

**AN ARCHAEOLOGICAL INVENTORY SURVEY
OF AN APPROXIMATELY 90 ACRE PARCEL
LĀWA`I AHUPUA`A, KŌLOA DISTRICT,
KAUA`I ISLAND, HAWAII
[TMK: (4) 2-6-002: 001, 004 to 006]**

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ABSTRACT

At the request of Charles “Chipper” Wichman, Director of the National Tropical Botanical Garden (NTBG), Scientific Consultant Services, Inc. (SCS), conducted an Archaeological Reconnaissance Survey, from April 28 to May 11, and an Archaeological Inventory Survey, from May 12 to June 15, 2007, at Allerton Gardens. The project area was comprised of an approximately 90 acre area located in Lāwa`i Ahupua`a, Kōloa District, Kauai Island [TMK: (4) 2-6-002:001,004-006].

During the Archaeological Reconnaissance Survey and Archaeological Inventory Survey six sites were newly identified. The newly identified sites include: Site 50-30-10-893, (SCS Site TS-1), agricultural terraces on the slope along the east side of the Allerton’s house); State Site 50-30-10-894 (SCS Site TS-2), multi-feature Habitation Site at the southeast corner of the property. State Site 50-30-10- 895 (SCS Site TS-3), two terraces located west of the stream; State Site 50-30-10-896 (SCS Site TS-4), a *lo`i* complex in a *hau* patch just west of the stream); State Site 50-30-10-897, (SCS Site TS-5), a habitation terrace located behind the Diana’s Fountain; State Site 50-30-10-898, a wall which was part of the Allerton Modifications. In addition, one site previously identified by Kikuchi (1963), State Site 50-30-10-3069 (Kikuchi’s Site 53), and one feature (Feature C of Site 50-30-10-3067, Kikuchi’s 50c), also previously identified by Kikuchi, were relocated and documented. State Site 50-30-10-3069 (Kikuchi’s Site 53) consists of a stone wall located at the southwest end of the project area (Kikuchi 1963:40, 42). Site 50-30-10-3067, Feature C (Kikuchi’s Site 50c) consists of a series of *lo`i* terraces located along the east and west sides of the stream which were initially identified by Kikuchi (1963: 39, 40).

Sites 50-30-10-893 through 50-30-10-898, 50-30-10-3067, Feature C, and 50-30-10-3069 -, have been evaluated for significance according to the established criteria for the Hawai`i State Register of Historic Places §13-275-6. All of these sites have been found to be significant under Criterion D, information content.

Due to the wealth of prehistoric and historic archaeological resources in the area, SCS recommends the entire project area be preserved under its current use as a portion of the existing Allerton Gardens.

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INTRODUCTION

At the request of Chipper “Charles” Wichman, Director of the National Tropical Botanical Garden (NTBG), Scientific Consultant Services, Inc. (SCS), conducted an Archaeological Reconnaissance Survey, from April 28 to May 11, and an Archaeological Inventory Survey, from May 12 to June 15, 2007, at Allerton Gardens. The project area was comprised of an approximately 90 acre area located in Lāwa`i Ahupua`a, Kōloa District, Island of Kauai [TMK: (4) 2-6-002:001,004-006] (Figures 1 and 2).

The purpose of the Archaeological Reconnaissance was to relocate previously identified archaeological sites, and to identify any previously unidentified sites within the lower portion of the National Tropical Botanical Gardens for inclusion in the State Inventory of Historic Properties (SIHP). The Inventory Survey portion of the study involved the detailed documentation of identified sites and limited test excavations at selected sites to determine the function and chronological sequence of the area. All identified archaeological sites were described and all locations were marked with a Global Positioning System operated by an employee of the National Tropical Botanical Gardens. All archaeological undertakings at this phase were limited to the lower portion of the garden (valley floor). Steep slopes and the valley walls were excluded.

The reconnaissance was carried out by several SCS staff members. Archaeologist Tomasi Patolo, B.A., was the on-site Project Director while archaeologists Jim Powell, B.A., Randy Ogg, B.A., and Guerin Tome, B.A. of SCS, and volunteer archaeologist Victoria Wichman, M.A., joined the team for the inventory survey portion of the project. Michael Dega, Ph.D., was the project’s Principal Investigator.

SCOPE OF WORK

After the Archaeological Reconnaissance of the project area was completed, SCS consulted with Nancy McMahon (Kauai State Historic Preservation Division Archaeologist), Charles “Chipper” Wichman (Director of the National Tropical Botanical Garden), and Scott Sloan (Assistant Director of the Allerton Gardens) to outline the goals for the inventory survey portion of archaeological work about to take place:

1. Identify and document the archaeological remains present within the lower portion (i.e., the valley floor) of the Allerton Gardens.
2. Determine site functions and architectural construction methods through limited excavation.
3. Determine the chronology of these sites through radiocarbon dating.

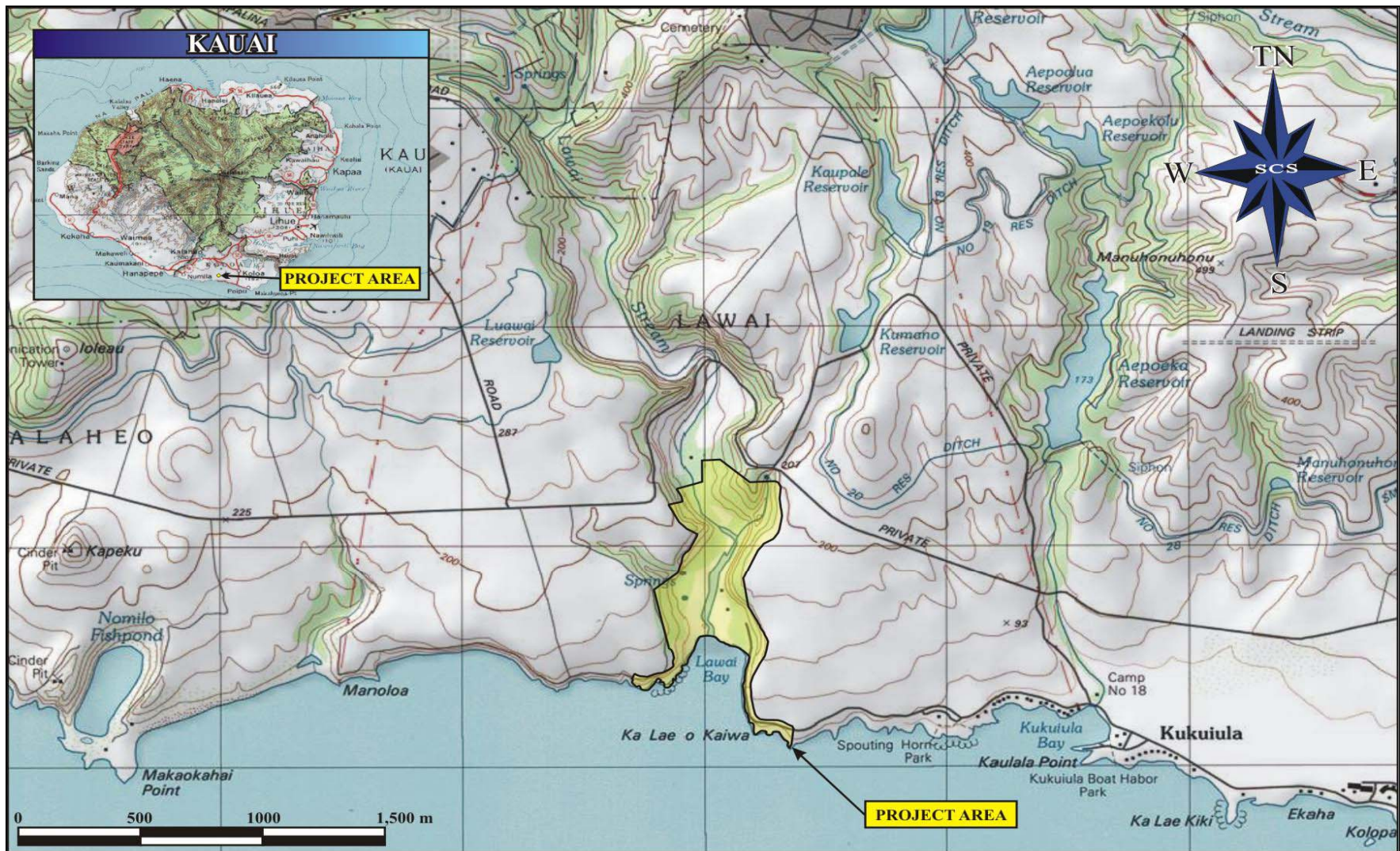


Figure 1: USGS Koloa Quadrangle Showing the Project Area.

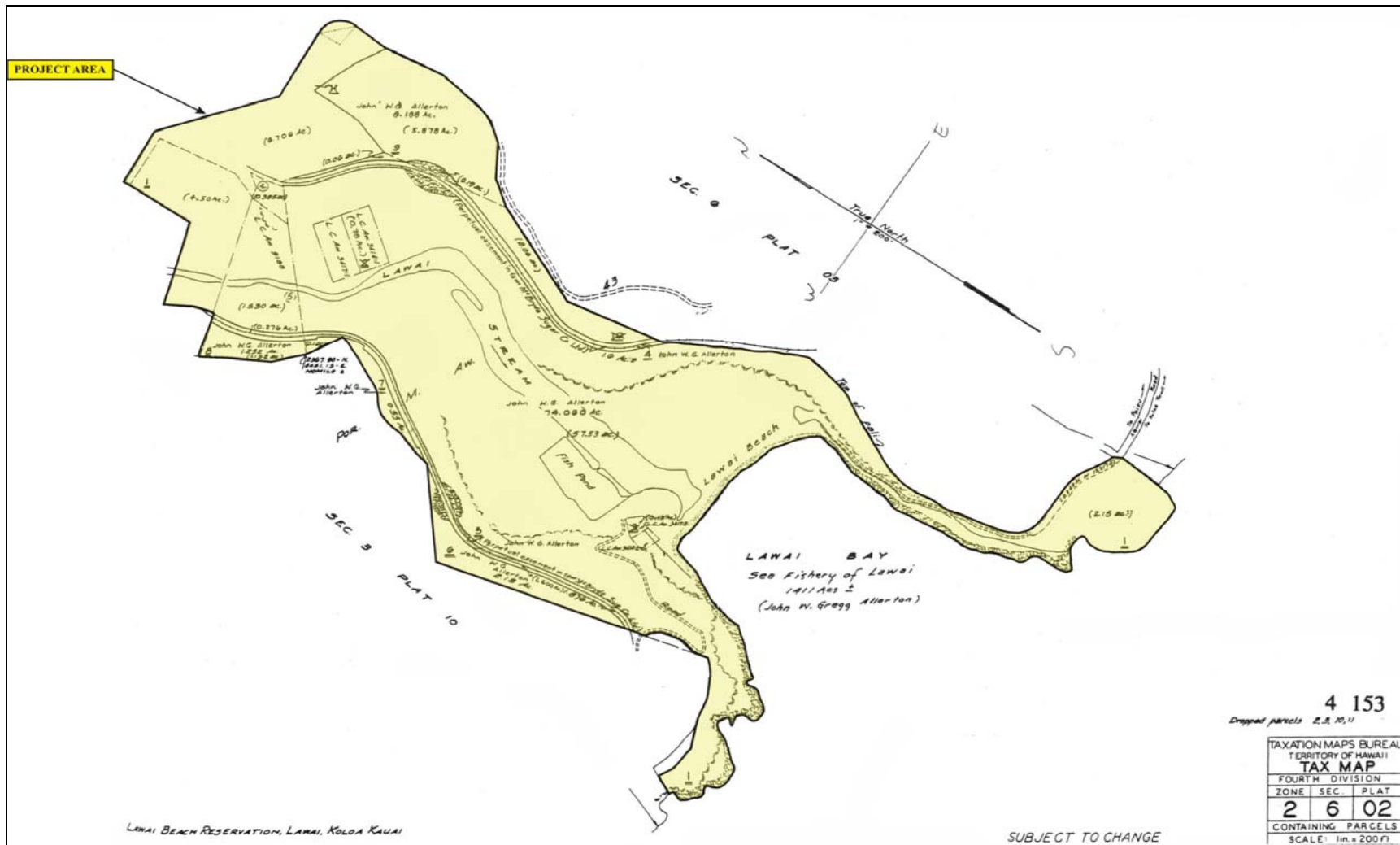


Figure 2: Tax Map Key (TMK) Showing the Project Area.

The Archaeological Inventory Survey consisted of a 100% systematic survey of the Lāwa`i Valley floor, including limited subsurface testing. A total of eight n archaeological sites were documented, four of which were tested through limited excavation.

PROJECT AREA DESCRIPTION

The project area is located in the southern portion of the island of Kauai in Lāwa`i Ahupua`a, Kōloa District, and covers approximately 90 acres of land [TMK: (4) 2-6-002:001, 004-006]. The surveyed area is contained within the National Tropical Botanical Gardens and known as Allerton Gardens. The Lāwa`i Stream meanders through the project area, heading south to Lāwa`i Bay. The topography of the project area is characterized by level flood plains along the east and the west sides of Lāwa`i Stream. Marshes are found in low-lying areas, such as the valley floor, of this project area. The flood plains of the area are bordered by steep to vertical slopes that ascend rapidly to create lushly forested valley tops. The north side of the project area is demarcated by the McBride National Tropical Botanical Garden. The project area's elevation ranges from sea level to 200 feet above sea level.

There are several features in the surrounding landscape worth mentioning. Reservoirs are located to the northeast of the Lāwa`i Valley, and the Nomilo Fishpond near Makaokahai Point lies to the west. To the north lie three modern homestead areas: the Kalaheo Homestead, the Lāwa`i Homestead, and the Omao Homestead. Several small *pu`u* (hills) dot the landscape around the project area.

CLIMATE

The project area has a mean annual rainfall of 69 inches (Armstrong 1983). The maximum temperature for the Lāwa`i area fluctuates between 80° to 90°F, while the area's minimum temperatures range from 60° to 70°F. The Koloa and Lāwa`i areas of Kauai experience the same levels of humidity as similar valleys in the rest of the Hawaiian Islands chain.

SOIL DESCRIPTIONS

Due to the steep topography of the valley, there are many different types of soil in the project area. The area surrounding the upper parts of the Lāwa`i Stream contains Pakala Extremely Stony Sandy Clay Loam (PHXC). Runoff through the soil is slow and stones make up roughly thirty percent of the subsoil. This soil composition consists of alluvial deposits and the expected average rainfall for this soil is 25 to 40 inches a year (Foote *et al.* 1972). This type of soil is typically used for cattle pastureland.

Jaucas Loamy Fine Sand (JfB) was found near and around the existing house sites of Queen Emma's cottage, the Allerton house, and the guest cottage in the southeastern corner of the property. The soil is single grained, pale brown to very pale brown in color and sandy in texture and is typically found near old beaches. The expected mean annual rainfall for this soil is between 10–40 inches. The soil was only found in a small portion of the property, which may be due to the high annual rainfall of this area. The soil is typically used for sugarcane cultivation and pasture lands.

The soils around the stream mouth and fishpond are classified as Marsh (MZ) soils. The areas are wet and flood periodically.

Rough Broken Land (rRR) soil is found along the steep valley walls whose gullies serve as drainage channels. Elevations range from 25 to 500 feet for this soil. rRR varies with 20 to over 60 inches in depth over soft, weathered rock. Runoff in the area consists of weathered rocks and/or rock fragments, as well as soil, and is very rapid.

Kaena Clay, Brown Variant (KavC) is found up the stream of the subject property. It is comprised of alluvial deposits from the Lāwa`i Stream and has a brown surface layer. Kaena Clay has poor drainage with slow to moderately slow permeability. Its' annual rainfall average is between 50 to 75 inches it is typically found on slopes from 50 to 150 feet. The soil is difficult to work and is typically used for pasture lands, sugarcane cultivation and homesteading.

On the southern end of the project area, at the mouth of the stream and bordering the ocean, are Beach sands (BS) interspersed with areas covered with stones, cobbly coral and seashells.

VEGETATION

Vegetation in the project area is varied. As the National Tropical Botanical Gardens, the entire project area has been extensively landscaped. Numerous roads, trails, pools, fountains, monuments, and walls are present. The valley floor is occupied by a variety of native and exotic plants introduced as part of the garden and open areas are carpeted by well-maintained grass (Figure 3).



Figure 3: Overview of Lāwa`i Valley, View from the South West.

The valley walls are inhabited by predominantly dense growth of cactus and bougainvillea. Flora on the valley floor includes but is not limited to: Coconut (*Cocos* L.), Hau (*Hibiscus tiliaceus*), Bamboo, Royal palm, Morton Bay Figs, Mango, Hala, Bamboo palms, Kiawe, Eucalyptus, Java Plum, Koa Haole, Milo, and both native and exotic vines, shrubs and a variety of grasses.

The main components of the Allerton Garden portion of the project area include but are not limited to: palms, (*Corypha*, *Raphia*; *Areca catechu*; *Licuala spinosa*; *Ptychosperma macarthurii*; *Nypa fruticans*), tropical flowers (*Anthuriums*, *Anthurium hookeri*; *Bougainvillea* sp.; *Plumeria* sp.; many species of *Heliconia* sp.), several large trees (Moreton Bay fig, *Ficus macrophyllai*; Monkey pod, *Samanea saman*; Kiawe, *Prosopis pallida*; bamboo *Bambuseae* sp.) as well as edible and fruiting plants (Chinese taro, *Alocasia cucullata*, *Alocasia macrorrhiza*; starfruit, *Averrhoa carambola*; Mango, *Mangifera* sp.; coconut, *Cocos nucifera*; Avocado, *Persea americana*; and macadamia nut trees, *Macadamia integrifolia*). Some native vegetation is also present in the project area: (*Hala*, *Pandanus tectorius*; Hau, *Hibiscus tiliaceus*; breadfruit (*Ulu*), *Artocarpus altilis*; Haole Koa, *Leucaena leucocephala*). Since the project area lies within a tropical garden, many of the original plants have been removed. Native foliage, however, still dominates the landscape in areas bordering the stream and beach.

CULTURAL HISTORICAL CONTEXT

TRADITIONAL SETTLEMENT PATTERNS

Although information on the prehistory of the project area is scant, some inferences can be made by looking at the topography and resources of the land, and the histories of similar areas. On all of the islands, the traditional Hawaiian economy was based on agricultural production and marine exploitation, animal husbandry and the harvesting of wild resources. Extended household groups settled in various *ahupua`a* and utilized the resources within them from the mountains to the ocean. During pre-Contact times, there were primarily two types of agriculture, wet and dry land, both of which were dependent on geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *uala* (sweet potato, *Ipomoea batatas*) were produced (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985).

Between A.D. 600 and 1100 the major focus of permanent settlement continued to be the fertile and well-watered windward valleys like the project area (Kirch 1985). The project area's location, topography and flora make it feasible that ancient people settled and utilized this land. Lāwa`i Stream would have supplied much needed water for the production of taro. *Lo`i* systems (pondfields for the cultivation of irrigated taro; Kirch 1985), permanent residences, *heiau*, and/or terraces are considered likely to have been constructed in the vicinity. Activities occurring in the valley, particularly the lower valley reaches presumably consisted of acquiring avifaunal and other faunal resources and tapping the stream and nearby springs for water.

Lāwa`i Kai has the desirable characteristics needed for Hawaiian settlement. There is the Lāwa`i Stream, a perennial watercourse, whose source is near 2000 feet in elevation in the mountains at the southeast corner of the Lihue Koloa Forest Reserve. In the lower section of Lāwa`i Valley the stream flow is reinforced by a number of springs seeping from the cliff walls. In and around the area now known as the Allerton Garden there is enough arable land to support traditional Hawaiian agricultural features that include *lo`i* and dry land terraces.

THE HISTORIC PERIOD 1778 to 1840

Captain James Cook's landfall on Maui in January of 1778 marked the beginning of the contact period in Hawaiian history. Again, direct historical accounts referencing the project area are scarce. However, it was from nearby Koloa that Hawaiians paddled to meet the Resolution

and Discovery. Although Cook's account of his exploration of the Hawaiian Islands does not mention Lāwa`i specifically, he does note that agriculture was developed with taro planted in the valleys (Cook 1784). Vancouver mentions seeing the "low country" planted in taro along with sugar cane and sweet potatoes (Vancouver 1798).

Although there are few written records of Lāwa`i during this period, a sense of the area's history can be gained by looking at the broad settlement and agricultural trends of the early contact period. Given the ideal environmental conditions and existing evidence, Hawaiians are known to have occupied the project area portion of the valley during the early historical period. In one of the few historical references to the project area, the first appearance of the name Lāwa`i occurs on an early map by Hiram Bingham in the 1820s (Ching 1983:9).

Travelers through the Kona region of Kauai in the 1830's noted agricultural activities similar to those described by Cook and Vancouver including taro, yam, sugar cane, dry land sweet potato farming and irrigation networks (Jarves 1838:68). Sandalwood was a major export in the area from the mid 1800s to 1829. Waimea was the port of departure for this trade and one area of collection was mauka of Koloa. This labor-intensive industry not only caused much loss of life but also drew the commoners away from traditional farming activities creating periods of famine (Joesting 1984:91). The break in traditional land use caused by the sandalwood industry, coupled with foreign diseases to which native Hawaiians had no immunity, contributed to a decrease in the Hawaiian population.

In Koloa, the first missionaries began arriving in 1834, bringing with them new methods of farming and agriculture, including sugar cane cultivation. A year later Ladd and Company became the first sugar plantation in Hawaii, and drew the majority of their workforce from immigrant laborers. Koloa Town and its environs grew into a culturally diverse commercial center and district that exported sweet potatoes, sugar, and molasses to California and supplied whalers with provisions such as squash, salt, salt beef, pigs, and cattle (Judd 1935:326).

THE MĀHELE 1840's

In the 1840s, the traditional land tenure system in Hawai`i was laid aside in favor of private land ownership based on Western practices. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to

that of a market economy (Kame`eleihiwa 1992:169–70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I: 145).

The Māhele of 1848 changed the traditional land tenure system of the Hawaiians over to one based on Western law and ownership practices. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and were issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). Archival research revealed that three Land Commission Awards (LCA) were issued within the subject parcel (LCAs 3414, 3417, 9188) (see Figure 2).

LCAs 3414 and 3417 consist of two parts, each with a piece of property on the *mauka* (mountain side) end and the *makai* (ocean side) end of the project area. At both the *mauka* and *makai* property sites, 3414 and 3417 are adjacent. The *makai* locations for both 3414 and 3417 reside near the ocean in the southwestern part of the project area. The *mauka* locations for these two LCA sites are east of the Lāwa`i Stream in the northern end of the project area. LCA 9188 is located on the northern end of the land parcel and slightly to the east.

Land Commission Award 3414 (0.75 acres) was awarded to Levi in the Lāwa`i Ahupua`a, Papakea Ili on January 12th, 1848. Levi cultivated the land with two *lo`i* and adjoining *kula* (open dry land usually used to cultivate sweet potatoes or gourds). A house lot was present on the *makai* property.

Land Commission Award 3417 (0.90 acres) was awarded to Pahuiki in the Lāwa`i Ahupua`a, Papakea Ili on January 12th, 1848. This LCA contained three *lo`i* and his house lot was located on the *makai* property with an adjoining *kula*.

Land Commission Award 9188 (1.5 acres) was awarded to Kamakahookai in the Lāwa`i Ahupua`a, Papakea Ili on February 5th, 1848. This property supported six *lo`i*, a house lot, and a pig enclosure on a *kula*. The claimant stated that there had once been an additional nine *lo`i*

located on the western side of the LCA 9188 but were no longer used because the taro was destroyed by a flood.

1850 to 1886

The written record of the Lāwa`i Valley, and the subsequent changes wrought by Hawaiian royalty in the area, begins with the Māhele. Lāwa`i Ahupua`a was inherited by James Young Kanehoa and granted to him by Kamehameha III in the Māhele of 1848 under Māhele Award 43, RP 4512 (Indices of Awards 1929). James Young was the second son of British seaman John Young Kanehoa who was an advisor to Kamehameha I. Upon James' death the land went to Hikoni. James was the uncle of Emma Kalanikaumakaamao Nae`a Rooke (Queen Emma). Before her death, Hikoni gave the *ahupua`a* of Lāwa`i to Emma for "love and affection and for the sum of one dollar, "with the understanding that Emma would care for her in her later years" (Kanahale 1999: 245). At the time of Emma's visit Hikoni had an existing home on the top of the eastern bluff that consisted of a large house and several smaller buildings and she had a grass house on the beach (Honolulu Star Bulletin 9/1/25). Hikoni and her second husband Kapule are said to be buried in the caves of Lāwa`i Valley (Salisbury 1935; Forbes 1970:3).

In this transfer, the Queen was deeded ownership of the entire valley except for various kuleana described by three Land Court Awards (Indices of Awards 1929:99) that were granted to farmers during the Māhele. Some of these claims were designated *apana* and were not contiguous but existed within the same *kuleana*. These lots generally included *lo`i*, *kula*, and house lots.

Soon after she acquired the land, Queen Emma set about planting and landscaping her property, instituting a plethora of changes that extended throughout the Lāwa`i Valley and project area. She had a two mile ditch constructed to bring water to Maunakilohana from upper Lāwa`i (Kanahale 1999:251) and imported many foreign and domestic plants from Honolulu and Koloa. Riding and walking trails were installed throughout the valley (Allerton 1978:78). Queen Emma also had taro patches planted in the area (Salisbury 1935). A registered map of the area created by James Gay in 1872 delineates the boundaries of Lāwa`i and shows the Maunakilohana residence as well as the *heiau* Niukapukapu situated north of the residence.

In 1876 Queen Emma leased the entire *ahupua`a* to Duncan McBryde except for Maunakilohana and a few *lo`i* in the valley (Donohugh 2001: 270). Following Queen Emma's death in 1885, the remaining portion of the *ahupua`a* was purchased by Elizabeth McBryde. In 1898 the McBryde Estate, Ltd. was established, and Alexander Moxley McBryde, Elizabeth

McBryde's eldest son, signed over the *ahupua`a* of Lāwa`i to the company. In 1899 the McBryde Sugar Company was created from a conglomeration of the Eleele Plantation, McBryde Estate and Koloa Agricultural Company (McBryde 1949). Lāwa`i Beach was excepted from the transaction and instead was granted to Alexander Moxley McBryde together with all the fishing rights of the bay (Forbes 1970: 14). McBryde lived on the project area until his death in 1935 (Garden Island 10/22/35).

1886 to 1935 McBryde Period

A fairly detailed paper and pictorial record of this time period exists, including the extensive alterations made to the property and project area by McBryde. When the McBryde Sugar Company decided to cultivate the eastern edge of the Lāwa`i Ahupua`a, McBryde moved Queen Emma's cottage from Maunakilohana. Former residents of the area say that the house was situated near an old cemetery on the eastern ridge of the property where the plantation had widened the road. The cemetery had a big mango tree and was surrounded by a rock wall (Hideo & Shige, interview, T12 00:28). A photo by Jerome Baker 1933 shows this configuration (Van Dyke 1982: 234).

The McBryde Annual Reports show one lone building labeled "McBrydes," in the valley, while a photograph taken in 1905 shows Queen Emma's cottage situated in the valley (McBryde Annual Reports 1902 - 1968, Forbes 1970:10-11). The house, with an added porch, was located near the stream on the east bank. A 1901 map (Anonymous 1901) shows three structures including a fence and wall enclosure (Rappolt 1991; Kauai Museum photo P2019.608.1). The cottage became the McBryde beach house and McBryde's home until 1925 when a new house was constructed on the property (Kauai Museum photo P2019.608.6; P2019.608.154) (Figure 4). McBryde later constructed a dove cote and stone kerosene building between his house and Queen Emma's house. There was also a warehouse situated nearby that existed during the Allerton era that was most likely destroyed during a hurricane (Allerton 1978:22).

Like Queen Emma before him, McBryde also made significant alterations to the landscape and plant life in the area. He was responsible for planting ferns, bougainvillea, tamarind trees, coconuts, palms, gingers, and plumeria in the project area. McBryde also built a greenhouse for ferns and anthuriums behind his residence (Star Bulletin 9/1/25). McBryde's garden was watered by a number of brackish wells; one of which is still located in the present project area's lawn (Teshima 1997:80, Allerton 1978:42). In 1917 a pipeline was built by Kimura that stretched from the main spring north McBryde's residence to the present day circular fountain (Allerton 1978:42). A wooden garage was located east towards the Jungle



Figure 4: Previously Unknown Photo of McBryde’s House on the Beach at Lāwa`i Kai (1938). View to the North. Photo from the Kauai Museum, Palama Album, Picture #2019.608.14.

Garden and a boardwalk extended from the garage towards the house (Teshima 1997: 63, Allerton 1978:20).

The area most impacted by McBryde included the road from Spouting Horn, the Jungle Garden, the lawn fronting the beach, the mouth of Lāwa`i stream and the beach itself. When McBryde first took over the area, there were a few grass houses near the river (Kauai Museum PN1735.4; Star Bull 9/1/25; Teshima 1997:125). There was also a stone wall along the river that was partially destroyed by the 1946 tidal wave (Rappolt 1991; P2019.608.1; Teshima 1997:79, Allerton 1978:11). Photos show rocks along the beach front described as walls or breakwater that were also most likely destroyed by the tidal wave (Kauai Museum PN1735.4, PN3823.41).

McBryde made several changes to the project area for entertaining or public use. An ironwood tree was shaped like a house for picnickers (Honolulu Star Bulletin 1/17/35) and a structure was created from pandanus, or *hala*, that was used for *luaus* (Teshima 1997:79, Allerton 1978:5) the 1946 tidal wave undermined these structures. McBryde had a boardwalk constructed that led from the garage area to a privy and bathing house (Allerton 1978:3; Teshima 1997:63, 80). There was a stone pier jutting into the river from the stone wall that lined the east

bank under the tamarind tree used to access canoes for paddling practice (Teshima 1997: 76, Hideo & Shige, interview, T12 0:32).

Along the beach front on the east side of the stream there was also a fence constructed of 4 by 4 ft. posts and wire to keep in cattle and horses (Rappolt 1991). This probably disappeared during the 1946 tidal wave. While the tidal wave impacted surface features, remnants of the stone features may still exist beneath the surface.

MCBRYDE SUGAR COMPANY

The McBryde Sugar Company impacted the Lāwa`i Valley in a number of ways. They built a railroad across and around the rim of the valley, a pumping station and constructed several housing camps for workers in the valley.

The McBryde Sugar Company's 1899 manager's report gives a detailed description of the alterations made by the company. It records that four wells were bored in Lāwa`i and a steam pump had been ordered (McBryde Sugar Co. 1949: 15). The pump station located in Lāwa`i Valley was designated pump 6 and is located 915 m from the beach on the east bank of the stream. This pump appears on the 1903 Annual Report map and together with a series of ditches and flumes was used to irrigate cane lands on the eastern side of the Lāwa`i Ahupua`a above the valley, the valley itself, and the western ahupua`a into Wahiawa (McBryde Annual Report 1903). Originally this pump was powered with coal but in 1906 the company began to use electric power from the Wainiha Hydroelectric Power Plant (McBryde Annual Report 1906). The 1899 records also indicate that the company connected seven miles of railway along the coast, keeping "to an elevation of 200 feet, except at either end and crossing the Lāwa`i Valley, where it drops down close to sea level," (Condè and Best 1973:191). A 1903 MSC Annual report map shows that the line is continuous from Hanapepe to just past Aepo Stream (McBryde Annual Report 1903).

The railway looped around the valley in a U-shape spanning two smaller valleys on the east and west sides. A 1933 photograph shows the wooden trestles across the two valleys on the east and west that are about 30 m high (Van Dyke 1982:234). A smaller trestle crossed the Lāwa`i Stream. A short spur to the pumping station was in place in 1903 to deliver coal (McBryde Annual Report 1903). Included on this spur was another trestle that served as a dam to keep the stream from flowing into the pump. It was later removed to make a road in the mid 1970s (Allerton 1978: 121). There are also two tunnels on the west bluff that are about 30 m above the floor of the valley.

In 1931 the wooden trestles were condemned and by 1934 the still intact wooden trestles had been buried with boulders that had been cleared from the nearby fields (McBryde Annual Report 1932, 1934). The small stone and concrete bridge at the back of the valley that crosses the Lāwa`i Stream replaced the smaller trestle in 1943 (the date is indicated on the bridge) and hauling cane by truck became the sole means of transport by 1947. The existing rails were removed and the ties made available to the public, the Allertons used them to line the old Queen Emma trail (Allerton 1978:100).

In the early days of the plantation period it was more expedient to locate workers closer to the sugar cane they harvested, leading to the development of camps or clusters of homes dotting the plantation grounds. Three sugarcane-era camps were located in Lāwa`i Valley: one close to pump 6 with 15 structures according to an early map (Anonymous 1901), and another located further north. Lastly, a map sketched by residents of Lāwa`i in the early 1900s shows a Korean plantation worker's camp on the east side of the valley, possibly in the terraces east of the pump or southeast in the fruit orchard (Matsunaga & Takahashi 1972:14). Oral accounts place Japanese and Filipino plantation camps in the Lāwa`i Valley as well (Tin-Yuke 1979:86).

During this same time period, a house was located near the two smaller springs just off the upper path that runs along the base of the cliff. The Goda family lived there in the early 1920s and operated a rice mill (Matsunaga & Takahashi 1972:14) Hideo Teshima was born there in 1927, and lived there with his family until 1933. According to Teshima and Allerton (Teshima 1997:66–68, Allerton 1978:57) rice, watercress and taro were grown on the ancient terraces near his home. The house was torn down by the late 1930's.

MCBRYDE SETTLEMENT AND AGRICULTURE

Once the McBryde family acquired the valley they began to lease portions of it to rice farmers. Maps (Monsarrat 1896; Anonymous 1901) show rice fields where taro was once grown. The first Chinese laborers arrived in Koloa in 1852 to work in the sugar cane fields (Joesting 1984:205). The Hawaiian rice industry reached its peak in 1879 when more than 600,000 pounds of rice was exported to California (Joesting 1984:207). By 1892, 70 acres of rice was being cultivated in Lāwa`i Valley (Tin Yuk 1979:76). Gabriel I reported seeing “just rice” growing during this period (Gabriel I, interview, T4 00:36). John Gregg Allerton also reports that McBryde leased the land in the valley (Allerton 1978:4), though Teshima claims to have leased and purchased from Moke (Teshima 1997:21). In an oral history of the area, Shige Nishi says that his father had a farm at Lāwa`i Kai where they raised lotus, taro, and watercress (Yamanaka 2001:8) (Figure 5).

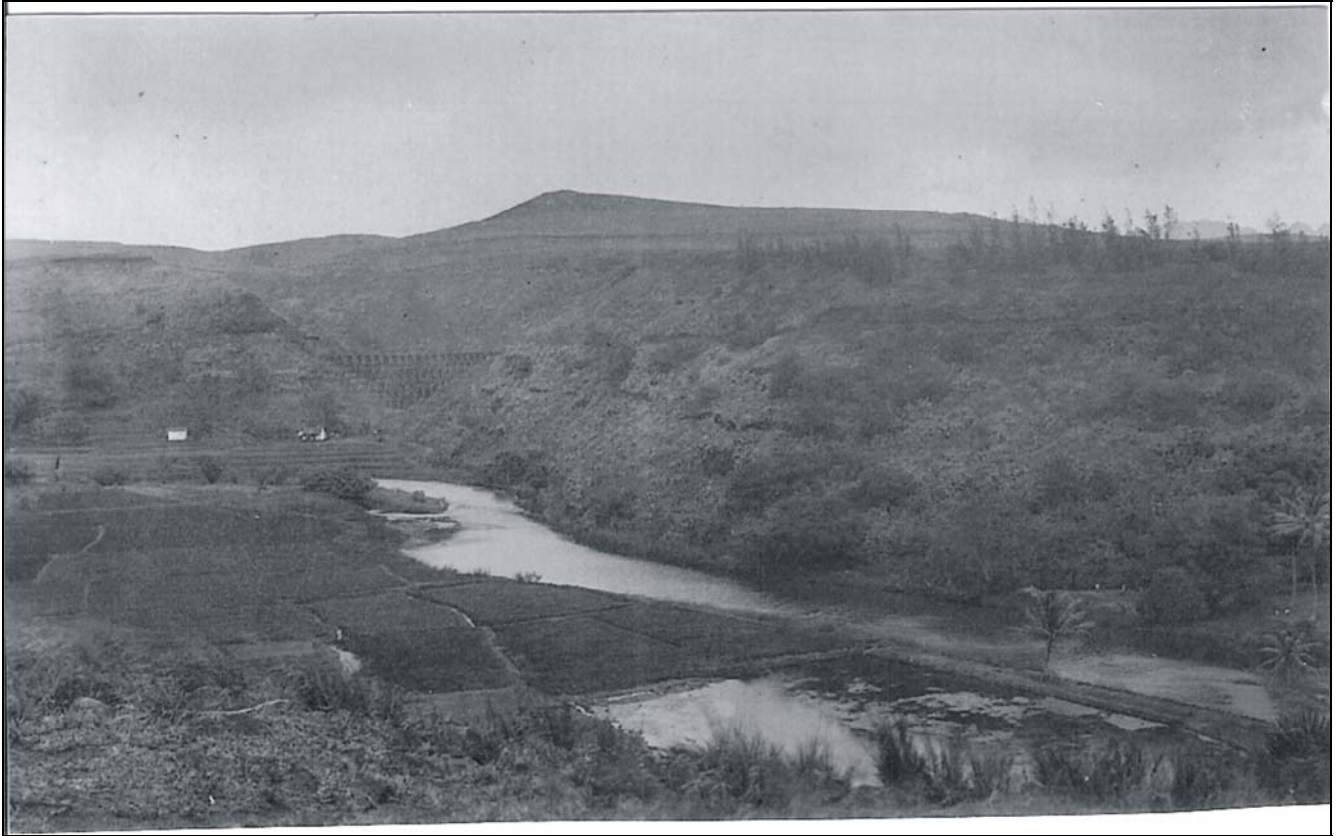


Figure 5: Lāwa`i Valley, View to the Northeast Prior to 1934, from the Kauai Museum Palama Album.

Chinese farmers were the first to lease land in the valley for rice growing, and were later joined by the Japanese in their endeavors. Oral interviews indicate that they were the previous occupants of some of the valley's houses (Teshima 1997:100), and that the Chinese owned land that the Japanese farmers leased (Personal Communication Anne Takahashi 2007). Records show a thriving Chinese community in upper Lāwa`i (just below the Kaumualli`i Highway), complete with stores, Chinese cultural societies, and a cemetery containing least 50 graves. By 1940 most Chinese immigrants had left the area (Tin Yuk 1979:86).

A map by a Lāwa`i Valley resident in the early 1900's identifies a house to the west of the stream near the fish pond that was occupied by a Chinese family named Ahni (Matsunaga & Takahashi 1972:14). J.G. Allerton mentions a Chinese family that lived on the west side of the valley, in one of the two houses situated there. They had a fruit orchard with orange trees (Allerton 1978:92). According to a Chinese local history project, a Chinese rice planter named Ching Dung Sen was located in the valley and Tai Moong Dang ran a store in Lāwa`i (Tin Yuk

1979:76, 85). Teshima (Teshima 1997:21) mentions that the house (two-story) that he occupied at Diana Fountain was said to have been a “grocery store from the Chinese days.”

Oral histories also indicate the Chinese built irrigation ditches and water flumes on the west side of the valley, though they may have just repaired existing native Hawaiian ditches. It was the Chinese who maintained the fishpond after the native Hawaiians ceased using the land, creating an embankment and growing lotus plants (Teshima 1997:128).

Shige Nishi, the son of a long-time fisherman of the bay remembers that there “was mullet and alio, Chinese fish” in the fishpond at that time (Hideo & Shige, interview, T11 00:19).

In 1899 the cultural composition of the Lāwa`i Valley shifted when the McBryde Sugar Company brought 1,050 Japanese contract workers to the area (McBryde Sugar 1949:27). In a map sketched by residents in the valley in the early 1900s, most of the names of the occupants of the valley are Japanese (Matsunaga & Takahashi 1972:14). In the early 1900’s, the Japanese were farming rice and ran the three rice mills. These farmers worked in rice farms until about the 1920s when the rice industry began to decline (Joesting 1984:208). Hideo Teshima (Teshima 1997) relates that his father arrived in Hawaii in 1905 to work for Charles Rice at Kipu Kai, then he moved to Koloa Plantation, and finally, he was lured to McBryde Sugar (Lāwa`i) by the possibility of making extra money growing rice. By 1938 the Teshima family was the only family left in the valley. The Monsarrat 1896 map and photos circa 1905 show two of their former residences up against the base of the cliff on the east (Kauai Museum photo Palama Album) and two other residences on the west side near the beach (Forbes 1970:10). The descendents of early residents in the valley (1910–1920) mention that watercress, lotus, taro, and ongchoi were grown on the west bank of the fishpond after the demand for rice subsided (Teshima 1997:78; Hideo & Shige, interview, T11 00:02, T13 00:06).

1937 to 1987 ALLERTON PERIOD

In 1937 Robert Allerton and John Gregg purchased the McBryde property (Allerton 1978:2) which consisted of 125 acres. When they were planning the construction of a new home, they noted two houses at the base of the cliff, Alexander’s bungalow and Emma’s cottage, the neglected garden, and the tenants raising watercress and lotus root and grazing cattle up in the valley. They later discovered old walls, house sites, burial caves, spring-like mud holes, and thick haole koa and lantana on the property (Hulme 1979:3).

The old McBryde bungalow was cut in half to make way for the new house and to provide a temporary living space for the Allertons (Allerton 1978:8). The eastern half of the house was burned down to make way for construction. The Allerton's house was built around a large banyan tree that was apparently southeast of McBryde's house.

Other nearby structures included Queen Emma's cottage located in the same place as it is today, a yard boy's house, a warehouse, tool house, fern house and the orchid house in back of the Allerton house. Queen Emma's cottage was pushed off of its foundation in hurricane Iwa and was later reconstructed altogether after Hurricane Iniki (Wilson 1981:106-107). The stone walls behind the kitchen were constructed by the Allertons and connected to an existing wall near the mango trees (Allerton 1978:10). The Allertons built a two car garage plus a three car worker's garage where the McBryde garage had once been. Today only three structures exist in this residential area: the Allerton house, Queen Emma's cottage and the orchid house.

The Allertons created a garden landscape by building fountains, buildings, employing statuary, and creating paths to connect these features. Their strategy was to adapt to the valley's existing physical elements rather than change them. The houses that still existed (photo Forbes 1970:10-11) were burned to the ground. The Teshimas, the last family living in the valley when the Allertons arrived, were asked to move and relocated to the Chalet near pump 6.

To understand the Allerton Garden features, it is best to move around the valley in a counter clockwise manner. This is not a chronologically correct sequence of feature construction. From the guest house walking north along the river path you encounter the bamboo grove and Mermaid Fountain, both created by the Allertons in the 1950s. The Mermaid Fountain is a wavy cement pool that has two mermaids at each end and is approximately 25 m long. The fountain is just off the path that follows the stream and runs perpendicular to it.

Harry's Valley is located to the east of Lāwa'i Valley. It contains an eastern path that rises from Lāwai Valley up to the hill that contains Niukapakapa Heiau. The valley mouth is now blocked by the stone railroad trestle created in 1932. It is sometimes referred to as the maiden fern valley. This valley is the source of water for Diana Fountain, the water runs through a tunnel under the trestle and down a hill (Teshima 1997:3). There are several structures in the valley; a path was built down into the valley, stairways, and a bench (Allerton 1997:102).

The semi-circular pond was built by workers from McBryde Sugar and this is the source of water for the house. Another house was located under the Longan tree at the south fork of the

Three Pools area. There are mango trees nearby, their appearance anywhere in the valley usually signifies that a house once stood there (Teshima 1997:33). This house was burned down by the Allertons. Above the waterfall (i.e., Robert's Fall) there are steps to the top, a path that goes to the railway tracks and a stairway that goes above the trees; these were all built in the Allerton era (Teshima 1997:33).

The meadow mauka of the Mermaid Fountain was planted in fruit and vegetables (broccoli, tomatoes, papayas, etc.) for the Allertons in 1941–1942 (Teshima 1997:67; Allerton 1978:61). Later as part of the war effort, the entire meadow was planted in sweet potato (Allerton 1978:71).

The Diana Fountain was the site of the Teshima's second home in the valley when they moved in 1933. According to Allerton (Allerton 1978:4) they lived in a two story house where the fountain is located and raised hogs and cattle on the slope down towards the river. Teshima relates that they lived in a house that had a single story but it was on a raised foundation three to four feet high. This house is easily recognized in an early photo that must be before 1932 because the wooden trestle is still apparent (Kauai Museum Palama Album). The photograph also shows clearly defined terraces surrounding the house. While clearing the area around the large stone behind the Diana statue, workers discovered "heaps of opihi shells," (Allerton 1978:77). Allerton poses the idea that a fishing *heiau* could have been located there (*ibid.*).

The rocks that make up this water feature are largely unchanged except for the creation of shallow basins to hold the water. Betty Snowden, a regular visitor to Lāwa`i in her youth recalls *heiau* located in the valley and in particular, "a fishing shrine with an aumakua overlooking the koa on the east end sitting on a stone platform low and not too big, under the Kukui nut trees" (Snowden n.d.: 7).

The Thanksgiving Garden was created after the Three Pools waterfall feature. The northern end of the Thanksgiving Garden is the southern reach of the area used for sugarcane, and sits on the eastern side of the stream. It consists of a lawn with two deer statues on the east side and four walls of Panax hedges on the west side.

The Phoenix House is located above Diana Fountain almost on the railway line on the eastern bluff. It is accessible via the Queen Emma trail, the bamboo trail or the trail that goes by the tank on the left of Diana Fountain. The structure is two-stories and was built to house

Venetian cabinets (the originals of which were later donated to the Honolulu Art Academy). The phoenix that adorns the roof is about 1.3 m high and weighs 100 pounds (Teshima 1997: 53).

The east portion of the project area consists of an orchard and terraces. The orchards are situated on the terraces but they are not as well defined as the adjacent terraces just to the north. Chinese Fu dog statues are located just behind the two tool sheds and one level up from the sheds. Allerton said that the terraces were created by his workers (Allerton 1978:110), but may have been built over older Hawaiian terraces.

The house known as the Chalet was originally meant for the worker who minded pump 6. In 1938 the Teshima family moved here when Mr. Teshima took over the pump job. They expanded the Chalet with wood from the Diana Fountain house to accommodate their family. The Teshimas had a vegetable garden where the nursery extension is currently located. Two houses were located just below the cliff on the western side of the valley close to the beach (Forbes 1970:10–11). A concrete pad for the water catchment tank is still there as well as a stove area (*ibid*: 140). One of these houses belonged to a watercress and lotus farmer by the name of Oshiro (and later Nishi) that used the ditch irrigation system. He also had some pigs that were located in the bamboo (Teshima 1978:78, 140). These houses were torn down in 1938. There are remnants of an old buggy near these two houses where one of the residents had an accident. Allerton remembers visits from the descendents of a Chinese family who lived in one of these houses; they had a fruit orchard (Allerton 1978:91).

FISHPOND

An early map (Gay 1872) of Lāwa`i depicts the fishpond being fed by a tributary of Lāwa`i Stream coming in from the small side valley on the west. An early Monsarrat map (Monsarrat 1896) shows that the pond as a rice field. A later map (Anonymous 1901) also shows the pond as part of a rice field.

The fishpond was divided into different ponds for raising mullet and the Chinese continued this practice, extending the banks to plant lotus, ongchoi and watercress. They also introduced alio, a Chinese fish (Hideo & Shige, interview, T11 00:19). Alexander McBryde told a reporter that the fishpond was once full of fish ready for consumption. It had once stretched further up the valley and was much larger (Honolulu Star Bulletin 9/1/25). Hideo & Shige claim that it covered $\frac{1}{4}$ of an acre and was four feet deep (Hideo & Shige, interview, T13 00:06). A pre-1934 photograph (NTBG Photo Fishpond) shows a wall structure along the western bank of the fishpond that was later destroyed by natural disasters. In 1946 the pond was filled in with

sand by a tidal wave and later hurricanes in 1982 and 1992 filled it in further. It remained unused until John Allerton dug up a portion of it to make the present lotus pond.

BEACH

Near the beach on the west side of the project area, there is an old trail on top of the rocky coast line. A photo dated circa 1913 shows this trail (Kauai Museum Photo P3085.280). John Allerton remembers it as a fishing trail along the rocks that was later enlarged (Allerton, 1978:96). Gabriel I recalls the Lāwa`i Kai to Palama's trail as having typical old Hawaiian gardens along it (Gabriel I, interview, T3 00:57). The road that came down on the west side was built by Shige's father Nishi out of an old horse trail, and can be seen in an older photo that also shows the rock enclosure and structures (Kauai Museum PN2031.55). The trail was blocked by the Allertons to keep people from driving into the valley. The rock, Puu Koloia, was altered by adding steps around its base (Allerton 1878:98) (Figure 6).

The rectangular rock enclosure that serves as a cemetery today once contained a boat house (10 m in length) and a net shed (Forbes 1970:10–11; Kauai Museum Photo PN2031.55). The enclosure may have been a fishing *heiau* in earlier days (Teshima 1997:137). The *ahupua`a* of Lāwa`i included the fishing rights to the bay and it appears that this location was made available to fishermen for storage of their boats and fishing equipment. The original walls were Hawaiian built but it was destroyed during Hurricane Iniki and rebuilt. There was also two other net sheds located in this area as well as boats. One of the net sheds was rebuilt by the Allertons but it was destroyed during hurricane Iwa (Hideo & Shige, interview, T11 00:24).

Betty Snowden, who frequented Lāwa`i Kai in the 1930s as a child, remembers the canoe shed with a canoe and a shed nearby that was used for storing such items as poi and pig boards, pounders, nets, calabashes and other household things (Snowden n.d.: 7). During McBryde's era there was a fisherman named Kimura who fished the bay and after him Nishi and his son Shige were given the right to fish in the bay (Hideo & Shige, interview, T11 00:02). Kimura probably occupied one of the houses against the western cliff near the beach (Matsunaga & Takahashi 1972:14) and it seems that he transferred his fields and fishing rights to Nishi since the Nishi family later farmed in the same area (Yamanaka 2001:8), occupied the same house and inherited the fishing rights.



Figure 6: 1927 Photo of Lāwa`i Beach from the Northeast Showing Queen Emma's Cottage. From the Kauai Museum Palama Album Picture # 2019.608.1.

After Alexander McBryde moved Queen Emma's house from Maunakilohana, he allowed the people of Lāwa`i Valley to use the area on the east bluff as a cemetery. Eventually, the McBryde Sugar Company decided to cultivate that land as well and moved the cemetery. According to Teshima, McBryde then allowed people to use the boat enclosure as a cemetery. Shige Nishi was a crane operator for McBryde Sugar at the time and tells of having to move each grave (including those of his own aunt and uncle). These individuals, along with many unknowns, were moved to Lāwa`i Cemetery. They uncovered guns, lead, throw nets, and silver coins in the process (Hideo & Shige, interview, T12 0:28). This move probably occurred at some point after 1933 because a photo by Jerome Baker (Van Dyke 1981: 234) shows the wall and mango tree still intact on the east bluff but before McBryde's death in 1935.

Betty Snowden, of the Puaoi family, who have always lived in Lāwa`i Valley, relates that her family received the plot of land as a cemetery during the Māhele of 1848. In the early 1980s there were three graves and Kuilo was one of the individuals (Teshima 1997:137). Betty Snowden says that William Sr., Puniia, a son, James, and Leilani Puaoi are buried there and others possibly buried there or in nearby caves (Snowden n.d.: 3). Gabriel I remembers the Puaoi family that lived in the back end of the valley and came down to fish at the beach. According to Allerton (Allerton 1978:96), the cemetery belonged to Mrs. Moke and it was her grandfather and grandmother buried there along with a little child. There was a small phallic rock over the grandfather's grave and a hollowed rock over the grandmother's. A round circular stone was supposed to be the hollow place where the spirit could go in and out of the grave (Allerton 1978:96).

CAVE BURIALS

There are a number of burial caves in the cliffs of the Lāwa`i Valley that former residents have mentioned seeing. Snowden says that her relatives are buried in the cemetery and the caves surrounding the valley and can recite 25 names of those interred, but says that there are more that she has forgotten (Snowden n.d.: 3). Gabriel I recalls that the Allertons liked to explore and together they found caves in the cliff just below where Maunakilohana was located and in the back where the railroads were built. He saw matting, bamboo *tapa* sticks, fishhooks and carvings. Teshima (Teshima 1997:137) mentions two Hawaiian graves up on the east cliff; one grave on top the of hill with an entire family in it; a cave above Diana Fountain with a small coffin the size of a baby; a cave with nine individuals with a big room (Teshima 1997:34); and a cave above the orange bougainvillea with an individual in a sitting position (Teshima 1997:145).

PREVIOUS ARCHAEOLOGY

There are several previous archaeological studies in the areas surrounding Lāwa`i Ahupua`a. Earlier work by Kikuchi, Bennett, and Thrum identified many sites within the Lāwa`i Valley but most lack sufficient recordation and documentation. More current works have been conducted outside of the project area mainly in Kōloa Ahupua`a.

Handy and Handy identify the existence of prehistoric Hawaiian-built terraces in the Lāwa`i Valley in their 1930 inventory (Handy and Handy 1972:428). Lāwa`i Stream and several smaller streams were most likely the main sources of water for the *lo`i* system while it was in use. To date, only one of the springs is identifiable. This spring is located in a small valley extending northeast from the main valley. Two of the springs purportedly located at the mouth of a small valley, west of the stream, are no longer identifiable.

KŌLOA DISTRICT AND AHUPUA`A SITES

Most of the archaeological work in Kōloa Ahupua`a has taken place at or near the seashore, in association with the relatively recent buildup of tourist facilities in and around Po`ipū. The quantity and diversity of archaeological sites documented during development of the shoreline, in particular, attests to the use of this southern coastal strip in traditional times.

During an informal island-wide survey of Kaua`i for the Bishop Museum in 1928 and 1929, Wendell C. Bennett recorded a number of archaeological sites within the southern reaches of Kōloa Ahupua`a (Bennett 1931). Saltpans were documented along the shoreline east of Waikomo Stream. Ponds, enclosures, taro terraces, and house sites were recorded within the vicinity of ū Beach. Two significant heiau were documented in Po`ipū: Kihouna and Kaneiolouma Heiaus. Dune burials in the area were common, particularly east of Makahuena Point (Bennett 1931:111).

Traditional land use and modification of Po`ipu have been further documented through the intensification of development projects occurring over the past forty years. Between the 1960s and 1980s, numerous archaeological reconnaissance surveys and excavations were conducted throughout Po`ipu and Koloa (Kikuchi 1963; Ching *et al.* 1974; Hammatt *et al.* 1978; Kikuchi 1981; and Neller 1981).

Hammatt's *Archaeological and Biological Survey of the Proposed Kiahuna Golf Village Area* (*et al.* 1978) resulted in the identification of 583 features within a 460-acre parcel. During this survey, extensive evidence of prehistoric land manipulation was documented. The rocky

landscape was transformed into an almost continuous complex of irrigated agricultural fields fed from Waikomo Stream through a series of canals. Habitation sites were also documented directly above and around the agricultural fields (Hammatt *et al.* 1978).

More recently, SCS conducted an Archaeological Inventory Survey in the Koloa Ahupua`a on a 5.381 acre land parcel located east of the current Allerton project area (Monahan 2004). Four sites and nine historic structures were documented at this project area. The four sites include: (1) the remnant ruins of the Shingon-shu Mission (Site -3901), (2) a dry-stacked boulder platform/historic storm drain (Site -3902), and (3) two dry-stacked wall remnants (Sites -3903 and -3904), both extensively remodeled and altered in recent times. The nine historic structures were found to be in poor physical condition, and they have little or no architectural integrity.

SCS also conducted an Archaeological Inventory Survey at the site of the ‘Old Kōloa Sugar Mill’ (SIHP 50-30-10-9302), located approximately east of the current project area (Wilson and Dega 2004). No traditional archaeological resources were identified, and a series of features were documented, all related to the historic mill site.

LĀWA`I AHUPUA`A SITES

Previous archaeological studies have been conducted for this project area at TMK: (4) 2-6-002:001, 004-006 predominately by Bennett (1931) and Kikuchi (1963), however no more recent studies have been conducted. Bennett describes this project area in his island wide survey of Kaua`i’s archaeology conducted in the late 20s through the early 30s. Bennett (1931) identified two destroyed *heiau*; the *Mamalu Heiau* (Site 69) and *Kalohiokapua Heiau* (Site 70). Another intact *heiau* resides on the eastern bluff of Lāwa`i Valley called *Niukapukapu* (Site 72). Bennett also describes scratched and pecked stick figure petroglyphs located above the current project area on the eastern side of a large rock (Site 71). Bennett bases most of his descriptions on his own field observations and descriptions given by Thrum (1906).

William Kikuchi (1963) surveyed Lāwa`i Valley using site locations previously recorded by Bennett and Thrum. Kikuchi re-identified old sites and identified nine new ones; however since Kikuchi was hired to assess vandalism damages on archaeological sites throughout the Kōloa district, this survey was very limited and was not meant to become a full survey of the area. Sites identified by Kikuchi include: `Opihi Rock (Site 50-30-10-3067, Fe. A; Kikuchi’s 50a), springs (Site -50-30-10-3067, Fe. B; Kikuchi’s 50b), *lo`i* terraces (Site 50-30-10-3067, Fe. C; Kikuchi’s 50c), Hina Rock (Site 50-30-10-3067, Fe. D; Kikuchi’s 50d), a path (Site 50-30-10-

3067, Fe. E; Kikuchi's 50e), a fishpond (Site 50-30-10-3067, Fe. F; Kikuchi's 50f), rock shelters (Site -3068, Kikuchi's 51 and Site -3070, Kikuchi's 54), and a stone wall (Site 50-30-10-3069, Kikuchi's 53) (Kikuchi 1963:39-44).

PROJECT AREA EXPECTATIONS

Site expectations for project area stem from previous activities and archaeological work in the area. The current project area is located in a valley known for its fertile agricultural land and access to river and ocean fishing. Previous archaeology conducted in the adjacent Kōloa Ahupua`a (Kikuchi 1963; Ching *et al.* 1974; Bennett 1931) and the Lāwa`i Ahupua`a provide evidence for traditional and historic-period activity. Documented sites in the general area primarily include agricultural terraces (*lo`i*), wall structures, and historic features associated with the sugarcane industry (railroad tracks, water pumps, housing/storage structures).

Given the area's history and archaeological record, remnants of traditional activities (*lo`i* agriculture, house units, fishing tools, etc.) were expected to be found. Remnants of historic features and development were also expected for the project area due to the sugarcane industry activity in the valley and plateaus and successive generations of private land ownership – from Queen Emma to the McBryde's to the Allerton's – that took place in the area.

METHODOLOGY

Archaeological methods used in the project area consisted of an Archaeological Reconnaissance and an Inventory Survey of the area. The reconnaissance phase of the project included the identification of previously identified archaeological sites within the project area, through document reviews and ground investigation, the identification and location of undocumented sites through a full systematic pedestrian survey of the project area, and GPS documentation of all identified archaeological sites. The archaeological inventory phase of the project adhered to the detailed documentation of sites in the project area through photographing, mapping and description; limited excavation at selected sites in order to determine site function; and the collection of carbon samples to determine a chronology of the project area through radiocarbon dating.

Controlled test units, stratigraphic trenching and backhoe trenching were utilized to facilitate subsurface archaeological investigations. All control test excavations were done in layers with 10 cm arbitrary levels where layers exceeded 10 centimeter in depth. All excavated matrices were screened through 1/4 and 1/8 inch mesh and all unit locations plotted on the plan

view map for each corresponding site. Artifacts recovered during the excavation were sent to the SCS Laboratory in Honolulu for analysis and curation (see Appendix A). Charcoal samples were collected and sent to Beta Analytic, Inc. for radio carbon dating, the results of which are reported and analyzed in the “Summary of Radiocarbon Dating” section of this report.

The laboratory phase of the project took place at SCS’s central office in Honolulu, HI. Laboratory work consisted of the cleaning, cataloguing and analysis of the artifacts and midden recovered from the site. SCS’s Guerin Tome oversaw all lab work and subsequent analysis.

SURVEY RESULTS

During the Archaeological Reconnaissance Survey and Archaeological Inventory Survey six sites were newly identified. The newly identified sites include: Site 50-30-10-893, (SCS Site TS-1), agricultural terraces on the slope along the east side of the Allerton’s house); State Site 50-30-10-894 (SCS Site TS-2), multi-feature Habitation Site at the southeast corner of the property. State Site 50-30-10- 895 (SCS Site TS-3), two terraces located west of the stream; State Site 50-30-10-896 (SCS Site TS-4), a *lo`i* complex in a *hau* patch just west of the stream); State Site 50-30-10-897, (SCS Site TS-5), a habitation terrace located behind the Diana’s Fountain; State Site 50-30-10-898, a wall which was part of the Allerton Modifications. In addition, one site previously identified by Kikuchi (State Site 50-30-10-3069, Kikuchi’s Site 53) and one feature (Feature C of Site 50-30-10-3067, Kikuchi’s 50c), also previously identified by Kikuchi, were relocated and documented. State Site 50-30-10-3069 (Kikuchi’s Site 53) consists of a stone wall located at the southwest end of the project area (Kikuchi 1963:39, 40) (Figures 7 and 8). The cultural deposit recorded in the vicinity of the burial site near Pu`ukilo`i`a was not relocated as this area is under dense growth of naupaka, and sand has been deposited over large swathes of the area since the last natural disaster.

SITE AND EXCAVATION DESCRIPTIONS

Nancy McMahan, State Historic Preservation Division, was consulted and concurred with Michael Dega, Principal Director, that all modifications associated with the development of the present-day Allerton Gardens could be considered as one archaeological site. Most of the existing features within the garden fall within the category termed “Allerton Modifications.” Since these features are both numerous and present throughout the project area, no detailed documentations were made. Most, if not all, of these features were mapped prior to the

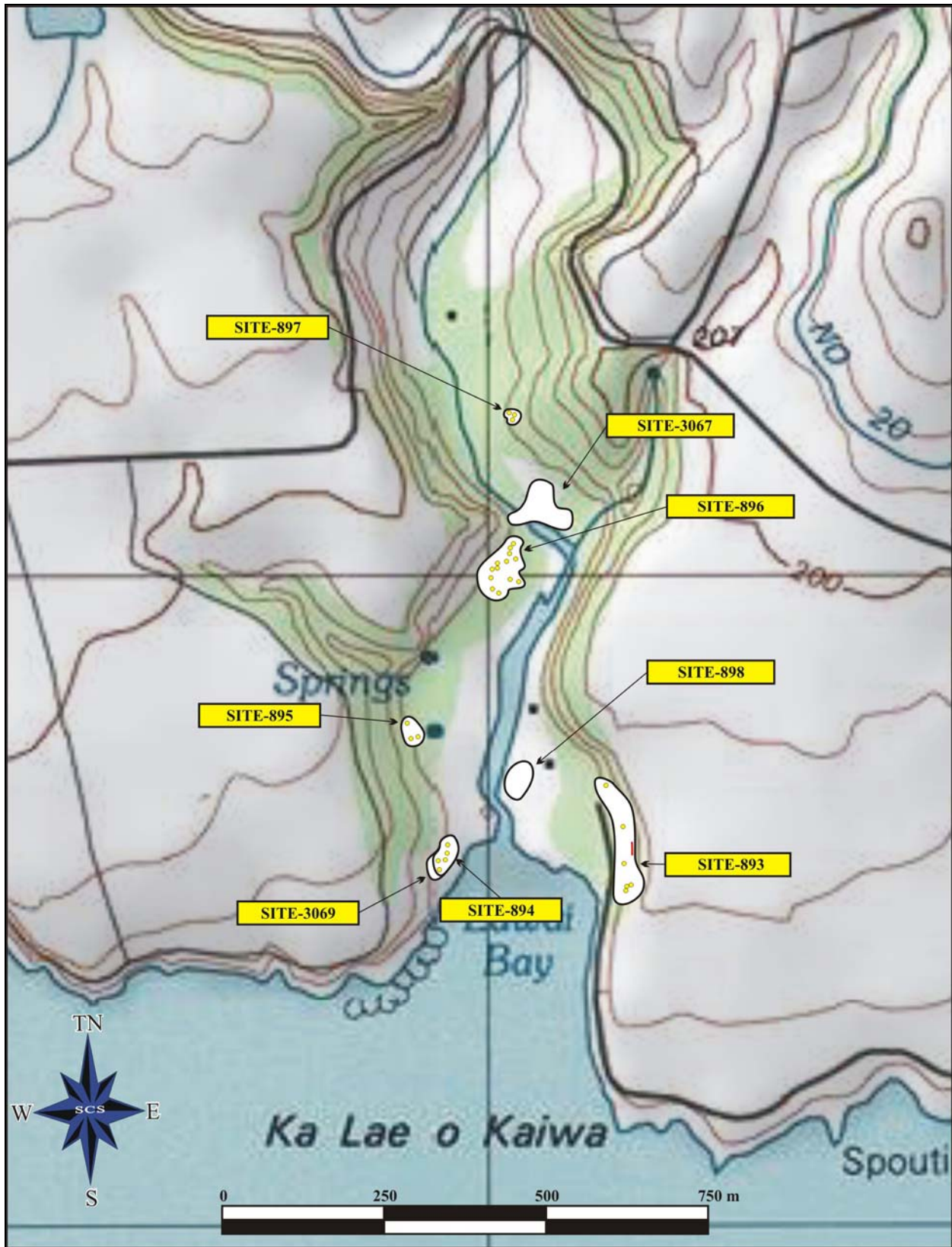


Figure 7: USGS Quadrangle (Koloa) Map Showing Site Locations.

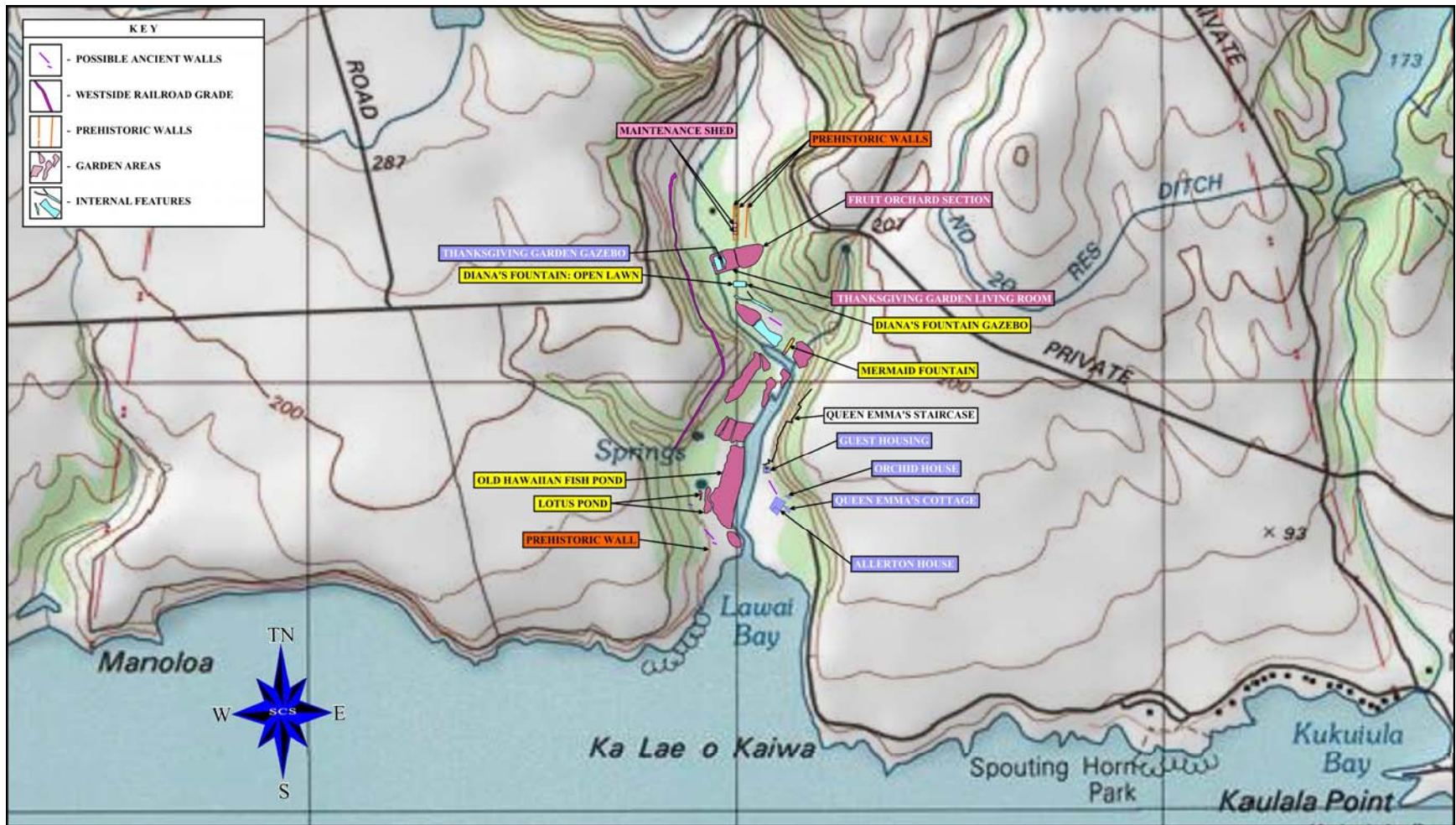


Figure 8: Allerton Garden Modifications.

beginning of the present archaeological investigation. The “Allerton Modifications” consist of various features located throughout the Allerton Garden which have been modified in historic times. These features include numerous rock walls, trails, terraces, several fountains, as well as the Guest House, Allerton House, Queen Emma’s Cottage, Thanksgiving Garden, Diana’s Fountain, the Three Pools water feature, the Mermaid Fountain, the rock walls located around the historic house sites, the large terraces in the northern end of the parcel, six buildings associated with the sugarcane industry, and the railroad remnants running through the project area.

As mentioned, five new sites were identified during archaeological investigation of the project area. Some of the sites are rather extensive and only selected portions were documented. The following tables (Tables 1 and 2) summarize these finds:

Table 1: Archaeological Sites and Features.

State Site Number	Previous Site Number	Size in Meters	Number of Features	Possible Age	Possible Function
50-30-10-893	SCS TS -1	Approx. 80 x 30	Numerous	Traditional, Historic	Agricultural
50-30-10-3069	SCS TS-2 Kikuchi’s Site 53	124 x 36	7	Traditional	Habitation
50-30-10-895	SCS TS-3	30 x 25	2	Undetermined	Habitation
50-30-10-896	SCS TS-4	94 x 42	5	Traditional	Agricultural, Workshop
50-30-10-897	SCS TS-5	27 x 18	2	Historic	Habitation
50-30-10-898 (Allerton Modifications: Wall)		36.6 x 1	1	Pre-Contact/ Post-Contact	Undetermined
50-30-10-3067, Feature C	Kikuchi’s Site 50c	130 x 90	10	Pre-Contact	Agricultural

STATE SITE 50-30-10-893 (SCS TS-1)

Site 50-30-10-893 consisted of multiple dry-land agricultural terraces located along a moderate slope east of the Allerton’s residence (Figures 9, 10, and 11). The area had been greatly impacted by episodes of landslides. The site area is under dense vegetation including but not limited to, palms, *kukui*, *hau*, *koa haole*, ironwood, banana, breadfruit, *haleconia*, *noni*, spider lilly, and vines. Vegetation removal and detailed documentation was limited to the features found in the site.



Figure 9: Site -893 Overview from the Southeast.

Feature Description

- Feature 1: Feature 1 consisted of a series of low agricultural terraces with planting circles located at the central portion of the site. A terrace measuring 50.0 meters long is located at center of these features. Smaller terraces and planting circles branch off of this central terrace. The central terrace is faced and stacked with a maximum height of 0.85 meter. Most of these terraces are in good condition; however, portions have been affected by land slides. All features within this series are interpreted as agricultural.
- Feature 2: Feature 2 is a low terrace wall measuring 11.0 meters long and about 0.4 meter at the highest point. The terrace is constructed with small to medium size boulders and is stacked 2 to 3 stones high. Feature 2 is interpreted as agricultural.
- Feature 3: Feature 3 is crudely constructed wall measuring 9.5 meters long and a maximum height of 1.2 meters. This wall doesn't appear to be part of the agricultural system since it doesn't appear to retain any soils. It is possible that this feature is associated with the later development.

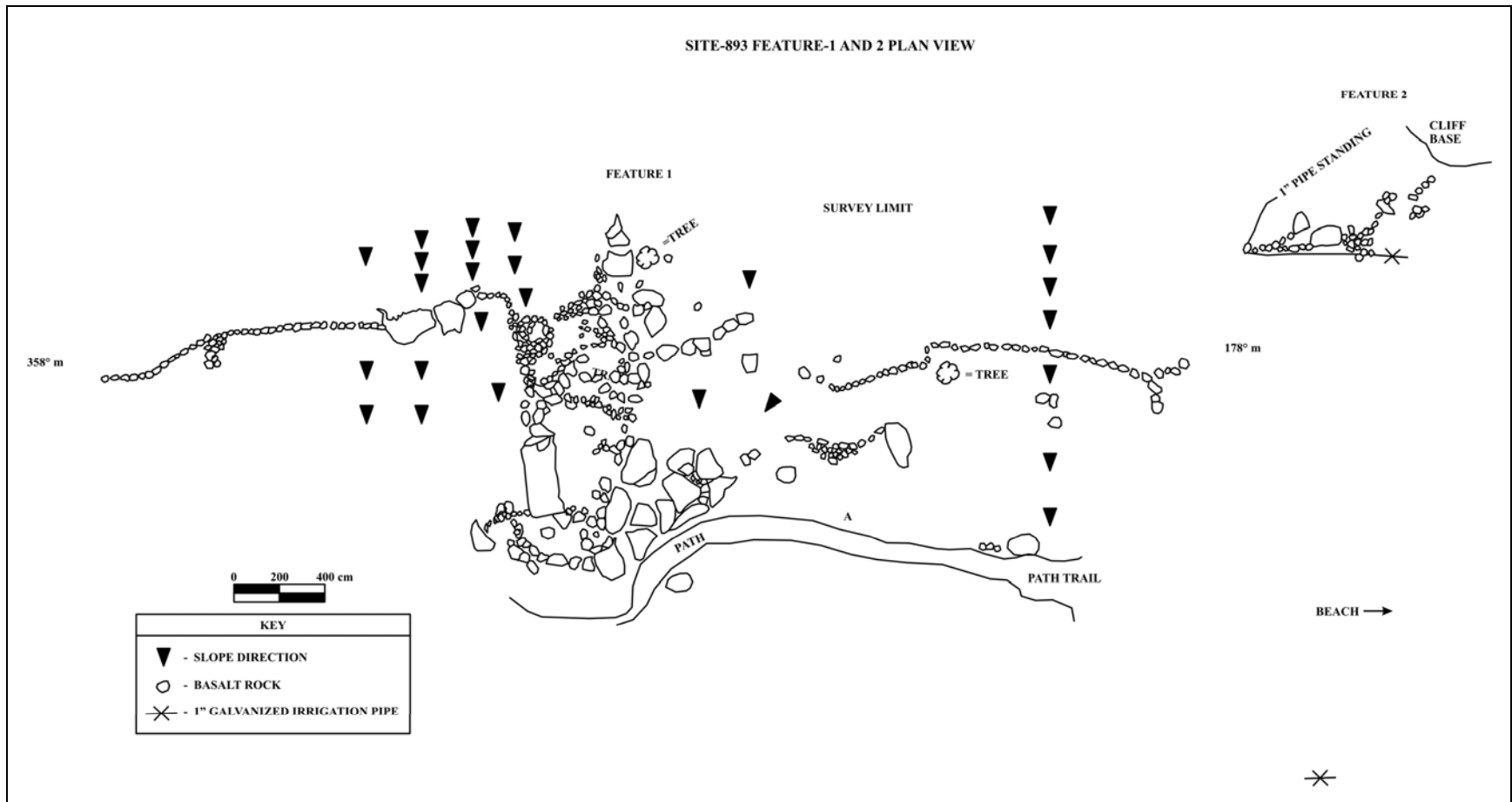


Figure 10: Site -893 Plan View Map of Features 1 and 2.

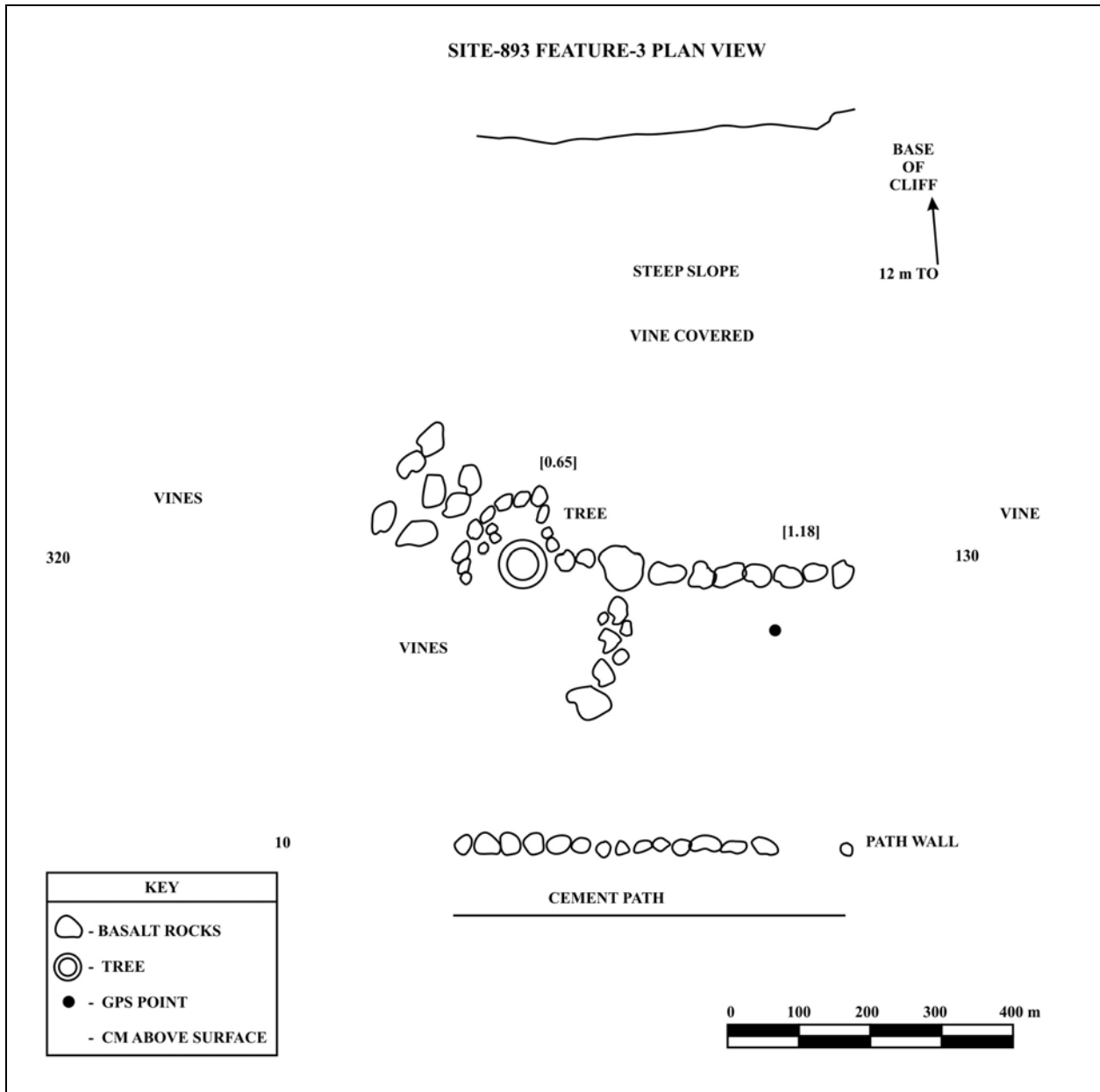


Figure 11: Site 893, Map of Feature 3.

STATE SITE 50-30-10-894 (SCS TS-2)

Site 50-30-10-894 is a multiple feature site located near the southwest corner of the project area. Most of the features are just inland from the rocky shore-line; however, two features are on the shoreline. The site encompasses an area that is 62.0 meters long and 27.0 meters wide (Figure 12). The site area is under sparse growth of ironwood, koa haole, individuals of *kiawe*, sisal (*sp*), and dense cactus at the inland portion of the site.

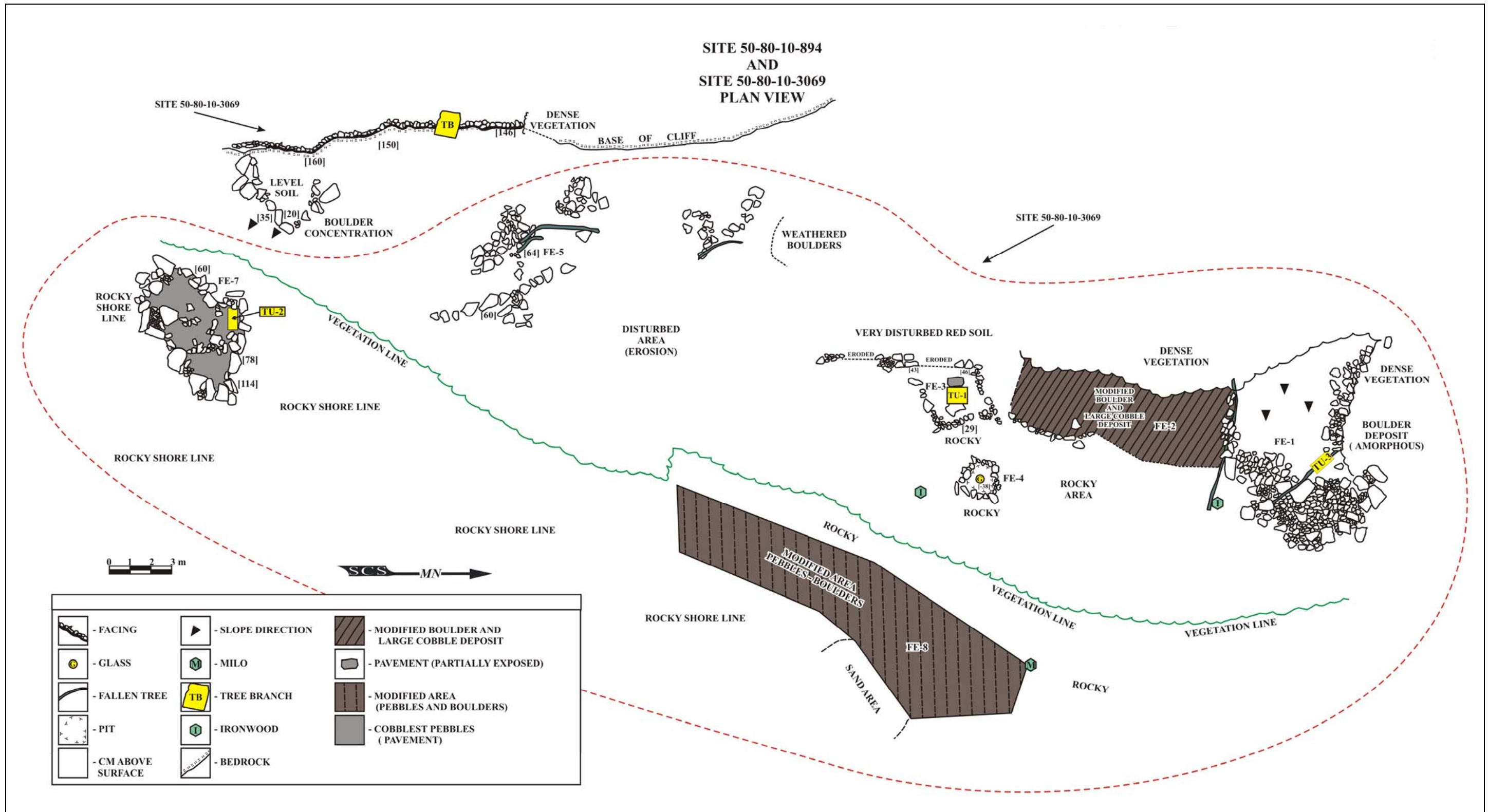


Figure 12: Site 5-30-10-894 and Site 50-30-10-3069. Plan View.

Extensive alteration is apparent throughout the site area. It appears that this entire area was greatly impacted by natural disasters, namely Hurricanes Ewa and `Iniki, and perhaps by the Tsunami of 1946. Large amount of displaced rocks are piled in various parts of the site, however, sections of the aboriginal architectures are still discernable.

A total of 8 features were identified at the site. These include: 3 C-shapes, 1 possible platform, 1 possible trail segment, 1 alignment, 1 depression, and 1 pavement. These features are described below (Figure 13).

Feature Description

- Feature 1: Feature 1 is a C-shaped structure located at the north end of the site. The feature measures 10.0 meters long and 6.0 meters wide. The east face contains large boulders and small cobbles. It appears that this side may have been double faced and core filled but it is rather difficult to ascertain at this point. The south side is demarcated by a large modified boulder deposit, and the north edge contains some scattered boulders but no formal architectural style observed. The west edge is under dense cactus. The interior gently slopes easterly and contains mostly soil. A small to medium size boulder concentration is present against the interior of the eastern border. Feature 1 is interpreted as a habitation feature.
- Feature 2: Feature 2 is a large modified boulder deposit located directly south of Feature 1. This deposit measures 11.0 meters long and 3.4 meters wide. The west edge is under dense cactus which inhibited thorough investigation of this portion of the feature. Feature 2 is interpreted as a habitation feature. Further investigations are needed, however, to determine the full function of the feature.
- Feature 3: Feature 3 is a small enclosure located immediately south of Feature 2. It measures 3.5 meters long, 3.0 meters wide, with maximum exterior height of 0.29 and 0.46 in the interior. The borders of the feature is mostly small boulder and cobble alignment, however the west edge is bounded by a medium size boulder alignment which extends south beyond the feature. The northwest corner of the feature contains a remnant of a small boulder pavement. A relatively large boulder inhabits the southeast corner of the feature. Marine shells and coral are scattered throughout this area. Feature 3 is interpreted as a habitation feature.
- Feature 4: Feature 4 is a rock lined depression located just east of Feature 3. This pit measures 2.0 meters in diameter and about 0.38 meter deep. Glass bottles are present on the surface. This feature is interpreted as a possible fire pit.
- Feature 5: Feature 5 consisted of a boulder alignment, along the south side, and a boulder concentration, along the north side, that are placed parallel to each other. The area between these rock features is soil. The feature measures 10.0 meters long and 1.5 meters wide, with a maximum height of 0.64 meter. This feature is interpreted as a possible trail remnant.



Figure 13: Portion of Site -894, Overview from the West.

Feature 6: According to the State Historic Preservation Division, Kapolei, Site File, SCS's Site 894, Feature 6 had been previously identified and documented by Kikuchi as Site 53 (Kikuchi 1963:39, 42). Further research revealed that Kikuchi's Site 53 had already been designated State Inventory of Historic Properties (SIHP) Site Number 50-80-10-30-3069. Thus, Feature 6 has been assigned the corrected SIHP Site Number of 50-80-10-3069 (Kikuchi's Site 53). As this research was conducted subsequent to the midden and radiocarbon analysis and subsequent to preparation of this report, the remaining SCS feature designations for Site -894 have not been changed. Site 50-80-10-3069 (Kikuchi's Site 53) is discussed below.

Feature 7: Feature 7 is an irregular shaped enclosure located on the rocky shore line at the southeast corner of the site. It measures 8.5 meters long, 5.0 meters wide, and 1.19 meters at the highest point. Large boulders form the perimeter of this feature and the interior is filled with angular cobbles and small boulders. There are two internal compartments at the east and the northwest corners of the feature. These compartments are delineated by large cobble and smaller boulder alignments. There is also a small area of pebble and small cobble fill at the central southern edge. Feature 7 is in fair to poor conditions and its function is not known.

Feature 8: Feature 8 consisted of an area containing a large deposit of angular cobbles and pebbles. The feature is located near the northern border of the rocky section of the shoreline. It measures 20.0 meters long and 6.0 meters wide. There is no formal structure associated with this concentration and its function is not known.

Excavation Descriptions

In Site -894, three controlled test excavations took place. Test units TU-1 and TU-2 measured 1.0 by 1.0 m, while TU-3 measured 1.0 by 0.5 m.

TU-1 Excavation in Feature 3 consisted of TU-1 and revealed three layers of strata reaching a depth of 90/100 cmbs. Layer I (0-30 cmbs) consisted of very powdery red (10R4/6) silt. Cultural material found in this layer included: charcoal, marine shells (cowrie, *opihi*, sea urchin), bird and fish bone, pig, shark, and dog teeth, and part of a pearlshell fishhook shank.

Layer II (30–50 cmbs) was a light brownish gray (10YR 6/2) ashen lens/layer mixed with sand. Many charcoal remnants were found and a sample was taken from this layer for radiocarbon dating. Other cultural materials found in the layer include: marine shell fragments, burnt urchin spine, fishbone, fire cracked rocks that were water-worn and located near the center of the pit in the sandy ash, and many signs of burning throughout layer II. Radiocarbon dating sample SCSRC546 provided a conventional age of 310±50 B.P. from this layer.

Layer III (50–90/100 cmbs) was light gray (10YR 7/1), sandy with large sub-angular gravel, coral, and small fragments of marine shell. Cultural material found in the layers included limited amounts of charcoal, marine shell, and bird and fish bone (Figure 14).

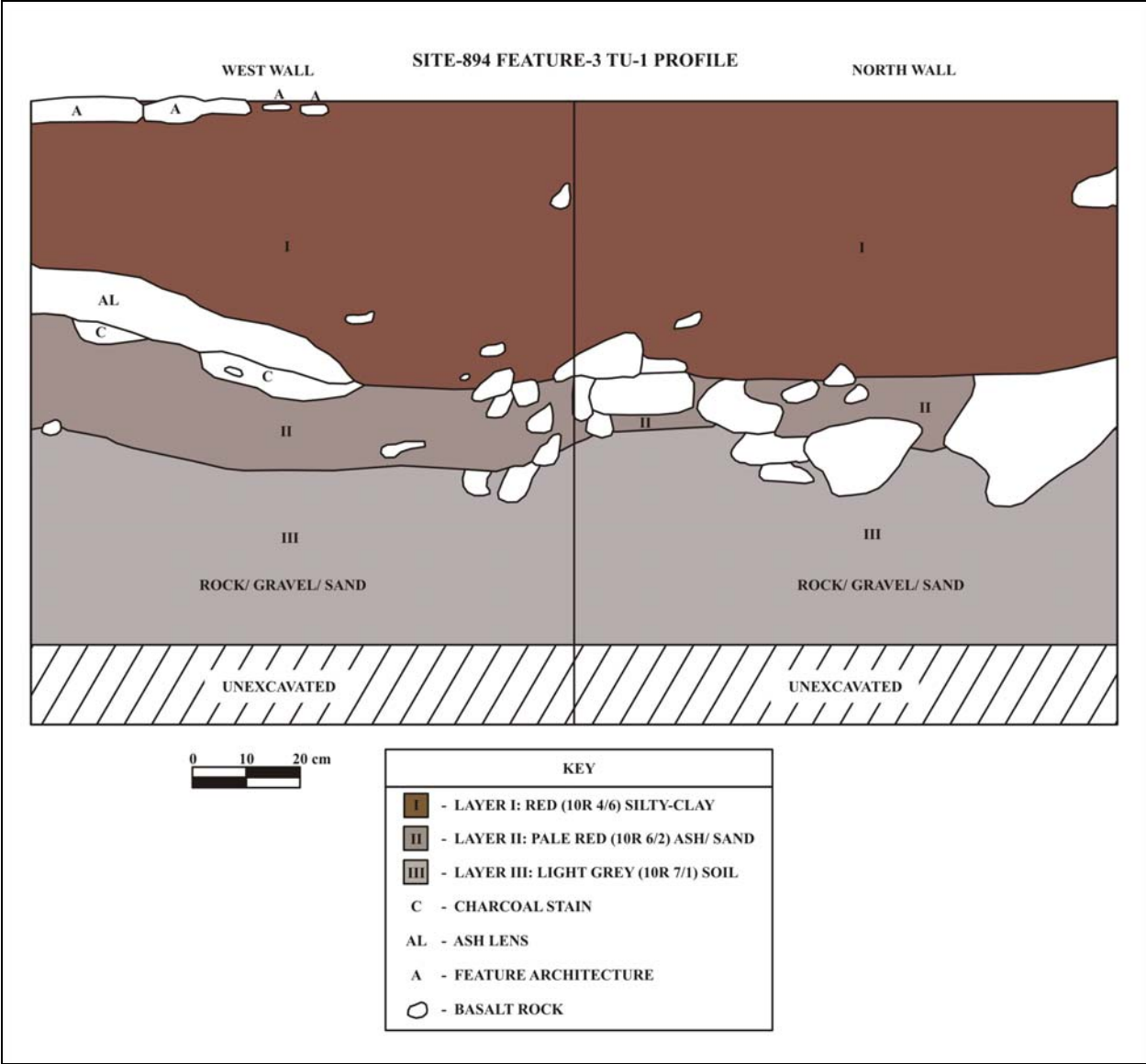


Figure 14: Site 50-30-10-894, Feature 3, TU-1 West and North Wall Profiles.

TU-2 TU-2 was located in the northeastern corner of a rough enclosure of very large boulders (Fe-2). The interior floor of the boulder enclosure was roughly panned with sub-angular boulders, cobbles, and pebbles (Fe-7). Fe-7 is about 12 m west of the surf line on a very rocky beach on the west side of Lāwa`i Bay. The sand beach is about 50 meters to the northeast. Stones were removed to a depth of 56/83 centimeters to uncover the top of layer I of TU-2 located on Feature 7. Large boulders prevented the excavation from continuing and activities in unit TU-2 were concluded. No cultural material was found during excavations in TU-2.

TU-3 Unit TU-3 was within Fe 1, a C-shape. The unit is located at the lowest spot within the C-shape against a very larger boulder. Feature 1 is at the west end of the sandy beach at the end of Lāwa`i Bay. There is about 8 m of boulder rubble between the unit and the edge of the sand. The surf line is about 15.0 meters away (at low tide). Unit TU-3 is 79/92 cmbs deep. The surface of TU-3 was sandy and covered with debris from nearby plants.

Layer I (0–10/18 cmbs) is a red (10R 4/6) loamy sand with abundant granules, gravel, and pebbles. Micro to medium roots were common in this layer. Marine shells present in the layer may have been naturally deposited after hurricanes Ewa and Iniki. Two basalt flakes, marine shells, pieces of metal, glass, ceramics, charcoal, echinoderms and water-worn pebbles were also collected. Cultural debris found in the unit consisted of metal, glass, ceramics, and charcoal and were all believed to be secondary deposits resulting from various storms.

Layer II (10/18–19/25 cmbs) was a pale red (10YR 6/2) ashy sand layer, with roots and pebbles present. Cultural materials consisted of marine shell, possible bone, metal flake, flat water-worn pebble, charcoal, an echinoderm, and four new basalt stones protruding from the floor of layer II.

Layer III (19/25–56 cmbs) is a dark reddish brown in color and (5YR 3/4) and both sand-like and compact in consistency, with perhaps a small component of clay or other binding material. Charcoal is widely disseminated throughout Layer III without any apparent pattern. A charcoal sample for radiocarbon dating was taken in this layer. Cultural material found includes: marine shell, echinoderm, bone, metal flake, basalt flakes, adze fragment, volcanic glass, charcoal. Radiocarbon sample SCSRC547 provided a conventional age of 320±40 B.P.

Layer IV (47/46–79/92 cmbs) is comprised of clean white (10YR 8/1) beach sand with some discoloration from Layer III in the northeast corner. Cultural deposits diminished in this layer. However, some do exist, including: marine shell, charcoal, fish bone, fish scale, echinoderm, a coral abrader, burnt *kukui*, waterworn pebble, basalt flakes, metal, mammal bone, and volcanic glass.

STATE SITE 50-30-10-895 (SCS TS-3)

Site 50-30-10-895 consisted of a terrace and a stone alignment located approximately 100 meters northwest of Pu`uki lo`i`a. The site measures 29.0 meters long and 29.0 meters wide and may be the remnants of a prehistoric habitation structure. The area is bordered to the east and the west sides by modern walls, with features within the site located midway between them. The ground is heavily veined by roots from two large Morton Bay Fig trees located in the central portion of the site (Figure 15 and 16).



Figure 15: Site -895 Overview from the Northwest.

Vegetation in the area includes: Bamboo Palm, Royal Palm, African Tulip, Kiawe and other unidentified vines and exotic plants.

Feature Description

Feature 1: Feature 1 is a terrace located west of the Morton Bay Fig trees. The feature measures 13.0 meters long and 4 courses (medium sized boulders) at the highest point. The northern portion of this feature is earthen and the southern portion is rock faced. A portion of it is stacked three to four courses high. The southernmost end of this terrace has two medium size boulder alignments and filled with cobbles in between. This terrace functions as retention for elevated portion of the site.

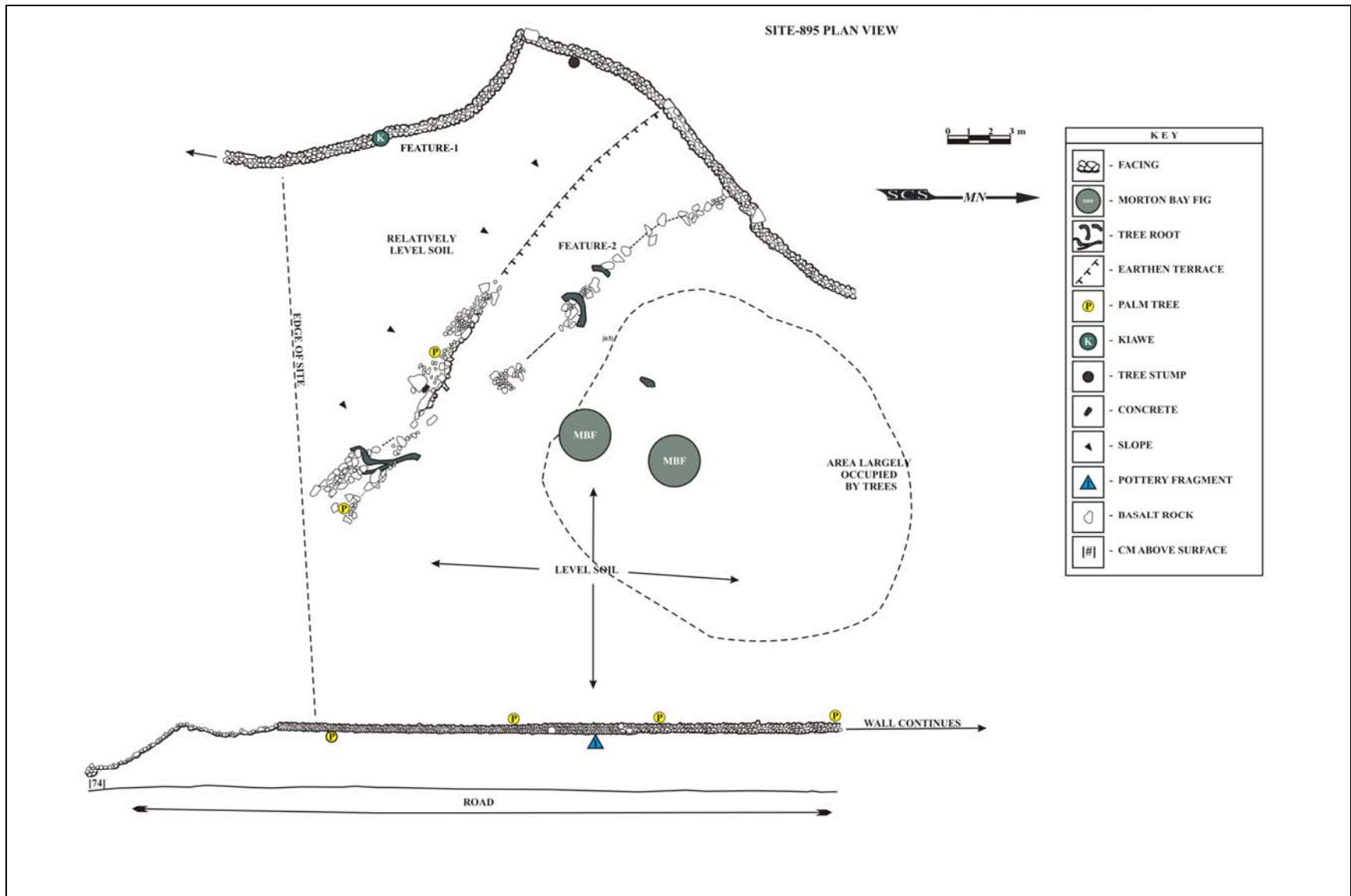


Figure 16: Site -895 Plan View Map.

Feature 2: Feature 2 is a cobble and boulder alignment located just east of Feature 1. This feature is in very poor condition due to disturbance by roots from nearby trees. Portions of this feature are piled cobbles and some have concrete inclusions. The feature measures 6.0 meters long and roughly one to one and a half feet wide. The function of this alignment is not known.

STATE SITE 50-30-10-896 (SCS TS-4)

Site 50-30-10-896 consists of *lo`i* and an area containing a lithic scatter located just southwest of Lāwa`i Stream. The *lo`i* are in dense *hau* immediately west of the existing beach access road. The area containing the lithic scatter is a level soil area directly across from the *hau* patch on the east side of the access road. Vegetation on this portion of the site includes; coconut, bamboo palm, milo, kiawe, and grass. The site is bounded from the north, east and west sides by modern roads and trail. The south boundary is at the south end of the surface features (Figure 17).

Site -896 encompasses an area measuring 96 meters long and 44 meters wide. Although the area was altered during various garden modifications, this remnant of the *lo`i* system appear to be relatively good condition, though most of the stones appear to have been removed from the *lo`i* terracing. Two of the plots (Features 1 and 2) seem very close to their original form.

Feature Descriptions

- Feature 1: Feature 1 is an irregularly shaped *lo`i* terrace situated at the north end of the site. It measures 50 meters long, 6 meters wide, with an average height of 0.77 meters. Medium boulders are present intermittently along the base of the terrace. A few short sections of intact terrace facings are also present. A single large boulder sits midway along the feature's facing. The interior of the terrace consists of compact, level soil. Feature 1 is interpreted as an agricultural feature.
- Feature 2: Feature 2 is also an irregularly shaped *lo`i* terrace located to the immediate west of Feature 1. The feature measures 28.0 meters long, 4.0 meters wide and 1.0 meter at its' highest point. Similar to feature 1, the feature facing is mostly earthen with portions of sloping piled stones. A remnant of what appears to be the *`auwai* is present upslope of this feature. Feature 2 is interpreted as an agricultural feature.
- Feature 3: Feature 3 is a relatively large *lo`i* located at the southwest end of the site. The feature measures 28.0 meters long, 13.0 meters wide, and 1.06 meters at the highest point. This feature's facing is also mostly earthen with intermittent medium size boulders along the base. The west side had been impacted by modern trail construction. There is a large pile of boulders and cobbles present at

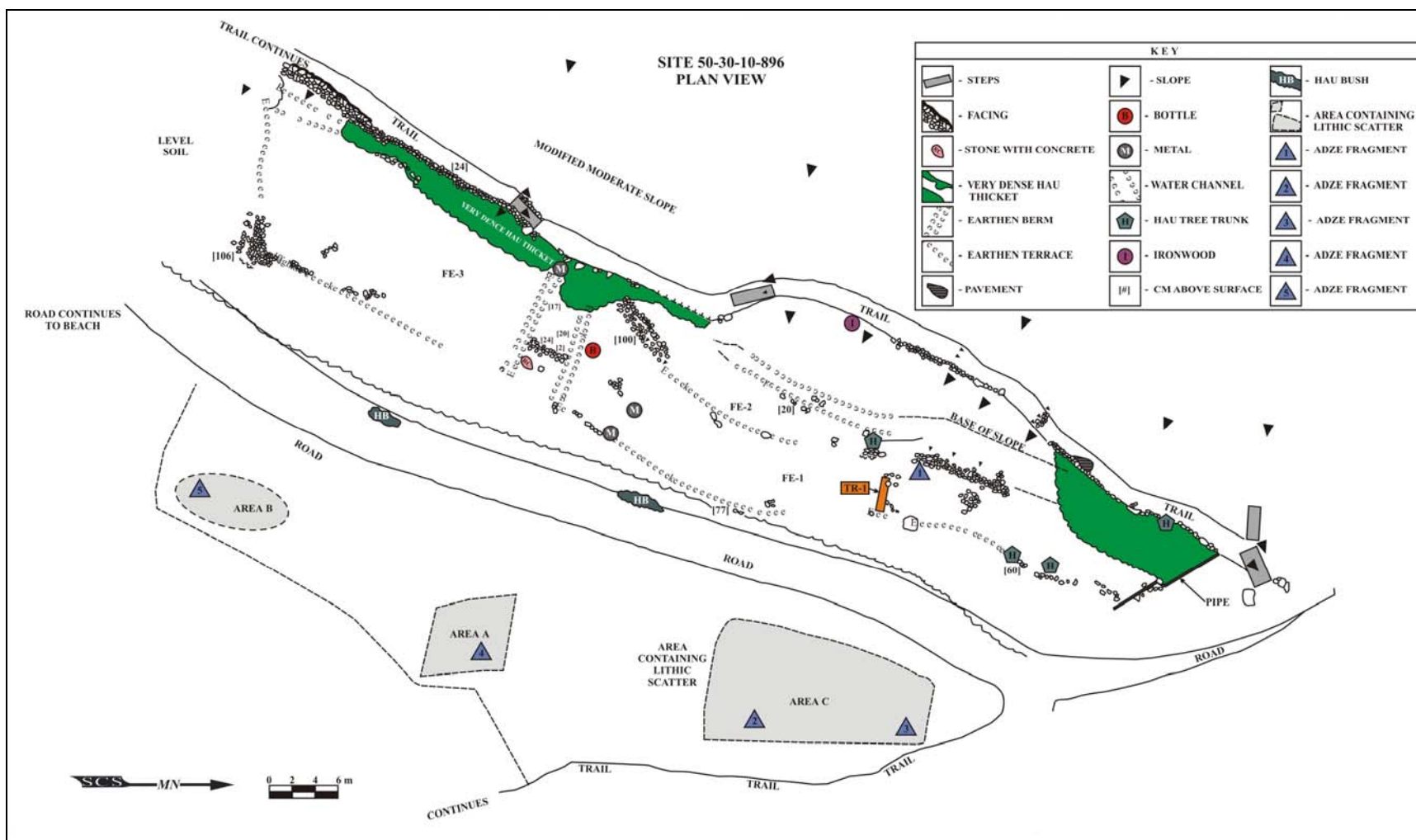


Figure 17: Site 50-30-10-896 Plan View.

the southeast corner of this feature. Some of these stones are probably part of the original structure however; it is suspected that most of the pile probably resulted from recent land clearing. A short section of what might have been an *auwai* was observed at the southwest corner of the feature. Feature 3 is interpreted as an agricultural feature.

Feature 4: Feature 4 is a water channel located between Feature 1 and Feature 3. This channel is bounded by earthen berms along the north and the south sides. These berms are 3.0 to 4.0 meters apart. A low linear stone mound measuring 0.22 meter in height extends between the two berms in the mid section of the channel. Pieces of concrete are present on the mound, in addition to some cobbles that are held together by concrete.

The channel was likely used for water transportation and the mound to control water flow. The presence of concrete in the feature's construction makes it likely that the feature is historic.

Feature 5: Feature 5 includes the portion of the site along the east side of the access road. This area measures 75.0 meters long and 22.0 meters wide. This area contains lithics including, adze fragments, an adze perform, and basalt flakes, as well as some volcanic glass. This area is interpreted as a workshop.

Excavation Descriptions

Feature 1 of Site -896 was examined by excavating one stratigraphic trench (ST-1). Five stratigraphic layers and two subsurface features (SSF 1 & 2) were revealed in this excavation. The purpose of the excavation was to recover datable remains that could be used to reconstruct the chronology of this particular site. This site is interpreted as agricultural (*lo`i*) wetland, with an associated lithic work area.

ST-1 This trench was located within the central portion of Feature 1, within the *hau* patch east of the Lāwa`i Stream. The trench was placed in an area with minimal surface disturbance that could have thus preserved evidence of traditional use and activities. TU-1's dimensions were 3.0 by 7.0m, with a depth ranging from 77 to 120 cm. The unit extends northwesterly from the interior edge of the eastern border of the feature. This portion of the site is considered traditional and probably not completely modified during the later use of the area. The surface was mostly level soil and littered with leaves and debris from the *hau* which dominates the vegetation in the area.

Layer I (0–6/12 cmbs) is a very dark brown (7.5YR 2.5/2) silty loam that is very hard, dry, blocky, and moderately coarse. There were approximately 1 percent of roots present in this layer, which was slightly wavy with very few rocks. No cultural material was found in this layer.

Layer II (6/12–16/42 cmbs) was a moderately compacted brown (7.5YR 4/3) clay loam with approximately 1 percent of roots present. Rocks in this wavy layer

were fine to very fine. Also present were some basalt and a few charcoal flakes. Layer IIA (16/42–20/62 cmbs) was a mixture of dark reddish brown (5YR 4/2) and dark reddish gray (5YR 3/2), slightly compacted, slightly blocky, clay loam that was discontinuous. The clay loam was mostly observed at the eastern half of the unit with about 2% saprolitic pebbles. A charcoal deposit (Subfeature 1; SCS TS-4-1) was observed at the west end of this slightly wavy layer. A charcoal sample for radiocarbon dating was taken from this layer.

Layer III (20/62–32/96 cmbs) was mottled with a reddish browns (5YR 4/4 and 5YR 5/4) and was compacted. There were 6–10 percent cobbles and pebbles in this layer with very few roots. There was scattered charcoal and basalt flaking throughout the layer. Subsurface features 1 and 2 were identified in this layer.

Layer IV (32/96–34/98 cmbs) was a mottled reddish brown (5YR 4/4) and yellowish red (5YR 5/6) soft clay loam that was fine to very fine in texture. There were very few rocks, and very few charcoal flecks. Subfeature 2 (SCS TS-4-2) is thought to be associated with this layer.

Layer V (34/98–77/120 cmbs) is very similar to Layer III with a mottled reddish brown (5YR 4/4 and 5YR 5/4) clay loam with approximately 6–10 percent of cobbles and pebbles. A charcoal sample for radiocarbon dating was taken in this layer. This layer contained charcoal flecking, along with some basalt flakes and volcanic glass, which were associated with the upper portion of the layer (Figure 18). Radiocarbon sample SCSRC545 provided a conventional age of 760±40 B.P. from this layer.

Subsurface Feature Descriptions

- SSF-1 This subsurface feature measures 16 cm (north-south) and 36 cm (east-west). This subsurface feature was observed at a depth of 30 cm in layer III. The cultural material found in this layer consisted of basalt flakes in the surrounding area, but not directly associated, with the subsurface feature. The fill of the subsurface feature was dark brown (7.5YR 3/4), scattered with a few gravel and charcoal remnants (Figure 19)
- SSF-2 This subsurface feature measures 96 cm (east-west in orientation). Its north-south measurement is unknown due to the limits of the trench size. It was observed at a depth of 65 cmbs in layer III. The cultural material found consists of basalt flakes, volcanic glass flakes, and charcoal remnants. The fill of the subsurface feature is a clay loam found between the rocks. A rock-free silty clay deposit (*lo`i* deposit) is present, most notably in the west side of the facing.

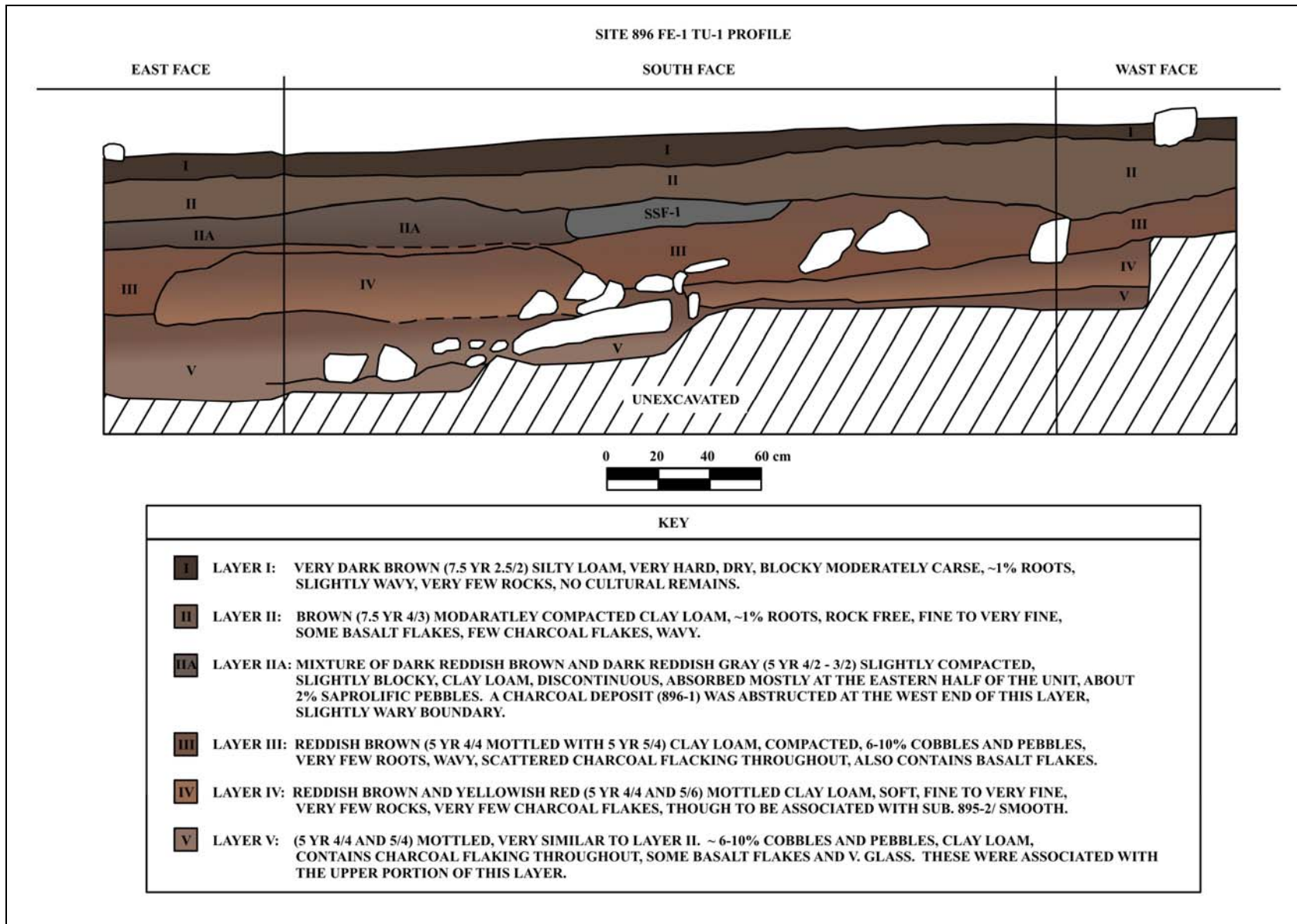


Figure 18: Site -896 Feature 1 TU-1 Profile of East, South, and West Faces.



Figure 19: Site 896, Feature 1, *Lo`i* Terrace, View From the East.

STATE SITE 50-30-10-897 (SCS TS-5)

Site 50-30-10-897 consisted of two terraces located directly behind the Diana's Fountain feature (Figure 20 and 21). Vegetation at the site includes, but is not limited to, tamarind, eucalyptus, mango, octopus trees, bamboo palms, *lauwa`e*, and dense exotic shrubs introduced for the garden.

The site is at the base of the eastern slope of the valley. The area is dominated by natural rock outcropping. Historic glass fragments and other historic debris are common in the site area. There are also numerous water pipes traversing through the site as well.



Figure 20: Site -897 Overview From the East.

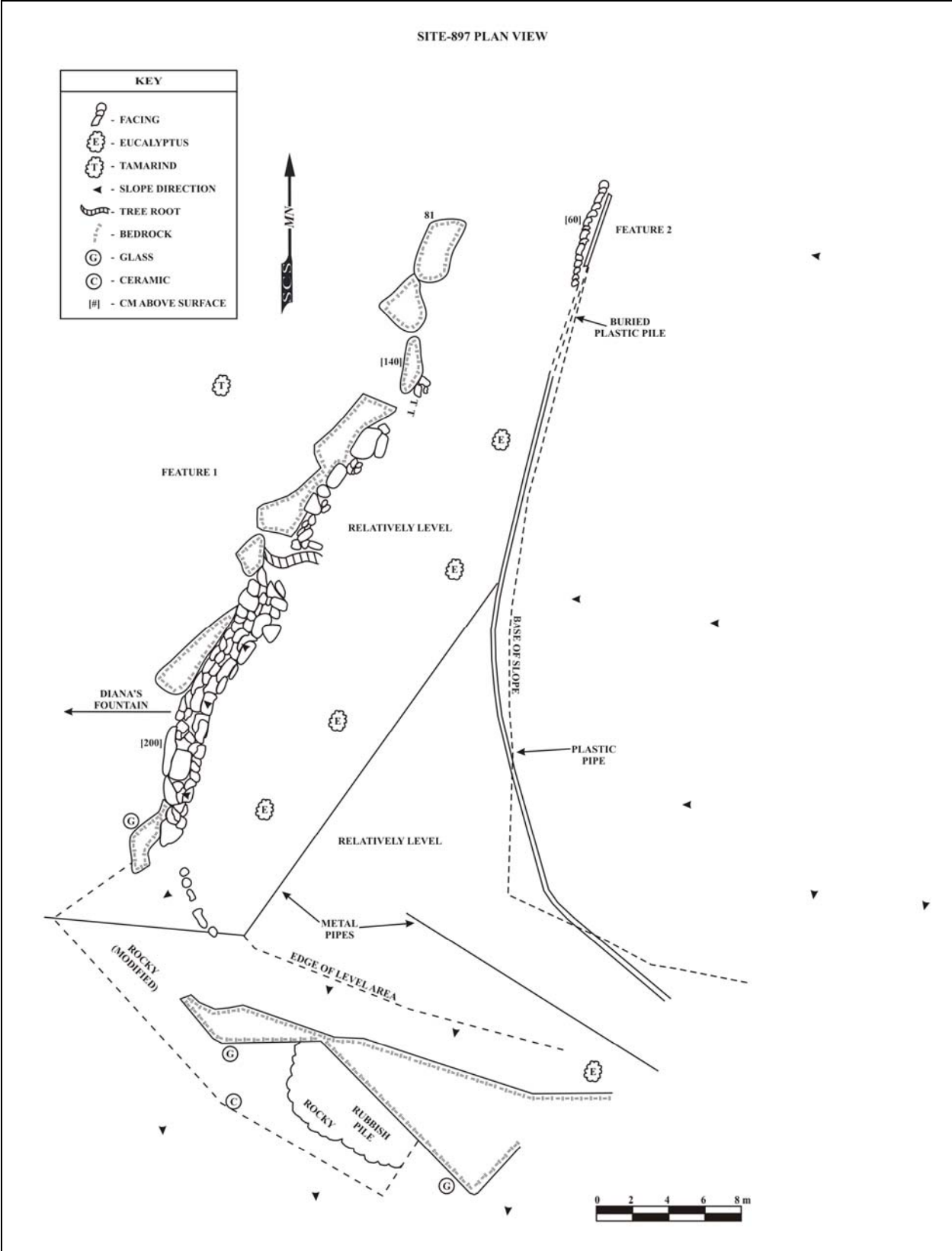


Figure 21: Site -897 Plan View.

Feature Descriptions

Feature 1: Feature 1 is a relatively large terrace located on a layer of bedrock. It measures 20.0 meters long, 18.0 meters wide, and 2.0 meters at the highest point. The terrace is constructed with medium to large boulders. The facing is stacked 3 to 5 stones high. The south side is mostly bedrock. Portions of the terrace have collapsed especially near the north end on the western side. The interior is relatively level soil but had been impacted by the installation of water lines that are now occupying the feature's surface. Feature 1 is in fair to poor condition, and interpreted as a historic house site.

Feature 2: Feature 2 is a terrace located north of Feature 1. This terrace measures 3 meters long, 1 meter wide, and 0.6 meters at the highest point. This feature was probably constructed for the purpose of supporting a water line that extends along the top.

STATE SITE 50-30-10-898

Of the 12 Allerton Garden Modifications features only the wall feature was assigned a state site number and excavated. This was to determine if there was a pre-Contact dimension to the feature. Although the wall itself is deemed historic, cultural material was found below it. The wall feature is located behind the Allerton House on the southeastern portion of Lāwa`i Valley near the ocean (Figures 22 and 23), roughly parallel to the base of the cliff, which sits 8 to 15 meters away.



Figure 22: Site 898 Allerton Modification Wall, Overview from the East.

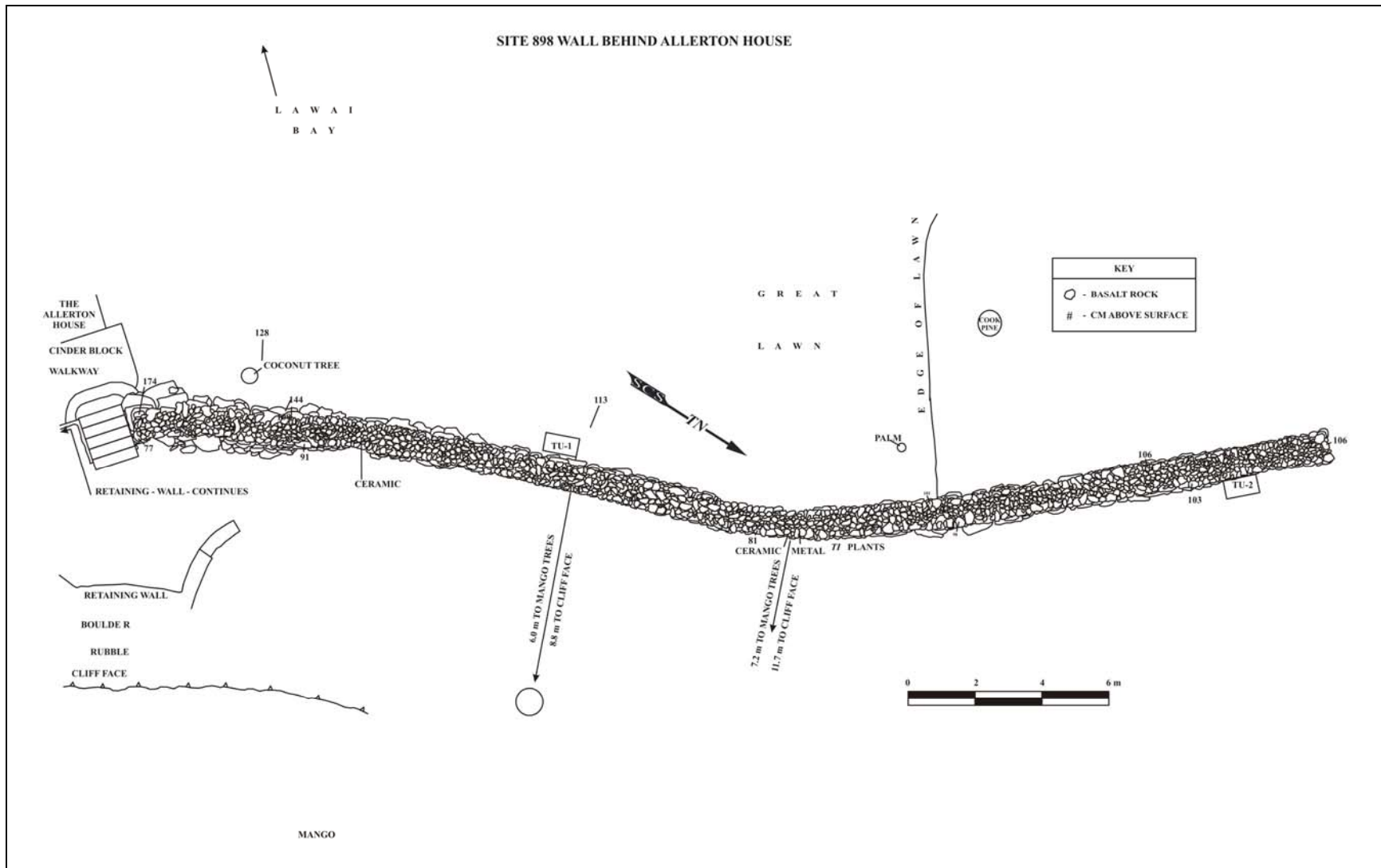


Figure 23: Site -898 Allerton Garden Modifications: Wall, Plan View.

There is a great lawn on the *makai* side of the wall feature and the Lāwa`i Stream is to the west. This site has been repaired several times with minor amounts of cement mortar. Portions of the wall feature on *makai* side are very roughly built and may be indicative of repairs made to the structure after storm damage. The wall consisted of angular, subangular, and sub-rounded basalt boulders and cobbles. The wall is somewhat wider at the base than at the top, which is paved flat with cobbles and some pebbles. The height of the wall is 3 to 6 courses (0.77 to 1.74 meters) high, with several very large boulders at the base, and 36.6 meters long. There is a row of six straight-trunk mango trees about 6.0 meters *mauka* of the wall feature. There is also *lauwa`e* (fern), coconut palm, and Bougainvillea on this site.

Excavation Description

Two controlled test excavations took place at State Site 50-30-10-898 and were placed at the base of an existing rock wall. TU-1's dimensions were 1.0 by 0.85 m, while TU-2 was a 1.0 by 0.5 m unit.

The purpose of these excavations was to see if the base of the rock wall continued below ground-level, perhaps revealing older architecture or cultural features.

TU-1 TU-1 was located along the base of the rock wall near the Allerton house on the south facing wall. Excavation of this unit exposed five layers of strata. The maximum depth reached in this excavation was 127 cmbs (Figure 24).

Layer I (0–37 cmbs) consisted of a very pale brown (10YR 8/4) sandy matrix under grass sod with lots of roots and small subangular pebbles. Clay silt was starting to appear at the bottom of this layer. Cultural material found consisted of historical glass fragments, potter fragment, marine shell, charcoal, bird and fish bone, a piece of concrete garden pot.

Layer II (37–39 cmbs) was also a very pale brown (10YR 8/4) sandy matrix that was transitioning into a silty clay sediment with small subangular basalt pebbles. Cultural material found at this layer included: a dog tooth, rat and bird bone, marine shell fragments, and a few charcoal fragments.

Layer III (39–97 cmbs) was a dark brown (10YR 3/3) silty clay. Towards the bottom of layer III a lens of sand appeared. A charcoal sample for radiocarbon dating was taken in this layer. Cultural material found in this layer included: charcoal, faunal remains, historic glass, marine shell, volcanic glass, dog teeth and bone, and rat bone. Dating sample SCSRC549 provided a conventional age of 370±60 B.P.

Layer IV (97–127 cmbs) was a very pale brown (10YR 8/3) sandy soil. Cultural material consisted of crab shell, charcoal, and dog bone.

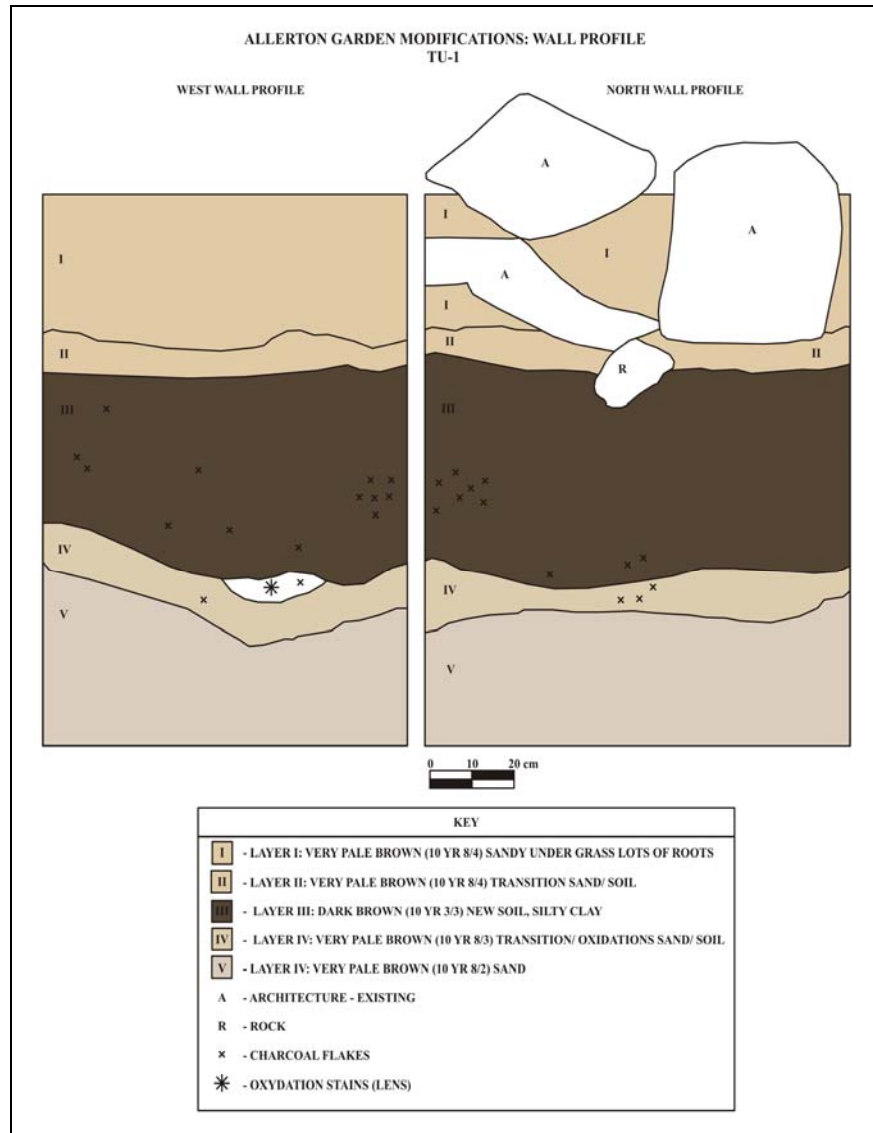


Figure 24: Site -898: Allerton Garden Modifications Wall, TU-1.

TU-2

TU-2 was located on the northern face of the wall, 25.0 meters from the stream, 15.0 meters from the base of the cliff, and east of TU-1. This unit was comprised of four strata layers. The surface of this unit was covered with fifty percent live and decomposing vegetation and the other fifty percent was loamy sand (Figure 25).

Layer I (0–9 cmbs) was a very fine to very coarse crumbly structured dark brown (10YR 3/3) loamy sand that was semi-loose with approximately 5 percent of its matrix being vegetative roots. There were also a few subangular basalt pebbles. No cultural material was found in this layer.

Layer II (9–21 cmbs) was a semi-loose, very fine granular, light yellowish brown (10YR 6/4) sand with approximately 5 percent of its matrix also comprised of vegetative roots. No cultural material was found in this layer.

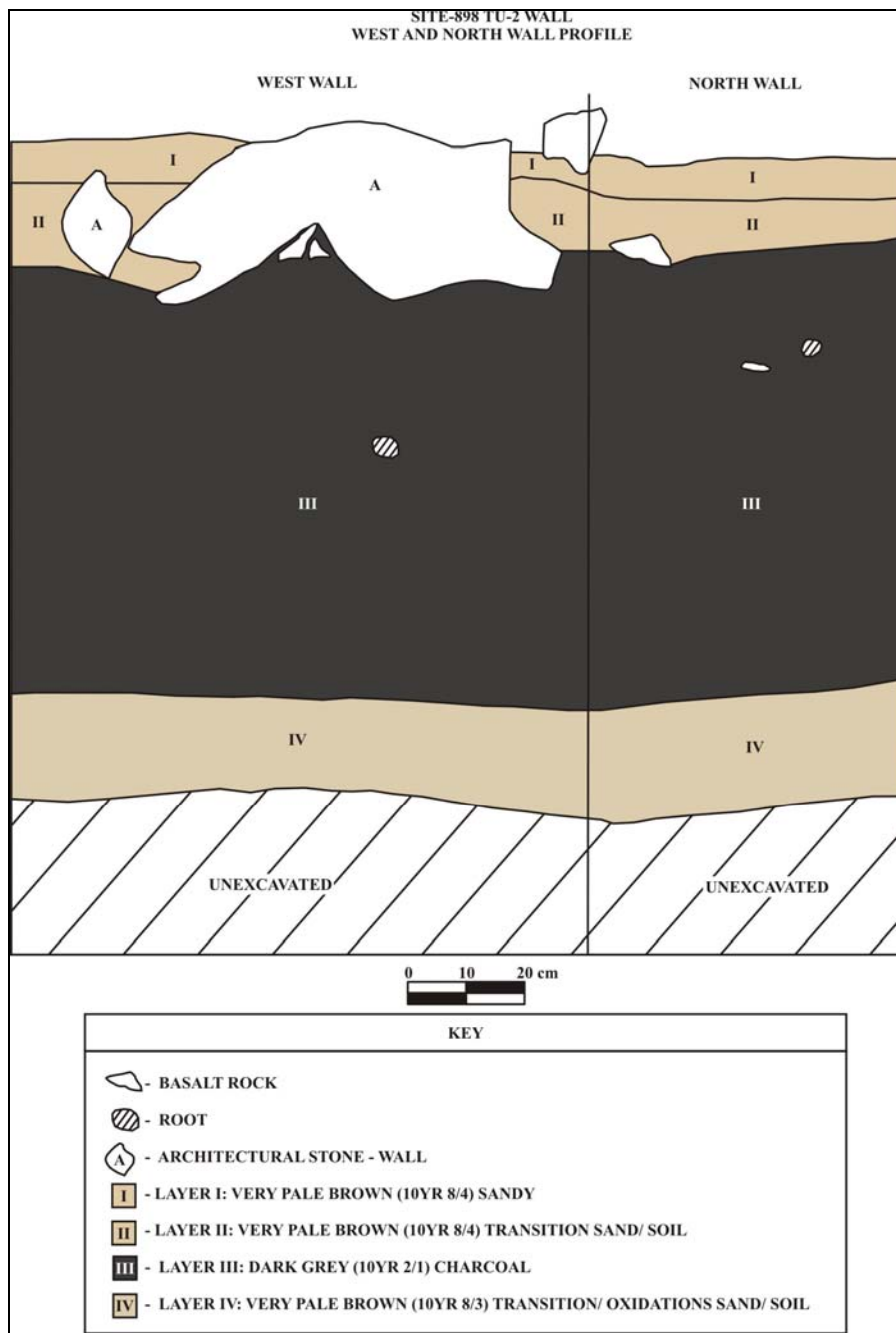


Figure 25: Wall Profile of TU-2.

Layer III (13–105 cmbs) is a dark brown (7.5YR 3/4) silty clay. A few angular pebbles and a few roots were present. A charcoal sample for radiocarbon dating was taken in this layer. Cultural material found included: charcoal, marine shell, basalt flakes.

STATE SITE 50-30-10-3067, FEATURE C (KIKUCHI'S SITE 50C)

This site was initially recorded by Kikuchi as Site 50c, a series of taro *lo`i* (Kikuchi 1963: 39, 40). Site -3067, Feature C is a series of *lo`i* located along the east and west sides of the Lāwa`i Stream in the center of the Allerton Garden. The most prominent of these are on the east side. Although modifications are apparent, most terraces are still detectable. The terrace walls are more pronounced towards the east and increase in height as the slope increases. Many of the rock facings on the *lo`i* along the west side have been removed or altered, leaving mostly earthen terraces. The best preserved *lo`i* plots are in a *hau* patch just west of the stream. A total of ten features were recorded (Figure 26). Please note the following feature number designations for Site -3067 were assigned by SCS in order to facilitate feature discussions.

Vegetation at the site includes, but is not limited to; monkey pod, Morton Bay fig, mango, and coconut. Pieces of metal and historic glass were found in the site area. The overall site area is fairly level with some terracing evident. Site -3067, Feature C was previously recorded as Site 50c, though recordation was done only to a minimal extent; therefore only a portion of Site -3067, Feature C (130 x 90 m) was documented in this Inventory Survey.

Feature Descriptions

- Feature 1: Feature 1 is a terrace along the western side of the Lāwa`i Stream measuring 37.04 meters long, 13.6 meters wide, and 39 cm high. It is located on the eastern-most side of Site -3067. There are fragments of terrace walls made from small to medium-sized basalt boulders. Extremely massive Morton Bay fig tree roots and a modern garden trail have greatly disturbed the terrace wall's alignment.
- Feature 2: Feature 2 is an irregularly shaped agricultural *lo`i* terrace in fairly poor condition located directly south of Feature 1. It is bordered by the Lāwa`i Stream to the east and a garden trail to the west. The southern portion of the terrace has been modified to include three cement steps. Recently, portions of the terrace wall were removed from the eastern side of Feature 2. The feature is 38.3 meters long, and is approximately 8.5 meters wide.
- Feature 3: Feature 3 is a *lo`i* terrace in poor condition located in the southwest corner of Site -3067, south of the mermaid fountain in a bamboo patch. It measures 19.85 meters long, 25.6 meters wide, and measures 70 cm at its highest point.
- Feature 4: Feature 4 is another *lo`i* terrace in poor condition located east of Feature 1. It is constructed of small and medium, subangular to sub-rounded boulders, and mainly consists of a soil berm. Feature 4 measures 58.2 meters long, 36 meters wide, and is one to two medium-sized boulders high.
- Feature 5: Feature 5 is a *lo`i* terrace located southeast of Feature 4 in the southeast corner of Site -3067. It is in fairly poor condition, measures 51 meters long, 37.7 meters wide, and stands an average of 0.8 meters high. The central portion of the south edge is a soil berm and the north edge is a soil berm with rocks. The north

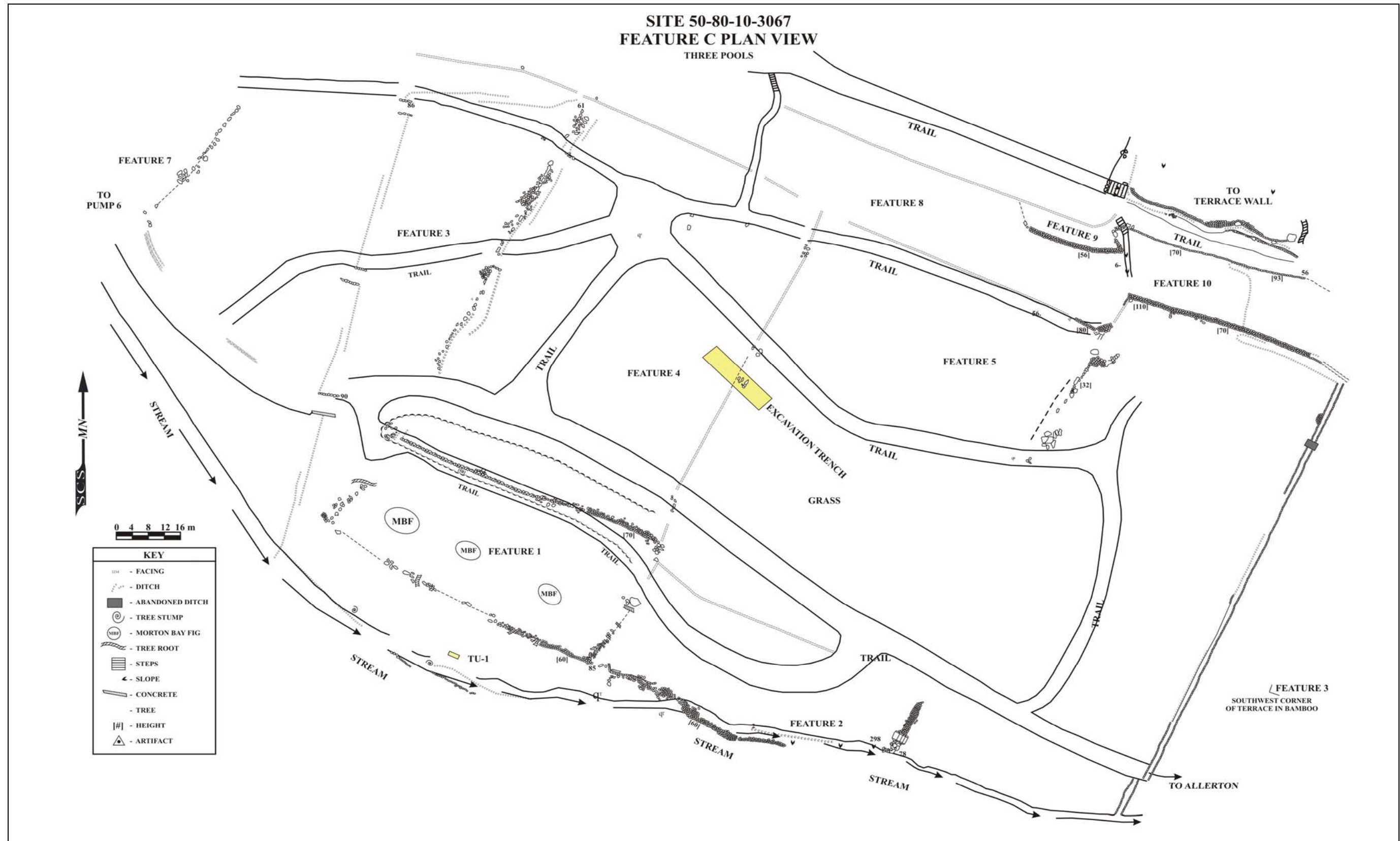


Figure 26: Site 50-30-10-3067, Feature C. Plan View.

boundary of the feature is disturbed by the trail near the west end. However, some stones are still visible within the trail. Both north and south edges are terminated at a terrace that stands directly west of the existing trail. Portions of this feature's retention terraces have already been altered by various activities associated with the garden, especially trail construction. There is a possible old `auwai along the south side of the northern edge.

- Feature 6: Feature 6 is a *lo`i* terrace composed of an earthen berm with small boulders. It is located north of Feature 4 and measures 42.9 meters long, 36.8 meters wide, and approximately one medium sized boulder high. An existing `auwai is located on the southern edge of this feature.
- Feature 7: Feature 7 is a *lo`i* terrace in poor condition located north of Feature 6 and within the northern section of Site -3067. It is comprised of small-to-medium boulders aligned in an east-west direction that measures 18.0 meters long, and about one medium sized boulder high. Feature 7 is level although roads and trails have altered the feature.
- Feature 8: Feature 8 is an agricultural *lo`i* terrace in good condition located in the eastern side of Site -3067. It is comprised of small to medium size boulders that are rounded to subangular. A wall is present on the western side of Feature 8 that has boulders stacked 5 to 6 stones high and approximately 1 stone wide. Feature 8 measures 48 meters long, 11 meters wide, and 0.8 meters high. The interior of the feature consists of level soil bounded by rock terrace facing on three sides, and demarcated on the west side by a modern trail.
- Feature 9: Feature 9 is a *lo`i* terrace of small boulders stacked and sloped against the natural slope. The interior slope is level and the entire feature measures 12 meters long, 3 meters wide, and 0.56 meters high. Feature 9 is located at the base of the eastern slope of Lāwa`i Valley, south east of Feature 8.
- Feature 10: Feature 10 is a *lo`i* terrace in good condition located south of Feature 9 and 10, in the southeast corner of Site -3067. It is comprised of small to large boulders that are stacked and mostly sloped against the natural slope. Feature 10 measures 30.0 meters long, 8.0 meters wide, and about 6 to 10 medium sized boulders high. A ditch that feeds the mermaid fountain cuts through the middle of Feature 10. Terrace walls were subjected modification associated with garden development.

Excavation Descriptions

Two units were excavated at Site -3067, Feature C. One (TU-1) was a controlled test excavation measuring 1.0 by 0.5 meters in Feature 1. The other (ST-1), was excavated via a backhoe and was placed in Feature 4.

- TU-1 TU-1 was located in Feature 1 on a level floodplain deposit about 2.6 meters north of the remnant terrace wall in the stream bank. There is another terrace wall 5.0 meters north of this unit, roughly parallel to the stream. Three very large

Mortén Bay fig trees are located on that terrace and this unit was placed so as to avoid their roots. Three layers of strata were revealed in this unit. The trench reached a maximum depth of 53 cm.

Layer I (0–8/11 cm) was a loose, brown (10YR 4/3) sandy loam, with a few basalt gravel-sized stones, some of which were waterworn. Small coral fragments were fairly common, but do not seem to be cultured. Cultural material found in this layer includes marine shells, rat bone, coral, charcoal, and unknown.

Layer II (8/11–30 cmbs) was a compact, dark yellowish brown (10YR 3/4) silty clay with a few pebbles and gravel-sized bits. There is a slight charcoal concentration in the middle of the west wall. Small amounts of charcoal are widely disseminated throughout this layer. Several small lumps of coal were collected as well as marine shell, charcoal, rat bones, and metal flakes.

Layer III (30–50/51 cmbs) was comprised of a dark brown (10YR 3/3) silty clay with a band of charcoal present in the west wall. Cultural material found in the layer included coal, a possible basalt tool, charcoal, and fragments of historic glass.

ST-1

ST-1 was a backhoe trench measuring 9.5 meters long, 0.7 meters wide, and 120 cmbs at its deepest point. ST-1 was located in Feature 4 of Site -3067, Future C about 40 to 50 meters west from the Lāwa`i Stream. Four stratigraphic levels were identified in this unit.

Layer I (0–8/24 cmbs) was a dark brown (10YR 3/3) clay loam that was very hard and blocky. Roughly 5% of the soil was mixed with grass and coconut roots, but contained no rocks. No cultural materials were found in this unit.

Layer II (8/24–16/45 cmbs) was a dark grayish brown (10YR 4/2) slightly mottled clay loam. This layer was blocky and hard when dry. The wavy boundary made this layer indistinct in areas and not recognizable in other areas due to the presence of other deposits. No rocks or cultural materials were found in this layer. Layer IIA (16/45–20/50 cmbs) was a discontinuous pocket of a heavily mottled clay deposit. It was composed of a mixture of dark gray (7.5YR 4/1), brown (7.5YR 4/2), and dark reddish brown (5YR 3/4) soils. Very few roots were present and some decomposed gravel was found in this layer. Layer IIB (20/50–30/77 cmbs) was another pocket of mottled clay loam comprised of dark gray (7.5YR 4/1), brown (7.5YR 4/3), and some dark reddish brown (5YR 3/4) sediments. This layer was not as reddish brown as Layer IIA. There were a few charcoal flecks present and very few roots.

Layer III (30/77–35/95 cmbs) was a mottled dark gray (10YR 4/1), dark grayish brown (10YR 4/2), reddish brown (5YR 4/4), and a yellowish brown (5YR 4/6) matrix of very moist, platy clay. This layer contained cultural material including; charcoal, basalt flakes, one adze fragment, a hammerstone, and two fire pits (Site

-3067 SCS Subsurface features 3067C.1 and 3067C.2). Two charcoal samples for radiocarbon dating was taken from this layer. Sample SCSRC542, from SSF 50.1, provided a conventional age of 100 ± 40 B.P., and sample SCSRC543, from SSF 50.2, provided a conventional date age of 580 ± 40 B.P.

Layer IV (35/95–40/120 cmbs) is a mottled yellowish red (5YR 5/6 and 5YR 4/6) and reddish brown (5YR 4/4) clay deposit. Decomposed rocks make up a large percentage of the sediment found in the layer. A charcoal sample for radiocarbon dating was taken in this layer. No cultural material was found except in areas where the subsurface features extend into Layer IV (Figure 27).

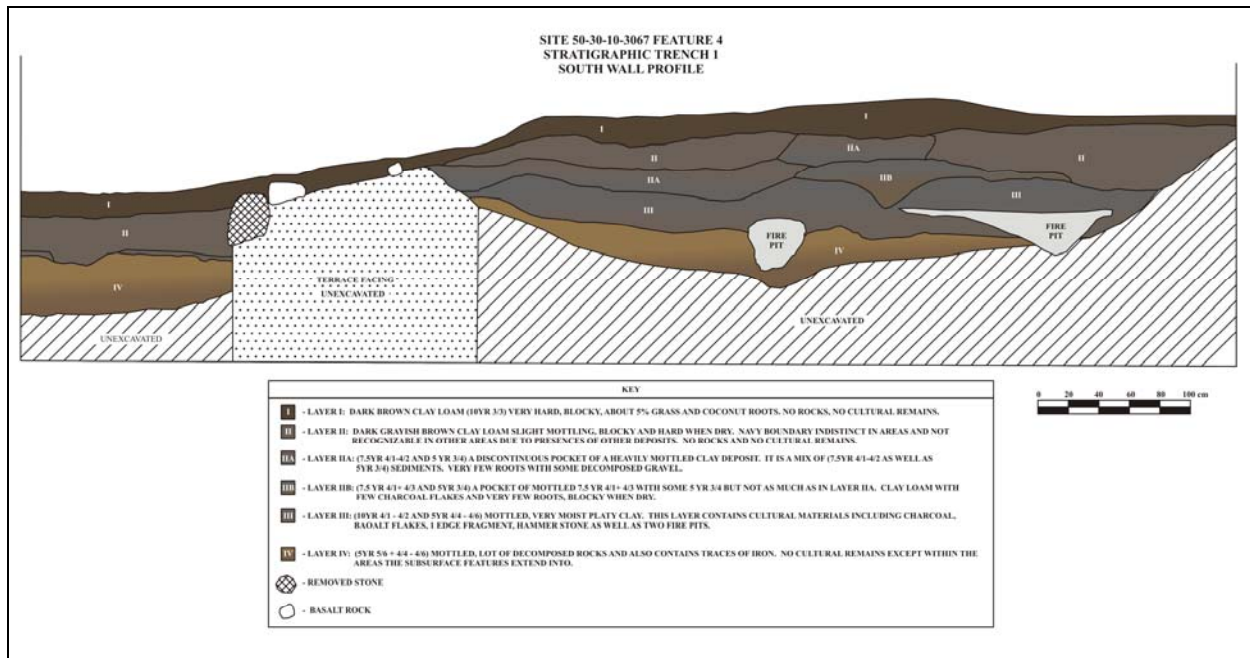


Figure 27: Site 50-30-10-3067, Feature C, Feature 4, ST 1 South Wall Profile.

Site -3067 Subsurface Feature Descriptions

SSF (3067)-1: Is a fire pit that originates in Layer III and extends into Layer IV.

SCS (3067)-2: Is an *imu* located mainly in Layer III and that extends into Layer IV.

SITE 50-80-30-3069 (Kikuchi Site 53)

This site was initially identified by Kikuchi in 1963 (Kikuchi 1963: 39, 42). Kikuchi (*ibid*) initially recorded this site as being "...located along the base of the western cliff slope where the beach meets the vertical slope" (Kikuchi 1963:42). According to Kikuchi, the wall contained midden "at the lower level wall face, suggesting it may be a traditional Hawaiian feature (*ibid*). During the current Archaeological Inventory Survey, this site was recorded as a C-shape located at the southwest end of the site. The feature is bounded by boulder alignment on north, south, and east sides. The interior is relatively level soil. There is a pile of boulders at the

northwest corner. These boulders are probably displaced from the original architecture. The feature measures 5.5 meters long, 4.0 meters wide, with a maximum height of 0.35 meter (see Figure 12). (Please note that during the current Archaeological Inventory Survey this site was erroneously designated Site 50-80-10-894, Feature 6).

SUMMARY OF RADIOCARBON DATING

Eight samples of carbonized wood (charcoal) were submitted to Beta Analytic Inc. for radiocarbon analysis (Appendix B) (Table 2). The samples were selected from a variety of sites and features during the Inventory Survey: Site-894 (2 samples), Site-896 (2 samples), Site-898 a Wall from the Allerton Modifications (2 samples) and Site-3067 (2 samples). The samples were not submitted for wood identification due to time and monetary constraints.

Table 2: Radiocarbon Data

State Site No./ Feature	Provenience	Form	Feature Function	SCS/Beta Number	Conventional Age	*Calibrated Date
Site -894 Feature 3	TU-1 Layer II/1 30–40 cmbs	Poor Cond. Enclosure	Habitation	SCSARC546/ Beta232105	310 +/- 50 B.P.	1450–1670
Site -894 Feature 1	TU-3 Layer III/2–4 31–56 cmbs	Poor Cond. Enclosure	Habitation	SCSARC547/ Beta232106	320 +/- 40 B.P.	1470–1660
Site -896 Feature 1	TU-1 Layer IIA 34–36 cmbs	Terrace	Agriculture	SCSARC544/ Beta232103	330 +/- 40 B.P.	1460–1650
Site -896 Feature 1	TU-1 Layer V 85–95 cmbs	Terrace	Agriculture	SCSARC545/ Beta232104	760 +/- 40 B.P.	1190–1300
Site-898 Allerton Modification Wall	TU-1 Layer III 77-87 cmbs	Wall	Undetermined	SCSARC549/ Beta232107	370 +/- 60 B.P.	1430-1650
Site -898 Allerton Modification Wall	TU-2 Layer III/3 50–80 cmbs	Wall	Undetermined	SCSARC548/ Beta232108	390 +/- 40 B.P.	1430–1530 1540 -1640
Site -3067, Feature 4 SSF-4-1	ST-1 Layer III 72-104 cmbs	Terrace	Agriculture	SCSARC542/ Beta232101	100 +/- 40 B.P.	1670–1770 1800–1960
Site -3067 Feature 4 SSF-4-2	ST-1 Layer III 64–92 cmbs	Terrace	Agriculture	SCSARC543/ Beta232102	580 +/- 40 B.P.	1300–1430

* The conventional date has been calibrated through the OxCal v3.5 Program. The listed calibration dates provide probability at 2 Sigma.

Results from the eight radiocarbon testing samples taken at the site indicate that human activity in the Lāwa`i region spans a wide range of time. It is important to note, however, that these dates are only one type of evidence from the archaeological record of each site.

By themselves, the radiocarbon samples are helpful in constructing a chronological sequence of human presence at the site. The carbon sample taken from Site 896, Fe 1, a terrace, is the earliest in the data set at 1190-1300 A.D. A sample from the terrace in Site 3067, Fe 4 provides the most modern date. Thus carbon samples from the site indicate a human-use period for the site of roughly 800 years, from the late 12th century to modern times. Further analysis shows that five of the eight carbon samples have dates that converge on the time period from 1430-1670 A.D.

The two radiocarbon dates from Site 3067 were not consistent between each other. Both samples came from subsurface features which originated in Layer III, yet their conventional ages were considerably different (SCSRC542 was 100±40 B.P. and SCSRC543 was 580±40 B.P.). Possible reasons for this lack of consistency are bioturbation (the displacement of the sediment by animals or plants), human agency, flooding, or extreme weather conditions, such as hurricanes Ewa and Iniki.

SUMMARY AND DISCUSSION

The goals of the archaeological work in the project area were multi-fold. First, the point of both the Archaeological Reconnaissance and Inventory Survey were to investigate the presence, or absence, of surface, and/or, subsurface archaeological structures, artifacts, or cultural deposits throughout the project area. Second, samples of carbonized wood taken from various terraces, walls and structures within the project area were sent away for analysis in order to establish dates for some of the archaeological sites located in the project area. Overall, the archaeological research conducted was aimed at understanding the function and chronology of the identified sites and their relationship to the history of settlement patterns and land use in the area.

Archival and archaeological data from the surrounding areas implied a strong probability for the identification of a wealth of archaeological resources relating to traditional dry and wet-land cultivation and agricultural practices, as well as agricultural practices pertaining to immigrants (rice cultivation) and large scale production (sugarcane cultivation) during the post-

Contact Period. The Inventory Survey results matched closely with the expected findings with some exciting new findings to add.

Buried cultural deposits, and features, were revealed in several of the excavation trenches indicating that many of the sites are composed of multiple components. These findings are extremely important in understanding the settlement and land-use practices employed in the Lāwa`i Valley. Overall, the number, size, and type of prehistoric and historic archaeological sites in the Lāwa`i Valley, prompts a recommendation for further study and careful recordation of the sites and features located in the area.

Radiocarbon dates provided a wealth of information about the project area. The dates indicated use of the valley possibly as early as the late 12th century, while the main cluster of radiocarbon samples dating from A.D. 1450–1670, show that a majority of cultural material found in the strata to be pre-Contact in origin. Interestingly, a majority of the lithics found at the sites were found in the same layers radiocarbon dates were taken from.

Laboratory analysis of artifacts and associated materials recovered from the site provides additional information, which is inventoried in Appendix A. First, the bulk of the material consisted of traditional-type food midden – fish bones, shells, etc. The basalt lithic debitage, adze fragments, sea urchin spine and coral abraders, coral abrader fragments, pearl shell and bone fishhook fragments and volcanic glass debitage are typical of traditional material culture. Indicators of historic period activity in the project area also appeared in the analysis. A non-ferrous wire nail, bottle glass body sherds and ferrous metal fragments indicative of iron, were found. Evidence of amphibian bones (i.e. frogs and toads), introduced snails (*Euglandina rosea*, *Achatina fulica*), and one freshwater clam (*corbicula fluminea*) were also present. The introduced species point to environmental alterations taking place in the project area sometime during the post-contact period.

SITE SIGNIFICANCE ASSESSMENTS AND RECOMMENDATIONS

A total of eight sites (two previously identified sites and six newly identified sites) were documented during the current project. The newly identified sites include: Site 50-30-10-893, (SCS Site TS-1), agricultural terraces on the slope along the east side of the Allerton's house); State Site 50-30-10-894 (SCS Site TS-2), multi-feature Habitation Site at the southeast corner of the property. State Site 50-30-10- 895 (SCS Site TS-3), two terraces located west of the stream; State Site 50-30-10-896 (SCS Site TS-4), a *lo`i* complex in a *hau* patch just west of the stream); State Site 50-30-10-897, (SCS Site TS-5), a habitation terrace located behind the Diana's

Fountain; State Site 50-30-10-898, a wall which was part of the Allerton Modifications. In addition, one site previously identified by Kikuchi (1963), State Site 50-30-10-3069 (Kikuchi's Site 53), and one feature (Feature C of Site 50-30-10-3067, Kikuchi's 50c), also previously identified by Kikuchi, were relocated and documented. State Site 50-30-10-3069 (Kikuchi's Site 53) consists of a stone wall located at the southwest end of the project area (Kikuchi 1963:40, 42). Site 50-30-10-3067, Feature C (Kikuchi's Site 50c) consists of a series of *lo`i* terraces located along the east and west sides of the stream which were initially identified by Kikuchi (1963: 39, 40). All of these sites have been evaluated for significance according to the criteria established for the Hawai'i State Register of Historic Places (§13-275-6). The five criteria are presented below:

- Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B: Site is associated with the lives of persons significant to our past
- Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction
- Criterion D: Site has yielded or has the potential to yield information important in prehistory or history
- Criterion E: Site has cultural significance to an ethnic group; examples include religious structures, burials, major traditional trails, and traditional cultural places

All of the above-mentioned sites have been found to be significant under Criteria D, for information content. As stated elsewhere in this report, a 100 percent survey was conducted of the Lāwa`i Valley floor. However, the valley walls are densely vegetated making these areas difficult to survey. Thus, it is possible additional sites may be present on the valley walls. Therefore, additional survey is recommended for these areas. Due to the wealth of pre- and post-Contact archaeological resources in the area, and due to the historical people and events associated with the project area, the entire project area is recommended for preservation under its current use as a portion of the existing Allerton Gardens.

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APPENDIX A: PROJECT MATERIALS ANALYSIS

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
1	1	-	Surface	-	Pearl Shell Fish Hook Fragment	-	1	Shank portion only, cf. <i>Pinctada</i> sp.
2	1	TU-3	Surface	-	Non-Diagnostic Ferrous Metal Fragment	-	1	-
2	1	TU-3	Surface	-	Stoneware Sherd	-	1	Non-glazed, function unknown
3	7	TU-2	I	-	Marine Invertebrate	0.1 g	-	Gastropod: <i>Cellana</i> sp.
3	7	TU-2	I	-	Marine Invertebrate	1.9 g	-	Gastropod: <i>Cellana sandwichensis</i>
3	7	TU-2	I	-	Marine Invertebrate	2.1 g	-	Gastropod: <i>Cymatium pileare</i>
3	7	TU-2	I	-	Marine Invertebrate	1.2 g	-	Gastropod: <i>Conus</i> sp.
3	7	TU-2	I	-	Marine Invertebrate	0.2 g	-	Bivalve: <i>Isognomon californicum</i>
3	7	TU-2	I	-	Marine Invertebrate	0.8 g	-	Bivalve: <i>Isognomon incisum</i>
3	7	TU-2	I	-	Marine Invertebrate	1.3 g	-	Bivalve: <i>Spondylus tenebrosus</i>
3	7	TU-2	I	-	Marine Invertebrate	0.1 g	-	Bivalve: <i>Macoma obliquilineata</i>
3	7	TU-2	I	-	Marine Invertebrate	7.7 g	-	Bivalve: <i>Periglypta reticulata</i>
3	7	TU-2	I	-	Charcoal	<0.1 g	-	-
3	7	TU-2	I	-	Bottle Glass Body Sherds	-	2	Amber
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	3.7 g	-	Gastropod: <i>Cellana</i> sp.
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	34.3 g	-	Gastropod: <i>Cellana sandwichensis</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	17.5 g	-	Gastropod: <i>Cellana talcosa</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	18.7 g	-	Gastropod: <i>Nerita picea</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	3.4 g	-	Gastropod: <i>Neritina granosa</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	1.8 g	-	Gastropod: <i>Theodoxus cariosus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY

Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Theodoxus neglectus</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	1.5 g	-	Gastropod: <i>Strombus maculatus</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	5.5 g	-	Gastropod: <i>Cypraea</i> sp.
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: Vermetidae
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	1.3 g	-	Gastropod: <i>Distorio anus</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	2.9 g	-	Gastropod: <i>Drupa morum</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	3.5 g	-	Gastropod: <i>Drupa ricina</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	1.1 g	-	Gastropod: <i>Morula granulata</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	4.1 g	-	Gastropod: <i>Purpura aperta</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	1.9 g	-	Gastropod: <i>Conus</i> sp.
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: Non-diagnostic
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.5 g	-	Bivalve: <i>Pinctada</i> sp.
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.7 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	3.5 g	-	Bivalve: <i>Isognomon californicum</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.7 g	-	Bivalve: cf. <i>Macoma dispar</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	6.4 g	-	Bivalve: <i>Periglypta reticulata</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.2 g	-	Echinoid: <i>Colobocentrotus atratus</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	4.8 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
4	1	TU-3	I/1	0-12 cmbs	Marine Invertebrate	0.9 g	-	Echinoid: Non-diagnostic
4	1	TU-3	I/1	0-12 cmbs	Terrestrial Vertebrate	0.4 g	-	<i>Canis familiaris</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY

Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
4	1	TU-3	I/1	0-12 cmbs	Terrestrial Vertebrate	1.4 g	-	Small mammal (juvenile)
4	1	TU-3	I/1	0-12 cmbs	Coral	11.4 g	1	Non-worked
4	1	TU-3	I/1	0-12 cmbs	Charcoal	0.2 g	-	-
4	1	TU-3	I/1	0-12 cmbs	Non-Diagnostic Ferrous Metal Fragments	-	13	-
4	1	TU-3	I/1	0-12 cmbs	Chert Flake	-	1	-
4	1	TU-3	I/1	0-12 cmbs	Bottle Glass Body Sherds	-	4	1-Amber, 1-clear, 1-olive green, 1-bluish-green
5	1	TU-3	I	9 cmbs	Whiteware Sherd	-	1	Interior and exterior glazed; artifact function unknown
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	0.6 g	-	Gastropod: <i>Cellana exarata</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	12.6 g	-	Gastropod: <i>Cellana sandwicensis</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	1.7 g	-	Gastropod: <i>Cellana talcosa</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	2.7 g	-	Gastropod: <i>Nerita picea</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	0.9 g	-	Gastropod: <i>Cypraea</i> sp.
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	4.2 g	-	Gastropod: <i>Cypraea nucleus</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	8.2 g	-	Gastropod: <i>Purpura aperta</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: Terebridae
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	<0.1 g	-	Bivalve: <i>Isognomon californicum</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	0.6 g	-	Bivalve: <i>Isognomon incisum</i>
6	1	TU-3	I/2	9-18 cmbs	Marine Invertebrate	1.1 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
6	1	TU-3	I/2	9-18 cmbs	Non-Diagnostic Ferrous Metal Fragments	-	2	-
6	1	TU-3	I/2	9-18 cmbs	Bottle Glass Base Sherds	-	2	Amber, partial manufacturer's stamp identified as DaiNippon Brewery Co, LTD. (1906-1949)
6	1	TU-3	I/2	9-18 cmbs	Bottle Glass Sherd	-	1	Worn, probably by wave action
6	1	TU-3	I/2	9-18 cmbs	Basalt Debitage	-	2	-
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	1.7 g	-	Gastropod: <i>Cellana sandwicensis</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	2.2 g	-	Gastropod: <i>Cellana talcosa</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.9 g	-	Gastropod: <i>Trochus intextus</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: <i>Turbo sandwicensis</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	3.5 g	-	Gastropod: <i>Nerita picea</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	1.5 g	-	Gastropod: <i>Neritina granosa</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.6 g	-	Gastropod: <i>Theodoxus vespertinus</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Hipponix foliaceus</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	2.8 g	-	Gastropod: <i>Cypraea</i> sp.
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.9 g	-	Gastropod: <i>Drupa ricina</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: Non-diagnostic
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	1.1 g	-	Bivalve: <i>Isognomon californicum</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.5 g	-	Bivalve: <i>Isognomon incisum</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Spondylus tenebrosus</i>
7	1	TU-3	II/1	10-25 cmbs	Marine Invertebrate	1.9 g	-	Bivalve: <i>Periglypta reticulata</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
7	1	TU-3	II/1	10–25 cmbs	Marine Invertebrate	0.4 g	-	Echinoid: Non-diagnostic
7	1	TU-3	II/1	10–25 cmbs	Terrestrial Vertebrate	0.5 g	-	Small/ medium mammal
7	1	TU-3	II/1	10–25 cmbs	Non-Diagnostic Ferrous Metal Fragment	-	1	-
7	1	TU-3	II/1	10–25 cmbs	Basalt Flake with Polish	-	1	-
8	1	TU-3	III/2	31–43 cmbs	Marine Vertebrate	1.0 g	-	Osteichthyes: Non-diagnostic
9	1	TU-3	II/1	10–25 cmbs	Charcoal with Matrix	3.2 g	-	-
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Cellana sandwicensis</i>
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Cellana talcosa</i>
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	1.4 g	-	Gastropod: <i>Nerita picea</i>
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Theodoxus vespertinus</i>
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	0.6 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Isognomon californicum</i>
10	1	TU-3	I, II, III/1	0–31 cmbs	Marine Invertebrate	0.4 g	-	Echinoid: Non-diagnostic
10	1	TU-3	I, II, III/1	0–31 cmbs	Non-Diagnostic Ferrous Metal Fragment	-	1	-
11	1	TU-3	III/1	19–31 cmbs	Geological Sample	-	1	Hematite
11	1	TU-3	III/1	19–31 cmbs	Basalt Debitage	-	5	-
11	1	TU-3	III/1	19–31 cmbs	Basalt Flakes with Polish	-	3	-
11	1	TU-3	III/1	19–31 cmbs	Volcanic Glass Debitage	-	1	-
12	1	TU-3	III/1	23 cmbs	Basalt Flake with Polish	-	1	Artifact found 27 cm from TU-3 south wall and 7 cm from the east

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
								wall
13	1	TU-3	III/1	19-31 cmbs	Marine Vertebrate	0.1 g	-	Osteichthyes: Monacanthidae
13	1	TU-3	III/1	19-31 cmbs	Marine Vertebrate	0.2 g	-	Osteichthyes: Non-diagnostic
13	1	TU-3	III/1	19-31 cmbs	Terrestrial Vertebrate	0.3 g	-	Small/ medium mammal
14	1	TU-3	III/1	19-31 cmbs	Charcoal with Matrix	2.8 g	-	-
15	1	TU-3	III/1	31-43 cmbs	Non-Diagnostic Ferrous Metal Fragments	-	2	-
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	5.9 g	-	Gastropod: <i>Cellana sandwicensis</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	2.4 g	-	Gastropod: <i>Cellana talcosa</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	3.7 g	-	Gastropod: <i>Nerita picea</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	2.7 g	-	Gastropod: <i>Cypraea</i> sp.
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Drupa</i> sp.
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	3.2 g	-	Gastropod: <i>Drupa morum</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	1.1 g	-	Gastropod: <i>Drupa ricina</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Drupa rubusidaeus</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: Non-diagnostic
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	2.6 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	15.2 g	-	Bivalve: <i>Isognomon californicum</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Periglypta reticulata</i>
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	0.1 g	-	Cirripedia (barnacles)
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	1.6 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
16	1	TU-3	III/2	31-43 cmbs	Marine Invertebrate	1.6 g	-	Echinoid: Non-diagnostic
17	1	TU-3	III/2	31-43 cmbs	Charcoal	-	-	Whole sample sent for radiocarbon dating; SCSRC-547
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.9 g	-	Gastropod: <i>Cellana</i> sp.
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	11.5 g	-	Gastropod: <i>Cellana sandwichensis</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	2.0 g	-	Gastropod: <i>Cellana talcosa</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Trochus intextus</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	6.4 g	-	Gastropod: <i>Nerita picea</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Theodoxus vespertinus</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	6.1 g	-	Gastropod: <i>Cypraea</i> sp.
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Cypraea caputserpentis</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	1.0 g	-	Gastropod: <i>Drupa rubusidaeus</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	5.2 g	-	Gastropod: Non-diagnostic
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	4.5 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	12.9 g	-	Bivalve: <i>Isognomon californicum</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.8 g	-	Bivalve: Pectinidae
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.2 g	-	Bivalve: <i>Codakia punctata</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.9 g	-	Bivalve: <i>Tellina elizabethae</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	1.1 g	-	Bivalve: <i>Tellina palatam</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	1.3 g	-	Bivalve: <i>Periglypta reticulata</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.5 g	-	Decapoda (crabs, lobsters, shrimps)

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	0.2 g	-	Echinoid: <i>Echinothrix diadema</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	6.7 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
18	1	TU-3	III/1	19-31 cmbs	Marine Invertebrate	1.0 g	-	Echinoid: Non-diagnostic
18	1	TU-3	III/1	19-31 cmbs	Marine Vertebrate	0.7 g	-	Osteichthyes: non-diagnostic
18	1	TU-3	III/1	19-31 cmbs	Basalt Debitage	-	1	-
18	1	TU-3	III/1	19-31 cmbs	Bone Fish Hook Fragment		1	Head only, bone is from a small/medium mammal
18	1	TU-3	III/1	19-31 cmbs	Pearl Shell Fish Hook Fragment		1	Shank only, cf. <i>Pinctada</i> sp.
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	0.1 g		Gastropod: <i>Cellana</i> sp.
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	1.1 g		Gastropod: <i>Cellana sandwicensis</i>
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	0.7 g		Gastropod: <i>Cellana talcosa</i>
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	0.8 g		Gastropod: <i>Nerita picea</i>
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	0.3 g		Gastropod: <i>Cypraea</i> sp.
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	1.9 g		Bivalve: <i>Brachidontes crebristriatus</i>
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	2.6 g		Bivalve: <i>Isognomon californicum</i>
19	1	TU-3	III/3	39-50 cmbs	Marine Invertebrate	2.9 g		Echinoid: <i>Hetercentrotus mammillatus</i>
19	1	TU-3	III/3	39-50 cmbs	Sea Urchin Abrader	-	1	<i>Heterocentrotus mammillatus</i> abrader
20	1	TU-3	III/3	39-50 cmbs	Basalt Debitage	-	2	-
20	1	TU-3	III/3	39-50 cmbs	Non-Diagnostic Ferrous Metal Fragments	-	1	-

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
21	1	TU-3	III/3	39-50 cmbs	Charcoal	-	1	Charcoal submitted for radiocarbon dating; SCSRC-547
22	1	TU-3	III/4	50-56 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Isognomon californicum</i>
22	1	TU-3	III/4	50-56 cmbs	Marine Invertebrate	0.9 g	-	Bivalve: <i>Periglypta reticulata</i>
23	1	TU-3	III/4	50-56 cmbs	Charcoal	-	-	Charcoal submitted for radiocarbon dating; SCSRC-547
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	5.4 g	-	Gastropod: <i>Cellana sandwicensis</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	3.0 g	-	Gastropod: <i>Nerita picea</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Theodoxus cariosus</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Littorina pintado</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Planaxis labiosa</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Hipponix foliaceus</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Cypraea</i> sp.
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	2.3 g	-	Gastropod: <i>Drupa</i> sp.
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Drupa ricina</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	1.7 g	-	Gastropod: <i>Drupa rubusidaeus</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	5.6 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	1.2 g	-	Bivalve: cf. <i>Pinctada</i> sp.
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	3.5 g	-	Bivalve: <i>Isognomon californicum</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.1 g	-	Bivalve: <i>Periglypta reticulata</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Colobocentrotus atratus</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Echinometra mathaei</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	0.2 g	-	Echinoid: <i>Echinometra oblonga</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Echinothrix calamaris</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	1.1 g	-	Echinoid: <i>Echinothrix diadema</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	2.8 g	-	Echinoid: <i>Heterocentrotus mammillatus</i>
24	1	TU-3	IV/1	49-66 cmbs	Marine Invertebrate	2.7 g	-	Echinoid: Non-diagnostic
24	1	TU-3	IV/1	49-66 cmbs	Marine Vertebrate	0.7 g	-	Osteichthyes: Non-diagnostic
24	1	TU-3	IV/1	49-66 cmbs	Charcoal	5.0 g	-	-
24	1	TU-3	IV/1	49-66 cmbs	<i>Kukui</i>	0.1 g	-	-
24	1	TU-3	IV/1	49-66 cmbs	Coral Abrader Fragment	-	1	-
24	1	TU-3	IV/1	49-66 cmbs	Basalt Debitage	-	5	-
24	1	TU-3	IV/1	49-66 cmbs	Glass Sherd	-	1	Clear
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	1.5 g	-	Gastropod: <i>Cellana sandwicensis</i>
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Cellana talcosa</i>
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Drupa rubusidaeus</i>
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	<0.1 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Isognomon californicum</i>
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	0.2 g	-	Echinoid: <i>Echinothrix diadema</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
25	1	TU-3	IV/2	60-73 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: Non-diagnostic
25	1	TU-3	IV/2	60-73 cmbs	Marine Vertebrate	<0.1 g	-	Osteichthyes: Non-diagnostic
25	1	TU-3	IV/2	60-73 cmbs	Charcoal	0.3 g	-	-
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Cellana</i> sp.
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Cellana sandwicensis</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	2.3 g	-	Gastropod: <i>Nerita picea</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Cypraea</i> sp.
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Drupa</i> sp.
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.6 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Isognomon californicum</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Echinometra mathaei</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Echinometra oblonga</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	6.5 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	5.4 g	-	Echinoid: Non-diagnostic
26	1	TU-3	IV/3	70-84 cmbs	Marine Invertebrate	0.1 g	-	Osteichthyes: Non-diagnostic
26	1	TU-3	IV/3	70-84 cmbs	Charcoal	<0.1 g	-	-
26	1	TU-3	IV/3	70-84 cmbs	Non-Diagnostic Ferrous Metal Fragments	-	3	-
26	1	TU-3	IV/3	70-84 cmbs	Coral Abrader Fragment	-	1	-
26	1	TU-3	IV/3	70-84 cmbs	Modified Marine Shell	-	1	cf. <i>Pinctada</i> sp.
26	1	TU-3	IV/3	70-84 cmbs	Basalt Debitage	-	7	-

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.4 g		Gastropod: <i>Cellana sandwicensis</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Cellana talcosa</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	5.8 g	-	Gastropod: <i>Nerita picea</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Theodoxus cariosus</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Theodoxus vespertinus</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Planaxis labiosa</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Cypraea</i> sp.
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Cypraea mauritiana</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Drupa</i> sp.
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Morula granulata</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: <i>Morula uva</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: Terebridae
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	1.6 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.8 g	-	Bivalve: <i>Isognomon californicum</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Echinometra mathaei</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.2 g	-	Echinoid: <i>Echinometra oblonga</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.5 g	-	Echinoid: <i>Echinothrix diadema</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	15.3 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
27	1	TU-3	IV/4	82-92 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Eucidaris metularia</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY

Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
27	1	TU-3	IV/4	82-92 cmbs	Marine Vertebrate	0.1 g	-	Osteichthyes: Non-diagnostic
27	1	TU-3	IV/4	82-92 cmbs	Terrestrial Vertebrate	0.7 g	-	Small/ medium mammal
27	1	TU-3	IV/4	82-92 cmbs	Sea Urchin Abrader Fragment	-	1	<i>Heterocentrotus mammillatus</i> abrader fragment
27	1	TU-3	IV/4	82-92 cmbs	Basalt Debitage	-	9	-
27	1	TU-3	IV/4	82-92 cmbs	Volcanic Glass Core Fragment	-	1	-
28	1.1	TU-3	-	42 cmbs	Soil Sample	~1,814.4 g	-	Subfeature 1 sandy silt fill
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	1.9 g	-	Gastropod: <i>Cellana</i> sp.
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Cellana exarata</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	18.8 g	-	Gastropod: <i>Cellana sandwicensis</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	6.6 g	-	Gastropod: <i>Cellana talcosa</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.6 g	-	Gastropod: <i>Trochus intextus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	5.5 g	-	Gastropod: <i>Nerita picea</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Theodoxus cariosus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	3.1 g	-	Gastropod: <i>Theodoxus vespertinus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Hipponix pilosus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	3.3 g	-	Gastropod: <i>Cypraea</i> sp.
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	1.8 g	-	Gastropod: <i>Cypraea caputserpentis</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	1.3 g	-	Gastropod: <i>Cypraea isabella</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	2.1 g	-	Gastropod: <i>Drupa ricina</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	5.2 g	-	Gastropod: <i>Drupa rubusidaeus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: Terebridae
29	3	TU-1	I/1	0-10 cmbs	Terrestrial Invertebrate	<0.1 g	-	Gastropod: cf. <i>Subulina</i> sp.
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	3.8 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	4.9 g	-	Bivalve: <i>Isognomon californicum</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: cf. <i>Isognomon incisum</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	1.2 g	-	Bivalve: <i>Periglypta reticulata</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.3 g	-	Decopoda (crabs, lobsters, shrimps)
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.7 g	-	Echinoid: <i>Colobocentrotus atratus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Echinometra mathaei</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.4 g	-	Echinoid: <i>Echinometra oblonga</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	0.3 g	-	Echinoid: <i>Echinothrix diadema</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	25.6 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
29	3	TU-1	I/1	0-10 cmbs	Marine Invertebrate	3.9 g	-	Echinoid: Non-diagnostic
29	3	TU-1	I/1	0-10 cmbs	Marine Vertebrate	0.1 g	-	cf. Muraenidae
29	3	TU-1	I/1	0-10 cmbs	Marine Vertebrate	<0.1 g	-	Osteichthyes: Monacanthidae
29	3	TU-1	I/1	0-10 cmbs	Marine Vertebrate	1.3 g	-	Osteichthyes: Non-diagnostic
29	3	TU-1	I/1	0-10 cmbs	Terrestrial Vertebrate	<0.1 g	-	cf. <i>Canis familiaris</i>
29	3	TU-1	I/1	0-10 cmbs	Terrestrial Vertebrate	2.4 g	-	Small/ medium mammal
29	3	TU-1	I/1	0-10 cmbs	Coral	1.3 g	2	Non-worked
29	3	TU-1	I/1	0-10 cmbs	Charcoal	50.5 g	-	-

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
29	3	TU-1	I/1	0-10 cmbs	<i>Kukui</i>	0.4 g	-	-
29	3	TU-1	I/1	0-10 cmbs	Non-Ferrous Wire Nail	-	1	-
29	3	TU-1	I/1	0-10 cmbs	Perforated Marine Shell	-	1	Gastropod: <i>Cellana talcosa</i>
29	3	TU-1	I/1	0-10 cmbs	Perforated Marine Shell	-	1	Gastropod: Terebridae
29	3	TU-1	I/1	0-10 cmbs	Basalt Debitage	-	1	-
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	6.1 g	-	Gastropod: <i>Cellana</i> sp.
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	8.4 g	-	Gastropod: <i>Cellana sandwicensis</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	2.0 g	-	Gastropod: <i>Cellana talcosa</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	5.8 g	-	Gastropod: <i>Nerita picea</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	2.0 g	-	Gastropod: <i>Neritina granosa</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Theodoxus cariosus</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	0.6 g	-	Gastropod: <i>Theodoxus vespertinus</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Planaxis labiosa</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	5.1 g	-	Gastropod: <i>Cypraea</i> sp.
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	0.6 g	-	Gastropod: <i>Cypraea caputserpentis</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: <i>Drupa</i> sp.
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	2.7 g	-	Gastropod: <i>Drupa rubusidaeus</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	2.9 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	0.9 g	-	Bivalve: <i>Pinctada</i> sp.
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	6.0 g	-	Bivalve: <i>Isognomon californicum</i>
30	3	TU-1	I/2	10-20 cmbs	Marine Invertebrate	1.3 g	-	Bivalve: <i>Periglypta</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
								<i>reticulata</i>
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	0.8 g	-	Cirripedia (barnacles)
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	0.2 g	-	Decapoda (crabs, lobsters, shrimps)
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	0.4 g	-	Echinoid: <i>Colobocentrotus atratus</i>
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	0.8 g	-	Echinoid: <i>Echinometra oblonga</i>
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	0.6 g	-	Echinoid: <i>Echinothrix diadema</i>
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	8.6 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
30	3	TU-1	I/2	10–20 cmbs	Marine Invertebrate	4.6 g	-	Echinoid: Non-diagnostic
30	3	TU-1	I/2	10–20 cmbs	Marine Vertebrate	0.5 g	-	Elasmobranchii (shark or ray)
30	3	TU-1	I/2	10–20 cmbs	Marine Vertebrate	0.1 g	-	Osteichthyes: Scaridae
30	3	TU-1	I/2	10–20 cmbs	Marine Vertebrate	6.1 g	-	Osteichthyes: Non-diagnostic
30	3	TU-1	I/2	10–20 cmbs	Avian Vertebrate	0.2 g	-	Aves: Non-diagnostic
30	3	TU-1	I/2	10–20 cmbs	Terrestrial Vertebrate	<0.1 g	-	<i>Rattus/ Mus</i> sp.
30	3	TU-1	I/2	10–20 cmbs	Terrestrial Vertebrate	0.4 g	-	<i>Canis familiaris</i>
30	3	TU-1	I/2	10–20 cmbs	Terrestrial Vertebrate	5.7 g	-	Small/ medium mammal
30	3	TU-1	I/2	10–20 cmbs	Terrestrial Vertebrate	7.9 g	-	Medium mammal
30	3	TU-1	I/2	10–20 cmbs	Charcoal	40.2 g	-	-
30	3	TU-1	I/2	10–20 cmbs	<i>Kukui</i>	0.3 g	-	-
30	3	TU-1	I/2	10–20 cmbs	Coral Abrader	-	1	-
31	3	TU-1	I/3	20–30 cmbs	Marine Invertebrate	3.8 g	-	Gastropod: <i>Cellana</i> sp.
31	3	TU-1	I/3	20–30 cmbs	Marine Invertebrate	20.4 g	-	Gastropod: <i>Cellana sandwicensis</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY

Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	3.5 g	-	Gastropod: <i>Cellana talcosa</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Trochus intextus</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	14.2 g	-	Gastropod: <i>Nerita picea</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Theodoxus cariosus</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	1.2 g	-	Gastropod: <i>Theodoxus vespertinus</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Strombus</i> sp.
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	19.3 g	-	Gastropod: <i>Cypraea</i> sp.
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	2.4 g	-	Gastropod: <i>Drupa</i> sp.
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	11.3 g	-	Gastropod: <i>Drupa morum</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	1.5 g	-	Gastropod: <i>Drupa ricina</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: Terebridae
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	<0.1 g	-	Gastropod: <i>Smaragdinella calyculata</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: Non-diagnostic
31	3	TU-1	I/3	20-30 cmbs	Terrestrial Invertebrate	<0.1 g	-	Gastropod: <i>Euglandina rosea</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	5.0 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	9.3 g	-	Bivalve: <i>Isognomon californicum</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	1.9 g	-	Bivalve: <i>Tellina palatam</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	4.3 g	-	Bivalve: <i>Periglypta reticulata</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	0.2 g	-	Decapoda (crabs, lobsters, shrimps)
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	1.0 g	-	Echinoid: <i>Echinometra oblonga</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	1.2 g	-	Echinoid: <i>Echinothrix diadema</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	27.4 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
31	3	TU-1	I/3	20-30 cmbs	Marine Invertebrate	13.7 g	-	Echinoid: Non-diagnostic
31	3	TU-1	I/3	20-30 cmbs	Marine Vertebrate	0.1 g	-	Elasmobranchii (shark or ray)
31	3	TU-1	I/3	20-30 cmbs	Marine Vertebrate	0.1 g	-	Osteichthyes: Monacanthidae
31	3	TU-1	I/3	20-30 cmbs	Marine Vertebrate	7.6 g	-	Osteichthyes: Non-diagnostic
31	3	TU-1	I/3	20-30 cmbs	Avian Vertebrate	0.8 g	-	Aves: Non-diagnostic
31	3	TU-1	I/3	20-30 cmbs	Terrestrial Vertebrate	<0.1 g	-	<i>Rattus/ Mus</i> sp.
31	3	TU-1	I/3	20-30 cmbs	Terrestrial Vertebrate	5.4 g	-	<i>Sus scrofa</i>
31	3	TU-1	I/3	20-30 cmbs	Terrestrial Vertebrate	8.7 g	-	Small/ medium mammal
31	3	TU-1	I/3	20-30 cmbs	Charcoal	51.5 g	-	-
31	3	TU-1	I/3	20-30 cmbs	<i>Kukui</i>	0.2 g	-	-
31	3	TU-1	I/3	20-30 cmbs	Sea Urchin Abrader	-	1	<i>Heterocentrotus mammillatus</i>
31	3	TU-1	I/3	20-30 cmbs	Pearl Shell Fish Hook Fragment	-	1	Shank only, cf. <i>Pinctada</i> sp.
31	3	TU-1	I/3	20-30 cmbs	Basalt Debitage	-	3	-
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	2.2 g	-	Gastropod: <i>Cellana</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	2.9 g	-	Gastropod: <i>Cellana exarata</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	29.3 g	-	Gastropod: <i>Cellana sandwicensis</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	8.0 g	-	Gastropod: <i>Cellana talcosa</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Trochus intextus</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: <i>Turbo sandwicensis</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	8.1 g	-	Gastropod: <i>Nerita picea</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	2.5 g	-	Gastropod: <i>Neritina granosa</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	1.6 g	-	Gastropod: <i>Theodoxus vespertinus</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Strombus</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	24.4 g	-	Gastropod: <i>Cypraea</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	8.4 g	-	Gastropod: <i>Cypraea caputserpentis</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	2.1 g	-	Gastropod: <i>Cypraea isabella</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Cymatium</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	1.7 g	-	Gastropod: <i>Bursa</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	1.8 g	-	Gastropod: <i>Drupa</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	12.2 g	-	Gastropod: <i>Drupa ricina</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: Terebridae
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	4.0 g	-	Gastropod: Non-diagnostic
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	4.4 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Pinctada radiata</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	8.9 g	-	Bivalve: <i>Isognomon californicum</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	2.8 g	-	Bivalve: <i>Chama iostoma</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.1 g	-	Bivalve: <i>Macoma dispar</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	1.4 g	-	Bivalve: <i>Tellina palatam</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	5.8 g	-	Bivalve: <i>Periglypta reticulata</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.3 g	-	Decopoda (crabs, lobsters, shrimps)

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Colobocentrotus atratus</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.9 g	-	Echinoid: <i>Echinometra oblonga</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	1.6 g	-	Echinoid: <i>Echinothrix diadema</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	31.5 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
32	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	7.0 g	-	Echinoid: Non-diagnostic
32	3	TU-1	II/1	30-40 cmbs	Marine Vertebrate	0.3 g	-	Elasmobranchii (shark or ray)
32	3	TU-1	II/1	30-40 cmbs	Marine Vertebrate	0.3 g	3	Osteichthyes: Monacanthidae
32	3	TU-1	II/1	30-40 cmbs	Marine Vertebrate	2.2 g	-	Osteichthyes: Non-diagnostic
32	3	TU-1	II/1	30-40 cmbs	Avian Vertebrate	0.1 g	-	Aves: Non-diagnostic
32	3	TU-1	II/1	30-40 cmbs	Terrestrial Vertebrate	0.2 g	-	<i>Rattus/ Mus</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Terrestrial Vertebrate	2.1 g	-	<i>Canis familiaris</i>
32	3	TU-1	II/1	30-40 cmbs	Terrestrial Vertebrate	10.8 g	-	<i>Sus scrofa</i>
32	3	TU-1	II/1	30-40 cmbs	Terrestrial Vertebrate	4.3 g	-	Small/ medium mammal
32	3	TU-1	II/1	30-40 cmbs	Basalt Debitage	-	3	-
32	3	TU-1	II/1	30-40 cmbs	Modified Marine Shell	-	1	<i>Pinctada</i> sp.
32	3	TU-1	II/1	30-40 cmbs	Sea Urchin Abrader Fragment	-	1	<i>Hetercentrotus mammillatus</i>
32A	3	TU-1	II/1	30-40 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Nerita picea</i>
32A	3	TU-1	II/1	30-40 cmbs	Charcoal	19.8 g	-	-
32A	3	TU-1	II/1	30-40 cmbs	Kukui	0.2 g	-	-
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	4.7 g	-	Gastropod: <i>Cellana</i> sp.
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	14.7 g	-	Gastropod: <i>Cellana sandwicensis</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	3.5 g	-	Gastropod: <i>Cellana talcosa</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Trochus intextus</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	1.8 g	-	Gastropod: <i>Nerita picea</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	2.2 g	-	Gastropod: <i>Neritina granosa</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	5.4 g	-	Gastropod: <i>Cypraea</i> sp.
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	4.9 g	-	Gastropod: <i>Cypraea caputserpentis</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	1.5 g	-	Gastropod: <i>Cypraea mauritiana</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	13.7 g	-	Gastropod: <i>Cypraea vitellus</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Drupa ricina</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	3.0 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.1 g	-	Bivalve: <i>Pinctada</i> sp.
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	4.2 g	-	Bivalve: <i>Isognomon californicum</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.2 g	-	Bivalve: <i>Macoma dispar</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	3.8 g	-	Bivalve: <i>Periglypta reticulata</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.1 g	-	Decapoda (crabs, lobsters, shrimps)
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Colobocentrotus atratus</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Echinometra mathaei</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.4 g	-	Echinoid: <i>Echinometra oblonga</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	0.5 g	-	Echinoid: <i>Echinothrix diadema</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	8.5 g	-	Echinoid: <i>Hetercentrotus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
								<i>mammillatus</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Eucidaris metularia</i>
33	3	TU-1	II/2	40-50 cmbs	Marine Invertebrate	2.4 g	-	Echinoid: Non-diagnostic
33	3	TU-1	II/2	40-50 cmbs	Marine Vertebrate	<0.1 g	-	Osteichthyes: Monacanthidae
33	3	TU-1	II/2	40-50 cmbs	Marine Vertebrate	1.5 g	-	Osteichthyes: Non-diagnostic
33	3	TU-1	II/2	40-50 cmbs	Avian Vertebrate	0.2 g	-	Aves: Non-diagnostic
33	3	TU-1	II/2	40-50 cmbs	Terrestrial Vertebrate	0.7 g	-	Small/ medium mammal
33	3	TU-1	II/2	40-50 cmbs	Non-Diagnostic Vertebrate	0.4 g	-	Small vertebrate
33	3	TU-1	II/2	40-50 cmbs	Charcoal	10.4 g	-	-
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	23.4 g	-	Gastropod: <i>Cellana</i> sp.
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	39.1 g	-	Gastropod: <i>Cellana sandwicensis</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Cellana talcosa</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Trochus intextus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Turbo sandwicensis</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	2.5 g	-	Gastropod: <i>Nerita picea</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	7.1 g	-	Gastropod: <i>Nerita polita</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	5.3 g	-	Gastropod: <i>Neritina granosa</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	1.3 g	-	Gastropod: <i>Theodoxus cariosus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Theodoxus vespertinus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	1.0 g	-	Gastropod: <i>Strombus</i> sp.
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Hipponix foliaceus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Hipponix pilosus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	37.1 g	-	Gastropod: <i>Cypraea</i> sp.
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	1.6 g	-	Gastropod: <i>Cypraea nucleus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	<0.1 g	-	Gastropod: <i>Drupa</i> sp.
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	1.5 g	-	Gastropod: <i>Drupa ricina</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: <i>Thais intermedia</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Conus</i> sp.
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	1.1 g	-	Gastropod: Terebridae
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.5 g	-	Gastropod: Non-diagnostic
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	2.4 g		Bivalve: <i>Brachidontes crebristriatus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	5.9 g	-	Bivalve: <i>Isognomon californicum</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	2.2 g	-	Bivalve: <i>Chama iostoma</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.8 g	-	Bivalve: <i>Macoma dispar</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.7 g	-	Bivalve: <i>Tellina palatam</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	11.8 g	-	Bivalve: <i>Periglypta reticulata</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.4 g	-	Cirripedia (barnacles)
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	<0.1 g	-	Decapoda (crabs, lobsters, shrimps)
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.3 g	-	Echinoid: <i>Echinometra oblonga</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.8 g	-	Echinoid: <i>Echinothrix diadema</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	6.0 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	0.1 g	-	Echinoid: <i>Eucidaris</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY

Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
								<i>metularia</i>
34	3	TU-1	III/1	50-60 cmbs	Marine Invertebrate	2.2 g	-	Echinoid: Non-diagnostic
34	3	TU-1	III/1	50-60 cmbs	Marine Vertebrate	2.3 g	-	Osteichthyes: Non-diagnostic
34	3	TU-1	III/1	50-60 cmbs	Avian Vertebrate	<0.1 g	-	Aves: Non-diagnostic
34	3	TU-1	III/1	50-60 cmbs	Terrestrial Vertebrate	0.1 g	-	<i>Canis familiaris</i>
34	3	TU-1	III/1	50-60 cmbs	Terrestrial Vertebrate	0.5 g	-	Small/ medium mammal
34	3	TU-1	III/1	50-60 cmbs	Charcoal	7.8 g	-	-
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	3.2 g	-	Gastropod: <i>Cellana</i> sp.
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	1.3 g	-	Gastropod: <i>Cellana sandwicensis</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	1.4 g	-	Gastropod: <i>Cellana talcosa</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: <i>Trochus intextus</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Turbo sandwicensis</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	3.0 g	-	Gastropod: <i>Nerita picea</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Strombus</i> sp.
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	2.1 g	-	Gastropod: <i>Cypraea</i> sp.
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Cypraea nucleus</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Morula granulata</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: Terebridae
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Melampus castaneus</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.2 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	2.3 g	-	Bivalve: <i>Isognomon californicum</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.4 g	-	Bivalve: <i>Tellina palatam</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	5.5 g	-	Bivalve: <i>Periglypta reticulata</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.2 g	-	Decapoda (crabs, lobsters, shrimps)
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	0.2 g	-	Echinoid: <i>Colobocentrotus atratus</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Echinometra oblonga</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	<0.1 g	-	Echinoid: <i>Echinothrix diadema</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	4.3 g	-	Echinoid: <i>Hetercentrotus mammillatus</i>
35	3	TU-1	III/2	60-70 cmbs	Marine Invertebrate	1.4 g	-	Echinoid: Non-diagnostic
35	3	TU-1	III/2	60-70 cmbs	Marine Vertebrate	<0.1 g	-	Osteichthyes: Monacanthidae
35	3	TU-1	III/2	60-70 cmbs	Marine Vertebrate	0.2 g	-	Osteichthyes: Diodontidae
35	3	TU-1	III/2	60-70 cmbs	Marine Vertebrate	0.2 g	-	Osteichthyes: Non-diagnostic
35	3	TU-1	III/2	60-70 cmbs	Terrestrial Vertebrate	0.2 g	-	Small mammal (small dog size)
35	3	TU-1	III/2	60-70 cmbs	Charcoal	2.1 g	-	-
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	1.0 g	-	Gastropod: <i>Cellana</i> sp.
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Cellana sandwicensis</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.8 g	-	Gastropod: <i>Trochus intextus</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	1.4 g	-	Gastropod: <i>Turbo sandwicensis</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	1.0 g	-	Gastropod: <i>Nerita picea</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: <i>Nerita polita</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Strombus</i> sp.
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Hipponix foliaceus</i>

SCS PROJECT 799 STATE SITE 50-30-10-894 MATERIALS INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Hipponix pilosus</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	2.8 g	-	Gastropod: <i>Cypraea</i> sp.
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	3.8 g	-	Gastropod: <i>Cypraea nucleus</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Natica</i> sp.
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.1 g	-	Gastropod: <i>Neothais harpa</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.7 g	-	Gastropod: <i>Conus</i> sp.
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.4 g	-	Gastropod: Terebridae
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Melampus castaneus</i>
36	3	TU-1	III/3+4	70-90 cmbs	Terrestrial Vertebrate	0.1 g	-	Gastropod: <i>Amastra</i> sp.
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.2 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.1 g	-	Bivalve: <i>Isognomon californicum</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	6.5 g	-	Bivalve: <i>Periglypta reticulata</i>
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.1 g	-	Decapoda (crabs, lobsters, shrimps)
36	3	TU-1	III/3+4	70-90 cmbs	Marine Invertebrate	0.4 g	-	Echinoid: Non-diagnostic
36	3	TU-1	III/3+4	70-90 cmbs	Terrestrial Vertebrate	<0.1 g	-	Small mammal (small dog size)
36	3	TU-1	III/3+4	70-90 cmbs	Charcoal	0.2 g	-	-
37	3	TU-1	II/1	35 cmbs	Charcoal Infused Ash	99.8 g	-	-

SCS PROJECT 799 STATE SITE 50-30-10-896 MATERIAL INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
1	1	TR-1	IIA	30-34 cmbs	Charcoal Infused Sand	~566.0 g	-	-
2	1/4.1	TR-1	IIA	34-36 cmbs	Charcoal Infused Soil	~340.0 g	-	-
3	1	TR-1	II	12-21 cmbs	Basalt Debitage	-	8	
4	1	TR-1	II West Half	37-54 cmbs	Basalt Debitage	-	2	-
5	1	TR-1 East Half	III	46-85 cmbs	Charcoal Infused Sand	28.3 g	-	-
6	1	TR-1 East Half	III	36-85 cmbs	Basalt Debitage	-	18	-
6	1	TR-1 East Half	III	36-85 cmbs	Basalt Flake with Polish	-	1	-
6	1	TR-1 East Half	III	36-85 cmbs	Basalt Adze Fragment	-	1	Back end only
6	1	TR-1 East Half	III	36-85 cmbs	Volcanic Glass Debitage	-	2	-
7	1	TR-1	III	21-42 cmbs	Basalt Debitage	-	7	-
8	1/4.2	TR-1	V	85-95 cmbs	Charcoal Infused Soil	~152.0 g	-	-
9	1/4.2	TR-1	V	85-95 cmbs	Basalt Debitage	-	7	-
9	1/4.2	TR-1	V	85-95 cmbs	Volcanic Glass Debitage	-	3	-
10	Area A	-	Surface	-	Basalt Adze Fragment	-	1	Artifact found east of road
11	Area B	-	Surface	-	Basalt Adze Fragment	-	1	Artifact found east of road
12	Area B	-	Surface	-	Basalt Debitage	-	8	Sample of Area B basalt debitage found east of road
13	Area C	-	Surface	-	Basalt Debitage	-	11	Sample of Area C basalt debitage found

SCS PROJECT 799 STATE SITE 50-30-10-896 MATERIAL INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
								east of road
14	Area A	-	Surface	-	Basalt Debitage	-	6	Sample of Area A basalt debitage found east of road
14	Area A	-	Surface	-	Basalt Core	-	1	Sample of Area A artifacts found east of road
14	Area A	-	Surface	-	Basalt Adze Fragment	-	1	Sample of Area A artifacts found east of road
15	1	-	Surface	-	Basalt Adze Fragment	-	1	Bevel end only
16	Area C	-	Surface	-	Basalt Adze Preform	-	1	Artifact found east of road
17	Area C	-	Surface	-	Basalt Adze Fragment	-	1	Back end only

SCS PROJECT 799 STATE SITE 50-30-10-899 MATERIAL INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
1	4/50C.1	BT-1	III+IV	98–100 cmbs	Charcoal Infused Sand	~907.0 g	-	-
2	4/50C.1	BT-1	III+IV	95–113 cmbs	Charcoal Infused Soil	~907.0 g	-	-
3	4/50C.1	BT-1	-	113–120 cmbs	Charcoal Infused Soil	~190.0 g	-	-
4	4/50C.1	BT-1	III+IV	95–98 cmbs	Basalt Debitage	-	8	-
4	4/50C.1	BT-1	III+IV	95–98 cmbs	Volcanic Glass Debitage	-	1	-
5	4	BT-1	Backfill	-	Basalt Debitage	-	41	Artifacts retrieved from trench backfill soils associated with Layer III
5	4	BT-1	Backfill	-	Basalt Flakes with Polish	-	2	Artifacts retrieved from trench backfill soils associated with Layer III
5	4	BT-1	Backfill	-	Possible Adze Fragment	-	1	Possible artifact retrieved from trench backfill soils associated with Layer III
5	4	BT-1	Backfill	-	Possible Modified Basalt Rock	-	1	Possible artifact retrieved from trench backfill soils associated with Layer III
5	4	BT-1	Backfill	-	Possible Waterworn Basalt Hammerstone	-	1	Possible artifact retrieved from trench backfill soils associated with Layer III
5	4	BT-1	Backfill	-	Fractured Waterworn Basalt Cobble	-	1	Possible artifact retrieved from trench backfill soils associated with Layer III
6	4/50C.2	BT-1	III+IV	70–90 cmbs	Charcoal Infused Soil	~1,700.0 g	-	-
7	1A	-	Surface	-	Basalt Scraper	-	1	-
8	1A	TU-1	I	0–11 cmbs	Marine Invertebrate	0.2 g	-	Gastropod: <i>Theodoxus neglectus</i>

SCS PROJECT 799 STATE SITE 50-30-10-899 MATERIAL INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
8	1A	TU-1	I	0-11 cmbs	Freshwater Invertebrate	0.2 g	-	Bivalve: <i>Corbicula fluminea</i>
8	1A	TU-1	I	0-11 cmbs	Marine Invertebrate	0.1 g	-	Bivalve: <i>Brachidontes crebristriatus</i>
8	1A	TU-1	I	0-11 cmbs	Marine Invertebrate	0.2 g	-	Bivalve: <i>Isognomon californicum</i>
8	1A	TU-1	I	0-11 cmbs	Marine Invertebrate	<0.1 g	-	Bivalve: <i>Macoma dispar</i>
8	1A	TU-1	I	0-11 cmbs	Terrestrial Vertebrate	<0.1 g	-	<i>Rattus/ Mus</i> sp.
8	1A	TU-1	I	0-11 cmbs	Coral	1.6 g	3	Non-worked
9	1A	TU-1	I	0-11 cmbs	Charcoal	3.9 g	-	-
10	1A	TU-1	II/1	11-19 cmbs	Charcoal	0.2 g	-	-
11	1A	TU-1	II/2	19-30 cmbs	Charcoal with Matrix	4.9 g	-	-
12	1A	TU-1	II/2	19-30 cmbs	Marine Invertebrate	0.3 g	-	Bivalve: <i>Isognomon californicum</i>
12	1A	TU-1	II/2	19-30 cmbs	Charcoal	1.4 g	-	-
13	1A	TU-1	III/1	30-44 cmbs	Charcoal	15.4 g	-	-
14	1A	TU-1	III/1	30-44 cmbs	Charcoal	1.4 g	-	-
15	1A	TU-1	III/1	33 cmbs	Bottle Glass Body Sherd	-	1	Light green
16	1A	TU-1	III/2	44-51 cmbs	Coral	0.5 g	1	Non-worked
16	1A	TU-1	III/2	44-51 cmbs	Charcoal	0.5 g	-	-
17	1A	TU-1	III/2	44-51 cmbs	Charcoal	0.6 g	-	-
18	1A	TU-1	III/2	46 cmbs	Charcoal with Matrix	0.1 g	-	-
19	1A	TU-1	II/1	8-19 cmbs	Marine Invertebrate	<0.1 g	-	Gastropod: <i>Cellana</i> sp.
19	1A	TU-1	II/1	8-19 cmbs	Marine Invertebrate	0.3 g	-	Gastropod: <i>Theodoxus vespertinus</i>
19	1A	TU-1	II/1	8-19 cmbs	Marine Invertebrate	0.4 g	-	Bivalve: <i>Isognomon californicum</i>

SCS PROJECT 799 STATE SITE 50-30-10-899 MATERIAL INVENTORY								
Field Bag	Feature	Unit	Layer	Depth	Identification	Measurements	Count	Remarks
19	1A	TU-1	II/1	8-19 cmbs	Marine Invertebrate	0.1 g	-	Bivalve: <i>Tellina palatam</i>
19	1A	TU-1	II/1	8-19 cmbs	Marine Invertebrate	0.1 g	-	Cirripedia (barnacles)

APPENDIX B: RADIOCARBON DATA

Dr. Robert L. Spear

Report Date: 8/8/2007

Scientific Consultant Services, Inc.

Material Received: 6/27/2007

Sample Data	Measured Radiocarbon Age	¹³ C/ ¹² C Ratio	Conventional Radiocarbon Age(*)
Beta - 232101 SAMPLE : SCSRC542 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1670 to 1770 (Cal BP 280 to 180) AND Cal AD 1800 to 1940 (Cal BP 150 to 10) Cal AD 1950 to 1960 (Cal BP 0 to 0)	90 +/- 40 BP	-24.3 o/oo	100 +/- 40 BP
Beta - 232102 SAMPLE : SCSRC543 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1300 to 1430 (Cal BP 660 to 520)	590 +/- 40 BP	-25.7 o/oo	580 +/- 40 BP
Beta - 232103 SAMPLE : SCSRC544 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1450 to 1650 (Cal BP 500 to 300)	340 +/- 40 BP	-25.6 o/oo	330 +/- 40 BP
Beta - 232104 SAMPLE : SCSRC545 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1210 to 1290 (Cal BP 740 to 660)	770 +/- 40 BP	-25.7 o/oo	760 +/- 40 BP
Beta - 232105 SAMPLE : SCSRC546 ANALYSIS : Radiometric-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1450 to 1660 (Cal BP 500 to 280)	260 +/- 50 BP	-22.1 o/oo	310 +/- 50 BP

