as the natural geographic area of the bay, comprising an area of 153.35 acres. On the nomination form (see Appendix B in Volume 2) Landrum notes there are “additional sites outside of the . . . district that probably are related to the district complex.”

#### **4.2.3 SIHP # 50-10-76-10231, Kīpuka Kuniau Archaeological District**

The Kīpuka Kuniau Archaeological District was nominated to the NRHP by Jim Landrum in 1984, but it has not been listed. The nomination form is included in Appendix B in Volume 2. The inventory record for the Kīpuka Kuniau Archaeological District could not be located at the SHPD library in Hilo, but the SHPD site database indicates one was prepared on 8 January 1988. In the NRHP database, the Kīpuka Kuniau Archaeological District (SIHP # 50-10-76-10231) is incorrectly named as the Kapalaoa Archaeological District.

The Kīpuka Kuniau Archaeological District is adjacent to, and essentially an extension of, the South Point Complex NHL. The district is located *mauka* of the South Point Complex. The proposed district boundaries were designated by the limits of Landrum’s 1984 survey, comprising 399.45 acres. The district contains 24 pre-Historic sites with 138 features. These sites represent traditional Hawaiian temporary habitation settlements associated with agricultural activity in the South Point region. The sites within the district could yield more information about Hawaiian subsistence activities, environmental exploitation, environmental data, and settlement patterns, as well as their relationship to coastal settlement sites.

### 4.3 Sites Previously Recorded Near the Project Area

As described in the summaries of previous archaeological studies at Ka Lae in Section 4.1, numerous archaeological sites have been documented in the vicinity of the current project area. The locations of these sites are depicted on Figure 25 through Figure 27. For each of these sites, Table 6 provides as applicable the SIHP number, other site numbers, and site name; past study reference(s); site type, function, and age; existing treatment recommendations; and notes on the sites' status or any other comments. Detailed descriptions from previous studies are included for sites indicated within or in direct proximity to the current project area. These descriptions are organized into two groups: pre-Contact and/or historic shelter or habitation sites (Section 4.3.1) and military sites associated with Morse Field (Section 4.3.2).

#### 4.3.1 Pre-Contact and/or Historic Habitation Sites

##### 4.3.1.1 50-Ha-B20-20

Cleghorn's (1984:7–8) B20-20 site complex contains six features located just west of the Green Sand Beach Pedestrian Path between Kaulana Bay and the proposed Green Sand Beach Parking lot (see Figure 18 and Figure 26). Most of the features were noted to be eroding out of the then-current roadbeds. Feature A is described as a low platform in fair condition, with marine shell eroding out of the roadway nearby. Feature B is a rectangular hearth, with two pieces of fire-cracked coral, one piece of cowrie shell, and a stone adze fragment. Feature C is a stone-lined rectangular hearth, noted to be in good condition, with associated pieces of drupe shell and cowrie shell. Feature D is a waterworn pebble and coral pavement, with associated scatters of marine shell, volcanic glass, and one coral abrader. Feature E is the remnant of a stacked *a'ā* wall, roughly two courses high. Feature F is a circular stacked *a'ā* mound representing a possible burial.

##### 4.3.1.2 50-Ha-B20-29

Cleghorn's (1984:17) B20-29 site abuts the Green Sand Beach Pedestrian Path to the west (see Figure 26). B20-29 is located in an extremely heavy vehicle traffic area. The site comprises scattered midden, *'ili'ili* (small pebble) pavement, volcanic glass fragments, two coral abraders, and several dark stained soil patches. At the time of survey in 1984, Cleghorn noted most of this site was already extremely eroded but was hopeful that some subsurface material may still be intact.

##### 4.3.1.3 SIHP # 50-10-76-03903

SIHP # -03903 is located on or near the Green Sand Beach Pedestrian Path close to Mahana Bay (see Figure 27). This site was included in Emory's (1970) inventory of Ka'ū district. Emory (1970:9) describes it as "a house site investigated by Bishop Museum" and gives the site name of "Papakolea," which is the place name for the area in which it is situated (see Table 2 in Section 3.1.1).

##### 4.3.1.4 SIHP # 50-10-76-03911, Kapalaoa Bay Village

In 1969, Ladd identified and mapped a portion of Kapalaoa Bay Village (see Figure 16 and Figure 26). Ladd's report states that Kapalaoa Bay Village contains walls, platforms, clearings, mounds, and lava bubble shelters occupied from pre-historic to historic times. In 1970, Emory included Kapalaoa Bay Village in his inventory. Emory (1970:9) states, "the area around Kaulana



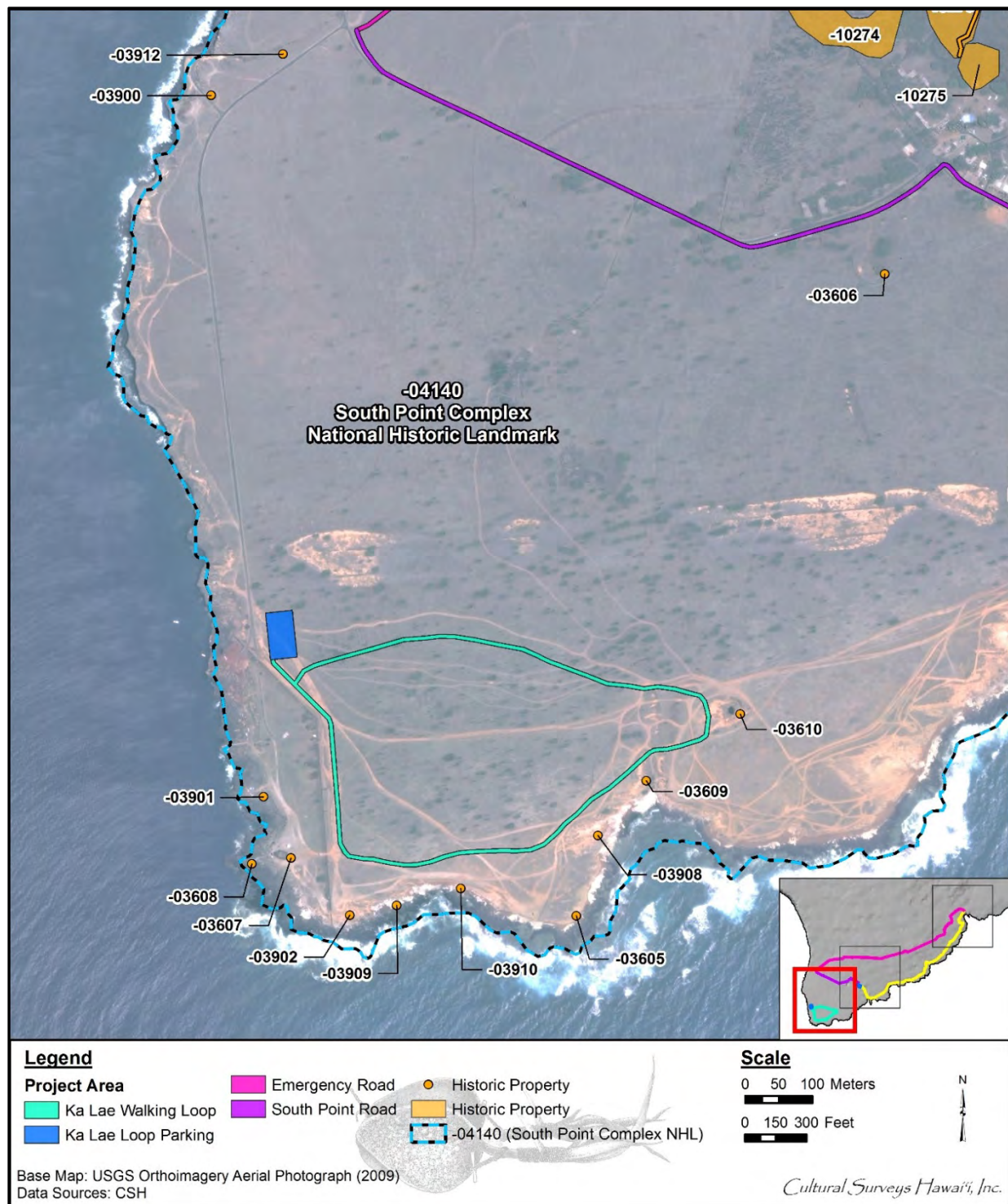


Figure 25. Portion of 2009 USGS Orthoimagery aerial photograph, showing previously identified archaeological sites in relation to the western portion of the current project area and the boundaries of the South Point Complex NHL (SIHP # -04140)



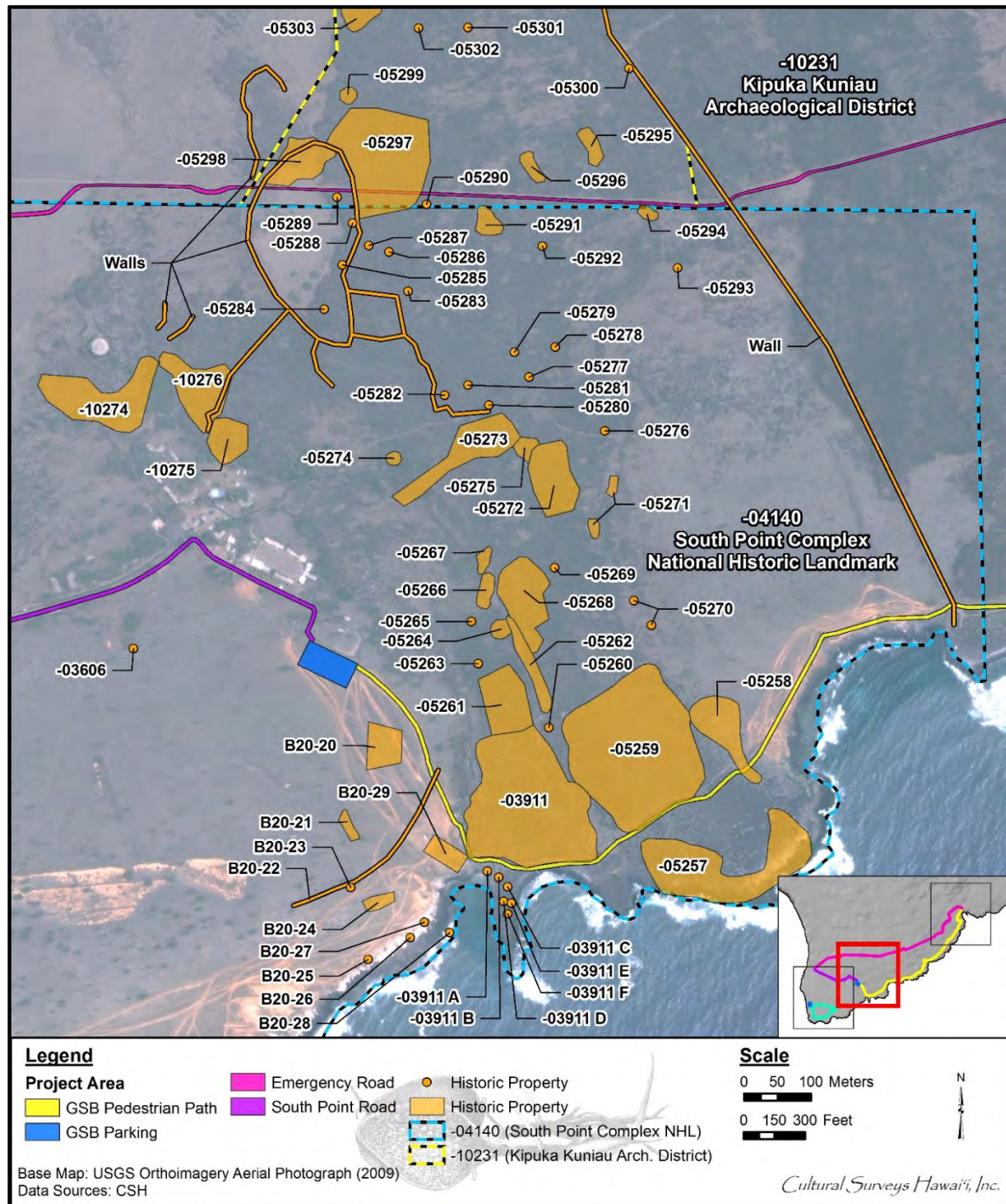


Figure 26. Portion of 2009 USGS Orthoimagery aerial photograph, showing previously identified archaeological sites in relation to the western-central portion of the current project area and the boundaries of the South Point Complex NHL (SIHP # -04140) and Kipuka Kuniau Archaeological District (SIHP # -10231)



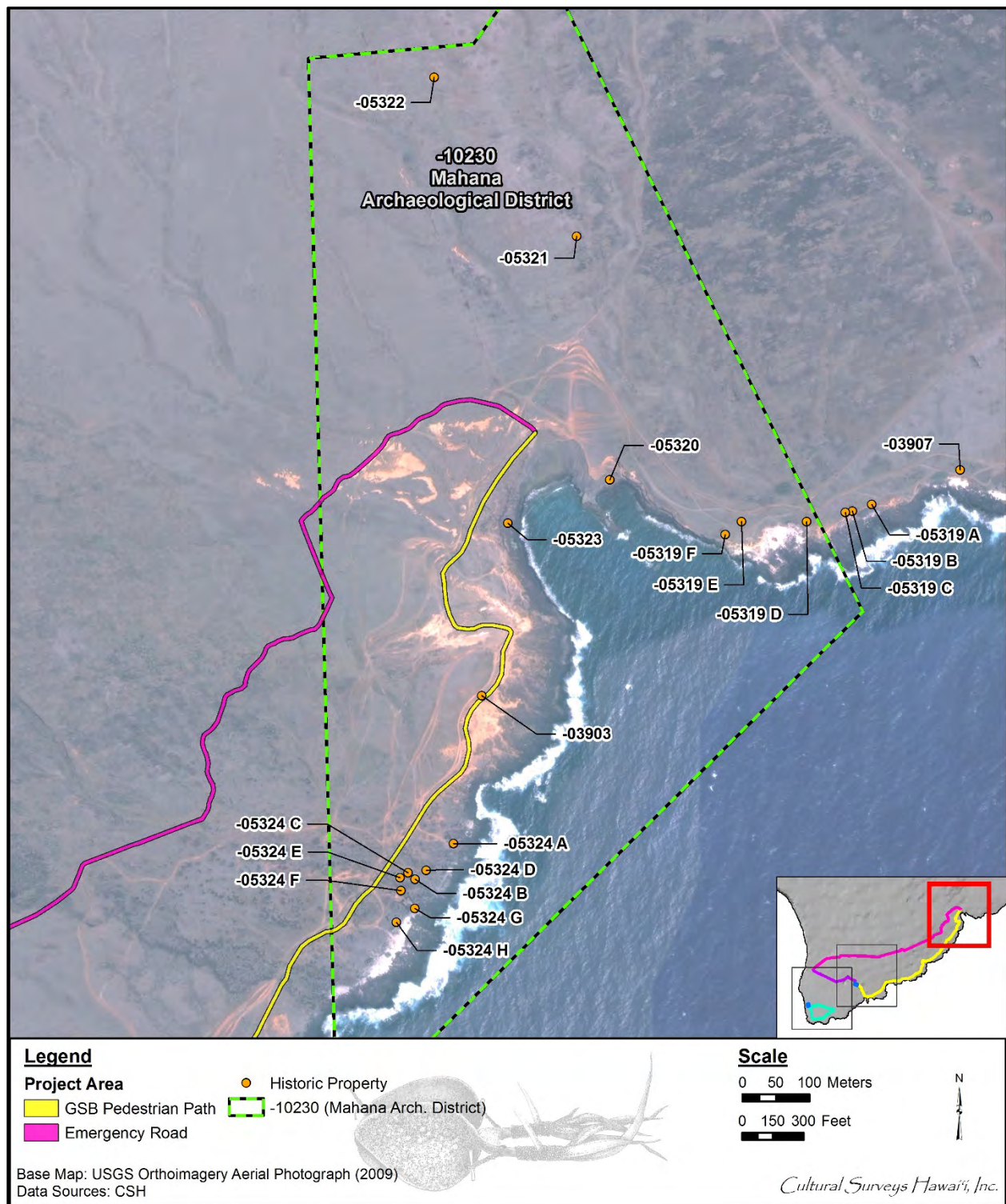


Figure 27. Portion of 2009 USGS Orthoimagery aerial photograph, showing previously identified archaeological sites in relation to the eastern portion of the current project area and the boundaries of the Mahana Archaeological District (SIHP # -10230)

Table 6. Sites previously recorded within or near the project area

SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-03605	H1; 50-Ha-B20-1	Pu'u Ali'i Sand Dune	Bonk 1954; Emory and Sinoto 1969; Underwood 1969; Emory 1970; Cordy 1987	House site and sand dune	Habitation, fisherman's workshop, burial ground	Pre-Contact; AD 1000-1350	—	1,710 fishhooks excavated; remains of 97 individuals excavated
50-10-76-03606	H2; 50-Ha-B20-2	Lua Mākālei	Bonk 1954; Emory and Sinoto 1969; Emory 1970	Cave	Shelter, habitation	AD 1600-1850	—	Lava tube collapse with two caves, excavated by Bishop Museum in the 1950s
50-10-76-03607	H4?; 50-Ha-B20-4	Kalalea Heiau	Stokes 1906; Kelly 1969; Emory 1970	Fisherman <i>heiau</i>	Ceremonial, religious	—	—	—
50-10-76-03608	50-Ha-B20-5	Ka Wai Ku'i a Kamehameha	Kelly 1969; Emory 1970	Canoe mooring holes	80 mooring holes for canoe fishing	—	—	—
50-10-76-03609	H5; 50-Ha-B20-6	Northeast of Pu'u Ali'i	Bishop Museum field party excavated in 1955; UH excavated in 1965; Wallace and Wallace 1969; Emory 1970; Cordy 1987	House site, two burials	Habitation	Pre-Contact	—	Cordy (1987) reports two burials at this site are being uncovered by erosion
50-10-76-03610	50-Ha-B20-7	Lua o Palahemo	Emory 1970	Brackish water pool	—	—	—	—
50-10-76-03900	50-Ha-B20-3	Kahukupoko	Emory 1970	House site	Habitation	—	—	Excavated by Bishop Museum in December 1953
50-10-76-03901	H4?; 50-Ha-B20-4, B20-8?	Ka Lae; "Flag Pole Site"	Bonk 1954; Emory 1970	Complex	Habitation	—	—	—



SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-03902	H6; 50-Ha-B20-9	—	Emory 1970	Buried midden	—	—	—	—
50-10-76-03903	H7; 50-Ha-B20-10	Papakolea	Emory 1970	House site	Habitation	—	—	Excavated by Bishop Museum
50-10-76-03907	H19; 50-Ha-B20-14	Pu'u O Mahana	Emory 1970	Two house sites	Habitation	—	—	Excavated by Bishop Museum
50-10-76-03908	H24; 50-Ha-B20-15	Pinao Bay	Wallace and Wallace 1969; Emory 1970; Cordy 1987	Complex	Habitation, fishing	Pre-Contact; AD 1450-1840	—	—
50-10-76-03909	H25; 50-Ha-B20-10	West of Pu'u Ali'i	Wallace and Wallace 1969; Emory 1970	Stone pavement	Ceremonial, religious	—	—	—
50-10-76-03910	H26; 50-Ha-B20-17	--	Wallace and Wallace 1969; Emory 1970	Buried midden	Temporary habitation, fishing	—	—	—
50-10-76-03911	H29; 50-Ha-B20-18	Kapalaoa Village	Ladd 1969; Emory 1970; Rosendahl 1981	Complex	Habitation	Pre-Contact, historic	Intensive archaeological survey <i>or</i> continued in-place preservation of features	—
50-10-76-03912	H31; 50-Ha-B20-19	Ka'alo	Emory 1970	Midden	—	—	—	Eroding out of Kolono Gully
50-10-76-05257	50-Ha-B20-30	—	Landrum 1984	Complex; 24 features	Temporary or seasonal habitation	—	—	Most features in deteriorated condition
50-10-76-05258	50-Ha-B20-31	—	Landrum 1984	Military-related complex; 19 features	Military	Pre-Contact, historic	—	Features F and I traditional sites modified for military use

SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-05259	50-Ha-B20-32	—	Landrum 1984	Military Target Impact Zone; four features	Military	Historic	—	—
50-10-76-05260	50-Ha-B20-033	—	Landrum 1984	Wall	Military	Historic	—	—
50-10-76-05261	50-Ha-B20-034	—	Landrum 1984	Complex; 60+ features	Agriculture, habitation, possible burials	—	—	Entire complex located within enclosure wall 90 m by 60 m
50-10-76-05262	50-Ha-B20-35	—	Landrum 1984	Complex	Agriculture, habitation	—	—	Fair excavation potential
50-10-76-05263	50-Ha-B20-36	—	Landrum 1984	Enclosure	—	—	—	Good condition
50-10-76-05264	50-Ha-B20-37	—	Landrum 1984	Enclosure, mounds, <i>ahu</i>	Habitation	—	—	Good excavation potential
50-10-76-05265	50-Ha-B20-38	—	Landrum 1984	Enclosure, mounds	Habitation	—	—	Good excavation potential
50-10-76-05266	50-Ha-B20-39	—	Landrum 1984	Complex; six features	Military	Historic	—	Features B and C likely traditional sites modified for military use
50-10-76-05267	50-Ha-B20-40	—	Landrum 1984	Enclosure; 11 features	Agriculture	—	—	—
50-10-76-05268	50-Ha-B20-41	—	Landrum 1984	Complex	—	—	—	Entire complex located within rectangular enclosure
50-10-76-05269	50-Ha-B20-42	—	Landrum 1984	C-shape enclosure	Temporary habitation	—	—	—
50-10-76-05270	50-Ha-B20-43	—	Landrum 1984	<i>Ahu</i> , wall	Military	Historic	—	—

SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-05271	50-Ha-B20-44	—	Landrum 1984	Complex; four features	Military	Historic	—	—
50-10-76-05272	50-Ha-B20-45	—	Landrum 1984	Complex	Agriculture	—	—	Entire complex located within rectangular enclosure
50-10-76-05273	50-Ha-B20-46	—	Landrum 1984	Complex	Military	Historic	—	—
50-10-76-05274	50-Ha-B20-47	—	Landrum 1984	Seven mounds	Crypts, mounds or dozer push	—	—	Possibly impact from military activities
50-10-76-05275	50-Ha-B20-48	—	Landrum 1984	Complex; six features	—	—	—	Includes U-shape, stone cache, wall segment, rubble piles, and pavement
50-10-76-05276	50-Ha-B20-49	—	Landrum 1984	Wall	—	—	—	—
50-10-76-05277	50-Ha-B20-50	—	Landrum 1984	Hearth, mounds	—	—	—	Covered hearth not commonly found in Hawai'i
50-10-76-05278	50-Ha-B20-51	—	Landrum 1984	C-shape enclosure	Temporary habitation	—	—	Good condition
50-10-76-05279	50-Ha-B20-52	—	Landrum 1984	Enclosure, mound	—	—	—	—
50-10-76-05280	50-Ha-B20-53	—	Landrum 1984	Rubble mound	—	—	—	—
50-10-76-05281	50-Ha-B20-54	—	Landrum 1984	Modified outcrop	—	—	—	—
50-10-76-05282	50-Ha-B20-55	—	Landrum 1984	Ahu	—	—	—	—
50-10-76-05283	50-Ha-B20-56	—	Landrum 1984	Wall	Ranching	Historic	—	—

SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-05284	50-Ha-B20-57	—	Landrum 1984	Modified outcrop; two features	—	—	—	Site located within bullpen enclosure
50-10-76-05285	50-Ha-B20-58	—	Landrum 1984	Two <i>ahu</i>	—	—	—	—
50-10-76-05286	50-Ha-B20-59	—	Landrum 1984	Trail, possible crypt	—	—	—	—
50-10-76-05287	50-Ha-B20-60	—	Landrum 1984	Mound, stone cupboard	—	—	—	—
50-10-76-05288	50-Ha-B20-61	—	Landrum 1984	C-shape enclosure	—	—	—	Site located within bullpen enclosure
50-10-76-05289	50-Ha-B20-62	—	Landrum 1984	Enclosure	—	—	—	Enclosure tumbled
50-10-76-05290	50-Ha-B20-63	—	Landrum 1984	U-shape enclosure, mound	—	—	—	—
50-10-76-05291	50-Ha-B20-64	—	Landrum 1984	Complex; seven features	—	—	—	Feature A, an L-shape wall, tumbled
50-10-76-05292	50-Ha-B20-65	—	Landrum 1984	Five mounds	Agriculture	—	—	—
50-10-76-05293	50-Ha-B20-66	—	Landrum 1984	Modern <i>ahu</i>	Survey	Historic	—	Wooden stake in center of <i>ahu</i>
50-10-76-05294	50-Ha-B20-67	—	Landrum 1984	Complex; three features	Temporary habitation	—	—	Complex located at Kīpuka Kamaoa
50-10-76-05295	50-Ha-B20-68	—	Landrum 1984	Complex; five features	—	—	—	—
50-10-76-05296	50-Ha-B20-69	—	Landrum 1984	C-shape enclosure, nine mounds	—	—	—	—



SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-05297	50-Ha-B20-70	—	Landrum 1984	Complex; four features	—	—	—	Entire complex located within enclosure
50-10-76-05298	50-Ha-B20-71	—	Landrum 1984	Complex; nine features	—	—	—	Military and ranching impact
50-10-76-05299	50-Ha-B20-72	—	Landrum 1984	Complex; five features	—	—	—	Good excavation potential
50-10-76-05300	50-Ha-B20-73	—	Landrum 1984	U-shape enclosure	—	—	—	Cowrie lure found 50 m southeast of site
50-10-76-05301	50-Ha-B20-74	—	Landrum 1984	Wall, modified outcrop, rubble mounds	—	—	—	—
50-10-76-05302	50-Ha-B20-75	—	Landrum 1984	Three mounds, three wall segments, two caches	—	—	—	—
50-10-76-05303	50-Ha-B20-76	—	Landrum 1984	Complex; 30 features	Habitation	—	—	Good research potential
50-10-76-05319	50-Ha-B20-92; MB-1, MB-3, MB-5	—	Excavated by Bonk (1960-70) but unpublished; Landrum 1984	Complex; six features	Habitation	Pre-Contact; AD 935-1732	—	Believed to be abandoned post-1868 tsunami
50-10-76-05320	50-Ha-B20-93	—	Landrum 1984	Waterworn boulders	—	—	—	Several hundred waterworn boulders eroding down Pu'u O Mahana
50-10-76-05321	50-Ha-B20-94	—	Landrum 1984	<i>Ahu</i>	—	—	—	<i>Ahu</i> at 190-ft elevation behind Pu'u O Mahana

SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
50-10-76-05322	50-Ha-B20-95	—	Landrum 1984	Wall and terrace	—	—	—	One piece of cowrie shell observed on surface
50-10-76-05323	50-Ha-B20-96	—	Landrum 1984	Overhang shelter	Temporary habitation	—	—	Mix of recent and traditional material present
50-10-76-05324	50-Ha-B20-97	—	Landrum 1984	Complex; eight features	Habitation	—	—	Complex modified and used by modern campers
50-10-76-10274	IARII #1	Complex 1	Price-Beggerly 1987	Complex; nine features	—	Feature 8: historic; Features 1–7, 9: early historic or pre-contact	Prior to future development, further research recommended	Feature 5 an early historic grave
50-10-76-10275	IARII #2	Complex 2	Price-Beggerly 1987	Complex; seven features	—	Feature 1: historic; Features 2–7: pre-modern	Features 1–2; no further research necessary; Features 3–7: prior to future development, further research recommended	Features 4, 5, and 6 inferred crypts
50-10-76-10276	—	Complex 3	Price-Beggerly 1987	Complex; 12 features	Ranching or military activity	Historic	Prior to future development, further research recommended	—
No SIHP	50-Ha-B20-20	—	Cleghorn 1984	Complex; six features	Habitation	—	Intensive data recovery	Likely contains charcoal for radiocarbon dating

SIHP #	Other Site #	Site Name	Past Studies	Site Type	Site Function	Site Age	Recommendation (s)	Status and Comment(s)
No SIHP	50-Ha-B20-21	—	Cleghorn 1984	Mounds	Agriculture or possible burials	—	Test excavations, intensive data recovery	—
No SIHP	50-Ha-B20-22	—	Cleghorn 1984	Raised roadbed	Transportation	Historical	No further archaeological work necessary	Likely associated with Morse Field
No SIHP	50-Ha-B20-23	—	Cleghorn 1984	Wall, C-shape	Temporary habitation	Likely historical	Intensive data recovery	—
No SIHP	50-Ha-B20-24	—	Cleghorn 1984	Platform	—	—	Intensive data recovery	Good excavation potential
No SIHP	50-Ha-B20-25	—	Cleghorn 1984	Hearth	—	AD 1240-1385	Intensive data recovery	Contents of hearth submitted for radiocarbon dates
No SIHP	50-Ha-B20-26	—	Cleghorn 1984	Possible platform	—	—	Intensive data recovery	Platform “slumped away from present erosional face”
No SIHP	50-Ha-B20-27	—	Cleghorn 1984	Possible platform	—	—	Intensive data recovery	Platform “slumped away from present erosional face”
No SIHP	50-Ha-B20-28	—	Cleghorn 1984	15 bait cups	Fishing	—	In situ preservation	—
No SIHP	50-Ha-B20-29	—	Cleghorn 1984	Midden, pavement	—	—	Intensive data recovery	Extremely eroded

Bay and on the *a'a* lava flow just east has an ancient village complex of house and garden sites . . . Emory (1970:9) also notes that “the lava tube cave shelters which held abundant stratified archaeological artifacts have been thoroughly plundered by artifact collectors.”

In 1981, Rosendahl conducted a survey of Kapalaoa Bay Village and identified six features (A–F) on the eastern side of Kaulana Bay makai of the Green Sand Beach Pedestrian Path (see Figure 17 and Figure 26). Only Feature F was a newly identified feature, as Features A through E had been previously surveyed but never given a designation. Rosendahl (1981:17–36) provides descriptions of each feature. Feature A is a subsurface cultural deposit containing features such as a hearth and pavement as well as cultural materials and charcoal; Feature B is a platform measuring 9 m by 12 m, paved with waterworn basalt and coral pebbles and bearing a historic concrete slab foundation on one side; Feature C is a crude platform measuring 4 m by 7 m, paved with waterworn pebbles and used as a foundation for a post-1969 outhouse; Feature D is a rectangular pavement measuring 4 m by 6 m and bearing a midden scatter; Feature E is a roughly rectangular platform that measures 9 m by 12 m; and Feature F is a remnant of a large pavement bearing a possible fire pit and midden scatter.

#### 4.3.1.5 SIHP # 50-10-76-05257

Landrum's (1984) site SIHP # -05257 is a complex of 24 features located at the shoreline *makai* of the Green Sand Beach Pedestrian Path (see Figure 26). Most of the features are described as badly deteriorating, as they are located within the high-water zone and have also been impacted by fishermen and Jeep roads (Landrum 1984:19). Landrum (1984:19) asserts the majority of the features are temporary or seasonal shelters. Landrum's maps do not provide precise feature locations (see Figure 20).

Landrum (1984:19–25) provides descriptions of each feature. Feature A is a roughly rectangular enclosure measuring 5 m by 3 m. Feature B is a roughly rectangular enclosure measuring 10 m by 8 m. Feature C is a stepping stone trail remnant. Feature D is a C-shape with a burial crypt. Feature E is an *ahu* or cairn constructed of *'a'ā* boulders. Feature F is a remnant section of a core-filled wall. Feature G is the remnant of a core-filled wall, possibly once an enclosure. Feature H is an L-shape wall and a small associated cave with a midden scatter. Feature I is a roughly rectangular enclosure measuring 7 m by 5 m and containing a cupboard in the southern wall. Feature J is a small rubble mound. Feature K is a rectangular enclosure that measures 5 m by 6 m and contains upright stones, two cupboards, and a midden scatter. Feature L is a square enclosure that measures 4 m by 4 m and contains a cupboard, shell midden, and fire-cracked rock. Feature M is a remnant rectangular enclosure containing a cupboard and midden scatter. Feature N is two wall segments possibly once of an enclosure, as one of the walls contains a collapsed cupboard constructed of waterworn slabs. Feature O is a C-shape measuring 6 m by 6 m with an interior pavement bearing midden. Feature P is a raised rectangular enclosure that measures 9 m by 5 m and contains a large slab cupboard and midden deposit. Feature Q is a C-shape measuring 4 m by 3 m with a cupboard in the east wall and midden deposit. Feature R is an *ahu* measuring 1.3 m high and 1 m in diameter. Feature S is a C-shape measuring 5.5 m by 4.5 m and containing two cupboards in the west wall and a midden scatter. Feature T is a wall measuring 4.8 m long. Feature U is a rectangular enclosure measuring 5 m by 3 m with soil and midden desposits. Feature V is two wall segments measuring 1.5 m by 0.8 m by 0.3 m. Feature W is a low mound that measures 3 m by 2 m. Feature X is a remnant structure, now resembling a mound measuring 1.6 m by 2.3 m by 0.6 m high.



#### 4.3.1.6 SIHP # 50-10-76-05294

Landrum's (1984) site SIHP # -05294 consists of three features located just *makai* of the proposed Emergency Road corridor in Kīpuka Kamao (see Figure 21 and Figure 26). No plan map is provided for the site. Landrum (1984:46) provides descriptions of each feature. Feature A is a cave site measuring 20 m by 2 m with a maximum ceiling height of 2 m and exhibiting a modified entry. Feature B is a possible shrine constructed of three upright stones and scattered coral fragments located directly atop Feature A. Feature C is a rock shelter and paved terrace, measuring 10 m by 3 m.

#### 4.3.1.7 SIHP # 50-10-76-05297

Landrum's (1984) site SIHP # -05297 consists of four features. The overall site complex is indicated to straddle the Emergency Road corridor (see Figure 21 and Figure 26). However, the four component features are not thought to be located in the immediate vicinity of the project area, as Landrum (1984:48) notes these four features have been grouped together because they are located within an enclosure wall attached to the "bullpen," though no further relationship could be inferred. Landrum (1984:48) provides descriptions of each feature, but no plan map. Feature A is a circular enclosure measuring 3 m by 4 m. Feature B is a modified outcrop containing stacked-stone walls constructed perpendicular to the wind. Feature C is an *ahu* located on an outcrop, constructed of just six stones. Feature D is a curved wall measuring 3 m by 0.5 m by 1 m high.

#### 4.3.1.8 SIHP # 50-10-76-05324

Landrum's (1984) site SIHP # -05324 consists of eight features, though additional features were also noted just outside the survey transect. The complex is indicated just *makai* of the Green Sand Beach Pedestrian Path approaching Mahana Bay (see Figure 27), and includes enclosures, walls, and terraces (Landrum 1984:79–84). Photos of some of the SIHP # -05324 features are included in the 1984 report, but no plan view maps. One of the enclosures (Feature G) was noted to contain a midden and volcanic glass scatter, two slab-lined hearths, and a *papamū* (stone on which the checkerlike game of *kōnane* was played). Of the eight recorded features, the two in closest proximity to the Green Sand Beach Pedestrian Path corridor are Feature C (curved core-filled wall measuring 15 m by 1 m by 0.75 m) and Feature E (three terraces that cover an area of 10 m by 6 m and may contain burials) (see Figure 27).

### 4.3.2 Morse Field and Military Infrastructure

Activity associated with military occupation can be seen in the archaeological record at Ka Lae. Military-era sites previously recorded in or directly adjacent to the project area are discussed in this section. According to Price-Beggerly (1987:33–34), military construction and occupation at Morse Field began in 1940 and ceased in 1952 (see Section 3.2.4). In addition to the air field runway, Morse Field facilities included a 500,000-gallon water tank, water lines, gas storage tanks, and a myriad of buildings (Price-Beggerly 1987:33–34); these facilities were mapped but not assigned a site number (see Section 4.1.15). Remnants of these buildings and facilities are still visible in Figure 26, just *mauka* of South Point Road. Remnants of the airfield runway can be seen in Figure 25, just *mauka* of the Ka Lae Walking Loop and Parking Area (see Section 3.2.4). Three clusters of military sites north of the barracks were assigned site numbers (SIHP #s -05298, -10274, -10275, -10276) but are not in direct proximity to the current project area (see 4.1.15, Figure 26 and Table 6). The current project area does pass through or near SIHP #s -05258, -05259, and 50-Ha-B20-22, which are described as primarily military-era sites.

#### 4.3.2.1 50-Ha-B20-22

Cleghorn's (1984:13) B20-22 site crosses the western portion of the Green Sand Beach Pedestrian Path *mauka* of Kaulana Bay (see Figure 18 and Figure 26). It is described as a raised roadbed likely associated with Morse Field.

#### 4.3.2.2 SIHP # 50-10-76-05258

Landrum's (1984) site complex SIHP # -05258 contains 19 features indicated to straddle the Green Sand Beach Pedestrian Path (see Figure 20 and Figure 26). Of the component features, Landrum (1984:25) associates 17 with military occupation, while the remaining two features (Feature F and Feature I) are noted to be likely pre-Contact features with military modifications. Landrum (1984:25–26) provides brief descriptions of each feature of SIHP # -05258, but no plan view maps. Features A, B, and C are mounds all roughly 1 m in diameter set in a line bearing 350 degrees magnetic north. Feature D is a modified outcrop. Feature E is a modified outcrop and a wall segment measuring 2.3 m long with weathered plastic sheeting located beneath its base. Features F, G, and H are C-shapes measuring approximately 4 m by 2.5 m by 0.6 m. Landrum notes Feature F has core-filled walls and is likely of traditional Hawaiian construct, while Features G and H are recent in origin. Features I, J, K, and L are rectangular enclosures of variable size. Features M, N, O, P, Q, R, and S are thought to be military in origin; however, Landrum (1984:26) does not indicate the nature of these features, but only states their location is strategic for observation of Hanalei Bay.

#### 4.3.2.3 SIHP # 50-10-76-05259

Landrum's (1984) site complex SIHP # -05259 is a military target impact zone located along the *mauka* side of the Green Sand Beach Pedestrian Path (see Figure 20 and Figure 26). Landrum (1984:26–27) provides brief descriptions of each of the four features of SIHP # -05259, but no plan view maps. Feature A is the target of the impact zone, comprising two concentric circles; the larger outer circle has a diameter of 60 m, while the inner circle (the bullseye) has a diameter of 10 m. The circles are constructed of single stone alignments. Several crude walls served as subsidiary targets. Shrapnel is observed in the area. No unexploded ordinance was observed. The bullseye is illustrated on Figure 20. Feature B and Feature C are C-shapes. Feature D is a modified outcrop with stacked stone walls at which numerous pieces of shrapnel and several impact craters were observed.

### 4.4 Background Summary and Predictive Model

Ka Lae has been used since pre-Contact times for habitation, agriculture, and procurement of resources—particularly fish. Its land and people have been shaped by dynamic natural forces such as wind, earthquakes, fire, and volcanic eruptions. The significant winds of Ka Lae and its abundant aquatic resources are common themes in oral histories and proverbs from the region. Early accounts also tell of revolts against chiefs who abused the people. In the historic era, Ka Lae was predominantly ranch land, with residential and economic centers located well to the northeast. In the mid-twentieth century Morse Field and the South Cape Airport were developed in Ka Lae, overlapping parts of the project area. By 1970 large parts of Kamā'oa-Pu'ueo were under the management of DHHL. Very little development has occurred within DHHL's lands at Ka Lae.

Previous archaeological research in the general vicinity of the project area confirms the long-held belief that the South Point region is a highly significant archaeological resource as one of the

earliest settlements in Hawai'i. Landmark archaeological studies conducted in the 1950s by the Bishop Museum and the University of Hawai'i documented evidence of substantial pre-Contact habitation in the South Point region from perhaps as early as the fourth century. Cleghorn (1984) and Landrum (1984) stress the importance of those early archaeological studies and their essential role in the development of a relative chronology of Hawaiian fishhook types. In 1959 Emory, Bonk, and Sinoto published on the seriation of fishhooks in the Hawaiian Islands. Emory states, "the fishhook series . . . offers, in the absence of pottery, the most promising means of tracing the ancient culture through artifacts" (Emory et al 1959:ix). The earliest work at South Point also prompted careful reconsideration of theories held on the origin of Polynesian settlement of the Hawaiian Islands. Unfortunately, the bulk of the fieldwork conducted in the 1950s and 1960s, in what is now the South Point Complex NHL (SIHP # -04140), remains unpublished.

Coastal sites near the Ka Lae Walking Loop, like Pu'u Ali'i (SIHP # -03605), have provided radiocarbon and hydration-rind dates of occupation from approximately AD 1000 to 1350 (Emory and Sinoto 1969:14, Hunt 1976:4). Occupation at Pu'u Ali'i began with a house site centered around fishing and the manufacture of fishhooks (Bonk 1954:1). After abandonment, a 6-ft-deep sand dune accumulated over the site that was later used as a burial ground (Bonk 1954:1). Other coastal habitation sites, like SIHP # -05324 near the Green Sand Beach Pedestrian Path and Mahana Bay, have been utilized and modified from pre-historic to historic times. This coastal site yielded traditional Hawaiian artifacts as well as artifacts from the late 1800s (Landrum 1984:82).

Sites like SIHP # -05272 provide an example of a more *mauka* agricultural complex (Landrum 1984:36). Over time, focus shifted from coastal marine resource-based exploitation to agricultural expansion in the more *mauka* regions (Landrum 1984:105). Trade networks, as well as trails, would have existed between coastal and *mauka* settlements (Landrum 1984:105).

Near the Emergency Road, evidence of historic cattle ranching can be seen in sites like SIHP # -05298. SIHP # -05298 is a complex of Hawaiian temporary habitation features that have been partially deconstructed to build an historic cattle ranching bullpen (Landrum 1984:48). Evidence of historic military impact and activity can be seen in sites like SIHP # -05258 and -05259. Both of these, located near the Green Sand Beach Pedestrian Path, are military training sites near traditional Hawaiian sites (Landrum 1984:26-27). Sites SIHP #s -10274, -10275, and -10276, adjacent to the Morse Field Barracks along South Point Road, also exemplify military occupation and activity near the project area.

Archaeological sites in the South Point region are deteriorating due to ongoing impacts from human activity and the natural environment. Heavy off-road vehicle traffic between the cape of Ka Lae and Mahana Bay continues to disturb archaeological sites. Campers, fishermen, and tourists have altered archaeological sites and abandoned their refuse within them. Natural erosion is also a cause for the destruction of many archaeological sites along the coast, as some traditional habitation sites there are located in what has become a high-water zone.

The project area corridors for the South Point RMP were designed to follow routes already in existence, in order to minimize any further impact to archaeological sites in the area. It is therefore expected that very few archaeological features will be encountered within the project area. It is possible that excavations could reveal subsurface cultural deposits as well as burn layers associated with range fires.

## Section 5 Results of Fieldwork

Fieldwork was conducted between 5 June 2017 and 11 August 2017 by CSH archaeologists Amanda Lawson, B.A., Samantha Sund, B.A., McKenzie Wildey, B.A., Zachariah Royalty, B.A., Jonas Madeus, B.A., and Olivier M. Bautista, B.A., under the general supervision of Hallett H. Hammatt, Ph.D. This work required approximately 86 person-days to complete. Field work consisted of 100% pedestrian inspection, an extensive subsurface testing program, documentation of new historic properties, and photo documentation of previously recorded sites along the Green Sand Beach corridor.

### 5.1 Pedestrian Inspection Results

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian inspection was accomplished through systematic sweeps with a crew of four archaeologists spaced 1-5 m apart throughout the project area. Spacing was adjusted as appropriate depending on the localized terrain and vegetation. During the pedestrian survey, potential historic properties were marked using GPS and photos. Following the survey, four archaeologists returned to the marked points to complete site documentation as applicable.

The pedestrian survey lead to the documentation of five new historic properties within or immediately adjacent to the current project area. These historic properties are summarized in Table 7. Their locations within the project area are depicted on a USGS topographic map (Figure 28). Aerial maps (Figure 29 through Figure 36) provide better detail of the site locations and their proximity to existing historical/archaeological districts at Ka Lae; namely the South Point Complex NHL (SIHP # -04140), Kīpuka Kuniau Archaeological District (SIHP # -10231), and Mahana Archaeological District (SIHP # -10230). Full descriptions of these sites are provided in Section 6. Figure 29 through Figure 36 also illustrate the completed shovel test locations within the various portions of the project area.

Two other features were fully documented but found to be modern: CSH-6, a rock mound along the Green Sand Beach Pedestrian Path, and CSH-7, a series of fence lines adjacent to the Emergency Road corridor. Fieldwork at CSH 6 included testing (TU-2) to aid in determination of age and function. The descriptions of these modern sites are included herein for future reference (see Section 5.2) and their locations are depicted on Figure 29 through Figure 33.

Table 7. Historic properties newly identified within the project area

SIHP # (50-10-76)	CSH Site #	Formal Type	Function	Age
-30726	CSH 1	Enclosure	Ranch boundary	Historic
-30727	CSH 2	Wall	Ranch boundary	Historic
-30728	CSH 4	Mound	Unknown	Unknown
-30729	CSH 5	Complex	Temporary habitation	Pre-Contact
-30730	CSH KL 19	Subsurface deposit	Burial	Pre-Contact



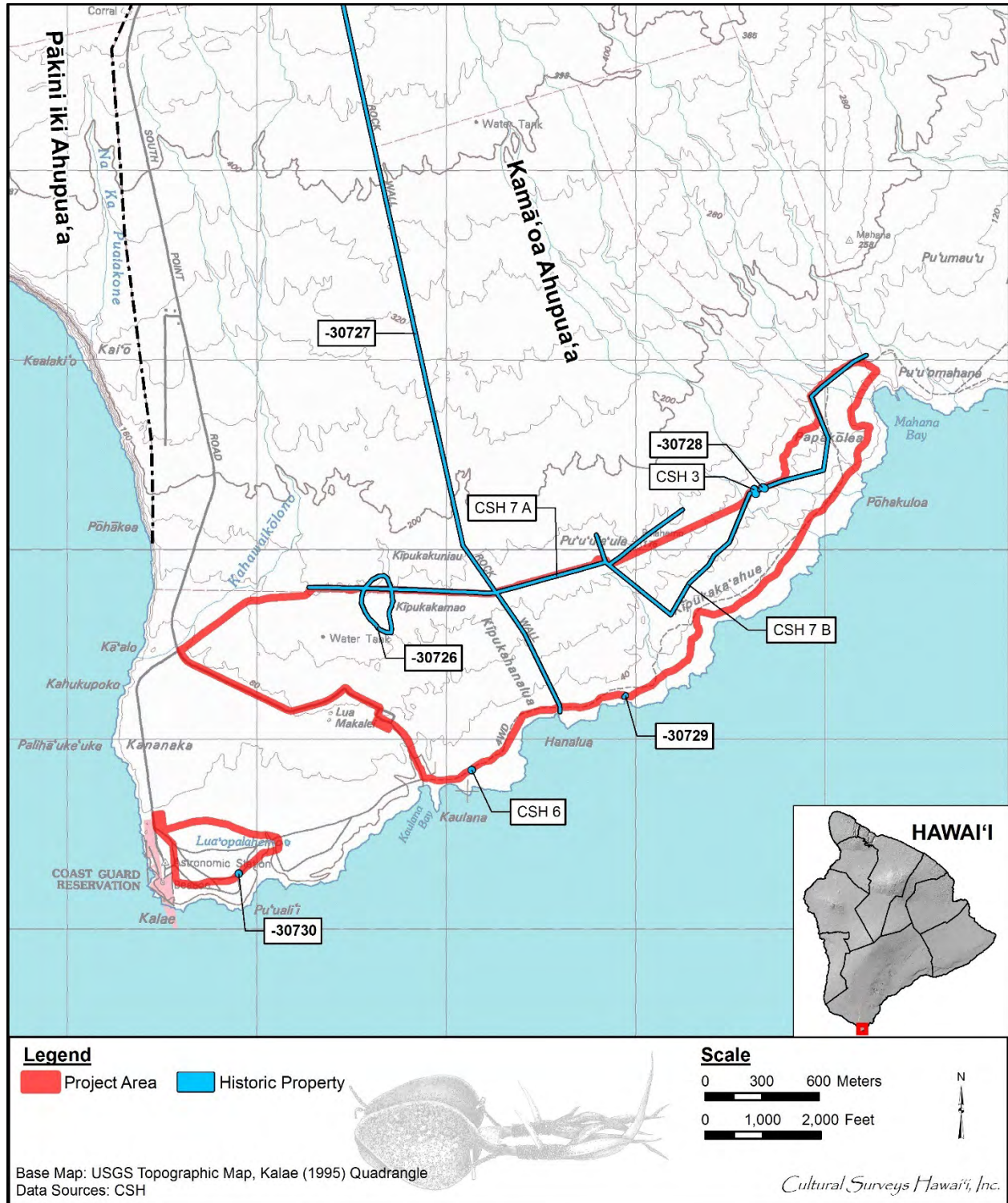


Figure 28. Portion of the 1995 Kalae USGS 7.5-minute topographic quadrangle showing historic properties newly documented in the project area



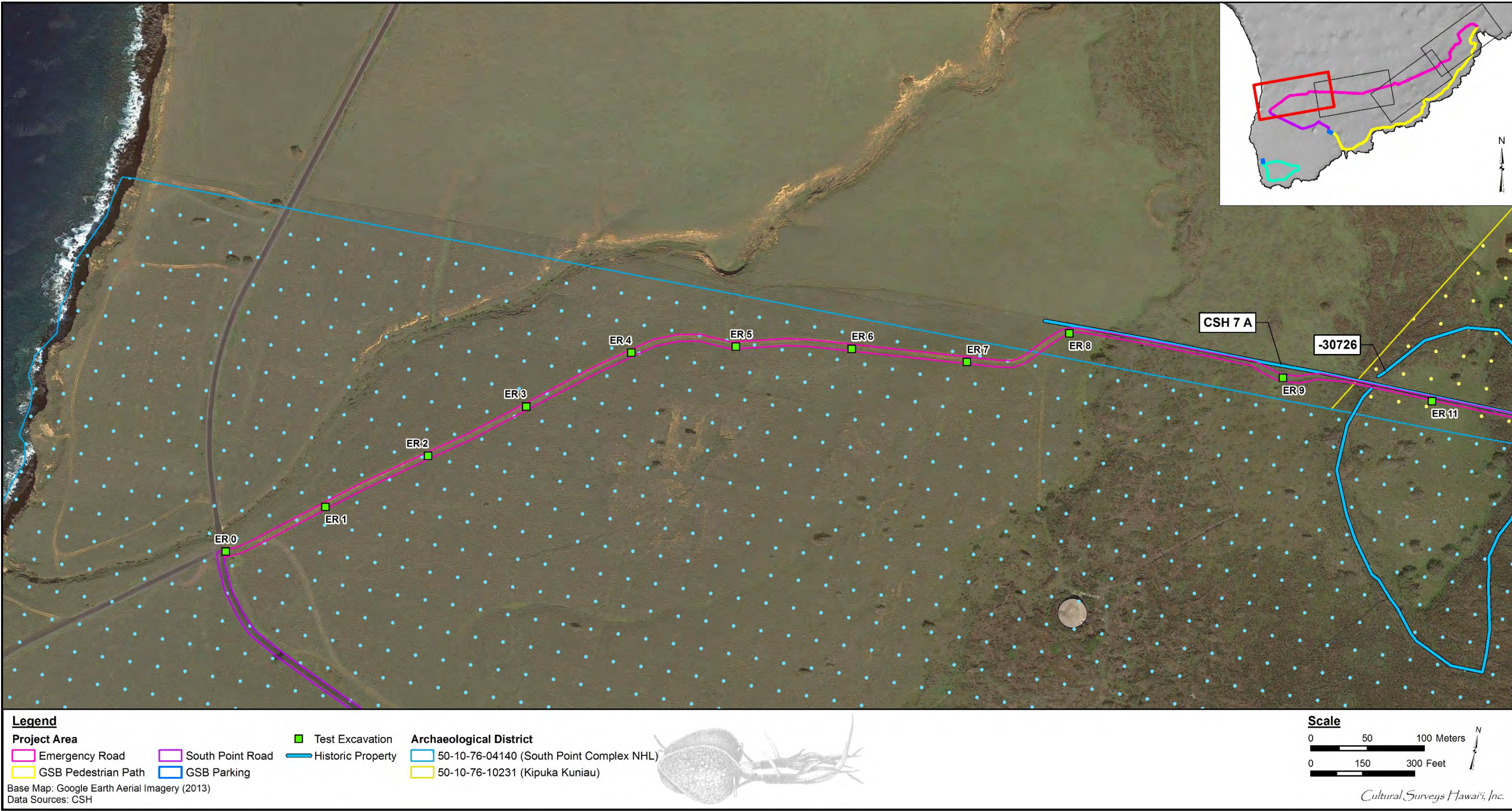


Figure 29. Aerial photo of the western portion of the proposed Emergency Road, showing completed shovel test locations and SIHP # -30726 and modern site CSH 7 in relation to the limits of the South Point Complex NHL (SIHP # -04140) and Kipuka Kuniau Archaeological District (SIHP # -10231) in this area (Google Earth Imagery 2013)



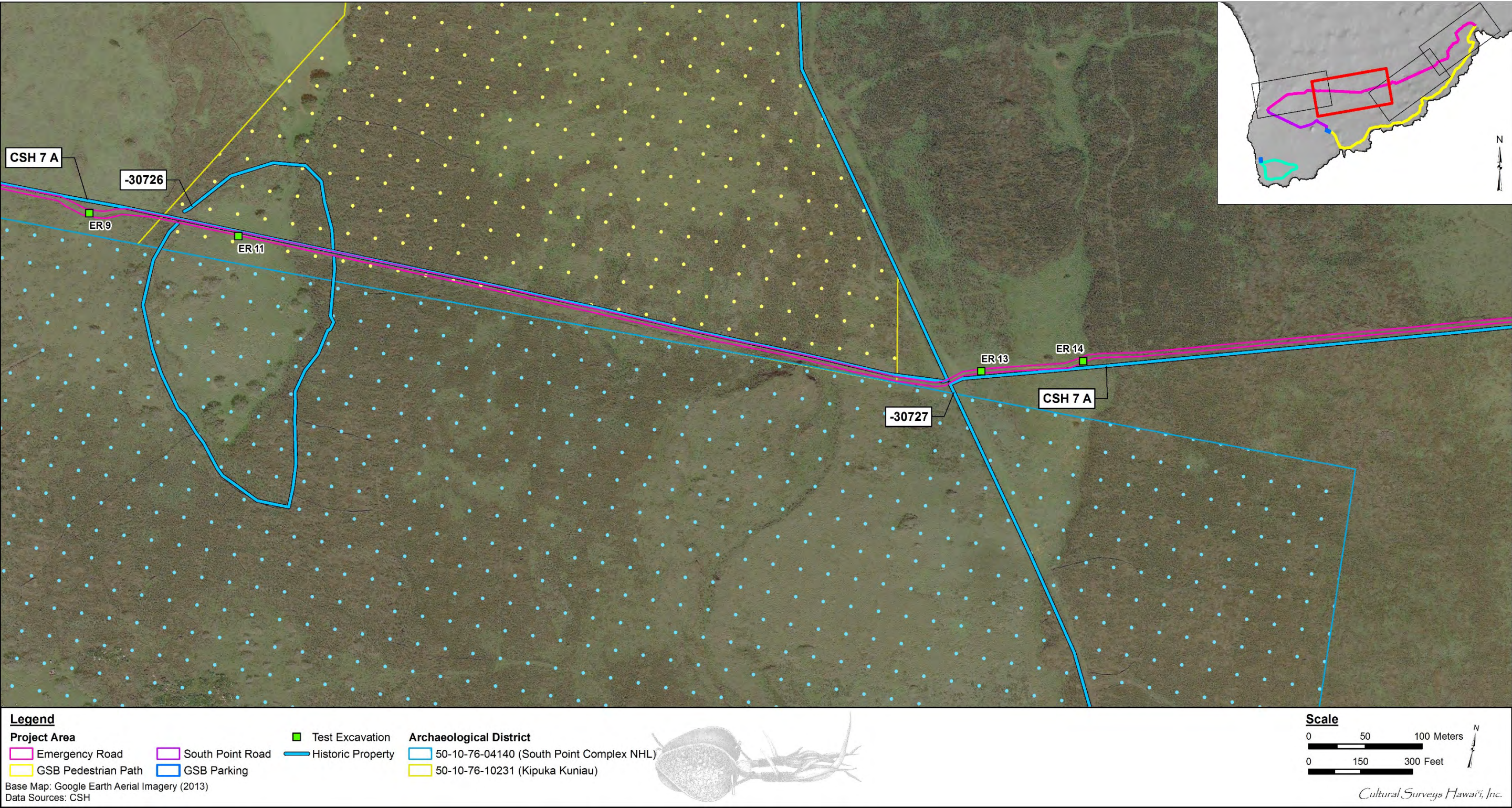


Figure 30. Aerial photo of the western-central portion of the proposed Emergency Road, showing completed shovel test locations and SIHP #s 30726, -30727, and modern site CSH 7 in relation to the limits of the South Point Complex NHL (SIHP # -04140) and Kīpuka Kuniau Archaeological District (SIHP # -10231) in this area (Google Earth Imagery 2013)



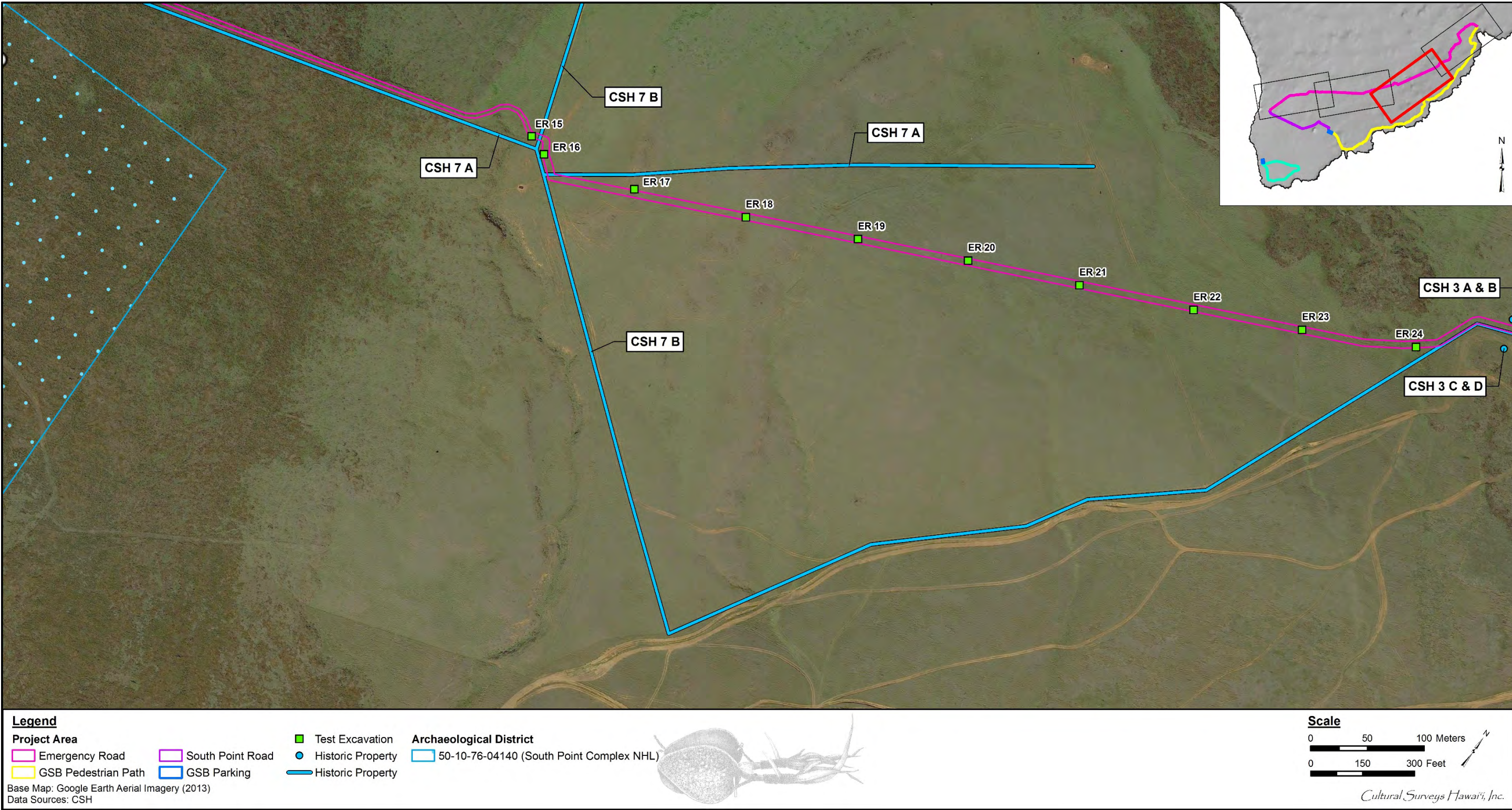


Figure 31. Aerial photo of the eastern-central portion of the proposed Emergency Road, showing completed shovel test locations and CSH 3 and modern site CSH 7 in relation to the limits of the South Point Complex NHL (SIHP # -04140) in this area (Google Earth Imagery 2013)



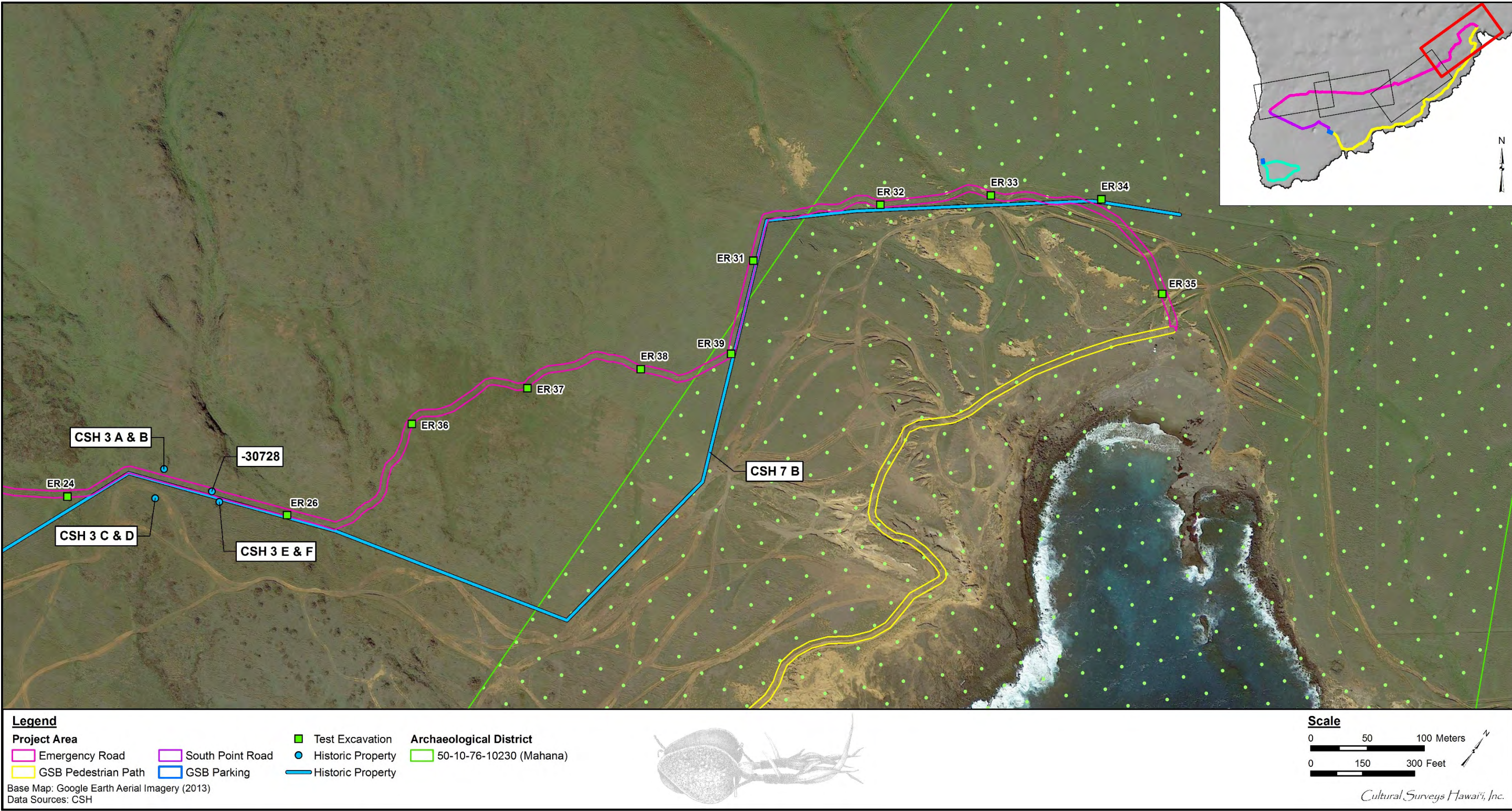


Figure 32. Aerial photo of the eastern portion of the proposed Emergency Road, showing completed shovel test locations and SIHP # -30728, CSH 3, and modern site CSH 7 in relation to the limits of the Mahana Archaeological District (SIHP # -10230) in this area (Google Earth Imagery 2013)





Figure 33. Aerial photo of the western portion of the proposed Green Sand Beach Parking lot and Pedestrian Path, showing completed shovel test locations and SIHP # -30727 and modern site CSH 6 in relation to the limits of the South Point Complex NHL (SIHP # -04140) in this area (Google Earth Imagery 2013)





Figure 34. Aerial photo of the central portion of the proposed Green Sand Beach Pedestrian Path, showing completed shovel test locations and SIHP # -30729 and modern site CSH 7 in relation to the limits of the South Point Complex NHL (SIHP # -04140) in this area (Google Earth Imagery 2013)





Figure 35. Aerial photo of the eastern portion of the proposed Green Sand Beach Pedestrian Path, showing completed shovel test locations and modern site CSH 7 in relation to the limits of the Mahana Archaeological District (SIHP # -10230) in this area (Google Earth Imagery 2013)





Figure 36. Aerial photo of the proposed Ka Lae Walking Loop, showing completed shovel test locations and SIHP # -30730 in relation to the limits of the South Point Complex NHL (SIHP # -04140) in this area (Google Earth Imagery 2013)



### 5.1.1 Pedestrian Survey of Ka Lae Walking Loop and Parking

The pedestrian inspection was initiated at the Ka Lae Walking Loop and associated parking area. The area is generally level, open grassland with very good ground visibility (Figure 37). No surface historic properties were observed in these portions of the project area. The historic rock wall delineating the property boundary in this area is located near the western sides of the loop trail, but does not come within 10 ft of the project area and was therefore not documented (Figure 38). This portion of the project area is also situated adjacent to a number of previously recorded archaeological sites, including (among others) the Pu'u Ali'i burial dune (SIHP # -03605) and Lua o Palahemo (SIHP # -03610), though all of these are 25 m or more away (see Figure 25). An extensive network of Jeep trails is present throughout this area, with severe erosion occurring along the coastline directly *makai* of the Ka Lae Walking Loop (see Figure 36).

### 5.1.2 Pedestrian Survey of Emergency Road

The Emergency Road corridor was the second portion of the project area to be surveyed. Inspection commenced at the South Point Road junction and proceeded east to Mahana Bay, typically but not always along existing unimproved Jeep roads. This corridor crosses both open, undulating grassland and 'a'ā flows bearing variable levels of vegetation (Figure 39 and Figure 40). Ground visibility was typically very good. Along the Emergency Road corridor several features were recorded including a large, historic ranching enclosure called the "bullpen" by Landrum (1984) (SIHP # -30726); a historic ranching wall also noted by Landrum (1984) (SIHP # -30727); a complex of modern fence lines documented as CSH 7; and a rock mound of indeterminate age and function that was subjected to excavation (SIHP # -30728). A second historic enclosure surrounding SIHP # -05297 and indicated by Landrum (1984) to straddle the Emergency Road adjacent to SIHP # -30726 (see Figure 21) was not located; it was likely heavily impacted in this area by construction of the Jeep road. Just west of SIHP # -30728 a complex of lava tubes and associated rock wall segments was encountered (CSH 3). These features are all located outside the project area and therefore were not fully explored and documented, though their presence was noted and each feature was photographed. Figure 41 and Figure 42 are representative photos of features (B, C, and D) at CSH 3. The Emergency Road corridor is largely inaccessible to the public due to a series of locked gates along the existing Jeep roads. This limited access has helped somewhat to preserve the natural landscape, as the roads are fewer and experience much less traffic; however, bovine impacts are ongoing, particularly along the *mauka* side of the Emergency Road corridor which is active pasture. The area of most impact is where the Emergency Road terminates at Mahana Bay, a major tourist attraction.

### 5.1.3 Pedestrian Survey of South Point Road

The next area to be inspected was the section of South Point Road connecting the proposed Emergency Road and Green Sand Beach Pedestrian Path. This section of South Point Road runs between the former Morse Field Barracks (see Figure 3 and Figure 23) and is heavily used by tourists coming to hike or drive to Mahana Bay. While remnant military structures line both sides of this section of South Point Road, none of them were located within the 6.0-m-wide road corridor, which essentially represents the single lane, asphalt road surface and adjacent graded shoulders (Figure 43). An informal parking area is located at the bend in the road (Figure 44); this is where many tourists park their rental vehicles and catch rides to Mahana Bay from local tour



Figure 37. Photo overlooking a portion of the Ka Lae Waking Loop; view to southeast



Figure 38. Photo showing the historic rock wall located west of the Ka Lae Waking Loop, note archaeologists performing shovel testing along existing Jeep road; view to southeast





Figure 39. Photo showing a typical open grassland area along the Emergency Road; view to northwest



Figure 40. Photo showing typical vegetation upon an 'a'ā lava flow within the Emergency Road; view to southeast





Figure 41. Photo of CSH 3 Feature B (lava tube); view to east



Figure 42. Photo of CSH 3 Feature C (lava tube) and Feature D (wall); view to northeast





Figure 43. Photo showing a portion of existing South Point Road; view to east



Figure 44. Photo showing informal parking area adjacent to South Point Road at former Mose Field Barracks; view to northeast

operators. The vegetation in this area is grassland with scattered *kiawe* and Christmas Berry trees, with very good ground visibility.

#### 5.1.4 Pedestrian Survey of Green Sand Beach Parking and Pedestrian Path

The proposed Green Sand Beach Parking lot is an impacted area directly west of an existing, informal parking area located at the official “end” of South Point Road. Visitors currently park in this area to access the coastline. Jeep trails crisscross the proposed parking lot area, and have denuded the natural grassland here significantly (Figure 45). Some patches of grass are still present. No surface archaeological features were observed.

The last portion of the project area to be surveyed was the proposed Green Sand Beach Pedestrian Path. This path follows existing Jeep trails that are part of an extensive network of coastal trails located between Kaulana Bay and Mahana Bay (Figure 46). Ground visibility was excellent throughout this portion of the project area. The westernmost portion of the corridor is surrounded by previously recorded archaeological and military sites (see Figure 26). Two Bishop Museum sites, B20-22 and B-20-29 (historic raised road bed and midden deposit/pavement, respectively), were indicated to come into contact with the corridor (see Figure 26), but no remnants of these sites were encountered during the survey. SIHP # -03911 (Kapalaoa Village) is a large archaeological complex situated within the bend of the corridor above Kaulana Bay upon a prominent ‘a‘ā flow (see Figure 26); in consultation with SHPD, this complex, as well as adjacent complexes SIHPs # -05259 and -05258 (military-era complexes) and SIHP # -05324 (habitation complex) to the east were photo documented (see Section 5.4).

The intent of the Green Sand Beach Pedestrian Path corridor design is that it should strictly follow existing Jeep roads (i.e., disturbed areas) thereby technically displacing the numerous archaeological features present in this area from the project area. Traveling along the Green Sand Beach Pedestrian Path corridor, it became apparent that the majority of archaeological features were located on the ‘a‘ā lava flows (Figure 47) or *makai* of the corridor directly along the coastline. CSH-6, a modern rock mound, was encountered within the Green Sand Beach Pedestrian Path corridor upon the first major ‘a‘ā ridge west of Kaulana Bay (see Figure 33). Historic wall SIHP # -30727 was encountered at the eastern edge of Kīpuka Hanalua between this ridge and another prominent ‘a‘ā ridge (see Figure 33). SIHP # -30729, a pre-Contact temporary habitation complex, was documented along the eastern fringes of this second ‘a‘ā ridge. The crew did not successfully relocate SIHP # -03903 (a house site known as “Papakolea”), thought to be present in the project area near Mahana Bay (see Figure 27), likely due to severe ongoing erosion and/or erroneous site location data in Emory (1970). Figure 48 illustrates the denuded and heavily impacted nature of the landscape approaching Mahana Bay, which is also visible on Figure 35.



Figure 45. Photo overlooking the Green Sand Beach Parking lot; view to west



Figure 46. Photo showing the Green Sand Beach Pedestrian Path trail head near the proposed parking lot, Kaulana Bay is visible in the background at the coast; view to southeast



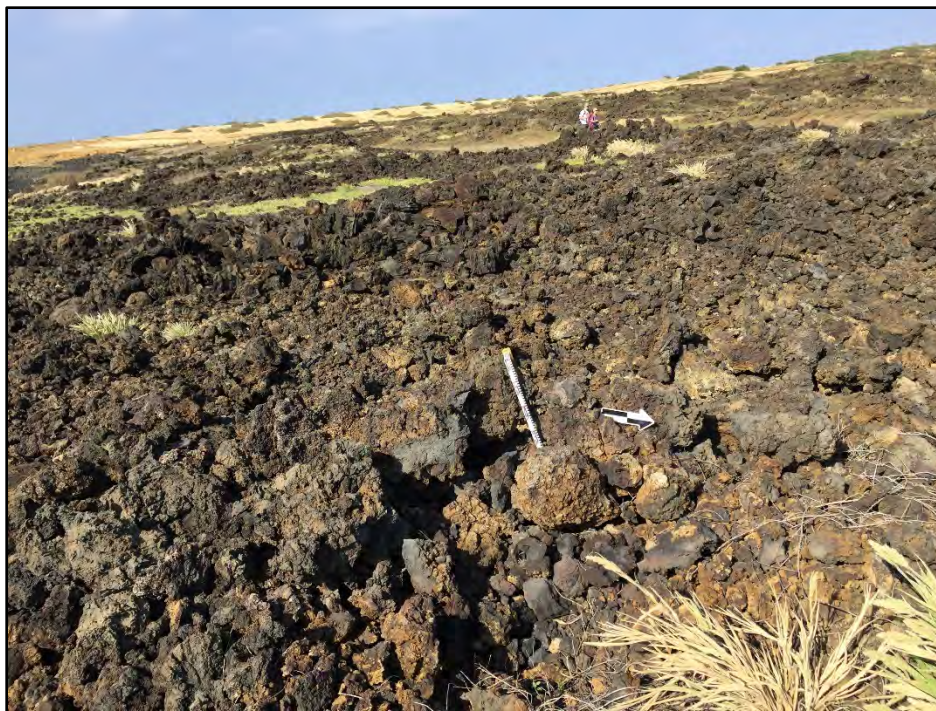


Figure 47. Photo showing an area of dense archeological features upon an ʻaʻā ridge along the Green Sand Beach Pedestrian Path, note tourists on path in background; view to southwest



Figure 48. Photo showing an area of erosion and Jeep trail impact near Mahana Bay; view to west

## 5.2 Documentation of Modern Features

### 5.2.1 CSH 6

<b>FORMAL TYPE:</b>	Mound
<b>FUNCTION:</b>	Transportation
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Modern
<b>TEST EXCAVATIONS:</b>	TU-2
<b>TAX MAP KEY:</b>	[3] 9-3-001:003
<b>LAND JURISDICTION:</b>	DHHL
<b>PREVIOUS DOCUMENTATION:</b>	None

CSH 6 is a stone mound located less than 1.0 m *makai* side of the existing Jeep road in the western portion of the Green Sand Beach Pedestrian Path corridor (see Figure 33). The mound is located approximately 85 m from the ocean on an 'a'ā outcrop situated in a fairly level area containing predominantly buffelgrass, lantana, 'ilima, and *pa'u o Hi'iaka*. CSH 6 is located within the bounds of the South Point Complex NHL (SIHP # -04140).

The circular mound is constructed of loosely piled, locally procured 'a'ā cobbles and boulders (Figure 49). A single coral cobble was placed on the surface of the mound. It measures 2.70 m long (east/west) by 2.60 m wide (north/south). It ranges in height from 0.85 m to 1.32 m, with a somewhat tilted appearance. The mound is in good condition, exhibiting little evidence of collapse. A 1.0 m x 1.0 m test unit (TU-2) was excavated at the mound, yielding no cultural materials. The full TU-2 discussion is provided in Section 5.3.2.2. No cultural materials were observed elsewhere at CSH 6.

Based on its construction, proximity to the Jeep trail, and lack of cultural materials, CSH 6 is assessed as modern feature associated with the presence and continued use of the adjacent Jeep trail. The mound may have been constructed as a marker along the Jeep road, or may be the result of clearing stones off the Jeep trail. Its lopsided appearance may be the result of continued addition of material over time by tourists or locals who frequent the coastline here.



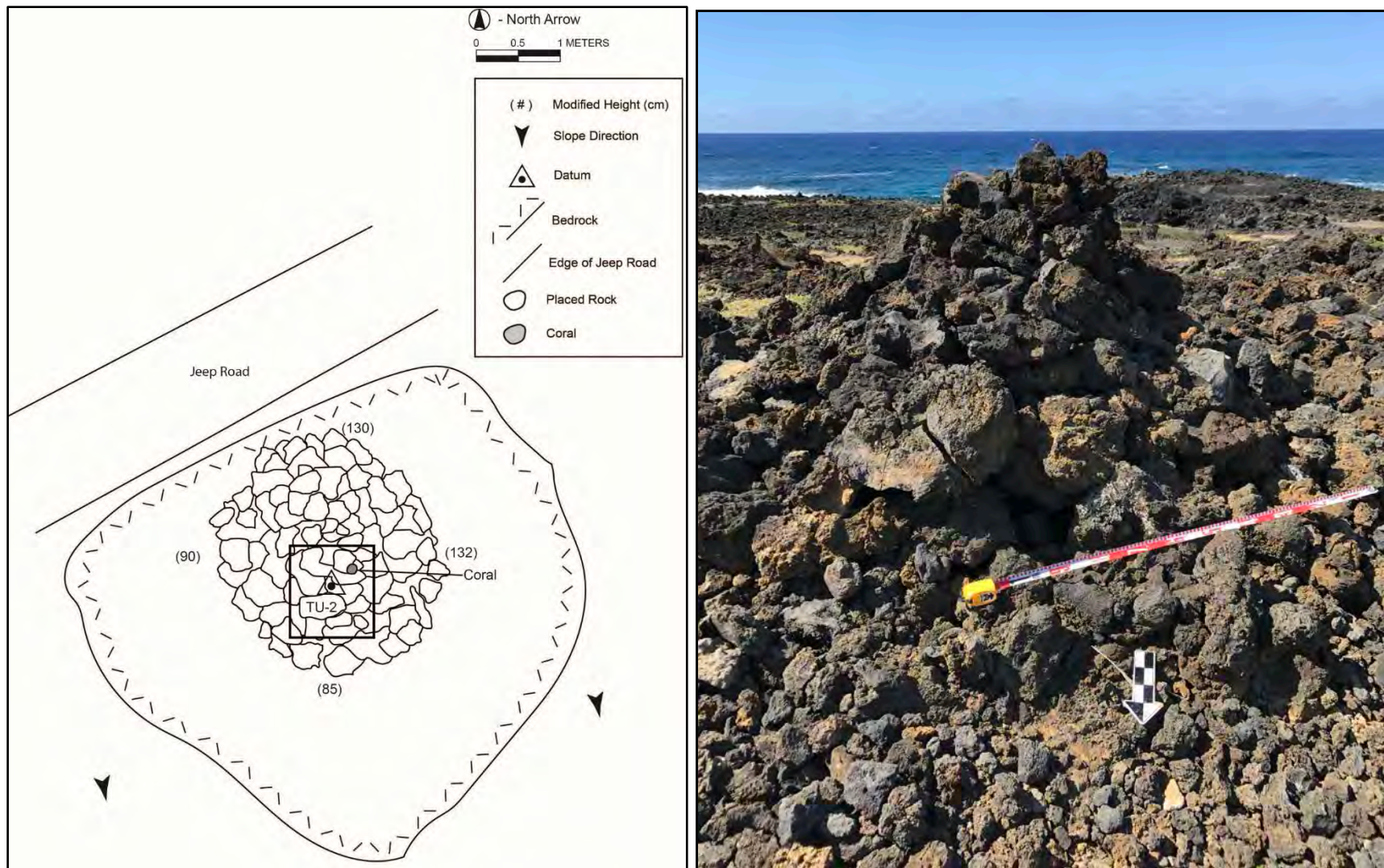


Figure 49. Plan view and photo (view to south) of CSH 6

### 5.2.2 CSH 7

<b>FORMAL TYPE:</b>	Fence line
<b>FUNCTION:</b>	Ranch boundary
<b>NUMBER OF FEATURES:</b>	2
<b>AGE:</b>	Modern
<b>TEST EXCAVATIONS:</b>	None
<b>TAX MAP KEY:</b>	[3] 9-3-001:002
<b>LAND JURISDICTION:</b>	DHHL
<b>PREVIOUS DOCUMENTATION:</b>	None

CSH 7 is a continuous series or complex of fence lines that follow existing Jeep roads within or adjacent to the proposed Emergency Road (see Figure 28 through Figure 32). These fence lines have been organized as two features (Features A and B) for the sake of documentation under this AIS investigation, based on their overall routes and the nature of their physical association. CSH 7 crosses the terrain in a generally lateral fashion. The site passes over both open grassland and 'a'ā flows. The predominant vegetation is buffelgrass, *koa haole*, and lantana. The western portions of Feature A are within the bounds of the South Point Complex NHL (SIHP # -04140) and the Kīpuka Kūia Archaeological District (SIHP # -10231). The eastern portion of Feature B is within the bounds of the Mahana Archaeological District (SIHP # -10230).

Features A and B are barbed wire strand fences supported by metal “T” posts, with very occasional unmilled wooden posts (Figure 50). The fences are on average 1.5 m high, with the posts extending upward another 10-30 cm. The fences employ modern gates proving access to and from paddocks in several locations (Figure 51). Features A and B interface near the mid-point of the proposed Emergency Road. In this location, the two features share a 23-m-long section of fence line where Feature A jogs slightly *makai* as Feature B crosses it perpendicularly (see Figure 31).

**Feature A** is a section of fence line located on alternating sides of the proposed ER. Aerial photos indicate this fence extends all the way to the *pali* to the west, but enters the current project area where it intersects the proposed Emergency Road corridor *mauka* of the old Morse Field Barracks. Feature A extends 2.1 km east from this location, ranging in elevation from 39–50 m (130–164 ft) amsl. Feature A passes through CSH 1 and CSH 2, terminating at a *mauka-makai* fence line not located within the project area.

**Feature B** is a section of fence line following sections of the eastern portion of the proposed Emergency Road. This fence line deviates significantly from the Emergency Road; the portions adjacent to but not within the project area were traced out on aerial imagery. The recorded portion of Feature B begins upslope of its interface with Feature A; Feature B extends an unknown distance *mauka* from this location. The fence continues approximately 0.4 km *makai* of the Emergency Road where it turns northeast to follow a meandering Jeep trail. It aligns with the Emergency Road corridor briefly in the vicinity of CSH 3 and CSH 4, then continues southeast away from the corridor before turning northeast where it eventually intersects with the corridor again. Feature B roughly follows the proposed Emergency Road to the vicinity of Mahana Bay, where the proposed corridor turns south to the bay while Feature B continues east outside of the project area.





Figure 50. Photo of CSH 7 Feature B, showing construction using modern materials and wooden posts; view to northwest



Figure 51. Photograph of CSH 7 Feature A showing a modern gate; view to northeast

The overall length of Feature B documented during this AIS is 2.6 km, and an elevation range of 12–46 m (39–151 ft) amsl.

Based on its component material and presence along a Jeep road, this fence is assessed as modern. The fence functions to keep cattle in their pastures and away from the coast. Because it is modern, excavation is not recommended.

## 5.3 Subsurface Testing Results

### 5.3.1 Overview of Ka Lae Stratigraphy

The stratigraphic record at Ka Lae is, at face value, straightforward: most areas not under relatively recent 'a 'ā lava flows contain deep deposits of what is commonly called Pahala Ash (see Section 1.3.1). According to Stearns and Macdonald (1946),

The ash, which resembles loess, receives its name from the village of Pahala which lies at the edge of extensive fields of yellow ash soil. The deposit is chiefly of Pleistocene origin but contains in its upper layer a small variable amount of recent material. [Stearns and Macdonald 1946:72]

It is the natural and dynamic forces at Ka Lae that complicate the sedimentary record. High winds constantly redistribute the natural fine loams, forming dunes in some areas and leaving other areas more and more eroded over time. This ongoing aeolian process also results in loss of the natural sand texture, leaving behind more clay-like properties. Additionally, layers of redeposited ash are in places interposed by darker, diffuse ashy strata typically attributed to large-scale range fires that are common in the dry climate; no charcoal was found within these darker ashy layers during this AIS. Concretions of caliche—hardened calcium carbonate bound with the natural ash sediments—are also present in certain areas at Ka Lae, particularly near Mahana Bay. For more in-depth analysis of the source and nature of Pahala Ash and stratigraphy at Ka Lae the reader is referred to Stearns and MacDonald (1946), Handy and Pukui (1958), and Wallace and Wallace (1966).

Previous archaeological studies have encountered cultural layers at variable depths within the ash deposits of Ka Lae (see Section 4.1), particularly along the coastal settlement areas. However, given strategic placement of the various portions of the project area within previously disturbed lands, significant exposure of cultural layers was not anticipated. This expectation was borne out during the exploratory testing program, and during exposure of sediments beneath an architectural layer at SIHP # -30728. Only one subsurface deposit (single human tooth, burial site SIHP # -30730) was encountered within the project area during shovel testing along the Ka Lae Walking Loop. Aside from isolated scraps of historic trash found in another shovel test along the proposed Ka Lae Walking Loop (STP # KL 2), no other cultural materials or layers were encountered during the AIS.

### 5.3.2 Testing at Archaeological Features

AIS documentation at two sites involved the excavation of test units. Both of these sites comprise rock mounds; testing was undertaken to aid in temporal and functional analysis and to ensure that the mounds did not contain burials. TU-1 was excavated at SIHP # -30728, and TU-2 was excavated at CSH 6. The test units were placed within the mounds in locations assessed as having the best potential for containing cultural materials. The locations of TU-1 and TU-2 are

indicated on the plan view maps included in the applicable historic property descriptions in Sections 6.3 and 5.2.1, respectively.

#### 5.3.2.1 TU-1

TU-1 was excavated within the SIHP # -30728 rock mound in an attempt to clarify site age and function (see Section 6.3). Figure 52 shows the TU-1 corners marked out with pink flagging tape prior to excavation. TU-1 was excavated to a depth of 80 cm below surface (cmbs) (measured from location of maximum height of mound) through an architectural layer (Stratum I) and two underlying layers of silt loam (Strata II and III), terminating at bedrock (Figure 53, Figure 54, and Table 8). A single conus shell fragment was recovered from the screen during screening of Stratum II sediment immediately underlying the Stratum I architectural layer. This fragment was not collected.

#### 5.3.2.2 TU-2

TU-2 was excavated within the CSH 6 rock mound in an attempt to clarify site age and function (see Section 5.2.1). Figure 55 shows the TU-2 corners marked out with pink flagging tape prior to excavation. TU-2 was excavated to a depth of 111 cmbs (measured from location of maximum height of mound) through a single architectural layer (Stratum I) and terminated at bedrock (Figure 56, Figure 57, and Table 9). No cultural material was observed.

### 5.3.3 Exploratory Testing

One of the major components of this AIS investigation was a program of extensive, exploratory subsurface testing. This involved the excavation of shovel test pits at regular, predetermined intervals along the proposed trails/roadways and within the proposed parking lot areas. On occasion, shovel test locations were adjusted slightly in the field or removed entirely based on local conditions. No exploratory testing occurred within the subject portion of South Point Road, as no improvements are currently planned in that area. A total of 135 shovel tests were completed. The following subsections provide tabulated summaries of the results of the exploratory testing within the various portions of the project area and representative photos and profile drawings, with the full sets of photos and profile drawings provided in Appendix C in Volume 2.

Overall, the exploratory testing exposed very few cultural materials. One site, a single human tooth (SIHP # -30730), was identified during testing at STP # KL 19 along the proposed Ka Lae Walking Loop. No cultural layers or other significant cultural deposits were exposed by shovel testing throughout the remainder of the project area. Isolated pieces of trash (two pieces of rusted scrap metal) were encountered in STP #s KL 2 (Stratum II), but these items do not constitute cultural layers or significant deposits, nor were they of diagnostic value, and therefore they were not collected for further analysis.

#### 5.3.3.1 Ka Lae Walking Loop

Shovel tests were plotted at 50-m intervals within areas of sediment along the Ka Lae Walking Loop corridor. Thirty-two shovel tests were proposed, with 31 completed: STP # KL 19 was abandoned upon discovery of human remains assigned as SIHP # -30730 (see Figure 36).





Figure 52. Photo showing TU-1 location at SIHP # -30728 marked out with pink flagging prior to excavation; view to east



Figure 53. Photo of TU-1 post-excitation, showing west sidewall; view to west



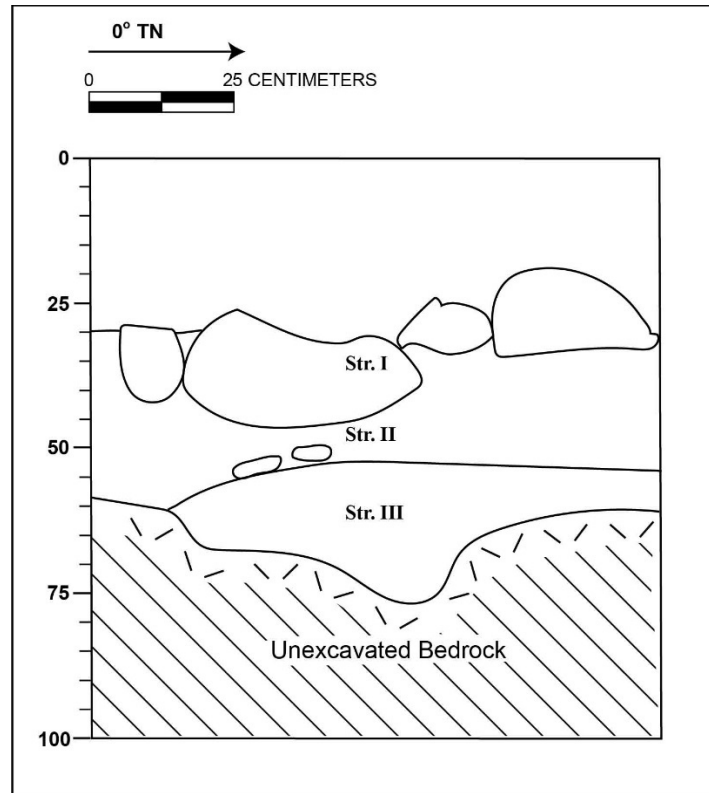


Figure 54. Profile of TU-1 west sidewall

Table 8. TU-1 stratigraphic description

Stratum	Depth (cmbs)	Description
I	20–44.5	Angular basalt boulders and cobbles with 10% Pahala Ash; deflated architectural layer
II	31–62	10YR 4/1, dark gray; very stony sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment; clear, smooth lower boundary; few fine roots; single ; Pahala ash with 50% small basalt cobbles
III	56–80	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, wavy lower boundary, terminated at bedrock; few very fine roots; no cultural material present; Pahala ash atop decomposing bedrock



Figure 55. Photo showing TU-2 location at CSH 6 marked out with pink flagging prior to excavation; view to north



Figure 56. Photo of TU-2 post-excavation, showing north sidewall; view to north

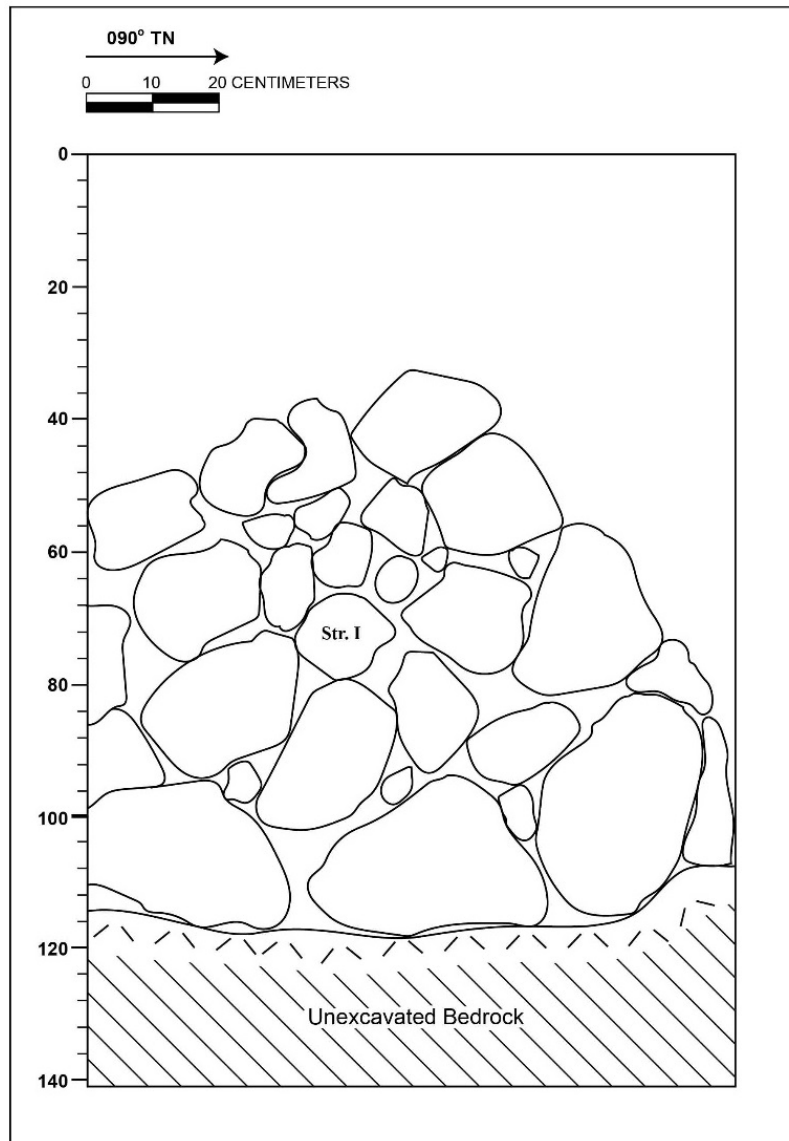


Figure 57. Profile of TU-2 north sidewall

Table 9. TU-2 stratigraphic description

Stratum	Depth (cmbs)	Description
I	50–111	Angular basalt boulders and cobbles and coral cobbles with 2% Pahala Ash; architectural layer

The results of the Ka Lae Walking Loop shovel tests are summarized in Table 10. The stratigraphy in this portion of the project area is Pahala Ash containing occasional caliche concretions. Burn layers were observed at eight of the shovel test locations (25%). Bedrock was encountered at two test pits (6%); the remaining 29 completed shovel tests were excavated to their physical limitations, or to depths ranging from 92-112 cmbs. Representative photos and profile drawings (STP #s KL 7 and KL 29) are given in Figure 58 and Figure 59, respectively; the complete set of profile photos and drawings are provided in Appendix C in Volume 2. Aside from SIHP # -30730 and two pieces of rusted scrap metal found in KL # 2 Stratum II, no cultural materials or layers were encountered during shovel testing within the proposed Ka Lae Walking Loop.

#### 5.3.3.2 Ka Lae Loop Parking

Four shovel tests locations were selected within the proposed Ka Lae Loop parking lot. All four of these tests were carried out as planned (see Figure 36).

The results of the Ka Lae Loop parking shovel tests are summarized in Table 11. The stratigraphy in this portion of the project area is Pahala Ash containing occasional caliche concretions. A burn layer was also exposed at STP # KLP 1. Bedrock was not encountered and all four shovel tests were excavated to their physical limitations, or to depths ranging from 100-102 cmbs. A representative photo and profile drawing (STP # KLP 3) is given in Figure 60; the complete set of profile photos and drawings are provided in Appendix C in Volume 2. No cultural materials or layers were encountered during shovel testing within the proposed Ka Lae Loop parking lot.

#### 5.3.3.3 Emergency Road

Shovel tests were plotted at 100-m intervals within areas of sediment along the Emergency Road corridor. Thirty-six shovel tests were proposed, with 32 completed (see Figure 29 through Figure 32). Proposed STP #s ER 10, 12, 15, and 25 were not excavated because the areas at and surrounding the proposed locations were found to consist of exposed bedrock with poor excavation potential. Four planned shovel test locations (STP #s ER 27 through 30) were exchanged with four new locations (STP #s ER [2; designating reroute] 36 through 39) due to a rerouting of a short section of the Emergency Road corridor near Mahana Bay (see Figure 32).

The results of the Emergency Road shovel tests are summarized in Table 12. The stratigraphy in this portion of the project area is Pahala Ash containing very occasional caliche concretions and a small area of Kaalualu series sediments in the *mauka* Papakōlea vicinity. Burn layers were observed at five of the Emergency Road shovel test locations (16%). A fill layer of local material was observed at STP # ER 0, located along an existing roadway intersection (see Figure 29). Marine sand was found mixed in with Pahala ash sediments at STP # ER 33, which is near Mahana Bay. Bedrock was encountered at six Emergency Road test pits (19%); the remaining 26 completed shovel tests were excavated to their physical limitations, or to depths ranging from 92-105 cmbs. No cultural materials or layers were encountered during shovel testing within the proposed Emergency Road corridor. Representative photos and profile drawings (STP #s ER 21 and ER [2]38) are given in Figure 61 and Figure 62, respectively; the complete set of profile photos and drawings are provided in Appendix C in Volume 2.



Table 10. Ka Lae Walking Loop shovel test pit (STP) stratigraphic descriptions

STP #	Stratum	Depth (cmbs)	Description
KL 1	I	0–1	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	1–5	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	III	5–10	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	IV	10–106	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; very fine and fine roots common; no cultural material present; Pahala ash
KL 2	I	0–5	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine and medium roots common; no cultural material present; Pahala ash
	II	5–100	10YR 5/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; medium roots common; two small pieces of rusty metal observed between 15-30 cmbs, not collected; Pahala ash
KL 3	I	0–30	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; single drupe shell observed at 20 cmbs, not collected; Pahala ash
	II	30–34	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer

STP #	Stratum	Depth (cmbs)	Description
	III	34–85	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	IV	85–86	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash with dense distribution of caliche concretions
	V	86–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
KL 4	I	0–112	10YR 5/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; medium and coarse roots common; no cultural material present; Pahala ash
KL 5	I	0–10	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	10–15	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	III	15–85	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine roots common; no cultural material present; Pahala ash
	IV	85–86	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash with dense distribution of caliche concretions

STP #	Stratum	Depth (cmbs)	Description
	V	86–100	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
KL 6	I	0–20	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many medium and coarse roots; no cultural material present; Pahala ash
	II	20–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; medium roots common; no cultural material present; Pahala ash
KL 7	I	0–5	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	5–12	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	III	12–98	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine and medium roots common; no cultural material present; Pahala ash
	IV	98–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with dense distribution of caliche concretions
KL 8	I	0–1	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	1–12	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	III	12–15	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	IV	15–100	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; fine and medium roots common; no cultural material present; Pahala ash
KL 9	I	0–105	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; medium and coarse roots common; no cultural material present; Pahala ash
KL 10	I	0–98	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine and medium roots common; no cultural material present; Pahala ash
	II	98–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with dense distribution of caliche concretions
KL 11	I	0–101	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
KL 12	I	0–82	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few fine roots; no cultural material present; Pahala ash
KL 13	I	0–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; fine and medium roots common; no cultural material present; Pahala ash
KL 14	I	0–21	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmts)	Description
	II	21–26	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	III	26–101	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
KL 15	I	0–12	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; small piece of coral observed on surface, not collected; Pahala ash
	II	12–75	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few medium roots; no cultural material present; Pahala ash
KL 16	I	0–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 17	I	0–12	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash
	II	12–15	10YR 5/4, grayish brown; sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; marine and terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; naturally deposited fragments of marine shell and coral dispersed throughout, not collected
	III	15–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmts)	Description
KL 18	I	0–10	10YR 5/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, wavy lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	10–102	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; small piece of coral observed at 15 cm, not collected; Pahala ash
KL 19	I	0–8	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	8–12	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; burn layer
	III	12–37	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; excavation and recordation terminated upon discovery of human tooth; Pahala ash
KL 20	I	0–5	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; few very fine and fine roots; no cultural material present; Pahala ash
	II	5–29	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; few fine roots; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
	III	29–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 21	I	0–8	10YR 5/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	II	8–38	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	III	38–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
KL 22	I	0–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 23	I	0–102	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; very fine roots common; no cultural material present; small piece of coral observed between 1-25 cm, not collected; Pahala ash
KL 24	I	0–110	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine and fine roots; no cultural material present; Pahala ash
KL 25	I	0–14	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; burn layer
	II	14–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine and fine roots; no cultural material present; Pahala ash
KL 26	I	0–40	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; shells and waterworn rocks observed on surface, not collected; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	II	40–85	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, wavy lower boundary; few very fine roots; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
	III	85–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 27	I	0–20	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	20–92	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
KL 28	I	0–30	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many medium roots; no cultural material present; two small pieces of marine shell observed, not collected; Pahala ash
	II	30–34	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine roots common; no cultural material present; burn layer
	III	34–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 29	I	0–9	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmbs)	Description
	II	9–25	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	III	25–56	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
	IV	56–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 30	I	0–90	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	II	90–101	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with dense distribution of caliche concretions
KL 31	I	0–5	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	5–29	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	III	29–80	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer

STP #	Stratum	Depth (cmbs)	Description
	IV	80–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KL 32	I	0–105	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash

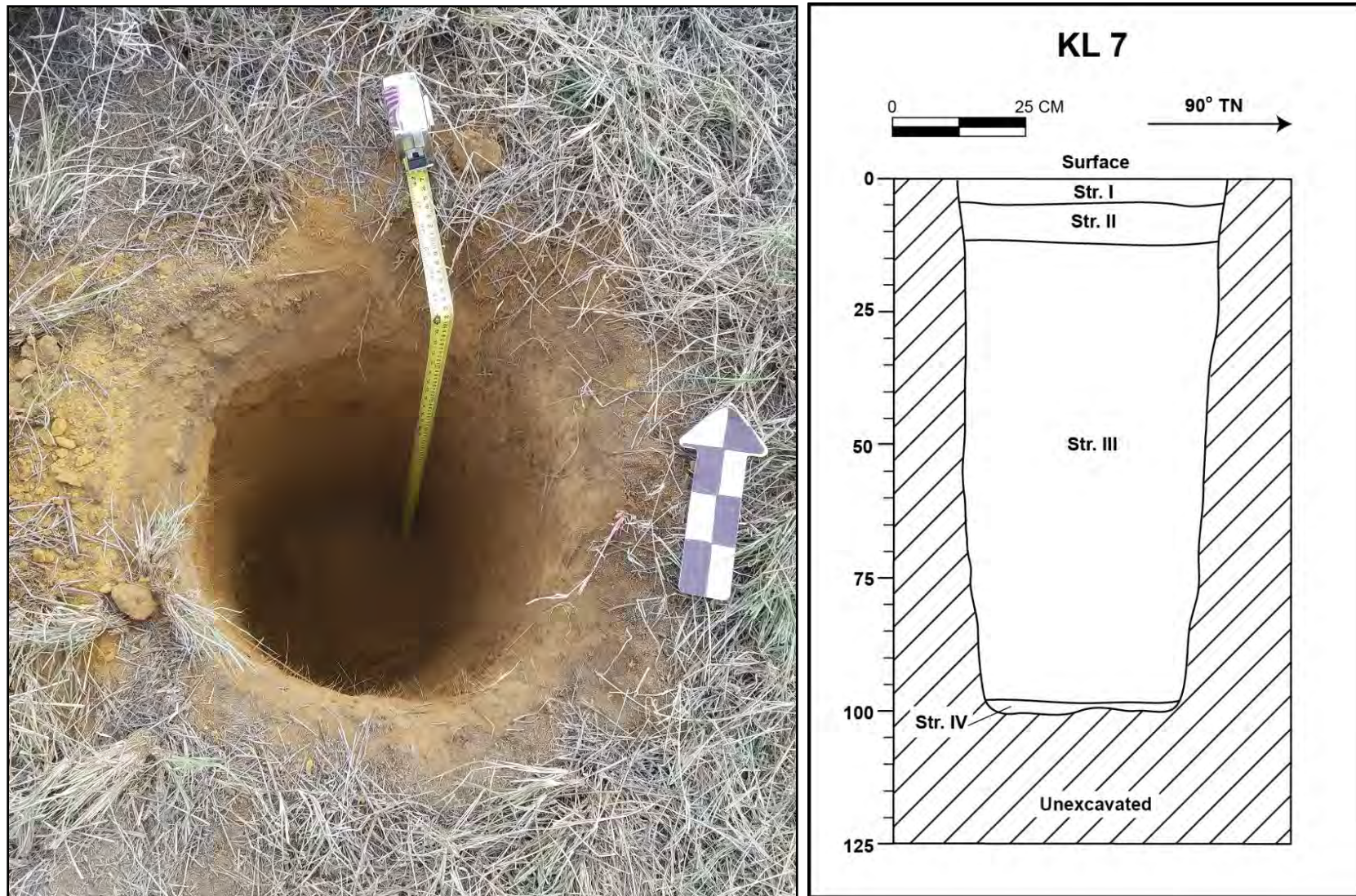


Figure 58. Photo and plan view of representative stratigraphy along Ka Lae Walking Loop (STP # KL 7)



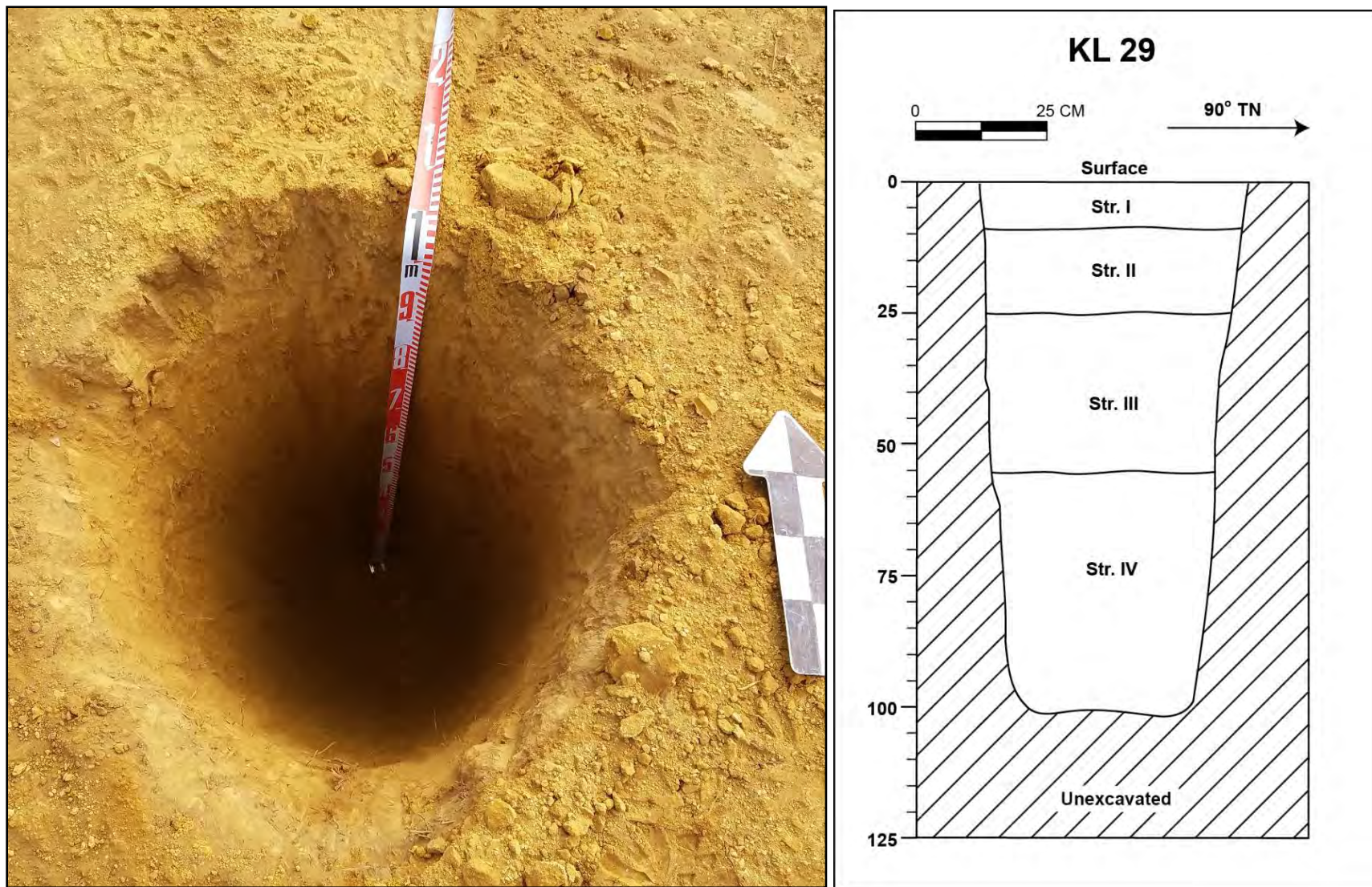


Figure 59. Photo and plan view of representative stratigraphy along Ka Lae Walking Loop (STP # KL 29)



Table 11. Ka Lae Loop parking STP stratigraphic descriptions

STP #	Stratum	Depth (cmbs)	Description
KLP 1	I	0–6	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary; few very fine roots; no cultural material present; burn layer
	II	6–19	10YR 4/4, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	III	19–62	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
	IV	62–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
KLP 2	I	0–75	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	75–102	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
KLP 3	I	0–14	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; Pahala ash
	II	14–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; very fine and fine roots common; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
KLP 4	I	0–75	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	75–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer

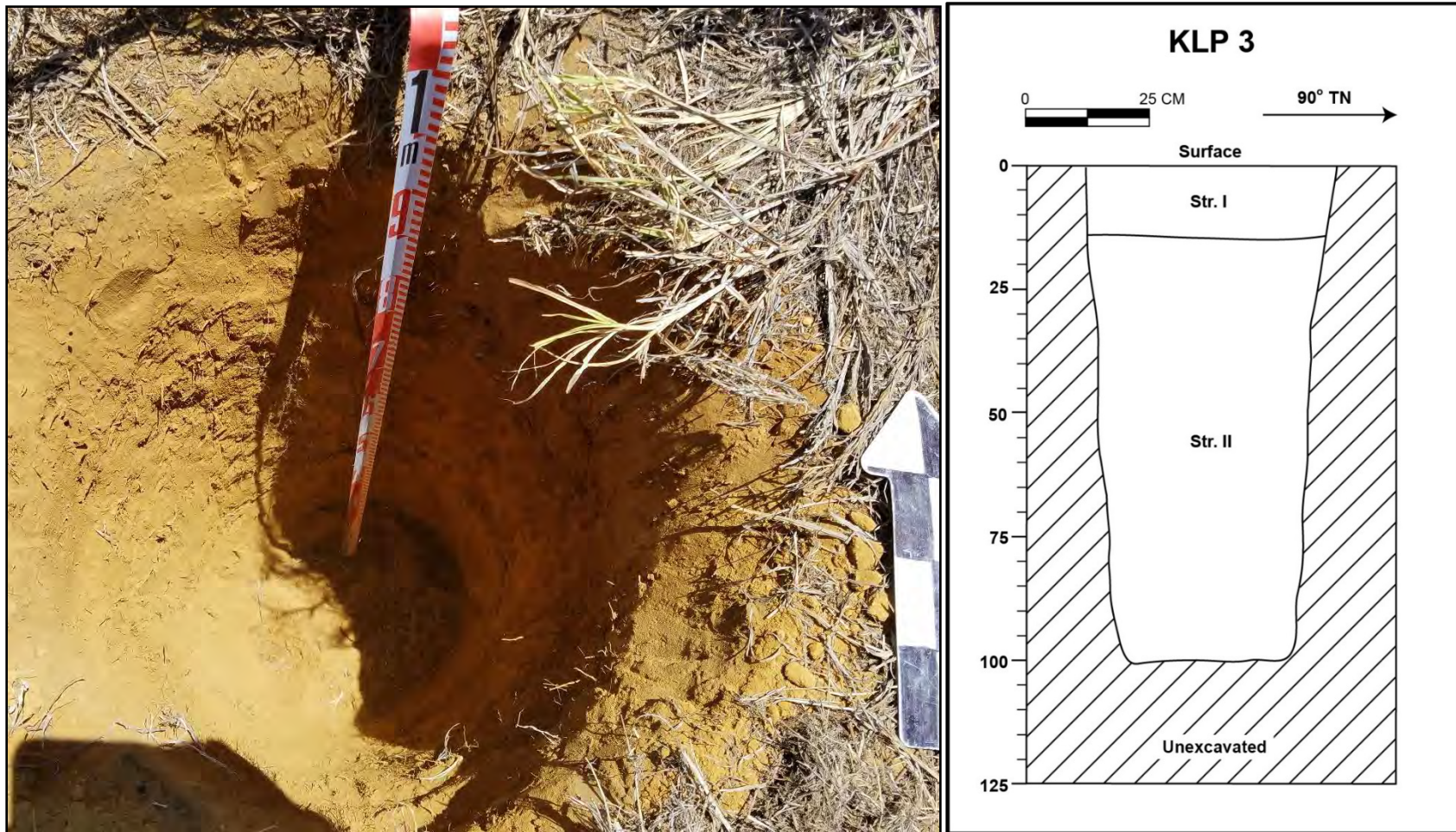


Figure 60. Photo and plan view of representative stratigraphy at Ka Lae Loop Parking lot (STP # KLP 3)

Table 12. Emergency Road STP stratigraphic descriptions

STP #	Stratum	Depth (cmbs)	Description
ER 0	I	0–2	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	2–13	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	III	13–32	10YR 4/4, dark yellowish brown; very stony sandy loam; single-grain, weak, fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; local fill material containing 50% basalt cobbles and boulders
	IV	32–100	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 1	I	0–83	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash
	II	83–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 2	I	0–87	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine roots common; no cultural material present; Pahala ash
	II	87–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer



STP #	Stratum	Depth (cmts)	Description
ER 3	I	0–7	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine roots common; no cultural material present; Pahala ash
	II	7–35	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	III	35–97	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 4	I	0–92	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash
	II	92–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash with caliche concretions evenly distributed throughout layer
ER 5	I	0–7	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash
	II	7–53	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash
	III	53–97	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 6	I	0–11	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	II	11–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; fine roots common; no cultural material present; Pahala ash
ER 7	I	0–9	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; Pahala ash
	II	9–80	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; fine roots common; no cultural material present; Pahala ash
	II	80–100	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 8	I	0–5	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; burn layer
	II	5–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
ER 9	I	0–8	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many fine roots; no cultural material present; burn layer
	II	8–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many fine roots; no cultural material present; Pahala ash
ER 11	I	0–20	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	II	20–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 13	I	0–11	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few fine roots; no cultural material present; Pahala ash
ER 14	I	0–94	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 16	I	0–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 17	I	0–5	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	5–63	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few fine roots; no cultural material present; Pahala ash
ER 18	I	0–4	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	II	4–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 19	I	0–7	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	II	7–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 20	I	0–5	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	II	5–95	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 21	I	0–10	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	10–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; fine roots common; no cultural material present; Pahala ash
ER 22	I	0–10	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	10–92	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 23	I	0–10	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	10–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; fine roots common; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmbs)	Description
ER 24	I	0–11	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	11–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 26	I	0–11	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; fine roots common; no cultural material present; Pahala ash
ER 31	I	0–20	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	20–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 32	I	0–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
ER 33	I	0–50	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	50–65	10YR 5/4, greyish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous and marine sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash mixed with marine sand
	III	65–90	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
ER 34	I	0–10	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	10–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, slightly hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
ER 35	I	0–95	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
ER 36	I	0–33	10YR 5/6, yellowish brown; stony loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few very fine roots; no cultural material present; comingled Pahala ash and Kaalualu series sediments with 20% small basalt cobbles
ER 37	I	0–25	10YR 5/6, yellowish brown; loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; comingled Pahala ash and Kaalualu series sediments
	II	25–32	10YR 5/2, greyish brown; loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few medium roots; no cultural material present; burn layer; charred root of recent origin through Str. I and Str. II
ER 38	I	0–30	10YR 4/3, brown; loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; comingled Pahala ash and Kaalualu series sediments
	II	30–40	10YR 6/8, brownish yellow; loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; few fine roots; no cultural material present; Kaalualu series sediments

STP #	Stratum	Depth (cmbs)	Description
ER 39	I	0–105	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash

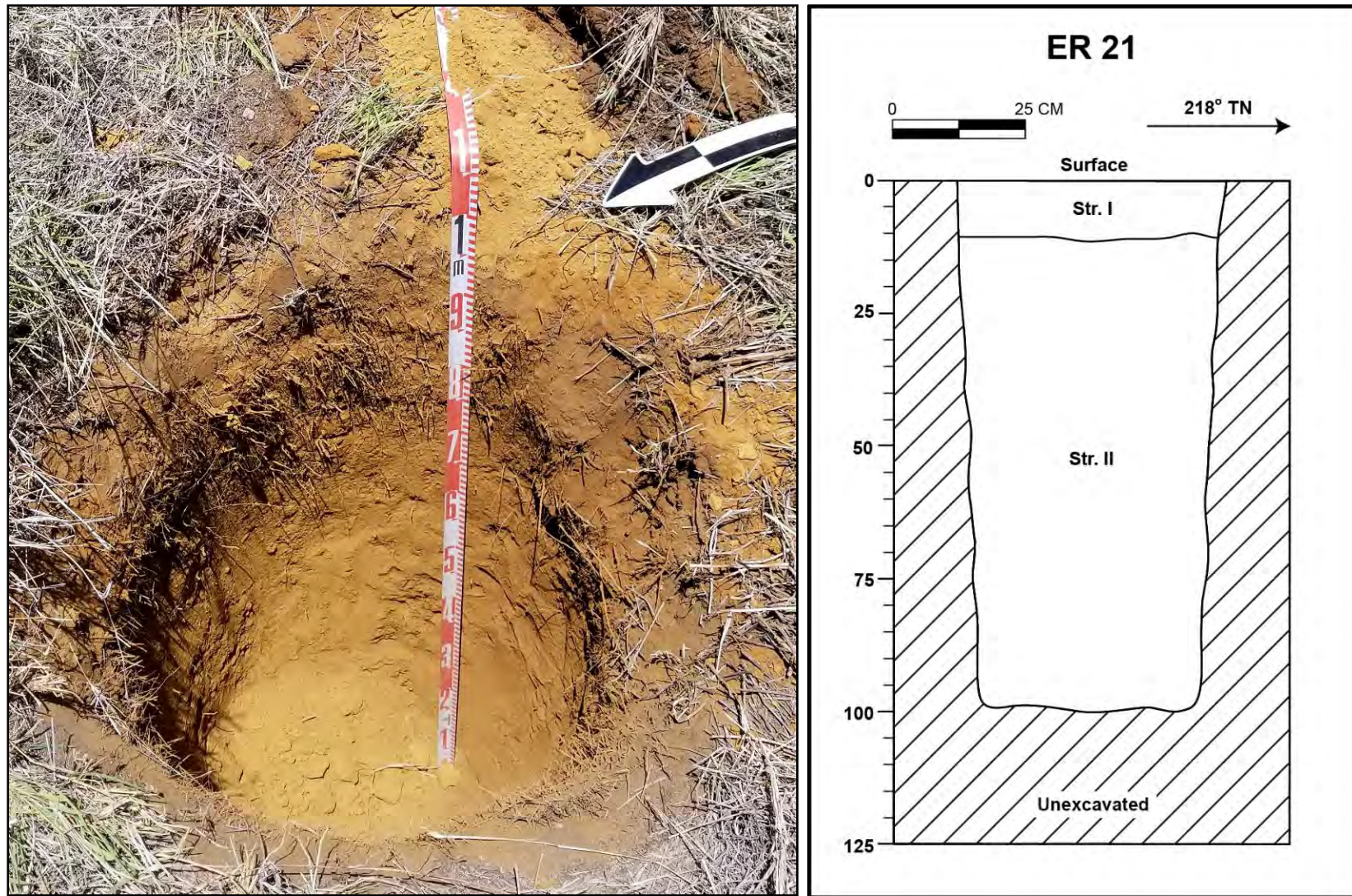


Figure 61. Photo and plan view of representative stratigraphy along Emergency Road (STP # ER 21)



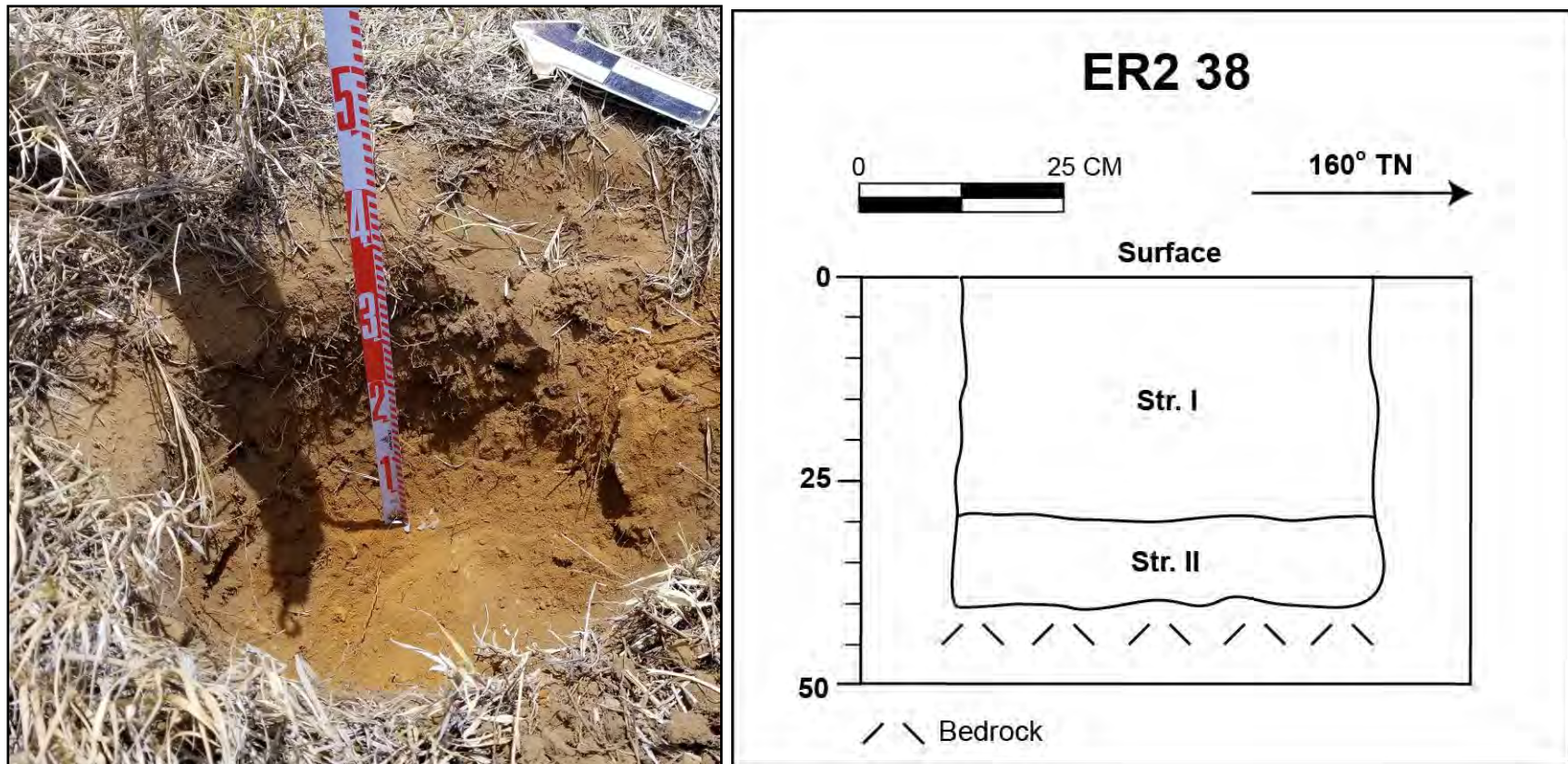


Figure 62. Photo and plan view of representative stratigraphy along Emergency Road (STP # ER[2] 38)

#### 5.3.3.4 Green Sand Beach Pedestrian Path

Shovel tests were plotted at 50-m intervals within areas of sediment along the Green Sand Beach Pedestrian Path corridor. Sixty-nine shovel tests were proposed, with 64 carried out (see Figure 33 through Figure 35). Proposed STP #s GSB 0, 1, 15, 17, and 21 were not excavated because the areas at and surrounding the proposed locations were found to consist of exposed bedrock with poor excavation potential.

The results of the Green Sand Beach Pedestrian Path shovel tests are summarized in Table 13. The stratigraphy in this portion of the project area is Pahala Ash with a small area of Kaalualu series sediments in the Papakōlea vicinity. Occasional caliche concretions were observed, particularly in the eastern portions of the corridor approaching Mahana Bay. Burn layers were observed at only four of the Green Sand Beach Pedestrian Path shovel test locations (6%). Bedrock was encountered at 17 test pits (27%); the remaining 47 shovel tests were excavated to their physical limitations, or to depths generally ranging from 90–100 cmbs. No cultural materials or layers were encountered during shovel testing within the proposed Green Sand Beach Pedestrian Path corridor. Representative photos and profile drawings (STP #s GSB 5, 22, and 58) are given in Figure 63, Figure 64, and Figure 65 respectively; the complete set of profile photos and drawings are provided in Appendix C in Volume 2.

#### 5.3.3.5 Green Sand Beach Parking

Four shovel test locations were selected within the proposed Green Sand Beach Parking lot. All four of these tests were carried out as planned (see Figure 33).

The results of the Green Sand Beach Parking shovel tests are summarized in Table 14. The stratigraphy in this portion of the project area is Pahala Ash containing occasional caliche concretions. A burn layer was also exposed at STP # GSBP 2. Bedrock was not encountered and all four shovel tests were excavated to their physical limitations, or to depths ranging from 100–107 cmbs. A representative photo and profile (STP # GSBP 1) is given in Figure 66; the complete set of profile photos and drawings are provided in Appendix C in Volume 2. No cultural materials or layers were encountered during shovel testing within the proposed Green Sand Beach Parking lot.

Table 13. Green Sand Beach Pedestrian Path STP stratigraphic descriptions

STP #	Stratum	Depth (cmbs)	Description
GSB 2	I	0–16	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 3	I	0–25	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 4	I	0–45	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash with 30% <i>a'a</i> cobbles
GSB 5	I	0–16	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	16–22	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	III	22–25	10YR 7/4, very pale brown; caliche; massive, moderate, coarse platy structure; dry, hard, strong cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; calcium carbonate concretions
	IV	25–70	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	V	70–72.5	10YR 7/4, very pale brown; caliche; massive, moderate, coarse platy structure; dry, hard, strong cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; calcium carbonate concretions

STP #	Stratum	Depth (cmbs)	Description
	VI	72.5–102	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 6	I	0–2	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	II	2–80	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	III	80–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
GSB 7	I	0–80	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	80–82	10YR 7/4, very pale brown; caliche; massive, moderate, coarse platy structure; dry, hard, strong cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; calcium carbonate concretions
	III	82–103	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 8	I	0–10	10YR 6/1, light brownish grey; sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; marine and terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present
	II	10–95	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmbs)	Description
GSB 9	I	0–106	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 10	I	0–45	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	45–95	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
GSB 11	I	0–70	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	70–95	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 12	I	0–35	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	35–40	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; burn layer
	III	40–80	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	IV	80–95	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
GSB 13	I	0–90	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; comingled Pahala ash and Kaalualu series sediments
GSB 14	I	0–20	10YR 5/6, yellowish brown; loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; comingled Pahala ash and Kaalualu series sediments
GSB 16	I	0–25	10YR 4/3, brown; very stony loamy sand; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; small fragment of coral observed but not collected; Kaalualu series sediments with 40% 'a'ā cobbles
GSB 18	I	0–12	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 19	I	0–14	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; fine roots common; no cultural material present; Pahala ash
GSB 20	I	0–10	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 22	I	0–25	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	25–50	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
GSB 23	I	0–10	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	10–20	10YR 4/1, dark gray; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; burn layer
	III	20–95	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 24	I	0–5	10YR 4/2, dark grayish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	5–95	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 25	I	0–20	10YR 4/2, dark grayish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	20–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 26	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
GSB 27	I	0–95	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
GSB 28	I	0–106	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 29	I	0–23	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	23–95	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 30	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 31	I	0–43	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine roots; no cultural material present; Pahala ash
	II	43–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
GSB 32	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 33	I	0–20	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	20–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmbs)	Description
GSB 34	I	0–102	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
GSB 35	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few very fine roots; no cultural material present; Pahala ash
GSB 36	I	0–20	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	20–40	10YR 4/1, dark gray; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary; no roots observed; no cultural material present; burn layer
	III	40–60	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	IV	60–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 37	I	0–37	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	37–52	10YR 4/3, brown; extremely stony sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash with 70% large basalt cobbles
	III	52–102	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
GSB 38	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 39	I	0–98	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 40	I	0–40	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 41	I	0–25	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	25–28	10YR 7/4, very pale brown; caliche; massive, moderate, coarse platy structure; dry, hard, strong cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; calcium carbonate concretions
	III	28–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 42	I	0–15	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	15–43	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 43	I	0–80	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
GSB 44	I	0–65	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	65–75	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 45	I	0–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 46	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 47	I	0–5	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	5–90	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 48	I	0–7	10YR 5/2, grayish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	7–95	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with 10% basalt pebbles
GSB 49	I	0–50	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	II	50–75	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 50	I	0–35	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	35–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 51	I	0–25	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	25–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 52	I	0–15	10YR 5/2, grayish brown; very stony sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash with 40% basalt cobbles and gravel
	II	15–45	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	III	45–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 53	I	0–42	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmbs)	Description
	II	42–48	10YR 7/4, very pale brown; caliche; massive, moderate, coarse platy structure; dry, hard, strong cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; calcium carbonate concretions
	III	48–90	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 54	I	0–102	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 55	I	0–35	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	35–85	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; clear, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	III	85–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 56	I	0–70	10YR 8/4, very pale brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 57	I	0–85	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine and medium roots; no cultural material present; Pahala ash
	II	85–100	10YR 8/4, very pale brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
GSB 58	I	0–10	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; burn layer
	II	10–20	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	III	20–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 59	I	0–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 60	I	0–17	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	17–40	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash
GSB 61	I	0–10	10YR 5/8, yellowish brown; stony sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash with 30% basalt cobbles
	II	10–40	10YR 6/8, brownish yellow; stony sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; abrupt, smooth lower boundary, terminated at bedrock; no roots observed; no cultural material present; Pahala ash with 30% basalt cobbles
GSB 62	I	0–5	10YR 5/8, yellowish brown; very stony sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash with 40% basalt cobbles

STP #	Stratum	Depth (cmbs)	Description
	II	5–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 63	I	0–90	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; Pahala ash
	II	90–92	10YR 7/4, very pale brown; caliche; massive, moderate, coarse platy structure; dry, hard, strong cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; calcium carbonate concretions
	III	92–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 64	I	0–40	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash
	II	40–100	10YR 8/4, very pale brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 65	I	0–100	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; fine and medium roots common; no cultural material present; Pahala ash
GSB 66	I	0–25	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	II	25–90	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; no roots observed; no cultural material present; Pahala ash

STP #	Stratum	Depth (cmbs)	Description
	III	90–100	10YR 8/4, very pale brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash
GSB 67	I	0–100	10YR 6/8, brownish yellow; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine and medium roots; no cultural material present; Pahala ash
GSB 68	I	0–65	10YR 5/8, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few very fine and fine roots; no cultural material present; Pahala ash
	II	65–100	10YR 8/4, very pale brown; sandy loam; single-grain, weak, very fine crumb structure; dry, hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash



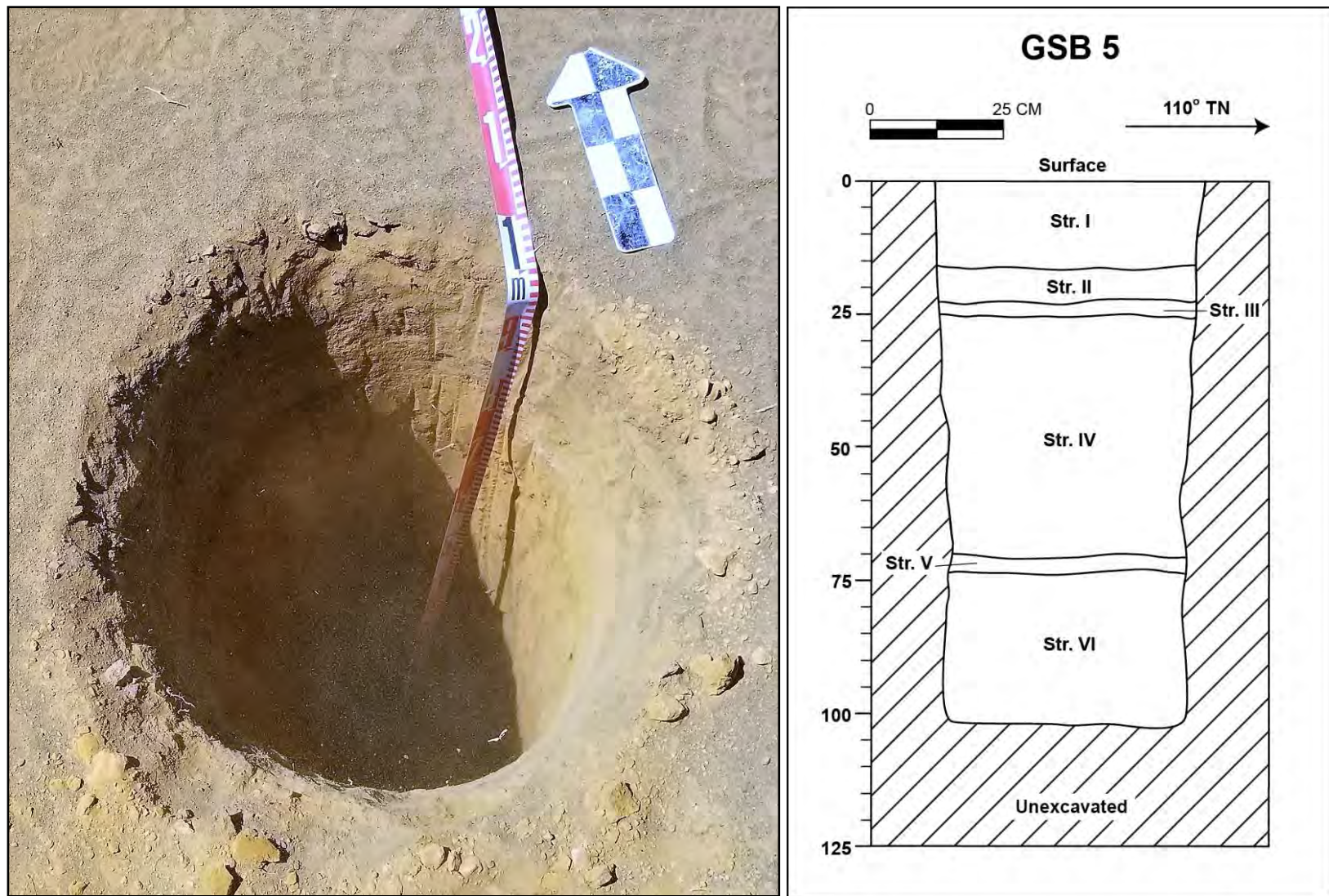


Figure 63. Photo and plan view of representative stratigraphy along Green Sand Beach Pedestrian Path (STP # GSB 5)

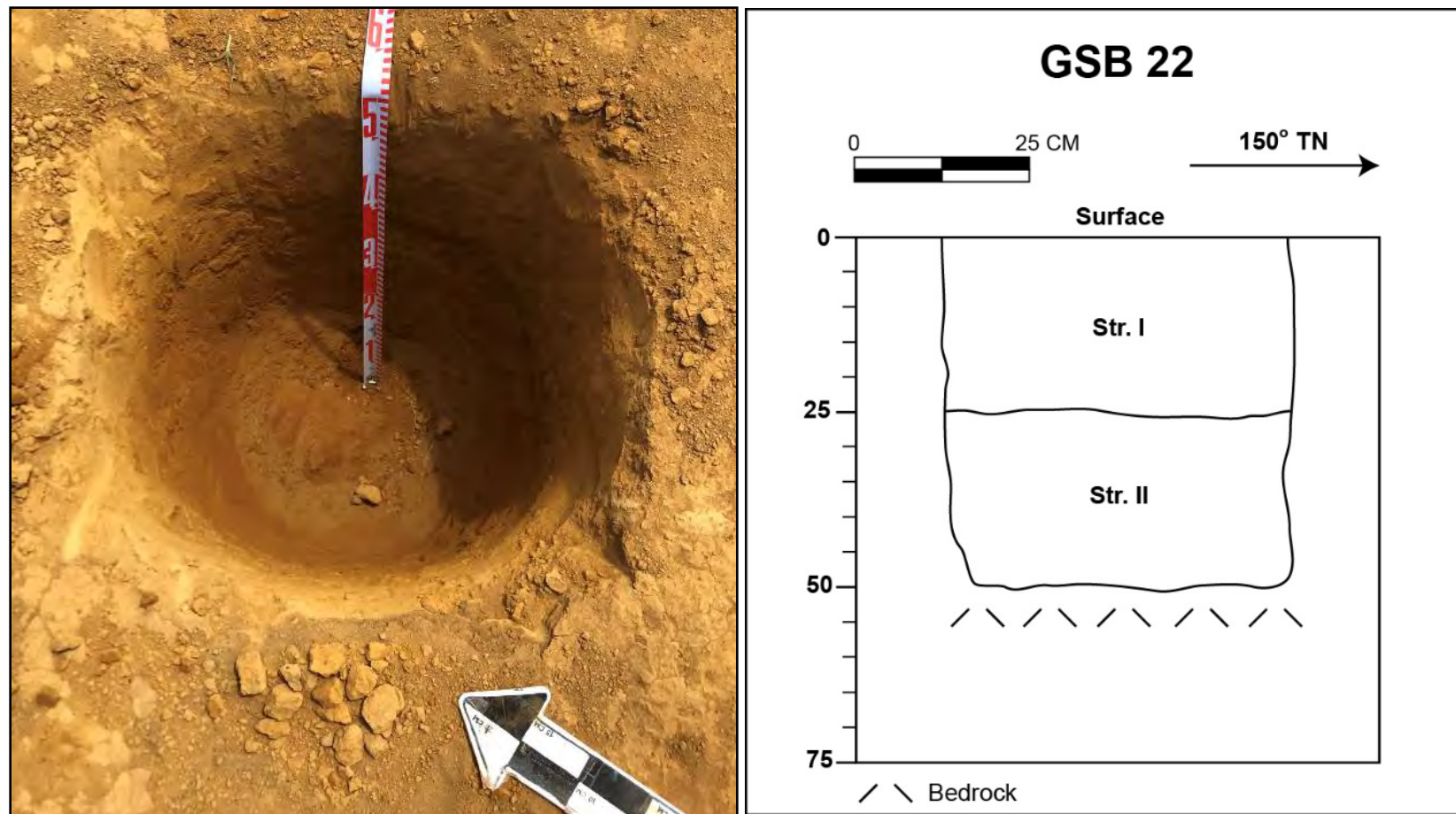


Figure 64. Photo and plan view of representative stratigraphy along Green Sand Beach Pedestrian Path (STP # GSB 22)



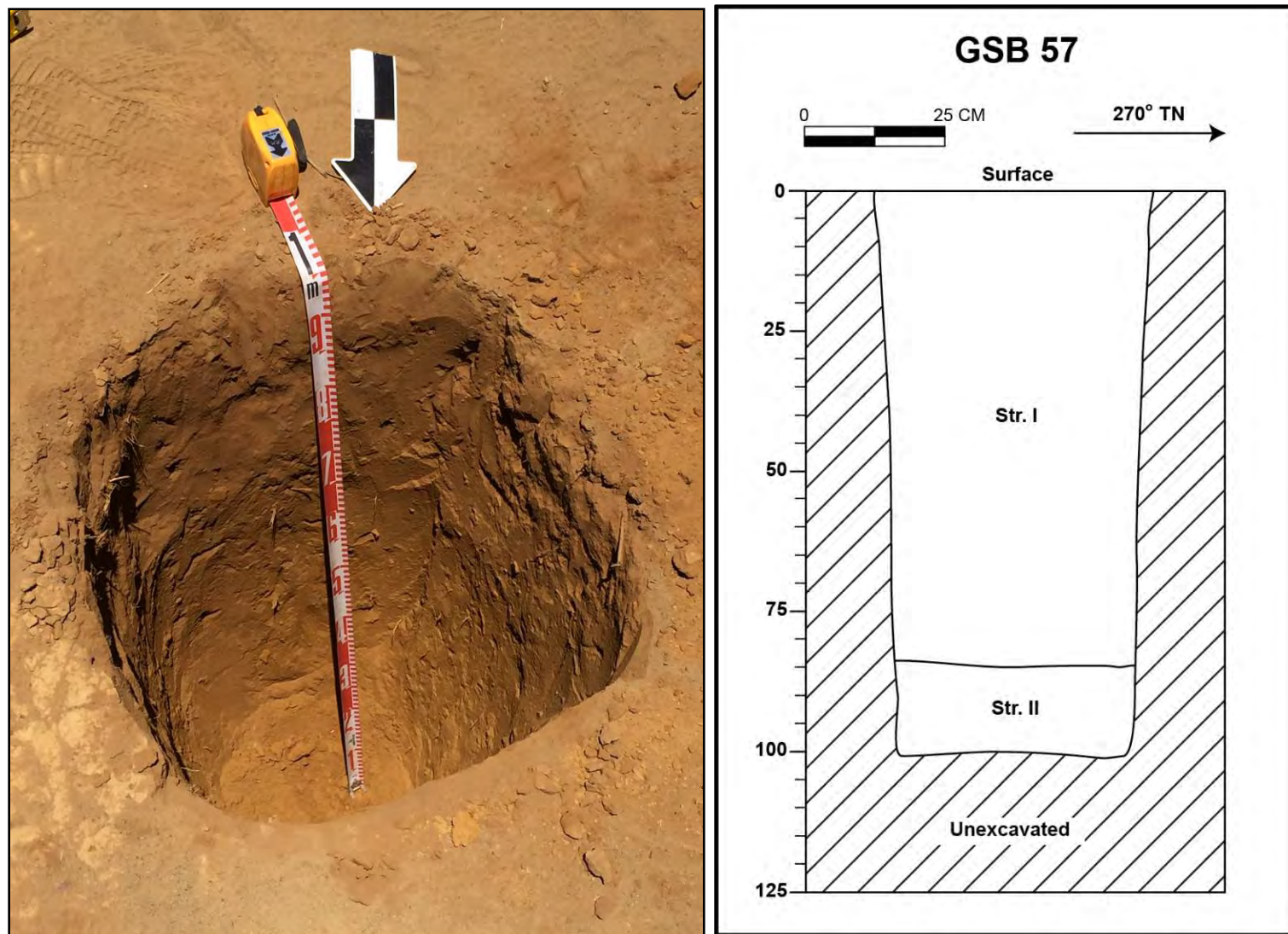


Figure 65. Photo and plan view of representative stratigraphy along Green Sand Beach Pedestrian Path (STP # GSB 58)

Table 14. Green Sand Beach Parking STP Stratigraphic Descriptions

STP #	Stratum	Depth (cmbs)	Description
GSBP 1	I	0–10	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; Pahala ash
	II	10–107	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
GSBP 2	I	0–25	10YR 3/3, dark brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; many very fine and fine roots; no cultural material present; burn layer
	II	25–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; many very fine and fine roots; no cultural material present; Pahala ash
GSBP 3	I	0–10	10YR 4/3, brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; Pahala ash
	II	10–85	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, slightly hard, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; Pahala ash
	III	85–100	10YR 4/6, dark yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, very hard, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; few fine roots; no cultural material present; Pahala ash
GSBP 4	I	0–16	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; very fine and fine roots common; no cultural material present; Pahala ash



STP #	Stratum	Depth (cmbs)	Description
	II	16–96	10YR 6/4, light yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, loose, weak cementation consistence; non-plastic; terrigenous sediment origin; diffuse, smooth lower boundary; few fine roots; no cultural material present; Pahala ash
	III	96–100	10YR 5/6, yellowish brown; sandy loam; single-grain, weak, very fine crumb structure; dry, weakly coherent, weak cementation consistence; non-plastic; terrigenous sediment origin; lower boundary not visible; no roots observed; no cultural material present; Pahala ash with dense distribution of caliche concretions

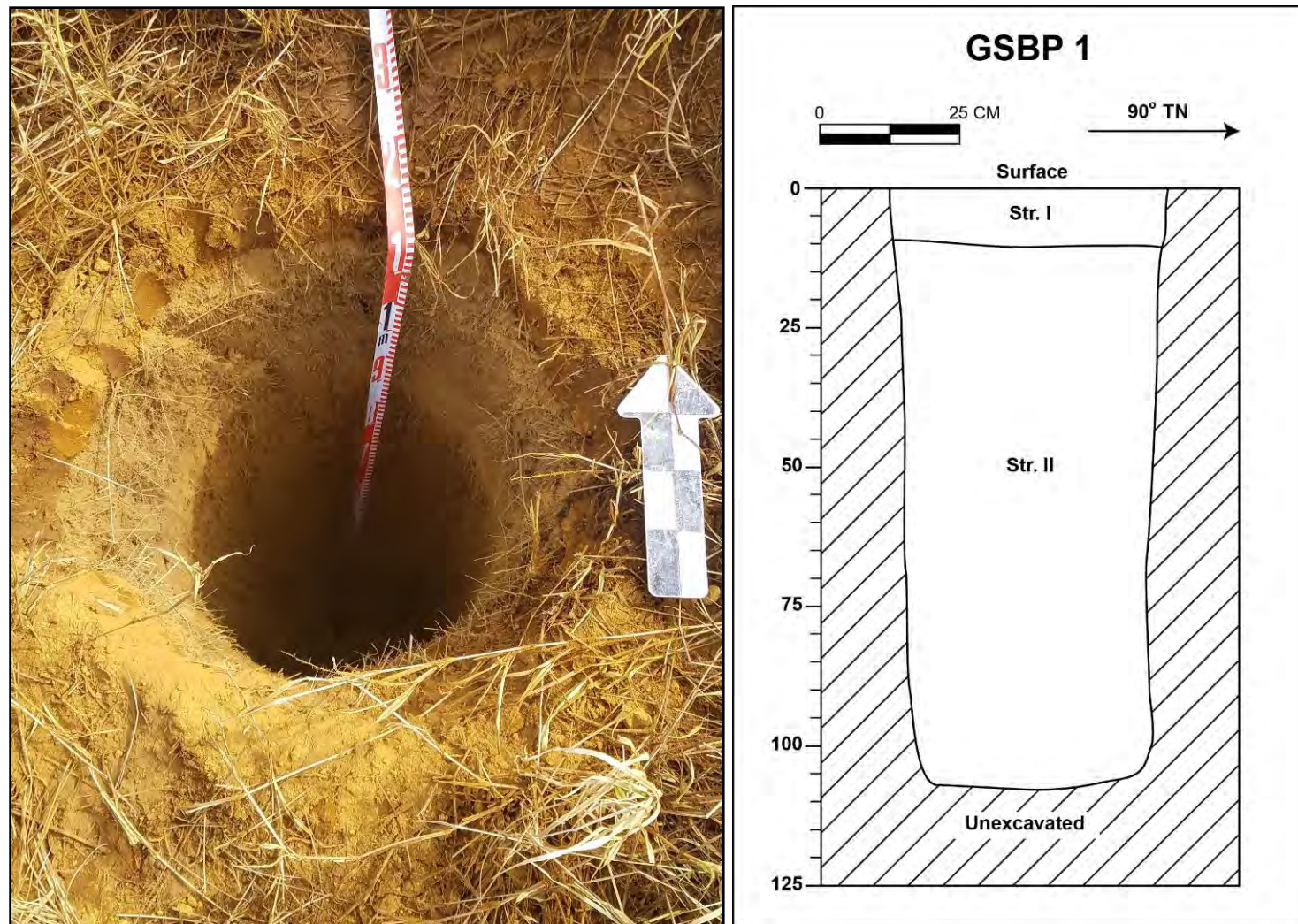


Figure 66. Photo and plan view of representative stratigraphy at Green Sand Beach Parking lot (STP # GSBP 1)

## 5.4 Photo Documentation of Previously Recorded Historic Properties

This section presents the photographic documentation undertaken during the AIS at stations or points along the proposed Green Sand Beach Pedestrian Path where previously documented historic properties are located directly adjacent. Additional points of interest were also photographed along the Green Sand Beach Pedestrian Path where areas of other, previously unrecorded archaeological features were encountered adjacent to but outside of the project area. Ten locations were documented; these locations are depicted on Figure 67. At each location, photos were taken in each cardinal direction, and brief notes were recorded about what anthropogenic or natural features are visible in each photo. These results are provided by individual photo point below.

### 5.4.1 Photo Point 1

Photo Point 1 is located at the western end of the proposed Green Sand Beach Pedestrian Path, near the indicated southwestern boundary of SIHP # -03911 (Kapalaoa Village, pre-Contact to historic habitation complex; see Section 4.3.1.4) and within the boundaries of the South Point Complex NHL (SIHP # -04140) (see Figure 67). Looking north, numerous features of SIHP # -03911 are visible including walls, enclosures, pavements, mounds, and other modifications (Figure 68). Looking east, additional features of SIHP # -03911 are visible (Figure 69). Looking south, SIHP # -03911 Features A through E (cultural deposit, platforms, and pavements) are visible (Figure 70). Looking west, Kaulana Bay and the indicated location of site B20-29 (cultural deposit; see Section 4.3.1.2) are visible (Figure 71).

### 5.4.2 Photo Point 2

Photo Point 2 is also located near the western end of the proposed Green Sand Beach Pedestrian Path near the indicated southeastern boundary of SIHP # -03911 (Kapalaoa Village, pre-Contact to historic habitation complex; see Section 4.3.1.4) and within the boundaries of the South Point Complex NHL (SIHP # -04140) (see Figure 67). Looking north, numerous features of SIHP # -03911 are visible including walls, enclosures, pavements, mounds, and other modifications (Figure 72). Looking east, no known archaeological features or any obvious new archaeological features are visible (Figure 73). Looking south, no known archaeological features or any obvious new archaeological features are visible (Figure 74). Looking west, possible modifications associated with SIHP # -03911 may be visible to the right of the existing Jeep road (Figure 75).

### 5.4.3 Photo Point 3

Photo Point 3 is located along the proposed Green Sand Beach Pedestrian Path near the indicated southwestern boundary of SIHP # -05259 (historic military complex; see Section 4.3.2.3) and northern tip of SIHP # -05257 (temporary habitation complex, see Section 4.3.1.5), and within the boundaries of the South Point Complex NHL (SIHP # -04140) (see Figure 67). Looking north, features of SIHP # -05259 are visible including walls, enclosures, and other possible modifications (Figure 76). Looking east, no known archaeological features or any obvious new archaeological features are visible (Figure 77). Looking south, features of SIHP # -05257 are visible, including walls, enclosures, and other modifications (Figure 78). Looking west, possible modifications associated with SIHP # -05257 are visible (Figure 79) *makai* of the existing Jeep road.



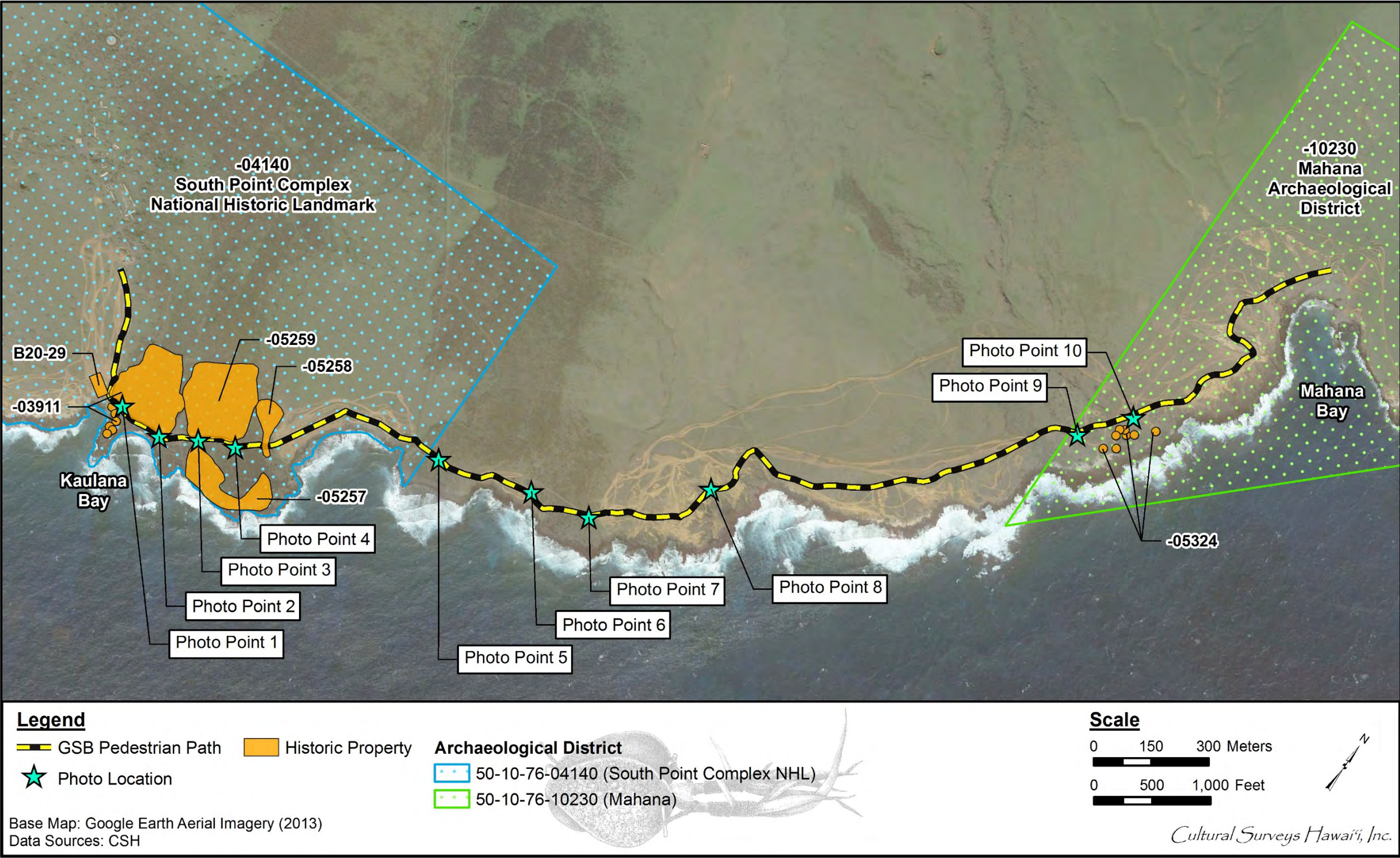


Figure 67. Aerial photo of the Green Sand Beach Pedestrian Path, showing the locations of Photo Points 1–10 in relation to previously documented historic properties and the limits of the South Point Complex NHL (SIHP # -04140) and Mahana Archaeological District (SIHP # -10230) (Google Earth Imagery 2013)





Figure 68. Photo Point 1 looking north



Figure 69. Photo Point 1 looking east



Figure 70. Photo Point 1 looking south



Figure 71. Photo Point 1 looking west





Figure 72. Photo Point 2 looking north



Figure 73. Photo Point 2 looking east





Figure 74. Photo Point 2 looking south



Figure 75. Photo Point 2 looking west





Figure 76. Photo Point 3 looking north



Figure 77. Photo Point 3 looking east



Figure 78. Photo Point 3 looking south



Figure 79. Photo Point 3 looking west



#### 5.4.4 Photo Point 4

Photo Point 4 is located along the proposed Green Sand Beach Pedestrian Path east of Photo Point 3, just south of the indicated southeastern boundary of SIHP # -05259 (historic military complex; see Section 4.3.2.2), *mauka* of SIHP # -05257 (temporary habitation complex; see Section 4.3.1.5), and within the boundaries of the South Point Complex NHL (SIHP # -04140) (see Figure 67). Looking north, possible modifications associated with SIHP # -05259 are visible along the left side of the frame (Figure 80). Looking east, no known archaeological features or any obvious new archaeological features are visible (Figure 81). Looking south, possible modifications associated with SIHP # -05257 may be visible along the coast (Figure 82). Looking west, no known archaeological features or any obvious new archaeological features are visible (Figure 83).

#### 5.4.5 Photo Point 5

Photo Point 5 is located along the proposed Green Sand Beach Pedestrian Path in an area of no previously recorded archaeological features (see Figure 67). This point was selected because it was found to contain archaeological features adjacent to but not within the project area. Looking north, walls and rock mounds are visible (Figure 84). Looking east, rock mounds are visible (Figure 85). Looking south, no obvious new archaeological features are visible (Figure 86). Looking west, a historic ranching wall (SIHP # -30727; see Section 6.2) is visible in the distance (Figure 87).

#### 5.4.6 Photo Point 6

Photo Point 6 is located along the proposed Green Sand Beach Pedestrian Path in an area of no previously recorded archaeological features (see Figure 67). This point was selected because it was found to contain archaeological features adjacent to but not within the project area. Looking north, enclosures, walls, and rock mounds are visible (Figure 88). Looking east, rock mounds are visible (Figure 89). Looking south, a complex of C-shapes is visible (Figure 90). Looking west, no obvious new archaeological features are visible (Figure 91).

#### 5.4.7 Photo Point 7

Photo Point 7 is located along the proposed Green Sand Beach Pedestrian Path in an area of no previously recorded archaeological features (see Figure 67). This point was selected because it was found to contain archaeological features adjacent to but not within the project area. Looking north, no obvious new archaeological features are visible (Figure 92). Looking east, no obvious new archaeological features are visible (Figure 93). Looking south, a complex of C-shapes is visible (Figure 94). Looking west, no obvious new archaeological features are visible (Figure 95).

#### 5.4.8 Photo Point 8

Photo Point 8 is located along the proposed Green Sand Beach Pedestrian Path in an area of no previously recorded archaeological features (see Figure 67). This point was selected because it was found to contain archaeological features adjacent to but not within the project area. Looking north, no obvious new archaeological features are visible (Figure 96). Looking east, a rock mound is visible on an outcrop (Figure 97). Looking south, a C-shape is visible (Figure 98). Looking west, no obvious new archaeological features are visible (Figure 99).



Figure 80. Photo Point 4 looking north



Figure 81. Photo Point 4 looking east





Figure 82. Photo Point 4 looking south



Figure 83. Photo Point 4 looking west





Figure 84. Photo Point 5 looking north



Figure 85. Photo Point 5 looking east





Figure 86. Photo Point 5 looking south



Figure 87. Photo Point 5 looking west





Figure 88. Photo Point 6 looking north



Figure 89. Photo Point 6 looking east





Figure 90. Photo Point 6 looking south



Figure 91. Photo Point 6 looking west





Figure 92. Photo Point 7 looking north



Figure 93. Photo Point 7 looking east





Figure 94. Photo Point 7 looking south



Figure 95. Photo Point 7 looking west



Figure 96. Photo Point 8 looking north



Figure 97. Photo Point 8 looking east





Figure 98. Photo Point 8 looking south



Figure 99. Photo Point 8 looking west

### 5.4.9 Photo Point 9

Photo Point 9 is located along the proposed Green Sand Beach Pedestrian Path approaching Mahana Bay, just west of SIHP # -05324 (habitation complex; see Section 4.3.1.8) and within the boundaries of the Mahana Archaeological District (SIHP # -04140) (see Figure 67). Looking north, a possibly modified outcrop with a modern rock mound are visible (Figure 100). Looking east, features of SIHP # -05324 are visible, including enclosures and walls (Figure 101). Looking south, possible features of SIHP # -05324 are visible, including two enclosures (Figure 102). Looking west, small rock mounds are visible (Figure 103).

### 5.4.10 Photo Point 10

Photo Point 10 is located along the proposed Green Sand Beach Pedestrian Path *mauka* of SIHP # -05324 (habitation complex; see Section 4.3.1.8) and within the boundaries of the Mahana Archaeological District (SIHP # -04140) (see Figure 67). Looking north, possibly modified outcrops are visible (Figure 104). Looking east, indicated SIHP # -05324 Feature A (enclosure) is visible to the right (Figure 105). Looking south, indicated SIHP # -05324 Features B through H (enclosures, walls, and terraces) are visible (Figure 106). Looking west, no clear features associated with SIHP # -05324 or obvious new archaeological features are visible (Figure 107).





Figure 100. Photo Point 9 looking north



Figure 101. Photo Point 9 looking east



Figure 102. Photo Point 9 looking south



Figure 103. Photo Point 9 looking west





Figure 104. Photo Point 10 looking north



Figure 105. Photo Point 10 looking east



Figure 106. Photo Point 10 looking south



Figure 107. Photo Point 10 looking west



## Section 6 Historic Property Descriptions

This section provides site descriptions for the five newly identified historic properties within or bounding the current project area. These historic properties are summarized in Table 7 and depicted on Figure 28 through Figure 36 in Section 5.1. The historic properties previously identified along the proposed corridors—particularly those along the Green Sand Beach Pedestrian Path—are not described in this section because they were not subjected to AIS-level recordation. See Section 4.3 for descriptions of these sites from previous studies, and Section 5.4 for photo documentation of these previously recorded site areas undertaken during this AIS.

### 6.1 SIHP # 50-10-76-30726

<b>FORMAL TYPE:</b>	Enclosure
<b>FUNCTION:</b>	Ranch boundary
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Historic
<b>TEST EXCAVATIONS:</b>	None
<b>TAX MAP KEY:</b>	[3] 9-3-001:002, 003
<b>LAND JURISDICTION:</b>	DHHL
<b>PREVIOUS DOCUMENTATION:</b>	Landrum (1984)

SIHP # -30726 is a large, irregularly shaped enclosure located approximately 1 km east of South Point Road and bisected by an existing unimproved Jeep road that was surveyed as part of the proposed Emergency Road corridor (see Figure 30 and Figure 108). A locked gate is present along the road where it passes through the western side of the enclosure; the roadway passage through the eastern side of the enclosure is not gated. The modern CSH 7 fence line follows the *mauka* side of the Jeep road through the enclosure. Landrum (1984) refers to this site as “the bullpen” and uses it as a landmark to describe the locations of nearby archaeological sites, but does not discuss the enclosure itself as an archaeological site (see Section 4.1.13). Landrum (1984) mapped at least two additional enclosures and a series of rock walls abutting SIHP # -30726; with the exception of an enclosure wall around site complex SIHP # -05297, these are all located well away from the current project area. The southern majority of SIHP # -30726 lies within the boundary of the South Point Complex NHL (SIHP # -04140); the northernmost portion of the site is within the boundaries of the Kīpuka Kūniau Archaeological District (SIHP # -10231).

SIHP # -30726 is situated within a prominent ‘*a‘ā* flow which slopes gently to the south, and contains in large part open grassland used for pasture. The ‘*a‘ā* flow supports predominately *koa haole*; the open pasture area is buffelgrass with scattered *kiawe* and *koa haole*. At the time of survey, cattle were observed within the portion of the enclosure *mauka* of the road.

SIHP # -30726 is defined by a dry-stacked stone wall. The wall is constructed using locally procured ‘*a‘ā* cobbles and boulders, with a core fill of smaller local stone material. Its width

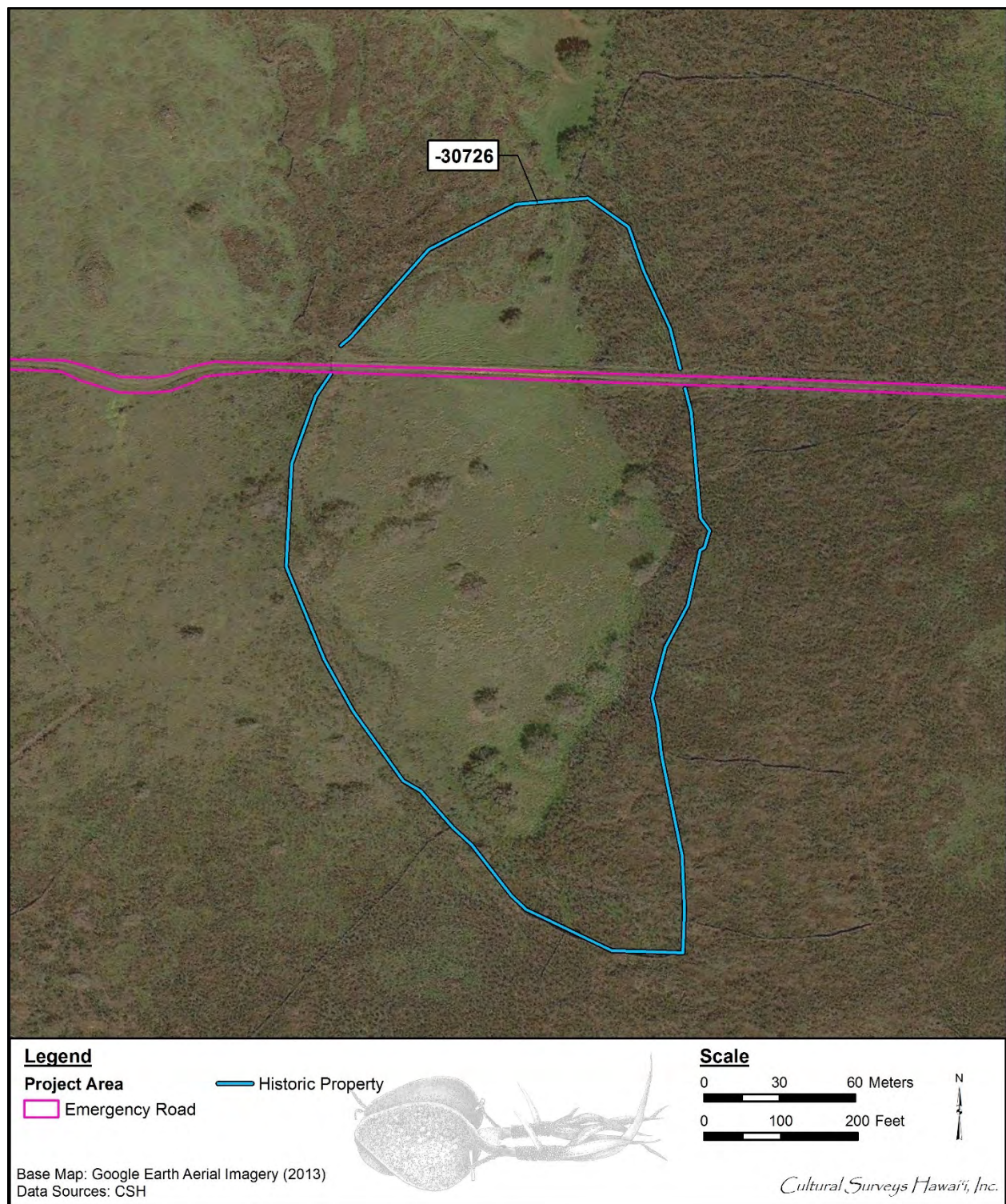


Figure 108. Aerial photograph showing SIHP # -30726 along the proposed Emergency Road (Google Earth Imagery 2009)



tapers upward from 90 cm at the base to 60 cm at the top. The height of the wall on average is 1.0 m (Figure 109). Overall, the wall is 745 m (2,444 ft) long, enclosing an area measuring approximately 300 m long (north/south) by 160 m wide (east/west) and ranging in elevation from 36–50 m (118–164 ft) amsl. Landrum (1984) documented archaeological sites within the enclosure, but none of these are in proximity to the current project area (see Figure 21). No cultural material was observed within the portions of the site immediately adjacent to the project area.

SIHP # -30726 exhibits relatively little collapse and is in generally good condition, aside from the areas breached for the roadway construction. The nature of these breaches indicates the Jeep road post-dates the enclosure. At the roadway breach locations, the enclosure wall typically exhibits signs of rough disturbance and collapse, as opposed to neatly constructed termini expected from purposeful construction around an existing passage. The disturbance is most severe on the eastern side of the enclosure, where bulldozing is evident (Figure 110). At the western breach where the gate is located (Figure 111), the *mauka* wall terminus is collapsed and scattered, and set back somewhat from the road (Figure 112). The gate abuts the CSH 7 fence line on this side of the road. On the *makai* side of the road, the gate post has been set directly adjacent to the wall terminus, which exhibits signs of truncation and crude reconstruction.

Based on the construction technique, known history of ranching in the area, and acknowledgement of the site as the “bullpen” by Landrum (1984), SIHP # -30726 is assessed as a historic-era site used as a livestock paddock. Excavation potential is fair as portions of the enclosure are in areas of deep sediment and may contain subsurface deposits associated with its historic construction and/or use; however, it is unlikely that such deposits would alter the present assessments of site age and/or function.

SIHP # -30726 is assessed as significant under Criterion d for the information it has yielded about historic ranching activity at Ka Lae.



Figure 109. Photo of SIHP # -30726 showing typical construction; view to west



Figure 110. Photo showing the eastern side of SIHP # -30726 *mauka* of the breach along the Emergency Road; Jeep road is just outside of frame to south, note the truncation of the wall to the right; view to east



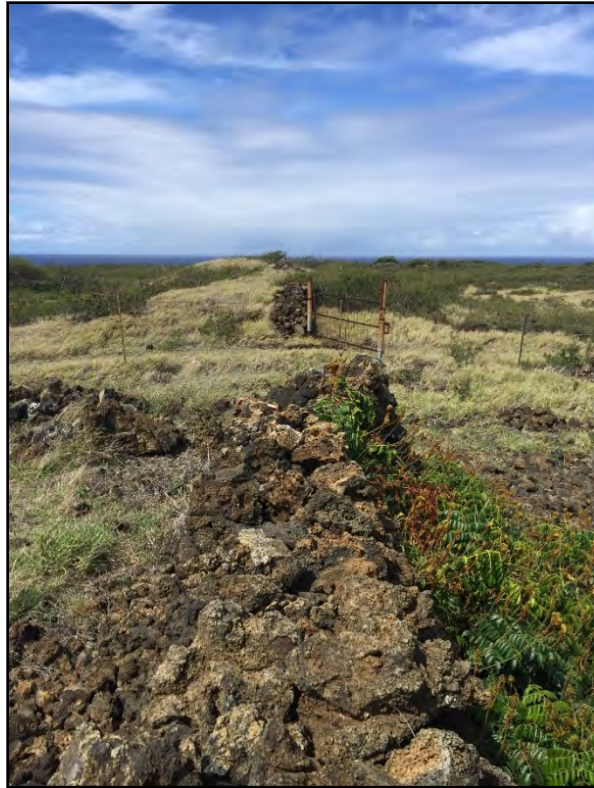


Figure 111. Photo showing the western side of SIHP # -30726 at the breach along the Emergency Road; view to south



Figure 112. Photo showing the western side of SIHP # -30726 *mauka* of the breach along the Emergency Road; view to west

## 6.2 SIHP # 50-10-76-30727

<b>FORMAL TYPE:</b>	Wall
<b>FUNCTION:</b>	Ranch boundary
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Historic
<b>TEST EXCAVATIONS:</b>	None
<b>TAX MAP KEY:</b>	[3] 9-3-001:002, 003
<b>LAND JURISDICTION:</b>	DHHL
<b>PREVIOUS DOCUMENTATION:</b>	Landrum (1984)

SIHP # -30727 is a linear rock wall crossing the central portion of the project area at both the proposed Green Sand Beach Pedestrian Path and the Emergency Road. The wall begins at Hanalua Bay and extends a considerable distance *mauka* of the project area; it is visible as a “Rock Wall” on the USGS topographic map (see Figure 28, Figure 30, and Figure 33). The wall has been breached where existing unimproved Jeep roads cross it. A locked gate is present at the Jeep road breach along the Emergency Road corridor, while the Jeep road breach along the Green Sand Beach Pedestrian Path is not gated. Landrum (1984) refers to this site as a “ranch wall” and uses it as a landmark to describe the locations of nearby archaeological sites, but does not discuss the wall itself as an archaeological site (see Section 4.1.13). The southern or *makai* portion of SIHP # -30727 lies within the boundary of the South Point Complex NHL (SIHP # -04140); the central or mid-elevation portion of the site lies along the eastern boundary of the Kīpuka Kuniau Archaeological District (SIHP # -10231).

SIHP # -30727 trends *mauka-makai* in linear sections across the gently sloping landscape, crossing both open grassland (including Kīpuka Hanalua adjacent to the coast) and ‘*a‘ā* flows (Figure 113). Vegetation in these areas along the wall includes predominately buffelgrass, *kiawe*, and *koa haole*.

SIHP # -30727 is constructed of five to eight courses of neatly dry-stacked and faced ‘*a‘ā* cobbles and boulders, with a core fill of smaller stones (Figure 114). The stone material was procured locally. The wall measures 0.90 m wide at its base, tapering to 0.60 m wide, and reaches a maximum height of approximately 1.0 m. Based on its depiction on USGS maps, the overall length of the wall (extending well outside the project area to the north) is 4.15 km (2.58 miles), with a range in elevation from 1–160 m (3–325 ft) amsl.

SIHP # -30727 exhibits relatively little collapse and is in generally good condition, aside from the areas breached for the roadway construction. The nature of these breaches indicates the Jeep roads post-date the wall. At the roadway breach locations, the enclosure wall typically exhibits signs of disturbance and collapse, as opposed to neatly constructed termini expected from purposeful construction around an existing passage. The ends of the wall abutting the gate along the Emergency Road show signs of crude reconstruction to close the gap between the original truncated wall and the installed gate posts (Figure 115 and Figure 116). Where the wall is breached along the Green Sand Beach Pedestrian Path, the wall is truncated directly adjacent to the *mauka*





Figure 113. Photo of SIHP # -30727 crossing grassland adjacent to its breach at the Green Sand Beach Pedestrian Path; view to northeast



Figure 114. Photo showing typical construction of SIHP # -30727; view to east





Figure 115. Photo of SIHP # -30727 at its gated breach along the Emergency Road; view to west



Figure 116. Photo of SIHP # -30727 at its breach along the Emergency Road, showing reconstruction at the *makai* gate interface; view to south

side of the Jeep road; *makai* of the road the wall has been razed. No cultural material was observed along the portions of the wall immediately adjacent to the project area.

Based on the construction technique, known history of ranching in the area, and acknowledgement of the site as a “ranch wall” by Landrum (1984), SIHP # -30727 is assessed as a historic-era site used as a livestock boundary. Excavation potential is fair as sections of the wall cross areas of deep sediment and may contain subsurface deposits associated with its historic construction and/or use; however, it is unlikely that such deposits would alter the present assessments of site age and/or function.

SIHP # -30727 is assessed as significant under Criterion d for the information it has yielded about historic ranching activity at Ka Lae.

### 6.3 SIHP # 50-10-76-30728

<b>FORMAL TYPE:</b>	Mound
<b>FUNCTION:</b>	Unknown
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Historic
<b>TEST EXCAVATIONS:</b>	TU-01
<b>TAX MAP KEY:</b>	[3] 9-3-001:002
<b>LAND JURISDICTION:</b>	DHHL
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # -30728 is a rock mound located approximately 1.0 m *mauka* of the existing Jeep road in the eastern portion of the Emergency Road corridor (see Figure 32). It is situated in open, rocky grassland sloping gently to the southeast. The predominant vegetation is buffelgrass. The site is in the immediate vicinity of CSH 3, a complex of features (lava tube openings with associated surface walls) located adjacent to but outside of the project area (see Figure 32). SIHP # -30728 was not included as part of the CSH 3 complex based on its difference in typology and lack of clear association with the lava tube features.

SIHP # -30728 is a low, roughly circular stone mound (Figure 117 and Figure 118). The mound is constructed of loosely piled, locally procured 'a'ā cobbles and boulders. It measures 2.5 m long (north/south) by 2.0 m wide (east/west) with a maximum height of 30 cm. SIHP # -30728 is in poor condition, exhibiting deflation and some scattering of its component material. A few pieces of coral were found near the mound along the Emergency Road, but their origin is unclear. A 1.0 m by 1.0 m test unit (TU-1) was excavated at the mound, yielding only a single conus fragment. The full TU-1 discussion is provided in Section 5.3.2.1. No other cultural materials were observed at SIHP # -30728.

The age and function of SIHP # -30728 are unknown. Testing did not yield valuable insight in this regard. The mound may be a clearing pile associated with the construction of the Emergency Road or ranching activity, but this seems somewhat unlikely given a lack of similar features in the surrounding area despite an abundance of scattered rock materials. There is no clear association with nearby CSH 3; it seems unlikely that SIHP # -30728 was a stockpile associated with CSH 3 based on the abundance of rock material in much closer proximity to the features of CSH 3.

SIHP # -30728 is assessed as significant under Criterion d for the information it has yielded about past land use at Ka Lae as evidenced by site typology and distribution.



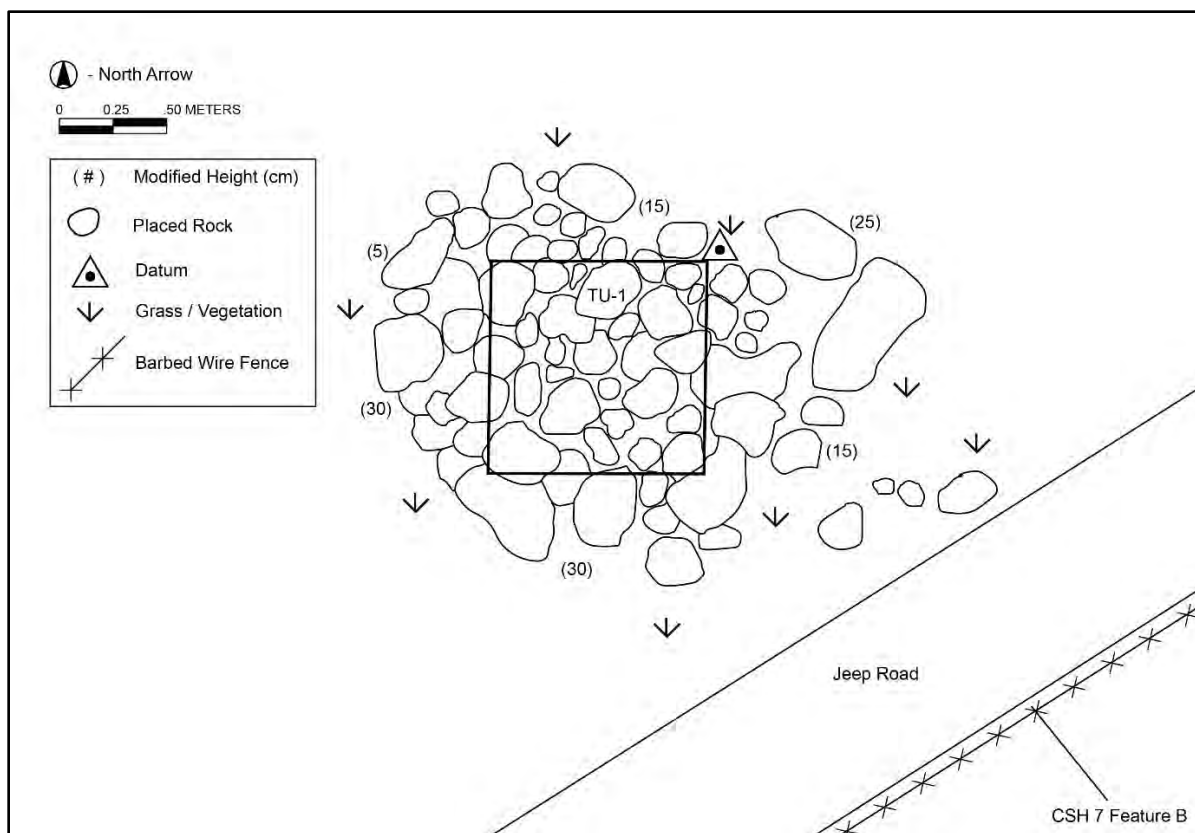


Figure 117. Plan view of SIHP # -30728



Figure 118. Photo of SIHP # -30728; view to northwest

## 6.4 SIHP # 50-10-76-30729

<b>FORMAL TYPE:</b>	Complex
<b>FUNCTION:</b>	Temporary habitation
<b>NUMBER OF FEATURES:</b>	5
<b>AGE:</b>	Pre-Contact
<b>TEST EXCAVATIONS:</b>	None
<b>TAX MAP KEY:</b>	[3] 9-3-001:002
<b>LAND JURISDICTION:</b>	DHHL
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # -30729 is a complex straddling an existing Jeep road within the central section of the Green Sand Beach Pedestrian Path corridor (see Figure 34). The site comprises five features: an enclosure (Feature A), a wall (Feature B), and three conjoined windbreaks (Feature C, Feature D, and Feature E). Feature A is located *makai* of the Jeep road, while Features B through E are constructed along the edge of an 'a 'ā outcrop *mauka* of the Jeep road (Figure 119 and Figure 120). Feature A was incorporated into the complex based on its proximity to the other features and apparent similarity in age and function. The site ranges from approximately 20–32 m back from the coast. It is situated on a sloped area of exposed Pahala Ash at the fringes of an 'a 'ā lava flow. The predominant vegetation includes buffelgrass, lantana, 'ilima, and *pa'u o Hi'iaka*.

**Feature A** is a small, rectangular enclosure situated upon an area of exposed sediment *makai* of the Jeep road (see Figure 119). The long axis of the enclosure is oriented northeast/southwest. It is constructed using approximately 60% small-to-medium-sized angular 'a 'ā boulders and 40% small-to-medium-sized waterworn basalt stones (Figure 121). The enclosure measures 3.0 m long (northeast/southwest), 2.1 m wide (northwest/southeast), and from 0.45 to 0.74 m high. It is in poor condition with badly deteriorated walls, likely resulting from high surf and/or theft of its materials for use elsewhere. Scattered fragments of coral and marine shell are present within and surrounding the enclosure. Glass fragments, shell casings, and other modern trash were also found within and around the feature, indicating modern use and impact.

**Feature B** is a wall constructed along the edge of an 'a 'ā outcrop in a *mauka-makai* direction, or generally north/south (see Figure 119 and Figure 122). The wall forms a crude shelter along the base of the outcrop. The western face of the wall is constructed of large 'a 'ā boulders stacked 2 to 3 courses high. The eastern face of the wall is constructed of generally a single course of medium 'a 'ā boulders. The northern end of the wall adjoins the interior floor of Feature C, a C-shaped enclosure. The southern end of the wall terminates at the Jeep road; it may have continued *makai* at one time but was impacted by the creation of the road. Feature B measures 2.2 m long by 0.6 m wide and up to 0.7 m high along its western face. Small fragments of marine shell and coral, as well as 'ili 'ili, are lightly scattered around the wall. Feature B is in fair condition; despite its possible truncation, the extant portion of the feature exhibits only minimal collapse. Feature B likely functioned primarily as a windbreak, though it may also have been designed to retain the 'a 'ā outcrop.

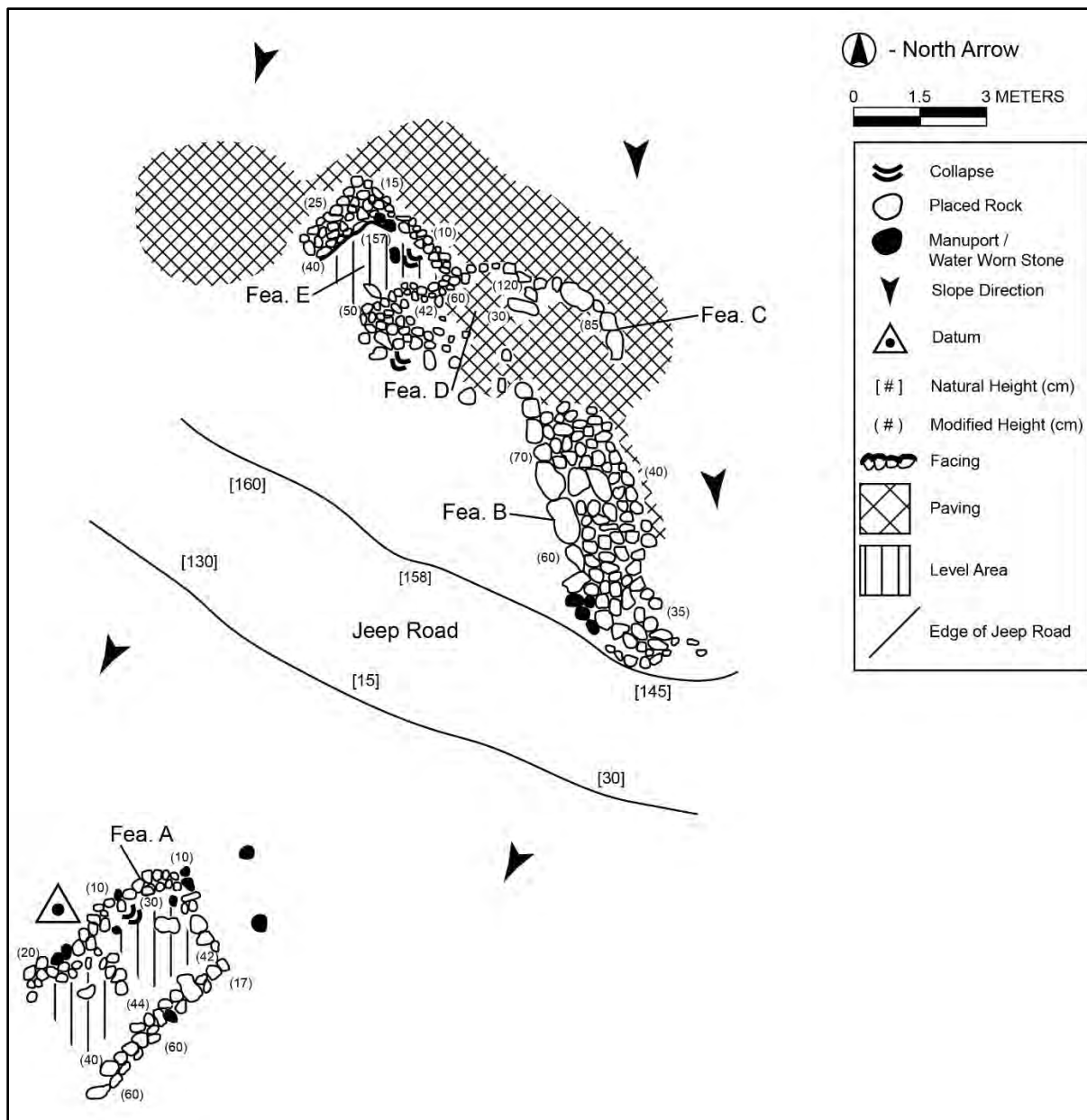


Figure 119. Plan view of SIHP # -30729





Figure 120. Photo of SIHP # -30729 Features B through E constructed along the edge of an 'a 'ā outcrop, taken from the existing Jeep road; view to east



Figure 121. Photo of SIHP # -30729 Feature A (enclosure); view to south





Figure 122. Photo of SIHP # -30729 Feature B (wall); view to southeast

**Feature C** is a C-shaped enclosure constructed along the edge of the *‘a‘ā* outcrop on which Features B, D, and E are located. Feature C is conjoined with Feature B on its southern end and Feature D on its northwestern end (see Figure 119). The C-shape outcrop consists of five large *‘a‘ā* boulders placed in a C-shape alignment to form an overhang open to the southwest, creating a windbreak (Figure 123). Feature C measures approximately 1.0 m long (north/south) by 0.5 m wide (east/west) with a maximum interior height of 0.85 m. The interior floor of the enclosure is a rough pavement of *‘a‘ā* pebbles and small cobbles intermixed with *‘ili‘ili*, overlain by an accumulation of windblown sediment. Scattered fragments of coral and marine shell are also present within the enclosure, along with scraps of modern trash. The placement of the boulders provides two small recesses useful for storage within the enclosure—one in the northeast corner and one in the southeast corner. The outcrop area behind the C-shape has been filled somewhat with smaller *‘a‘ā* materials to form a roughly level surface exhibiting compression. Feature C is in good condition with very little collapse.

**Feature D** is a U-shaped enclosure, also representing modification to the natural edge of the *‘a‘ā* outcrop. Feature D is conjoined with Features B and C on its western side and shares its eastern wall with Feature E (see Figure 119). Feature D runs generally north to south, providing shelter from the eastern winds. The U-shaped outcrop consists of small, medium, and large *‘a‘ā* boulders stacked two courses high along the outcrop edge (Figure 124). Feature D measures 1.5 m long (north/south) by 0.6 m wide (east/west), with a maximum interior height of 1.2 m. The interior floor of the enclosure is a rough pavement of *‘a‘ā* pebbles and small cobbles intermixed with *‘ili‘ili*, with a sparse accumulation of windblown sediment. Scattered fragments of coral and marine shell are also present within the enclosure. The outcrop area behind the U-shape has been filled somewhat with smaller *‘a‘ā* materials to form a roughly level surface exhibiting compression. Feature D is in good condition with very little collapse.





Figure 123. Photo of SIHP # -30729 Feature C (C-shaped enclosure); view to northeast



Figure 124. Photo of SIHP # -30729 Feature D (U-shaped enclosure); view to east

**Feature E** is the northernmost and most formally constructed feature of SIHP # -30729 located along the 'a'ā outcrop (see Figure 119). This C-shaped enclosure shares its substantial southern wall with Feature D. It is similarly oriented with Features D and C, providing shelter from the eastern winds. The C-shaped enclosure consists of up to eight courses of neatly stacked small to medium 'a'ā boulders (Figure 125). Two small waterworn basalt boulders are placed next to each other on the wall surface. A waterworn cobble is located on the interior floor of the enclosure adjacent to the rear wall with other collapsed materials. Feature E measures 2.0 m long by 1.0 m wide with a maximum interior height of 1.6 m. The interior floor is predominantly sediment with scattered coral and marine shell fragments. Mongoose bones and a single beef short rib bone were also observed on the interior floor, as well as evidence of a small, recent campfire in the southeastern corner. The outcrop area behind the C-shape has been filled somewhat with smaller 'a'ā materials to form a surface roughly level with the C-shape wall. Furthermore, another area of rough pavement abuts the northwestern enclosure wall. Feature E is in good condition with minimal collapse.

Based on its typology and construction, SIHP # -30729 is assessed a pre-Contact site used for temporary habitation. The component features provided shelter from the wind and storage. The effort expended in its construction, proximity to coast, and modern impacts including the presence of a fire pit and modern trash would indicate repeated occupation to the present day. Excavation potential is fair given the presence of sediment within and around the site; however, it is unlikely any significant cultural deposits would be encountered given a well-known history of artifact looting throughout the area and continued modern impacts. Furthermore, any cultural materials that may be uncovered by excavation have little potential to alter the present assessments of site age and/or function.

SIHP # -30729 is assessed as significant under Criterion d for the information it has yielded about pre-Contact habitation at Ka Lae.





Figure 125. Photo of SIHP # -30729 Feature E (C-shaped enclosure); view to east



## 6.5 SIHP # 50-10-76-30730

<b>FORMAL TYPE:</b>	Subsurface deposit
<b>FUNCTION:</b>	Burial
<b>NUMBER OF FEATURES:</b>	1
<b>AGE:</b>	Pre-Contact
<b>TEST EXCAVATIONS:</b>	KL-19
<b>TAX MAP KEY:</b>	[3] 9-3-001:003
<b>LAND JURISDICTION:</b>	State DHHL
<b>PREVIOUS DOCUMENTATION:</b>	None

SIHP # -30730 is a subsurface deposit consisting of a single human tooth discovered at STP # KL-19 located along the proposed Ka Lae Walking Loop (see Figure 36 and Figure 126). The site is situated in an area of open grassland approximately 50 m north of the Pu'u Ali'i sand dune (SIHP # -03605). The site boundary is presently defined as the extent of the 50-cm diameter shovel test pit in which tooth was identified. SIHP # -30730 is located within the bounds of the South Point Complex NHL (SIHP # -04140).

A single tooth was recovered in the screen during screening of sediment excavated from between 0–37 cm below surface at SIHP # -30730. The tooth is a left adult incisor of unknown sex. It was assessed to represent human remains as opposed to an extraction. Upon discovery and examination, excavation was immediately terminated and proper notifications were made. The tooth was returned to the test pit, which was carefully backfilled using the excavated and thoroughly screened sediments. No other human remains were encountered. The general site location was photographed and recorded with GPS (Figure 127).

Given its distance from Pu'u Ali'i and lack of clear association with that burial site, SIHP # -30730 has been assigned as a separate site. Based on its condition and context it is assessed as a pre-Contact burial. Further excavation around SIHP # -30730 could determine the presence or absence of any additional associated remains and clarify the extent of the burial deposit.

SIHP # -30730 is assessed as significant under Criterion d for the information it has yielded about pre-Contact land use at Ka Lae; and under Criterion e for its inherent importance to Native Hawaiians as a burial site.



Figure 126. Photo of STP # KL-19 prior to excavation; view to north



Figure 127. Photo of crew undertaking GPS documentation of SIHP # -30730; view to southwest

## Section 7 Summary and Interpretation

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At the request of TSI and on behalf of DHHL, CSH has completed this AIS for the South Point RMP project, Kamā'oa Ahupua'a, Ka'ū District, Hawai'i Island, TMKs: [3] 9-3-001:002 and 003. Fieldwork was conducted between 5 June 2017 and 11 August 2017 and required approximately 86 person-days to complete. Fieldwork consisted of 100% pedestrian inspection, an extensive subsurface testing program, documentation of new historic properties, and photo documentation of previously recorded sites along the Green Sand Beach Pedestrian Path corridor.

Four new surface historic properties were documented during the pedestrian survey. Three are located along the proposed Emergency Road corridor: SIHP # -30726, a historic ranching enclosure; SIHP # -30727, a historic ranching wall; and SIHP # -30728, a rock mound of unknown age and function. The fourth site, SIHP # -30729, is a pre-Contact temporary habitation site along the Green Sand Beach Pedestrian Path between previously documented settlements at Kaulana and Mahana bays. These results are as expected given the history of land use within the coastal and adjacent upland areas of Ka Lae indicated in the background research. Additionally, two modern sites were recorded, including a rock mound along the existing Jeep road in the Green Sand Beach Pedestrian Path corridor (CSH 6) and a series of fence lines adjacent to the Emergency Road corridor (CSH 7).

As predicted based on the background research, a number of previously documented historic properties associated with pre-Contact habitation and historic military occupation were encountered adjacent to but outside of the project area corridors. Remnants of Morse Field are present along South Point Road. Kapalaoa Village (SIHP # -03911) and other pre-Contact habitation sites as well as military training sites are located along the Green Sand Beach Pedestrian Path. In consultation with SHPD, the sites along the Green Sand Beach Pedestrian Path to Mahana Bay were photo documented, along with a handful of archaeological features that have not been previously documented (i.e., those observed from Photo Points 5-8).

The AIS also involved excavation of two test units: TU-1 at SIHP # -30728 and TU-1 at CSH-6. The purpose of this testing was to clarify site age and function. Aside from a single conus shell fragment at TU-1, no cultural materials were encountered; the testing did not provide further useful information about either site.

An extensive program of exploratory testing was undertaken along the proposed corridors and within the proposed parking areas. A total of 135 shovel test pits were excavated to determine the potential for the presence of subsurface cultural materials within the various portions of the project area. No significant cultural deposits or layers were encountered, aside from the documentation of a human tooth at STP # KL-19, which was assessed as a pre-Contact burial and has been assigned as SIHP # -30730. This site is located approximately 50 m *mauka* of Pu'u Ali'i along the proposed Ka Lae Walking Loop. The sediments exposed by testing consist of naturally occurring Pakini ("Pahala Ash") and Kaalualu series soils containing occasional caliche concretions and/or dark ashy strata resulting from range fire events.

In general, the low density of historic properties identified during this AIS was as expected given the placement of the proposed roads, trails, and parking areas in previously disturbed areas. The network of existing Jeep trails along which the majority of the project area is situated has experienced decades of at times intensive erosion as well as other forms of disturbance. This

impact is greatest along the coastal portions of the project area (i.e., the proposed Green Sand Beach Pedestrian Path). High winds and rising sea levels are also ongoing threats to the archaeological record at Ka Lae. The results of this AIS, which was designed to purposefully avoid sites, should not be considered representative of the overall portions of Ka Lae in which the project area is situated. The significant archaeological and cultural landscape at Ka Lae merits comprehensive inventory and analysis using modern methods and technologies. The results of such an effort would be of immense value to our understanding of the history of this unique place.



## Section 8 Significance Assessments

Historic property significance is evaluated and assessed based on the five State of Hawai'i historic property significance criteria. To be considered significant, a historic property must possess integrity of location, design, setting, materials, workmanship, feeling, and/or association and meet one or more of the following broad cultural/historic significance criteria (in accordance with HAR §13-275-6):

- a. Be associated with events that have made an important contribution to the broad patterns of our history;
- b. Be associated with the lives of persons important in our past;
- c. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;
- d. Have yielded, or is likely to yield, information important for research on prehistory or history; or
- 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 accounts—these associations being important to the group's history and cultural identity.

Five new historic properties were identified within the current project area. Table 15 lists the historic properties along with their significance/eligibility assessments and mitigation recommendations. These significance recommendations are included in this AISR for the review and concurrence of the SHPD.

All five of the newly identified historic properties are assessed as significant under Criterion d for their information content. SIHP # -30730 is also assessed as significant under Criterion e for its inherent importance to Native Hawaiians as a burial site.

### 8.1 Contributions to Historic/Archaeological Districts

Three historic/archaeological districts overlap portions of the current project area: South Point Complex NHL (SIHP # 50-10-75-04140), Mahana Archaeological District (SIHP # 50-10-76-10230), and Kīpuka Kuniau Archaeological District (SIHP # 50-10-76-10231) (see Figure 24). The historic properties newly documented during this AIS have been evaluated for their contribution to these districts as applicable, based on the indicated boundaries and themes of each district as described in Section 4.2.

Three new historic properties were documented within the boundaries of the South Point Complex NHL (SIHP # 50-10-75-04140): SIHP #s 50-10-76-30726 (historic ranch enclosure), -30727 (historic ranch wall), and -30730 (pre-Contact burial) (see Figure 30, Figure 33 and Figure 36). The stated theme of the South Point Complex NHL is “Hawaiian Site, Religion, Transport and Travel, Maritime and Native Uses of the Sea, Natural Resource Usage” (see Section 4.2.1 and Appendix B in Volume 2). Being historic-era ranching sites, SIHP #s -30726 and -30727 do not

Table 15. Archaeological cultural resource integrity, significance/eligibility, and mitigation recommendations

SIHP # (50-10-76)	Test Excavation	Formal Type/ Description	Integrity (Y=Yes; N=No)							Significance	Mitigation Recommendation
			Location	Design	Setting	Materials	Workmanship	Feeling	Association		
-30726	—	Historic ranching enclosure	Y	Y	Y	Y	Y	Y	Y	d	No further work
-30727	—	Historic ranch boundary wall	Y	Y	Y	Y	Y	Y	Y	d	No further work
-30728	TU-1	Mound of indeterminate age and function	Y	Y	Y	Y	Y	Y	Y	d	No further work
-30729	—	Pre-Contact habitation complex	Y	Y	Y	Y	Y	Y	Y	d	No further work
-30730	—	Subsurface deposit (pre-Contact burial)	Y	Y	Y	Y	Y	Y	Y	d	Preservation

fit with the theme of pre-Contact land use within the district and therefore are not evaluated as contributing significance to the district. As a pre-Contact burial site, SIHP # -30730 does follow the theme and is therefore evaluated as contributing significance to the district.

Two new historic properties were documented within the boundaries of the Kīpuka Kuniau Archaeological District (SIHP # 50-10-76-10231): SIHP #s -30726 (historic ranch enclosure) and -30727 (historic ranch wall). The theme of this district is pre-Contact agricultural land use (see Section 4.2.3 and Appendix B in Volume 2). Being historic-era ranching sites, SIHP #s -30726 and -30727 do not fit with the theme of pre-Contact land use within the district and therefore are not evaluated as contributing significance to the district.

No new historic properties were located within the boundaries of the Mahana Archaeological District (SIHP # 50-10-76-10230).

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## **Section 9 Project Effect and Mitigation Recommendations**

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### **9.1 Project Effect**

In accordance with HAR §13-275-7, the project effect recommendation is “effect, with proposed mitigation commitments.”

### **9.2 Mitigation Recommendations**

Pursuant to HAR §13-275-8, CSH recommends preservation of SIHP # -30730. The details of this preservation will be determined by NAGPRA consultations with stakeholders. No further work is recommended for SIHP #s -30726 through -30729. Sufficient information regarding the location, function, age, and construction methods of these sites has been generated by the current archaeological inventory survey investigation to mitigate any adverse effect caused by proposed development activities.

CSH recommends a program of archaeological monitoring where project-related ground disturbance is to occur in the vicinity of known archaeological sites along the three proposed routes. Monitoring locations and conditions should be delineated and detailed in an archaeological monitoring plan (AMP) prepared in accordance with HAR §13-279-4 and accepted by SHPD.



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**Draft**

**Archaeological Inventory Survey Report for the  
South Point Resources Management Plan Project,  
Kamā‘oa Ahupua‘a, Ka‘ū District, Hawai‘i Island,  
TMKs: [3] 9-3-001:002, 003**

**VOLUME 2: Appendices**

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# Appendix A Land Commission Awards in Kamā'oa Ahupua'a, Kalae 'Ili



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## Document Delivery

### Mahele Database Documents

Number: 09249

Claim Number:	<b>09249</b>		
Claimant:	<b>Kaoo</b>		
Other claimant:	Malaolao, Kuaipalahalaha		
Other name:			
Island:	<b>Hawaii</b>		
District:	<b>Kau</b>		
Ahupuaa:	<b>Kamaoa</b>		
Ili:	<b>Kalae</b>		
Apana:	<b>1</b>	Awarded:	<b>1</b>
Loi:		FR:	
Plus:		NR:	<b>630v8</b>
Mala Taro:		FT:	
Kula:		NT:	<b>480v8</b>
House lot:	<b>1</b>	RP:	
Kihapai/Pakanu:		Number of Royal Patents:	
Salt lands:		Koele/Poalima:	<b>No</b>
Wauke:		Loko:	<b>No</b>
Olona:		Lokoia:	<b>No</b>
Noni:		Fishing Rights:	<b>No</b>
Hala:		Sea/Shore/Dunes:	<b>No</b>
Sweet Potatoes:	<b>3</b>	Auwai/Ditch:	<b>No</b>
Irish Potatoes:		Other Edifice:	<b>No</b>
Bananas:		Spring/Well:	<b>No</b>
Breadfruit:		Pigpen:	<b>No</b>
Coconut:		Road/Path:	<b>No</b>
Coffee:		Burial/Graveyard:	<b>No</b>
Oranges:		Wall/Fence:	<b>No</b>
Bitter Melon/Gourd:		Stream/Muliwai/River:	<b>No</b>

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Sugar Cane:	Pali:	<b>No</b>
Tobacco:	Disease:	<b>No</b>
Koa/Kou Trees:	Claimant Died:	<b>No</b>
Other Plants:	Other Trees:	
Other Mammals: <b>No</b>	Miscellaneous:	<b>Awarded 1 apana, See 9249B for Moaloolao, 9249C for Kuaipalahalaha</b>

**No. 9249, Kaoo, Kalae, Kau, Hawaii  
N.R. 630v8**

I, Kaoo, a claimant of land at Kalae, have 3 kihapai of sweet potatoes, and also a house lot. Keahi in another claim.  
KAOO

I, Moaloolao, am a claimant of 4 kihapai of sweet potatoes.  
MALAOLAO

I, Kuaipalahalaha, am a claimant of 5 mala of sweet potatoes.  
KUAIPALAHALAH


**N.T. 480v8**

No. 9249, Kaoo

Puhi and Kaohuhu, sworn, they have seen Kaoo's one section of 3 potato kihapai at Kalae of Kamaoa, from Puhalahua in 1819, and the section No. 2 of a house lot at Kalae which has been enclosed.

The land is bounded by the konohiki's land.

[Award 9249; Kamaoa Kau; 1 ap.; 5.5 Acs; See also 9249B and 9249C]

 Number: 09249B

Claim Number:	<b>09249B</b>	
Claimant:	<b>Molaolao</b>	
Other claimant:		
Other name:	Kolaolao	
Island:	<b>Hawaii</b>	
District:	<b>Kau</b>	
Ahupuaa:	<b>Kamaoa</b>	
Ili:	<b>Kalae</b>	
Apana:	<b>1</b>	Awarded: <b>1</b>
Loi:		FR:
Plus:		NR: <b>630v8</b>

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Mala Taro:	FT:	
Kula:	NT:	<b>481v8</b>
House lot:	RP:	<b>5115</b>
Kihapai/Pakanu:	Number of Royal Patents:	<b>1</b>
Salt lands:	Koele/Poolima:	<b>No</b>
Wauke:	Loko:	<b>No</b>
Olona:	Lokoia:	<b>No</b>
Noni:	Fishing Rights:	<b>No</b>
Hala:	Sea/Shore/Dunes:	<b>No</b>
Sweet Potatoes: <b>4</b>	Auwal/Ditch:	<b>No</b>
Irish Potatoes:	Other Edifice:	<b>No</b>
Bananas:	Spring/Well:	<b>No</b>
Breadfruit:	Pigpen:	<b>No</b>
Coconut:	Road/Path:	<b>No</b>
Coffee:	Burial/Graveyard:	<b>No</b>
Oranges:	Wall/Fence:	<b>No</b>
Bitter	Stream/Muliwai/River:	<b>No</b>
Melon/Gourd:		
Sugar Cane:	Pali:	<b>No</b>
Tobacco:	Disease:	<b>No</b>
Koa/Kou Trees:	Claimant Died:	<b>No</b>
Other Plants:	Other Trees:	
Other Mammals: <b>No</b>	Miscellaneous:	<b>See 9249 for N.R. document</b>

**No. 9249B, Molaolao (Kolaolao), 12 November 1849**  
**N.T. 481v8**

Puhi and Kaohuhu, sworn, they have seen Molaolao's parcel of land of 3 potato kihapai. Puhalahua had given in 1819.

No objections. It is bounded by the land of the konohiki.

**No. 9249, Kaoo, Kalae, Kau, Hawaii**  
**N.R. 630v8**

I, Kaoo, a claimant of land at Kalae, have 3 kihapai of sweet potatoes, and also a house lot. Keahi in another claim.

KAOO


I, Molaolao, am a claimant of 4 kihapai of sweet potatoes.  
 MALAOLAO

I, Kuaipalahalaha, am a claimant of 5 mala of sweet potatoes.  
 KUAIPALAHALAH

<https://www.waiihona.com/purchase.asp>

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[Award 9249B; R.P. 5115; Kamaoa Kau; 1 ap.; 7.75 Acs; See Award 9249 for Native Register document]

 Number: 09249C

Claim Number:	<b>09249C</b>		
Claimant:	<b>Kuaipalahalaha</b>		
Other claimant:			
Other name:			
Island:	<b>Hawaii</b>		
District:	<b>Kau</b>		
Ahupuaa:	<b>Kamaoa</b>		
Ili:	<b>Kalae</b>		
Apana:	<b>1</b>	Awarded:	<b>1</b>
Loi:		FR:	
Plus:		NR:	<b>630v8</b>
Mala Taro:		FT:	
Kula:		NT:	<b>481v8</b>
House lot:		RP:	<b>7098</b>
Kihapai/Pakanu:		Number of Royal Patents:	<b>1</b>
Salt lands:		Koele/Poolima:	<b>No</b>
Wauke:		Loko:	<b>No</b>
Olona:		Lokoia:	<b>No</b>
Noni:		Fishing Rights:	<b>No</b>
Hala:		Sea/Shore/Dunes:	<b>No</b>
Sweet Potatoes:	<b>5</b>	Auwai/Ditch:	<b>No</b>
Irish Potatoes:		Other Edifice:	<b>No</b>
Bananas:		Spring/Well:	<b>No</b>
Breadfruit:		Pigpen:	<b>No</b>
Coconut:		Road/Path:	<b>No</b>
Coffee:		Burial/Graveyard:	<b>No</b>
Oranges:		Wall/Fence:	<b>No</b>
Bitter Melon/Gourd:		Stream/Muliwai/River:	<b>No</b>
Sugar Cane:		Pali:	<b>No</b>
Tobacco:		Disease:	<b>No</b>
Koa/Kou Trees:		Claimant Died:	<b>No</b>
Other Plants:		Other Trees:	
Other Mammals:	<b>No</b>	Miscellaneous:	<b>See 9249 for N.R. document</b>

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**No. 9249C, Kuaipalahalaha  
N.T. 481v8**

Puhi and Kaohuhu, sworn they have seen his section of 3 potato kihapai. Puhalahua had given him in 1819.

No objections. It is bounded by the land of the konohiki.

[Award 9249C; R.P. 7098; Kalae Kau; 1 ap.; 4 Acs; See Award 9249 for Native Register document]



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## Appendix B State and National Historic Register Nomination Forms

### South Point Complex Hawaii Register of Historic Places

HAWAII REGISTER OF HISTORIC PLACES  
CERTIFICATION OF PROPERTY

Submitted to the Historic Places Review Board, Hawaii  
Foundation for History and the Humanities on October 8, 1971

SOUTH POINT COMPLEX 10,75,4140  
(name) (number)

is hereby placed on the Hawaii Register of Historic Places and  
designated as HIGH VALUE with NATIONAL  
significance.

William K. Kikuchi  
(Archaeologist)  
William K. Kikuchi

Ralston Nagata  
(Architect)  
Ralston Nagata

Frances Jackson  
(Historian)  
Frances Jackson

Richard Paglinawan  
(Hawaiiana Specialist)  
Richard Paglinawan

Bernhard Hormann  
(Sociologist)  
Bernhard Hormann

on October 8, 1971

COVER SHEET

HAWAII REGISTER OF HISTORIC PLACES

50 - 10-75-4140 SITE NAME/TYPE South Point Complex  
 1 2 3 4 5 6 7 8 9 DISTRICT KAU  
 SITE IDENTIFICATION NUMBER AREA 3 square Kilometers  
2 1 PRE-1778 CATEGORY Single Feature ☒ Complex Place  
 10 11 12 13 14 15 16 17 18 19 20 OWNERSHIP ☒ Public Private  
 CARD NO DATE/PERIOD  
 PRESENT LAND USE(S) GRAZING KNOWN PRESSURES ON SITE NONE  
 DESTRUCTION ☒ No Known Future Danger Possible Future Danger Future Danger Certain  
Present Danger Presently Being Destroyed  
 STATUS Occupied ☒ Unoccupied CONDITION Excellent ☒ Good Fair Deteriorated  
 INTEGRITY ☒ Unaltered, Orig Loc Unaltered, Moved Altered, Orig Loc Altered, Moved  
 ACCESSIBILITY ☒ Unrestricted Restricted Inaccessible PHOTOS Yes No (Tech Temp)  
 LEGENDARY MATERIALS KNOWN Yes ☒ No WRITTEN HISTORICAL MATERIALS Yes ☒ No  
 SUSCEPTIBILITY TO INTERPRETATION ☒ Good Moderate Poor  
 IMPORTANCE AS EXAMPLE OF TYPE SITE ☒ Good Moderate Poor  
 RESEARCH POTENTIAL ☒ Good Moderate Poor  
 LOCAL ATTITUDES ABOUT SITE ☒ Valuable Moderate Value Low Value Ambivalent  
Unknown  
 BRIEF DESCRIPTION (Columns 21 - 80):  
MAJOR HABITATION AREA OF GREAT RESEARCH VALUE  
 STAFF EVALUATION ☒ High Value Valuable Reserve Marginal  
 SUGGESTED THEME(S):  
 DATE SUBMITTED TO REVIEW BOARD \_\_\_\_\_

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REVIEWER'S RECORD & EVALUATION

NAME \_\_\_\_\_ DATE REVIEWED \_\_\_\_\_  
 CATEGORY High Value Valuable Reserve Marginal  
 SIGNIFICANCE National State Local  
 RECOMMENDED DISPOSITION Nominate National Register State Register Staff Files  
 RECOMMENDED THEMES:  
 REVIEWER'S COMMENTS:

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REVIEW BOARD EVALUATION RECORD

DATE REVIEWED OCT 8, 1972 RECORDER \_\_\_\_\_  
 OFFICIAL CATEGORY ☒ High Value ☒ Valuable Reserve Marginal  
 OFFICIAL SIGNIFICANCE ☒ National State Local  
 OFFICIAL THEMES HAWAIIAN SITE, RELIGION, TRANSPORT & TRAVEL, MARITIME & NATIVE USES OF THE SEA, NATURAL RESOURCE USE  
 OFFICIAL DISPOSITION National Register Nomination ☒ State Register Staff Files  
 REVIEW BOARD COMMENTS:  
 VOTING RECORD: Clivar \_\_\_\_\_ Daws \_\_\_\_\_ Hormann \_\_\_\_\_ Jackson \_\_\_\_\_  
 Kikuchi \_\_\_\_\_ Lind \_\_\_\_\_ Nagata \_\_\_\_\_ Paglinawan \_\_\_\_\_  
 Roche \_\_\_\_\_ Tuggle \_\_\_\_\_  
NATIONAL LANDMARK STATUS DEC 1 1972

 DEPARTMENT OF LAND AND NATURAL RESOURCES STATE PARKS DIVISION		HAWAII REGISTER OF HISTORIC PLACES ARCHAEOLOGICAL FORMS	
<b>FORM 01: FIELD SURVEY</b>			
<div style="border: 1px solid black; padding: 5px; display: inline-block;">           12 4 CORNER         </div>		<div style="border: 1px solid black; padding: 5px; display: inline-block;">           2 13 14 15 16 17 18 N. / 19 20 21 22 23 E.            SINGLE POINT COORDINATE LOCATION         </div>	
15 24 25 DISTRICT	26 LOC	1 27 FACTOR	3 28 29 30 AREA SQUARE
		3 31 CATEGORY	01 32 33 SIG 1
			21 34 35 SIG 2
2 36 DESTR	199 37 38 39 LAND CLASS	40 PHOTOS	TSN 41 42 43 INITIALS
			01 44 45 INSTITUTION
			01 46 47 MONTH
			73 48 49 YEAR
HISTORICAL OR COMMON NAME: <u>SOUTH PT COMPLEX</u> 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67			
<div style="border: 1px solid black; padding: 5px; display: inline-block;">           521 68 69 70 71 72 73 74 75 76 77            FEATURE CLASSIFICATION CODE         </div>		<div style="border: 1px solid black; padding: 5px; display: inline-block;">           2 78            COND         </div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">           1 79            INTG         </div>
		<div style="border: 1px solid black; padding: 5px; display: inline-block;">           1 80            PERIOD         </div>	
<b>FORM 11: FOUR CORNER LOCATION</b>			
NW CORNER:	12 13	2 14 15 16 17 18 19 N. / 20 21 22 23 24 E.	
NE CORNER:	25 26	2 27 28 29 30 31 32 N. / 33 34 35 36 37 E.	
SE CORNER:	38 39	2 40 41 42 43 44 45 N. / 46 47 48 49 50 E.	
SW CORNER:	51 52 QUAD	2 53 54 55 56 57 58 N. / 59 60 61 62 63 E.	
		NORTH GRID COORDINATE	EAST GRID COORDINATE
<div style="border: 1px solid black; padding: 5px; display: inline-block; transform: rotate(-90deg); transform-origin: right top;">           50-10-75-11-10            3 4 5 6            ISLAND QUAD TIER 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50         </div>			



## FORM 31: PROPERTY OWNERSHIP

50 - 10 - 75 - 4140  
           3 4           5 6           7 8 9 10 11  
           ISLAND       QUAD       IDENTIFICATION NO.

21 15 2 1 2 1                       
 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
 USE 1   USE 2   STAT   OWNR   ATTD   ACCS   zone sect   plat   parcel  
   T A X   M A P   K E Y

PROPERTY OWNER: S T A T E O F H A W A I I  
                           28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

STREET ADDRESS:                                                        
                           46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

TOWN OR CITY:                                                        
                           64 65 66 67 68 69 70 71 72 73   74 75   76 77 78 79 80  
   STATE       ZIP CODE

## FORM 41: BACKGROUND DATA

50 - 10 - 75 - 4140  
           3 4           5 6           7 8 9 10 11  
           ISLAND       QUAD       IDENTIFICATION NO.

AHUPUA'A

P U U E O  
 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

PREVIOUS SURVEYS:

N P S    L A N D M A R K    S T U D Y  
 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44

PREVIOUS SITE DESIGNATION(S):

M U L T I P L E  
 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

LAST NAME OF SURVEYOR:

S C H U M A C H E R  
 63 64 65 66 67 68 69 70 71 72 73 74

03   62   03  
       75 76   77 78   79 80  
 INSTITUTION   YEAR   FILED AT

## Select Pages from South Point Complex National Register of Historic Places Nomination Form 1962

NATIONAL PARK SERVICE			
NATIONAL SURVEY OF HISTORIC SITES AND BUILDINGS			
1. STATE Hawaii		2. THEME(S). IF ARCHEOLOGICAL SITE, WRITE "ARCH" BEFORE THEME NO. Theme XVI - Indigenous People and Cultures	
3. NAME(S) OF SITE South Point Complex		4. APPROX. ACREAGE 710 acres	
5. EXACT LOCATION (County, township, roads, etc. If difficult to find, sketch on Supplementary Sheet) Extreme Southern Point of the Island of Hawaii, Kau District			
6. NAME AND ADDRESS OF PRESENT OWNER (Also administrator if different from owner) U.S. Government, U.S. Coast Guard, and State of Hawaii			
7. IMPORTANCE AND DESCRIPTION (Describe briefly what makes site important and what remains are extant) <p>This area at the southern-most tip of the Hawaiian archipelago comprises a group of sites which forms one of the most complete and longest periods of occupations by the Hawaiian Islanders. Included in this complex are:</p> <ol style="list-style-type: none"> <li>1. Puu Alii sand dune site (HASS-50-HA-B20-1) from which the earliest recorded date of 124 A.D. for Hawaii has been obtained through the carbon 14 method of dating. This house site with fire hearth was excavated by the Bishop Museum in a sand dune along the coast a few hundred feet east of the light house.</li> <li>2. Makalei Cave Shelter, (HASS-50-HA-B20-2) was also excavated by the Bishop Museum. This large rock shelter contained material datable to 1750 A.D. The cave is situated about 1/2 mile inland from the seashore surrounded by a former military base.</li> <li>3. Kaloalea heiau is a fisherman's heiau of a small court type which has been venerated for years and is still used today by the Japanese fishermen. A stone resembling a humanoid face which is the fish god is situated just outside the heiau.</li> <li>4. This area has been used for hundreds of years by fishermen as attested by the hundreds of mooring holes pierced in the lava ledge overlooking the sea. Each hole belongs or belonged to an individual family. The sea currents meet at South Cape and the turbulence brings schools of fishes, making it excellent but dangerous fishing. These mooring holes were used to attach the native canoes to while fishing in this cross current.</li> <li>5. Numerous carved and natural salt pans attest to the extensive task of salt manufacturing which occurred here in times past.</li> <li>6. The Pohakuokeau Stone, or "stone of the times" or "stone of the reign" is also in this area. A huge natural boulder, it is supposed to turn over when the reigns change.</li> </ol> <p>Within the near vicinity are many additional early settlement sites which are important in Polynesian archeology.</p>			
8. BIBLIOGRAPHICAL REFERENCES (Give best sources: give location of manuscripts and rare works) Dorothy Barrere, <u>Hawaiian Aboriginal Culture</u> , Bishop Museum, 1961, 9			
9. REPORTS AND STUDIES (Attention best reports and studies, as, NPS study, HABS, etc.) Hawaii Archeological Site Survey-50-HA-B20-1,2			
10. PHOTOGRAPHS-2020-31 ATTACHED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	11. CONDITION Good	12. PRESENT USE (Museum, farm, etc.) Lighthouse & Grazing Land	13. DATE OF VISIT April 1962
14. NAME OF RECORDER (Signature) J.F. Schumacher	15. TITLE Regional Archeologist	16. DATE June 27, 1962	
<small>*ERY MOUNT ON AN 8 X 10 SHEET OF PHOTOGRAPHIC PAPER. IDENTIFY BY VIEW AND NAME OF THE SITE, DATE OF PHOTOGRAPH, AND NAME OF PHOTOGRAPHER. GIVE LOCATION OF NEGATIVE. IF ATTACHED, ENCLOSE IN PROPER NEGATIVE ENVELOPES. (IF ADDITIONAL SPACE IS NEEDED USE SUPPLEMENTARY SHEET, 10-317a, AND REFER TO ITEM NUMBER)</small>			

Hawaii

## Theme XVI - Indigenous People and Cultures

South Point Complex

710 acres

point of the Island of Hawaii, in the Kau District

South Cape, the extreme southern

U. S. Government (U.S. Coast Guard) and the State of Hawaii

Significance

This area contains a group of sites that document the longest and most complete record of human occupation in the Hawaiian Islands. Included in this complex are the following sites:

1. Puu Alii Sand Dune Site (HMS-90-HA-820-1). From this site the earliest recorded date of 124 A.D. for the State of Hawaii has been obtained through the carbon 14 method of dating. The house site with a fire hearth was excavated in the 1950's by the Bishop Museum. The site is located in a sand dune a few hundred feet east of the Coast Guard light house. This area was once a large fisherman's habitation and workshop that was later covered by a sand dune and subsequently used as a burial ground. The site is located on the coast approximately a quarter of a mile east of the lighthouse at South Point.

2. Makalae Cave Shelter (HMS-90-HA-820-2). This site, located about three-quarters of a mile inland from the Puu Alii Sand Dune site, is a great depression in the ground with two large lava tubes extending from it at either end. The tube on the north, which was used as a habitation site, has stone terracing at both sides of the entrance and on the main floor. This large rock shelter was also excavated by the Bishop Museum and contained material dating back to 1750 A.D. The site is surrounded by a former military base.

3. Makalae heiau, adjacent to the lighthouse, is a fishermen's heiau of the small court-type which has been venerated for years and is still used by fishermen today. A stone resembling a humanoid face, that served as the fish god, is situated just outside of the heiau.

and Yoshiko H. Sinoto, Hawaiian Archaeology: Fieldnotes, Bernice P. Bishop Museum Special Publication 47, Honolulu, 1959, 6-7; Bernice P. Bishop Museum, Hawaii - A Guide to All the Islands (Honolulu, Calif., 1961), 46.

Dorothy B. Porter, "Hawaiian Aboriginal Culture" (Bishop Museum, 1961, a NFB type-script), 9

photos 2828, 2830, 2822, 2823, 2820

x

Good

Lighthouse &amp; Grazing Land

April 1962

Paul J. F. Schmeckler

Regional Archaeologist

July 17, 1962

Hawaii

South Point Complex

7. Importance and Description (continued)

4. Mooring Holes. Attesting to the fact that the area has been used for hundreds of years by fishermen are the many mooring holes that have been pierced in the lava ledge overlooking the sea. These holes belonged to individual families and were used to attach their canoes while fishing in the powerful cross currents. The sea currents meet at South Cape and the turbulence brings schools of fishes, making an excellent but dangerous fishing ground.

5. Salt Pans. Numerous carved and natural salt pans indicate the extensive scale of salt manufacturing that occurred at South Point in times past.

6. The Peheluckanu Stone ("stone of the times" or "stone of the region") is also situated in this area. Legend states that this huge natural boulder turns over each time a reign changes in Hawaii.



## Select Pages from South Point Complex National Register of Historic Places Nomination Form 1970

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY - NOMINATION FORM

(Type all entries - complete applicable sections)

COUNTY: Hawaii

FOR NPS USE ONLY

ENTRY NUMBER: \_\_\_\_\_ DATE: \_\_\_\_\_

**1. NAME**

COMMON: South Point Complex

AND/OR HISTORIC: \_\_\_\_\_

**2. LOCATION**

STREET AND NUMBER: Extreme Southern Point of the Island of Hawaii

CITY OR TOWN: 18 miles (via road) southwest of Nanalehu, Hawaii

STATE: Hawaii CODE: \_\_\_\_\_ COUNTRY: Hawaii (Kau District) CODE: \_\_\_\_\_

**3. CLASSIFICATION**

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input checked="" type="checkbox"/> District <input type="checkbox"/> Site <input type="checkbox"/> Object	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Both	Public Acquisition: <input type="checkbox"/> In Process <input type="checkbox"/> Being Considered	<input type="checkbox"/> Occupied <input checked="" type="checkbox"/> Unoccupied <input type="checkbox"/> Preservation work in progress
PRESENT USE (Check One or More as Appropriate)			Yes: <input type="checkbox"/> Restricted <input checked="" type="checkbox"/> Unrestricted <input type="checkbox"/> No
<input checked="" type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input checked="" type="checkbox"/> Government <input type="checkbox"/> Industrial <input type="checkbox"/> Military <input type="checkbox"/> Museum	<input type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other (Specify) <u>"Proposed"</u> <u>State Park</u>
			<input checked="" type="checkbox"/> Comments <u>Lighthouse</u> <u>and Grazing</u> <u>Land</u>

**4. OWNER OF PROPERTY**

OWNER'S NAME: U. S. Coast Guard 14th District Other Owner: State

STREET AND NUMBER: 1347 Kapiolani Blvd. of Hawaii (Hawaiian Homes)

CITY OR TOWN: Honolulu STATE: Hawaii CODE: 96814

**5. LOCATION OF LEGAL DESCRIPTION**

COURTHOUSE, REGISTRY OF DEEDS, ETC.: Rent Property Division, Hawaii State Tax Office

STREET AND NUMBER: 75 Aupuni Street

CITY OR TOWN: Hilo STATE: Hawaii CODE: 96720

**6. REPRESENTATION IN EXISTING SURVEYS**

TITLE OF SURVEY: National Survey of Historic Sites and Buildings, NPS, Washington, D.C. 1962

DATE OF SURVEY: \_\_\_\_\_ ☐ Federal ☐ State ☐ County ☒ Local

OPPOSITOR FOR SURVEY RECORDS: Bernice P. Bishop Museum

STREET AND NUMBER: 1355 Kapihi Street

CITY OR TOWN: Honolulu STATE: Hawaii CODE: 96810

SEE INSTRUCTIONS

FOR NPS USE ONLY

ENTRY NUMBER: \_\_\_\_\_ DATE: \_\_\_\_\_

V. DESCRIPTION	
CONDITION	(Check One)
	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Deteriorated <input type="checkbox"/> Ruins <input type="checkbox"/> Unexposed (Check One)
	<input type="checkbox"/> Altered <input checked="" type="checkbox"/> Unaltered <input type="checkbox"/> Moved <input checked="" type="checkbox"/> Original Site (Check One)
DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE	
<p>The South Point Complex area is an open, windswept land covered with grass and used as a grazing area for cattle. At the extreme tip of the land is the light house operated by the U.S. Coast Guard. The coastline along the western shore consists of an extremely rugged cliff with a sheer drop of 30-50 feet to the water. The remains of a former military base used during World War II are located a short distance inland. The area is generally accessible via secondary road and a jeep trail follows the southern shore line.</p> <p>The complex includes the following:</p> <ol style="list-style-type: none"> <li>1. <u>Puu Alii sand dune site</u> (HASS-50-HA-B20-1) from which the earliest recorded date of 174 A.D. for Hawaii has been obtained through the carbon 14 method of dating. This house site with fire hearth was excavated by the Bishop Museum in a sand dune along the coast a few hundred feet east of the light house.</li> <li>2. <u>Makalae Cave Shelter</u>, (HASS-50-HA-B20-2) was also excavated by the Bishop Museum. This large rock shelter contained material datable to 1750 A.D. The cave is situated about ½ mile inland from the seashore surrounded by a former military base.</li> <li>3. <u>Kalalea heiau</u> is a fisherman's heiau of a small court type which has been venerated for years and is still used today by the Japanese fishermen. A stone resembling a humanoid face which is the fish god is situated just outside the heiau.</li> <li>4. This area has been used for hundreds of years by fishermen as attested by the hundreds of <u>mooring holes</u> pierced in the lava ledge overlooking the sea. Each hole belongs or belonged to an individual family. The sea currents meet at South Cape and the turbulence brings schools of fishes, making it excellent but dangerous fishing. These mooring holes were used to attach the native canoes to while fishing in this cross current.</li> <li>5. Numerous carved and natural <u>salt pans</u> attest to the extensive task of salt manufacturing which occurred here in times past.</li> <li>6. The <u>Pohakuokeau Stone</u>, or "stone of the times" or "stone of the region" is also in this area. A huge natural boulder, it is supposed to turn over when the reigns change.</li> </ol> <p>Within the near vicinity are many additional early settlement sites which are important in Polynesian archeology.</p> <p>The plaque is in the State Parks office in Honolulu.</p>	

SEE INSTRUCTIONS

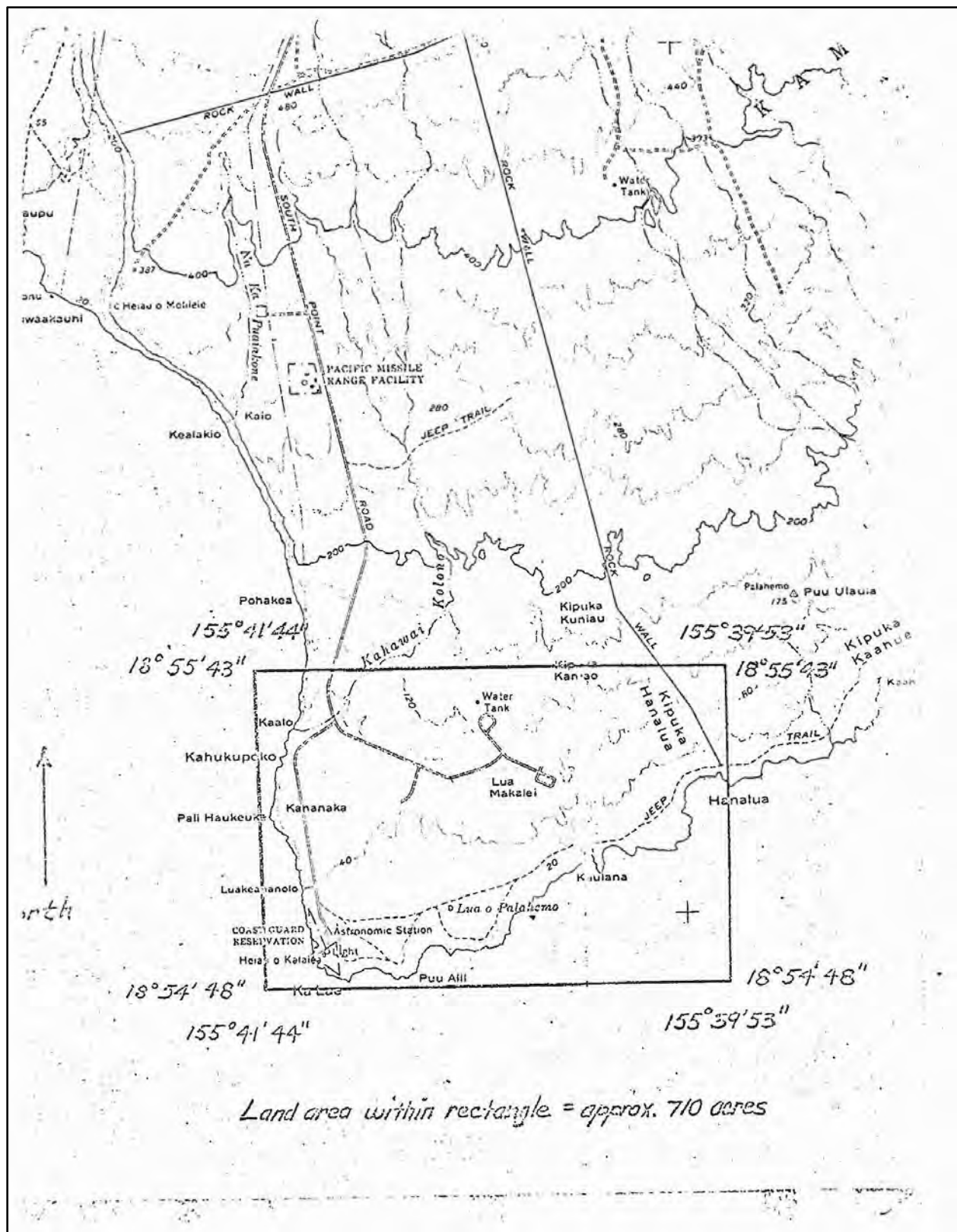
J. SIGNIFICANCE			
PERIOD (Check One or More as Appropriate)			
<input checked="" type="checkbox"/> Pre-Columbian	<input checked="" type="checkbox"/> 16th Century	<input checked="" type="checkbox"/> 18th Century	<input checked="" type="checkbox"/> 20th Century
<input checked="" type="checkbox"/> 15th Century	<input checked="" type="checkbox"/> 17th Century	<input checked="" type="checkbox"/> 19th Century	
SPECIFIC DATE(S) (If Applicable and Known)			
AREAS OF SIGNIFICANCE (Check One or More as Appropriate)			
Aboriginal	<input type="checkbox"/> Education	<input type="checkbox"/> Political	<input type="checkbox"/> Urban Planning
<input checked="" type="checkbox"/> Prehistoric	<input type="checkbox"/> Engineering	<input type="checkbox"/> Religion/Philosophy	<input type="checkbox"/> Other (Specify)
<input checked="" type="checkbox"/> Historic	<input type="checkbox"/> Industry	<input type="checkbox"/> Science	
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Invention	<input type="checkbox"/> Sculpture	
<input type="checkbox"/> Architecture	<input type="checkbox"/> Landscape	<input type="checkbox"/> Social/Humanitarian	
<input type="checkbox"/> Art	<input type="checkbox"/> Architecture	<input type="checkbox"/> Theater	
<input type="checkbox"/> Commerce	<input type="checkbox"/> Literature	<input type="checkbox"/> Transportation	
<input type="checkbox"/> Communications	<input type="checkbox"/> Military		
<input type="checkbox"/> Conservation	<input type="checkbox"/> Music		
STATEMENT OF SIGNIFICANCE			
<p>The South Point Complex is a group of sites which provides the longest and most complete record of human occupation in the Hawaiian Islands. The Puu Alii Sand Dune Site which has given the earliest recorded date (124 A.D.) for the State of Hawaii, was a fisherman's habitation later covered by sand and used as a burial ground. The Makalei Cave Shelter contained material datable to 1750 A.D. and the Kalalea Heiau is a fisherman's heiau (temple) of the small court type. Other sites include mooring holes for attaching native canoes, numerous carved and natural salt pans, and the Pohakuokena Stone which allegedly turns over each time a reign changes in Hawaii.</p>			

SEE INSTRUCTIONS

9. BIBLIOGRAPHICAL REFERENCES			
Dorothy Bortez, <u>Hawaiian Aboriginal Culture</u> , Bishop Museum 1961, 9 Emory, Bonk, Sinoto, <u>Hawaiian Archeology: Fishhooks</u> , Bishop Museum Special Publication 47, Honolulu, 1959, 6-7 Sunset Discovery Book, Hawaii - A Guide to All the Islands, Menlo Park, Calif. 1961, 46			
10. GEOGRAPHICAL DATA			
LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY			
CORNER	LATITUDE Degrees Minutes Seconds	LONGITUDE Degrees Minutes Seconds	O R
NW	18° 55' 43"	155° 41' 44"	
NE	18° 55' 43"	155° 39' 53"	
SE	18° 54' 45"	155° 39' 53"	
SW	18° 54' 43"	155° 41' 44"	
LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES			
LATITUDE Degrees Minutes Seconds		LONGITUDE Degrees Minutes Seconds	
APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 710 Acres			
LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES			
STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
11. FORM PREPARED BY			
NAME AND TITLE: Arthur F. Hewitt, Jr., Chief Ranger			
ORGANIZATION: National Park Service			
STREET AND NUMBER: Hawaii Volcanoes National Park			DATE: May 6, 1970
CITY OR TOWN:			STATE: Hawaii 96718
CODE:			
12. STATE LIAISON OFFICER CERTIFICATION			
As the designated State Liaison Officer for the Na- tional Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is: National <input type="checkbox"/> State <input type="checkbox"/> Local <input type="checkbox"/>		I hereby certify that this property is included in the National Register.  _____ Chief, Office of Archeology and Historic Preservation	
Name _____		Date _____	
Title _____		ATTEST:	
Date _____		Accepted at The National Register	
Date _____		Date _____	

SEE INSTRUCTIONS





# Select Pages from Kīpuka Kuniau Archaeological District National Register of Historic Places Nomination Form

OMB NO. 1024-0018  
EXP. 10/31/84

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Inventory—Nomination Form**

See instructions in How to Complete National Register Forms  
Type all entries—complete applicable sections

**1. Name** Kapalapa Village Passed

historic KIPUKA KUNIAU ARCHAEOLOGICAL DISTRICT (SITE 50-Ha-10231)

and/or common \_\_\_\_\_

**2. Location**

street & number KIPUKA KUNIAU, SOUTH POINT \_\_\_\_\_ not for publication

city, town KA'U \_\_\_\_\_ vicinity of congressional district

state HAWAII code 15 county HAWAII code 01

**3. Classification**

<input checked="" type="checkbox"/> Category <input type="checkbox"/> district <input type="checkbox"/> building(s) <input type="checkbox"/> structure <input type="checkbox"/> site <input type="checkbox"/> object	<input checked="" type="checkbox"/> Ownership <input type="checkbox"/> public <input type="checkbox"/> private <input type="checkbox"/> both <b>Public Acquisition</b> <input type="checkbox"/> in process <input type="checkbox"/> being considered <u>N/A</u>	<b>Status</b> <input type="checkbox"/> occupied <input checked="" type="checkbox"/> unoccupied <input type="checkbox"/> work in progress <b>Accessible</b> <input checked="" type="checkbox"/> yes: restricted <input type="checkbox"/> yes: unrestricted <input type="checkbox"/> no	<b>Present Use</b> <input checked="" type="checkbox"/> agriculture <input type="checkbox"/> commercial <input type="checkbox"/> educational <input type="checkbox"/> entertainment <input type="checkbox"/> government <input type="checkbox"/> industrial <input type="checkbox"/> military	<input type="checkbox"/> museum <input type="checkbox"/> park <input type="checkbox"/> private residence <input type="checkbox"/> religious <input type="checkbox"/> scientific <input type="checkbox"/> transportation <input type="checkbox"/> other:
---	--	--	---	---

**4. Owner of Property**

name DEPARTMENT OF HAWAIIAN HOMELANDS

street & number POST OFFICE BOX 1879

city, town HONOLULU \_\_\_\_\_ vicinity of \_\_\_\_\_ state HI 96805

**5. Location of Legal Description**

courthouse, registry of deeds, etc. BUREAU OF CONVEYANCES

street & number 1151 PUNCHBOWL

city, town HONOLULU \_\_\_\_\_ state HI 96813

**6. Representation in Existing Surveys**

HAWAII INVENTORY OF HISTORIC PLACES  
title SITE 50-10-76-10231 has this property been determined eligible? \_\_\_\_\_ yes ☒ no

date 1985 \_\_\_\_\_ federal ☒ state \_\_\_\_\_ county \_\_\_\_\_ local

depository for survey records DEPARTMENT OF LAND AND NATURAL RESOURCES

city, town HONOLULU \_\_\_\_\_ state HAWAII

## 7. Description

<b>Condition</b>		<b>Check one</b>	<b>Check one</b>
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input checked="" type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input type="checkbox"/> good	<input checked="" type="checkbox"/> ruins	<input type="checkbox"/> altered	<input type="checkbox"/> moved
<input type="checkbox"/> fair	<input checked="" type="checkbox"/> unexposed		date <u>N/A</u>

### Describe the present and original (if known) physical appearance

The Kipuka Kuniiau District contains 24 archaeological sites located on an a'a lava flow in the South Point area of the Island of Hawaii. 138 distinct features have been recorded in the district, including numerous rock walls, enclosures, terraces, mounds, and cairns. The remains are probably associated with agricultural use of the adjacent, soil-filled swale, and the coastal fishing sites at South Point. The sites are moderately well preserved, although the area is used as a range land for cattle.

Context. Sites in the Kipuka Kuniiau Archaeological District were located during a reconnaissance survey undertaken for the Hawaii Historic Preservation Office by the department of anthropology, Bernice Pauahi Bishop Museum. The survey was funded by the Historic Preservation Grants-In-Aid program established by the National Historic Preservation Act of 1966. Field investigations were conducted during the period 15 April through 15 May 1984. Three transects were surveyed within the Kama'oa-Pu'u'e'o Ahupua'a, Kau district, Hawai'i Island. The Kipuka Kuniiau Archaeological District is within the first of the transects above Kaulana Bay, and is adjacent to the South Point Complex National Historic Landmark. The sites within the proposed district are an extension of the site complex presently within the Landmark boundary.

The findings of the survey established a data base that will allow future researchers to investigate the nature and extent of Hawaiian exploitation and settlement of the areas inland of the coastal settlements, and the relationship of those areas to the coastal fringe within the South Point region. The information will aid both on-going and future research of the region and island, as well as of the entire Hawaiian archipelago.

Boundary Justification. The district boundaries are defined to include all prehistoric sites discovered during the archaeological reconnaissance of the Kaulana transect. The boundaries enclose a natural geographic area immediately adjacent to the South Point Complex National Historic Landmark.

Environment. The district is located entirely on an a'a lava flow adjacent to a Pahala ash-filled swale. The two geologic features probably account for the area's prehistoric use. The lava flow provides shelter from the consistently high winds, and provides resources for habitation construction. The swale, located in the lee of the a'a lava flow, could have been utilized on a seasonal basis for agricultural purposes.

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The district is currently used as range land for cattle ranches. Vegetation is predominantly exotic, introduced flora (koa haole, lantana, and grasses).

Archaeological Investigations. The archaeological features are located on the leeward (west) edge of the a'a flow, adjacent to the soil-filled swale. Preliminary investigations suggest the features are temporary habitation features associated with seasonal agricultural use of the swale.

No excavations have been conducted to determine the true nature and extent of the features.

All data concerning the features was collected during the surface reconnaissance (15 April to 15 May 1984). The reconnaissance was conducted to establish a data base for predictive modeling of settlement patterns in the areas immediately inland of the South Point Complex National Historic Landmark coastal settlements, and for understanding the relationship between the two areas.

There are 24 archaeological sites with 138 features located within the proposed district and 38 sites with 206 features located within the National Historic Landmark Boundary in the Kaulana transect that were found during the survey. The sites within the National Historic Landmark have not been previously recorded.

The present nomination concerns the (24) sites located in the district, which were assigned Hawaii State Historic Preservation Office Archaeological Site Numbers 50-10-76-5295 through 5318. These sites are described below:

50-10-76-5295 (BPBM 50-Ha-B20-68) - This site consists of five features and is located on an exposed pahoehoe slope within the a'a flow at the 170 ft. elevation. The area has a koa haole overgrowth that ranges from thin to thick, with some lantana:

Feature A Cave Site. An attempt was made to enter the cave, however, due to unstable, tumbling boulders, no data on the actual nature of the cave was collected. There is a natural pahoehoe slab paving outside the cave entrance. The cave location is advantageous, as it affords a good view of the surrounding terrain.

Feature B Collapsed stone cache (or cupboard) located 10.0 m. southeast of Feature A.



## 8. Significance

Period	Areas of Significance—Check and justify below			
<input checked="" type="checkbox"/> prehistoric	<input checked="" type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

Specific dates N/A

Builder/Architect N/A

### Statement of Significance (in one paragraph)

The Kipuka Kuniau Sites are representative examples of prehistoric Hawaiian sites associated with agricultural use of the inland areas of South Point. They contain data relevant to studies of temporary habitation sites and traditional settlement patterns. Data derived from these sites would be useful in comparisons with previous studies of similar sites in the Lapakahi area in North Kohala (NR) and with the adjacent coastal sites in the South Point Complex (NHL).

Study of midden deposits and dating samples would be useful in developing a chronology for the area and for comparison with the chronologies already proposed for the South Point area. The archaeological deposits should be useful in studies of traditional subsistence, technology, adaptation, evolution, ecological relationships, and environmental change.

The "South Point Complex" is the only site in the area on the National Register at the present time.

*Hawaiian early  
arrival migration*

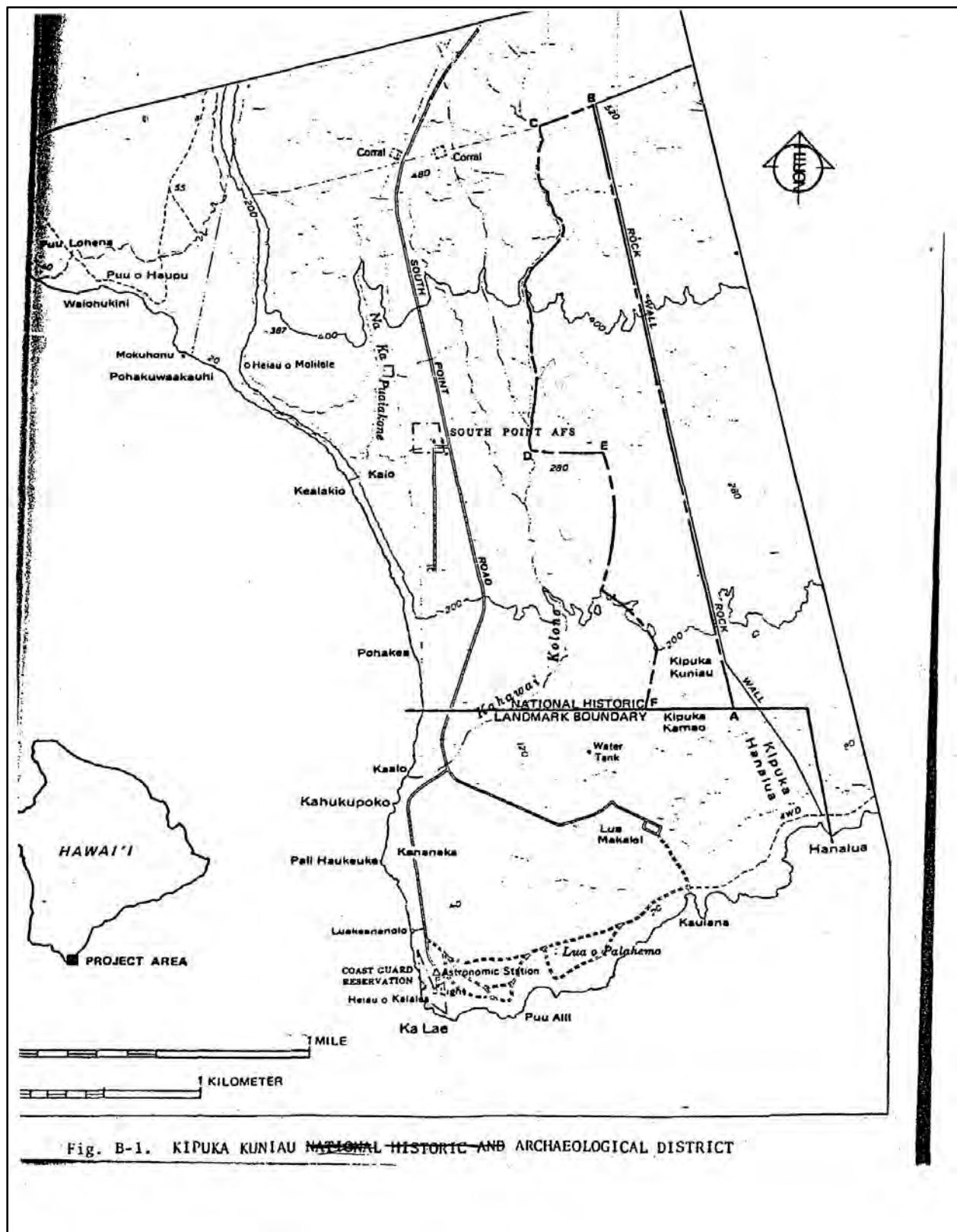
Landrum, Jim, III, 1984, "An Archaeological Reconnaissance Survey of Three Mauka-Makai Transects Within Kama'oa-Pu'u'e'o Ahupua'a, Ka'u District, Hawaii Island". Ms. in Dept. Anthropology. B.P. Bishop Mus.

state	code	county	code
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name/title	JIM LANDRUM, III		
organization	BERNICE P. BISHOP MUSEUM	date	SEPTEMBER, 1981
street & number	BOX 19000-A	telephone	847-3511
city or town	HONOLULU	state	HAWAII 96819

☐ national      ☐ state      ☐ local

title	STATE HISTORIC PRESERVATION OFFICER	date
For NPS use only I hereby certify that this property is included in the National Register.		
		date
Keeper of the National Register		
Attest:		date
Chief of Registration		



# Mahana Bay Archaeological District National Register of Historic Places Nomination Form 1984

NPS Form 10-900  
(7-81)

EXP. 10/31/84

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Inventory—Nomination Form**

See instructions in How to Complete National Register Forms  
Type all entries—complete applicable sections.

**1. Name** Maiana Bay

historic MAHANA ARCHAEOLOGICAL DISTRICT (SITE 50-Ha-10230)

and/or common

**2. Location**

street & number MAHANA BAY not for publication

city, town KA'U vicinity of congressional district

state HAWAII code 15 county HAWAII code 01

**3. Classification**

<b>Category</b> <input checked="" type="checkbox"/> district <input type="checkbox"/> building(s) <input type="checkbox"/> structure <input type="checkbox"/> site <input type="checkbox"/> object	<b>Ownership</b> <input checked="" type="checkbox"/> public <input type="checkbox"/> private <input type="checkbox"/> both <b>Public Acquisition</b> <input type="checkbox"/> in process <input type="checkbox"/> being considered <u>N/A</u>	<b>Status</b> <input type="checkbox"/> occupied <input checked="" type="checkbox"/> unoccupied <input type="checkbox"/> work in progress <b>Accessible</b> <input checked="" type="checkbox"/> yes: restricted <input type="checkbox"/> yes: unrestricted <input type="checkbox"/> no	<b>Present Use</b> <input checked="" type="checkbox"/> agriculture <input type="checkbox"/> commercial <input type="checkbox"/> educational <input type="checkbox"/> entertainment <input type="checkbox"/> government <input type="checkbox"/> industrial <input type="checkbox"/> military	<input type="checkbox"/> museum <input type="checkbox"/> park <input type="checkbox"/> private residence <input type="checkbox"/> religious <input type="checkbox"/> scientific <input type="checkbox"/> transportation <input type="checkbox"/> other:
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**4. Owner of Property**

name DEPARTMENT OF HAWAIIAN HOME LANDS

street & number POST OFFICE BOX 1879

city, town HONOLULU vicinity of state HI 96805

**5. Location of Legal Description**

courthouse, registry of deeds, etc. BUREAU OF CONVEYANCES

street & number 1151 PUNCHBOWL

city, town HONOLULU state HAWAII

**6. Representation in Existing Surveys**

title has this property been determined eligible? ☐ yes ☐ no

date \_\_\_\_\_ federal ☐ state ☐ county ☐ local

depository for survey records \_\_\_\_\_

city, town \_\_\_\_\_ state \_\_\_\_\_



## 7. Description

<b>Condition</b>		<b>Check one</b>	<b>Check one</b>
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input checked="" type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input type="checkbox"/> good	<input checked="" type="checkbox"/> ruins	<input type="checkbox"/> altered	<input type="checkbox"/> moved
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		date <u>N/A</u>

**Describe the present and original (if known) physical appearance**

The Mahana Archaeological District contains six Hawaiian Archaeological sites (19 features) that cluster around Mahana Bay in the Ka'u District of the Island of Hawaii. Basaltic Glass samples from the sites have given ages in the range of A.D. 950-1700. The remains include the ruins of permanent and temporary habitation sites represented by midden deposits, stone walls, enclosures, and terraces.

Context. Sites in the Mahana Archaeological district were located during an archaeological survey of portions of lands in Kama'oa-Pu'u'eo ahupua'a, Kau District, Hawai'i Island. The survey was conducted by the Department of Anthropology, Bernice Pauahi Bishop Museum, for the Hawaii State Historic Preservation Office.

The field survey was conducted during the period 25 April through 15 May, 1984. The field survey methodology consisted of walking through the area to determine the presence or absence of archaeological resources, with the aid of recent color and black-and-white aerial photographs and U.S.G.S. quadrangle maps. No subsurface testing was conducted to determine the nature or extent of the features, and all features located were mapped with tape-and-compass, and located on the aerial photographs and U.S.G.S. quadrangle maps. Previous to the survey, William Bonk, of the University of Hawaii-Hilo, had conducted numerous excavations in the Mahana area. Three of the sites located during the present survey are sites Bonk excavated between 1958 and the 1970s. To date, the only published data concerning those excavations is a short paper by a student of Bonk, Terrance Hunt (1976), that discusses the analysis of Hawaiian volcanic-glass artifacts. The measurement of the volcanic-glass hydration/alteration rind thickness yielded early dates, ca.  $935 \pm 50$  A.D. and  $981 \pm 105$  A.D., as well as dates from the late 1200s, 1400s, 1600s, and 1700s, from different contexts within the site deposit. No radio-carbon dating has been done, however, Bonk (pers. com 1984) stated datable materials are present from the site, and that he also has accumulated adequate materials from previous excavations for radio-carbon analysis (Bonk, pers. com 1984). Bonk further stated the sites were occupied into the mid-1800s and abandoned subsequent to the 1868 tsunami. Bonk cites historic-period artifacts dating to the mid-1800s as evidence. Kelly (1969) conducted an archival and historical survey of the South Point area, and references the 1868 tsunami as having a

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devastating impact on the region, citing accounts by missionaries and travelers that indicated the area was inhabited at the time of the tsunami.

Based on the available data, the sites within the Mahana Archaeological District have a temporal range of occupation from ca. A.D. 900 to 1800. Whether the evidence indicates intermittent or permanent occupation has not been determined. However, the age range and rich surface scatter of midden and artifactual materials indicate a great potential resource for archaeological and historical research addressing numerous and significant topics concerning Hawaiian adaptation and settlement of the South Point region as well as throughout the archipelago.

Boundary Justification. The district is in the area immediately adjacent to Mahana Bay stretching along the coast from Hali'i Pa'akai on the northeast, to Pohakuloa on the southwest and inland to the 200 ft. elevation. Boundaries are defined based on the extent of the archaeological reconnaissance survey, and enclosed the natural geographic area of Mahana Bay. The northeast and southwest coastal boundaries are adjacent to intermittent stream gullies, and the inland boundary is the 200 ft. elevation contour. The district area covers 153.35 acres.

Environment. The district is composed of the Pu'u o Mahana olivine-rich cinder cone at the head of Mahana Bay, which was formed during a ~~magma~~-phreatic eruption during the Kuhuku Volcanic series as a flank eruption on Mauna Loa Volcano and the adjacent slopes of Mauna Loa.

The cinder cone and the adjacent slopes and coastal areas are overlaid by Pakini, very fine sandy loamy soils of the major Pahala Ash soils group. The area is predominately void of surface rock, except where erosional activity has exposed either a'a lava or pahoehoe substrate along flood zones or the intermittent streams, and along the coast in the high-water zone. The coast is predominantly gently sloping, except in the bay proper where cliffs reach heights of up to 50 ft. Several unnamed intermittent streams bisect the district. The vegetation is predominantly introduced, mainly range grass and lantana (Lantana camara) on the inland portions, with several indigenous species of coastal plants along the shore. The plants include naupaka (Scaevola sericea), tree heliotrope (Messerschmidia argentea), beach vitex (Vitex trifolia), and several other trailing vines.

pili  
grass

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The area is arid, receiving less than 20 in. of rain annually, and is exposed to the consistent winds of the region, which have a mean velocity of 27 MPH.

The area is presently used as pasturage, and is a popular recreational area for campers and fishermen. The Bay is renowned for its "Green Sands Beach" at the base of the olivine-rich cinder cone. The coastal area is a rich marine environment well-known for its abundant resources. Access to the area is via 4-WD vehicles on unimproved and severely eroding roads. The sites have been assigned Hawaii State Historic Preservation Office archaeological site numbers. The sites were located during the reconnaissance survey, and Bonk's site numbers are included for those sites within the district that were excavated, as well as Bonk's personal communications concerning the sites. The sites are mostly coastal permanent habitations or temporary shelters, and are described below.

50-10-76-5319 (BPRM 5-Ha-B20-92) - This complex is located on the northeast point of Mahana Bay at Keana. The six features in this site are coastal habitations, and several of them were excavated by William Bonk during the 1960s and 1970s. As of this publication, no reports on the excavations have been published, other than a short paper discussing volcanic-glass hydration dates by Terrance Hunt in 1976. Bonk was kind enough to identify the site locations and site designations, as well as to supply a limited amount of general information concerning the preliminary results of the excavations. The data he supplied will be included in the feature descriptions below.

Feature A A remnant rectangular enclosure with only two portions of the walls remaining. The enclosure measures 12.5 by 7.5 m., with walls up to 1.0 m. wide and 0.6 m. high. The walls appear to have been core-filled, and the surface has scattered midden and coral fragments. The feature is above the coastal erosional bank, and there is a 0.35 m. thick cultural deposit exposed in the fact. The stratum exhibits a good range of midden and rich charcoal flecking. The enclosure has an internal 'ili'ili paving. No artifacts were observed.

Feature B Rectangular enclosure (10.0 by 9.0 m.) with core-filled walls 1.0 m. thick and up to 0.5 m. high. The feature was extensively excavated by Bonk. He designated this feature Site MB-1. Bonk

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believes, based on his excavations, the feature was occupied up to the (1968) tsunami and subsequently abandoned. He cites historic-period artifacts dating to this time, as well as earlier period traditional Hawaiian artifactual assemblages. Carbon samples were collected but have not been processed (Bonk, pers. com. 1984). Hunt reported two volcanic-glass hydration ring measurements yielding dates of A.D. 935  $\pm$  50 years and A.D. 1732  $\pm$  23 years from separate strata within the site (Hunt 1976).

Feature C      10.5 by 8.5 m. rectangular enclosure with core-filled walls 1.0 m. thick and up to 0.7 m. high, located immediately adjacent to Feature B. This feature is included in Bonk's Site MB-1 and is also assigned Hunt's dates. It cannot be determined which feature yielded the data. Bonk stated that in the early 1960s, he and Kenneth Emory conducted test excavations at this feature. No record of these excavations has been located in the Bishop Museum files.

Features B and C are surrounded by extensive back-dirt piles and midden scatter, but it is quite difficult to differentiate between primary and secondary deposition.

Feature D      Midden scatter on both sides of Keana Stream, covering an area about 20.0 by 20.0 m. The area is at the mouth of the stream, at the edge of the high-water zone. It is not clear whether this is a primary or secondary deposit, although its location and the history of the area suggest probably secondary deposition. However, intact subsurface material may be present.

Feature E      7.0 by 10.0 m. rectangular enclosure defined by only the foundation stones. There is a slab-lined hearth inside and a papamu (a game board) measuring 0.4 by 0.4 m., with 33 holes, laying just outside the mauka wall.

This feature is Bonk's Site MB-5, and was partially excavated by him. Bonk believes the site was abandoned subsequent to the 1868 tsunami, based on



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data from his excavations. Bonk also claims the feature was initially occupied ca. A.D. 1300, but did not state the source for the date (Bonk 1984, pers. com.).

Feature F

A substantial square enclosure (9.0 by 9.0 m.), located on the northeast side of Mahana Bay at Keana Point. The feature has an internal waterworn slab pavement and multiple hearth features. There is an external paving and a midden scatter. The walls are core-filled (1.5 m. wide and up to 1.2 m. high) and built of waterworn stones and coral cobbles. There are additional walls set on the northwest side of the feature that appear to be recent camper modifications, using material from the original feature (abundant modern trash is also present).

There is a recently constructed firepit in the interior. The feature has been extensively excavated by Bonk, who designated it Site MB-3. Bonk claims the feature is a probably high-status residence, based on data from his excavations, and sets the initial occupation at around 1300 A.D. (Bonk pers. com. 1984).

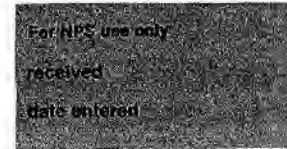
Hunt has reported two volcanic-glass hydration rind measurements yielding dates of A.D. 1680  $\pm$  41 years and A.D. 1725  $\pm$  31 years for this site (Hunt 1976). There is an extensive scattered back-dirt pile on the southwest side of the feature and slumping down the erosional bank. It is difficult to determine the nature or extent of any intact deposit in the area.

Bonk excavated a rock shelter (MB-2), apparently containing a thin cultural deposit, on the leeward cliff below the Feature F to the west (Bonk, pers. com. 1984). At the time of the survey, there was no indication of a rock shelter along the cliff in the area, indicating either complete excavation or total site erosion subsequent to the excavation. There is some shell scattered about on the cliffside, but its origin could be either contemporary deposition or the result of erosional forces transporting the material from the upper site deposit.

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50-10-76-5320 (BPBM 50-Ha-B20-93) - This site is a ruin eroding down the southeast side of Pu'u o Mahana. There is no recognizable structural component, but the feature is composed of a mass of perhaps several hundred large waterworn boulders. There is a sparse scattering of midden on the slope. The feature may have sat on the crest of the ridge which tumbled downslope.

50-10-76-5321 (BPBM 50-Ha-B20-94) - This site is an ahu (1.0 by 1.4 by 0.9 m.) set atop an outcrop on the hillside behind Pu'u o Mahana at the 190 ft. elevation. No midden or artifacts are present.

50-10-76-5322 (BPBM 50-Ha-B20-95) - This is a wall and terrace set on the lee of the hillside behind Pu'u o Mahana at the 200 ft. elevation. The wall is stacked, and measures 9.0 by 1.5 by 0.85 m. high. The terrace is in the lee of the wall and measures 2.0 by 3.0 by 0.3 m. high. One piece of cowrie shell was observed on the surface. The feature is in fair condition.

50-10-76-5323 (BPBM 50-Ha-B20-96) - This site is a rock shelter located on the cliff inside Mahana Bay, about 30 ft. above the water. The shelter is presently used and recently has been modified. The internal portion of the cave measures 6.0 by 3.0 m., with a maximum floor to ceiling height of 1.8 m. The shelter is walled from floor to ceiling at the dripline, with a one-course thick stacking of a'a clinker. Marshall Weisler of the Bishop Museum stated that he visited the site in 1971, and no wall was present at the time ) Weisler, pers. com 1984).

The 6.0 by 3.0 m. area constitutes a major terrace with a minor terrace (2.5 by 2.5 m.) located southwest, just inside the dripline. The shelter has recent trash and midden (beer bottles, plastic wrap, wax candles, and macadamias), and an apparent traditional Hawaiian cultural deposit as well ('opihi, pipipi, cowrie, drupa, and fish bone). The floor deposit appears relatively intact with a surface mix of recent and traditional material.

50-10-76-5324 (BPBM 50-Ha-B20-97) - This complex is located along the coast southwest of Mahana Bay, from Papkolea to Pohakuloa. The transect boundary bisects the complex. There are additional features in the complex to the southwest beyonds Feature H, but due to project constraints, it was not feasible to record these features. There are eight designated features in the surveyed portion of the complex.

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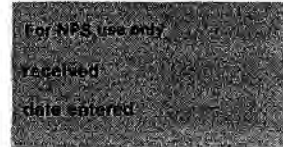
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- Feature A      Large rectangular structure (50 by 7.0 m.) with its 15 m. long east wall jutting 4.0 m. to the north and 6.0 m. to the south. The east wall is set perpendicular to the wind. The walls are stacked, ranging 0.9 to 1.65 m. high and 0.7 to 1.4 m. wide. There is an internal cyst and an external cupboard. The cupboard is 1.0 by 0.5 by 0.5 m. There is an abundance of midden scattered over the feature area, extending out 10.0 to 15.0 m. makai of the feature. There are volcanic-glass flakes, coral abraders, and basalt flakes in the scatter. There is an assemblage of ceramic sherds and bottle-glass fragments that appear to be late 1800s era material. There is also a fair amount of recent trash about, as the feature is evidently frequently utilized as a campsite. Two recently built firepits are within the feature. built with stones taken from the walls. Aside from the current impact, the integrity of the feature seems fair. cist
- Feature B      Large, well constructed and observed rectangular enclosure (10.0 by 12.0 m. ), located 30 m. southwest of Feature A. The feature is built of large waterworn and coral boulders, and incorporates upright slabs. The walls are core-filled and measure 1.4 to 2.0 m. high and 1.5 m. thick. There is a cupboard in the northeast wall (1.2 by 0.9 by 0.3 m.). Midden and numerous coral cobbles are scattered about the surface.
- Feature C      Slightly curved wall (15.0 by 1.0 by 0.75 m.), extending mauka from Feature B. The wall is core-filled with a'a cobbles, waterworn stones, and coral.
- Feature D      Scattered midden and volcanic glass located northeast of Feature B. The area covers 10.0 by 5.0 m.
- Feature E      Series of three terraces in deteriorating condition, built against a slope mauka of Feature B and southwest of Feature C. The terraces have internal alignments and are constructed of a'a clinker, waterworn stones, and coral. The terraces cover an area 10.0 by 6.0 m. The feature may be a burial complex.

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Feature F      Double terrace built against an outcrop mauka of Feature E. Each terrace is 7.0 by 2.5 by 0.3 m. to 0.6 m. high. The terraces are constructed of a'a' clinker and some coral.

Feature G      Located 20.0 m. southwest of Feature B, and is a large (17.0 by 19.0 m.) rectangular enclosure with core-filled walls. The walls are 0.7 to 1.6 m. high and 1.0 to 1.4 m. thick. Two walls extend 28.0 m. mauka at the northeast and northwest corners, and form a sort of yard boundary. The stacked a'a rock walls are 0.6 to 0.8 m. high, and up to 0.8 m. wide.

The feature area contains scattered midden and volcanic glass, as well as recent camper trash. The mauka wall has been modified to accommodate vehicle access to the interior. There are also recently built fireplaces and low walls in the interior.

Two apparently intact slab-line hearths are inside the feature, and a papamu (0.40 by 0.35 m.) with 32 holes is next to the mauka wall. The interior is paved with sand cobbles. The southwest portion of the feature is in very poor condition, because it is set within the high-water zone and is evidently tumbled by wave action.

Feature H      Very poorly preserved remnant of a rectangular enclosure located well within the high-water zone. The feature has three wall segments remaining, each about 2.0 by 1.0 m. with one section 9.0 long. The entire area is a jumble of beach rock. There is a possibility that an intact subsurface deposit is present. Midden is present in the area.

Intrusions and Data Limitations. The boundaries are based solely on the survey findings, and the findings are limited to the transect. There are additional sites outside the transect and district that probably are related to the district complex, located along the coast and somewhat inland in the adjacent Pu'u Ma'au area. Serious consideration should be given to surveying the areas outside the proposed district prior to finalization of the District nomination. However, the sites within the district are, of themselves eligible, and, although they are merely a representative sample, can be nominated.



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Continuation sheet	DESCRIPTION :	Item number	Page
		7	9
<p>Cattle, people, and the elements are severely affecting the integrity of the archaeological and geological resources of the district. People litter the sites with their trash; alter and destroy the integrity of the features by removing rocks from the features to make firepits, shelters, or toilet facilities, and drive over the features in their vehicles. Cattle trample walls. The wind deflates site deposits and, when coupled with rain, accelerates the erosion of exposed deposits. The high waves and occasional tsunamis inundate the coastal area and seriously affect the area, destroying coastal sites and washing debris onto other adjacent sites, etc.</p> <p>The Mahana Archaeological District contains six Hawaiian archaeological sites (19 Features) that cluster around Mahana Bay in the Ka'u District of the Island of Hawaii. Basaltic Glass samples from the sites have given ages in the range of A.D. 950-1700. The remains include the ruins of permanent and temporary habitation sites represented by midden deposits, stone walls, enclosures, and terraces.</p>			

## 8. Significance

Period.	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input checked="" type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input checked="" type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

Specific dates N/A

Builder/Architect N/A

### Statement of Significance (in one paragraph)

The Mahana Archaeological District is representative of traditional Hawaiian coastal settlements and camps in the South Point area of the Island of Hawaii. They contain data relevant to studies of traditional Hawaiian habitation sites, chronology, and settlement patterns. The sites in the District have value as an in-place exhibit of traditional Hawaiian culture for public use and education. The sites within the district are primarily coastal habitations and temporary shelters. There are multiple sets of data which may be studied:

(1.) Prehistoric artifacts range from lithic artifacts (volcanic glass and basalt) to worked bone, shell and coral, to modified vegetable products (wood and fibrous plants and gourds). Historic artifacts including metal, ceramics, glass, and wood are also present. The data appear in sufficient quantity to allow substantial analyses of both prehistoric and historic time periods. On the basis of these data, technological and subsistence activities and strategies can be studied through time. Additionally, the impact of western influence on the traditional Hawaiian culture can be studied through comparison of the assemblages.

(2) Ecofactual remains represent a wide range of fish, shellfish, birds, mammals, and floral remains. These data may be used to provide information concerning resource exploitation and acquisition.

(3) Environmental data may be obtained from pollen cores, and macrobotanical and macrofaunal samples. This information may provide the data necessary to correlate prehistoric human activities with environmental changes.

(4) The sites represent an c. 900 year span of human occupation in the South Point area. The time period covers almost the entire era of Polynesian settlement in the archipelago. Few locations in the archipelago contain such a dense cluster of permanent and temporary shelters that span this period.

The potential for archaeological study is significantly greater here than elsewhere.

Archaeological research in the district can address the following:

<small>NPS Form 10-900-a (2-82)</small>	<div style="text-align: right;"><small>OMB No. 1024-0018 Exp. 10-31-84</small></div> <div style="text-align: center;"><b>United States Department of the Interior National Park Service</b> <b>National Register of Historic Places Inventory—Nomination Form</b></div>	<div style="border: 1px solid black; padding: 5px; background-color: #f0f0f0;"><small>For NPS use only received date entered</small></div>
<hr/>		
Continuation sheet	SIGNIFICANCE	Item number 8 Page 2
<hr/>		
<p>(a) Temporal change in subsistence strategies, and the relationship to environmental change and population dynamics and settlement.</p> <p>(b) Temporal change in resource acquisition shifts from maritime to terrestrial, focus and the relationship to population dynamics.</p> <p style="text-align: center;"><i>g j</i></p> <p>(c) In addition to addressing <del>low-level</del> regional research topics the data may potentially provide information concerning Polynesian migrations in Oceania, and the relationship of Hawaiians to other Polynesians. The data may shed light on the origin of the Hawaiians. Furthermore, the data can be extrapolated to access phenomena of acculturation and technological innovation over time between geographically isolated peoples. Such data would be pertinent to local, regional, and oceanic area studies of population dispersal and settlement.</p>		

Hunt, Terry L., 1976, "Hydration-Rind Dates from Archaeological Sites in the South Point Area: A Contribution to Hawaiian Prehistory." In Proceedings First Conference in Hawaii, Hawaii Volcanoes National Park, August 16-20, 1976.

Landrum, Jim, III, 1984, "An Archaeological Reconnaissance of Three Mauka-Makai Transects Within Kama'oa-Pu'ueo Ahupua'a, Ka'u District, Hawaii Island," Ms. in Dept. Anthropology, B.P. Bishop Mus

Quadrangle scale 1:24,000

**H**

**List all states and counties for properties overlapping state or county boundaries**

state	code	county	code
-------	------	--------	------

state HAWAII 96819

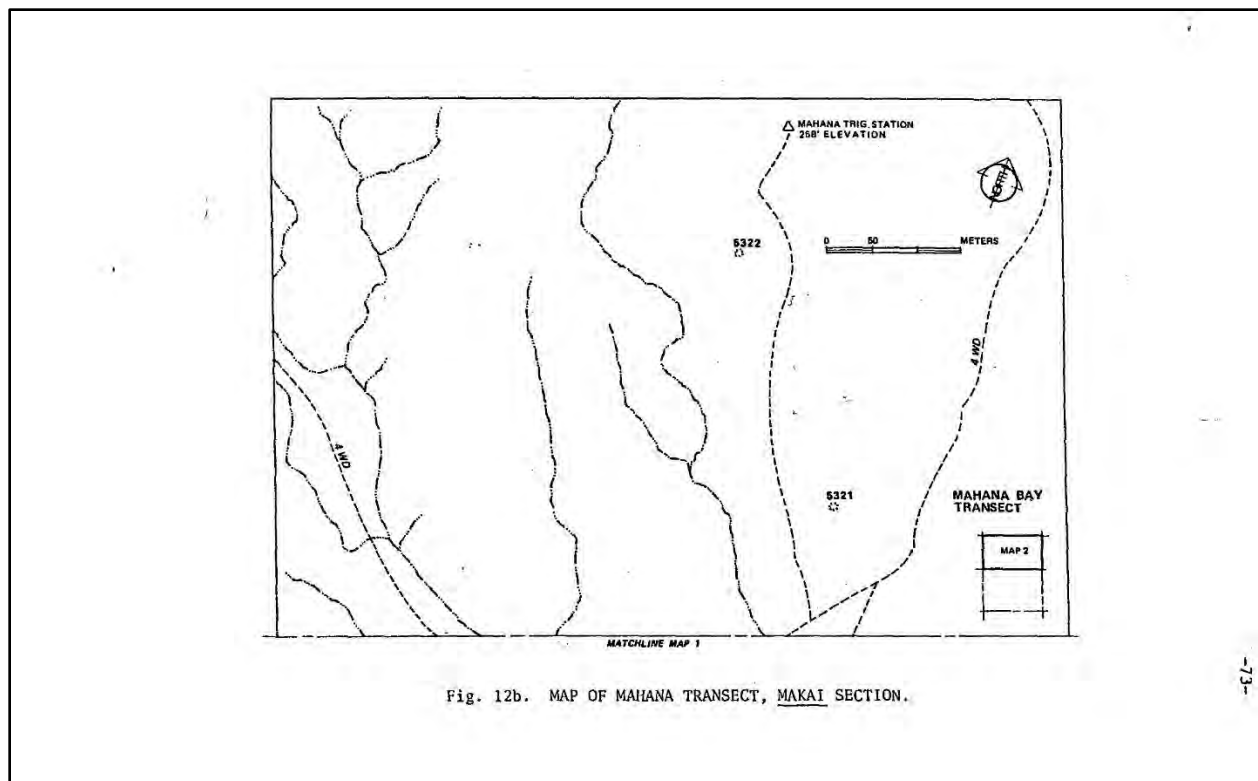
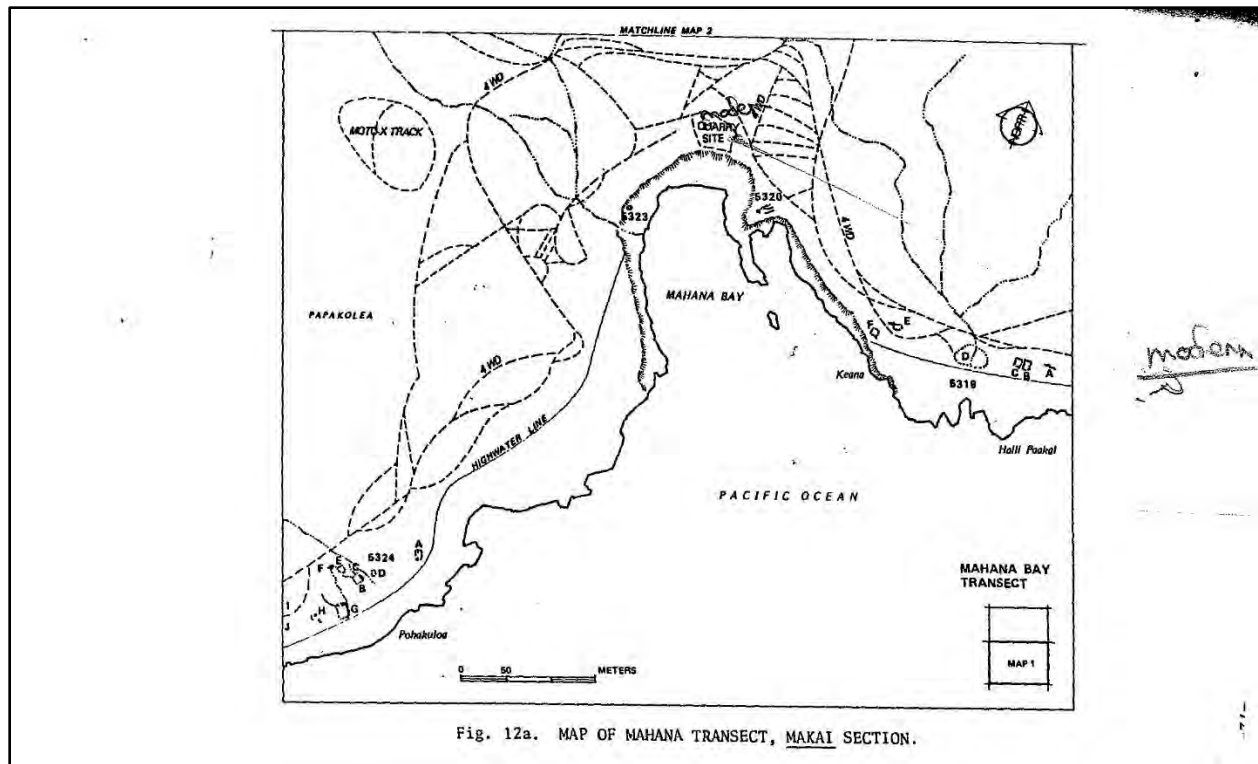
\_\_\_\_ national      X state      \_\_\_\_ local

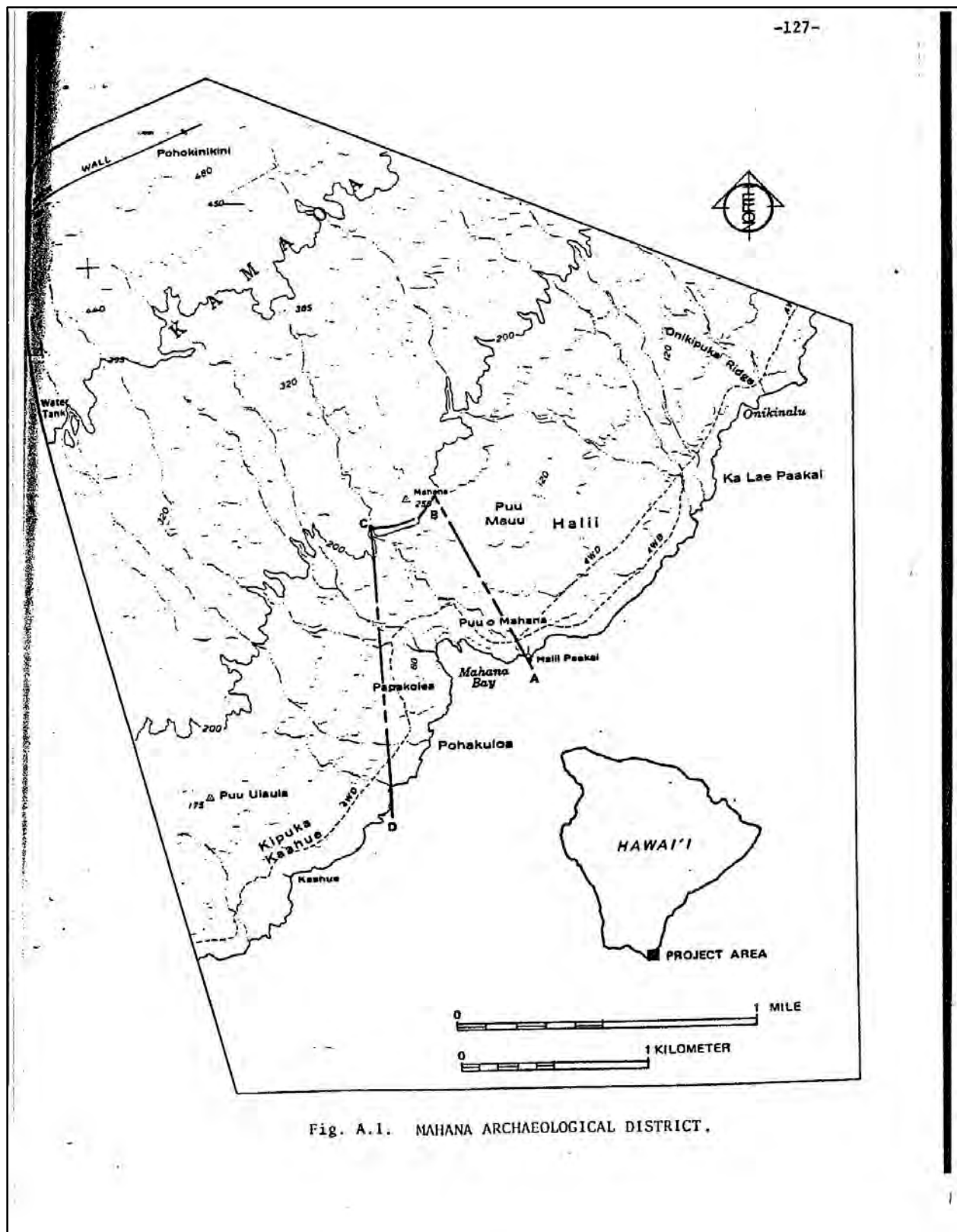
**State Historic Preservation Officer signature**

date

For NAB use only	
Number of my business records included in the National Register	1110
Keeper of the National Register	
Attest	11/19
Chief of Registration	







## Appendix C Exploratory Testing Profile Photos and Drawings

### Ka Lae Walking Loop

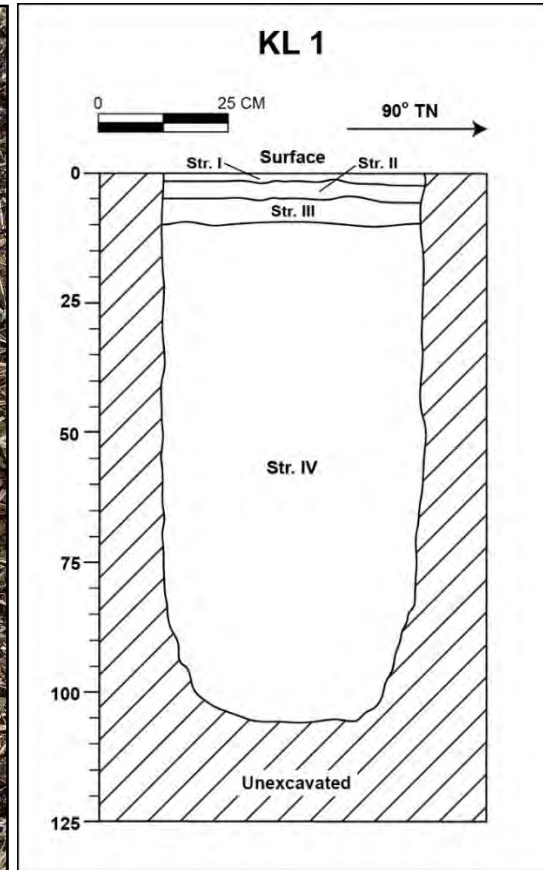


Figure 1. North sidewall profile photo and drawing for STP # KL 1



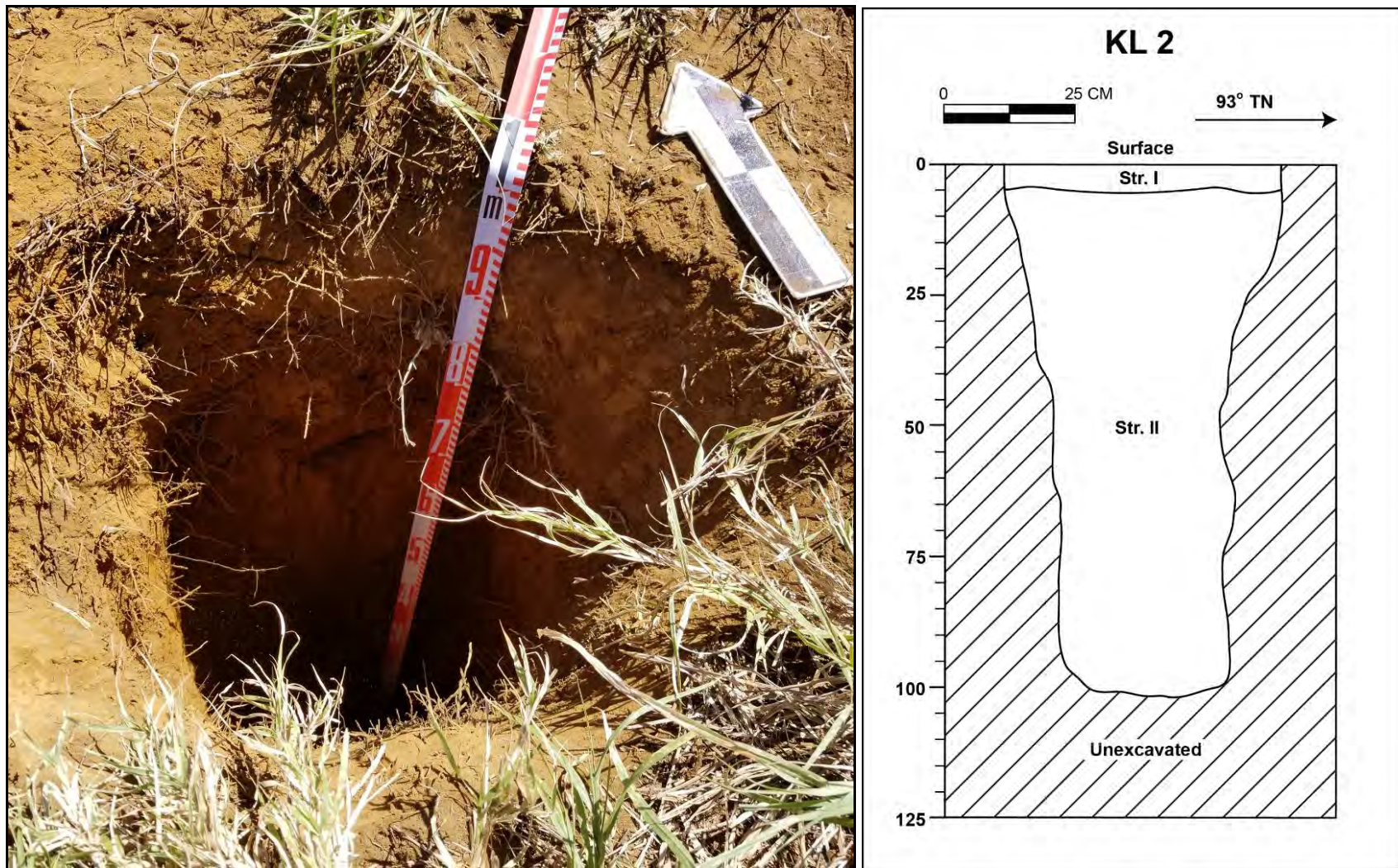


Figure 2. North sidewall profile photo and drawing for STP # KL 2



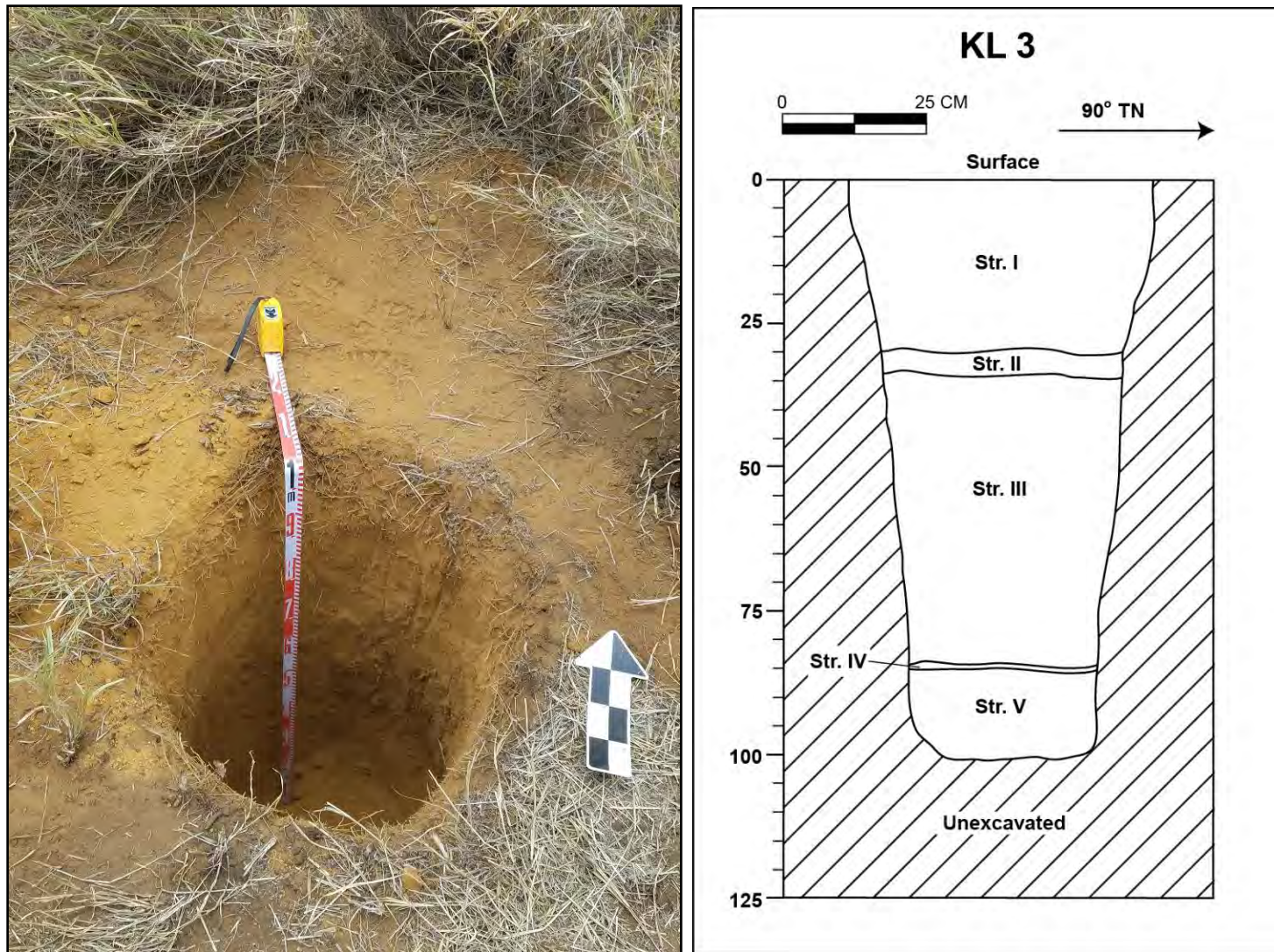


Figure 3. North sidewall profile photo and drawing for STP # KL 3



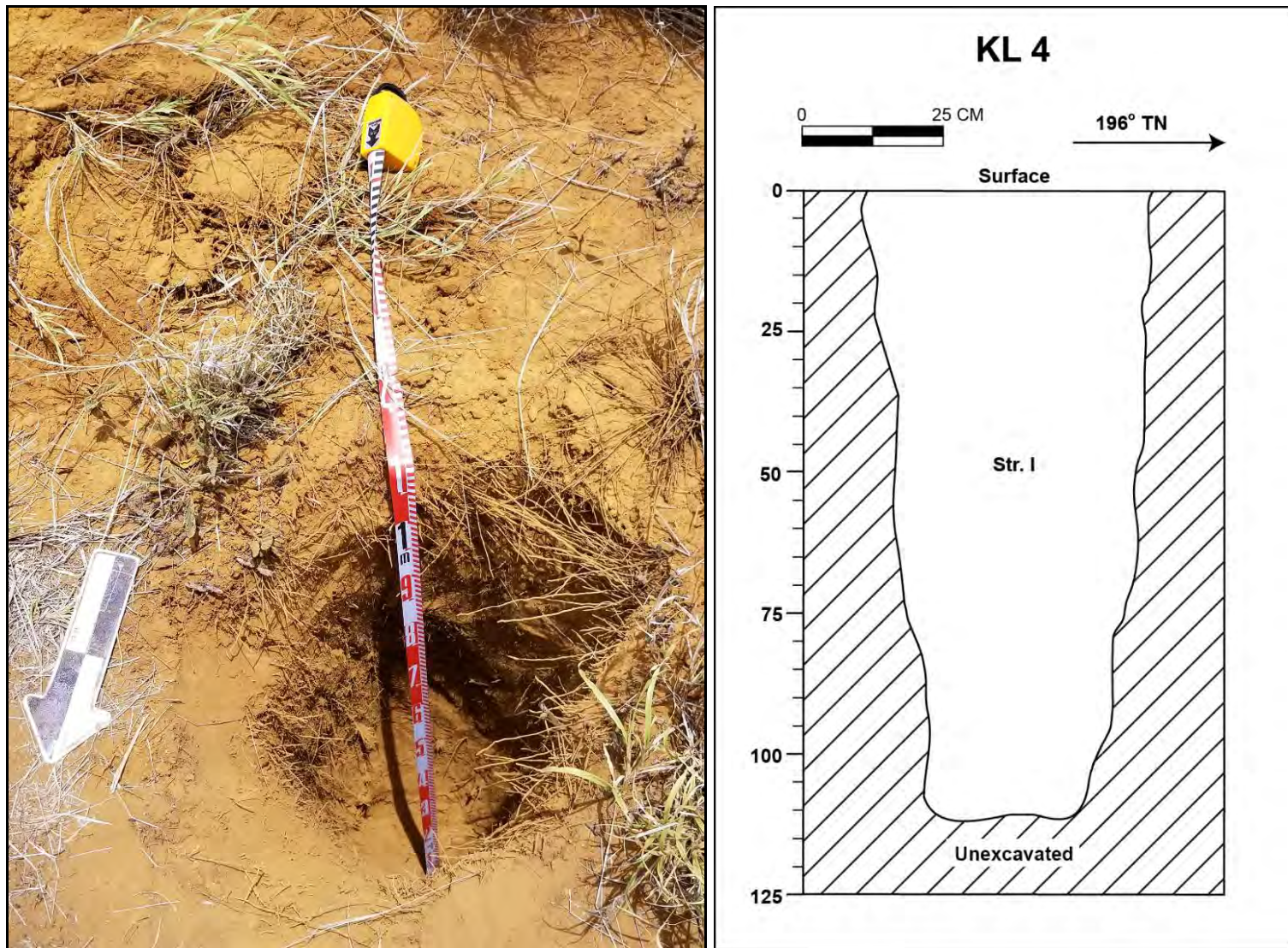


Figure 4. East sidewall profile photo (view to southeast to allow exposure of east sidewall) and drawing for STP # KL 4



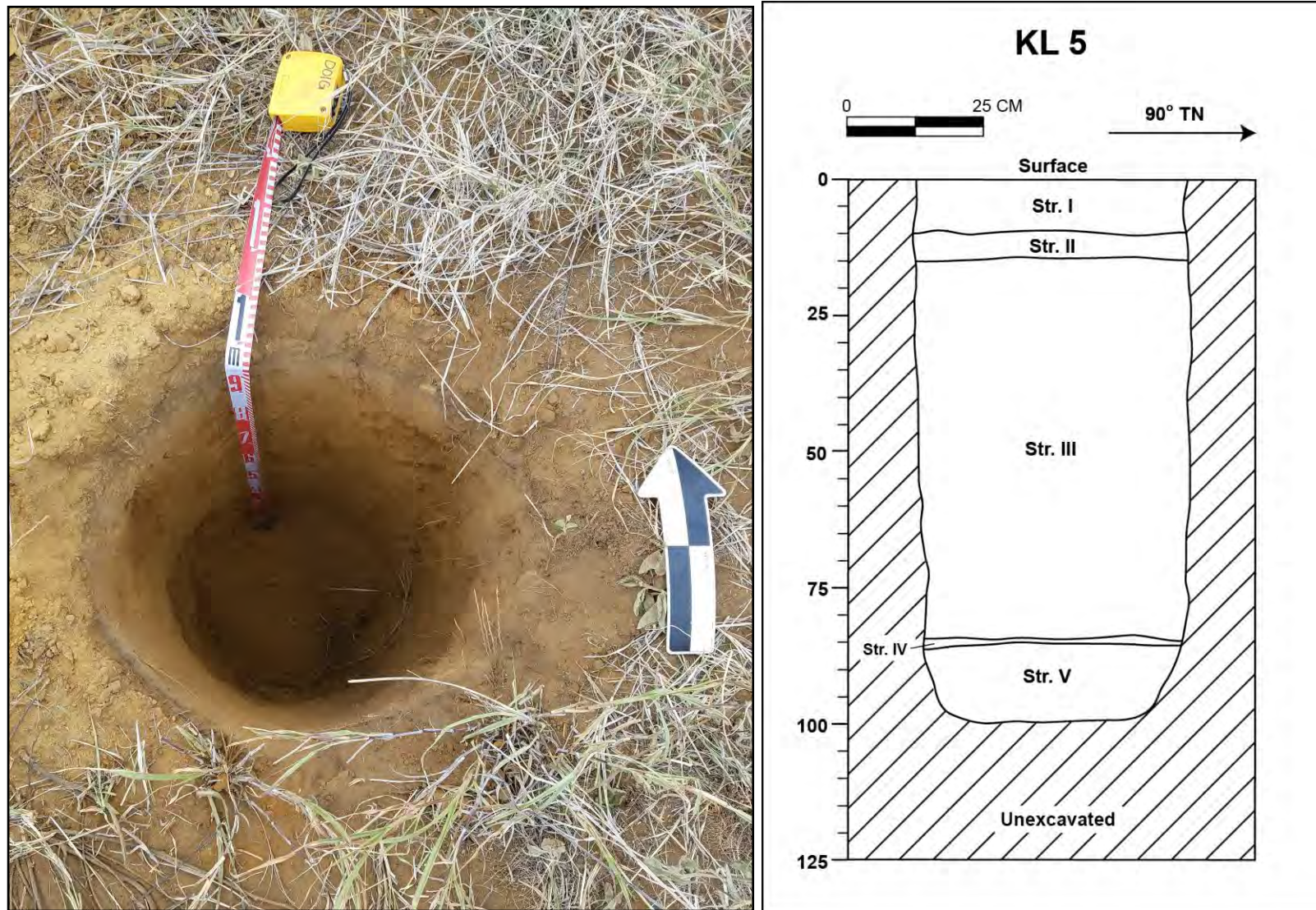


Figure 5. North sidewall profile photo and drawing for STP # KL 5



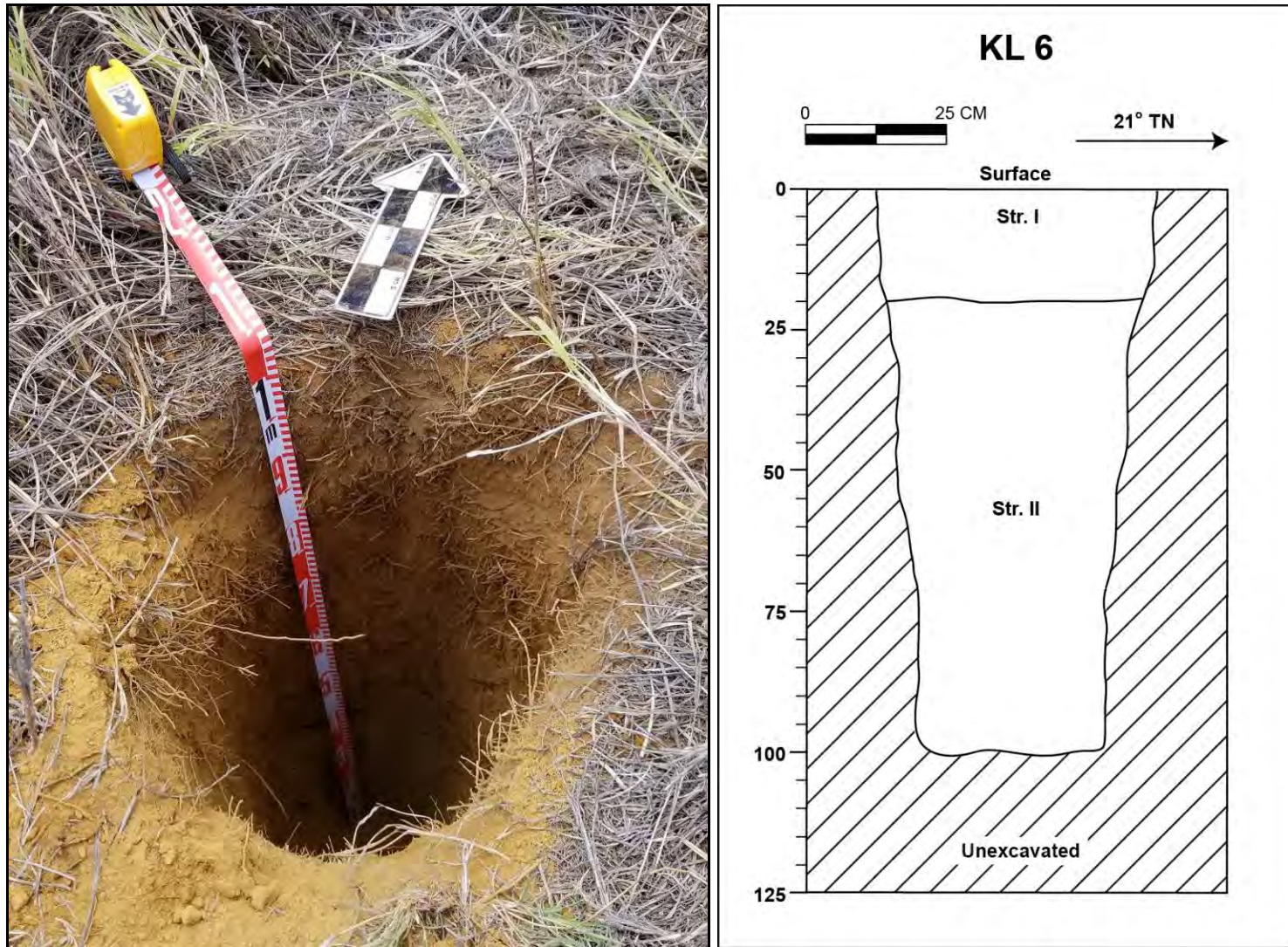


Figure 6. Northwest sidewall profile photo and drawing for STP # KL 6



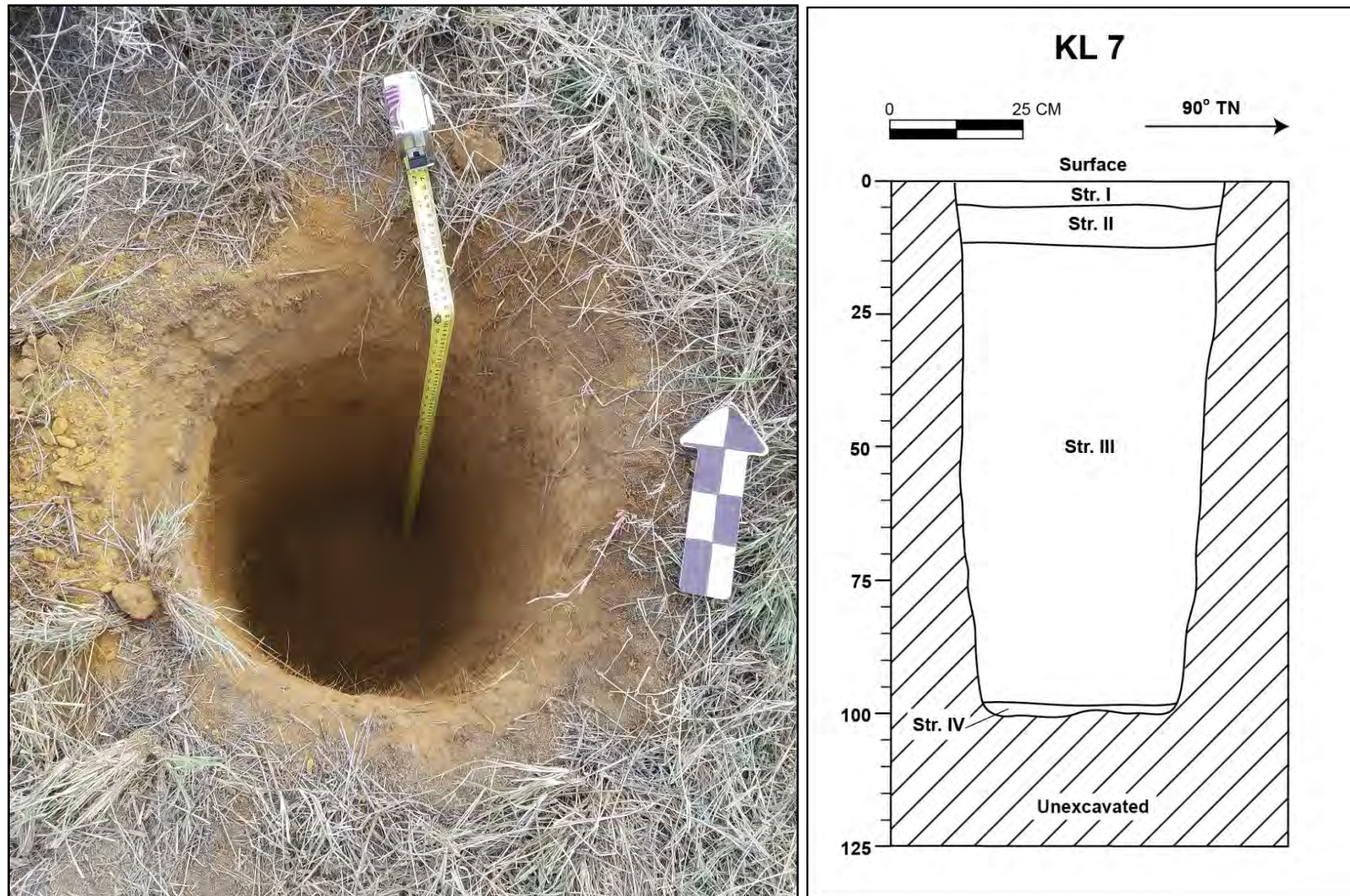


Figure 7. North sidewall profile photo and drawing for STP # KL 7



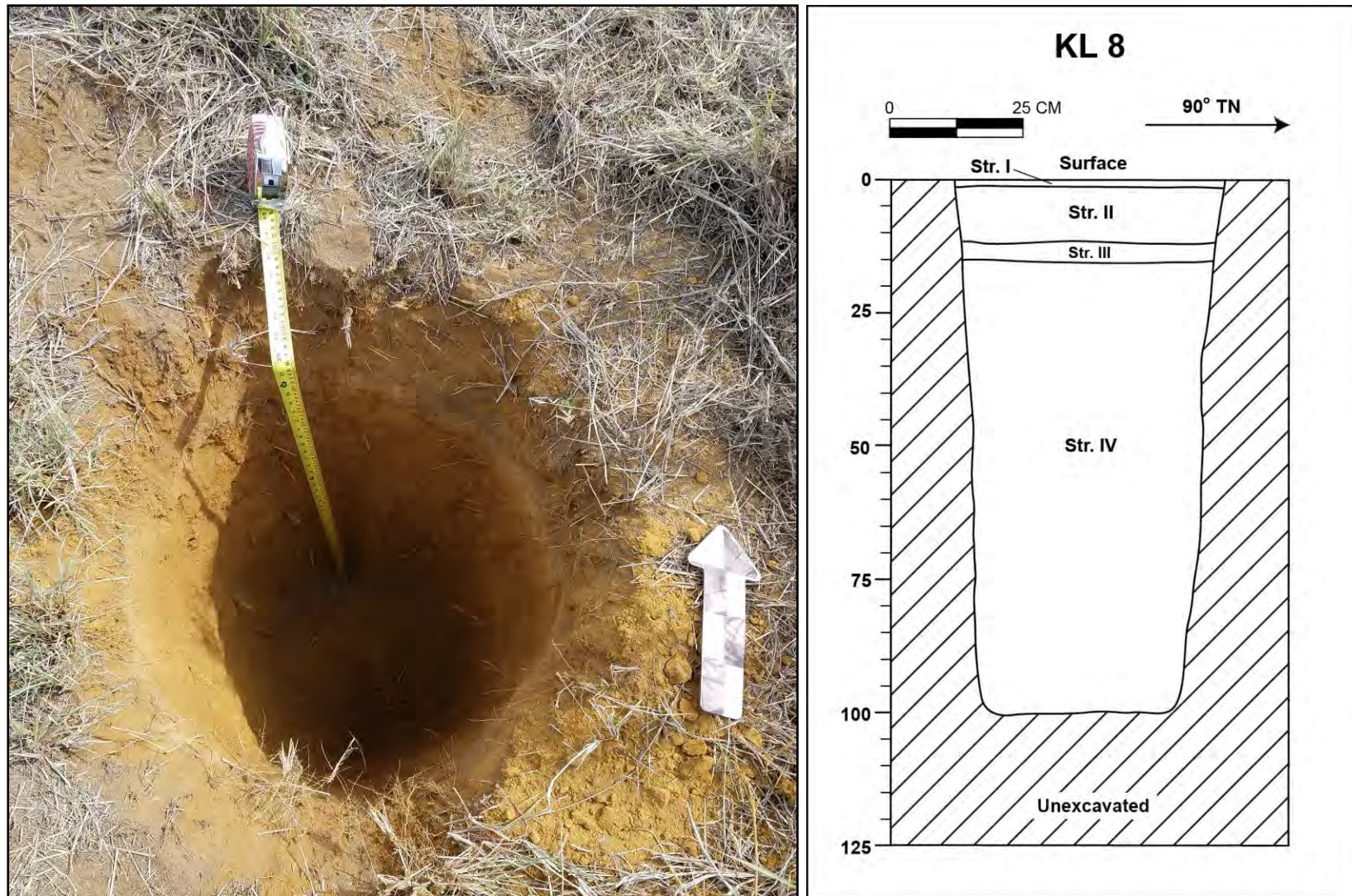


Figure 8. North sidewall profile photo and drawing for STP # KL 8



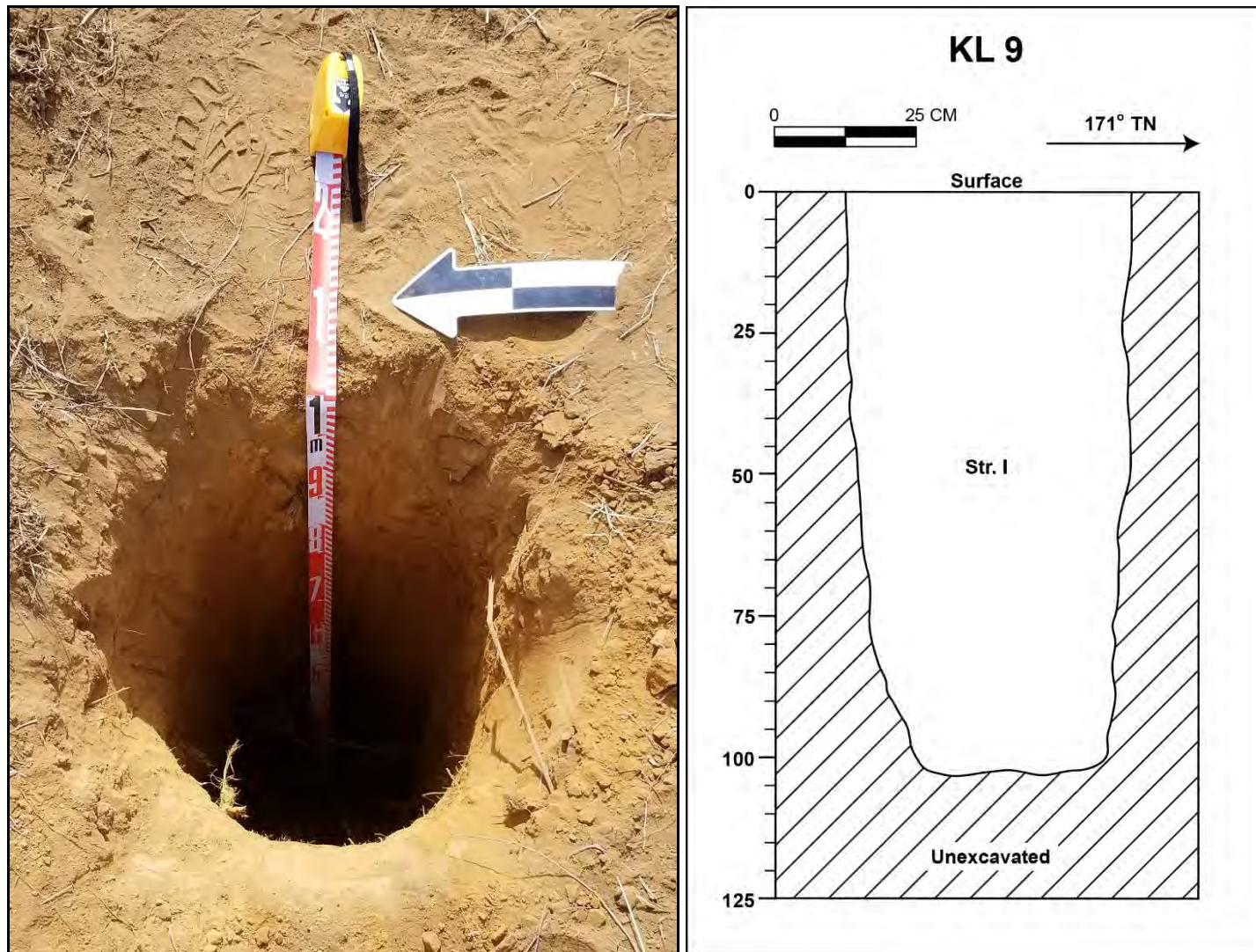


Figure 9. East sidewall profile photo and drawing for STP # KL 9



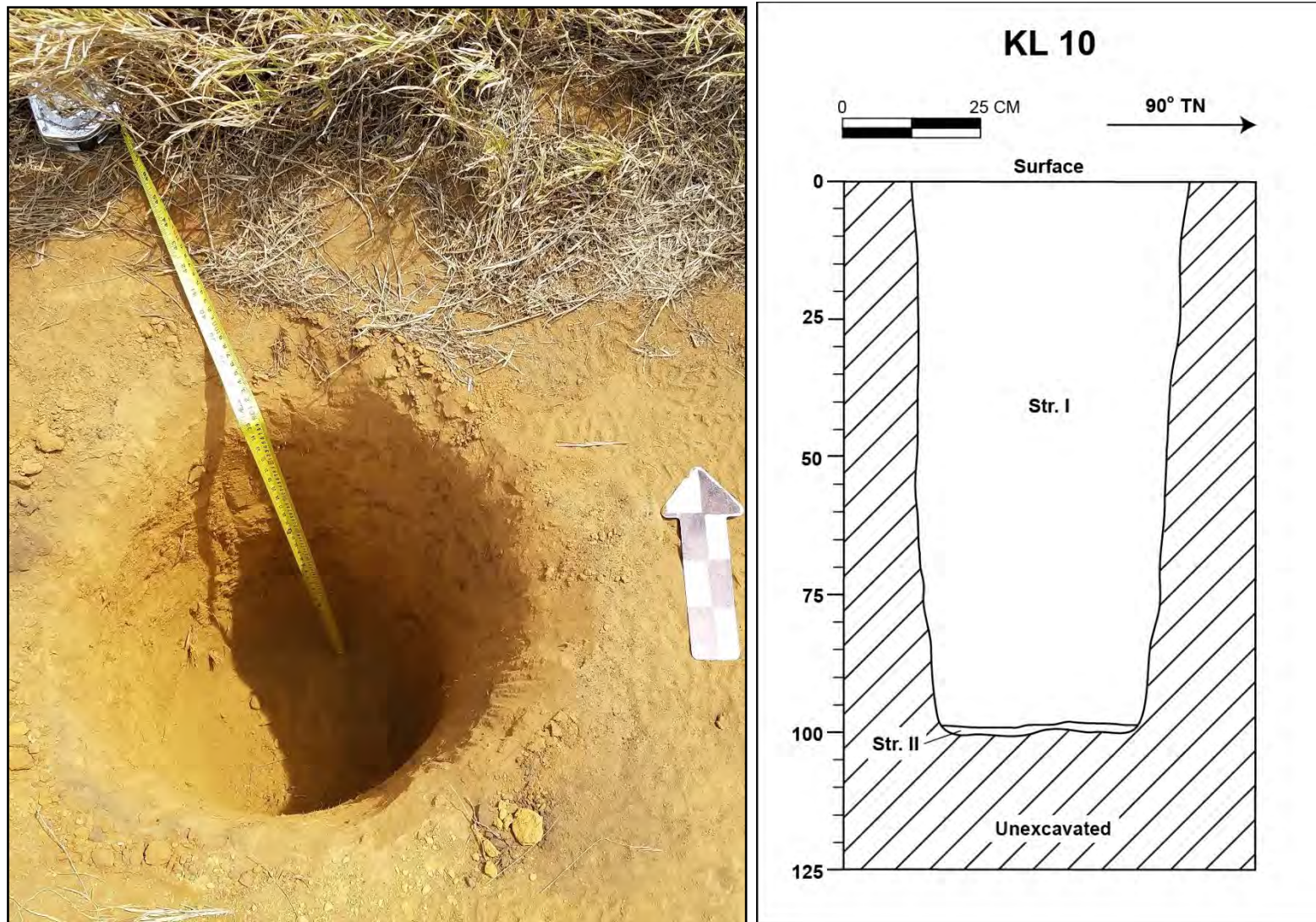


Figure 10. North sidewall profile photo and drawing for STP # KL 10



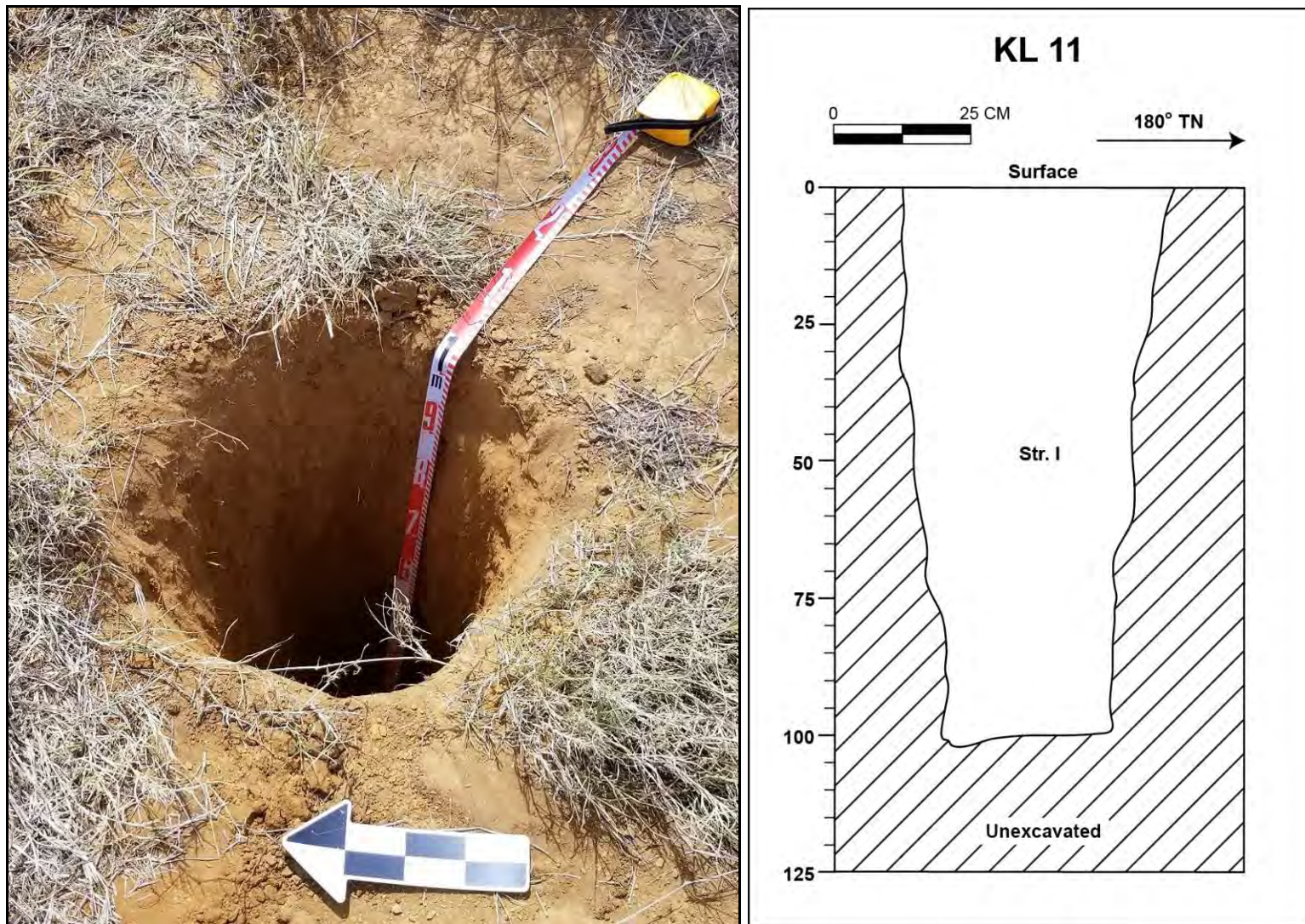


Figure 11. East sidewall profile photo and drawing for STP # KL 11



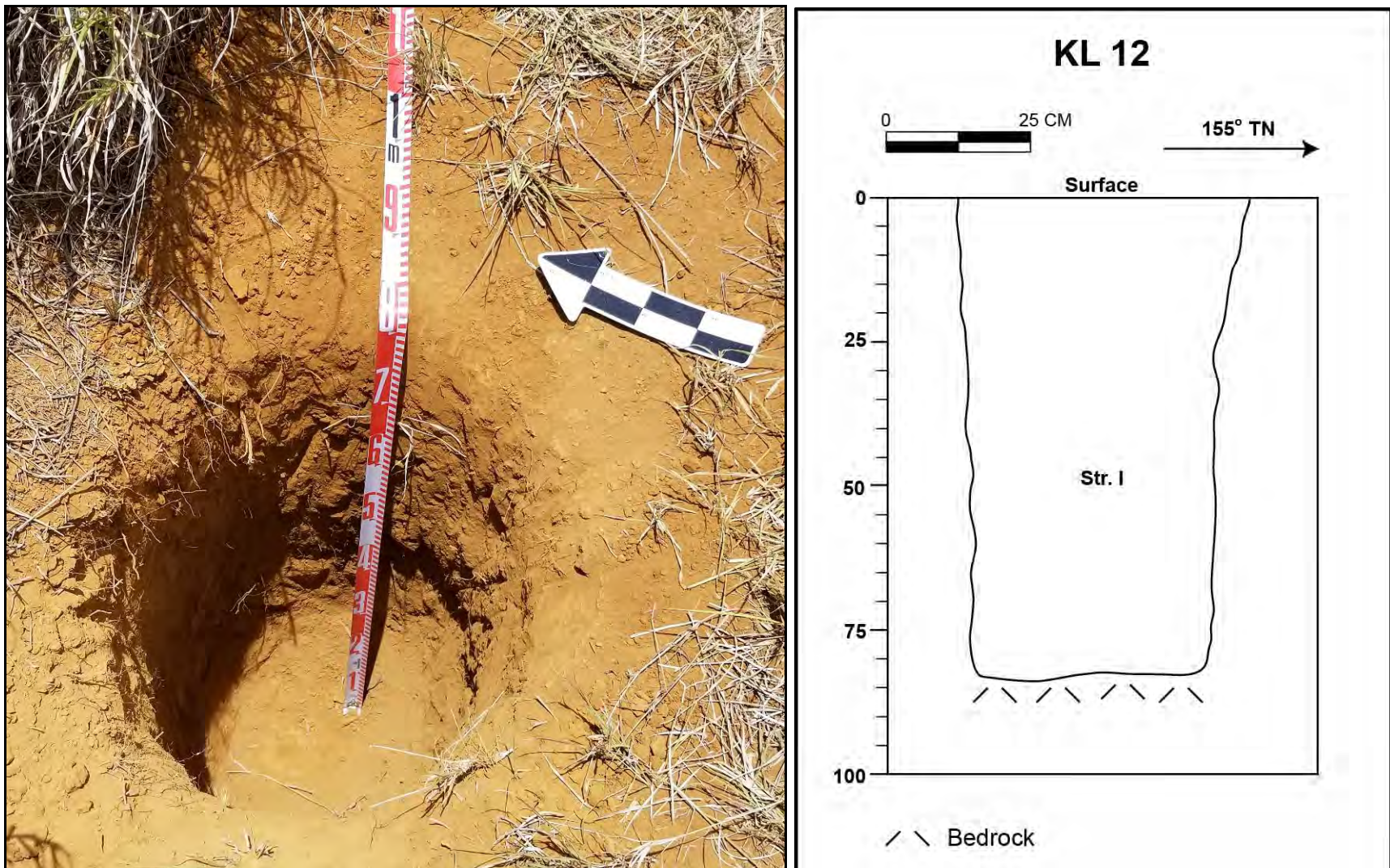


Figure 12. Northeast sidewall profile photo and drawing for STP # KL 12



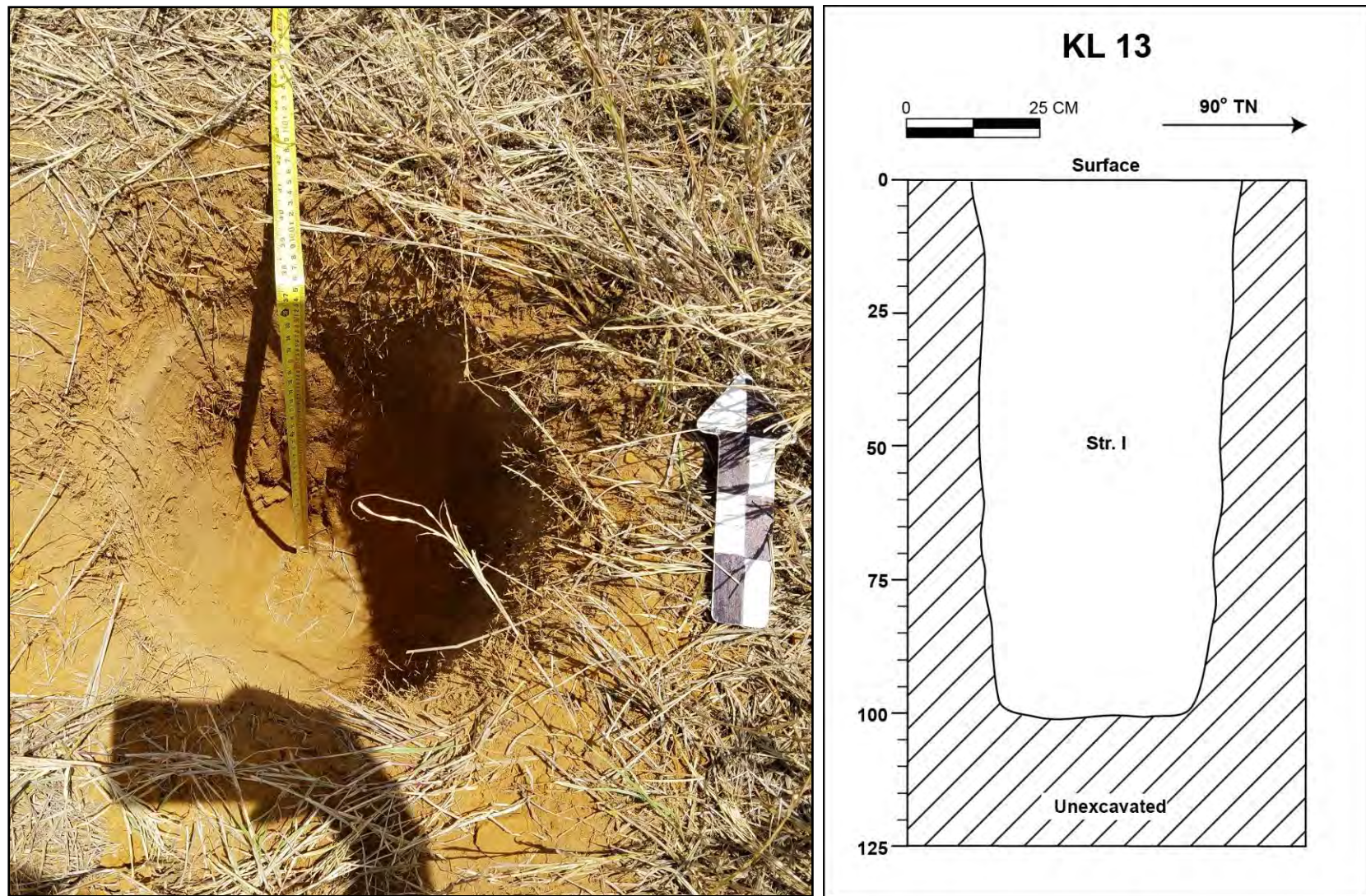


Figure 13. North sidewall profile photo and drawing for STP # KL 13



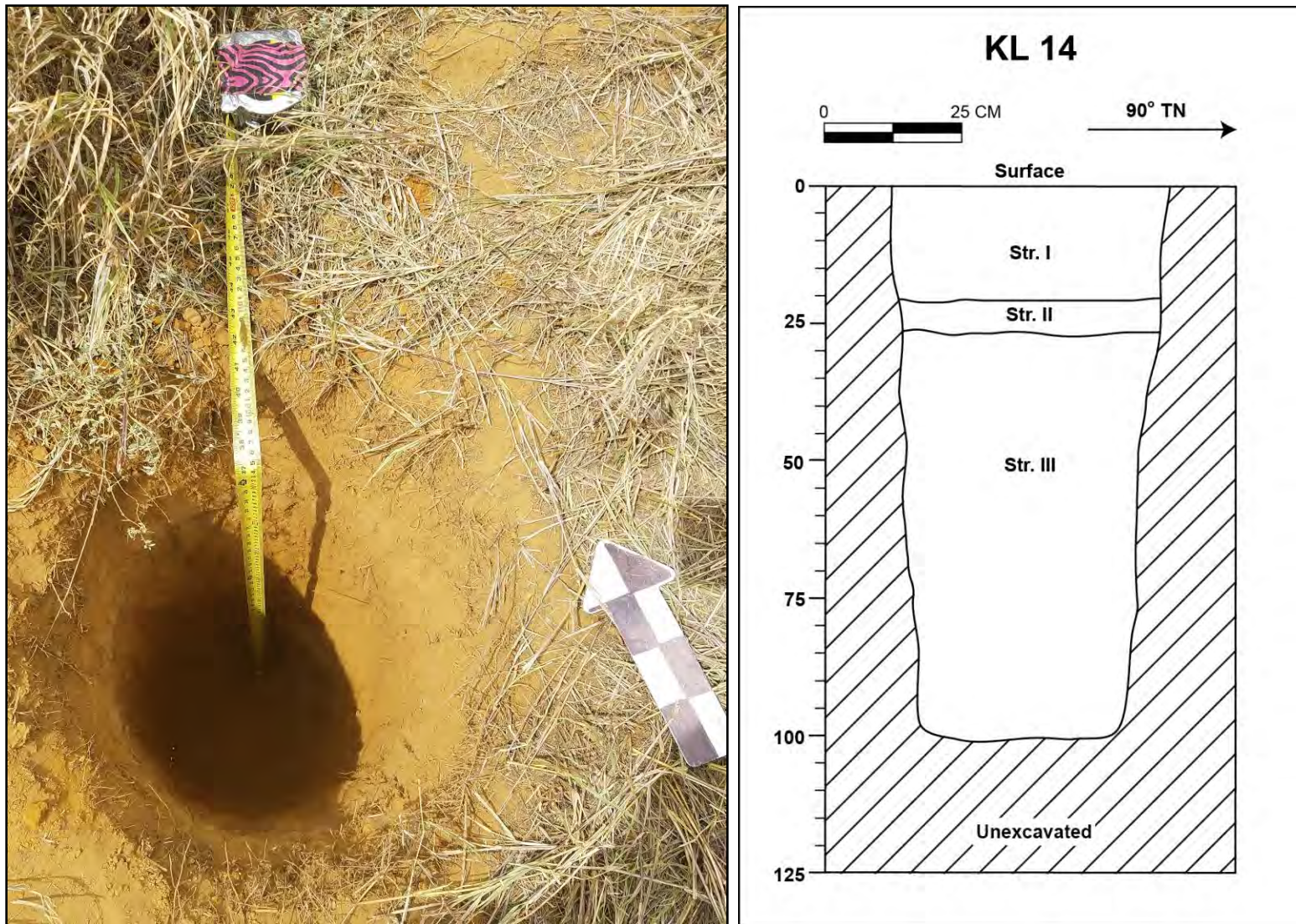


Figure 14. North sidewall profile photo and drawing for STP # KL 14



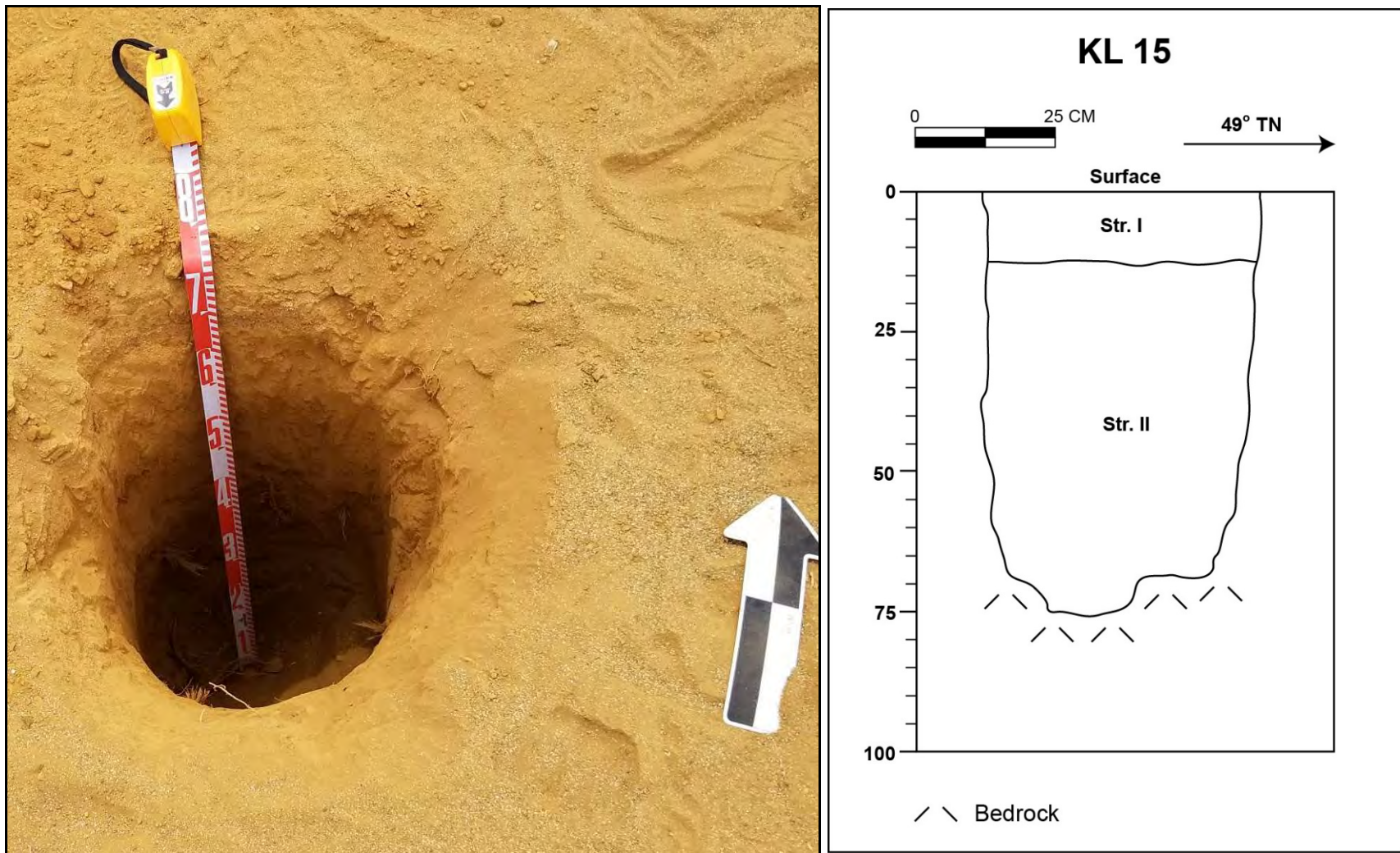


Figure 15. Northwest sidewall profile photo and drawing for STP # KL 15

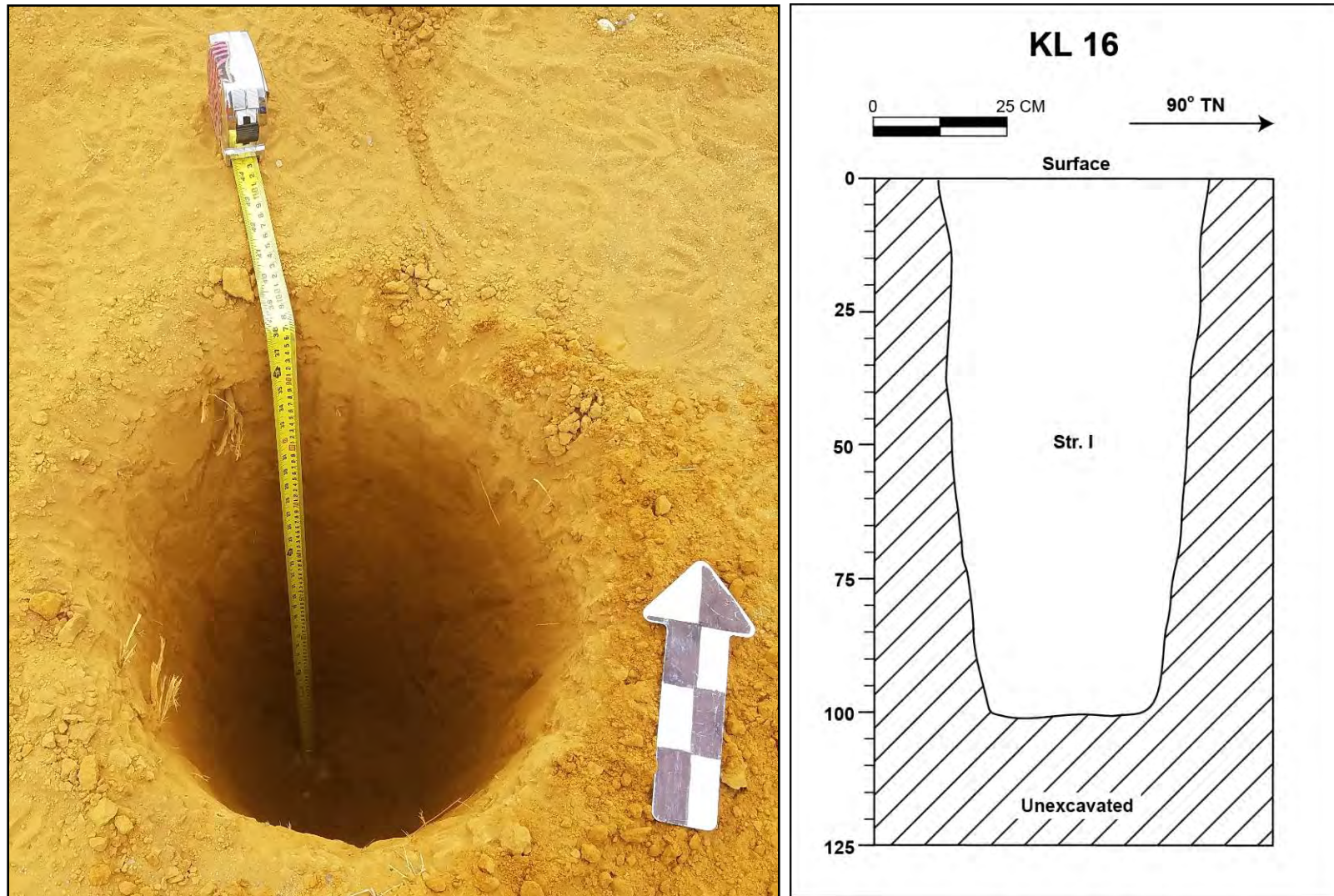


Figure 16. North sidewall profile photo and drawing for STP # KL 16



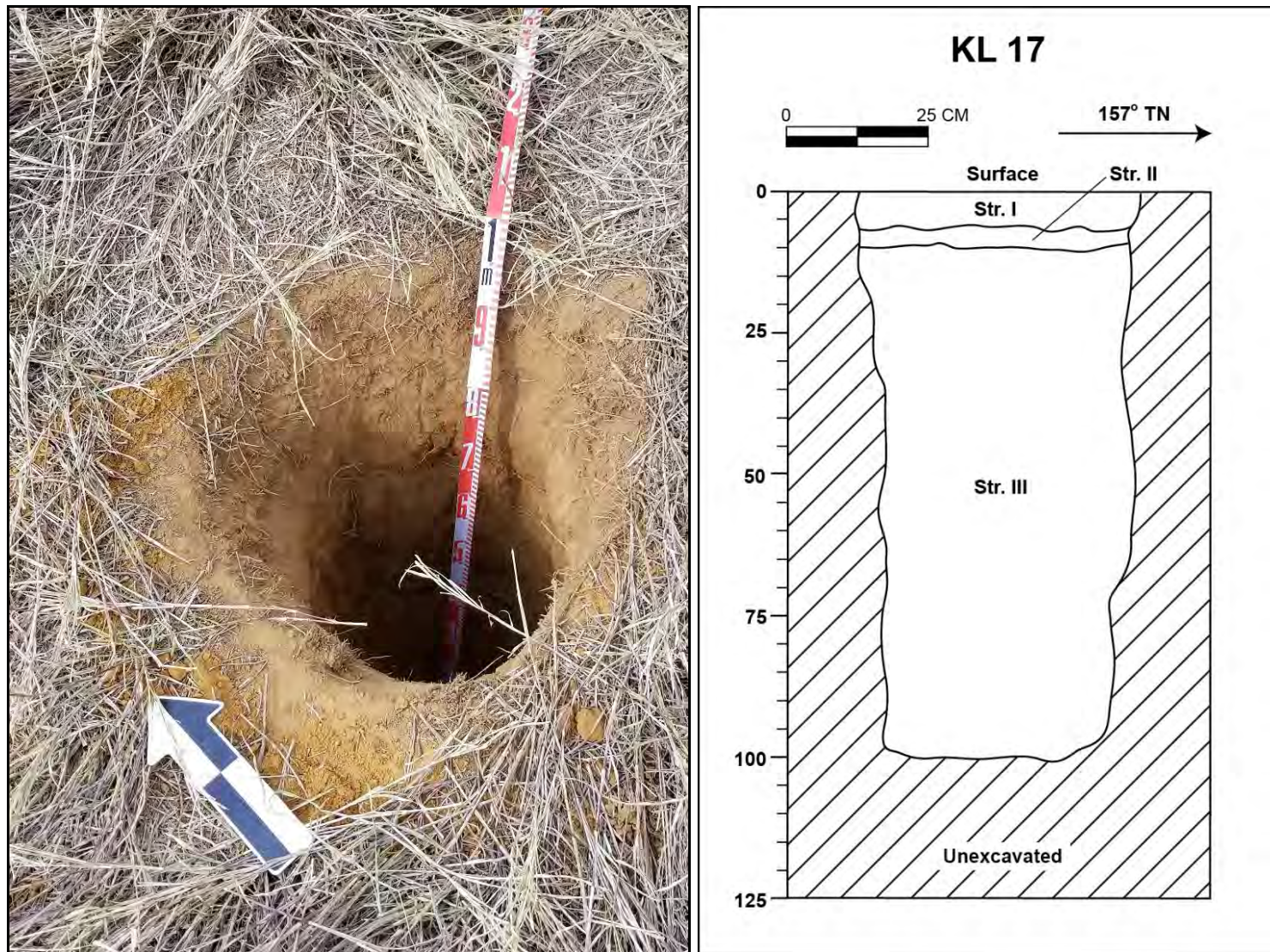


Figure 17. East sidewall profile photo (view to southeast to allow exposure of east sidewall) and drawing for STP # KL 17



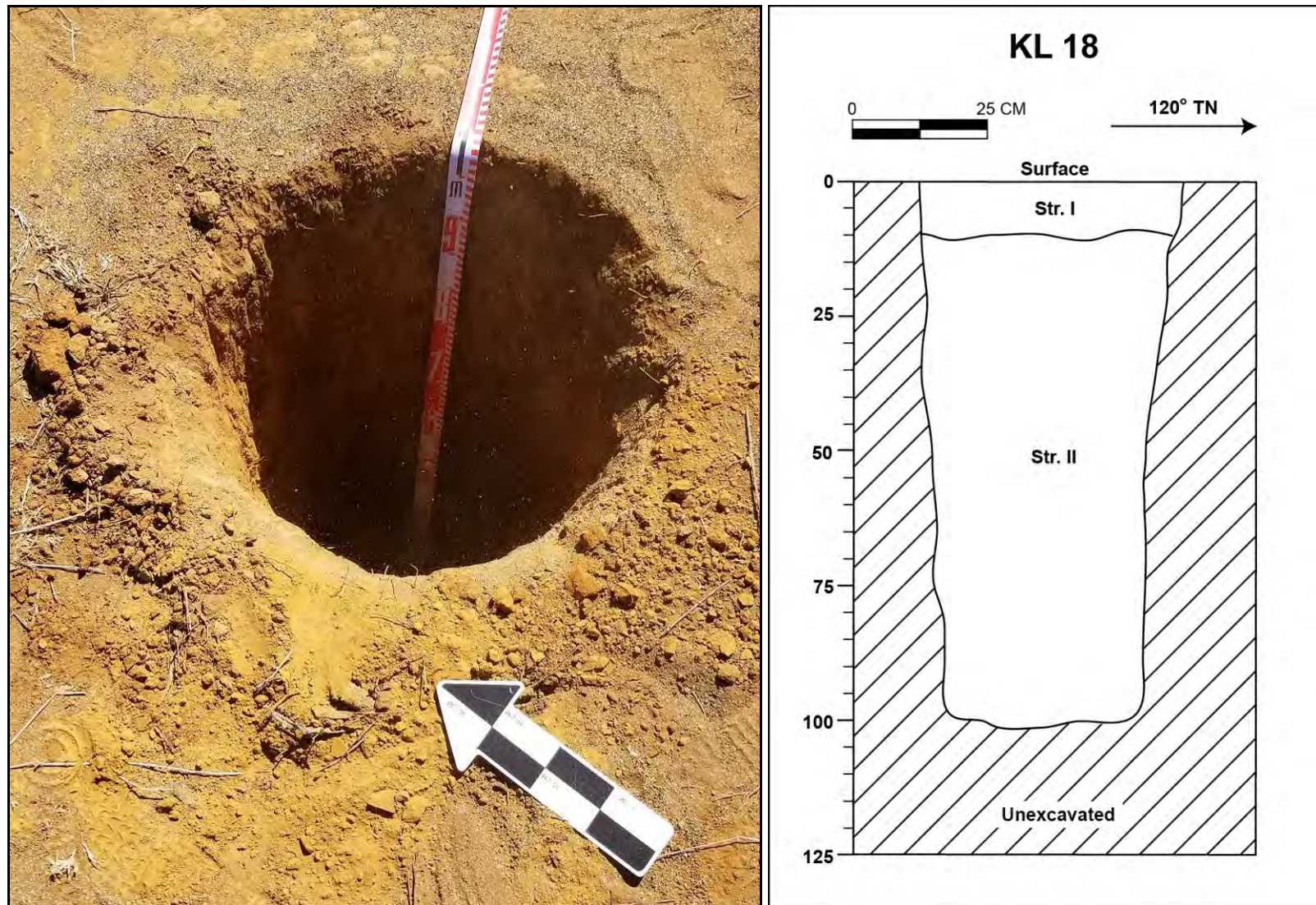


Figure 18. Northeast sidewall profile photo and drawing for STP # KL 18



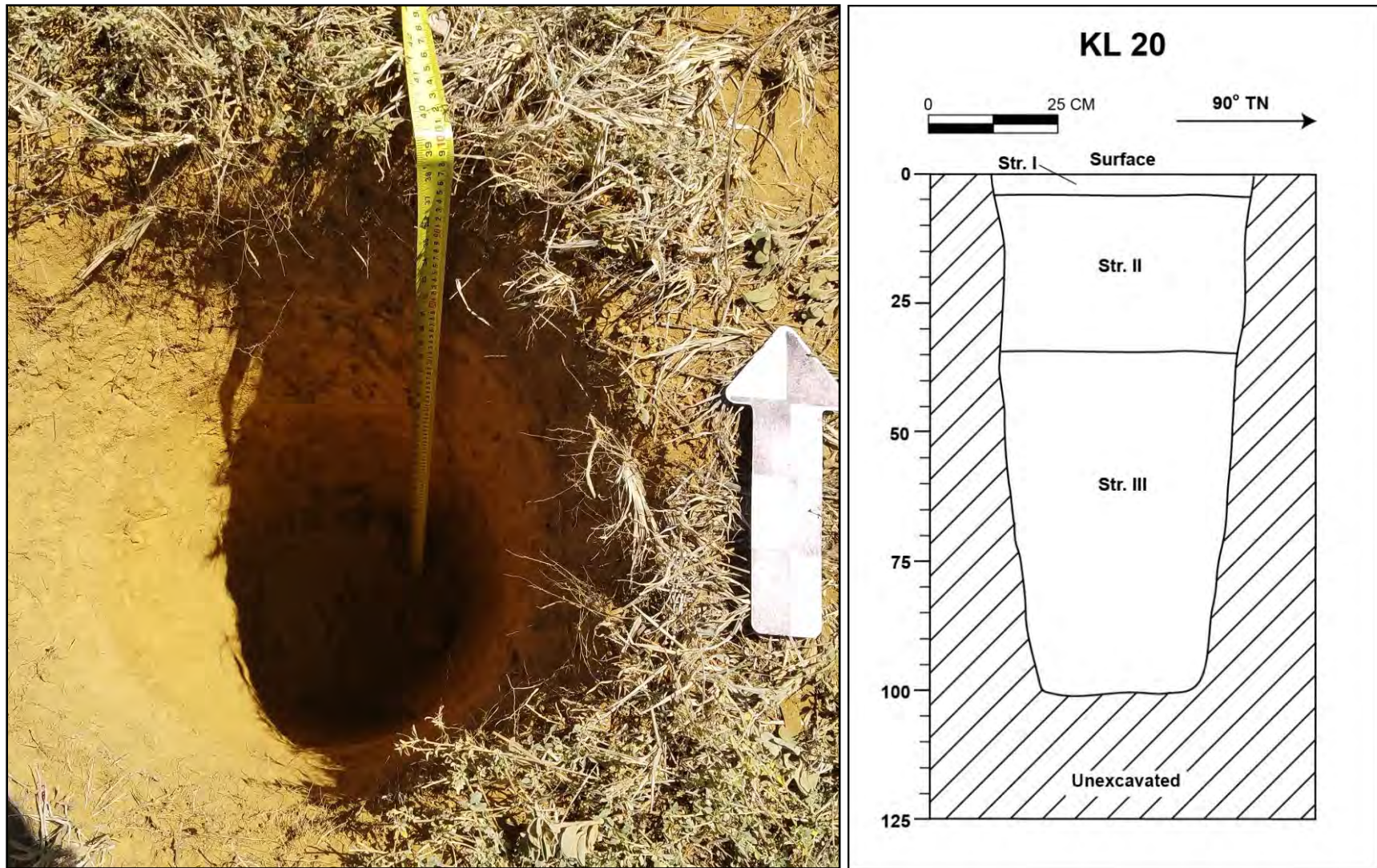


Figure 19. North sidewall profile photo and drawing for STP # KL 20



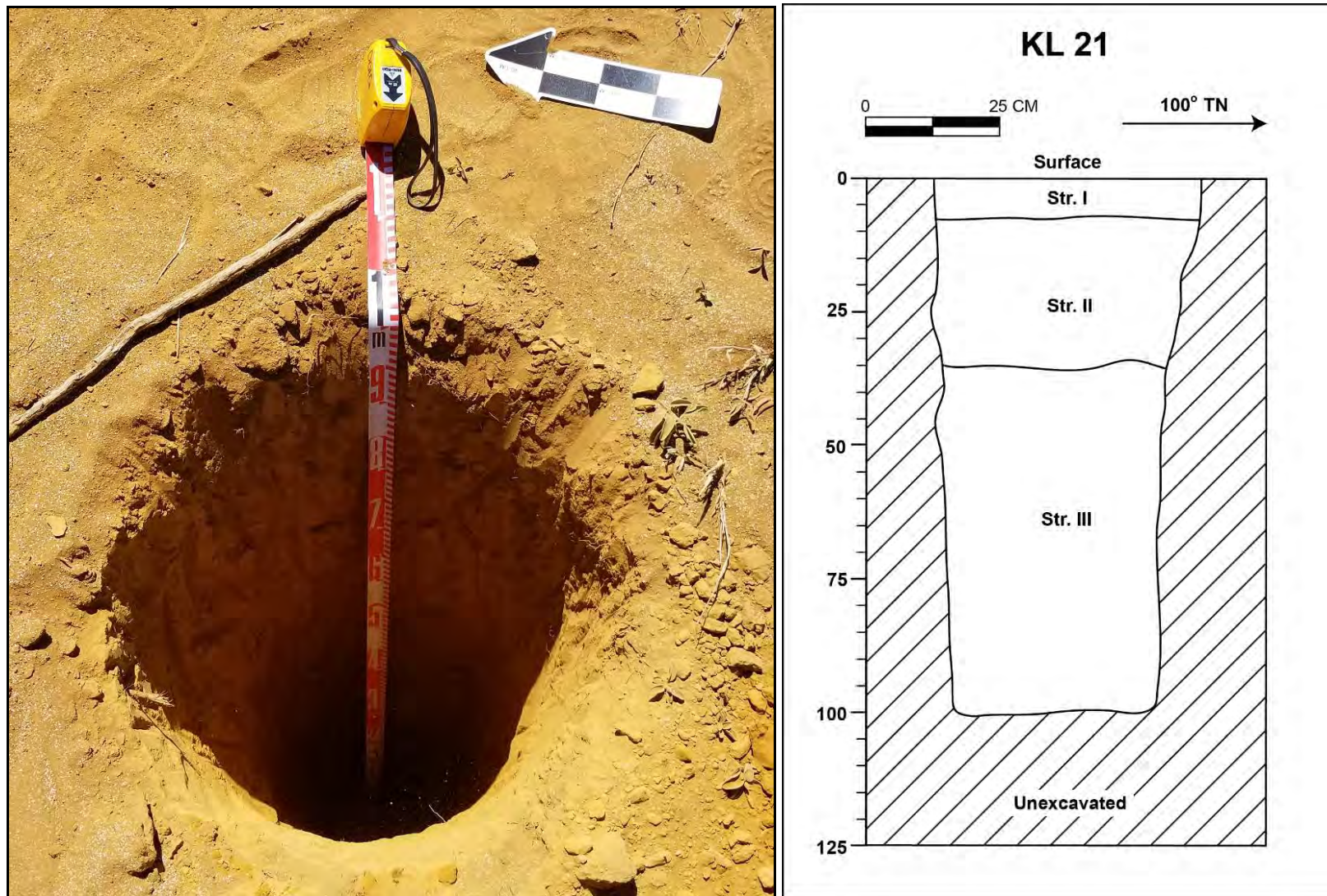


Figure 20. East sidewall profile photo and drawing for STP # KL 21



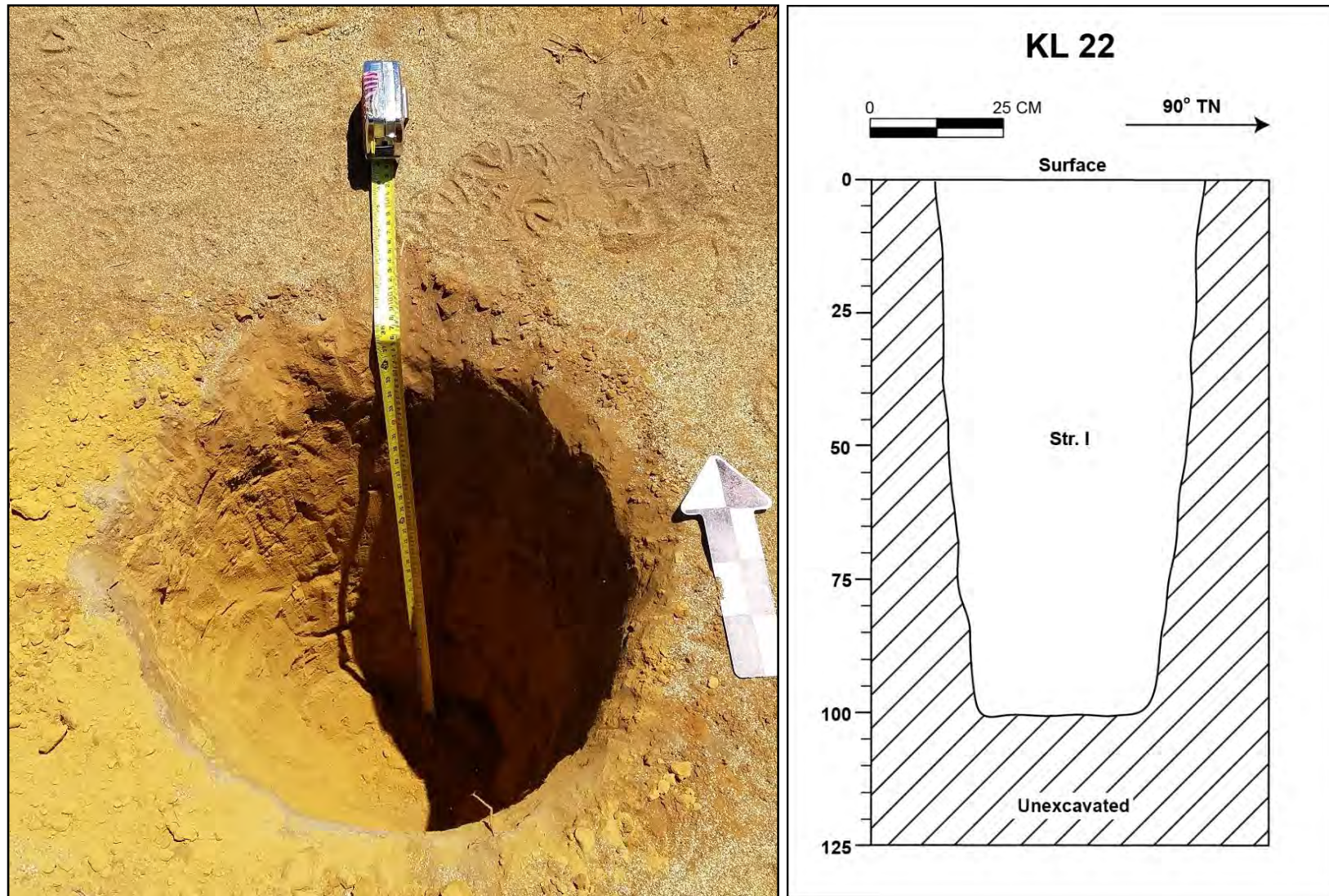


Figure 21. North sidewall profile photo and drawing for STP # KL 22



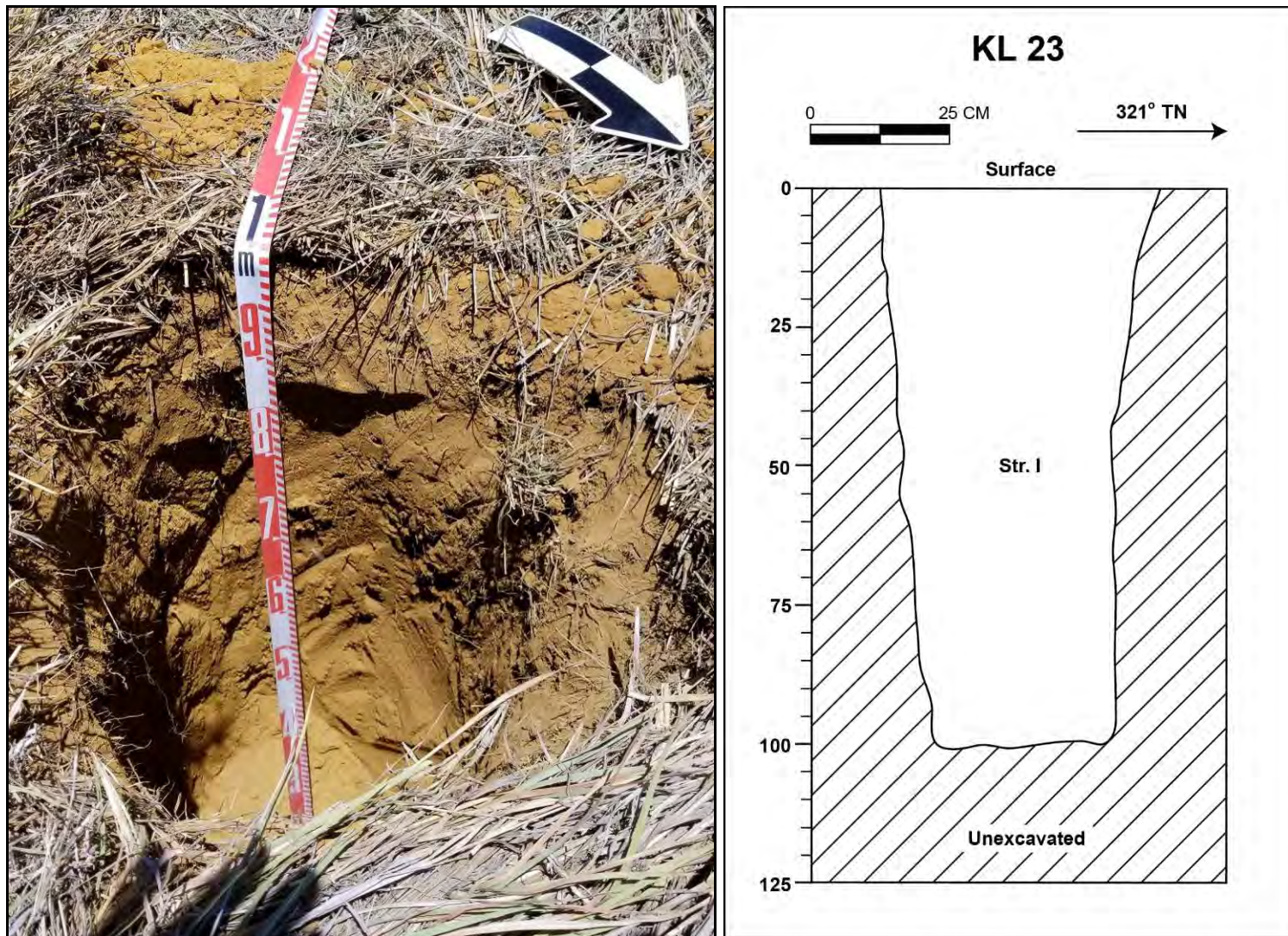


Figure 22. Southwest sidewall profile photo and drawing for STP # KL 23



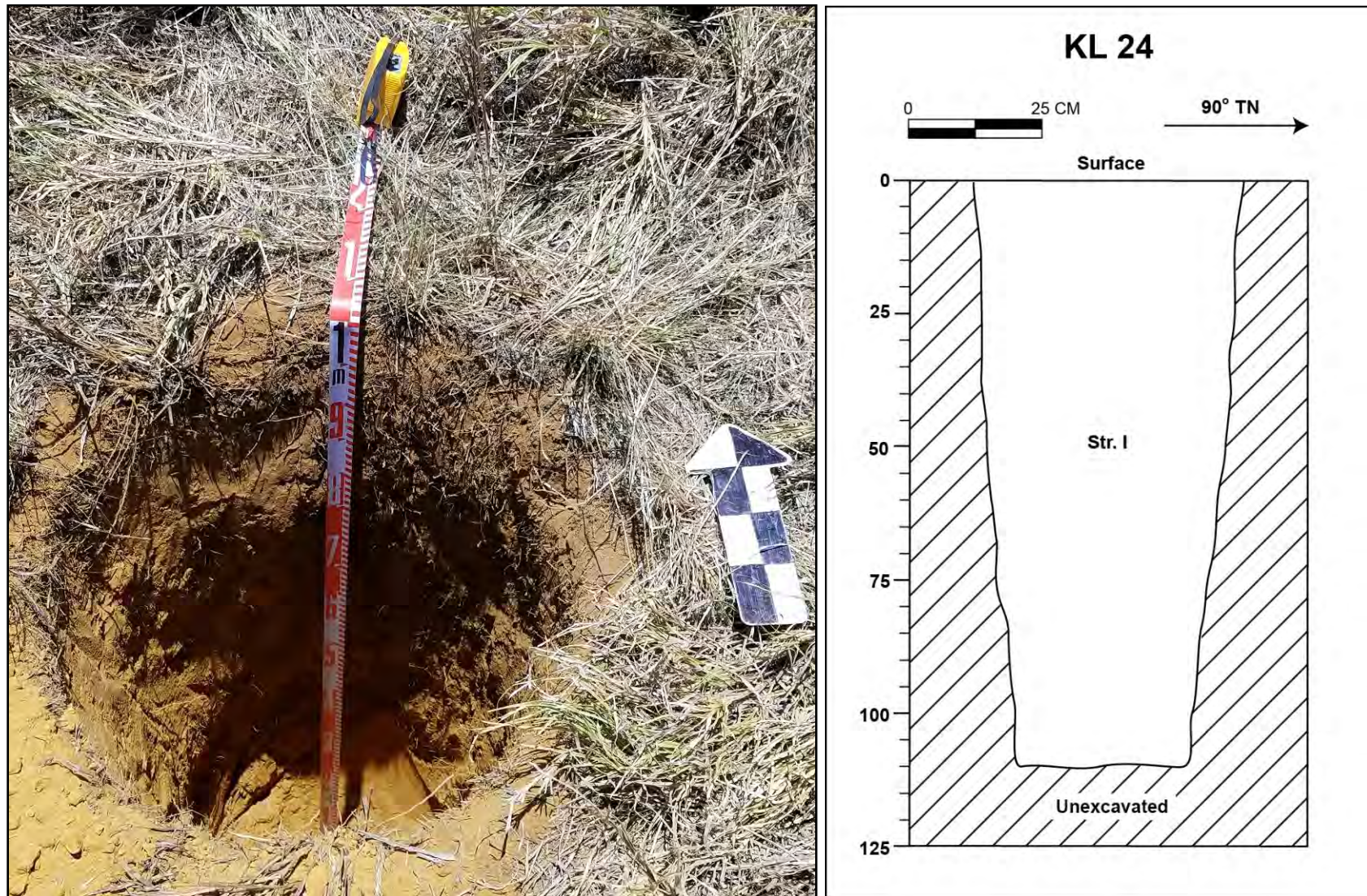


Figure 23. North sidewall profile photo and drawing for STP # KL 24



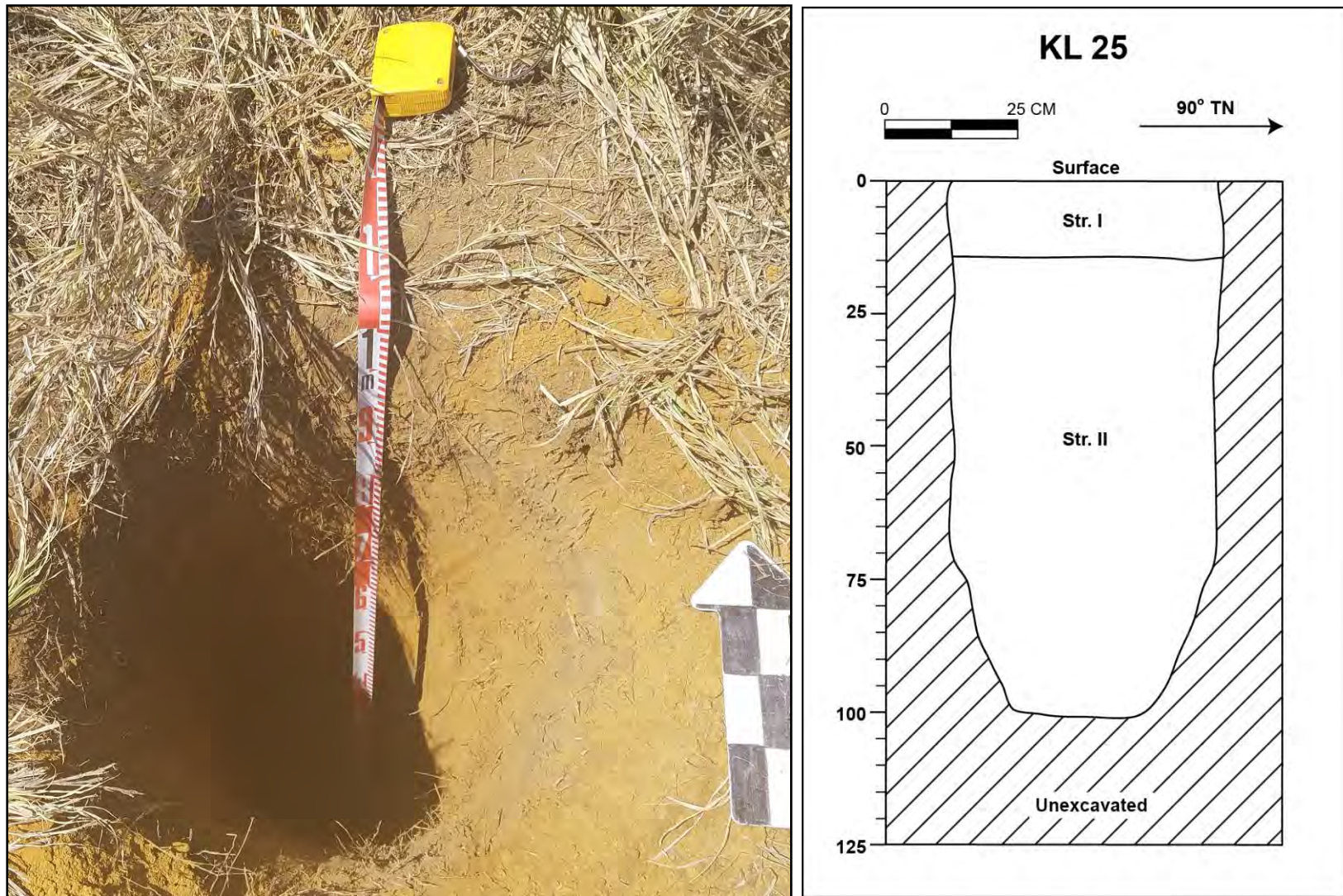


Figure 24. North sidewall profile photo and drawing for STP # KL 25



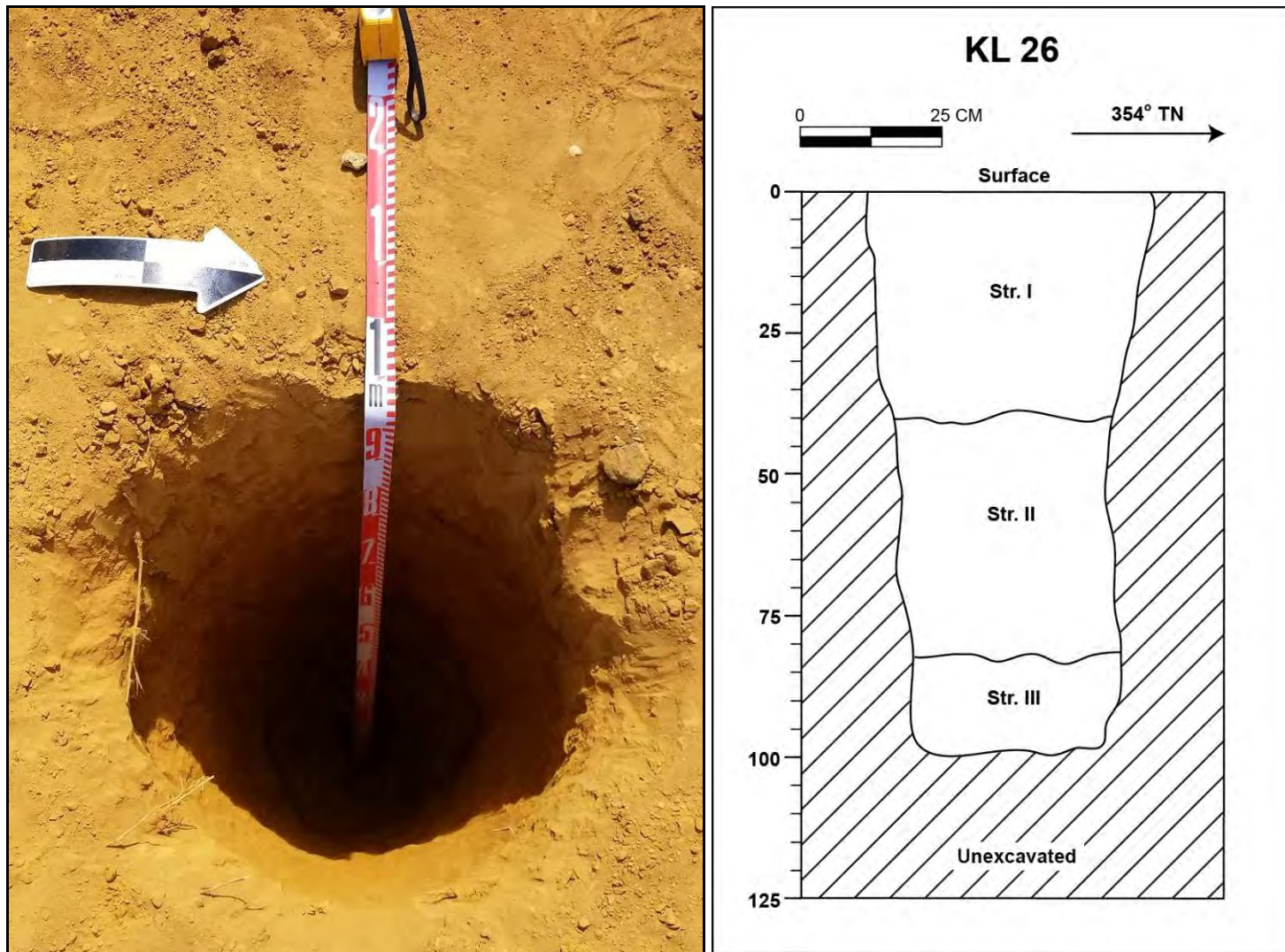


Figure 25. West sidewall profile photo and drawing for STP # KL 26



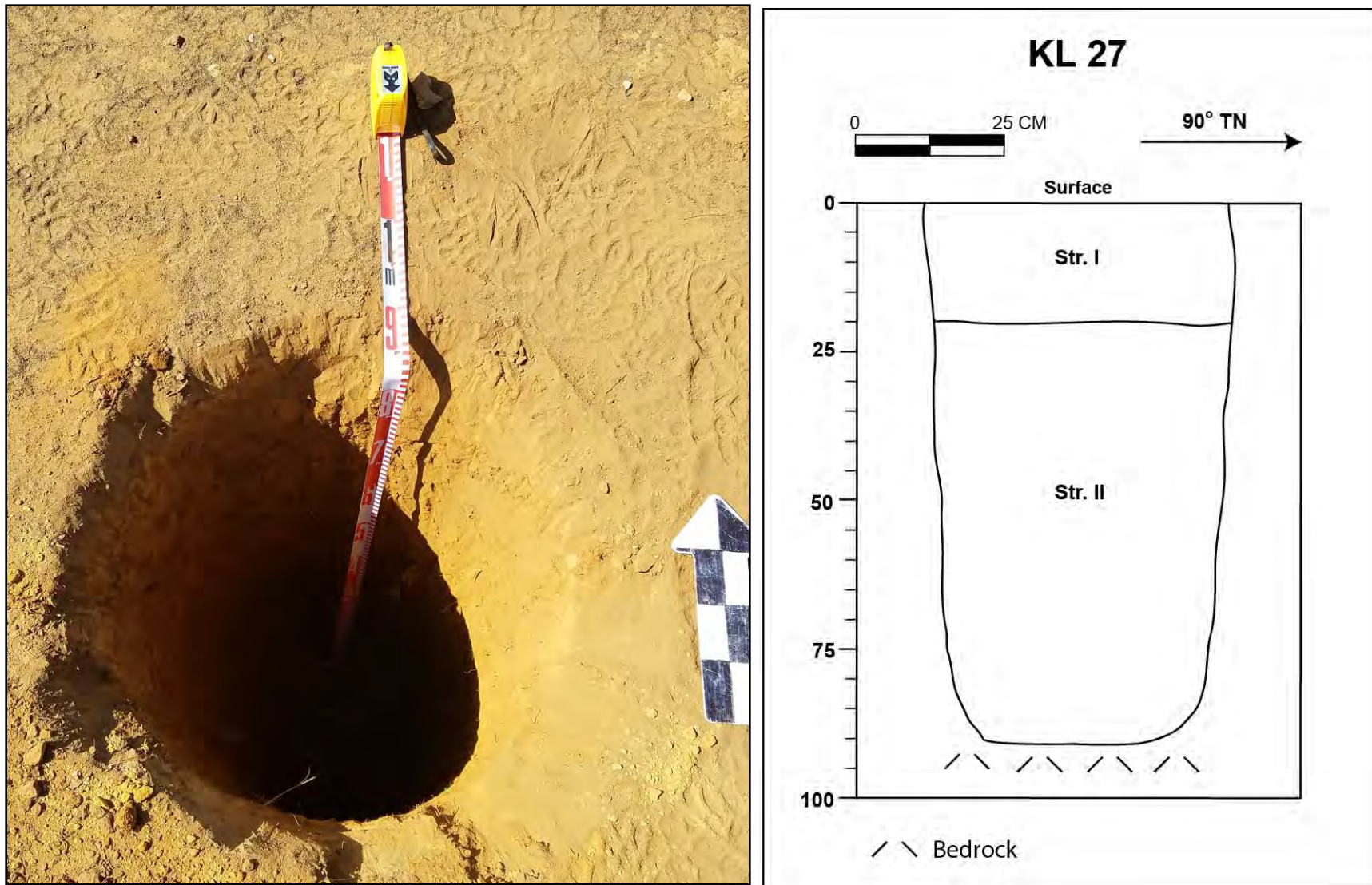


Figure 26. North sidewall profile photo and drawing for STP # KL 27



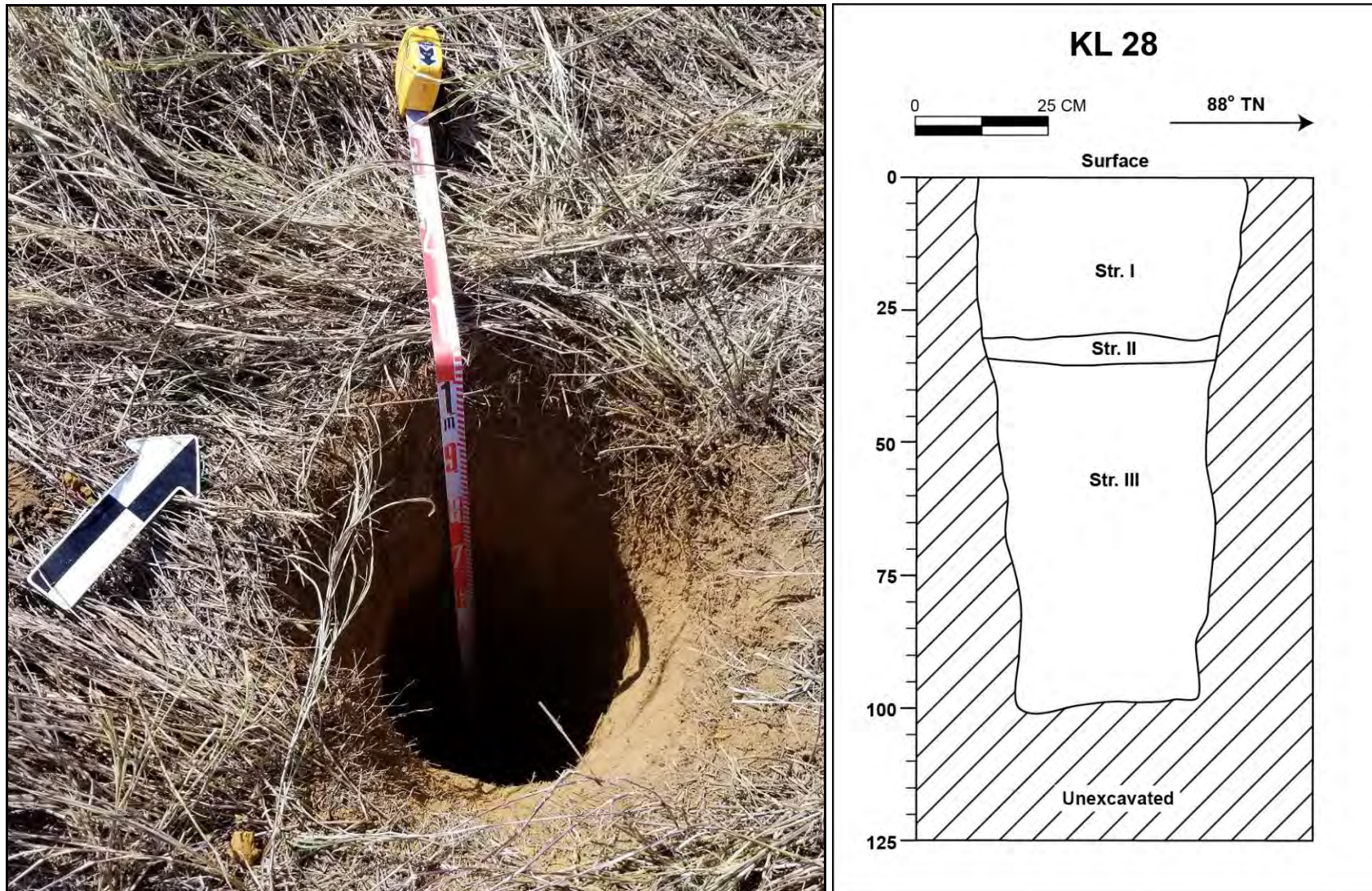


Figure 27. North sidewall profile photo and drawing for STP # KL 28



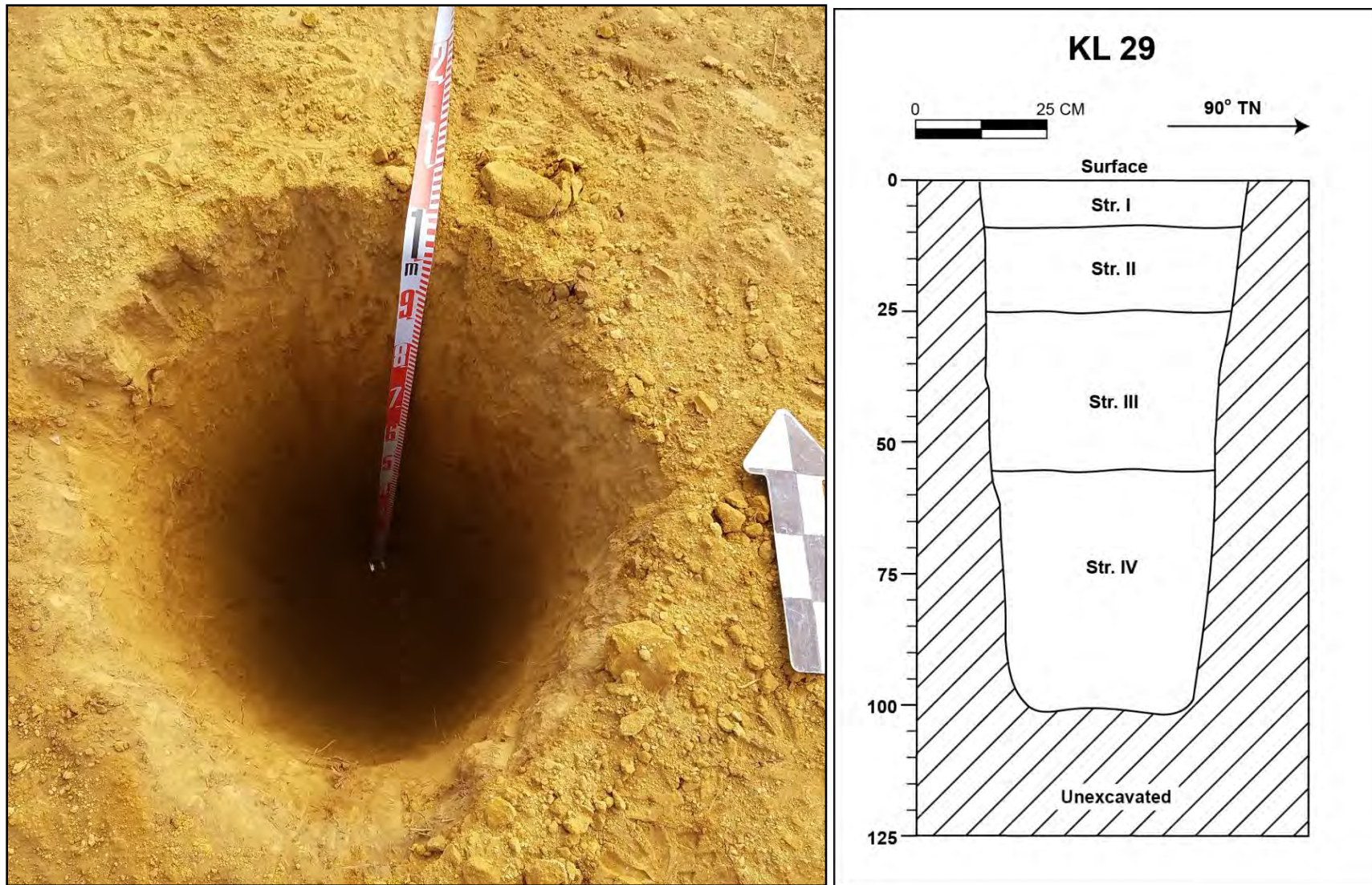


Figure 28. North sidewall profile photo and drawing for STP # KL 29



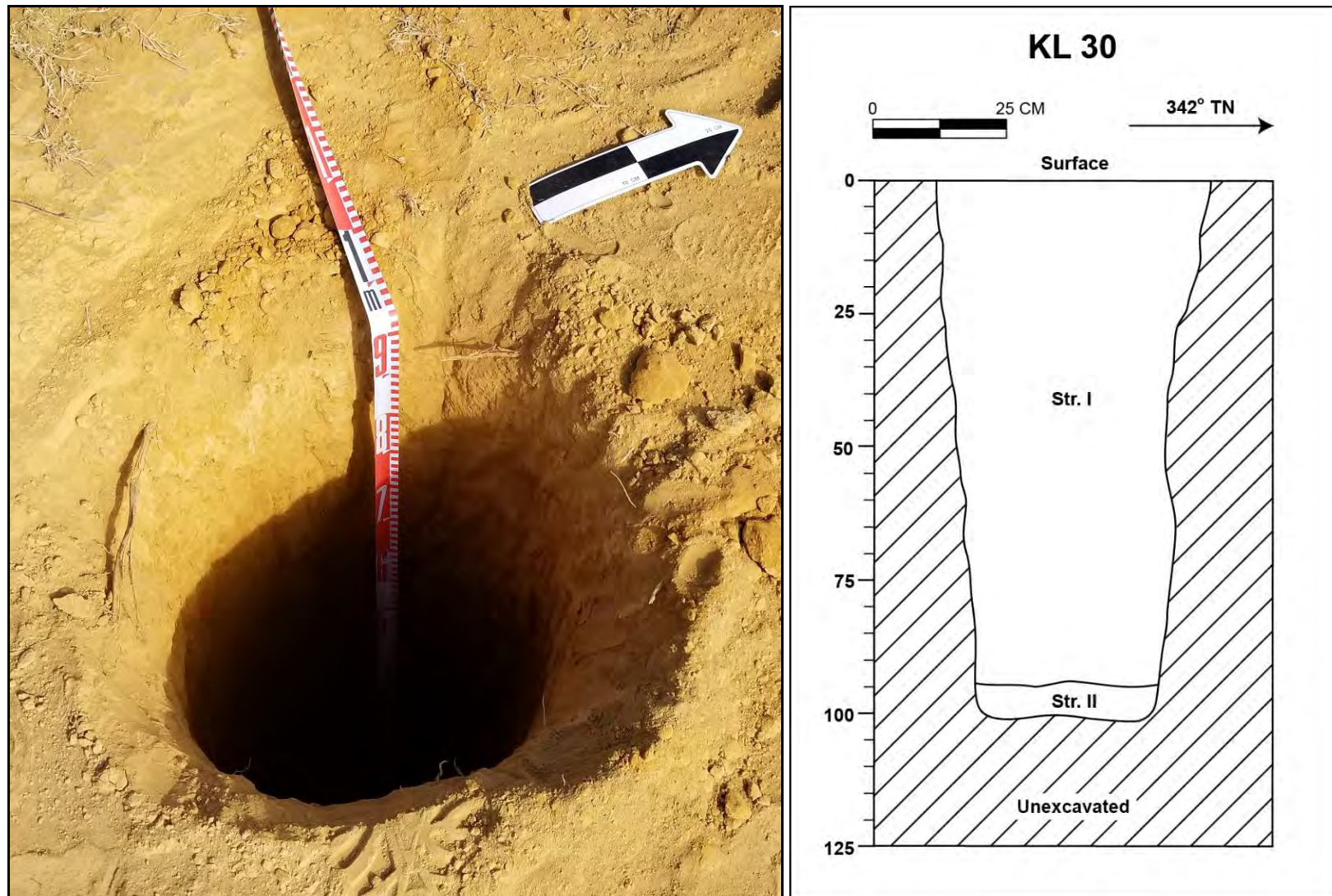


Figure 29. West sidewall profile photo and drawing for STP # KL 30



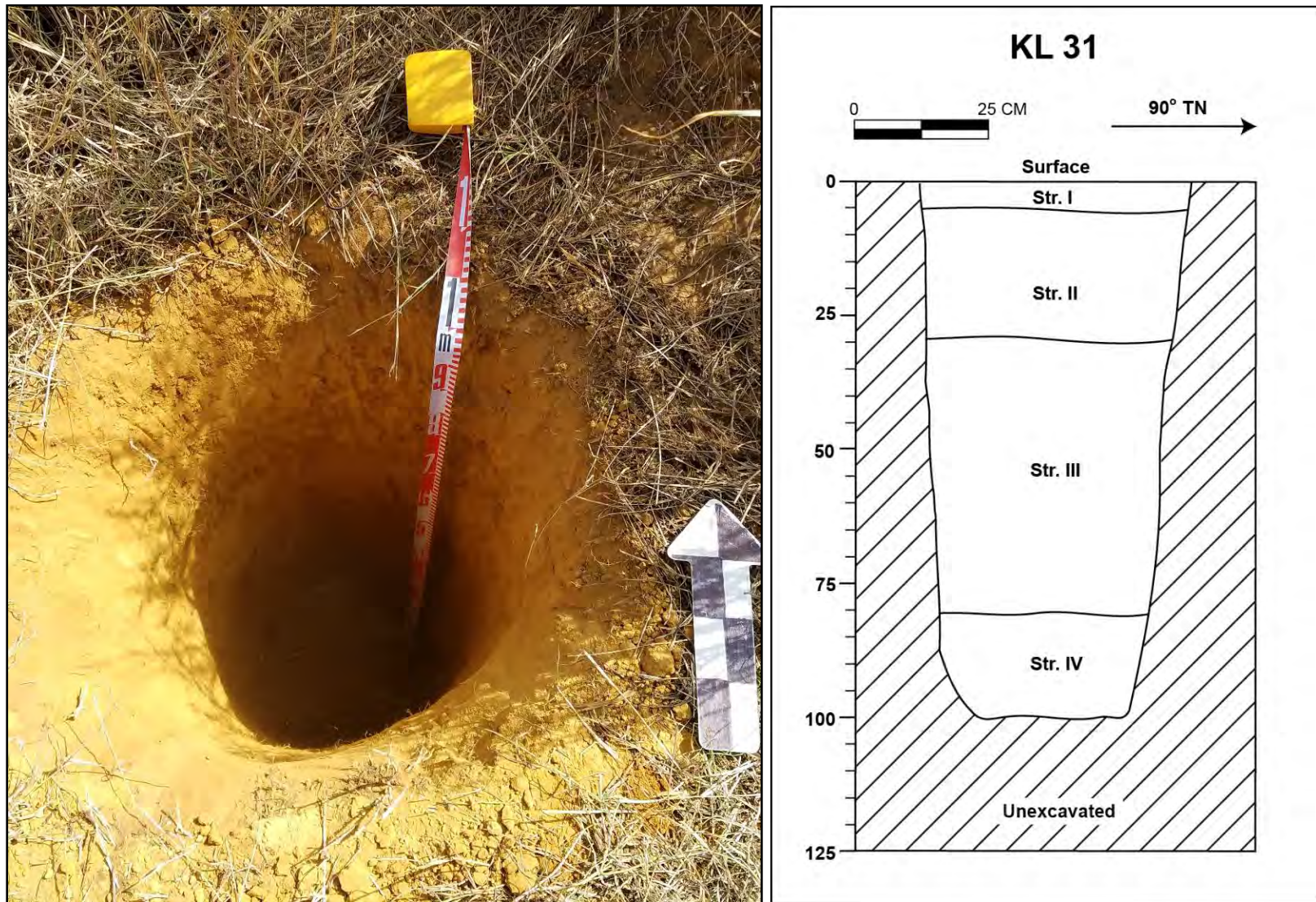


Figure 30. North sidewall profile photo and drawing for STP # KL 31



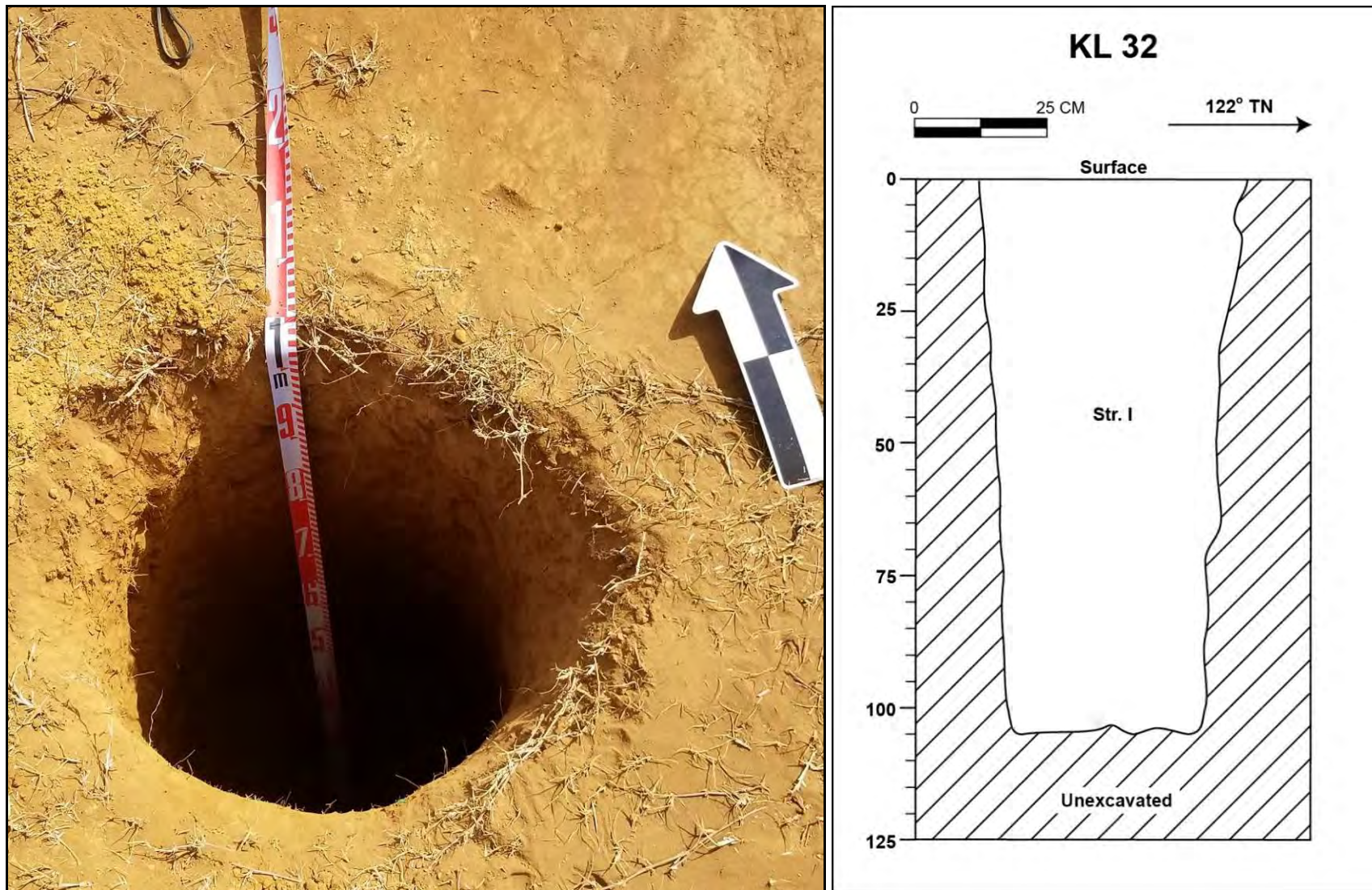


Figure 31. Northeast sidewall profile photo and drawing for STP # KL 32



## Ka Lae Loop Parking

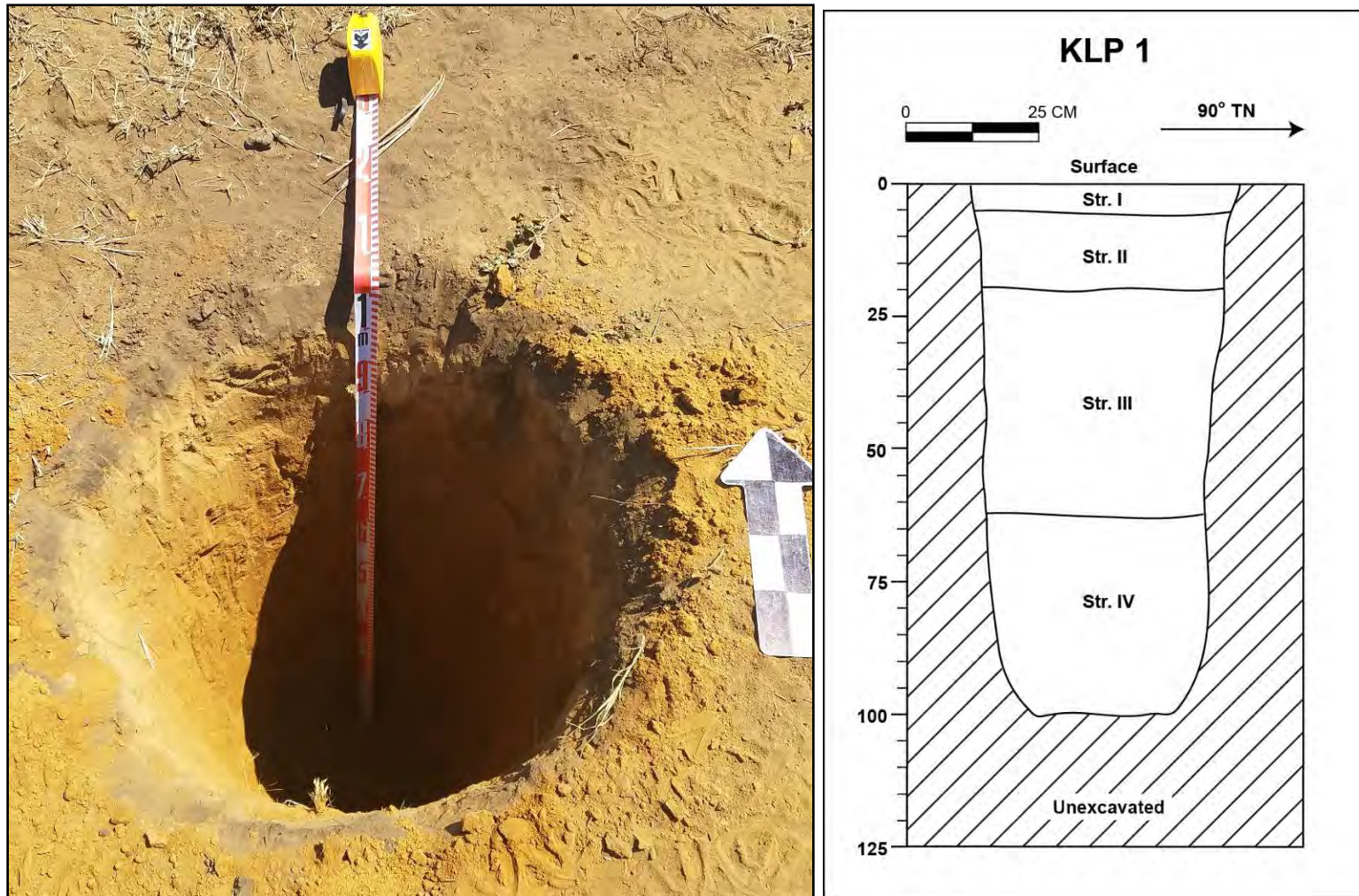


Figure 32. North sidewall profile photo and drawing for STP # KLP 1



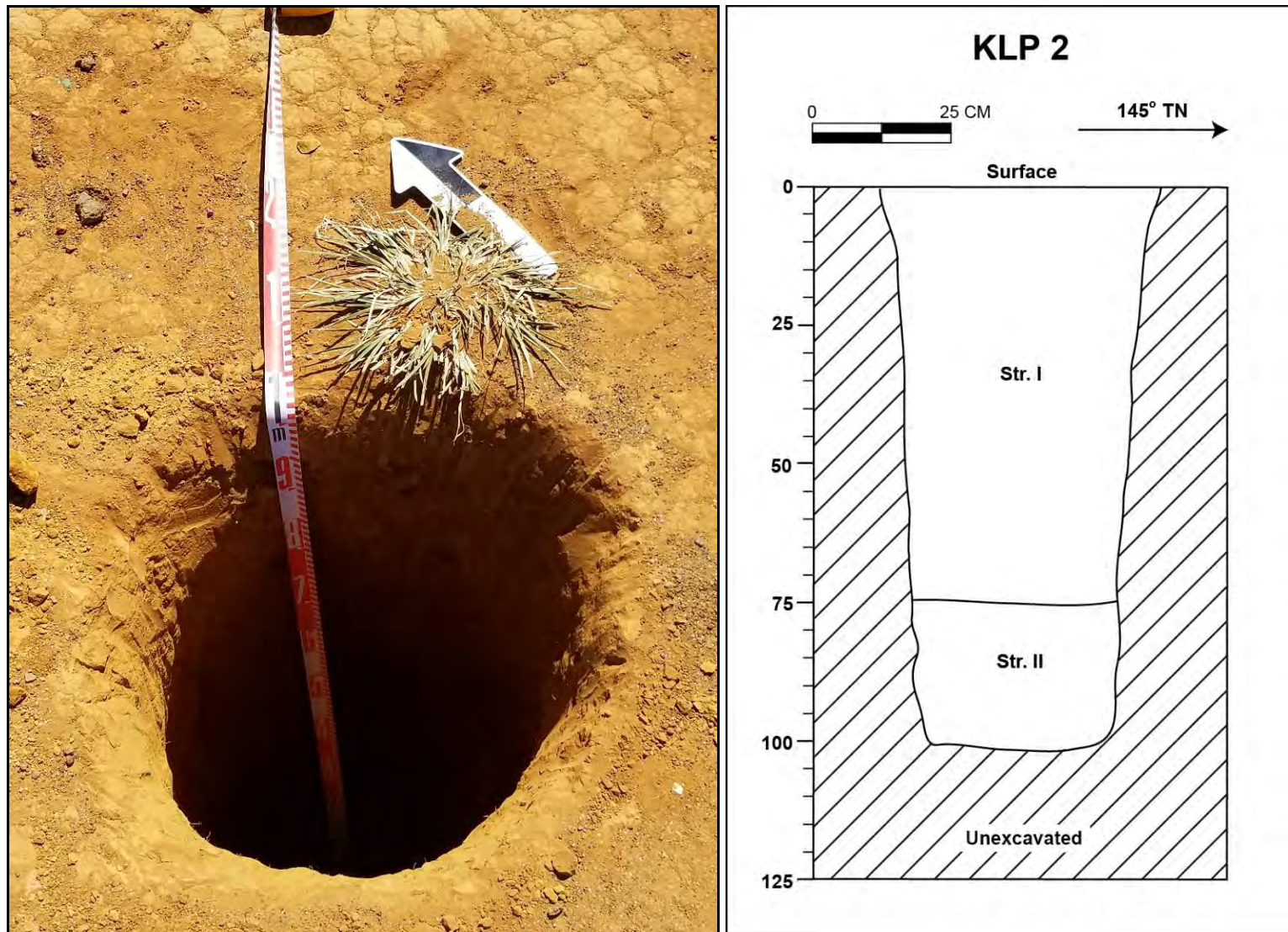


Figure 33. Northeast sidewall profile photo and drawing for STP # KLP 2



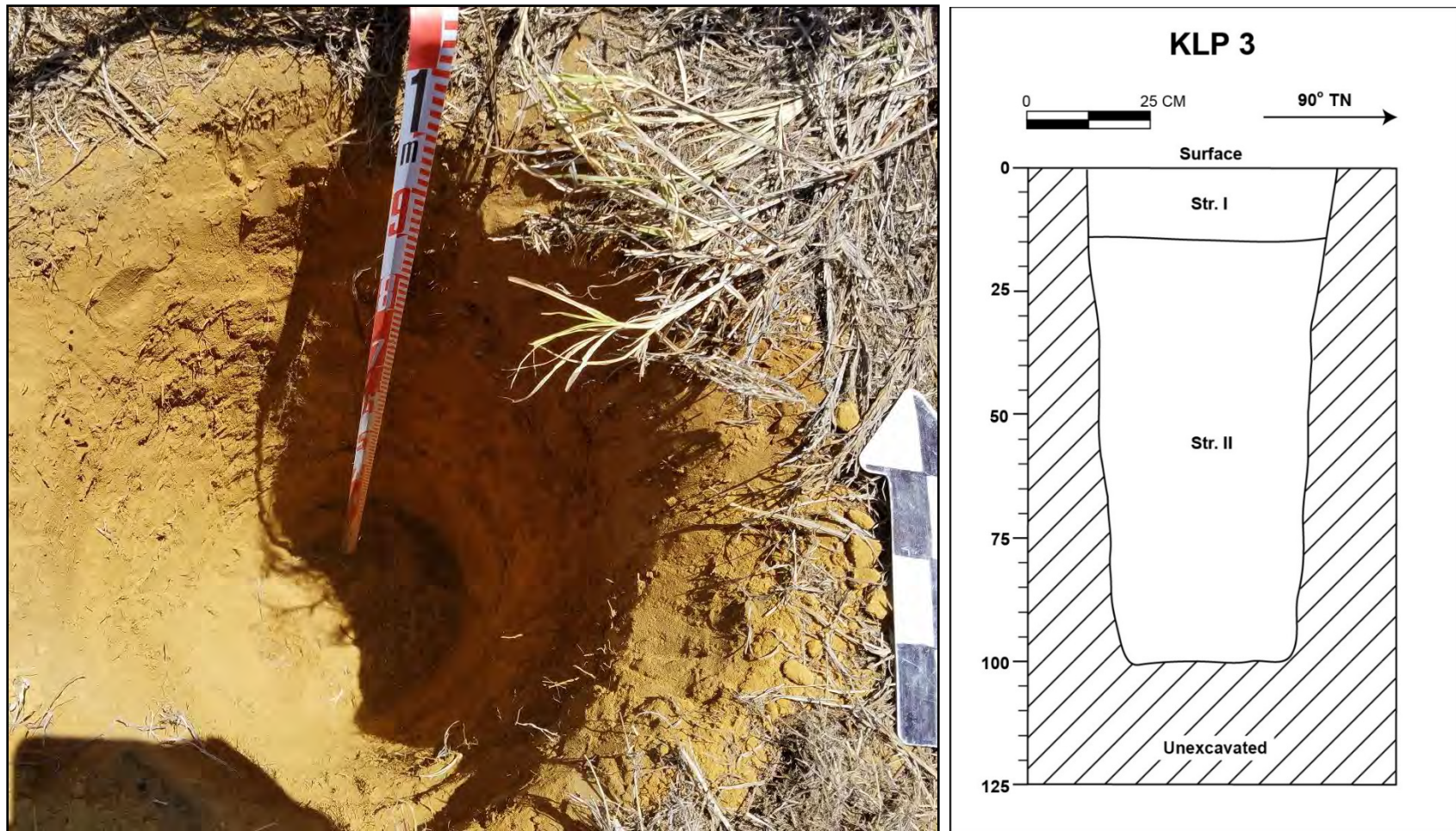


Figure 34. North sidewall profile photo and drawing for STP # KLP 3



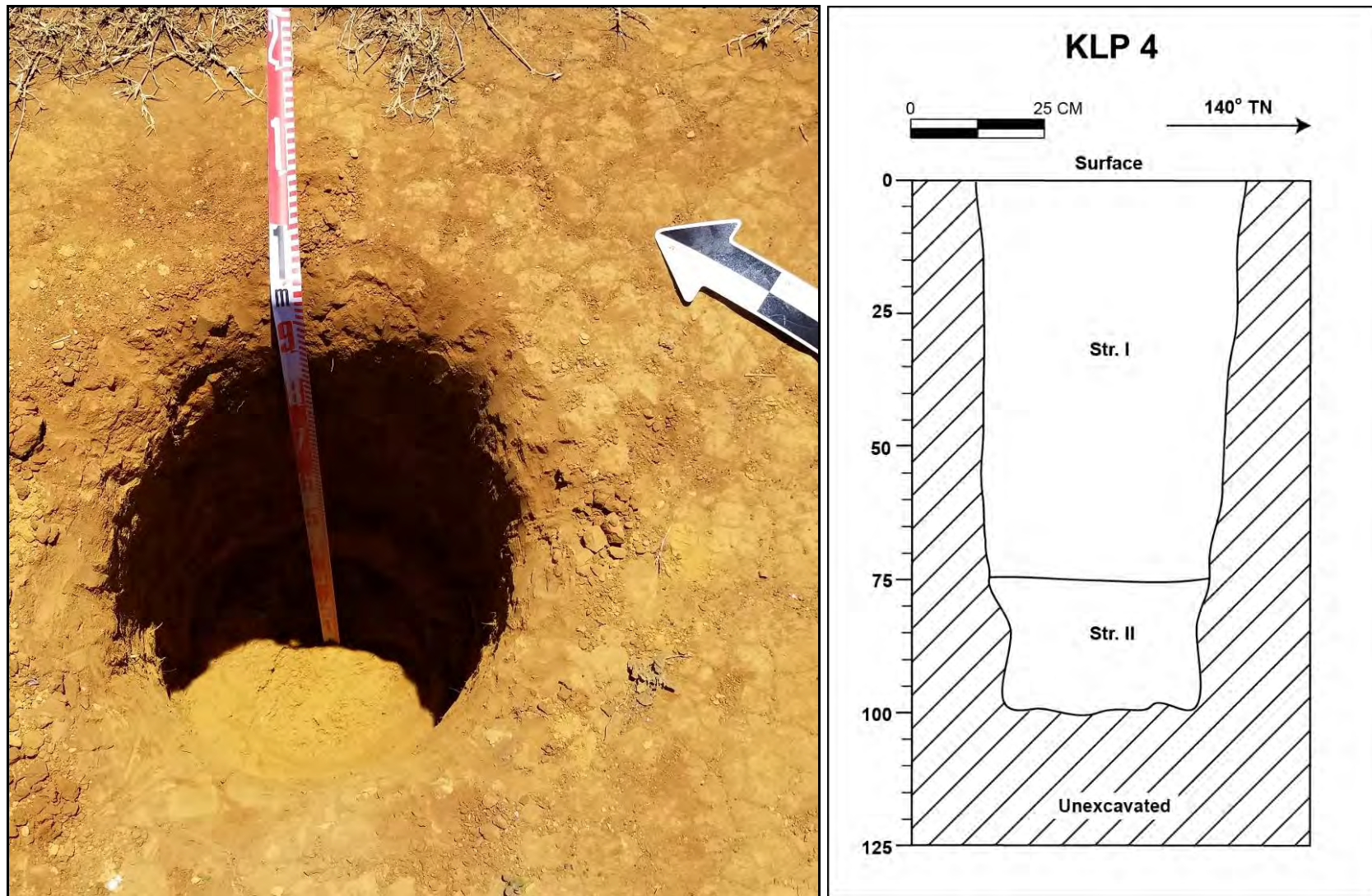


Figure 35. Northeast sidewall profile photo and drawing for STP # KLP 4



## Emergency Road

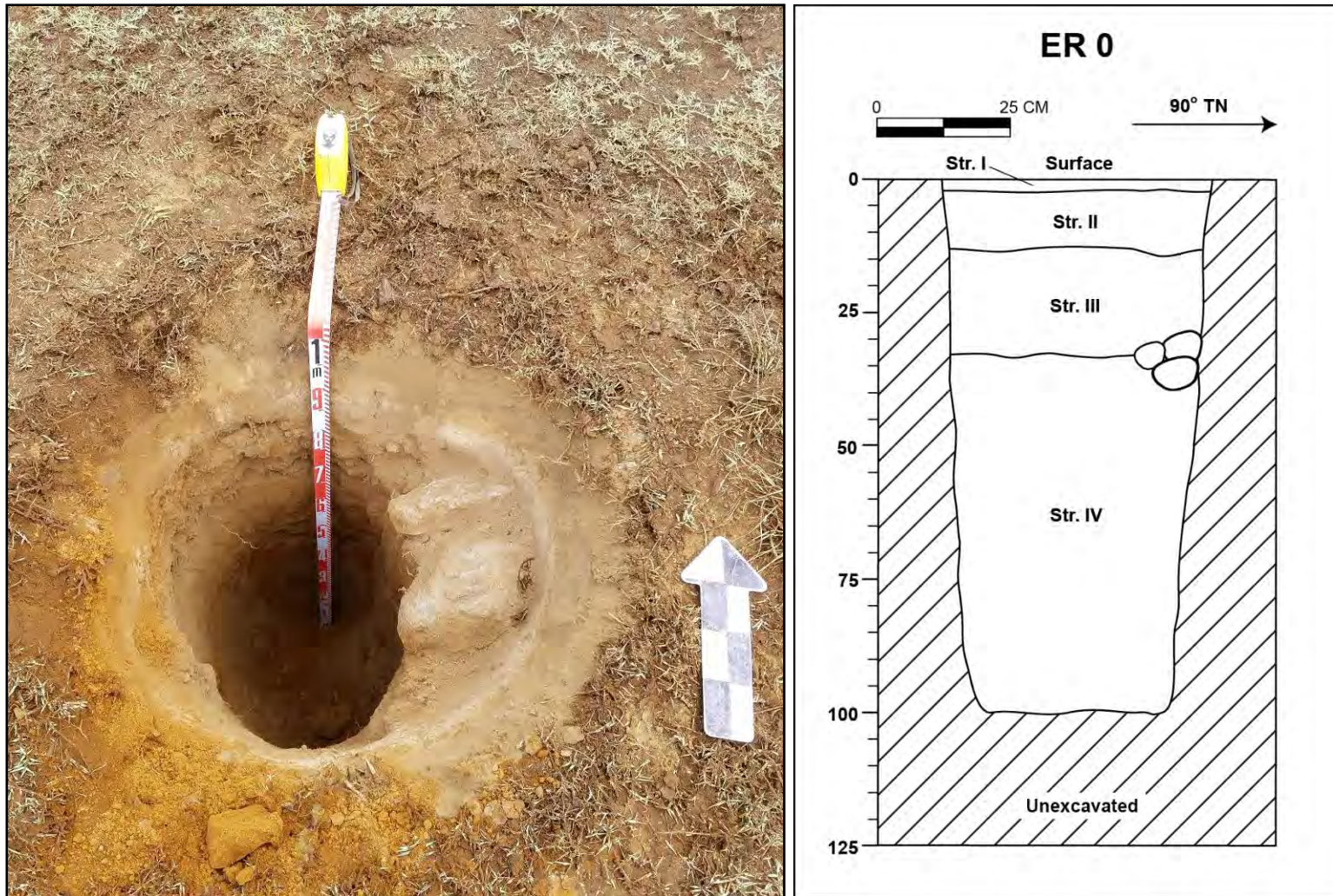


Figure 36. North sidewall profile photo and drawing for STP # ER 0



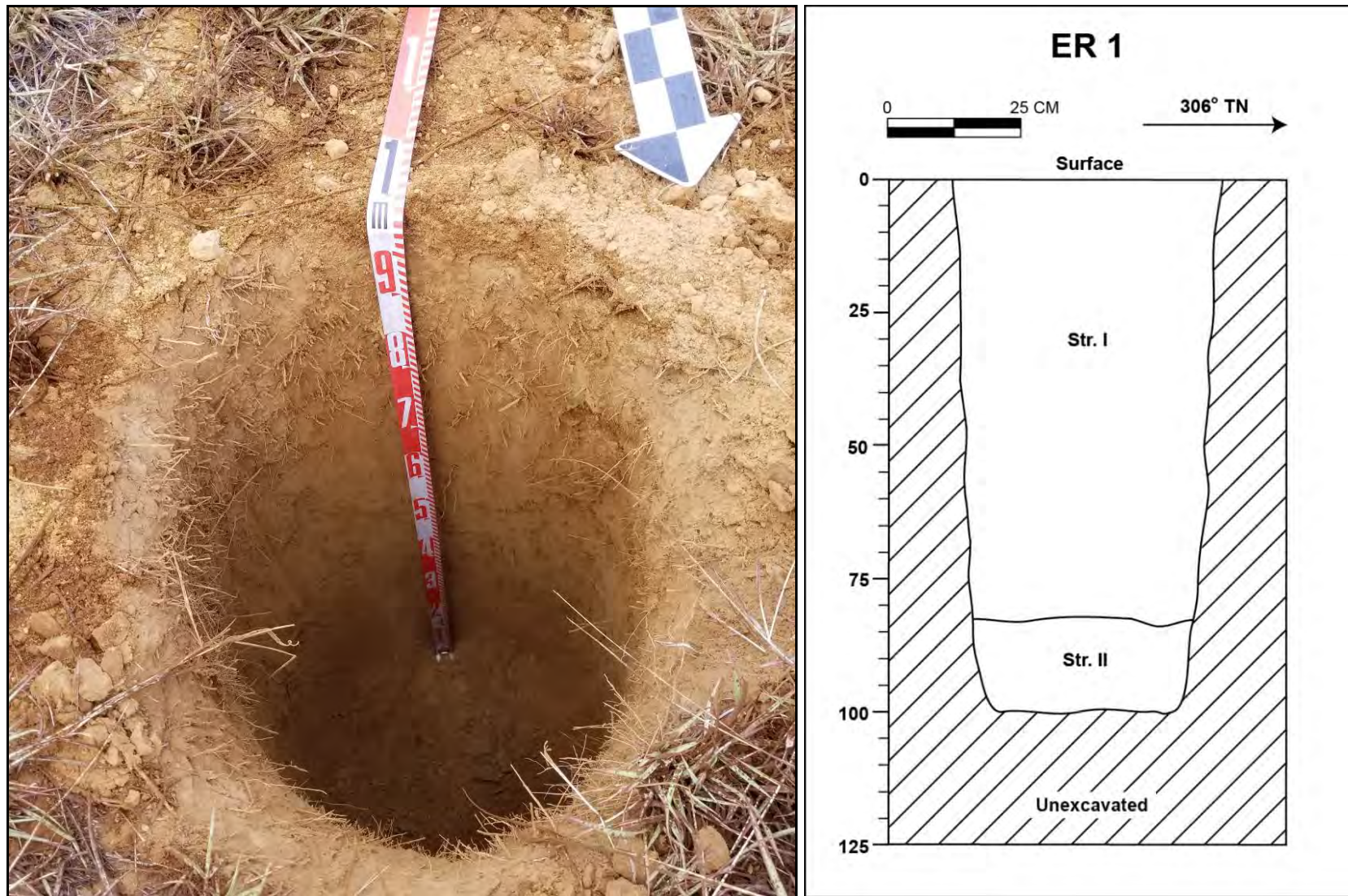


Figure 37. Southwest sidewall profile photo and drawing for STP # ER 1



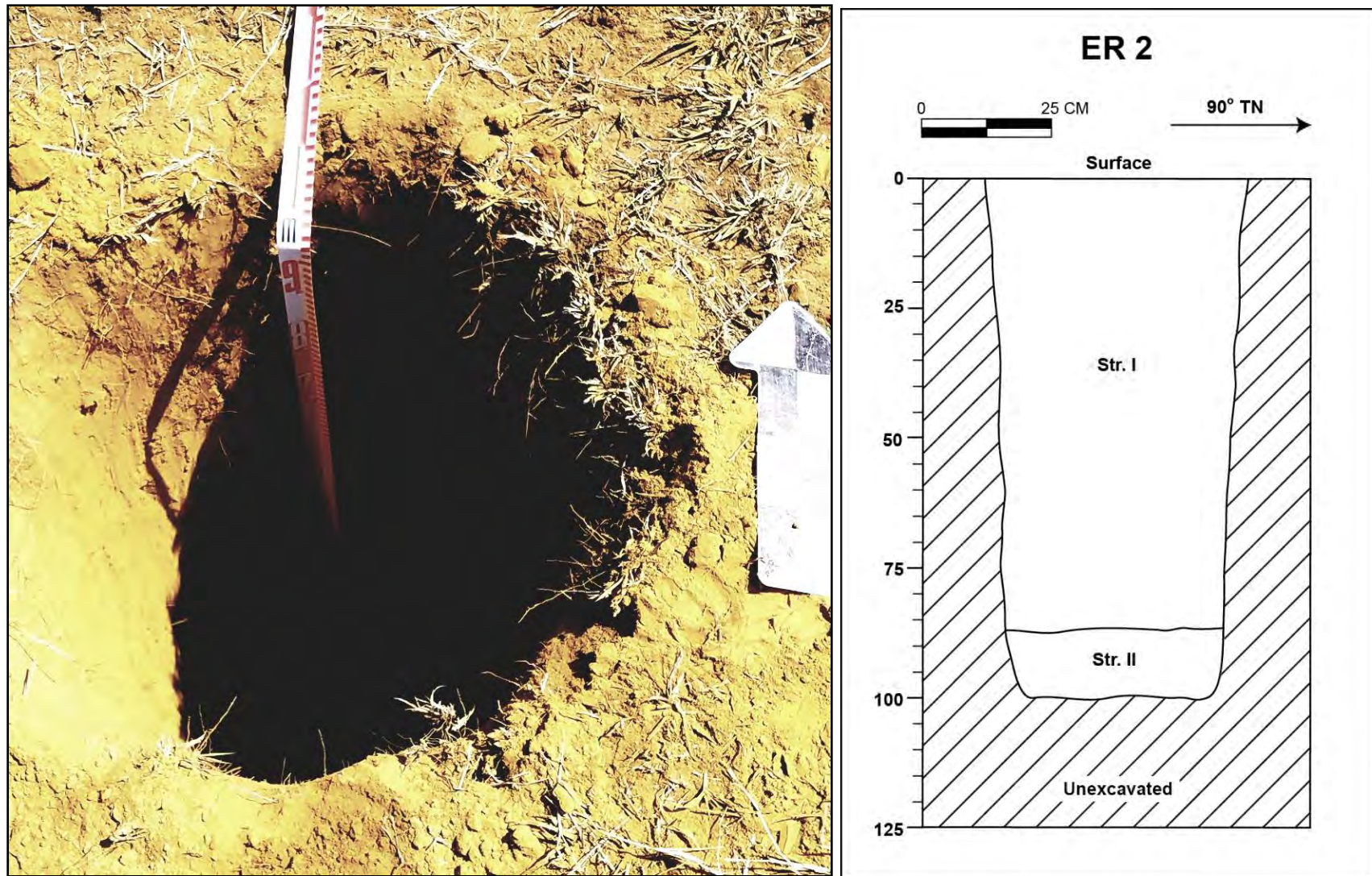


Figure 38. North sidewall profile photo and drawing for STP # ER 2



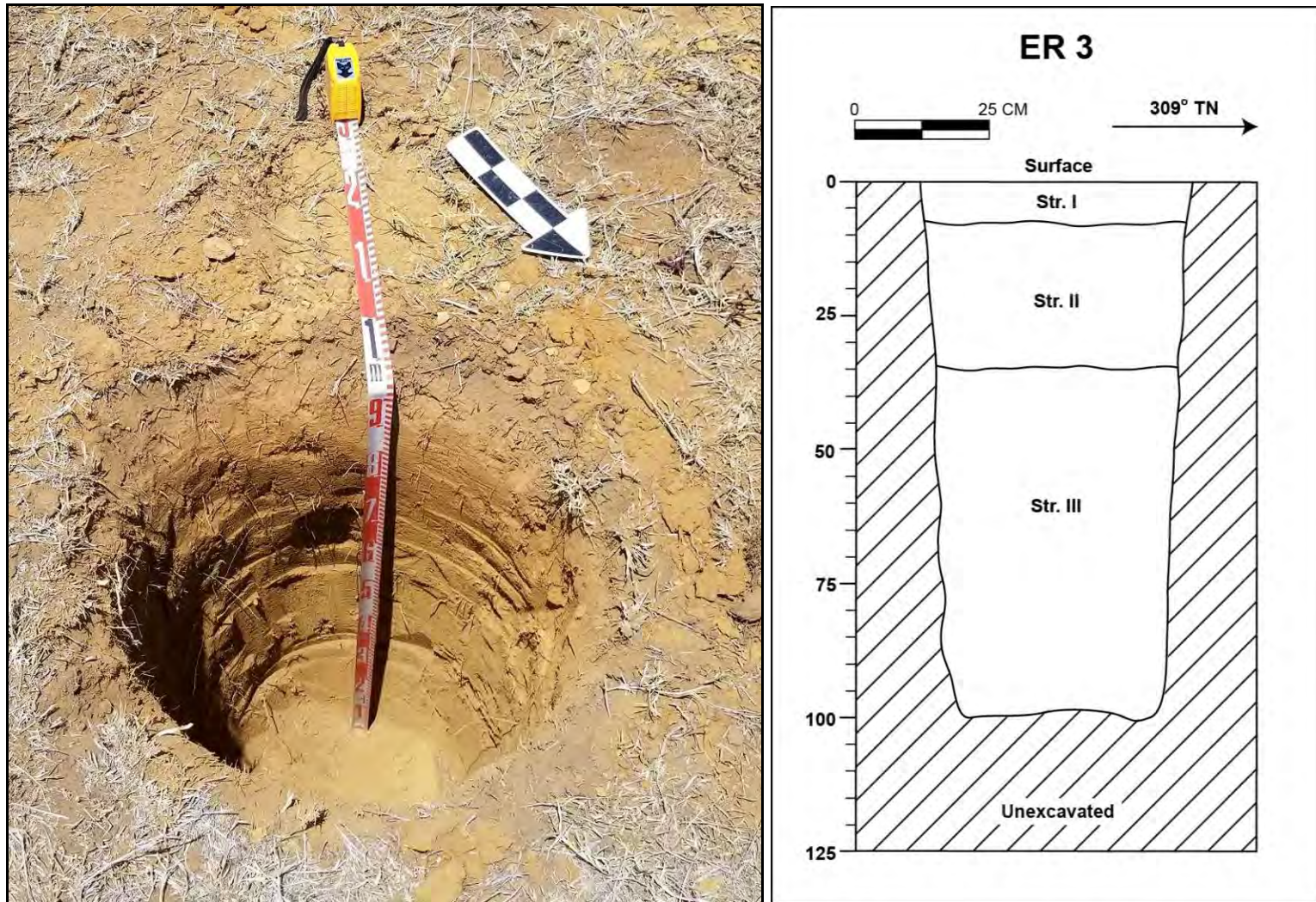


Figure 39. Southwest sidewall profile photo and drawing for STP # ER 3



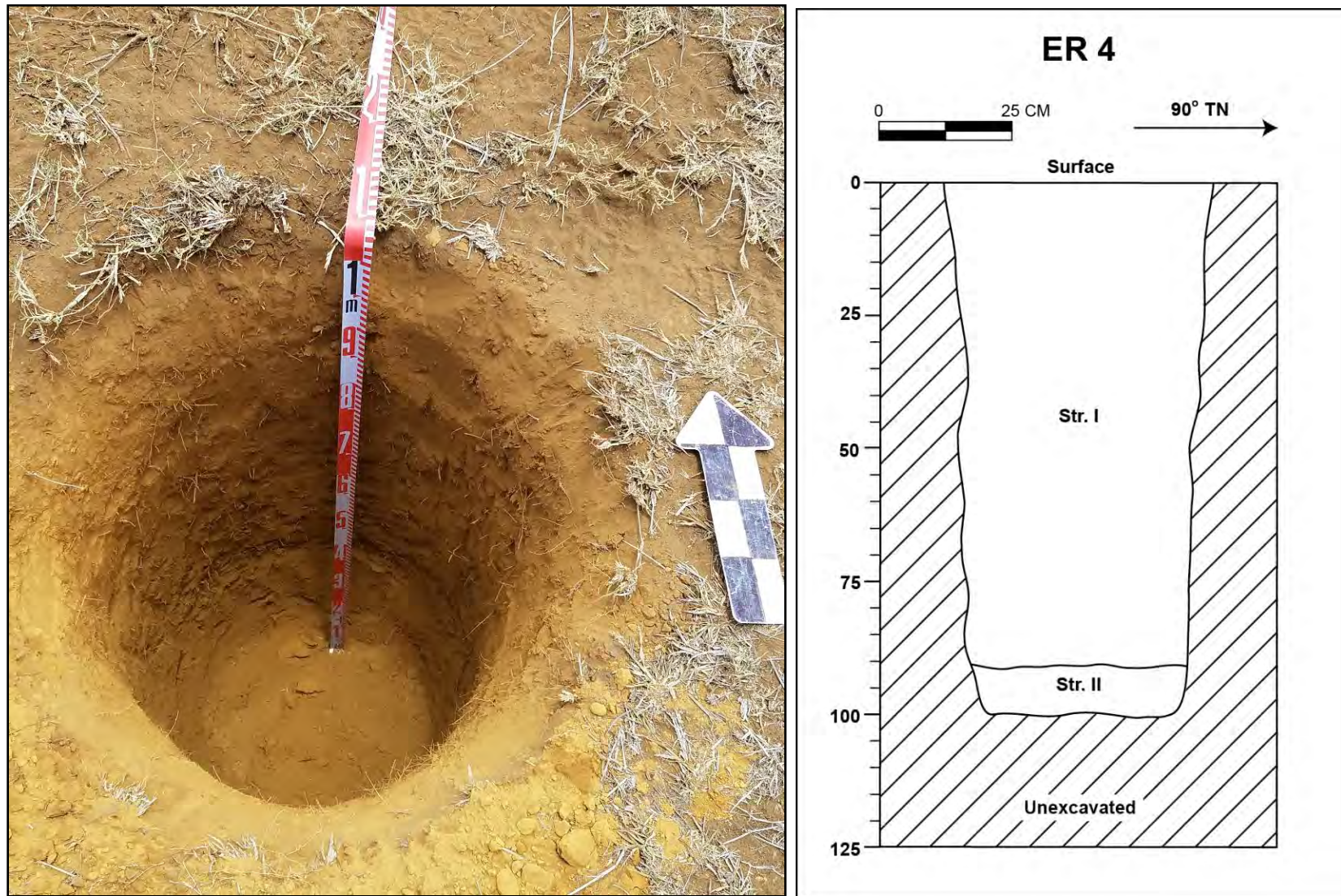


Figure 40. North sidewall profile photo and drawing for STP # ER 4



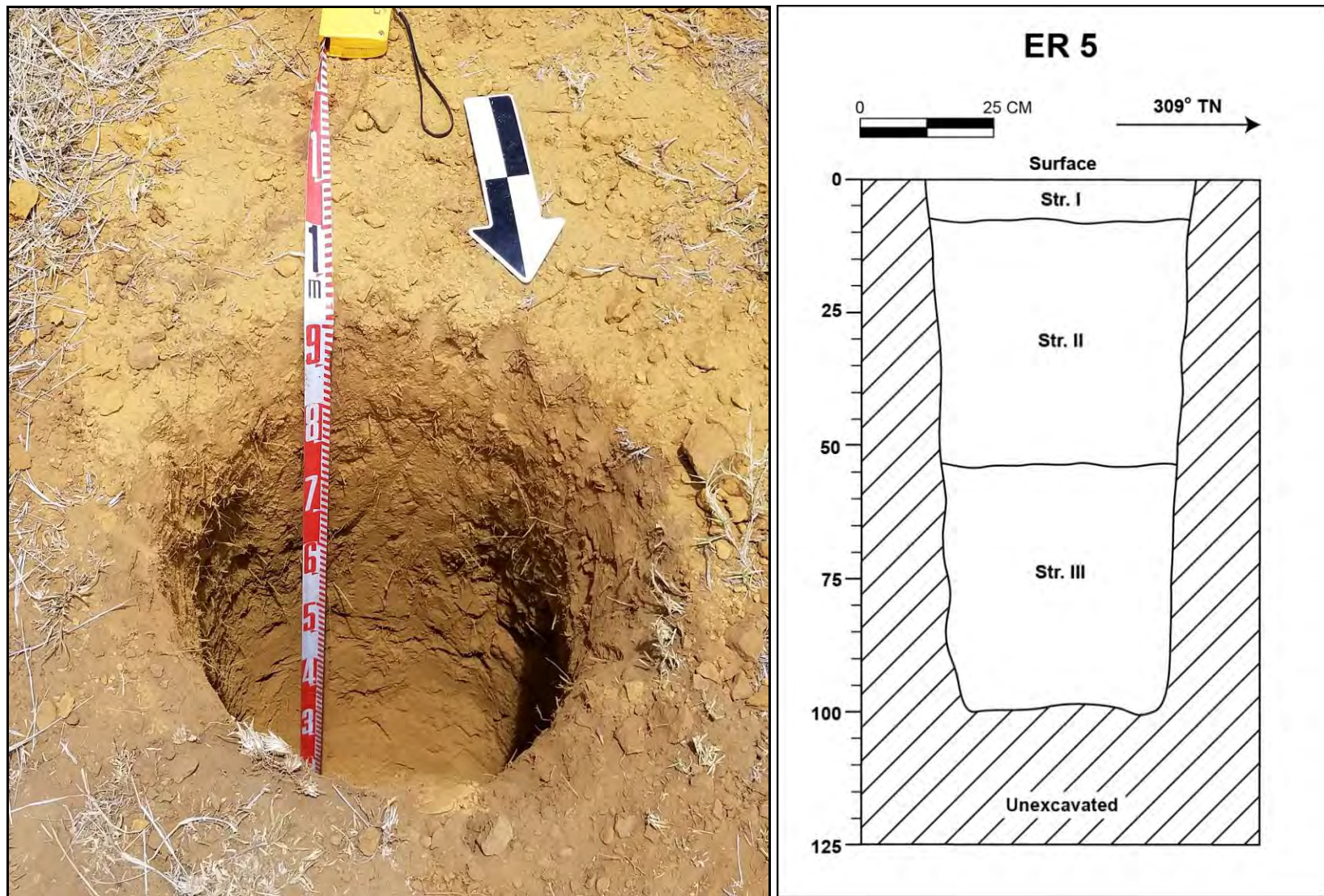


Figure 41. Southwest sidewall profile photo and drawing for STP # ER 5



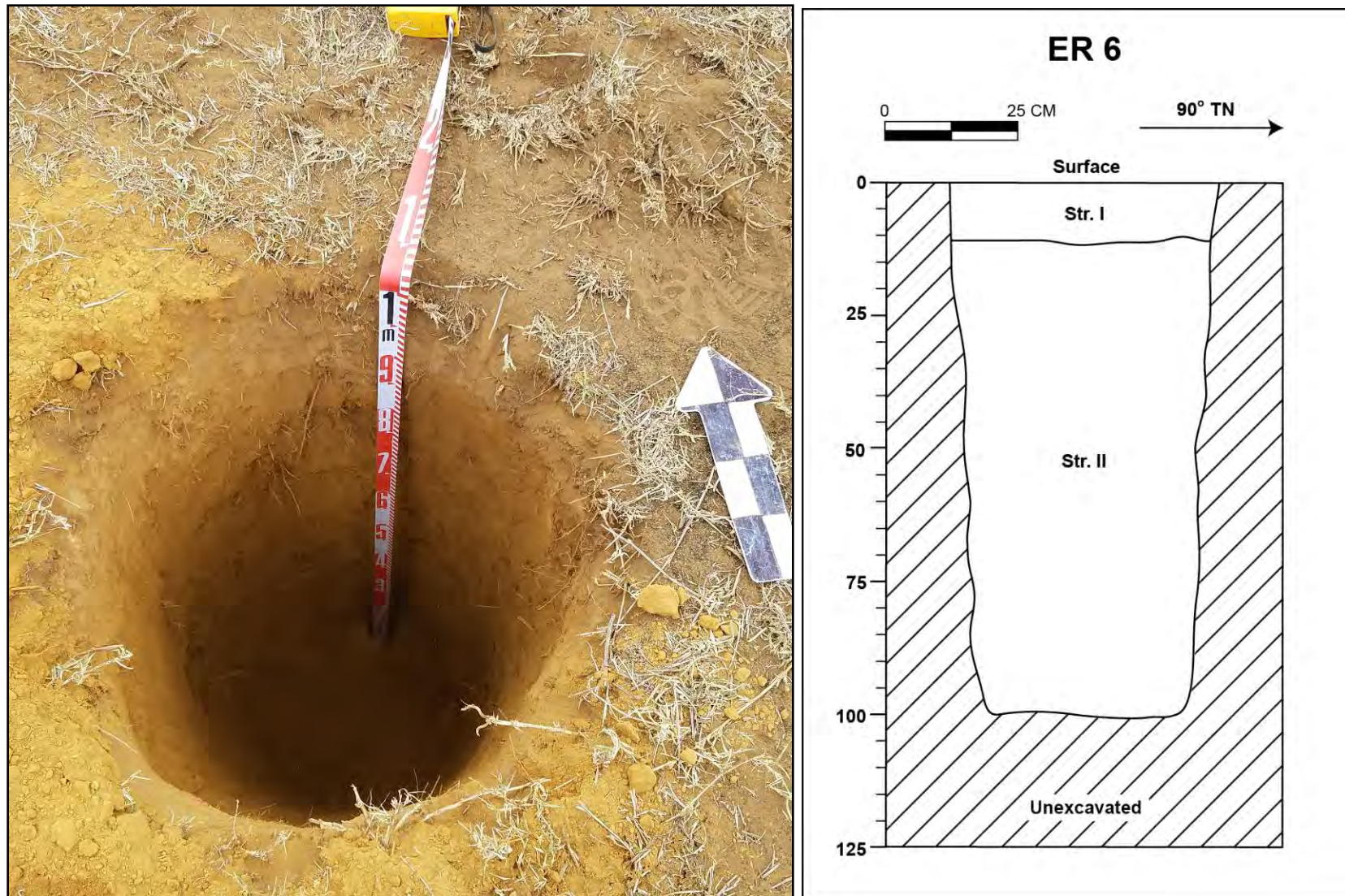


Figure 42. North sidewall profile photo and drawing for STP # ER 6



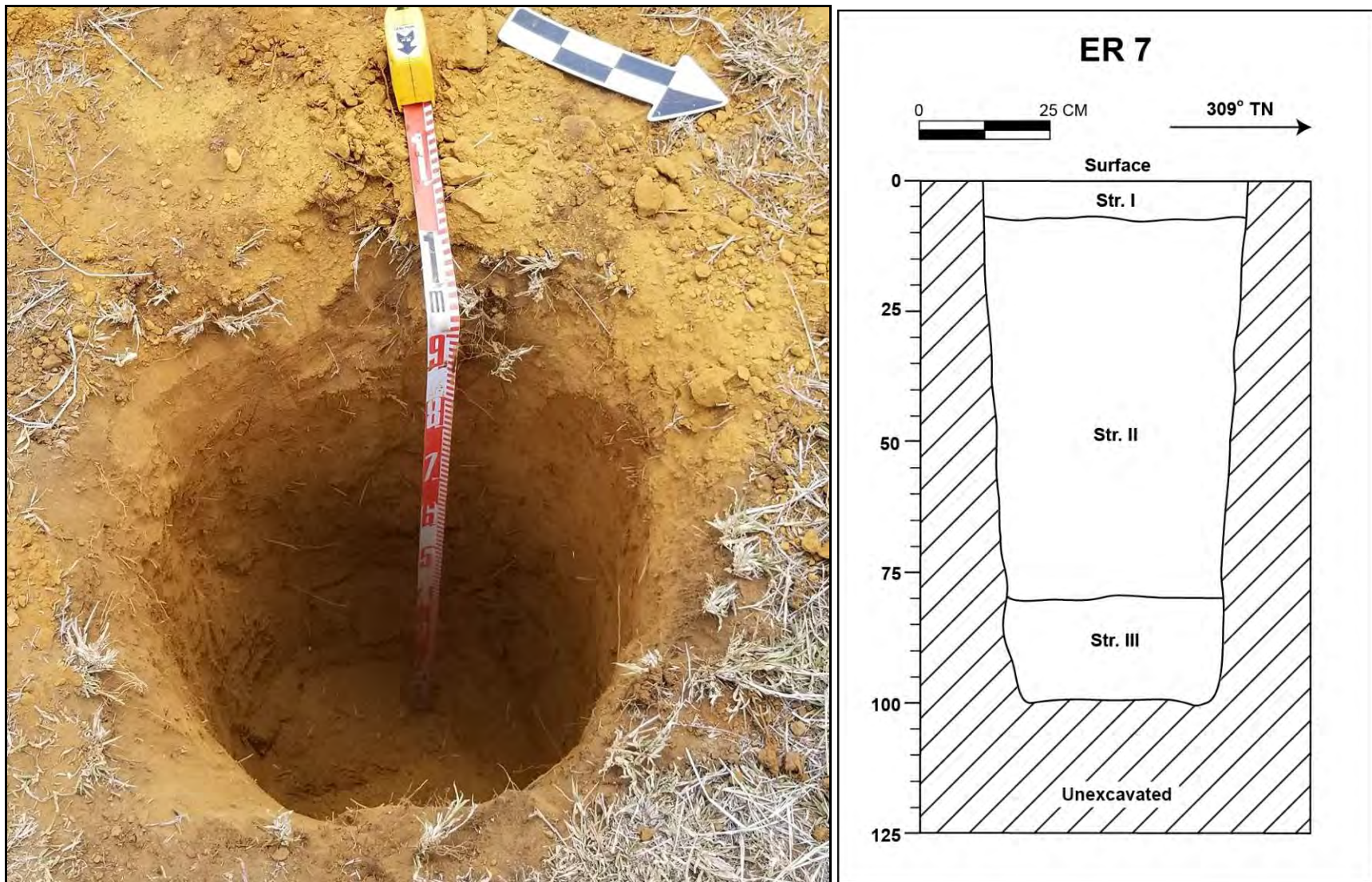


Figure 43. Southwest sidewall profile photo and drawing for STP # ER 7



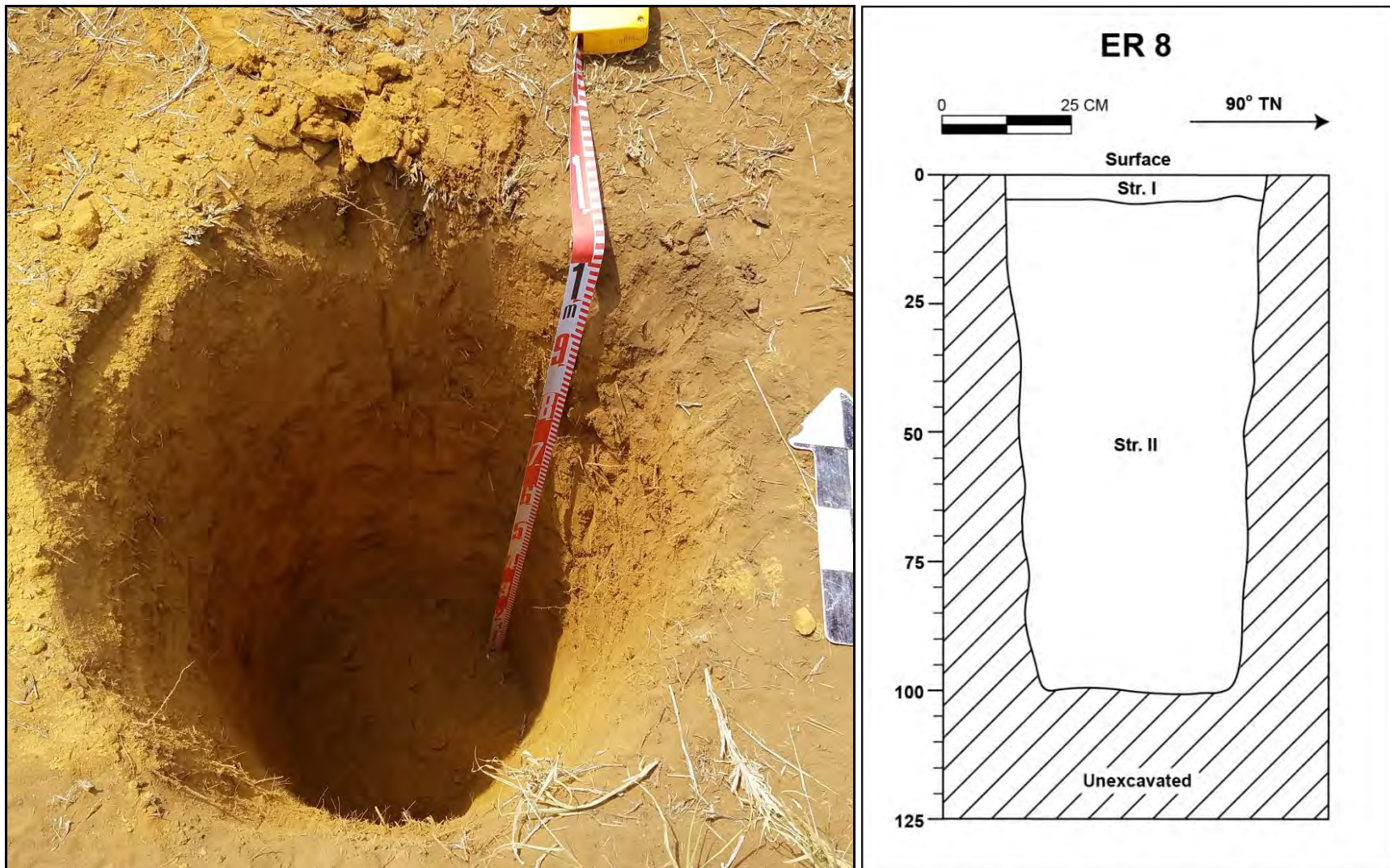


Figure 44. North sidewall profile photo and drawing for STP # ER 8



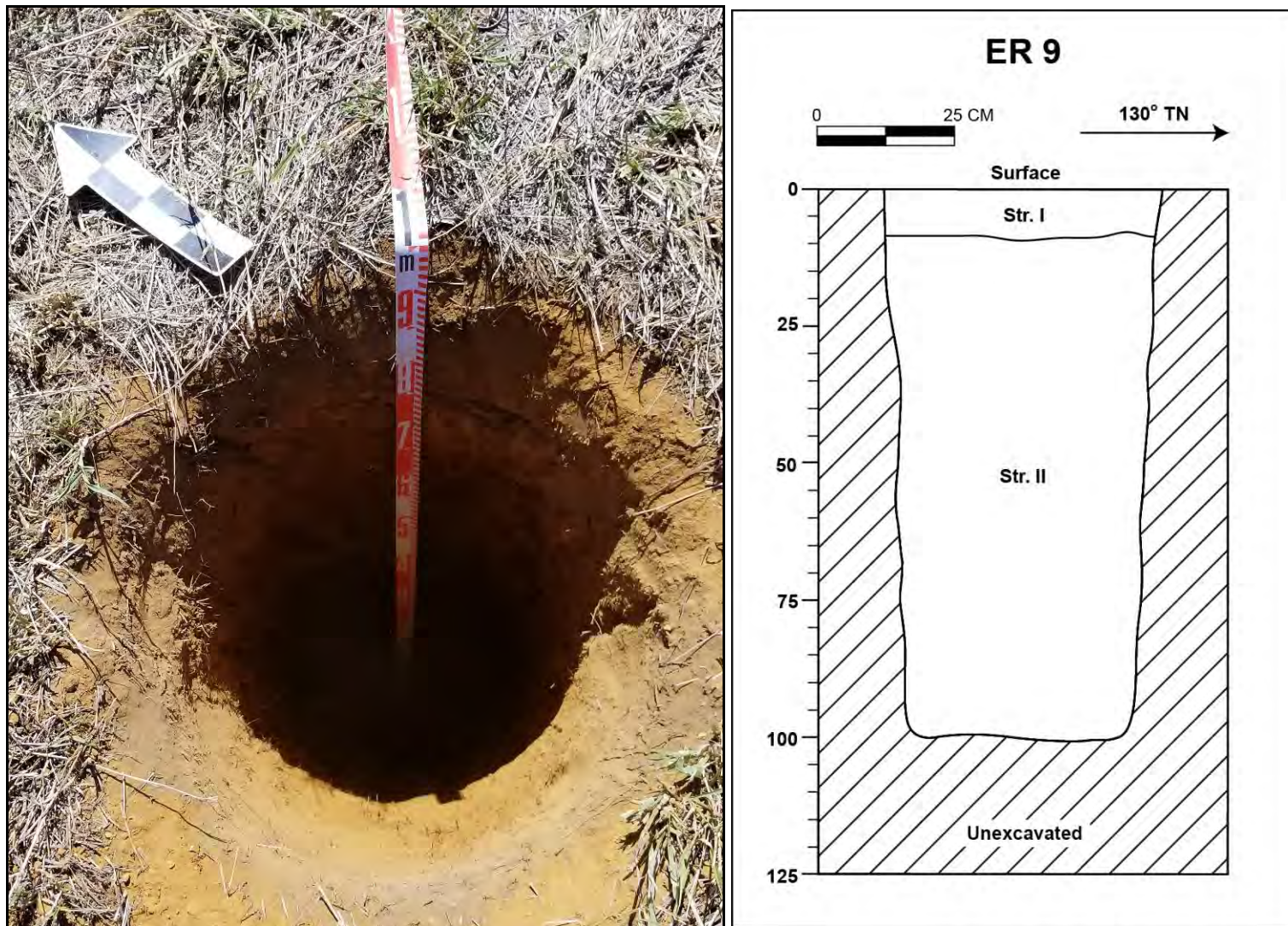


Figure 45. Northeast sidewall profile photo and drawing for STP # ER 9



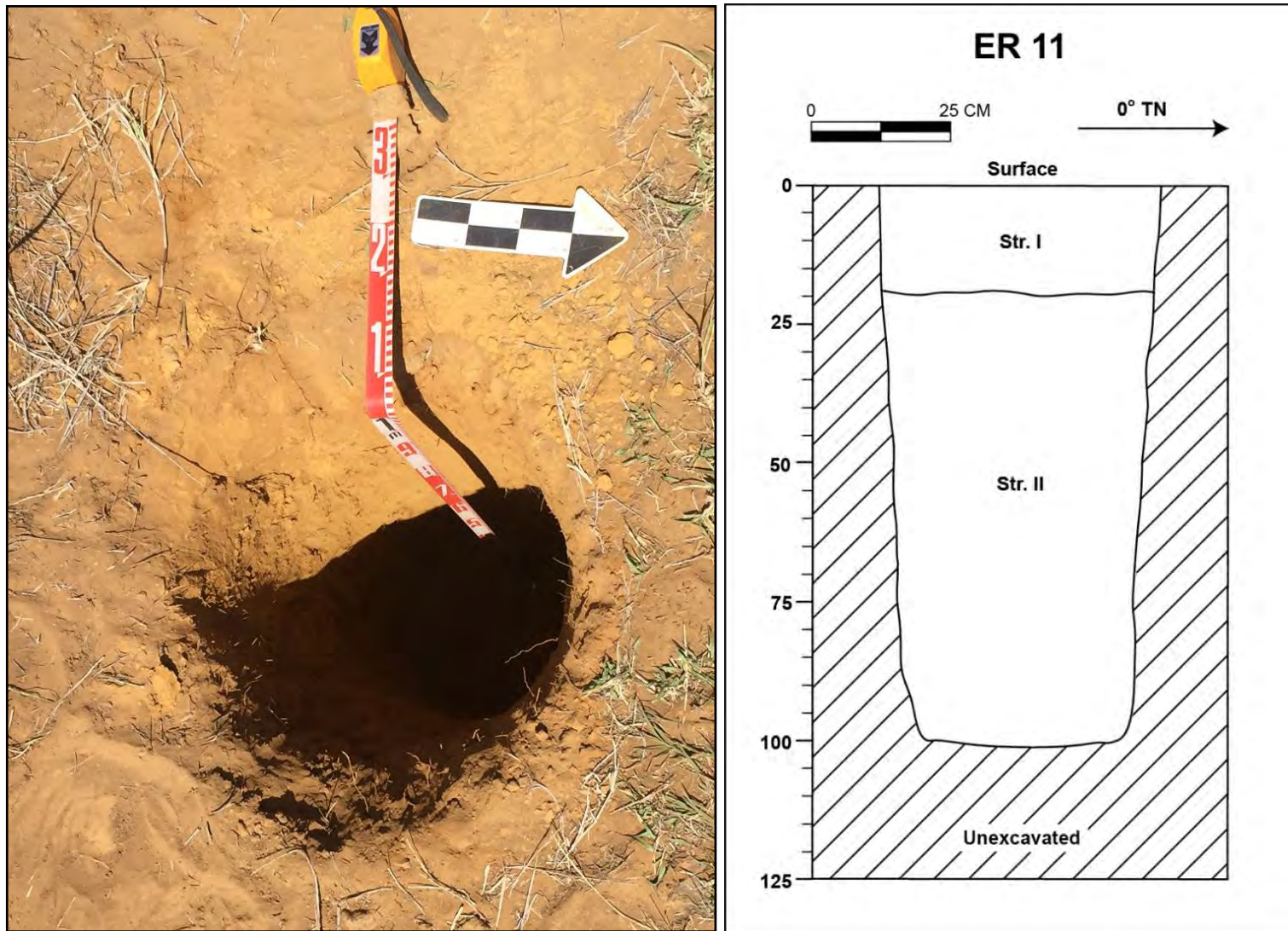


Figure 46. West sidewall profile photo and drawing for STP # ER 11



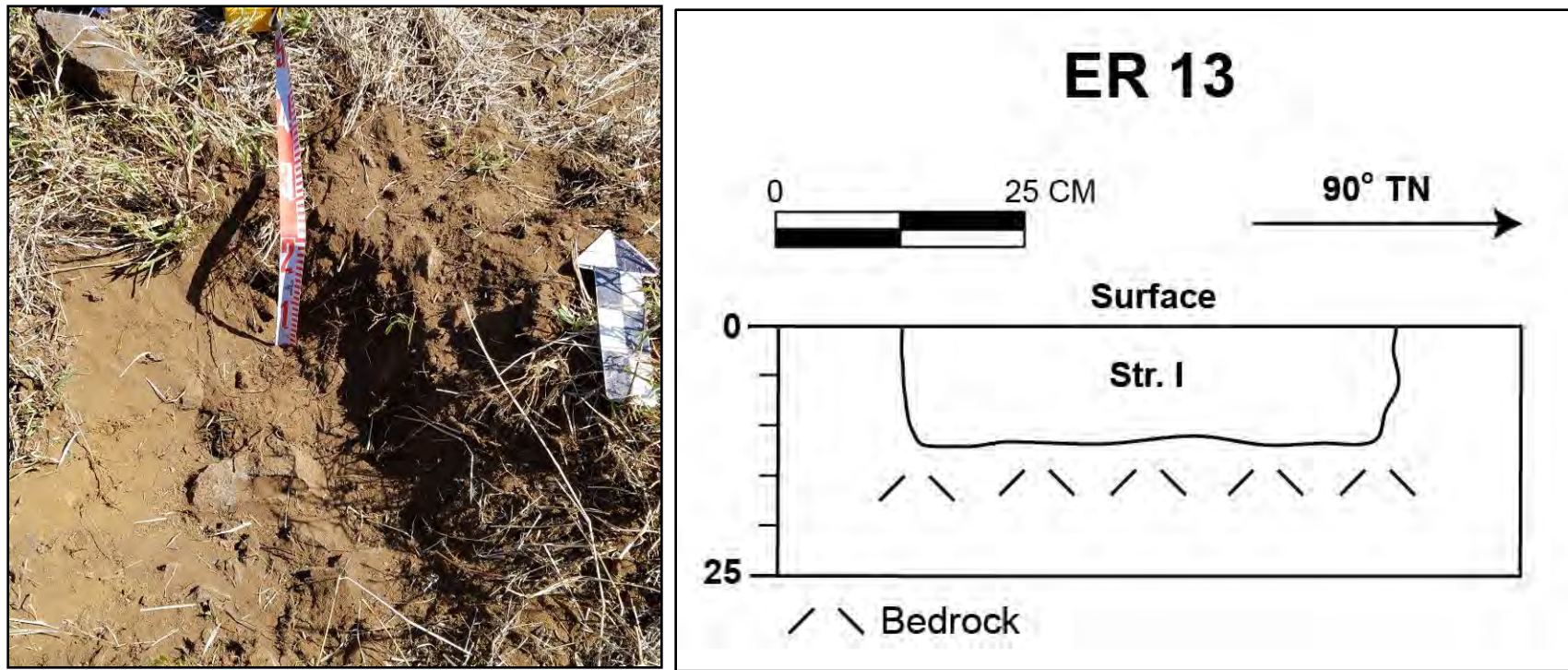


Figure 47. North sidewall profile photo and drawing for STP # ER 13

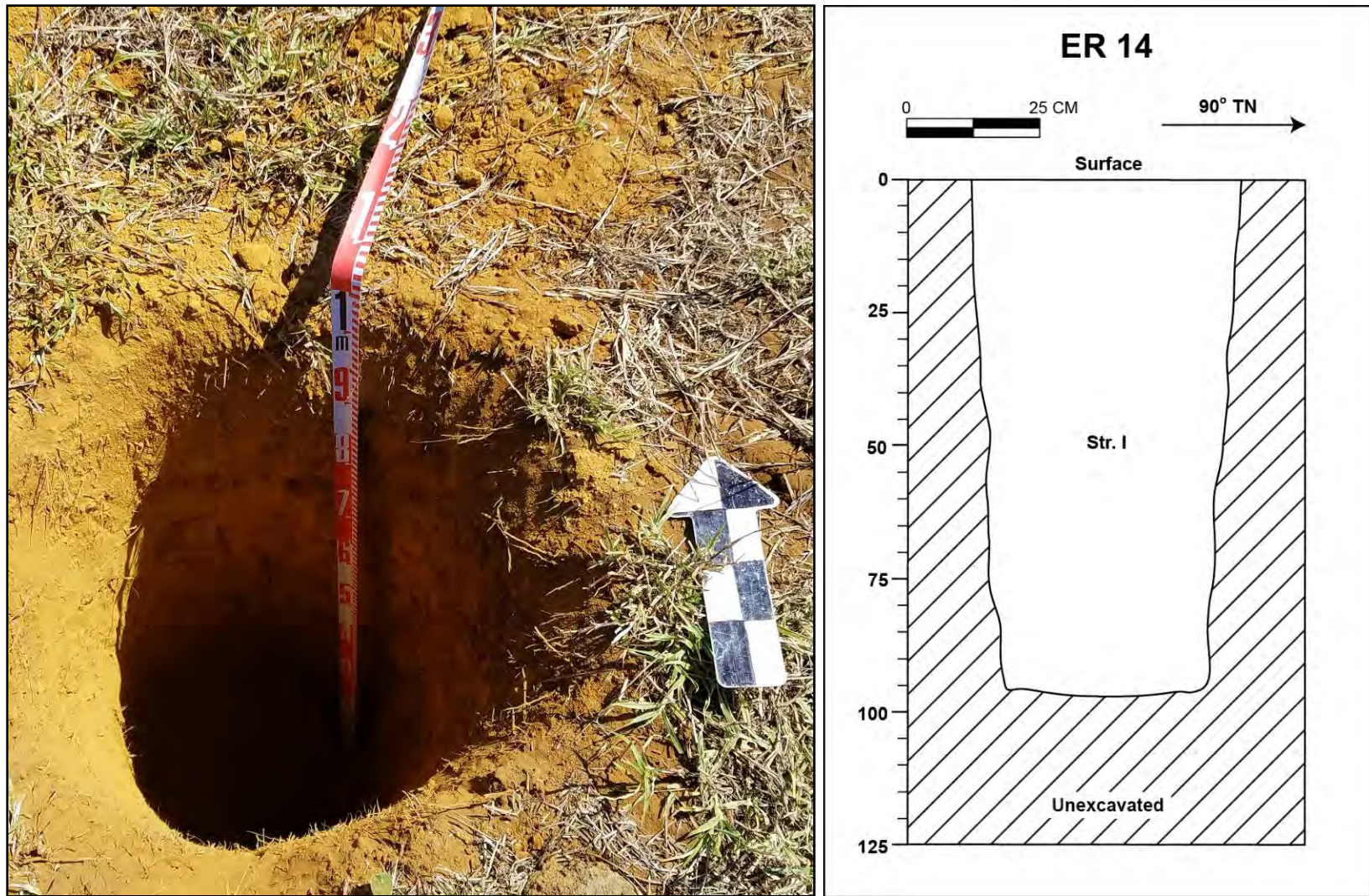


Figure 48. North sidewall profile photo and drawing for STP # ER 14



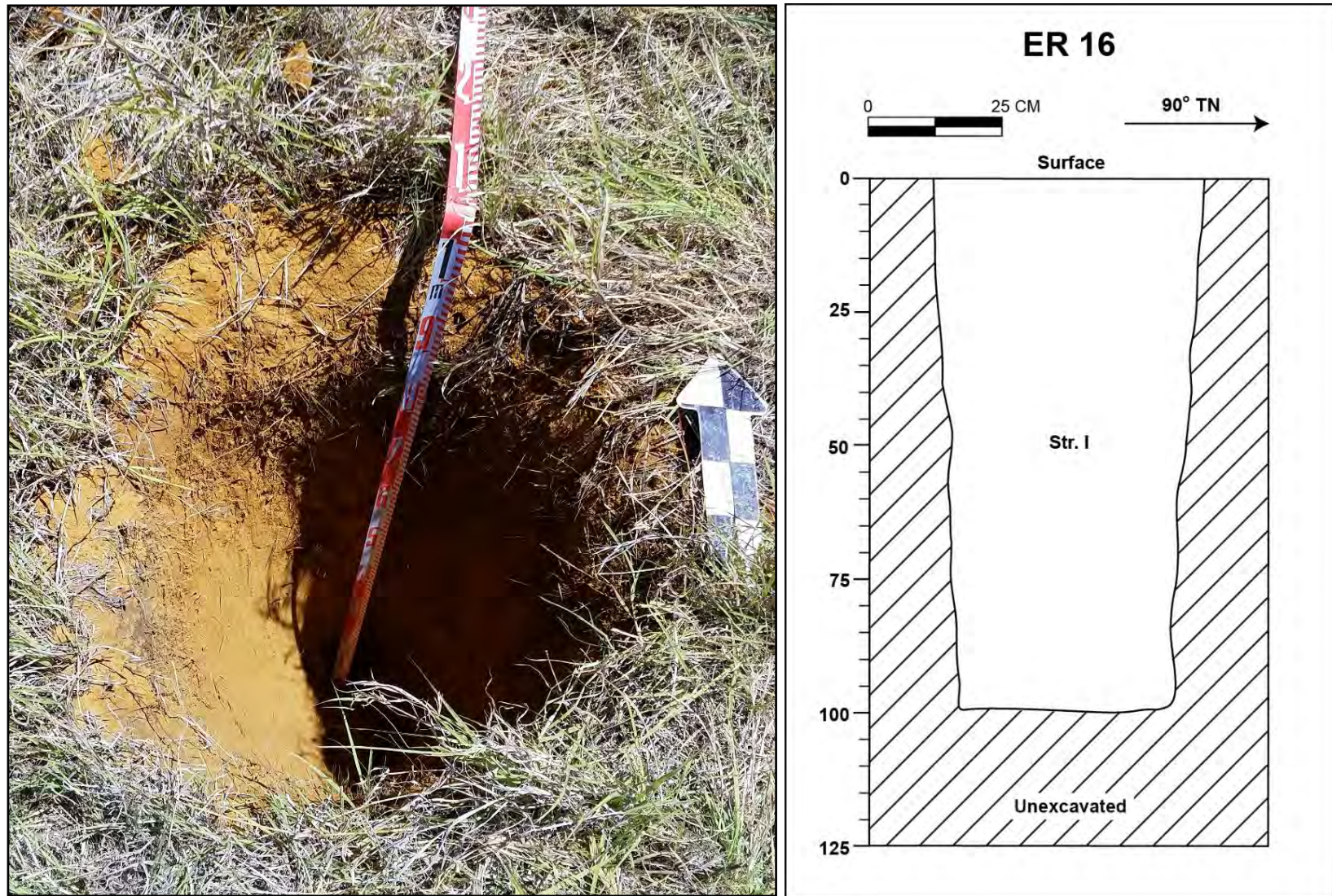


Figure 49. North sidewall profile photo and drawing for STP # ER 16



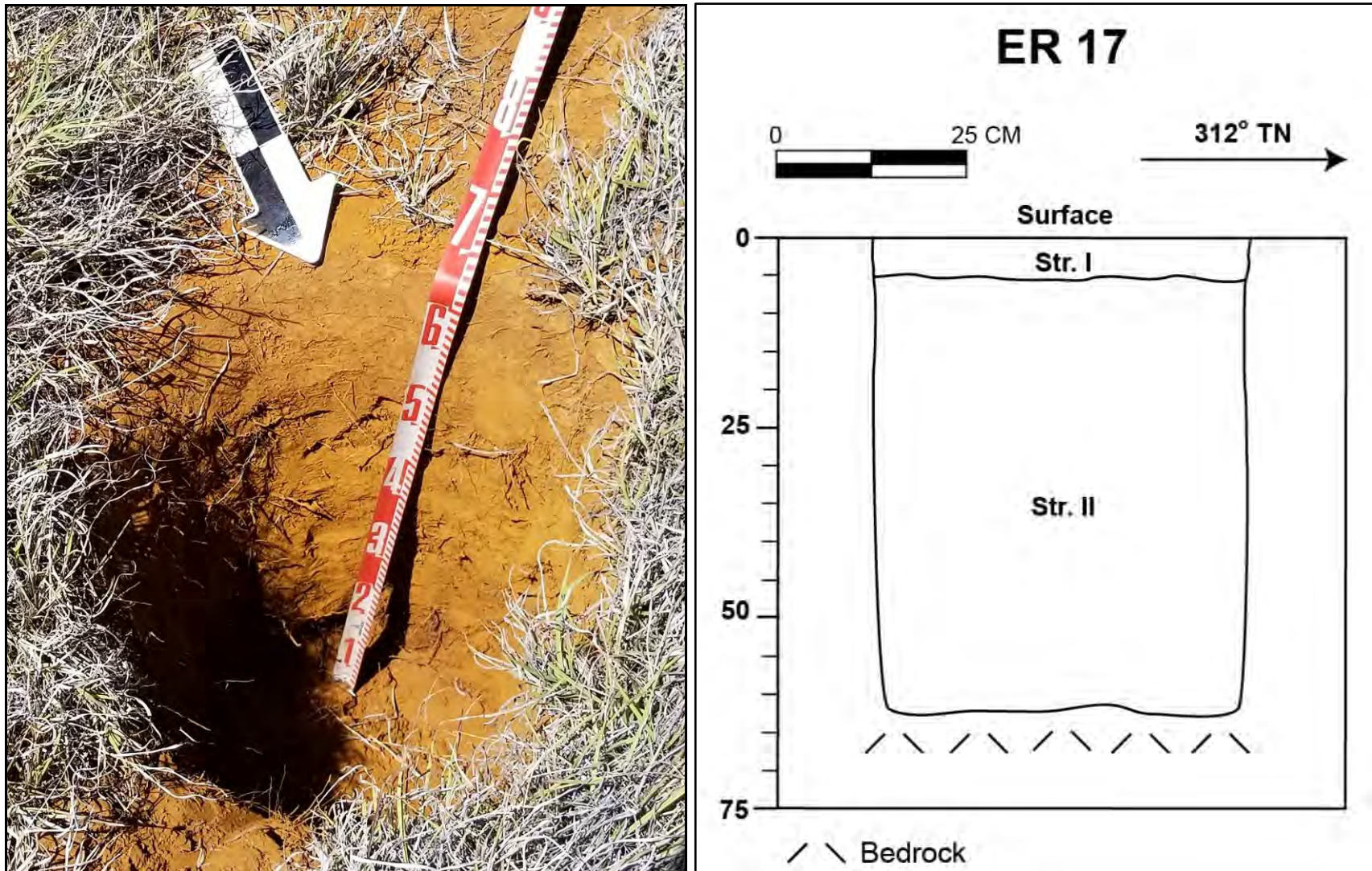


Figure 50. Southwest sidewall profile photo and drawing for STP # ER 17



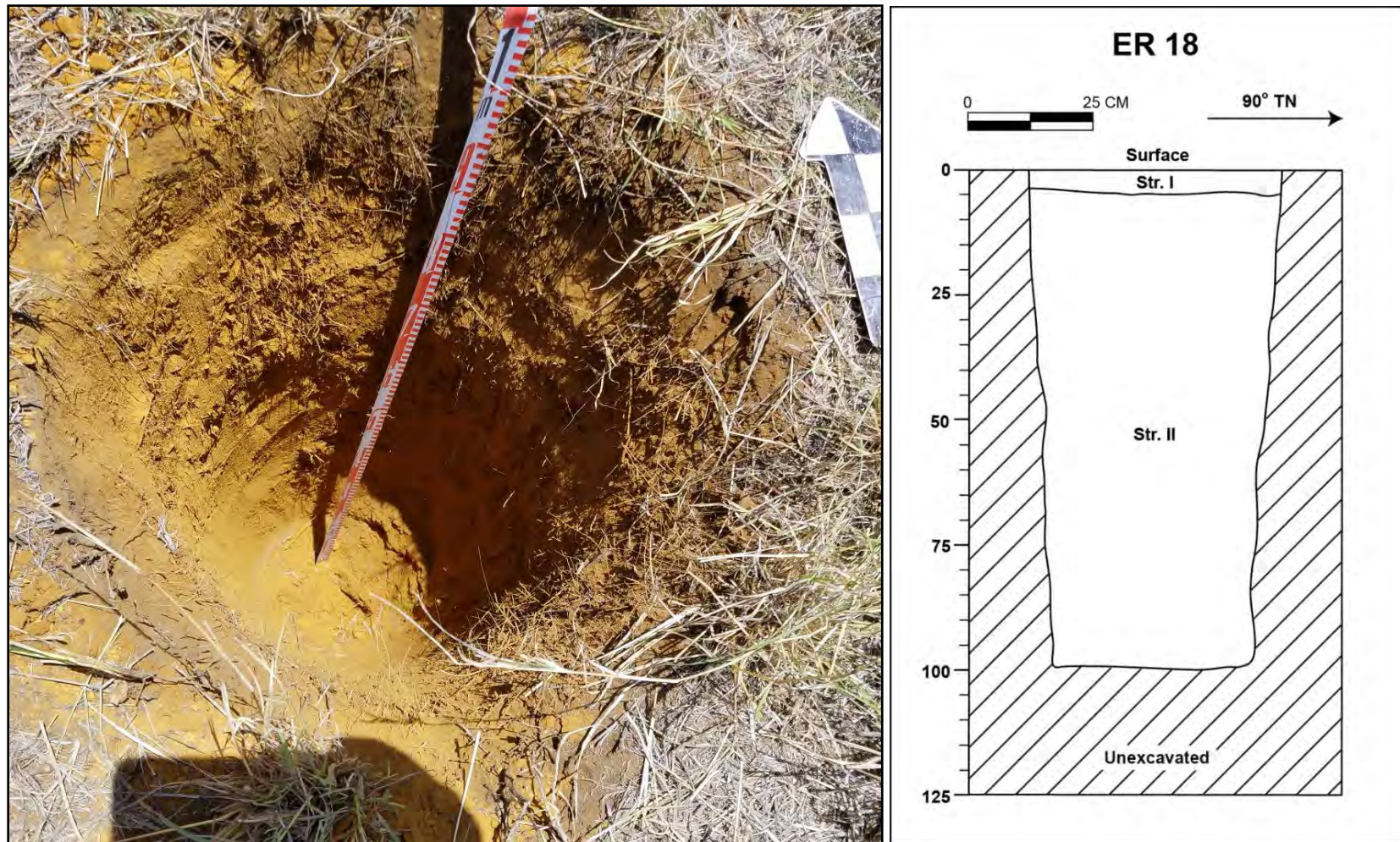


Figure 51. North sidewall profile photo and drawing for STP # ER 18



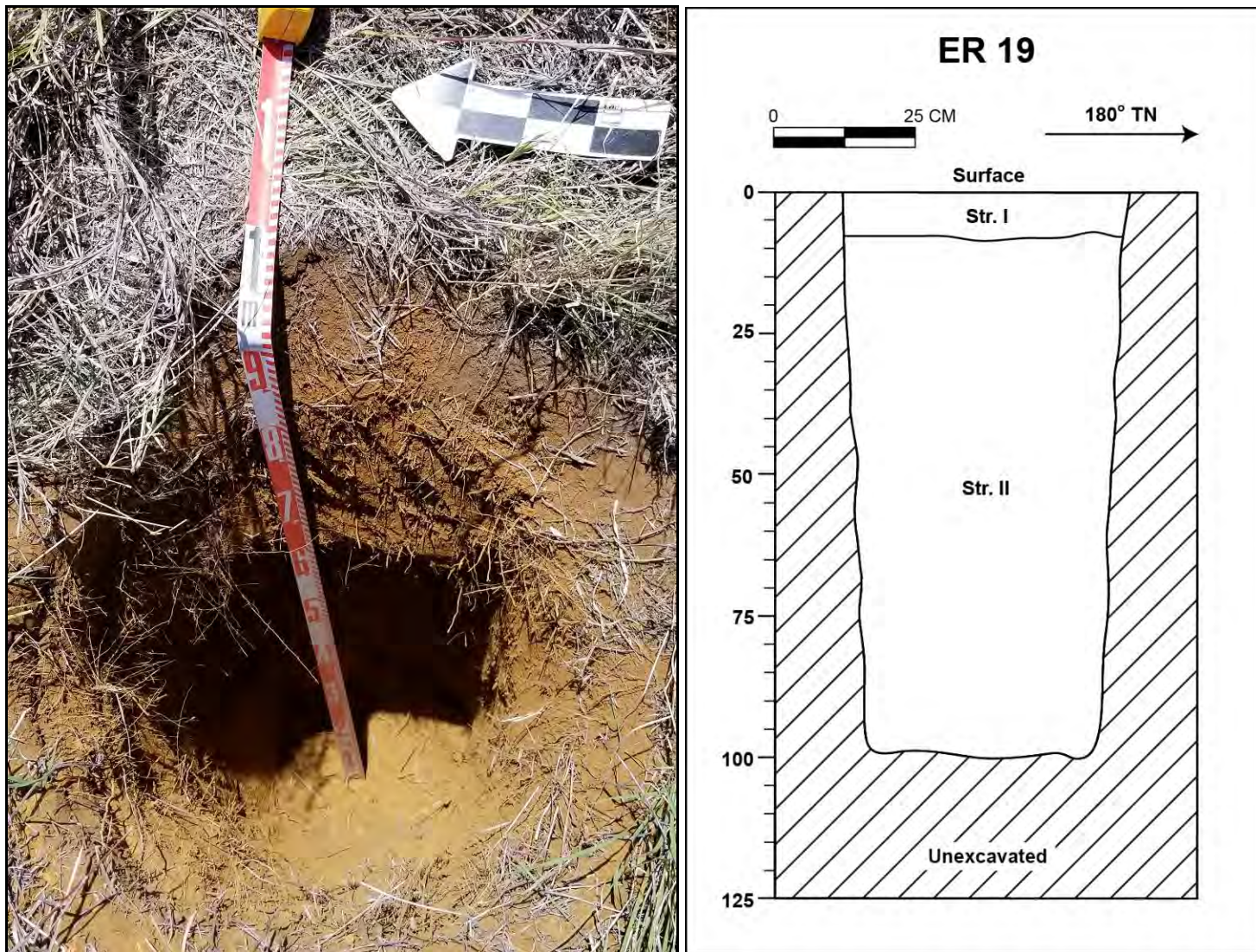


Figure 52. East sidewall profile photo and drawing for STP # ER 19



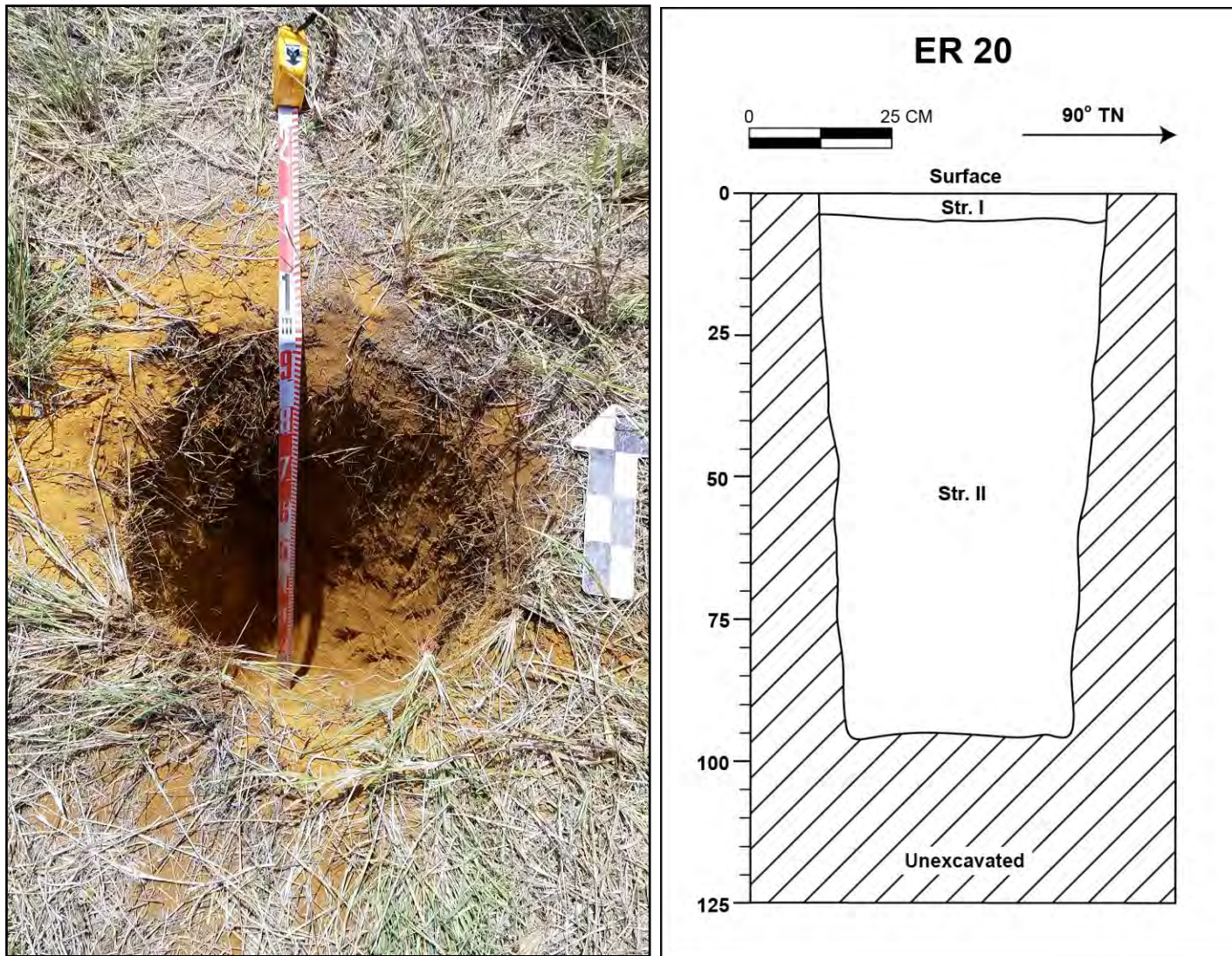


Figure 53. North sidewall profile photo and drawing for STP # ER 20



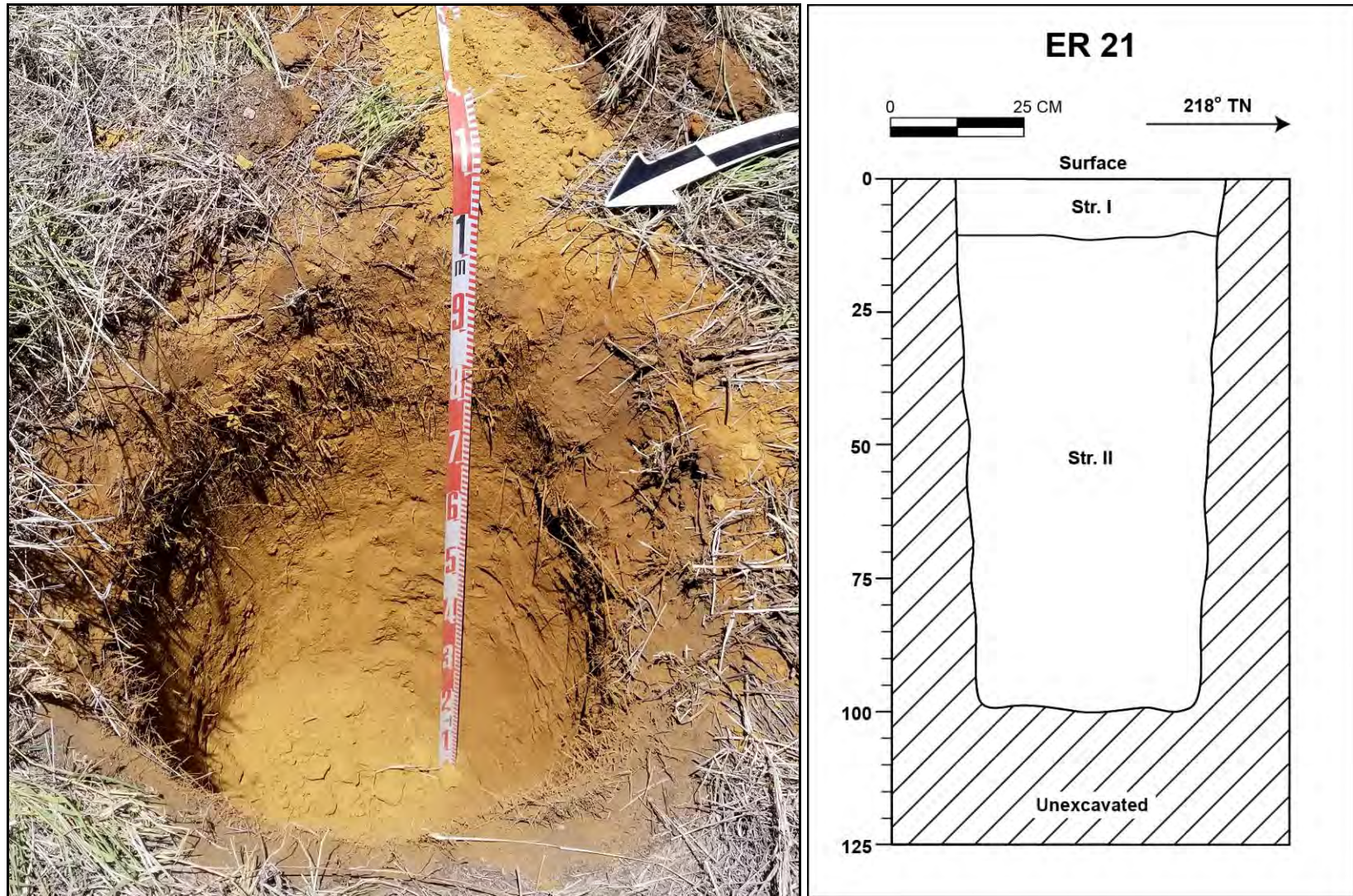


Figure 54. Southeast sidewall profile photo and drawing for STP # ER 21



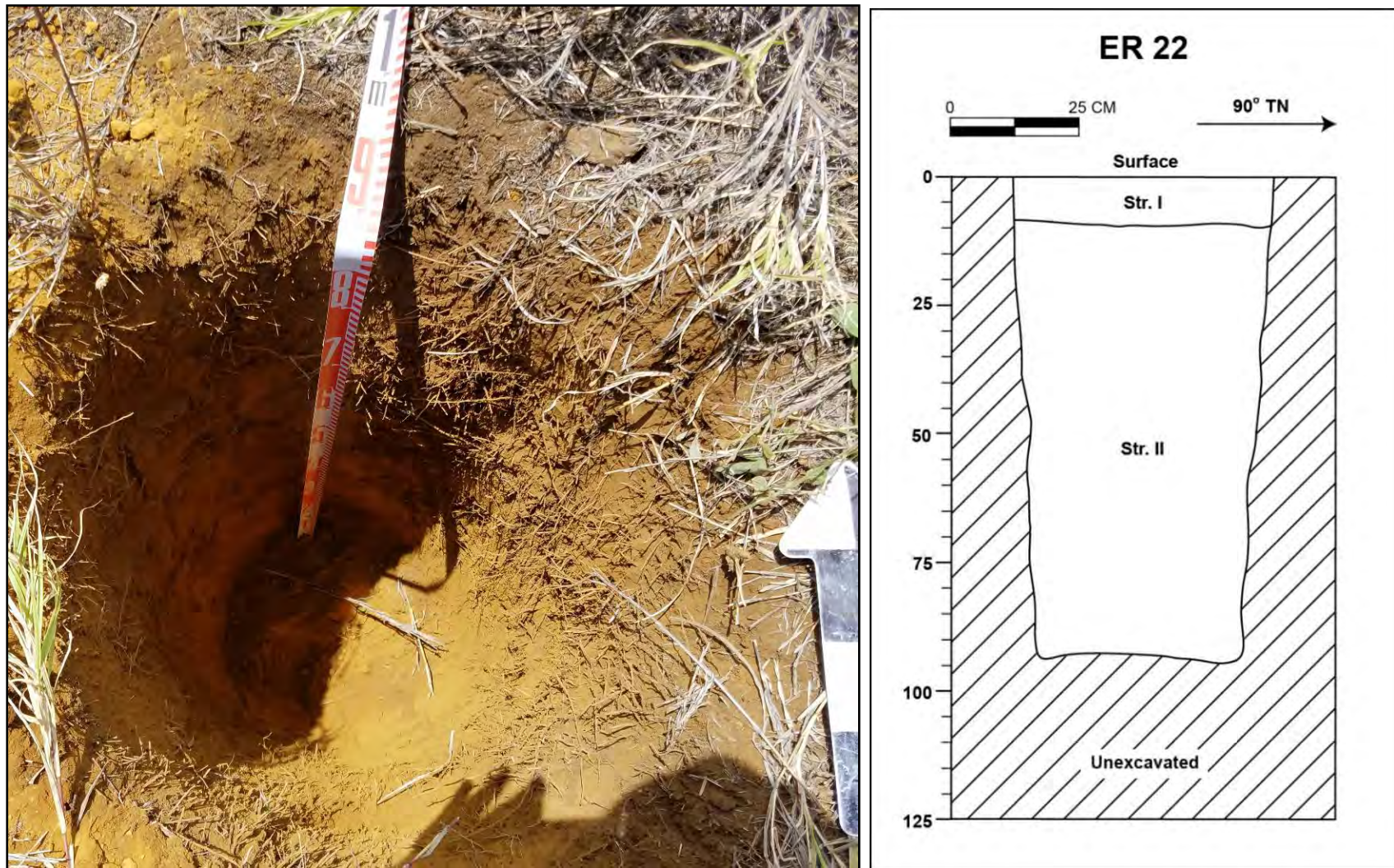


Figure 55. North sidewall profile photo and drawing for STP # ER 22



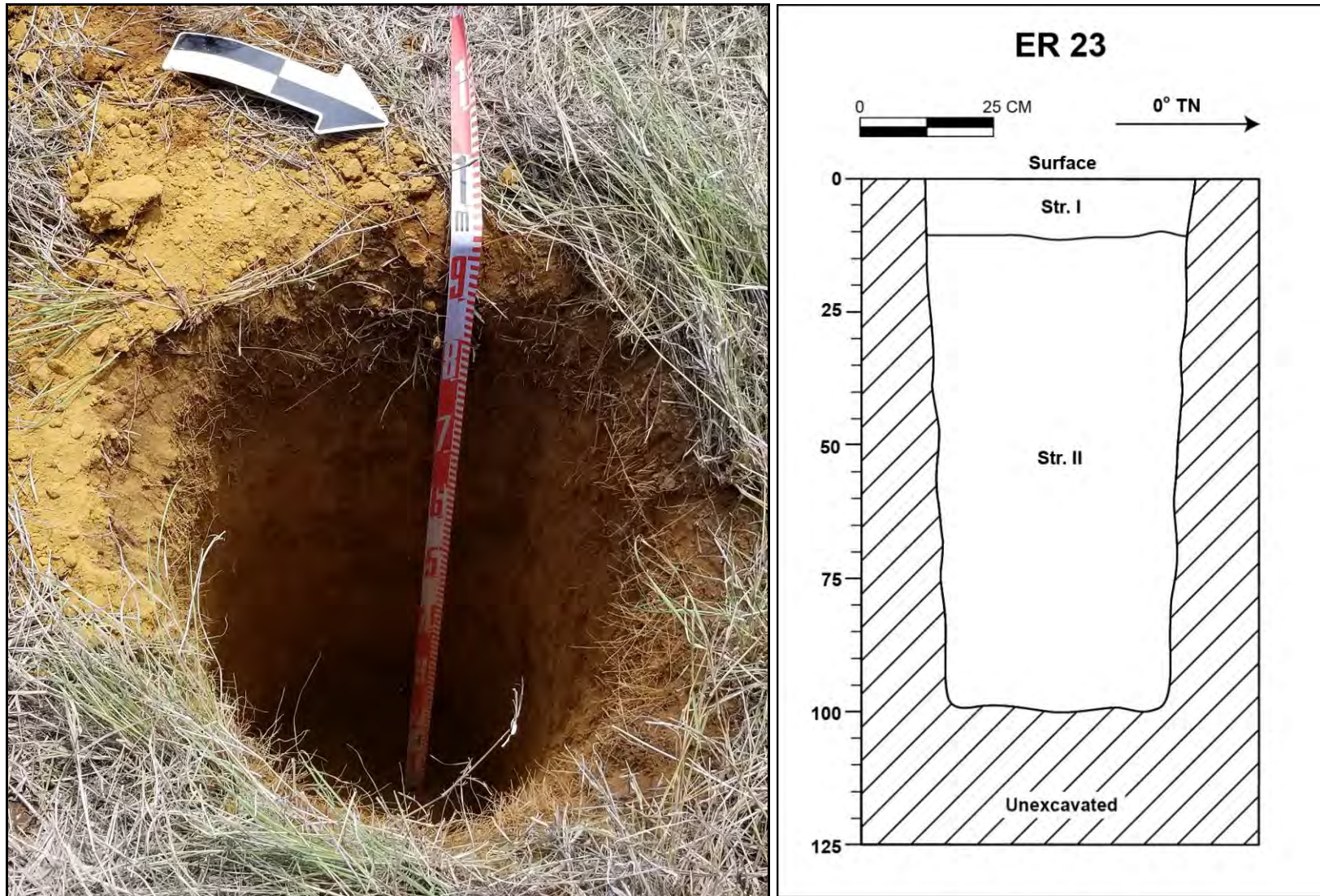


Figure 56. West sidewall profile photo and drawing for STP # ER 23



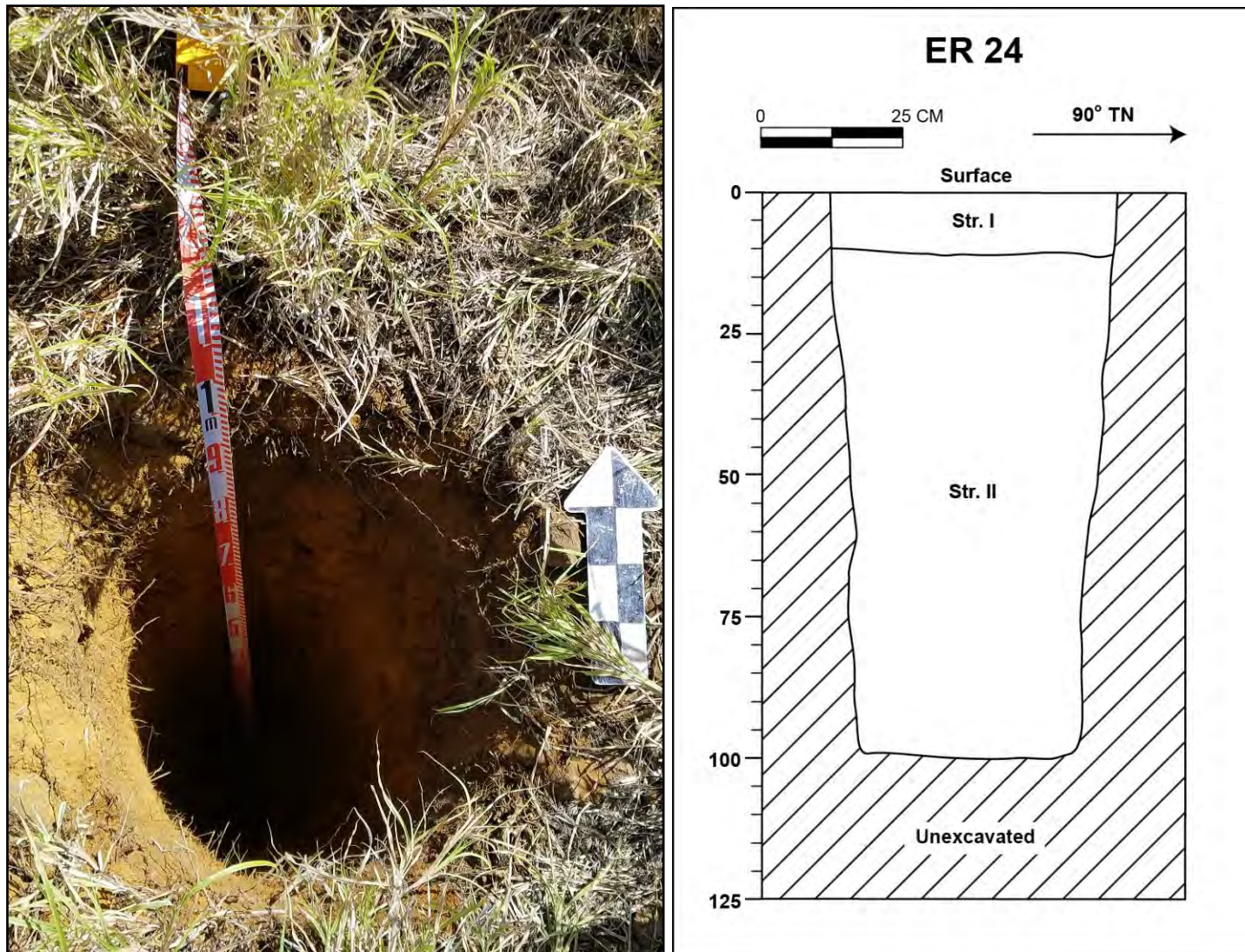


Figure 57. North sidewall profile photo and drawing for STP # ER 24

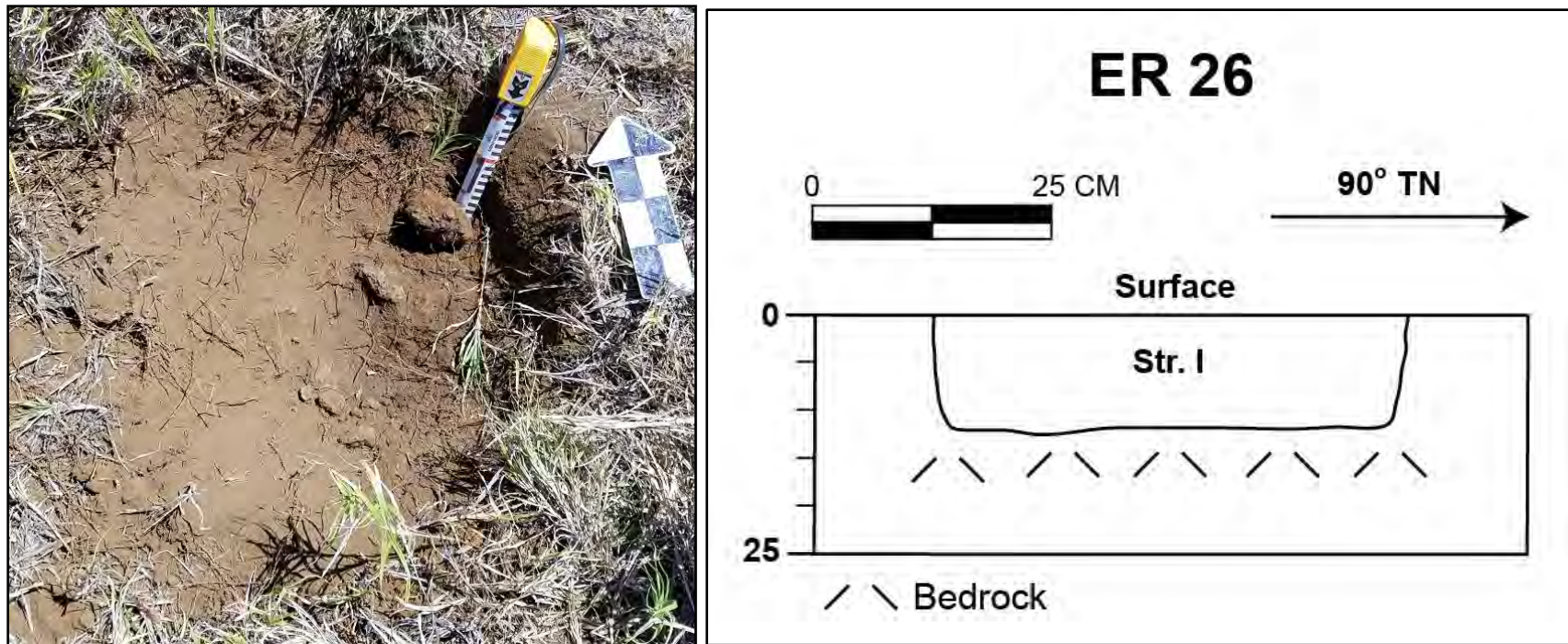


Figure 58. North sidewall profile photo and drawing for STP # ER 26



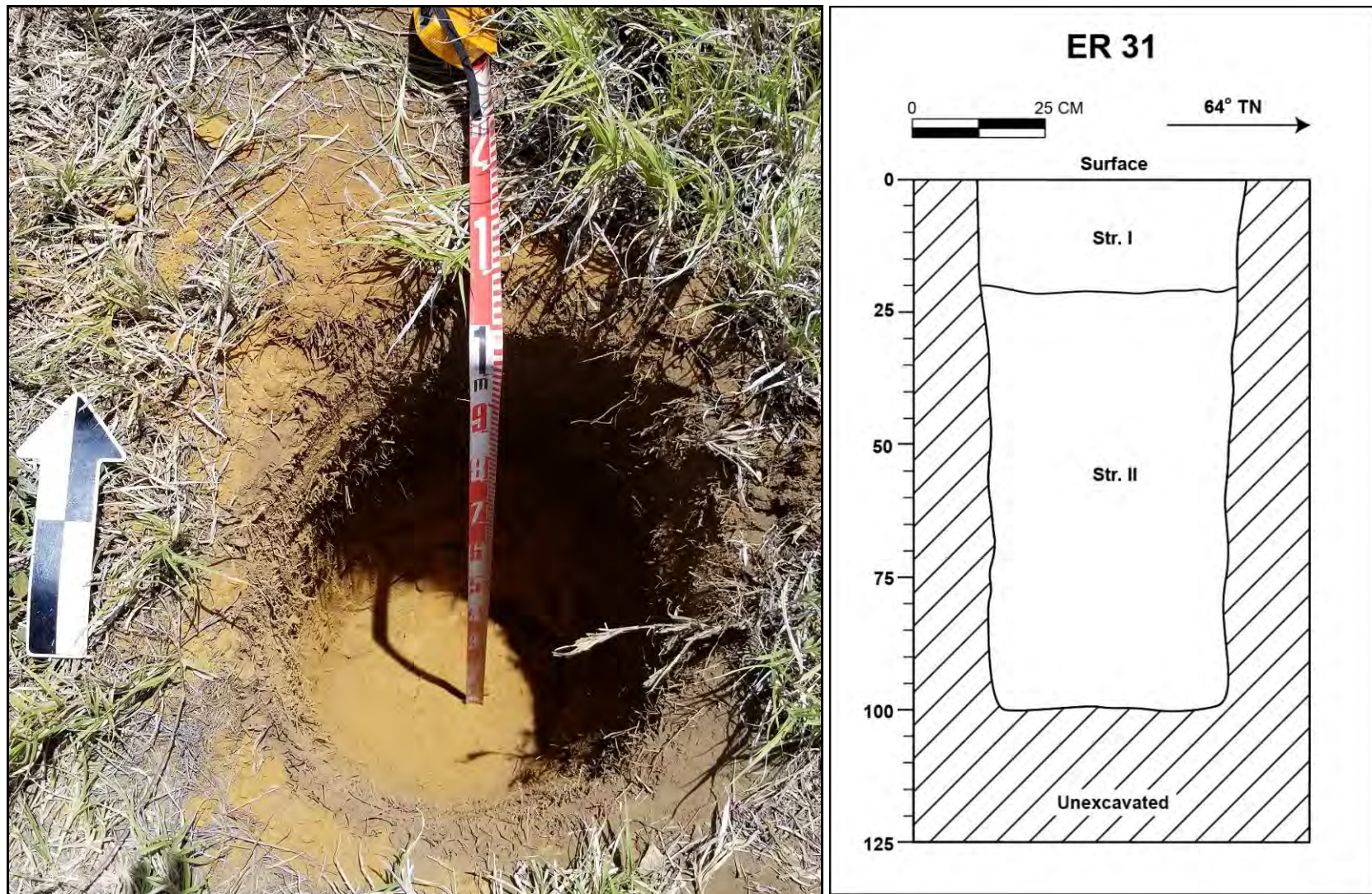


Figure 59. Northwest sidewall profile photo and drawing for STP # ER 31



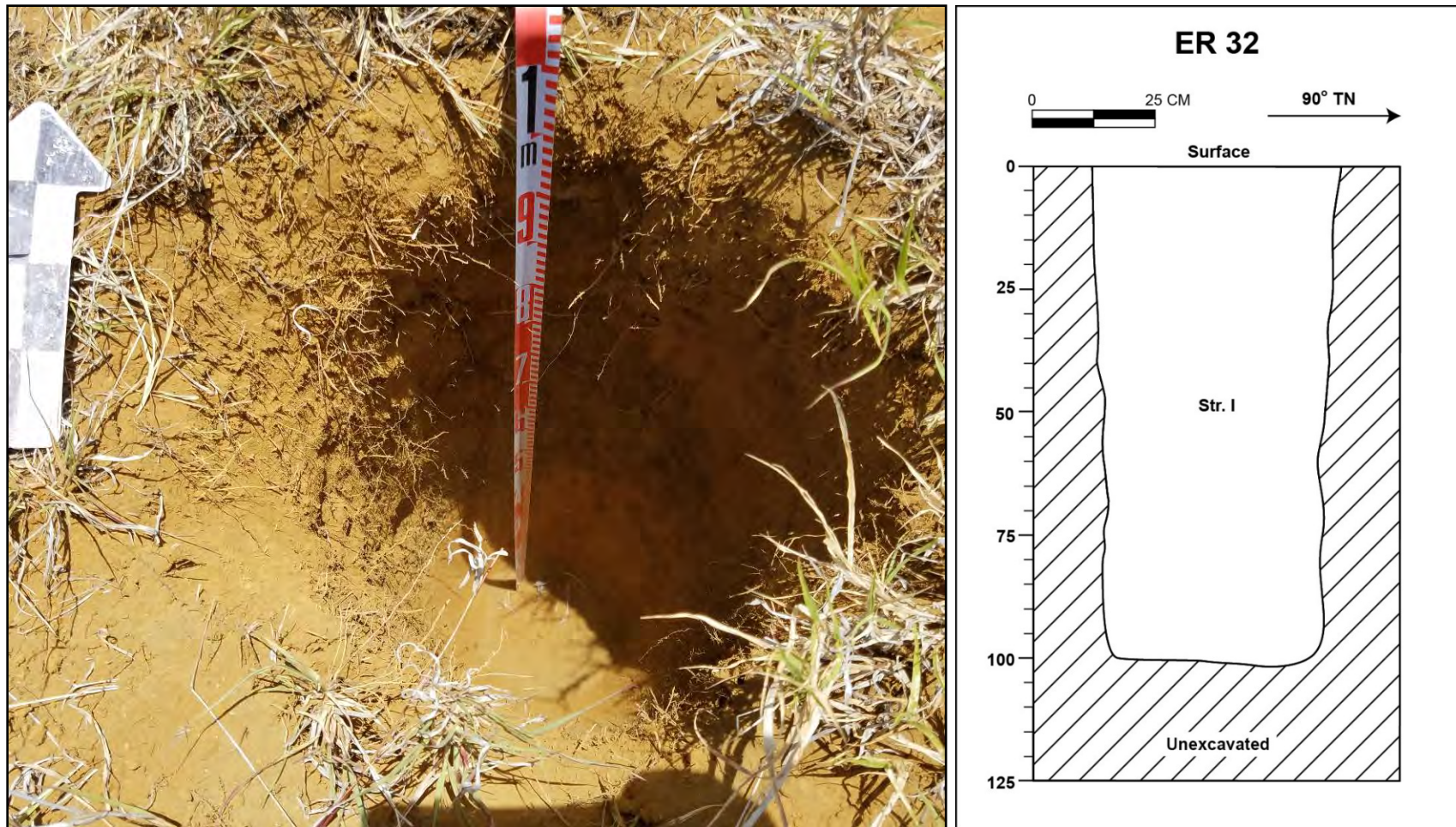


Figure 60. North sidewall profile photo and drawing for STP # ER 32



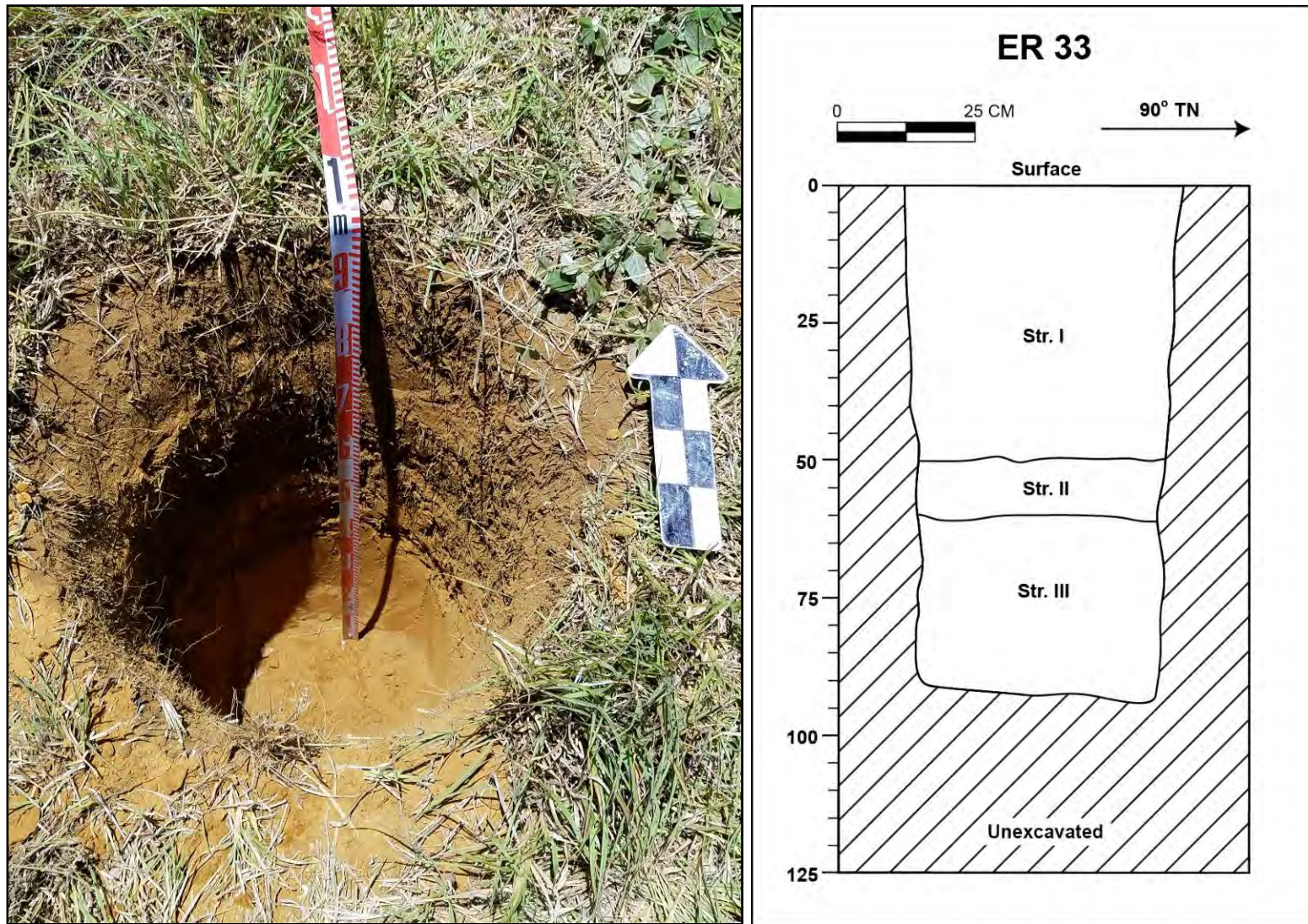


Figure 61. North sidewall profile photo and drawing for STP # ER 33



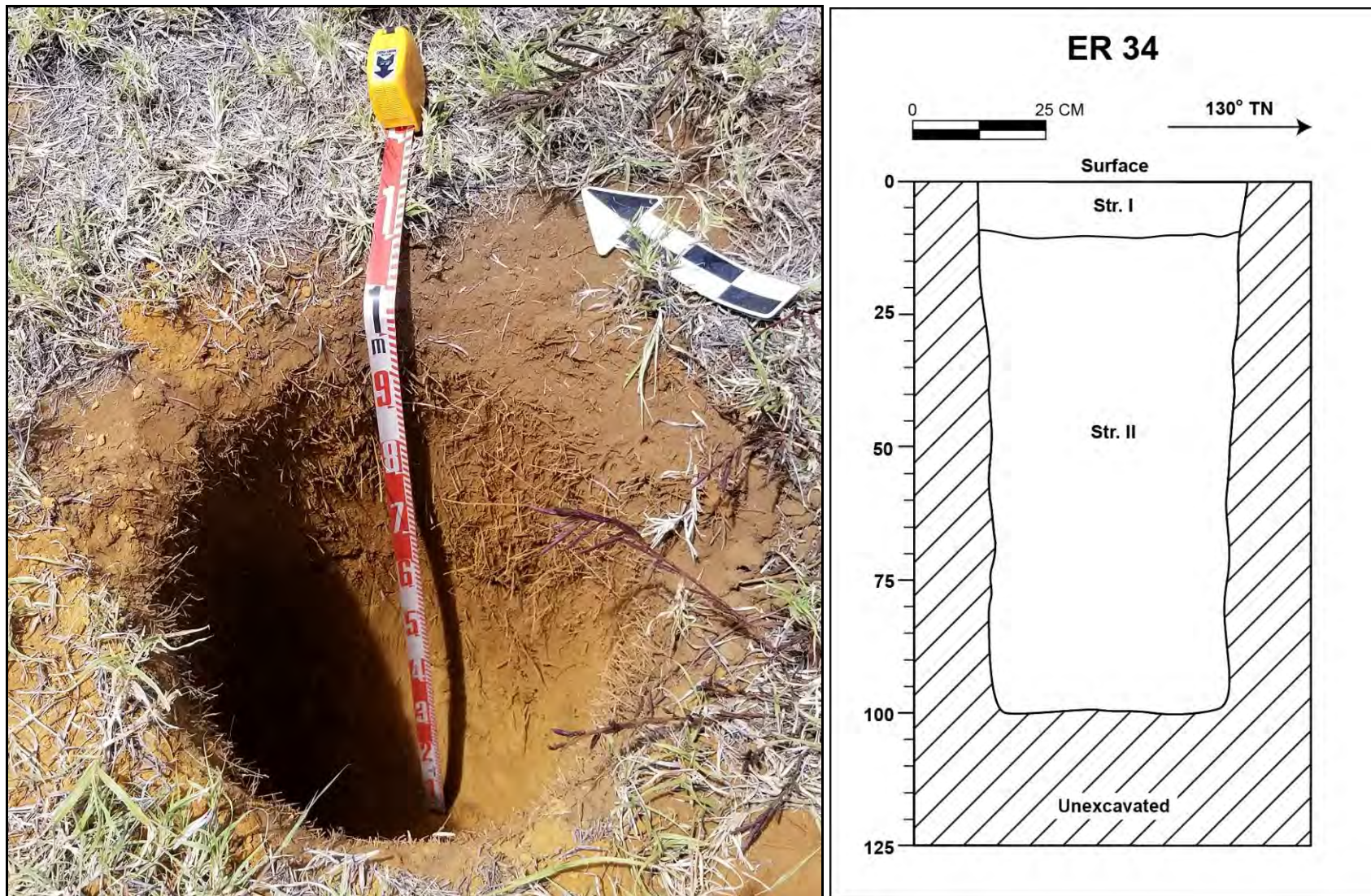


Figure 62. Northeast sidewall profile photo and drawing for STP # ER 34



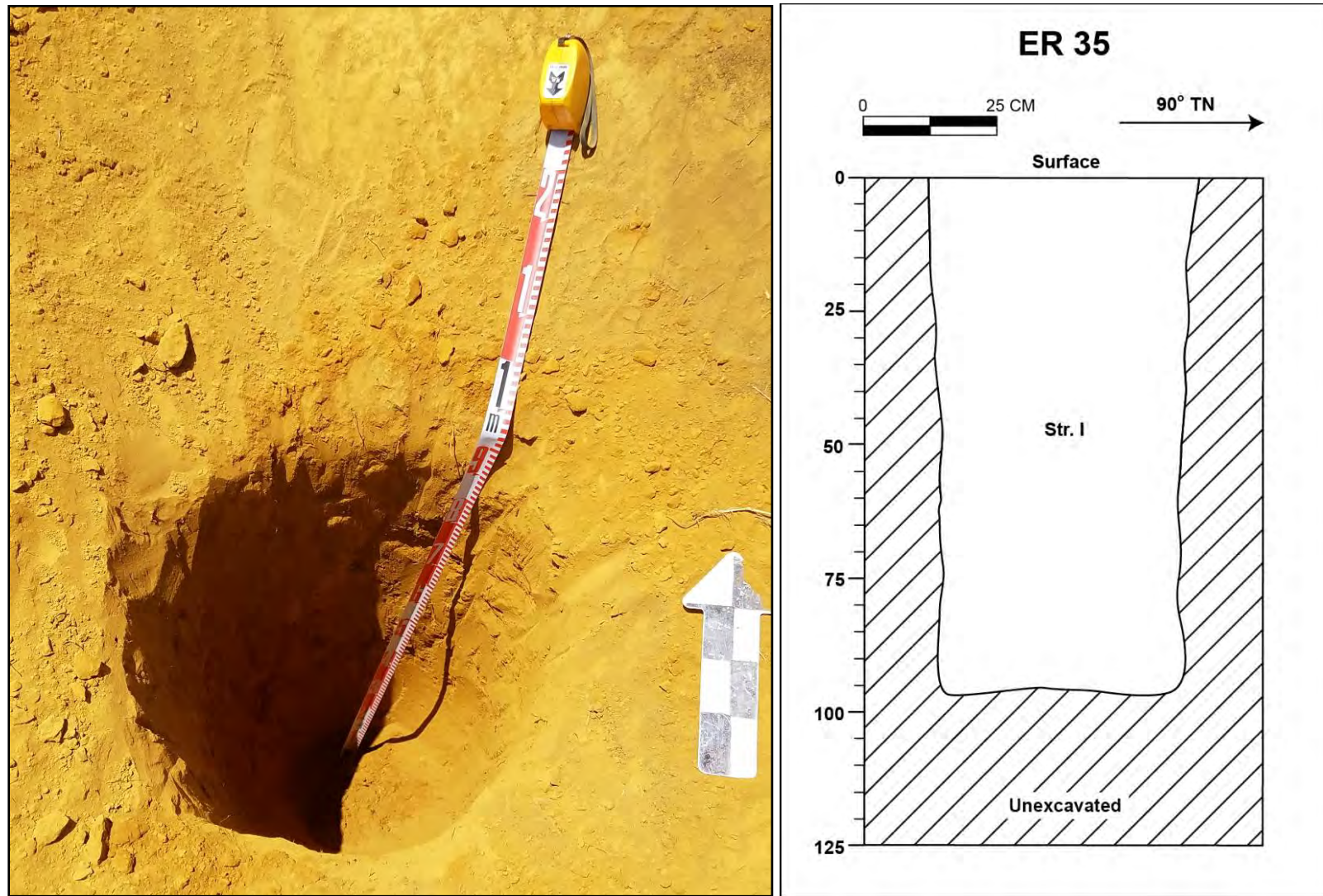


Figure 63. North sidewall profile photo and drawing for STP # ER 35

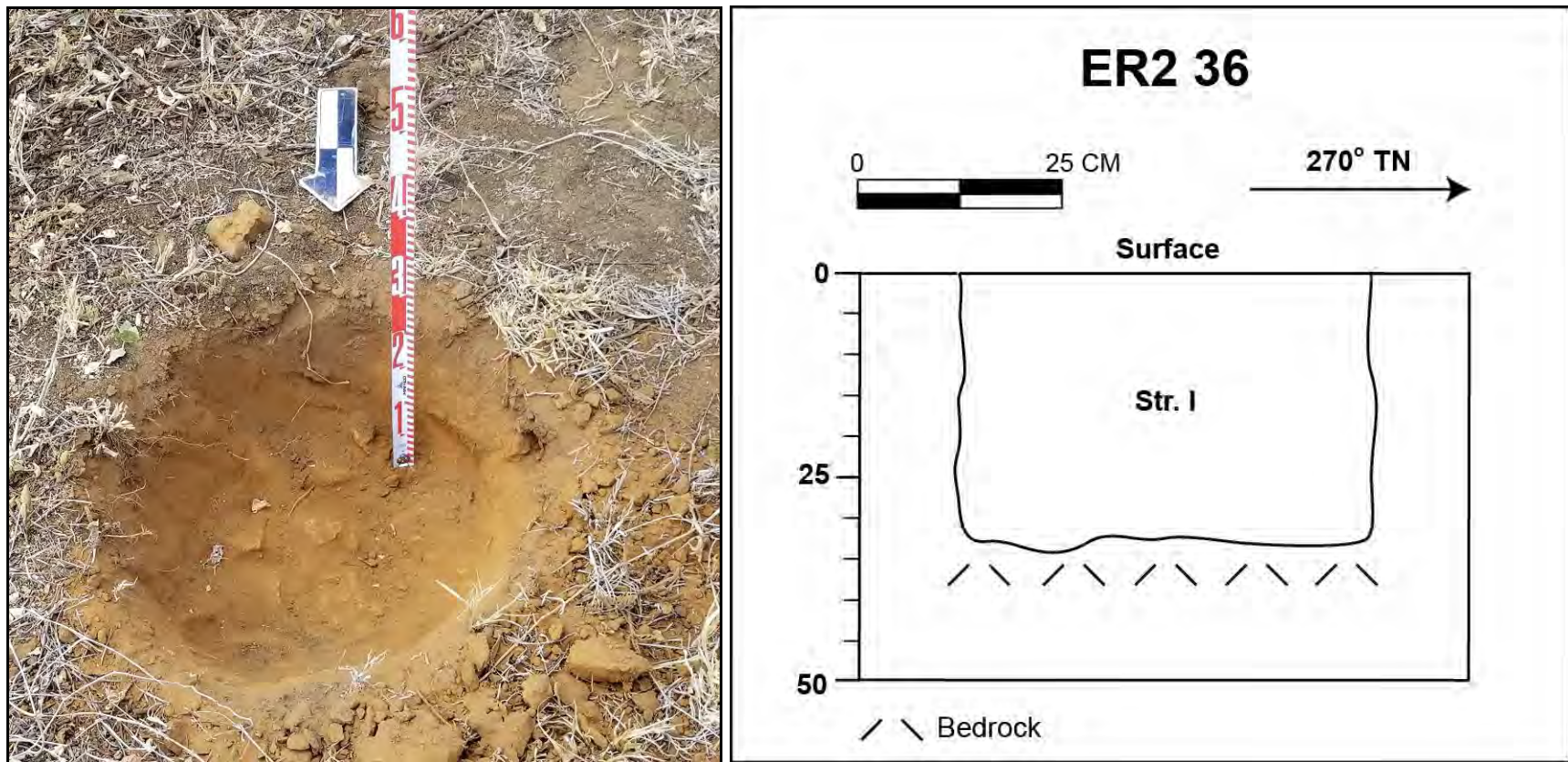


Figure 64. South sidewall profile photo and drawing for STP # ER[2] 36



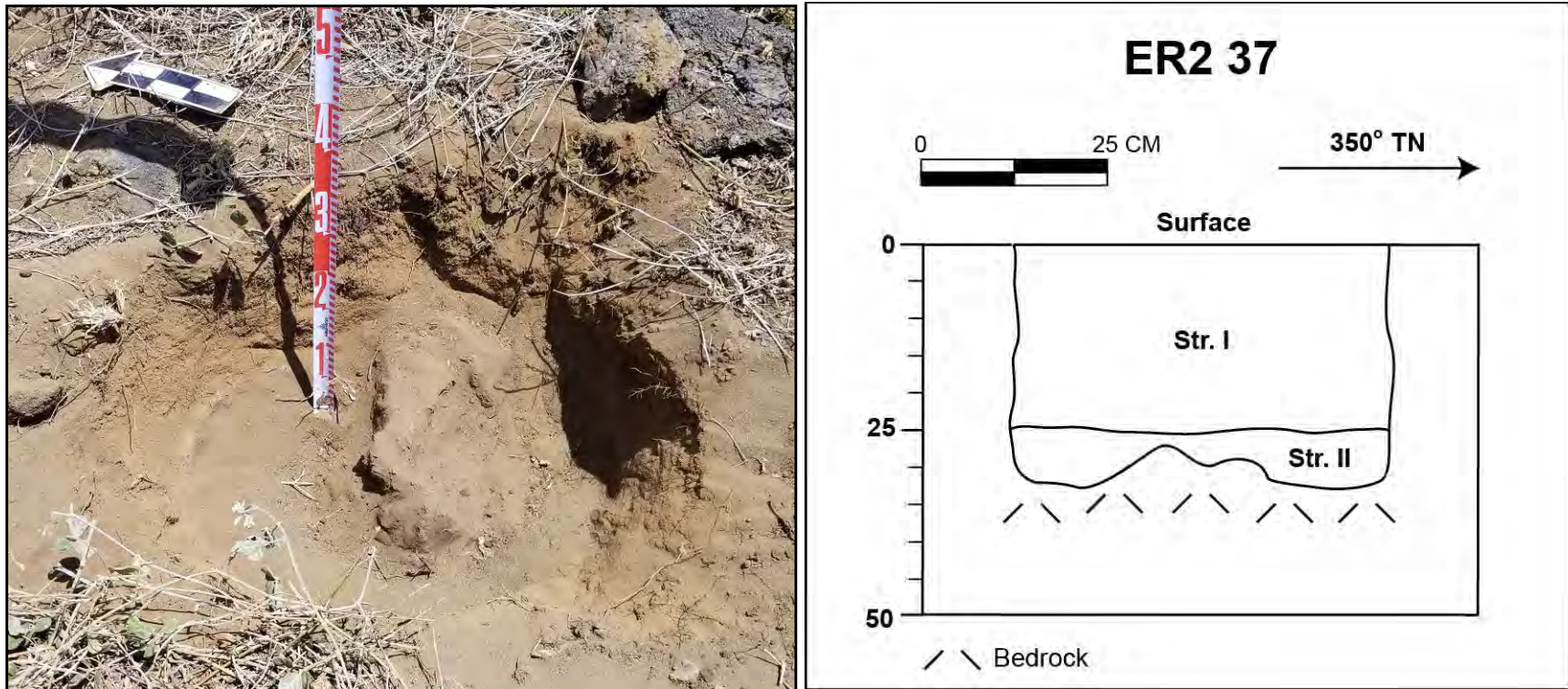


Figure 65. West sidewall profile photo and drawing for STP # ER[2] 37

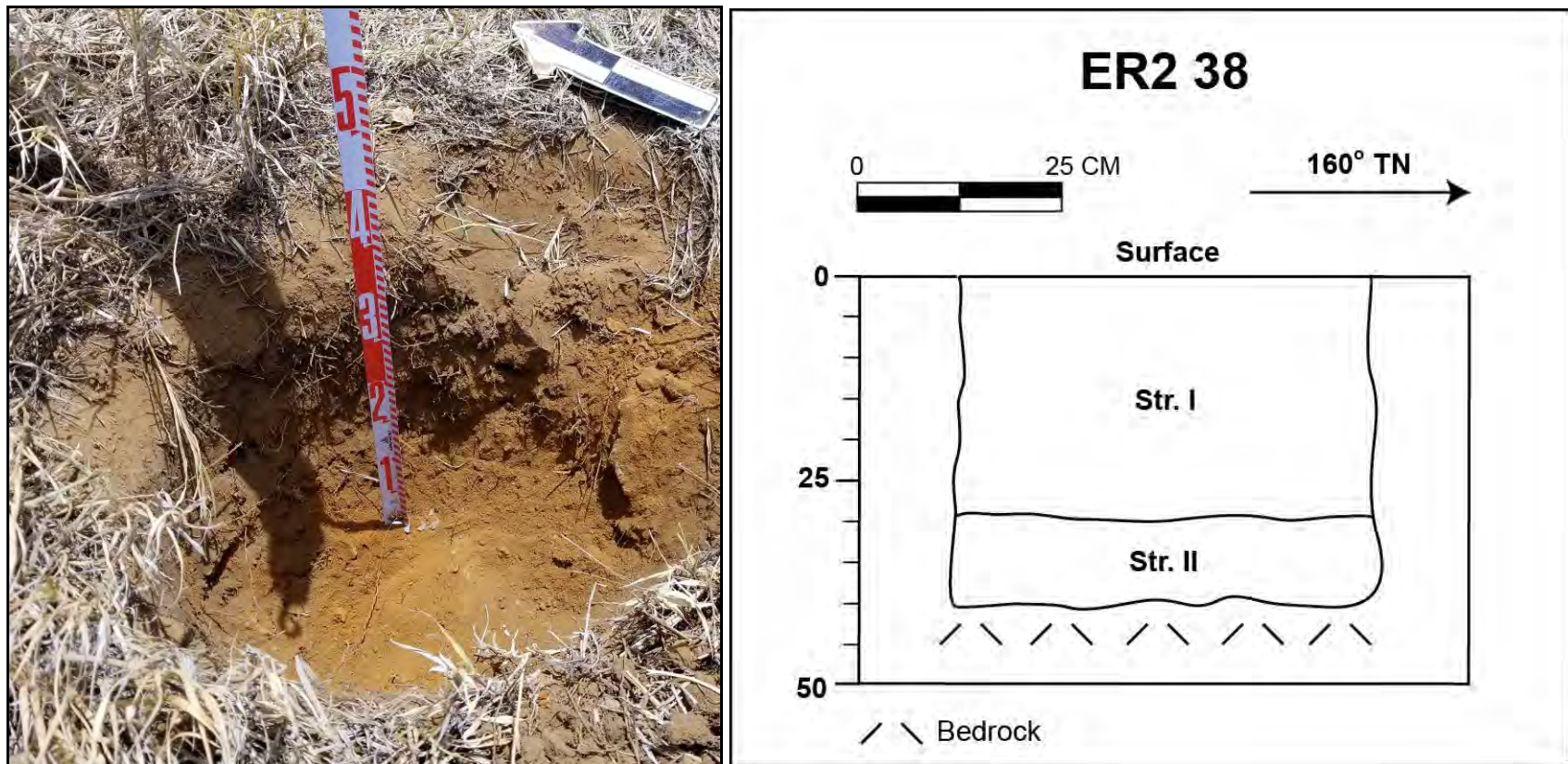


Figure 66. East sidewall profile photo and drawing for STP # ER[2] 38



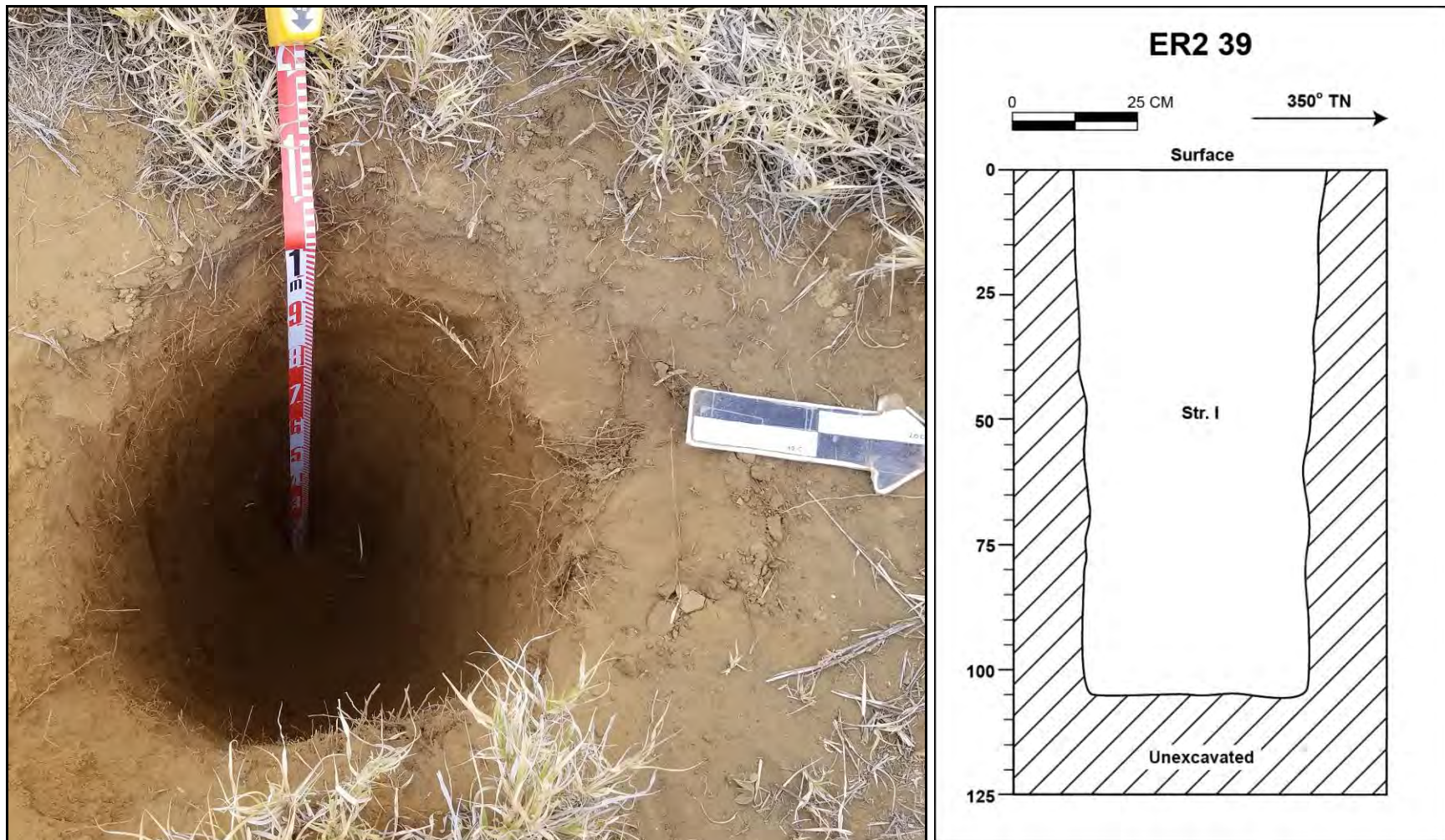


Figure 67. West sidewall profile photo and drawing for STP # ER[2] 39



## Green Sand Beach Pedestrian Path

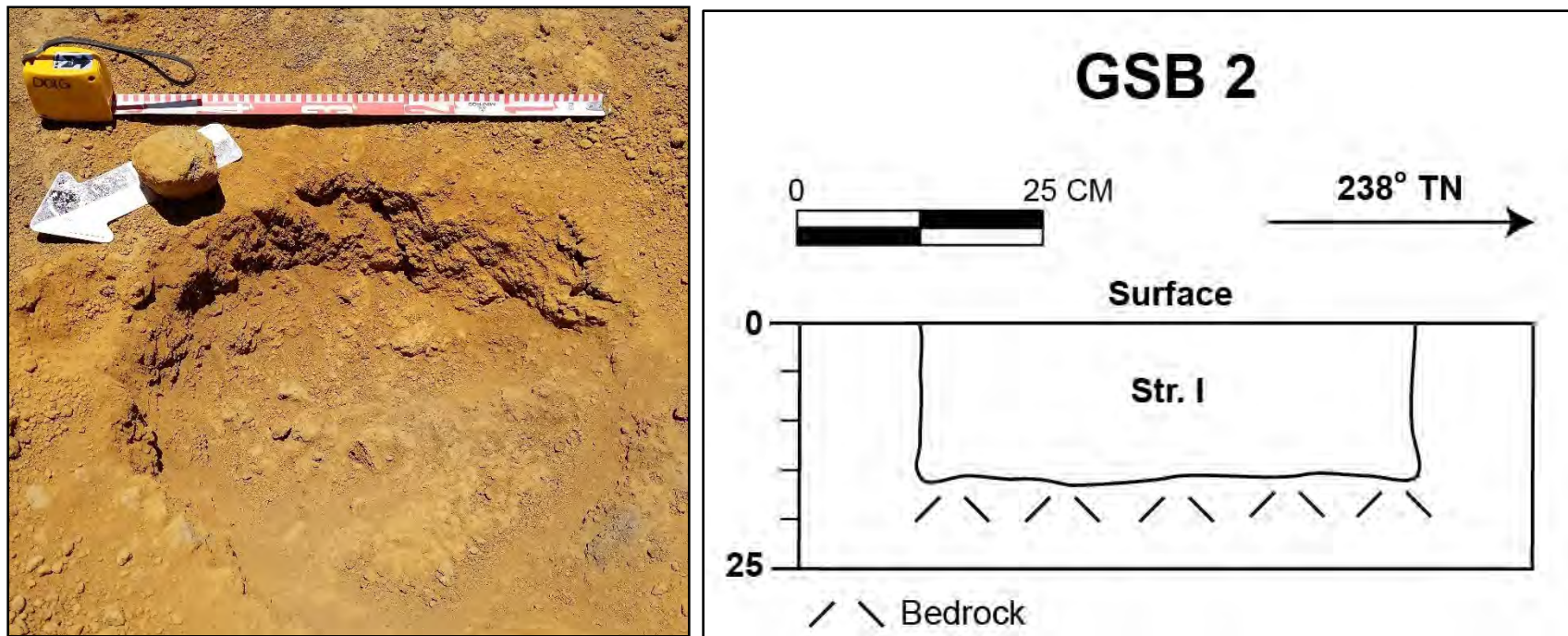


Figure 68. Southeast sidewall profile photo and drawing for STP # GSB 2

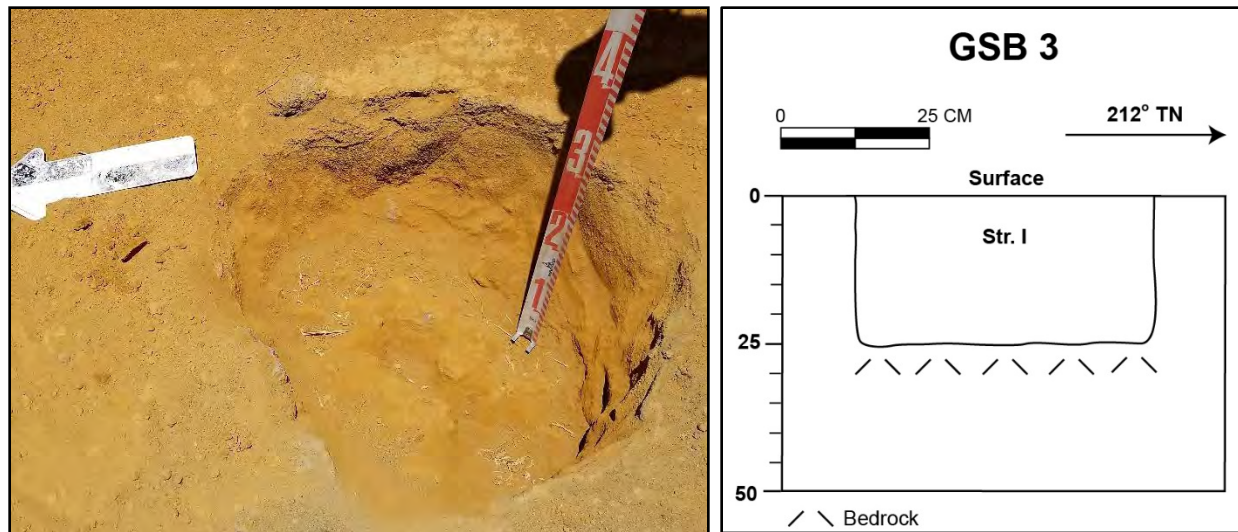


Figure 69. Southeast sidewall profile photo and drawing for STP # GSB 3

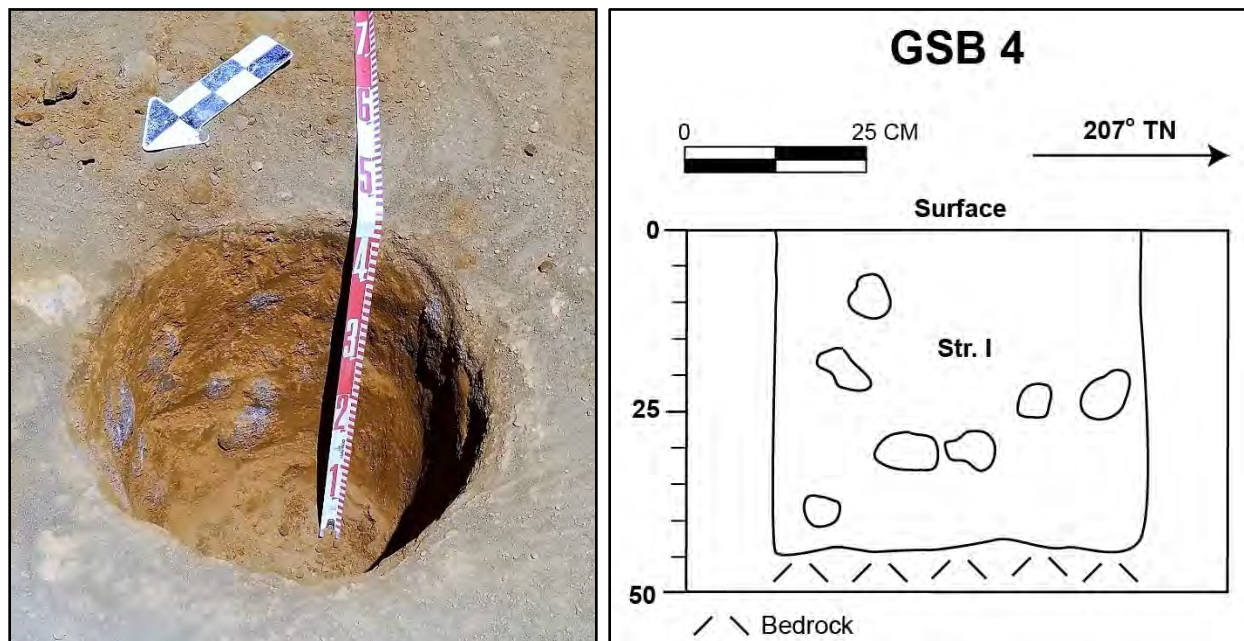


Figure 70. Southeast sidewall profile photo and drawing for STP # GSB 4



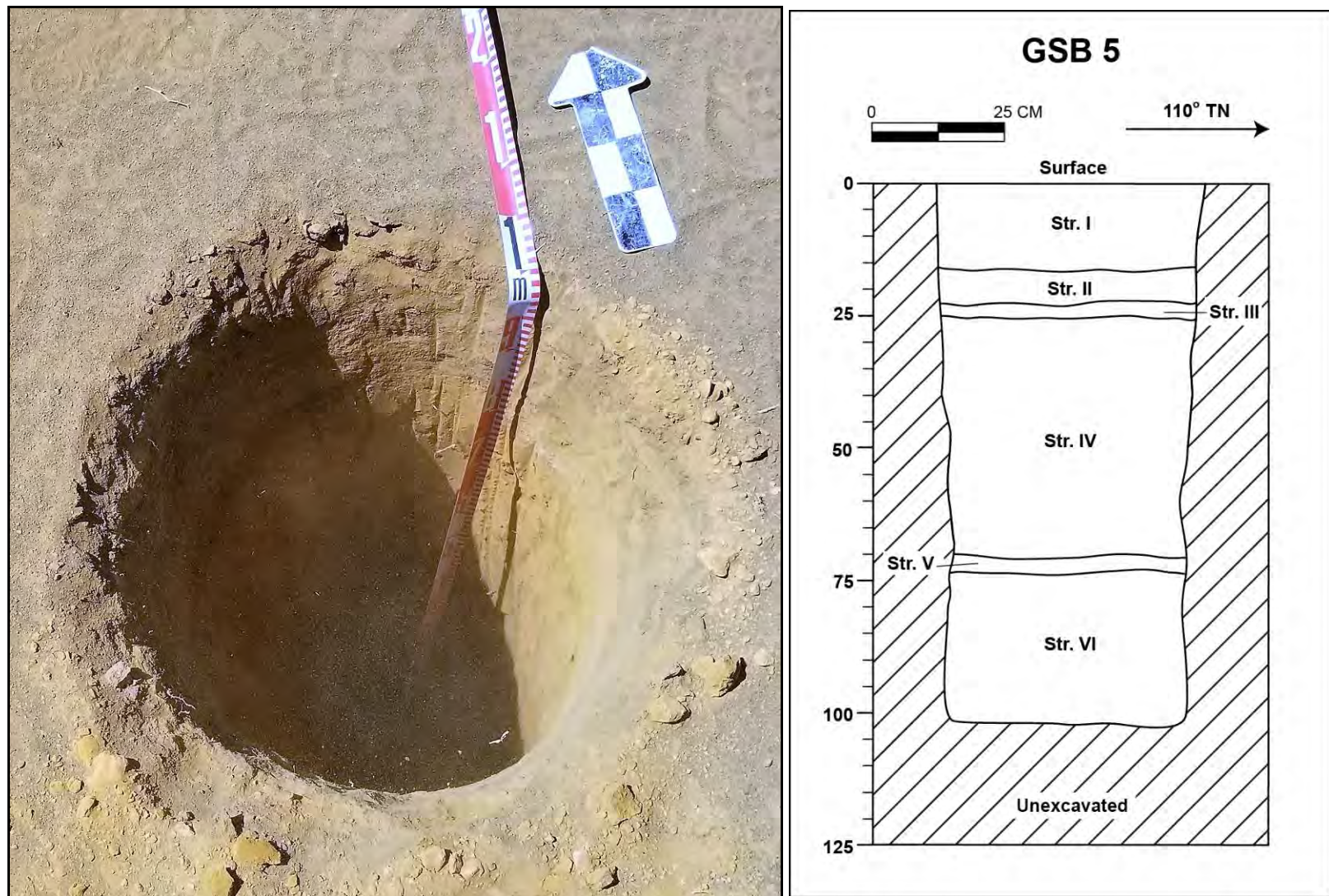


Figure 71. North sidewall profile photo and drawing for STP # GSB 5



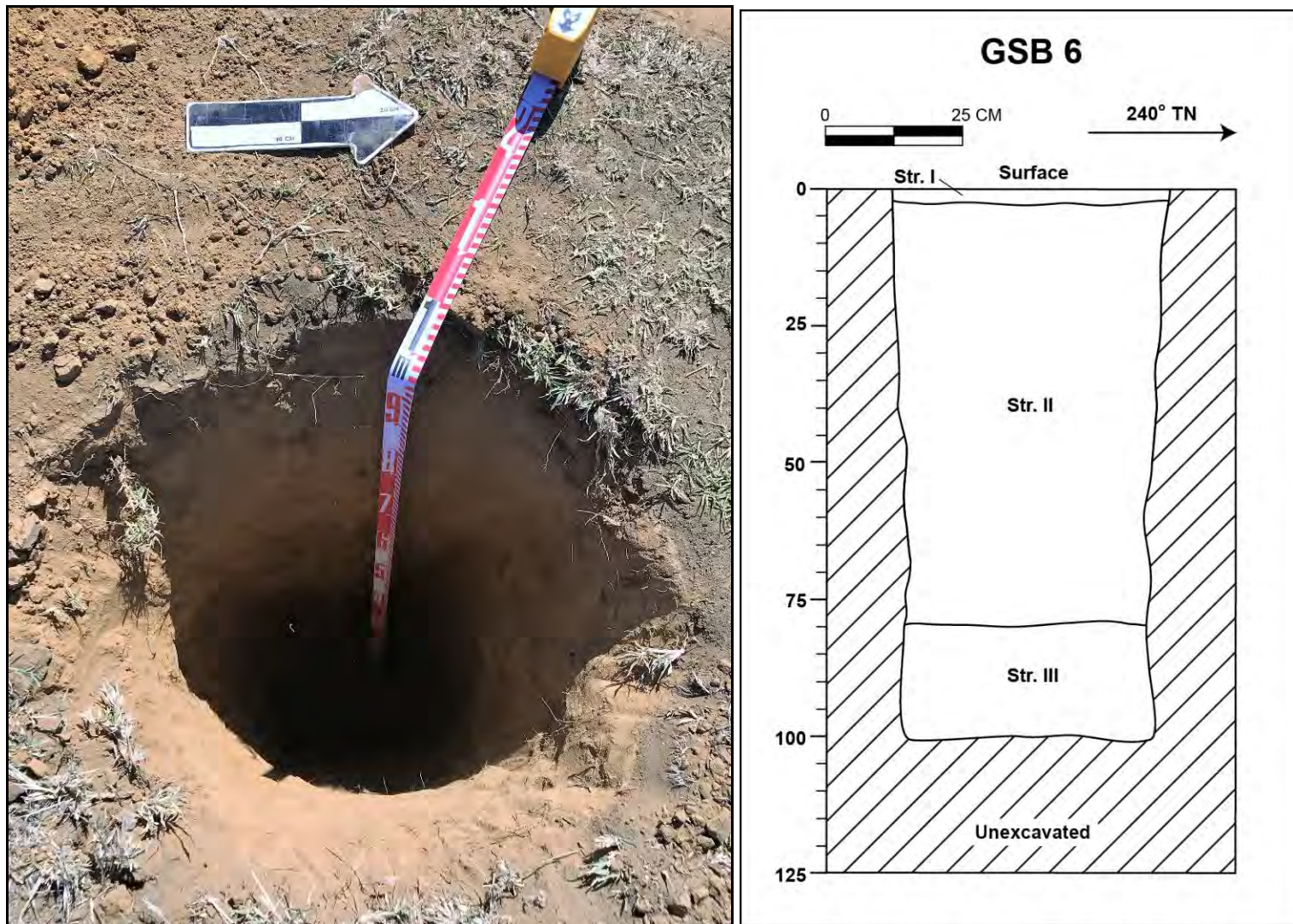


Figure 72. Southeast sidewall profile photo and drawing for STP # GSB 6



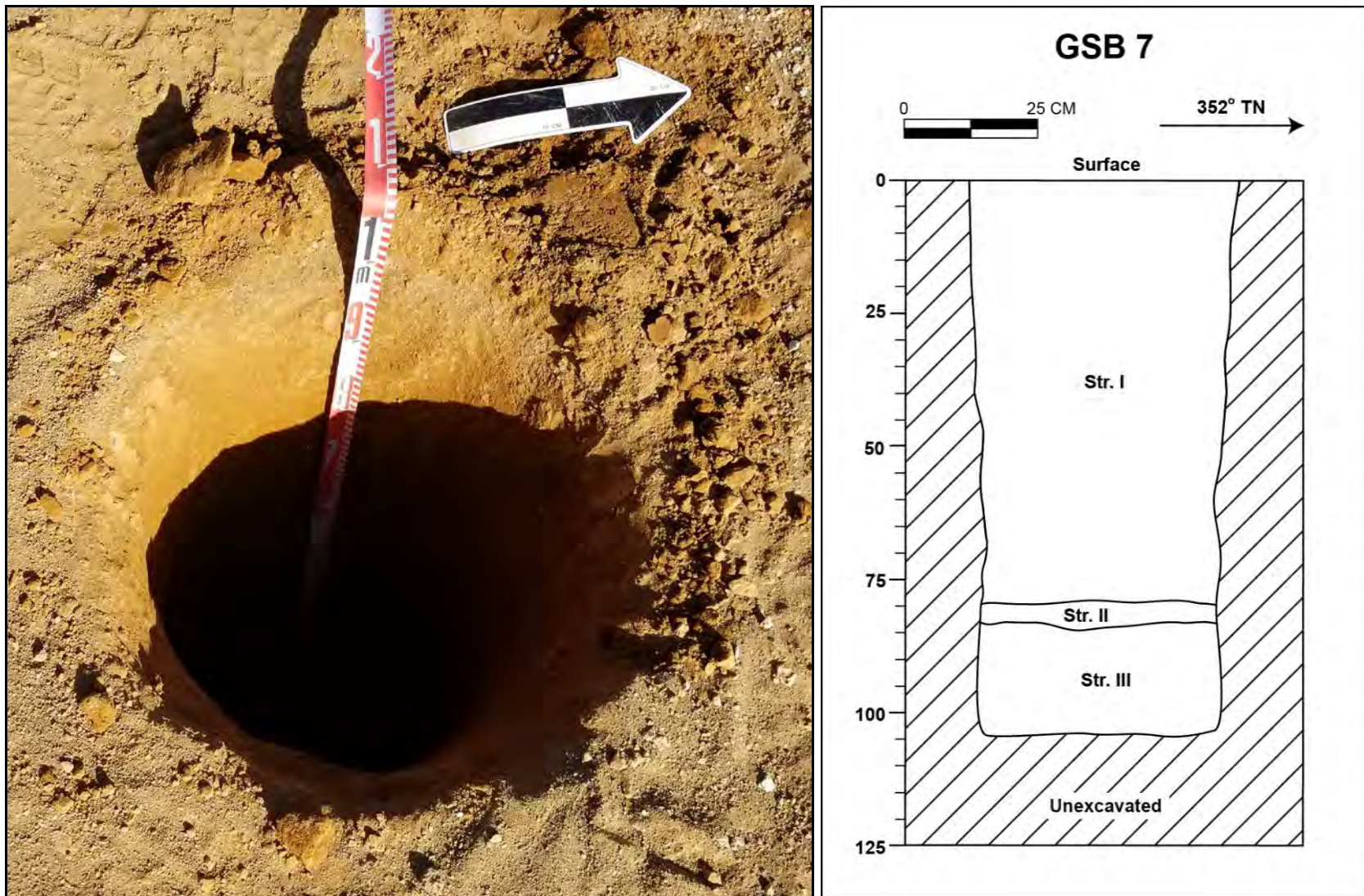


Figure 73. West sidewall profile photo and drawing for STP # GSB 7



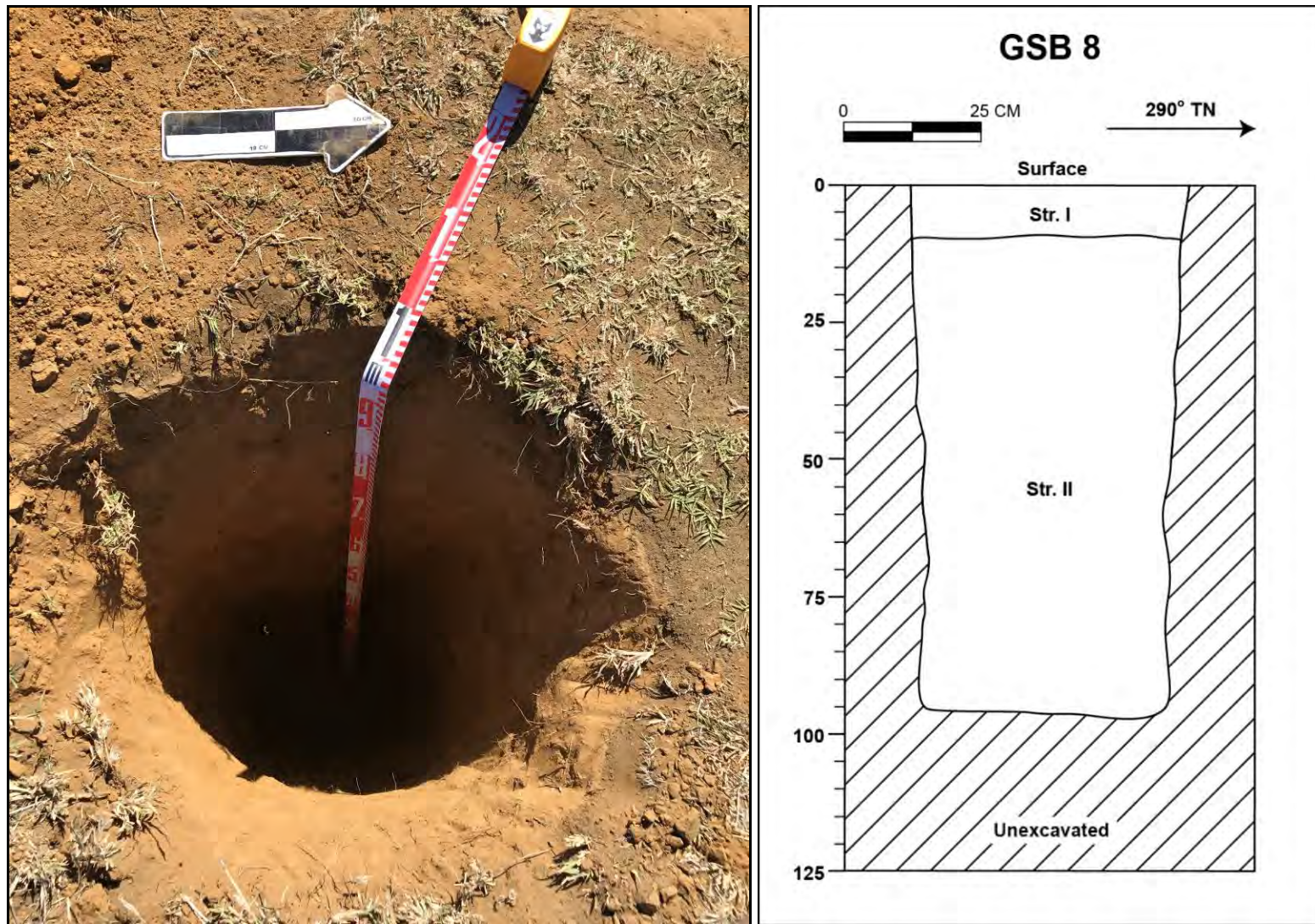


Figure 74. South sidewall profile photo and drawing for STP # GSB 8



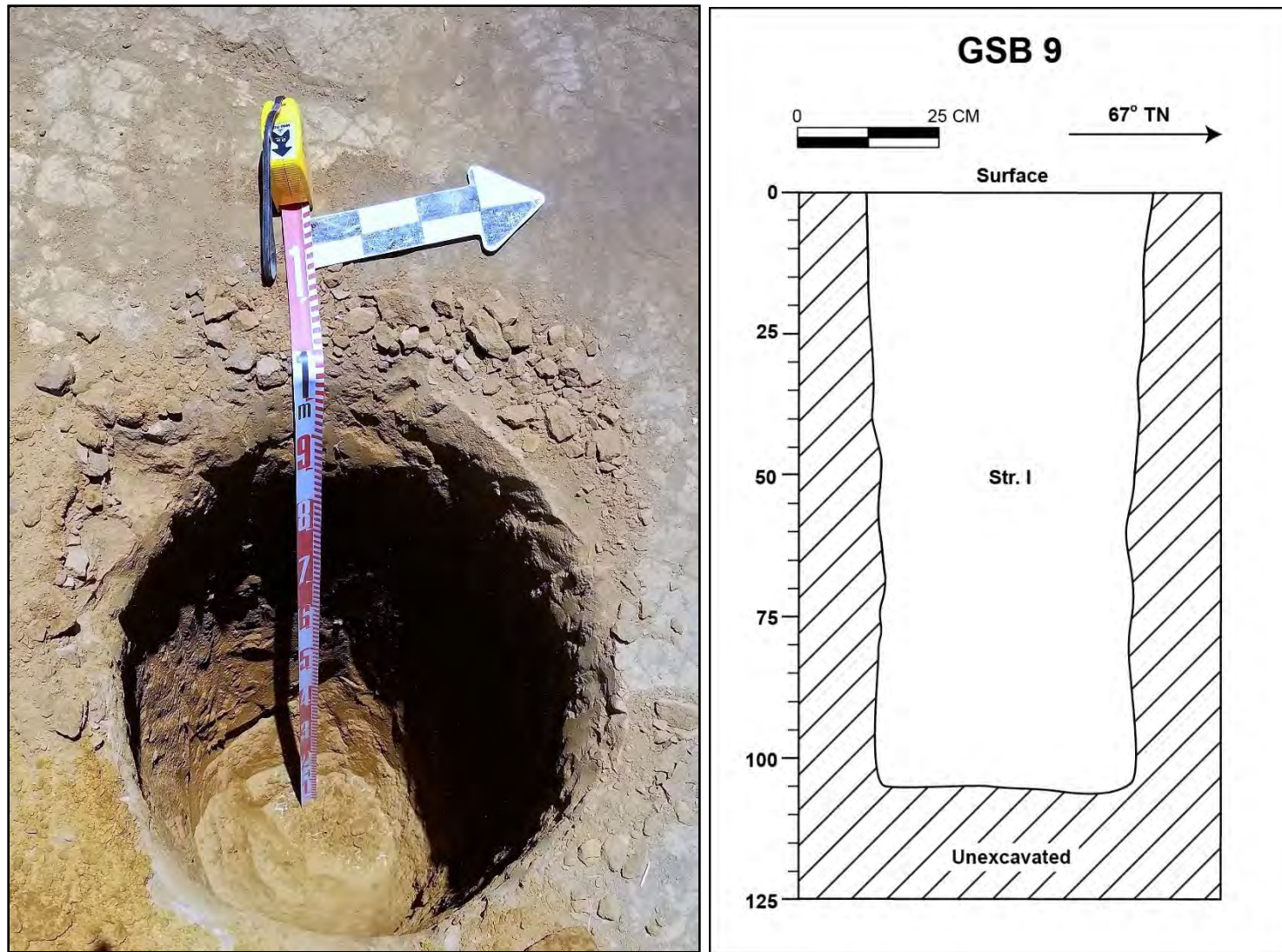


Figure 75. North sidewall profile photo and drawing for STP # GSB 9

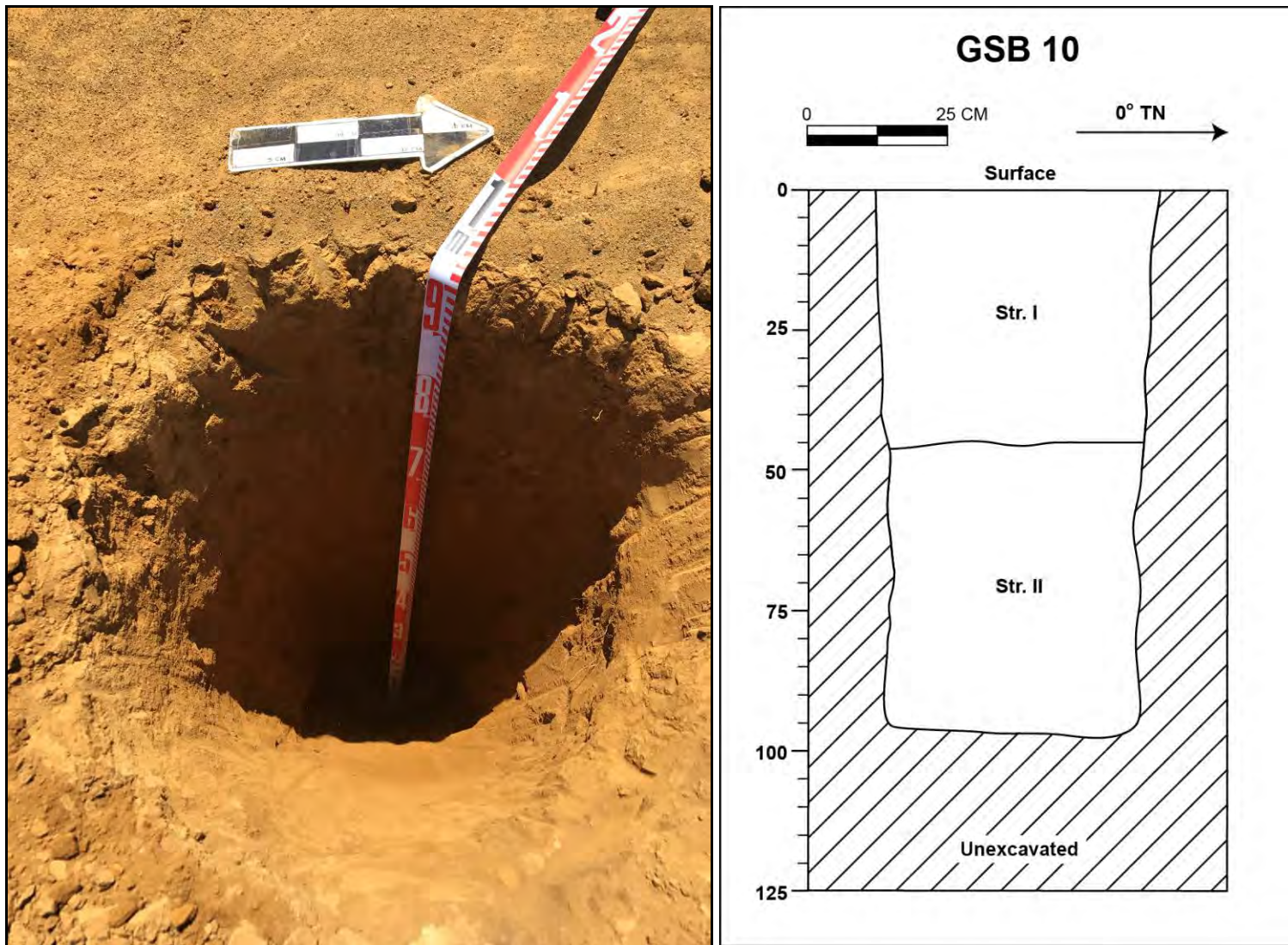


Figure 76. West sidewall profile photo and drawing for STP # GSB 10



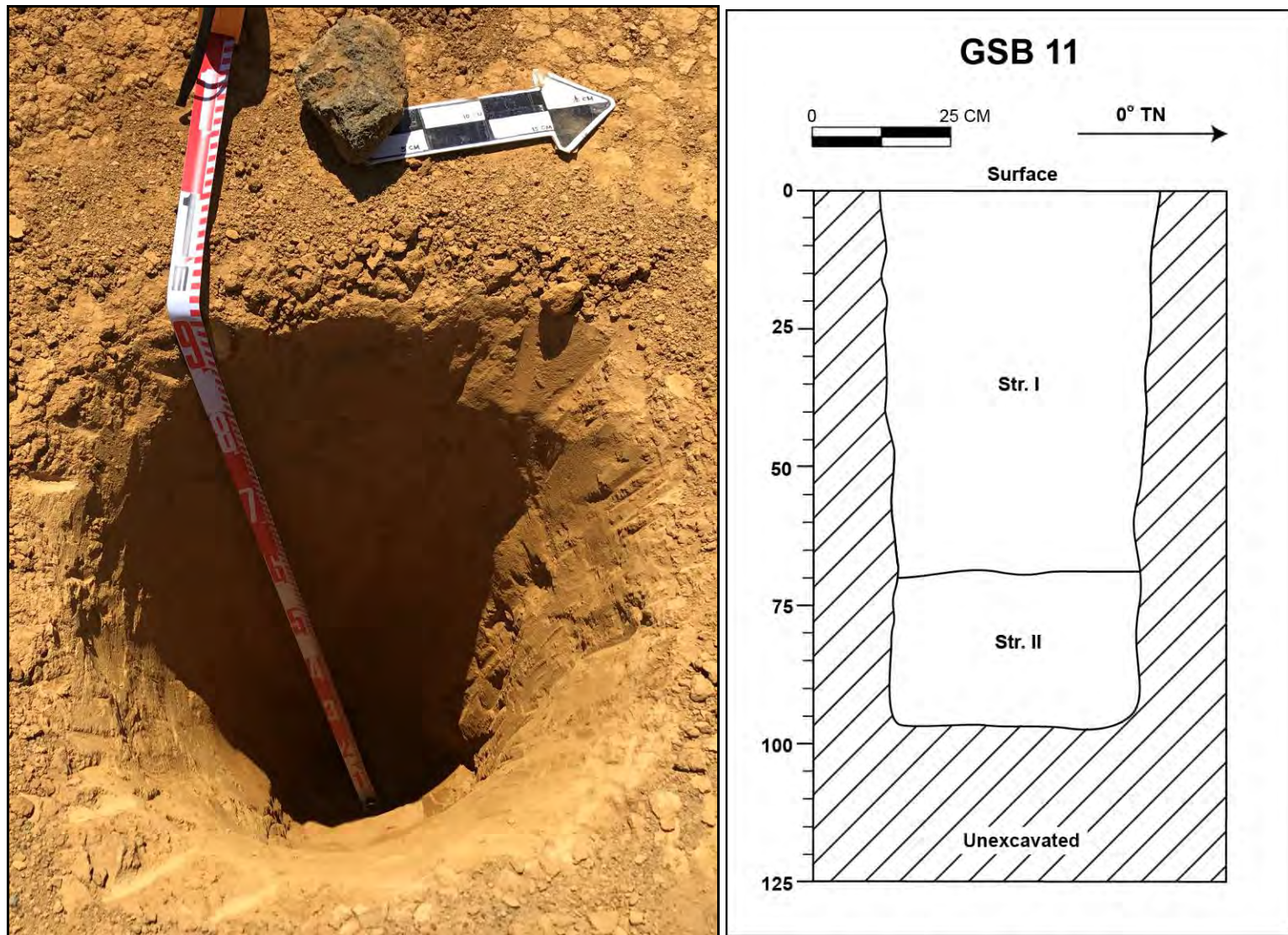


Figure 77. West sidewall profile photo and drawing for STP # GSB 11



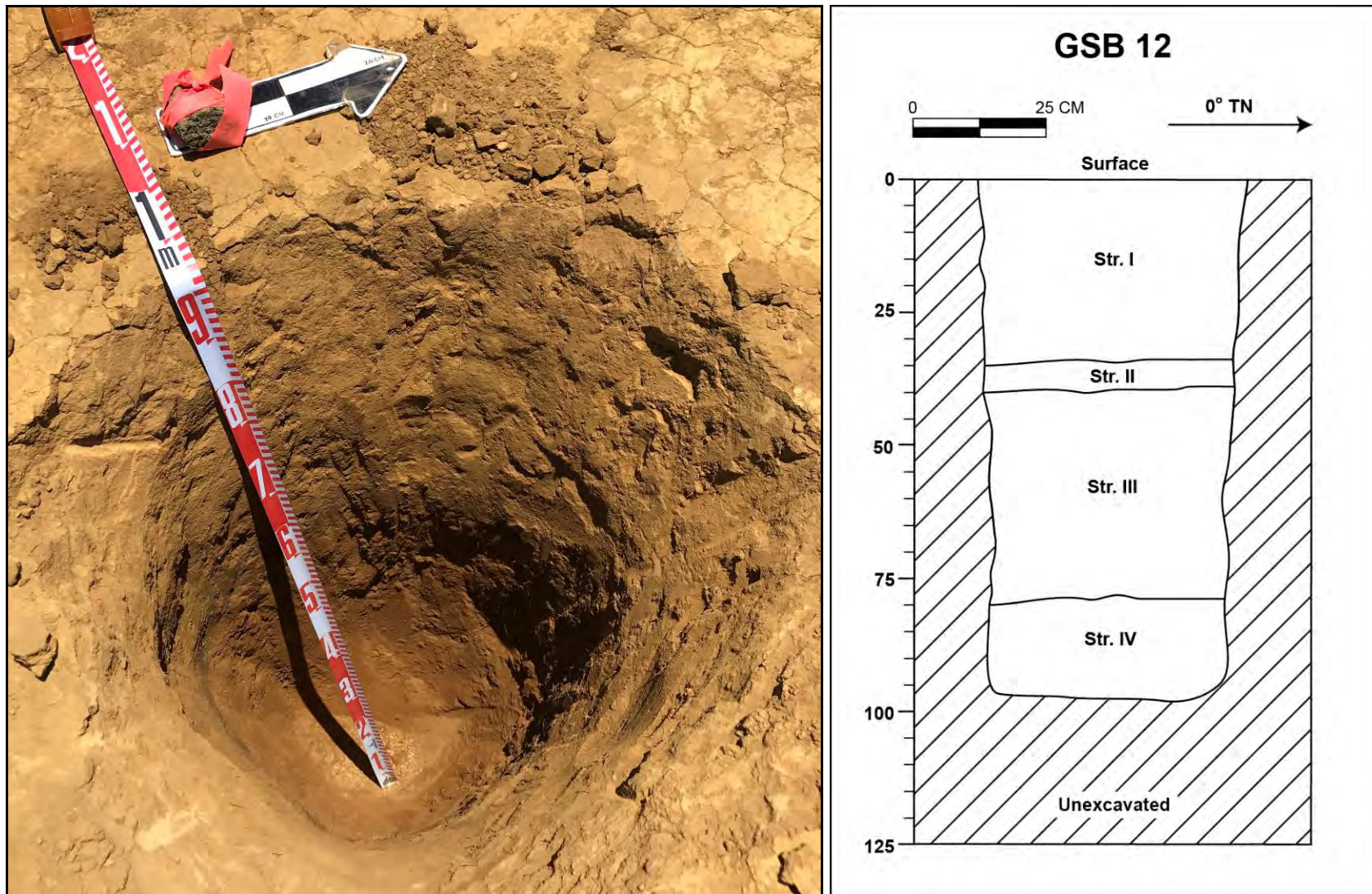


Figure 78. West sidewall profile photo and drawing for STP # GSB 12



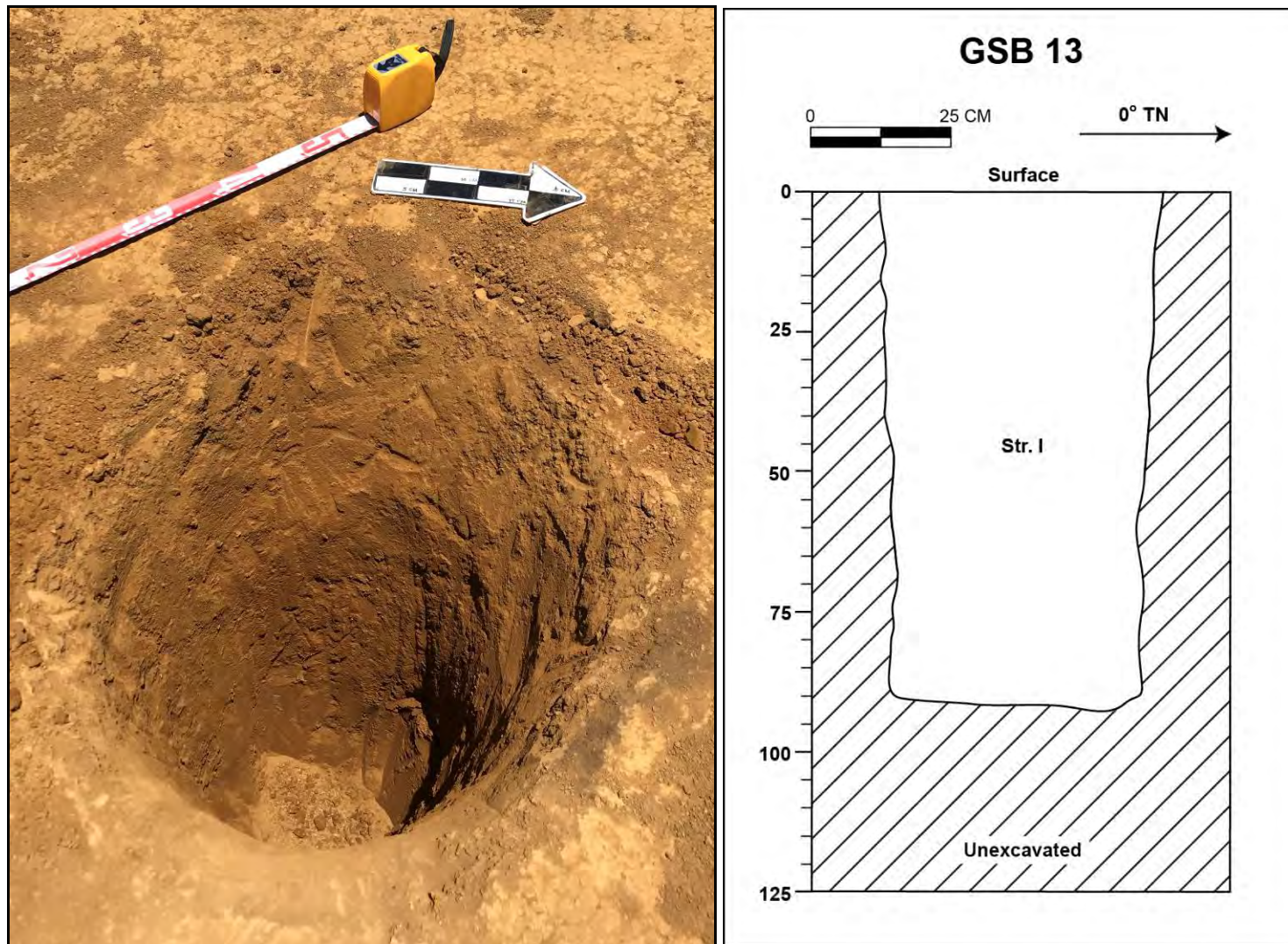


Figure 79. Well sidewall profile photo and drawing for STP # GSB 13

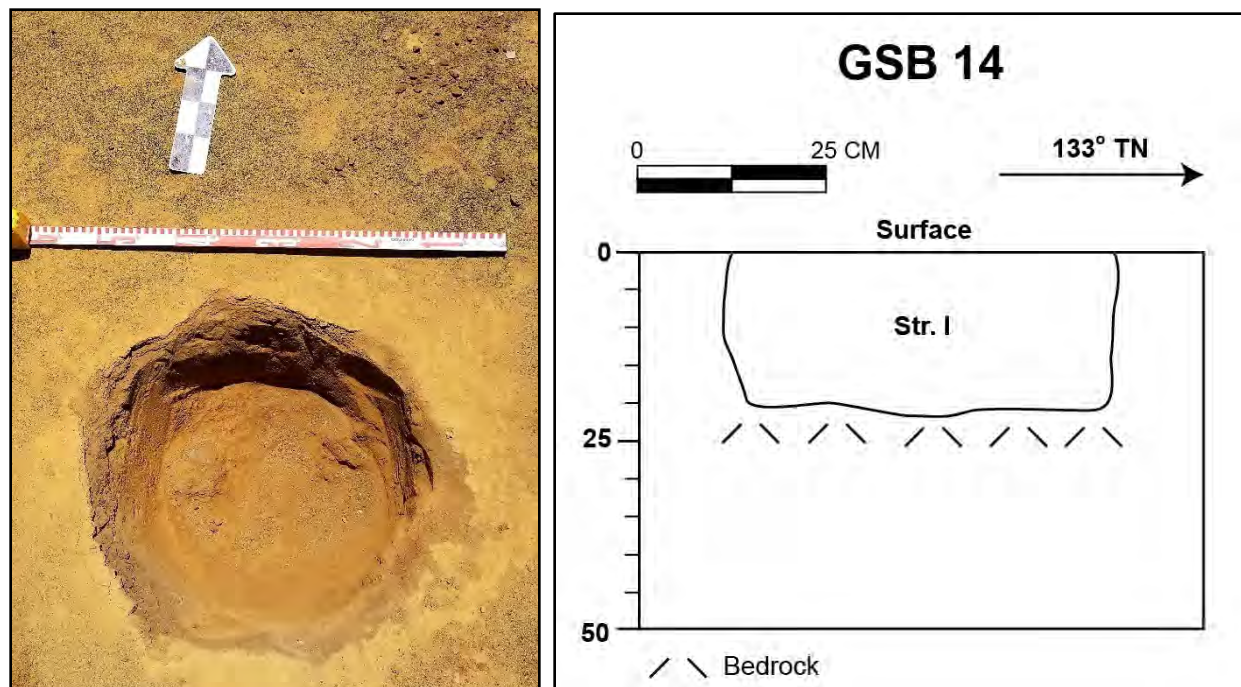


Figure 80. Northeast sidewall profile photo and drawing for STP # GSB 14

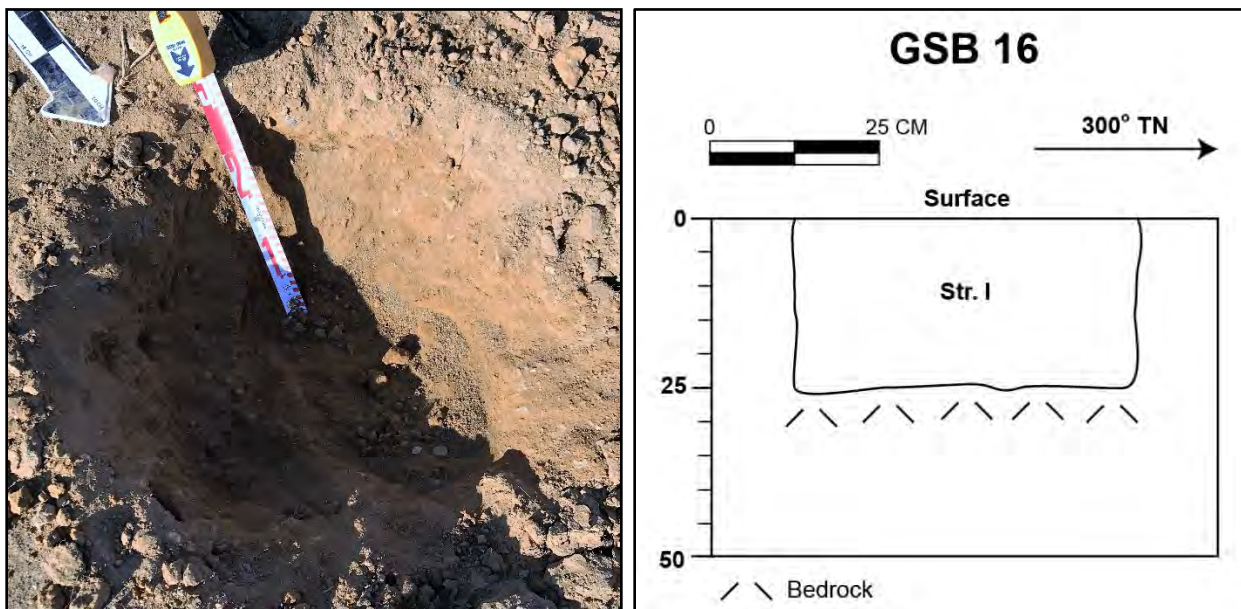


Figure 81. Southwest sidewall profile photo and drawing for STP # GSB 16



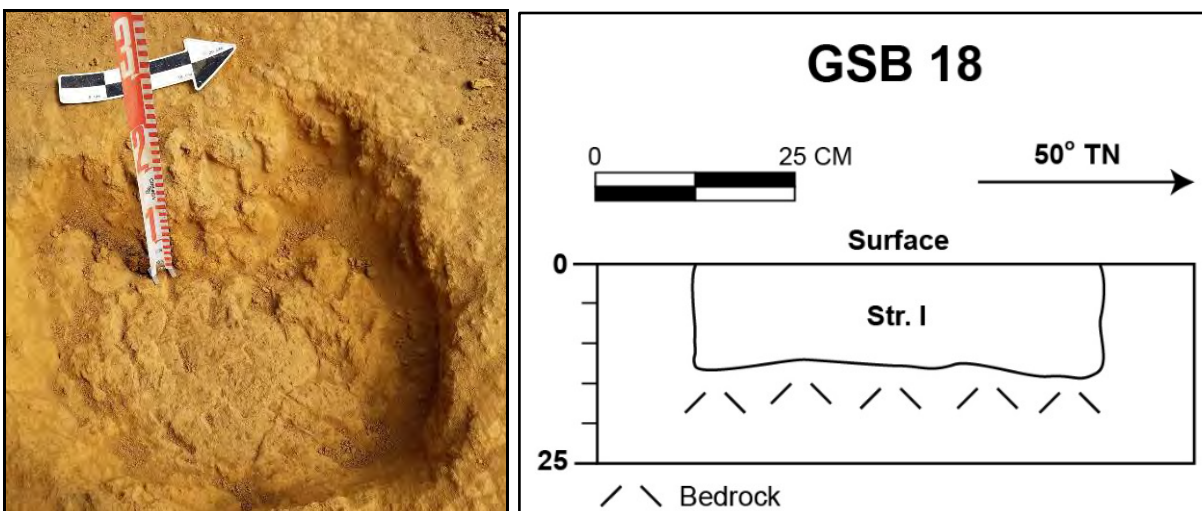


Figure 82. Northwest sidewall profile photo and drawing for STP # GSB 18

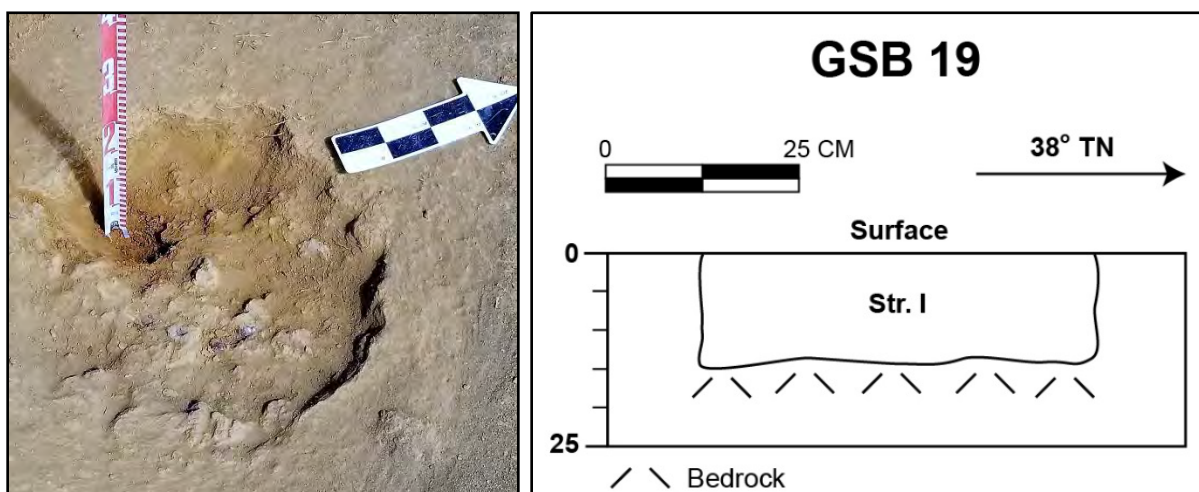


Figure 83. Northwest sidewall profile photo and drawing for STP # GSB 19

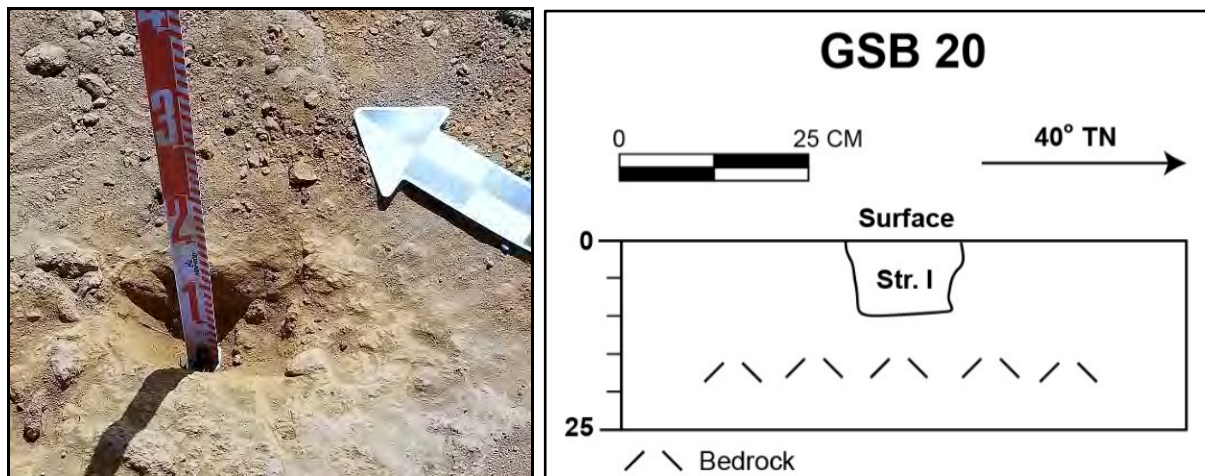


Figure 84. Northwest sidewall profile photo and drawing for STP # GSB 20

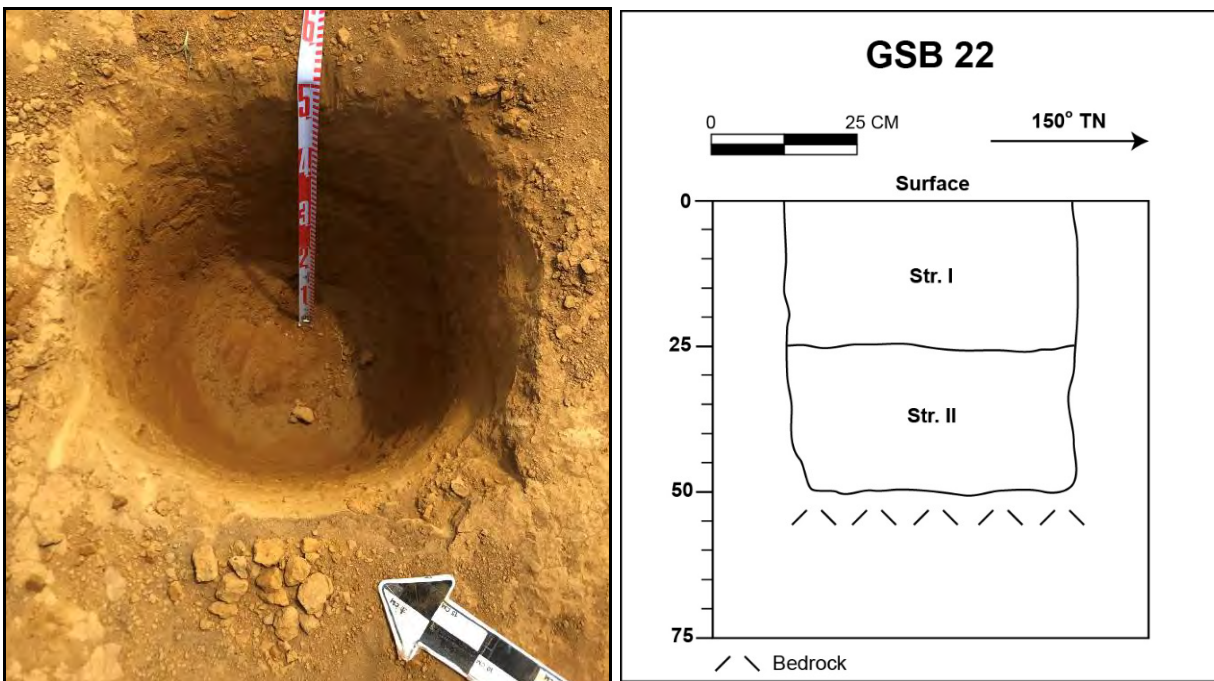


Figure 85. Northeast sidewall profile photo and drawing for STP # GSB 22



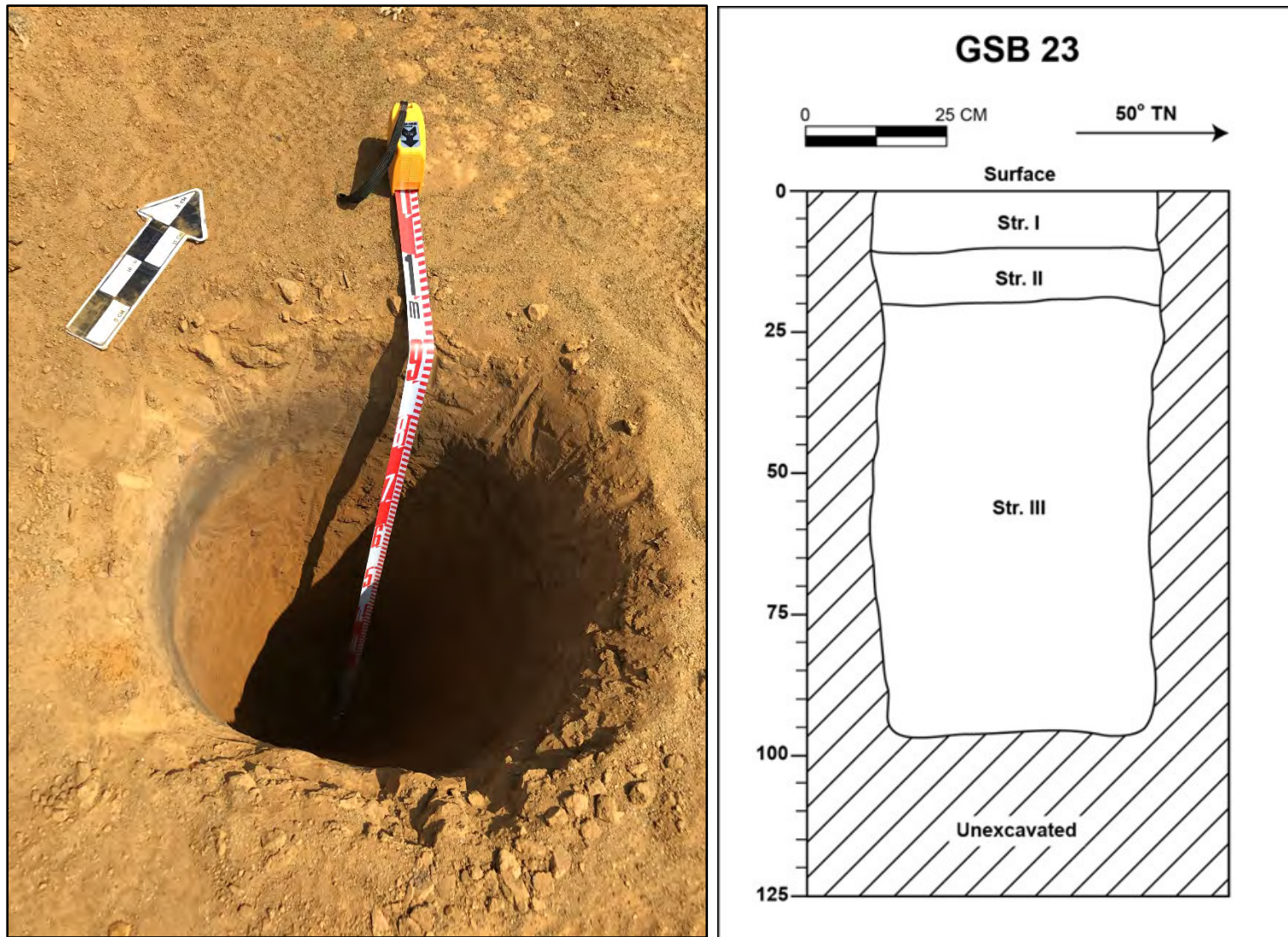


Figure 86. Northwest sidewall profile photo and drawing for STP # GSB 23



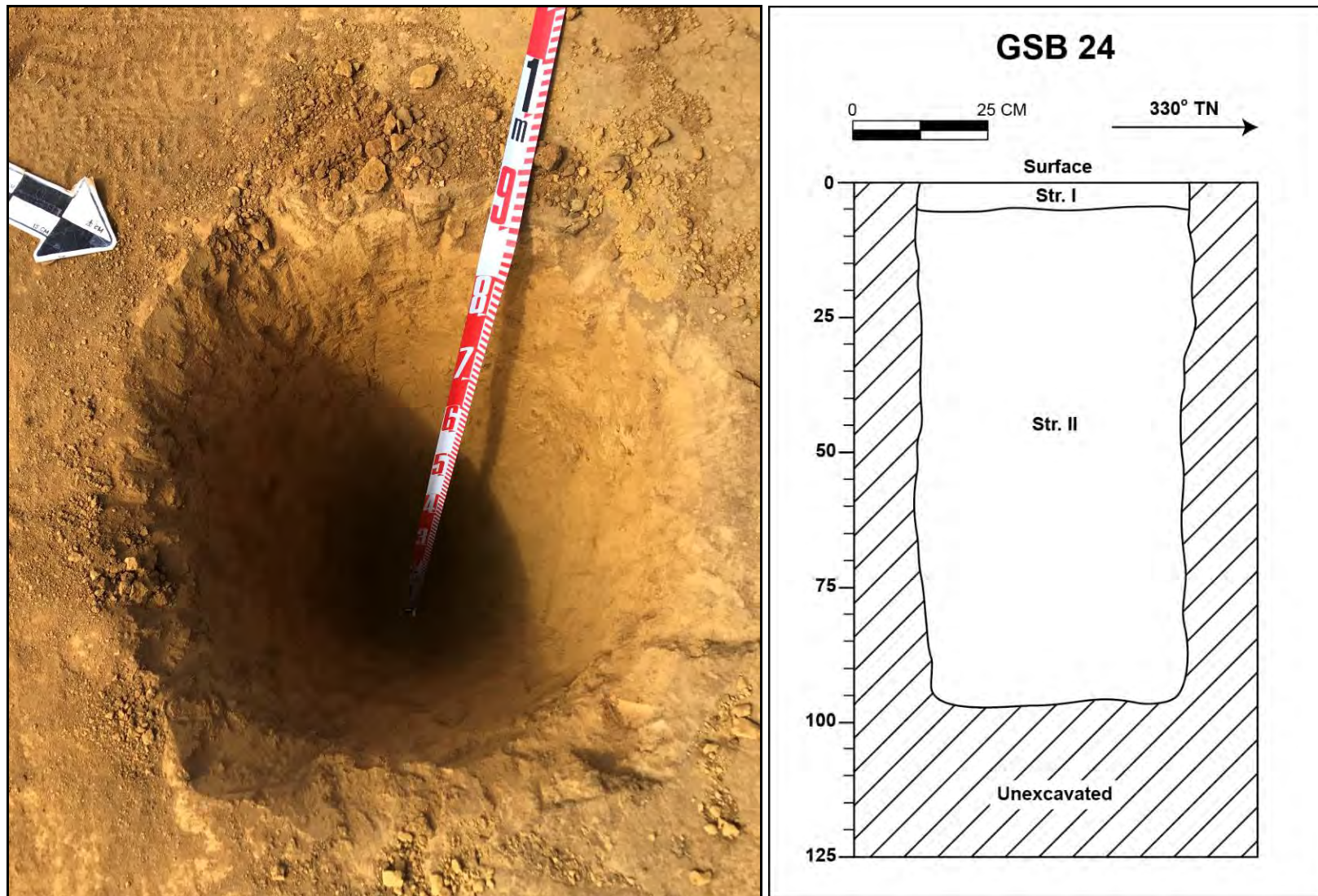


Figure 87. Southwest sidewall profile photo and drawing for STP # GSB 24



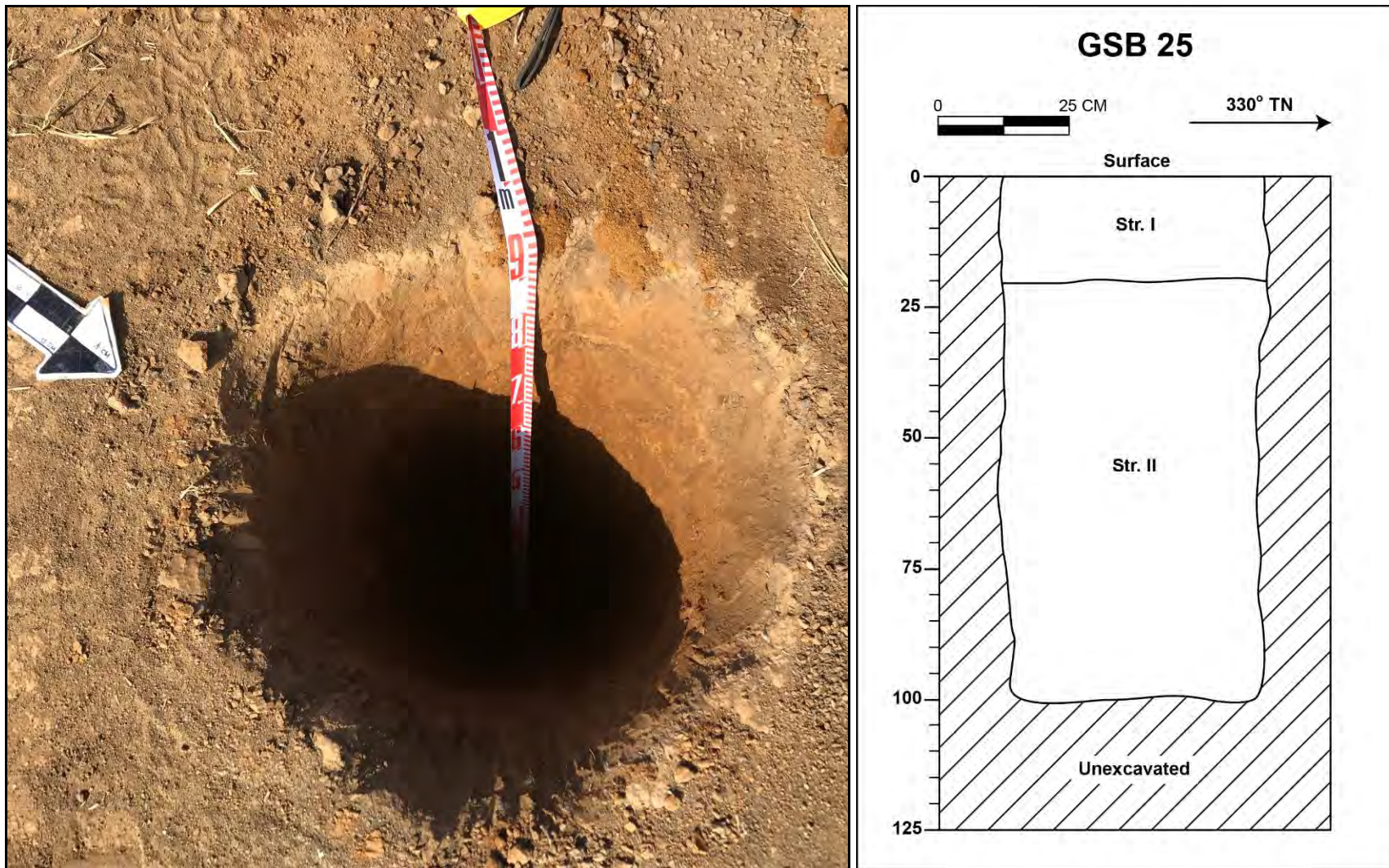


Figure 88. Southwest sidewall profile photo and drawing for STP # GSB 25



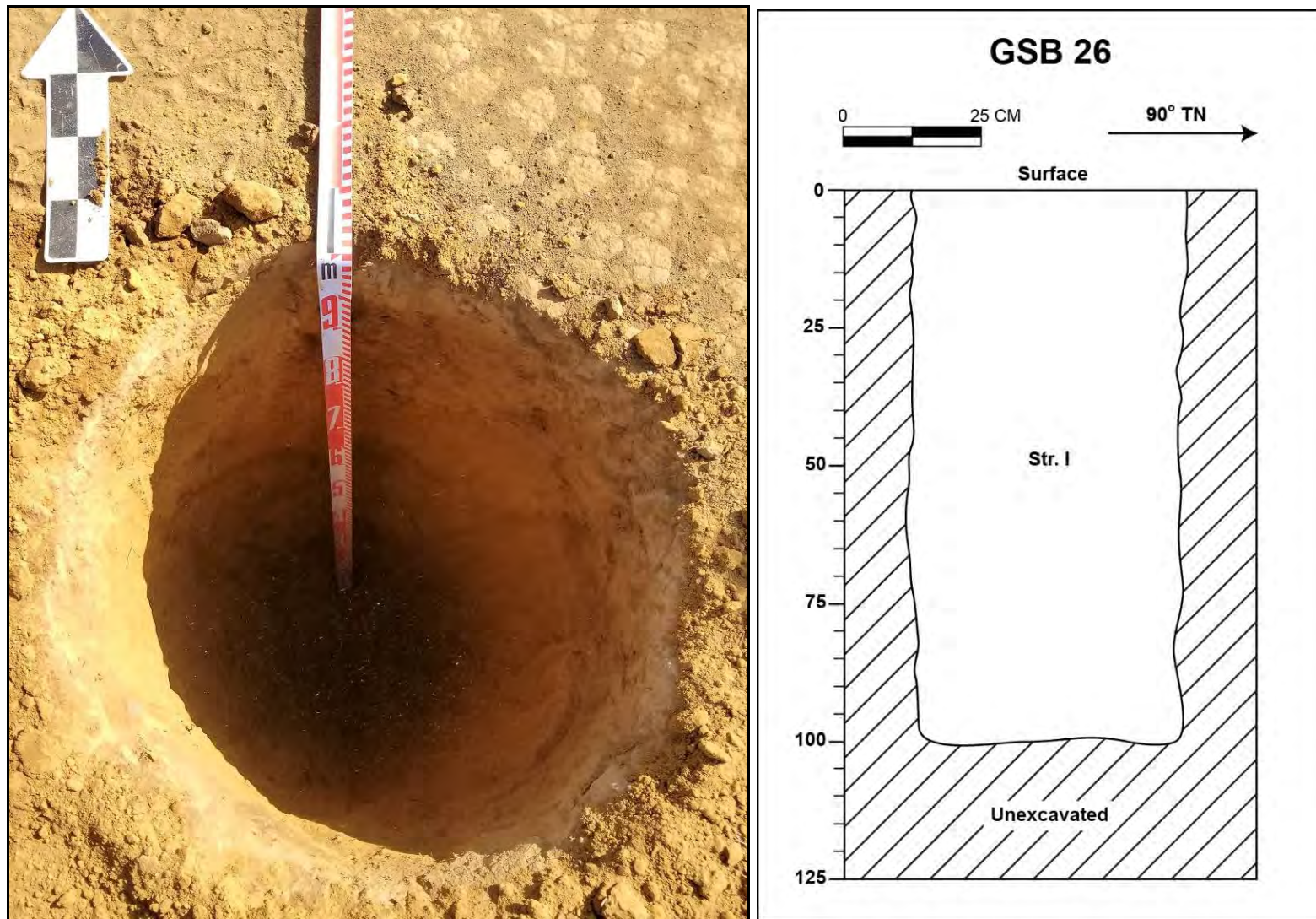


Figure 89. North sidewall profile photo and drawing for STP # GSB 26



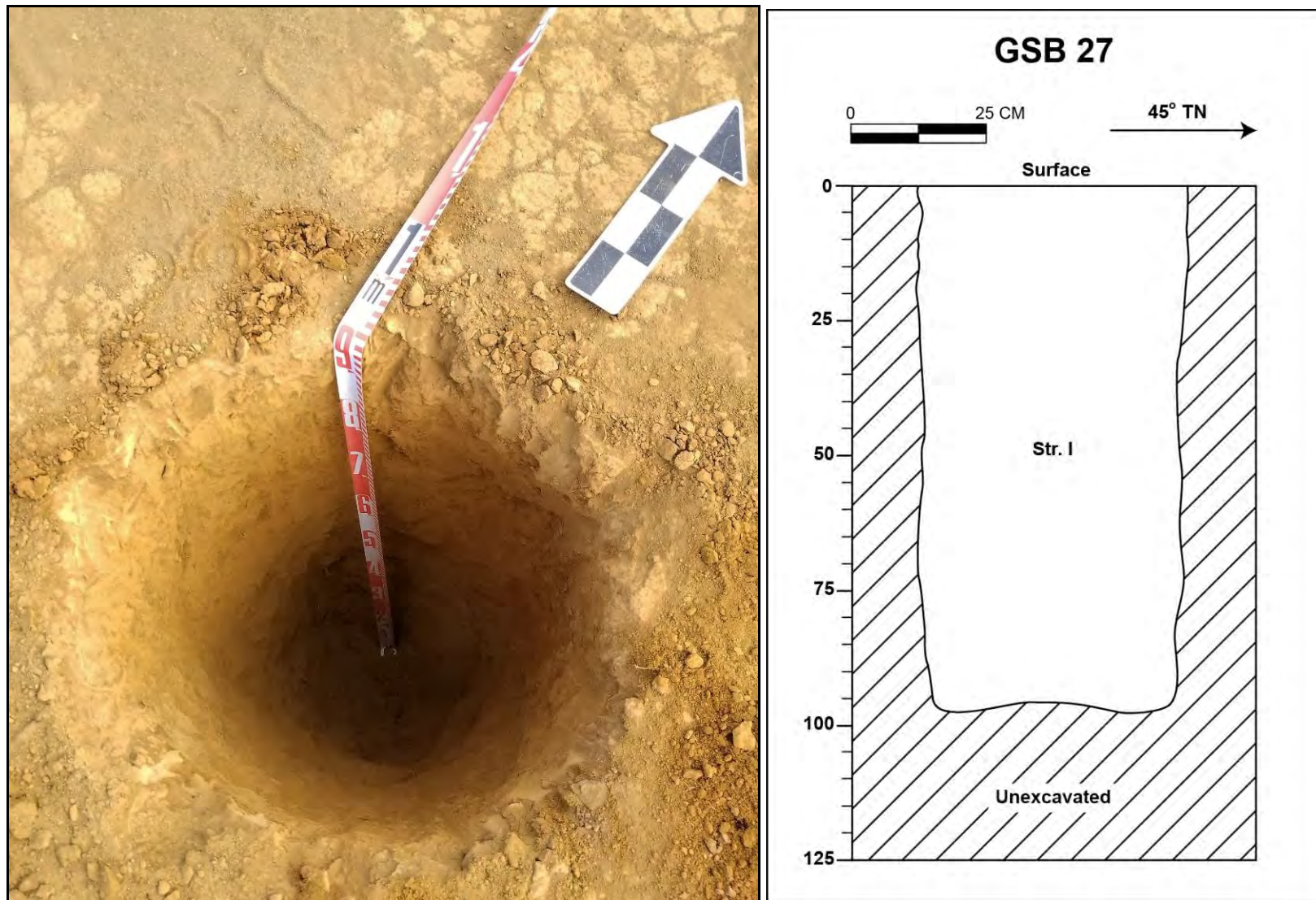


Figure 90. Northwest sidewall profile photo and drawing for STP # GSB 27

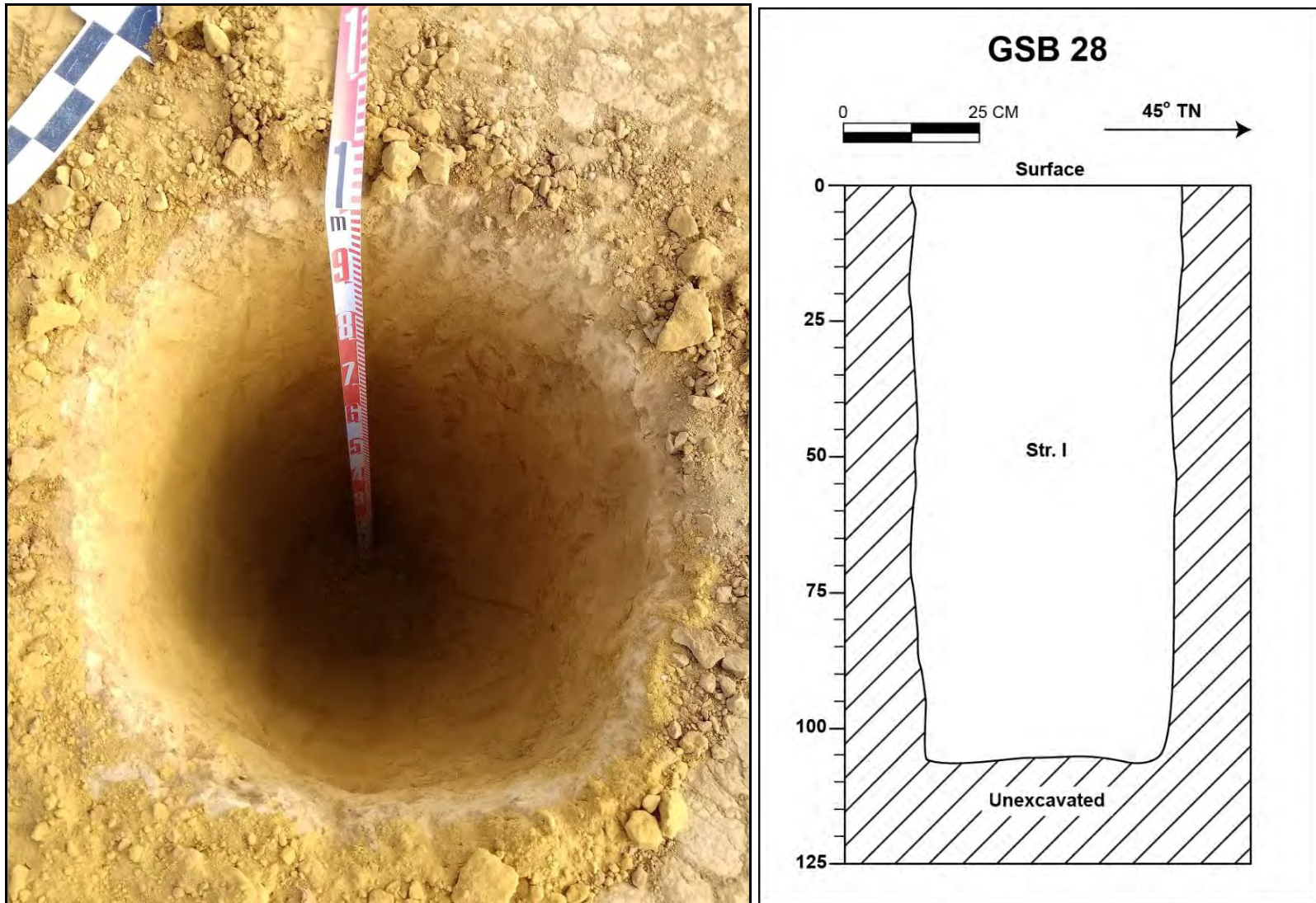


Figure 91. Northwest sidewall profile photo and drawing for STP # GSB 28



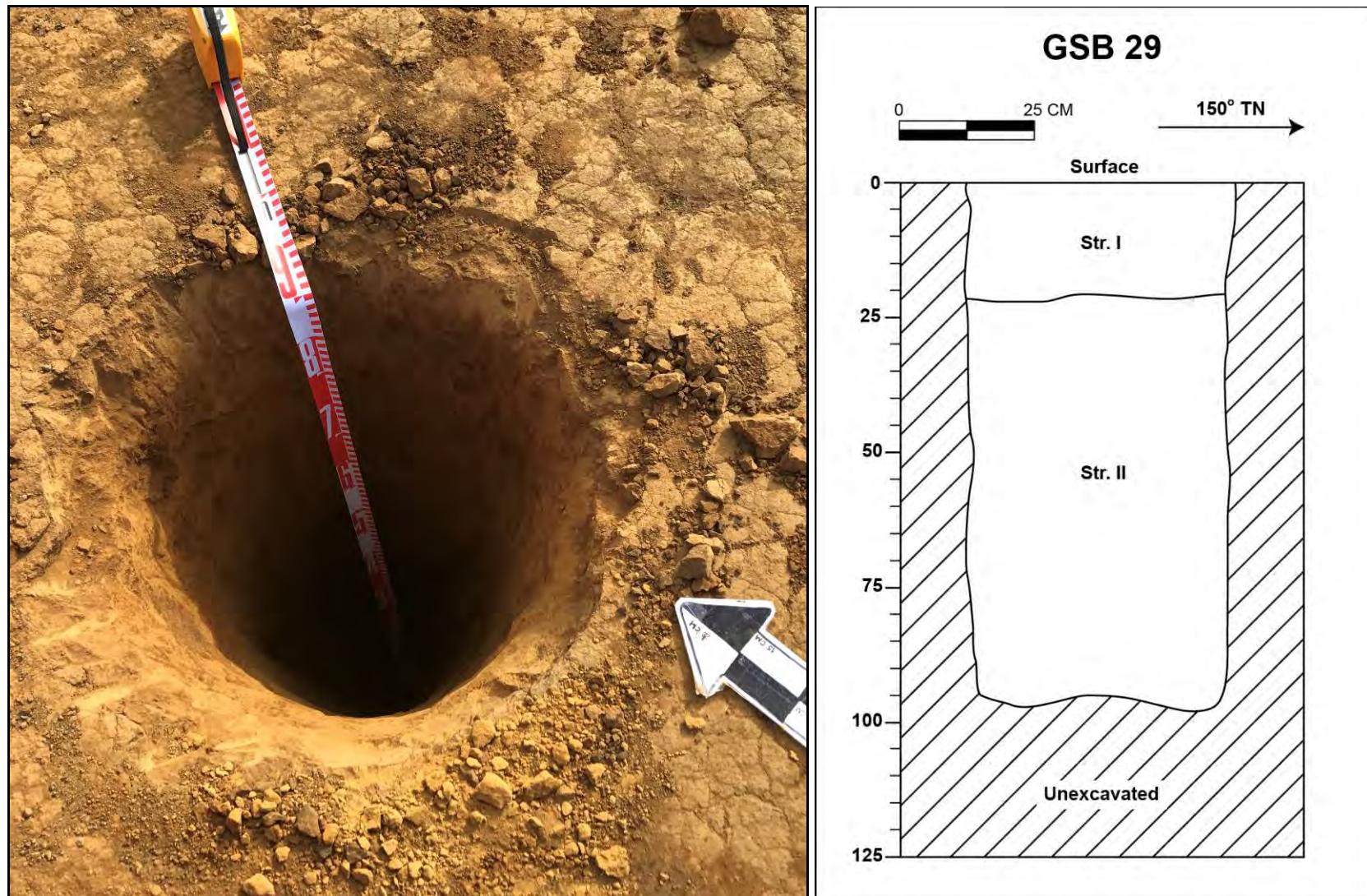


Figure 92. Northeast sidewall profile photo and drawing for STP # GSB 29



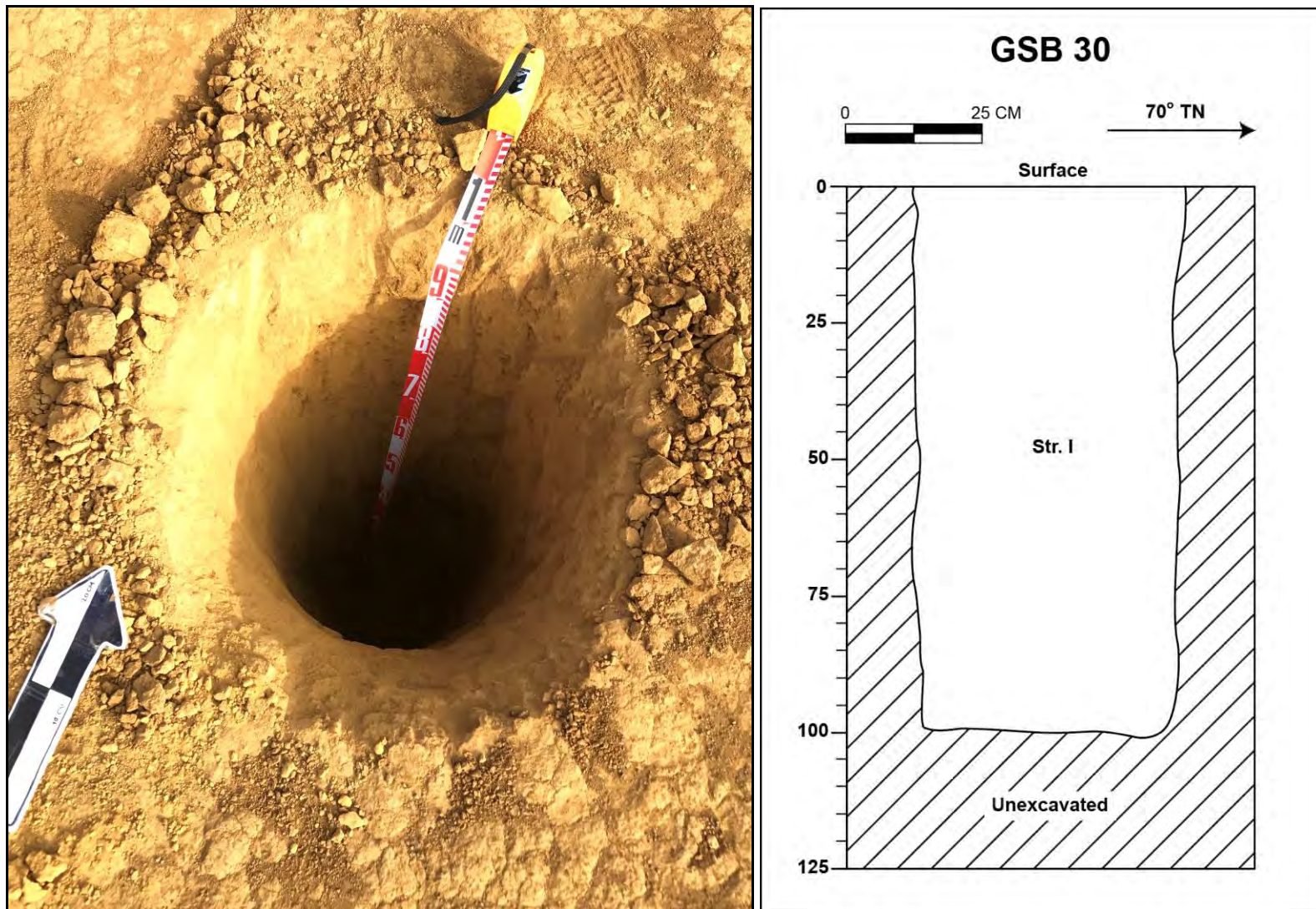


Figure 93. North sidewall profile photo and drawing for STP # GSB 30

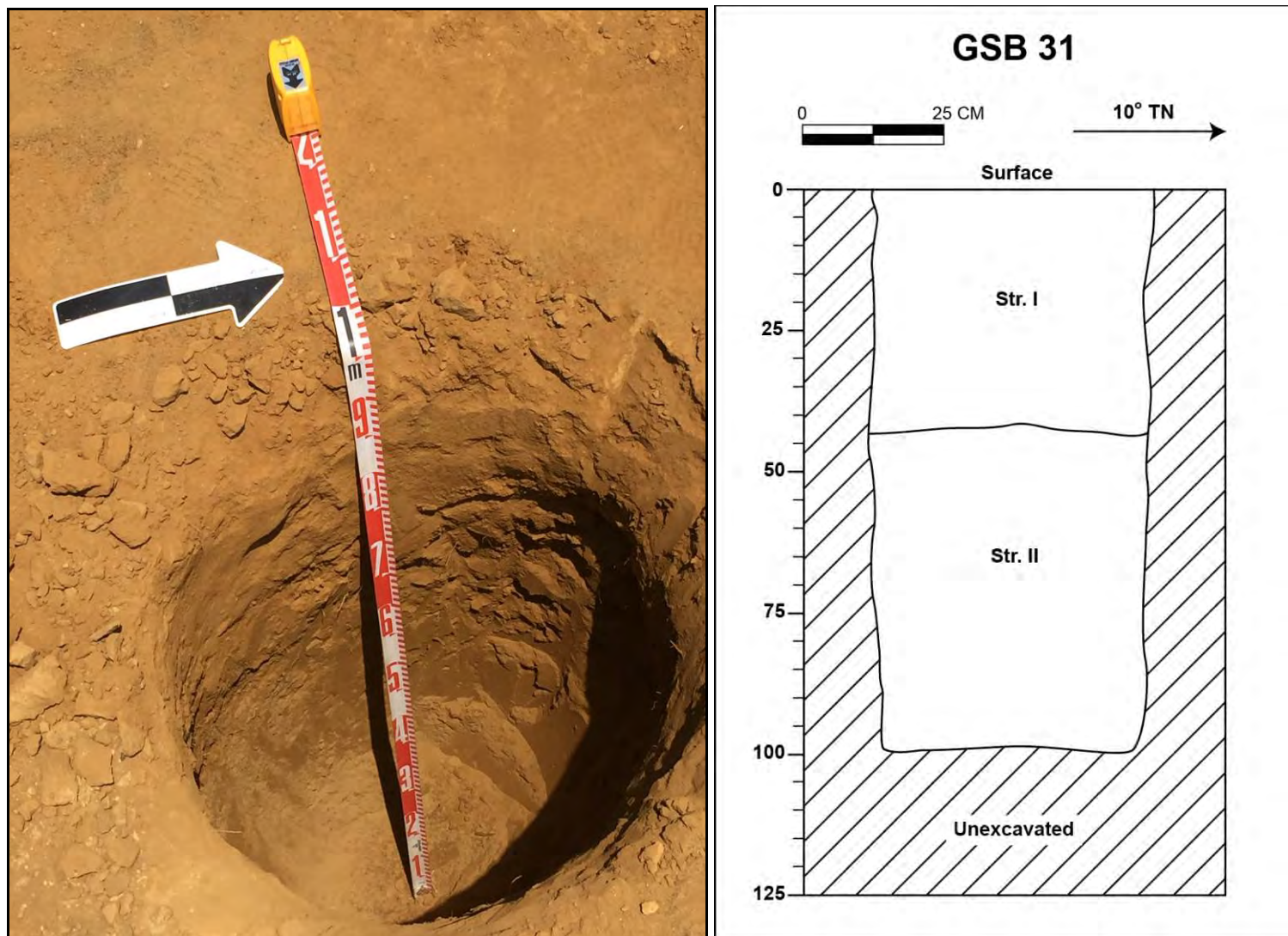


Figure 94. West sidewall profile photo and drawing for STP # GSB 31



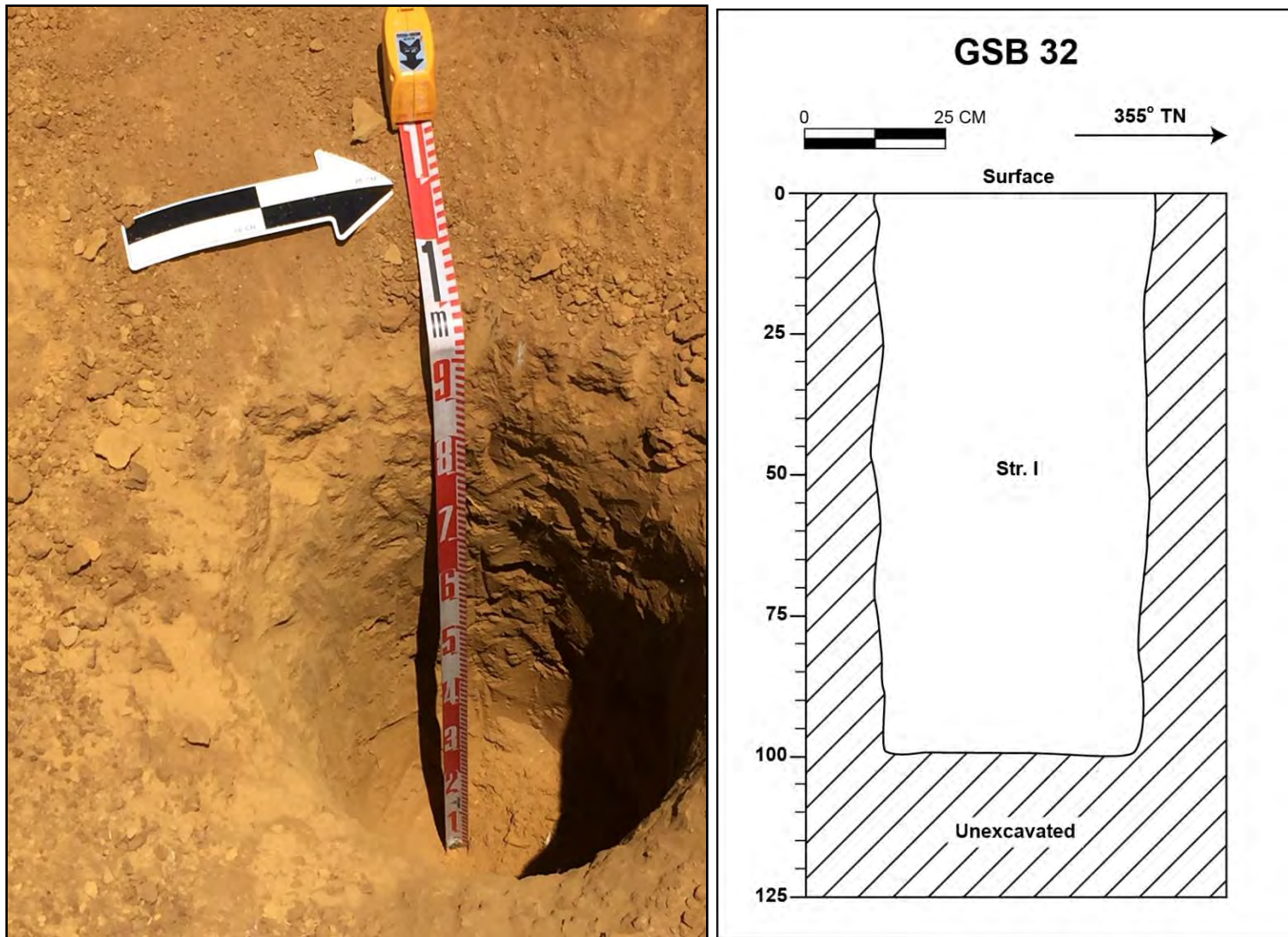


Figure 95. West sidewall profile photo and drawing for STP # GSB 32



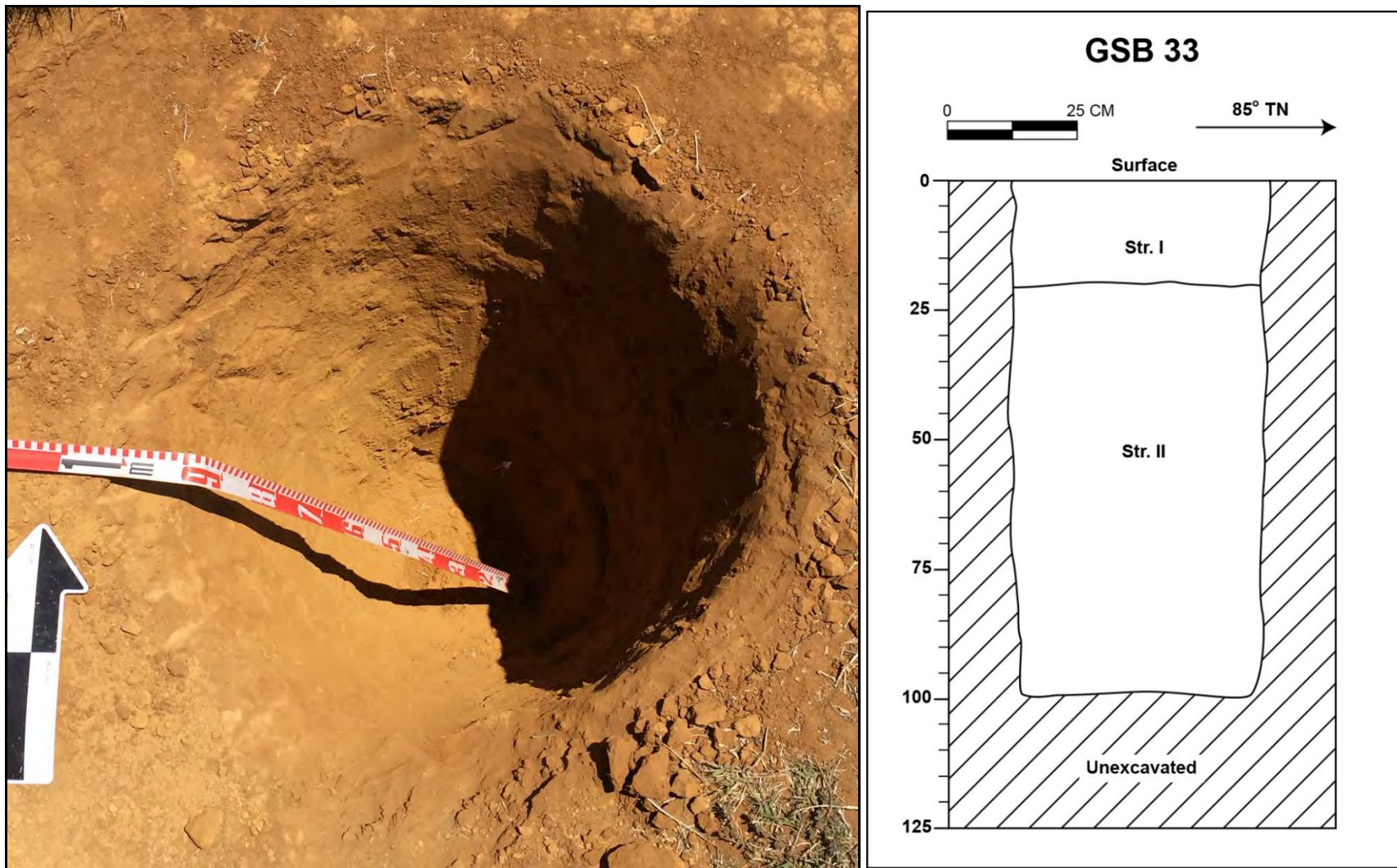


Figure 96. North sidewall profile photo and drawing for STP # GSB 33

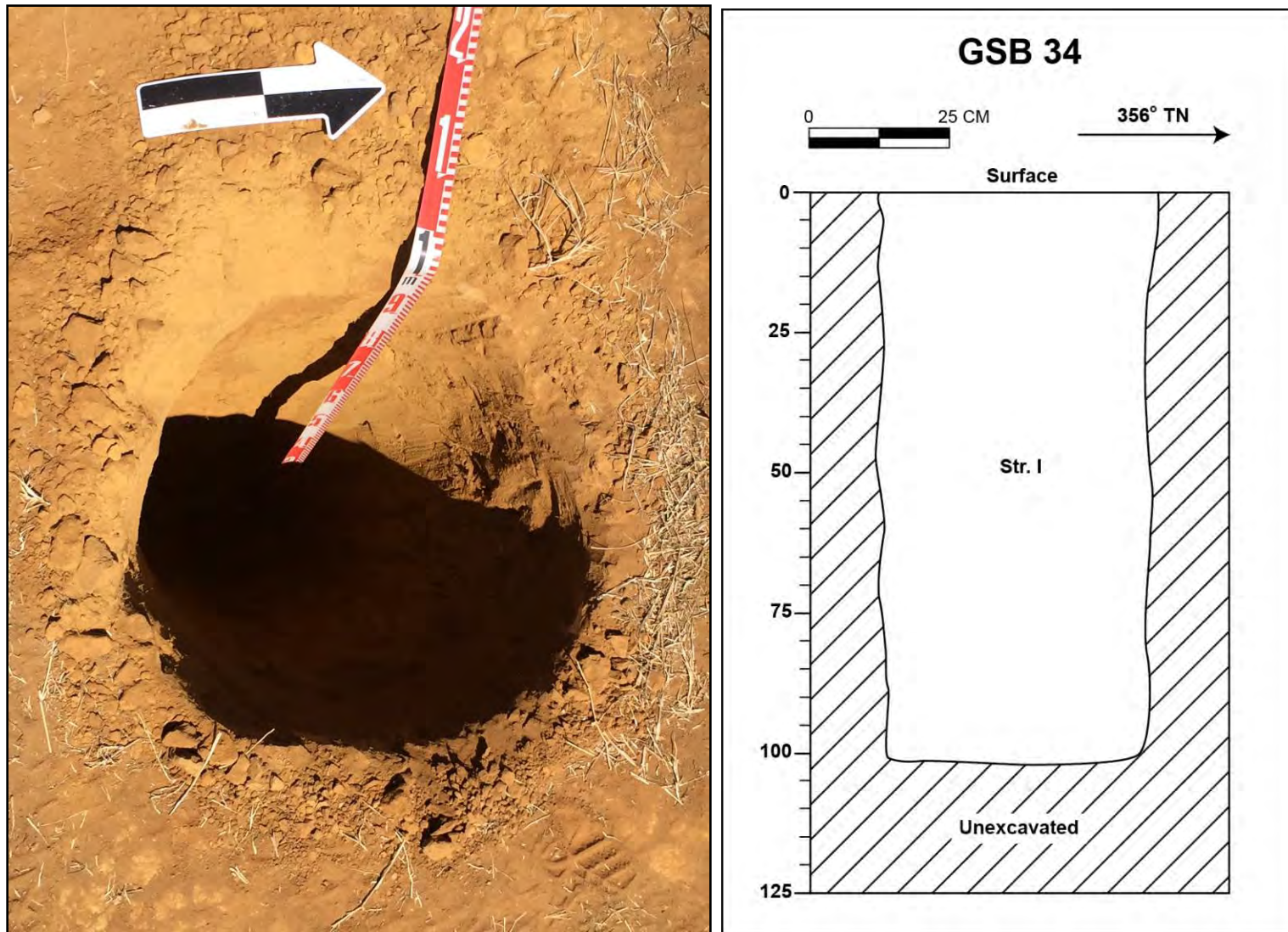


Figure 97. West sidewall profile photo and drawing for STP # GSB 34



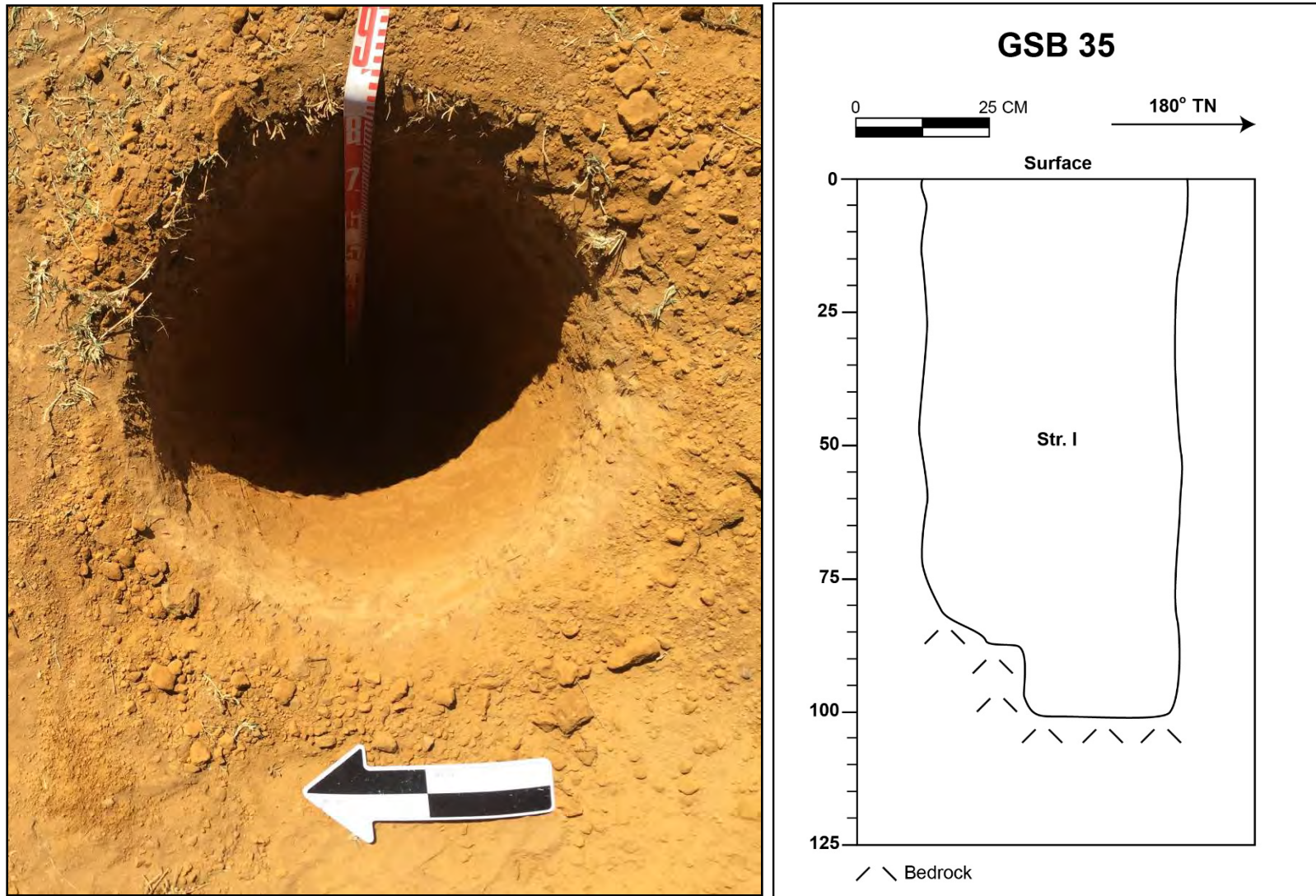


Figure 98. East sidewall profile photo and drawing for STP # GSB 35



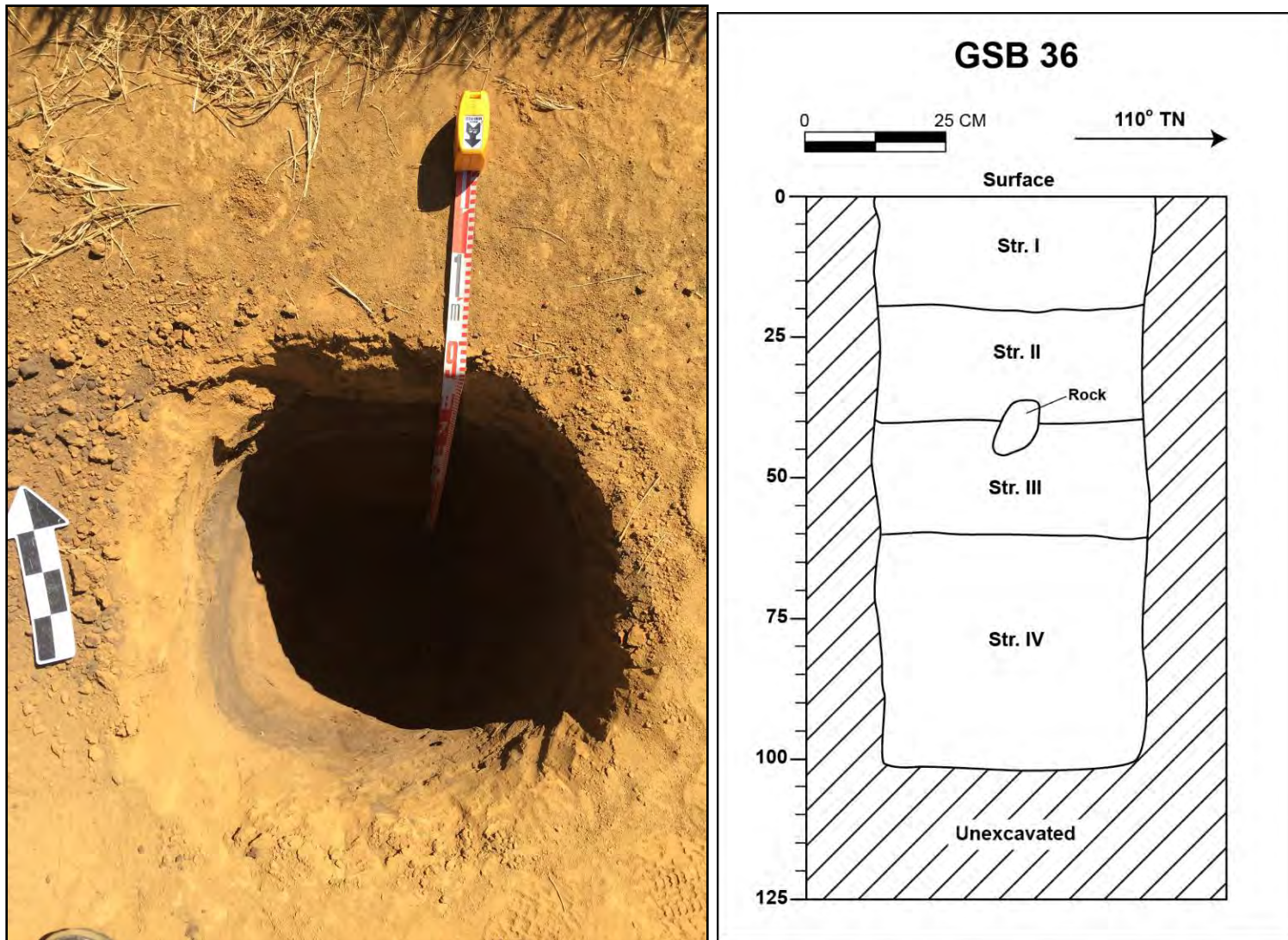


Figure 99. North sidewall profile photo and drawing for STP # GSB 36

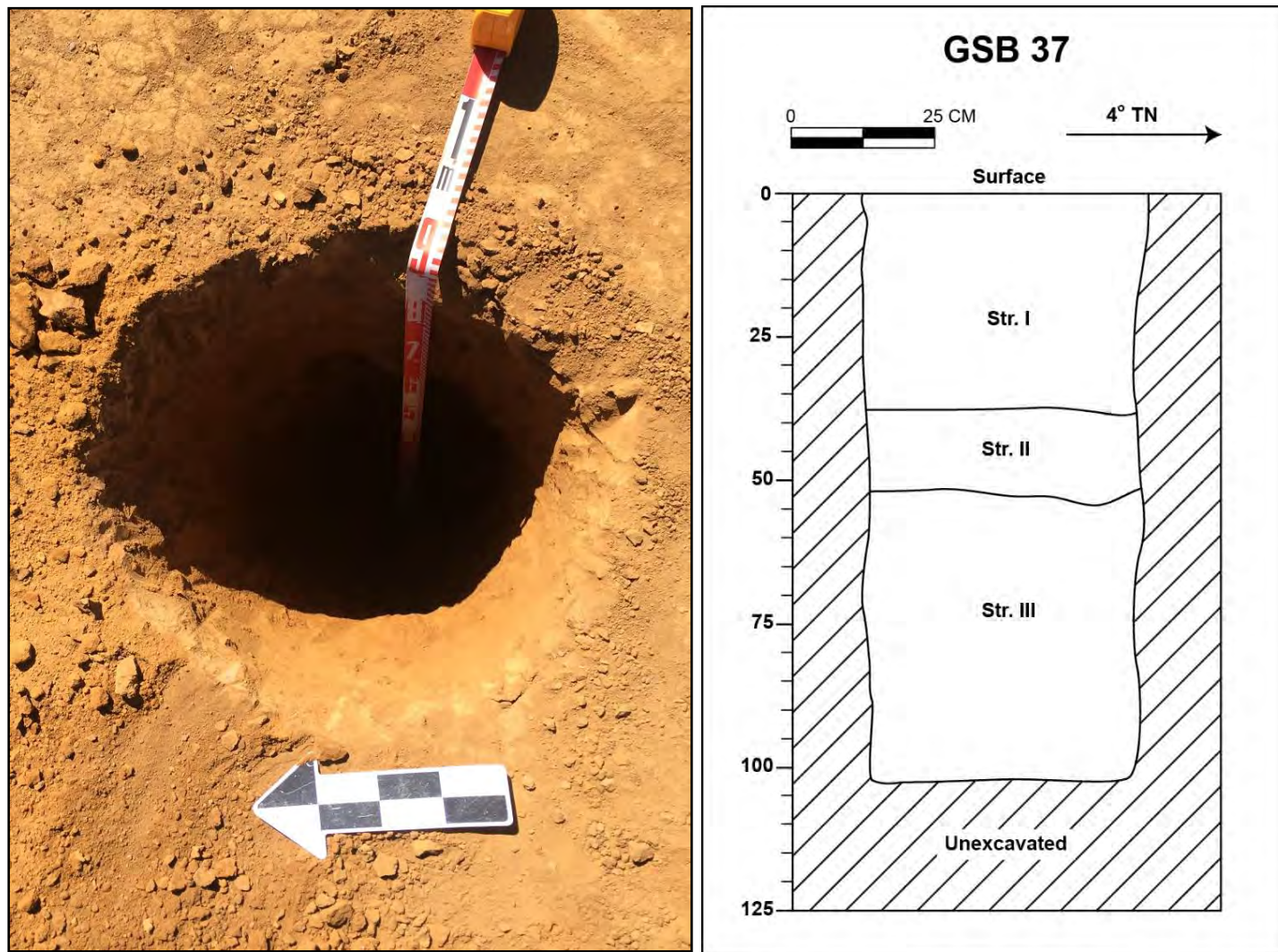


Figure 100. West sidewall profile photo (view to east to allow exposure of west sidewall) and drawing for STP # GSB 37



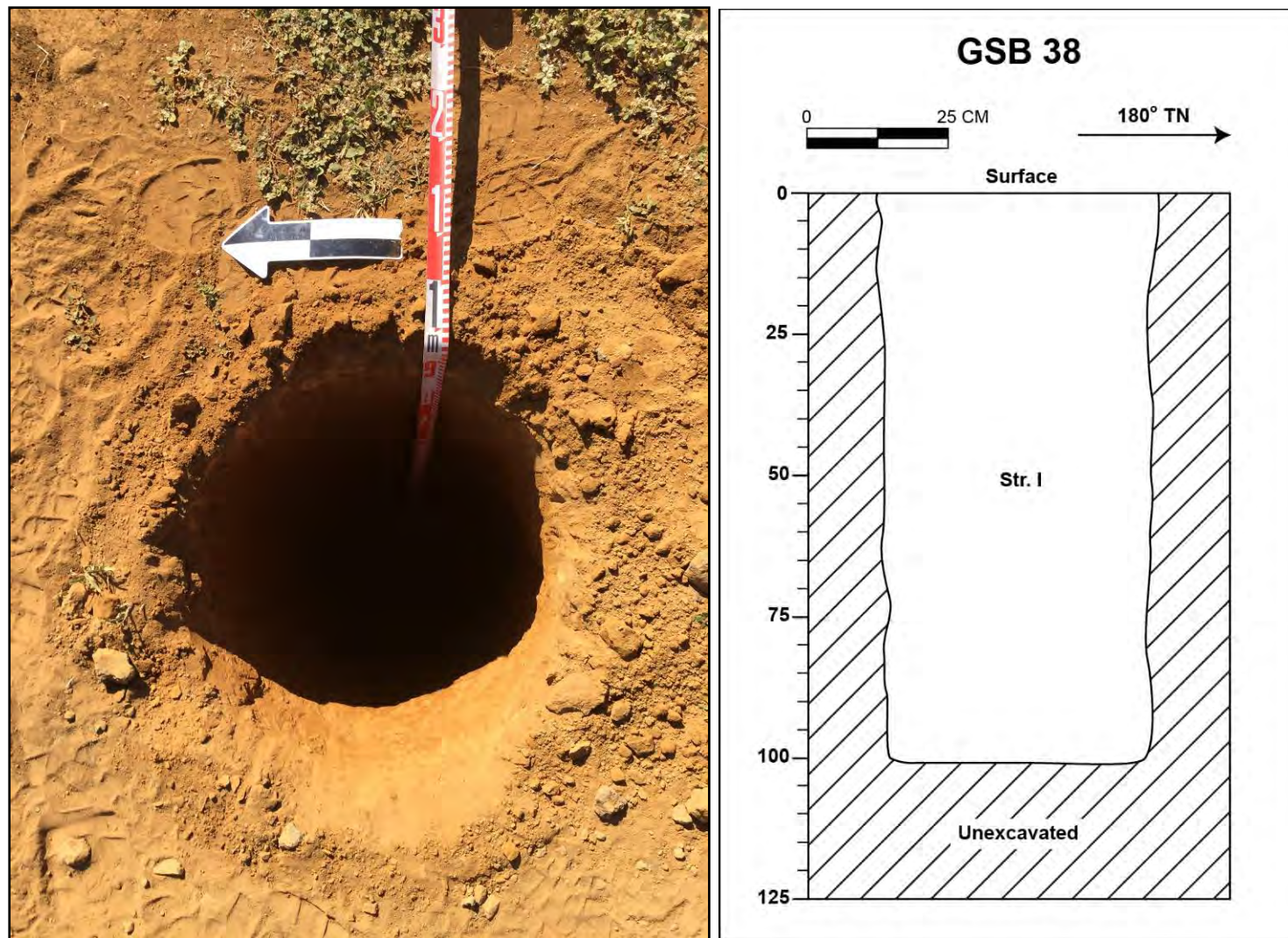


Figure 101. East sidewall profile photo and drawing for STP # GSB 38



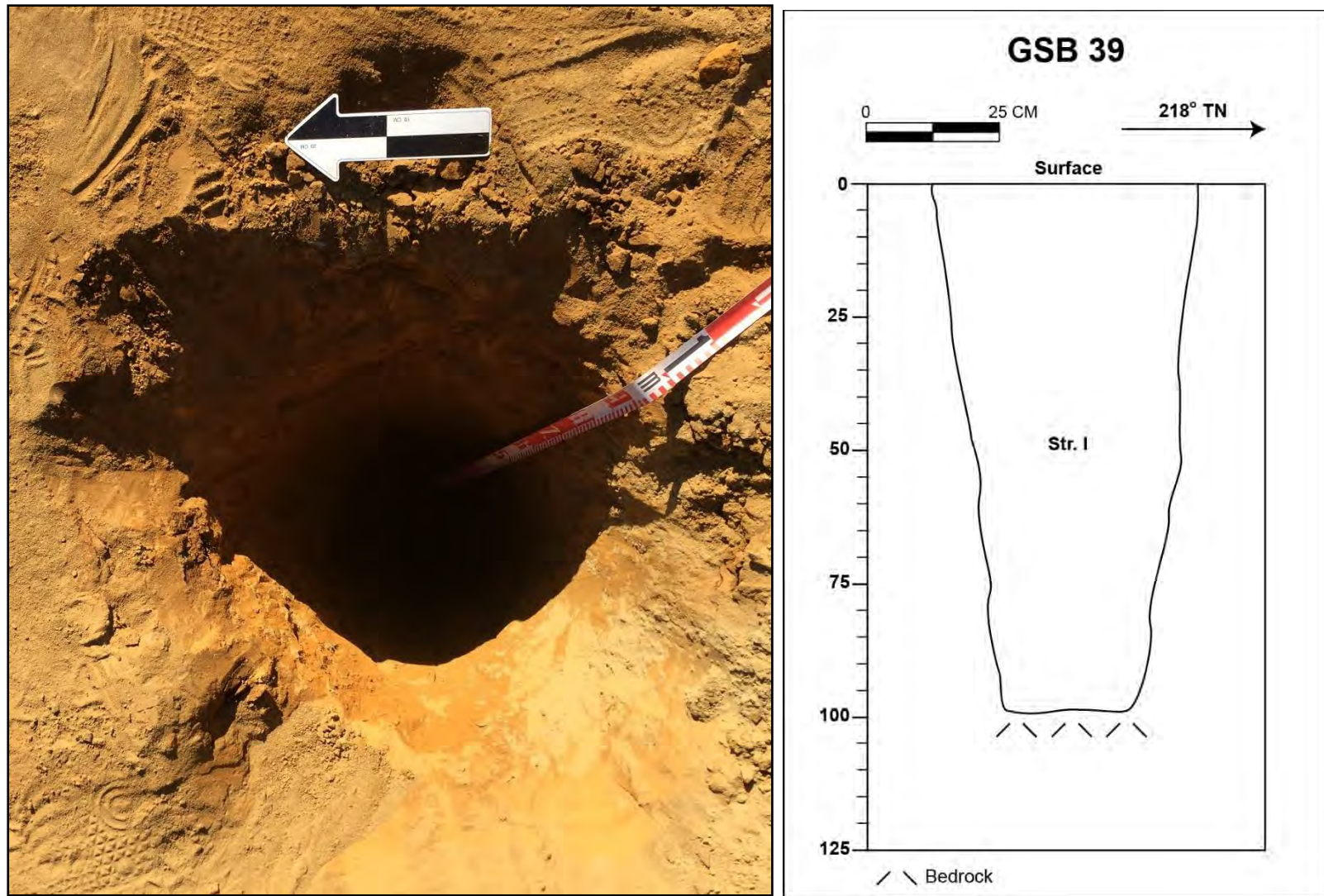


Figure 102. Southeast sidewall profile photo and drawing for STP # GSB 39

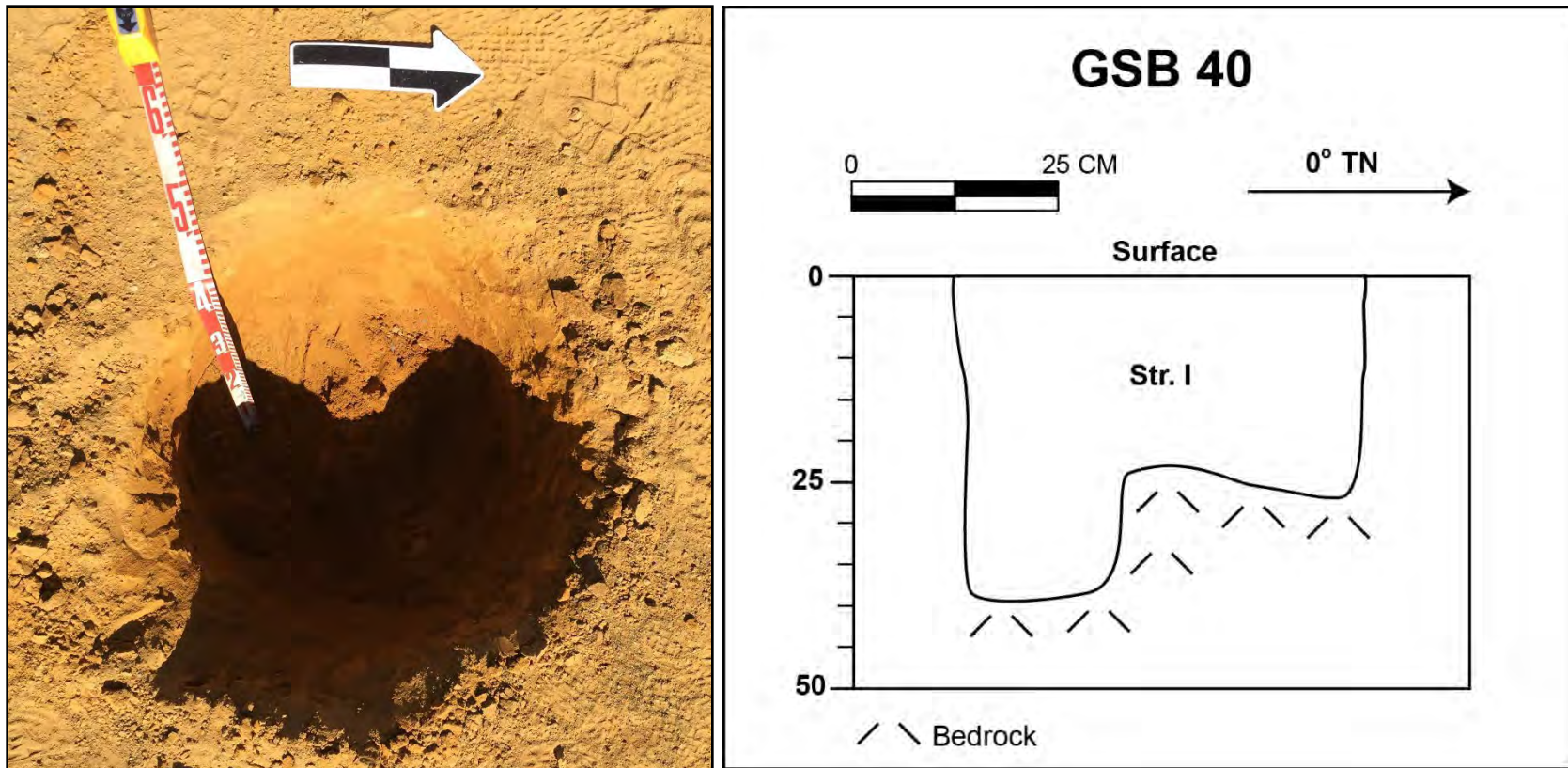


Figure 103. East sidewall profile photo and drawing for STP # GSB 40



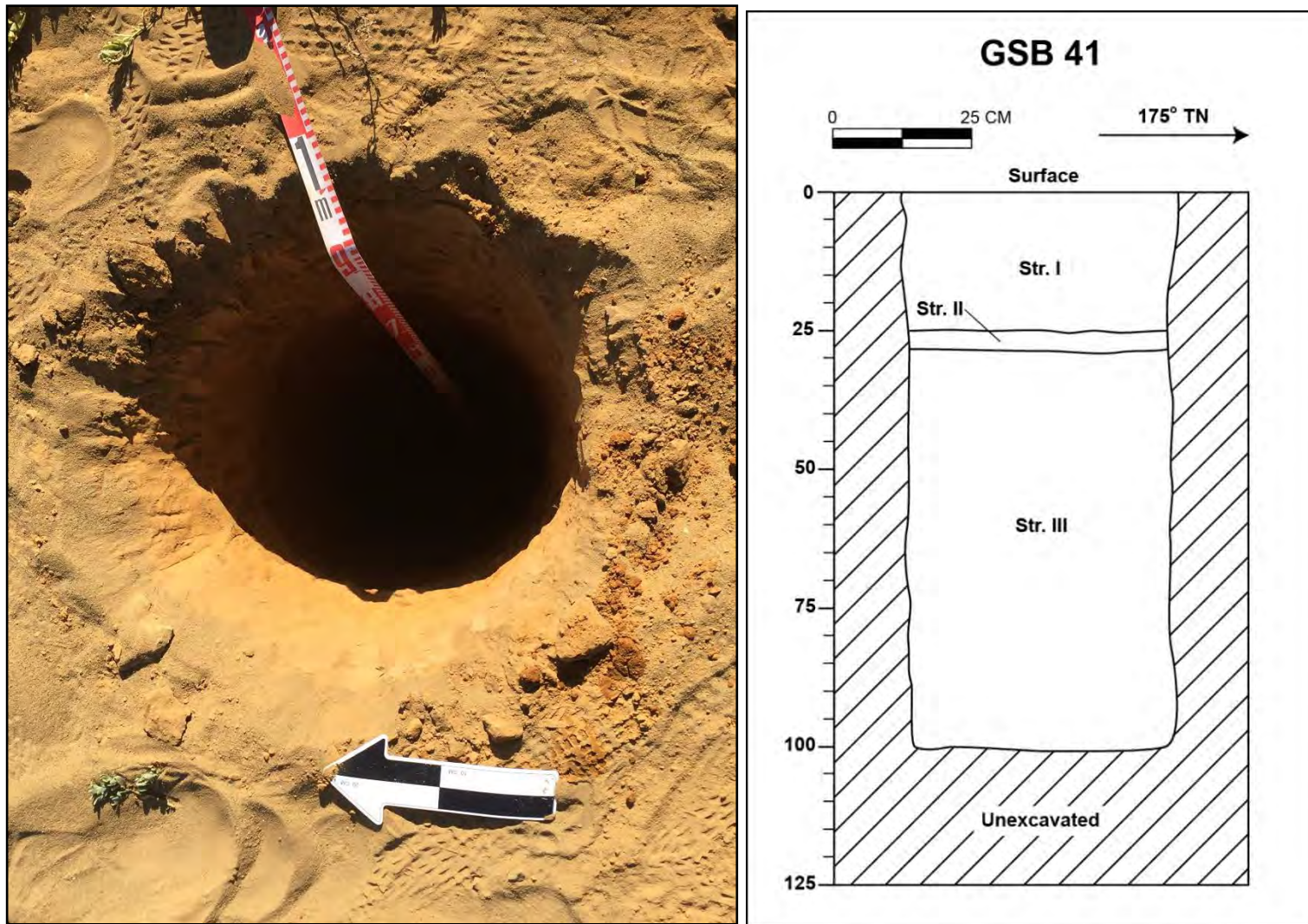


Figure 104. East sidewall profile photo and drawing for STP # GSB 41



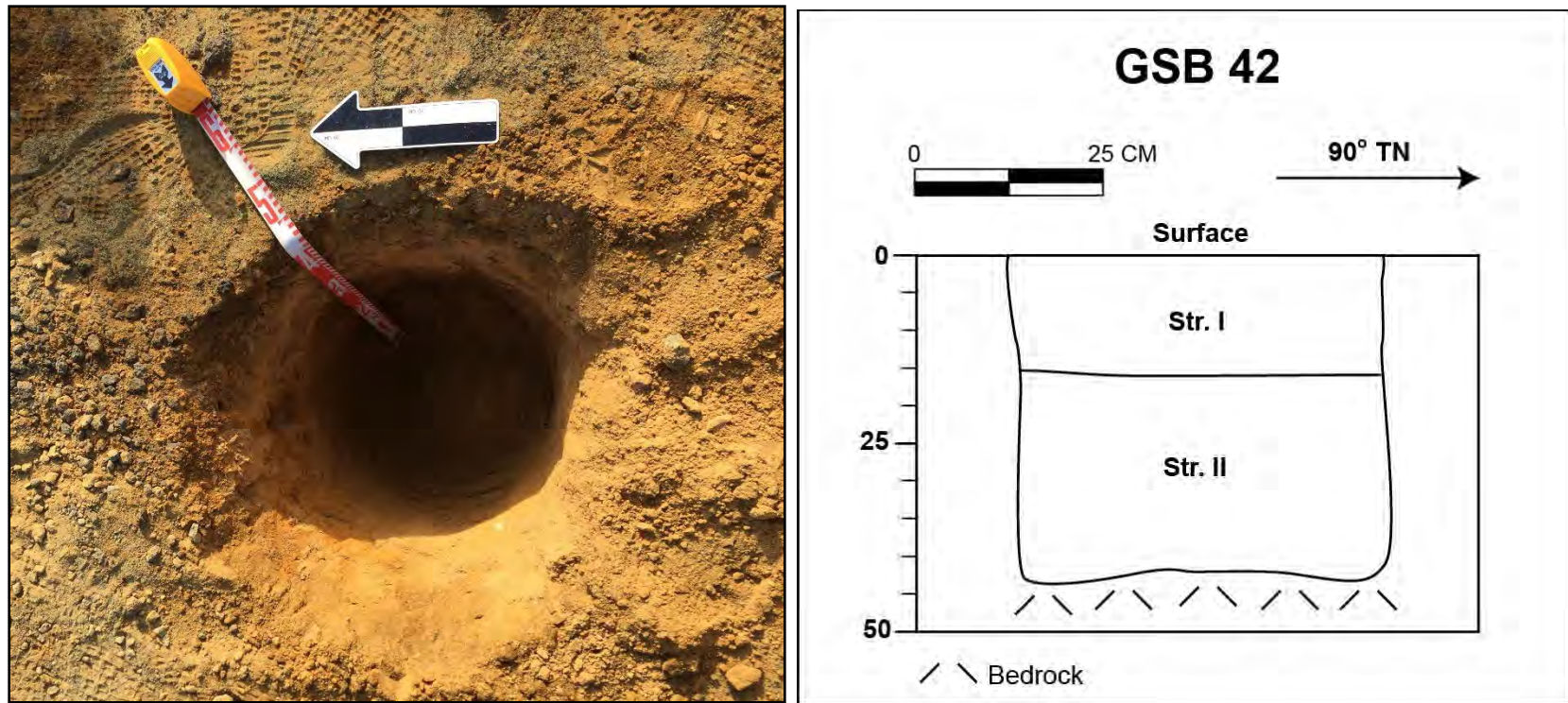


Figure 105. North sidewall profile photo and drawing for STP # GSB 42

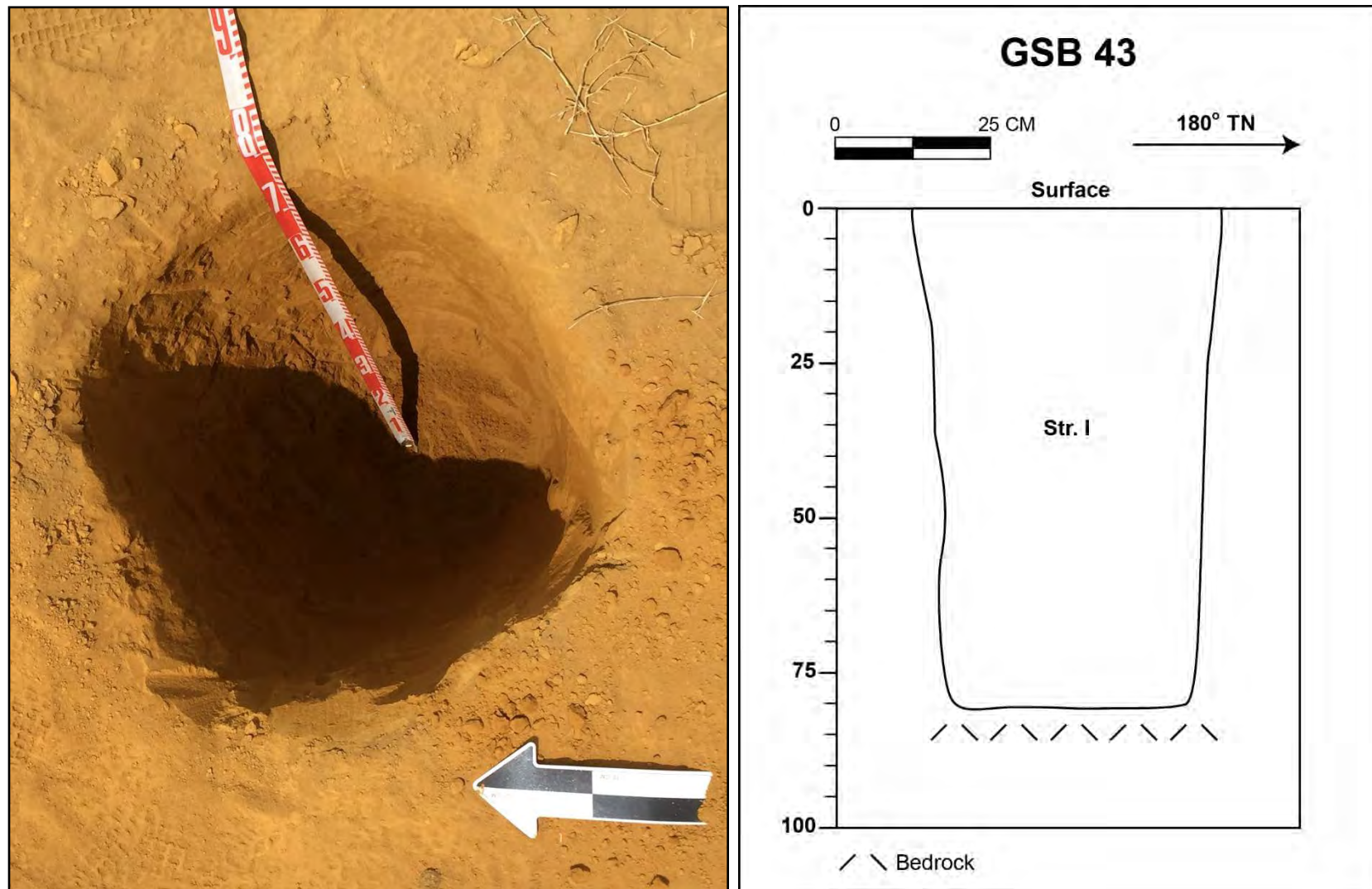


Figure 106. East sidewall profile photo and drawing for STP # GSB 43



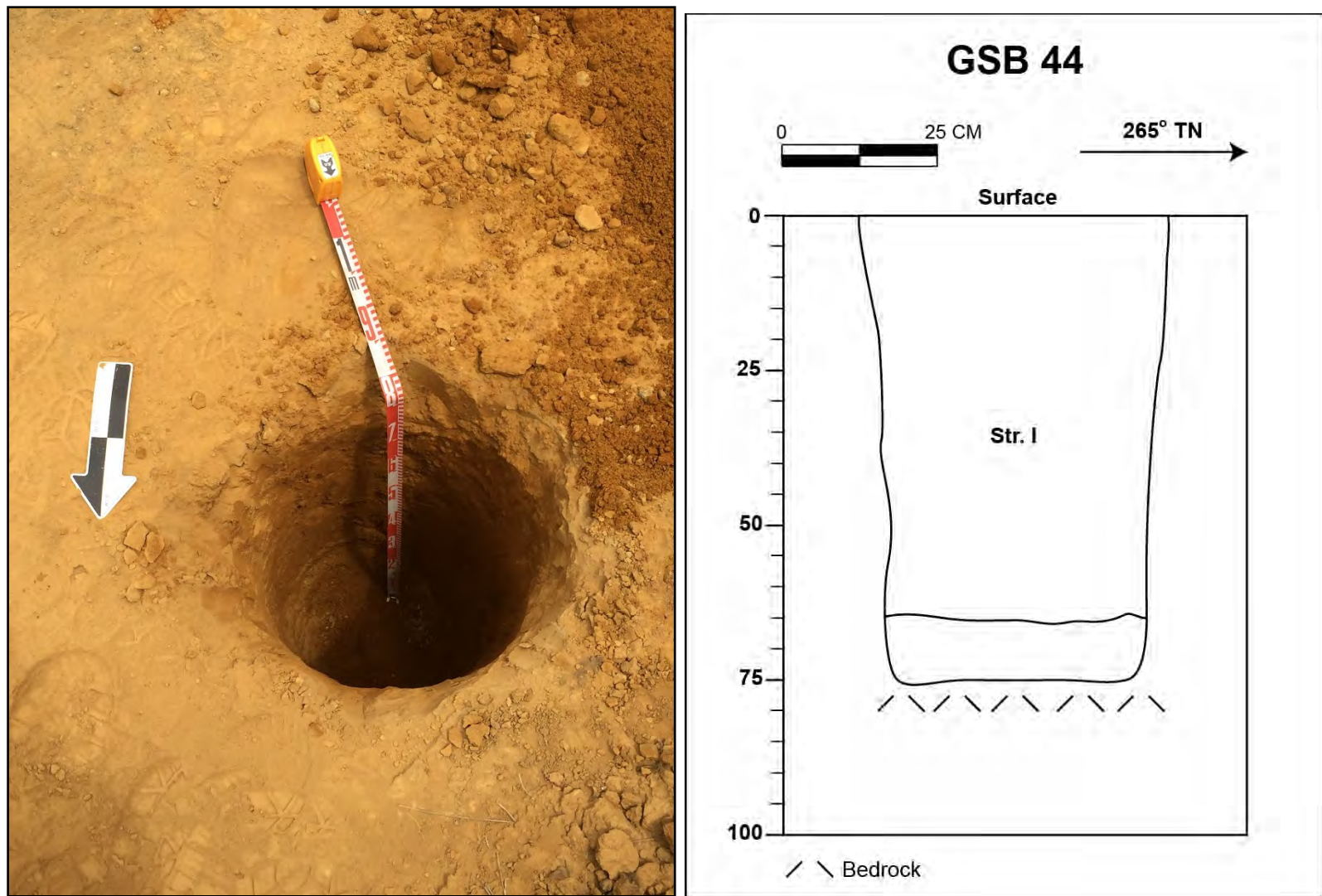


Figure 107. South sidewall profile photo and drawing for STP # GSB 44



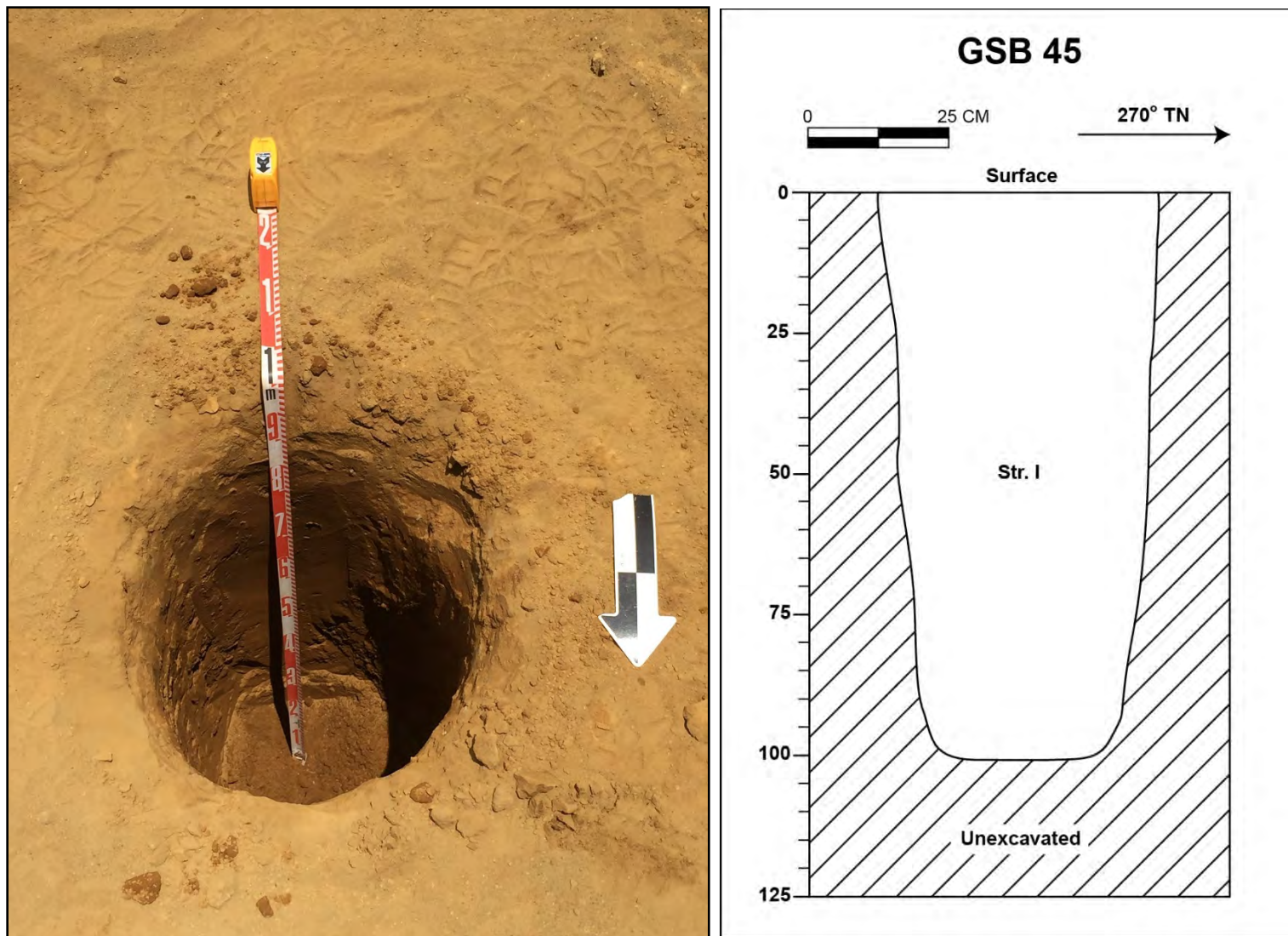


Figure 108. South sidewall profile photo and drawing for STP # GSB 45

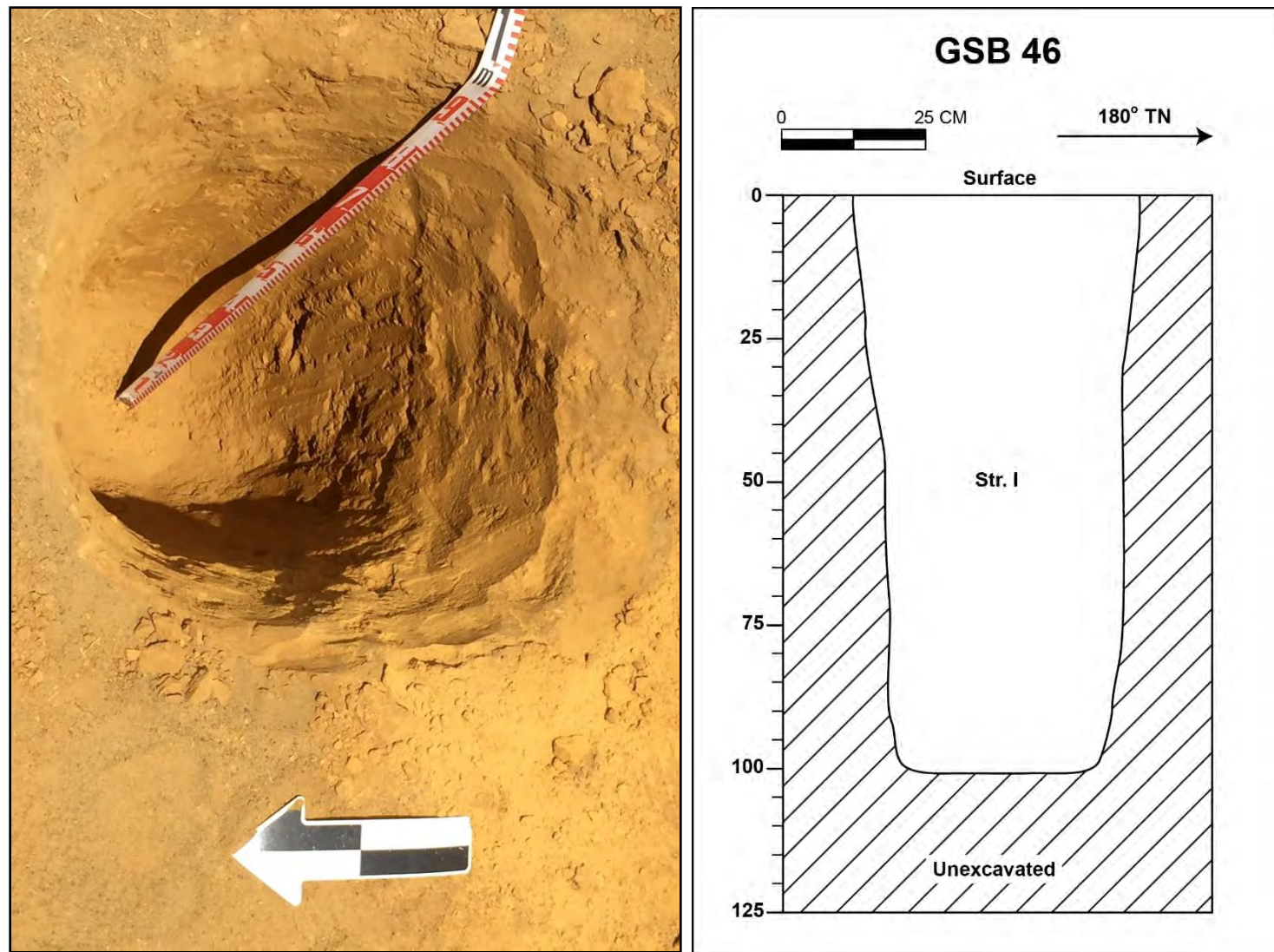


Figure 109. East sidewall profile photo and drawing for STP # GSB 46



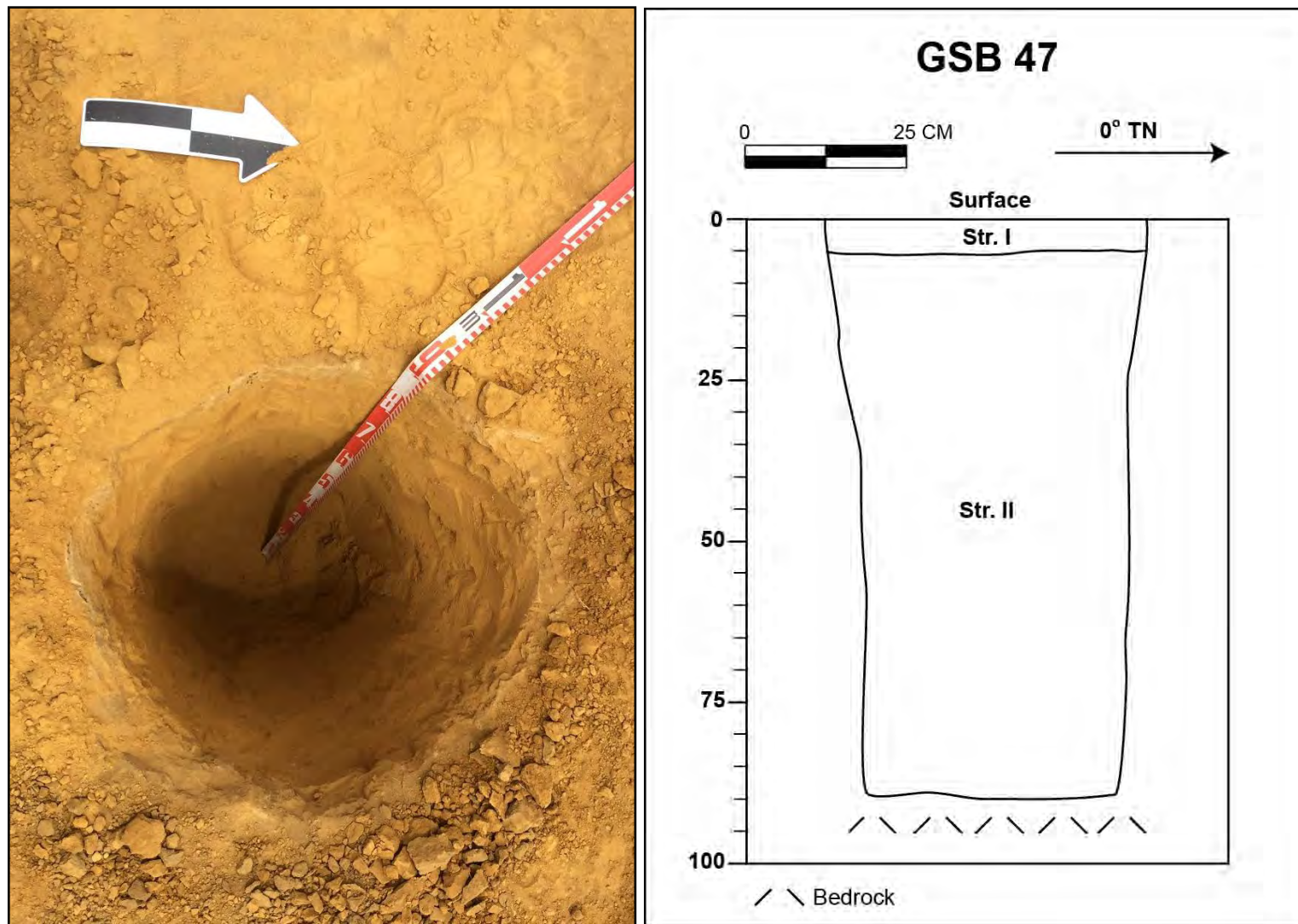


Figure 110. West sidewall profile photo and drawing for STP # GSB 47



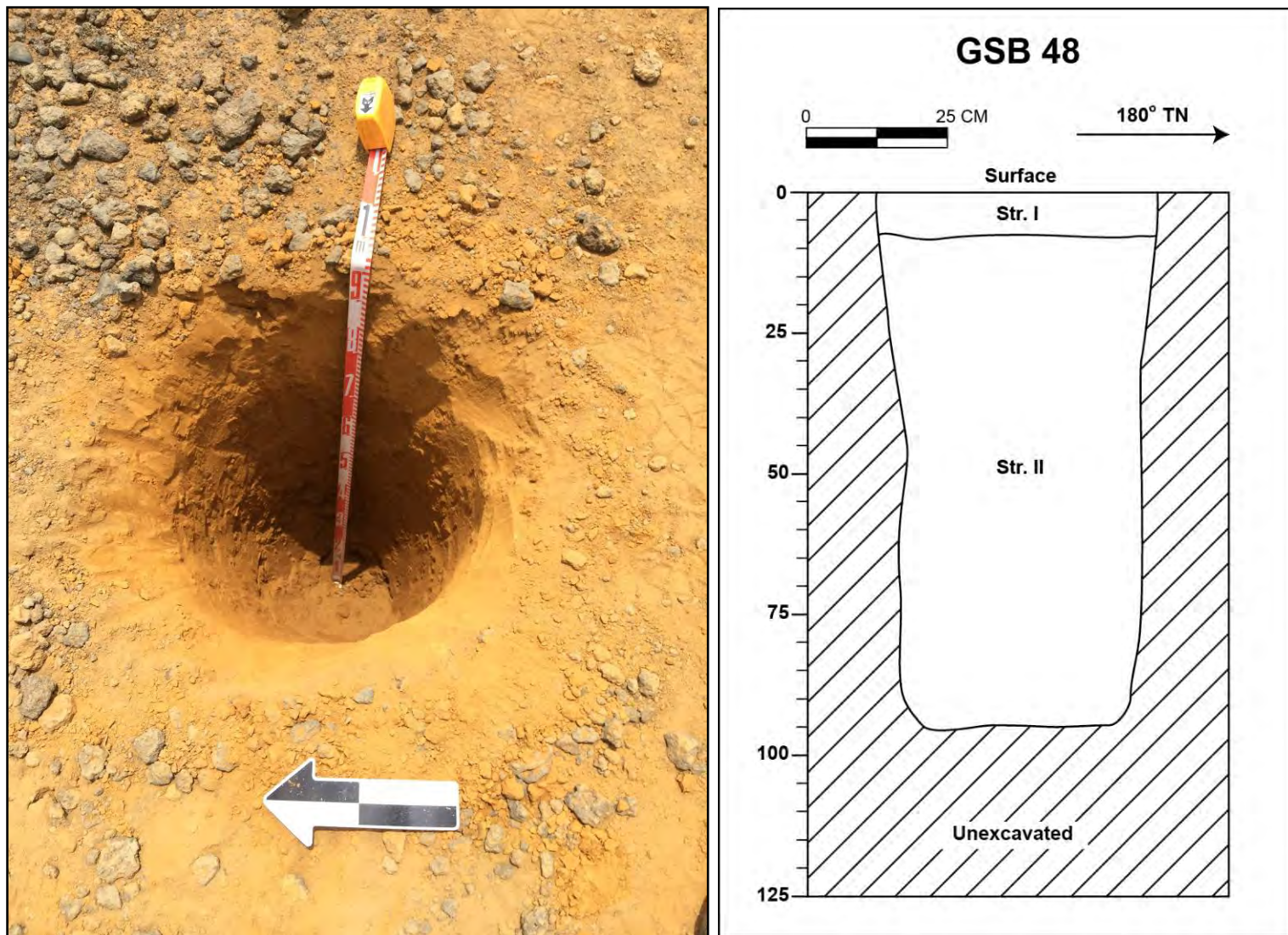


Figure 111. East sidewall profile photo and drawing for STP # GSB 48

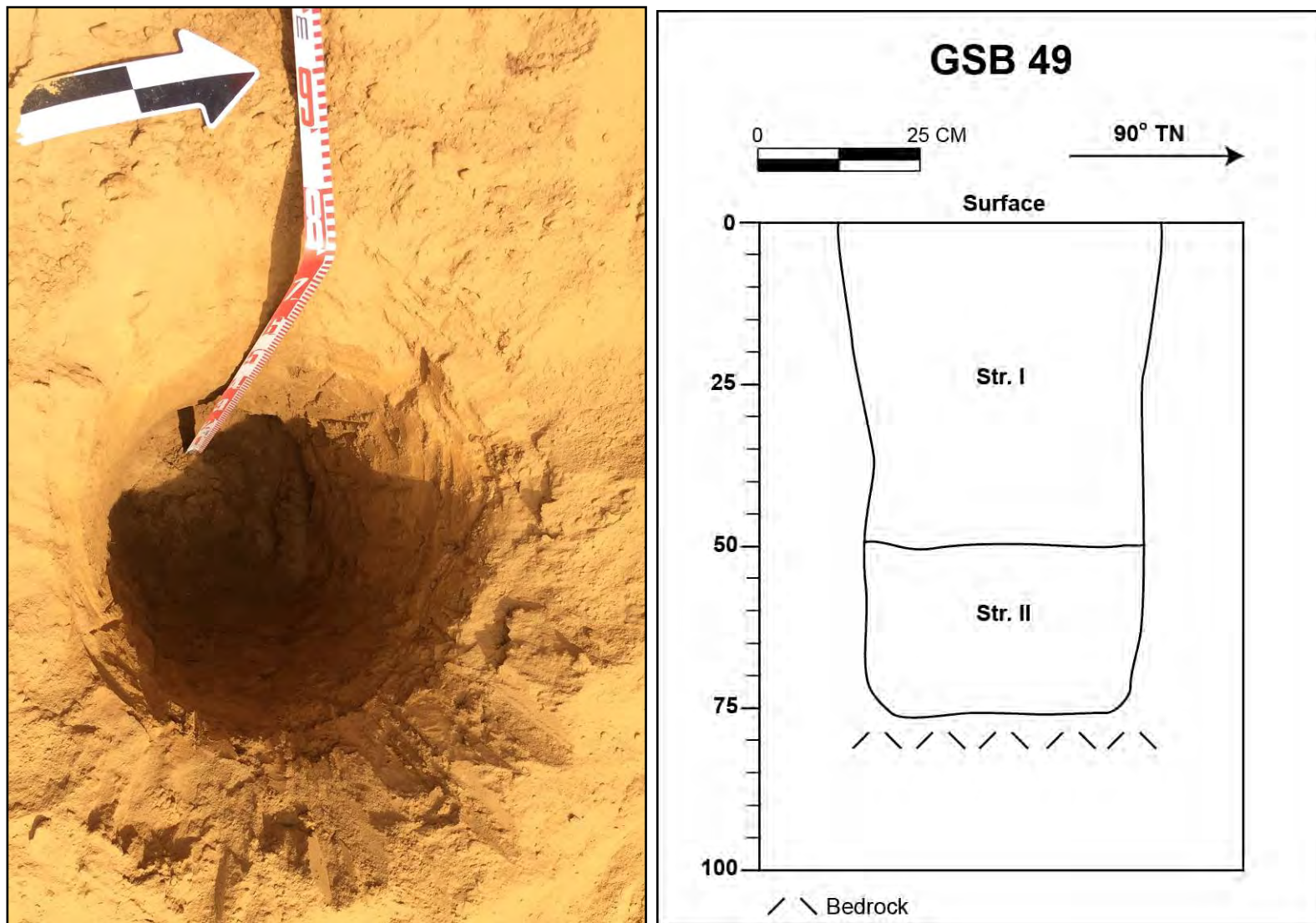


Figure 112. North sidewall profile photo (view to northwest to allow exposure of north sidewall) and drawing for STP # GSB 49



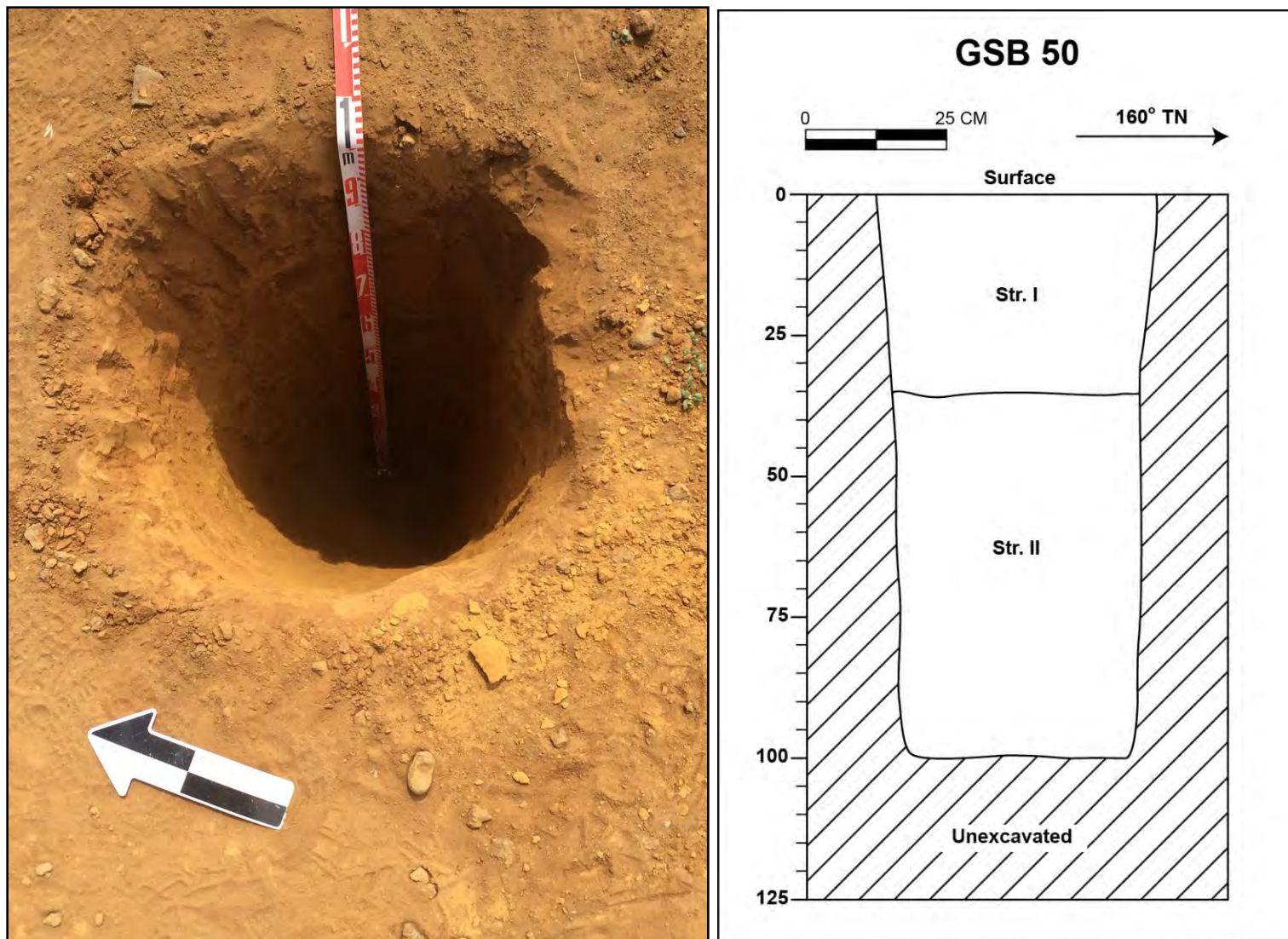


Figure 113. East sidewall profile photo and drawing for STP # GSB 50



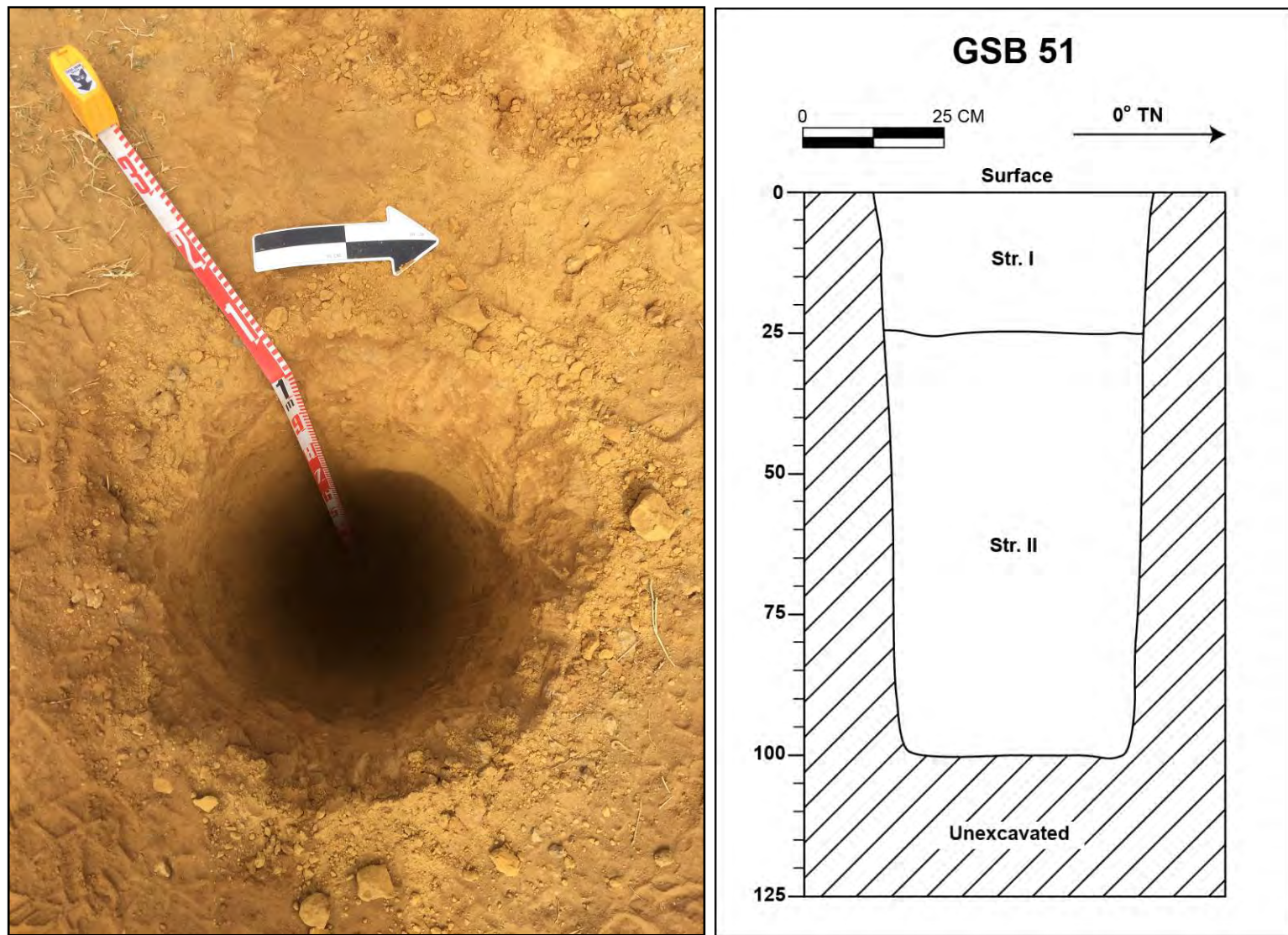


Figure 114. West sidewall profile photo and drawing for STP # GSB 51

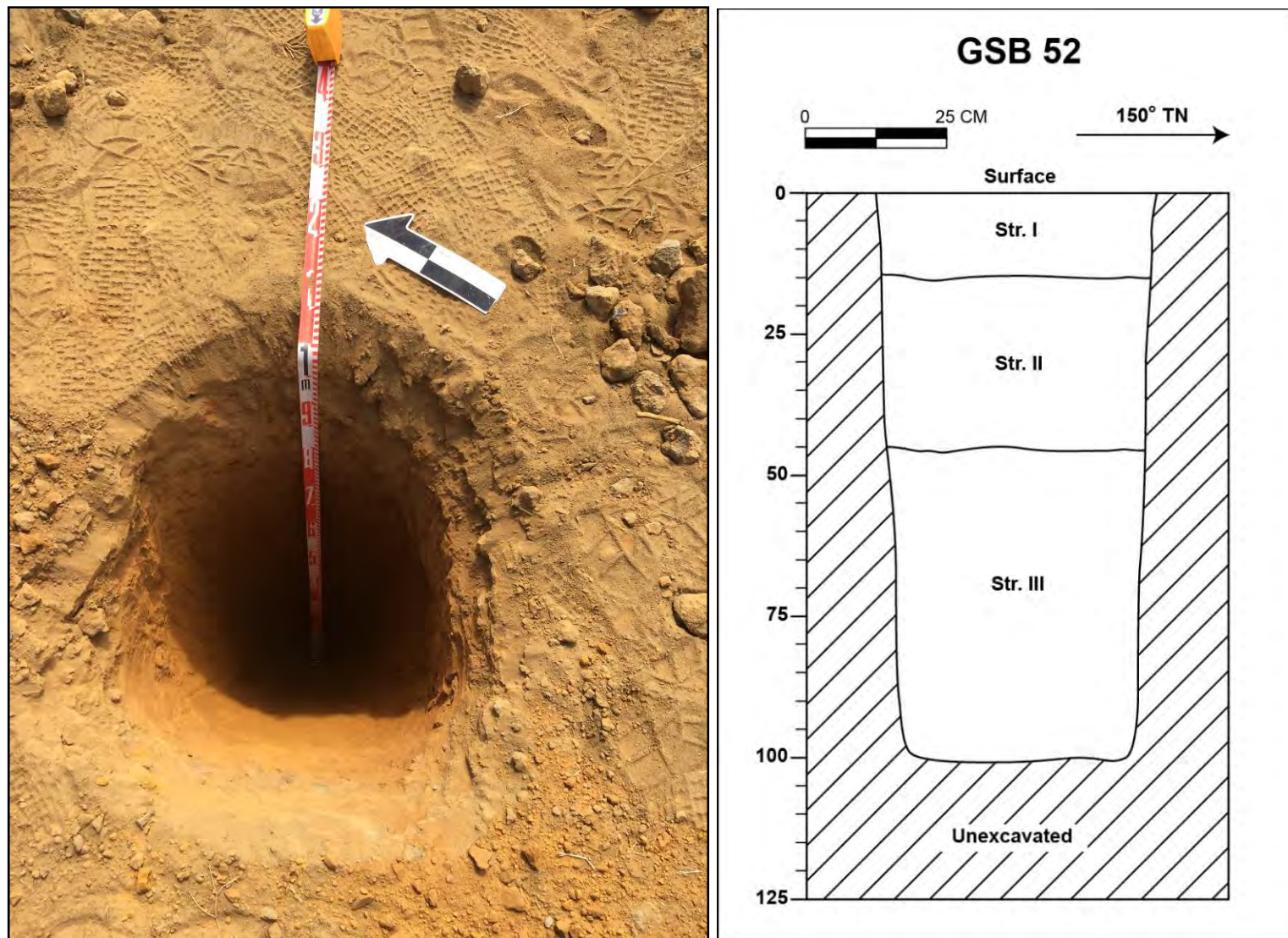


Figure 115. Northeast sidewall profile photo and drawing for STP # GSB 52



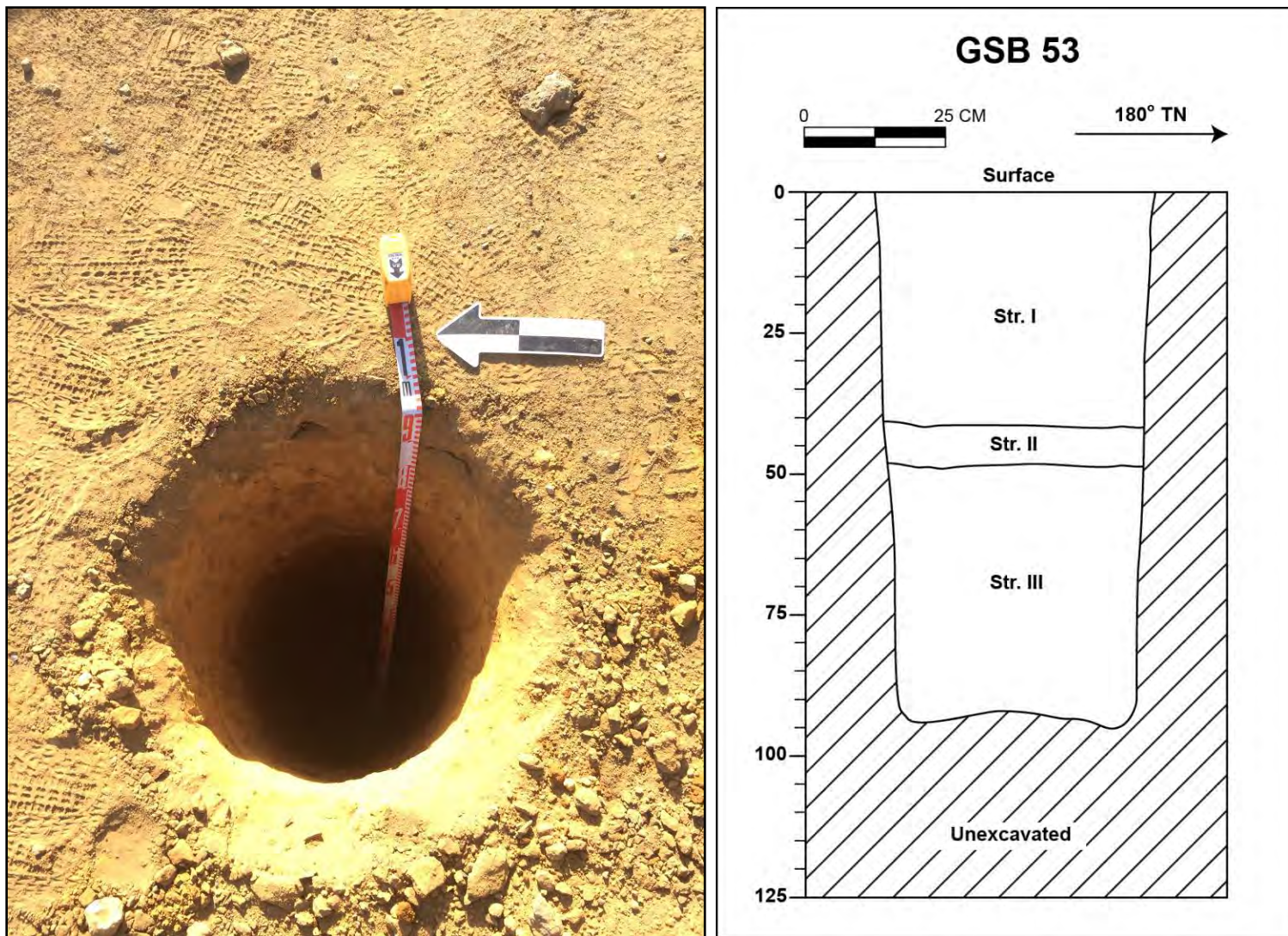


Figure 116. East sidewall profile photo and drawing for STP # GSB 53



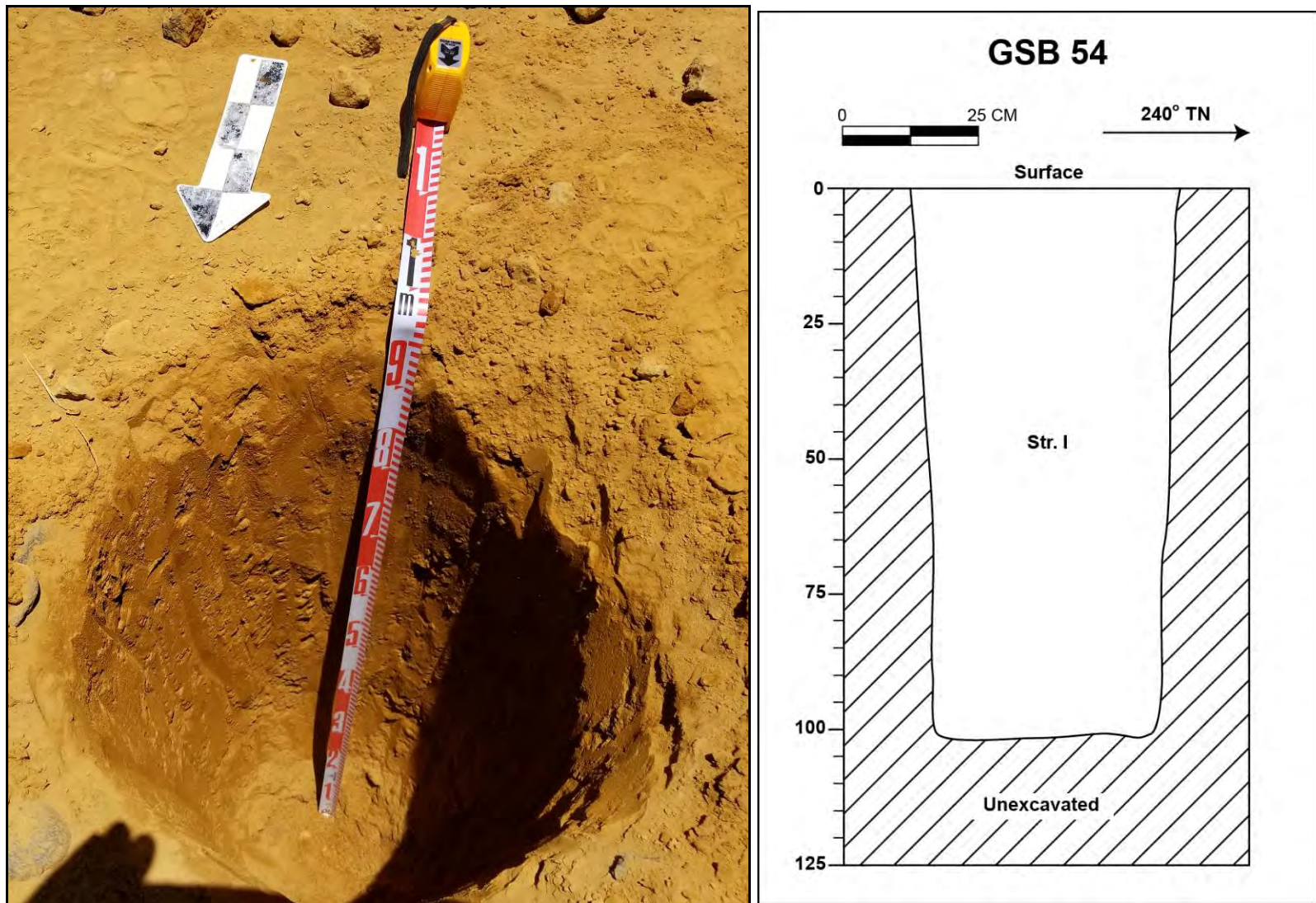


Figure 117. Southeast sidewall profile photo and drawing for STP # GSB 54

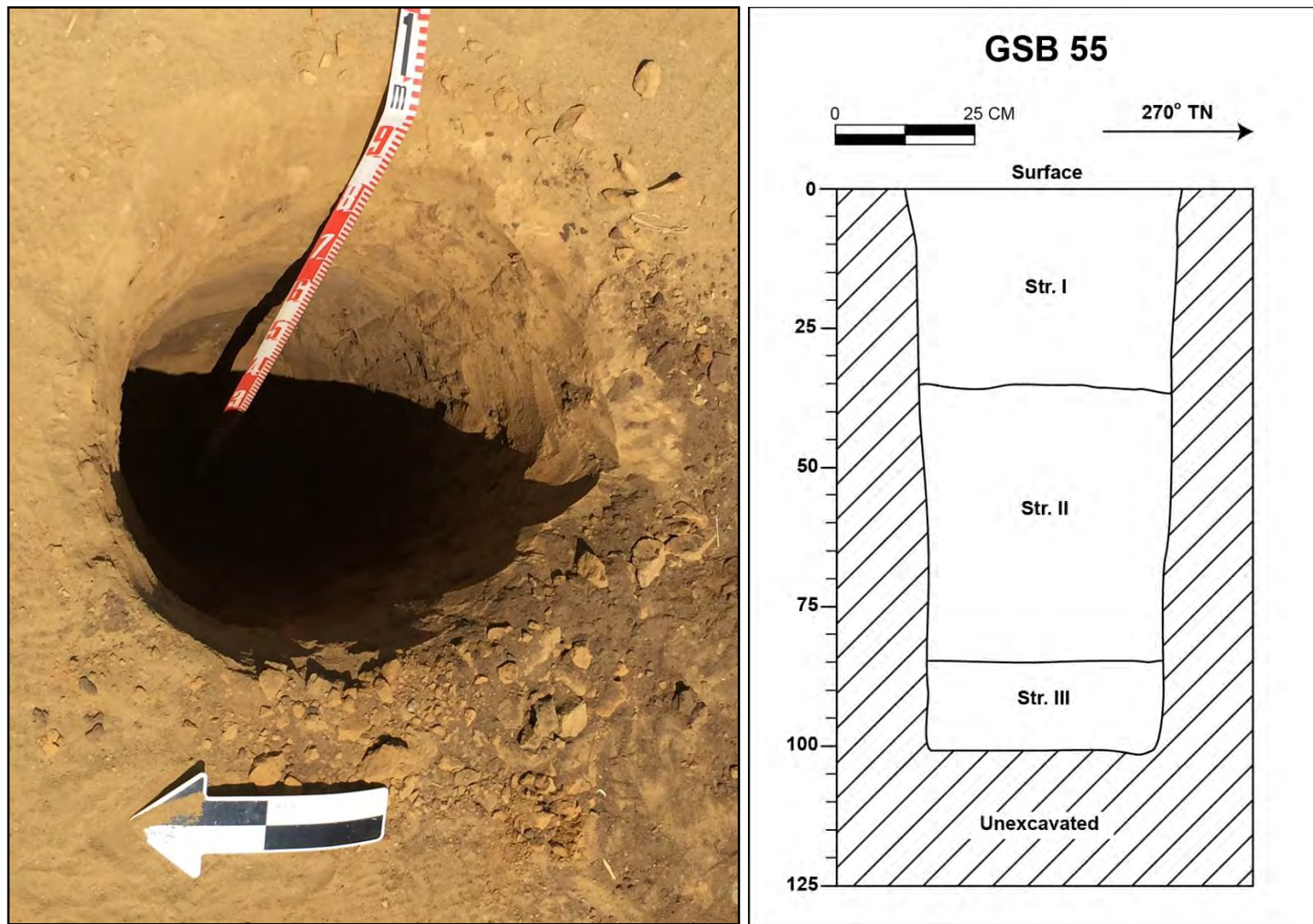


Figure 118. East sidewall profile photo view to south to allow exposure of west sidewall and drawing for STP # GSB 55



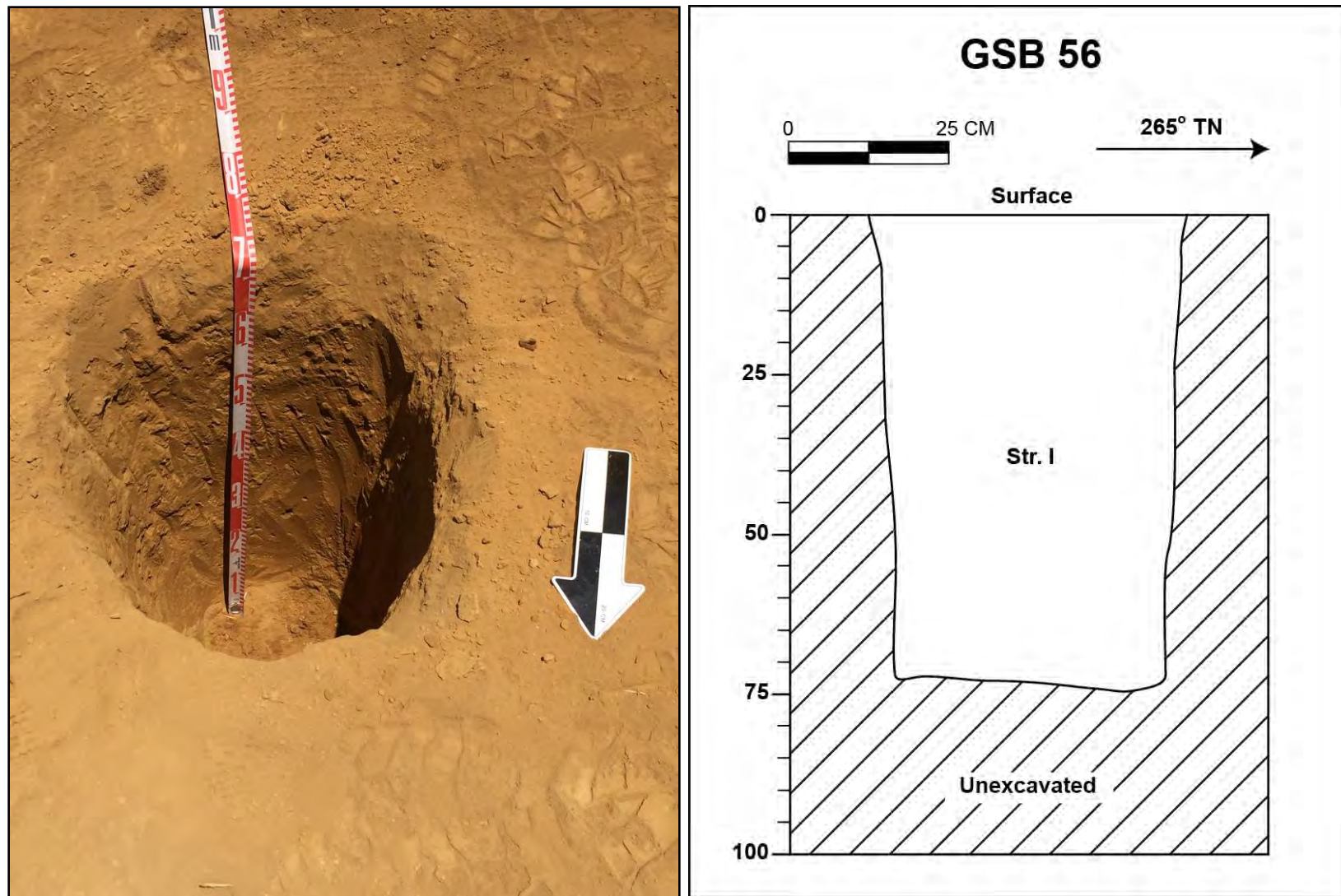


Figure 119. South sidewall profile photo and drawing for STP # GSB 56



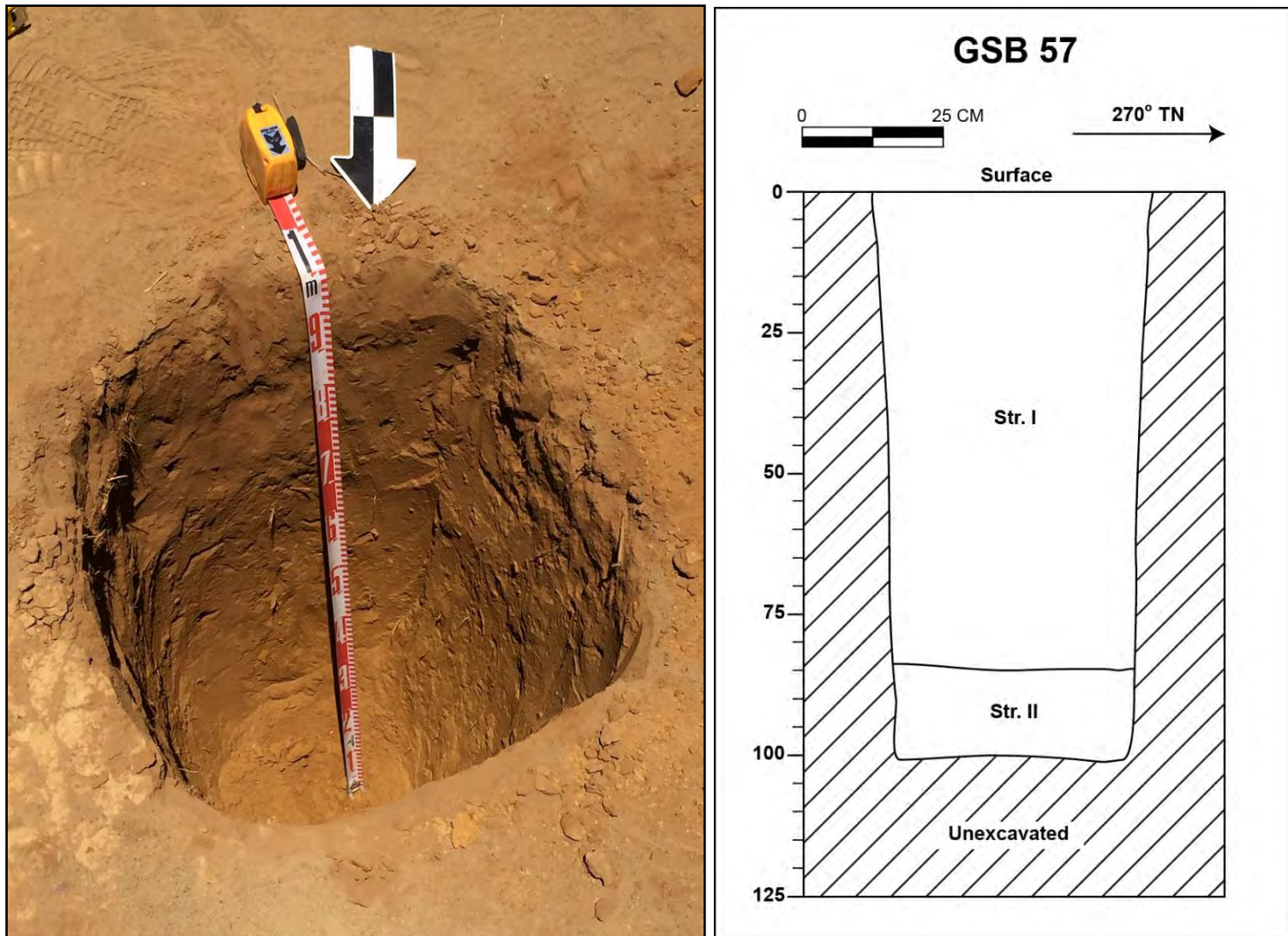


Figure 120. South sidewall profile photo and drawing for STP # GSB 57

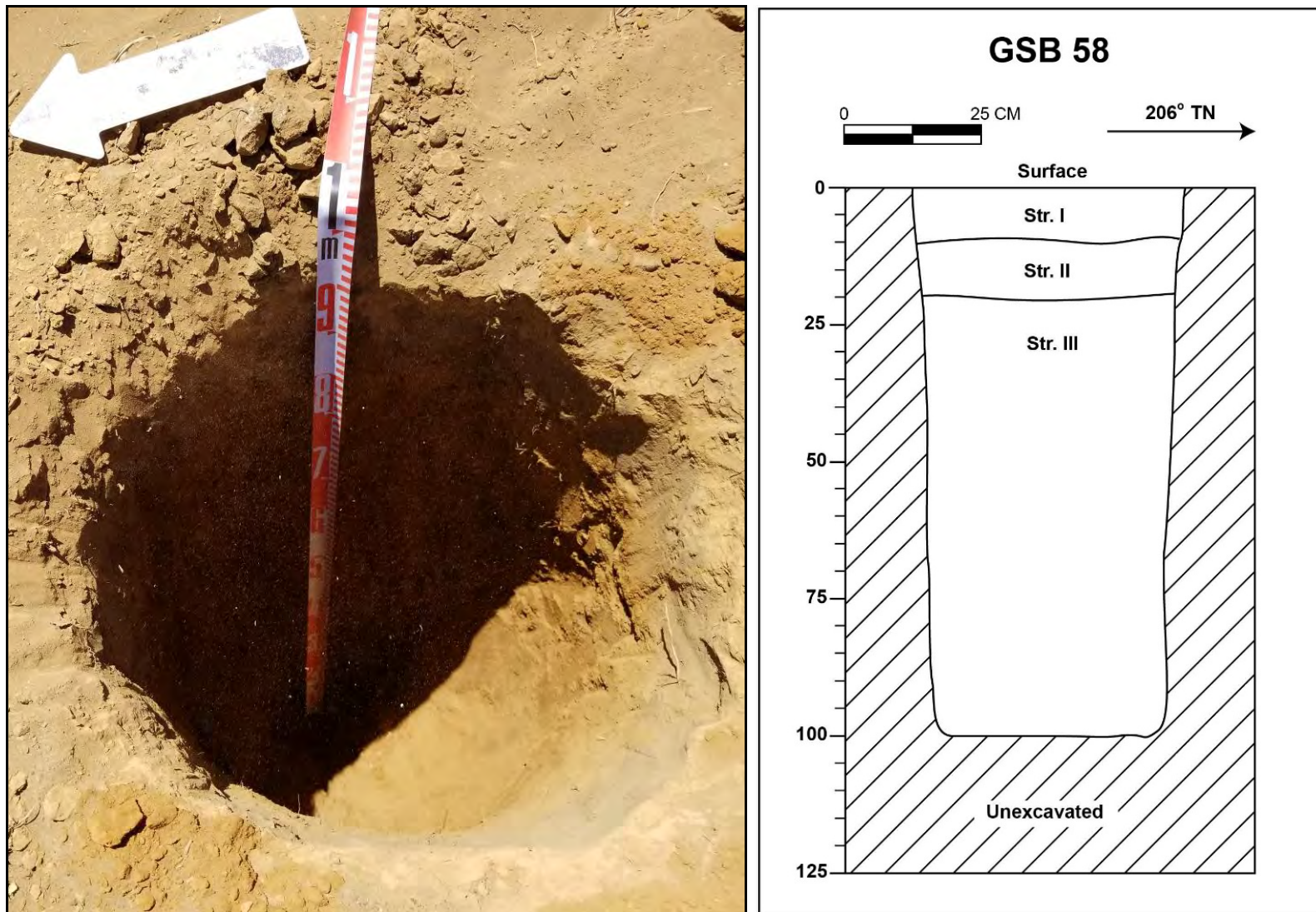


Figure 121. Southeast sidewall profile photo and drawing for STP # GSB 58



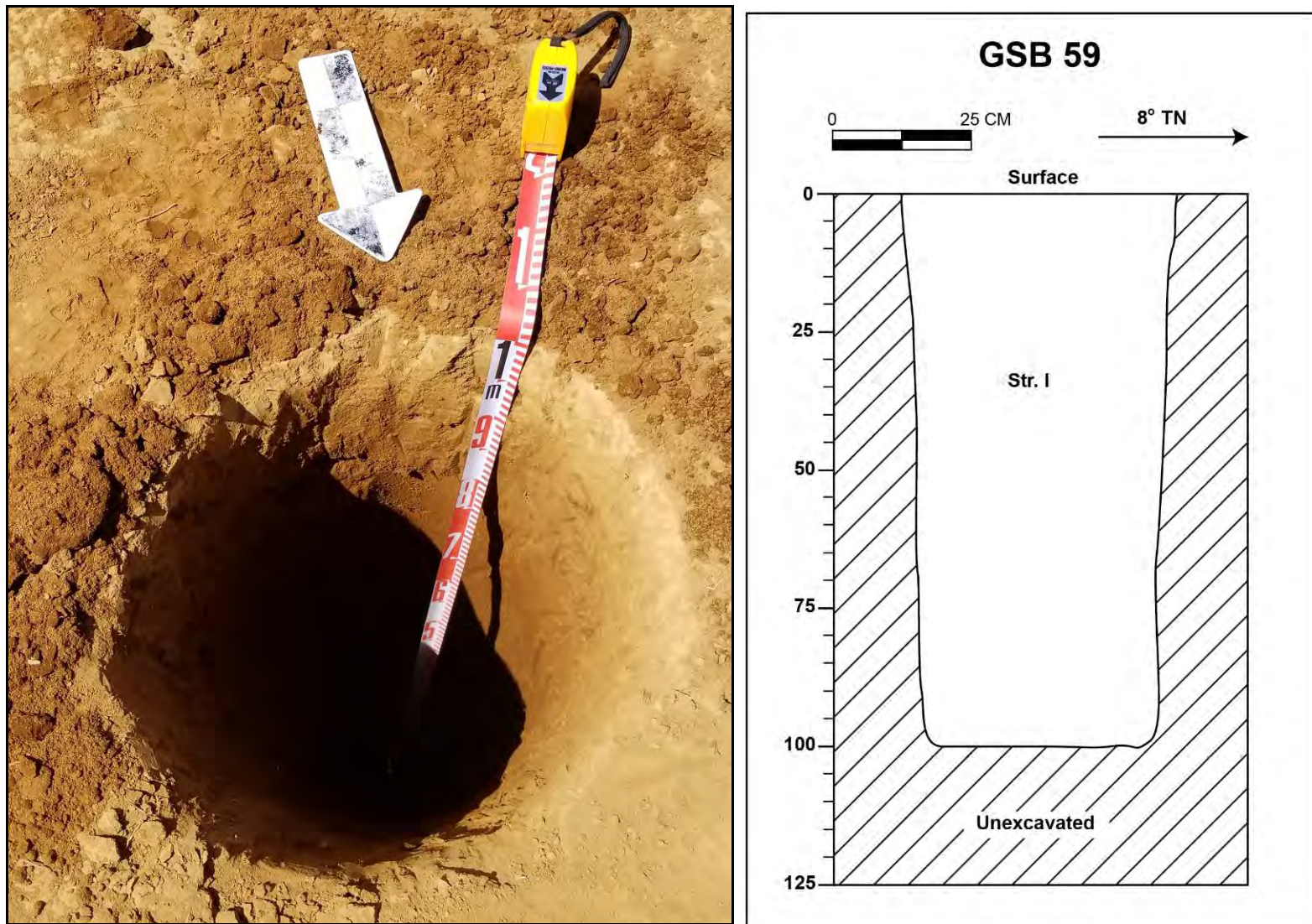


Figure 122. West sidewall profile photo (view to south to allow exposure of west sidewall) and drawing for STP # GSB 59



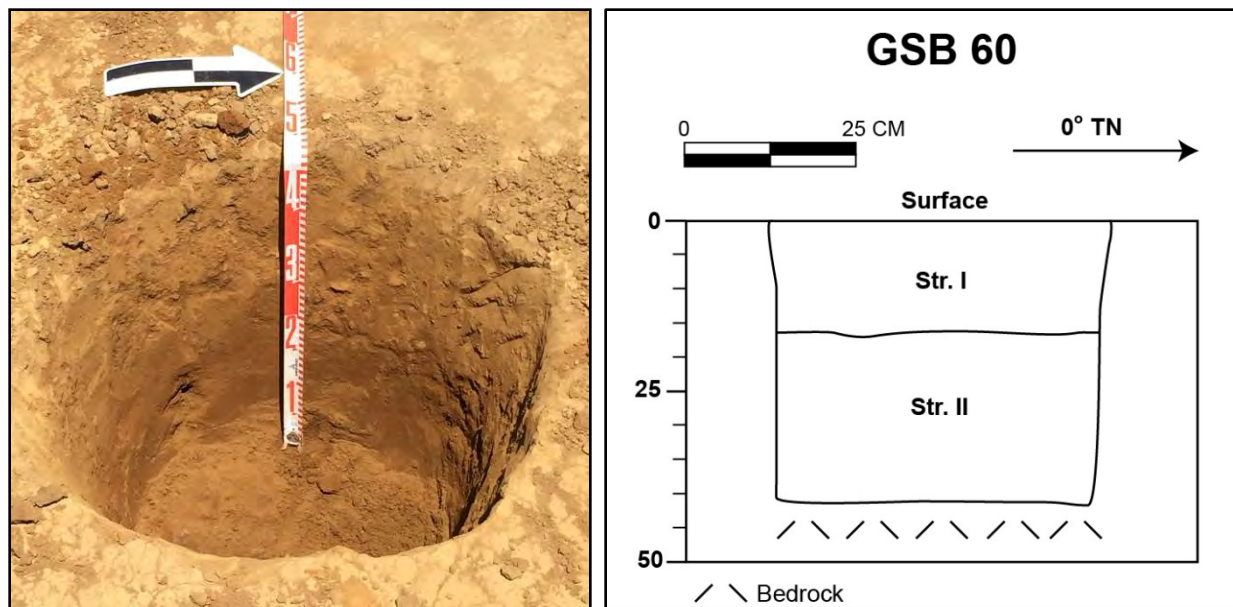


Figure 123. West sidewall profile photo and drawing for STP # GSB 60

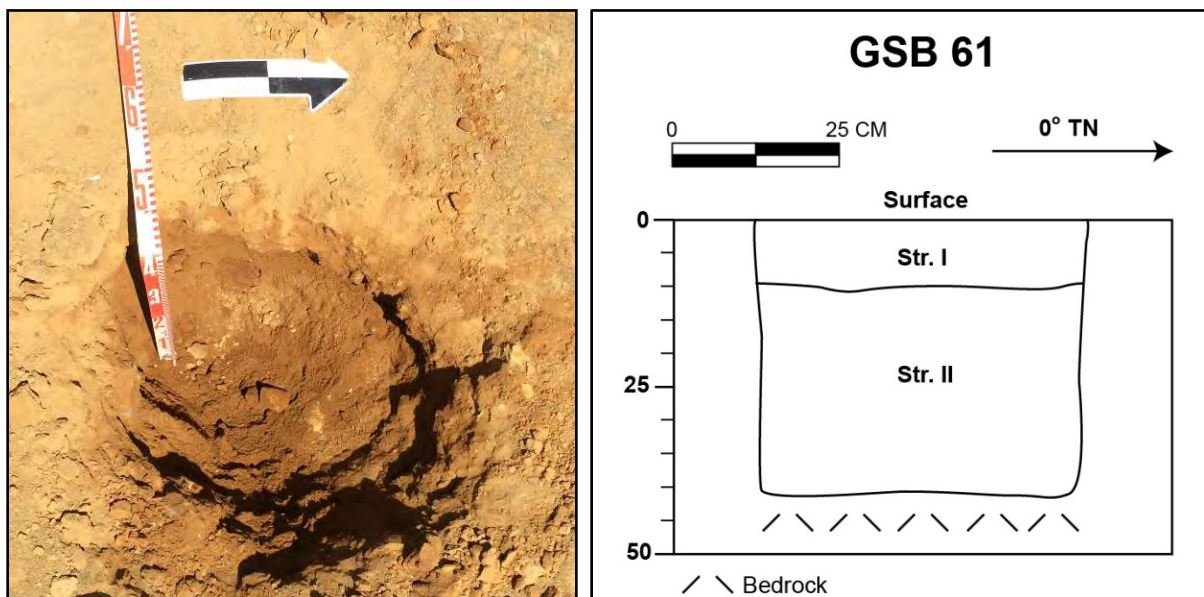


Figure 124. West sidewall profile photo and drawing for STP # GSB 61

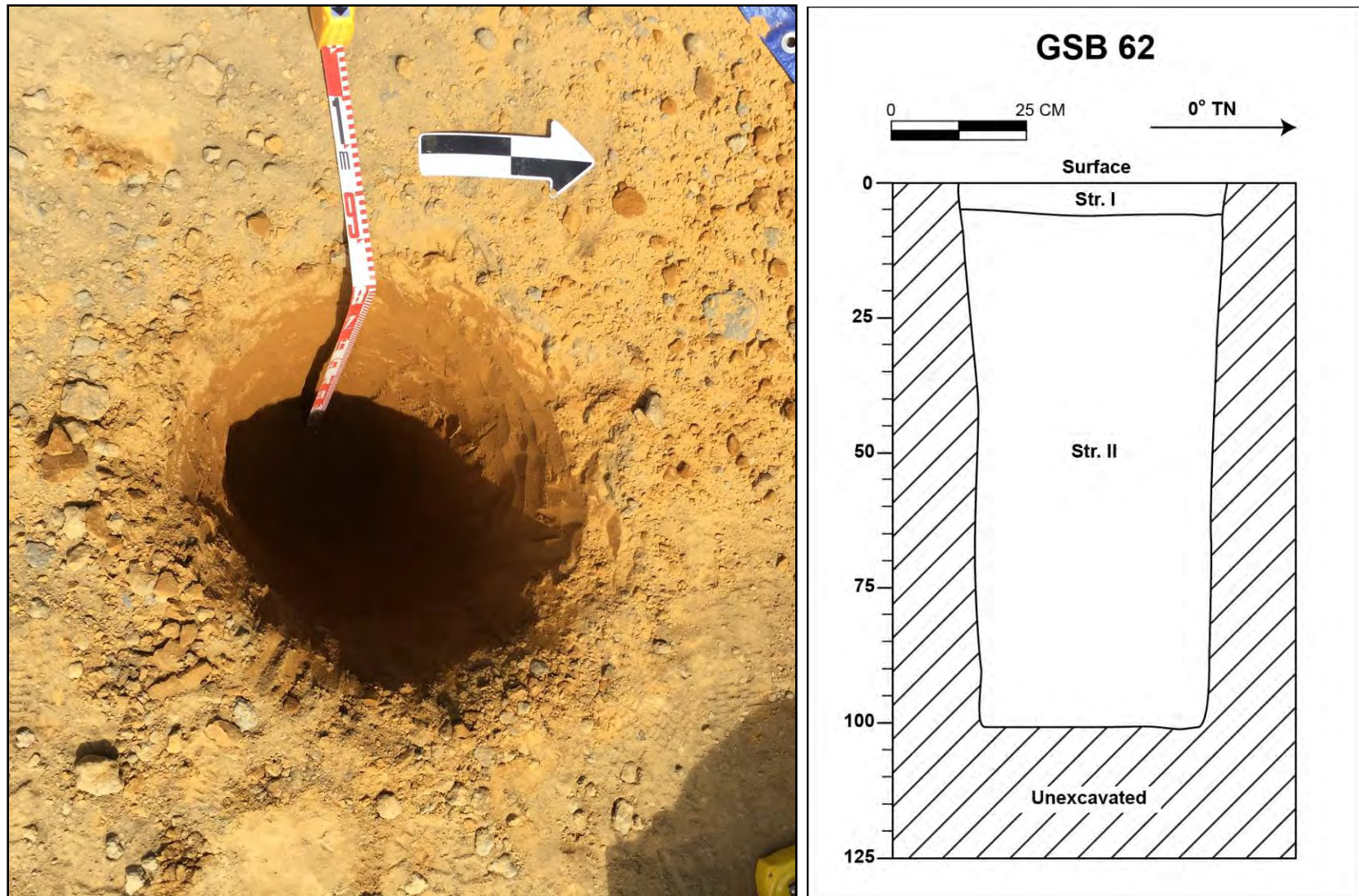


Figure 125. West sidewall profile photo and drawing for STP # GSB 62



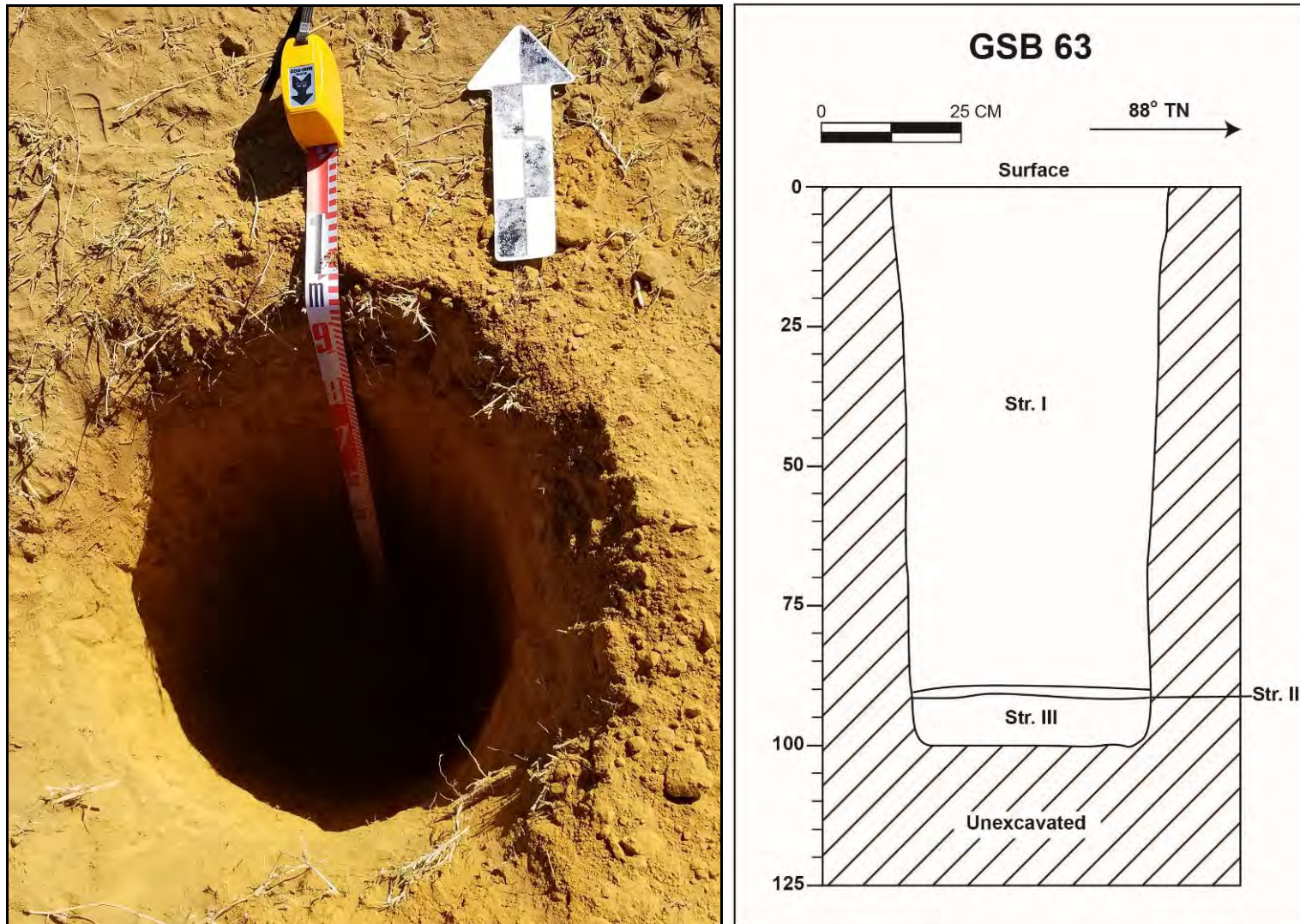


Figure 126. North sidewall profile photo and drawing for STP # GSB 63



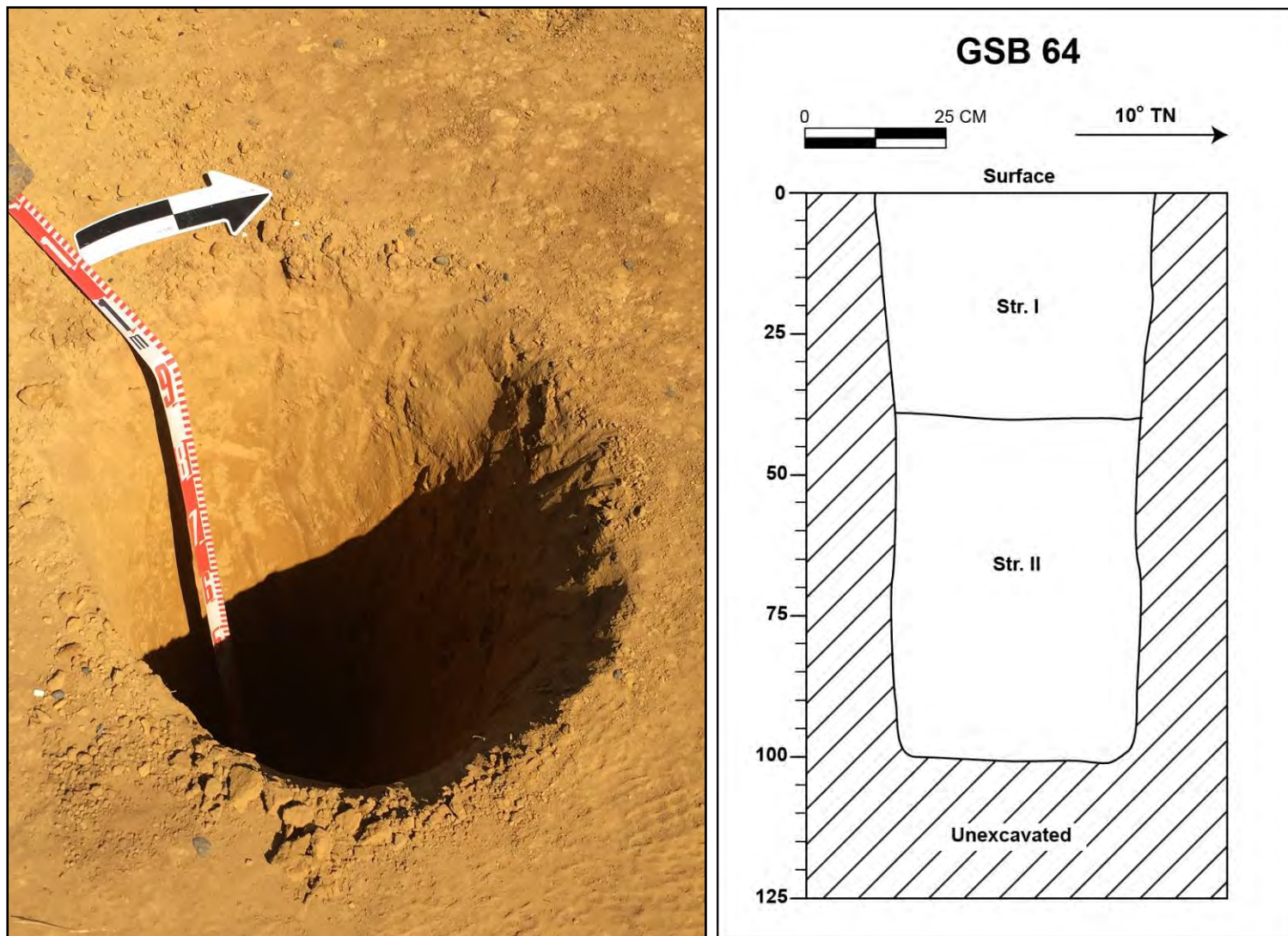


Figure 127. West sidewall profile photo and drawing for STP # GSB 64

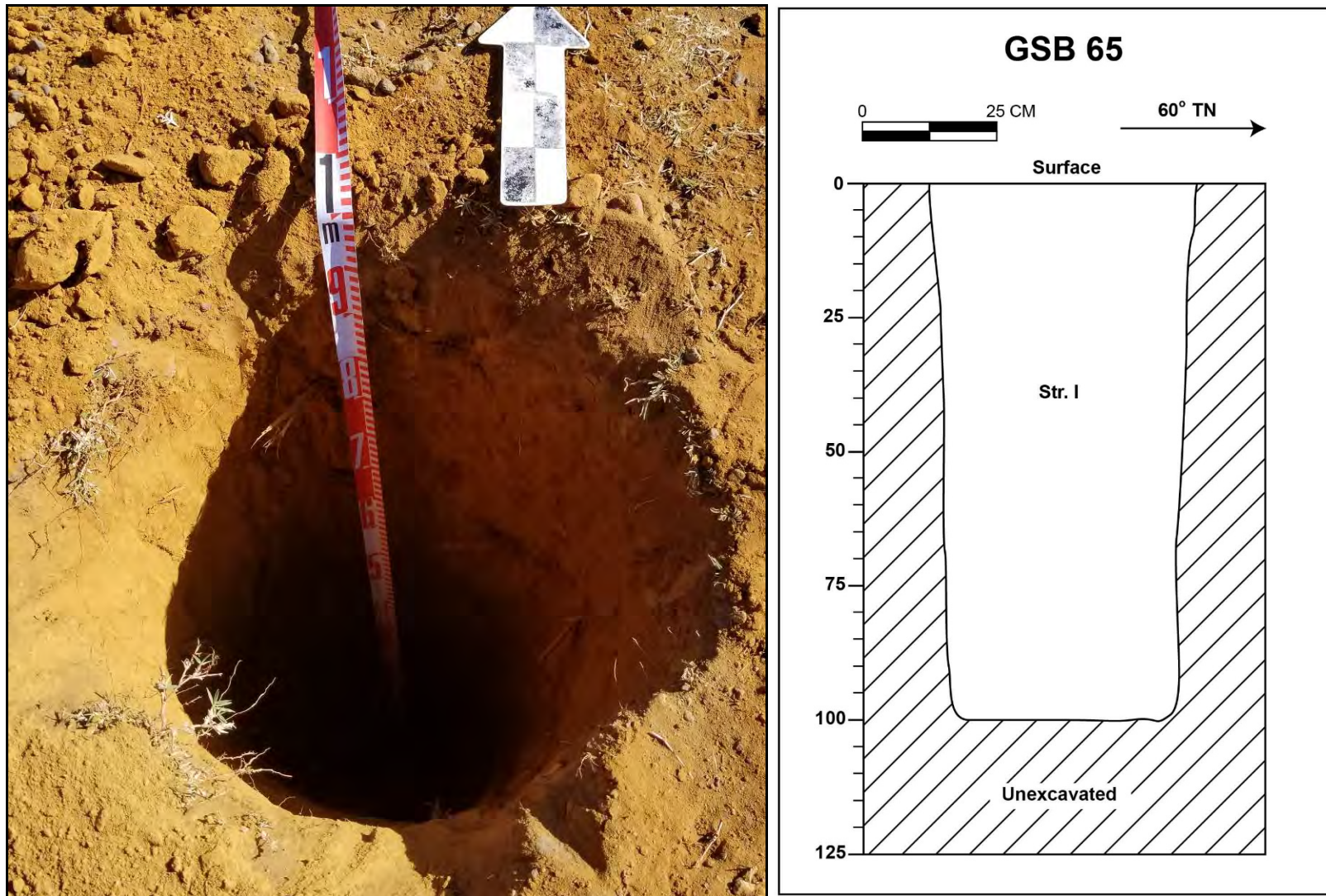


Figure 128. Northwest sidewall profile photo (view to north to allow exposure of northwest sidewall) and drawing for STP # GSB 65



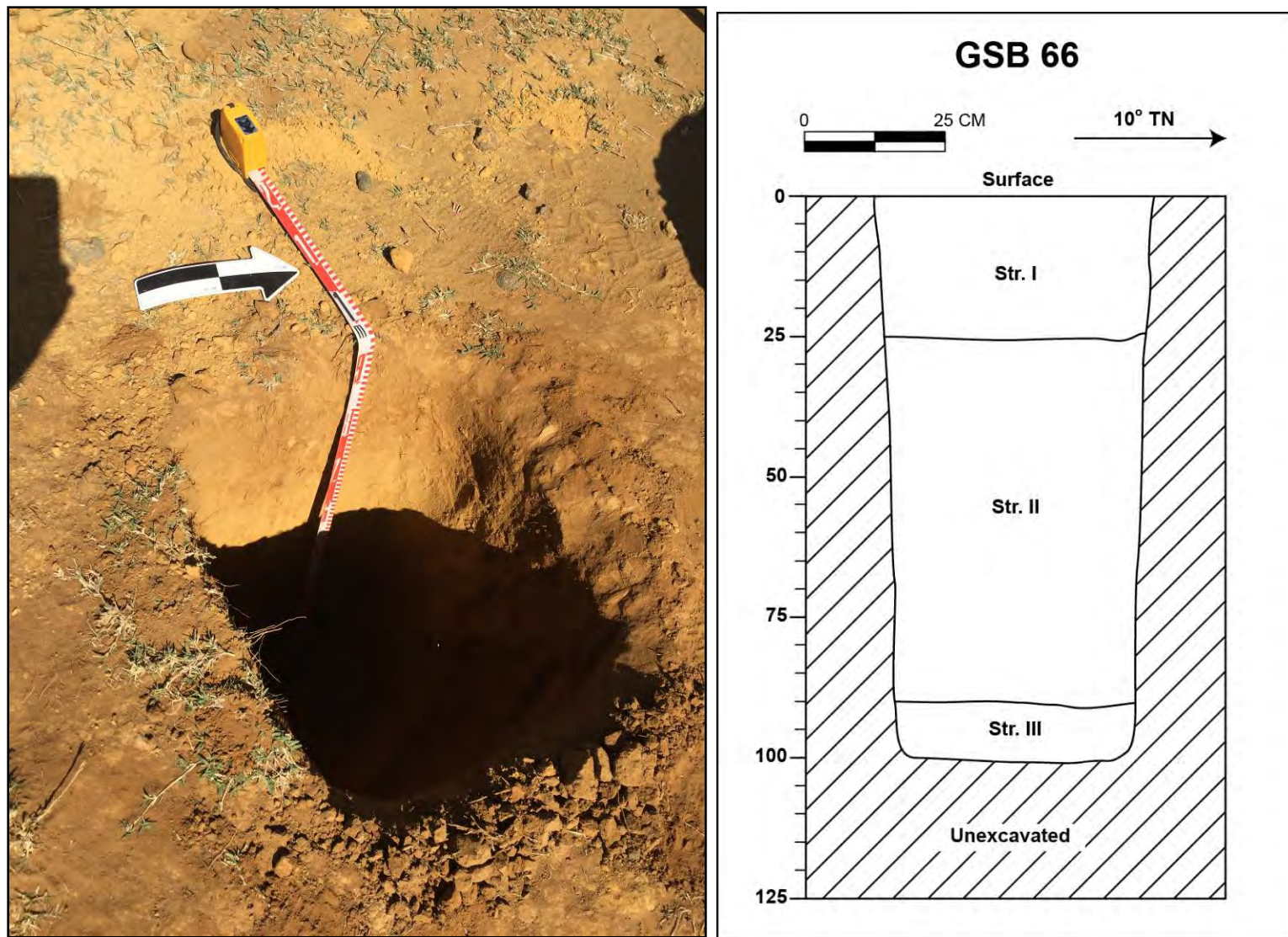


Figure 129. West sidewall profile photo and drawing for STP # GSB 66



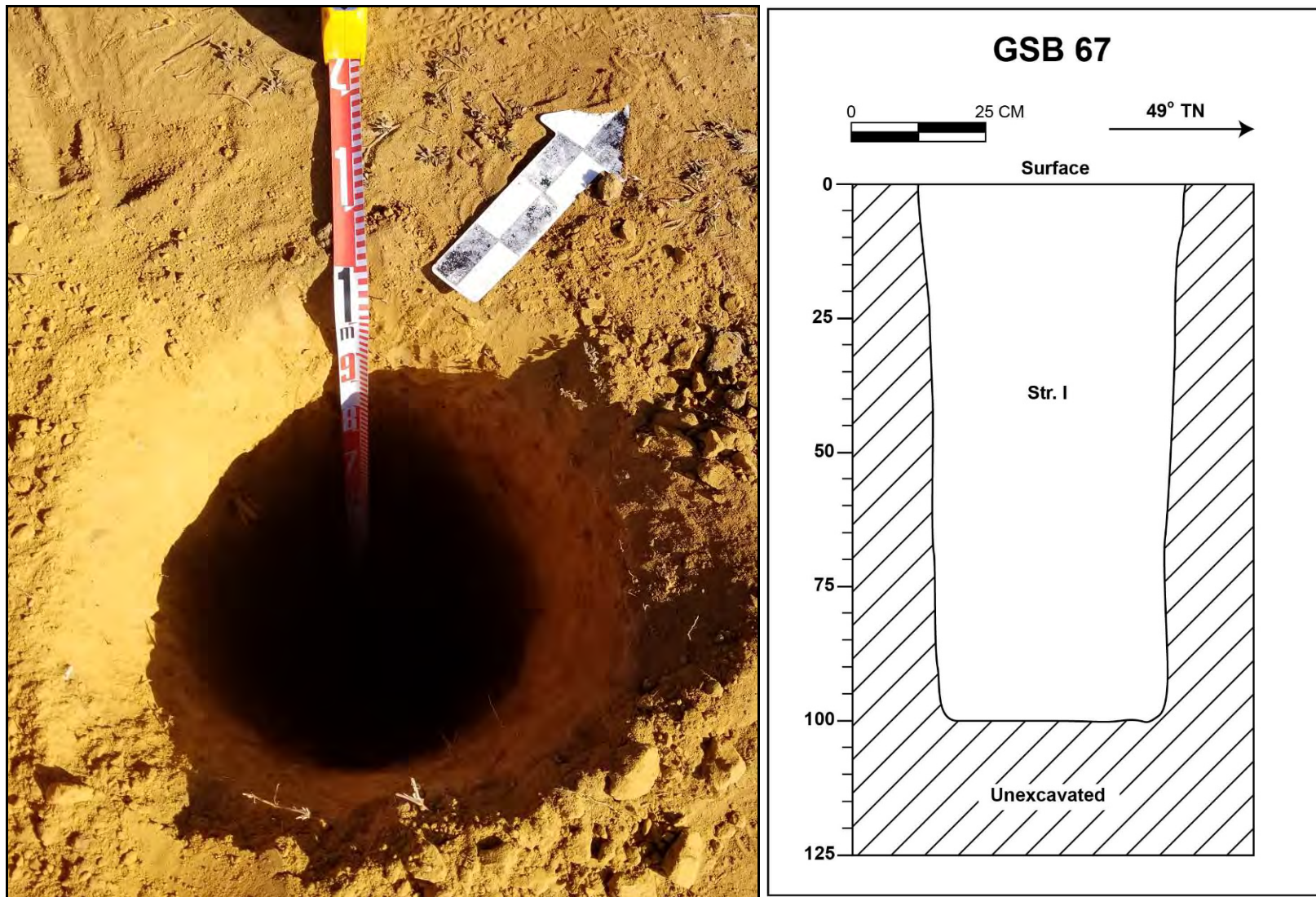


Figure 130. Northwest sidewall profile photo and drawing for STP # GSB 67

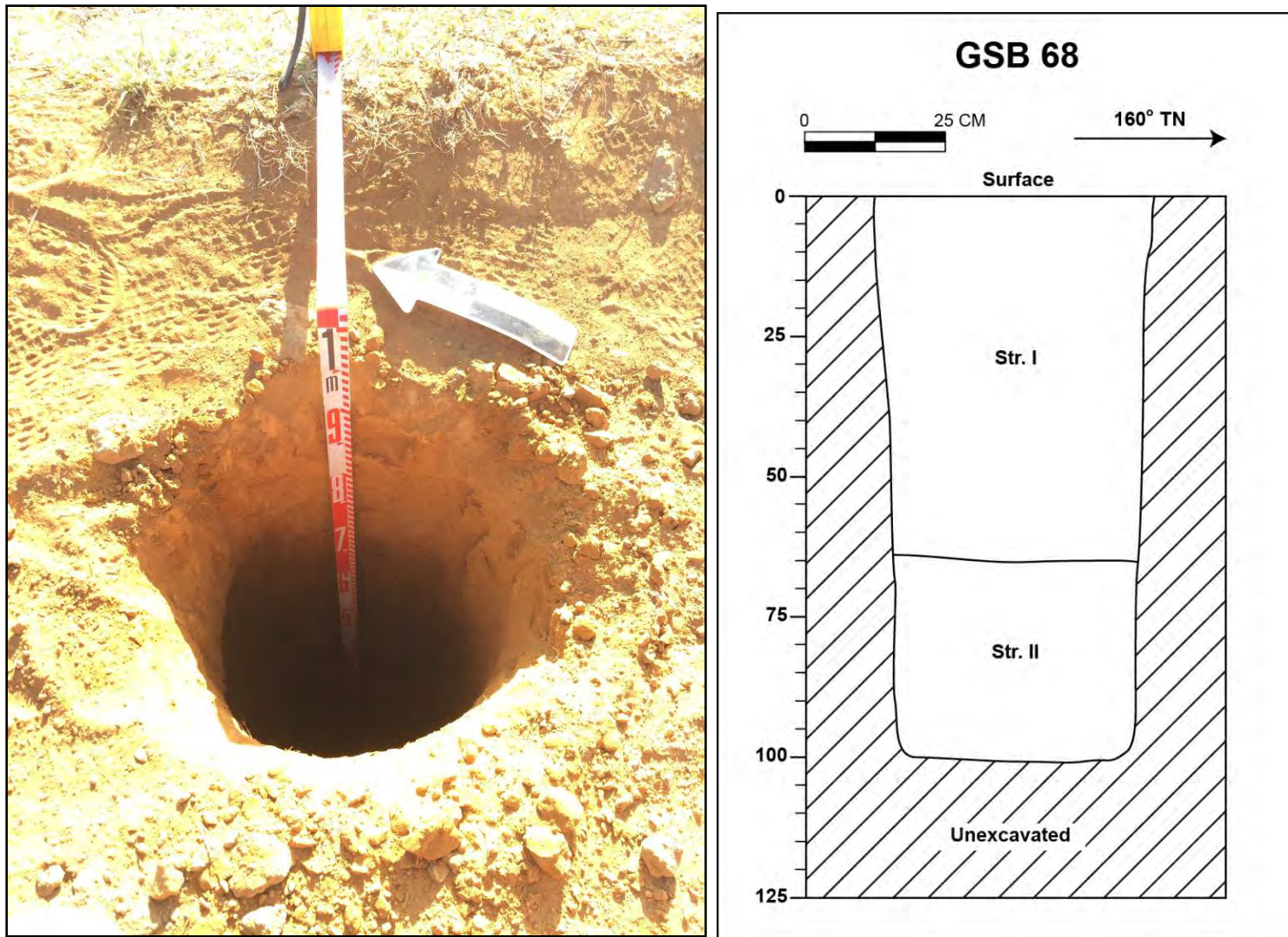


Figure 131. East sidewall profile photo and drawing for STP # GSB 68



## Green Sand Beach Parking

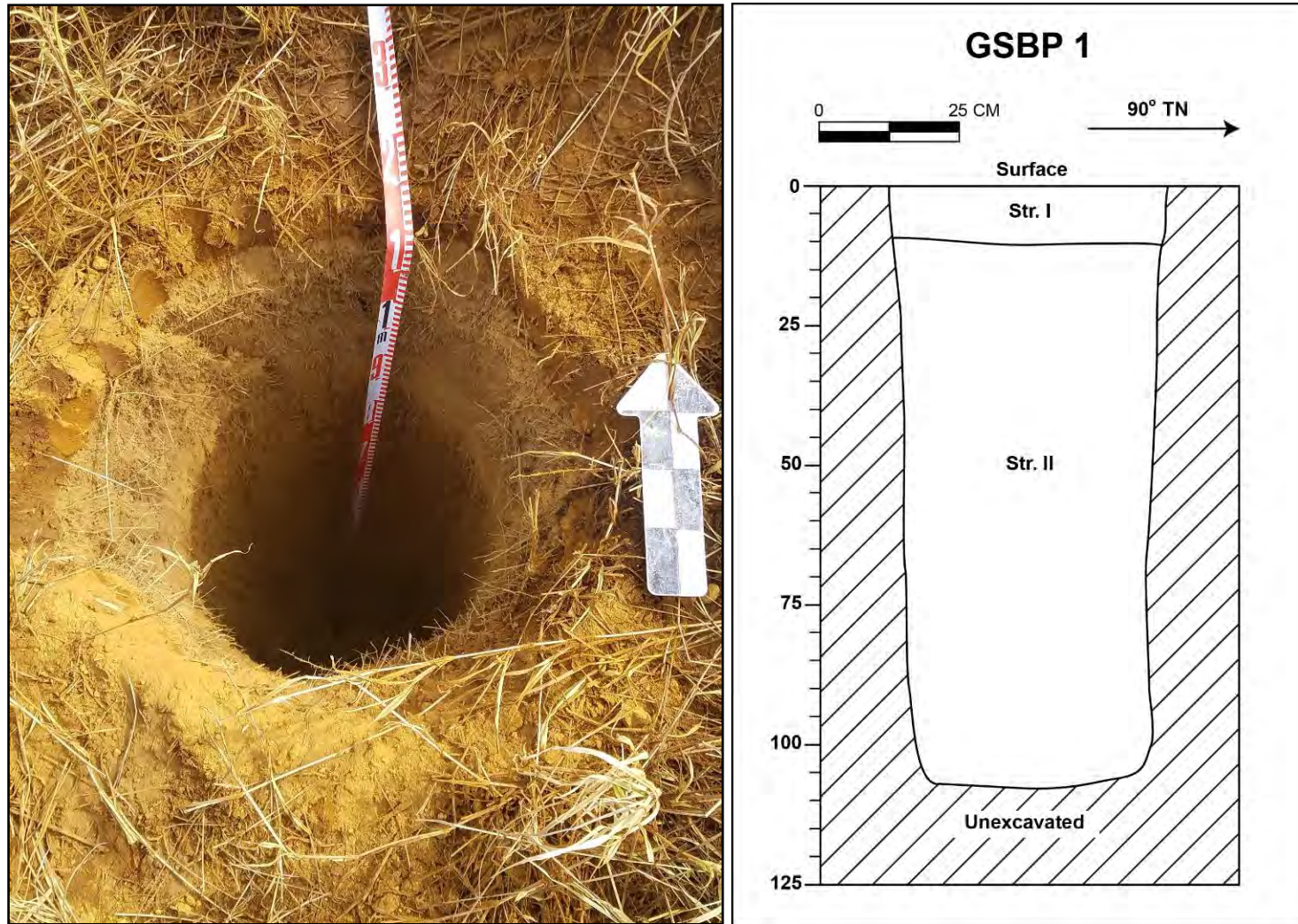


Figure 132. North sidewall profile photo and drawing for STP # GSBP 1



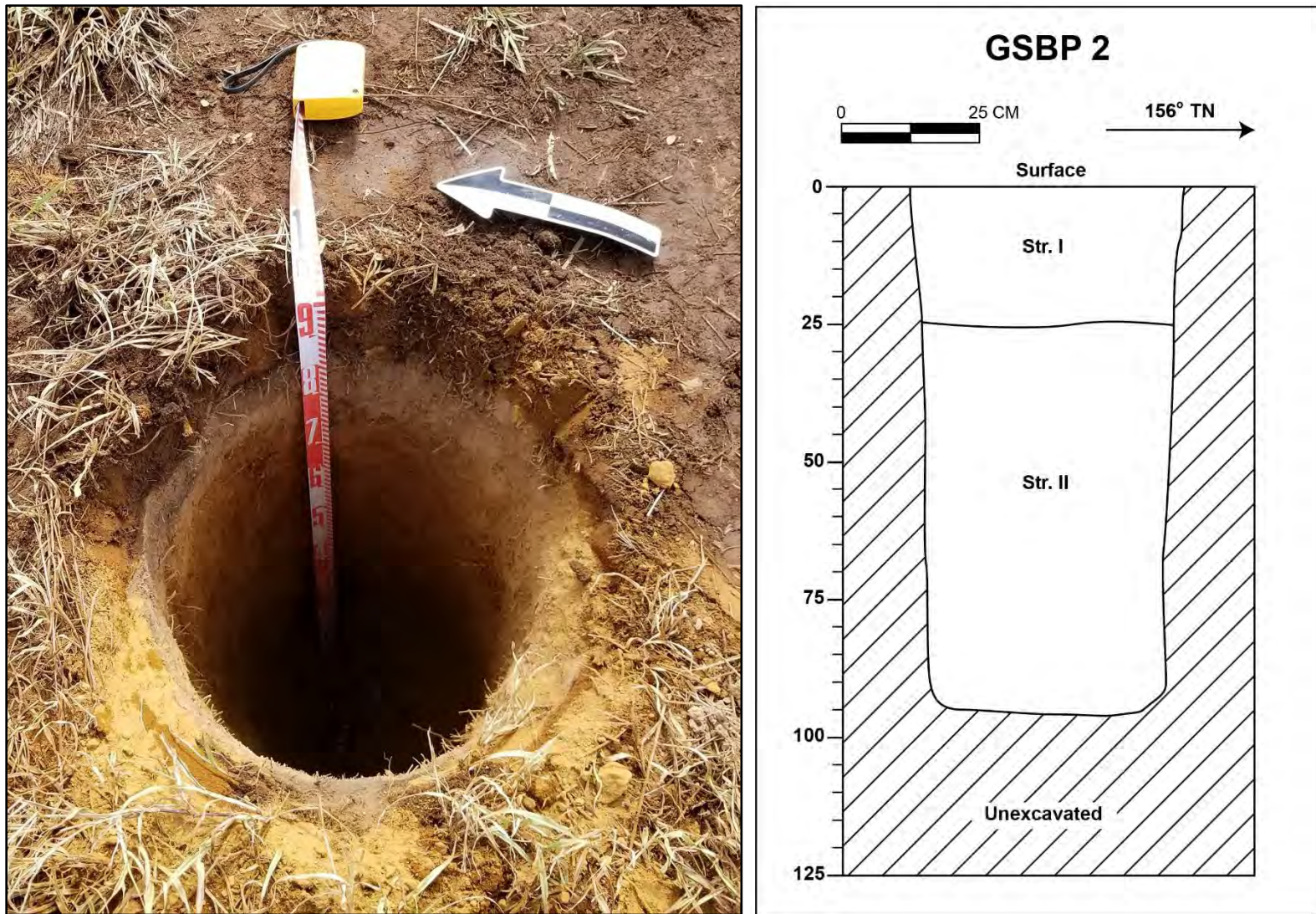


Figure 133. West sidewall profile photo and drawing for STP # GSBP 2



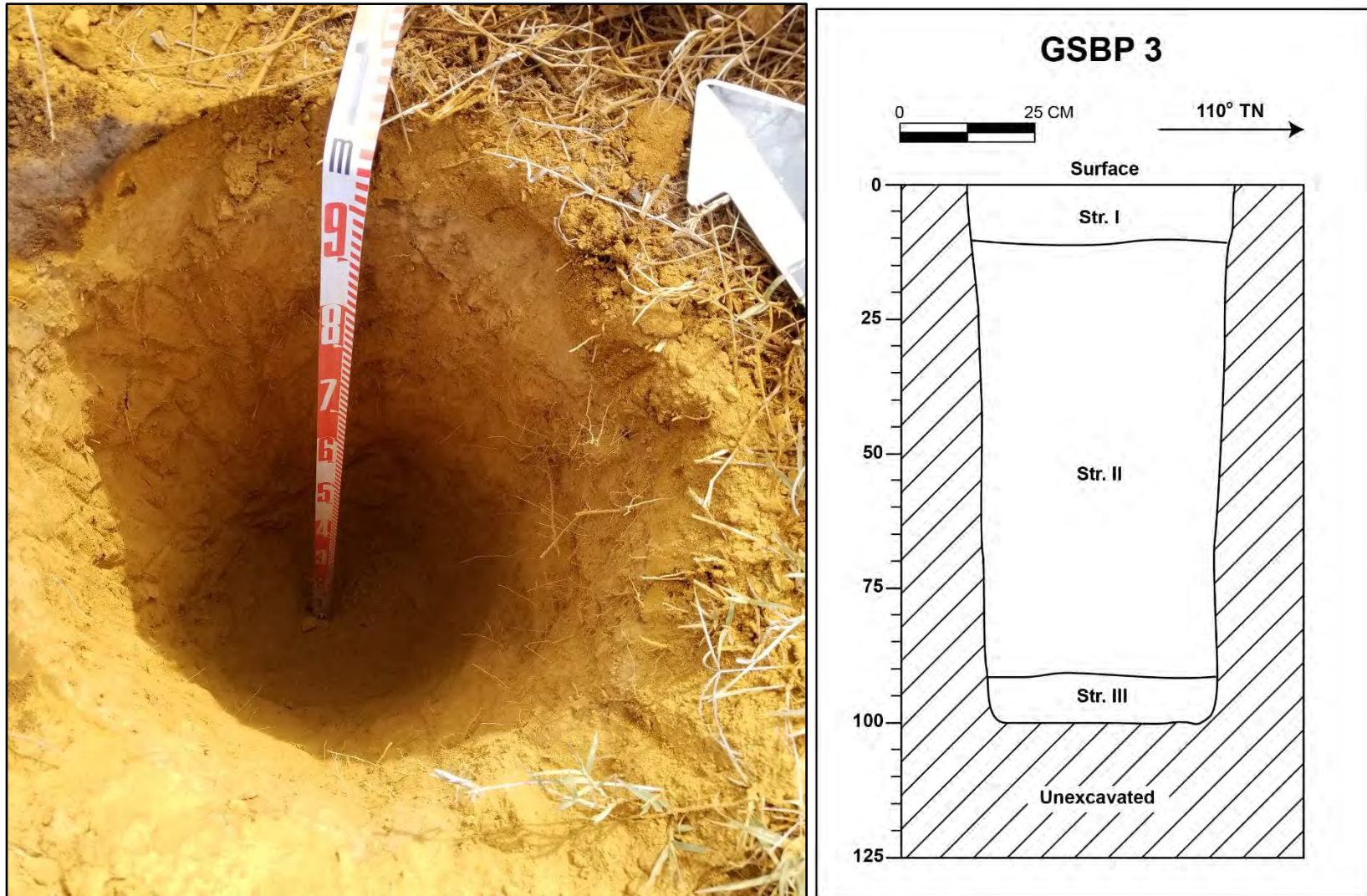


Figure 134. Northeast sidewall profile photo and drawing for STP # GSBP 3



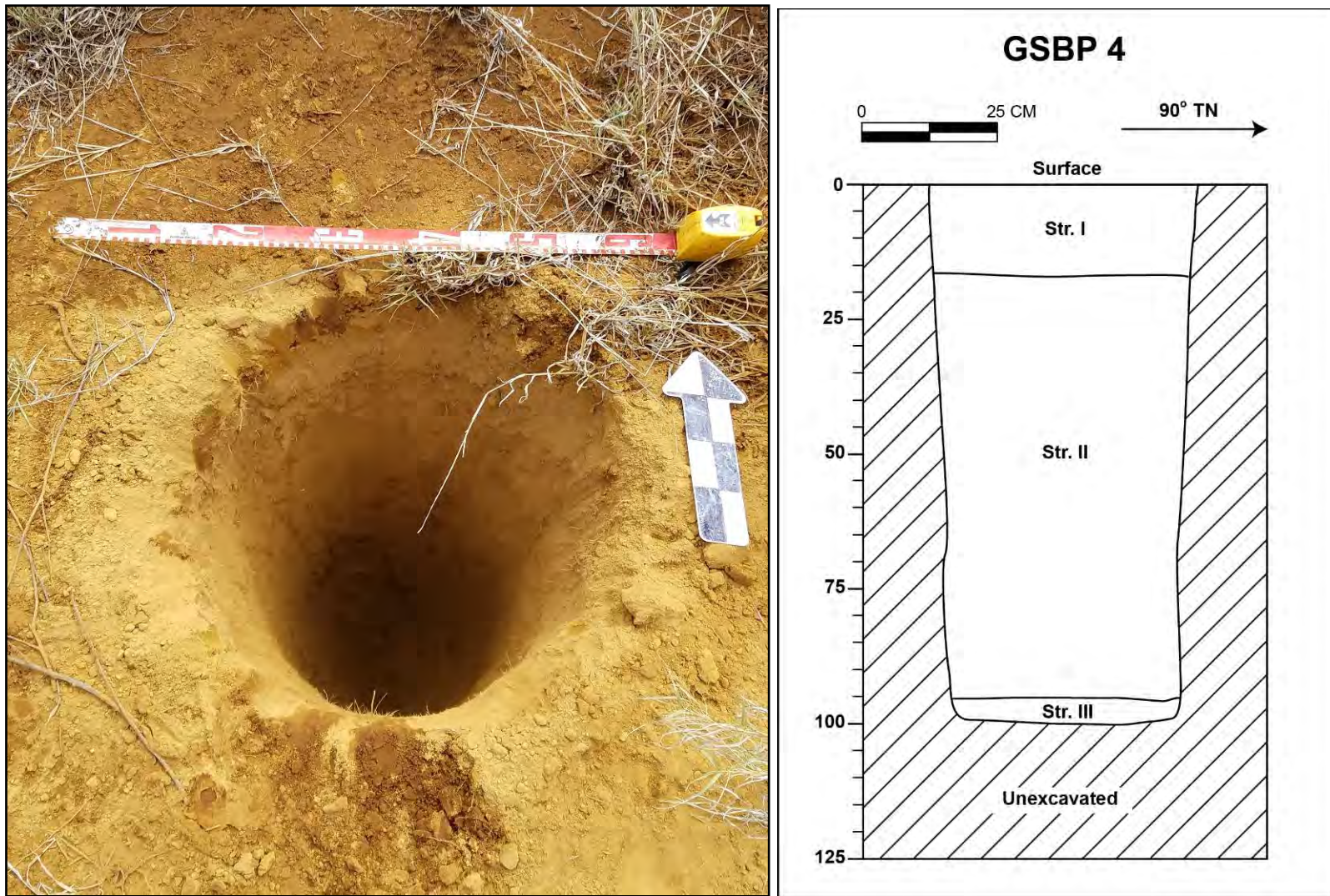


Figure 135. North sidewall profile photo and drawing for STP # GSBP 4



# APPENDIX E:

## CULTURAL IMPACT ASSESSMENT (CIA)

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# Cultural Impact Assessment:

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THE DHHL SOUTH POINT RESOURCES  
MANAGEMENT PLAN, KAMA`OA-PU`UEO  
AHUPUA`A, KA`U DISTRICT, HAWAI`I ISLAND ON  
PORTIONS OF TAX MAP KEY (TMK): (3)-9-3-001:003.

Prepared by:  
TOWNSCAPE, INC  
Prepared for:  
DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL)

---

## **Prefatory Remarks on Language and Style**

### **A Note about Hawaiian and other non-English Words:**

This report recognizes that the Hawaiian language is an official language of the State of Hawai'i. Therefore, Hawaiian words are not italicized. However, other non-English and non-Hawaiian words are italicized. Hawaiian words are parenthetically translated or defined in the text at first mention.



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## List of Acronyms

AIS	Archaeological Inventory Survey
ASEA	Southeast Mauna Loa Aquifer Sector Area
CDP	Community Development Plan
COH	County of Hawai'i
CSH	Cultural Surveys Hawai'i, Inc.
CZM	Coastal Zone Management
DHHL	Department of Hawaiian Homelands
DOH	Department of Health
DPP	Department of Planning and Permitting
DWS	Department of Water Supply
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information Systems
HAR	Hawai'i Administrative Rules
HDOH	Hawai'i Department of Health
HECO	Hawaiian Electric Company
HRS	Hawai'i Revised Statutes
LCAs	Land Commission Awards
mgd	million gallons per day
MSL	Mean Sea Level
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
SFHA	Special Flood Hazard Area
SHPD	State Historic Preservation Division
SMA	Special Management Area
TMK	Tax Map Key
TSI	Townscape, Inc.

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# 1 INTRODUCTION

## 1.1 Background

At the request of the State of Hawai'i's Department of Hawaiian Homelands (DHHL), Townscape, Inc. (TSI) prepared a Cultural Impact Assessment (CIA), in accordance with Hawai'i Revised Statutes (HRS) Chapter 343, for the implementation of the 2016 DHHL South Point Resources Management (RMP 2016). The RMP 2016 was developed between June 2015 and November 2016 based on information gathered from consultations with community members from Ka'ū. DHHL proposes implementing the RMP to protect and restore natural and cultural resources on DHHL lands at South Point.

Unregulated access to DHHL lands at South Point, also known as Ka Lae, has compromised the integrity of its heritage sites and of coastal ecosystems. Specifically, heavy use of recreational trucks, ATVs, and motor bikes has not only destroyed sacred sites but has resulted in widespread soil and sand erosion. The unregulated use of off-road vehicles, coupled with the site's exposure to the prevailing winds, has left the natural and cultural resources of South Point in critical condition. To address these threats and accomplish the goals of the RMP 2016, the plan proposes several priority projects for South Point which are clustered in 4 main management areas and depicted in Figure 1. These include:

- A: The installation of an entrance gate at the intersection of Kalae Rd. and South Point Road, and a security booth 0.75 miles north of the intersection along South Point Road;
- B: Two designated parking areas at the "Barracks" near the Kaulana Boat Ramp and at Ka Lae;
- C: A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites; and
- D: A pedestrian path and an emergency access road extending from the "Barracks" to Māhana (Green Sands) Bay.

## 1.2 Scope of Work

The scope of work for this CIA includes research focusing the following areas within in the Project area and the larger context of Kamā'oa-Pu'ueo Ahupua'a:

- Oral traditions consisting of beliefs, customs, practices, and resources;
- Historic background literature research;
- Review available and recorded oral histories conducted in the vicinity of the Project area;
- Search for and consult with individuals and organization(s) knowledgeable about the Project area;
- Conduct interviews with identifiable individuals or organizations; and
- Document the results and findings.

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### 1.3 Purpose of the CIA

The Project requires compliance with the State of Hawai'i environmental review process (Hawai'i Revised Statutes [HRS] Chapter 343), which requires consideration of a proposed Project's effect on cultural practices. This report provides information pertinent to the assessment of the proposed Project's impacts to cultural practices and resources (per the *Office of Environmental Quality Control's Guidelines for Assessing Cultural Impacts*). The document is intended to support the Project's environmental review and may also serve to support the Project's historic preservation review under HRS Chapter 6E and HAR Chapter 13–275.

### 1.4 Project Location

This Project is located on Tax Map Key (TMK) parcel number: (3)-9-3-001:003, in the ahupua'a of Kamā'oa-Pu'ueo, in the district of Ka'ū, on Hawai'i Island. Situated south of Nā'ālehu town, South Point is the southern-most point of the Hawaiian Islands. South Point is also located in a remote area, far away from major centers of human settlement. The Hawaiian Homestead of Ka'ū is the nearest settlement to the Project area which consists of a handful of 20-acre agricultural lots and 25-acre pastoral lots, some of which have residential houses. Kamā'oa Road, which turns into South Point Road, and Kalae Rd, connects South Point to Nā'ālehu and to Māmalahoa Highway. South Point is surrounded by the Pacific Ocean on its western, southern, and eastern boundaries.

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## 2 METHODS

Research for this project consisted of background research of historical documents, maps, and existing archaeological information related to the Project area, as well as community consultations with kūpuna (elderly) and kama'āina (Native-born) with knowledge about previous and current cultural resources and practices of the Project area and the larger Kamā'oa-Pu'ueo Ahupua'a. Information collected were synthesized to assess the potential impact of the proposed Project on the cultural resources and practices of the Project area and its larger context within Kamā'oa-Pu'ueo Ahupua'a.

Participants for community consultations in this study were identified using a combination of qualitative methods including purposive, snowball, and expert sampling (Bernard 2006). The intent of our research was not to establish a representative or random sample but to identify people with knowledge about the cultural resources and practices of the Project area and the larger Kamā'oa-Pu'ueo Ahupua'a (Mays and Pope 1995:110; Bernard 2006). TSI conducted a series of community meetings in the Ka'ū District in 2015 in the preparation of the RMP for South Point, therefore, had a substantial database of kūpuna (elderly), kama'āina, Native Hawaiian DHHL beneficiaries, community organizations, and relevant agencies with connections to South Point. We began community consultations with purposive sampling, where a subset of individuals and organizations from the database were contacted. These contacts were selected based on informed referrals from specialists and Ka'ū residents who recommended those who might possess relevant knowledge to share about the Project area.

Throughout the course of this assessment, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the study area. This effort was made by letter, e-mail, telephone and in person contact. The initial outreach effort began in June, 2017 and was completed in November, 2017. Please refer to Table 1, for a complete list of individuals and organizations contacted for this CIA.

All interviews follow an informed consent process that include the following:

1. Participants are informed of how the consent process works prior to each interview including an overview of the Project purpose, the intent of the study, and how information collected will be used;
2. Participants are given a copy of the Authorization and Release Form to read and sign
3. A participant agrees to participate by way of signing the consent form or providing oral consent;
4. Participants received a copy of the Authorization and Release Form for their records and TSI retains a copy;
5. After interviews are summarized, participants are afforded an opportunity to review the interview notes (or transcription) and summary and to make any corrections, deletions or additions to the substance of their testimony/oral history interview; this is accomplished via phone, post or email or through a follow-up visit with the participant.



Interviews are semi-structured interviews, asking questions from broad categories to guide interviews. These topics include mo'olelo (stories) and wahi pana (storied places), gathering practices, burials, trails, historic properties, and other resources. Interviews were conducted initially at a place of the participant's choosing (usually at the participant's home or at a public meeting place) and/or—whenever feasible—during site visits to the Project area. Following the consent protocol outlined above, interviews may be recorded on tape and in handwritten notes, and the participant photographed. Interviews typically last one to four hours biographical information (e.g., connection to the study area, genealogy, professional and volunteer affiliations, etc.) Participation is voluntary and participants may withdraw from the study at any time. Individual interview participants are compensated for their time in the form of a small honorarium and/or other makana (gift).

For this Project, TSI attempted to contact 36 community members, government agencies, community organizations, and individuals, including residents, “recognized” descendants, and cultural practitioners. Of the 15 people that responded, five kūpuna and/or kama'āina participated in formal interviews for more in-depth contributions to the CIA and four people provided a statement via e-mail. However, one individual chose to remove their statement from the study. Three interviews from previous TSI work at South Point were also included resulting in a total of eight individuals who provided in-depth information in interviews for this Project.

**Table 1.** Community contact list for consultations

ID	Contact Name	Affiliation	Responded	Interview Date
1	Palikapu Deadman	Pele Defense Fund	Yes	August 21, 2017
2	Pernell Hanoa	Beneficiary	Yes	
3	Kurt Dela Cruz	Counsellor at UH Hilo; Nā'ālehu Kama'āina	Yes	June 9, 2017
4	George Manuel	Lineal Descendent of South Point and Wai'ōhinu	Yes	August 8, 2017
5	Charmaine Keanu	Beneficiary, Kupuna	Yes	
6	Jesse Ke	Kupuna	No	
7	Dave Kaawa	Beneficiary	No	
8	Tammy Kaawa	Ka'ū Resident	No	
9	Kai Mcguire	Na Mamo o Kāwā	Yes	
10	Garry Kaawa	Beneficiary	No	
11	William Kekoa Jr.	Beneficiary	No	
12	Nohealani Kaawa	Wai'ōhinu Descendent; Hawai'i State Department of Land and Natural Resources' (DLNR) Division of Forestry and Wildlife (DOFAW)	Yes	November 12, 2015; October, 2017
13	Cynthia Baji	Beneficiary	No	
14	Kalani DeCoito	Beneficiary	No	
15	Ella M. McComber	Beneficiary	No	

16	Donald D. McComober	Beneficiary	No	
17	Jeffery Kekoa	Beneficiary	Yes	July 13, 2017
18	Jackie Kalua'u	Beneficiary	No	
19	Sophia Hanoa	Ka'u Resident	Yes	
20	Joni Mae Makauakane-Jarreu	Beneficiary	No	
21	Elsa K. Dedman	Ka'u Resident	No	
22	Keoni Fox	Beneficiary	Yes	October 7, 2017
23	Richard Taylor	Discovery Harbor	Yes	July 21, 2017
24	Kama Dancil	Kamehameha Schools, Staff	No	
25	Nona Makuakane	Beneficiary	No	
26	Paul Makuakane	Beneficiary	No	
27	Dean Kaniho	Beneficiary; Paniolo	Yes	August 18, 2017
28	Tissy Kaniho	Married to Dean Kaniho; Resident of South Point	Yes	August 18, 2017
29	Gilbert Medeiros Jr.	Beneficiary	No	
30	Aunty Pake	Kupuna	Yes	
31	Anna Cariaga	Kupuna	Yes	September 8, 2015; November 2017
32	Sean Naleimaile	Hawai'i Island archaeologist, SHPD	No	
33	Edward Halealoha Ayau	Hui Mālama in Na Iwi Kupuna o Hawai'i Nei Acting District Supervisor Department of Hawaiian Home Lands Molokai District Office	No	
35	Alan Downer	Hawai'i Island Burial Council Administrator	No	
35	Kamana'opono Crabbe, Ph.D.	Office of Hawaiian Affairs, CEO, Ph.D.	No	
36	Tommy Kaniho	Long-time paniolo; Beneficiary; Former South Point Resident	Deceased/Yes	September 8, 2015

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### 3 TRADITIONAL AND HISTORICAL BACKGROUND

#### 3.1 ORAL HISTORY OF KAMĀ'OA-PU'UEO AHUPUA'A BEFORE EUROPEAN CONTACT (1778)

##### 3.1.1 Overview

According to Fornander, the Island of Hawai'i was divided into six major moku or districts at the time when 'Umi-a-Li'loa ruled the island, around 1525 (Fornander 1973). The District of Ka'ū was divided into smaller regions or 'okana (District or sub-district, usually comprising several ahupua'a), which comprised of nearly 30 ahupua'a. The Project area is located within Kamā'oa Ahupua'a, also known as Kamā'oa-Pu'ueo, in the 'ili 'āina (smaller subdivision of an ahupua'a) of Ka Lae. According to Soehren (2010), Kamā'oa contains over 30 'ili 'āina or 'ili kū. Kamā'oa-Pu'ueo Ahupua'a is bounded by the ahupua'a of Pākini Iki and Pākini Nui to the west, and Kawela Ahupua'a to the east. The southern flank of Mauna Loa defines the inland boundaries of most ahupua'a in the district.

##### 3.1.2 Settlement and Habitation

Handy and Handy (1972) propose that Ka'ū was likely colonized and settled by Polynesian migrant chiefs from Kahiki (which means 'a foreign land,' not necessarily Tahiti) approximately a thousand years ago. Kirch (1985:81–87) estimated that settlement of the southern-most coastline of Hawai'i by early Polynesians, would have occurred by the fourth or fifth century AD. South Point is thought to have been a prime locale for habitation due to its direct proximity to deep-sea fishing grounds. Handy and Handy (1972:545) speculate that the earliest settlers to Ka'ū found Manuka, a ahupua'a that bounds Kahuku Ahupua'a because large sections of this area were cultivated prior to devastation by lava flows. The authors note that the origin of these names are Manu'a and Ta'u, which are islands in Samoa. Handy and Handy (1972:545) further describe the ahupua'a of Kamā'oa as the homeland of one group of early settlers who in historic times have called themselves the 'clan of Pele.'

The Archaeological Inventory Survey (AIS) conducted for this Project, states that archaeological evidence point to pre-Contact permanent settlement within inland portions of South Point:

Archaeological studies in the general region clearly indicate pre-Contact permanent habitation settlement along the coast as well as within inland portions of South Point. Archaeological research conducted in the upland South Point region (Cordy 1986; Cordy 1987; Spear and Rosendahl 1987; Tomonari-Tuggle and Tuggle 1991) signify a distinct inland settlement typically focusing on agricultural subsistence. Radiocarbon dates from a lava tube site located approximately 6 miles northwest of the project area in the Wai'ōhinu area indicate occupation between AD 1420 and 1655 (Robins et al. 1992). An organized upland field system is known to have been present in Ka'ū, but has not been investigated in any systemic way. Part of the greater Ka'ū field system, the South Point-Kamā'oa Agricultural System (SIHP # 50-10-76-10277) was identified by Price-Beggerly (1987) using aerial photography.



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### 3.1.3 Wahi Pana

A Hawaiian wahi pana, also referred to as a place name, and appear in bold in this section, “physically and poetically describes an area while revealing its historical or legendary significance” (Landgraf 1994:v). Wahi pana may refer to natural geographic locations, such as streams, peaks, rock formations, ridges, and offshore islands and reefs, or they can refer to Hawaiian land divisions, such as ahupua‘a and ‘ili (land section, usually a subdivision of an ahupua‘a), and man-made structures, such as fishponds or heiau (temple). In this way, the wahi pana of Kamā‘oa, and the specific Project area surrounding Ka Lae tangibly link the kama‘āina of that place to their past. While many kama‘āina from throughout the District of Ka‘ū claim South Point as their place of cultural descentance, the contents of this Project focuses on Kamā‘oa-Pu‘ueo Ahupua‘a and more specifically, Ka Lae, where the Project area is located.

#### 3.1.3.1 Ka Lae Place Name Chant

This chant was given to Mary Kawena Pukui in 1935 by her aunt, Keli‘ihue Kamali, a kahuna lapa‘au who lived in Wai‘ōhinu. The chant was translated by Pukui in 1966. The first half of the chant mentions wahi pana of Ka Lae that describes the landscape of the southern-most point of Hawai‘i. Highlighted in bold, these wahi pana are described in more detail below. The second half of the chant describes the physical landscape, such as the native vegetation that likely grew at Ka Lae like the kauna‘oa and ‘ilima. It also references the heat and dry land that characterizes the lands of Ka‘ū. The chant evokes imagery of Ka Lae that still remains almost a century later.

Nani ka mana‘o i hiki mai  
Nani E naue a e ‘ike ia **Ka-lae**  
Ka lae **kaulana** o ka ‘aina  
E ‘alo ana i ke ehu o ke kai.  
Noho ana **Ka-‘ilio-a-Lono**  
Ho‘oipo ana me **Ka-lupe-nui**  
O ke **Koko-a-Makali‘i**  
He ali‘i no ‘oe a **Kalalea**  
Ka‘ana nei me **Wahine-hele**  
Hele no a ia **Ka-puhi-‘ula**  
Ki‘ei I **Ka-lua-o-ka-‘iole**  
Noho **Poho-a-Hina** ia ka la‘i  
‘Au‘au i ka wai o **Palahemo**  
Kahi wai ‘awili me ke kai.  
Ui a‘e ka mana‘o o na hoa  
ohu I ka lei kauna‘oa  
Nonono ‘ula wena i ka la  
I ahona I ka lau  
Nohomai **Makalei** I ke kapu  
La‘au pi‘i ona a ka i‘a.  
E ha‘ina ia mai ka puana  
No makou no a pau.

A wonderful thought arose  
To travel and to see Ka-lae.  
Ka-lae, the famous point of land  
Facing the foamy sea.  
There abides Ka-‘ilio-a-Lono  
Making love to Ka-lupe-nui.  
There too, Koko-a-Makali‘i  
And the chief, Kalalea.  
Sharing (the scene) with Wahine-hele  
Going on to Ka-puhi-‘ula  
Peering down Ka-lua-o-ka-‘iole,  
Poho-a-Hina reposes in the calm.  
Bathe in the water of Palahemo  
Where fresh water mixes with the salty.  
Thoughts turn to the companions  
Adorned with leis of kauna‘oa  
Reddened by the sun,  
Cooled by the ‘ilima leaves  
Makalei abides in the kapu  
That wood that attracts fish.  
This concludes our song in honor  
Of everyone of us.

**Kamā’oa** is defined by Pukui et al. (1976) as “a plain near Ka Lae (South Point), Ka’ū, Hawai’i, a place noted for red dust; people jumped from a cliff (**Kau-maea-lele-kawa**) near here into a dust heap in imitation of the support of leaping from a cliff into water (lele kawa).” Consultations with Nohealani Ka’awa, a kama’āina of Ka’ū (refer to Section 4.4.7), indicate that **Kamā’oa** was the daughter of **Hala’ea** who married **Ka’alualu**. She explained in the following excerpt that the place names surrounding **Kamā’oa**, reflect the geneology of that area:

**Hala’ea** [an unjust Chief of Ka’ū] is also the name of the current fronting Ka Lae. **Hala’ea** had two children, a daughter he named **Kamā’oa** and a son he named **Kahuku**. Kamā’oa married **Ka’alu’alu**. Kahuku married **‘Ahukini**. Kahuku and ‘Ahukini had a daughter they named **Mōlī**. ‘Ahukini had a brother and his name is **Kaulanamauna**. These are all ahupua’a or beach areas which lay fairly close in vicinity of one another [near the Project area].

**Ka Lae**, is defined literally by Pukui et al. 1976;71, as “the Point.” Ka Lae is further described as, “southernmost point in all the fifty states. A rock in the sea here called **Pōhaku-wa’a-Kauhi** (Kauhi canoe stone) is believed to have been a canoe from Kahiki [Tahiti].” According to Pukui (1969), most early written work on **Ka Lae** define Ka Lae as the general area at the southernmost tip of Hawai’i Island as well as its headland. The Coastal Geodetic Survey maps use the term Ka Lae for the headland. The term, South Point, refers to both and headland and the adjacent land and coastal areas. For the purposes of this Project, Ka Lae and South Point are used interchangeably. Additional place names for Kamā’oa are provided in the Table 1.

**Table 2.** Place Names of Kamā’oa (Source: Bautista et. al, 2017)

Place Name	Meaning
‘Alalākeiki	Cave; literally, “child’s wail” (believed to be heard here)
Hala’ea	The name of the current coming from the east at Ka Lae (South Point), Hawai’i, which meets a current from the west named Kāwili; the two currents go out to sea together. Hala’ea was named for a chief. A stone on the shore nearby, Pōhaku-o-ke-au (stone of the time), is believed to turn over in strong seas, an omen of coming change
Hālī’i	A broad area inland, between Pu’u Mau’u and Ka Lae Pa’akai; literally, “strewn”
Hālī’ipa’akai	The name may apply to a cave at the shore near Mahana or to a small point containing the cave. The name may refer to the making of sea salt; literally, “salt strewn.”
Hanalua	A bay located below Kīpuka Hanalua
Kalaepa’akai	Point where salt was probably made; literally, “the salt point”
Ka’ahue	Cave at the shore of a small bay and a kīpuka inland
Ka’alo	Place at the mouth of Kahawai Kolono; bend in the coast west of South Point, Hawai’i; fishing is good here in calm weather; a pier

Place Name	Meaning
	built here some years ago against the advice of local Hawaiians was soon destroyed by the elements; literally, “the avoidance”
Kahawai o Lono	Stream; a large dry gulch washed by downpours, which extends to the sea [at Ka‘alo] just above South Point. Lono was embodied in the rain cloud, and in the sound of thunder; misspelled “Kahawai Kolono” by USGS; lit. stream of (the god) Lono
Kahukupoko	Point; a small point
Kalalea	Heiau; well-preserved fishing shrine at Ka Lae, Hawai‘i; it was taboo to women. Offerings are still placed there. A stone nearby is called Pōhaku-o-ke-au, which may be translated ‘stone of the current’ (referring to intersecting currents; see Hala‘ea) or ‘stone of the times,’ referring to the belief that the stone turned over if there was to be a change in government; lit. “prominent”
Kamā‘oa Homesteads	Homestead; located in upland Kamā‘oa
Kananaka	Place at the shore above Pali Hā‘uke‘uke
Kapu‘uone	Surf; ancient surfing area on the east side of Ka Lae; lit. “the sand hill”
Kaulana	Bay; a small boat launching ramp was constructed here; lit. “[boat] landing”
Kāwili	Current; a current coming from the west to Ka Lae; see Hala‘ea; lit. “twist”
Kīpuka Hanalua	Kīpuka (clear place within a lava bed where there may be vegetation) located above Hanalua Bay, northeast of Ka Lae
Kīpuka Ka‘ahue	Kīpuka located above Ka‘ahue Cave
Kīpuka Kamao	Kīpuka located below Kīpuka Kuniau, elev. 120 ft to 160 ft
Kīpuka Kuniau	Kīpuka located above Kīpuka Kamao, elev. 160 ft to 200 ft
Kīpuka Mali	Kīpuka located at elev. 700 ft
Kīpuka Pu‘u Kou	Kīpuka located at elev. 900 ft
Lalahala	Cove; lit. “pandanus tree branch”
Lua Mākālei	Cave; a very large lava tube designated Makalei Shelter, Site H2, by Bishop Museum; lit. “pit of Mākālei”
Lua o Palahemo / Palahemo	Pit; a famous water hole east of Ka Lae and near the shore, believed to be connected underground to the sea and haunted by a <i>mo‘o</i> (water spirit) of the same name; in times of rain it was taboo to bathe there; lit. “pit of Palahemo [loose dab of excreta]”
Lua Keananolo	Cave located at the shore north of Ka Lae
Mahana Bay	Bay; a bay formed in an eroded littoral cone, breached by the sea
‘Ōnikinalu	Cove located below ‘Ōnikipuka Ridge
‘Ōnikipuka Ridge	Place near the shore above ‘Ōnikinalu
Pali Hā‘uke‘uke	Point located at the shore below Kananaka; lit. “sea urchin ( <i>Colohocentrotus atratus</i> ) cliff”



Place Name	Meaning
Papakōlea	Place; beach 3 miles northeast of Ka Lae, Hawai'i (adjacent to Mahana Bay) famous for its sand consisting predominantly of green olivine crystals; lit. "plover flats"
Pōhakuokeau	Stone; a stone located just outside the stone wall on the east side of the Coast Guard station, near Kalalea <i>heiau</i> ; lit. "stone of the current" (referring to intersecting currents; see Hala'ea) or "stone of the times" referring to the belief that the stone turned over if there was to be a change of government
Pohokinikini	Place located at elev. 500 ft; lit. "many hollows"
Pu'u Ali'i	Place; a small sand dune east of Ka Lae; archaeological site designated H1 by Bishop Museum and described in several reports by K.P. Emory, W.J. Bonk, Y.H. Sinoto, M. Kelly; lit. "royal hill"
Pu'u Huluhulu	Knoll located elev. 600 ft; lit. "shaggy hill"
Pu'u Maemae	Knoll located near Pākini Iki-Kāma'oa boundary at elev. 960 ft; site of a group of wind driven electrical generators
Pu'u Mau'u	Point located east of Mahana Bay, of less than 40 ft elev; lit. "grass hill"
Pu'u o Mahana	Cone; a littoral cone breached by the sea forming Mahana Bay. Source of olivine crystals forming the famous Green Sands beach at Papakōlea
Pu'u 'Ula'ula	Knoll; site of Palahemo trig. station, elev. 175 ft; also called Pohakuloa; lit. "red hill"

### 3.1.4 Mo'olelo

Kamā'oa-Pu'ueo Ahupua'a is associated with various mo'olelo that not only characterize the people and physical landscape of that place, but also suggest that the place was once well-populated. These mo'olelo are described in more detail below. This section highlights mo'olelo directly related to Kamā'oa-Pu'ueo Ahupua'a, such as the story of the Ipu Vine and those associated with Pele and her mother Haumea. Relevant mo'olelo from the larger district of Ka'ū are also included that describe the rebellious nature of the Ka'ū people, a characteristic that remains today.

#### 3.1.4.1 The Ipu Vine

This mo'olelo is a love story about an ali'i couple in Ka'ū who ran away and married despite the disapproval of their respective families. The couple became the chief and chiefess of their land and eventually the chiefess became pregnant. However, she died in childbirth. She was laid to rest in a burial cave and it is said that a vine sprouted from her navel and extended across the plains of Kamā'oa. The chiefess appeared to her love in a dream which led him to the cave where he discovered the vine. The vine is said to have produced a gourd from which two seeds emerged that turned into twin girls. The birth of twins is thought to be a common

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phenomenon of the people of this land. The following is an excerpt from Caren Loebel-Fried's (2010:1–36) version of the story:

The chief brought the gourd home and wrapped it in layers of soft kapa cloth. The next morning, he discovered the gourd had cracked, and into his palms fell two seeds. Suddenly, the seeds began to grow. Two warm soft balls covered with downy hairs quickly filled his hands, sprouting arms and legs. Soon he held in his arms two baby girls. He joyfully hugged the twins and they giggled, grabbing his fingers and holding so tightly, the chief remembered the tendrils of the gourd vine. He knew these girls would be strong and grow up with firm ties to their people and their land. And so the twins grew to be powerful women and great warriors who had many children of their own. The years and generations followed and the twins of the gourd became ancestors to many people. Like the gourd vine, the family spread and settled all over the Kamā'oa Plain. Near the shore lived fishermen, in the valleys and up the slopes of Mauna Loa lived farmers. The fishermen and farmers traded and shared food from the land and the sea. Soon descendants of the twins numbered in the thousands. And the people called themselves, 'The Children of the Gourd.'

#### **3.1.4.2 *Lua o Makalei and Haumea***

Lua o Makalei is a cave at South Point that is associated with Haumea, the goddess of fertility and childbirth and mother of Pele (Soehren 2010). According to Martha Beckwith (1970: 297):

By rebirths she changes herself from age to youth and returns to marry her children and grandchildren...and transforms herself into a growing tree in which she conceals her husband from those who are leading him away to sacrifice. She is possessor of the stick Makalei which attracts fish. With the stick (or tree) Makalei is associated a tree of never-failing food supply. [Beckwith 1970:297]

#### **3.1.4.3 *The Winds of Ka'ū***

The winds of Ka'ū, off of Ka Lae, are referenced by Fornander (1917:590–591) in the following chant:

Na pu'u e napu'u  
Na Puulena i Kauhako i Pakini,  
Lele mai ka okai makani mai lalo o ka lua.  
He makani lawe i ka waa lawaia,  
Na pu'u e napu'u  
Na Puulena i Kahuku i Pakini,  
Lele mai ka okai makani mai lalo o Kailua.  
He makani lawe I ke kapa lawaia la e

The hills, yea, the hills.  
The hills at Pu'ulena, at Kauhako, at Pakini  
The wind from below, from within the hole sweeps up.  
It is the wind that carries away the fishermen's canoes.

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The hills, yea, the hills.  
The hills at Pu'ulena, at Kahuku, at Pakini  
The wind from the lower end of Kailua sweeps up.  
It is the wind that carries away the fishermen's clothes.

#### **3.1.4.4 Kūmauna, Kū of the Mountain**

"Ku-mauna (Kū of the mountain), according to Beckwith (1970:17), is one of the forest gods banished by Pele for refusing to destroy Lohiau at her bidding. He is said to have lived as a banana planter in the valley above Hi'ilea in Ka'ū where he incurred the wrath of Pele. Today, the large boulder of lava which retains his shape in the bed of the valley is worshiped as a rain god. Kūmauna is the local deity of rain in the Hi'ilea vicinity. Kūmauna is directly related to the Project area because lineal descendents of Kamā'oa state, in Section 4.41, that Kūmauna can be seen from Palahemo at South Point.

Kūmauna is known for growing the iholena variety of banana and an extensive plantation of iholena banana remains the base of Pu'u Kaiholena that perhaps were the remains of Kūmauna's plantation. Beckwith (1970:18-19) tells the following story of Kūmauna:

A tall foreigner comes from Kahiki and cultivates bananas of the iholena variety in a marshy spot of the valley. Pele comes to him in the shape of an old woman and he refuses to share his bananas with her. She first sends cold, then, as he sits doubled up with his hands pressed against his face trying to keep warm, she overwhelms him with a stream of molten lava. In this shape he is to be seen today encrusted in lava. Sick people are sometimes brought to a cave near the place where stands Kumauna and left there overnight for healing. In case of drought an opelu fish is brought from the sea and struck against the rock in order to call the rain god's attention to the needs of his worshipers. In case a fish of the proper variety is lacking, a rare plant growing in the vicinity, which has leaves mottled like the sides of the opelu, may be used as a substitute. But all this must be done with the greatest reverence. Visitors to the valley are warned to be quiet and respectful lest a violent rainstorm mar their trip to the mountains. The story told of Johnny Searle has become a legend of the valley and a warning to irreverent foreigners. About the year 1896, while Johnny Searle was manager of Hi'ilea sugar plantation, there occurred a prolonged drought and one evening as he was riding home down the valley with a party of Hawaiian goat hunters he raised his gun and shot at the Kumauna boulder, exclaiming, "There, Kumauna! Show your power!" The shot broke off a piece from a projecting elbow, which some say he took home and threw into the fire. His companions fled. That night (as the story runs) a cloud-burst rushed down the valley and flung great stones all over the back yard of the plantation house, where they may be seen today as proof of the truth of Kumauna's power.



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#### 3.1.4.5 The Oppressive Chiefs of Ka'ū

The people of Ka'ū are known for their independence and dignity and though ruled by various ali'i (chiefs), they were known to usurp rulers that were abusive (Kelly 1980). Malo (1951:195) named three of these chiefs from Ka'ū whose deaths were attributed to the abuse of their people: Hala'ea, Koihala, and Kohā-i-ka-lani. Hala'ea is directly associated with the Project area, as it is the name of the easterly current at Ka Lae which meets the westerly current, named Kāwili. Pukui and Green (1995) describe the death of Hala'ea:

A greedy chief was Hala'ea. Every day he visited the fleet of fishing canoes and took for himself and his retainers all the fish he could find. Then he held a feast, carousing and often wantonly wasting the food that remained. As for the fishermen, they were obliged to catch the fish without ever having any to take home to their families. Day after day, they ate herbs for food. This conduct of the chief greatly vexed the people, and they sought means to rid themselves of his oppression. Never did they go out upon the ocean without hearing on their return the voice of their chief crying, 'The fish is mine! Give me the fish!'

At last came the season for 'ahi, the tuna, and a proclamation was made, summoning the head fishermen to accompany their chief to the fishing grounds. So they gathered together and prepared their canoes, looking after the nets, the bait, and whatever else was required for the expedition. Also, they held a council at which it was agreed to deposit all their fish in the chief's canoe and themselves return to the shore without even a backward glance. At the day appointed, everything was in readiness from Wai'ahukini to Keauhou.

When the first canoe-load was conveyed to the chief's canoe, even then the voice of the chief could be heard protesting, 'Bring me the fish! Bring me the fish!' But when the second, third, fourth, fifth, and succeeding canoes had deposited their loads into the chief's canoe and he saw there was danger of swamping the canoe with their weight, he called out, 'The chief has fish enough!'

'Not so!' cried the men. 'Here is all the fish that the chief desires!' They piled in the last load, and the canoe began to sink rapidly. The chief looked about for help, but there was no canoe at hand and no man to show compassion; all had gone back to land. So perished Hala'ea in the sea, surrounded by the objects of his greed.

[Pukui and Green 1995:74-75]

Another oppressive chief, Kohā-i-ka-lani, ordered the people from Punalu'u and Hīlea to carry thousands of baskets of pebbles from beaches of Koloa in Nīnole, to Makaanau plateau in the mauka region of the ahuapu'a of Hīlea (Kelly 1980), further east of the Project area. Pebbles were laid down as pavement for the construction of a new heiau for Kohā-i-ka-lani and pebbles were passed up the mountain by forming a human chain where not a word could be spoken or a stone dropped. The chief demanded on erecting a wooden image to be carved from the largest tree in the forest several miles away without allowing workers to tend to their food crops. He further insisted that the log be dragged up on the steep slope of the hill to the temple site but the workers became fed-up with the demands of the chief and killed him, along with the assistance of the kahuna (priest).

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In Stoke's version of the story, two names are mentioned as having built the heiau, Kohāikalani and Kaiawa or the chief who joined in the assassination of Kohāikalani. Thrum's list of heiau for Hawai'i Island, associated the name of Kuakini, a very ill-tempered chief, before Kamehameha I's time, with this heiau. That account also identifies Kāwā as the source of pebbles for the heiau (Thrum also mentions in another account that this heiau was "a luakini class, of which Kahoa-puaku, a relative of Keoua, was its priest" (Thrum 1908:78). It is speculated that the names mentioned by Thrum are more recent than those listed by Stokes (Kelly 1980). Pukui et al. (1974:141) tells that the chief killed at this heiau site was "the grandfather of chiefs mentioned in the 'Umi story" and how the heiau was later destroyed by the sugarcane plantations.

Another version of the story, called, the **Story of Koha**, was written by Z.P. Kalokuokamaile and translated by Mary Pukui<sup>1</sup>. In this version, Hīlea was said to have been the birthplace of Kohāikalani, who lived in the uplands of Hīlea. Parts of the story are shared here which tell of a landscape that once had large trees of kauila and breadfruit:

There were many houses in this place and life there, in olden times, was pleasant. The houses stood on ground composed only of earth. The chief desired much to have (his god) made of a big log and have it erected on Makaanau hill, close to the village of upper Hīlea. He ordered his kahuna to ascend with the men to cut the wood and the size of log that he desired was four fathoms in length and girded by three men. Because the kahuna hears his words, they replied, "O Chief, if that is your wish here is a large tree the kauila which would not rot when buried in the earth." Koha asked, "What kind of a tree is it?" "Here is a breadfruit tree with the size desired by the chief." The chief approved of this. "Yes, that is good." Then a large breadfruit tree, five fathoms long and could be girded by three men, was cut down, a tree the size desired by the chief.

After the log was carved, it took one week to haul the breadfruit log unsuccessfully to the temple site when finally the workers rebelled and killed the chief instead, earning a reputation for being Makaha (destroyers) and Ka'ū being known as, Ka'ū Makaha.

#### **3.1.4.6 *Ī-mai-ka-lani, the Blind Chief of Ka'ū***

The rebellious nature of the people of Ka'ū is also reflected by Kamakau's account of Ī-mai-ka-lani, the blind chief of Ka'ū who was revered for his strength and skill in battle and feared by 'Umi-a-Liloa. Kamakau describes the blind chief:

He was skilled in striking left or striking right, and when he thrust his spear (*pololu*) to the right or to the left it roared like thunder, flashed like lightning, and rumbled like an earthquake. When he struck behind him, a cloud of dust rose skyward as though in a whirlwind. 'Umi-a-Liloa feared I-mai-ka-lani... 'Umi was never able to take Ka-u. The war lasted a long time... After I-mai-ka-lani became blind the fight between him and 'Umi continued... After I-mai-ka-lani's death Ka-u became 'Umi-a-Liloa's. [Kamakau 1961:18–19]

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<sup>1</sup> Hawaiian Ethnographic Notes, Vol. 2: 147-148, Bishop Museum Library.

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#### 3.1.4.7 Pele

The lands of Kaʻū, including the Project area, are often associated with Pele because of the close vicinity of Kīlauea and Mauna Loa. Westervelt (1916) wrote of Pele's retaliation to being angered by some young chiefs in Kahuhu, an ahupuaʻa west of Pakini Nui: "floods of lava, obeying the commands of the goddess, spread out over the land of the chiefs so that from the mountain to the sea the luxuriant lands became desolate" (Westervelt 1916:25). Handy and Handy (1972:545) also describe the ahupuaʻa of Kamāʻoa as the homeland of one group of early settlers who in historic times have called themselves the 'clan of Pele.'

#### 3.1.4.8 Puʻu ʻEnuhe

The moʻolelo of Puʻu ʻEnuhe, or Caterpillar Hill, is told by Pukui ( In Handy and Handy 1970: 146) in the following account:

In Kaʻu, Hawaiians never burned the fields because it was believed that an epidemic of caterpillars would follow. Puʻu ʻEnuhe, or "Caterpillar Hill, is a hill in Kaʻu where Kumuhea, the caterpillar god lived. Because of his cruel treatment of his wife, whose only food was sweet potato leaves (which is the food of caterpillars), his father cut him up and made little caterpillars of him. It was because Kumuhea chose to live in Kaʻu, that his district was the home of caterpillars. Kaʻu has ever been subject to caterpillar epidemics, when the caterpillars swarm over everything, eating grass, the foliage of taro and potatoes, and even stripping the trees. It is because of this that Kaʻu has been a land of periodic famines.

It is believed that the ʻenuhe were forms (kino lau) of Kumuhea and kapu to certain families, thus, when a farmer in Kaʻū finds the first caterpillar on this sweet potato patch, he plucks the caterpillar off the leaf and carries it to the corner of his patch, lays it on a mound of sweet potatoes and says to the caterpillar:

O Kumu-hea, eat all you want [of the leaves],  
Leave your excrement for me, the human being,  
That I may have life and those of my household,  
That the animals may have food and the strangers,  
that may come to our house.

"Excrement" referred to the sweet potato in the mounds. Pukui also adds that when the fat green caterpillars came, they were not killed. A caterpillar plague was told to have occurred in December of 1900 which lasted for one week and "there were millions moving down the slopes to seaward, leaving destruction in the fields" (In Handy and Handy, 1970:146).

#### 3.1.5 ʻŌlelo Noʻeau (Proverbs)

Many ʻōlelo noʻeau originate from Kamāʻoa-Puʻueo Ahupuaʻa and from Kaʻū that further describe and characterize the land of the Project area. These sayings are associated with and reference important wahi pana, chiefs, and physical attributes of the area's landscape, such as its arid soil conditions, water, rain, wind, and ocean conditions. These ʻōlelo noʻeau are listed in Table 3 with their corresponding meanings and translations. Except for the first ʻōlelo noʻeau, the ʻōlelo noʻeau are taken from Pukui's (1983) *ʻŌlelo Noʻeau: Hawaiian Proverbs and Poetical Sayings*.



**Table 3.** ‘Ōlelo No‘eau of Kamā‘oa-Pu‘ueo Ahupua‘a and Ka‘ū

‘Ōlelo No‘eau	Meaning / Translation
1. E ho‘i Ka‘ū i Pala-hemo	“Go back to Ka‘ū and Palahemo” which Pukui et al. (1976:176) note is “an insult, since Pala-hemo means ‘loose dab of excreta’, a name given because markings on the walls of the hole suggesting excreta.”
2. ‘Ōlelo No‘eau #1257: I puni ia ‘oe o Ka‘ū a i ‘ike ‘ole ‘oe ia Palahemo, ‘a‘ohe no ‘oe i ‘ike ia Ka‘ū.	If you have been around Ka‘ū and have not seen Palahemo, you have not seen the whole of the district. [Pukui 1983:136]
3. ‘Ōlelo No‘eau #1292: I puni ia ‘oe o Ka‘ū a i ‘ike ‘ole ‘oe ia Palahemo, ‘a‘ohe no ‘oe i ‘ike ia Ka‘ū. Ka hālau a ‘Ī.	The house of ‘Ī. The descendants of ‘Ī, who extended through Hāmākua, Hilo, Puna, and Ka‘ū. One of these was ‘Īmakakoloa, who was condemned to death by Kamehameha. According to the historian Kamakau, ‘Īmakakoloa was put to death in Kamā‘oa. But according to the people of Ka‘ū, a junior kinsman of similar appearance was substituted at the execution. [Pukui 1983:141]
4. ‘Ōlelo No‘eau #1292: Ka nui e pa‘a ai i ka hue wai.	The size that enables one to carry a water bottle. Said of a child about two years old. In Ka‘ū, where fresh water was scarce and had to be obtained from upland springs, every person who went helped to carry home water. When a child was about two, he was given a small gourd bottle for carrying water. [Pukui 1983:163]
5. ‘Ōlelo No‘eau #1559: Ka‘ū, ‘āina kua makani.	Ka‘ū, a land over whose back the wind blows. [Pukui 1983:168]
6. ‘Ōlelo No‘eau #1576: Ka ua kūnihi a Ka‘upena.	The rain of Ka‘upena that turns aside. Ka‘upena was a seeress of Kamā‘oa Plain, in Ka‘ū. Whenever rain approached, she called it to come to her home and to leave the homes of her neighbors alone so that their crops would not be ruined by a too-early rain. The rain obeyed. [Pukui 1983:170]
7. ‘Ōlelo No‘eau #1609: Kau ‘ino na wa‘a o Ka‘alu‘alu	The canoes hasten ashore at Ka‘alu‘alu. Said of those who hurry away from the scene of trouble. Ka‘alu‘alu is a beach in Ka‘ū, Hawai‘i, where fishermen hastened away from Hala‘ea after unloading their fish onto his canoe. [Pukui 1983:174]

<b>‘Ōlelo No‘eau</b>	<b>Meaning / Translation</b>
8. ‘Ōlelo No‘eau #1610: Ka‘ū, I Palahemo.	Palahemo is a pool near Kalae in Ka‘ū. Salt water is found under the fresh water, and any disturbance, like the dropping of a heavy stone, reverses the water, so that the salt water rises to the top. This place is famed in songs and chants. [Pukui 1983:174]
9. ‘Ōlelo No‘eau #1620: Ka‘ū lepo ‘ual‘ula.	Ka‘ū of the red earth. Said of the natives of old Ka‘ū, who were one vast family. Because of pride in their own people and homeland, Ka‘ū people intermarried until they were of one blood and as one with their homeland. [Pukui 1983:175]
10. ‘Ōlelo No‘eau #1629: Ka‘ū mākaheka.	Ka‘ū of the fierce fighters. The district of Ka‘ū, Hawai‘i, was known for its fierce and independent warriors. Kohhāikalani, Koihala, and Hala‘ea, selfish and oppressive chiefs, were each destroyed by rebellious subjects. [Pukui 1983:176]
11. ‘Ōlelo No‘eau #1630: Ka‘ū malo ‘eka, kua wehi.	Ka‘ū of the dirty loincloth and black back. The soil of Ka‘ū is not easy to till. The farmers there squatted on their haunches and worked the soil with short digging sticks. The sun darkened the backs of the workers. [Pukui 1983:176]
12. ‘Ōlelo No‘eau #1695: Ke hele mai la ko Ka‘ū; He iho mai la ko Palahemo; He hōkake a‘e la i Manukā; Haele loa aku la i Kaleinapueo.	There come those of Ka‘ū; those of Palahemo descend; those of Manukā push this way and that; and away they all go to Kaleinapueo. Said when one tries to find out something about another and meets with failure at every turn. [Pukui 1983:182]
13. ‘Ōlelo No‘eau #1762: Ke kula wai‘ole o Kamā‘oa.	The waterless plain of Kamā‘oa. The plain of Kamā‘oa, in Ka‘ū, was well populated, but its people had to go upland for their water supply. [Pukui 1983:189]
14. ‘Ōlelo No‘eau #2068: Mai ka uka a ke kai, mai kāhi pae a kāhi pae o Ka‘ū, he ho‘okāhi no ‘ohana.	From the upland to the sea, from end to end of Ka‘ū, there is only one family. The inhabitants of old Ka‘ū were of one family. [Pukui 1983:225]
15. ‘Ōlelo No‘eau #2939: Wili i ke au wili o Kāwili	Swirled about by the swirling Kāwili. Said of a confusing, bewildering situation. Kā-wili (Hit-and-twist) is a current at Ka Lae, Ka‘ū, that comes from the Kona side and flows out to

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‘Ōlelo No‘eau	Meaning / Translation
	the ocean. It is the rougher of the two currents that meet off Ka Lae. [Pukui 1983:321]

### 3.2 WRITTEN HISTORY of KAMĀ‘OA-PU‘UEO AHUPUA‘A AFTER EUROPEAN CONTACT (1778)

#### 3.2.1 Early Explorers

Captain James Cook arrived in the Hawaiian Islands on January 18, 1778. A year later, he visited Ka‘ū and recorded a large village at South Point. He and his crew members were not impressed with the food that the Hawaiians shared with them and were not enamored by the harsh landscape of Ka‘ū. The first written account of Ka‘ū was documented by Lt. James King who was on the 1779 voyage of Captain James Cook:

The coast of Kaoo [Ka‘ū] presents a prospect of the most horrid and dreary kind: the whole country appearing to have undergone a total change from the effects of some dreadful convulsion. The ground is every where covered with cinders and intersected in many places with black streaks, which seem to mark the course of a lava that has flowed, not many ages back, from the mountain Roa [Mauna Loa] to the shore. The southern promontory looks like the mere dregs of a volcano. The projecting headland is composed of broken and craggy rocks, piled irregularly on one another, and terminating in sharp points. [King 1784:104]

In 1794, Archibald Menzies, a surgeon and naturalist on Captain George Vancouver’s voyage, was one of the first foreigners to visit Ka‘ū who also noted the harsh conditions of Ka‘ū (Menzies 1920:184). Menzies was on a mission to climb Mauna Loa and traveled through Ka‘ū on his way. Along his journey, he recorded many of his observations. Between Honu‘apo and Nīnole, south of the Project area, Menzies (1920: 186) wrote the following:

“without even a hut or the least arable land for a considerable distance, and so arid that we could get no water to quench our thirst or refresh ourselves... by the time we got through this dreary tract, we were ready to drop with thirst, hunger and fatigue.

He also described a fine fertile valley [where he] put up for the night at a village called Kioloku, on a rich plantation belonging to Keawe-a-heulu. Menzies wrote:

. . . This was by far the most populous village we had yet met with since we left Kealakekua. Towards the dusk of the evening, there fell some showers of rain which gave a gay and refreshing look to the most enchanting scenes of rural industry with which we were surrounded. The economy with which these people laid out and managed their ground and the neatness with which they cultivated their little fields made the whole valley appear more like a rich garden than a plantation. A stream of water which fell from the mountain through the middle of it was ingeniously branched off on each side to flood and fertilize the most distant fields at pleasure. [Menzies 1920:184–185]



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As he travelled east through the ahupua'a of Honu'apo, east of the Project area, Menzies described the agricultural practice of the area:

. . . the people everywhere busily employed in their little fields, many of which were here cropped with plantains and bananas that had a ragged appearance from having little or no shelter, yet they bore fruit tolerably well. We seldom observed these vegetables cultivated so low down on the western side of the island, where they generally occupy the verge of the forest, a situation which for shelter seems more congenial to their tender feelings. We observed here that they suffer many of their fields here and there to lay fallow, and these in general were cropped with fine grass, which they cut down for the purpose of covering their new planted fields of taro or yams to preserve them from the powerful heat of the sun. [Menzies 1920:185–186]

Approximately 29 years later in July, 1823, a Protestant missionary from Boston known as Reverend William Ellis, visited the Ka'ū District, following Menzie's same route. He provided insight into the population, history, and landscape of the region. He described Hīlea as a pleasant village belonging to Kuakini, the governor of Hawai'i at the time, who had inherited land from his parents, Nāmāhana and Ke'eaumoku. Ellis also reported a number of artificial fishponds there. According to Ellis, the head man at Hīlea begged them to stay long enough for him to prepare a meal for them, saying he had "hogs, fish, taro, potatoes, and bananas in abundance." The man also expressed fear that the governor might be displeased if he heard that the people of his village did not feed and entertain his friends when they passed through. Ellis recorded that he could see the hill called Makanau which he described as where "Keoua, the last rival of T[K]amehameha, surrendered himself up" (Ellis 1963: 1431).

The missionaries first initiated population census reports for the Hawaiian Islands in 1831-1832 and 1835-1836 (Schmitt 1973:30). During the 1830s Protestant missionaries based in Kona and Hilo made occasional tours into Ka'ū, but a permanent missionary presence was not installed until the early 1840s when Catholic and Protestant missions were established in the district. The first census of Ka'ū was conducted by missionaries in 1831-1832, recording a total population of 5,800 in the district of Ka'ū. The first official government census in 1847, showed that the population decreased to 3,010. By 1853, the population consisted of only 2,210 and Ka Lae is estimated to have had a population of about 150 people.

### **3.2.2 The Great Māhele (1848)**

Prior to 1848, all land in Hawai'i belonged to 'akua (god), held in trust by the paramount chief and managed by lesser chiefs. In 1848, Kamehameha III decreed a division of lands called the Māhele, which privatized the ownership of land in Hawaiian society (Chinen 1958). In 1848, lands were divided into crown lands, government lands, and lands set aside for the chiefs. Individual plots, called kuleana awards, were granted within these divided lands to native inhabitants who lived on and farmed these plots and who came forward to claim them. Chiefs and konohiki were required to pay taxes for their lands and awardees usually "returned" a portion of the lands awarded to pay the commutation fee for the lands they "retained." The returned lands usually became government lands (Chinen 1958:13).

In 1950, the Kuleana Act was legislated allowing Hawaiians to own land parcels which they were currently and actively cultivating and/or residing. Theoretically, hundreds of thousands of acres were set aside as potential kuleana parcels which led to about 10,000 claimants obtaining approximately 30,000 acres. The konohiki, 252 chiefs, divided up about a million acres. Many Hawaiians were disenfranchised through this process (Cordy et al. 1991).

In the Māhele, Kamā'oa Ahupua'a was granted to Leleiohoku who returned it in commutation for lands elsewhere. Kamā'oa was retained by the Government. Māhele records indicate that numerous Land Commission Awards (LCA)s were claimed in Kamā'oa, however, many of them were not awarded. In the 'ili of Kalae, three kuleana claims were made, and all were awarded. These LCAs are shown in Table 4 and indicate that inhabitants were growing sweet potato at Kalae.

**Table 4.** Land Commission Awards in Kamā'oa Ahupua'a

LCA Number	Awardee	Royal Patent Number	Acres	Land Use
9249	Kaoo	-	5.5	One 'apana: one house lot, three sweet potato kihāpai (fields)
9249B	Molaolao	5115	7.75	One 'apana: four sweet potato kihāpai
9249C	Kuaipalahalaha	7098	4	One 'apana: five sweet potato kihāpai

The specific locations of these awards are unknown; all are described in testimony as being bound by "konohiki" land. The modern tax map includes a notation categorizing LCA 9249-C as "Unlocated," and does not depict nor provide any notation for LCAs 9249 or 9249B (see Figure 2), or any other LCAs in Kamā'oa. Bautista et. al (2017) suggest that the approximate location for LCA 9249C might have been north of the proposed parking lot at the Barracks.

### 3.2.3 Plantation Era (Mid 19<sup>th</sup> to 20<sup>th</sup> Century)

#### 3.2.3.1 Cattle Ranching

Ranching activity in Ka'ū began after 1850 when Princess Ruth Ke'elikolani started Ka'alu'alu Ranch with cattle brought from Waimea. Cattle continued to be shipped out of Ka'alu'alu at least until the 1920s. Organized cattle ranching was focused at Ka'alu'alu, Kahuku, and Kapāpala. Ka'alu'alu had become a focus of activity as the export of agriculture and livestock began to dominate the Ka'ū economy. In 1852, an improved, 7-mile-long cart road was constructed between the harbor and Wai'ōhinu.

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### **3.2.3.2 Commercial Sugar Cane Agriculture**

Sugar came to dominate economic, political, and social life in Hawai'i and in 1866, the first sugar mill in Ka'ū was established in Wai'ōhinu. In 1868, Alexander Hutchinson built the Nā'alehu Sugar Mill in Nā'alehu, bought the Wai'ōhinu Sugar Company in 1877, started a plantation and mill at Hīlea, and in 1879, started another mill in Honu'apo. After Hutchinson died in 1879, the W.G. Irwin continued the Hutchinson Sugar Plantation Company. The Honu'apo Wharf was built in 1883 to ship out sugar from Ka'ū so a system of flumes and railway lines were also built to transport raw sugar and molasses to Honu'apo. The mill at Hīlea was gone by 1907.

In 1919, Hutchinson's company merged with C. Brewer and Company, who owned most the land at South Point, and continued to produce sugar through the early 1940s. By 1942, the wharf at Honu'apo was closed and raw sugar was shipped from Ka'ū to Hilo by truck for shipping to California.

Native Hawaiian populations could not meet plantations' needs for a constant supply of cheap labor so foreign labor was imported by plantations particularly from Japan, China, and the Philippines. This changed the social and cultural fabric not only of Ka'ū but all of Hawai'i. In 1876, Hutchinson brought in laborers from China to work in the sugar cane fields. Soon afterwards, Portuguese, Japanese, and Pacific Islanders were brought in 1880s, and Filipinos arrived at the beginning of the 1900s. Plantation camps were established to house plantation workers and they were often divided by ethnicity. By the 1960s, sugar production was cheaper in other parts of the world and in 1972, the Honu'apo mill closed. However, the sugar industry continued in Ka'ū to a certain extent until 1996 and ranching persisted as the main economy at Ka Lae. During the latter part of the twentieth century, sugarcane agriculture became replaced by macadamia nut and coffee farm ventures which continue in Ka'ū today.

### **3.2.4 Recent Years: 1900s**

#### **3.2.4.1 Military**

The Kalae Lighthouse at South Point was established by a 1908 Presidential Proclamation. In 1926, Executive Order 258 established 517 acres in Ka Lae for a U.S. Air Service military reservation airplane landing field called Morse Field. In 1940, an additional 182.38 acres was set aside for the Kalae Military Reservation. Construction of Morse Field began in 1940 but was halted in 1941 and adjacent landing areas were destroyed as a precautionary measure against enemy use. A water line to Morse Field Barracks was completed by 1941. By 1947, Morse Field came under the management of the Hawaii Aeronautics Commission. In 1948, the airstrip was retained as an emergency landing field. By 1952, the airfield was found to be in poor condition due to erosion of the runway. Bautista et. al (2017) suggests that by the 1950s, a number of roads were established around Morse Field, as a result of military reservation development.

#### **3.2.4.2 Current Land Use**

The DHHL acquired the lands of Kamā'oa-Pu'ueo in 1970. Since that time, limited development has occurred within the Project area. However, an increase in tourism to South Point has occurred in recent years, attributed to sites like Māhana Bay and the growing prominence of Ka Lae as the Southern-most point of the United States of America. Unregulated recreational use has led to severe degradation of the DHHL lands at South Point.



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## 4 COMMUNITY CONSULTATIONS

### 4.1 Interviews and Statements

Throughout the course of this assessment, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the study area. This effort was made by letter, e-mail, telephone and in person contact. The initial outreach effort began in June, 2017 and was completed in November, 2017. A list of entities contacted for this assessment is shown in Table 1.

TSI attempted to contact 36 community members, government agencies, community organizations, and individuals, including residents, “recognized” descendants, and cultural practitioners. Of the 15 people that responded, five kūpuna (elders) and/or kama‘āina (Native-born) participated in formal interviews for more in-depth contributions to the CIA and four people provided a statement via e-mail. However, one individual chose to remove their statement from the study. Three interviews from previous TSI work at South Point were also included resulting in a total of eight individuals who provided in-depth information in interviews for this Project.

TSI initiated the interviews with questions from broad categories such as wahi pana and mo‘olelo, agriculture and gathering practices, freshwater and marine resources, trails, cultural and historic properties, and burials. The interviews were conducted from August to October, 2015 and from May to November, 2017. Participants’ biographical backgrounds, comments, and concerns about the proposed development and study area and environs are presented below.

### 4.2 Acknowledgement

The authors and researchers of this report extend our deep appreciation to everyone who took time to speak and share their mana‘o (thoughts, ideas, opinions) with TSI whether in interviews or brief consultations. We request that if these interviews are used in future documents, the words of contributors are reproduced accurately and not in any way altered, and that if large excerpts from interviews are used, report preparers obtain the written consent of the interviewee/s.

### 4.3 Statements

#### 4.3.1 Jeffery Kekoa

Jeffrey Kekoa, the president of the Ka‘ū Hawaiian Home Lands Association, called TSI on July 13, 2017 to discuss his thoughts on the South Point Resources Management Plan. There are several features at South Point he thought were culturally significant. These include the canoe mooring holes, Kalalea Heiau, endangered native plants, and a historic rock wall that extends north from Ka Lae. These are located in the vicinity of the United States Coast Guard’s (USCG) lighthouse at South Point. According to Mr. Kekoa, there is an opening in the rock wall where a gate used to be located. “The gate was always locked and was only opened by the USCG for access to maintain the lighthouse,” he said.

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Mr. Kekoa is concerned about the opening in the rock wall where many fishermen drive through to access Kalalea Heiau because they drive over endangered native plants. He added that people park next to and tie down their tents to the heiau. He explained that in the past, when the rock wall was in-tact and the gate locked, no one would drive in. "You would park outside and carry your stuff in. Most of the campers/fishermen today are from Hilo or Kona side of the island and they stay there for days," he said.

A group of volunteers offered to restore the rock wall and enclose the opening.

He is aware that the environmental review might be a lengthy process that would take time before actions proposed in the South Point Resource Management Plan can be implemented. He is frustrated with the process and asked whether there are short term actions that can be implemented without the need for environmental review.

He referred to the two portable toilets currently near the hoist, which are paid for by a non-profit group of Ka'ū. "There is a need for more toilets that should be located at the old Barracks site," he said. "There are no trash receptacles so trash is piled next to the outside of these toilets. The toilets and trash cans should be installed and paid for by DHHL. The DHHL Commission knows but nothing is being done," he said.

He recommended that a cultural center with an educational program that utilizes cultural practitioners to teach children should be established at South Point.

Mr. Kekoa does not condone the illegal shuttle service currently taking tourist to Māhana. "Driving sometimes as much as 30 trucks back and forth daily is desecrating our fragile coastline," he said.

He believes that the main reason for South Point Resource Management Plan is to protect and preserve the natural and cultural resources of Ka'ū.

#### **4.3.2 Keoni Fox**

On October 7, 2017, Mr. Keoni Fox sent a letter in an E-mail to TSI sharing his mana'o regarding the proposed Project. The following is the letter that he provided:

Thank you for providing this opportunity to share my concerns regarding the priority Resource Management Plan projects specifically potential impacts to cultural resources and practices in the ahupua'a of Kama'oa-Pu'ueo. My main concern with any planned action is the need to maintain the cultural integrity and the natural landscape. It is important that we maintain the sense of place at Ka Lae. As a wahi pana, respect for Hawaiian culture and history is paramount. Although we are experiencing high demands for visitor and recreational use, we cannot allow tourism and off-road enthusiasts to continue to adversely impact our lands and resources. I have the following comments:

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A: The installation of an entrance gate at the intersection of Kalae Rd. and South Point Rd, and a security booth 0.75 miles north of the intersection along South Point Rd; I have no concerns as long as pedestrian access for cultural practitioners is permitted 24/7 and parking is available along South Point Road. Once the gate is installed, safeguards should be put in place to deter driving into the area from other access points.

B: Two designated parking areas at the “Barracks” near the Kaulana Boat Ramp and at Ka Lae; The parking lot near the fishing hoist should be established on the east side of Ka Lae Road outside of the historic wall around the point. It is my understanding that the wall may have been installed long ago to protect the more sacred areas of Ka Lae. Over the years, many breaks in the wall were made to allow for vehicular access. It is my hope that the Department will allow the community to repair and restore the wall in the future.

C: A cultural interpretive walking trail with associated signage/protective barriers around cultural sites; Please work with the community and any future advisory group in the development, design and exact placement of any interpretive signage. The content of signage which provides cultural and historical information should come from descendants of the area. The pathway should be as natural as possible to blend in with the environment. I strongly discourage any use of asphalt, concrete or man-made materials for the pathway.

D: A pedestrian path and an emergency access road extending from the “Barracks” to Mahana (Green Sands) Bay Please engage an archaeologist to complete an AIS prior to design and development of any emergency access road. The area to the east of the barracks is known as Kapalaoa and it is known to have many cultural sites and ancient trail segments. I would strongly recommend that the road be as natural as possible to blend in with the environment and usage be limited for emergencies and maintenance of the area only by custodial staff, security, first responders and stewardship groups. General public use should not be allowed. NPS Ala Kahakai (ALKA) and Na Ala Hele should be consulted during the design of the pedestrian path. Once again, the path should be as natural as possible to blend in with the environment. Directional trail signage might be available through NPS ALKA and Na Ala Hele.

In closing, I would like to remind the Department that damage to cultural and natural resources is occurring at Ka Lae daily. There are a number of action items which can be implemented immediately to protect resources while environmental studies are being conducted such as posting of signage with rules regarding off-road vehicle use, hiring of security officers to enforce rules, placement of additional lua at barracks and fishing hoist, trash collection, facilitation of stewardship



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agreements with community organizations and government agencies for cultural and natural resource management and creation of an advisory committee.

I appreciate your consideration of these comments.  
Mahalo.

#### **4.3.3 Richard Taylor**

Mr. Taylor called TSI on July 21<sup>st</sup>, 2017, to share his mana'o about the project. Mr. Taylor lives approximately 6 miles north of the project area next to the Hawaiian Home Lands property at South Point. In the last eight years, he has seen the number of people coming to Ka Lae increase markedly over that time, especially since the improvement of South Point Road. According to Mr. Taylor, the rebuilt historic wall located near the hoist within the Project area, is part of the network of walls found within the Hawaiian Homelands that extend to Ka'alualu Bay and beyond to Kamilo, northerly to Kama'oa Road, and to the highway. He shared the following:

A neighbor cattle rancher that had lived here for many years had told me that there had been a village along this low ridge a long time ago. So early on I had a number of young people just out of high school working here and I suggested that they keep their eyes open for signs of previous inhabitants. Over time they found many artifacts on the parcel. Originally thought they might be donated to a museum so that others could see them too, but was later advised by a friend who works for DLNR to keep them at the site where found. "We found implements that could go back to pre-contact. Some are from the recent era, pieces of a cast iron Chinese ring, a wood ember iron, some relatively modern china pottery. But some are more ancient: coral and lava poi pounders, chisel blades, small adze heads, mostly broken pieces but some intact. Kids rolling stones. The younger locals here got interested after the first pieces were found, and they could see this as part of their heritage.

Regarding the plans proposed in the RMP, he believed that people will do what they want to do at South Point. "The number of tourists and cars carrying them has increased as more and more people come. The idea of managing is necessary but it's also complicated," he said. He valued the cultural significance of Ka Lae to the Hawaiian people and to all visitors, and provided the following comments:

I'd like to see the cultural resources identified and to see all areas with signs of human activity there be off limits to vehicle traffic, and perhaps some to foot traffic as well. You don't want people taking stones from there. Perhaps some areas should be set aside for ceremonial uses only. If people are allowed to drive, they should not leave a single designated road.

Mr. Taylor acknowledged that DHHL has issues of manpower and agreed that a tourist entrance fee proposed in the RMP would be helpful at generating revenues. "At some point, a fee for entrance might be needed, but I do not believe it should be applied to local people," he said. "But if you are going to attempt to actively manage the area then it is going to need funding," he said.

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Mr. Taylor also referred to the shuttle operation at South Point and discussed possible scenarios that DHHL might pursue. He was concerned that local people may be squeezed out of the bidding process in selecting shuttle vendors. “That’s guaranteed to cause problems, these people are trying to earn a living, generating income in a place where jobs are nearly non-existent,” he said. He was also concerned about the proposed gate being locked at night and pointed out that at Volcano National Park, the gate remains open to allow access to Pele.

Mr. Taylor also stated that he had located aerial photos of the project area as far back as the 1950s that he was willing to share. They would serve to document the increase in vehicle footprint over the years.

## 4.4 Interviews

### 4.4.1 George Kaleokalani Manuel

TSI met with Mr. George Kaleokalani Manuel on August 8, 2017. Mr. Manuel was born in 1969 and grew up in Wai’ōhinu but is a lineal and cultural descendent of Kamā’oa. His father, George A. Manuel, was born and raised in Kamā’oa and his mother was Minerva L. Akiu. Her mother was Elizabeth Kaikua’ana who was also born and raised in Kamā’oa and her father was Charles A. Akiu who was a paniolo. Mr. Manuel’s grandfather, William Maiola Manuel, was a blacksmith married to Abigail Bob whose father, Peke Bob, was a highly skilled Paniolo. Mr. Manuel’s great-grandfather, Peke Bob, would travel from Kamā’oa to Ka’alualu Ranch for work and he roamed the lands of South Point, therefore, knew the place intimately. “Back then, people would spend time on the land and they would learn to understand the weather, the wind,” Mr. Manuel explained. “They had to use their senses to understand their environment,” he continued. Mr. Manuel spoke proudly of his great-grandfather who is featured as an all-time cowboy from Ka’ū in the work of Mary Kawena Pukui. Mr. Manuel’s great-grandfather is buried at Kamā’oa so he often visits his iwi kupuna at South Point.

As the oldest child of four children, Mr. Manuel is the retainer of knowledge shared by his parents and grandparents. Much of this knowledge was passed down through stories. At night, his father would tell stories of Kamā’oa and life in Ka’ū to him and his siblings. Mr. Manuel remembered how his father would love to tell them stories which he now shares and passes on to his own children. One of those stories was about water. Though Ka’ū is a rugged land with harsh conditions, it is bountiful. “People say it’s hard to get water, but my dad would say, it’s possible,” he remembered. “The water in Ka’ū runs underground,” he said. He explained that the early people of Ka’ū would capture water percolating from below. He discussed the water situation and the dilemmas resulting from the lack of a systematic water supply for homesteaders at South Point today. He pointed out that water will be needed to implement some of the actions proposed in the RMP for South Point, particularly at the guard shack if security guards will be present daily. He also noted that a guard shack would require bathroom amenities for workers.

Mr. Manuel recalled growing up fishing at Ka Lae and walking the coastline with his dad. Māhana for him was never a destination. He would frequent that area to go fishing with his father in the many coves south of Māhana or on their way to Ka’alualu:

I can still remember there being one main road [along that stretch from Kaulana to Māhana]. My dad said that they used to walk the coast road. They used to also

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ride horses along that road. We'd come to the pukas before you get to Māhana to go and throw net. I was his bag boy. Back then, we were very choosy about the type of fish we took because there was plenty fish. He'd catch 'um and he'd throw them back to me...They were mostly reef fish- manini, 'āholehole, pakukui, kala. We also got 'opihi and 'a'ama. What we caught was only for subsistence, not for selling.

There were plenty areas where fishing was done. Mostly throw-net. There's fishing [in the areas towards Māhana] but rough. Easier to first throw-net. Once in awhile it was flat. That's why lots of fishermen launch out of Kaulana.

He shared that his father would always try to instill in him and his siblings the value of taking only what one asks for when harvesting resources. This meant that these practices were done purposefully. Thus, when his father would fish, he would ask for a certain type of fish and take only what he asked for. Therefore, if other animals or species were to also appear, he would ignore or release them because he did not ask for them. One could ask for something else the next day, but for that day, the fisherman would be focused on catching what he asked for. He believed that this value was likely a strategy of resource management that earlier Hawaiians used to conserve resources, similar to the seasonal kapu placed on specific fish. The practice also seemed to be associated with good fishing protocol.

He also recalled harvesting salt as a child. "My dad said that when he was young, they used to collect salt at South Point [near the hoist] but as they grew older, people weren't respectful and would mimi (urinate) everywhere so they stopped," he said.

He remembered Pu'u Ali'i as much larger than it is now. "It used to be so huge," he said. "Now it's not a pu'u anymore." He wasn't sure whether the pu'u actually decreased in size or whether it just seemed larger from a child's perspective. He also remembered that even back then in the 1970's people from Hilo would come on their dirt bikes and jump over the pu'u. "It was the place to go off-roading," he said. He has memories of his cousin, Bernard, and Palikapu Dedman, regulating the area to stop the people from destroying cultural sites at South Point. Mr. Manuel mentioned several times that there was only one road to Māhana when he was a child. "When I was growing up, there was only one road. It was the closest road to the coastline," he said. He remembered that it was the practice to take care of the road so people would drive slowly.

The spiritual significance of the lands of Ka Lae was passed on through stories. Mr. Manuel recounted stories his father shared about Kalalea Heiau. He explained:

Dad told stories of a tourist that visited and she went into the heiau to urinate. She didn't know its significance. She also had her ma'i. When she left, she kept bleeding and wouldn't stop. The tourist asked one of the elders there how to stop the bleeding. When the man found out where she was, they had to go back to the heiau and make amends. The elder had to go in with protocol and ask for forgiveness for the tourist. Dad was a small boy then.

He also remembered another story of a cowboy travelling through and tying his rope to the rocks of the heiau:

The cowboy was travelling through and tied his rope to the tallest rock. At night, he heard, "huuui!" He would wake up and see that the horse had moved away from where he left him. Then he realized he should take the horse from the rock.



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Mr. Manuel described South Point as a place he revered that had great spiritual and cultural significance. As a boy, he would remember hearing voices and footsteps at times in Ka Lae but nobody would be around. While discussing Kalalea Heiau, he shared his father's belief system that there was no such thing as good and bad, as is the duality of Heaven and Hell in Christian belief. Rather, he believed that there was polarity to all actions, thus good and bad co-exist side by side.

Mr. Manuel also discussed the significance of Lua o Palahemo. "You can stand at Palahemo and see Kū Mauna, the water god [in Pahala]. He explained that in Hawaiian belief, the most pure state of being is being connected to the gods and it is a practice that is incorporated into the Hawaiian martial arts of lua. Therefore, the mauka-makai connections of these two places at Palahemo is spiritually significant because "it brings you closer to the gods." He noted that historically, Ka'ū was a training ground for warriors.

Mr. Manuel spoke to the character of the Ka'ū people as a resilient and rebellious people as reflected by the mo'olelo of Ka'ū. He shared his knowledge about the mo'olelo of Hala'ea to demonstrate the nature of the Ka'ū people. He recounted two versions of the story:

**Version 1:** There was a greedy chief. He'd make sure he would take his canoe out when he knew people would be coming in from fishing with fish. He would tax them and have them give him their fish. This version goes, that the people would give them all their fish that they filled up his canoe and he sank and died.

**Version 2:** The other version is that when the chief came ashore, the people stoned him to death. The second version is more likely what happened in Ka'ū.

Mr. Manuel shared several ideas regarding the potential impacts of the proposed RMP on the cultural resources and practices at South Point. He supported the idea of shutting down the road to South Point and letting the land heal but he was also open to the ideas of management, as presented in the RMP. He felt that limiting vehicular access to South Point was a good idea that was consistent with the historic use of the place where everyone walked. However, he believed that resistance to the idea would stem from a culture of convenience. "For everybody, it's about the ease of being able to drive up," he said.

Mr. Manuel believed that there has been enough destruction to resources at South Point previously, that any actions from RMP would not negatively impact the area. However, he had several concerns:

1. He stated that he would like South Point to continue to be accessible to kūpuna. He was concerned that the limit on vehicular access would deter the ability of kūpuna visiting South Point. Though he acknowledged that there are not many kūpuna left, he recommended that their ability to access South Point will not be affected by the proposed project.

2. Mr. Manuel was also concerned about how the RMP might impact the 'ohana currently operating the shuttle service to Māhana. The 'ohana is his family and he understands their presence at South Point. He acknowledged that he understands the requirement for a bidding process for legitimate shuttle service vendors eventually but pointed out that it would be hard for Ka'ū people to compete with established, outside vendors, such as Kapoho Kine Adventures. He hoped that the process would not be one-sided and if possible, for DHHL to support building the capacity of local Ka'ū people.

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#### 4.4.2 Tommy Kaniho

TSI met with and interviewed Mr. Tommy Kaniho on September 8<sup>th</sup>, 2015 at his home at South Point. Mr. Kaniho passed away on June 11<sup>th</sup>, 2016, but his 'ohana agreed to include his mana'o for this project.

Mr. Kaniho was born on May 6<sup>th</sup>, 1928 and raised in Ka'ū. His mother passed away when he was four years old. His father moved to Ka'ū and re-married a woman from the Martensen 'Ohana. His father had 13 children and he was one of the two boys in the family. Mr. Kaniho worked as an assistant manager for C. Brewer & Co. Ltd. Plantation, one of the "Big Five" and largest land owners in Hawai'i, historically. "C. Brewer owned the land all the way up to Volcano and they ran a cow-calf operation," he remembered. He also recalled that the ranch sourced its own water from a spring in Hā'ao-Wai'ōhinu through a four-inch pipe line. C. Brewer & Co. Ltd. Plantation sold the land at South Point to Parker Ranch. In the 1940s, Mr. Kaniho worked construction for \$2 per hour with Glover and then his grandfather, who was running Parker Ranch, got him to work for the ranch. In January 1949, Mr. Kaniho started working for C. Brewer & Co. Ltd. Plantation, for whom he worked for 27 years.

At C. Brewer & Co. Ltd. Plantation, Mr. Kaniho was paid \$1 per day and his medical and housing expenses were covered. "It was good money back then," he explained. The food they ate at the ranch was smoked meat and whatever vegetables they could live on. At one time, he would milk cows for 50 cents a day then he would deliver the milk to homes nearby. Mr. Kaniho shared his knowledge of ranching at South Point:

Cows used to be everywhere at South Point. During the dry weather, cows are fed cane tops and molasses today and the feed is brought from the mainland. A calf can be sold for \$500.

He explained that the best cow-calf operation would have more than 2,000 head of cattle per year. Steers and heifers were fed grain for 90 days in a feed lot to fatten them up before they were taken to the market. During these three months, the color of the meat would change. In 1965, there was a drought that was so bad, he remembered that they lost cattle. The cattle had to be skinned and the hide was sent to Japan. He remembered that Percy Lam had 700 acres and had great plans for raising cattle but had no money to support the initiative.

Mr. Kaniho shared his memories of Ka Lae and some of the practices that occur in the area:

Fishing was a luxury. People used to camp out and fish at Kaulana Bay. People still do that now especially at Kamilo Bay where there's naupaka growing there.

There also used to be a wharf by where the light house is.

He used to go fishing then would drive to Ka'alualu. "From Kaulana to Ka'alualu, people would surround net, lobster net, lay net at night and check the next day, and even turtle net," he said. "Fishermen used to feed kū'ula (ko'a) when they'd go throw-net. Today, people mostly fish off boats, catching marlin and tuna off the coast which is very deep water," he said. He explained that fish caught, is usually taken and sold in Hilo. "People used to be able to drive down and go fishing but people started abusing the road," he said. He described the road as "really bad especially when it rains."

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Mr. Kaniho also shared his knowledge of the wahi pana of South Point such as Palahemo, and Māhana. “There’s a famous saying: You haven’t seen Ka’ū if you haven’t seen Palahemo,” Mr. Kaniho said of the spring. Mr. Kaniho explained that two sisters died there in the pond in the 1930s and that the pond is connected to the ocean. He described Māhana as a canoe-landing where people used to leave their canoes there for fishing. “They would just remove the ama and take that with them but leave the canoe in the bay,” he remembered. Mr. Kaniho also talked about the south winds at Ka Lae which usually blow during the winter months. During this time, the ocean is calm and conditions are really nice.

Regarding the presence of cultural sites at South Point, Mr. Kaniho said, “No more.” He explained that South Point was occupied by the military and it was a gun nest for World War II so he thought that many cultural features were destroyed during this time. “Service men used to live down there,” he remembered. “The military brought the water to South Point and people could not build a house but could build a shack,” he said. His existing house, which he acquired in 1986, used to be a work shack.

Mr. Kaniho pointed out that fires occur often at South Point but that there is no help from DHHL to address this threat. “Fires are caused by people who come into South Point. There’s usually about one fire per year,” he said. This year, he was worried because of the dry weather so he was happy when the rain came. “During the winter months, South Point is beautiful with lantana flowers everywhere,” he shared. Despite the threat that fires pose, Mr. Kaniho explained that fire improves the place. He also described how they use the “backfire” strategy to control fires and the fire break starts at about Lot 15 [referring to DHHL Homestead lots]. He explained that: “if there’s a fire below that, it’s okay but if there’s a fire above, it’s bad news.”

In discussing the future of South Point, Mr. Kaniho supported Daryl Kalua’u’s proposal for an ecotourism venture at South Point. He also discussed the potential for a future Hawaiian cultural center at South Point but felt that “everybody likes to be the boss which might be problematic.” Mr. Kaniho made the following recommendations:

(1) Close down South Point. He explained:

The only thing I can tell you is to close the place down. DHHL gotta get security and put their foot down. There’s nice fishing grounds at South Point and you can’t stop fishing because that’s people’s livelihoods but the tourism, that’s what needs to be managed. Recreational users need to be managed.

(2) DHHL provide security and charge visitors a fee. “They [DHHL] must get a security guard... You can’t stop anybody from walking in, but can stop a car driving in,” he said. He agreed that it would be a good idea to charge visitors a fee. “Visitors are paying \$20-\$30 just to be taken in to see Māhana Bay,” he said.

#### **4.4.3 Dean Kaniho and Tissy Kaniho**

TSI spoke with Mr. Dean Kaniho, hereafter referred to as Mr. Kaniho Jr., on the telephone on August 18, 2017. TSI also met with Mr. Kaniho Jr. and his wife, Tissy, at their home at South



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Point, to discuss their thoughts on the potential impacts of the proposed project on native Hawaiians, their cultural resources, and practices.

Mr. Kaniho Jr. is a native Hawaiian and the son of the late Mr. Tommy Kaniho. Like his father, Mr. Kaniho Jr. is a Hawaiian Homelands beneficiary, one of the few beneficiaries at South Point who was born and raised in the area. He was awarded 25 acres (Lot Number 6) of land at South Point in 1986, therefore, has been on the property for almost 31 years. His wife, Tissy, is of Native American descent. The couple owns a ranch located near the intersection of South Point Road and Kama'oa with panoramic views of South Point. They are also grandparents to 8 children who frequently live with them at their home and consider South Point, their playground. "Having a place like South Point is great for having the kids here," Mr. Kaniho Jr. explained. He was proud that his grandchildren are able to grow up in the ranching lifestyle that he himself was raised in and have access to the beauty and open space that South Point provides.

Mr. Kaniho Jr. reflected on his experience as a rancher at South Point and explained that 25-acres is too small to support a cattle operation so he has additional private lands for his farming.

Another limiting factor to farming and ranching is the lack of infrastructure and water. He explained the water situation at South Point:

It is not sustainable to make a living on land with no water. The issues the homesteaders at South Point had with DHHL was not implementing the infrastructure. The water was the main thing but it was never provided. The land should come with the infrastructure already developed but DHHL is not committing themselves to us. My father was awarded one County meter that used to be split between six ranchers. Tissy and I inherited the meter and we share the water with 5 others. It is optional sharing. John Kalua'u also got another meter. His comes from a 7,000-gallon tank that is supposed to be full all the time for emergencies in case there is a fire. But that didn't work out because he had to pay for everything.

Mr. Kaniho Jr. also discussed a 50,000-gallon water tank that is located on DHHL land at South Point in the vicinity of the Barracks. He explained that the water tank is maintained by the County of Hawai'i's Department of Water. According to Mr. Kaniho Jr., the infrastructure for the water tank was built by the U.S. military when they were at South Point during World War II. The tank is fed by a four-inch line that carries water down from Hā'ao Springs. "They say that the water tank is cracked so it's just sitting there, wasting a resource," he said. He was frustrated that nothing has been done to utilize the water and make it accessible to homesteaders at South Point. "If you can store 50,000 gallons of water at the bottom, why not build five, smaller, 10-gallon tanks up top and let it service DHHL homesteaders?" he asked. Tissy added that her father-in-law, Mr. Tommy Kaniho, asked for water for South Point for over 30 years and it was sad that he passed away and still no water at South Point. "I don't understand," said Mr. Kaniho Jr. "I remember a time when we worked together with the County to access the tank, particularly for homesteaders in the lower region of South Point near the coast." He also shared that the DHHL dug a fresh water well at South Point but drilled too deep, contaminating the well with saltwater. Therefore, the well was never utilized.

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The couple spoke about the destruction that they have seen occur at South Point over the last several decades and were saddened that nothing has been done to address misuse of the land. "People go down, ripping the land," said Mr. Kaniho Jr. "We remember when that place was nice," Tissy added. They reminisced of the time when 'Ohana o Kalae, a non-profit that was operated by the Hanoa 'Ohana, created a school at South Point to teach Hawaiian cultural knowledge and practices to children of Ka'ū. Tissy shared:

I was at the school in '93 and all those kids looked forward to it. Kids were going down there doing hula. They planted coconut trees. They watched the land. We'd go down there and it was nice. Had a really nice flow. It was a nice way of taking care of the area.

Mr. Kaniho Jr. added that there were flushable toilets down there at the Barracks that people used so he knows from experience that infrastructure is possible at South Point. Sadly, "people stole money from the organization and the program ended," said Mr. Kaniho Jr.

They also discussed the illegal shuttle service at South Point. "The family has been doing the illegal shuttling for years but they have been there for longer," said Mr. Kaniho Jr. "Every Hawaiian in Ka'ū can claim South Point," he added. Therefore, he did not think that it was right that the family should be allowed to continue to conduct illegal operations at South Point.

The discussion turned to the DHHL South Point Resources Management Plan that was developed for South Point. Mr. Kaniho Jr. commended efforts to implement a management plan at South Point. He stated that the management plan should have been implemented 30 years ago and expressed disappointment with the DHHL for not having done so. After reviewing actions proposed in the RMP 2016, he was concerned about the lack of plans for security on the Ka'alualu side of South Point. "Once you stop the front, people will come from the backside [and enter from Ka'alualu]," he said. He felt that to produce a more effective plan to curb vehicular access to South Point, managing vehicular access at Ka'alualu is also necessary. "The back [Ka'alualu] portion should be done at the same time as the front," he said. "If it will take another couple of months to add this into the plan, then it's worth it because now you are taking care of the whole area," he said.

Mr. Kaniho Jr. felt that after decades of inaction from DHHL, drastic measures need to be taken to address the desecration at South Point. He said:

How about getting input from our Governor? I think our Governor is not hearing about this and he has no idea about what is happening at South Point. We can bring the news media to bring attention to South Point and let people know what is happening here so that something can be done. If I stand by myself, I am not going to get heard. We need to approach this as a community. I can get people together. I remember when Uncle Sunny addressed the Governor to oppose lands being given to the Big 5, to open it up to give to the people.

The land tenure of South Point, as "Available Lands," as opposed to "Public Lands" was discussed. Tissy shared her knowledge and experience of land laws regarding Native American reservations. She explained that Native American reservations are owned by

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Native American people and are NOT open to the general public. She felt that the land tenure of South Point as “Available Lands,” intended for the betterment of native Hawaiian people, that the same rules apply. “The main thing right now is to shut down the road and then clean up the place,” said Tissy. Both agreed that since South Point is “Available Lands,” South Point should be used for what it is intended for, as stated by law. Therefore, they recommended that South Point Road be gated and closed to the public.

#### 4.4.4 Anna Cariaga

TSI met with Anna Kailiawa Cariaga at her home in Pāhala on September 8, 2015 to discuss the proposed Resources Management Plan for South Point. Also present were her cousin, Bea Kailiawa, and Edwina Kukahiku. In sharing her connection to the project area, Ms. Cariaga described South Point as a very sacred place. “I find my spiritual self there... Down there is so sacred. I find I can go and talk to the wind.” She also shared her childhood memories at South Point, which included various practices like fishing, “plucking” limu kohu from Kaulana Bay, salt gathering and camping:

Plenty limu kohu down South Point. Plenty down there...but you know...before days, we knew how to pick, not just pull pull pull. My uncle used to teach us how to do [it]. That’s what we need to do...take our kids back to the ocean...teach them...educate them. We should be able to take our families there.

She explained that limu kohu still grows at Kaulana Bay and they continue to gather limu from that area:

We go right in the front where Kaulana Bay stay. You sit right in the corner. There’s a pond right there when the tide go over. I used to sit right there...and you could just sit down there and pluck your limu. My mother used to say, “you no pull, you pluck the limu.” There’s still limu. We always go there and pluck limu. I used to find a lot of kupe’e there too. I find my spirits...spiritual needs down there.

In the summertime, Ms. Cariaga and her family would live down at South Point. ““First day of summer we stay down there...weekends...we go down there. We used to have a garden and old fire place across from Kaulana Bay.” She remembered fishing for ‘ōpelu and using pumpkin and taro as bait for the ‘ōpelu. “We used to help make the hooks [for ‘ōpelu fishing]...we used to help bring the pumpkin down.” They also used ‘ōpae ‘ula for bait and she shared how they would catch the shrimp at Palahemo:

[Palahemo]—that’s the only pond we have that I know that get the ‘ōpae ‘ula...night time you go certain time...there’s a season you shine the flashlight...get plenty you know. We used to go get. My uncle was a fisherman....for the ‘ōpelu. [He was a] big boat fisherman. They use it [‘ōpae] for bait. You put ‘em in a bag and one time you sink ‘em down and open the net and all the ‘ōpelu would go inside.

She also shared that she has seen more turtles near the shoreline compared to before:



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You go Punalu'u, you no can see the limu anymore. Our turtles eat everything already. So when you throw your net, careful you no catch the turtle. If the warden see you [at the National Park at Kalapana], you pay a fine....We had some people from Ka'u who went to Volcano on a tour and they seen some fish and went to their car to get their bamboo to fish and the husband went to get some 'opihi. The National Park rangers took away all that from them ...the fish and the 'opihi from them...that was cruel. If National Park is going to rule and save things...they rather save the seals than save the Hawaiians. Our seals are coming up from the ocean... We need to kind of balance.

Another popular fishing area at South Point was along the cliffs where the hoist is located. She recalled that it was her father who built the hoist at South Point which was a ladder to climb back up the cliff from the ocean. According to Ms. Cariaga, people used to park above and walk down to go fishing. People did not park by the blowhole as they do now. She explained:

We would park where the stone wall stay...where you can drive into the gate. Now the people park by the blowhole. That was dangerous [because] you never know when that will collapse. So we never went down. When we had fish...we had to carry 'em up...that's why I said we had a hoist that my father built... and before, you no can just build anything...you had to pray...so he build a ladder...a swinging ladder...the water came in....we would go with the water. So he made that...to bring in the fish... We could leave our fish on the cliff. My father made a wooden box cooler and leave it by the cliff. Nobody went there and stole our fish. Nobody. They respected each other back then... Down there it's so sacred...you gotta pray. I love that place....I can finally talk to the wind...when we was kids I used to jump off the cliff. The ladder is too rusty now. I used to go on the ladder to get to the boat.

Thus, she felt that cars should not be allowed to park near the hoist. "Park up and walk down. They only going there to fish. They can walk down with their cooler," she said.

Ms. Cariaga also explained that they used to gather salt from along the coast at South Point where there used to be little ponds all along the shoreline. They used to walk to Ka'alualu where the salt was "glassy." "When the water dried out...the sun evaporates...the salt is like glass on a piece of paper," she explained. "The whole shoreline had salt...as long as there is a little pond...and when it evaporates then the salt is there," she continued. When they would run out of salt, one could go to the ocean and get a rock and boil it. Ms. Cariaga said that no one gathers salt along the shoreline anymore because people "shishi" along the coast now. She also explained that South Point was where she learned how to drive. "We had to learn how to drive because we had to bring home water," she said.

Ms. Cariaga described her thoughts on Māhana Bay, "[It] is a beautiful bay. I think it would be hard to save 'em now. It's all olivine and now when the wind blow...the thing stay blowing off in the water....the current strong in Māhana Bay." She also explained that they would find petrified wood there that was beautiful and the beach was so green, it was beautiful. She suggested

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building a trail from the Barracks to Māhana and stated that “they always had a walkway...but no more.”

Ms. Cariaga also shared her knowledge of native plants at South Point. “Did you know we have some plants down there really worth while saving? But I don’t want Nature Conservancy doing ‘em.” She explained her sentiments:

Before you know, they going to close down the whole place forever....but we can put a date....how long it is going to be closed...and why it is going to be closed...and then we can open ‘em once in a while...maybe couple days...leave it open...and see how people act...if they going come in rough and destroy it...then say if you going destroy it then we will close it all off...we may not reopen it...but I would like to see it close...and then that would give us chance to work on our path by the ocean...the breeze is so beautiful...and a small place where you can park and walk...and a little station where you can have water...and people down there can make money and sell ice water from the bottom...I think that would be good...and that would help the tourists.

Kalalea Heiau, according to Ms. Cariaga, is a heiau for fishermen. “Us wāhine cannot go inside,” she said. She also explained that there are many burials and house lots in the vicinity of Kaulana Bay. “There are a lot of house lots across from Kaulana Bay...burial grounds,” she said.

One of Ms. Cariaga’s greatest concerns was lack of water at South Point. She felt that first and foremost, providing access to water was the top priority at South Point. “We get good life out here in Ka’ū. Once we know where we going, we alright.” She also explained that one must be strong to live in Ka’ū. “I think I can guarantee if we get water coming down there and our people know that there is water, [they will] make plans together and stick to our plans.” She explained that traditionally, the Hawaiians got their water from the springs. “If we can tap Hā’ao Springs, we will be real good,” she said. She continued:

Hā’ao Springs get plenty water. If they can bring ‘em down, big changes in Ka’ū if we get the water. people would learn to love each other....We had Nature Conservancy talk to us and looks like they ran the whole meeting. Nature Conservancy preserves a lot of stuff...but they taking a lot of stuff away from us too. If I knew they can preserve and we can still go to the beach and do what we do...then we can work together.

Ms. Cariaga felt strongly about allowing camping at South Point, a practice that she grew up with in Ka’ū. As mentioned above, she would live down at South Point during the summer time during her childhood. “A lot of people want to go there to have a picnic or for camping,” she said. She also cautioned that if allowed, people must pack up their rubbish and sign waivers. She brought up the camping program at Puhi Bay with the Hawaiian Homestead at Keaukaha, a model for South Point. She shared her thoughts on this topic:

Before I die, I want to see a project. Even if we don’t get the water, maybe we can get the camping... I would really like to see camping over there. We can plant Hawaiian plants around the barracks. Aloe, noni, chili pepper all around there.

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Ms. Cariaga discussed destructive activities from vehicular use at South Point such as recreational four wheeling and the illegal shuttling of tourists from the Barracks to Māhana:

One of the problems is that a lot of people with four-wheelers have no consideration... They just come around and make the dust. People from Kona.

That's why you have all the deep roads.

She recommended building a protective stone wall around Palahemo. "A stone wall around Palahemo so the 4-wheelers no can go in there," she said "Not real high."

According to Ms. Cariaga, the shuttle operation started about two years ago [from the time of this interview]. She expressed concern about DHHL allowing the shuttle service to operate which has been known to include the employment of young unlicensed drivers, the sale of liquor on the property, lack of liability insurance, and tax evasion on revenues generated. She felt that the shuttle operation should contribute a portion of revenues generated from tours at South Point to be used for the management of DHHL property. She also expressed that other Native Hawaiians from Ka'ū, particularly DHHL beneficiaries, should have equal opportunities to pursue economic ventures.

Ms. Cariaga also discussed the negative impacts of tourists at South Point:

Tourists just walk in like they own the place. Hawaiian Homes is always more concern[ed] about the tourists than their own people. More concerned about the tourist going in and getting hurt...but they [DHHL] never did nothing.

She expressed her frustration at DHHL's inaction. "It's time now," she stated. "Gotta put the feet down... Stop what is going on now." In addition to the need for DHHL to assert management actions and decisions at South Point, she felt that it was also the community's responsibility to help manage South Point. She explained:

Palikapu had curatorship of down there... Kalua'u would be good...because they have the machines. The curatorship should be shared by everybody. Everybody should have a responsibility...not only one group. Everybody should have one responsibility of the area.

She discussed strategies for restoring the land at South Point. She felt that a temporary closure of the area would be effective. She explained:

From Kaulana to Green Sand...temporarily...we need to do one study on the damage. That place is sinking... I would like to see that place filled and let it stand for a while then put a solid pavement...a road. We need paved road in case of emergency...for ambulance... we need to let the people know what's over there...they going to take care...but if you don't let them know...they don't know.

She also felt that if vehicles are allowed to enter then they should pay a fee, as suggested in the RMP. "They should pay a fee...if the fee goes back to the land," she said. She also suggested that a security guard would be necessary. "You can hire our own people to do the work. I don't know how many know the history of the place but that's why we need education programs," said Ms. Cariaga.



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#### 4.4.5 Palikapu Dedman

TSI met with Palikapu Dedman in Hilo on August 21, 2017. Originally from Punalu'u, in the district of Ka'u, Mr. Dedman is a long-time activist fighting for Native Hawaiian rights since the 1970's, protesting against the U.S. Military's bombing of the island of Kaho'olawe. He was part of the movement that resulted in the return of the island to the Hawaiian people and igniting the renaissance movement for the revival of Hawaiian sovereignty, identity, and things Hawaiian. Mr. Dedman continues to defend his Hawaiian purpose and responsibilities for protecting native land rights in numerous ways. His resume is lengthy and includes advocacy work through the non-profit organization, Pele Defense Fund (PDF), of which he is the executive director. PDF has been most notable for expanding Native Hawaiian gathering rights through a series of court cases that started from PDF suing the State of Hawai'i for allegedly exchanging approximately 27,800 acres of public "ceded" lands, including the Wao Kele O Puna Natural Area Reserve, for approximately 25,800 acres of land owned by the Estate of James Campbell. PDF claimed that the exchange violated Article XII, Section 7 of the Hawai'i State Constitution, Hawai'i Revised Statutes (HRS) Chapters 171 and 195. The lawsuit demanded that the exchanged land be returned to ceded land status.

Mr. Dedman has also been using traditional practices for the protection of natural and cultural resources at South Point. He believes that the settlement of native Hawaiians on Hawaiian Homelands such as Ka Lae, has been ignored since 1920. At Ka Lae, he felt that DHHL has prioritized everyone else over the needs of native Hawaiians, therefore, calls on the DHHL to assume their responsibility to prioritize the settlement of native Hawaiian people not only at South Point but in Hawai'i. He explained that negligence on their part has forced native Hawaiians like himself to become activists. To demonstrate what he meant, he shared a long list of projects that he had demonstrated against over the years. He provided an overview of various development projects that were proposed at South Point.

These included NASA's proposed rocket launching project at Ka Lae, as well as the State of Hawai'i Department of Transportation's and Federal government's joint proposal to create a public boat ramp at Kaulana. Both projects were never implemented, largely attributed to community opposition to the initiatives. Mr. Dedman shared memories from this time:

They wanted to take 55 acres and make a public boat ramp at Kaulana. They brought all the surveyors and took surveys. We sold laulau and made \$2,500 to pay for the cost of legal fees... We filed suit and lost the lawsuit. The Feds were going to go in half-half with the State for the ramp. So, I got on a plane and went to D.C. Went to Inoye. Akaka's office.

Mr. Dedman explained that the main premise of his trip to D.C. was to argue that DHHL lands, like Indian Reservations, are private lands, not intended to be opened up to the public. He described returning to Hawai'i from his trip feeling unsuccessful. However, shortly after, an earthquake had damaged Kawaihae Harbor and he was notified that funds intended for the proposed boat ramp at South Point were redirected to Kawaihae Harbor. "The Feds pulled out and South Point never got developed," Mr. Dedman remembered.

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Mr. Dedman has been particularly known for his leading role in the repatriation of iwi to South Point from Bishop Museum. "I have so much experience with iwi," Mr. Dedman stated as he recounted a list of various events he had participated in previously. His experience with iwi dated back to protests in the mid-1980s against the digging up of burials for the construction of the Carlton Ritz hotel in Honokohua, Maui. Approximately 450 bodies had been dug up at the Maui site. Knowledge of the incident created outrage among the Hawaiian community and spurred a protest in O'ahu against the development. He explained:

We flew to Honolulu. People from the other islands came. About 60 people were there. After the 6 PM news, people started coming. Every hour, people dressed in black, chanted, did ceremony. By the next day, hundreds came, then thousands came. The following day, Wahe'e walks over from across the street and tells us to go up to his chambers. We met with Waihe'e.

The project was stopped and cost the State of Hawai'i 16 million dollars. According to Mr. Dedman, NAGPRA (Native American Graves Protection and Repatriation Act) did not come about until about a year later in 1986-1987, which initiated national movements towards the federal recognition of the significance of burials and their protection.

Following the protests that started in Maui, a group, including Mr. Dedman, traveled from Hawai'i Island to Honolulu to bring back iwi that the Bishop Museum had collected from South Point. Horrified at how the museum treated the iwi of his ancestors, Mr. Dedman recounted the following:

Me and a couple of Hawaiians went to Honolulu. Went Bishop Museum.

They [the iwi] were in garbage bags in the hallway. Our kūpuna were bagged up and stored in garbage bags.

Mr. Dedman explained that about 176 bodies had been dug up from South Point previously by archaeologists, bagged, and stored at Bishop Museum. He believed the iwi came from digs that were searching for fishhooks and implements. About a week after they had arrived in O'ahu, NAGPRA came about which required institutions like the Bishop Museum to return iwi in their possession to their origins. Mr. Dedman explained that the new regulations surrounding burials had created a political scene in Honolulu and people wanted to bring media attention to the occasion. "All of a sudden, OHA, SHPD, DHHL, all of them were there because of the photo op," he remembered. He continued:

While everybody was preparing for this ceremony and media show, we went and took the iwi and flew back home. We put them in 2X2 boxes. Flower boxes. Took them back to South Point. We got sand from Pinao Bay and buried them at Pu'u Ali'i. We were all happy. All the 'ohana happy. They were back at Pu'u Ali'i. But everybody [in O'ahu] hated me.

Mr. Dedman asked the question, "Who do the iwi belong to?" "They don't belong to DHHL. They belong to Ka'ū," he stated. He explained that it was at this time that a group of them took advantage of NAGPRA to introduce the Burial Bill which became the beginning of the Burial Council. Today, the Burial Council requires a permitting process but he felt that the Burial Council

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is problematic because Christian Hawaiians are on the council. Mr. Dedman continues to be part of a group who inters iwi that the state receives from around the islands.

Some time following the return of iwi to Pu'u Ali'i, Mr. Dedman and a group of Hawaiians, established an education program at South Point. The program targeted more than 5,000 students and provided outdoor learning excursions that immersed students in cultural experiences, such as fishing and farming practices. South Point provided an ideal medium for sharing such experiences with youth. Mr. Dedman, like most people from Ka'u, grew up fishing at South Point and retained much knowledge of the practice. "I learned to be a really good fisherman," he shared. "I learned to apply those same aspects to activism, like I did fishing," he said. He recalled fishing for 'opelu off of the cliffs and spoke of ko'a that were maintained for the 'opelu fishery. The program provided water and toilets for their students. The education program was mentioned anecdotally by people from Ka'u who spoke favorably of the program.

However, according to Mr. Dedman, DHHL threatened and evicted some members of the group. Mr. Dedman traveled to O'ahu and shared the education initiatives they were conducting at South Point, with the governor. According to Mr. Dedman, the governor applauded their work with the youth at South Point and extended the group's revocable permit. Mr. Dedman recalled that their group attracted many activists to South Point who also came and lived with them. "Bumpy [Kanahele] came and took what we did and started his own thing at Waimanalo in O'ahu, he remembered. "Wahe'e gave him 60 acres and he did his thing."

Mr. Dedman had a poor impression of DHHL whom he blames for the degraded state of the environment at South Point. He reiterated the point that South Point is private lands that should not be used for commercial activities but should be used to better the lives of the Hawaiian people. He questioned the DHHL's institutional definitions of success, stating that it is not success if infrastructure is developed while the social problems afflicting Native Hawaiians are not being addressed. He spoke at length about the lasting impact of cumulative actions of the illegal occupation of Hawai'i by America on the psyche of the Hawaiian people which has manifested in Hawaiians having the worst socio-economic demographic profile of all ethnicities in the islands.

Mr. Dedman made several recommendations. He indicated that actions proposed for Management Area A, or the gate and guard shack, is a waste of time. Instead, he felt that the road should be closed and the area should only be accessible to beneficiaries of DHHL. He further recommended that a key system should be set up for beneficiaries. "What's wrong with trying it out and learning from it?" he asked. Mr. Dedman also recommended that shoreline management extend all the way to Ka'alualu. He explained that when they were running the education program at South Point in the 1980s, they had proposed a 6-mile shoreline management area where half, or 3 miles of the area along the coast, would be closed off to prohibit access completely for 1 year. The limit would then apply to the other half of the area in the following year.

Mr. Dedman also pointed out that the U.S. Military had negatively impacted the environment at South Point. He shared the following:



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The military filled up Lua o Makalei with rubbish-cans and barbed wire. When we came down, we had them clean up the mess. When the military left, they did not put that place back to the way it was. They had that alternate airport but they didn't clean up that tar pit. They applied to use the Superfund but they never got it. The tar pit is still there.

In a subsequent meeting, Mr. Dedman indicated that continuing to allow public access onto DHHL lands, as well as prioritizing the needs of others over those of Native Hawaiian beneficiaries on DHHL lands, is an impact on traditional and customary Hawaiian practices. He explained that these actions not only continue to negatively impact the psychological well-being of Native Hawaiians, but also the degradation of natural and cultural resources caused by unmanaged access at South Point, directly impact the ability of Native Hawaiians to carry out their traditional and customary practices. As one of the few remaining spaces in Hawai'i that has been designated for Native Hawaiians, Mr. Dedman recommended closing the gate to South Point and limiting public access except for Native Hawaiian beneficiaries, to allow the land to heal.

#### **4.4.6 Kurt Douglas Dela Cruz**

Mr. Kurt Douglas Dela Cruz met with TSI on June 9<sup>th</sup> at his office at the University of Hawai'i at Hilo where he works as a senior advisor to university students. Mr. Cruz was born in Honolulu and raised in Up Camp at Nā'ālehu, in the district of Ka'ū, on Hawai'i Island. He attended Ka'ū High School, then obtained his BA from the University of Northern Colorado and then his Master's degree in student affairs in higher from Colorado State University. He returned to Hawai'i where he currently works at the university and resides in "economic exile" in Puna—a term he used to describe a phenomenon that many others like himself faced when they had to move away from home to make a living. He explained that rural areas like Ka'ū and Puna host the state's poorest populations with few jobs and high unemployment rates. Within Ka'ū, Oceanview has become the largest community in the district because the land is cheap and poor people are able to buy land there. Thus, a significant segment of the Oceanview population come from Pāhala and Nā'ālehu.

After living away from Ka'ū for 30 years, Mr. Dela Cruz described himself as a "former" kama'āina of Ka'ū. Though he is still considered a kama'āina in Ka'ū, he felt that he no longer has a voice because he has been away. Despite his absence, his connections to Ka'ū are deep and his love for the place that raised him, is strong. "I will always consider myself a son of Ka'ū," he explained fondly.

It's the place that produced me. The mo'olelo I've created, all the different fishing places I know, came from my upbringing there. I miss Ka'ū. Every time I drive out and reach Pāhala, I feel sad that I'm leaving. What I miss the most, are the relationships that Ka'ū provided. Community. Love. When I was growing up, everybody took care of each other. We didn't need a lot but everything was abundant.

Though he is not Hawaiian, he felt that growing up in Ka'ū, his family became accepted as Ka'ū people. His ancestry is mixed Filipino-Puerto Rican with his father being part Filipino and part

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Taino —the native people of Puerto Rico— from Honomū, and his mother, a pure Puerto Rican from Onomea. He attributed his passion for activism to his Puerto Rican heritage. His parents moved to where the jobs were so he referred to himself as a product of colonialism and of economics. His parents moved to O‘ahu for work for a short period of time but returned and lived in Nā‘ālehu where his father worked for the plantation and his mother worked at Punalu‘u. His family lived at Up Camp which he described as having had five lanes of houses.

The sugar plantation was prevalent in Ka‘ū and Mr. Dela Cruz explained that his era was defined by a culture of laborers. “My identify as a child, was a “laborer’s kid,” he shared. He reminisced about his hometown and the Nā‘ālehu he described, reflected the hierarchy of the plantation with the supervisors and managers living on front street in the center of town. He remembered that the Punalu‘u Bakery used to be a manager’s house. During the Plantation Era, the plantation supported the livelihood of most people and he believed that the people of Ka‘ū never recovered from the closing of the plantations. He spoke at length about the history of the plantations and how they significantly shaped the economic, political, and social dynamics of Hawai‘i at large, including his own.

Through his experience as a child of immigrants in post-plantation, colonized Hawai‘i, he provided the historical context within which he understood the systematic break down of Ka‘ū. He believed that his rural hometown became excluded from modern decision-making processes and dialogue of capitalistic Hawai‘i, dating back to the plantation era and before where foreigners became masters and kama‘āina were the laborers. The latter did the hard, manual work of the sugar industry for minimal wages. Gradually, kama‘āina became dependent on the institution for their livelihoods. Though the plantation era ended, he explained that a new Big Five emerged to replace the plantations that continues to perpetuate the exclusion of rural Hawaiians and local people from having a voice, resulting in the poverty and hardship experienced throughout Ka‘ū today. He defined the new Big Five as including: 1) the construction industry, 2) shipping and commerce; 3) real estate and land holdings; 4) the visitor industry; and 5) the military. He believed these forces have worked to keep rural communities on the periphery resulting in conditions of economic hardship that residents of Ka‘ū find themselves in today. He pointed to the family that conducts the shuttle service at South Point and explained that they are an example of the breakdown of a system that has marginalized Hawaiians and local communities.

It was important to Mr. Dela Cruz to include the aforementioned ‘ohana in proposed projects for South Point. He saw the RMP 2016 as an opportunity to build the capacity of local communities and utilize the pre-existing connections and networks to South Point to create positive outcomes for DHHL and local people. “[This] existing Hawaiian family have claims to Ka Lae for generations. The land is sacred to them. How do we empower them to go legit? There are ways to empower that ‘ohana and three to four other vendors from Ka‘ū,” he stated. He expressed his aloha and deep reverence for that ‘ohana and hope that they do not become marginalized in the bureaucratic processes of government.

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Considering the potential impacts of the proposed Project on Native Hawaiian cultural practices and resources, Mr. Dela Cruz shared his mana'o on specific proposed action items. Regarding Management Area A, or the Booth/Security gate, Mr. Dela Cruz felt that a gate will be met with resistance because a culture of South Point as a place of free access has been established. He believed that people will fight the proposed gate. Therefore, he emphasized the importance of enforcement. "If there's no enforcement, nothing will happen," he said. He further suggested that if the security/information booth is intended to acclimate visitors to South Point, then it should be more than a booth, such as the visitor center at Mauna Kea. He explained:

The guard shack is important because it is the place of welcome to the area. So the element of welcome is very important and it needs to embrace everybody. Visitors could stop, park, check in, and view pictures of Ka'ū there where they are able to show the value of Ka'ū and this fabric of people who have claimed it to be bountiful and abundant. Part of the welcome also includes raising awareness that we all have kuleana towards the place. But, it needs enforcement.

In addition to enforcement, he also identified other factors necessary for the proposed Project to be successful. He stated:

It would need to be a larger investment in the people of Ka'ū. You cannot throw things there and expect it to work. If you're going to do it cheap, it's not going to work. Imagine, if it worked, this could be a very special place in the Pacific. For the plan to work, there needs to be an advisory and working group and the 'ohana [running the shuttle service] needs to be part of that group. They should not be marginalized.

Regarding Management Area C, surrounding Pu'u Ali'i, Mr. Dela Cruz shared that Pu'u Ali'i is the heaviest area of Ka Lae and he was socialized to treat certain areas as sacred. In three separate times in his childhood, he has seen Maori people come to Ka'ū and claiming lineage to Ka'ū so he was curious about the connection. He remembered when Palikapu Dedman brought back iwi from Bishop Museum and buried them at Pu'u Ali'i. "Before, there was no signage at Pu'u Ali'i," he said. "There's a physical manifestation of the heiau and sites over there that has made people put that place as sacred," he said. He explained that Palahemo and Pu'u Ali'i have always been revered by local people but said that the case is not the same for Kalalea Heiau which gets trampled on all the time. "Maybe the heiau doesn't speak to Christianity?" he pondered. In the past, he has taken people to Pu'u Ali'i to pour water and conduct protocol relating to iwi kūpuna buried at the site. He was concerned about how a potential fence around Pu'u Ali'i might impact those who continue to visit and access Pu'u Ali'i to visit ancestors. "Who gets left outside the fence? Who cannot come in?" he asked. He recommended that if a fence is built, there should be ways that still allows access for cultural practice.

Regarding Management Area D, or the area from the Barracks to Māhana, Mr. Dela Cruz shared his local knowledge of the area:

Rarely were we going to Māhana. It's not a point of destination. We'd go to Ka'alualu and come out to Wai'ohinu. That's closer to home. People would go to



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Ka'alualu to fish and camp. That practice has been going on historically. It has a big beautiful bay. But along the coast from the Barracks to Māhana, the fishing area is spotty because the areas there are rough and rugged all along that coast. Those are not 'opihi grounds. 'Opihi gathering is usually from Kamilo to Honuapo towards Volcano. Maybe pīpipi and kūpe'e. But traditionally, that area was not a camp ground. Camping was more Kahuku Beach towards Ka'alualu where it's more calm for families and kids can swim. Kaulana is one of the only accessible beaches in Ka'u coast. It's one of the only sandy mellow places and currents are strong elsewhere. There's also Honuapo, Punalu'u, and Kāwā. Pinao Bay is not a mellow bay. It's no joke. Like Māhana, it cranks. The waves are fast and short.

South Point is also an important place for fishing. "Some people love South Point for fishing and nothing else," said Mr. Dela Cruz. He explained that throw-net fishing is a day-time practice usually around Pinao Bay. Line fishing occurs along the cliff areas by the hoist and diving occurs along the area of Broken Road.

Mr. Dela Cruz provided the following recommendations:

1. Support the 'ohana currently operating the shuttle service and all key Ka'ū stakeholders before anyone else. Regarding future plans for choosing a vendor to conduct a shuttle service to Mahana, Mr. Dela Cruz felt that the 'ohana should be "first in line" to seek the contract for shuttle and vendor service. "The... 'ohana and all other interested Ka'ū-based proposals should be prioritized," he said.
2. Require security presence at the guard shack 24-7. Mr. Dela Cruz explained that an operation cannot function by itself and must need security 24-7. He also suggested that security personnel should be Ka'ū people who are trained with a certain level of professionalism.
3. Develop the visitor booth to be larger than a booth. Mr. Dela Cruz felt that entry into sacred space is important, therefore, the point where people are being introduced to place, is important.
4. Create a team of about 10 people to run a little mini National Park model consisting of staff for maintenance, security etc. He thought that it could serve as a model for DHHL.

#### **4.4.7 Nohealani K.U. Ka'awa**

Ms. Nohealani K.U. Ka'awa was born in 1983 and raised in the ahupua'a of Wai'ōhinu, located east of Kama'oa-Pu'ueo. In addition to having an affinity for learning about her cultural heritage, Ms. Ka'awa spent a significant amount of time with kūpuna and family from Ka'ū and has gained a wealth of cultural information about Ka'ū. Like many from the district of Ka'ū, Ms. Ka'awa, cares deeply about her home and proud of her rich cultural heritage. She has dedicated her life to protecting and managing the natural and cultural resources of Ka'ū through her work but also as a resident who actively engages in community initiatives to perpetuate the sense of place and quality of life that Ka'ū provides. She works as an educational outreach specialist for various organizations including the Hawai'i State Department of Land and Natural Resources' (DLNR) Division of Forestry and Wildlife (DOFAW), The Hawai'i Wildlife Fund, and The Three Mountain Alliance's student enrichment program, also known as 'Imi Pono No Ka 'Āina Program. Thus, she

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is a young leader in her community who is connected to and works closely with both the youth and older generations.

Ms. Ka'awa met with and took TSI on a tour of significant cultural sites at South Point on November 12, 2015. TSI also corresponded with Ms. Ka'awa in October, 2017, to discuss potential cultural impacts of the RMP of South Point, on cultural resources and practices in the area. The following, is a summary of these meetings and correspondences.

Ms. Ka'awa led a tour of South Point on foot that started at Lua o Mākālei near the Barrack's parking lot area, where the remnants of World War II infrastructure and buildings are scattered. Mākālei is a supernatural tree believed to be owned by the Goddess Haumea who is the mother of Pele. The tree was carved into a club and used as a lure, smeared with bait such as roasted 'alahe'e, roasted coconut, or various leaves to attract fish into a fishing net. Mākālei is also a lua technique which means to "gauge out the eye." It is believed that the cave was possibly used for sheltering and training warriors in Ka'ū during Kamehameha I's reign. The cave is also believed to contain burials, to have been used as a lua training area, a fishermen's work shelter, and as a classroom. The cave is also known to be a habitat for the endemic pueo, *Asio flammus sanwicensis*.

From Lua o Makalei, the group walked across the grassy plains of South Point towards the ocean, to Palahemo, Pu'u Ali'i, Kalalea Heiau, over to Pā Kanaka, and ending at Pali Hā'uke'uke.

Like many people in Ka'ū, Ms. Ka'awa considered Palahemo a sacred place that must be respected and protected. Palahemo is considered an achialine pond, a water source that rises and falls with the tide but it is not visibly connected to the ocean. "The water here is brackish with freshwater flowing from up mauka through the aquifer from the Ka'ū Forest Reserve likely the ahupua'a of Hā'ao and Kahuku," she said. Ms. Ka'awa described an 'ōlelo no'eau associated with Palahemo:

I 'ike 'oe iā Ka'ū a puni, a 'ike 'ole 'oe iā Palahemo, 'a'ole 'oe i 'ike iā Ka'ū. If you have seen all Ka'ū, but have not seen Palahemo, you haven't seen Ka'ū. Or similarly, I puni iā 'oe o Ka'ū a i 'ike 'ole 'oe iā Palahemo, 'a'ohe nō 'oe i 'ike iā Ka'ū. If you have been around Ka'ū and have not seen Palahemo, you have not seen the whole of the Ka'ū District. These 'ōlelo no'eau speak to the fact that if you stand at Palahemo you can see where both Kona and Puna—the neighboring land divisions of the district of Ka'ū—begin. And if you look mauka, you can see the highest point of where the district of Ka'ū extends to. Hence, from this one particular vantage point in the moku [land division] of Ka'ū, you can see the entire district.

Palahemo is believed to be connected underground to the sea and a dwelling place of a mo'o of the same name; in times of rain it was taboo to bathe there. Palahemo is a brackish pool. Salt water is found under the fresh water, and any disturbance, like the dropping of a heavy stone, reverses the water, so that the salt water rises to the top. Mrs. Mary Kawena Pukui has stated that "ka wai o Palahemo" was also referred to as "ka wai 'āwili," ('āwili = mixed water, brackish) and nearby residents would fetch water from this place.

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Ka'ūloa and Waiōhinu were two stones, wife and husband, that stood on a kukui grove on the upper side of the road between Na'alehu and Waiōhinu. With the passing of time, these stones gradually sank until they vanished completely into the earth. After Ka'ūloa was no longer seen, Palahemo was substituted as the chief point of interest. In our Hawaiian Culture, anything that gives us life is an Akua, water gives us life, fish gives us life, the air gives us life etc... In order for them to continue to sustain us, we need to feed that relationship by being responsible stewards of our resources.

In addition to her spiritual connection to Palahemo, Ms. Ka'awa shared childhood memories of the wahi pana. The pond extends to about 150 feet deep and when diving in the pond, the downward pull of the water can be felt. Thus, the water level at Palahemo depends on the tide so the water is more salty at high tide. As a child, she remembered seeing red 'ōpae 'ula at Palahemo but now the pond has a grayish-blackish shrimp, is seasonally wasp-infested, and the loosened dirt caused by vehicular access around the area enters Palahemo when it rains. Thus, the pond is heavily muddied and "quite a disgust to witness," she explained.

While at Palahemo, Ms. Ka'awa pointed to the yellow flowers scattered along the rim of the pond and identified them as the flowers of the endemic nohu plant, a native plant that is used in traditional Hawaiian medicine. Ms. Ka'awa sat on a rocky landing at Palahemo and proceeded to share her knowledge of place names at South Point that were significant to her. She explained that the place names told the genealogy of this part of Ka'ū:

**Hala'ea** [an unjust Chief of Ka'ū] is also the name of the current fronting Ka Lae. **Hala'ea** had two children a daughter he named **Kamā'oa** and a son he named **Kahuku**. Kamā'oa married **Ka'alu'alu**. Kahuku married **'Ahukini**. Kahuku and 'Ahukini had a daughter they named **Mōlī**. 'Ahukini had a brother and his name is **Kaulanamauna**. These are all ahupua'a or beach areas which lay fairly close in vicinity of one another [near the Project area].

Ms. Ka'awa also pointed to the different cliffs at South Point and shared their names. "That's **Pali Haukea** then on to **Pali Hā'uke'uke**, as the pali continues, it then turns into **Pali o Kūlani**, otherwise known as **Kūlani Pali** and further up, the pali transforms into **Pali o Māmalu**." Other important place names she highlighted included **Pu'u Ali'i**, **Pinao Bay**, **Kalalea Heiau**, **Pōhaku o Ka 'Iole**, **Kumaiea**, **Hina**, **Kū'ula**, **Hawai'iloa**, **'Ai'ai**, **Kānemākua** and **Luakea** or the blowhole adjacent to the hoist that people jump off through into the ocean below. The name of the flat area known as "the hoist" was traditionally known as **Pā Kanaka**. Pinao, she explained, is a type of flying fish similar to the malolo. "They look like flat fish along the rock," she said. "It's also the name for an endangered dragonfly, [that is native to Ka'ū]," she explained.

She also shared several mo'olelo connected to South Point and emphasized the importance of mo'olelo:



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People should know the mo'olelo of where they come from. They should know their connection. They should feel these elements and know of these stories and embody these things. [My children], they know.

Ms. Ka'awa explained that twins are common in Ka'ū and that phenomenon occurs in her family. She told of a mo'olelo of the ipu vine that illustrates the prevalence of twins being born in Ka'ū:

This fisherman from Kama'oa had a wife and she died. He buried her in the back of his house and from there, grew the ipu vine. The ipu traveled far into differing ahupua'a and ended up somewhere in Kona. A man from Kona saw the fruit growing from the vine and had claimed ownership [inaudible.]. The Ka'ū fisherman was having dreams of his wife coming to him and saying "Someone is moving me, pinching me." So he went to her grave and saw the 'ipu vine. He followed the vine all the way to where the fruit came out and the Kona guy came and said, "Eh, that's my fruit. It's starting to get ripe and it belongs to me." So the fisherman takes him all the way to Ka'ū and shows him where the vine grew out from which was the grave of his wife. So, the man from Kona] said, "okay, this belongs to you." When the fruit was ripe, he cut the fruit, took 'em home. And since that time, twins became a common thing in Ka'ū.

My grandparents had fraternal twins. My youngest aunty had a set of fraternal twins and my younger brother and sister are fraternal twins. There are many families who have a set of twins in Ka'ū. To name a few, the Keli'ikoa 'Ohana, the Grace 'Ohana, the Salmo's, the Mākuakāne's, the Dancel 'Ohana and many more...

Ms. Ka'awa is concerned about the numerous threats to the land due to the lack of respect for the sacredness of the place. She shared her sentiments:

Our 'Iwi Kūpuna are being eroded because of run-off and off-roading. Our cultural sites are being dismantled and walked through. The list goes on and on. There is a lack of enforcement and management so people are allowed to four-wheel and defecate wherever they want and use the area for mud bogging and donut blowing. Overharvesting beyond bag limits is happening along with local trash and marine debris accumulation which is harmful to our marine life.

Ms. Ka'awa provided several recommendations for the project which she explained was based on what many were in agreement with at several community meetings regarding the Project:

(1) Restore and protect cultural sites. "I would like to see our cultural and burial sites... being restored and protected in place," she said

(2) Limit vehicular access by closing the road and implement the road closure further up from the fork between South Point Road and Ka Lae Road. She explained that if closing the road is the only way to protect the resources, then she supports road closure. "You always want to leave the place with the least amount of impact as you can. Always leave a place better than how you found it," she said.

(3) Regarding Management Area A: a) Establish an entrance fee; and b) Create a learning center to connect people to place. She feels that revenues generated could support proper management

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of the place. However, she recommended that the fee be waived for the people of Ka'ū. She explained that, "as a kama'āina from Ka'ū, I think it's [South Point] my birth right."

(4) Regarding Management Area C: a) Cultural information provided must be accurate and correct; b) Place names should be spelt accurately. Ms. Ka'awa supported the idea of guided tours, as long as the correct information about South Point and Ka'ū is provided.

(5) Replant the area with plants that are native to South Point so that the ecosystem can function properly. She further suggested that getting tourists involved in a plant restoration program might instill a sense of ownership over the resources which may lead to better behavior on the land.

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## 5 RESULTS

### 5.1 Results of Literature Research

Background research for this Project yielded the following results (presented in approximate chronological order):

1. The Project area is located within the ahupua'a of Kamā'oa-Pu'ueo, also known as Kamā'oa Ahupua'a, in the 'ili 'āina (smaller subdivision of an ahupua'a) of Ka Lae.
2. Kamā'oa is described as: "Plain near Ka Lae (South Point), Ka'ū, Hawai'i, a place noted for red dust; people jumped from a cliff (Kau-maea-lele-kawa) near here into a dust heap in imitation of the sport of leaping from a cliff into water (lele kawa) (Pukui et al. 1974)." Pu'ueo is described as, "land sections... Ka Lae qds., Hawai'i." Ka Lae translates literally as, "the point," (Pukui et al. 1974) and is referred to as, "South Point, Hawai'i, the southernmost point in all the fifty states; quadrangle, south Hawai'i."
3. Settlement of the Project area, and the southern-most coastline of Hawai'i by early Polynesians, possibly occurred by the fourth or fifth century AD (Kirch (1985:81–87). Radiocarbon dates from sources approximately 6 miles northwest of the Project area, suggest occupation between AD 1420 and 1655 (Robins et al. 1992). Handy and Handy (1972:545) also describe the ahupua'a of Kamā'oa as the homeland of one group of early settlers who in historic times called themselves the 'clan of Pele.' Linguistic origins of the place names in Ka'ū, like Manu'a and Ta'u [or Ka'u] to Samoa, infer possible early migrations from Samoa (Handy and Handy 1972:545).
4. Mo'olelo (stories, oral histories), wahi pana (storied places), and 'ōlelo no'eau (proverbs) associated with the Project area are plentiful suggesting early settlement of the area by a viable Native Hawaiian population. The presence of distinguished heiau (Pre-Christian place of worship), rock walls, canoe-moorings, and other cultural features is testament to early settlement.
5. Oral histories describe the Project area and the lands of Ka'ū as an arid, rugged land with a resilient and rebellious people.
6. Population census conducted by missionaries in 1831-1832, recorded a total population of 5,800 in the district of Ka'ū which decreased to 2,210 by 1853 with an estimated population of 150 at Ka Lae.
7. During the Māhele, Kamā'oa Ahupua'a was granted to Leleiohoku who returned it in commutation for lands elsewhere, thus, the land became government lands. Three kuleana claims were made and awarded in the 'ili of Kalae to Kaoo, Molaolao, and Kuaipalahalaha who all cultivated sweet potato.
8. The Plantation Era significantly impacted the social and economic history of Ka'ū which began with cattle ranching after 1850 when Princess Ruth Ke'elikolani started Ka'alu'alu Ranch and the first sugar mill was established in Wai'ōhinu in 1866 (Elwell and Elwell 2004). Chinese laborers were brought to work in the sugar plantations in Ka'ū in 1876 followed by an influx of immigrant workers including Portuguese, Japanese, Pacific Islanders, and Filipinos who eventually settled in Ka'ū. The sugar industry ended in Ka'ū in 1996 but ranching persisted as the main economy at Ka Lae. Macadamia nut and coffee farm ventures replaced the sugar industry which continue in Ka'ū today.



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9. The Kalae Lighthouse at South Point was established by a 1908 Presidential Proclamation.
  10. Military presence at South Point began in 1926, with the designation of 517 acres in Ka Lae for a U.S. Air Service military reservation airplane landing field called Morse Field. The construction of Morse Field Barracks and the airstrip in the 1940s also brought a water line to South Point by 1941. Military infrastructure was destroyed as a precautionary measure against enemy use during World War II but remnants of these structures and roads are at South Point today.
  11. The DHHL acquired the lands of Kamā'oa-Pu'ueo in 1970 and since that time, limited development has occurred within the Project area.
  12. An increase in tourism to South Point has occurred in recent years, attributed to sites like Māhana Bay and the growing prominence of Ka Lae as the Southern-most point of the United States of America. Unregulated recreational use has led to severe degradation of the DHHL lands at South Point.

## **5.2 Results of Community Consultations**

TSI attempted to contact 36 community members, government agencies, community organizations, and individuals, including residents, “recognized” descendants, and cultural practitioners. Of the 15 people that responded, five kūpuna (elders) and/or kama'āina (Native-born) participated in formal interviews for more in-depth contributions to the CIA and four people provided a statement via e-mail. However, one individual chose to remove their statement from the study. Three interviews from previous TSI work at South Point were also included resulting in a total of eight individuals who provided in-depth information in interviews for this Project. The interviews were conducted from August to October, 2015 and from May to November, 2017. These community consultations indicate:

1. South Point is a place where kūpuna and kama'āina of Ka'ū identify with, feel deep spiritual connections to, and where many spent their childhood learning and applying Native Hawaiian traditional practices such as: fishing; gathering limu, salt, and 'opihi; camping; and spending time with family. A kupuna expressed that she finds her spiritual self at South Point where she is able to talk to the wind. Others describe life in Ka'ū as characterized by strong, resilient, and rugged people who value relationships and close-knit communities that nurture family and take care of each other.
2. Camping was and continues to be a common practice at South Point among Ka'ū families, particularly on the first day of summer, on the weekends, where the ocean is more calm for swimming such as at Kaulana Bay and in the area between Kahuku Beach towards Ka'alualu.
3. The settlement of DHHL lands at South Point by Native Hawaiians is believed by one informant to have been ignored by the DHHL since 1920 who have prioritized “everybody else’s needs over those of Native Hawaiians. He recounted a series of unsuccessful proposed developments as examples, including NASA’s proposed rocket launching project at Ka Lae, the Department of Transportation’s proposal for a public boat ramp at Kaulana and many others that local residents protested.

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4. The Project area is rich in archaeological features associated with early settlement of the area, and the first inhabitation of the Hawaiian Islands from the South Pacific. Community members highlight important features from this era at South Point including: canoe mooring holes at Ka Lae, Kalalea Heiau, an extensive historic rock wall, burial grounds of Pu'u Ali'i, ancient trails, and other artifacts.
  5. Kamā'oa-Pu'ueo Ahupua'a is rich in mo'olelo associated with early Native Hawaiian settlement. Community members recounted mo'olelo associated with supernatural experiences near Kalalau Heiau, mo'olelo that demonstrate the rebellious and resilient nature of Ka'ū people, moolelo that describe the genealogy of Ka'ū including the various place names at Kamā'oa-Pu'ueo, such as Palahemo, Lua o Makalei, Kaulana, Kapalaoa, the two sisters that died at Palahemo.
  6. South Point is considered by many Ka'ū residents as a wahi pana of great spiritual significance that warrant protection. These sites include:
    - **Palahemo:** Consultations indicated that Palahemo is spiritually significant because: Ku Mauna [in Pahala], the rain god, can be viewed from Palahemo, therefore, "it brings you closer to the gods"; it is the dwelling of a mo'o (lizard) of the same name; and the boundaries of the Puna and Kona Districts are visible from the pond, thus, one can see the entire Ka'ū District from Palahemo. An informant explained that previously, Ka'ū was known for two stones, Ka'ūloa and Wai'ōhinu, located in the mauka region between Na'alehu and Wai'ōhinu. Over time, the stones receded and disappeared underground and Palahemo became the symbol for Ka'ū. So highly regarded is Palahemo that a kupuna explained, "You haven't seen Ka'ū if you haven't seen Palahemo." The site is also associated with various 'ōlelo no'eau (proverbs), as shown in Section 3.1.5.
    - **Kalalea Heiau:** One informant recounted stories of supernatural experiences surrounding this heiau while another shared that the heiau was for fishermen and women were not allowed to enter the heiau.
    - **Pu'u Ali'i:** A native Hawaiian burial ground where many iwi were removed during early archaeological studies by Bishop Museum and stored in garbage bags at the museum. Many of the iwi were repatriated to Pu'u Ali'i in the 1980s following the creation of NAGPRA that mandated the return of iwi to their places of origin. An informant expressed concern over the protection of iwi at Pu'u Ali'i and who should assume responsibility over their management because the iwi belong to the people of Ka'ū rather than the DHHL. Another informant remembered seeing Palikapu Dedman bring the iwi back to Pu'u Ali'i. The same individual considered Pu'u Ali'i and Palahemo as the "heaviest" sites of South Point and he was socialized to treat these sites as sacred. He shared incidences where he had taken people down to pour water and conduct protocol relating to iwi kupuna buried at the site. Some Maori also consider themselves to originate from ancestors buried at Pu'u Ali'i.
    - **Lua O Mākālei:** A cave in the vicinity of the Barracks that is believed to have been used for sheltering and training warriors during Kamehameha I's reign, serve as a habitat for the endemic pueo (*Asio flammus sanwicensis*), and contains burials. Consultations indicate that Mākālei is a supernatural tree of the Goddess Haumea,
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mother of Pele, used as a lure for fishing. Mākālei is also a lua technique that refers to, “gaug[ing] out the eye.”

7. Palahemo is an anchialine pond that provided habitat for the red ‘ōpae‘ula (shrimp). Consultations indicate that the pond extends to 150 feet and is connected to the ocean below, therefore, is responsive to the flow and ebb of the tides. ‘Ōpae‘ula from the pond was used traditionally for ‘ōpelu fishing, however, the pond is currently inhabited by a grayish-black shrimp, is seasonally wasp-infested, and is now “heavily muddied” from loose dirt created by vehicular access near the pond.
8. Māhana Bay was described by a kupuna as a canoe landing where people used to leave their canoes there for fishing: “They would just remove the ama and take that with them but leave the canoe in the bay,” he recalled. Māhana Bay was also described as having a strong current. Several informants shared that Māhana Bay was not typically a destination for kama‘āina of Ka‘ū who regularly accessed South Point, but rather, Ka‘alualu was usually the destination and Māhana was just along the way. “From Kaulana to Ka‘alualu, people would surround net, lobster net, lay net at night and check the next day, even turtle net... [and they would] feed kū‘ula (ko‘a),” said a kupuna of South Point.
9. The south winds usually blow at South Point during the winter months and a prominent current known as Hala‘ea, fronts Ka lae. During the winter, the ocean is calm and ideal for fishing and South Point is “beautiful with lantana flowers everywhere.”
10. South Point was and continues to be an important fishing ground—Broken Landing is known for spearfishing, the cliffs at Ka Lae are known for line fishing, the areas from Kaulana Bay to Māhana, was known for net fishing when the water was calm, and Kaulana Bay was known for limu kohu and where boats launch from for deep-sea fishing. Marine products frequently caught and collected included manini, ‘āholehole, pakukui, kala, ‘opihi, and ‘a‘ama. Kupuna recall fishing for ‘ōpelu using pumpkin, taro, and ‘ōpae‘ula caught at Palahemo. Today, deep-sea fishing off the coast of South Point for tuna and marlin is more common, however, fish caught is usually sold in Hilo.
11. The hoist was built by an informant’s father, to provide access to fishermen to enter and exit the ocean along the cliffs at Ka Lae. Fishermen would leave their catch at the top area of hoist while they fished.
12. Salt gathering was a common practice at Ka Lae but the practice has ceased to exist because of unsanitary conditions from people urinating along the coastline. Consultations indicate that the practice occurred along the entire shoreline from Ka Lae to Ka‘alualu and the salt was described by kupuna as “glassy.” When salt was not available, a rock from the ocean could be boiled.
13. Previously, there was one coastal road that extended from Kaulana Bay to Māhana Bay. Two informants remember only one road along this shoreline growing up where people accessed by foot and on horseback for fishing and as a thorough way to Ka‘alualu. One kupuna recalled that fishermen who accessed the hoist would park on the mauka-side of the historic wall and walk down to the hoist. Informants explained that in more recent years, the recreational use of vehicles at South Point has created many roads that have damaged the land and desecrated sacred sites like Palahemo and Pu‘u Ali‘i.



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14. The Project area has native plants that informants highlight as worth protecting. Consultations also indicate that previously, plants were successfully cultivated at South Point despite dry conditions. These included vegetables like pumpkin, and canoe plants like coconut.
  15. In the 1990s, the non-profit, 'Ohana o Kalae, operated an education program that taught children of Ka'ū, Hawaiian cultural knowledge and practices. Accounts from community members indicate that the program was highly effective.
  16. Water is an important but limited resource at South Point. Lineal descendants of South Point recall stories told by kupuna that "water in Ka'ū runs underground" and that early residents would capture water percolating from below, as well as from springs originating from Hā'ao Springs. South Point lacks a systematic water supply which has been a point of contention among homesteaders and DHHL for over 30 years. A DHHL homesteader at South Point identified several water sources at South Point including: a 50,000-gallon water tank located near the Barracks that is supplied by a four-inch waterline from Hā'ao Springs and maintained by the County of Hawai'i's Department of Water; a DHHL-owned fresh water well contaminated by saltwater intrusion from excessive drilling; and two County meters that several beneficiaries split, one of which was paid for by a beneficiary. A kupuna felt that the availability of water would unite Native Hawaiians of the area with common goals of achieving plans for South Point.
  17. Kupuna remember the prevalence of ranching and the paniolo lifestyle at South Point and how "cows used to be everywhere." However, a homesteader at South Point pointed out that 25-acre parcels, the size of DHHL lots at South Point, are too small to support a ranching operation.
  18. During the Plantation Era, the plantations supported the livelihood of most people in Ka'ū and an informant believed that Ka'ū has never recovered from the closing of the plantations. The land at South Point was owned by C. Brewer & Co. Ltd. Plantation, one of the "Big Five," and it was subsequently sold to Parker Ranch. Though the Plantation Era ended, he believed a new "Big Five" emerged to replace the plantations that continue to keep rural communities on the periphery, resulting in economic hardships that characterize life in Ka'ū today. These include: the construction industry, shipping and commerce, real estate and land holdings, the visitor industry, and the military.
  19. South Point was also occupied by the military and served as a gun nest during World War II. A kupuna remembered that service men used to live at South Point and it was the military that initially brought the water into South Point. The kupuna believed that the military destroyed many cultural resources that were at South Point and another informant explained that the military negatively impacted the environment of South Point by filling up Lua o Makalei with rubbish cans and barbed wire and failed to clean up a tar pit that still exists at South Point.

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## 6 DISCUSSION

This section integrates information from previous sections to examine cultural resources and practices identified within or in proximity to the Project area in the broader context of the encompassing landscape of South Point. Various issues and concerns were raised by informants about the existing conditions at South Point in general, as well as more specific concerns about potential cultural impacts of the proposed Project. Excerpts from interview sessions from past and the present cultural studies are incorporated where applicable. Discussions of specific aspects of traditional Hawaiian culture as they relate to the Project area are presented below.

### **Sense of Place**

The CIA revealed that the people of Ka'ū historically were and continue to be proud, rugged people, fiercely protective of their sacred places and people. Through the course of this study, it seems to be the case that for the district of Ka'ū, many of its inhabitants, regardless of the ahupua'a they are from, claim South Point as their 'āina. All those interviewed for this Project, had a deep connection to South Point. Many had spent a significant amount of time there as children, with family, and as a place for cultural practice, like fishing, limu gathering, and camping. A kupuna described South Point as a very sacred place. "I find my spiritual self there... Down there is so sacred. I find I can go and talk to the wind," she said. Mr. Fox voiced a concern about the need to maintain the sense of place at Ka Lae, a sentiment that was shared by all those who participated in the study:

My main concern with any planned action is the need to maintain the cultural integrity and the natural landscape. It is important that we maintain the sense of place at Ka Lae. As a wahi pana, respect for Hawaiian culture and history is paramount. Although we are experiencing high demands for visitor and recreational use, we cannot allow tourism and off-road enthusiasts to continue to adversely impact our lands and resources.

Several wahi pana were described by informants as critical to the unique identity and sacred sense of place of South Point, therefore, should be protected and restored. These included the burials at Pu'u Ali'i, Kalalea Heiau, and Palahemo. "There's a physical manifestation of the heiau and sites over there that has made people put that place as sacred," Mr. Dela Cruz said. He explained that Palahemo and Pu'u Ali'i have always been revered by local people but said that the case is not the same for Kalalea Heiau which gets trampled on all the time. "Maybe the heiau doesn't speak to Christianity?" he pondered. Though Kalalea Heiau is not located on DHHL lands and the wahi pana was not discussed in as much detail as Pu'u Ali'i and Palahemo, it was still raised as an important wahi pana that characterizes the sacredness of Ka Lae, and needs to be protected.

Management strategies proposed in the RMP 2016, to protect such sites, such as a cultural interpretive walking trail and associated signage; limiting vehicular access; and installing protective barriers around Pu'u Ali'i and Palahemo, were welcomed as a "step in the right direction." However, some participants were frustrated with the lengthy process of an Environmental Assessment to implement the RMP 2016 which they felt stalls the immediate

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implementation of management actions. Mr. Kekoa and Mr. Fox felt that a number of action items could be implemented immediately to protect resources while environmental studies are being conducted. These included: posting of signage with rules regarding off-road vehicle use; hiring security officers to enforce rules; placement of additional lua (toilet) at barracks and fishing hoist; trash collection; facilitation of stewardship agreements with community organizations and government agencies for cultural and natural resource management; and the creation of an advisory committee.

### **Burials & Cultural Sites**

Research for this study indicated that South Point is a Historic Landmark that consists of approximately 710 acres, providing the “longest and most complete record of human occupation in the Hawaiian Island.” It is believed that Ka Lae was the first place that the early Polynesians from the Marquesas Islands, and possibly other island in the South Pacific, settled when they arrived in the Hawaiian Islands, as early as A.D. 124. Important cultural sites that informants associated with South Point included: Pu’u Ali’i, Kalalea Heiau, the historic wall near the hoist, canoe mooring holes at Ka Lae, Lua or Palahemo, Lua o Makalei, and house sites nears Kaulana Bay. Consultations suggested that many people from Ka’ū claim that their ancestors are buried at Pu’u Ali’i which might explain Mr. Kaniho Jr.’s opinion that anyone from Ka’ū can claim South Point.

Mr. Dela Cruz shared that Pu’u Ali’i is the heaviest area of Ka Lae and he was socialized to treat certain areas as sacred. In three separate times in his childhood, he recalled seeing Maori people come to Ka’ū and claim lineage to Ka’ū. He remembered when Palikapu Dedman brought back iwi from Bishop Museum and buried them at Pu’u Ali’i. “Before, there was no signage at Pu’u Ali’i,” he said. Mr. Dedman shared his experience with iwi (bones) at Pu’u Ali’i and explained that about 176 bodies had been dug up from South Point previously by archaeologists, bagged, and stored at Bishop Museum. He believed the iwi came from digs that were searching for fishhooks and implements. However, NAGPRA regulations required the Bishop Museum to return iwi in their possession to their origins. He shared how the iwi was returned to Pu’u Ali’i. Mr. Dedman asked an important question of who owns the iwi at South Point. “They don’t belong to DHHL. They belong to Ka’ū,” he stated.

In the past, Mr. Dela Cruz has taken people to Pu’u Ali’i to pour water and conduct protocol relating to iwi kūpuna buried at the site. He was concerned about how a potential fence around Pu’u Ali’i might impact those who continue to visit and access Pu’u Ali’i to visit ancestors. “Who gets left outside the fence? Who cannot come in?” he asked. He recommended that if a fence is built, there should be ways that still allow access for cultural practice.

### **Fishing**

Consultations indicated that South Point is an important place for fishing and where many residents of Ka’ū, including participants of this study, learned to fish and feed their families. “Some people love South Point for fishing and nothing else,” said Mr. Dela Cruz. Participants characterized fishing practice at South Point as follows: Throw-net fishing is a day-time practice



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that usually occurs in the areas from Pinao Bay to Māhana; line fishing occurs along the cliff areas by the hoist; and spearfishing occurs along the area of Broken Road.

The study also found that while many Kaʻū people access South Point for subsistence, that practice is being threatened by commercial fishers who generally are from other places like Kona and Hilo. South Point has also become a destination for sport fishing tournaments. Consultations suggested that residents fear that the lack of management of the fisheries at South Point will deplete fish reserves at South Point and its surrounding areas. Mr. Dedman explained that initiatives to create a management plan to manage fishing in the area between Ka Lae and Māhana were discussed in the 1980s.

Consultations also suggested that the RMP 2016, particularly the efforts to manage vehicular access, might impact fishing practices. However, kūpuna like Ms. Cariaga and Mr. Kaniho Sr. emphasized that people can always park and walk down to the coastline like they did in the past. Thus, it is important to highlight that while the RMP 2016 is intended to manage vehicular access, pedestrian access to the shoreline for fishing is permitted.

### **Camping**

Camping is a practice that the people of Kaʻū associated with South Point. Ms. Cariaga, Ms. Kaʻawa, and Mr. Dela Cruz recalled fond memories of camping there in their childhood.. Thus, Ms. Cariaga felt strongly about allowing camping at South Point. “A lot of people want to go there to have a picnic or for camping,” she said. “Before I die, I want to see a project. Even if we don’t get the water, maybe we can get the camping... I would really like to see camping over there,” she said. She recommended that the camping program at Puhi Bay with the Hawaiian Homestead at Keaukaha, is a good model for South Point.

### **Native Plants**

Consultations indicated that endangered native plants are located in the vicinity of the lighthouse at South Point. Mr. Kekoa was concerned that fishermen driving through an opening in the historic wall to access Kalalea Heiau, might drive over the endangered native plants. Ms. Cariaga also mentioned that some plants at South Point are worth saving but she did not want The Nature Conservancy involved in its management. Ms. Kaʻawa pointed out several native coastal plants including the endemic nohu plant growing along the sides of Palahemo, a native plant that is used in traditional Hawaiian medicine. To protect native and endangered plants at South Point, Ms. Kaʻawa recommended replanting the area with plants that are native to South Point and also to engage tourists in a plant restoration program. Mr. Kekoa recommended engaging community volunteers to restore the historic wall and block vehicular access that impact endangered plants.

### **Water**

Though Kaʻū is a rugged land with harsh environmental conditions, early Hawaiians of Kaʻū knew how to capture water percolating from underground, according to Mr. Manuel. “People say it’s hard to get water, but my dad would say, it’s possible,” he said. “The water in Kaʻū runs underground,” he said. Ms. Cariaga explained that traditionally, the Hawaiians got their water from

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the springs, [such as Hā'ao Springs]." The presence of Kūmauna, the local deity of rain in Ka'ū, who resides in the mauka regions of the district and visible from Palahemo, suggests the significance of water to the area, traditionally.

Consultations indicated that one of the most common concerns about South Point in the 21<sup>st</sup> Century, is water availability and accessibility. Ms. Cariaga expressed that her greatest concern for South Point was the lack of water, therefore, she felt that providing access to water should be the top priority for DHHL at South Point. Though she explained that one must be strong to live in Ka'ū, she felt that access to water would improve the quality of life for those living at South Point. She explained:

I think I can guarantee if we get water coming down there and our people know that there is water, [they will] make plans together and stick to our plans. If we can tap Hā'ao Springs, we will be real good. Hā'ao Springs get plenty water. If they can bring 'em down, big changes in Ka'ū if we get the water. People would learn to love each other.

The Kaniho 'Ohana, who are DHHL beneficiaries with land at South Point, have also been strong advocates for water access at South Point for over 30 years. As a long-time rancher, Mr. Kaniho Jr. stated that lack of water is a limiting factor for farming and ranching at South Point. He explained:

It is not sustainable to make a living on land with no water. The issues the homesteaders at South Point had with DHHL was not implementing the infrastructure. The water was the main thing but it was never provided. The land should come with the infrastructure already developed but DHHL is not committing themselves to us.

He shared that two County water meters exist for homesteaders at South Point. One of the meters was awarded to his father, the late Mr. Kaniho Sr. that used to be split between six ranchers. He and his wife inherited the meter when his father passed away and they continue to share it with 5 other ranchers. "It is optional sharing, he said." According to Mr. Kaniho Jr., the second meter is connected to a 7,000-gallon tank that is supposed to be full all the time for fire emergencies. However, that meter was paid for entirely by another homesteader.

Mr. Kaniho Jr. shared that there were flushable toilets at the Barracks that people used previously so he knows from experience that water infrastructure is possible at South Point. He referenced the 50,000-gallon water tank located in the vicinity of the Barracks at South Point that used to service previous operations at South Point. Though the water tank is on DHHL lands, it is maintained by the Hawai'i County Department of Water Supply (DWS). According to Mr. Kaniho Jr., the infrastructure for the water tank was built by the U.S. military during World War II. The tank is fed by a four-inch line that carries water down from Hā'ao Springs. "They say that the water tank is cracked so it's just sitting there, wasting a resource," he said. He was frustrated that nothing has been done to utilize the water and make it accessible to homesteaders at South Point. "If you can store 50,000 gallons of water at the bottom, why not build five, smaller, 10-gallon tanks up top and let it service DHHL homesteaders?"

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Regarding the proposed RMP for South Point, Mr. Manuel pointed out that water will be needed to implement some of the actions proposed in the RMP 2016. He indicated that a guard shack with security guards on a daily basis, as proposed in the RMP, would require bathroom amenities for workers. Thus, access to water will be necessary.

### **Access**

The majority of informants consulted for this Project were concerned about the existing unmanaged access situation at South Point. Though several trespassing signs have been erected at South Point by the DHHL, visitors do not heed the signage because there is no active enforcement at South Point. Therefore, South Point has been accessed freely by the public as a place of recreation and has become a well-known tourist destination. Unfortunately, visitors have significantly impacted the natural and cultural resources. All informants consulted for this study felt that the situation must be managed and there was unanimous support for strategies to manage vehicular access. The majority of those interviewed for this study felt that the land needs to heal, therefore, they recommended to close the road.

Mr. Manuel, Mr. Kaniho Sr., Mr. and Mrs. Kaniho Jr., Ms. Ka'awa, and Mr. Dedman supported the idea of shutting down the road to South Point. Mr. Dedman stated that continuing to allow public access to South Point, impacts traditional and customary Hawaiian practices. He explained that these actions not only continue to negatively impact the psychological well-being of Native Hawaiians, but also the degradation of natural and cultural resources caused by unmanaged access at South Point, directly impacts the ability of Native Hawaiians to carry out their traditional and customary practices. As one of the few remaining spaces in Hawai'i that has been designated for Native Hawaiians, Mr. Dedman recommended closing the gate to South Point and limiting public access except for Native Hawaiian beneficiaries.

Ms. Ka'awa also recommended limiting vehicular access by closing the road and implementing the road closure further up from the fork between South Point Road and Ka Lae Road. She explained that if closing the road is the only way to protect the resources, then she supports road closure. "You always want to leave the place with the least amount of impact as you can. Always leave a place better than how you found it," she said. Mr. Kaniho Sr., who has now passed away, also concurred stating that, "The only thing I can tell you is to close the place down. DHHL gotta get security and put their foot down." Mr. and Mrs. Kaniho Jr. also recommended that South Point Road be gated and closed to the public. Mrs. Kaniho Jr. explained that Native American reservations are owned by Native American people and are NOT open to the general public. She felt that the same rules apply to South Point since its land tenure as "Available Lands," is intended for the betterment of native Hawaiian people. "The main thing right now is to shut down the road and then clean up the place," said Mrs. Kaniho Jr. Both agreed that South Point should be used for what it is intended for, as stated by law.

Mr. Manuel also supported the idea of shutting down the road to South Point and letting the land heal but he, like the majority of those consulted for this Project, also welcomed the ideas of management, as presented in the RMP 2016. He felt that limiting vehicular access to South Point



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was a good idea that was consistent with the historic use of the place where everyone walked. However, he and two others also felt that actions to limit vehicular access to South Point should not impact the ability of kūpuna and cultural practitioners to access South Point. Mr. Fox recommended allowing 24-hour access to cultural practitioners and Mr. Taylor highlighted Volcano National Park as an example of 24-hour access to cultural practitioners.

Participants unanimously supported installing a gate along South Point Road and building a guard shack nearby to monitor daily activities at South Point. Mr. Dela Cruz felt that a gate will be met with resistance from local community, therefore, enforcement would be necessary for the Project to work. Mr. Manuel also believed that resistance to the idea would stem from a culture of convenience. “For everybody, it’s about the ease of being able to drive up,” he said. Despite resistance to the idea of a gate, some felt that resistance will be temporary until people get used to the idea.

The need for enforcement will be necessary for proposed actions to work. Mr. Kaniho Jr. pointed out that though a security guard and gate are planned for the entrance to South Point, he was concerned about the lack of plans for the Ka’alualu portion of the Project area. “Once you stop the front, people will come from the backside [and enter from Ka’alualu],” he said. He felt that to produce a more effective plan to curb vehicular access to South Point, managing vehicular access at Ka’alualu is also necessary. “The back [Ka’alualu] portion should be done at the same time as the front,” he said. “If it will take another couple of months to add this into the plan, then it’s worth it because now you are taking care of the whole area,” he said.

Consultations indicated support for an entrance fee at South Point to generate funds to support the management of South Point. However, Mr. Taylor, Mr. Kaniho Sr., and Ms. Ka’awa felt that the fee should be waived for the people of Ka’ū. “At some point, a fee for entrance might be needed, but I do not believe it should be applied to local people,” Mr. Taylor said. “But if you are going to attempt to actively manage the area then it is going to need funding,” he said. Ms. Ka’awa stated that, “as a kama’āina from Ka’ū, I think it’s [South Point] my birth right.”

### **Shuttle Service**

The majority of informants consulted for this Project, were concerned about a shuttle service at the Barracks at South Point, that transports visitors to and from Māhana Bay. The operation has been run by a local Ka’ū family over the past several years despite opposition from other Ka’ū residents and being prohibited by the DHHL. Several informants, including Mr. Kekoa, Ms. Cariaga, and Mr. Kaniho Jr., disagreed with the operation on grounds that the activities are conducted illegally on DHHL property without giving back to community and place through taxes or monetary contributions to the DHHL; that the operators do not have liability insurance and are not adequately trained to safely host visitors; that the vehicular shuttling of visitors of up to 30 trucks daily to and from Māhana Bay contributes to the degradation and erosion of the land at South Point; and that the family monopolizes the activity preventing other Ka’ū families from benefitting from similar economic opportunities.

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At the same time, consultations suggested tolerance of the operation due to lack of jobs and economic opportunities in Ka'ū. The economic hardships commonly experienced in Ka'ū was offered as justification for the operation, thus, the family conducting the shuttle service was described as people just trying to feed their families and make ends meet. Consultations further suggested that the RMP 2016 offers opportunities for the DHHL to assist in building the capacity of local communities. While some participants recommended that the family should not be allowed to participate in future endeavors at South Point due to their history of illegal activities at South Point and their contribution to the degradation of the place, other informants recommended that the DHHL prioritize local Ka'ū residents, including the family, should there be a bidding process to operate a legitimate shuttle service. Several participants like Mr. Manuel, Mr. Dela Cruz, and Mr. Taylor expressed concern that the requirement for a bidding process would exclude local Ka'ū vendors, including the family, because it would be hard for Ka'ū people to compete with outside vendors like Kapoho Kine Adventures. Mr. Taylor stated, "That's guaranteed to cause problems, these people are trying to earn a living, generating income in a place where jobs are nearly non-existent," he said.

### **Lack of Management by DHHL**

Most people consulted for this Project were concerned about the role of DHHL as a land manager at South Point and the lack of attention the agency has devoted to the previous and existing impacts to natural and cultural resources at South Point. While some welcomed the RMP for South Point as a step in the right direction for the place, others were skeptical about the agency's ability to follow-through and implement the actions in the Plan. The following is a summary of informants' sentiments on this issue. Mr. Kaniho Jr. commended efforts to implement a management plan at South Point, stating that the management plan should have been implemented 30 years ago. He expressed disappointment with the DHHL for decades of inaction, and felt that drastic measures need to be taken to address the desecration at South Point. He said:

How about getting input from our Governor? I think our Governor is not hearing about this and he has no idea about what is happening at South Point. We can bring the news media to bring attention to South Point and let people know what is happening here so that something can be done. If I stand by myself, I am not going to get heard. We need to approach this as a community. I can get people together. I remember when Uncle Sunny addressed the Governor to oppose lands being given to the Big 5, to open it up to give to the people.

Ms. Anna Cariaga also expressed her frustration with DHHL's inaction. "It's time now," she stated. "Gotta put the feet down... Stop what is going on now." In addition to the need for DHHL to assert management actions and decisions at South Point, she felt that it was also the community's responsibility to help manage South Point. She explained: The curatorship should be shared by everybody. Everybody should have a responsibility...not only one group. Everybody should have one responsibility of the area. Mr. Taylor acknowledged that DHHL has issues of manpower. Mr. Dedman also concurred, attributing the degraded state of the environment at South Point to the DHHL. He indicated that the settlement of native Hawaiians on DHHL lands, such as Ka Lae, has

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been ignored since 1920. At Ka Lae, he felt that DHHL has prioritized everyone else over the needs of native Hawaiians, therefore, calls on the DHHL to assume their responsibility to prioritize the settlement of native Hawaiian people not only at South Point but throughout the State of Hawai'i. He explained that negligence on DHHL's part has forced native Hawaiians like himself to become activists. He reiterated the point that South Point is private lands that should not be used for commercial activities but should be used to better the lives of the Hawaiian people. He questioned the DHHL's institutional definitions of success, stating that it is not success if infrastructure is developed while the social problems afflicting Native Hawaiians are not being addressed.

## **Cultural Impacts**

Though all informants spoke of the history of impact to cultural resources and practices at South Point, as a result of unmanaged access to South Point, several informants, such as Mr. Kaniho Sr., Mr. Manuel, and Mr. Dedman, believed that there had been enough destruction to resources at South Point previously, from military and ranching activities, that any actions from the RMP 2016 would not negatively impact the area. Mr. Dedman pointed out that the U.S. Military had negatively impacted the environment at South Point. He shared the following:

The military filled up Lua o Makalei with rubbish-cans and barbed wire. When we came down, we had them clean up the mess. When the military left, they did not put that place back to the way it was. They had that alternate airport but they didn't clean up that tar pit. They applied to use the Superfund but they never got it. The tar pit is still there.

Mr. Dedman also stated that continuing to allow public access to South Point, impacts traditional and customary Hawaiian practices. He explained that these actions not only continue to negatively impact the psychological well-being of Native Hawaiians, but also the degradation of natural and cultural resources caused by unmanaged access at South Point, directly impacts the ability of Native Hawaiians to carry out their traditional and customary practices. As one of the few remaining spaces in Hawai'i that has been designated for Native Hawaiians, Mr. Dedman recommended closing the gate to South Point and limiting public access except for Native Hawaiian beneficiaries. He felt that this action is necessary to allow the land to heal.

Though the RMP 2016 does not advocate a road closure, the actions proposed in the plan were generally regarded by most participants of this study to improve the integrity of natural and cultural resources of the area, thereby, improving the capacity of the land to support cultural practices in the long term. Thus, the RMP 2016, was supported by the majority of informants consulted for this study, as a positive impact on the cultural resources and practices at South Point.

## **6.1 Impacts and Recommendations**

The following cultural impacts and recommendations are based on a synthesis of all information gathered during preparation of the CIA. This study indicated that the Project area is located within a culturally significant area with many burial and archaeological sites. The most significant cultural impacts, if the RMP 2016 is implemented, include: the possibility of encountering iwi kūpuna



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(human skeletal remains) and cultural sites, during subsurface ground disturbance; limiting access to traditional and cultural practices; and impacting sense of place. To help mitigate the potential adverse impacts of the proposed Project on Hawaiian cultural beliefs, practices, and resources, recommendations should be faithfully considered, and the development of the appropriate measures to address each concern should be implemented.

1. Several respondents indicated that burials are located throughout the Project area, particularly in the area surrounding Pu'u Ali'i. Mr. Dedman, who returned iwi from Bishop Museum to Pu'u Ali'i and who is regularly involved in the internment of iwi throughout Hawai'i, stated that the iwi at South Point does not belong to DHHL. "They belong to Ka'ū," he said. The distinction of who owns the iwi is important for burial treatment. Mr. Fox recommended conducting an archaeological inventory survey prior to the design and development of the emergency access road. TSI recommends archaeological monitoring, as well as cultural monitoring during all phases of development.
2. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease and the appropriate agencies notified pursuant to applicable law. Kūpuna and/or lineal descendents from the Project area should also be consulted to ensure proper cultural protocol are addressed.
3. Installing the proposed entrance gate should not limit Native Hawaiian access to traditional and customary practices. South Point is one of the most important fishing grounds in the Ka'ū District. Consultations indicated concern that the proposed gate in the RMP 2016 might limit the ability of cultural practitioners to continue their practice. To mitigate these concerns the following recommendations were provided:
  - a. Mr. Fox, Mr. Taylor, Mr. Kaniho Sr., and Mr. Manuel recommended that the gate not limit kūpuna and local people from accessing South Point for cultural practices; therefore, provide parking along South Point Road and allow for pedestrian access;
  - b. Mr. Fox recommended allowing 24-hour access to cultural practitioners and Mr. Taylor highlighted Volcano National Park as an example of 24-hour access to cultural practitioners;
  - c. Mr. Dela Cruz recommended that there be enforcement. "If there's no enforcement, nothing will happen," he said. He further suggested that if the security/information booth is intended to acclimate visitors to South Point, then it should be more than a booth, such as the visitor center at Mauna Kea;
  - d. Mr. Kaniho Jr. recommended that a gate with security guards should also be implemented at the backside or the Ka'alualu side of the Project area to account for the whole area;
  - e. In the event that an entrance fee to South Point is implemented, Mr. Taylor, Mr. Kaniho Sr., and Ms. Kaawa recommended that the fee be waived for the people of Ka'ū.

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4. Installing a fence/protective barrier around Pu‘u Ali‘i and Palahemo should not limit access to traditional and customary practices at those sites. Mr. Dela Cruz recommended that if a fence is built around Pu‘u Ali‘i, there should be ways that still allows access for cultural practice.
  5. Implementing the RMP 2016 should not impact the sense of place of South Point. Mr. Fox stated that: “It is important that we maintain the sense of place at Ka Lae,” a sentiment shared by all who participated in the study. The following recommendations were provided to protect sense of place:
    - a. Use natural materials for the construction of proposed actions. Mr. Fox recommended that the pedestrian pathway and proposed roads should be as natural as possible to blend in with the environment. He also strongly discouraged the use of asphalt, concrete or man-made materials for the pedestrian pathway. Ms. Cariaga recommended building a protective stone wall around Palahemo.
    - b. Mr. Kekoa and Mr. Fox recommended allowing community members to implement immediate actions that do not require an environmental review process, such as: posting of signage with rules regarding off-road vehicle use; hiring of security officers to enforce rules; placement of additional lua at the Barracks and fishing hoist; trash collection; facilitation of stewardship agreements with community organizations and government agencies for cultural and natural resource management; and the creation of an advisory committee.
    - c. Increase education awareness about the sacred sites and cultural significance of South Point through the use of signage and protective barriers. However, the design and exact placement of the cultural interpretive walking trail and any associated interpretive signage/protective barriers around cultural sites, should be informed by descendants of South Point. Mr. Fox recommended working closely with community and descendants of the area.
  6. Community members and organizations should be briefed and consulted as the Project design progresses. This will keep the community informed of changes that could result in unanticipated adverse cultural impacts. Ms. Cariaga supports this idea and recommended that management of South Point should be a co-management effort where community groups also have a responsibility towards stewardship of the place. Mr. Kekoa shared that he could have volunteers ready to help restore the historical wall near the hoist. Mr. Dedman called on the DHHL to assume their responsibility to prioritize the settlement of native Hawaiian people not only at South Point but throughout the State of Hawai‘i.
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