

Appendix E

**An Archaeological Inventory Study of
TMKs: 3-7-5-10:85 and 3-7-5-17:06
Wai'aha Ahupua'a
North Kona District, Island of Hawai'i
Retchman Consulting, 2003**

An Archaeological Inventory Survey of TMKs: 3-7-5-10:85 and 3-7-5-17:06

Wai'aha Ahupua'a
North Kona District
Island of Hawai'i



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February 2003
(revised August 2003)

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INTRODUCTION

At the request of Mr. George Atta of Group 70 International, on behalf of his client Mr. Mark Spangler of U of N BENCORP, Rechtman Consulting, LLC conducted an archaeological inventory survey of a roughly 62-acre parcel (TMK:3-7-5-10:85 and 3-7-5-17:06) along Kuakini Highway in Wai'aha Ahupua'a, North Kona District, Island of Hawai'i (Figure 1). This survey was undertaken in accordance with draft Hawai'i Administrative Rules 13§13–284, dated 10/15/98, and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports as contained in draft Hawai'i Administrative Rules 13§13–276. Compliance with the above standards is sufficient for meeting the initial historic preservation review process requirements of both the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD) and the County of Hawai'i Planning Department.

This report contains background information outlining the project area's physical and cultural contexts, a presentation of previous archaeological work in the area and current survey expectations based on that previous work, an explanation of the project methods, detailed descriptions of the archaeological resources encountered, interpretation and evaluation of those resources, and lastly, treatment recommendations for all of the documented sites.

BACKGROUND

To generate expectations regarding the nature of the historic properties that might exist on the study parcel, and to provide an appropriate background to assess any resources that are encountered, the specific as well as general physical and cultural contexts are presented along with prior archaeological studies relevant to the project area.

Project Area Description

The current study area is bounded to the east by land that has already been inspected by a DLNR-SHPD representative (Mr. Marc Smith) and given historic preservation clearance; to the north by a stone wall along the Wai'aha 1st/Pua'a 3rd boundary; to the south by a stone wall in Wai'aha 2nd Ahupua'a just south of the Wai'aha 1st boundary along the edge of TMK: 3-7-5-17:6 and by an existing residential development where the wall no longer stands; and to the west by a stone wall along the *mauka* edge Kuakini Highway (Figure 2). Terrain in the project area is gently undulating and elevation ranges from 100 to 240 feet above sea level. Two soils characterize the project area, Wai'aha extremely stony silt loam and Punalu'u extremely rocky peat (Sato et al. 1973). Both are well-drained, thin organic soils over bedrock. The underlying bedrock is *pāhoehoe* within the western third of the project area transitioning to *'a'ā* in the eastern two-thirds; the flows date to more than 5,000 years BP (Wolfe and Morris 1996).

Despite the seemingly consistent semi-arid condition of this area, seasonality is evident. Throughout the Hawaiian Islands, the warmer and drier summer months, traditionally referenced as *kau*, extend from May to September, and the wetter, cooler months (*ho'oilō*) extend from October to April (Handy and Handy 1972). The temperatures in the Kona area are generally consistent with this seasonal pattern, ranging between 62–80 degrees in winter and 68–86 degrees in summer (Schilt 1984). However, the typical rainfall pattern differs considerably from that seen elsewhere; in all elevations along the Kona coast, rainfall during *kau* is typically greater than that during *ho'oilō* (Schilt 1984).

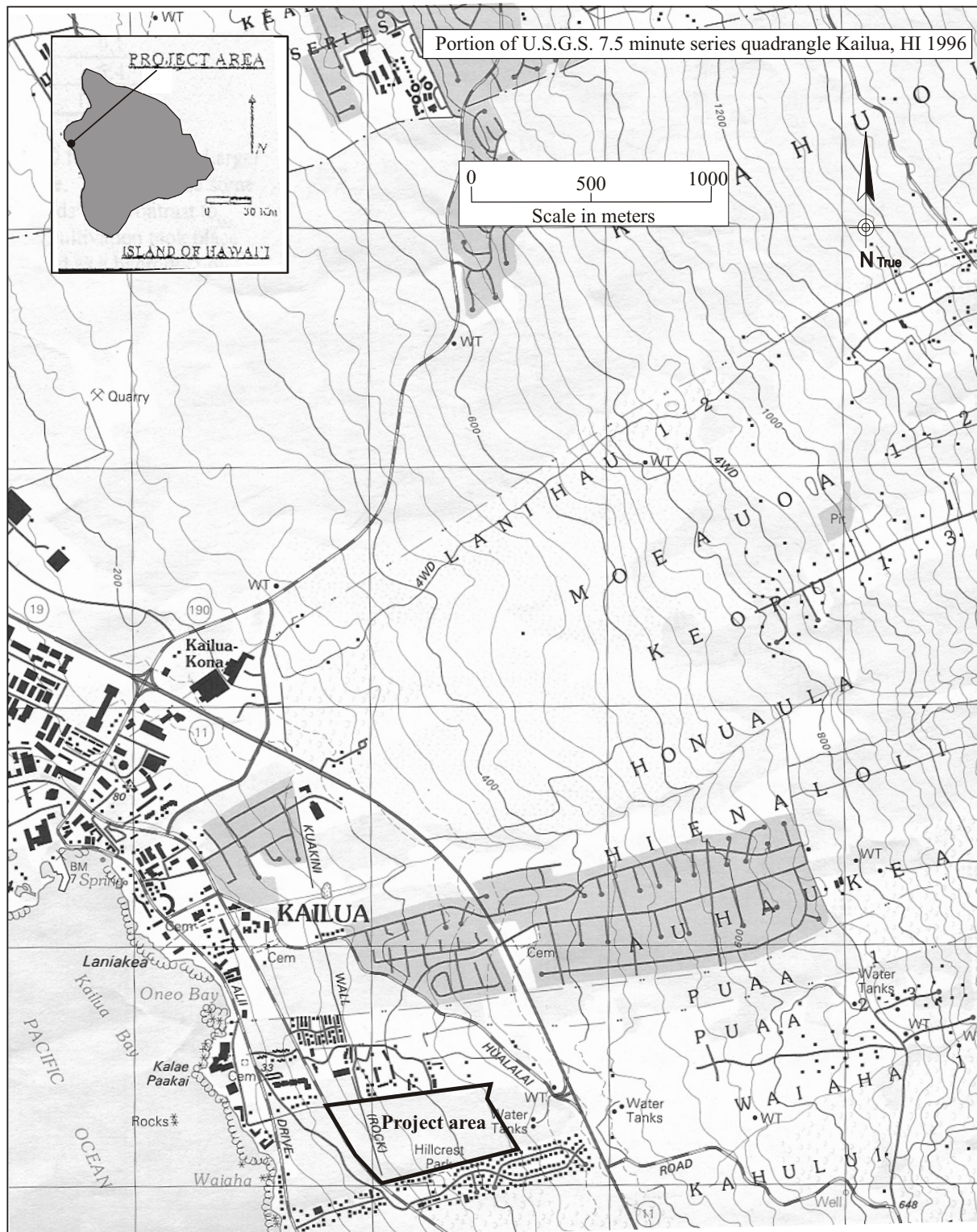
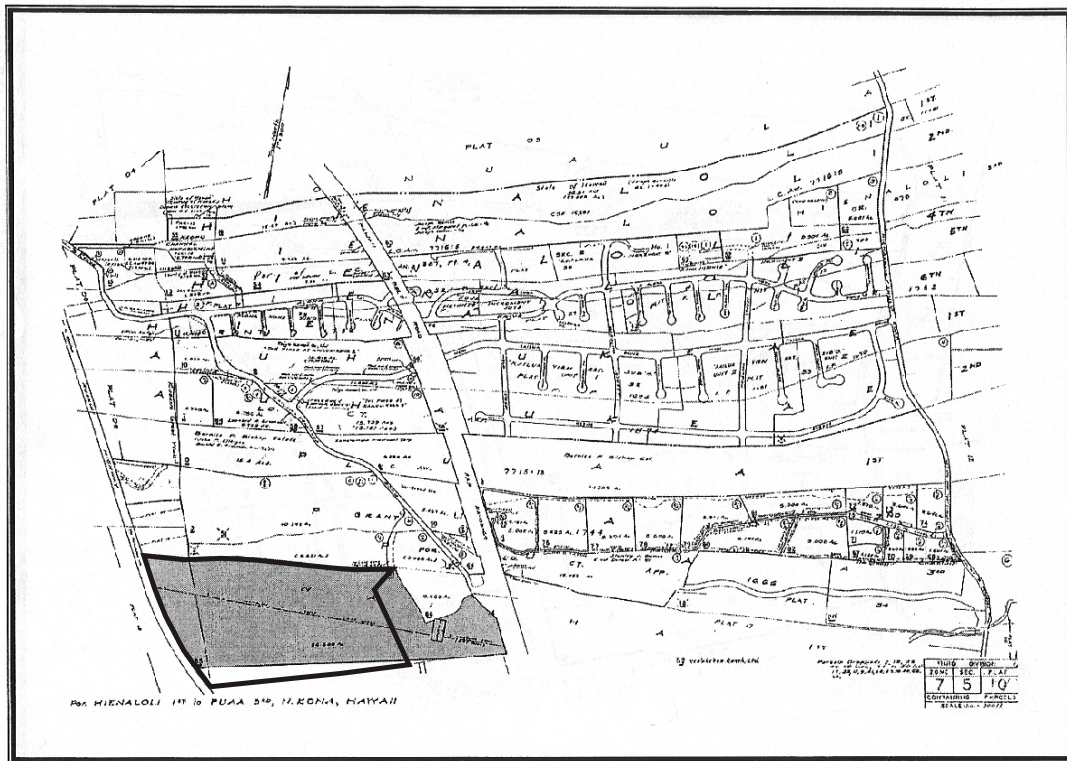


Figure 1. Project area location.



↑ TMK:3-7-5-10:85 ▭ = Study area ■ = U of N BENCORP parcels TMK:3-7-5-17:06 ↓

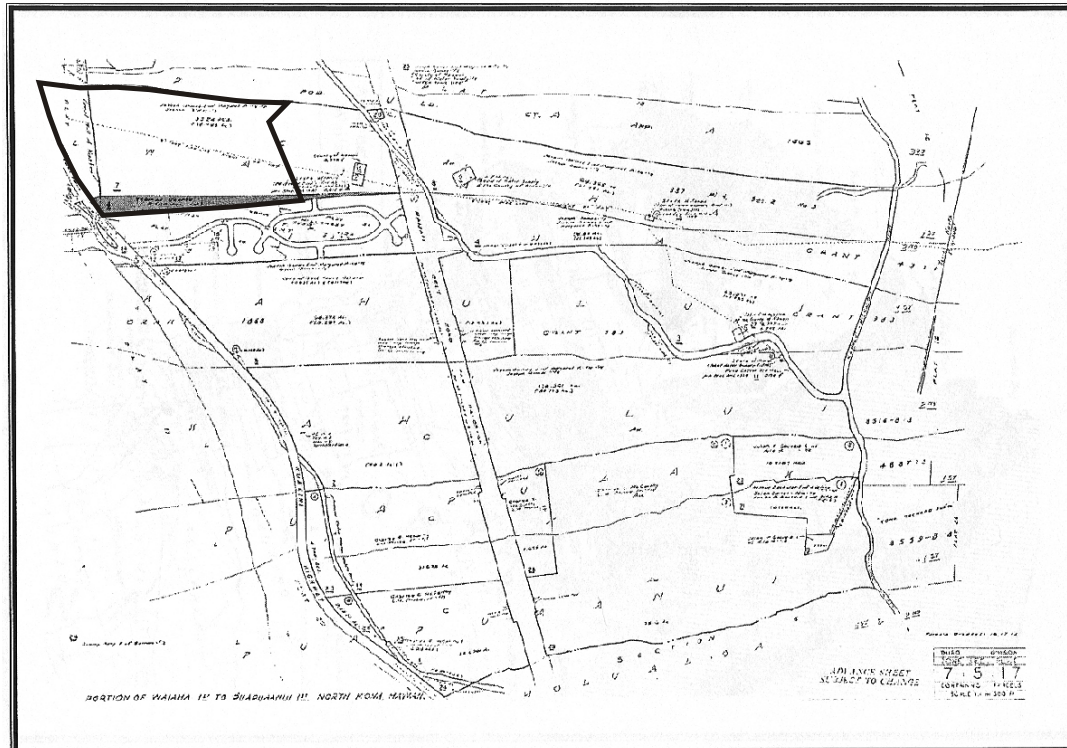


Figure 2. Tax Map Keys: 3-7-5-10 and 17 showing current project area (parcels 85 and 10).

Two historically introduced species, *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena glauca*) dominate the vegetation within the project area. A variety of grasses, vines, weeds, and shrubs are also present. Prior impacts within the project area can be described as substantial. Mechanical earth moving is evident as a graded road (no longer in use) corresponding to a waterline easement running *mauka/makai* through the property.

Cultural Contexts

The project area is in the coastal edge of the Kona Field System (Cordy 1995, Newman 1970, Schilt 1984). This area extends north at least to Kau Ahupua‘a and south to Honaunau, west from the coastline and east to the forested slopes of Hualālai (Cordy 1995). A large portion of this area is designated in the Hawai‘i SIHP (State Inventory of Historic Places) as Site 50-10-37-6601 and has been determined eligible for inclusion in the National Register of Historic Places. The basic characteristics and elevationally delimited zones within this agricultural/residential system as presented in Newman (1970) have been confirmed and elaborated on by ethnohistorical investigations (Kelly 1983).

The current study parcel is in the *kula* zone. This is the area from sea level to 150 meters elevation. Annual rainfall in the *kula* zone is 75 to 125 centimeters. This lower elevation zone is traditionally associated with habitation and the cultivation of sweet potatoes, paper mulberry, and gourds. Agricultural features, such as clearing mounds, planting mounds, planting depressions, modified outcrops, pavements, enclosures, and planting terraces, are common throughout much of this zone (Hammatt and Clark 1980, Hammatt and Folk 1980, Haun et al. 1998, Schilt 1984). Dwellings were scattered throughout the agricultural portion of the *kula*, but they are commonly concentrated along the shoreline (Cordy 1981, Hammatt 1980). The shoreline zone, extending inland approximately 200 meters, was used primarily for permanent habitation and other non-agricultural activities, such as canoe storage, ceremonial and burial practices, recreation, and fishing-related activity. Mao or Nalupo‘o Heiau (SIHP 3834) was recorded along the sandy beach shoreline of Wai‘aha Ahupua‘a (Stokes and Dye 1991).

Royal and high chiefly centers were also situated within the shoreline of the *kula*. These complexes included dwellings for chiefs and their entourage, places of refuge, and other structures. Several large and densely populated royal centers were located along the shoreline between Kailua and Honaunau (Cordy 1995, Tomonari-Tuggle 1993). A variety of non-residential features are present in the *kula* near royal centers, including small agricultural plots, and formal and informal burial features (Cordy 1995, Han et al. 1986, Schilt 1984, Tainter 1973, Tomanari-Tuggle 1993).

Nineteenth century habitation features built on stone platforms were present in the *kula* (Hammatt and Meeker 1979, Schilt 1984). Stone platforms with clearly defined internal divisions are present (O’Hare and Wolforth 1997) and probably reflect a change in residential plans from a complex of multiple, separate, single-function structures (men’s sleeping, women’s sleeping, cooking) to a single structure with multiple rooms and functions (entire family’s quarters and cooking) (Ladefoged 1991). Burial features with historic-era artifacts and architecture (i.e., mortar and corrugated tin) are present in the lower elevations. These are frequently isolated structures, but burial also occurred within residential platforms during the Historic Period (O’Hare and Wolforth 1997).

During the early nineteenth century, following the breaking of the traditional eating *kapu* by Liholiho, Ka‘ahumanu, and the Queen mother Keopuolani, which was a symbolic gesture that led to the demise of the entire Hawaiian religious system, the older places of worship (*heiau*) no longer held their significance. Many such places were dismantled, and the stones used for other building projects such as the Kuakini Wall, which bisects the current project area.

Ceremonial/Religious

A site is placed into this classification if it is a platform that has multiple terraced enclosures attached, is relatively massive (large volume of rock used in construction), and/or possesses surface or subsurface branch coral. This site type can date from any period, but typically dates to the Precontact Period.

Trail

Trails are defined by alignments of smooth stones (stepping-stones) across 'a'ā flows and cleared and worn linear alignments running *mauka/makai* across the landscape.

Ranching

This functional designation is assigned to core-filled walls and enclosures formed by multiple core-filled walls. Within the current project area these sites are associated with the Gomes Ranch and date between 1927-1960.

Landscape Marker

This site type is a wall (usually core-filled) so situated that it appears to correspond with a known land boundary. Such walls were used as landscape markers only during historic times.

Site Descriptions, Test Excavations, and Functional Interpretations

During the current archaeological inventory survey twenty-five previously unrecorded sites and one previously recorded site were discovered. Twenty-two test units were excavated at ten of these sites. Descriptions for each site and the test units excavated at them are presented below. Site discussions are grouped into seven categories: Historic Ranching Related Sites and Boundary Walls, Precontact Habitation Sites, Trails, Ceremonial Sites, Game Boards, Burials, and Agricultural Sites. A complete listing of the sites including their formal feature type, function, and temporal affiliation can be seen in Table 1. The location of each site is shown on Figure 4.

Table 1. Archaeological sites recorded as part of the current inventory survey.

<i>SIHP No.</i>	<i>Formal Type</i>	<i>Functional Type</i>	<i>Age</i>
6302	Wall	Kuakini Wall	Historic
23662	Enclosure	Ranching	Historic
23663	Wall	Ranching	Historic
23664	Wall	Ranching	Historic
23665	Wall	Landscape marker	Historic
23666	Wall	Landscape marker	Historic
23667	Wall	Landscape marker	Historic
23668	Lava blister	Temporary habitation	Precontact
23669	Modified outcrop	Temporary habitation	Precontact
23670	Platform complex	Permanent habitation	Precontact
23671	Platform	Temporary habitation	Precontact
23672	Enclosure complex	Temporary habitation	Precontact
23673	Platform/enclosure	Permanent habitation	Precontact
23674	Platform/enclosure	Temporary habitation	Precontact
23675	Platform	Temporary habitation	Precontact
23676	Platform	Temporary habitation	Precontact
23677	Platform/enclosure	Temporary habitation	Precontact
23678	Enclosure	Temporary habitation	Precontact
23679	Trail	Trail	Precontact
23680	Trail	Trail	Precontact
23681	Platform/enclosure	Ceremonial	Precontact
23682	Game board	Game board	Precontact
23683	Platform	Burial	Precontact
23684	Platform/enclosure	Burial	Precontact
23685	Platform	Burial	Precontact
23686	Complex	Agricultural	Precontact

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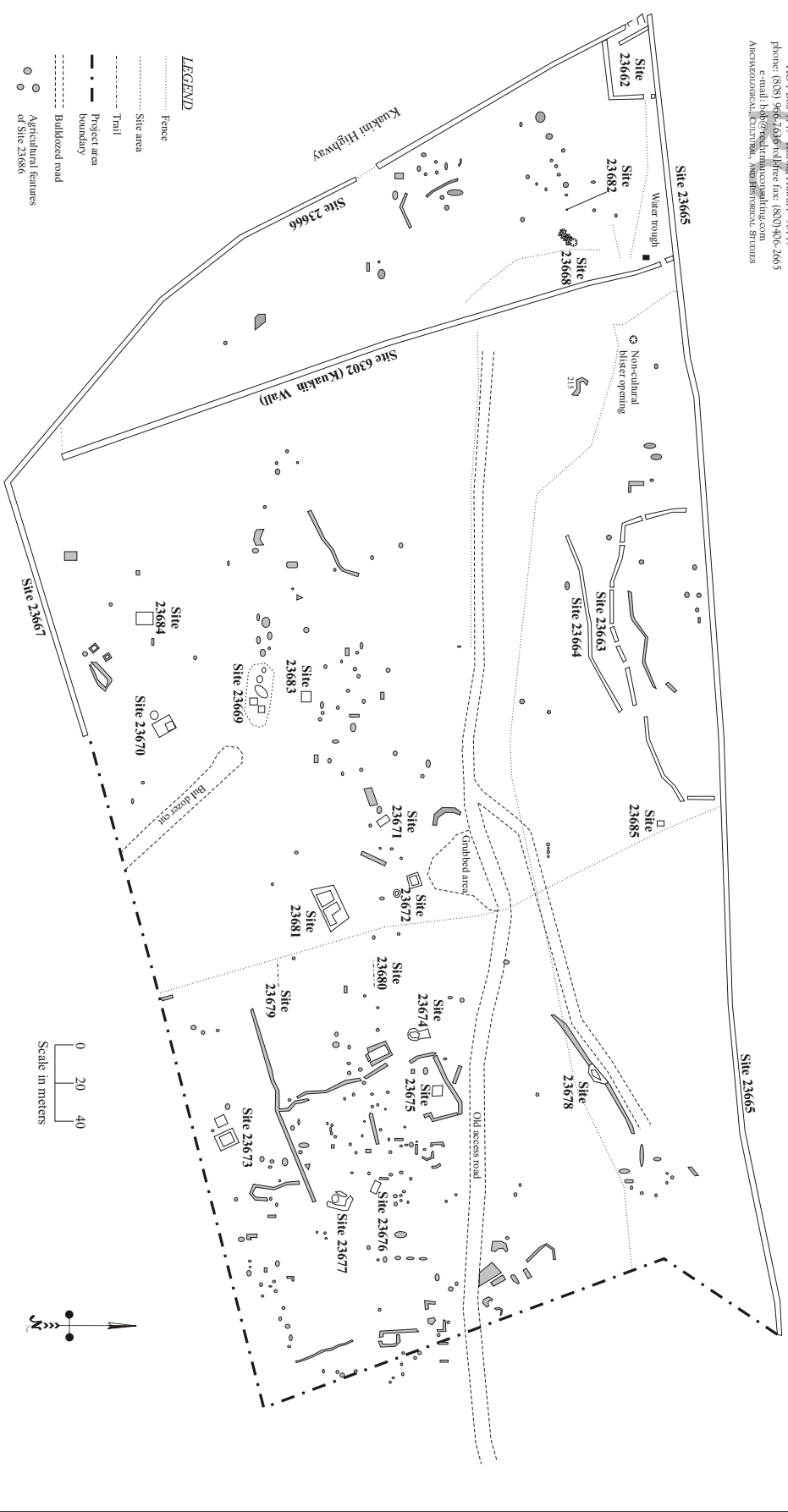


Figure 4. Project area plan view showing site locations.

Historic Ranching Related Sites and Boundary Walls

SIHP Site 6302

Site 6302 is the Statewide Inventory of Historic Places (SIHP) designation for the Kuakini Wall, a portion of which runs through the current project area (see Figure 4). Construction of the Great Wall of Kuakini began in the early 1800s as a response to the growing number of introduced herbivores (i.e. Cattle, goats, and pigs) running rampant in Kona. The wall, which stretches a considerable distance through Kona parallel to the coast, was designed to keep the animals out of coastal residential and agricultural areas. Although no record of Governor Kuakini having ordered the wall built exists, its final configuration was attributed to him (O'Hare and Wolforth 1998).

A 340-meter section of Site 6302 stretches north/south across the current project area. In this section the Kuakini Wall stands up to 1.2 meters high and measures as wide as 1.0 meter. It is of core-filled construction and has two breaks along its length. The first break occurs at its northern end adjacent to Site 23665 and measures 3 meters across. This break was most likely created by the Gomes Ranch (1927-1960s) to help funnel cattle west towards Site 23662. There is a metal water trough located just to the west of the break and a wire fence parallels Site 23665 all the way to Site 23662. The second break occurs at the wall segments south end 20 meters from the southern boundary of the project area at Site 23667. This section of wall was most likely removed to construct Sites 23666 and 23667. A wire fence connects the southern end of the Kuakini wall segment to Site 23666 creating a large paddock between the two walls.

SIHP Site 23662

Site 23662 is a historic/modern cattle enclosure located in the northwest corner of the project area along Kuakini Highway (see Figure 4). The enclosure walls (Figure 5) form a roughly rectangular area measuring 32 meters long (southern wall) by 24 meters wide (eastern wall). The north and west sides of the enclosure (which are actually longer) are formed by Sites 23665 and 23666 respectively. Site 23665 (the north wall of the enclosure), owing to on-going development at the adjoining parcel to the north, has been recently dismantled and reconstructed with stones cemented in place. The remaining walls, which are of core-filled construction, attain a maximum height of 1.8 meters above ground surface and measure from 0.5-1.0 meter across their top edges. The interior of the enclosure, accessed through three gates (1 metal and 2 wooden), contains an internal dividing wall, a stone and wood ramp, and two rock piles. The enclosure, most likely constructed by the Gomes Ranch (1927-1960s), appears to have functioned as a holding area designed for loading/unloading cattle trucks at Kuakini Highway.

A small wooden gate (2.0 meters wide), located in the east wall of the enclosure 2.5 meters south of Site 23665, allows access to an eastern paddock area. An internal dividing wall (1.7 meter high by 0.6 meters wide) running southeast from Site 23665 (roughly parallel to the west wall of the enclosure) for 22 meters forms the western edge of the paddock area. The paddock contains several large *kiawe*, tall grasses, and two stone piles, which represent either clearing piles or left over wall building materials. The south end of the internal dividing wall adjoins a four-meter long wooden gate remnant connecting the aforementioned wall to the southern wall of the enclosure. On the west side of this gate a 10-meter wide passage, between the western wall of the enclosure and the internal dividing wall, leads to a ramp and a metal gate facing Kuakini Highway in the enclosure's northwest corner. The 3-meter long metal gate adjoins the southwestern corner of a 3.0 by 3.0 meter stone ramp with a "4 x 4" wooden frame. The ramp rises from ground surface along its eastern edge to 1.1 meters above ground surface along its western face. It is constructed of *pāhoehoe* boulders with smaller cobbles paving its surface. The ramp is fairly dilapidated and covered in dense vegetation. The wall to the north end of the ramp has been recently dismantled.

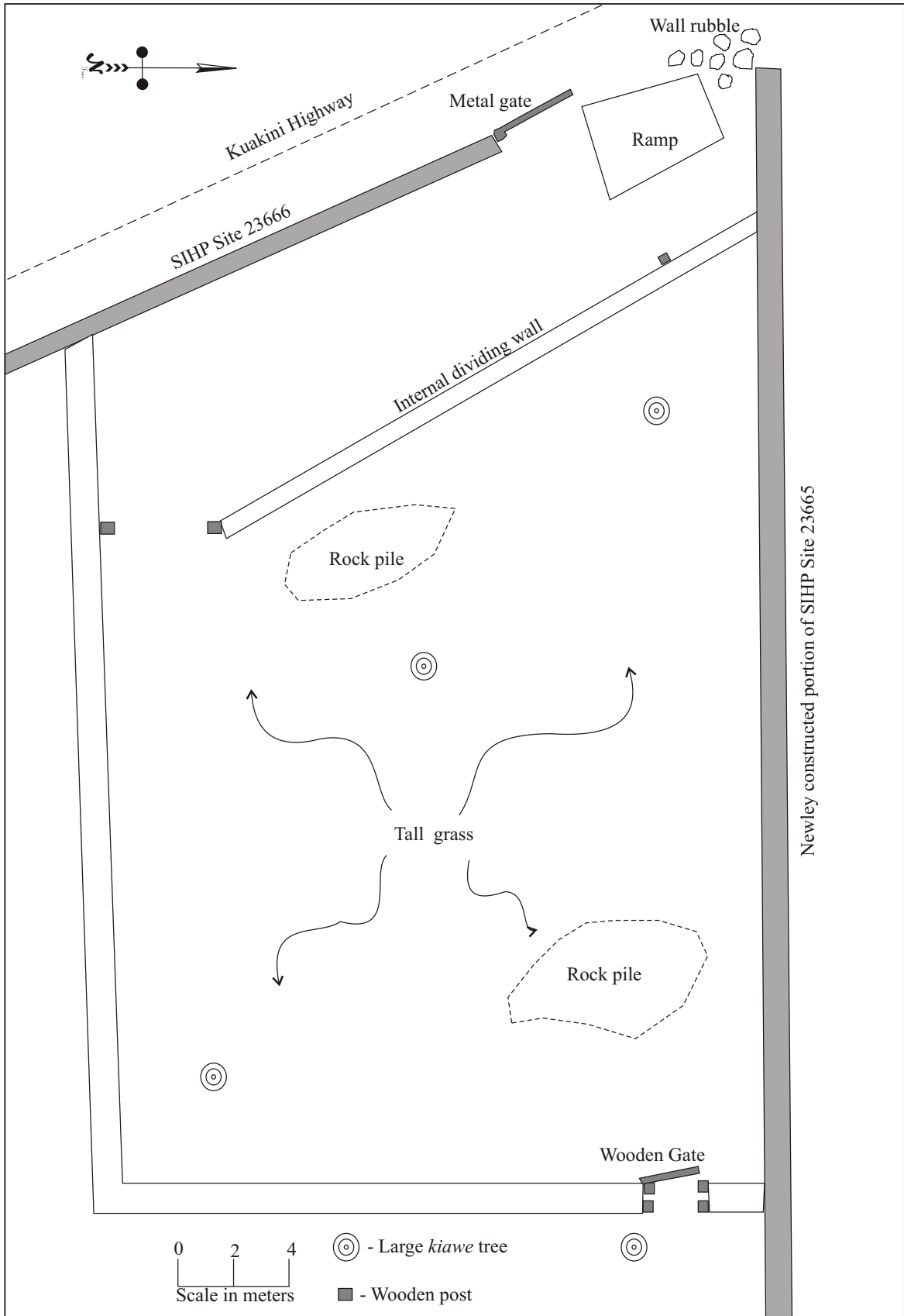


Figure 5. SIHP Site 23662 plan view.

SIHP Site 23663

Site 23663 is a historic wall remnant that, together with Site 23665, forms a rough enclosure along the northern boundary of the project area (see Figure 4). The wall is of core-filled construction, but is collapsed in several sections with gaps ranging from 1.0 to 8.0 meters wide. Intact sections of the wall stand up to 0.7 meters above ground surface and measure 40-90 centimeters wide (Figure 6). Starting at its western end (8 meters south of Site 23665) the wall runs for 38.6 meters at 166°, turns and runs a meandering course for 150.0 meters at 80°, then turns once more and runs for 14.3 meters at 380° to its end point (4 meters south of Site 23665). It appears that Site 23663 may have been partially dismantled along its east and west ends during the construction of Site 23665, making it the older of the two walls. Site 23663 was most likely used by the Gomes Ranch (1927-1960s) for livestock control purposes.



Figure 6. SIHP Site 23663 view to east.

SIHP Site 23664

Site 23664 is a historic core-filled wall remnant running east/west roughly parallel to Site 23663 (approximately 10-20 meters to the south) (see Figure 4). The wall stretches for a total distance of 95 meters near the west end of Site 23663. It is in a poor state of preservation standing only 0.6 meters high at its most intact sections and averaging up to 1.2 meters wide. Large portions of the wall may have been pirated to construct Site 23663 or, conversely, the two walls may have acted as a contemporary cattle chute, but over time only Site 23663 was maintained and Site 23664 fell into disuse, or was used for repairs to the other wall. In either case, this wall was most likely constructed by the Gomes Ranch (1927-1960s) for livestock control purposes.

SIHP Site 23665

Site 23665 is a historic core-filled wall running along the northern boundary of the project area (see Figure 4). This wall, most likely built by the Gomes Ranch (1927-1960s), also marks the boundary between Wai'aha 1st Ahupua'a and Pua'a 3rd Ahupua'a. The *makai* most 130 meters of Site 23665 (from the Kuakini Highway to the Kuakini Wall), as a result of on-going development at the neighboring parcel to the north, has been recently dismantled and reconstructed with stones cemented in place. The remaining 470 meters of wall along the northern project area boundary is relatively intact and of historic core-filled construction, although ground surface on the north side of the wall has been significantly raised. Site 23665 is collapsed in several places but in places it stands up to 1.3 meters above project area ground surface and measures as wide as 1.0 meter across the top.

SIHP Site 23666

Site 23666 is a historic core-filled boundary wall running along the *makai* edge of the study area parallel to the Kuakini Highway (see Figure 4). The wall, most likely constructed by the Gomes Ranch (1927-1960s), is in generally good condition, but may have been recently reconstructed in some sections. Site 23666 stretches along the western project area boundary for 440 meters, it stands up to 1.2 meters above ground surface and measures as wide as 0.7 meters across its top edge. The wall used to continue along Kuakini Highway out of the current project area to both the north and the south, but has been destroyed by development on the adjacent parcels. There are two constructed openings in the wall. The first opening, a 3-meter long metal gate located at the northern end of Site 23666, is part of Site 23662. The second opening, located 170 meters south of the walls north end, measures 8.5 meters across and is blocked off with wire fencing.

SIHP Site 23667

Site 23667 is a 140-meter long historic core-filled wall segment running along the southern boundary of the current project area (see Figure 4). This wall is located in Wai'aha 2nd Ahupua'a running along the southern edge of Parcel 6 (TMK:3-7-5-17). Site 23667 is in relatively good condition standing up to 1.0 meter above ground surface and measuring 0.8 meters across its top edge. The wall's western end abuts Site 23666 and the eastern end used to stretch further than it currently does, but has been removed by development on the adjoining parcel to the south.

Precontact Habitation Sites

SIHP Site 23668

Site 23668 is an exposed *pāhoehoe* bedrock outcrop (9.0 meters by 7.8 meters) containing a small lava tube and a possibly leveled pavement of *pāhoehoe* cobbles (Figure 7). The site is located in the northwest portion of the project area approximately 20 meters *makai* of Site 6302 (the Kuakini Wall) (see Figure 4). The cobble pavement area (4.0 meters long by 2.5 meters wide), which is located at the southern end of the outcrop (Figure 8), slopes slightly to the north and although the cobbles are arranged in a relatively uniform fashion they may be resting in natural positions. The entrance to the lava tube has been slightly modified suggesting that the site may have been used for temporary habitation purposes. A *Cypraea* shell fragment was found on the ground surface seven meters at 26° from the tube entrance.



Figure 7. SIHP Site 23668 view to south (tube entrance in foreground pavement in background).

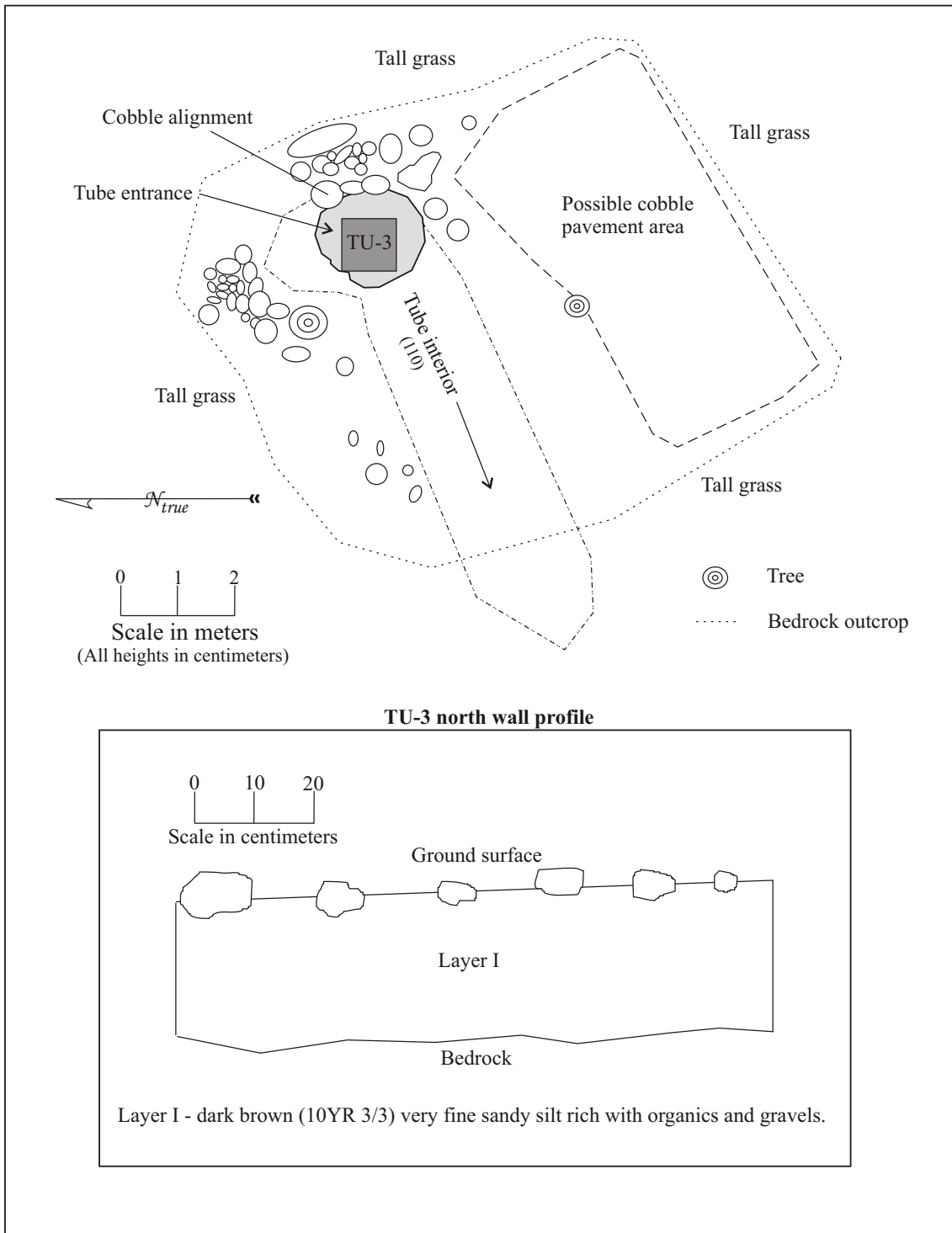


Figure 8. SIHP Site 23668 plan view and TU-3 profile.

The tube entrance measures 1.8 meters by 1.6 meters and drops 1.6 meters to the interior ground surface (Figure 9). A single course of *pāhoehoe* cobbles has been placed along the eastern edge of the entrance filling in a low spot in the bedrock. The interior tube area measures approximately 3.0 meters in diameter at the entrance with a floor to ceiling height of 1.1 meters. A narrow passage, 1.5 meters wide, runs west from the entrance for 6.5 meters before becoming impassable. The floor of the tube consists of soil with a few small cobbles and a house cat skeleton resting on its surface. A 1 x 1 meter test unit (TU-3) was excavated within the central area of the tube entrance (see Figure 8). Excavation of TU-3 revealed a single stratigraphic soil layer (60 centimeters deep) of dark brown (10YR 3/3) very fine sandy silt rich with organics and gravels resting on bedrock. No cultural material was recovered from TU-3 leaving the presumed function of the site somewhat in doubt. The cobble alignment along the eastern edge of the opening may have been placed there by the Gomes Ranch to deter cattle from falling in and injuring themselves.



Figure 9. SIHP Site 23668 tube entrance and location of TU-3 view to north.

SIHP Site 23669

Site 23669 consists of a large 'a'ā outcrop (27 meters long by 7 meters wide) with several cultural modifications along its length (Features A-F) possibly used for temporary habitation and/or agricultural purposes (Figure 10). Site 23669 is centrally located within the western half of the project area (see Figure 4) near several agricultural features and a burial (Site 23683). The outcrop stands up to 3 meters above ground surface along its north side and up to 2 meters above ground surface along its south side. The culturally modified areas consist of terraces, stacking, and a modern rock shelter contained within a 20-meter long section on the north side of the outcrop. No habitation debris was observed in the vicinity of the features.

Feature A is a small cleared and leveled terrace area located at the northeastern end of the outcrop (see Figure 10). The cleared area contains soil and measures 1.4 meters (east/west) by 1.3 meters (north/south) (Figure 11). Its western edge, which consists of stacked cobbles, rises 0.65 meters above ground surface while its southern edge abuts Feature B.

Feature B is cobble terrace (3.0 meters long by 2.0 meters wide) located between Features A and C. The feature consists of stacked cobbles (1.35 meters high) along its north (against Feature A) and west (against Feature C) edges (see Figures 10 and 11), while the two remaining edges are level with the bedrock outcrop. The surface of the feature slopes slightly to the east and lacks any sort of paving. Feature B may represent cobbles cleared and stacked from Features A and C.

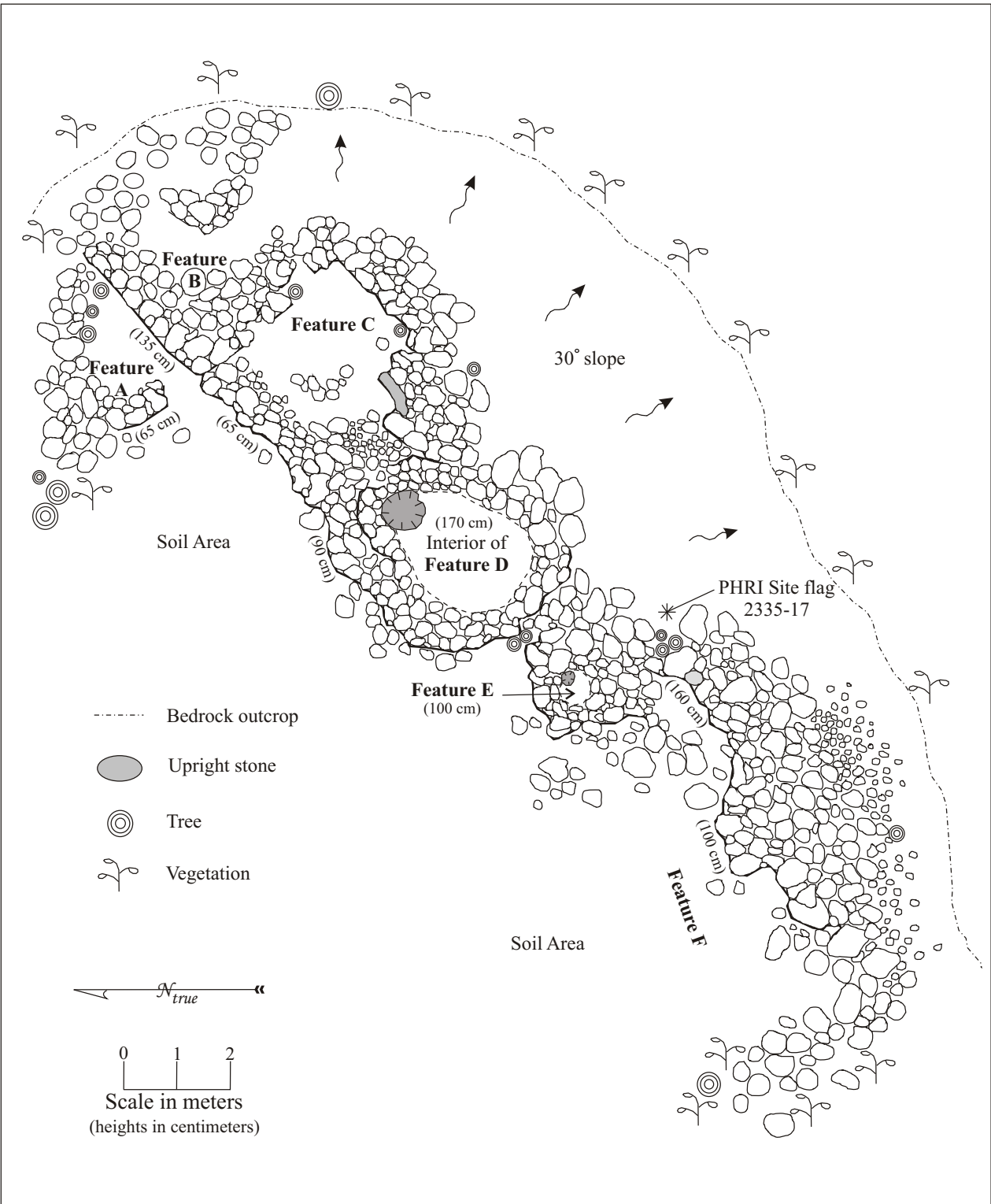


Figure 10. SIHP Site 23669 plan view.



Figure 11. SIHP Site 23669 Features A and B view to east.

Feature C is a cleared and leveled terrace area adjacent to the west side of Feature B (see Figure 10). The cleared area measures 3.0 meters by 2.5 meters and consists of soil (Figure 12). The northern edge of the terrace is stacked and rises 0.65 meters above ground surface. The south and west (Feature B) edges are also stacked and rise 1.35 meters above the terrace's surface. The eastern edge of the soil abuts Feature D.



Figure 12. SIHP Site 23669 Features B and C view to southeast.

Feature D is a modern igloo-style domed habitation feature located along the eastern edge of Feature C (see Figure 10). Feature D is built entirely of large 'a'ā cobbles fitted together with 'a'ā slab as a roof so as to create an enclosed interior area 2.5 meters long by 1.85 meters wide and 1.8 meters tall. There is a small opening (0.9 meters in diameter) allowing access to the western end of the feature (Figure 13). The interior floor is level, consists of soil, and is littered with modern debris including plastic, beer bottles, Olympia Beer cans, tin cans, and pork chop bones. Feature D appears to have been recently constructed on a former cleared and leveled terrace area.

Feature E is a cupboard located 1.2 meters southwest of Feature D (see Figure 10). The cupboard is constructed with a semicircular alignment of stacked 'a'ā cobbles (1.0 meter high) to the north and west abutting the bedrock outcrop to the southeast. The interior of the cupboard measures 0.9 meters long by 0.6 meters wide and 0.4 meters deep. Two eroded 'a'ā cobbles rest across the top of the cupboard creating a roof. A 0.3-meter diameter opening at the west end of the cupboard is its only opening. This feature appears to be related to Feature D and is of modern construction.

Feature F is a meandering alignment of stacked 'a'ā cobbles and boulders along the southwestern end of the outcrop (see Figure 10). The stacking stands 0.85 vertical meters above ground surface on its north side and behind this slopes southeast at 28° to the top of the outcrop. Feature F may have been created as the soil area to the north of the outcrop was cleared of cobbles, or perhaps as a retaining wall to keep cobbles out of the soil area.



Figure 13. SIHP Site 23669 Feature D (Features E and F in background) view to south.

SIHP Site 23670

Site 23670 is a probable habitation site located in the western half of the project area approximately 30 meters north of the eastern end of Site 23667 (see Figure 4). Site 23670 consists of a two-tiered platform (Features A and B) with a second smaller platform (Feature C) located two meters to the east (Figure 14). Both platforms are constructed of 'a'ā with large cobbles stacked around the outside edges and small cobbles paving the surface. A single *Cypraea* shell fragment was found on ground surface near the south edge of Feature A. Despite the lack of significant habitation debris, the size and construction of the larger platforms (Features A and B) conforms to the specifications generally accepted as permanent habitation (Cordy 1981;1995), so therefore a function of permanent habitation is tentatively assigned to this site.

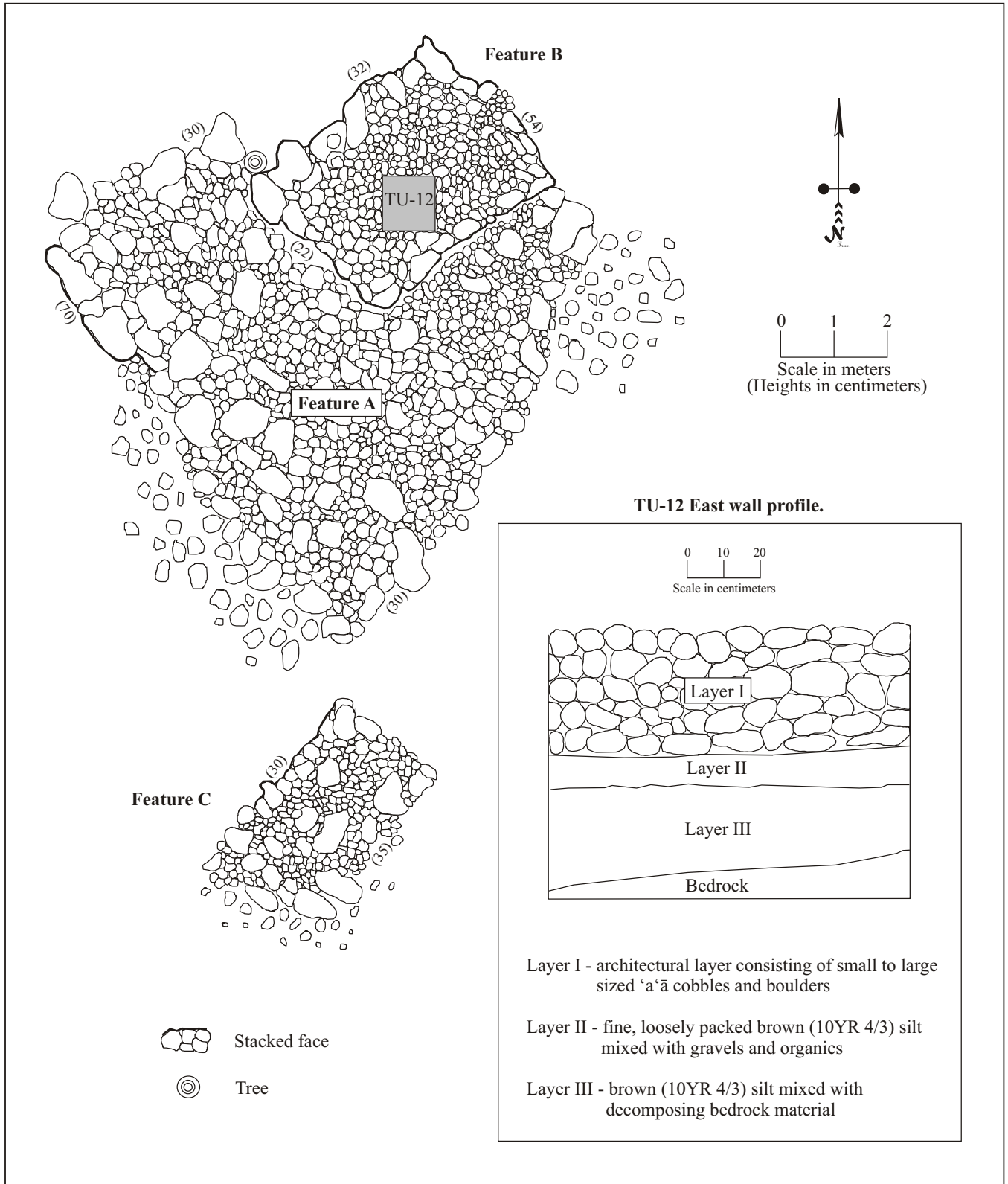


Figure 14. SIHP Site 23670 plan view and TU-12 profile.

Feature A is the lower platform of the two-tiered platform (see Figure 14). This roughly rectangular platform measures 9.0 meters long by 6.2 meters wide (Figure 15). The feature is constructed on bedrock with the outside edges stacked 0.7 meters (two courses) high. The paved surface of Feature A is relatively level and in good condition, although some collapse has occurred along the south and west edges.

Feature B, the upper platform of the two-tiered platform (see Figure 14), is situated on the northeast corner of Feature A (see Figure 15). Feature B is rectangular in shape measuring 3.4 meters long by 3.0 meters wide. Its stacked edges rise as much as 0.3 meters (2 courses) above the surface of Feature A and 0.54 meters above the bedrock ground surface. A single 1 x 1 meter test unit (TU-12) was excavated in the central portion of Feature B.



Figure 15. SIHP Site 23670 Features A and B view to west.

Excavation of TU-12 revealed a simple three-layer stratigraphic profile (see Figure 14). Layer I, the architectural layer, consisted of small to large sized 'a'ā cobbles and boulders. This layer continued to a depth of 35 centimeters below the unit's surface. Layer I rested on and was incorporated into Layer II, a fine loosely packed brown (10YR 4/3) silt mixed with gravels and organics. Layer II continued for 10 centimeters before transitioning to Layer III at a depth of 45 centimeters below the unit's surface. Layer III consisted of brown silt (10YR 4/3) mixed with decomposing bedrock material, which continued for 25 centimeters below Layer II to a depth of 70 centimeters below the unit's surface. Layer III and the excavation of TU-12 terminated at bedrock. No cultural material was recovered from TU-12.

Feature C is a small rectangular platform located 1.5 meters south of Feature A's southwestern corner (see Figure 14). Feature C measures 3.8 meters long by 3.1 meters wide with stacked sides standing up to 0.35 (1–2 courses) meters above the surrounding bedrock ground surface (Figure 16). Feature C is in relatively good condition, although portions of its southwestern edge have collapsed. No habitation debris was observed in the vicinity of this feature.



Figure 16. SIHP Site 23670 Feature C view to northeast.

SIHP Site 23671

Site 23671 is a probable temporary habitation platform remnant located in the central portion of the project area (see Figure 4). The platform (Figure 17), constructed of 'a'ā cobbles, is largely collapsed although some stacking remains along the western edge. Current platform dimensions are 6.9 meters (north/south) by 3.8 meters (east/west) including the rubble scatter that surrounds the feature. The stacked western edge of the site stands up to 0.9 meters above the surrounding bedrock ground surface. The surface of the platform is relatively level and paved primarily with small 'a'ā cobbles, although some larger cobbles are present. Site 23671 seems to have been heavily disturbed by ranching activities in the area. No habitation debris was observed on ground surface at this site. Data recovery efforts will help further determine the specific function of Site 23671.



Figure 17. SIHP Site 23671 view to north.

SIHP Site 23672

Site 23672 is a probable temporary habitation site centrally located within the project area (see Figure 4). The site consists of a large rectangular enclosure (Feature A) with a small rounded enclosure (Feature B) located six meters to its south (Figure 18). Bulldozing activity along the old central access road came close to impacting the north edge of Feature A and may have covered a third feature near its northwest corner. Two test units (TU-11 and TU-13), one in each feature, were excavated at Site 23672.

Feature A is a large low-lying enclosure located at the north end of Site 23672. The enclosure (Figure 19), constructed of piled and stacked 'a'ā cobbles, measures 13.5 meters long by 8.5 meters wide. The interior area of the enclosure (10.1 meters by 6.0 meters) has been cleared of cobbles leaving a leveled soil floor. The cleared cobbles were used to create the enclosure's walls, which stand between 0.6 and 0.9 meters high along the interior edges and gradually transition into ground surface along the exterior edges.



Figure 19. SIHP Site 23672 Feature A view to southwest.

A single 1 x 1 meter test unit (TU-11) was excavated in the soil floor along the western interior wall of Feature A (see Figure 18). Excavation of TU-11 revealed a two-layer stratigraphic profile (Figure 20). Layer I, the uppermost layer, consisted of a very dark brown (10YR 2/2) thin topsoil four centimeters deep mixed with grass roots and organics. Below this layer was an 'a'ā cobble layer (Layer II) mixed fairly evenly with a sandy-silt soil. Layer II gradually transitioned from very dark brown (10YR 2/2) to dark yellowish brown (10YR 4/4) and mixed with decomposing bedrock with depth. Excavation of TU-11 concluded at the base of Layer II, 42 centimeters below ground surface at bedrock (Figure 21). Sixteen cow bone fragments were recovered from Layer I and the top of Layer II. These bones showed no sign of human processing and are most likely not related to the feature, but rather to the cow pasture within which the feature resides.

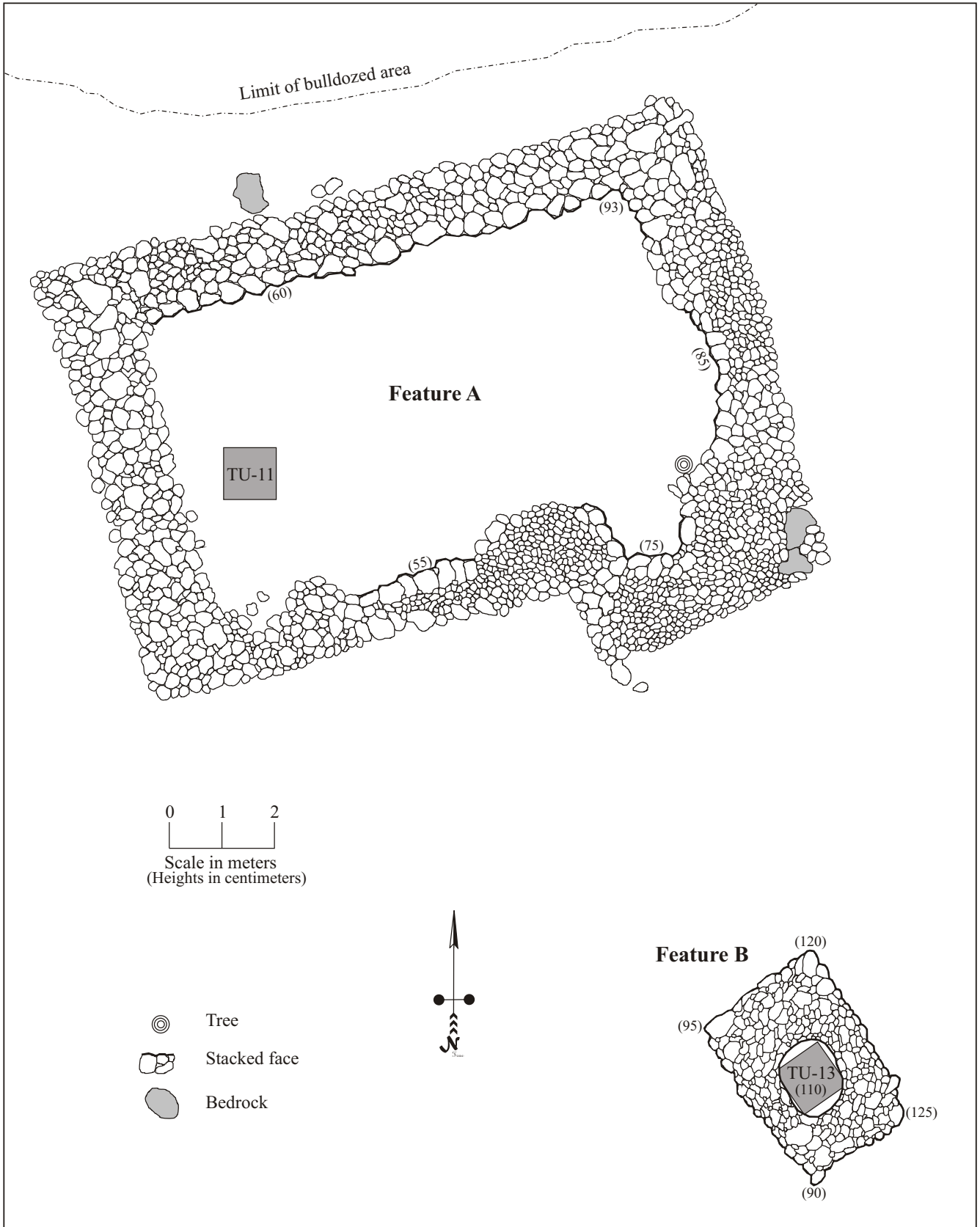


Figure 18. SIHP Site 23672 plan view.

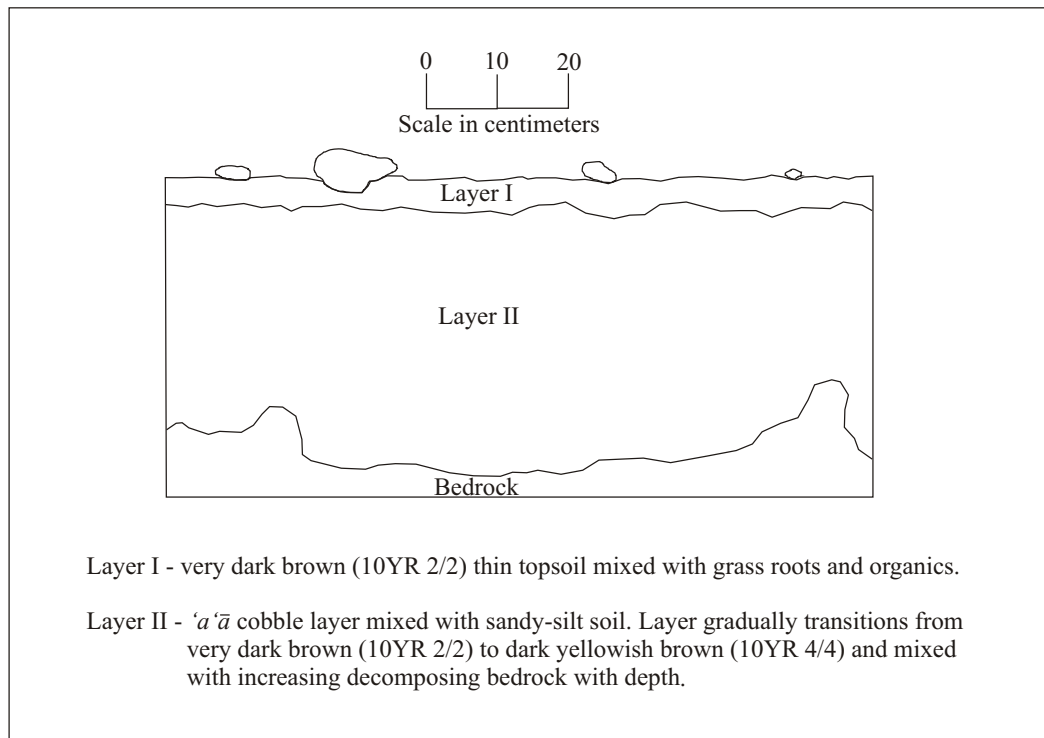


Figure 20. SIHP Site 23672 Feature A TU-11 north wall profile.



Figure 21. SIHP Site 23672 Feature A TU-11 base of excavation view to north.

Feature B is small roughly rectangular enclosure with rounded corners located six meters south of Feature A (see Figure 18). The enclosure is constructed on an 'a'ā bedrock outcrop of stacked 'a'ā cobbles standing 6-8 courses (1.0 –1.3 meters) high (Figure 22). It measures 3.5 meters long by 2.5 meters wide along its exterior edges and has a roughly circular centrally located interior space 1.2 meters in diameter and 1.1 meters deep containing a soil floor. A rubber hose fragment, a modern beer can, decaying organics, and several cobbles were resting on ground surface within the enclosure. Feature B is not large enough to have been used for habitation purposes, and may have been used by the residents of Feature A as a storage area, an agricultural processing area, or perhaps even a trash receptacle.

The entire soil floor of Feature B was removed as a single 1 x 1 meter test unit (TU-13). Excavation of TU-13 revealed two distinct soil horizons resting on bedrock (Figure 23). The uppermost soil layer (Figure 24), Layer I, consisted of very dark grayish brown (10YR 3/2) very fine silt mixed with many small 'a'ā pebbles, roots and decaying organic material. This layer proceeded to a depth of 22 centimeters below the unit's surface, although bedrock was encountered in the northeastern portion of the unit just below ground surface. Cultural material recovered from Layer I (Table 2) included a large amount of volcanic glass, *kukui* nut fragments, shark's teeth, marine shell fragments, a water worn pebble, and a small amount of charcoal. In portions of the unit a 20-centimeter thick Layer II consisting of dark brown (10YR 3/3) fine silt mixed with decomposing bedrock was encountered. This culturally sterile layer was situated directly on bedrock. Excavation of TU-13 concluded at bedrock.

A carbon sample (1.8 grams) was collected from Layer I during the screening of Level 2, 10-20 centimeters below the surface of TU-13. The carbon sample from this layer was sent to Beta Analytic, Inc. for radiocarbon age determination (Beta-175916; see Appendix A). The sample produced a conventional radiocarbon age of 210 ± 70 years before present, or a 2 sigma calibrated result of A.D. 1510 to 1950 with an intercept of A.D. 1660.



Figure 22. SIHP Site 23672 Feature B exterior view to north.

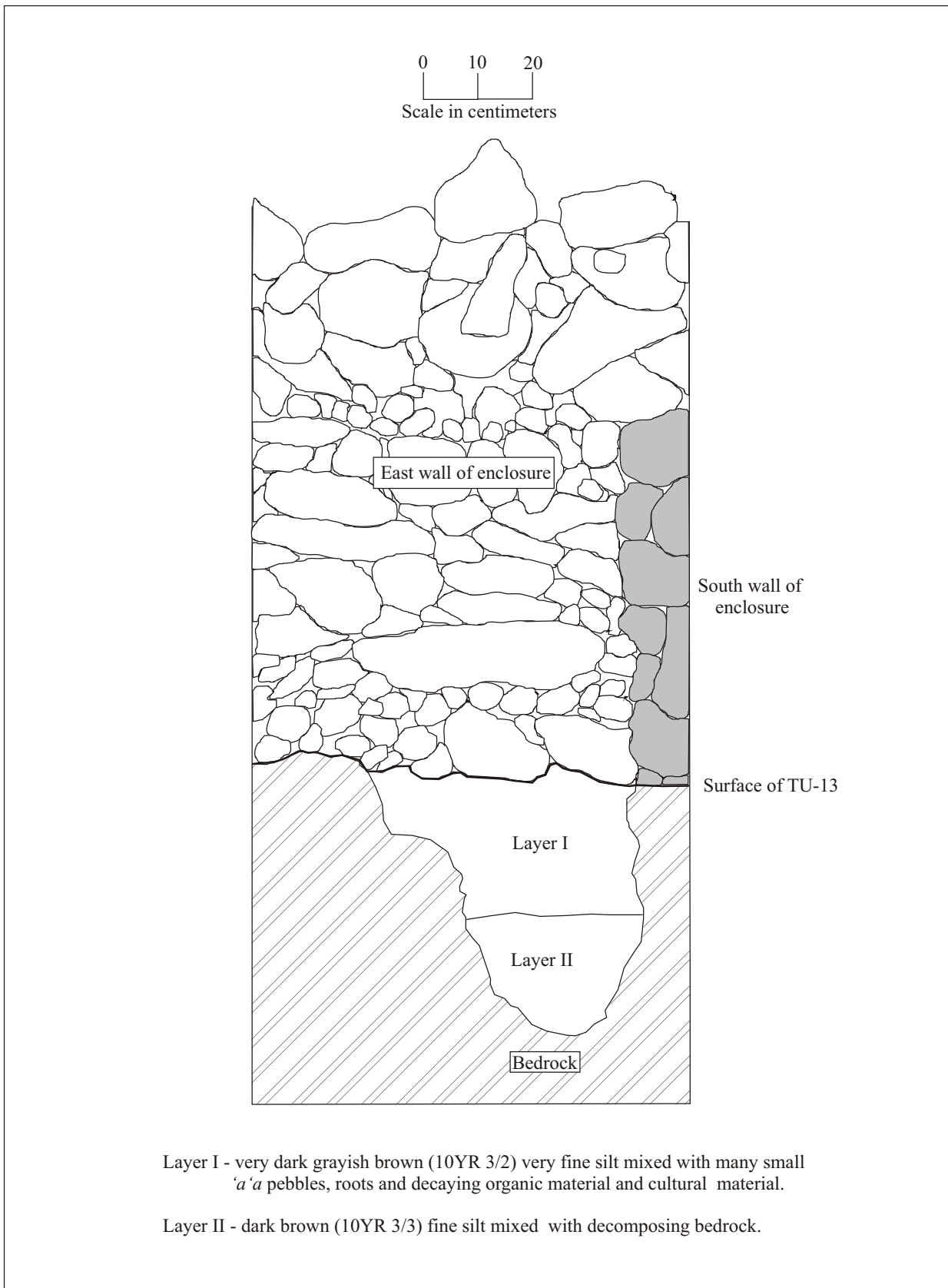


Figure 23. SIHP Site 23672 Feature B TU-13 east wall profile.



Figure 24. SIHP Site 23672 Feature B interior overview and surface of TU-13.

Table 2. Recovered cultural material from SIHP Site 23672 Feature B, TU-13 Layer I.

<i>ACC #</i>	<i>Depth (cm)</i>	<i>Material</i>	<i>Species/type</i>	<i>Count</i>	<i>MNI</i>	<i>Weight (g)</i>
4	0-10	Volcanic glass	Flakes	4	-	1.5
5	0-10	Organic	<i>Kukui</i>	2	1	3.0
6	10-20	Basalt	Water worn	1	-	45.1
7	10-20	Volcanic glass	Shatter	44	-	17.5
8	10-20	Bone	Rodent	1	1	0.05
9	10-20	Bone	Shark (teeth)	2	1	0.2
10	10-20	Shell	<i>Drupa</i>	1	1	0.1
11	10-20	Shell	<i>Nerita</i>	1	1	0.2
12	10-20	Organic	Charcoal	-	-	1.8

SIHP Site 23673

Site 23673 is a permanent habitation site consisting of a platform (Feature A) and an enclosure (Feature B) located in the eastern half of the project area along the southern property boundary (see Figure 4). The permanent habitation interpretation is primarily based on size (Cordy 1991; 1995). The features are constructed of 'a'a cobbles and boulders in an area of exposed bedrock and thin soil. Feature A is located 6.7 meters west of Feature B (Figure 25). Modern debris was observed on the surface of the site including a paint can lid and several golf balls. A 1 x 1 meter test unit (TU-17) excavated in the center of Feature A revealed an abundance of habitation debris.

Feature A is a habitation platform measuring 6.8 meters long by 3.9 meters wide (see Figure 25). It is constructed with large cobbles and boulders stacked along the exterior edges (Figure 26) and small cobbles paving the roughly level platform surface. The western edge of the feature rises 0.9 meters above ground surface, while the eastern edge rises 0.4-0.7 meters above ground surface. The exterior edges of Feature A are collapsed in several locations.

Table 5. Recovered cultural material from SIHP Site 23676, TU-18.

<i>ACC #</i>	<i>Layer</i>	<i>Depth*</i>	<i>Material</i>	<i>Species/type</i>	<i>Count</i>	<i>MNI</i>	<i>Weight (g)</i>
87	I	0-40	Shell	<i>Cypraea</i>	9	3	9.4
88	I	0-40	Shell	<i>Cellana</i>	1	1	0.1
89	I	0-40	Shell	Unidentified	1	1	1.0
90	I	0-40	Shell	<i>He'e lure</i>	1	1	32.0
91	I	0-40	Organic	<i>Kukui</i>	5	-	4.5
92	I	0-40	Bone	Fish	1	1	0.1
93	I	0-40	Bone	<i>Sus</i>	1	2	1.4
79	I	0-40	Bone	Rodent	3		0.3
94	I	0-40	Volcanic glass	Flakes	2	-	2.6
95	II	40-50	Organic	Charcoal	-	-	0.5
96	II	40-50	Organic	<i>Kukui</i>	10	-	2.3
97	II	40-50	Shell	<i>Echinoidea</i>	25	1	1.6
98	II	40-50	Shell	<i>Conus</i>	1	1	0.2
99	II	40-50	Shell	<i>Cypraea</i>	39	14	22.3
100	II	40-50	Shell	<i>Drupa</i>	1	1	0.1
101	II	40-50	Shell	<i>Nerita</i>	1	1	0.2
102	II	40-50	Shell	<i>Cellana</i>	3	1	0.4
103	II	40-50	Shell	<i>Strombina</i>	1	1	0.3
104	II	40-50	Shell	Unidentified	17	-	0.3
105	II	40-50	Bone	Small mammal	4	2	0.8
106	II	40-50	Volcanic glass	Flakes	8	-	6.4
107	II	40-50	Organic	<i>Kukui</i>	1	1	0.1
108	II	50-60	Shell	<i>Echinoidea</i>	25	1	1.9
109	II	50-60	Shell	<i>Nerita</i>	1	1	0.1
110	II	50-60	Organic	Charcoal	-	-	0.2
111	II	50-60	Shell	<i>Cypraea</i>	12	3	10.9
112	II	50-60	Volcanic glass	Flakes	2	-	0.9
113	II	60-71	Shell	<i>Echinoidea</i>	11	1	0.9
114	II	60-71	Shell	<i>Cypraea</i>	6	1	2.1
115	II	60-71	Volcanic glass	Flakes	2	-	1.1

*Depth in centimeters below the surface of TU-18.

SIHP Site 23677

Site 23677 is a temporary habitation site located in the east-central portion of the project area (see Figure 4). It consists of a small square platform remnant (Feature A) constructed in the southwest corner of a rough enclosure (Feature B) (Figure 36). The features are constructed of 'a'ā cobbles and boulders formerly stacked, but now largely collapsed (Figure 37). The interior of the enclosure consists of thin soil covered by dense vegetation. A water worn cobble, a piece of coral, and *Cypraea* shell fragments were observed on ground surface within the site. A 1 x 1 meter test unit (TU-16) was excavated in the center of Feature A.

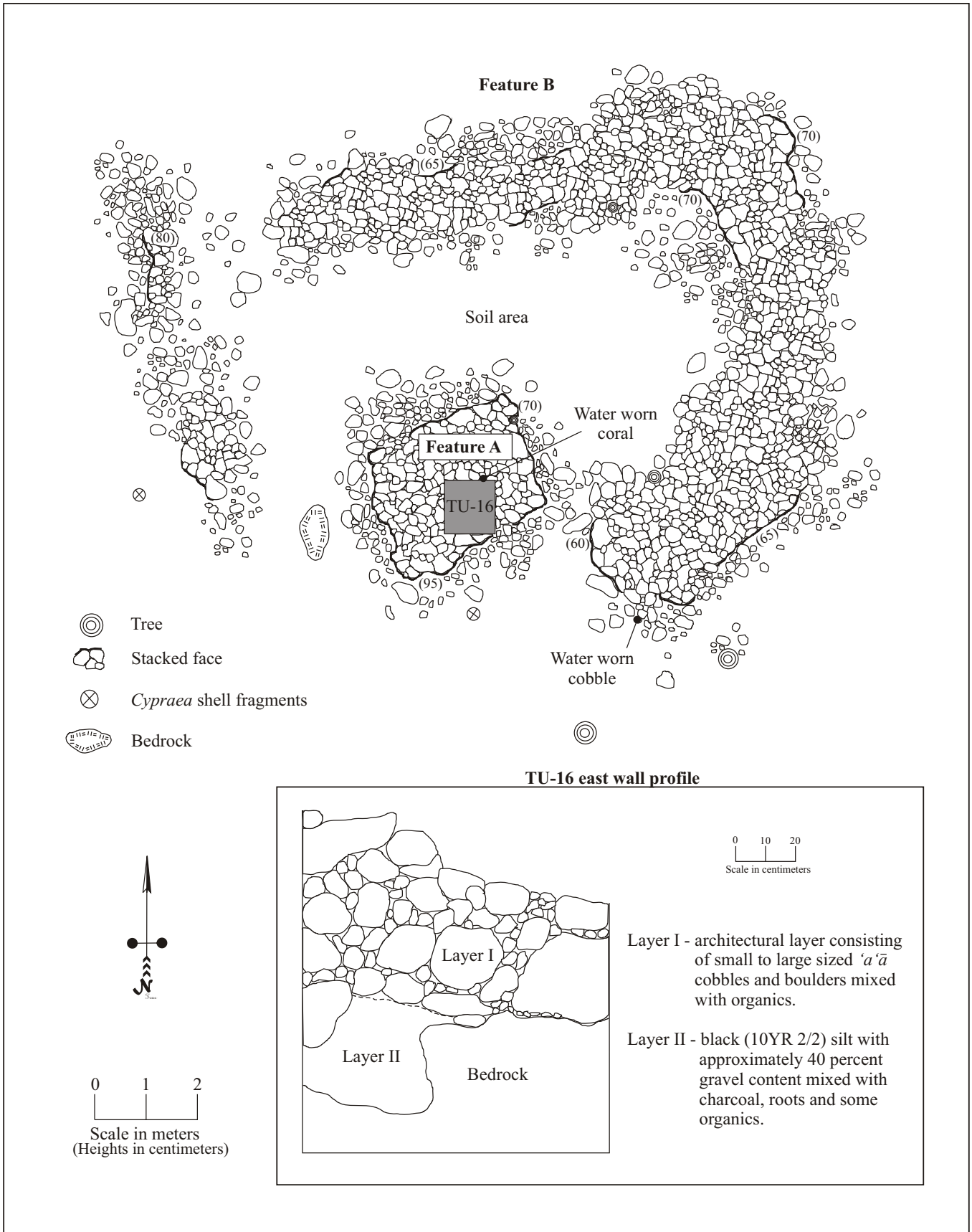


Figure 36. SIHP Site 23677 plan view and TU-16 profile.



Figure 37. SIHP Site 23677 view to southwest.

Feature A is a small platform remnant (2.9 meters long by 2.5 meters wide) located in the northwest corner of the enclosure area (Feature B). The platform is constructed with large 'a'ā cobbles stacked around the outside edges (0.9 meters high) and small cobbles paving its roughly level surface. Much of Feature A has collapsed leaving a rubble scatter around the entire feature. A piece of water worn coral was found on the platform's surface.

A 1 x 1 meter test unit (TU-16) was excavated in the south-central area of Feature A (see Figure 36). Excavation of TU-16 revealed a two-layer stratigraphic profile and a plethora of cultural material consistent with the sites habitation function. Recovered cultural materials included (Table 6) marine shell, urchin, burned bone, volcanic glass, coral, and a small amount of charcoal. The uppermost layer of TU-16 (Layer I), a 65-centimeter thick architectural layer, consisted of small to large sized 'a'ā cobbles and boulders mixed with organics. Layer I rested on and was incorporated into Layer II, a 30-centimeter thick layer of black (10YR 2/2) silt with approximately 40 percent gravel content mixed with roots and some organics. The dark color of the soil is most likely the result of charcoal staining. A charcoal sample from this layer was sent to Beta Analytic, Inc. for AMS radiocarbon analysis (Beta Sample No. 175917). The resulting conventional radiocarbon age is 160 ± 40 B.P., with a 2-sigma range of A.D. 1660 to 1950 (Appendix A). Layer II terminated at bedrock 95 centimeters below the platform's surface.

Table 6. Recovered cultural material from SIHP Site 23677, TU-16.

<i>ACC #</i>	<i>Layer</i>	<i>Depth*</i>	<i>Material</i>	<i>Species/type</i>	<i>Count</i>	<i>MNI</i>	<i>Weight (g)</i>
26	I	0-65	Organic	Charcoal	-	-	0.4
27	I	0-65	Shell	<i>Echinoidea</i>	2	1	0.3
28	I	0-65	Shell	<i>Cypraea</i>	3	2	5.0
29	I	0-65	Shell	<i>Conus</i>	1	1	0.7
30	I	0-65	Shell	<i>Drupa</i>	1	1	3.5
31	I	0-65	Shell	<i>Nerita</i>	1	1	0.2
32	II	65-75	Organic	Charcoal	-	-	2.2
34	II	65-75	Shell	<i>Echinoidea</i>	28	1	3.6
35	II	65-75	Shell	<i>Nerita</i>	5	5	1.7
36	II	65-75	Shell	Unidentified	1	1	0.1
37	II	65-75	Coral	Water worn	8	-	4.1
38	II	65-75	Shell	<i>Drupa</i>	2	1	0.6
39	II	65-75	Shell	<i>Cantharus</i>	1	1	0.1
40	II	65-75	Shell	<i>Cypraea</i>	30	4	14.7
41	II	65-75	Shell	<i>Cellana</i>	1	1	0.1
42	II	65-75	Shell	<i>Venus</i>	1	1	0.1
43	II	65-75	Bone	Fish	1	1	0.2
44	II	65-75	Bone	Small mammal	1	1	2.4
45	II	65-75	Volcanic glass	Flakes	2	-	0.5
46	II	75-85	Organic	Charcoal	-	-	1.3
47	II	75-85	Shell	<i>Echinoidea</i>	16	1	1.6
48	II	75-85	Shell	<i>Cypraea</i>	5	1	1.1
49	II	75-85	Shell	<i>Nerita</i>	1	1	0.1
50	II	75-85	Shell	<i>Cellana</i>	1	1	0.1
51	II	75-85	Bone	Small mammal	1	1	1.0
52	II	75-85	Volcanic glass	Debitage	1	-	0.3
53	II	75-85	Organic	Charcoal	-	-	0.9
54	II	75-85	Shell	<i>Echinoidea</i>	2	1	0.3
55	II	75-85	Shell	<i>Cypraea</i>	3	1	2.7
56	II	75-85	Shell	<i>Nerita</i>	1	1	0.1
57	II	75-85	Shell	<i>Venus</i>	1	1	0.3

*Depth in centimeters below the surface of TU-16.

Feature B is a rough wall partially enclosing Feature A to the north and east. The wall which was formerly stacked, but is now mostly collapsed, measures up to 2.5 meters wide, 0.7 meters high, and encompasses an area approximately 13.2 meters long by 9.5 meters wide. This 'a'ā cobble wall is absent in the site's southwest corner near Feature A, and only a faint trace of the western wall remains intact. The central area enclosed by the wall consists primarily of thin soil.

SIHP Site 23678

Site 23678 is an oval shaped habitation enclosure located in the north east quadrant of the project area (see Figure 4) constructed within the center of a *kuaiwi* wall remnant (Site 23686 Feature 291) (Figure 38). The enclosure (12.5 meters long by 5.5 meters wide) is constructed of partially stacked (mostly collapsed) 'a'ā cobbles and boulders (Figure 39). In several locations the tops of the walls, which stand up to 0.6 meters above ground surface and measure 1.0 meter wide, are topped with smooth *pāhoehoe* cobbles. The interior of the enclosure area (7.7 meters long by 2.6 meters wide) consists primarily of thin soil (at least 8 centimeters thick) covered by dense vegetation (Figure x). An engineered opening (1.0 meter wide) located in the center of the north wall allows access to the enclosure. A *Cypraea* shell fragment and a small piece of coral were found on ground surface within Site 23678. Judging by the continuous construction, it appears that the enclosure was built prior to, or at the same time as, the *kuaiwi* wall (Site 23686 Feature 291), which extends in both directions from the enclosure's east and west ends. The rough (insubstantial) construction of the enclosure combined with its relatively small interior space suggests that Site 23678 may have been used for temporary habitation purposes.



Figure 38. SIHP Site 23678 plan view.



Figure 39. SIHP Site 23678 view to east.

Trails

SIHP Site 23679

Site 23679 is a 20-meter long segment of stepping stone trail running east/west along the south-central portion of the project area (see Figure 4). Site 23679 is constructed of flat *pāhoehoe* and 'a'ā slabs laid across an exposed 'a'ā flow (Figure 40). Large cobbles and boulders have been cleared from the trail route and loosely piled along its edges creating a rough kerbing. The west end of the trail segment appears to fork. The north fork runs three meters west before terminating and the south fork travels five meters west before terminating at a wire fence. No further portions of the trail could be located either *mauka* or *makai* of the site.

SIHP Site 23680

Site 23680 is a stepping stone trail segment located in the central eastern portion of the project area (see Figure 4). The trail segment runs east/west for 10 meters across an exposed 'a'ā flow. It is constructed of at least 10 weathered 'a'ā and smooth *pāhoehoe* slabs laid flat on the natural outcrop (Figure 41). No further portions of the trail could be located either *mauka* or *makai* of the site.



Figure 40. SIHP Site 23679 view to northeast.



Figure 41. SIHP Site 23680 view to west.

Ceremonial Sites

SIHP Site 23681

Site 23681 is interpreted as an agricultural shrine or *heiau* centrally located within the project area (see Figure 4). The site consists of a platform (Feature A) constructed within the northeast corner of a double enclosure area (Feature B) (Figure 42). The platform and enclosure walls are constructed of 'a'ā cobbles and boulders, while the floor of the enclosure area consists of thin soil covered by dense vegetation. Site 23681 resembles in size and shape other sites described in North Kona as *heiau* (cf. Stokes and Dye 1991). A single 1 x 1 meter test unit (TU-14) was excavated in Feature A.

Feature A is a large rectangular platform (9.1 meters long by 5.3 meters wide) located in the northeast corner of Site 23681 (see Figure 42). The platform is constructed with large 'a'ā cobbles and boulders stacked along its outside edges and a surface of small cobbles paving top (Figure 43). The platform rises up to 0.7 meters above the surrounding ground surface and is mostly intact with the exception of some collapse in the southwest corner and along the north edge. The enclosure walls (Feature B) run in a perpendicular direction from the platform's edge starting at its southeast and northwest corners. The walls are not of continuous construction and may have been built subsequent to the completion of the platform. A single piece of water rounded coral and a water worn cobble were found on the surface of the Feature A.

A 1 x 1 meter test unit (TU-14) was excavated in the northeast corner of Feature A (see Figure 42). Excavation of TU-14 revealed a three-layer stratigraphic soil profile resting on bedrock. Layer I, the 70-centimeter thick architectural layer, consisted of small to large sized 'a'ā cobbles mixed with organics. Layer I rested on and was incorporated into Layer II, a dark brown (10YR 3/3) sandy silt with approximately 40 percent gravel content 15 centimeters thick. Layer II gradually transitioned into Layer III, a 26-centimeter thick (in places) dark yellowish brown (10YR 4/4) culturally sterile silt mixed with decomposing bedrock. Cultural material collected from Layers I and II included volcanic glass, fire cracked rock, marine shell, urchin, *kukui*, and mammal bone (Table 7). Excavation of TU-14 ceased at undulating bedrock 106 centimeters below the platform's surface.

Table 7. Recovered cultural material from SIHP Site 23681, TU-14.

<i>ACC #</i>	<i>Layer</i>	<i>Depth*</i>	<i>Material</i>	<i>Species/type</i>	<i>Count</i>	<i>MNI</i>	<i>Weight (g)</i>
13	I	0-70	Volcanic glass	Flake	1	-	2.7
15	I	0-70	Basalt	Flake	1	-	15.6
16	I	0-70	Bone	Small mammal	2	1	0.3
17	I	0-70	Shell	<i>Cypraea</i>	2	2	6.0
18	I	0-70	Shell	<i>Echinoidea</i>	9	1	0.7
19	II	70-80	Volcanic glass	Flake	1	-	2.8
20	II	70-80	Bone	Small mammal	2	2	0.1
21	II	70-80	Shell	<i>Cypraea</i>	8	2	9.7
22	II	70-80	Shell	<i>Echinoidea</i>	6	1	1.2
23	II	70-80	Organic	<i>Kukui</i>	1	1	0.2
25	II	80-95	Shell	<i>Echinoidea</i>	1	1	0.2

*Depth in centimeters below the surface of TU-14.

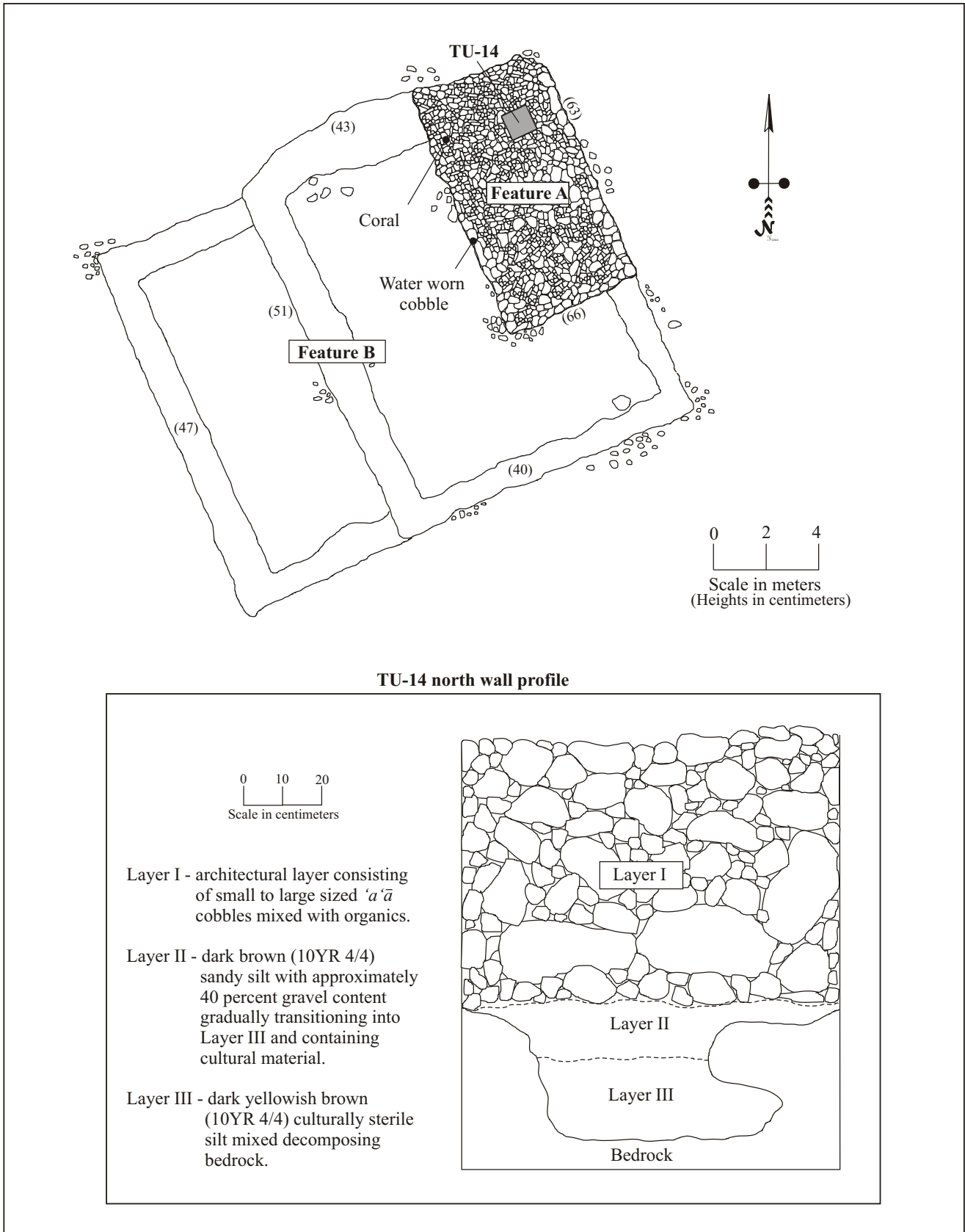


Figure 42. SIHP Site 23681 plan view and TU-14 profile.



Figure 43. SIHP Site 23681 view to northwest (Feature B in foreground and Feature A in background).

Feature B consists of a double enclosure located to the south and west of Feature A (see Figure 42). The enclosure measures 19 meters long by 15 meters wide. A partially terraced central dividing wall creates two enclosure areas within Feature B; the interior of the western area measures 12 meters by 5 meters, and the interior of the eastern area measures 12 meters by 10 meters. The eastern enclosure area is slightly terraced (0.5 meters high) above its western counterpart. The enclosure walls are constructed of 'a'ā cobbles and boulders (see Figure 43), they were formerly stacked, but are now mostly collapsed. Intact sections of wall stand up to 0.5 meters above ground surface and measure 1.0 meter wide. Ground surface within Feature B consists of thin soil covered by dense vegetation.

Game Boards

SIHP Site 23682

Site 23682 is a rough *papamū* located approximately 15 meters west of Site 23668. The roughly square game board (Figure 44), which measures 30 centimeters by 30 centimeters, is pecked into *pāhoehoe* bedrock in an area surrounded by agricultural mounds. It is very weathered making the number of pecked holes and their alignments difficult to discern. It is possible that Site 23682 is located along an old trail route no longer traceable on the *pāhoehoe* bedrock.



Figure 44. SIHP Site 23682 view to east.

Burials

SIHP Site 23683

Site 23683 is a burial platform located in the west-central portion of the project area (see Figure 4). The platform measures 6.7 meters long by 5.4 meters wide and rises 1.6 meters (3-4 courses) above the surrounding bedrock ground surface at its northeast corner. Site 23683 is constructed with *'a'a* and *pāhoehoe* boulders and cobbles stacked along its exterior north, south, and east edges. The western edge of the platform abuts a raised bedrock outcrop and the platform's surface is paved with small *'a'a* and *pāhoehoe* cobbles. Site 23683 is in a decent state of repair, although portions of the exterior walls have collapsed (Figure 45).

A metal site tag with the inscription "PHRI # 17" was found on the platform's surface indicating that this site had been designated as PHRI temporary site 2235-17 (Corbin and Rosendahl 2002). There was further evidence of a previously excavated 1 x 1 meter test unit located near the eastern edge of the platform (Figure 46). A PHRI letter report (Rosendahl 2002) indicated that Site 23683 had indeed been subject to burial testing in June of 2002 with negative results. However, the platform's formal attributes appeared so burial like (i.e. similar to other North Kona burial sites) that it was decided to re-evaluate the presence or absence of a burial within.



Figure 45. SIHP Site 23683 view to south.

A 1 x 1 meter test unit (TU-9) was excavated in the approximate center of the platform adjacent to the western edge of the previously excavated PHRI unit (see Figure 46). Excavation of TU-9 revealed that human skeletal remains were indeed present at Site 23683 (Figure 47). The excavation began with the removal of a 1.1-meter thick architectural layer, Layer I, consisting of small to large sized 'a'a and pāhoehoe cobbles. A single water worn cobble was observed in the northwest corner of the unit at the base of Layer I, but no other cultural material was present. Layer I rested on a dark brown (10YR 3/2) fine silt mixed with 'a'a gravels, Layer II. Approximately 10 centimeters below the surface of Layer II articulated human skeletal remains (oriented north/south) were encountered in the northeast corner of the unit. Upon discovery of the skeletal remains excavation of TU-9 immediately ceased. The remains, which were not moved from their original position, were stabilized and re-buried with the soil excavated from the unit. The architectural layer was then rebuilt on top of the burial, as close to its original specifications as possible, and DLNR-SHPD was notified of the discovery. As no habitation debris or any other cultural material was found at Site 23683 it is suggested that the platform was built solely as a burial monument subsequent to the interment of the deceased individual.

SIHP Site 23684

Site 23684 consists of a burial platform attached to the north side of a square enclosure located in the southwest corner of the project area (see Figure 4). The rectangular burial platform measures 7.0 meters long by 3.5 meters wide (Figure 48). It is constructed of neatly stacked 'a'a cobbles and boulders along its exterior edges (1.1 meters high) with small cobbles paving the roughly level surface (Figure 49). The northwest corner of the platform has collapsed, but otherwise the feature is in fairly stable condition. A single piece of branch coral was found amongst the rubble scatter in the northwest corner. The platform (and enclosure) may have been used for habitation purposes prior to the interment of the deceased individual at the site.

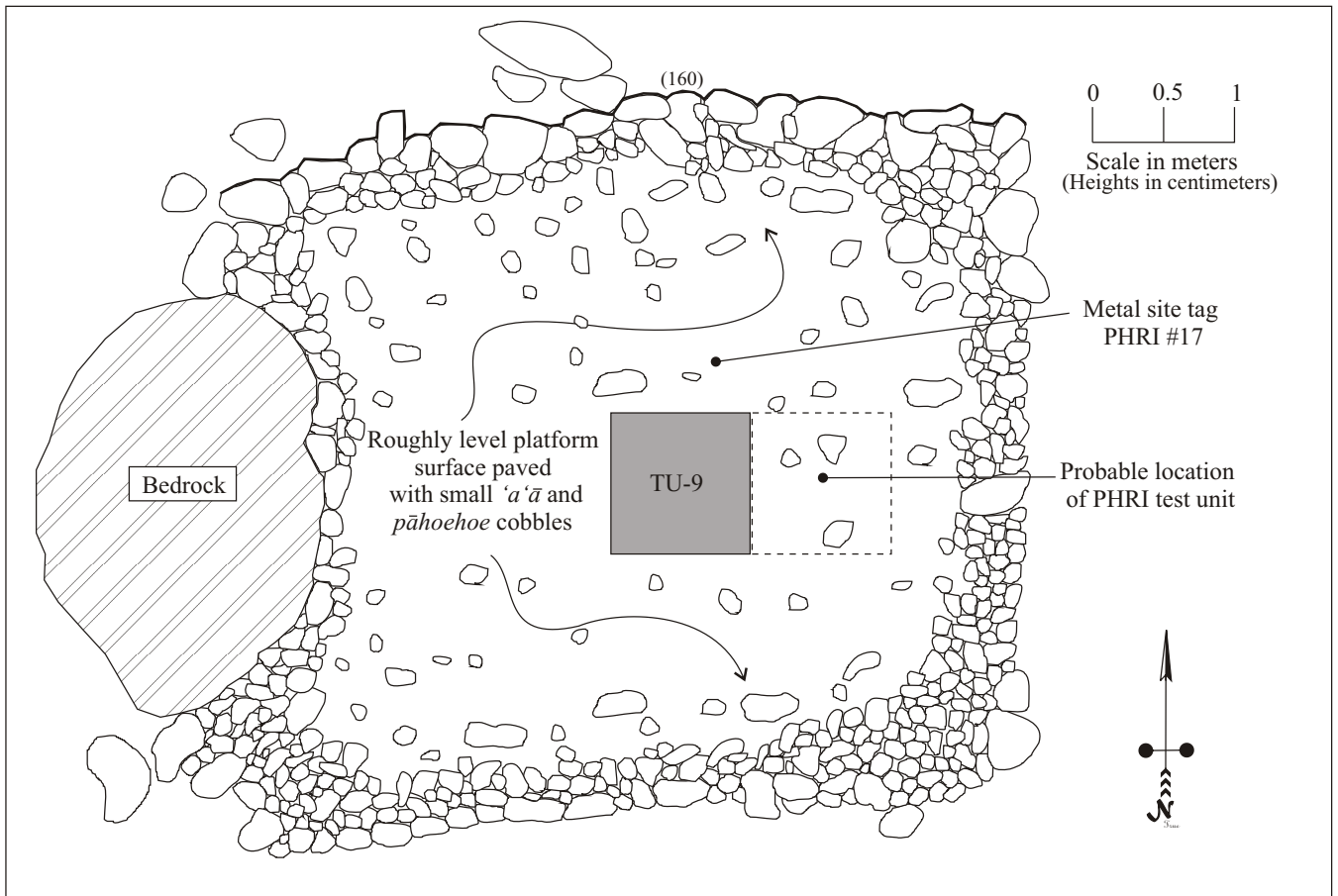


Figure 46. SIHP Site 23683 plan view.

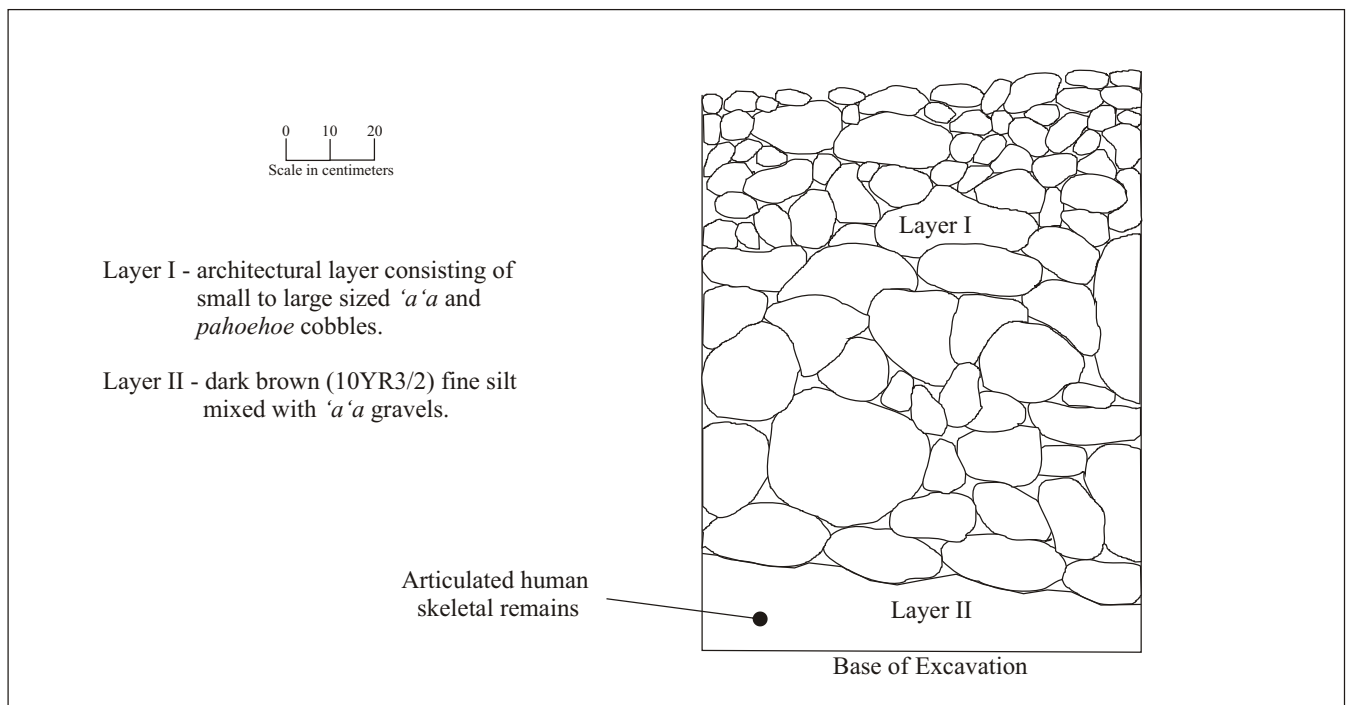


Figure 47. SIHP Site 23683 TU-9 east wall profile.

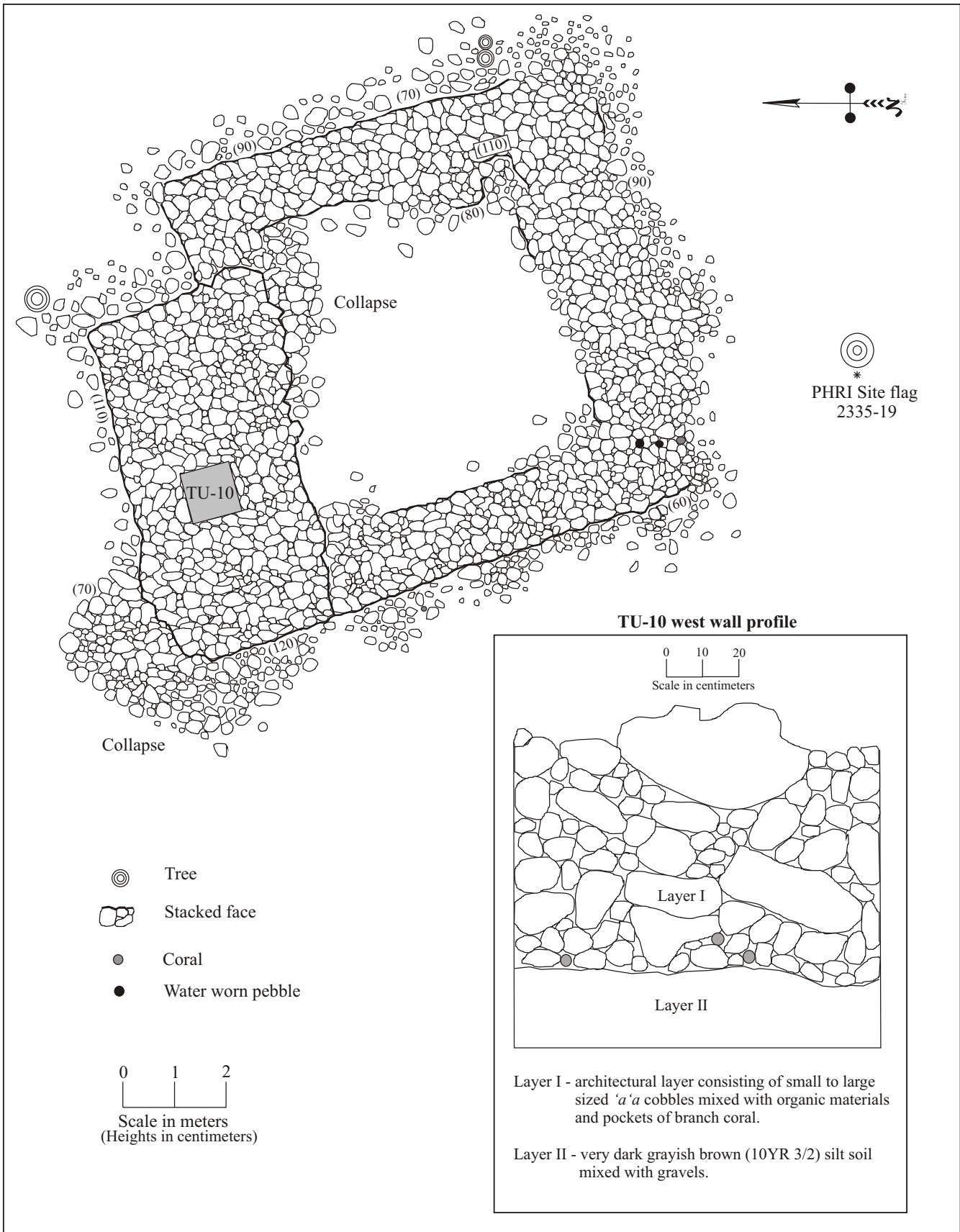


Figure 48. SIHP Site 23684 plan view and TU-10 profile.



Figure 49. SIHP Site 23684 view to north.

A square enclosure protrudes from the south edge of the platform (see Figure 48). The interior space created by the enclosure walls measures 5.6 meters by 5.6 meters, and consists of soil covered by dense vegetation. The enclosure walls measure approximately 1.5 meters wide and stand up to 1.25 meters high along the interior edge and 0.7 meters high along the exterior edge. They are constructed of stacked 'a'ā cobbles and boulders and are relatively intact with the exception of some collapse along the exterior southern edge. Two water worn pebbles and a rounded piece of coral were found on top of the wall in the south west corner of the enclosure. Although no test unit was excavated within the interior of the enclosure, it is possible that it contains burials.

A 1 x 1 meter test unit TU-10 was excavated in the central portion of the platform (see Figure 48). Excavation of TU-10 revealed two stratigraphic layers and confirmed the presence of human skeletal remains at Site 23684. The excavation began with the removal of a 70-centimeter thick architectural layer, Layer I, consisting of small to large sized 'a'ā cobbles mixed with organic materials. Pockets of branch coral were also found carefully cached within the architectural layer (Figure 50). Location and placement of the stones and coral were metrically recorded so that they could be returned to their appropriate places upon completion of the unit. Beneath the architectural layer was a very dark grayish brown (10YR 3/2) silt soil mixed with gravels (Layer II). Marine shells, coral and water worn pebbles were also noted in the soil. Five centimeters into the excavation of Layer II articulated human skeletal remains (a cranium) were encountered in the southeast corner of the unit. Upon discovery of the skeletal remains excavation of TU-10 immediately ceased. The remains, which were not moved from their original position, were stabilized and re-buried with the soil excavated from the unit. All artifacts recovered from the screen were returned to their rightful places. The architectural layer was then rebuilt on top of the burial, as close to its original specifications as possible, and DLNR-SHPD was notified of the discovery.



Figure 50. SIHP Site 23684 TU-10 architectural layer (Layer I) showing branch coral view to west.

SIHP Site 23685

Site 23685 consists of a burial feature located in the north-central portion of the project area (see Figure 4). The feature is a platform (3.8 meters long by 3.0 meters wide) constructed of formerly stacked, but now mostly collapsed *pāhoehoe* cobbles and boulders. It abuts a *pāhoehoe* bedrock outcrop along its northern up slope edge (Figure 51). The platform consists of boulders and cobbles forming a roughly circular monument with a slightly rounded top surface paved with small cobbles (Figure 52). The feature stands 0.95 meters above ground surface along its southern edge and 0.4 meters above the bedrock outcrop along its northern edge. Overall, Site 23685 has a very formal appearance.

A 1 x 1 meter test unit (TU-7) was excavated in the central portion of the feature along an upright *pāhoehoe* slab (see Figure 51). Excavation of TU-7 revealed three stratigraphic layers and confirmed the presence of human skeletal remains at Site 23685. The excavation began with the removal of a 30-centimeter thick architectural layer, Layer I, consisting of small to large sized *pāhoehoe* cobbles mixed with some organics. Layer I rested on and was incorporated into Layer II, a 30-centimeter thick brown (10YR 2/2) fine slightly sandy silt mixed with gravels. In the southeast corner of the unit a black (10YR 2/1) silt soil rich with charcoal (Layer III) was noted 14 centimeters below the base of Layer I, the remains of a possible hearth. Screened soil from this hearth feature yielded a small amount of marine shell, sea urchin, and *kukui*. In the southwest corner of the unit, 18 centimeters below the base of Layer I, articulated human skeletal remains, including a skull, mandible, and scapula were discovered under a large *pāhoehoe* boulder capstone. The burial appeared to be an intrusive pit excavated into the cultural soil, indicating that the individual was interred subsequent to the area being used as a habitation feature. Judging by the accumulated non-cultural soil on top of the hearth feature, the architectural layer may have been added as a monument after the individual was interred.

Upon discovery of the skeletal remains excavation of TU-7 immediately ceased. The remains, which were not moved from their original position, were stabilized and re-buried with the soil excavated from the unit. All artifacts recovered from the screen were returned to their rightful places and the capstone was replaced over the burial. The architectural layer was then rebuilt, as close to its original specifications as possible, and DLNR-SHPD was notified of the discovery.

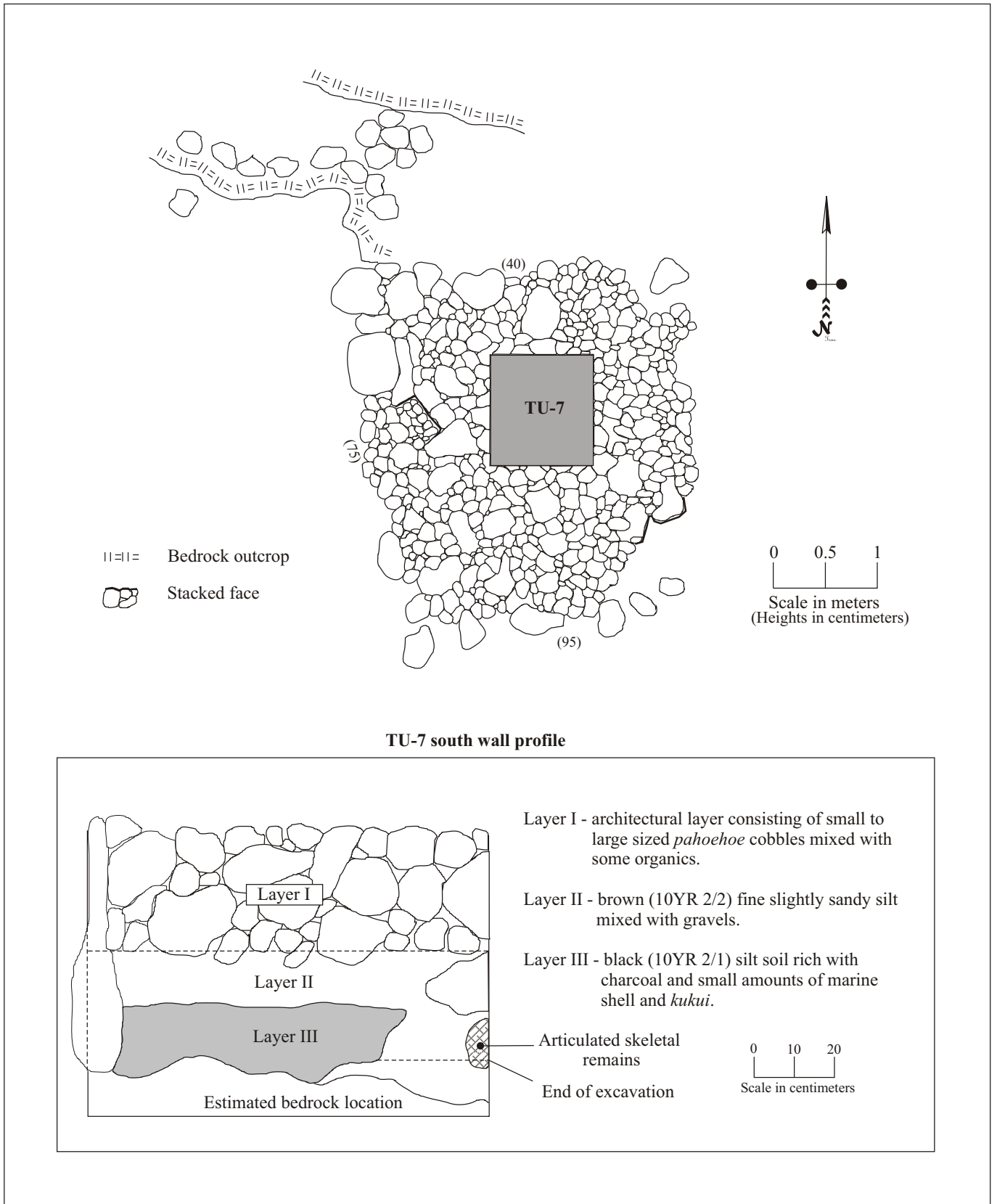


Figure 51. SIHP Site 23685 plan view and TU-7 profile.



Figure 52. SIHP Site 23685 view to east.

Agricultural Sites

SIHP Site 23686

Site 23686 consists of the entire archaeological agricultural landscape contained within the project area. The site encompasses 297 distinct agricultural features including 199 mounds (67.0%), 59 modified outcrops (19.6%), 22 terraces (7.4%), 7 enclosures (2.4%), 7 *kuaiwi* (2.4%), and 3 pavements (1.0%). These features stretch over the entire landscape but, by far, the greatest numbers are concentrated in the southeast quadrant of the project area. This area may have received less historic use, which would point to a higher number of preserved features in this area, rather than increased Precontact use of this portion of the project area. Features in the *makai* third to one half of the project area are constructed primarily of *pāhoehoe* while the *mauka* features are constructed primarily of 'a'ā, as dictated by the readily available source materials. A complete listing of the features at Site 23686 is shown in Table 8, and the locations of the features are shown on Figure 53.

Ten test units were excavated within a diverse range of features at a variety of elevations within Site 23686. All ten test units had one thing in common, they all yielded no cultural material. A description of the test units, along with a generalized discussion of feature types, using specific examples of the agricultural features, is presented below.



Figure 53. SHP Site 23686 Plan View.

Table 8. SIHP Site 23686 agricultural features.

<i>Feature #</i>	<i>Feature type</i>	<i>Attribute*</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Height (m)</i>	<i>Shape</i>
1	Mound	S/P	5.2	2.9	0.8	Irregular
2	Mound	S	2.8	2.7	0.8	Oval
3	Modified outcrop	S	4.3	2.2	1.8	Irregular
4	Modified outcrop	P	4.6	2.9	1.1	Linear
5	Modified outcrop	P	5.8	4.2	0.6	Irregular
6	Mound	P	5.0	2.1	0.4	Linear
7	Modified outcrop	P	4.4	3.6	0.6	Triangular
8	Mound	P	2.8	2.8	0.5	Circular
9	Modified outcrop	S	5.2	2.9	0.8	Irregular
10	Mound	P	2.0	1.5	0.5	Oval
11	Mound	P	3.9	1.8	0.8	Linear
12	Mound	P	3.7	2.1	0.7	Linear
13	Mound	P	3.8	2.7	0.9	Linear
14	Mound	P	2.7	2.7	0.7	Circular
15	Mound	P	3.5	3.0	1.0	Oval
16	Mound	P	2.3	2.3	0.8	Circular
17	<i>Kuaiwi</i>	P	38.7	2.0	0.8	Linear
18	Mound	P	2.7	2.4	0.7	Circular
19	Mound	P	2.1	0.9	0.9	Linear
20	Mound	P	3.1	1.9	0.9	Oval
21	Mound	P	2.7	1.6	1.0	Irregular
22	Mound	P	3.2	2.9	0.5	Rectangular
23	Mound	P	3.3	0.9	0.9	Linear
24	Mound	P	3.8	3.0	0.9	Irregular
25	Mound	P	3.1	2.5	0.5	Irregular
26	Modified outcrop	P	4.5	3.5	0.7	Irregular
27	Mound	P	2.1	2.1	0.7	Circular
28	Mound	P	3.5	2.0	0.4	Irregular
29	Mound	P	4.1	3.5	0.9	Oval
30	Mound	P	10.7	2.7	0.4	Linear
31	Mound	P/S	2.1	1.9	0.7	Irregular
32	Mound	P	1.8	1.6	0.6	Irregular
33	Mound	P	4.0	3.6	0.8	Oval
34	Mound	P	2.2	2.2	1.0	Circular
35	Enclosure	P	3.0	2.5	0.4	Oval
36	Modified outcrop	P/S	2.1	1.4	1.1	Irregular
37	Terrace	P	4.8	3.1	0.9	Linear
38	Mound	P	2.0	1.7	0.5	Oval
39	Mound	P	1.8	1.4	0.5	Oval
40	Mound	P	2.8	2.1	0.7	Oval
41	Mound	P	1.4	1.4	0.4	Circular
42	Mound	S	2.1	1.8	0.8	Irregular
43	Mound	P	1.9	1.8	0.5	Circular
44	Mound	P	2.3	2.0	0.5	Oval
45	Mound	P	2.3	1.5	0.5	Oval
46	Mound	P	3.2	1.0	0.4	Linear
47	Mound	P	2.5	1.9	0.6	Oval
48	Mound	P	2.6	2.0	0.4	Oval
49	Mound	P	2.3	1.9	0.5	Oval
50	Mound	P	3.2	2.1	0.5	Irregular
51	Mound	P	2.7	1.8	0.5	Irregular
52	Mound	P	1.3	1.3	0.6	Circular

*S=Stacked; P=Piled.

Table 8 continued on next page.

Table 8. Continued.

<i>Feature #</i>	<i>Feature type</i>	<i>Attribute*</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Height (m)</i>	<i>Shape</i>
53	Mound	P	4.4	2.9	0.6	Oval
54	Mound	P	1.8	1.3	0.4	Irregular
55	Mound	P	1.9	1.3	0.4	Rectangular
56	Mound	P	2.5	1.7	0.7	Oval
57	Mound	P	2.5	1.6	0.7	Linear
58	Mound	P	4.5	3.2	0.7	Irregular
59	<i>Kuaiwi</i>	P	18.6	1.1	0.4	Linear
60	Mound	P	1.4	1.4	0.6	Linear
61	Mound	P	3.3	1.5	0.7	Linear
62	Mound	P	2.1	2.1	0.3	Circular
63	Mound	P	1.7	1.0	0.5	Irregular
64	Mound	P	3.3	1.9	0.3	Oval
65	Mound	P	2.1	1.5	0.2	Oval
66	Mound	P	1.7	2.1	0.3	Circular
67	Mound	P	3.5	0.8	0.4	Linear
68	Mound	P	1.8	1.0	0.5	Circular
69	Mound	P	2.7	2.7	0.6	Circular
70	Mound	P	2.2	1.2	0.4	Oval
71	Mound	P	4.8	3.3	0.4	Irregular
72	Mound	P	1.9	1.5	0.8	Oval
73	Mound	P	1.9	1.9	0.4	Circular
74	Mound	P	1.7	1.7	0.3	Circular
75	Mound	P	2.1	1.4	0.6	Oval
76	Mound	P	1.3	1.3	0.5	Circular
77	Mound	P	1.9	1.2	0.3	Oval
78	Mound	P	1.8	1.1	0.5	Oval
79	Mound	P	1.4	1.4	0.4	Circular
80	Mound	P	3.2	1.4	0.7	Linear
81	Terrace	S	60.0	1.0	0.5	Linear
82	<i>Kuaiwi</i>	S	108.0	2.1	0.7	Linear
83	Mound	S	1.8	1.3	0.5	Circular
84	Mound	S	3.4	2.1	0.8	Rectangular
85	Mound	P	3.1	2.2	0.8	Oval
86	Mound	P	3.0	1.7	0.5	Oval
87	Mound	S	1.8	1.1	0.4	Rectangular
88	Mound	P	2.1	1.1	0.4	Oval
89	Mound	P	1.5	1.5	0.5	Circular
90	Mound	P	3.4	1.7	0.6	Linear
91	Mound	P	1.9	1.9	0.6	Circular
92	Mound	P	5.6	2.1	0.7	Linear
93	Mound	P	3.4	1.9	0.4	Rectangular
94	Mound	P	1.9	1.9	0.7	Circular
95	Mound	P	6.4	1.8	1.4	Crescent
96	Mound	P	2.6	1.2	0.7	Irregular
97	Mound	P	1.9	1.4	0.5	Oval
98	Mound	P	2.0	1.2	0.4	Rectangular
99	Mound	P	4.0	1.4	0.4	Linear
100	Mound	P	11.9	1.9	0.5	Circular
101	Mound	P	2.0	2.0	0.5	Circular
102	Mound	P	1.4	1.4	0.4	Circular
103	Mound	P	3.4	1.7	0.5	Irregular
104	Mound	P	1.6	1.1	0.4	Oval

*S=Stacked; P=Piled.

Table 8 continued on next page.

Table 8. Continued.

<i>Feature #</i>	<i>Feature type</i>	<i>Attribute*</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Height (m)</i>	<i>Shape</i>
105	Mound	P	2.4	2.4	0.4	Circular
106	Mound	P	1.7	1.7	0.4	Circular
107	Terrace	P	5.2	2.4	0.3	Linear
108	Mound	P	1.7	1.5	0.5	Irregular
109	Mound	P	1.7	1.2	0.5	Oval
110	Mound	P	1.6	1.6	0.5	Circular
111	Mound	P	1.8	1.2	0.5	Oval
112	Modified outcrop	P	3.6	2.3	0.8	Linear
113	Mound	P	2.8	1.8	0.6	Linear
114	Mound	P	2.2	1.5	0.3	Rectangular
115	Mound	P	2.1	2.0	0.5	Irregular
116	Mound	P	2.3	1.4	0.5	Oval
117	Mound	P	2.4	1.2	0.3	Oval
118	Terrace	P	7.0	0.7	0.6	L-shaped
119	Mound	P	2.8	1.9	0.4	Oval
120	Terrace	S	29.0	1.0	0.6	Linear
121	Mound	P	2.7	1.3	0.4	Oval
122	Mound	S	2.8	1.7	0.6	Oval
123	Mound	P	2.3	1.2	0.5	Linear
124	Mound	P	2.3	1.3	0.4	Oval
125	Mound	P	2.0	1.4	0.5	Oval
126	Mound	S	2.6	1.6	0.7	Rectangular
127	Mound	P	5.2	1.2	0.4	Linear
128	Mound	P	3.2	2.2	0.6	Oval
129	Mound	P	3.5	3.2	1.0	Oval
130	Modified outcrop	S	4.7	2.8	0.3	Linear
131	Mound	S	3.4	2.3	0.5	Triangular
132	Mound	P	1.8	1.3	0.8	Oval
133	Modified outcrop	P	2.2	2.0	0.7	Irregular
134	Mound	P	1.9	1.3	0.4	Oval
135	Modified outcrop	P	1.8	1.1	0.6	Irregular
136	Mound	P	2.3	1.9	0.6	Irregular
137	Modified outcrop	P	2.8	2.0	0.8	Rectangular
138	Mound	P	1.3	1.3	0.3	Circular
139	Modified outcrop	P	1.5	1.1	0.7	Oval
140	Mound	S	2.3	1.8	0.7	Irregular
141	Terrace	P	4.7	2.5	1.0	Rectangular
142	Mound	S	1.3	0.9	0.9	Oval
143	Terrace	P	3.6	1.8	0.8	Rectangular
144	Mound	P	2.6	2.1	0.8	Oval
145	Modified outcrop	P	1.8	2.1	0.7	Oval
146	Mound	P	2.6	2.2	0.6	Oval
147	Mound	P	3.7	1.6	0.5	Linear
148	Mound	P	2.3	1.2	0.6	Oval
149	Mound	P	2.0	2.0	0.7	Circular
150	Mound	P	4.4	2.5	0.6	Linear
151	Mound	P	1.4	1.4	0.3	Circular
152	Mound	P	4.9	3.2	0.7	Linear
153	Mound	P	1.4	0.8	0.3	Oval
154	Mound	P	3.6	2.3	0.7	Linear
155	Mound	P	1.5	1.0	0.4	Triangular
156	Mound	P	3.2	2.1	0.6	Oval

*S=Stacked; P=Piled.

Table 8 continued on next page.

Table 8. Continued.

<i>Feature #</i>	<i>Feature type</i>	<i>Attribute*</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Height (m)</i>	<i>Shape</i>
157	Mound	P	1.8	1.5	0.5	Circular
158	Mound	S	2.5	1.6	0.7	Oval
159	Mound	P	1.5	1.2	0.7	Oval
160	Mound	S	1.8	1.3	0.6	Irregular
161	Modified outcrop	S/P	6.0	3.0	1.4	Rectangular
162	Mound	P	1.3	1.3	0.6	Circular
163	Modified outcrop	P	12.2	1.1	1.1	Irregular
164	Modified outcrop	P	5.8	4.8	1.9	Rectangular
165	Mound	P	1.8	1.8	0.4	Irregular
166	Mound	P	3.2	1.7	0.8	Linear
167	Mound	P	1.3	1.3	0.4	Circular
168	Mound	S/P	5.7	3.9	0.9	Oval
169	Mound	P	2.2	1.6	0.7	Oval
170	Mound	P	1.3	1.3	0.5	Circular
171	Mound	P	2.2	1.7	0.8	Irregular
172	Mound	P	2.3	1.8	0.5	Oval
173	Mound	P	3.0	2.2	0.9	Oval
174	Mound	P	1.8	1.8	0.3	Circular
175	Modified outcrop	P	2.3	2.1	1.0	Irregular
176	Mound	P	1.1	1.0	0.5	Circular
177	Modified outcrop	P	2.9	2.6	0.6	Crescent
178	Mound	P	2.6	2.1	0.5	Irregular
179	Modified outcrop	P	1.4	2.3	0.4	Irregular
180	Mound	P	1.8	1.8	0.6	Circular
181	Mound	P	2.8	1.7	0.8	Irregular
182	Mound	P	2.2	2.2	0.5	Circular
183	Modified outcrop	S	6.7	5.3	0.8	Irregular
184	Mound	P	2.0	2.0	0.4	Circular
185	Terrace	P	17.0	0.6	0.9	Linear
186	Mound	S/P	2.6	1.4	0.9	Oval
187	Mound	S/P	3.0	1.7	0.8	Rectangular
188	Modified outcrop	P	3.5	2.7	1.0	Irregular
189	Mound	P	2.4	2.2	0.7	Irregular
190	Modified outcrop	S/P	3.9	2.3	0.9	Linear
191	Modified outcrop	P	4.4	2.1	0.8	Linear
192	Modified outcrop	S	2.5	1.8	0.8	Oval
193	Modified outcrop	P	9.2	3.1	1.1	Irregular
194	Mound	P	3.0	2.1	0.6	Oval
195	<i>Kuaiwi</i>	S/P	16.0	1.0	0.5	Linear
196	Modified outcrop	P	5.2	2.8	0.8	Linear
197	Mound	S/P	6.0	2.3	1.1	Rectangular
198	Modified outcrop	P	3.1	2.7	0.6	Irregular
199	Modified outcrop	P	6.5	4.8	0.7	L-shaped
200	Terrace	P	7.2	2.1	0.8	Crescent
201	Modified outcrop	S/P	6.2	3.8	0.7	Oval
202	Mound	P	2.1	2.1	0.6	Circular
203	Mound	P	3.4	2.8	0.8	Circular
204	Modified outcrop	S/P	3.4	2.7	0.7	Irregular
205	Modified outcrop	P	3.0	2.3	0.6	Irregular
206	Mound	S	2.3	2.3	0.6	Circular
207	Mound	S	3.2	3.2	0.8	Irregular
208	Modified outcrop	P	2.7	0.9	0.4	Linear

*S=Stacked; P=Piled.

Table 8 continued on next page.

Table 8. Continued.

<i>Feature #</i>	<i>Feature type</i>	<i>Attribute*</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Height (m)</i>	<i>Shape</i>
209	Modified outcrop	P	3.7	2.6	0.6	Oval
210	Modified outcrop	P	5.2	3.4	0.9	Irregular
211	Mound	P	3.6	2.8	0.8	Irregular
212	Terrace	P	5.2	1.4	0.5	Linear
213	<i>Kuaiwi</i>	P	50.2	1.8	0.7	Linear
214	Mound	S/P	2.6	2.1	0.9	Oval
215	Modified outcrop	S/P	10.3	3.9	1.7	Irregular
216	Mound	P	2.7	2.4	0.2	Circular
217	Modified outcrop	S	1.6	0.4	0.4	Linear
218	Modified outcrop	P	2.0	1.8	0.7	Oval
219	Modified outcrop	P	3.0	1.8	1.0	Irregular
220	Modified outcrop	S	1.8	1.0	1.5	Crescent
221	Mound	S/P	3.5	1.9	1.1	Irregular
222	Mound	P	3.6	2.7	1.0	Rectangular
223	Mound	P	2.5	2.0	0.8	Irregular
224	Mound	S/P	3.3	1.9	0.9	Rectangular
225	Mound	P	1.4	1.4	0.7	Circular
226	Mound	P	2.0	2.0	0.6	Circular
227	Mound	P	4.1	3.7	0.8	Irregular
228	Mound	P	2.3	2.1	1.0	Oval
229	Mound	S/P	4.3	2.0	0.9	Rectangular
230	Modified outcrop	P	3.4	2.3	0.9	Oval
231	Modified outcrop	P	2.3	2.0	0.7	Irregular
232	Modified outcrop	P	1.9	1.7	0.9	Oval
233	Mound	P	2.3	1.7	0.8	Irregular
234	Mound	S/P	2.0	1.7	1.0	Irregular
235	Modified outcrop	S/P	3.9	1.9	1.0	Irregular
236	Modified outcrop	S/P	2.1	1.6	1.1	Irregular
237	Terrace	S/P	6.0	4.0	2.1	Rectangular
238	Modified outcrop	P	3.4	2.8	1.0	L-shaped
239	Modified outcrop	S/P	4.0	2.5	0.7	Rectangular
240	Mound	P	2.5	2.1	0.8	Circular
241	Mound	P	4.4	3.1	1.0	Irregular
242	Modified outcrop	S/P	3.4	2.2	0.8	Irregular
243	Terrace	S/P	11.8	7.9	0.9	Crescent
244	Terrace	S/P	9.0	5.6	0.7	Linear
245	Modified outcrop	S/P	13.9	7.8	1.7	Irregular
246	Mound	S/P	2.2	1.0	0.6	Irregular
247	Terrace	S/P	11.0	2.6	0.9	Linear
248	Modified outcrop	P	3.5	1.9	0.7	Irregular
249	Mound	P	4.1	2.3	0.6	Oval
250	Pavement	P	2.5	1.8	0.5	Rectangular
251	Enclosure	P	12.5	11.5	0.6	Rectangular
252	<i>Kuaiwi</i>	P	38.0	2.3	0.8	Linear
253	Terrace	S/P	15.0	2.5	0.7	Linear
254	Terrace	S/P	20.0	2.7	0.8	Linear
255	Mound	P	9.5	2.8	0.8	Linear
256	Mound	P	1.5	1.4	0.5	Circular
257	Mound	S/P	2.9	2.1	0.6	Rectangular
258	Mound	P	1.2	1.0	0.5	Oval
259	Mound	P	2.8	1.2	0.6	Rectangular
260	Mound	S	3.3	2.3	1.2	Triangular

*S=Stacked; P=Piled.

Table 8 continued on next page.

Table 8. Continued.

<i>Feature #</i>	<i>Feature type</i>	<i>Attribute*</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Height (m)</i>	<i>Shape</i>
261	Mound	S	5.1	3.0	1.2	Oval
262	Mound	S	3.4	1.7	1.2	Irregular
263	Mound	S/P	4.2	2.2	1.4	Oval
264	Terrace	S/P	36.0	2.1	0.7	Linear
265	Terrace	P	5.2	1.4	0.4	Linear
266	Mound	S	2.4	1.2	0.7	Rectangular
267	Terrace	S/P	5.0	5.0	1.0	L-shaped
268	Modified outcrop	P	3.1	2.1	0.9	Irregular
269	Terrace	S/P	22.5	1.8	0.8	Linear
270	Enclosure	S/P	11.0	9.5	0.9	U-shaped
271	Mound	S	2.9	2.5	0.9	Rectangular
272	Modified outcrop	P	4.6	4.5	0.7	Oval
273	Modified outcrop	P	5.5	3.0	1.1	Irregular
274	Mound	P	4.0	2.5	1.0	Oval
275	Modified outcrop	S/P	5.0	4.5	1.2	Oval
276	Mound	P	2.7	1.4	0.8	Linear
277	Mound	S/P	5.0	2.7	0.9	Oval
278	Mound	P	3.2	2.4	0.9	Oval
279	Enclosure	S/P	3.5	2.6	0.7	Oval
280	Mound	P	2.2	2.2	0.6	Circular
281	Modified outcrop	P	6.4	4.3	1.0	L-shaped
282	Pavement	P	12.5	8.5	0.2	Rectangular
283	Mound	P	7.4	1.7	0.8	Linear
284	Mound	P	4.5	2.9	0.7	Irregular
285	Mound	S/P	5.0	1.3	0.8	Linear
286	Terrace	P	16.0	1.8	0.6	Irregular
287	Modified outcrop	S/P	3.5	1.7	0.9	Irregular
288	Modified outcrop	P	3.0	1.1	0.8	Crescent
289	Pavement	P	9.0	5.5	0.2	Irregular
290	Terrace	S/P	11.0	6.5	0.8	Crescent
291	<i>Kuaiwi</i>	P	78.0	3.5	0.3	Linear
292	Modified outcrop	P	5.6	4.7	0.9	Rectangular
293	Enclosure	P	1.9	1.9	0.5	Square
294	Enclosure	P	2.2	2.2	0.6	Square
295	Enclosure	P	5.5	3.4	0.5	U-shaped
296	Mound	P	2.3	1.3	0.7	Oval
297	Modified outcrop	S/P	4.5	4.0	0.7	Oval

*S=Stacked; P=Piled.

End of Table 8.

Mounds

A mound is collection of stones with an irregular surface. Mounds range considerably in size, shape, method of construction, and type of stone used. They are constructed from as few as four stones or as many as the topography and the effort of the individual(s) constructing them allow. The shape of a mound (i.e. oval, round, linear, curvilinear, square, crescent, rectangular, or irregular) varies considerably depending on the terrain and the individual (purpose of construction). However, all mounds, as dictated by gravity, have sloped sides. Mounds are either piled or stacked, or a combination of both. Stacked mounds usually contain a fill of piled stones with an outside layer stacked around the edges. The type of stone used in mound construction is a reflection of the immediately available source material. The size of stone used is also a function of material availability.

This type of feature has a different function depending on its temporal and spatial associations. Mounds can be clearing features, planting features, or landscape markers. The functional distinction between types of mounds is contextual rather than formal. Mounds found in clusters on barren lava are considered to be planting features. Mounds found in clusters around rock-free areas of plentiful soil are considered to be clearing features. Testing of mounds during the data recovery phase of this project will address the question of formal variation between presumed planting and clearing features.

Nearly two hundred mounds were recorded within the project area (see Table 8 and Figure 53). The mounds varied immensely in size, shape, and formal attributes. Five mounds (Features 187, 189, 262, 266, 271), ones that appeared to have the most time invested in their construction, underwent subsurface testing in the form of 1 x 1 meter test units. The results are presented below.

Feature 187 is a partially stacked rectangular shaped *pāhoehoe* cobbles mound located in the extreme western end of the project area. The mound rests on exposed bedrock. Its edges are mostly stacked, but have collapsed in small sections (Figure 54). Feature 187 measures 3.0 meters long by 1.7 meters wide and 0.8 meters tall. Its surface slopes slightly to the north following the natural bedrock contours.



Figure 54. SIHP Site 23686 Feature 187 view to southeast.

A 1 x 1 meter test unit (TU-1) was excavated into the north-central portion of Feature 187 (Figure 55). Excavation of TU-1 revealed a single architectural layer (Layer I) resting on bedrock. Layer I consisted of small to medium sized *pāhoehoe* cobbles mixed with some organics. This layer rested directly on bedrock and at the base of the layer a single piece of a water rounded coral was discovered. Along the unit's northern edge, a small amount of brown (10YR 4/3) sandy silt (less than 1 centimeter thick) had accumulated subsequent to the feature's construction. No cultural material (with the exception of the coral fragment) was recovered from TU-1 and the excavation terminated at bedrock (Figure 56).

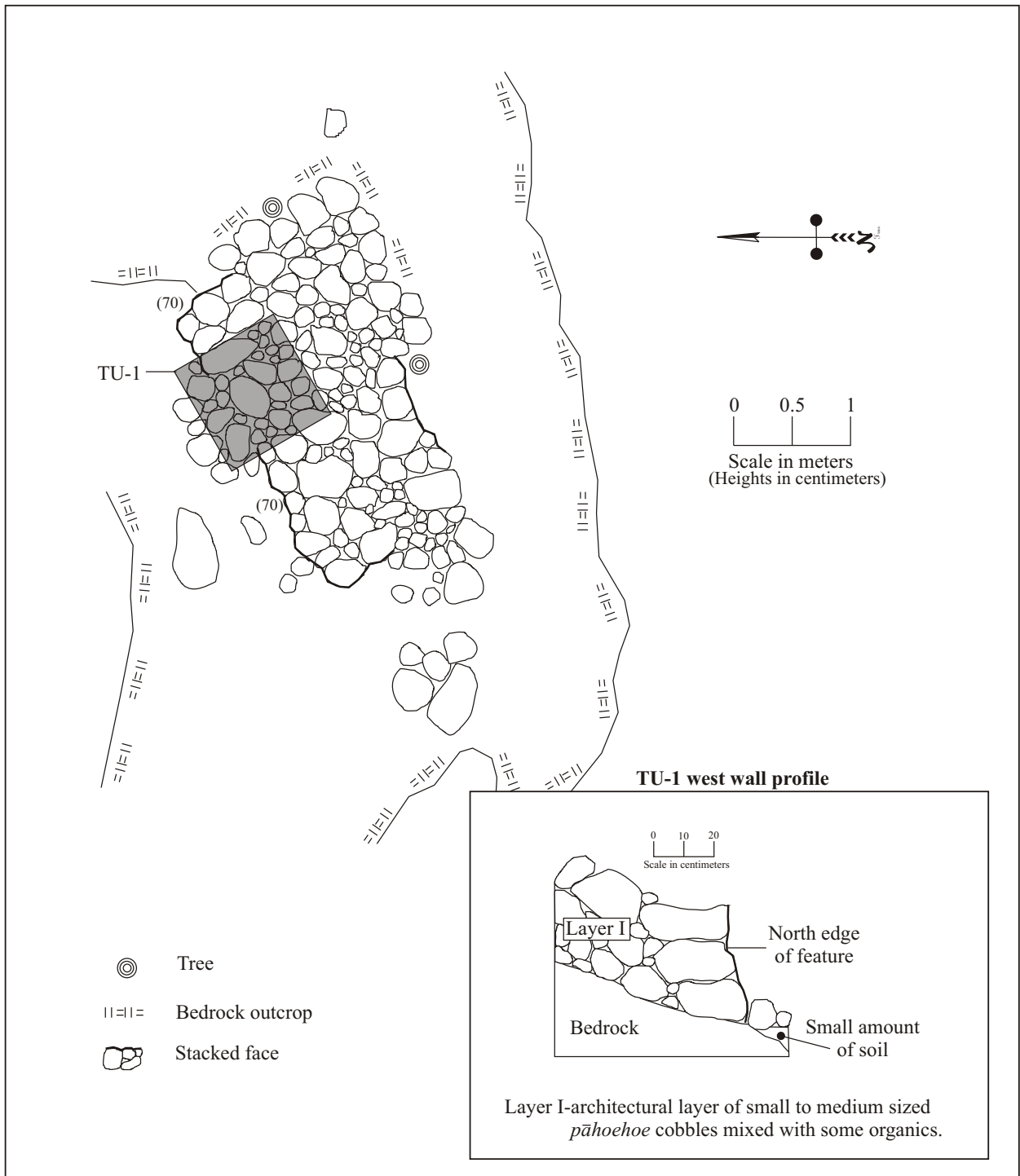


Figure 55. SIHP Site 23686 Feature 187 plan view and TU-1 profile.



Figure 56. SIHP Site 23686 Feature 187 TU-1 base of excavation view to southwest.

Feature 189 is a piled irregular shaped *pāhoehoe* cobble mound located in the extreme western end of the project area (see Figure 53). The mound rests on exposed bedrock and may have been formerly stacked around its edges, but is now largely collapsed (Figure 57). In its current condition Feature 189 measures 2.4 meters long by 2.2 meters wide and 0.7 meters tall. A small rounded piece of coral was found resting on the feature's southwest corner (Figure 58).



Figure 57. SIHP Site 23686 Feature 189 view to northeast.

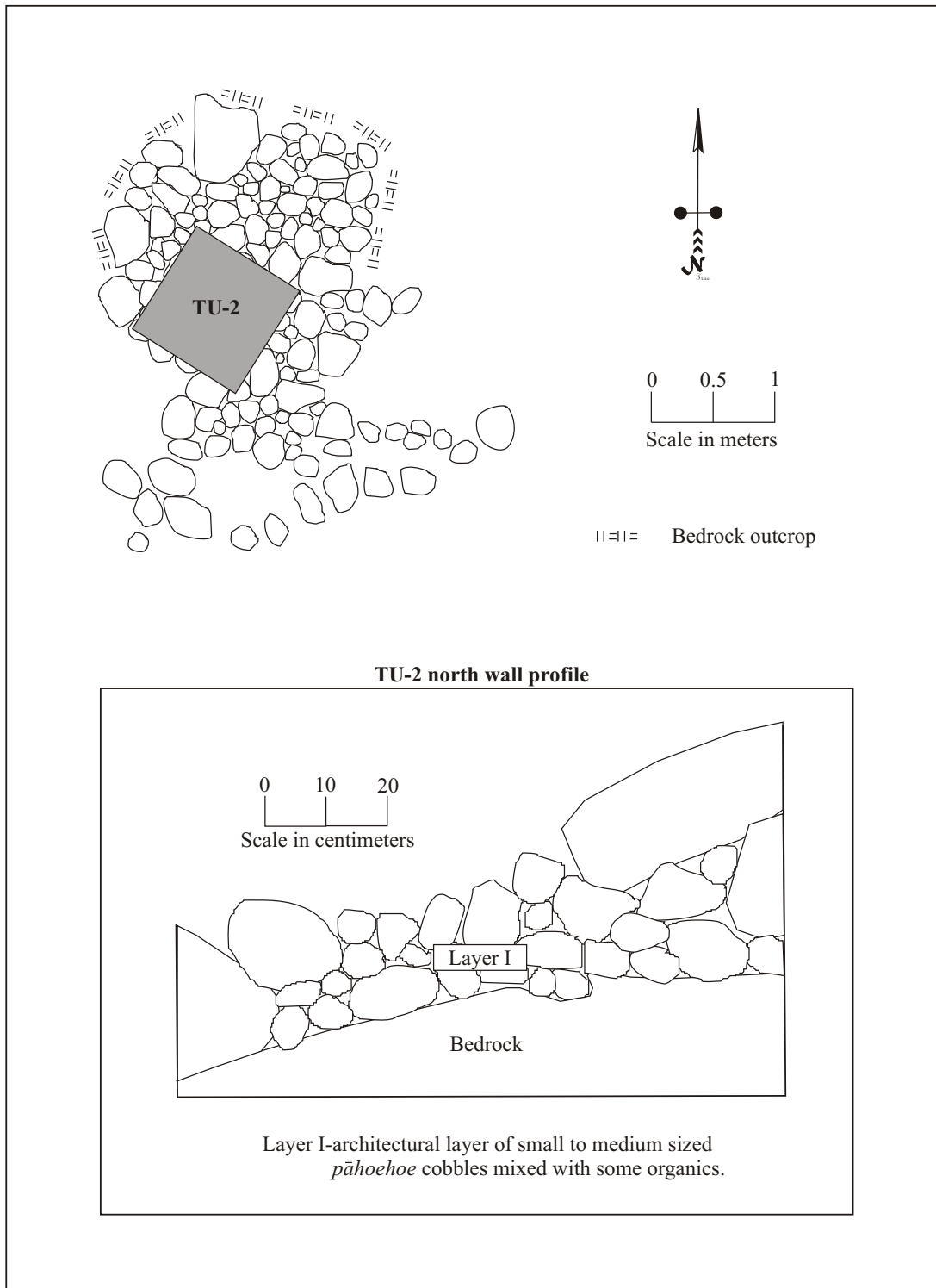


Figure 58. SIHP Site 23686 Feature 189 plan view and TU-2 profile.

A 1 x 1 meter test unit (TU-2) was excavated into the central portion of Feature 189 (see Figure 58). Excavation of TU-2 revealed a single architectural layer (Layer I) resting on bedrock. Layer I consisted of small to medium sized *pāhoehoe* cobbles mixed with some organics. This layer rested directly on bedrock. However, along its southwestern edge, in a bedrock depression (Figure 59), a small amount of brown (7.5YR 3/4) fine silt (less than 1 centimeter thick) had accumulated subsequent to the feature's construction. No cultural material of any kind was recovered from TU-2 and the excavation terminated at bedrock.



Figure 59. SIHP Site 23686 Feature 189 TU-2 base of excavation view to northeast.

Feature 262 is an irregular shaped mound constructed of stacked *'a'ā* cobbles located in the southeast quadrant of the project area along the north side of Feature 82, a *kuaiwi* (see Figure 53). The mound measures 3.4 meter long by 1.7 meters wide and up to 1.25 meters tall (Figure 60). It has a squared north side and a slightly rounded south side with a rounded top surface (Figure 61). Feature 262 rests on a soil ground surface covered by dense vegetation.

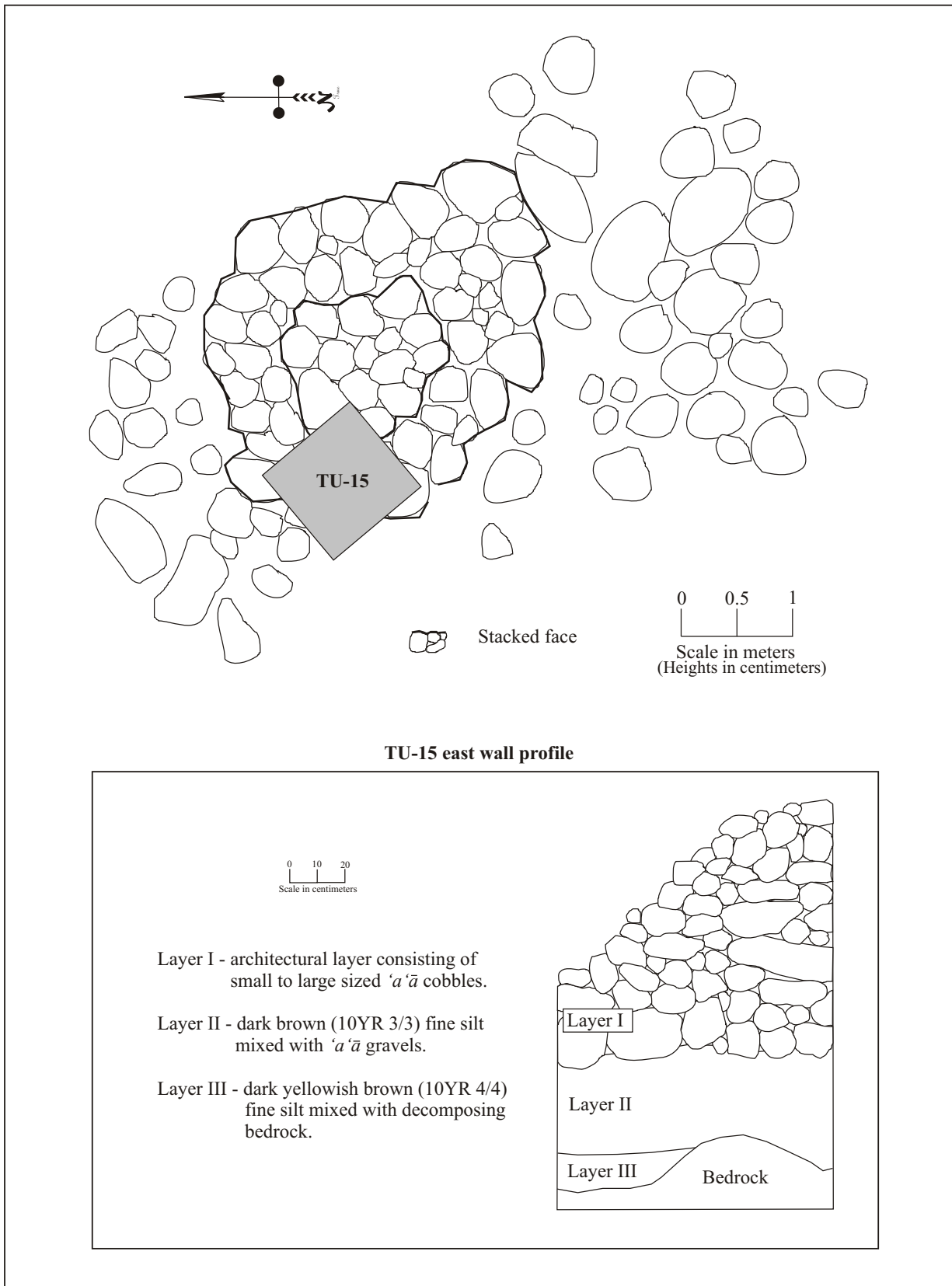


Figure 60. SIHP Site 23686 Feature 262 plan view and TU-15 profile.



Figure 61. SIHP Site 23686 Feature 262 view to east.

A 1 x 1 meter test unit TU-15 was excavated in the northwest corner of Feature 262 (see Figure 60). Excavation of TU-15 revealed a three-layer stratigraphic profile. Layer I, the 92-centimeter thick architectural layer, consisted of small to large sized 'a'ā cobbles stacked along the exterior edges of the feature and piled within the interior. Layer I rested on Layer II, a 49-centimeter thick dark brown (10YR 3/3) fine silt mixed with 'a'ā gravels. Layer II rested on bedrock in the southern portion of TU-15 and Layer III in the northern portion. Layer III consisted of dark yellowish brown (10YR 4/4) fine silt mixed with decomposing bedrock 12 centimeters thick. Excavation of TU-15 terminated at bedrock 147 centimeters below the feature's surface. No cultural material was recovered from TU-15.

Feature 266 is a stacked 'a'ā cobble mound located in the southeast quadrant of the project area amongst a number of less formal mounds (see Figure 53). This mound, which is roughly rectangular in shape, measures 2.4 meters long by 1.2 meters wide and stands up to 0.7 meters above the surrounding soil ground surface (Figure 62). The west end of the feature is neatly stacked and an 'a'ā slab (70 centimeters long) had been placed upright at the eastern end of the feature (Figure 63).

A 1 x 1 meter test unit (TU-19) was excavated within the center of Feature 266. Excavation of TU-19 revealed a two-layer stratigraphic profile resting on bedrock. The upper most layer (Layer I), the architectural layer, consisted of small to large sized 'a'ā cobbles mixed with organics. The 48-centimeter thick Layer I was roughly size sorted with large cobbles on top and smaller cobbles beneath resting on and incorporated into Layer II (Figure 64). Layer II consisted of a dark grayish brown (10YR 3/2) silt containing approximately 50 percent gravel. This 19-centimeter thick layer rested on undulating bedrock. Excavation of TU-19 terminated at bedrock 67 centimeters below the feature's surface. No cultural material was recovered from TU-19.

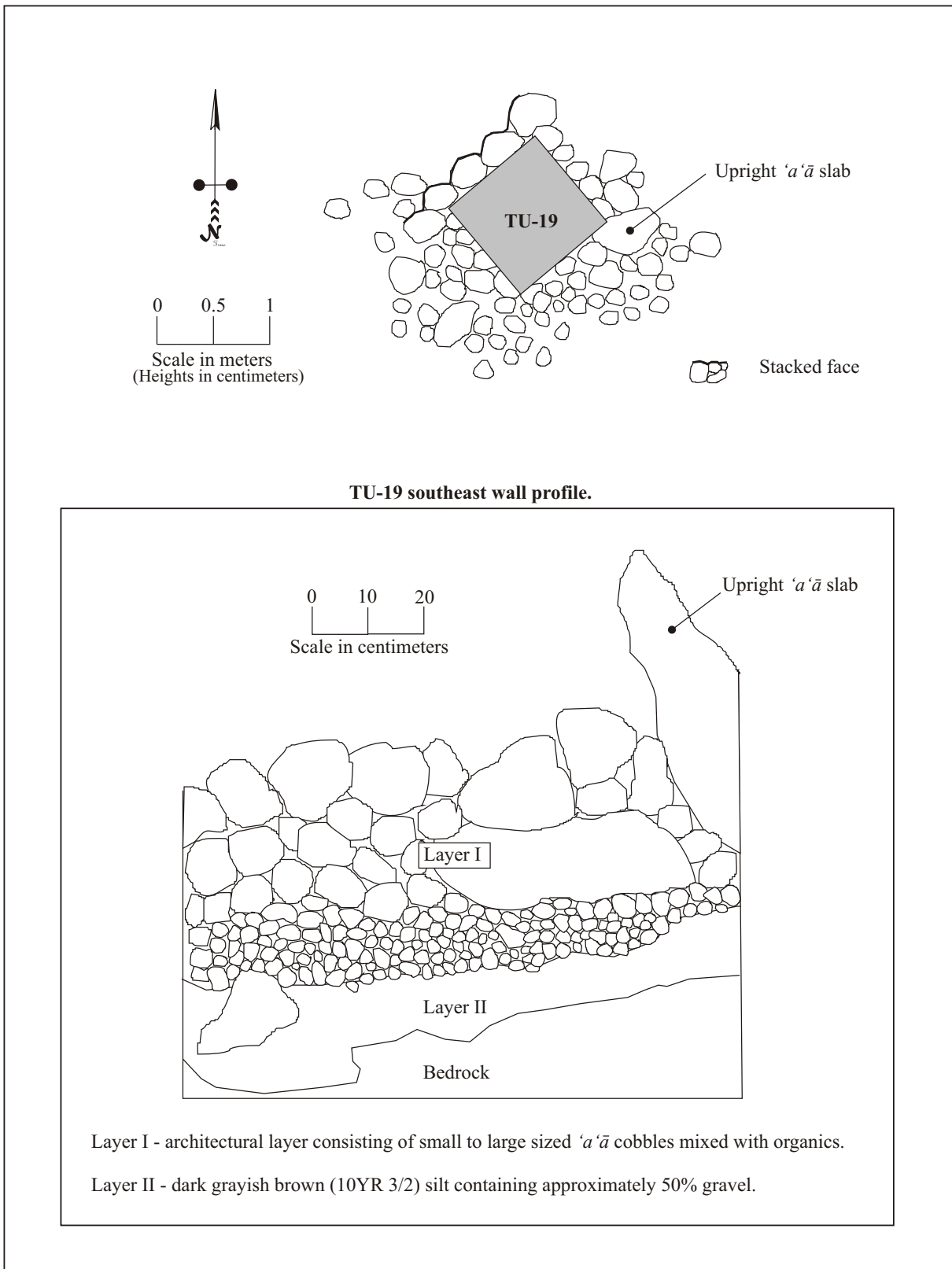


Figure 62. SIHP Site 23686 Feature 266 plan view and TU-19 profile.



Figure 63. SIHP Site 23686 Feature 266 view to east.



Figure 64. SIHP Site 23686 Feature 266 TU-19 base of excavation view to northeast.

Feature 271 is a stacked 'a'ā cobble mound located in the southeast quadrant of the project area along the southern property boundary amongst a number of less formal mounds (see Figure 53). The mound, which is roughly rectangular in shape, measures 2.9 meters long by 2.5 meters wide and stands up to 0.9 meters above the surrounding soil ground surface (Figure 65). An aluminum site tag with the inscription "PHRI Site T2235-10" was found on the surface of the feature and there was evidence that a 1 x 1 meter test unit had been previously excavated at Feature 271. A fragment of water-rounded coral was discovered along the eastern edge of the mound and three coconut husks were resting on its northeast corner.



Figure 65. SIHP Site 23686 Feature 271 view to southeast.

A 1 x 1 meter test unit (TU-21) was excavated in the northeast corner of Feature 271 adjacent to the north edge of the previously excavated PHRI test unit (Figure 66). Excavation of TU-21 revealed a single architectural layer (Layer I) resting on bedrock. Layer I consisted of small to large sized 'a'ā cobbles mixed with organics 61 centimeters thick resting on bedrock. A small amount of soil (approximately 2 centimeters thick) had accumulated in the southwest corner of the unit on top of the bedrock subsequent to the construction of the feature. Excavation of TU-21 terminated at bedrock 61 centimeters below the feature's surface and no cultural material was recovered from Feature 271.

Modified Outcrops

A modified outcrop is a natural bedrock formation with an associated collection of stones placed against and supported by it. Unlike a mound, the stone collection is not freestanding and depends on the bedrock formation for support. The type and size of the stones used is a function of the immediately available source materials. The stones are either stacked, piled, or a combination of both, but the size of the stone collection must be significantly smaller than the size of the bedrock formation, otherwise the feature is considered a mound. The surface of a modified outcrop is always irregular with sloped sides and incorporated bedrock. Occasionally, if the stones are stacked against a vertical bedrock formation, the stacked edges will also approach vertical.

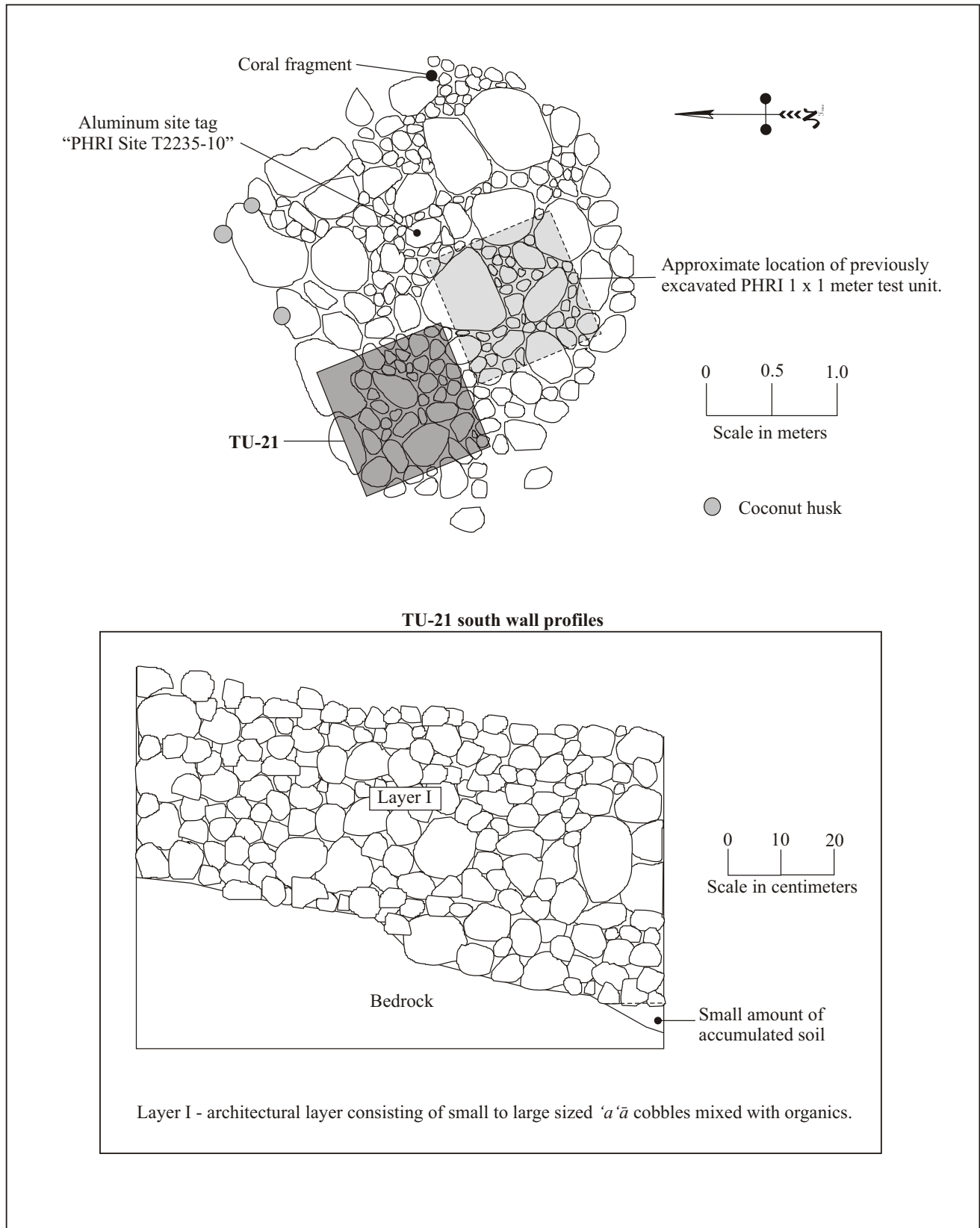


Figure 66. SIHP Site 23686 Feature 271 plan view and TU-21 profile.

Bedrock outcrops, once modified, functioned as clearing features, planting features, or temporary habitation features. Temporary habitations are defined based on the presence of faunal remains and a level and/or paved surface. Clearing features are defined based on the presence of rocks piled on an outcrop in an area free of stones with ample soil. Planting features are defined based the presence of piled or stacked rocks on an outcrop in areas of no soil. The modified outcrops identified as part of this study are considered either planting or clearing features. No modified outcrop temporary habitations were discovered within the project area.

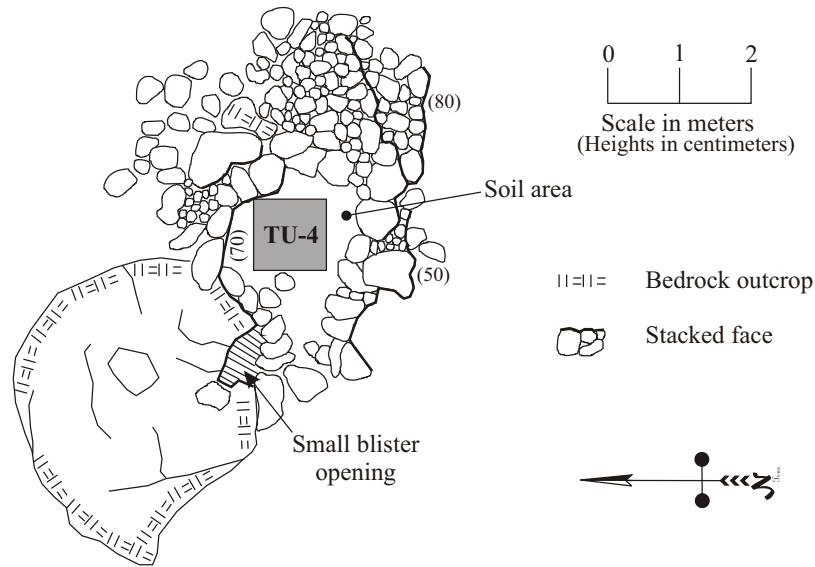
Fifty-nine modified outcrops were recorded within the project area (see Table 8 and Figure 53). The modified outcrops varied immensely in size, shape, and formal attributes. Five modified outcrops (Features 183, 201, 204, 239, and 297), ones that appeared to have the most time invested in their construction, underwent subsurface testing in the form of 1 x 1 meter test units. The results are presented below.

Feature 183 is a modified *pāhoehoe* outcrop located in the extreme northwestern portion of the project area (see Figure 53). The feature measures 6.7 meters long by 5.3 meters wide and stands up to 0.8 meters above the surrounding ground surface. It consists of *pāhoehoe* cobbles and boulders stacked along the south and east edges of an elongated bedrock outcrop stretching to the west (Figure 67). The central portion of the feature, on top of the outcrop, consists of a soil area (2 meters in diameter) cleared of cobbles possibly used for planting. Along the west edge of the soil area is a small blister opening that measures 48 centimeters from floor to ceiling and 60 centimeters deep. No cobble modification was evident around the blister. The feature is most likely constructed from the remains of a larger collapsed blister.

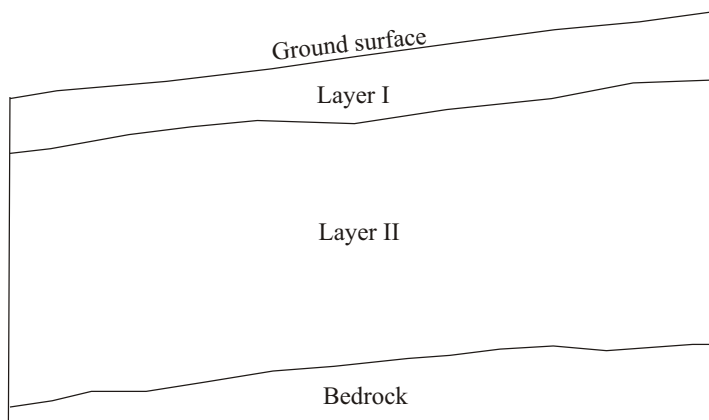
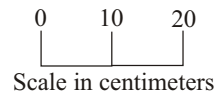


Figure 67. SIHP Site 23686 Feature 183 view to northwest.

A 1 x 1 meter test unit (TU-4) was excavated in the cleared soil area at the center of Feature 183 (Figure 68). Excavation of TU-4 revealed a two-layer stratigraphic soil profile resting on bedrock. Layer I, the uppermost layer, consisted of a 10-centimeter thick very dark grayish brown (10YR 3/2) topsoil mixed with decaying organics and grass roots. This layer rested on Layer II, a dark yellowish brown (10YR 4/3) fine silt mixed with decomposing bedrock at its base. Layer II was 35 centimeters thick and terminated at bedrock 45 centimeters below the surface of TU-4. No cultural material of any kind was recovered Feature 183, but it is suggested that the feature was utilized as a planting area.



TU-4 east wall profile



Layer I - very dark grayish brown (10YR 3/2) topsoil mixed with decaying organics.

Layer II - dark yellowish brown (10YR 4/3) fine silt mixed with decomposing bedrock at its base.

Figure 68. SIHP Site 23686 Feature 183 plan view and TU-4 profile.

Feature 201 is a modified *pāhoehoe* outcrop located in the northwestern quadrant of the project area along the northern property boundary (see Figure 53). The feature consists of formerly stacked *pāhoehoe* cobbles and boulders, now partially collapsed, supported by a bedrock outcrop to the east (Figure 69). Feature 201 is roughly oval in shape and measures 6.2 long by 3.8 meters wide and stands up to 0.7 meters high along its western edge. The surface of the feature is roughly leveled and paved with small *pāhoehoe* cobbles.



Figure 69. SIHP Site 23686 Feature 201 view to east.

A 1 x 1 meter test unit (TU-5) was excavated in the central portion of Feature 201 (Figure 70). Excavation of TU-5 revealed a two-layer stratigraphic profile resting on undulating bedrock. Layer I, the 25 to 40-centimeter architectural layer, consisted of small to large sized *pāhoehoe* cobbles. This layer rested on and was incorporated into Layer II, a dark brown (10YR 3/3) silt mixed with organics 15 centimeters thick. Layer II most likely accumulated after the construction of the feature as it is only present at low spots within the bedrock. Excavation of TU-5 terminated at bedrock 35 to 50 centimeters below the feature's surface. No cultural material was recovered from Feature 201, and it is suggested that this feature was a by-product of agricultural clearing in the area.

Feature 204 is a modified *pāhoehoe* outcrop located in the northwestern quadrant of the project area (see Figure 53). The feature has an irregular shape and may have been formerly stacked, but is now mostly collapsed (Figure 71). Some remnant *pāhoehoe* cobble stacking still remains along its southwestern edge and the northeastern edge abuts the bedrock outcrop. The surface of the feature, which has evidence of protruding bedrock, is roughly leveled and paved with small *pāhoehoe* cobbles (Figure 72). A water worn cobble was found on the feature's surface adjacent to the bedrock outcrop. Feature 204 measures 3.4 meters long by 2.7 meters wide and stands 0.7 meters high along its western edge.

A 1 x 1 meter test unit (TU-6) was excavated in the west-central portion of Feature 204 (see Figure 71). Excavation of TU-6 revealed a two-layer stratigraphic profile resting on bedrock. Layer I consisted of small to large sized *pāhoehoe* cobbles mixed with organics up to 18 centimeters thick. A small amount of soil (approximately 1 to 5 centimeters thick) had accumulated in low-lying bedrock pockets subsequent to the construction of the feature (Layer II) at the base of Layer I. This soil was a dark brown (10YR 3/3) silt mixed with organics and, like Layer I, rested on bedrock. Excavation of TU-6 terminated at bedrock 25 centimeters below the unit's surface. No cultural material was recovered from Feature 271.

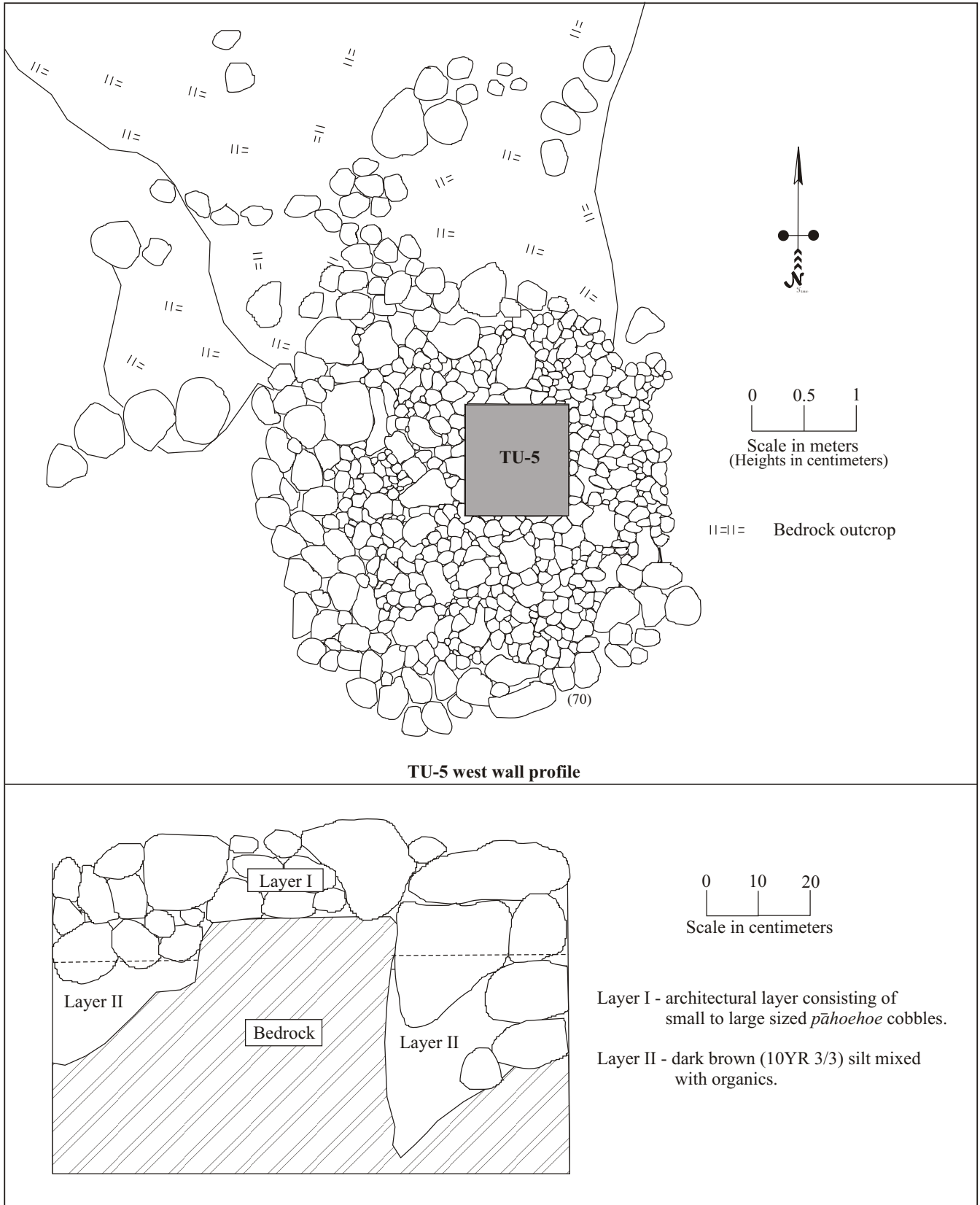


Figure 70. SIHP Site 23686 Feature 201 plan view and TU-5 profile.

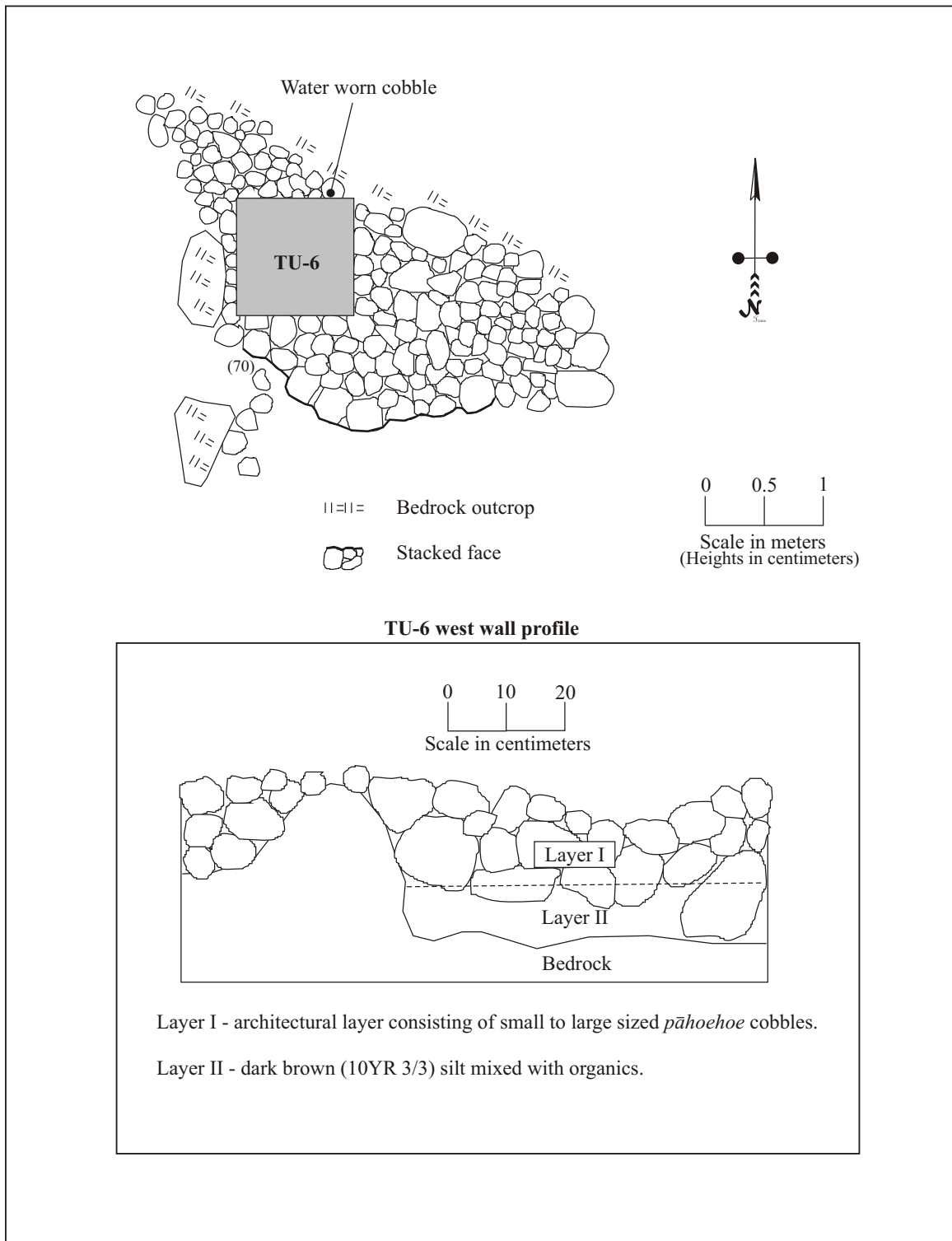


Figure 71. SIHP Site 23686 Feature 204 plan view and TU-6 profile.



Figure 72. SIHP Site 23686 Feature 204 view to west.

Feature 239 is a modified 'a'ā outcrop centrally located within the project area amongst a number of other agricultural features (see Figure 53). The feature, which is roughly rectangular, measures 4.0 meters long by 2.5 meters wide and stands up to 0.7 meters high along its southern edge. The southern and western edges consist of stacked 'a'ā cobbles and boulders (Figure 73). The eastern edge is completely collapsed and the bedrock outcrop supports the northern edge of the feature (Figure 74). The surface of feature 239 is roughly paved and leveled with small 'a'ā cobbles.



Figure 73. SIHP Site 23686 Feature 239 view to north.

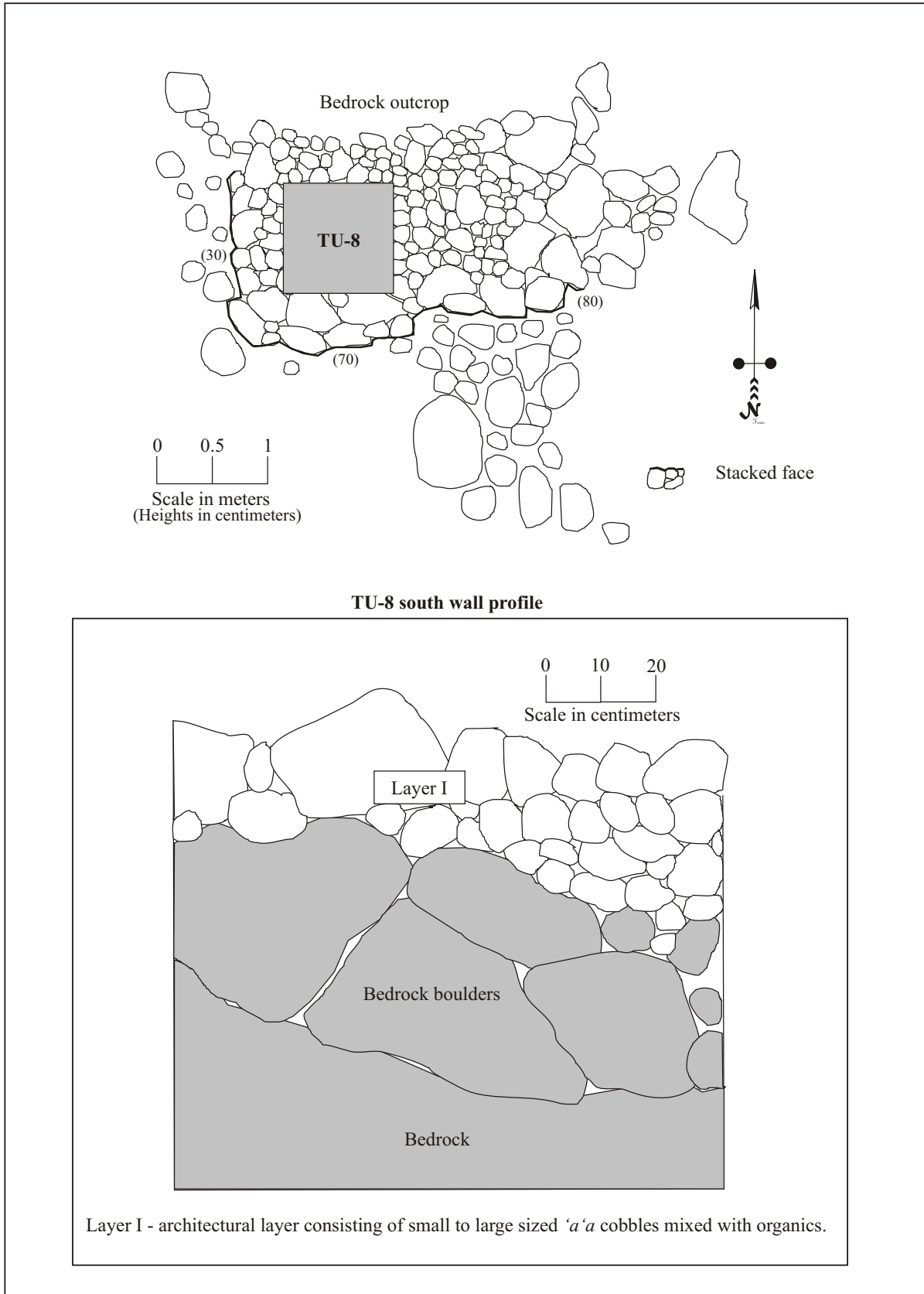


Figure 74. SIHP Site 23686 Feature 239 plan view and TU-8 profile.

A 1 x 1 meter test unit (TU-8) was excavated in the west-central portion of Feature 239 (see Figure 74). Excavation of TU-8 revealed a single architectural layer (Layer I) resting on bedrock. Layer I consisted of small to large sized 'a'ā cobbles mixed with organics 55 centimeters thick resting on bedrock and mixed with fractured bedrock boulders. A small amount of soil (approximately 1 to 2 centimeters thick) had accumulated at the base of the unit within low-lying bedrock areas subsequent to the construction of the feature. Excavation of TU-8 terminated at bedrock 55 centimeters below the feature's surface (Figure 75). No cultural material was recovered from Feature 239 and it is suggested that this feature may be a by-product of agricultural clearing in the area.



Figure 75. SIHP Site 23686 Feature 239 TU-8 base of excavation view to south.

Feature 297 is a modified 'a'ā outcrop located at the extreme eastern end of the project area along the southern edge of the old access road (see Figure 53). Feature 297 was formerly constructed of stacked 'a'ā cobbles, but is now collapsed in several sections. The feature, which is roughly oval in shape, measures 4.5 meters long by 4.0 meters wide and stands up to 0.7 meters above ground surface in its southwestern corner (Figure 76). The southern and northern edges of the feature are stacked (Figure 77). The western edge is nearly completely collapsed and a bedrock outcrop supports the eastern edge of the feature. The surface of Feature 297 is roughly paved and leveled with small sized 'a'ā cobbles. Overall, the feature has a very formal appearance

A 1 x 1 meter test unit (TU-22) was excavated in the east central portion of Feature 297 (see Figure 76). Excavation of TU-22 revealed a two-layer stratigraphic profile. Layer I, the 33-centimeter thick architectural layer, consisted of small to large sized 'a'ā cobbles mixed with organics. This layer rested on and was incorporated into Layer II, a dark brown (10YR 3/3) very fine sandy silt 30 centimeters thick. The upper portions of this layer were mixed with decaying organics, while the lower portions gradually transitioned into dark yellowish brown soil (10YR 4/4) mixed with decomposing bedrock. Excavation of TU-22 terminated at bedrock 63 centimeters below the unit's surface. No cultural material of any kind was recovered from TU-22, and it is suggested that Feature 297 may be the by-product of agricultural clearing in area.

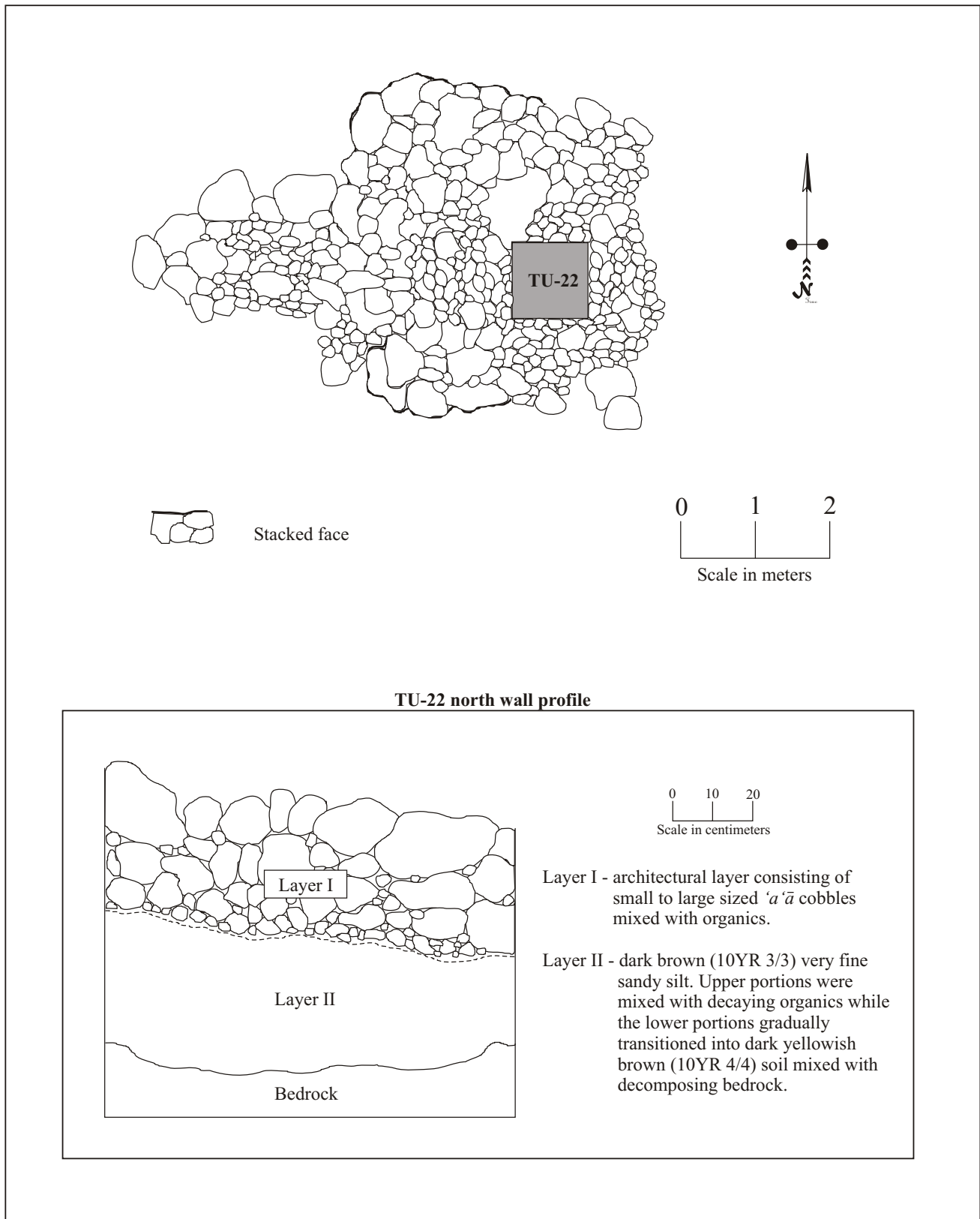


Figure 76. SIHP Site 23686 Feature 297 plan view and TU-22 profile.



Figure 77. SIHP Site 23686 Feature 297 view to north.

Terraces

A terrace is a linear or curvilinear stone construction built perpendicular to the natural slope of the terrain. It is generally longer than it is wide and at least two courses high. On the upslope side of the terrace soil is either placed, or more often naturally accumulated, to form a relatively level surface area. The stones of a terrace may be piled or stacked (piled edges are sloped, while stacked edges are generally vertical). The terrace is a specialized feature of an agricultural field. It functioned to trap or retain soil to create a planting area (Kirch 1985; Soehren and Newman 1968). Terrace walls are typically built connecting *kuaiwi* and are of stacked construction with a rectangular or trapezoidal profile. Although no such evidence was recorded within the current project area, level soil areas behind shorter terrace walls, which form rectangular areas, have been documented at other locations in Kona to be residential features.

Twenty-two remnant terraces (Figure 78) are present within the study area and are generally orientated perpendicular to the *kuaiwi* (see Figure 53). The downslope sides of the terraces are formed by either piled or stacked walls that range in length from 3.6 to 60 meters and are mostly collapsed because of both erosional forces and cattle grazing impacts. The walls range in height from 0.3 to 1 meter. The terrace areas retained by the walls are a combination of soil and stone and likely functioned as planting areas. Some of the terraces also contain mounds. No terraces were tested as part of the inventory survey.

Enclosures

An enclosure is a construction of stones that surrounds an interior space around at least 75% of its perimeter. The construction may incorporate natural formations (i.e. bedrock outcrops, boulders, etc.) or other formal feature types (i.e. walls, terraces, etc.) into its length. Construction materials are of varying type and size depending on the source material. The shape of an enclosure (i.e. square, rectangular, three sided, many sided, circular, oval, or irregular) varies considerably depending on the topography and its intended function. Some enclosures completely surround an interior space with no openings.



Figure 78. SIHP Site 23686 Feature 264 typical terrace construction view to northwest.

An enclosure can be a habitation feature, a planting feature, or used to house or detain animals. Planting enclosures (typically with irregular shapes) do not have entrances and are piled or stacked constructions less than one meter in height, with soil in the interior (Ching 1971). Large enclosures with soil interiors may have been the by-product of clearing agricultural planting areas (i.e. the cleared rocks form the enclosure walls). Small enclosures with no soil may have functioned to retain soil, mulch, and moisture. Enclosures with higher walls may have also acted as barriers to keep animals out of planting areas. The location of an enclosure is often opportunistic, taking advantage of natural landforms to maximize its usefulness and minimize the amount of effort required for its construction.

Seven agricultural enclosures were recorded within the study area (Features 35, 251, 270, 279, 293, 294, 295) (see Figure 53). One of these is rectangular, two are square, two are oval and two are U-shaped (Figures 79 and 80). All of these features are similar in that they represent cleared areas in an otherwise rocky terrain. The rocks that make up the stacked and piled walls have been cleared from the center of the feature. None of these features is built substantially enough to retain animals inside or to serve as habitations. The walls, however, are tall and wide enough to retain compost and soil and to deter pigs from casually entering the interior enclosed space. No enclosures were tested as part of the current inventory survey.

Kuaiwi

Kuaiwi are linear or curvilinear alignments of stones (at least two courses high) running *mauka/makai* that are considerably longer than wide. They are constructed using stones of various type and size depending upon the source material. *Kuaiwi* are characterized by piled construction with a “humped” profile (Soehren and Newman 1968). During Precontact times (and into Historic times) *kuaiwi* functioned primarily as agricultural field boundaries (Cordy 2000; Kirch 1985; Soehren and Newman 1968).

Seven remnant *kuaiwi*, orientated generally northeast/southwest, are distributed in a parallel fashion across the study area. They range from relatively short, collapsed segments minimally 16 meters in length to semi-intact segments that extend for as much as 108 meters. Linear *kuaiwi* features (Features 17, 59, 82, 195, 213, 252, 291) can be seen on Figure 53 and appear as broken and segmented wall fragments. It is possible that these field boundary are coincident with *'ili* designations, suggesting the presence of at least five different *'ili* in Wai'aha 1st. No *kuaiwi* were tested as part of the current inventory survey.



Figure 79. SIHP Site 23686 Feature 251 typical large enclosure view to southwest.



Figure 80. SIHP Site 23686 Feature 294 typical small enclosure view to west.

Pavements

A pavement is a stone surfaced area, level with the surrounding ground surface on at least one side. Pavements are generally constructed against or into sloping terrain, and are then filled with stones to create a relatively flat surface. Pavements come in many shapes (including square, rectangular, and irregular) and sizes. The outside edges of a pavement may be piled or stacked (piled edges are sloped, while stacked edges are generally vertical). Small (cobble to gravel size) stones are generally used as the fill material. For the current study, a pavement is hypothesized to be a specialized feature associated with agricultural activity, and used as a produce staging or processing area.

Three pavement features (Features 250, 282, 289) were recorded within Site 23686, all within the *mauka* one third of the site (see Figure 53). The respective dimensions of these features are presented in Table 8. Rechtman et al. (2001) formally defined this specialized agricultural feature type based on archaeological survey work within large more or less intact agricultural sites in South Kona. The distribution of the pavements recorded during the current study match what would be expected for centrally located staging and processing areas (it is assumed here that the Precontact agricultural fields once continued more *mauka* than is currently recorded). As none of the pavements were investigated through subsurface testing; this feature type should be a focus of the limited data recovery that is recommended for this site.

SIGNIFICANCE EVALUATION AND TREATMENT RECOMMENDATIONS

All of the sites recorded during the current study are assessed for their significance based on criteria established and promoted by the DLNR-SHPD and contained in the draft Hawaii Administrative Rules 13§13-284-6, dated 1998. These significance evaluations should be considered as preliminary until DLNR-SHPD provides concurrence. For resources to be considered significant they must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- A. Be associated with events that have made an important contribution to the broad patterns of our history;
- B. Be associated with the lives of persons important in our past;
- C. Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- D. Have yielded, or is likely to yield, information important for research on prehistory or history;
- E. Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

The significance and recommended treatment for the twenty-six sites are discussed below and presented in Table 9.

Table 9. Site significance and treatment recommendations.

<i>SIHP No.</i>	<i>Function</i>	<i>Temporal Association</i>	<i>Significance</i>	<i>Recommended Treatment</i>
6302	Ranching/boundary	Historic	A,C,D	Preservation
23662	Ranching	Historic	D	No further work
23663	Ranching	Historic	D	No further work
23664	Ranching	Historic	D	No further work
23665	Boundary	Historic	D	No further work
23666	Boundary	Historic	D	No further work
23667	Boundary	Historic	D	No further work
23668	Temporary habitation	Precontact	D	No further work
23669	Temporary habitation	Precontact	D	No further work
23670	Permanent habitation	Precontact	D	Data recovery
23671	Temporary habitation	Precontact	D	Data recovery
23672	Temporary habitation	Precontact	D	Data recovery
23673	Permanent habitation	Precontact	D	Data recovery
23674	Temporary habitation	Precontact	D	Data recovery
23675	Temporary habitation	Precontact	D	Data recovery
23676	Temporary habitation	Precontact	D	Data recovery
23677	Temporary habitation	Precontact	D	Data recovery
23678	Temporary habitation	Precontact	D	Data recovery
23679	Trail	Precontact	D	No further work
23680	Trail	Precontact	D	No further work
23681	Ceremonial	Precontact	D,E	Preservation
23682	Game board	Precontact	D	No further work
23683	Burial	Precontact	D,E	Preservation
23684	Burial	Precontact	D,E	Preservation
23685	Burial	Precontact	D,E	Preservation
23686	Agricultural	Precontact	D	Data recovery

Sites Recommended For No Further Work

Upon approval of this report, sites that fall into this category can be dismantled or otherwise destroyed with no further historic preservation consideration.

SIHP 23662

This Historic Period cattle enclosure is significant under Criterion D, and has provided information relative to late nineteenth and early twentieth century use of the property. No further work is recommended.

SIHP 23663

This wall is a significant feature under Criterion D as it relates to early twentieth century ranching practices. The information recorded from this site has sufficiently mitigated any potential impact that may be caused by the development of the parcel.

SIHP 23664

This wall is a significant feature under Criterion D as it relates to early twentieth century ranching practices. The information recorded from this site has sufficiently mitigated any potential impact that may be caused by the development of the parcel.

SIHP 23665

This historic wall is significant under Criterion D and no further work is recommended to mitigate impacts to it. The data collected during the current study sufficiently documented this site.

SIHP 23666

This wall is a significant feature under Criterion D as it relates to early twentieth century ranching practices. The information recorded from this site has sufficiently mitigated any potential impact that may be caused by the development of the parcel.

SIHP 23667

This wall is significant under Criterion D as part of the network of historic ranching/boundary walls on the property. No further work is recommended to mitigate impacts as the data collected during the current study sufficiently documents this site.

SIHP 23668

This lava blister was at most used minimally for temporary habitation purposes and is considered significant under Criterion D. Test excavation conducted as part of this study has resulting in the collection of sufficient information to warrant a no further work recommendation.

SIHP 23669

This site is considered significant under Criterion D as illustrative of the temporary residential use of the *kula* zone. No further work is recommended to mitigate impacts as the data collected during the current study sufficiently documents this very ephemeral temporary habitation site.

SIHP 23679

This short trail segment is significant under Criterion D. Its continuance both *mauka* and *makai* could not be discerned. Therefore, the data collected during the current study has been sufficient to mitigate any potential impacts that might be caused by the proposed development; no further work is recommended.

SIHP 23680

This short trail segment is significant under Criterion D. Its continuance both *mauka* and *makai* could not be discerned. Therefore, the data collected during the current study has been sufficient to mitigate any potential impacts that might be caused by the proposed development; no further work is recommended.

SIHP 23682

The *papamū* is in a poor state of preservation and has been documented in its entirety; therefore no further work is recommended. However, given the nature of the proposed development (a cultural center), the location of this site could be maintained or memorialized in the development planning and perhaps a similar game board established in the vicinity with appropriate interpretive signage.

Sites Recommended For Data Recovery

Upon approval of this report, sites in this category should be protected until data recovery investigations are completed.

SIHP 23670

This permanent habitation platform complex is considered significant under Criterion D for the potential data it could yield relative to Precontact settlement patterns and land use. Data recovery is recommended.

SIHP 23671

This temporary habitation platform is evaluated as significant under Criterion D, and further data collection is recommended. Excavation of the feature and underlying deposit could provide further data relative to the age of the site and potential association to other sites and features in the vicinity.

SIHP 23672

This temporary habitation enclosure complex is evaluated as significant under Criterion D, and further data collection is recommended. Excavation of portions of both enclosures could provide more specific information relative to both function and temporality.

SIHP 23673

Site 23673 is interpreted as a permanent habitation platform and enclosure and is considered significant under Criterion D. Further investigation of this site will help determine the functional relationship between the two features and establish a more precise temporal association for the site. Data recovery is recommended.

SIHP 23674

This temporary habitation platform and enclosure is evaluated as significant under Criterion D, and further data collection is recommended. Excavation of this site could focus on documenting the quantity and diversity of dietary remains in an effort to make comparisons with Site 23673, interpreted as a permanent habitation platform and enclosure.

SIHP 23675

This temporary habitation platform is considered significant under Criterion D, and further data recovery is recommended to augment the excavation data obtained during the testing. Data recovery excavations could shed further light on site function and age.

SIHP 23676

This site is considered significant under Criteria D as a Precontact temporary habitation platform. As a result of the test excavations, this site yielded a relatively substantial amount remains including marine shell, volcanic glass flakes, and a *he'e* lure. Data recovery is recommended in an effort to further define site function and temporality.

SIHP 23677

This temporary habitation platform and enclosure is evaluated as significant under Criterion D, and further data collection is recommended. Excavation of this site could focus on documenting the quantity and diversity of dietary remains in an effort to make comparisons with Site 23674 (another temporary habitation platform and enclosure) and Site 23673, interpreted as a permanent habitation platform and enclosure.

SIHP 23678

This enclosure is incorporated into a *kuaiwi* (Site 23686 Feature 292) and is unique for the project area. It is interpreted as a temporary habitation and is considered significant under Criterion D. Data recovery is recommended to assess the precise function of the site and to further investigate the relationship between the enclosure and the *kuaiwi*.

SIHP 23686

This site is the complex of agricultural features that form the archaeological backdrop of the study area. A total of 296 features were recorded and this site is considered significant under Criterion D. Limited data recovery is recommended in an effort to collect radiocarbon samples sufficient for age determination analysis. Potentially documenting a when the *kula* zone of Kona was first used for agriculture is an important on-going research goal.

Sites Recommended For Preservation

Upon approval of this report, sites in this category should be protected indefinitely, and perpetual easements established to ensure their long-term preservation.

SIHP 6302

This site has come to be known as the Kuakini Wall and its significance has been evaluated and approved in several projects. This site has been determined significant for its association with broad patterns of local history (Criterion A), its characteristic construction style (Criterion C) and its archaeological information (Criterion D). Preservation and interpretation is the recommended general treatment, with the allowance of possible breaches for *mauka/makai* property access. A preservation and interpretation plan should be written in consultation with members of the local community and DLNR-SHPD.

SIHP 23681

This ceremonial site is evaluated as significant under Criteria D, and E; and should be preserved as a stabilized ruin with interpretation. A preservation and interpretation plan should be written in consultation with members of the local community and DLNR-SHPD.

SIHP Sites 23683, 23684 and 23685

These three sites contain buried human remains and are evaluated as significant under Criteria D and E. All of these single feature sites should be preserved as is without interpretation. A search for lineal and cultural descendants should be undertaken and a burial treatment plan written in consultation with any identified descendants and the Hawai'i Island Burial Council.

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APPENDIX A – RADIOCARBON RESULTS

Dr. Bob Rechtman

Report Date: 2/17/2003

Rechtman Consulting

Material Received: 2/7/2003

Sample Data	Measured Radiocarbon Age	$^{13}\text{C}/^{12}\text{C}$ Ratio	Conventional Radiocarbon Age(*)
Beta - 175916 SAMPLE : RC-0153-12 ANALYSIS : Radiometric-Priority delivery (with extended counting) MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1510 to 1600 (Cal BP 440 to 350) AND Cal AD 1620 to 1950 (Cal BP 330 to 0)	180 +/- 60 BP	-23.5 o/oo	210 +/- 70 BP
Beta - 175917 SAMPLE : RC-0153-40 ANALYSIS : AMS-Advance delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1660 to 1950 (Cal BP 290 to 0)	140 +/- 40 BP	-23.5 o/oo	160 +/- 40 BP

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.5;lab. mult=1)

Laboratory number: Beta-175916

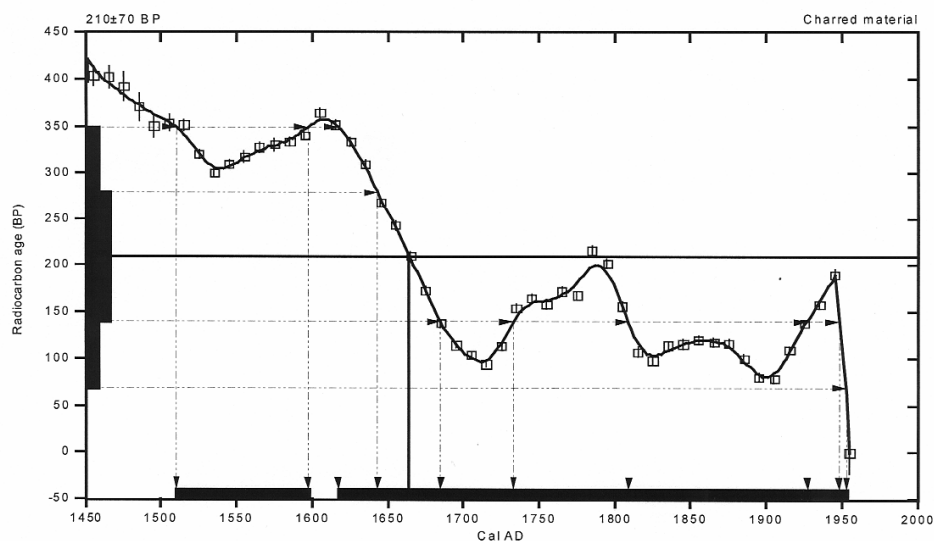
Conventional radiocarbon age: 210 ± 70 BP

2 Sigma calibrated results: Cal AD 1510 to 1600 (Cal BP 440 to 350) and
(95% probability) Cal AD 1620 to 1950 (Cal BP 330 to 0)

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 1660 (Cal BP 290)

1 Sigma calibrated results: Cal AD 1640 to 1680 (Cal BP 310 to 260) and
(68% probability) Cal AD 1730 to 1810 (Cal BP 220 to 140) and
Cal AD 1930 to 1950 (Cal BP 20 to 0)



References:

Database used

Calibration Database

Editorial Comment

Stuiver, M., van der Plicht, H., 1998, *Radiocarbon* 40(3), pxii-xiii

INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et. al., 1998, *Radiocarbon* 40(3), p1041-1083

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322

Beta Analytic Inc.

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.5;lab. mult=1)

Laboratory number: **Beta-175917**

Conventional radiocarbon age: **160±40 BP**

2 Sigma calibrated result: Cal AD 1660 to 1950 (Cal BP 290 to 0)
(95% probability)

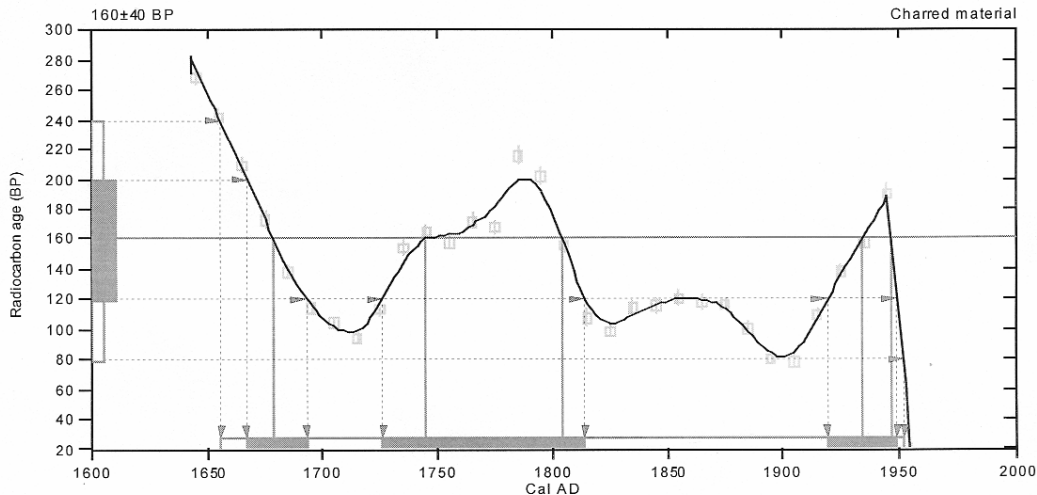
Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal AD 1680 (Cal BP 270) and
Cal AD 1740 (Cal BP 200) and
Cal AD 1800 (Cal BP 150) and
Cal AD 1930 (Cal BP 20) and
Cal AD 1950 (Cal BP 0)

1 Sigma calibrated results:
(68% probability)

Cal AD 1670 to 1690 (Cal BP 280 to 260) and
Cal AD 1730 to 1810 (Cal BP 220 to 140) and
Cal AD 1920 to 1950 (Cal BP 30 to 0)



References:

Database used

INTCAL98

Calibration Database

Editorial Comment

Stuiver, M., van der Plicht, H., 1998, *Radiocarbon* 40(3), pxi-xiii

INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et al., 1998, *Radiocarbon* 40(3), p1041-1083

Mathematics

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