

**FEATURE 6**

Feature 6 is another possible activity area associated with Feature 1. It is a level soil filled terrace, with its “L” shaped architecture extending off of the east end of the third alignment of Feature 2. Consequently, its level soil is just to the south and east of Feature 1.

ST-4 was a 0.25 x 0.25 m trench placed in this feature’s level soil in order to determine feature function. This excavation demonstrated two soil layers extending 45 cmbs before encountering bedrock, with three basalt abraders recovered (Table 24). Natural pebbles accounted for about 35% of both layers matrix, and a small amount of charcoal was observed deep within Layer II; it was determined to be too small an amount to warrant collecting it. No profile was drawn for this excavation.

**Table 24. Site 10694 Traditional Artifacts.**

Feat.	Unit	Layer	Artifact Type	Length (cm)	Width (cm)	Thick. (cm)	N	Remarks
1	TU-1	I	Volcanic Glass Debitage	-	-	-	1	One IF
			Volcanic Glass Debitage	-	-	-	2	Two NDF
		II	Volcanic Glass Debitage	-	-	-	2	One IF; 1 NDF
			Basalt Debitage	-	-	-	1	One IF
			Volcanic Glass Debitage	-	-	-	10	Four IF; 6 NDF
			Volcanic Glass Core	1.79	1.43	1.14	1	Small nodule; single, unprepared striking platform
	TU-2	II	Volcanic Glass Debitage	-	-	-	3	One SF; 2 NDF
	TU-3	II	Volcanic Glass Debitage	-	-	-	9	Six IF; 3 NDF
			Volcanic Glass Manuport	3.23	2.50	1.72	1	Unworked nodule
	ST-1	II	Volcanic Glass Debitage	-	-	-	1	One NDF
6	ST-5	II	Pumic Abrader	3.22	3.13	1.91	1	One worked facet; rectangular in planview
			Pumic Abrader	2.65	2.31	1.35	1	One worked facet; rectangular in planview
			Pumic Abrader	3.52	2.28	1.70	1	One worked facet; rectangular in planview
8	ST-2	Arch. Fill	Basalt Core	5.28	3.70	3.60	1	Nodule; multiple, prepared striking platforms

IF = Interior Flake; SF = Secondary Flake; NDF = Non-Diagnostic Flake

**SITE 10695**

Site 10695 lies in Kohanaiki Ahupua’a in the north-central portion of the project area, immediately above the 1000 ft. elevation contour. Site 10697 is directly adjacent to the west, while site 10721, a cave, is about 30.0 m to the east. Site 10695 is situated on the older of the project area’s two Hualalai flows, and has christmasberry and silk oak as dominant overstory species. Additional species include *alahe’e*, *noni*, *lama*, mango, lantana, and air plant.

Six features have been identified at 10695 distributed across a gentle west facing slope and covering about a 30.0 by 50.0 m area (Figure 49). Features include: three terraces; one platform; one three-sided enclosure; and one trail (Table 25). While agricultural features of the Kona Field System occur within and around the site, these are not described here. Features interpreted as non-agricultural were done so on the basis of form and obvious time and care spent in construction.

**Table 25. Site 10695 Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Platform	8.50	6.50	0.80	Two 1 x 1 m TUs (TU-1and2); One 1 x 2 m ST (ST-2)
2	Trail	125.00	4.00		
3	Terrace	6.00	5.00	0.80	One 1 x 1 m ST (ST-1)
4	Terrace	6.00	5.00	0.60	
5	3 Sided Enclosure	8.00	5.50	0.70	
6	Terrace	4.50	3.75	0.45	

A total of 5.0 m<sup>2</sup> (2 TUs, 2 STs) was excavated at Site 10695. Features 1 and 3 were excavated, while Features 2 and 4 through 6 were not. Cultural materials recovered in excavation consisted of traditional artifacts, including three polishing stones, three pieces of volcanic glass, two hammerstones, one piece of worked basalt, one adze fragment, and one piece of worked bone. Other cultural materials recovered from excavation included marine shell, vertebrates, coral, *kukui*, and charcoal. A single radiocarbon dating sample was processed from Feature 1, ST-2.

Site 10695 is interpreted as permanent habitation based on the number, size, and construction of the recorded features. The site is dated to the late pre-Contact to early post-Contact period based on the single radiocarbon date and the absence of historic materials.

### **FEATURE 1**

Feature 1 is complex rectangular platform bisected by a 1.0 m wide, 15 cm high raised area extending its entire east-west width. To the south of this raised area, the feature's surface is a pebble pavement, enclosed by a cobble and boulder retaining element, with the west side of this element comprised of horizontally laid slabs, 1.0 m wide. Horizontally laid slabs also define a circular depression in the northeast corner of this pebble pavement, and an additional vertical slab lined pit occurs toward the middle of this pavement, abutting the raised area. In the north portion of the feature, the raised area slopes down to a cobble pavement. The only visible facings observed were two areas on the feature's west side: one in its southwest corner, and one at the west end of the raised area. Cultural material observed on the feature's surface included groundstone slabs, marine shell, an adze and a hammerstone. Only the adze and hammerstone were collected, however.

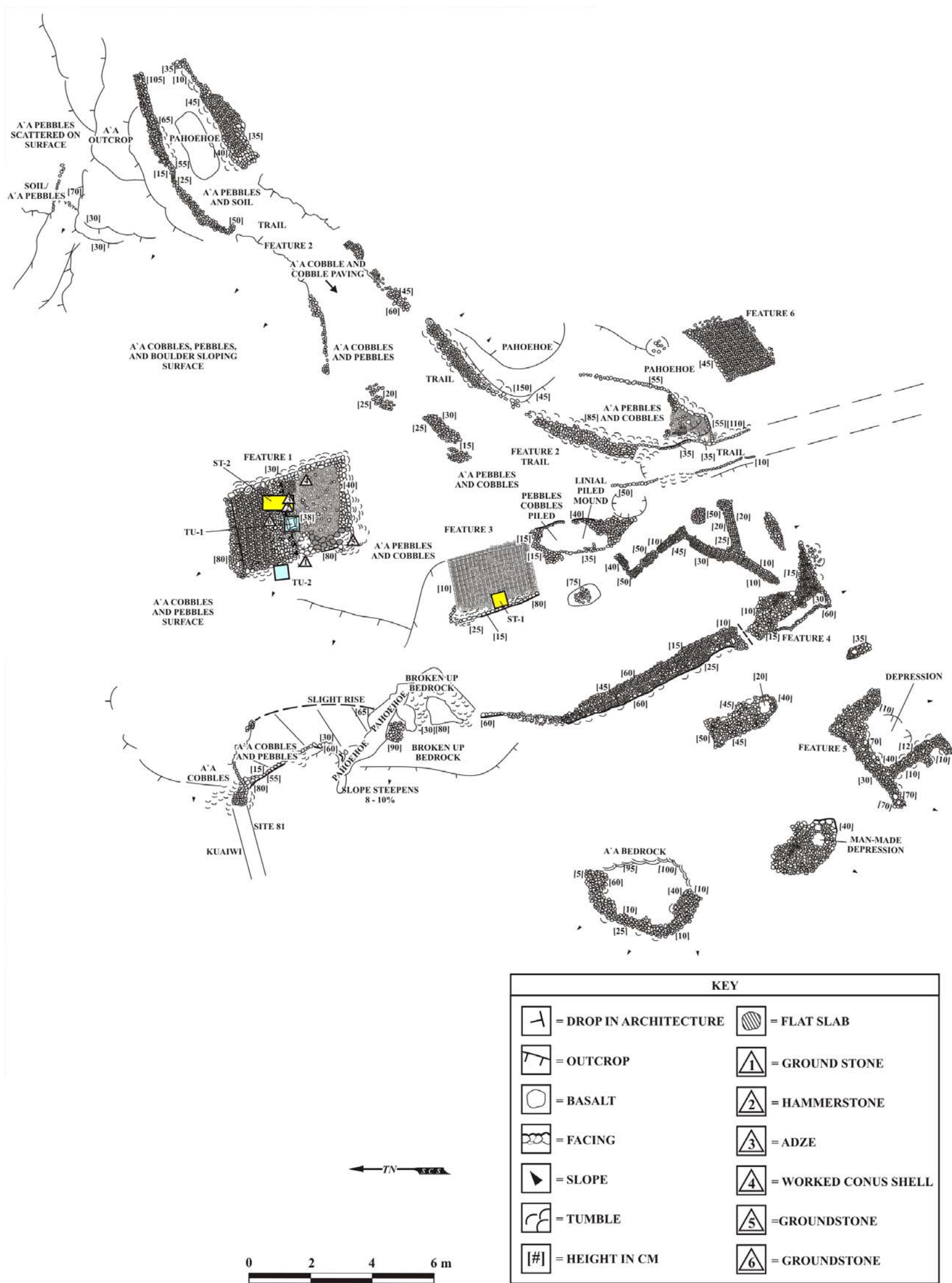


Figure 49. Site 10695 Plan View.

Three units were placed in this feature: TU-1, TU-2, and ST-2. TU-1 was a 1.0 by 1.0 m unit placed over the vertical slab lined pit in order to determine its function, with only its interior excavated (Figure 50). This excavation revealed a thin, 12 cm deep charcoal stained soil containing small amounts of animal bone before encountering a boulder that restricted further excavation (Figure 51). Soil from this unit was bagged as a bulk sample (Table 26). TU-1 had only one layer. Layer I averaged 35 cm thick and was a black (10YR 2/1) silt.

**Table 26. Site 10695, Feature 1, TU-1, Midden.**

Layer	Collected Material	Weight (grams)	Count	Remarks
I/SSF-1	Vertebrates	1.2	-	Taxa: small-to-medium mammal, small vertebrate
	Charcoal	1.0	-	-

TU-2 was not placed within the feature, but directly outside of it, abutting its west wall and was located in order to determine the extent of the cultural deposit off of the feature. Excavation of this unit showed that the area immediately surrounding the feature had been modified with a thin cobble pavement overlying two soil layers. Layer I extended to around 40 cmbs, averaging 25 cm thick, and was a black (10YR 2/1) rocky silt. Layer I contained marine shell, fish bone, coral, urchin, pig teeth, and a fair amount of charcoal. Layer II extended only 4 cm before encountering bedrock. Layer II was a dark brown (10YR 3/3) rocky silt and only yielded a small amount of charcoal (Tables 27 and 29). Both layers contained about 70% natural 'a'ā pebbles and cobbles (Figure 52).

ST-2 is associated with Feature 1 and was placed straddling the feature's raised area so that the trench's southern portion was in the pebble pavement, and its northern portion was in the cobble pavement (Figure 53). This trench measured 2.0 by 1.0 m and was placed here in order to understand the feature's internal architecture.

Excavation revealed two soil layers and two architectural layers. The first architectural layer was that which was observed on the surface and was associated with soil Layer I. Layer I was a 15 cm thick, very dark grayish brown (10YR 3/2) humic silt. Cultural material occurred in Layer I on the portion of the unit that was associated with the pebble pavement. This material included marine shell, bone, worked bone, chert, polished basalt, and 'ili 'ili and contrasted with the portion of the unit in the cobble pavement, which yielded no cultural material.

Underneath Layer I was Architectural Layer II, up to 65 cm thick with uniform cobble and boulder construction throughout the entire unit. Very little soil occurred in this layer and no cultural material was recovered.

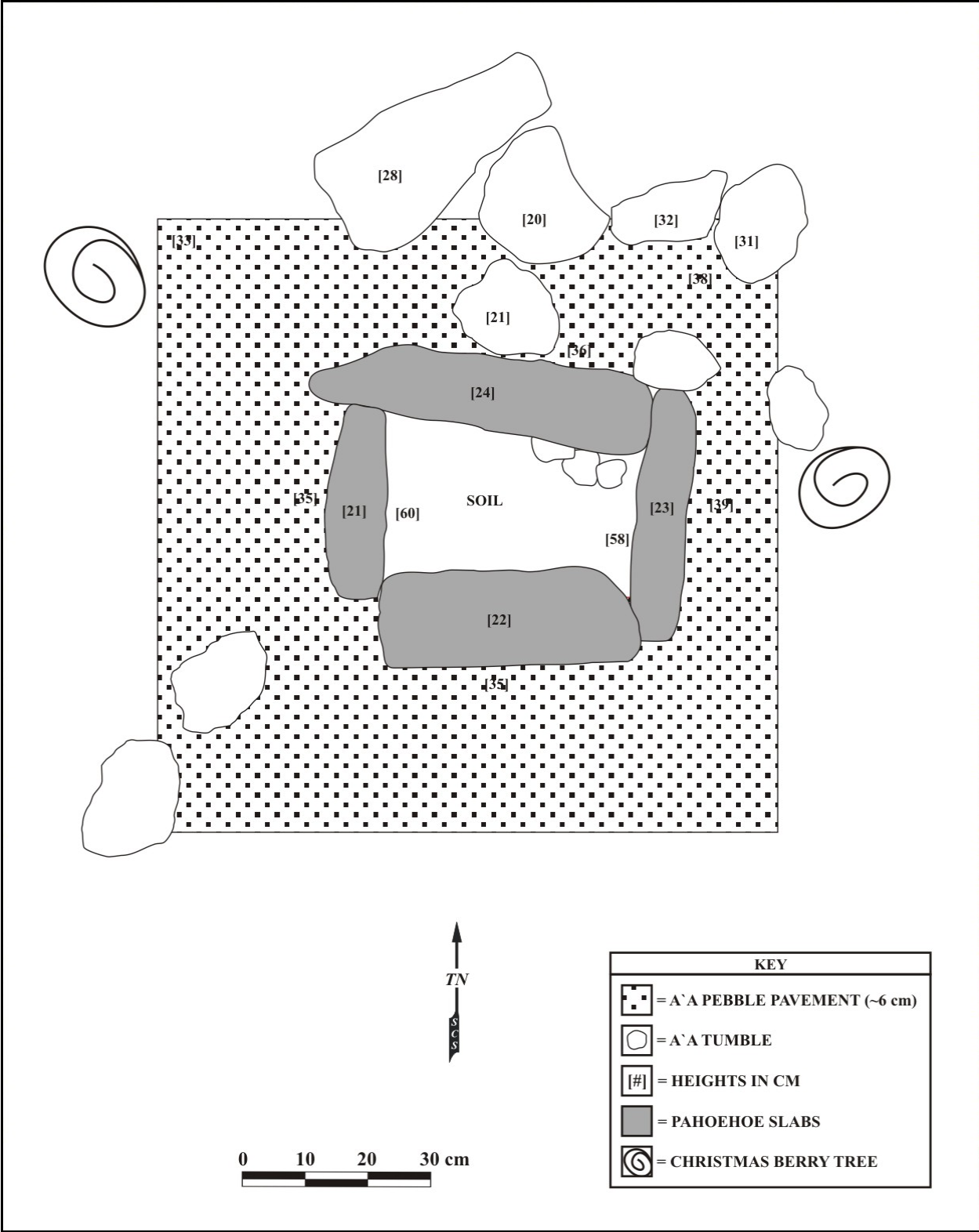
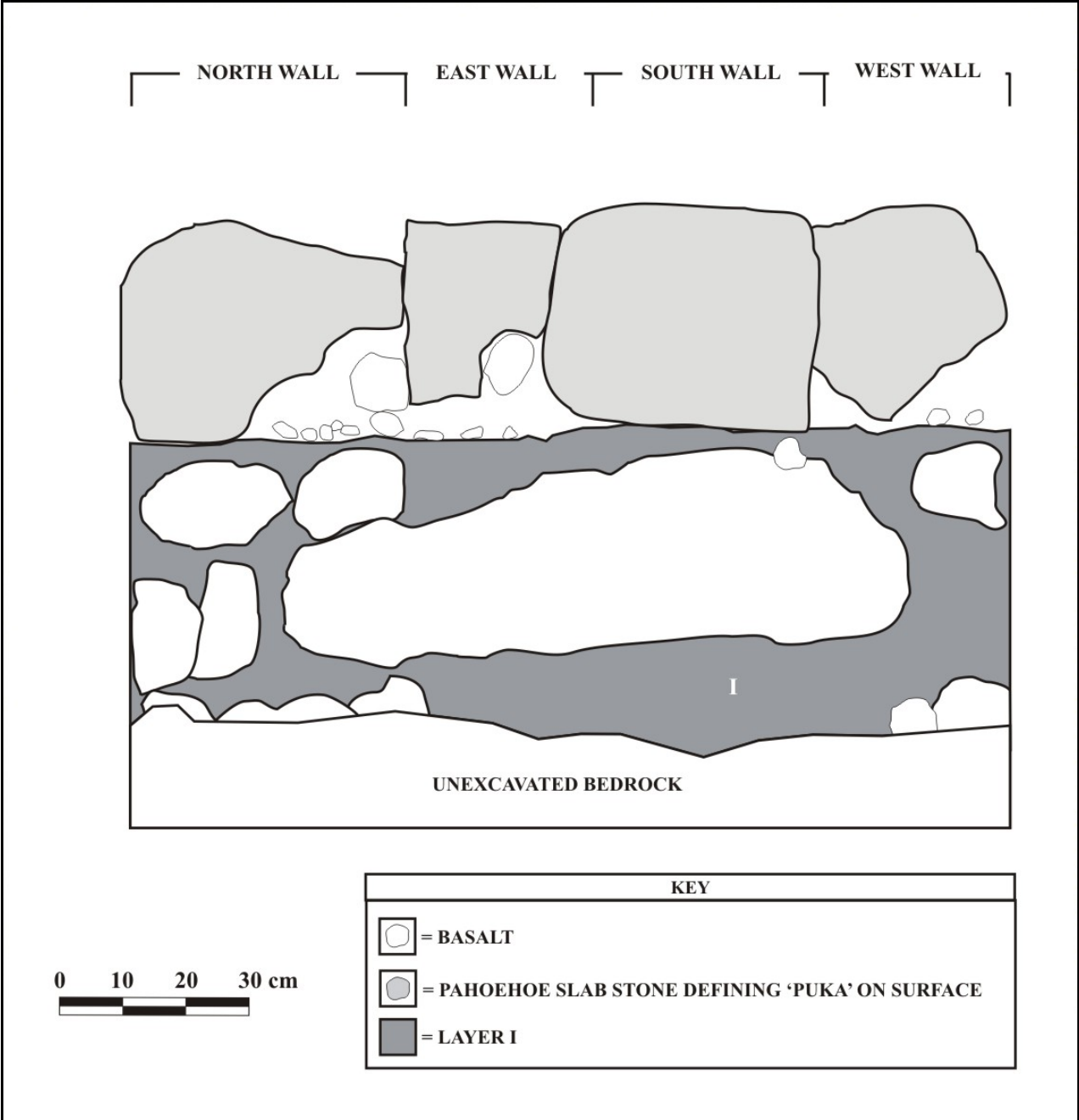


Figure 49: Site 10695, Feature 1, TU-1, Plan View.



**Figure 50: Site 10695, Feature 1, TU-1, Profile: North, South, East and West Walls.**

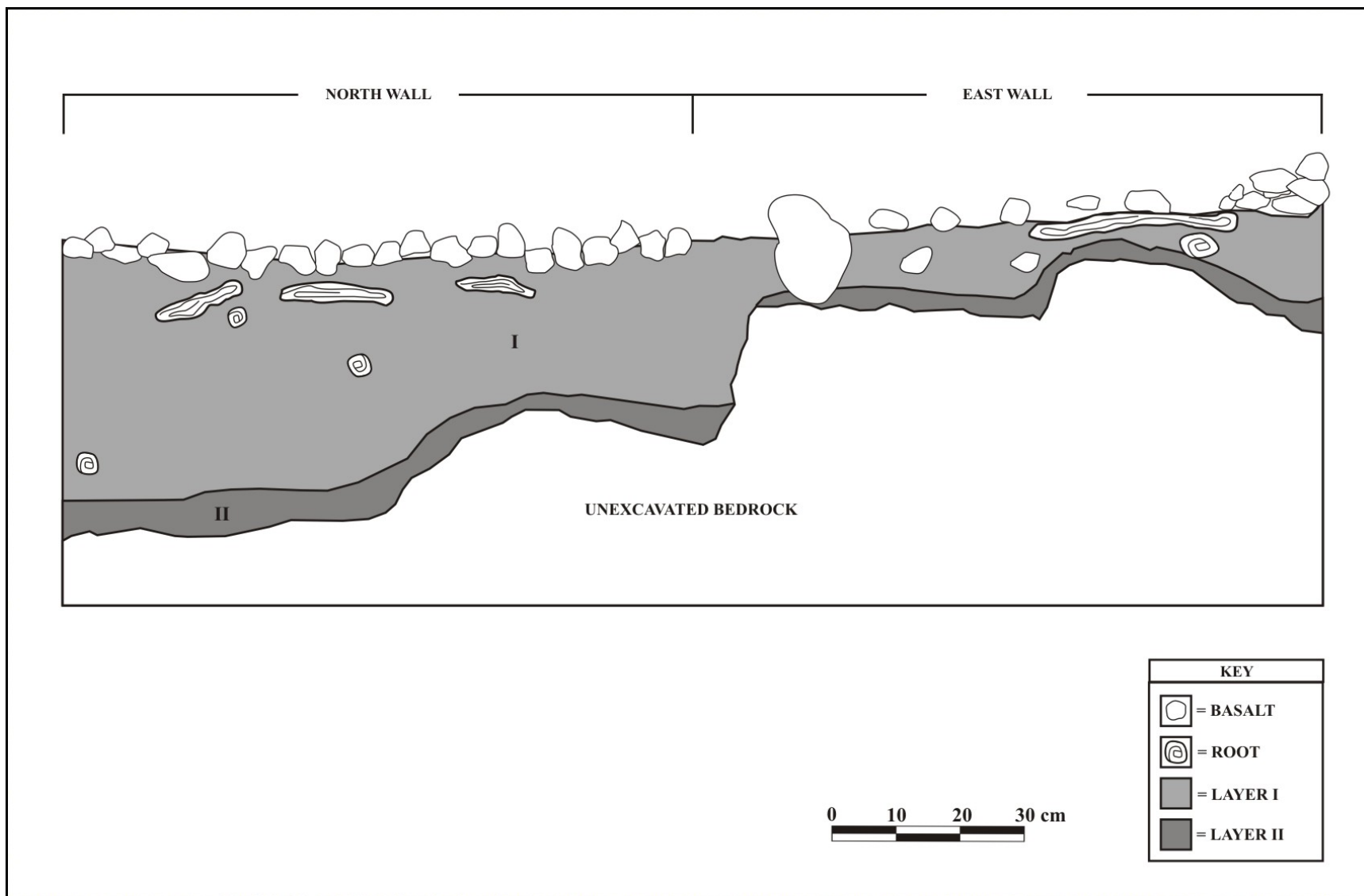


Figure 51: Site 10695, Feature 1, TU-2, Profile: North and East Walls.

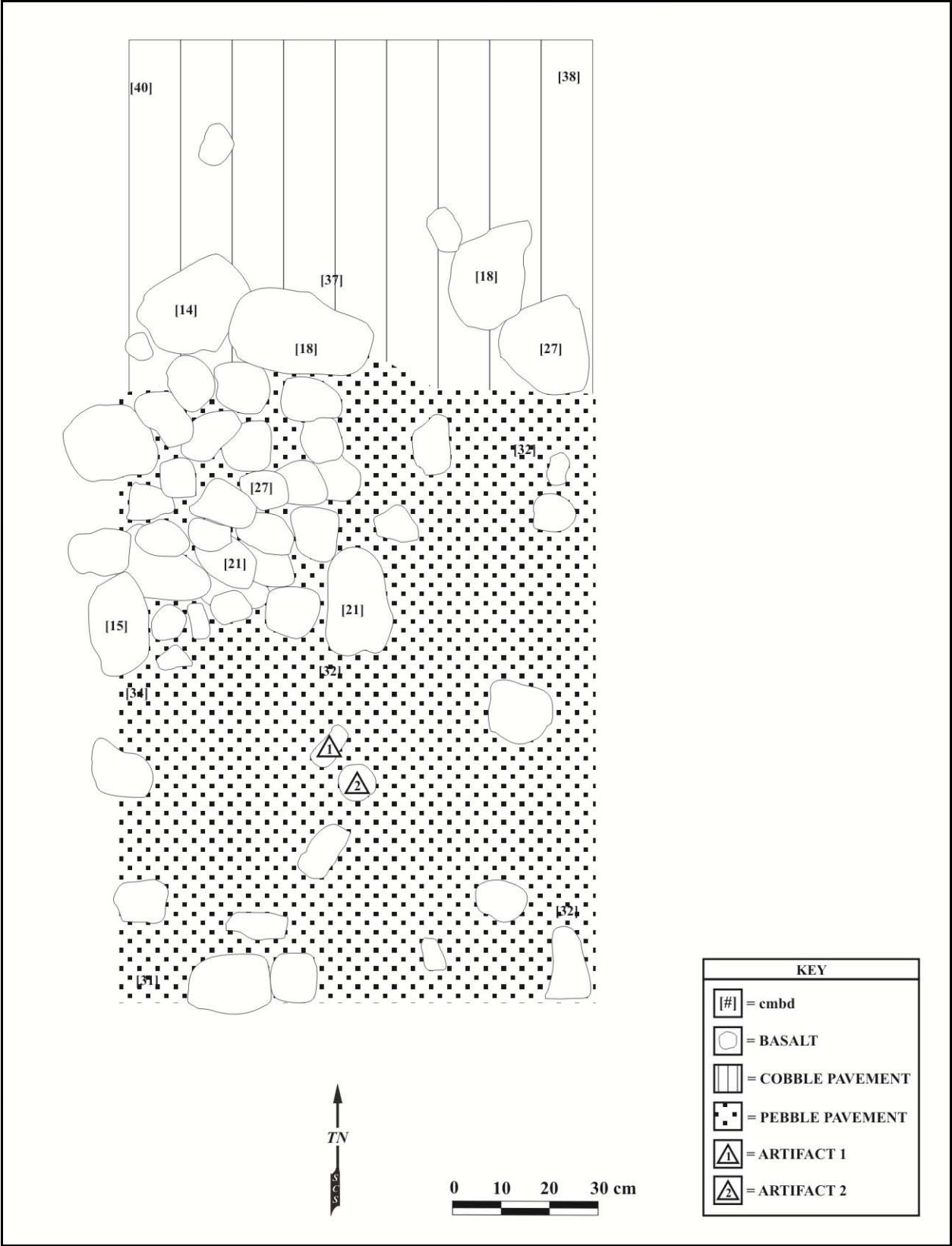


Figure 52: Site 10695, Feature 1, ST-2, Plan View.



**Table 27. Site 10695, Feature 1, TU-2, Midden.**

Layer	Collected Material	Weight (grams)	Count	Remarks
I	Invertebrates	35.5	-	Taxa: <i>Nerita</i> sp., <i>Theodoxus</i> sp., <i>Cypraea</i> sp., <i>Brachidontes</i> sp., <i>Isognomon</i> sp., Echinoidea
	Vertebrates	1.8	-	Taxa: Fish, Bird, <i>Rattus/Mus</i> sp., small-to-medium mammal
	Coral	2.0	4	2 pieces poss. Branch 1.3 g
	Charcoal	0.3	-	-
	Charcoal	34.5	-	-
	Charcoal	40.1	-	-
	Charcoal	25.7	-	-
	<i>Kukui</i>	2.8	-	-
II	Charcoal	2.7	-	-

The final layer excavated before bedrock was reached was Soil Layer II. This layer averaged 16 cm thick and was a black (10YR 2/1) silt which partly occurred underneath the cobble pavement in the northern portion of the unit (Figure 54). Cultural material included volcanic glass, marine shell, bone and worked bone (Table 28).

One conventional radiocarbon determination of  $120 \pm 50$  BP (Beta No. 197062) was obtained from the south half ST-2, Layer II. Calibrated dates (OxCal v.3.5) are (1 sigma) A.D. 1670-1780 (0.38) and A.D. 1800-1960 (0.62); at 2 sigma, A.D. 1660-1960 (1.00).

**Table 28. Site 10695, Feature 1, ST-2, Midden.**

Layer	Collected Material	Weight (grams)	Count	Remarks
Arch.	Invertebrates	38.4	-	Taxa: <i>Cellana</i> sp., <i>Cypraea</i> sp., <i>Conus</i> sp.
I	Invertebrates	67.2	-	Taxa: <i>Cellana</i> sp., <i>Nerita</i> sp., <i>Theodoxus</i> sp., <i>Cypraea</i> sp., <i>Conus</i> sp., <i>Brachidontes</i> sp., Echinoidea
	Vertebrates	3.9	-	Taxa: Fish, <i>Sus scrofa</i>
	Charcoal	1.7	-	-
	Charcoal	3.5	-	-
	Charcoal	0.2	-	-
	<i>Kukui</i>	2.8	-	-
	Chert	2.1	1	-
II	Invertebrates	25.6	-	Taxa: <i>Nerita</i> sp., <i>Cypraea</i> sp., <i>Drupa</i> sp., <i>Conus</i> sp., <i>Brachidontes</i> sp., <i>Isognomon</i> sp., Echinoidea
	Vertebrates	16.4	-	Taxa: Fish, Bird, <i>Sus scrofa</i> , <i>Rattus/Mus</i> sp.
	Charcoal	21.2	-	-
	Charcoal	0.2	-	-
	<i>Kukui</i>	4.3	-	-
IIA	Invertebrates	3.1	-	Taxa: <i>Cypraea</i> sp., <i>Brachidontes</i> sp., Echinoidea
	Vertebrates	0.1	-	Taxa: Fish, <i>Rattus/Mus</i> sp.
	Charcoal	0.8	-	-

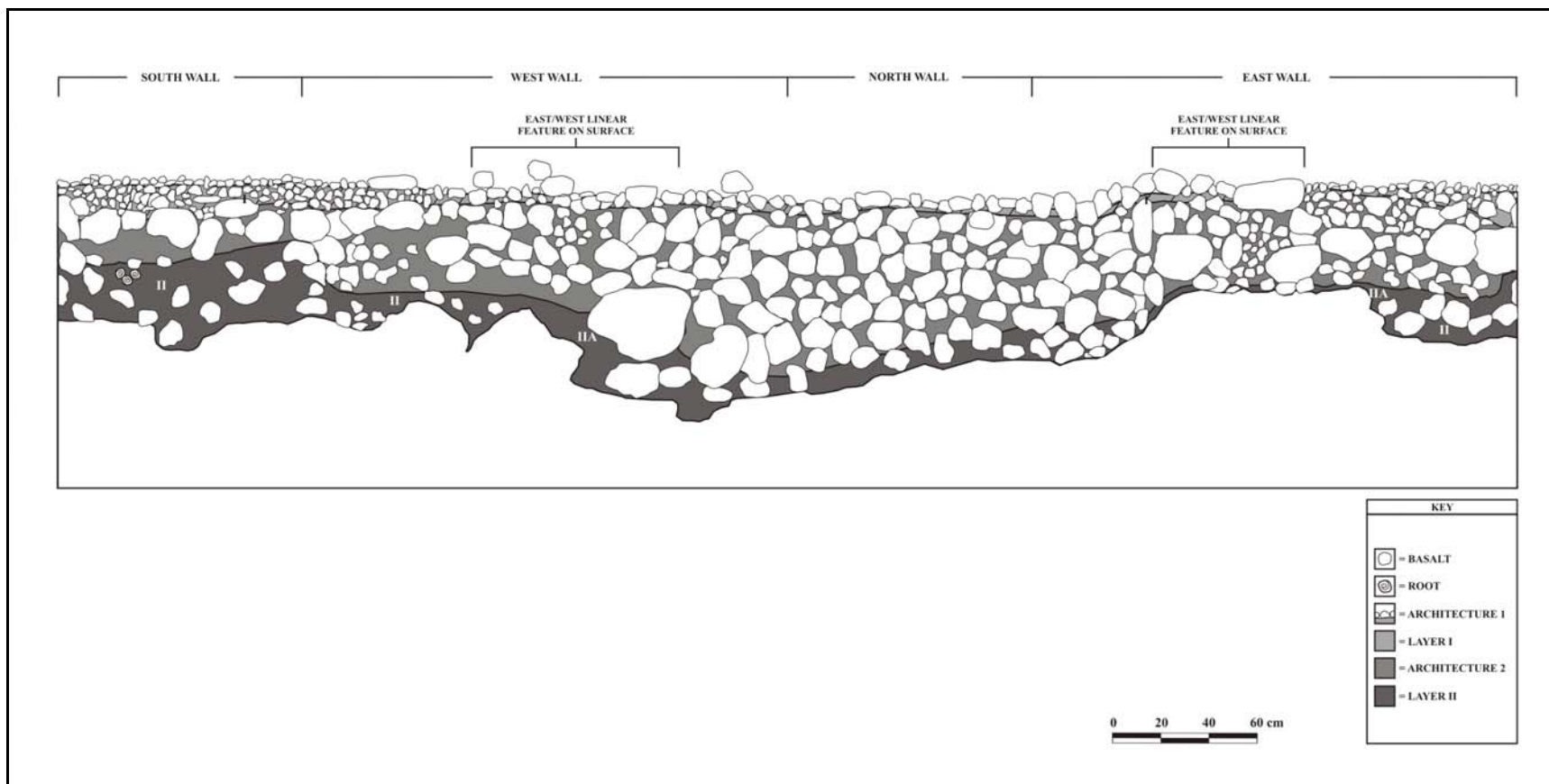


Figure 53: Site 10695, Feature 1, ST-2, Profile: South, West, North and East Walls.

## **FEATURE 2**

Feature 2, the trail, extends from the northeast corner of the site southwest, bisecting the site to its south. It is well defined with both natural *pāhoehoe* outcrops and architecture along portions of both its sides.

## **FEATURE 3**

Feature 3 was the only other feature excavated at the site and was located about 8.0 m south of Feature 1. It is a well constructed rectangular terrace with cobble facing on the majority of its west side. This facing may have once been a free standing wall, about 50 cm high, with the remaining portion of the terrace subsequently filled in.

A single 1.0 by 1.0 m stratigraphic trench, ST-1, was excavated in this feature. This trench was placed toward the center of the west side of the terrace so that its west wall abutted the interior of the facing. This unit was placed here primarily to assess feature function. Excavation revealed cobble and boulder construction resting on a 50 cm-thick soil layer. This soil then rested on a natural 'a'ā flow, visible on the surrounding ground surface (Figure 54). Other than surface architecture, no cultural material was recovered from this excavation.

## **FEATURE 4**

Feature 4, located in the southwest portion of the site, is a two tiered terrace with its lower tier of level soil, about 1 m wide, nicely faced, and having at least one identifiable corner. The upper tier is less defined, has no facing, is of cobble and boulder construction and merges with the natural 'a'ā flow to its north.

## **FEATURE 5**

Feature 5 is a three sided enclosure located about 7.0 m southwest of Feature 4. It is open to the southeast with its northwest wall extending about 2 m past its southwest wall. A moderately deep 3.0 m diameter depression occurs in its center

## **FEATURE 6**

Feature 6 is the other terrace located in the sites southeast portion. It is trapezoidal in shape, has a leveled pebble surface, and is faced on its north side.

Investigations at this site focused on Feature 1, the platform, because it was the only feature at the site that indicated a specialized non-agricultural function. The amount of worked basalt recovered from this feature is interesting, and with the lack of debitage, points towards an area for the manufacture of ground items. A radiocarbon sample, taken from Feature 1, ST-2, yielded a date of 120 years before present, plus or minus 40 years. This set of features probably represents a permanent habitation complex.

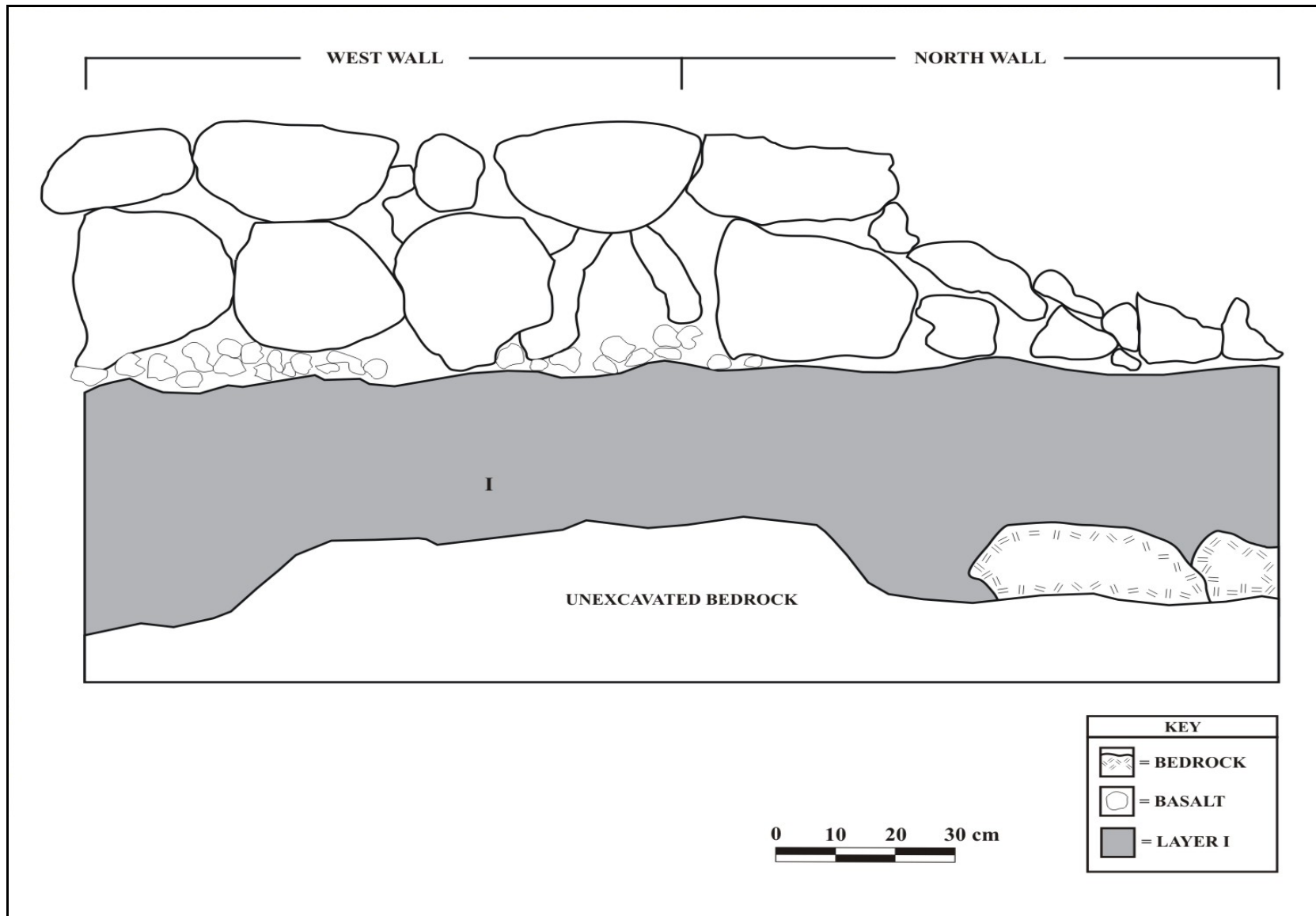


Figure 54: Site 10695, Feature 3, ST-1, Profile: West and North Walls.

**Table 29. Site 10695 Traditional Artifacts.**

Feature	Unit	Layer	Artifact Type	L (cm)	W (cm)	T (cm)	N	Remarks
1	TU-2	I	Worked Basalt	-	-	2.26	1	Fragment of larger piece; 1 surface of this vesicular stone is smoothed down and slightly curved
		ST-2	Surface	Basalt Adze	-	4.22	3.62	1
	Basalt Hammerstone			9.11	8.36	5.37	1	Water rounded cobble; entire circumference has been battered
	Arch.		Basalt Hammerstone	10.11	6.14	5.44	1	Rounded, vesicular cobble; battered at both ends
			Basalt Polishing Stone	-	-	1.23	1	Large fragment missing from stone - possibly broken from use
	I	Volcanic Glass Debitage	-	-	-	1	One IF	
		Basalt Polishing Stone	-	-	1.21	7	Seven fragments of the same piece; 1 used surface	
		Basalt Polishing Stone	-	-	1.67	3	Three fragments of the same piece; 1 used surface	
		Worked Bone	-	-	-	1	One fragment; medium mammal	
	II	Volcanic Glass Debitage	-	-	-	1	One NDF	
	IIa	Volcanic Glass Debitage	-	-	-	1	One NDF	

IF = Interior Flake; SF = Secondary Flake; NDF = Non-Diagnostic Flake

### SITE 10696

Site 10696 lies in Kohanaiki Ahupua'a toward the center of the project area, just north of Site 10714, the Mauka-Makai Road. It is located between the 900 and 920 ft. elevation contours and on the older Hualalai flows area. The site's primary overstory species is christmasberry.

Site 10696 consists of a single feature located on a moderate west-facing slope. It is a well-constructed mound incorporating a *pāhoehoe* outcrop with the central portion of its surface flat boulders, its eastern side faced with boulders, and its western side constructed of piled cobbles and pebbles (Figure 55).

The feature was excavated mainly to determine if it contained human remains. Based on cultural materials recovered in excavation, the feature is thought to be historic. No radiocarbon dates were obtained.

Two stratigraphic trenches were placed within the feature: ST-1, a 1.0 by 3.5 m trench bisecting the feature into north and south halves; and ST-2, a 1.0 by 1.0 m trench placed on the south side of ST-1. Excavation of ST-1 revealed three construction elements with the first being

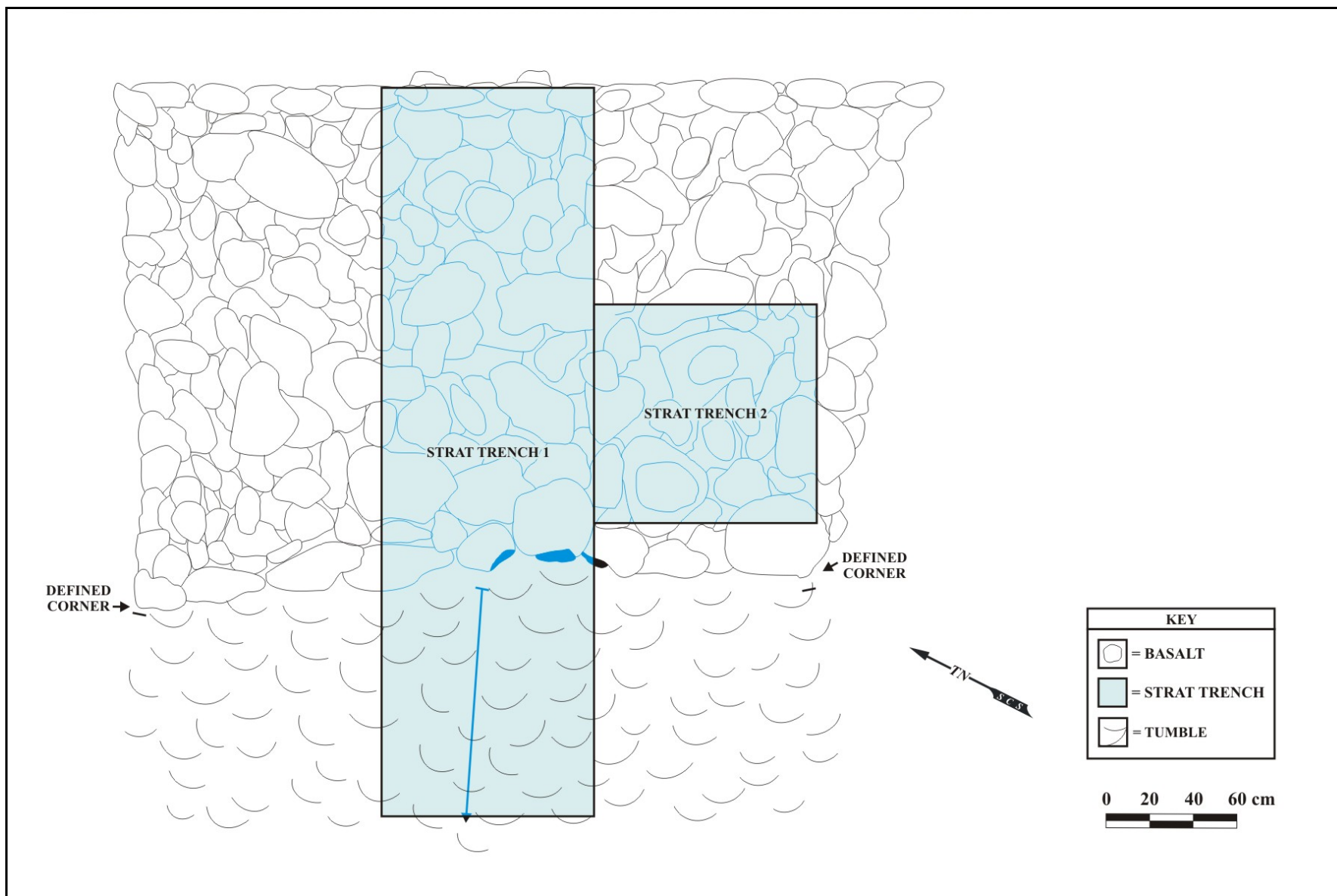


Figure 55: Site 10696, Plan View.

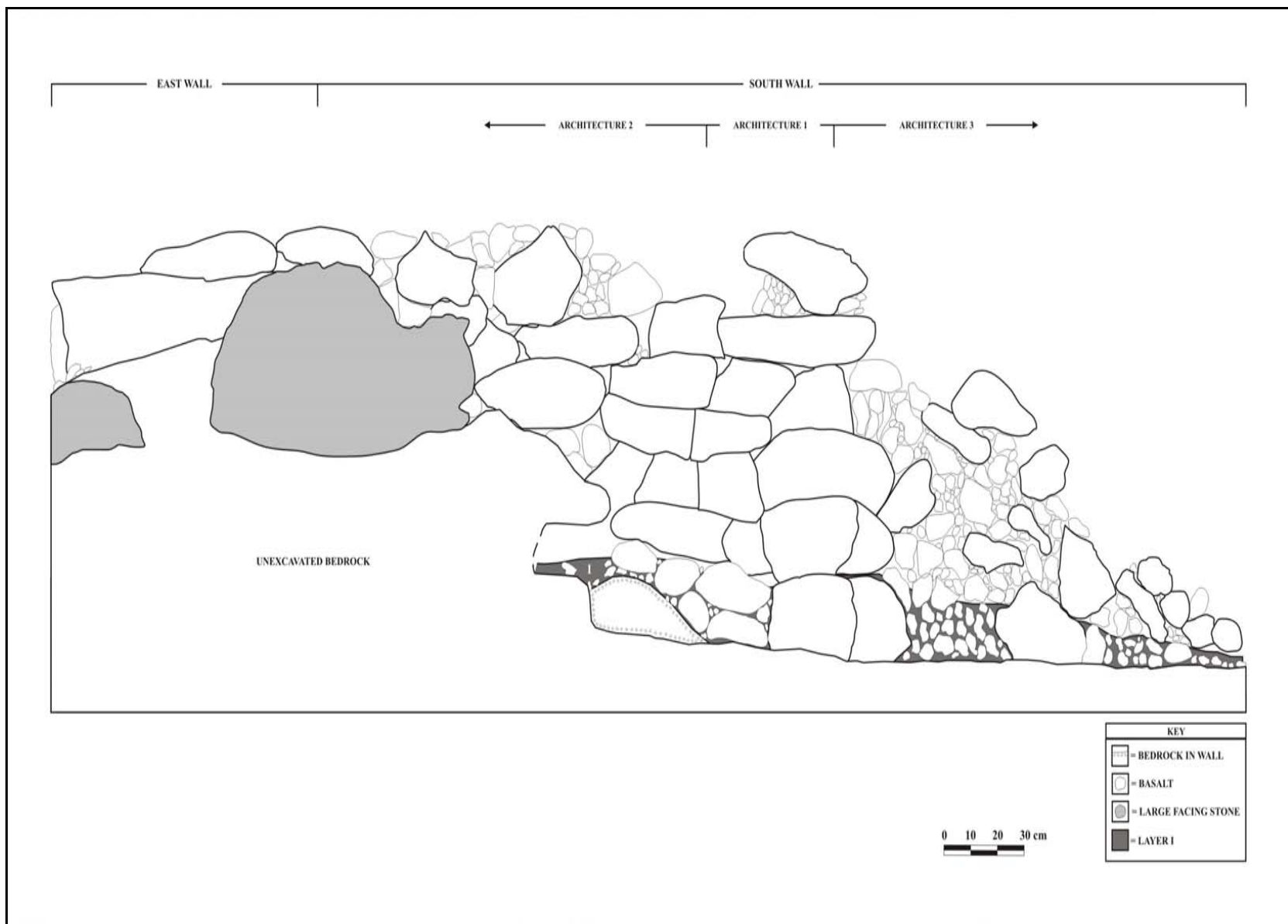
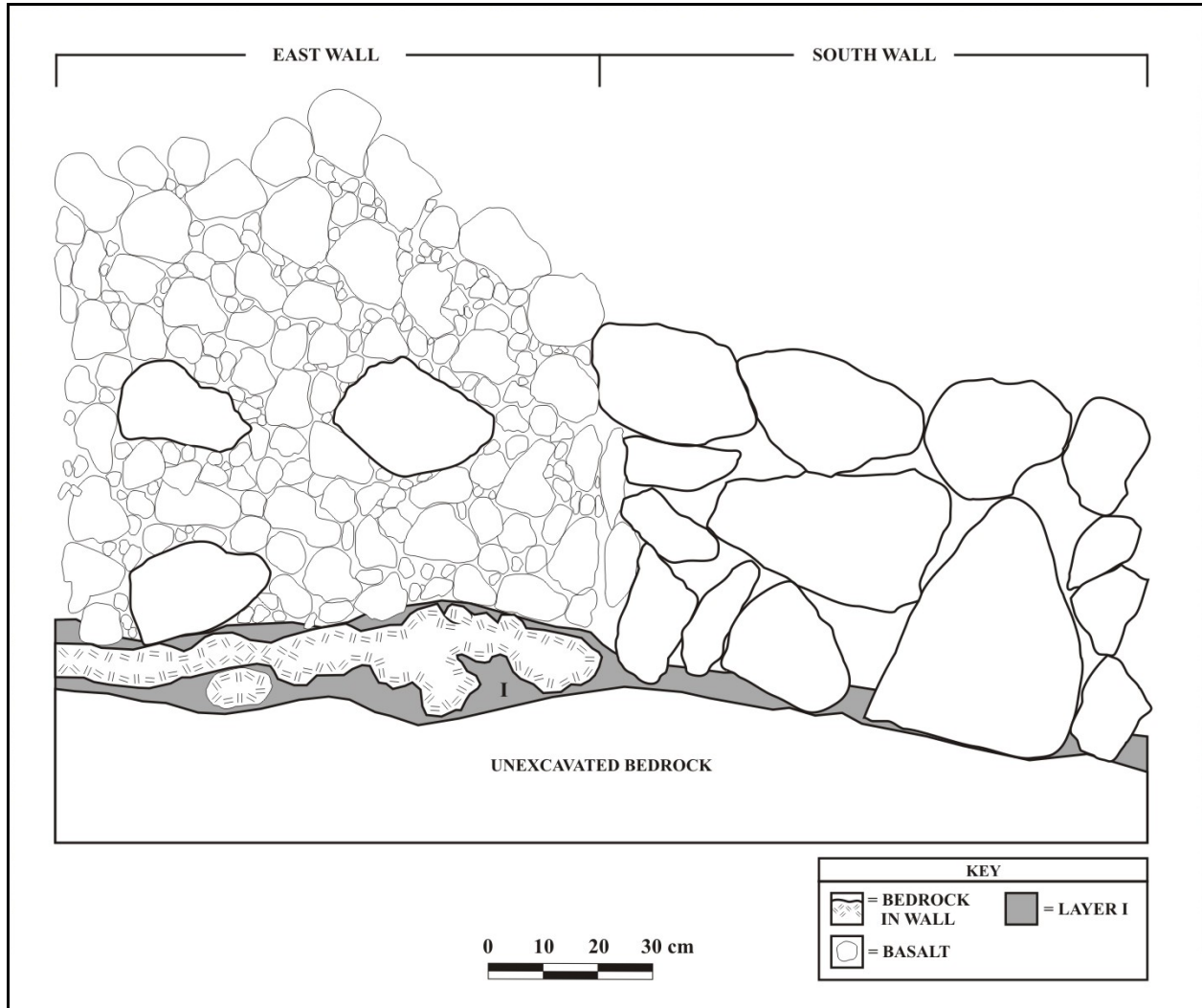


Figure 56: Site 10696, Feature 1, ST-1, Profile: East and South Walls.

the central portion of boulders mentioned above. This element continued as a boulder construction until it reached bedrock, although its lowermost 20 cm were mixed with soil. This Layer I soil was a very dark grayish brown (10YR 3/2) silt.

The second element appears to be an addition of mixed boulders and cobbles on the east side of the feature resting directly on the outcrop with no soil. The third element also appears to be an addition, randomly piled against the first elements west side. Construction of this element is quite different from the other elements in that it is comprised of cobbles and pebbles (Figure 56). Cultural material recovered from ST-1 inspired ST-2 (Figure 57).



**Figure 57: Site 10696, Feature 1, ST-2, Profile: East and South Walls.**

Only two cultural items were recovered from the feature: a small boulder manuport of a white sedimentary material located in the eastern portion of the trench, about 70 cm below the surface and a remnant of a plastic sandwich bag also located quite deep within the feature's first element (Table 30). With this discovery, efforts were made to identify recent human disturbance within the structure, but none was found. ST-2, which then attempted to identify animal disturbance, found none. Nonetheless, animal disturbance remains the most plausible



explanation. Moss, and soil accumulation at the bottom of the feature indicates that its construction was pre-plastic. ST-2's stratigraphy was nearly identical to that of ST-1.

**Table 30. Site 10696, Feature 1, ST-1, Midden.**

Layer	Depth (cmbd)	Collected Material	Weight (grams)	Count	Remarks
-	-	Clear Plastic	-	1	Modern, from plastic bag or saran wrap
Arch 2	-	Conglomerate Coral and Coarse Gravel Block	>20 lbs	1	One side is smooth

**SITE 10697**

Site 10697 is located in Kohanaiki Ahupua'a, in the central portion of the project area, toward its northern margin. The site is located on the earlier of the project area's two Hualalai flows, just below the 980 ft. elevation contour line. Dominant overstory species include christmasberry and *alahe'e*. Additional plant species include *noni*, *lama*, and *kukui*. Site 10697 (Figure 58) is composed of eight features and covers a total area of approximately 50 m on a north-south axis by approximately 25 m on an east-west axis (1,250 m<sup>2</sup>). The site lies on a west-facing slope along the project area's northern boundary, a ranch wall, occurring approximately 40 m to the northwest.

Site 10697 is composed of a grouping of non-agricultural features located within the immediate agricultural area. The grouping was based on feature form, inferred function, and labor expenditure. Eight features compose the site: two terraces, two terrace/paved areas, one mound, one modified outcrop, one enclosure, and one paved area (Table 31). These features are interpreted to form a complex occupied on a permanent basis. Four test units and one stratigraphic trench were excavated to further investigate Site 10697. Only one test unit yielded a significant amount of cultural materials in the form of shell, volcanic glass fragments, and charcoal flecking (TU-2). TU-3 produced only a very modest quantity of shell and volcanic glass. The remainder of the units and the single trench provided only negative results. Based simply on physical attributes of the site and limited associated cultural materials, the habitation complex appears to have been constructed during pre-Contact times. A radiocarbon date from Feature 5 indicates a site occupation at or around the terminal pre-Contact/early historic period.

**Table 31. Site 10697 Non-Agricultural Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Enclosure	6.50	4.50	1.30	One 1 x 1 m TU (TU-1)
2	Terrace/Paved Area	6.50	3.50	0.60	One 1 x 1 m TU (TU-4)
3	Terrace	5.00	3.50	0.55	
4	Paved Area	5.00	3.00		
5	Terrace/Paved Area	7.00	3.75	0.80	One 1 x 1 m TU (TU-2)
6	Modified Outcrop	2.50	2.50	1.25	One approx. 2 x 1 m ST (ST-1) (discontinued)
7	Terrace	5.00	4.00	0.95	One 1 x 1 m TU (TU-3)
8	Mound	2.50	1.50	0.45	

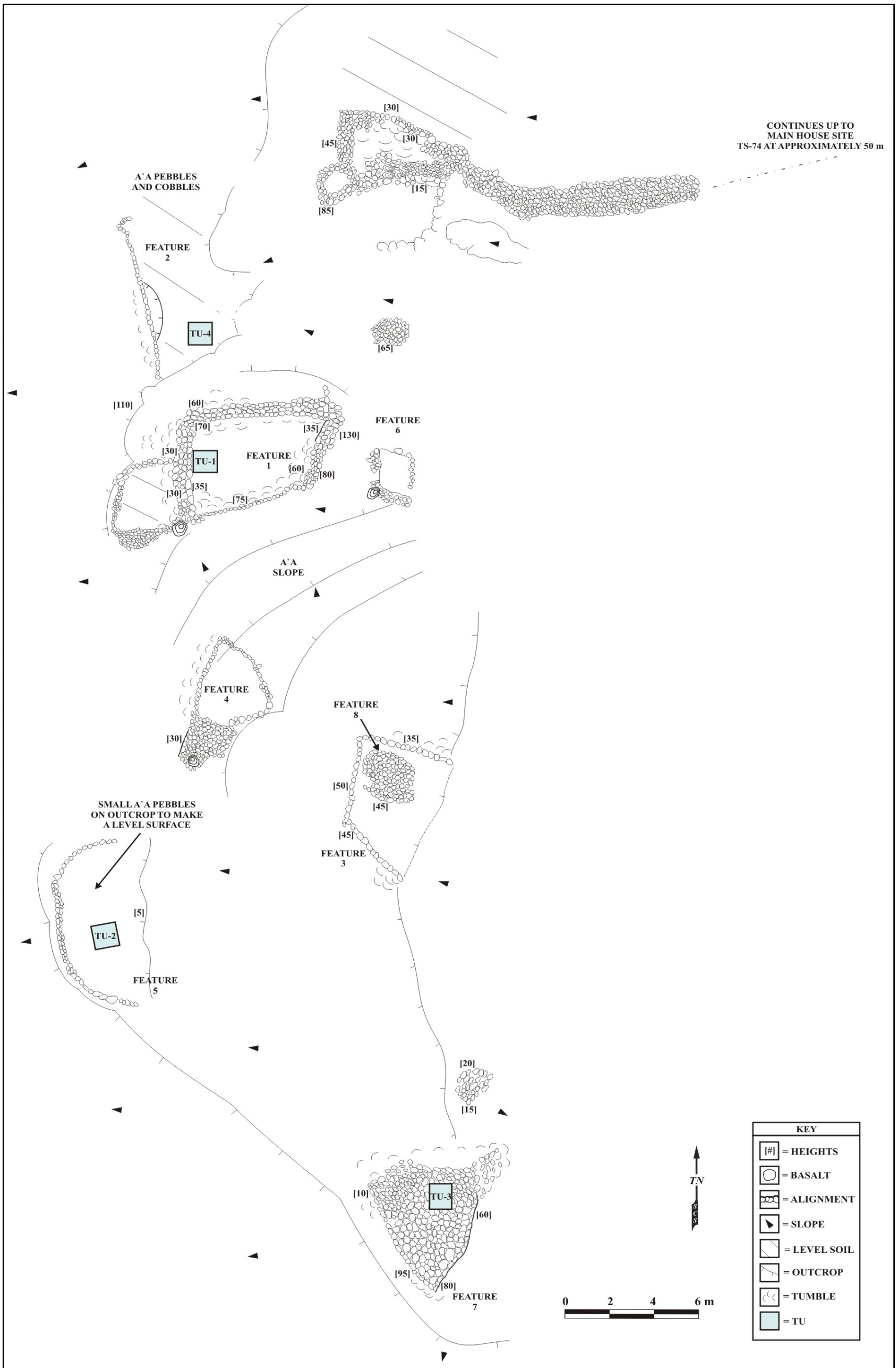


Figure 58: Site 10697, Plan View.

## FEATURE 1

Feature 1 is a three-sided enclosure located in the western portion of Site 10697 on a gentle, northwest-facing slope. The feature was constructed of cobbles and boulders founded on bedrock. The three walls occur as the feature's north, east, and west flanks. The southern flank exhibits a slight retaining element of cobbles and pebbles against an 'a'ā slope. The only visible facing of the feature occurs on the interior, eastern wall, in its northeast corner.

A single 1.0 by 1.0 m unit, TU-1, was placed abutting the central portion of the feature's west wall. The unit was excavated to aid in defining feature function, yet was sterile and only extended 25 cmbs before terminating at bedrock. TU-1 revealed a single soil layer. Layer I averaged 25 cm thick and was a black (10YR 2/1) rocky silt containing a high percentage of pebbles and cobbles (Figure 59)

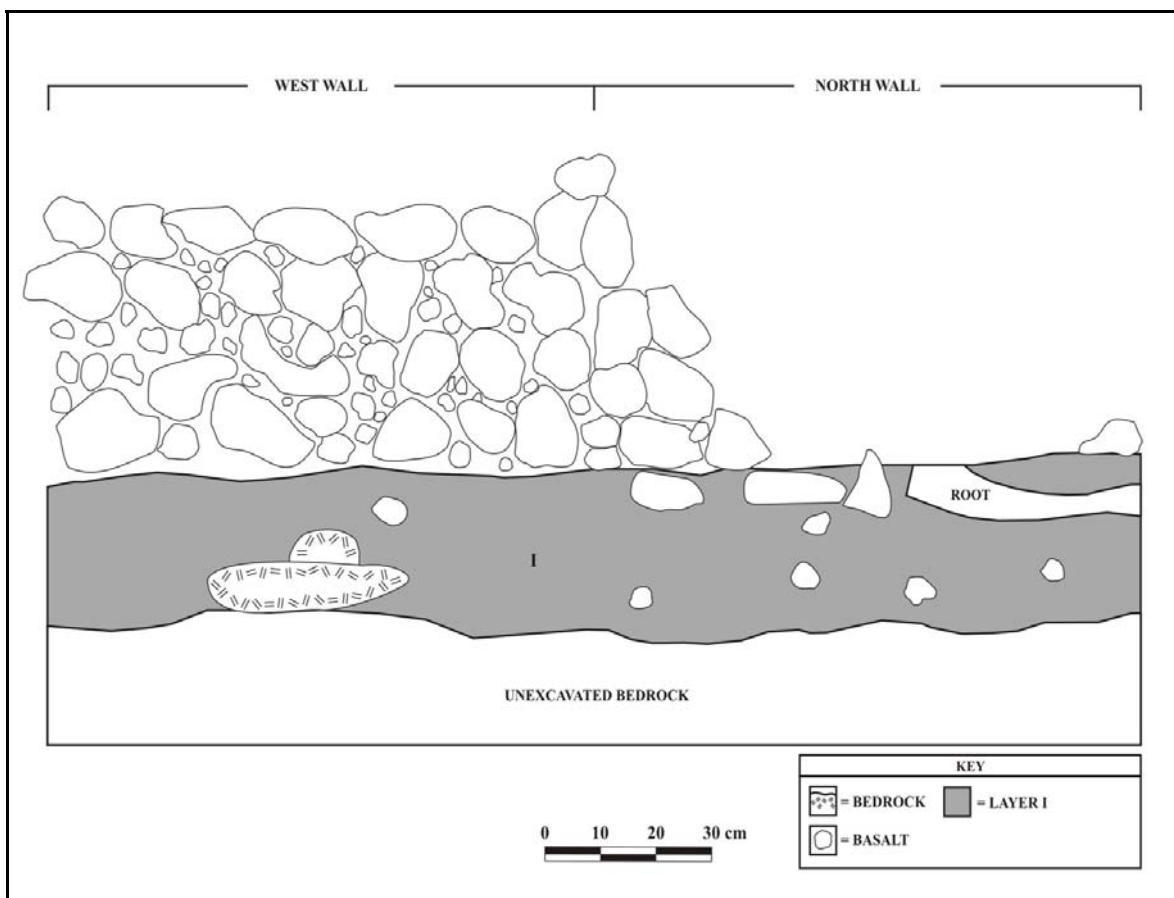
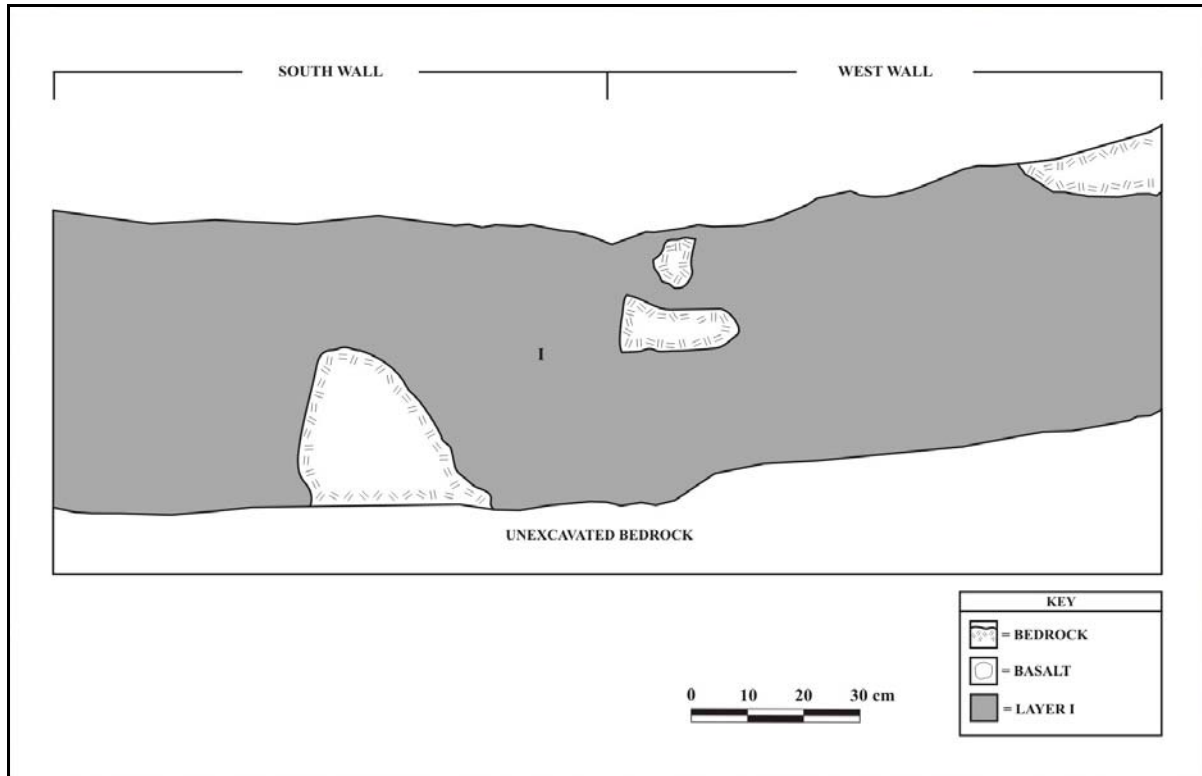


Figure 59: Site 10697, Feature 1, TU-1, Profile: West and North Walls.

## FEATURE 2

Feature 2 consists of a terrace that retains a level, pebble and cobble pavement. This feature is located 3.0 m to the north of Feature 1. Only the western flank of the terrace is faced, with the northern, eastern, and southern flanks abutting either *pāhoehoe* outcropping or an 'a'ā flow. A small area of level soil occurs in the southeastern corner of the feature and a basalt core was found on its surface.

TU-4, a 1.0 by 1.0 m unit, was placed in the area of level soil to further investigate feature function and the presence/absence of associated cultural material. The unit was excavated to a maximum depth of 50 cmbs and contained a single layer of soil with many rock inclusions. Layer I was a black (10YR 2/1), rocky silt. TU-4 was culturally sterile (Figure 60).



**Figure 60: Site 10697, Feature 2, TU-4, Profile: South and West Walls.**

## FEATURE 5

Feature 5 lies at the top of a steep, west-facing slope in the southwestern portion of Site 10697. The feature is situated 12.0 m to the south of Feature 1 and is composed of a terrace/pebble pavement founded on 'a'ā outcropping. The western flank of the feature contains a cobble and boulder-faced retaining element.

TU-2, a 1.0 by 1.0 m unit, was the only unit excavated in Feature 5. The unit was placed toward the central portion of the feature to further assess feature function and determine the presence/absence of associated cultural material. A single soil layer, Layer I, composed of c. 70% pebble in a silt matrix was encountered in this shallow excavation unit. Layer I was a black (10YR 2/1) color. A moderate to high concentration of cultural material was recovered from TU-2 and included marine shell, volcanic glass, and charcoal (Figure 61; Table 32).

One conventional radiocarbon determination of  $150 \pm 70$  BP (Beta No. 197063) was obtained from Layer I, TU-2, Feature 5, at Site 10697. Calibrated dates (OxCal v.3.5) are (1 sigma) A.D. A.D. 1660–1960 (1.00); at 2 sigma, A.D. 1640-1960 (1.00).

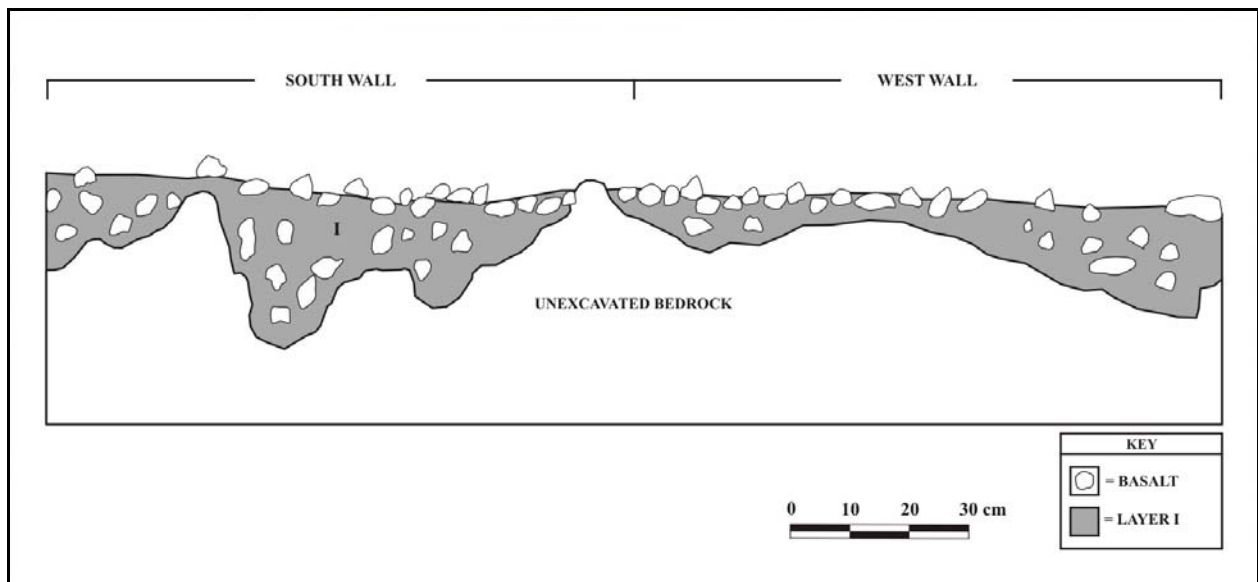


Figure 61: Site 10697, Feature 5, TU-2, Profile: South and West Walls.

Table 32. Site 10697, Feature 5, TU-2, Midden.

Layer	Collected Material	Weight (g)	Count	Remarks
I	Invertebrates	2.4	-	<i>Conus</i> sp.; <i>Cypraea</i> sp.
	Charcoal	14.3	-	-

## FEATURE 6

Feature 6 is a collapsed lava blister (modified outcrop) located 2 m east of Feature 1 in Site 10697. Cobble and boulder construction occurs on its south, east and west sides. The interior of the feature contains some collapsed rocks.

ST-1 (2.0 by 1.0 m at the time excavation ceased) consisted of two excavation areas, the trench having been placed in the eastern and western portions of the blister interior. This unit was placed to investigate whether occupants blocked a lava tube entrance, which often contain human remains. The western segment of the trench was excavated first, and, after the removal of a fair amount of rock, became confined in a narrow space due to large amounts of soil present. Consequently, this portion of the unit was abandoned and work began on the eastern flank of the trench. Rock was initially removed until the roof began caving in and excavation was no longer feasible. Prior to abandonment, however, an approximately 1.0 square meter could be viewed laterally in both discontinued ends of the trench. No cultural material observed in this section. No profile was drawn for this unit, and it does not appear on the plan view.

The remaining features of the site, Features 3, 4, and 8, were not subject to testing. Feature 4 consists of a paved area with a slightly raised portion at its southwest end. This section is faced with cobbles and is located about 5.0 m south of Feature 1. Feature 4 is interpreted to have functioned as a work area. Feature 3 consists of a three-sided terrace that faces to the west.

The feature has an uneven pebble and cobble interior. Feature 8 is composed of a well-constructed rectangular mound that lies on top of Feature 3.

Site 10697 is interpreted as a permanent habitation locus with an emphasis on stone tool manufacture. Of interest was the high quantity of volcanic glass debitage recovered from Feature 5. Quantities of this amount would seemingly point toward on-site manufacture or use of the feature as a workshop. A single radiocarbon sample was acquired from Layer I of Feature 5, dated to a late pre-Contact to historic period of occupation.

### FEATURE 7

Feature 7 consists of a triangular-shaped terrace having been constructed at the top of a steep, southwestern-facing slope near the southern flank of Site 10697. The feature has an irregular cobble and pebble surface with facing along its eastern flank.

TU-3, the only unit excavated in Feature 7, measured 1.0 by 1.0 m TU-3 was placed toward the northwestern margin in order to further assess feature function and determine the presence/absence of associated cultural material. This unit yielded 20 cm of architecture before soil was encountered, with the remainder of the excavation divided into two soil layers lying above bedrock. Layer I averaged 20 cm thick and was a very dark grayish-brown (10YR 3/2), rocky silt. Layer II averaged 30 cm thick and was a dark brown (10YR 3/3), rocky silt. Architecture only extended into the upper portion of Layer I (0-20 cm) and yielded small amounts of marine shell, a single piece of volcanic glass, and modest charcoal flecking. Layer II was almost completely sterile, but for its upper margin which yielded a marine shell fragment and some charcoal (Figure 62; Tables 33 and 34). Layer II contained c. 60% to 70% pebble inclusions.

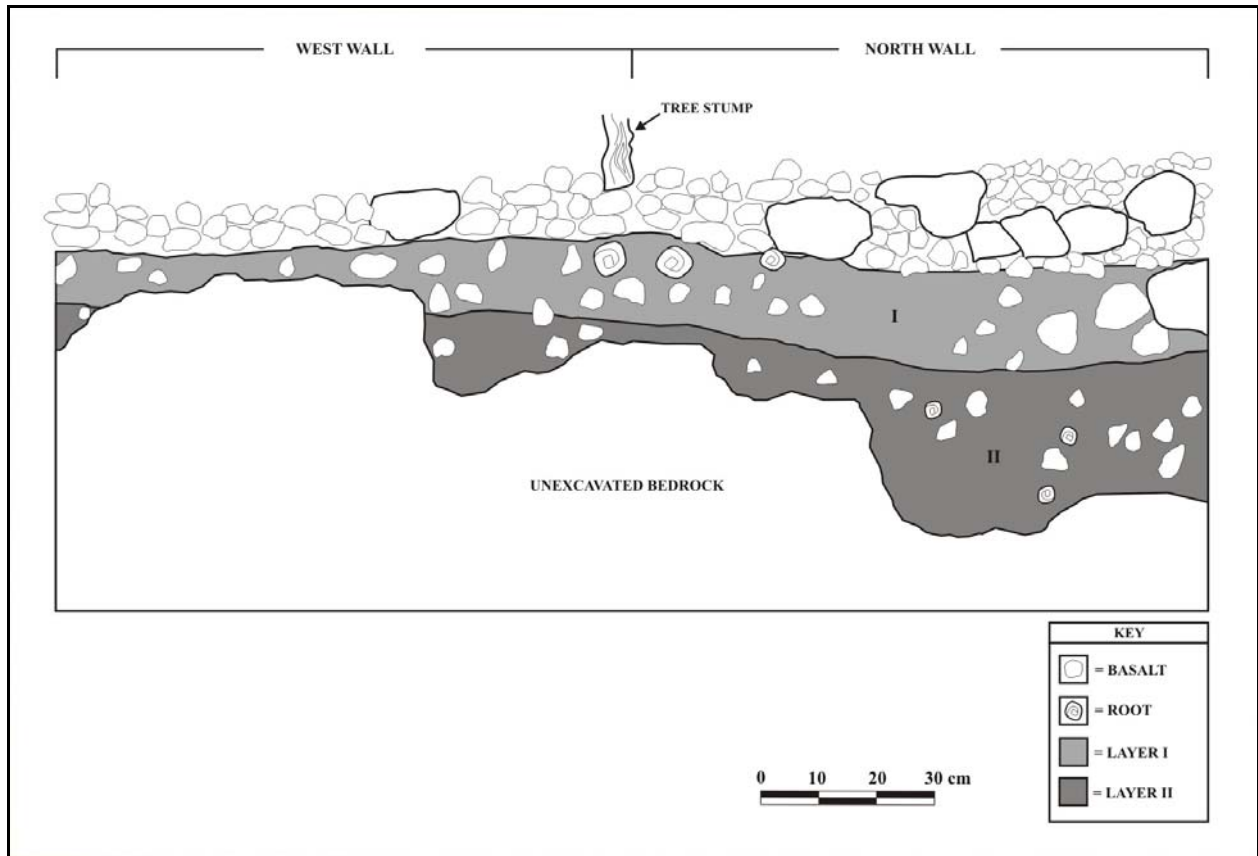
**Table 33. Site 10697, Feature 7, TU-3, Midden.**

Layer	Collected Material	Weight (grams)	Count	Remarks
I	Invertebrates	9.4	-	<i>Cypraea</i> sp.
	Charcoal	2.8	-	-
II	Invertebrates	1.2	-	Taxa: <i>Cellana</i> sp., <i>Drupa</i> sp.
	Charcoal	7.5	-	-
	<i>Kukui</i>	0.5	-	-

**Table 34. Site 10697 Traditional Artifacts.**

Feat.	Unit	Layer	Artifact Type	L (cm)	W (cm)	T (cm)	N	Remarks
5	TU-2	I	Volcanic Glass Debitage	-	-	-	22	Eight IF; 3 SF; 11 NDF
7	TU-3	I	Volcanic Glass Debitage	-	-	-	1	One IF

IF = Interior Flake; SF = Secondary Flake; NDF = Non-Diagnostic Flake



**Figure 62: Site 10697, Feature 7, TU-3, Profile: West and North Walls.**

**SITE 10698**

Site 10698 is located in Kohanaiki Ahupua'a, toward the center of the project area, approximately 100 m east of Site 30 (the Mauka-Makai Road). The site occurs immediately below the 920 ft. elevation contour line and lies on the older of the two Hualalai flows which dominate the project area. The overstory within the site is mostly *alahe'e*.

Site 10698 is a single feature site (Feature 1) lying on a moderate, west-facing slope (Figure 63; Table 35). Site 10704 is aligned to the southwest.

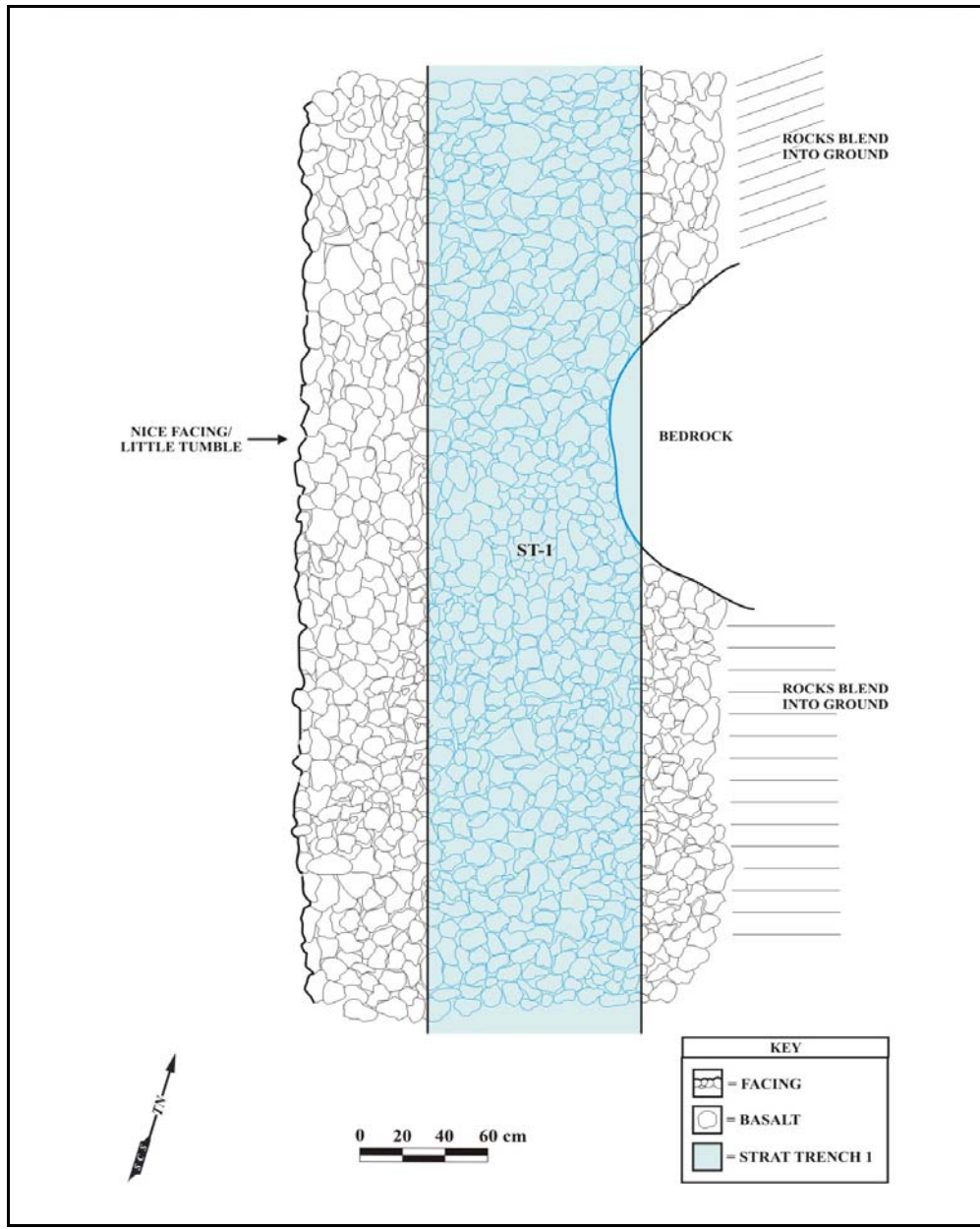


Figure 63: Site 10698, Plan View.

Table 35. Site 10698 Features.

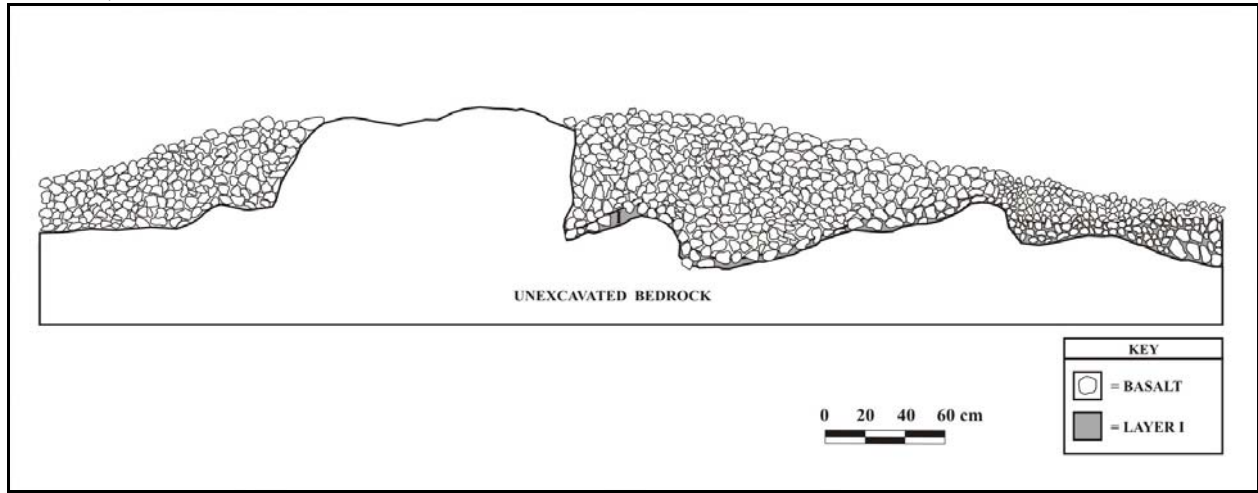
Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Platform/Terrace	4.80	2.10	0.70	One 1 x 5 m ST (ST-1)

Feature 1 measures 4.80 m long, 2.10 m high, and 0.70 m above the ground surface. The feature consists of a mound constructed directly on bedrock and oriented in a rough north-south direction. There is a slight rise on the eastern side of the feature and the mound is faced on its western side.

Feature 1 was excavated by a single 1.0 by 5.0 m stratigraphic trench bisecting the long axis of the feature. ST-1 was placed primarily to determine the presence/absence of associated



subsurface deposits and extended to a maximum depth of approximately 70 cmbs. The matrix primarily consisted of cobble and boulder architecture with a thin layer of mixed sediment and architecture overlying bedrock (Figure 64). Layer I was a very dark grayish-brown (10YR 3/2) rocky silt. No cultural material was recovered from testing. While the form of Feature 1 remains somewhat debatable, feature function is more secure: agricultural. This is based on the morphology of the feature, its form (mounded), the morphology of other agricultural features in the area, and the lack of associated cultural resources.



**Figure 64: Site 10698, Feature 1, ST-1, Profile: South and East Walls.**

**SITE 10699**

Site 10699 is situated near the center of the project area in Kohanaiki Ahupua’a, between the 880 and 900 ft. elevation contours. It lies on the older of the project area’s Hualalai flows and has an overstory dominated by christmasberry and alahe’e. Site 10699 consists of 11 features lying on a fairly steep west facing slope and covering an area roughly 45 m east-west by 30 m north-south (Figure 65). Of these, eight features have been grouped as non-agricultural features, and three features have been grouped as agricultural features. Features include: one mound, five terraces, three platform/mounds, one enclosure, and one filled blister with associated upright (Table 36). Additional non-tested agricultural features of the Kona Field System lie within and around the site area.

**Table 36. Site 10699 Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Mound	4.20	2.60	1.00	One 1.0 x 2.6 m ST (ST-1)
2	Platform/Mound	2.80	2.50	1.20	One 1.0 x 2.0 m ST (ST-2)
3	Filled Blister w/ Upright	1.60	1.60	—	One 1.6 x 1.6 m ST (ST-3)
4	Terrace	5.10	2.10	1.70	One 1.0 x 3.5 m ST (ST-4)
5	Platform/Mound	8.90	2.00	0.90	
6	Terrace	5.00	3.50	1.00	
7	Terrace	4.00	3.00	1.30	
8	Terrace	6.40	2.10	0.48	
9	Terrace	7.75	3.10	1.30	
10	Platform/Mound	6.70	2.00	0.70	One 1.0 x 2.6 m ST (ST-5)
11	Enclosure	6.00	5.00	0.30	



Figure 65: Site 10699, Plan View.

All of the features appear to be agricultural in function. A single radiocarbon date was obtained from the site, in soil at the bottom of the lava blister that ST-3 was put in. The date from this feature was surprisingly early for the area, suggesting deposition between the 13<sup>th</sup> and 15<sup>th</sup> centuries.

### **FEATURE 1**

Feature 1, a mound, is located toward the north margin of the site and is moderately sized, faced with small boulders on its south and west side. Bedrock extends from underneath the feature on its north side (Figure 66). ST-1, a 2.6 by 1.0 m trench, was placed in this feature so that it bisected it toward its center with excavation, revealing a boulder, cobble, and pebble fill behind the boulder facing. Two very thin layers of soil overlaid the bedrock in the southern portion of the unit. Layer I averaged 4 cm thick and was a very dark brown (10YR 2/2) silt. Layer II averaged 10 cm thick and was a dark brown (10YR 3/3), rocky silt. No cultural material was observed during the excavation (Figure 67).

### **FEATURE 2**

Feature 2 was labeled a platform/mound in that it differs slightly from other mounds in the area. Located in the eastern portion of the site, it is nearly square with well-defined corners. It is faced with boulder-sized slabs on its south side and has a relatively flat top (Figure 68). Because of its relatively small size, the feature was bisected by ST-2, a 2.0 by 1.0 m trench, along a rough east-west axis with almost its entire east side removed. Excavation revealed cobble and boulder fill retained on its south side by the previously described facing, and some flat, horizontally laid slabs on its top. Two layers of soil lay beneath the architecture in most of the trench, but these did not contain architecture, extending a maximum of 25 cm before bedrock was reached (Figure 69). Layer I averaged 15 cm thick and was a dark brown (10YR 3/3) silt. Layer II averaged 5 cm thick and was a very dark brown (10YR 2/2) silt. Besides architecture, no cultural material was revealed.

### **FEATURE 3**

Feature 3 was the most unusual feature at the site and is a collapsed lava blister filled with cobbles and boulders and a few *pāhoehoe* slabs. It is located along the southern margin of the site and also has an 80 cm high upright slab near its south edge (Figure 70). Excavation of this feature was primarily intended to establish the presence or absence of human remains, and began by removing its fill. Consequently, the size and shape of ST-3 was dictated by the blister's opening. After this fill was removed, two low tubes were revealed extending 4.5 m northeast and 5.0 m southwest (Figure 71). In addition, a small 1.0 m-long, filled-in side tube extended to an opening directly south. The only soil observed in this excavation lay directly underneath the larger of the openings, averaged 20 cm thick and appeared to have been deposited prior to the rock fill (Figure 72). This Layer I soil was a dark brown (10YR 3/3) silt. The only material recovered from this excavation was some charred material (5.6 g) derived from the soil layer.

One conventional radiocarbon determination of  $520 \pm 70$  BP (Beta No. 197064) was obtained from Layer I, ST-3, Feature 3, at Site 10699. Calibrated dates (OxCal v.3.5) are (1 sigma) A.D. 1320–1350 (0.21) and A.D. 1390–1450 (0.79); at 2 sigma, A.D. 1290–1490 (1.00) (see Appendix A).

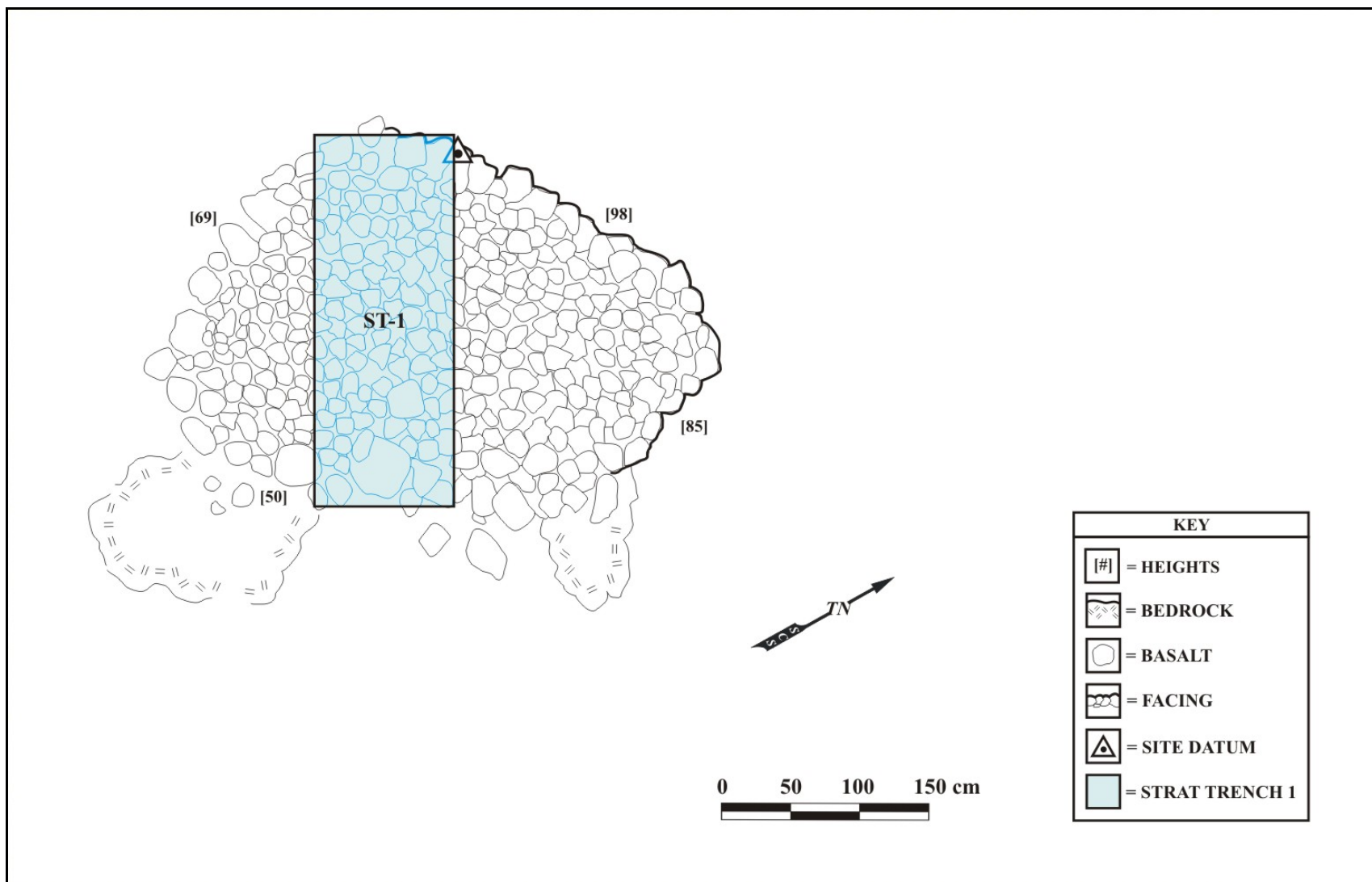


Figure 66: Site 10699, Feature 1, ST-1, Plan View.

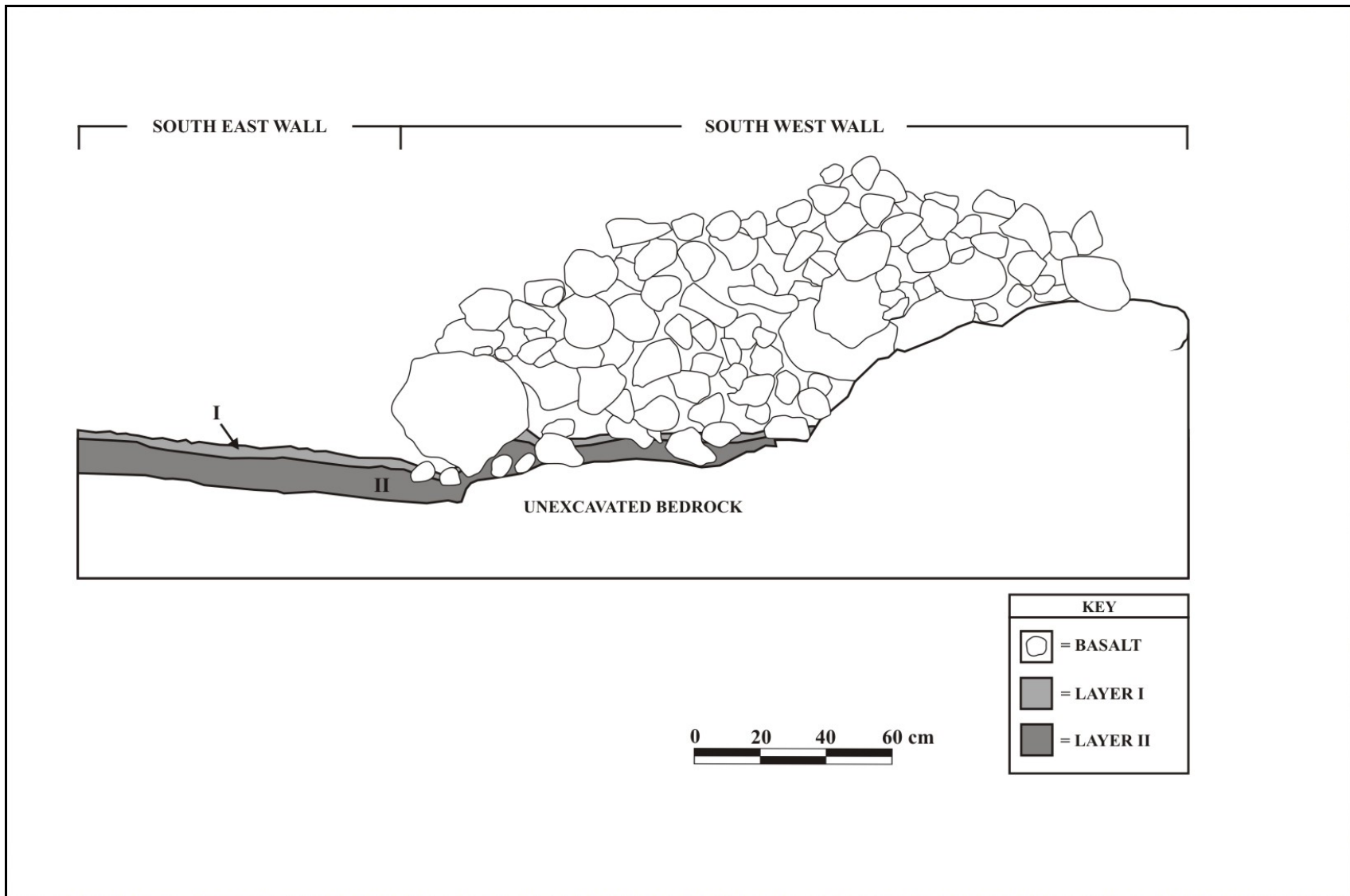
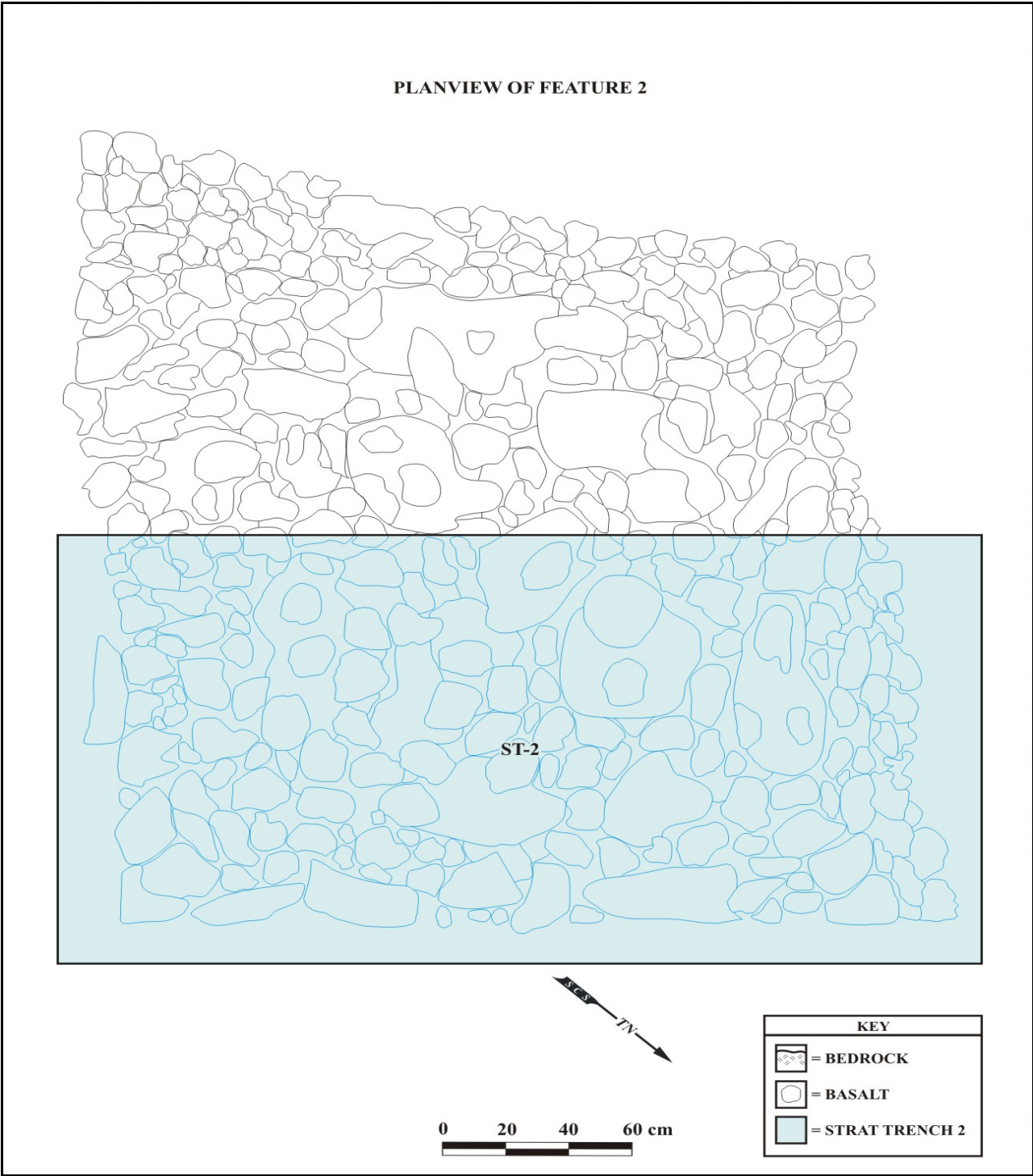


Figure 67: Site 10699, Feature 1, ST-1, Profile: Southeast and Southwest Walls.



**Figure 68: Site 10699, Feature 2, ST-2, Plan View.**

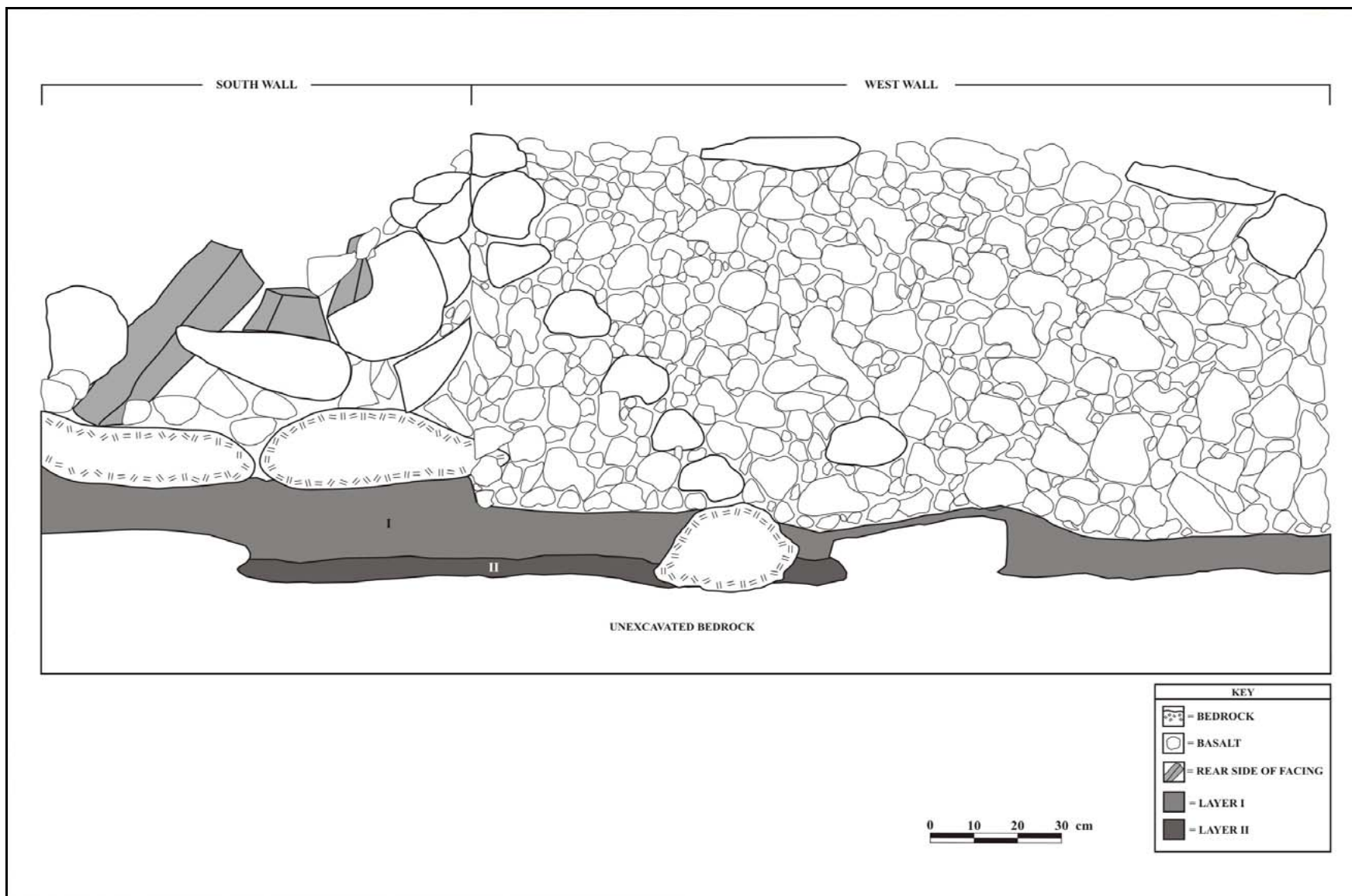


Figure 69: Site 10699, Feature 2, ST-2, Profile: South and West Walls.

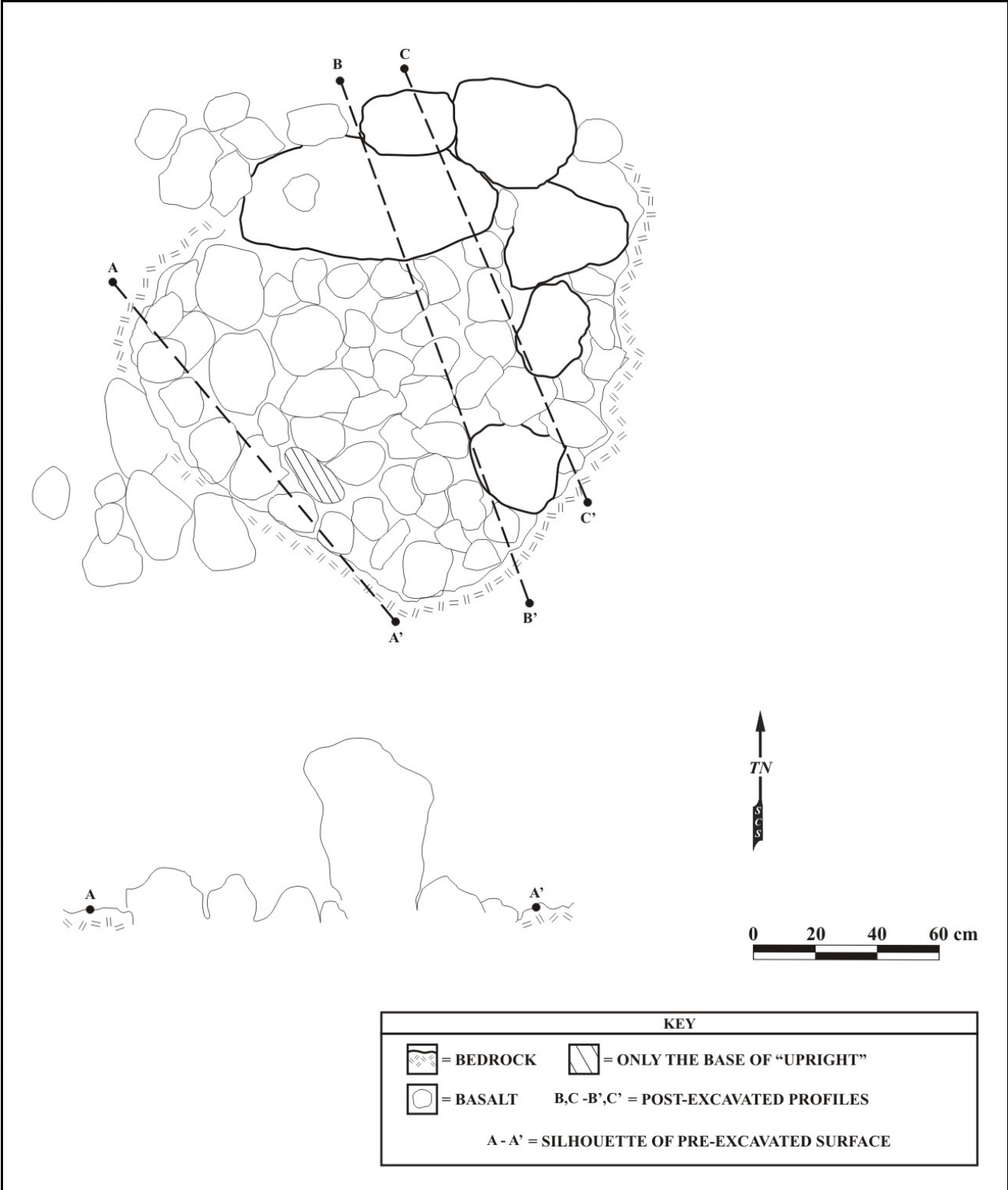


Figure 70: Site 10699, Feature 3, ST-3, Plan View.



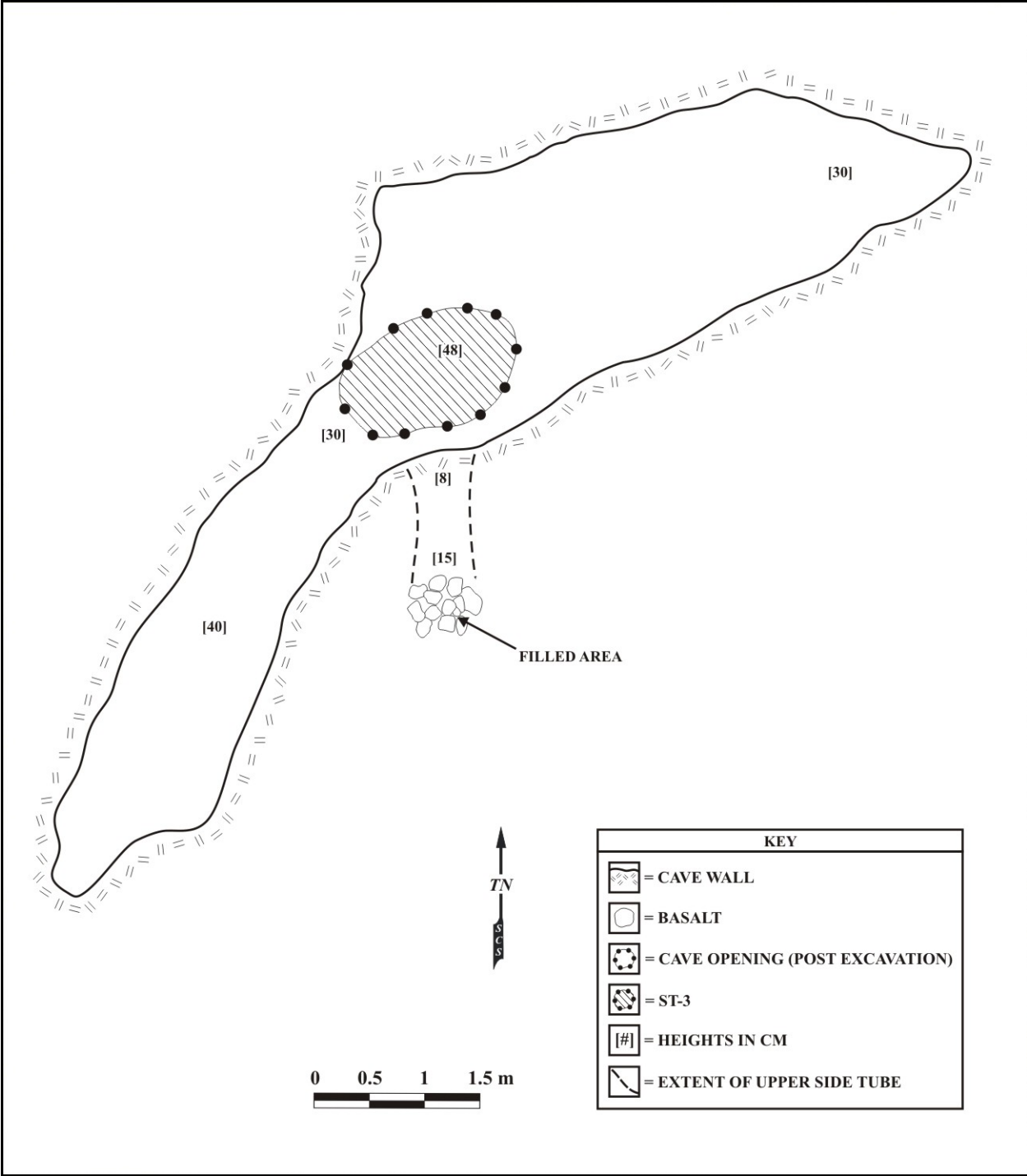


Figure 71: Site 10699, Feature 3, ST-3, Post Excavation Plan View.

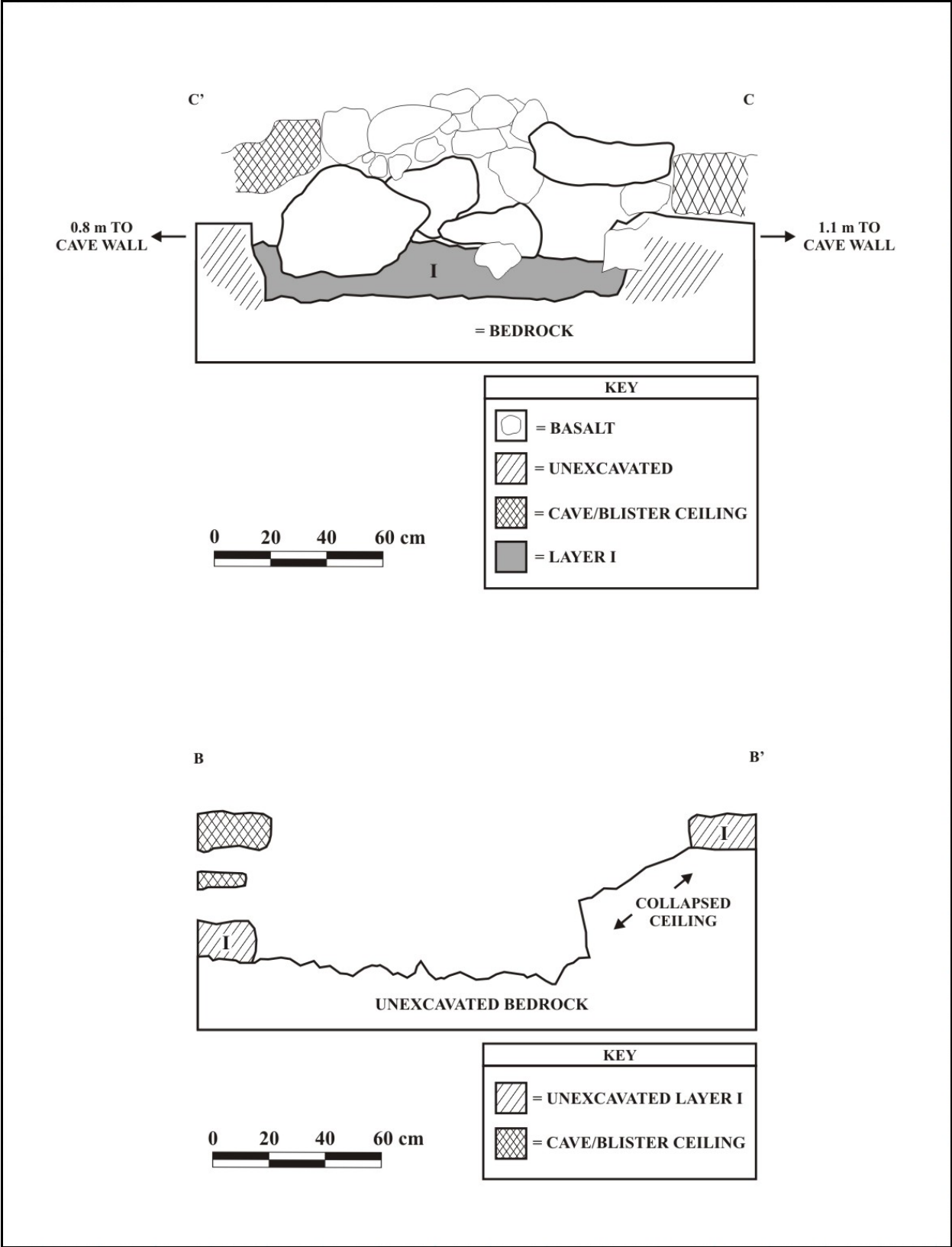


Figure 72: Site 10699, Feature 3, ST-3, Profile: East and West Walls.

#### **FEATURE 4**

Feature 4 is a terrace located along the northern edge of the site. It extends southwestward from a large, steep outcrop with a small cave in it, and exhibits some nice stacking (but not facing). It differs from the other terraces in that it retains a moderately sized area of level soil (Figures 73 and 74).

ST-4 was the single trench placed in this feature, and was situated on a north-south axis so that about half of it lay in the area of level soil. It measured 3.5 by 1.0 m and was placed in this feature primarily to explore feature function and architecture. Excavation demonstrated a retaining element of boulders and cobble overlying bedrock with only a few centimeters of soil located at the bottom of the architecture. The portion of the trench that was located in the area of level soil revealed two soil layers totaling not more than 25 cm in thickness before bedrock was reached. Layer I averaged 20 cm thick and was black (10YR 2/1) silt. Layer II averaged 4 cm thick and was a very dark grayish-brown (10YR 3/2) silt with architecture. No cultural material was recovered in this excavation.

#### **FEATURE 5**

Measuring 8.9 by 2.0 m, Feature 5 is the third largest feature of Site 10699. It is a wide linear platform/mound with a relatively flat top. Feature 5 is located at the southeast corner of the site, 5.0 m south of Feature 10 and 2.0 m east of Feature 11 (see Site 10699 Planview). This feature is oriented east-west, its length lying parallel to the slope. Very similar in construction to Feature 10, Feature 5 is distinctly faced with boulders—however, on only one side in this case. This platform/mound was not tested, and no cultural material was found on the surface.

#### **FEATURES 6 THROUGH 9**

Features 6, 7, 8, and 9 are unexcavated terraces that have soil behind them and they all retain pavements. All of these terraces are located on fairly steep portions of the general west facing slope, and incorporate bedrock outcrops.

#### **FEATURE 10**

Feature 10 is the only other feature that was excavated in the non-agricultural group and is a fairly wide linear platform/mound with a relatively flat top. It is located in the southeast portion of the site, runs perpendicular to the slope and is faced with boulders in areas on its north, south, and east sides. In addition, a small paved area is retained by it in its northeast corner (Figure 75).

ST- 5, a 2.6 by 1.0 m trench, was placed in Feature 10 mainly to search for human remains. This excavation demonstrated medium sized boulder facing on both of the feature's north and south sides retaining a cobble and pebble fill with occasional boulders. Two thin soil layers, both of which contain architecture, overlaid the bedrock, although the second layer, where the trench extended into a small area of the pebble pavement, became deeper and did not contain architecture (Figure 76). Layer I averaged 10 cm thick and was a very dark brown (10YR 2/2) silt. Layer II averaged 25 cm thick and was a dark brown (10YR 3/3) rocky silt. Other than architecture, no additional cultural material was observed.

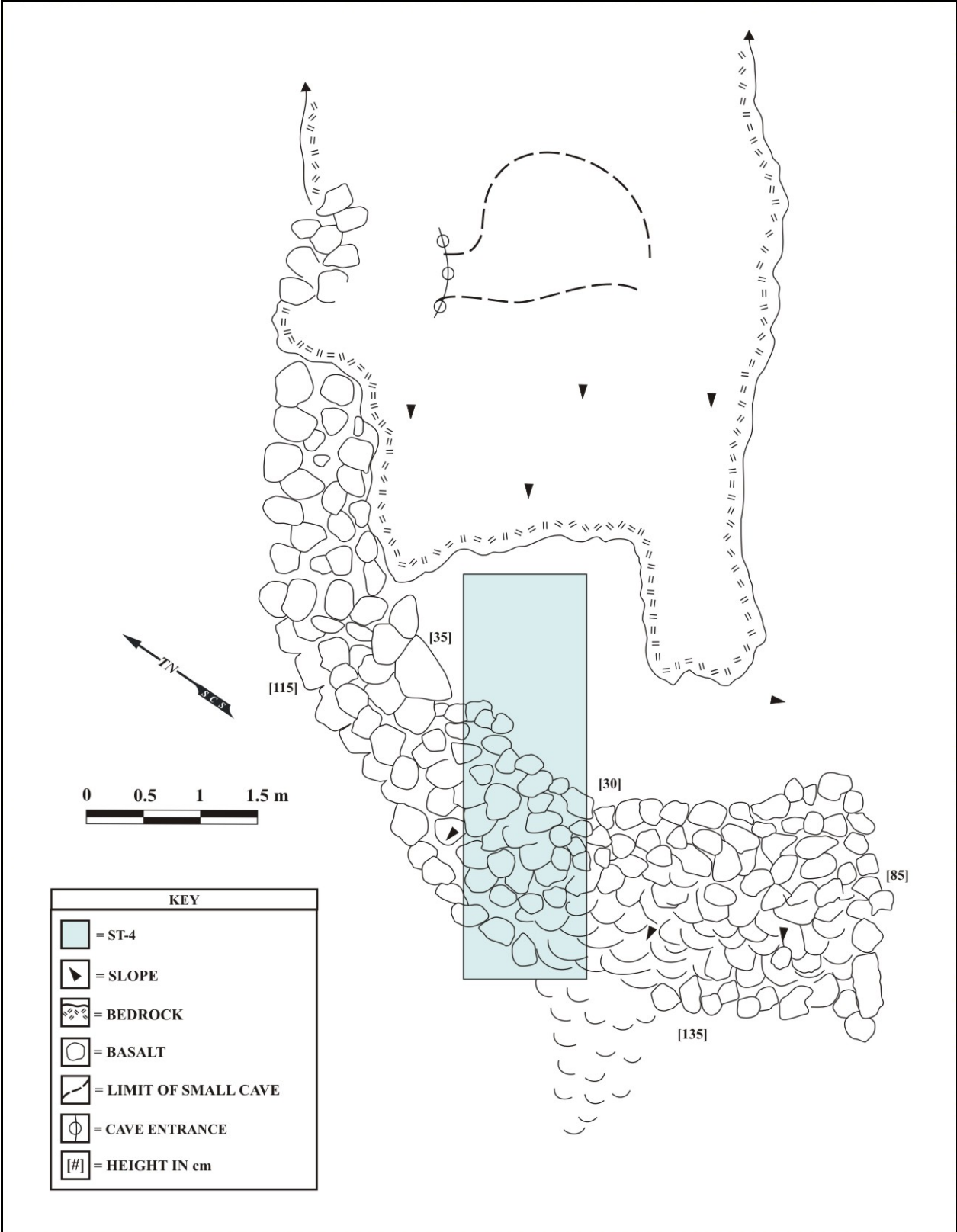


Figure 73: Site 10699, Feature 4, ST-4, Plan View.

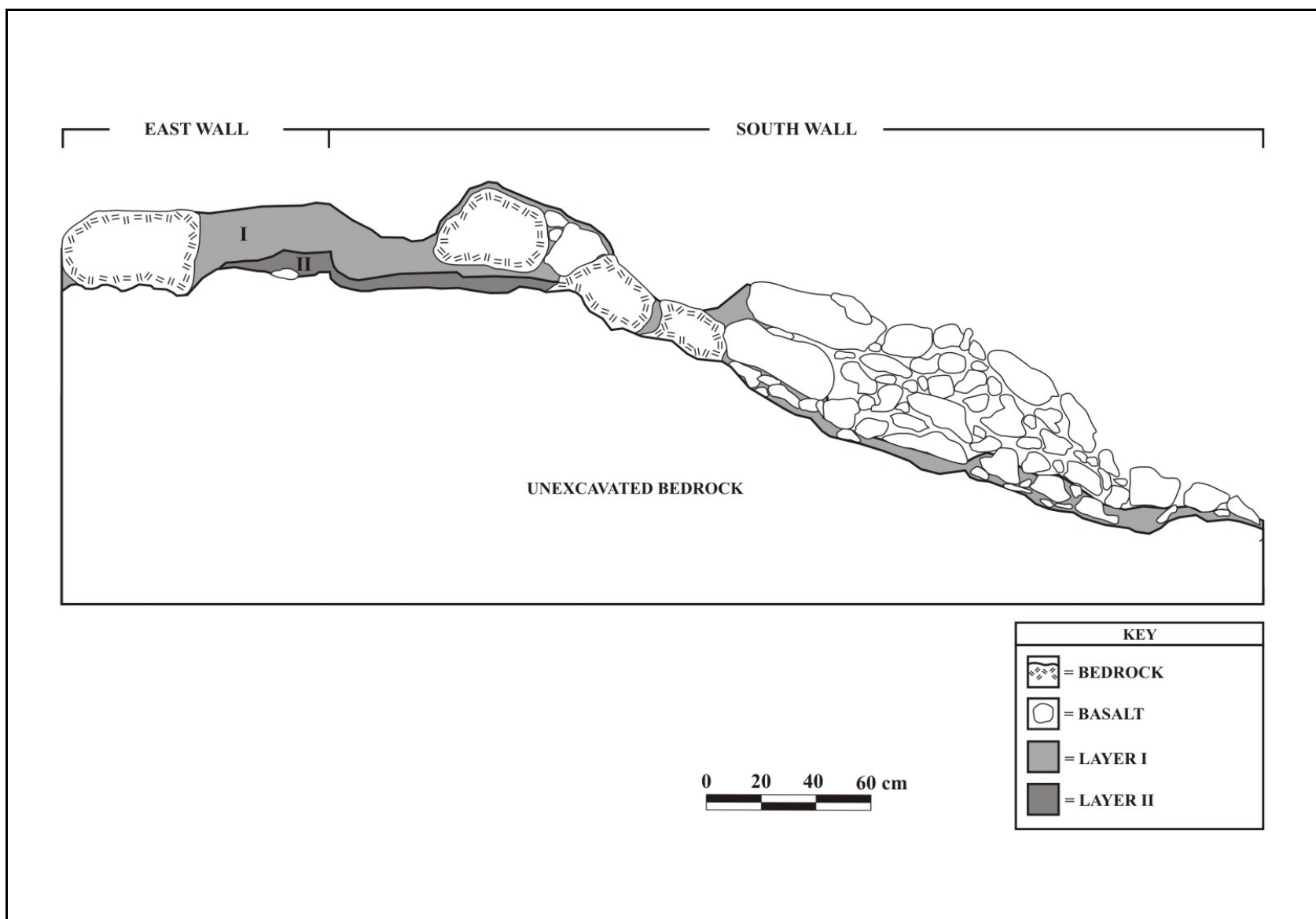


Figure 74: Site 10699, Feature 4, ST-4, Profile: East and South Walls.

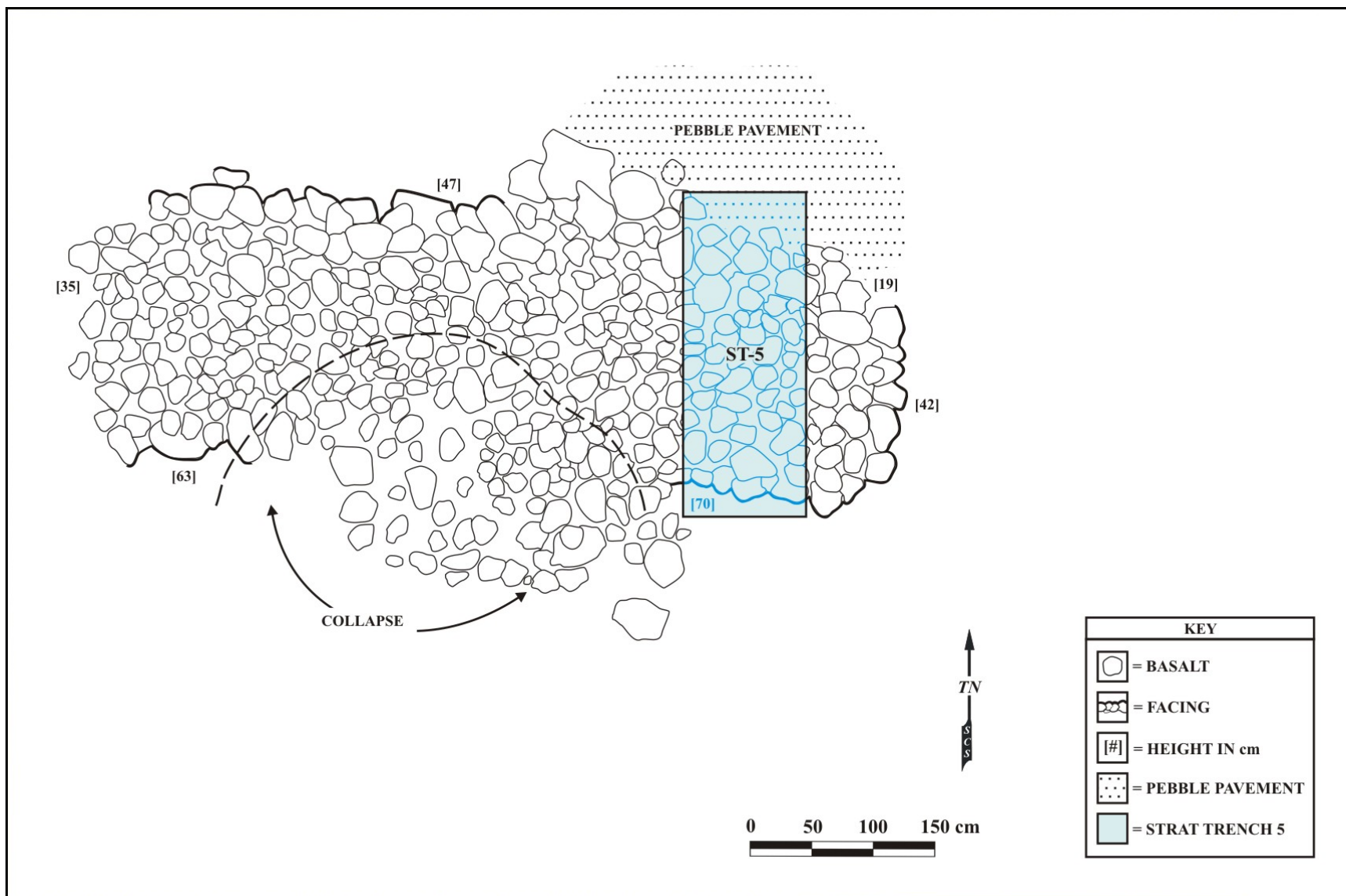
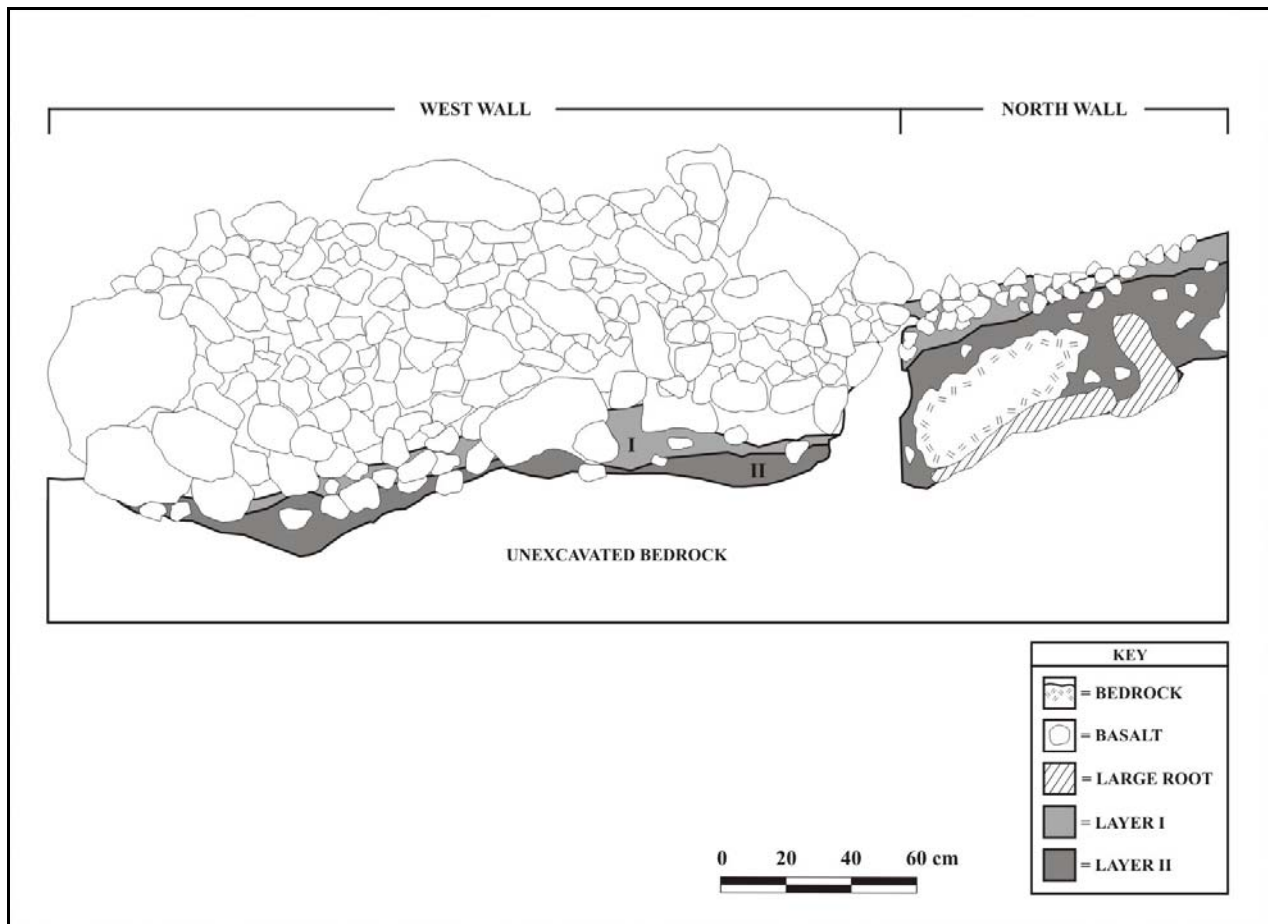


Figure 75: Site 10699, Feature 10, ST-5, Plan View.



**Figure 76: Site 10699, Feature 10, ST-5, Profile: West and North Walls.**

### **FEATURE 11**

Feature 11 is unique, and either an oval shaped enclosure, or a c-shape becoming enclosed by tumble. It is constructed of piled cobbles and boulders and exhibits no facing. A small, blocked lava blister is incorporated into its architecture at the feature's southeast end, but it is too small to enter.

## SITE 10700

This site was recorded and excavated by Barrera (1985, 1991). The information from this work is summarized here. Site 10700 consists of 26 features within an approximately 0.7-acre area bounded to the east and west by portions of the historic wall network encircling the Walled Fields area, and bounded to the north and south by part of the *kuaiwi* network designated Site 10716 (Figures 77 and 78). In addition to this habitation site, there are three distinct groups of features at Site 10700: (1) to the east (upslope), a group of five features bounded (to their east and west) by remnant cross-slope terraces; (2) an easternmost (highest in elevation) group of 12 features bounded by a remnant cross-slope terrace (to the west), and by a portion of the historic wall network encircling the Walled Fields area; and, (3) a westernmost group of eight features (seven mounds and one wall) bounded (to the west) by a portion of the historic wall network encircling the Walled Fields area.

All 26 features at Site 10700 are formally described below, including results of subsurface testing and analysis of material finds, where applicable. No subsurface testing or dismantling of features was conducted at the westernmost group of features (#3, above). Only one feature in the easternmost group (#2, above) was excavated (one trench). The majority of subsurface testing (*i.e.*, excavation and feature dismantling) was conducted at group #1 (see above) and at the C-shape habitation feature (Feature 1).

A modest amount of traditional artifacts—mostly stone tools and their manufacturing by-products—and midden—mostly marine shell, but also including mammal, bird, and fish bone, *kukui* nut shell, and charcoal—was recovered in excavation at Site 10700. Three historic era artifacts (two bottle glass sherds and one unidentifiable metal fragment) were recovered in two of mounds (*i.e.*, Features 11 and 13), but no historic artifacts were recovered at the main habitation feature (Feature 1). This, along with the dating, suggests the site is solidly within the pre-Contact era, but that some degree of site utilization into the post-Contact era has also occurred.

Two hydration rind dates were obtained from the C-shape habitation (Feature 1) at Site 10700. One hydration rind date was obtained from the terrace designated Feature 13 (see below). The dates for the C-shape range from the late 15<sup>th</sup> century (20–30 cmbs) to the middle-to-late 17<sup>th</sup> century (10–20 cmbs), indicating a terminal pre-Contact date for its utilization. The date for the terrace is from the middle 17<sup>th</sup> century.

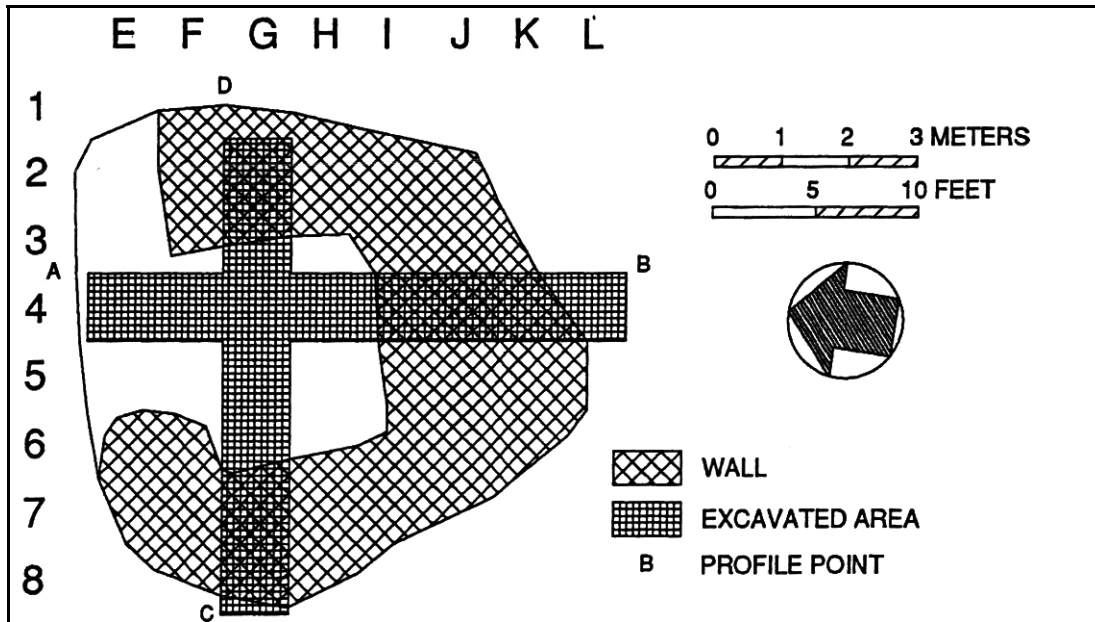
### **FEATURE 1**

Feature 1 is a C-shape habitation shelter measuring 6.0 m by 9.4 m, with a maximum height of 40 cm above the ground surface, on the east (upslope) side, and 150 cm above the ground surface, on the west (downslope) side. Feature 1 is located near the center of the site, and is bounded by portions of the *kuaiwi*/cross-slope terrace network (Site 10716) to the south, east, and north (see Figure 42, Site 10693). The C-shape is constructed of dry-stacked, angular, basalt cobbles resting directly on the *pāhoehoe* bedrock. These stacked rocks create a low-walled, three-sided enclosure, open to the north, with a flat, semi-circular area in the middle of the feature.





Figure 77: Sites and Features of the Walled Fields Portion of the Project Area (adapted from Barrera 1991:5).



**Figure 78: Plan View of Site 10700 (Feature 1), Showing Locations of Excavation Units (from Barrera 1991:20).**

Fifteen 1.0 by 1.0 m test units, eventually joining up to form two, intersecting trenches, were excavated at Feature 1. The test units sampled most of the interior space formed by the low walls, completely breached the south and east walls, and partially breached the west wall. Excavation revealed a soil deposit, up to 70 cm in thickness, of angular, basalt cobbles, midden, traditional artifacts, and ash.

Cultural materials recovered in excavation included: 69 pieces of volcanic glass debitage, angular waste, and utilized flakes, two basalt adze fragments, four adze flakes, six basalt flakes, one basalt core, four basalt manuports, and one echinoid spine abrader.

A total of 1,424.6 g of Invertebrate remains was recovered in excavation at Feature 1. The vast majority (1,332.6 g, or 93.6%) were shell, with smaller amounts of sea urchin (Echinoidea) (89.8 g) and crab (Crustacea) (4.3 g). With the exception of 41.4 g of *Theodoxus verspertinus*—a brackish-water species, the shells all represent marine species, including at least 12 different taxa. Floral remains included: 640.2 g of charcoal, 29.8 g of *kukui* (*Aleurites moluccana*) shell, and 12.7 g of charred *kukui* nut shell.

Vertebrate remains recovered in excavation at the C-shape designated Feature 1 included non-diagnostic fish (16.9 g), one specimen of chicken (*Gallus gallus*), six specimens of bird—including one *Bulweria bulwerii*, dog (*Canis familiaris*) (8 specimens), pig (*Sus scrofa*) (2 specimens), rat (*Rattus exulans*) (1 specimen), and other non-diagnostic mammal (3 specimens) and vertebrate (3 specimens).

Two hydration rind dates were obtained from Excavation Unit G, in the center of the enclosed area: A.D. 1660–1678, from 10–20 cmbs; and, A.D. 1491–1547, from 20–30 cmbs.

## **FEATURES 2 THROUGH 9**

A group of seven mounds and one wall, designated Features 2 through 9, is located in the western portion (downslope) of the Walled Fields area. This group of features occupies an area of 15.0 (north-to-south) by 40.0 m (east-to-west); it is bounded (to the west) by a portion of the historic wall network encircling the Walled Fields area, and (to the north and south) by *kuaiwi* walls (portions of Site 10716).

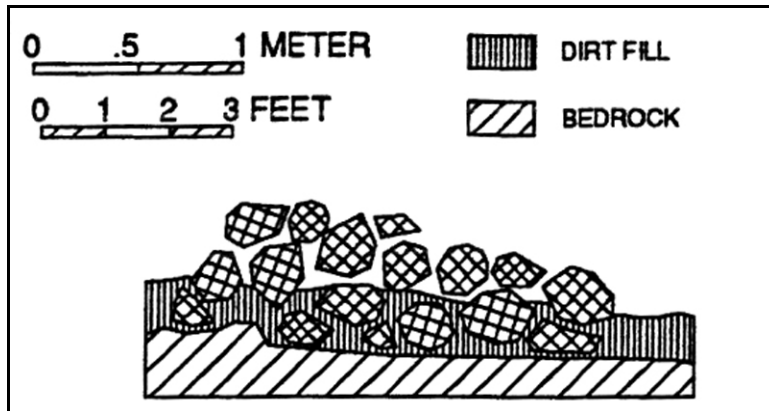
Feature 2 is a mound measuring 1.6 by 5.4 m, oriented roughly east to west, with a maximum height of 60 cm above the ground surface. Feature 3 is a mound measuring 1.5 by 2.3 m, with a maximum height of 90 cm above the ground surface. Feature 4 is a mound measuring 1.6 by 6.7 m, oriented roughly south-southeast to north-northwest, with a maximum height range of 40 to 80 cm above the ground surface. Feature 5 is a mound measuring 0.9 m by 1.6 m, with a maximum height range of 30 to 50 cm above the ground surface. Feature 6 is a mound measuring 1.9 by 2.5 m, with a maximum height of 90 cm above the ground surface. Feature 7 is a mound measuring 1.2 by 2.7 m, with a maximum height range of 50 to 80 cm above the ground surface. Feature 8 is a mound measuring 1.5 by 1.5 m, with a maximum height range of 30 to 50 cm above the ground surface. Feature 9 is a free-standing wall measuring 3.9 m in length, 1.2 m in width, and ranging in height from 50 cm above the ground surface (upslope side) to 80 cm above the ground surface (downslope side). No excavations were conducted at Features 2 through 9.

## **FEATURES 10 THROUGH 14**

A group of four mounds and one terrace, designated Features 10 through 14, is located east (upslope) of the C-shape (Feature 1), in the upper portion of the Walled Fields area. This group of features occupies an area of approximately 10.0 (north-to-south) by 25.0 m (east-to-west); it is bounded on all sides by portions of the *kuaiwi*/cross-slope terrace network (Site 10716). As described below, three of the mounds (Features 10, 11, and 14) were partially dismantled; one mound was bisected with a trench; and, the terrace was bisected with a trench. One hydration rind date was obtained for Feature 13 (see below).

### **Feature 10**

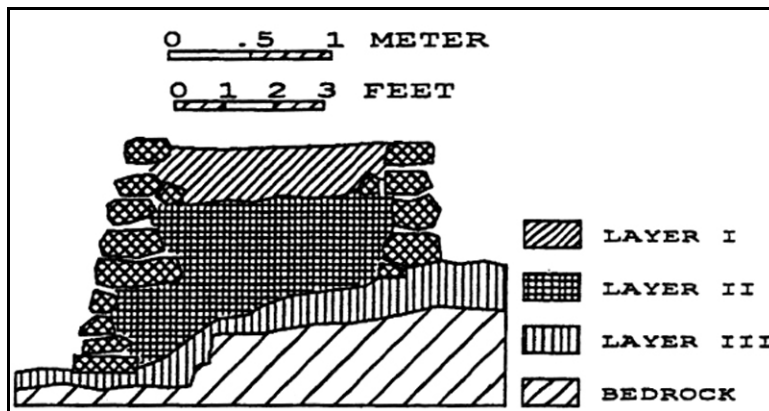
This is a mound measuring 2.7 by 3.0 m, with a maximum height of 110 cm above the ground surface. The eastern half of this mound was dismantled, revealing three distinct layers of rock and/or soil matrix (Figure 79). The uppermost layer (Layer I) consisted of tightly packed, angular, basalt pebbles, and ranged in thickness from 10 to 65 cm. Directly below this pebble layer, Layer II consisted of tightly packed, angular, basalt cobbles, and ranged in thickness from 15 to 90 cm. The lowermost layer (Layer III) consisted of angular, basalt cobbles in a soil matrix; this layer was 10 cm in thick, and rested directly on *pāhoehoe* bedrock. The base of the mound was located within Layer III. No cultural materials or midden were recovered in the dismantling of Feature 10.



**Figure 79: Section View (Trench Excavation) of Site 10700 (Feature 10) (from Barrera 1991:14).**

### Feature 11

This is a mound measuring 1.9 by 3.3 m, with a maximum height of 80 cm above the ground surface. The southern half of this mound was dismantled, revealing three distinct layers of rock and/or soil matrix (Figure 80). The uppermost layer (Layer I) consisted of tightly packed, angular, basalt pebbles, and ranged in thickness from 40 to 45 cm. Directly below this pebble layer, Layer II consisted of tightly packed, angular, basalt cobbles, and ranged in thickness from 60 to 120 cm. The lowermost layer (Layer III) consisted of angular, basalt cobbles in a soil matrix; this layer was 10 to 30 cm in thick, and rested directly on *pāhoehoe* bedrock. The base of the mound was located on top of the Layer III surface.

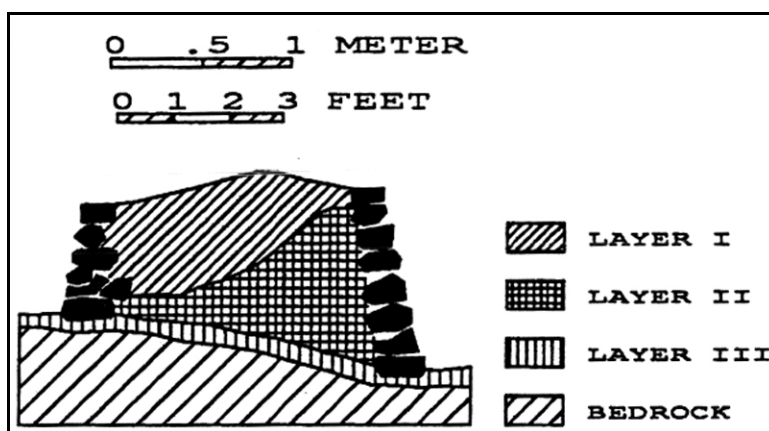


**Figure 80: Section View (Trench Excavation) of Site 10700 (Feature 11) (from Barrera 1991:16).**

Cultural materials recovered during the dismantling of Feature 11 consisted of two bottle glass sherds, and 56.8 g of charcoal.

### Feature 12

This is a mound measuring 1.5 by 4.9 m, and ranging in height from 50 cm above the ground surface (upslope side) to 80 cm above the ground surface (downslope side). This mound was bisected by a trench, revealing a fill of angular, basalt gravel resting directly on the *pāhoehoe* bedrock (Figure 81).



**Figure 81: Section View (Trench Excavation) of Site 10700 (Feature 12) (from Barrera 1991:14)**

No cultural materials were recovered in the trench at Feature 12.

### Feature 13

This is a terrace measuring 4.7 m in length, 2.3 m in width, and ranging in height from 30 cm above the ground surface (upslope) to 120 cm above the ground surface (downslope). A trench was excavated across the terrace, revealing a fill of angular, basalt cobbles directly on top of a 30 cm-thick deposit of angular, basalt cobbles and soil matrix.

Cultural materials consisted of 56 pieces of volcanic glass debitage, angular waste, and utilized flakes, one nodule of volcanic glass, one basalt flake, two basalt manuports, and one unidentified metal fragment. The metal fragment, in particular, is significant, in that it indicates a historic component to the utilization of this feature.

A total of 40.3 g of Invertebrate remains was recovered in excavation at Feature 13, including 8.6 g of *Theodoxus vespertinus*, a brackish-water species. Floral remains consisted of 17.2 g of charcoal and 0.2 g of charred *kukui* (*Aleurites moluccana*) shell.

One hydration rind date of A.D. 1643–1669 was obtained from the trench excavated at the terrace designated Feature 13, suggesting a late pre-Contact utilization for this feature. As noted above, the metal fragment recovered in excavation implies that the feature was utilized into the post-Contact era.

### Feature 14

This is a mound measuring 1.6 by 1.8 m, with a maximum height of 50 cm above the ground surface. The northern end of this mound was dismantled, revealing a 50-cm thick layer of angular, basalt cobbles.

The only materials recovered in the dismantling of Feature 14 consisted of 7.5 g of charcoal.

## **FEATURES 15 THROUGH 26**

A group of 12 mounds, designated Features 15 through 26, is located in the easternmost (upslope) area of Site 10700. Collectively, the 12 mounds occupy an area of approximately 10 (north-to-south) by 20 m (east-to-west), bounded to the south, west, and north by portions of the *kuaiwi*/cross-slope terrace network (Site 10716), and bounded to the east by a portions of the historic wall network encircling the Walled Fields area.

One trench was excavated at Feature 20 in this group of mounds (see below). No hydration rind dates were obtained for these features.

Feature 15 is a mound measuring 3.3 by 4.9 m, with a maximum height of 70 cm above the ground surface. Feature 16 is a mound measuring 3.1 by 3.1 m, with a maximum height at the sides of 60 cm above the ground surface and a maximum height at the center of 100 cm above the ground surface. Feature 17 is a mound measuring 0.9 by 1.2 m, with a maximum height of 60 cm above the ground surface. Feature 18 is a mound measuring 1.3 by 3.7 m, with a maximum height of 60 cm above the ground surface. Feature 19 is a mound measuring 1.6 by 2.0 m, with a maximum height of 60 cm above the ground surface. Feature 20 is a mound measuring 1.8 by 2.3 m, with a maximum height of 80 cm above the ground surface.

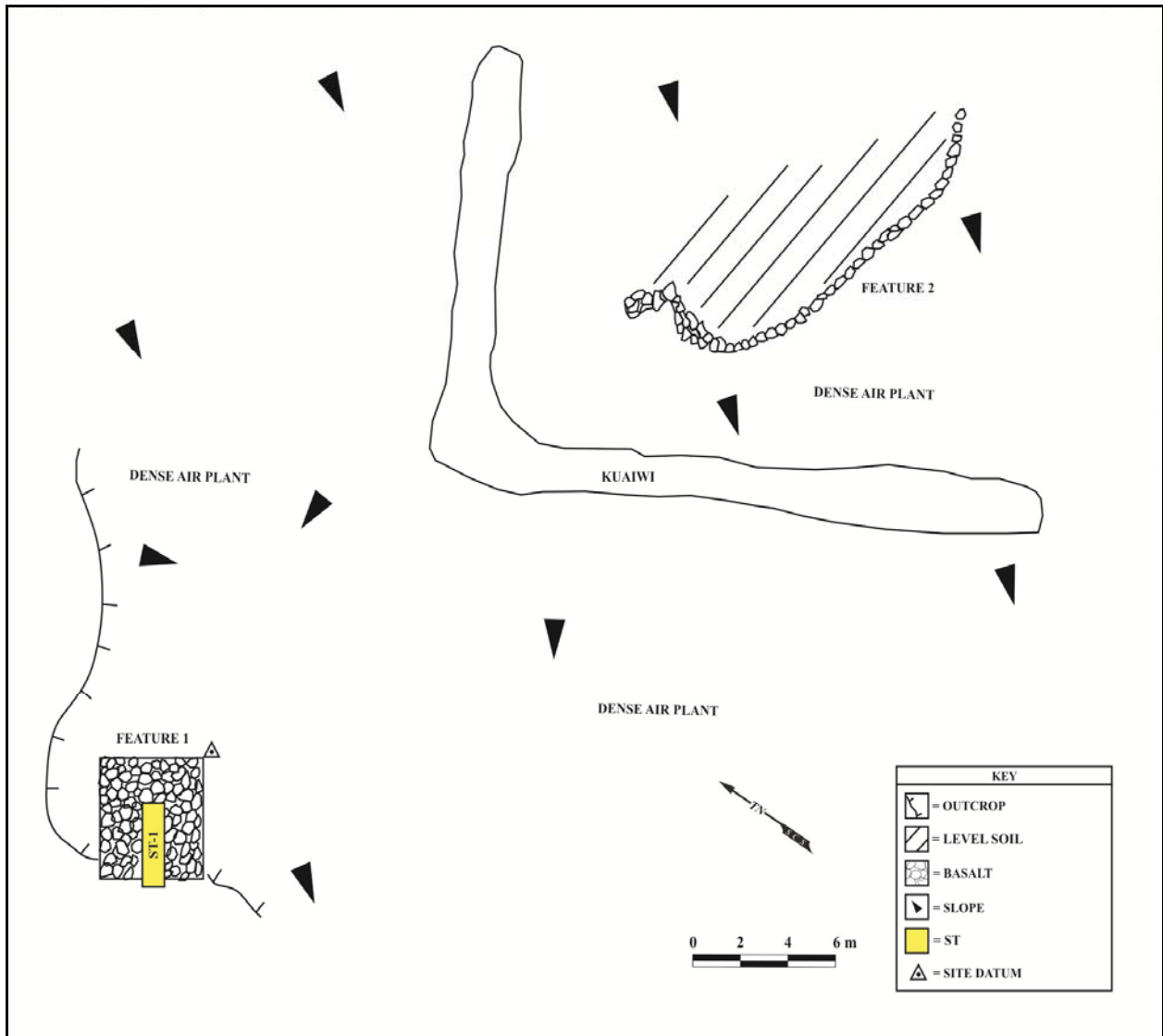
Feature 21 is a mound measuring 2.0 by 2.1 m, with a maximum height of 80 cm above the ground surface. Feature 22 is a mound measuring 2.3 by 2.6 m, with a maximum height of 100 cm above the ground surface. Feature 23 is a mound measuring 1.9 by 2.4 m, with a maximum height of 100 cm above the ground surface. Feature 24 is a mound measuring 0.9 by 2.7 m, with a maximum height of 50 cm above the ground surface. Feature 25 is a mound measuring 1.1 by 2.6 m, with a maximum height of 60 cm above the ground surface. Feature 26 is a mound measuring 2.0 by 5.9 m, with a maximum height of 70 cm above the ground surface.

One trench was excavated through the middle of the mound designated Feature 20, revealing a 90 cm-thick deposit of angular, basalt cobbles, but no cultural materials.

## **SITE 10701**

Site 10701 lies in the south-central portion of the project area, in Kohanaiki Ahupua'a, about 50 m north of Site 10714, the Mauka-Makai Road. It is located on the older of the project area's Hualalai flows, just below the 840 ft. elevation contour. Dominant overstory species consist of *alahe`e* and christmasberry, and the ground cover is dense air plant.

Site 10701 consists of two non-agricultural features lying on a southwest facing slope, and covering an area approximately 50 m east-west by 30 m north-south. Features are a platform and a wall (Figure 82; Table 37). The platform (Feature 1) is a burial, and human remains were recovered in excavation at this feature.



**Figure 82: Site 10701, Plan View.**

**Table 37. Site 10701 Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Platform	4.70	4.30	1.30	One 3.0 x 1.0 m ST (ST-1)
2	Wall	16.00	0.50	0.50	

Feature 1 is a well built, nearly perfect square platform lying in a slight swale. It has four well defined corners and large cobble/small boulder facing on all four sides. Its top surface is a pavement of similar sized rocks, and relatively level with the exception of a roughly rectangular 2.00 by 0.70 m depression, about 15 cm deep. This depression was located in center of the southwestern two thirds of the feature's surface (Figure 83).

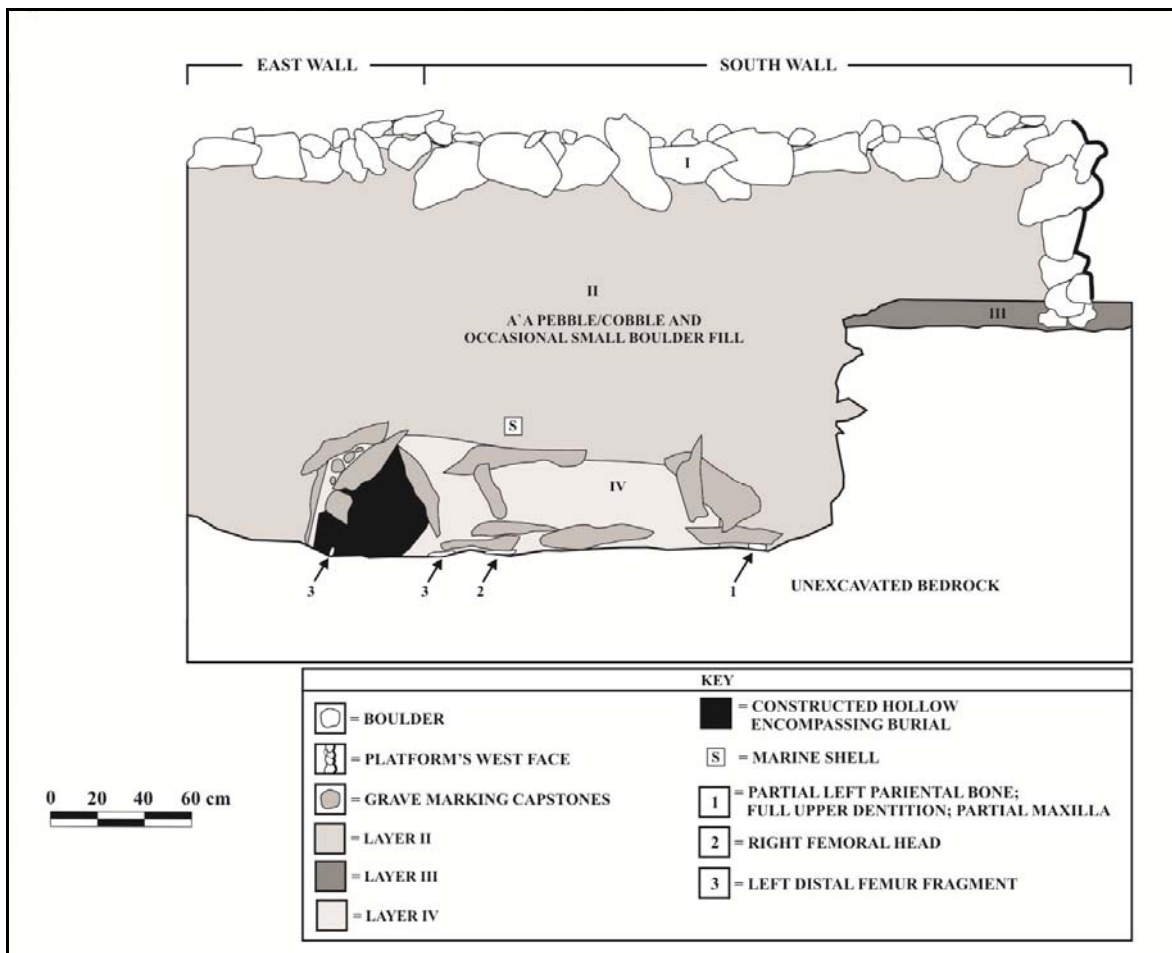


**Figure 83: Photograph of Site 10701.2, Feature 1, Overview Looking West**

ST-1 measured 3.0 by 1.0 m and was placed on the southwest two thirds of the feature, in its center and perpendicular to its southeast and northwest sides. It also included the previously described depression, and was excavated mainly to determine the presence or absence of human remains. Excavation of this unit revealed the surface pavement to be a single course of rock (Layer I), quickly giving way to a uniform fill layer of medium sized cobbles with an occasional small boulder (Layer II). This layer continued to a depth of about 80 cm below the feature's surface in the southwestern 40% of the trench, where it encountered a soil layer similar to, and at the same level, as the surface soil outside of the feature (Layer III). The medium sized cobble layer continued, however, in the northeastern 60% of the trench.

Layer III proved to be a soil layer 13 cm in thickness and directly on top of bedrock. Layer IIII was a dark brown (10YR 3/3) silt. In the remainder of the trench, the cobble layer continued to around 135 cm below the feature's surface until both horizontal and vertically laid boulder sized slabs were encountered (Layer IV). These slabs were found to create a crypt-like structure, which comprised the majority of the unexcavated portion of the trench and occurred directly underneath the depression noted on the surface. Subsequent to removal of several of these slabs it was found that the crypt extended beyond the trench to its northeast and that human remains lay directly upon the underlying bedrock at a depth of around 180 cm below the feature's surface (Figure 84). Other than human remains, the only other non-architectural cultural item noted during excavation was a single *Drupa* sp. shell, which was found directly on top of one of the horizontally laid slabs.





**Figure 84: Site 10701, Feature 1, ST-1, Profile: East and South Walls.**

Because of current policy, only a preliminary analysis of the human remains could be conducted before the feature was reconstructed with the remains left in place. This analysis revealed the presence of portions of the left and right maxilla with full dentition, a portion of the left parietal bone, the distal portion of the left femur, and the proximal portion of the right femur. Although the femur portions were in a very deteriorated state, it was noted that they were straight with closed epiphyses. Analysis of the maxilla revealed complete dentition with no caries or abscesses, and little wear.

Feature 2 is a wall, lying within the area defined by Feature 2, and although free-standing, also retains soil. It is about 50 cm wide, faced with cobbles and very small boulders on both sides, and has a pebble and cobble core fill.

The features at this site have been placed together into it solely on the basis of their close proximity. While Feature 1 is obviously of a ritual function, Feature 2 is of unknown function, and may represent a different period of occupation.

## SITE 10702

Site 10702 is located in the northwestern portion of the project area, in Kohanaiki Ahupua'a, and between the 840 and 860 ft. elevation contours. It lies on the older of the project area's Hualalai flows and has an overstory dominated by *alahe`e* and christmasberry.

Site 10702 consists of 11 features lying on a gentle to moderate west facing slope and covering an area approximately 45 m east-west by 30 m north-south. Sites 10707 and 10706 lie less than 50 m downslope, and several well-constructed mounds of the Kona Field System are directly adjacent to the north. Site 10763, a trail, appears to lead to the site from the south (Figure 85). All described features are thought to be non-agricultural (Table 38).

Site 10702 is one of the most impressive sites in the project area, a near fully intact religious site. The amount of branch coral found in Feature 1, and Feature 6, a possible socket for a *tiki*, further bolster this view. In addition, that the impressive facing of Feature 2 was almost completely confined to its interior, would seem to indicate more of a concern with activities taking place inside the enclosure (sacred space vs. profane space). Also interesting at Site 10702 was the discovery of multiple construction phases. Although this aspect was most obvious at Feature 1, the intentional paving over of a fire pit at Feature 11 also demonstrates this.

Two charcoal samples from this site were submitted for radiocarbon dates, suggesting a possible site occupation from as early as the late 17<sup>th</sup> century into the early historic period.

**Table 38. Site 10702 Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Enclosure/ Platform	8.50	8.50	1.40	One 1.0 x 4.5 m TU (TU-3)
2	Enclosure	35.00	14.50	1.00	
3	Modified Blister	1.65	1.20		One 1.0 x 1.0 m ST (ST-2)
4	Cairn	0.75	0.75	0.65	
5	Enclosure	6.00	3.50	0.30	
6	Modified Blister	0.55	0.40		One 1.0 x 1.0 m ST (ST-1)
7	Cairn	1.00	1.00	0.50	
8	Cairn/Paved Area	2.50	2.00	0.30	
9	Paved Area	2.50	2.00	0.25	
10	Enclosure	2.50	1.50	0.30	One 1.0 x 1.0 m TU (TU-2)
11	Depression	4.50	3.00		One 1.0 x 1.0 m TU (TU-1)

### FEATURE 1

Feature 1 is the most prominent feature at the site and is an impressively walled quadrilateral enclosure with its interior filled to create a platform higher than the surrounding ground surface. This fill is flush with the structures south and west walls, while the feature's massive north and east walls rise above it to become free standing. Exterior facing occurs on all four sides, but is only minimally visible on its east and south sides where it has collapsed (Figure 86).

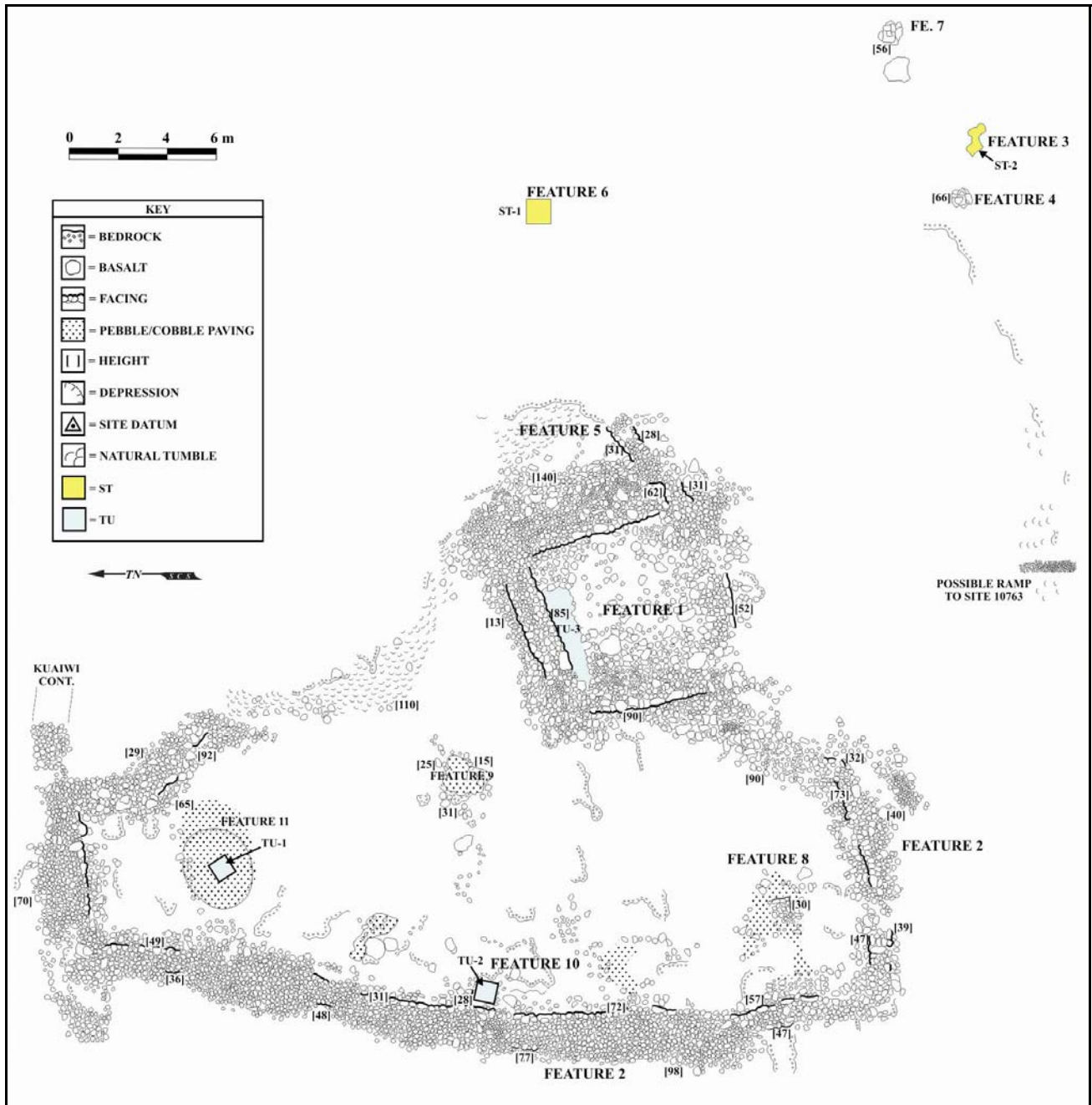


Figure 85: 10702.1. Site 10702, Plan View.



**Figure 86: Photograph of Site 10702, Feature 1, Overview looking East.**

Interior facing also occurs on both of the free standing walls. Interior and exterior facing is of horizontally laid courses of large *pāhoehoe* slabs, giving the feature an extremely formal appearance. Walls average just over a meter in thickness and have a pebble/cobble core fill.

Facing also reveals that the south and east walls abut one another, rather than connect. There appears to have been additional construction in the feature's southwest corner creating a possible ramp or entryway, but it is difficult to tell considering how badly this area is deteriorated. The feature's interior surface is a combination of a cobble and *pāhoehoe* slab pavement, although the slabs occur primarily in the western portion of this pavement.

TU-3 measured 4.5 by 1.0 m and was the only unit excavated in this feature, and was placed in the feature's northwest corner, parallel and immediately adjacent to the north wall. It was also located so that it penetrated what appeared to be the interior of the west wall. The unit's primary purpose was to shed light on feature function and architecture. Three architectural layers, and three soil layers were identified in this excavation. The first architectural layer consisted of a cobble and pebble pavement in the east fifth of the unit, becoming a cobble/small boulder pavement with some slabs in the majority of the unit. This pavement was shallow, only one or two courses of rock thick, and associated with the Layer I soil, a very dark grayish-brown (10YR 3/2) highly organic, humic silt that averaged 10 cm thick.

The second architectural layer, a massive fill of boulders and cobbles, averaged 70 cm thick. Layer II was a dark brown (10YR 3/3) silt with little, or no organic matter. The silt most likely represented a post-construction deposition migrating down through the architecture. At the bottom of the second architectural layer was a boulder/cobble fill and soil Layer III was encountered. The architecture rested on top of this layer. Layer III was a compact, very dark brown (10YR 2/2) silt, averaging 15 cm thick. On top of this soil layer was the final architectural layer, a pavement of small boulders and cobbles with some horizontally laid slabs, occurring primarily in the eastern portion of the unit (Figure 87).

Several architectural details were revealed in this excavation. First, it was discovered that the horizontally laid slab interior facing of the feature's north wall continued below the feature's interior fill, all the way to its contact with Layer III soils. This would indicate that this part of the feature was built as a free standing wall first (as opposed to a retaining element), and the interior filled in afterwards (Figure 88). Secondly, after the surface pavement was removed in the west end of the unit, facing comprised of cobbles boulders and horizontally laid slabs was found on the interior of the feature's west side, indicating that this was once a free standing wall also. Thirdly, a noticeable seam was revealed where these two interior facings met, indicating that the north wall (or at least its interior facing) apparently abutted the west wall. Consequently, like the construction in the feature's southeast corner, these walls were not built as an integrated construction. Lastly, it was noted that the pavement associated with Layer III soils continued underneath the north wall, indicating that this was the earliest element of the construction.

Cultural material recovered from TU-3 was substantial and included volcanic glass flakes, a volcanic glass core, a nearly complete adze, a bone pick, a ground stone, water-worn pebbles, a human tooth, a pig jaw, miscellaneous bone, marine shell, both branch and non-branch coral, and large quantities of charcoal (Table 39). Although some of this material occurred in the boulder/cobble fill of the second architectural layer, the majority of it occurred in and on the surface of the third soil layer. This quantity of cultural material occurred within approximately 350 liters of soil; at this stratigraphic position this suggests *in situ* deposition, rather than movement through the architecture over time. Also noteworthy was the relatively substantial quantity of branch coral, indicating religious functions (Tables 40 and 42).

One conventional radiocarbon determination of  $180 \pm 50$  BP (Beta No. 197065) was obtained from Layer III, TU-3, Feature 1, Site 10702. Calibrated dates (OxCal v.3.5) are (1 sigma) A.D. 1720–1820 (0.61), A.D. 1650–1690 (0.21), and A.D. 1920–1950 (0.18); at 2 sigma, A.D. 1640–1960 (1.00) (see Appendix A).

## **FEATURE 2**

Of the features that were not excavated, Feature 2 is the most noticeable. This is a large, low-walled, roughly oblong enclosure which attaches to Feature 1 toward the south portion of Feature 2's east side. The north, south, and west walls are the feature's most prominent, with substantial areas of internal facing, remarkable in its use of large vertical *pāhoehoe* slabs. Areas of external facing exist, but are not as common with much of the south wall utilizing bedrock,

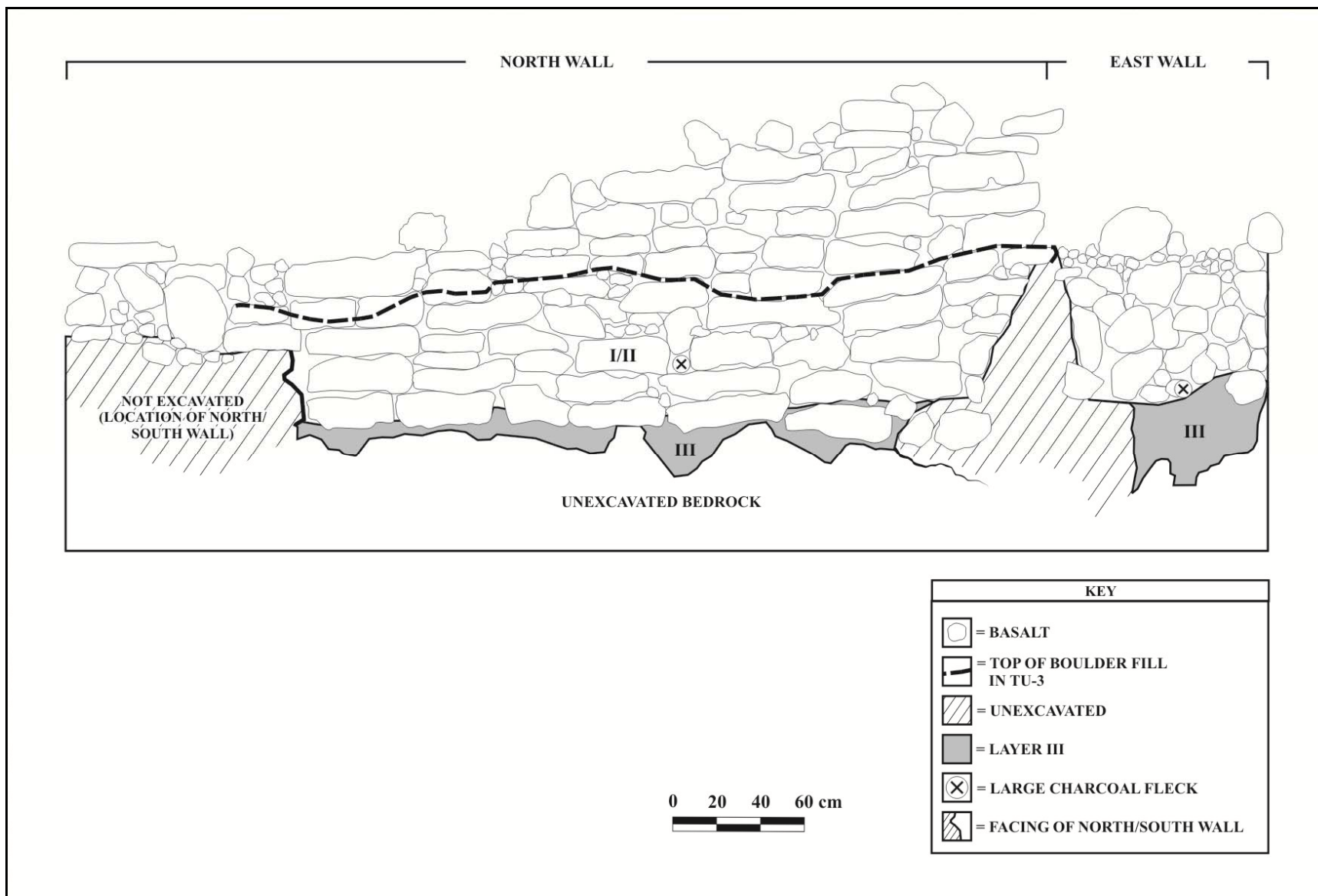


Figure 87: Site 10702, Feature 1, TU-3, Profile: North and East Walls.



**Figure 88: Photograph of Site 10702, Feature 1, TU-3, Post Excavation showing Buried Facing.**

and the west wall, the longest, being mostly tumble continuing downslope. The feature's east wall is most obvious at its north end. As one follows this wall south, however, it becomes a steep natural 'a'ā outcrop with much tumble, attaching to the northeast portion of Feature 1. The area enclosed by Feature 2 is relatively level, and none of the internal faces of its constructed walls exceed a height of 1.0 m.

### **FEATURE 3**

Feature 3 is a small, irregular shaped blister in a *pāhoehoe* outcrop located about 20 m southeast of Feature 1. Two rock cairns, Features 4 and 7, lie within a 5.0 m radius of Feature 3, and consequently it was thought that this feature had a relatively high probability of containing human remains. ST-2, measuring 1.0 by 1.0 m, was placed within Feature 3.

**Table 39. Site 94, Feature 1, TU-3, Midden.**

Layer	Material	Weight (g)	N	Remarks
Surface	Vertebrates	23.3	-	<i>Sus scrofa</i>
	Coral	14.5	1	Non-Branch
Arch. II	Charcoal	4.9	-	
	Charcoal	0.6	-	
	Charcoal	10.8	-	
	Charcoal	2.1	-	
	Coral	96.1	12	Branch
	Invertebrates	4.6	-	<i>Tellina palatam</i> ,
III	Charcoal	21.2	-	-
	Charcoal	246.4	-	-
	<i>Kukui</i>	5.6	-	-
	Coral	1558.5	119	Branch
	Coral	5.4	7	Non-Branch
	Invertebrates	46.7	-	Taxa: <i>Conus</i> sp., <i>Isognomon</i> sp., <i>Nerita picea</i> , <i>Cypraea</i> sp., <i>Cassis cornuta</i> , <i>Conus</i> sp., <i>Tellina palatam</i> , non-diagnostic marine shell, Echinoidea, Decapoda
	Vertebrates	95.2	-	Taxa: Fish, <i>Rattus/Mus</i> sp., <i>Sus scrofa</i> , small-to-medium mammal

Prior to the excavation of ST-2, the opening of this cavity had been filled with medium to large cobbles, making it level to the surface of the surrounding bedrock (Figure 89).

After excavation, however, naturally collapsed boulder slabs were revealed to line the north and south sides of this blister, while the primary portions of the cavity extended to the east and west. To the west, the cavity narrowed considerably to be blocked off by natural tumble, while to the east, it narrowed to a point precluding further investigation. A thin layer of organic soil lay at the bottom of the exposed opening. Layer I averaged 7 cm thick and was a very dark brown (10YR 2/2 silt. A single adze fragment found resting on this soil, and a basalt abrader found on the unit's surface, were the only cultural items recovered from this excavation (Figure 90).

## FEATURE 6

Feature 6 is also a small irregular shaped cavity in a *pāhoehoe* outcrop located about 10 m east of Feature 1. Prior to excavation, two vertical *pāhoehoe* slabs were noted in the cavity, and along with another small boulder, appeared placed to create a constructed hole. A horseshoe was also found immediately adjacent to this construction (Figure 91).

ST-1, measuring 1.0 by 1.0 m, was placed within this feature to explore its function. It revealed that Feature 6 was culturally filled with boulders, cobbles, and pebbles that overlay a 20 cm thick layer of soil that filtered down through the fill. Layer I was a dark brown (7.5YR 3/2) silt. Except for one horseshoe, no cultural material was found in this excavation, so further lateral excavation of the fill was deemed unnecessary (Figures 92).



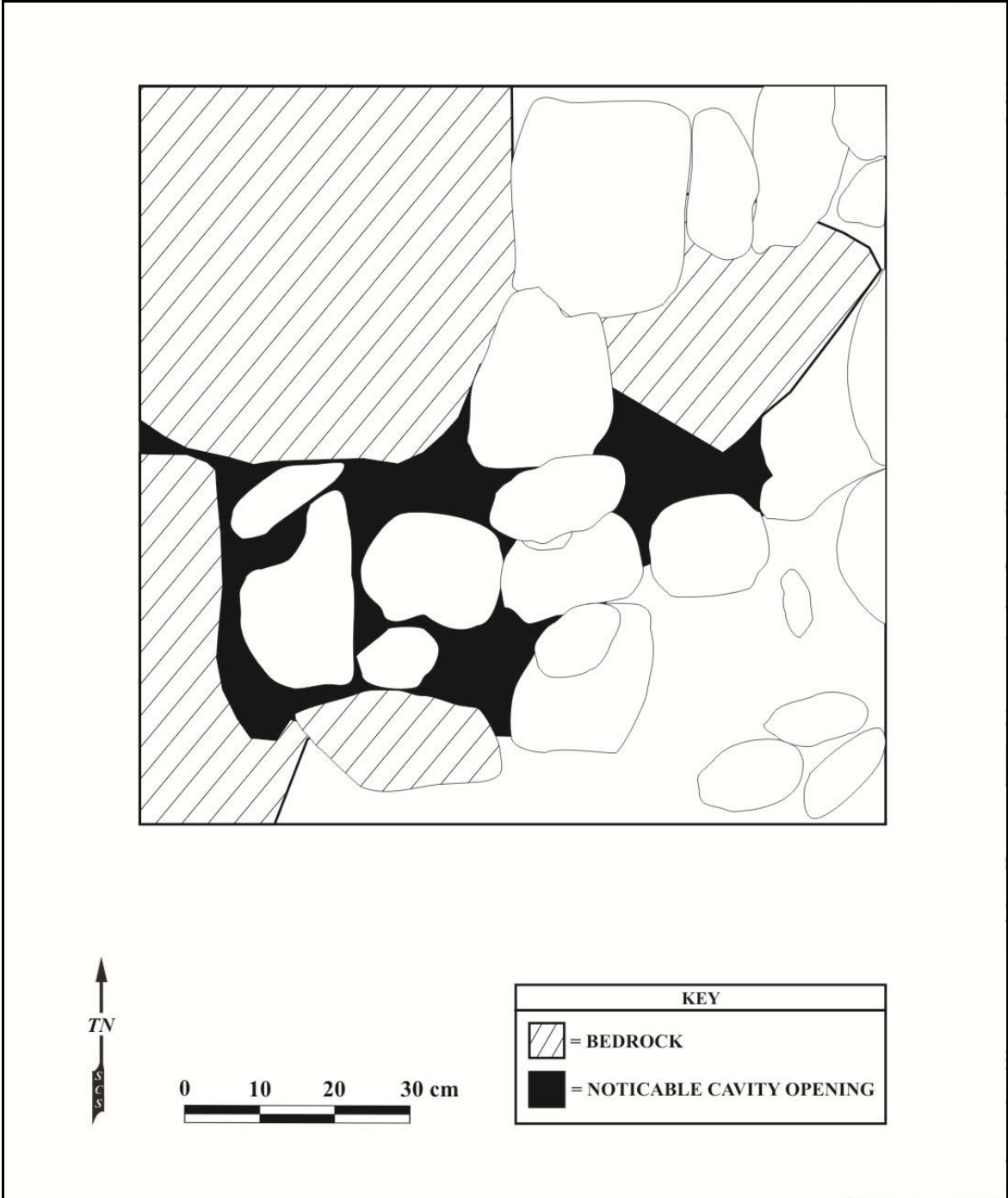


Figure 89: Site 10702, Feature 3, ST-2, Plan View.

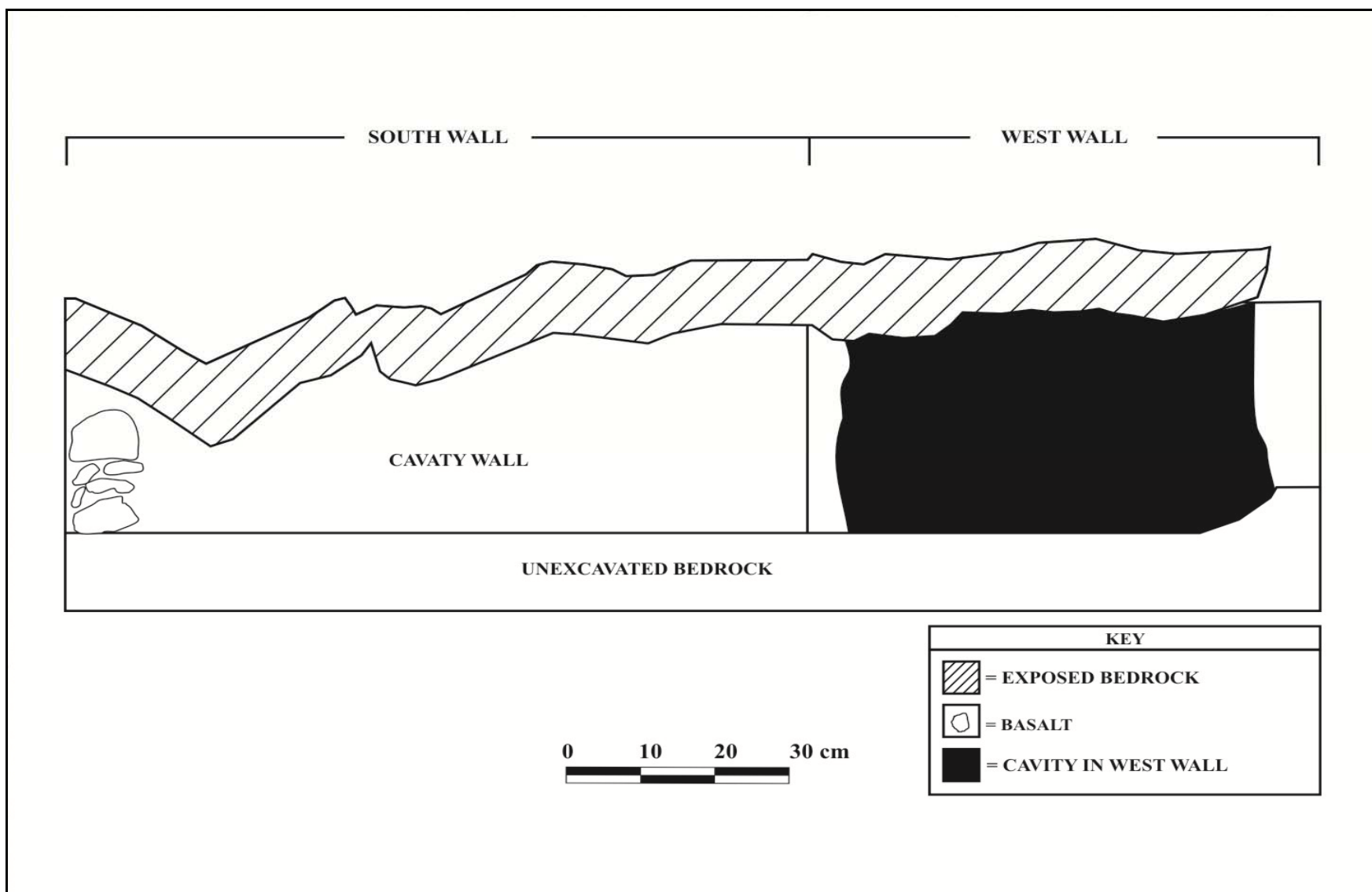


Figure 90: Site 10702, Feature 3, ST-2, Profile: South and West Walls.

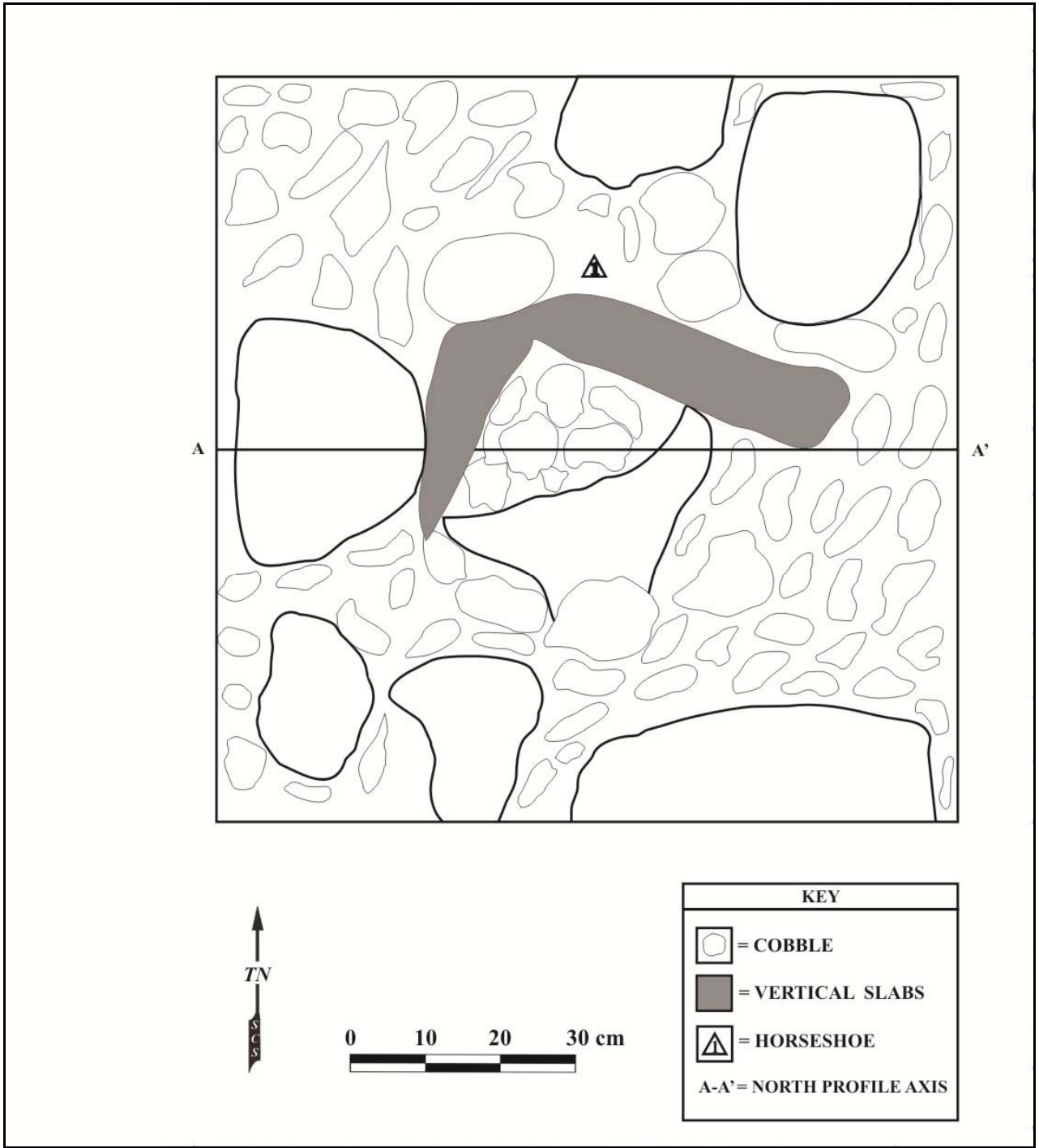


Figure 91: Site 10702, Feature 6, ST-1, Plan View.

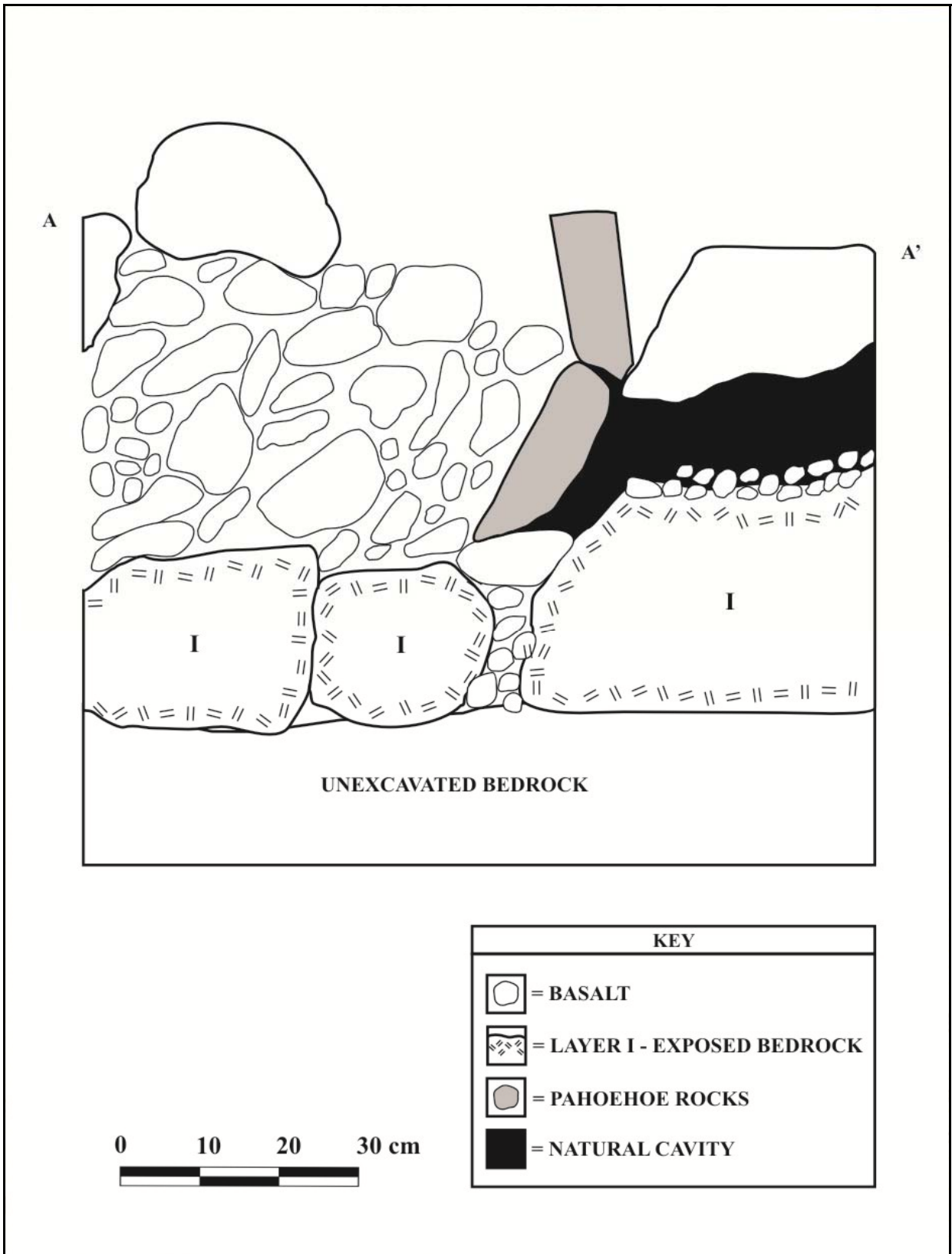


Figure 92: Site 10702, Feature 6, ST-1, Profile: North Wall.

## **FEATURES 4, 5, 7, 8, AND 9**

Features 4 and 7 are rock cairns located short distances to the west and northeast of Feature 3. Feature 4 is the most prominent of these, and utilizes several *pāhoehoe* slabs.

Feature 5 is a small enclosure utilizing Feature 1 as its west wall, and a moderately high 'a'ā outcrop as its west wall. A portion of its north wall also uses this outcrop, but a short section of construction, badly deteriorated, extends from the northeast corner of Feature 1 to this outcrop. The south wall is the most obviously constructed portion of this feature, and is basically just a low wall foundation, but with small boulder alignments creating both its internal and external aspects. Fill between these alignments consists of cobbles and pebbles with some native soil visible also.

Feature 8 is a small, low, deteriorated square-shaped cairn surrounded by a small, 'a'ā pebble pavement. It lies within Feature 2, about 8 m south of the southwest corner of Feature 1. The cairn measures roughly 75 by 75 cm and has visible facing on its south and east sides. Facing may have at one time occurred on the cairns north and west sides, but it is now collapsed.

Feature 9 is probably the most ephemeral feature at the site and also lies within Feature 2, about 4 m northwest of the northwest corner of Feature 1. It is a small paved area of mixed *pāhoehoe* and 'a'ā pebbles and cobbles, with portions of it on *pāhoehoe* bedrock.

## **FEATURE 10**

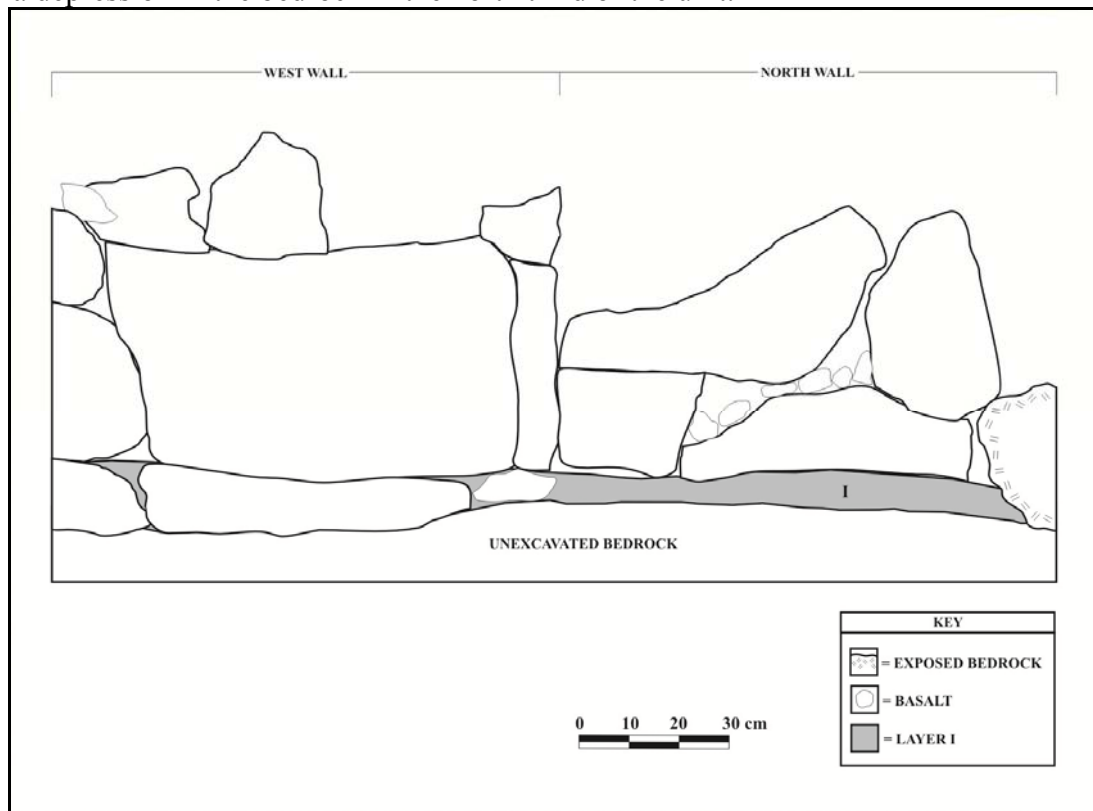
Feature 10 appeared to be a small ephemeral, open-ended enclosure which utilized the west wall of Feature 2 as its west wall, and low bedrock outcrops as its east wall. Construction only seemed to occur at the feature's north end where an alignment of small boulders and cobbles retaining more rock blocked this space off. It was located 11.0 m west and slightly north of the northwest corner of Feature 1.

TU-2 measured 1.0 by 1.0 m and was placed over this feature in order to see if it was indeed cultural, and if so, understand its function. Excavation of this unit revealed a shallow, 15 cm layer of soil overlying bedrock, with the west wall of Feature 1 resting on the bedrock, indicating that this soil probably post dates its construction. Layer I was a very dark grayish-brown (10YR 3/2) silt (Figure 93). No cultural material was found during excavation.

## **FEATURE 11**

Feature 11 is a shallow 3.25 x 3.00 m depression in an 'a'ā cobble/pebble pavement located about 14 m north and slightly west of the northwest corner of Feature 1. TU-1 was placed in this feature primarily to determine its function and period of use. Excavation of the unit revealed about 35 cm of the pebble pavement before the first layer of soil was encountered. Layer I soil was a very dark grayish-brown (10YR 3/2) silt mixed with the cobbles and pebbles of the overlying pavement. It was also around 20 cm

thick and contained no cultural material. Underneath were Layer II soils, divided into two constituents: Layer IIa was a very dark gray (10YR 3/1), charcoal stained silt, of varying thickness, while Layer IIb was a dark gray (10YR 4/1) ash lens occurring underneath IIa, in a depression in the bedrock in the north third of the unit.



**Figure 93: Site 10702, Feature 10, TU-2, Profile: West and North Walls.**

Both of these soils contained minor amounts of marine shell, volcanic glass, and charcoal, and both also contained a fair amount of rock, thought to be part of the overlying pavement subsequently mixed with these underlying soils. TU-1 was about 80 cmbs at its greatest depth, and is believed to represent an *in situ* hearth in a natural bedrock depression, subsequently overlaid by a pavement in an attempt to level the ground surface (Figure 94; Tables 40 and 41).

One conventional radiocarbon determination of  $170 \pm 70$  BP (Beta No. 197066) was obtained from Layer II, TU-1, Feature 11, at Site 10702. Calibrated dates (OxCal v.3.5) are (1 sigma) A.D. 1650–1890 (0.85) and A.D. 1910–1950 (0.15); and (2 sigma) A.D. 1630–1960 (0.99) and A.D. 1520–1530 (0.01) (see Appendix A).

**Table 40. Feature 11, TU-1, Midden.**

Layer	Material	Weight (g)	N	Remarks
IIa/IIb	Invertebrates	1.7	-	<i>Cypraea</i> sp.
	Charcoal	7.5	-	-
	<i>Kukui</i>	1.2	-	-

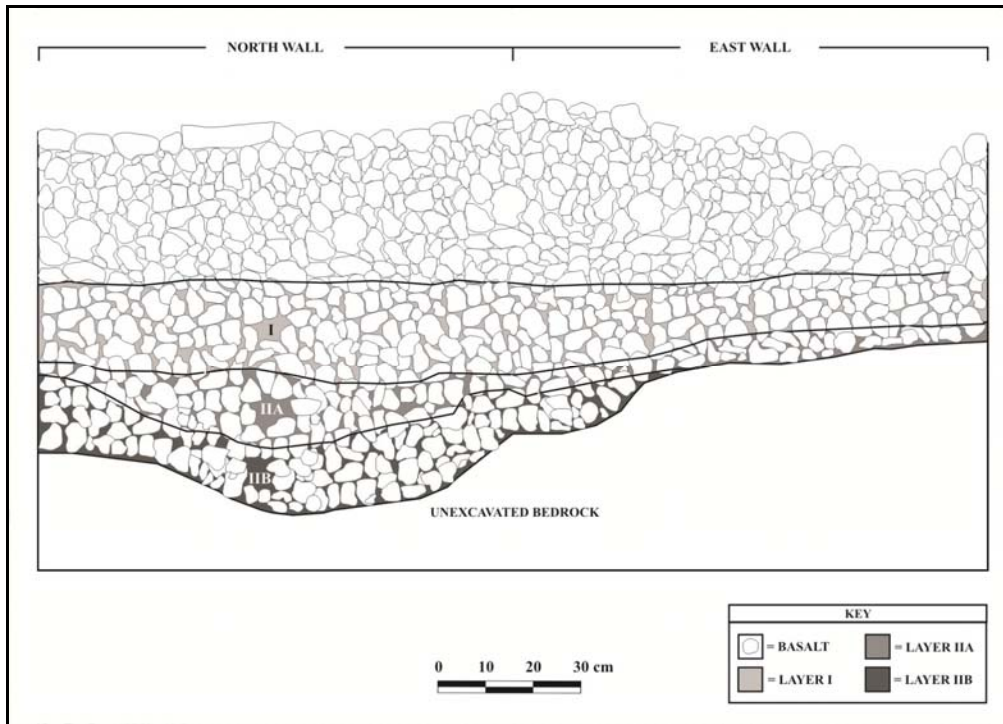


Figure 94: Site 10702, Feature 11, TU-1, Profile: North and East Walls.

Table 41. Site 10702 Traditional Artifacts.

Feature	Unit	Layer	Artifact Type	L (cm)	W (cm)	T (cm)	N	Remarks
11	TU-1	II	Volcanic Glass Debitage	-	-	-	1	One IF
3	ST-2	Surface	Basalt Abrader	-	-	7.90	1	Large block 7.9 cm thick; 1 surface utilized for abrading other objects
		-	Basalt Adze Fragment	-	-	-	1	Thick flake from adze; 2 polished surfaces
1	TU-3	III	Bone Pick	7.52	1.29	0.65	1	Long bone fragment of a medium mammal
			Volcanic Glass Manuport	3.16	2.10	1.74	1	Unworked nodule
			Modified Animal Tooth	-	-	-	1	Modified <i>Sus scrofa</i> incisor
			Basalt Abrader	-	-	1.20	1	Thin piece; fragment of large piece - 2 worked surfaces
			Volcanic Glass Debitage	-	-	-	4	Three IF; 1 NDF
			Basalt Adze	4.39	1.69	0.68	1	Complete, almost totally polished

IF = Interior Flake; SF = Secondary Flake; NDF = Non-Diagnostic Flake

## SITE 10703

Site 10703 is located in Kohanaiki Ahupua'a, midway between the projects northern boundary and Site 10714, the Mauka-Makai Road. It lies between the 900 and 920 ft. elevation contours, on the older of the project area's Hualalai flows. Its primary overstory species are *alahe'e* and christmasberry.

Site 10703 is a habitation and ceremonial area consisting of five features lying on a fairly steep west by southwest slope, and covering an area roughly 25.0 east-west by 20.0 m north-south (Figure 95). These include two enclosures and three terraces. Only one feature at this site, an enclosure, is not paved. Consequently, all features are thought to be non-agricultural (Table 42).

**Table 42. Site 10703 Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Enclosure	3.25	3.00	1.75	One 1.00 x 3.50 m ST (ST-1)
2	Enclosure	10.00	8.50	0.72	
3	Terrace	6.00	4.00	0.63	
4	Terrace	4.75	2.25	0.53	
5	Terrace	8.00	4.00	0.37	

### **FEATURE 1**

Feature 1 is a small, roughly square enclosure with a large conspicuous upright stone incorporated in its west wall. It is constructed of both stacked and piled boulders and cobbles with visible exterior facing. Its interior facing, however, is collapsed making its interior paving and tumble difficult to separate. The upright is incorporated into the feature's exterior facing.

ST-1 was the only excavation conducted at the site, and was placed so that it abutted the interior of the upright and extended east to the exterior of the feature's east wall. The trench measured 3.5 by 1.0 m and was excavated to establish the presence or absence of human remains, understand feature function, and understand feature architecture. This investigation demonstrated that the walls of the feature were constructed mostly of large cobbles with a few boulders, and that pebbles were used around the upright as fill or support. The feature's interior pavement was comprised of small cobbles and was relatively shallow before two layers of soil were discovered.

Layer I was a dark brown (7.5YR 3/2) organic silt about 20 cm thick, while Layer II, a black (7.5YR 2.5/1) silt, was only 4 cm thick and occurred in limited areas. The east wall of the feature penetrated both of these layers and rested on bedrock, but the interior pavement and west wall rested on the upper soil layer. Total depth of the feature, including architecture, was not more than 45 cm above bedrock (Figure 96). No cultural material was recovered.





Figure 95: Site 10703, Plan View.



**Figure 96: Photograph of Site 10703, Feature 1, ST-1, Profile: West and South Walls.**

## **FEATURE 2**

Feature 2 is a moderately-sized ovoid enclosure with thick, deteriorated walls, located 9.0 m northeast, upslope from Feature 1. Its east, west and south walls are its most prominent, with the north wall severely tumbled and covered by organic debris. This wall might not have been that prominent in its original construction, but the north boundary of the feature is obvious because of the severe drop off immediately outside of it. Boulder facing occurs in areas of both the interior and exterior of the feature's walls, the most noticeable being both the interior and exterior of its southwest exposure, and an interior section of its south exposure.

The interior of the feature appears to have a level 'a'ā pebble pavement, but it is difficult to tell whether this is natural or cultural. The surrounding area is a natural 'a'ā pebble flow, but unlike the feature's interior, it is not level. What may be a short ramp extends off of the feature's northwest portion, linking it to the retaining element of Feature 5. This possible ramp is most obvious on its north side where it is faced with large boulders.

### **FEATURES 3 AND 5**

Features 3 and 5 are both terraces retaining level 'a'ā pebble pavements. They are both of similar size with un-faced boulder and large cobble retaining elements, around 50 cm high. Both face west with Feature 5 lying just to the northeast of Feature 2, and Feature 3 lying about 4 m northwest of Feature 1.

### **FEATURE 4**

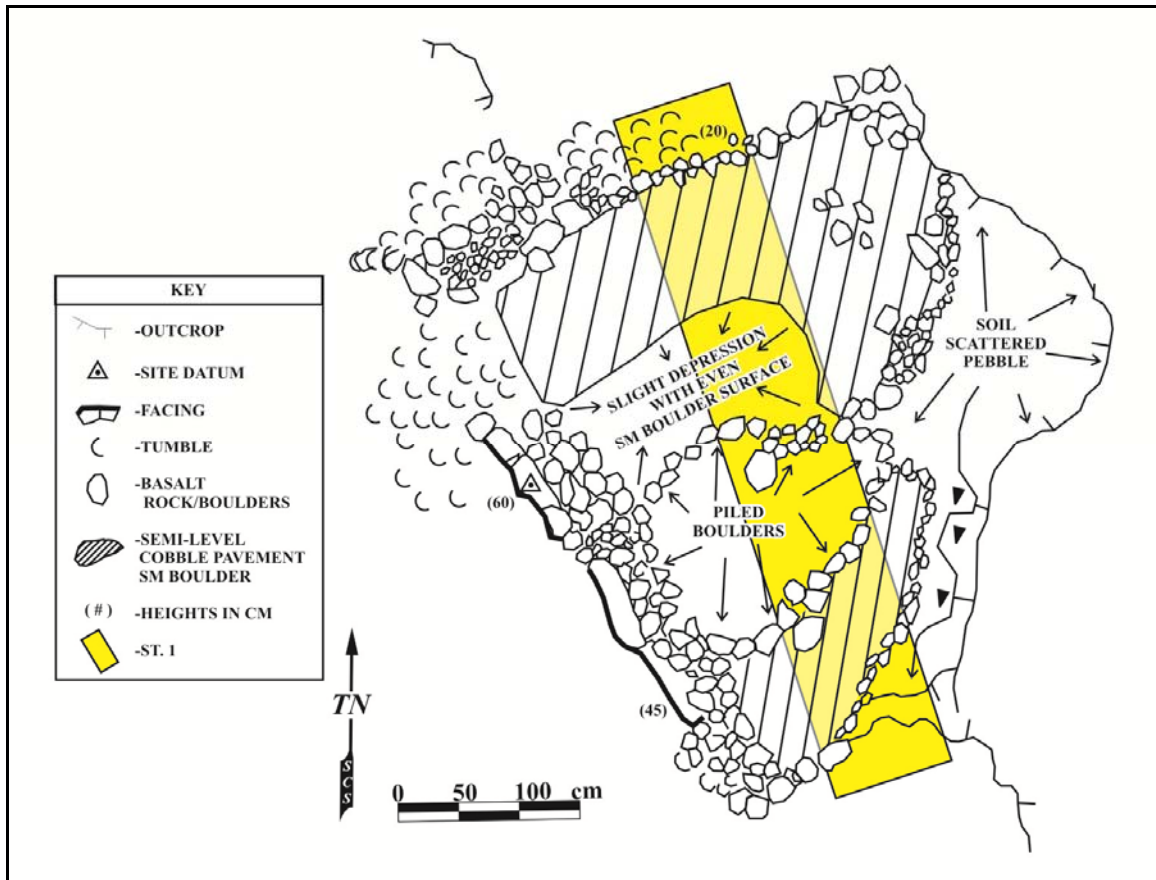
Feature 4 is a terrace and the only feature at the site that has visible soil. It is a severely deteriorated southwest-facing terrace located about 5 m southeast of Feature 1, abutting a steep *pāhoehoe* outcrop to its northeast. Its retaining element was at one time comprised of large boulders and cobbles, but these are presently so tumbled that the feature is barely recognizable. This element also appears to at once have been at least partially free-standing above its interior. This is a small 3.5 by 2.0 m area of level soil occurring between what remains of the retaining element and the outcrop.

The most impressive feature at this site is Feature 1. It is well-built, small, and with its prominent upright may be religious in function. Feature 2 is about the size and shape of similar features thought to be prehistoric house compounds, while the remaining features appear to be work surfaces. While Features 3 and 5 appear to have fairly large level surfaces behind their retaining elements, these surfaces are of 'a'ā pebbles that may well be natural, making the constructed portion of these features minimal, and limited to retaining elements.

### **SITE 10704**

Site 10704 is located in Kohanaiki Ahupua'a, toward the center of the project area, 60.0 m north of site 10714. It is just south of site 10698 and just below the 920 ft. elevation contour. Site 10737, which yielded a considerable amount of cultural material, lies a short distance to the southeast. The site lies on the older of the project area's Hualalai flows and has a dominant overstory of christmasberry. Additional species noted on site include *alahe'e*, *lama*, *haole koa*, and air plant.

Site 10704 is a single feature site consisting of a complex, a three-sided platform lying on a southwestern facing slope. It is 6.0 m north-south by 5.5 m east-west. Both its north and southwest sides are fairly well defined, the north side by a remnant alignment with tumble, and the southwest side having boulder/slab facing on a significant portion of its length. The feature's east edge is its most difficult to discern with a gradual slope of tumble blending in with the natural rock of the adjacent ground surface. The surface of the feature can be divided into four sections. The first is a level cobble/small boulder pavement lying in the northern third, while the second is a slight depression covered by small boulders in the central west. The third section is of piled boulders located immediately south of the second portion, and the fourth is another cobble/boulder pavement in the feature's southern corner (Figure 97).



**Figure 97: Site 10704, Plan View.**

ST-1 measured 1.0 x 6.4 m and was placed on a rough north-south axis over the unit primarily to investigate the presence or absence of human remains. It also transversed all four sections of the feature's surface. Excavation revealed that, regardless of the feature's surface, subsurface architecture was fairly uniform, consisting of piled pebbles to small boulders. Architecture did not exceed 60 cmbs and overlay a 20 cm thick (maximum) soil layer (Layer II) before encountering bedrock. An additional, thin, discontinuous soil layer lay intermixed with the architecture (Layer I), at its bottom, and for the most part is thought to have filtered down through the construction. A third layer of soil lay underneath the upper soil layer in areas of the unit outside of the feature (Layer III). Layer I averaged 7 cm thick and was a very dark brown (10YR 2/2) silt. Layer II averaged 20 cm thick and was a dark brown (10YR 3/3) silt. Layer III averaged 4 cm thick and was a dark brown (10YR 3/3) silt. Cultural material recovered from this trench was sparse, but consisted of marine shell, coral, an urchin spine, charcoal, and a ceramic marble (Figure 98; Table 43).

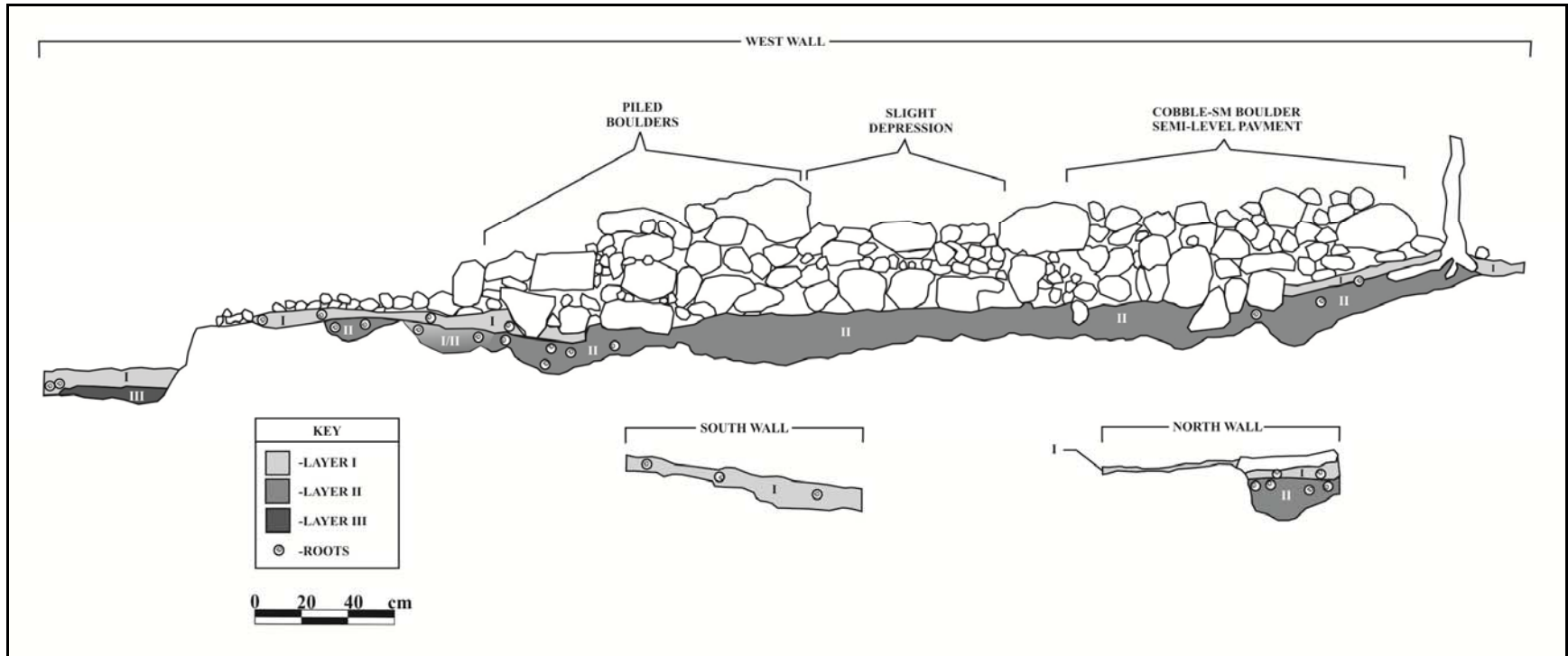


Figure 98: Site 10704, Feature 1, ST-1, Profile: North, South and West Walls.

**Table 43. Site 10704, Feature 1, ST-1, Midden and Historic Artifacts.**

Layer	Material	Weight (g)	N	Remarks
Arch	Coral	6.4	2	Non-Branch
Arch/I	Charcoal	0.4	-	
I	Invertebrates	1.7	-	<i>Cypraea</i> sp., <i>Cassis cornuta</i> ,
II	Ceramic Marble	4.7	1	
	Invertebrates	0.1	-	Echinoidea, South 1m
	Charcoal	0.6	-	

Excavation covered a significant portion of this site, and the feature is thought to be agricultural. The presence of a ceramic marble near the top of soil Layer II is curious, and suggests either that the feature dates to the historic period or that the marble is intrusive into a pre-Contact feature.

### SITE 10705

Site 10705 is located in Kohanaiki Ahupua'a, near the western margin of the project area, directly south and adjacent to Site 10714. It lies between the 780 and 800 ft. elevation contours on the older of the project area's two Hualalai flows, and has *alahe'e* as its dominant overstory species.

Site 10705 consists of four features lying on a gentle southwest facing slope, and covers an area about 45 north-south by 35 m east-west (Figure 99). All recorded features at this site appear to have non-agricultural functions, although there are many obvious agricultural features surrounding the site, especially to the southwest (Table 44).

This site is interpreted as a traditional Hawaiian house compound, either modified, or built in historic times. Feature 4 is thought to be historic due to its nice ordered rectilinear construction paralleling the historically documented "Road to the Sea".

**Table 44. Site 10705 Features.**

Fe. #	Type	L (m)	W (m)	H (m)	Units
1	Enclosure/Walls	16.00	12.00	1.45	
2	Modified Outcrop	5.00	4.00	1.10	One 1.0 x.3.0 m ST (ST-1)
3	Enclosure	6.50	6.00	1.00	
4	Wall Complex	32.00	30.00	1.10	

### **FEATURE 1**

Feature 1 is a well-built rectangular enclosure in good condition with a northwest-southeast long axis. Facing, much of it composed of large vertical slabs of *pāhoehoe*, covers the majority of the interior portions of the walls, while exterior facing, some also utilizing vertical slabs, is less frequent, occurring mainly on its northeast wall. Wall thickness is 2.0 m at its maximum. The interior of the feature is quite level with areas, especially toward the east corner, substantially filled to create this level surface. Three walls extend outward from this feature, ranging between 9.0 to 12.0 m in length. These

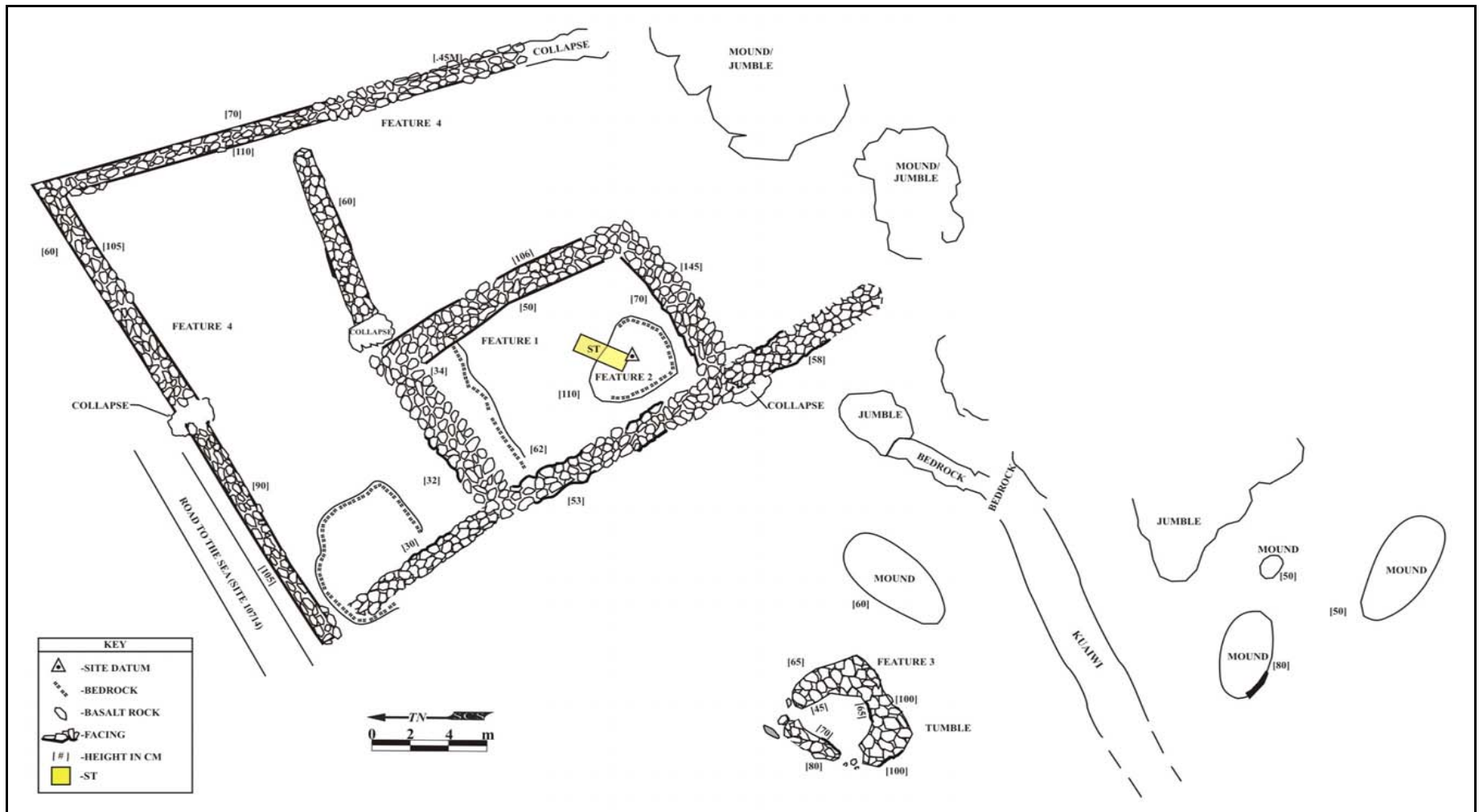


Figure 99: Site 10705, Plan View.

extend from its west corner northwestward, from its south corner southeastward, and from its north corner northeastward.

## **FEATURE 2**

Feature 2 is a large, dome-shaped modified outcrop located within the southern quadrant of Feature 1. Modification of piled cobbles and small boulders occurs entirely on its north side.

ST-1, the only excavation at the site, was located so that it straddled the modified portion of Feature 2, and extended north, into the interior of Feature 2. Excavation of this trench demonstrated that much of the modification of Feature 2 rested directly on bedrock, and where it didn't, it lay on top of only a few centimeters of highly organic soil. This primarily cobble modification was also revealed to be minimal. Where the trench extended out into the interior portion of Feature 1, soil became deeper, averaging around 18 cm thick, with a second layer of soil below. Layer I was a dark yellowish-brown (10YR 3/4) silt. The lower layer, Layer II, rested on bedrock and was a darker, less humic silt that averaged less than 10 cm thick. Layer II was a very dark grayish brown (10YR 3/2) (Figure 100). No cultural material was recovered from this excavation.

## **FEATURE 3**

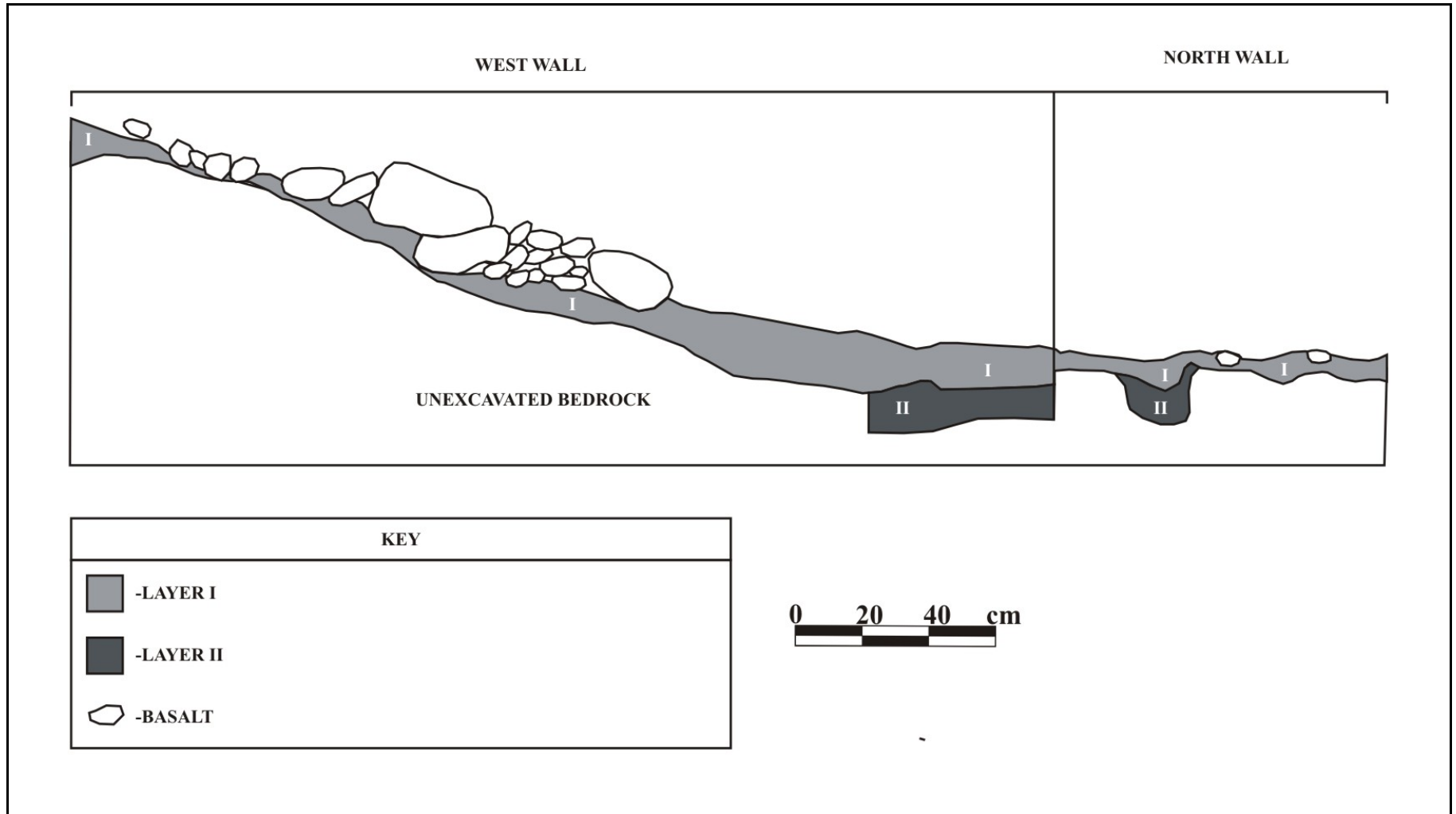
Feature 3 is a small, deteriorated, presently oval shaped enclosure located about 16 m southwest of the southwest corner of Feature 1. It may have at one time been rectilinear due to the occurrence of an exterior corner located on the feature's south side. Two small gaps occur in the enclosures west and northeast sides which may be natural or intentional, but the feature is in such deteriorated condition its difficult to tell. Two areas of remnant facing are visible on the features interior, and an area of exterior facing occurs on the feature's southwest portion. Otherwise, the feature is in such deteriorated condition that either additional facing is gone, or never existed. Construction is of piled cobbles and small boulders, and its interior shows some filling to level it out. This is most striking in the feature's southern portion, where the interior is much higher than the surrounding ground surface. A boulder upright occurs immediately adjacent to the feature, on its north side.

## **FEATURE 4**

Feature 4 is a wall complex, or three-sided enclosure, which, with the northeast wall extension off of Feature 1, is almost divided into two portions. The most striking portions of this feature are its northeastern and northwestern walls. Both of these are cobble core-filled, well built and well faced, the northwest wall being faced on both of its sides its entire length. This wall is also directly adjacent to, and parallels the Mauka - Makai Road, the main reason it is thought to be historic.

These walls average around 1.0 m wide, and much of their facing is of large vertical slabs of *pāhoehoe*. The southwest side of this feature is formed by the northwest and southeast wall extensions off of Feature 1. These are less striking than the previously described walls, being lower, less well built and having much less facing. There is a definite constructed gap between the well-built northwest wall and the northwest extension off Feature 1. At its southeastern end, walls of the feature become ephemeral and collapsed, and although there is some bedrock jumble forming a partial southeast





**Figure 100: Site 10705, Feature 2, ST-1, Profile: West and North Walls.**

barrier, nothing on this side appears constructed. The northeast extension wall off of Feature 1 nearly completely divides this feature into northwest and southeast portions. Although well built, and of similar character to the walls of Feature 1, another definitely constructed 1.5 m gap makes this an incomplete division (Figure 100).

### **SITE 10706**

Site 10706 lies in the northwest corner of the project area, 50.0 m west of Site 10702, in Kohanaiki Ahupua'a. It occurs slightly above the 820 ft. elevation contour, on the older of the project area's two Hualalai flows, and has an overstory dominated by christmasberry and *alahe'e*.

The site consists of two features lying on a moderately steep southwest slope. Feature 1 defines the size of the site, which is 25.0 m north-south by 23.0 m east-west (Figure 101).

Based on its size and construction, Feature 1 is thought to be a traditional Hawaiian house compound. The presence of branch coral also points toward ceremonial activities.

Feature 1 is a large rectilinear enclosure that utilizes bedrock outcrops in its east wall and southwest corner. Walls range from around 1.5 to 2.0 m thick and are constructed of stacked boulders and cobbles with an interior pebble fill. Interior facing is most noticeable on its north and west walls, although limited areas occur on the east wall also. Exterior facing occurs almost exclusively on the north wall. Much of the existing facing is of nicely stacked boulders. The exterior of the west wall is quite collapsed, but from the terminus of its rubble to the top of the wall, it is over 2.0 m high. An entrance may occur in the southern portion of the west wall.

TU-1, a 0.50 by 0.50 m unit placed a few meters from the northwest corner of this feature, was the only unit excavated in the site. TU-1 was excavated mainly to establish the presence or absence of cultural material in the feature, and extended to 25 cmbs before encountering bedrock. Two soil layers were revealed: Layer I was a dark grayish brown (10YR 3/2) duff and silt layer comprising the majority of the excavation; Layer II was a 5 cm thick, very dark brown (10YR 2/2) sticky silt lying directly above the bedrock (Figure 102). Cultural material retrieved from this unit included a small amount of charcoal (1.6 g), marine shell (*Cypraea* sp.) (7.3 g), a single piece of branch coral (12.3 g), and two pieces of volcanic debitage. All of this material was derived from Layer II.

### **FEATURE 2**

Feature 2 is a modified outcrop occurring within the eastern portion of Feature 1. It is about 4.0 m north-south by 2.0 m east-west, and has little visible form other than being large boulders to large cobbles stacked on a bedrock outcrop. It is about 1.2 m high as measured from the bottom of its down-slope side.

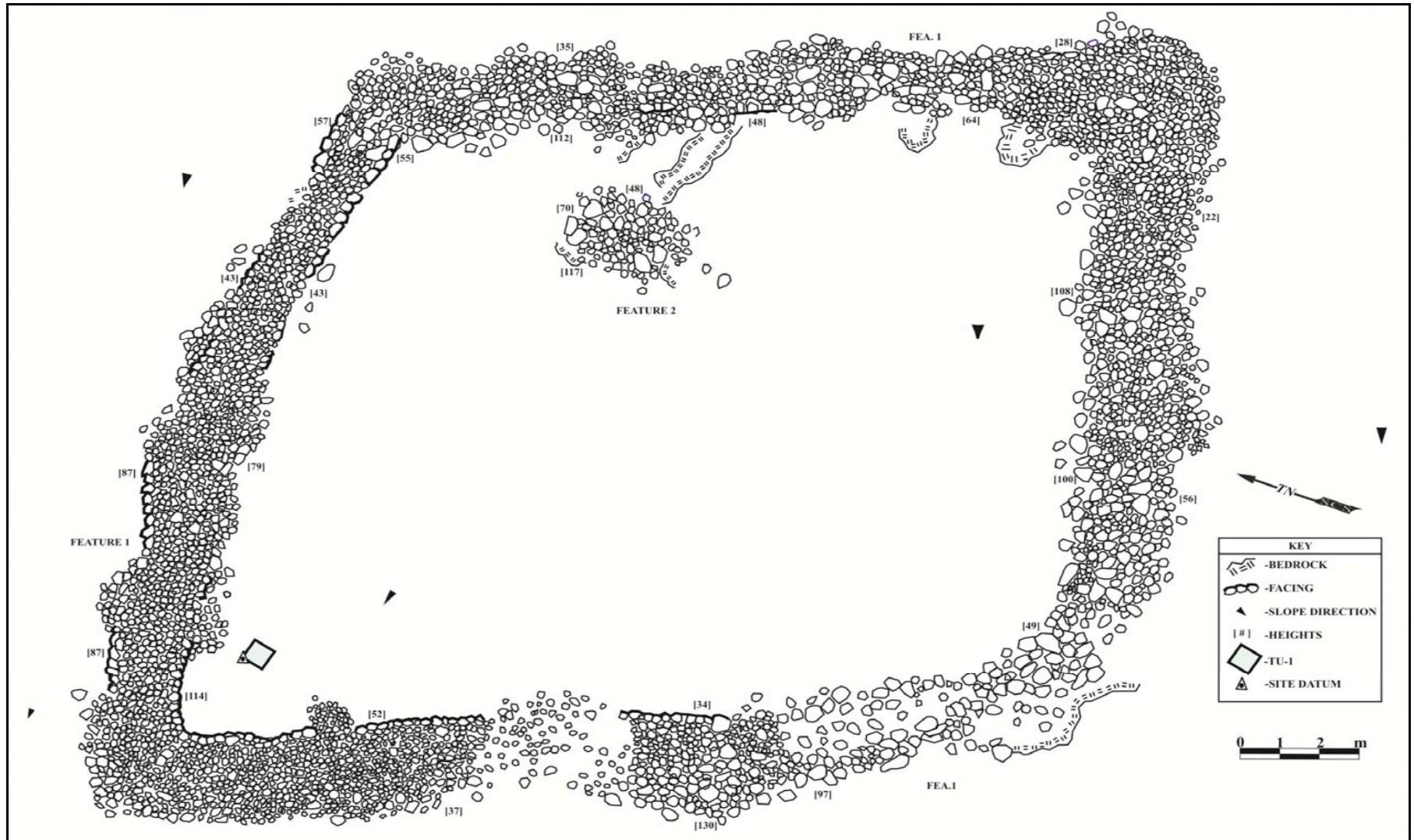
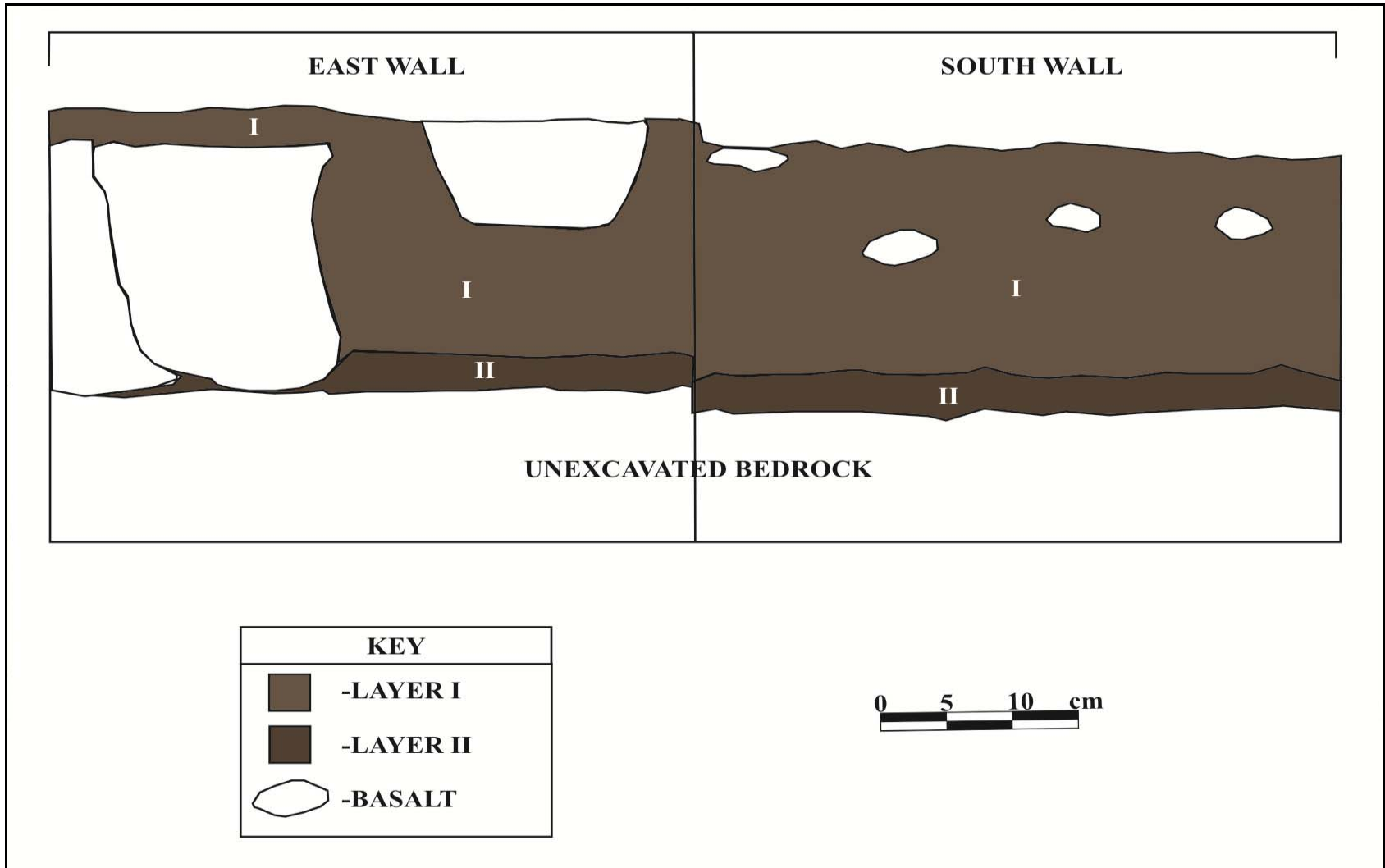


Figure 101: Site 10706, Plan View.



**Figure 102: Site 10706, Feature 1, TU-1, Profile: South and East Walls.**

## **SITE 10707**

Site 10707 is an agricultural paved area located in the northwest portion of the project area, midway between sites 10702 and 10706, in Kohanaiki Ahupua'a. It lies immediately above the 820 ft. elevation contour on the older of the two Hualalai flows, and has an overstory dominated by christmasberry.

Site 10707 is a single feature site, which covers an area about 7.0 m northeast-southwest by 6.0 m northwest-southeast. It is a pavement of piled cobbles with a few small boulders incorporating three ephemeral alignments, and a boulder upright. All of the alignments are short and only one, located along the feature's southern margin, is constructed of moderate-sized boulders. The other two are located in the northern half of the feature, and are distinguished from the surrounding pavement by a slight increase in cobble size and a slight increase in height. The upright is in the northwest area of the feature (Figure 103).

ST-1 was the only excavation at the site, and was placed in the feature in order to establish the presence or absence of human remains. The trench measured 3.5 m north-south by 1.0 m east-west and was taken to a maximum depth of 0.4 m before bedrock was encountered. A single, 15 cm thick, very dark-brown (10 YR 2/2) silt layer occurred underneath the feature's surface pavement, and excavation demonstrated the absence of any subsurface cultural material (Figure 104).

The subtle architecture of this feature is barely distinguishable—with the exception of the possible upright—from the other agricultural features of the surrounding Kona Field System.

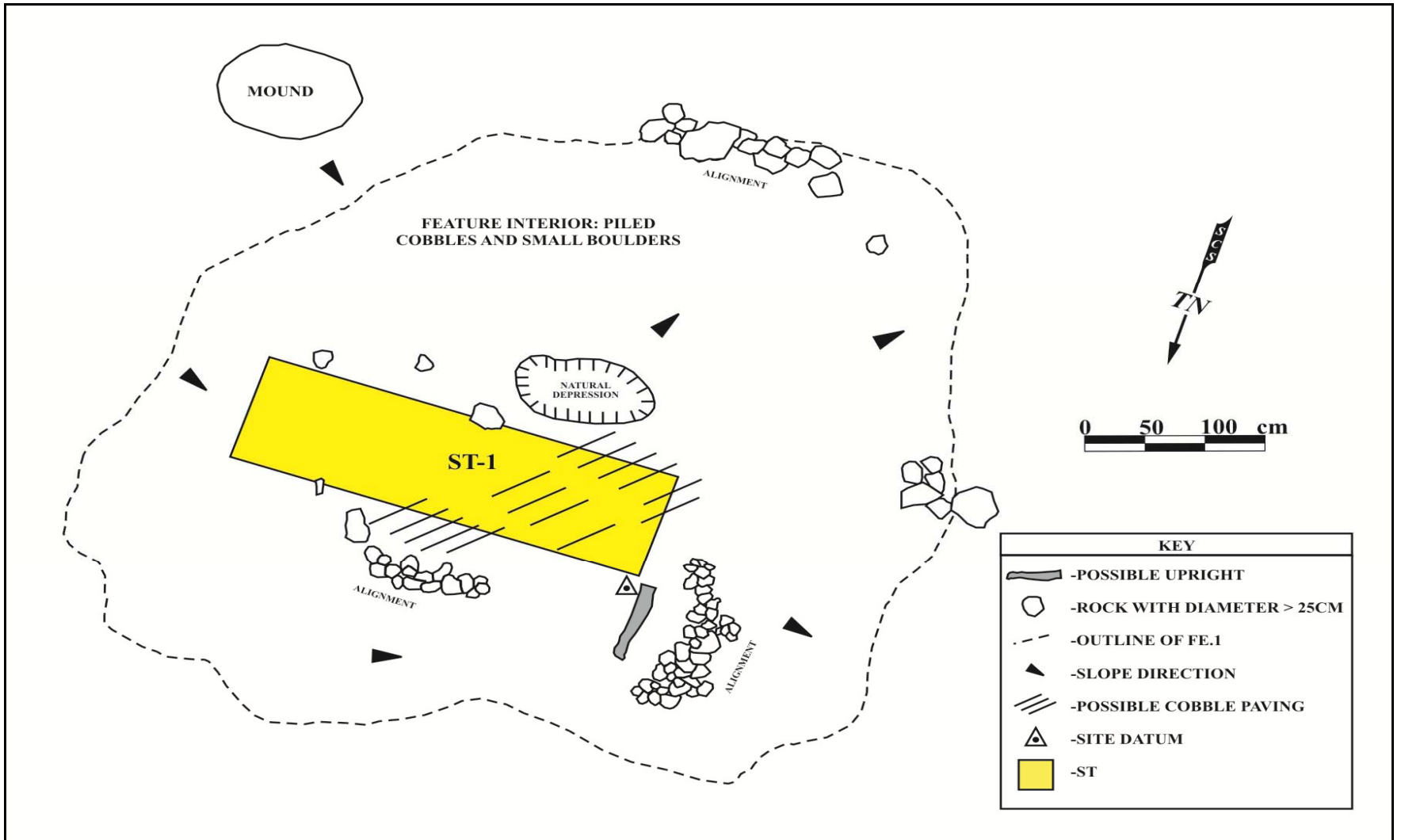
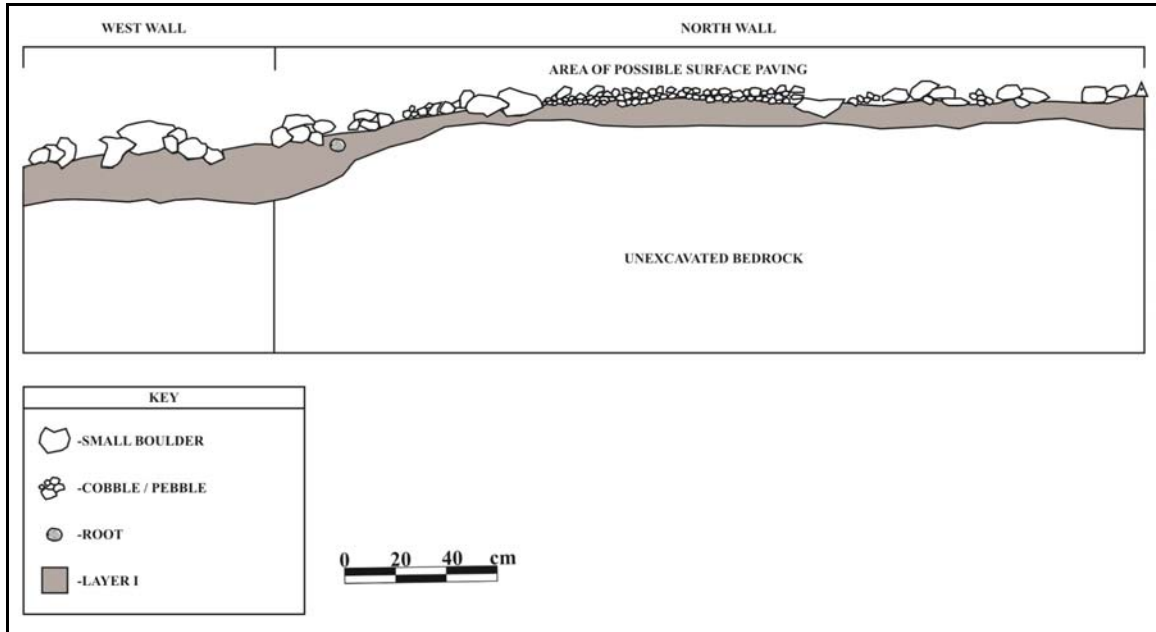


Figure 103: Site 10707, Plan View.



**Figure 104: Site 10707, ST-1, Profile: West and North Walls.**

### **SITE 10708**

Site 10708 is a wall located within the Kohanaiki Ahupua‘a at the 1080 ft. elevation contour. This wall is oriented parallel to the ocean extending from the NE corner of the property to the NE corner of the Kohanaiki Homesteads. This wall extends for approximately 330 m with an average height of 100 cm and an average width of 70 cm. This wall was most likely built during the ranching era and serves as a boundary wall in this portion of the property.

### **SITE 10709**

Site 10709 is a wall located within the Kohanaiki Ahupua‘a between the 780 and 1100 ft. elevation contours. This wall is oriented *mauka-makai* extending from the NE corner to the NW corner of the property. This wall extends for approximately 940 m with an average height of 100 cm and an average width of 70 cm. This wall was most likely built during the ranching era and serves as the northern boundary of the property.

### **SITE 10710**

Site 10710 is a wall in Kaloko Ahupua‘a at the 1040 ft. elevation contour. It is oriented parallel to the ocean extending from the southeast corner of the project area to the southwest corner of the Kohanaiki Homesteads. The wall is approximately 700 m long with an average height of 100 cm and an average width of 70 cm. The wall is discontinuous due to recent bulldozing in the Kona Heavens Subdivision. It was most likely built during the ranching era and serves as a boundary wall in this portion of the property.

### **SITE 10711**

Site 10711 is a wall located within the Kohanaiki Ahupua‘a between the 940 and 1040 ft. elevation contours. It is oriented *mauka - makai*, with its upper end near the project area’s eastern boundary wall. This wall is approximately 150 m in length and appears to be of ranching in origin.

### **SITE 10712**

Site 10712 is a wall located on the boundary of the Kohanaiki and Kaloko Ahupua‘a between the 760 and 1040 ft. elevation contours. This wall is oriented *mauka-makai* extending from the SW corner of the Kohanaiki Homesteads to the western boundary of the project. This wall extends for 800 m with an average height of 100 cm and an average width of 70 cm. This wall was most likely built during the ranching era and serves as a boundary between the two *ahupua‘a*.

### **SITE 10713**

Site 10713 is a wall located in the Kohanaiki Ahupua‘a, between 1020 and 1060 ft. elevation contours. It extends 35.0 m westerly from the northwest corner of the Kohanaiki Homesteads, and then turns to run 275.0 m across the slope to the project area’s north boundary. It is a well-built continuous wall, faced for the majority of its length on both sides. It averages 1.0 m wide, is 1.5 m at its greatest height, and most likely historic (See Figure 3).

### **SITE 10714**

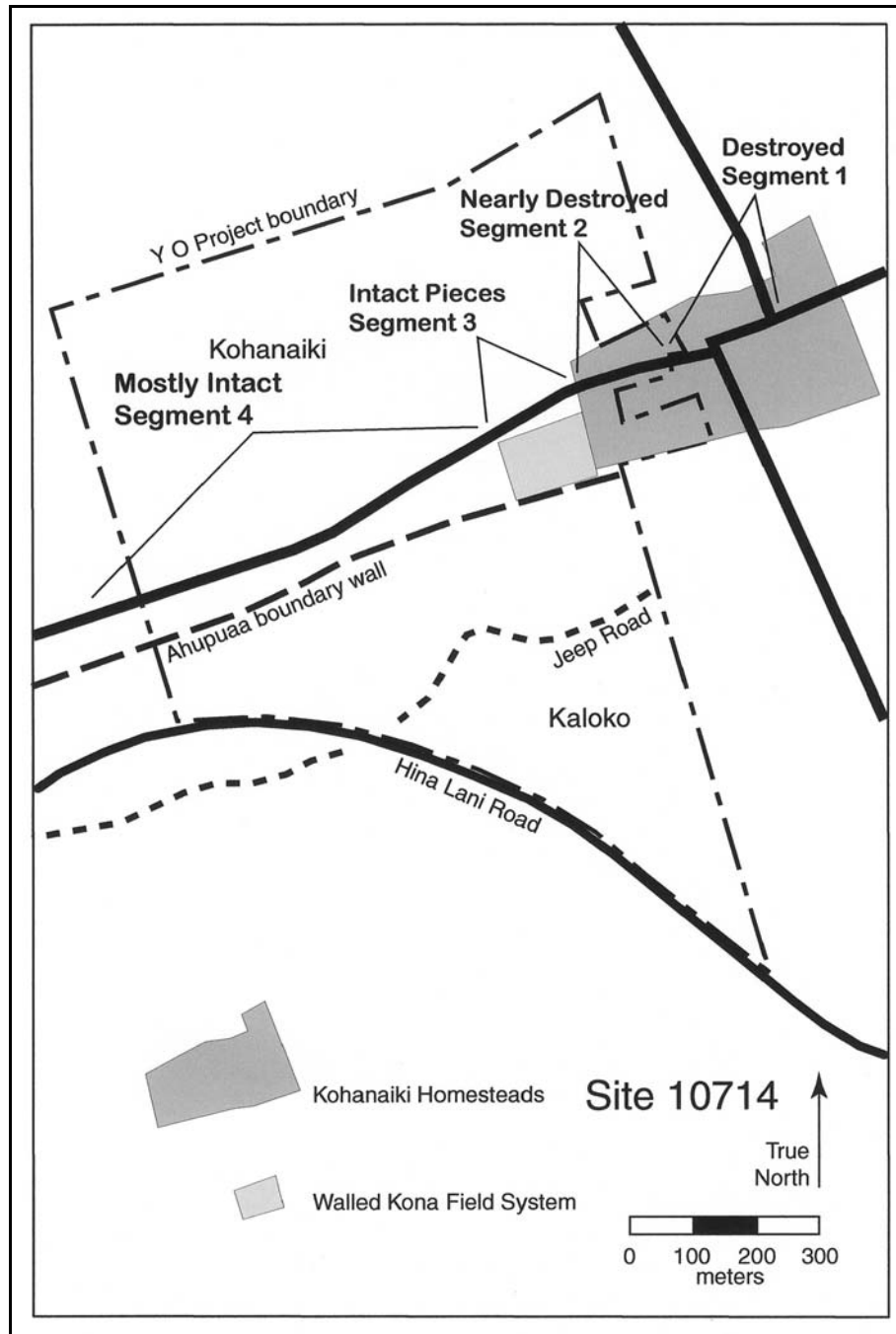
#### **THE ROAD FROM KALOKO POND TO KOHANAIFI HOMESTEADS**

Site 10714, the Road from Kaloko Pond to the Kohanaiki Homesteads, extends 900 meters (roughly 2,950 feet, or 0.6 miles) within the project area. Vegetation at and around the road varies depending upon elevation, and proximity to the Kohanaiki Homesteads. The characteristics and the condition of the road also vary. Those variations can be grouped into four segments (Figure 105).

#### **SEGMENT 1: THE INTERSECTION TO KIAHA HOMESTEAD**

Segment 1 (Spot 1) is the portion of the road that is adjacent to and beyond the project area. A portion of this area has been bulldozed for the construction of modern house lots. The road may have been bulldozed away here, and at the very least has been notably altered by modern vehicle transportation creating a typical two-track appearance in a pathway leading to a modern house.





**Figure 105: Current condition of Site 10714.**

The intersection of the road with a north-south trending trail (mentioned in the Cultural Context section) is still a transportation route, but one that has been partially paved, and evolved into a two-track. Consequently, this portion of the road retains none of the character that it had during the historic or prehistoric era. Based solely on visual evidence, no one would recognize it as the location of a historic or prehistoric trail.

## **SEGMENT 2: THE KOHANAIKI HOMESTEADS**

Segment 2 (Spots 2 through 4) is the 150 meter-long portion of the road that passes within the Kohanaiki Homesteads. The road is difficult to identify in this segment due to the highest density and large size of trees along the road—to a degree not seen elsewhere along the road. The roots of large christmasberry trees have altered the ground surface. In addition, present pig foraging and cultivation by *pakalolo* growers in the past has disturbed the ground surface to the extent that no intact road is evident in this segment.

Determining the road location in this segment is confounded by the fact that the distance between the walls of the homesteads ranges from 4.0 to 8.0 meters. The road could have been anywhere within that width.

## **SEGMENT 3: ALONGSIDE THE WALLED KONA FIELD SYSTEM**

Segment 3 (Spots 5 through 8) is the 150.0 meter-long portion that parallels the walled-in Kona Field System area that is west of the Kohanaiki Homesteads. The road is identifiable along this portion, but only in discontinuous pieces. Curbs<sup>6</sup> are present in short lengths (mostly less than 15.0 m long). The width of the pathway ranges from 3.0 to 3.2 m. The road is most noticeable as cleared ground in comparison to the natural and rugged lava on either side of the pathway. The surface of the road is most often bare lava. Paving is present (small stones 2 to 15 cm in diameter) in the pathway, but not frequently or for long distances. Soil and introduced paving covers the pathway in less than 20% of this segment. There are trees within the pathway, but there are fewer than those present in Segment 2. There is a short wall on the north side of the road near Spot 8 that terminates in alignment with the northwest corner of the walled Kona Field System area. The function of that little wall is unknown, but it appears to be directly associated with the road, by creating a 6.0 meter-wide route for the road.

## **SEGMENT 4: THE MIDDLE AND LOWER ELEVATIONS**

Segment 4 (Spots 9 through 19) is the 600 m portion of the road that is *makai* of the walled Kona Field System. The road is clearly identifiable with curbs delineating the pathway throughout much of this segment (Figure 106). The pathway width ranges from 1.5 to 2.3 meters. Trees and scattered stones attest to some disturbance to the pathway, paving, and curbing. There is more disturbance to the road in the eastern portions of Segment 4.

---

<sup>6</sup> Curbing along the Trail is manifest most often as brick-like stones set "on end" and partially embedded in the ground to create a thin line of rock projecting above the trail and ground surface. Curbs are less frequently lines of rock resting on the ground surface.



**Figure 106: Road near spot 17.**

The road is in good condition throughout the western majority of Segment 4. Curbs and paving are present and intact over long portions of the road. Trees and scattered stones attest to some disturbance to the pathway, but that is limited in scope. In the lowest elevations six-foot tall grass is directly associated with the road, that is, growing on top of the road, but is not growing alongside it. While it makes it more difficult to view the road, the grass does not seem to have created any disturbance to the road.

#### **Artifacts and Other Factors**

Several historic artifacts were observed along the road, and these are probably directly related to road use. Three rubber motor vehicle tires were within several meters of the road. All three were 67 cm in outer diameter, with a 40 cm interior diameter. Close inspection of one tire lacking treads showed trademarks and specifications: "Firestone Gum Dipper, 4 Ply 6.00-16, #0425835BB". Another tire was partially covered in soil, suggesting its longer period of time at that location.

Two clear glass gallon jugs, one clear glass bottle, one clear glass half gallon bottle, and two broken bottle bottoms were observed within several meters of the road, and in one instance, within the road pathway. The smaller bottles and half gallon one are typical alcohol bottle shapes, and the two intact gallon jugs have "Fuji Sake Brewing Co. Ltd., Honolulu, Hawaii" imprinted on their bases.

In addition, one complete *opihi* shell, and one complete cowry shell were located within a meter of the road (at different locations). Similar evidence of discarded food sources along the road may also be represented by the occasional adult mango trees alongside. Although there are mango trees in groups scattered around the project area, their presence alongside the road may be related to discarded mango pits during travel in historic times. In one instance, a sake jug and tire occur at the road with approximately a dozen mango trees.

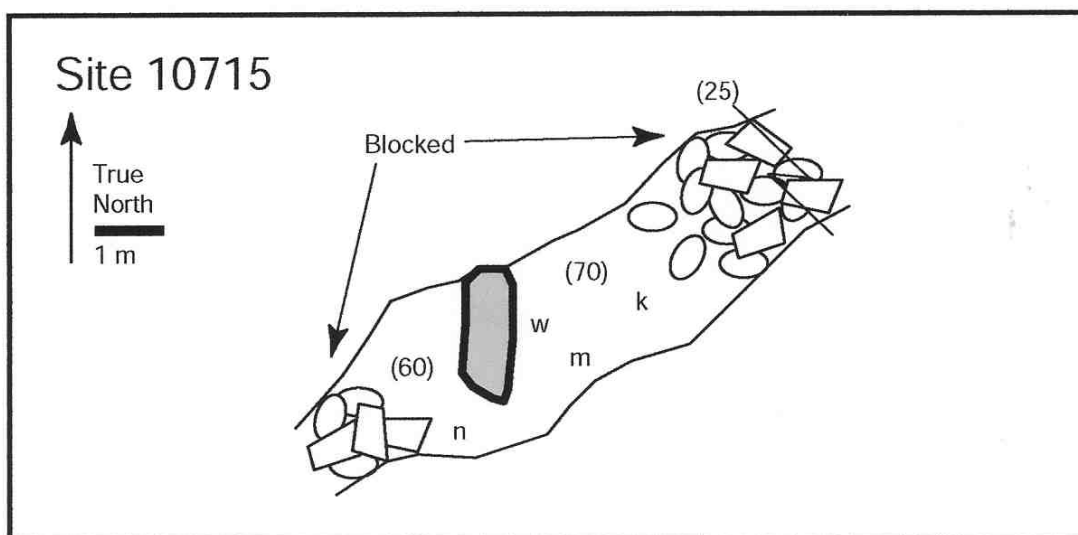
There is one papamū directly associated with the pathway. The konane board is on 60 by 60 centimeter portable stone that is situated on the pathway between the low, rough kerbing at UTM 186378E, 2181151N. It is next to the northern kerb. The konane grid is 6 by 8, but the grid is truncated by the roughly triangular shape of the playing area (Figure 107). The *papamū* is a pre-contact artifact and was originally located nearby, but it was moved to its current resting place on top of stones placed there during WWII.



**Figure 107. Papamū along the pathway of Site 10714. View to Southeast.**

### **SITE 10715**

Site 10715 is a cave in Kohanaiki Ahupua‘a at 960 ft. elevation. It has a vertical entrance into an approximately 7.0 m-long chamber. The cave floor is soil and *pāhoehoe* cobble, and the cave ceiling is a maximum 0.7 m high. The interior of the cave contains the following cultural material: marine shell, *kukui*, and non-human bone, and a water-worn-stone (Figure 108).



**Figure 108. Site 10715, plan view.**

Both the northern and southern limits of the cave do not end with natural closure. Instead, they have been manually filled with cobble. There is a small gap in the northern filled end that facilitates a view beyond the blockage; the chamber does continue beyond the blockage.

This is a small cave containing a small sample of cultural debris. The water-worn stone is a rare item in the Kohanaiki caves. This material and the blocked northern end indicate a probable temporary habitation shelter. It is likely that this activity took place during prehistory.

### **SITE 10716**

Site 10716, recorded and tested by Barrera (1985, 1991), consists of a network of remnant *kuaiwi* and cross-slope terraces covering most of the Walled Fields area. A total of 14 features (6 *kuaiwi* and 8 cross-slope terraces) are included. These have been assigned a single site number since several habitation complexes collectively share all or some of these features in common (see Figure 42, Site 10693). The longest intact *kuaiwi* (Feature 1) is 90.0 m long; the shortest is 14.0 m long. The longest intact cross-slope terrace is 30.0 m long; the shortest is 7.0 m long.

All 14 of the features at Site 10716 are formally described below, including results of subsurface testing and analysis of material finds, where applicable. Seven trenches were excavated (one each at Features 1, 5, 8, and 11; three at Feature 7); Feature 12 was partially dismantled; and, one small (30 cm by 30 cm) test pit was excavated at Feature 14.

Recovered materials included one piece of volcanic glass debitage, one fragment of unidentified metal, and small amounts of marine shell, charcoal, and *kukui* nut shell.

A total of three hydration rind dates were obtained at Site 10716. One date of A.D. 1607–1639 was obtained from a *kuaiwi* (Feature 5). Two dates of A.D. 1639–1665 and A.D. 1502–1536 were obtained from a cross-slope terrace (Feature 7). These data suggest that the Walled Fields area dates from late pre-Contact times. The site is interpreted as an agricultural complex.

## **FEATURES 1 AND 2**

The longest *kuaiwi* in the Walled Fields area, designated Feature 1, and a second *kuaiwi* portion above it, designated Feature 2, constitute a nearly continuous linear mound stretching over 130 m (east to west) (see Figure 42, Site 10693). These two features separate Site 10693, the possible habitation complex to the south, and Site 10700, the habitation complex to the north.

Feature 1 measures 90.0 m long by 2.1 m wide, with a maximum height of 30 cm. Feature 2 measures 25.5 m long by 1.3 m wide, with a maximum height of 1.0 m above the ground surface.

A 2.5 m trench was excavated across one section of the *kuaiwi* designated Feature 1 (see Figure 43, Site 10693), revealing a 30 cm thick layer of angular, basalt cobbles and boulders in a soil matrix, under the 30 cm thick rock stacking above the ground surface. The basal rock and soil layer rests directly on the *pāhoehoe* bedrock.

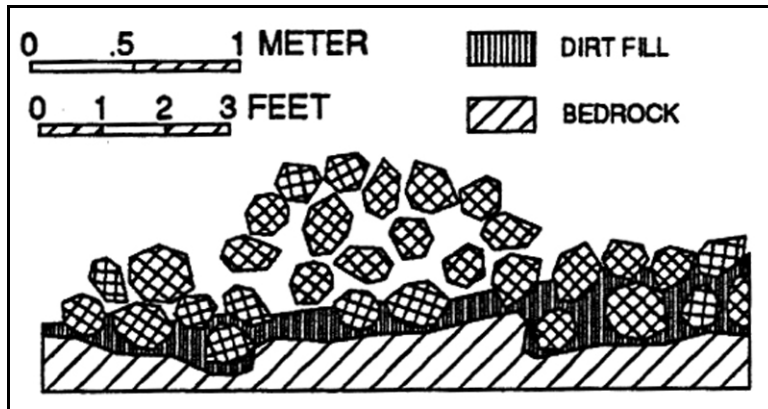
Other than 2.1 g of charcoal, no cultural materials were recovered in the trench excavated at Feature 1.

## **FEATURES 3 THROUGH 6**

A set of four *kuaiwi*, designated Features 3 through 6, traverses the slope from west to east, 15.0 m north of, and parallel to, Features 1 and 2 (see Figure 42, Site 10693). These four *kuaiwi* are more truncated than Features 1 and 2, but overall, they cover a similar distance of nearly 130 m from west to east. Features 3 through 6, separate from Site 10700 (the habitation complex to the south) from Sites 10734 and 10730 (the habitation complexes to the north).

Feature 3, the uppermost *kuaiwi*, measures 20.3 m long by 2.4 m wide, with a maximum height of 80 cm above the ground surface. Feature 4, just west (downslope) of Feature 3, measures 14.0 m long, between 1.6 and 4.6 m wide, with a maximum height of 40 cm to 70 cm. Feature 5, further west (downslope) of Feature 4, measures 27.0 m long by 1.8 m wide, with a maximum height of 50 cm above the ground surface. The lowermost *kuaiwi*, designated Feature 6, measures 26.4 m long by 1.6 m wide, with a maximum height of 60 cm above the ground surface.

One trench was excavated across the *kuaiwi* designated Feature 5 (Figure 109), revealing a 15 to 30 cm thick layer of angular, basalt cobbles and boulders in a soil matrix, under the 60-cm thick rock stacking above the ground surface. The basal rock and soil layer rests directly on the *pāhoehoe* bedrock (Figure 109).



**Figure 109. Section View (Trench Excavation) of Site 10716 (from Barrera 1991:21).**

One piece of volcanic glass debitage was recovered in excavation at Feature 5. This specimen was dated to A.D. 1607–1639. A small amount of marine shell (19.7 g) and charcoal (1.9 g) was also recovered.

#### **FEATURES 7 THORUGH 14**

Eight cross-slope terraces are located in the upper reaches of Site 10716 (see Figure 42, Site 10693). These vary in overall size and degree of completeness, and most appear to have been truncated/altered to some extent.

The first four cross-slope terraces described below are located within the upper area of Site 10693. Trenches were excavated at two of these features (see below). Feature 7, the longest and most complete cross-slope terrace, measures 30.0 m long by 3.6 m wide, with a maximum height of 35 cm above the ground surface (upslope side) to 100 cm above the ground surface (downslope side).

Feature 7 abuts the longest *kuaiwi* (Feature 1) at Site 10716. Feature 8, just east (upslope) of Feature 7, measures 19.9 m long by 6.6 m wide, with a maximum height ranging from 40 cm above the ground surface (upslope side) to 120 cm above the ground surface (downslope side). This feature also abuts the long *kuaiwi* designated Feature 1. Feature 9, located just upslope (east) of Feature 8, measures 5.7 m long by 1.1 wide, with a maximum height ranging from 30 cm above the ground surface (upslope side) to 60 cm above the ground surface (downslope side). Several meters upslope, to the east, Feature 10 measures 10.4 m long by 1.8 m wide, with a maximum height of 80 cm above the ground surface.

Three trenches totaling 13.0 m in length were excavated through the cross-slope terrace designated Feature 7 (see Figures 43 and 44, both Site 10693). These trenches revealed an upper architectural layer 45 cm thick, consisting of angular, basalt cobbles and small boulders, overlying a rock and soil matrix layer 25 cm thick; this layer rested directly on the *pāhoehoe* bedrock. Cultural materials included 10 specimens of volcanic

glass debitage and one basalt adze fragment. Invertebrate remains consisted of: 86.8 g of shell, representing at least 6 taxa of marine species, 1.2 g of Echinoidea, and 1.0 g of Crustacea. Two dates of A.D. 1639–1665 and A.D. 1502–1536 were obtained from this feature.

One trench totaling 2.0 m in length was excavated through the cross-slope terrace designated Feature 8 (see Figures 42 and 43, both Site 10693), revealing a construction of angular, basalt cobbles and small boulders. Cultural material consisted of one fragment of unidentified metal. Midden consisted of 14.2 grams of charcoal and a trace amount (0.3 g) of non-diagnostic shell.

Feature 11, located within the upper area of Site 10700, follows the same general elevation contour as the cross-slope terraces designated Features 7 and 8 (see Figure 42 and 43, both Site 10693). Feature 11 measures 14.2 m in length by 1.8 m in width, with a maximum height of 50 cm above the ground surface.

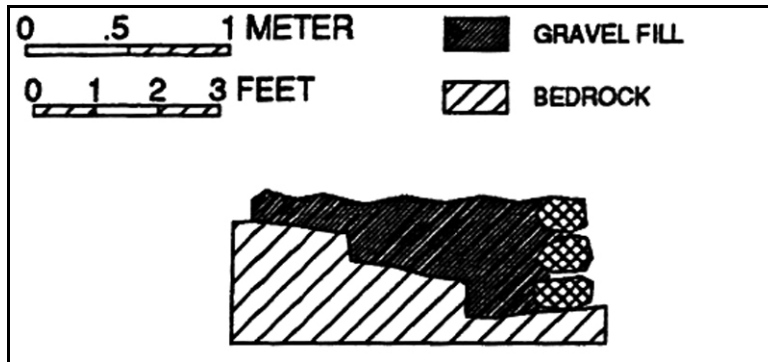
One trench was excavated through the cross-slope terrace designated Feature 11, revealing a 50 cm thick deposit of angular, basalt cobbles. Other than 7.5 g of charcoal, no cultural materials were recovered in the trench.

Features 12 through 14 are a series of truncated cross-slope terraces following the same general elevation contour as the large cross-slope terrace designated Feature 7 (see Figure 42 and 43, both Site 10693). Feature 12, located just east (upslope) of the habitation (C-shape) at Site 10700, measures 6.6 m long by 1.6 m wide, with a maximum height ranging from 30 cm above the ground surface (upslope side) to 80 cm above the ground surface (downslope side).

Feature 13, located at the top (eastern terminus) of the *kuaiwi* remnant designated Feature 5, straddles Site 10700 and Site 10730; this cross-slope terrace has partially collapsed, giving it a relatively wide dimension that reflects rock fall, in addition to its original width. It measures 7.8 m in length by 5.7 m in width, with a maximum height ranging from 40 cm above the ground surface (upslope side) to 100 cm above the ground surface (downslope side). Feature 14, located just north-northwest of Feature 13, measures 10.7 m in length by 3.0 m in width, with a maximum height of 50 cm above the ground surface.

The north end of the cross-slope terrace designated Feature 12 was partially dismantled, revealing a fill of angular, basalt pebbles resting directly on the *pāhoehoe* bedrock (Figure 110). No cultural materials or midden were recovered.





**Figure 110.** Section View (Trench Excavation) of Site 10716 (Feature 12) (from Barrera 1991:19).

A small (30 cm by 30 cm) test pit was excavated adjacent to the cross-slope terrace designated Feature 14. Small amounts of charcoal (3.1 g), burned *kukui* nut shell (4.1 g), and unburned *kukui* nut shell (8.6 g) were recovered. No other materials were recovered in the test pit at this feature.

### SITE 10717

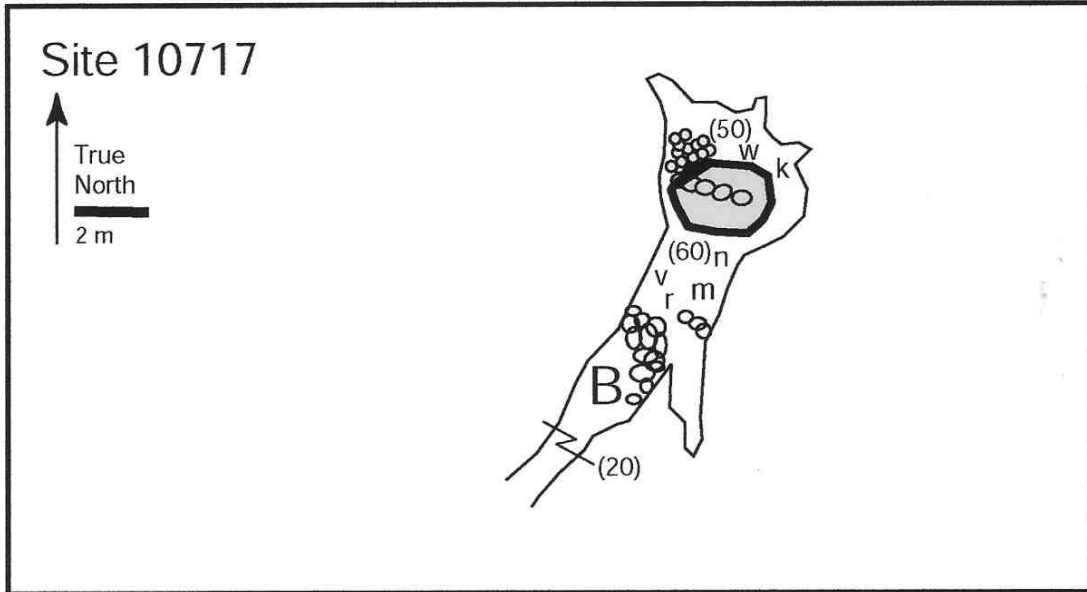
Site 10717 is in Kohanaiki Ahupua‘a at the 1070 ft. elevation. A less than 2.0 m diameter hole in the ground surface provides a vertical opening into the chamber. Stacked rock forms a line at the cave floor below the opening (Figure 111). This feature appears to divide the cave into a small northern chamber, and a larger southern chamber.

There is a small paving, many *kukui* nuts, and a broken water-worn stone in the soil and ‘a‘ā in the northern chamber. The southern chamber has non-human bone, a piece of volcanic glass, *kukui* nut, an *opihi* shell, and a modified piece of coral near the opening. There is a man made "wall" of rocks beyond these artifacts and beyond the wall are human *iwi*.

The *iwi* are partially buried in soil, so it is likely that more *iwi* are present beyond view. Identifiable *iwi* include a sacrum, left scapula, calcaneous, portions of 8 ribs, 5 cervical vertebra 2 digits, and 1 talus. Based on this preliminary field assessment, it appears that there is only one individual in this cave. The age and sex and ethnicity of the individual were not determined. The time of interment (historic or pre-Contact) was not determined, however, it is probably that the remains date to the pre-Contact period.

This is a small cave with one burial. In addition, there are a diverse set of artifacts in the cave, and two internal partitions. One partition separates the burial from all other parts and contents of the cave. The other partition separates the paved area in the north, from the artifact filled area in the central portion. These partitions appear to create three separate activity areas within this small cave: 1) the burial area; 2) the food processing area (central portion with the artifacts), and; 3) the sleeping area (on the

paving). Segregation of work areas, including burials, within a cave has been demonstrated with the large caves at Hōkūli‘a, but is an unusual concept within the confines of a small cave where each activity was conducted close to the other. This site is interpreted as a burial and habitation local.

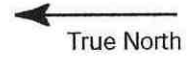


**Figure 111. Site 10717 plan view.**

### **SITE 10718**

Site 10718 is a cave in Kohanaiki Ahupua‘a at the 1080 ft. elevation. Access to the cave interior is through a vertical shaft created as a result of substantial modification to a natural sink. The entire western portion of the sink apparently was naturally open to the interior cave, but most of this opening was intentionally filled. A small passage from the modified sink connects to an intersection of trails within the cave. The entire intersection area was created by stacking rocks from floor to ceiling in the central portion of the cave. Well-constructed passages lead to chambers to the north, west, and south of the intersection. The passages are level and paved. The passage to the south chamber has well-constructed step downward into that chamber (Chamber 3), and a paved trail continues in the northern chamber (Chamber 1) beyond the built up intersection area (Figure 112).

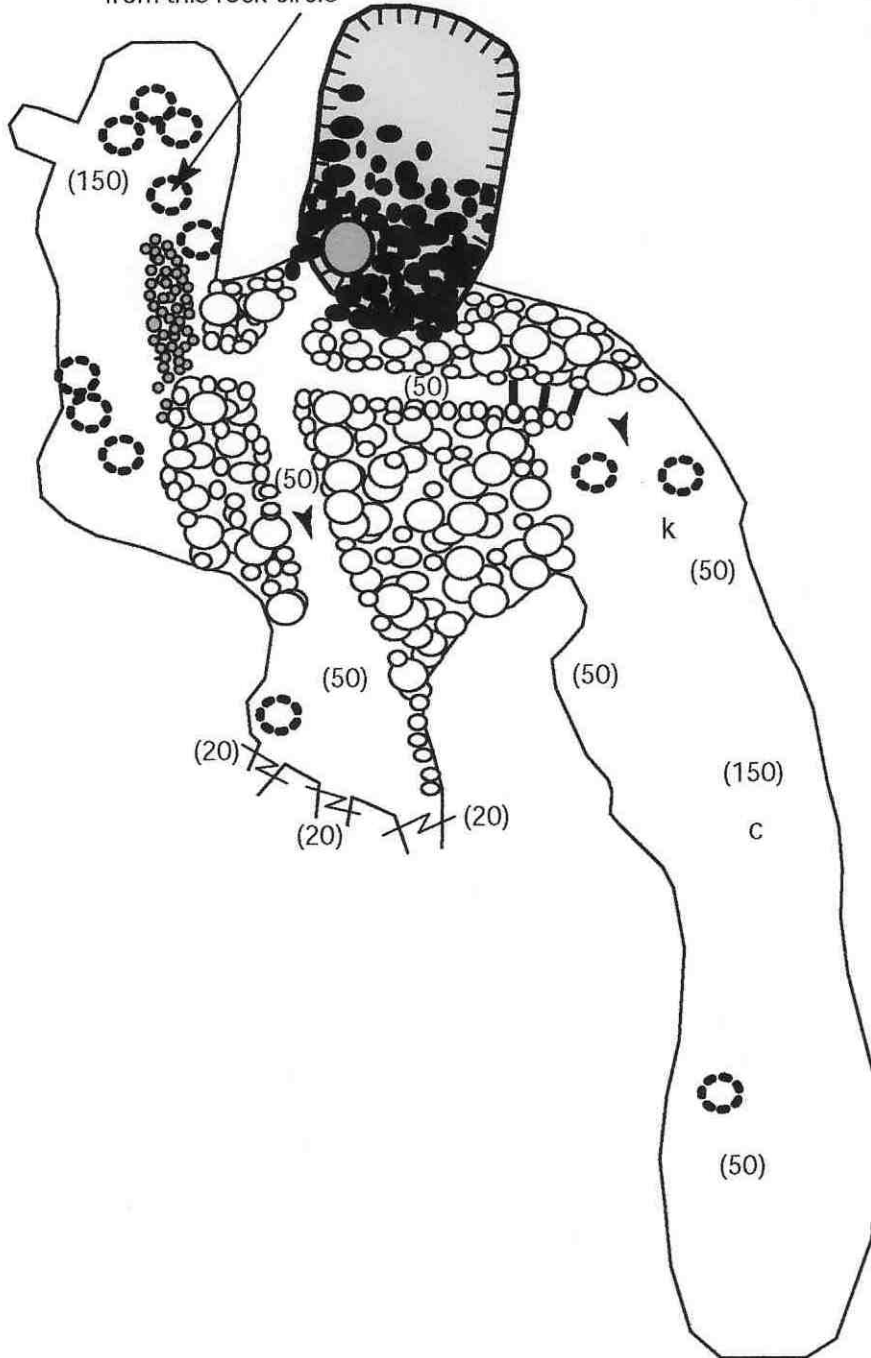
# Site 10718



True North

2 m

Radiocarbon date  
A.D. 1660 to 1960  
from this rock circle



**Figure 112. Site 10718, plan view.**

There are eight circles of rocks in the northern chamber (Chamber 1). The passage slopes downward into Chamber 2 where there is one rock circle. The passage steps down into Chamber 3 where there are three rock circles.

One radiocarbon dating sample was generated from organic material from a rock circle in Chamber 1 (see Appendix A). This sample produced a conventional radiocarbon age of  $120 \pm 40$  BP. Using OxCal v.3.5 this age produces three calibrated date ranges (at 1 sigma): A.D. 1670 to 1740 (0.31), A.D. 1750 to 1760 (0.02), and A.D. 1800 to 1960 (0.67). At 2 sigma the calibrated range was A.D. 1660 to 1960.

The Thurston family was the first missionary family in Kailua-Kona, living there from 1820 until their deaths (1868 for Asa and 1876 for Lucy) (Piercy 1992:54-55). Lucy Thurston documented many local activities, including how fresh water was collected.

The inhabitants generally use brackish water which they find near the shore; or the water that is caught in the rocks; but the chiefs send back several miles for the water which they drink, which is found fresh and cool in caves and natural reservoirs (Thurston 1821:21).

This medium-sized cave is interpreted as being used as a water source. The cave has substantial modifications inside, at the opening, and in the sink. The 12 rock circles dominate the internal contents, with only a few pieces of charred material and *kukui* also present. Whether the water in Site 10718 was collected during prehistory, or during historic times, or both, is not clear based on the limited investigations conducted to date.

**SITE 10719**

Site 10719 is a cave in Kohanaiki Ahupua'a at the 1030 ft. elevation. Walls on the ground surface enclose a small space (2.0 by 4.0 m) that includes the sink that opens to Site 10719 (Figure 113). There are many *kukui* nuts pieces, and a few non-human bones. The site is interpreted as a temporary habitation.

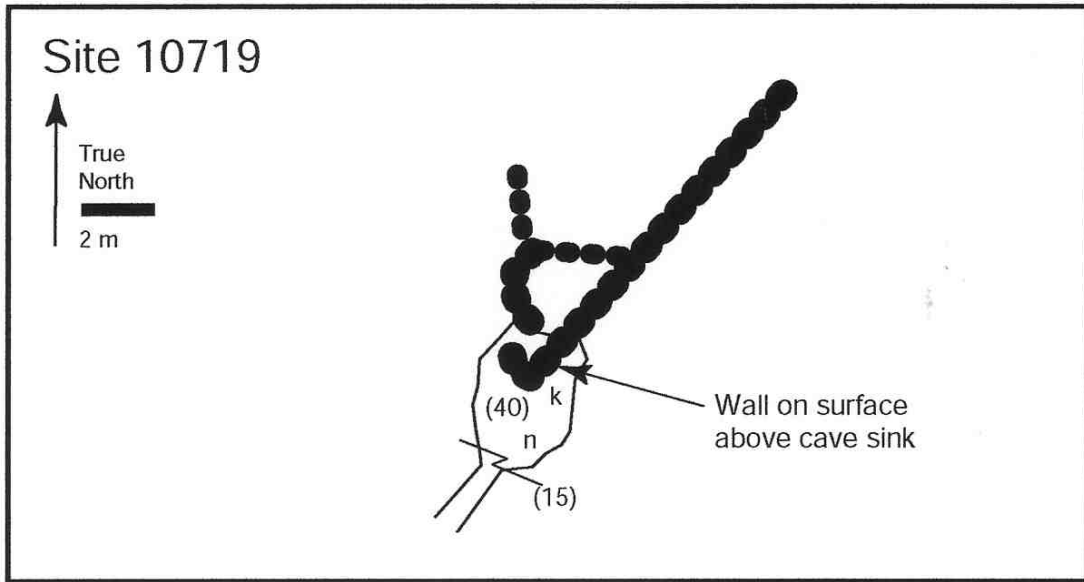
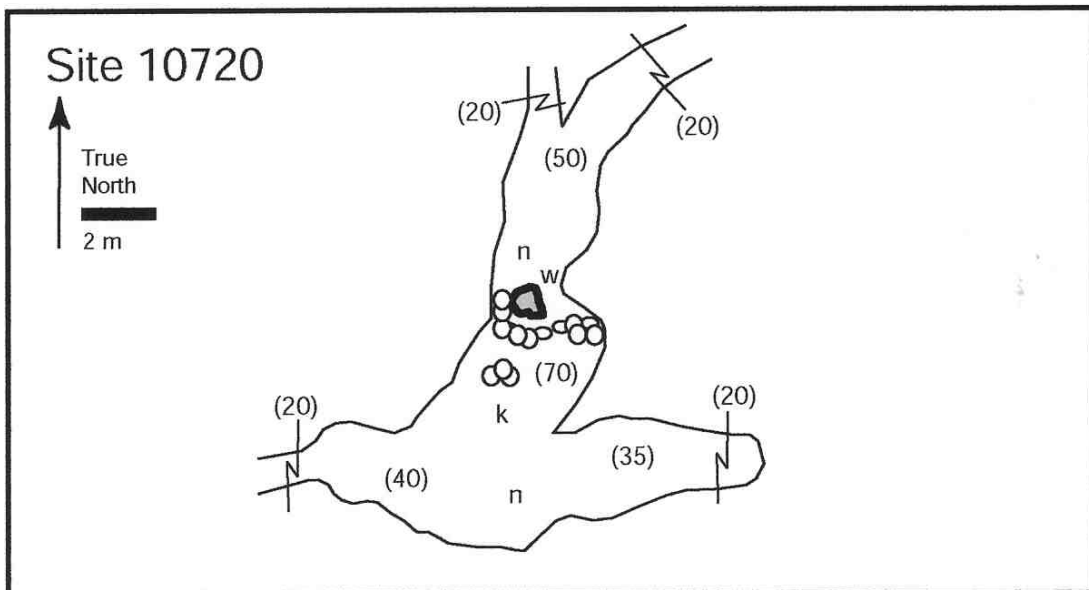


Figure 113. Site 10719, plan view.

**SITE 10720**

Site 10720 is a cave in Kohanaiki Ahupua‘a at 970 ft. elevation. A small (70 cm diameter) hole provides a vertical access to the chamber below. The cave floor is ‘a‘ā and soil, and there is a "wall" of stones that spans the chamber just to the south of the cave opening. Cow bones cover the cave floor just below the opening, testifying to the death of that large mammal that fell into the chamber (Figure 114).

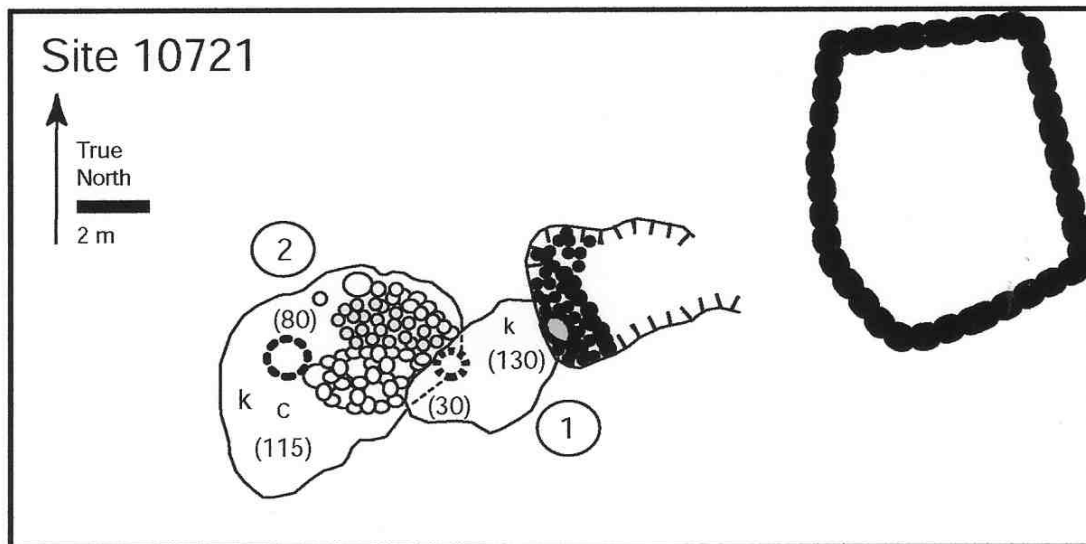


**Figure 114. Site 10720, plan view.**

In addition to the internal wall, cultural items are limited to a water-worn stone near the cave opening, and *kukui* nut to the south of the opening. These items indicate that people used this small cave, and it is interpreted as a temporary habitation.

**SITE 10721**

Site 10721 is in Kohanaiki at 1010 ft. elevation. The cave sink has been filled in to create a constricted opening that is less than a meter diameter. The first opening connects to a small chamber (Chamber 1) where there is only some *kukui*. There is a hole in the floor of the first chamber that connects to a deeper, and slightly larger chamber (Chamber 2). Stones have been piled up to create a pathway from the opening into the central portion of Chamber 2 (Figure 115).



**Figure 115. Site 10721, plan view.**

There is one rock circle on the 'a'ā cave floor in Chamber 2. Charred material, including burnt *kukui*, is plentiful in Chamber 2. A sample of the charred material was collected, but not assayed for radiocarbon dating. This damp, small cave is an example of a sink that is near a stone enclosure, but is not within the enclosed area. Whether this relationship is coincidental or meaningful is not known. The combination of damp cave, rock circle, made pathway, and constricted opening indicates that this cave was used to collect fresh water.

**SITE 10722**

Site 10722 is a cave in Kohanaiki Ahupua'a at the 1010 ft. elevation. The less than 1.0 m diameter hole in the ground provides access to a chamber (Chamber 1) with a soil floor and rocks placed around the perimeter. *Kukui*, branch coral, and marine shell are scattered about this chamber (Figure 116).

Chamber 2 has branch coral, basalt flake and marine shell on an 'a'ā floor. There are some mammal bones that may be human. There is an *ahu* at the distal end of Chamber 2 near a constricted portion of the cave that is further constricted with rocks placed there purposefully. The cave branches off into Chambers 3 and 4. There is a set of human *iwi* near the distal portion of Chamber 3 and Chamber 4. Otherwise, Chambers 3 and 4 are nearly void of cultural material.

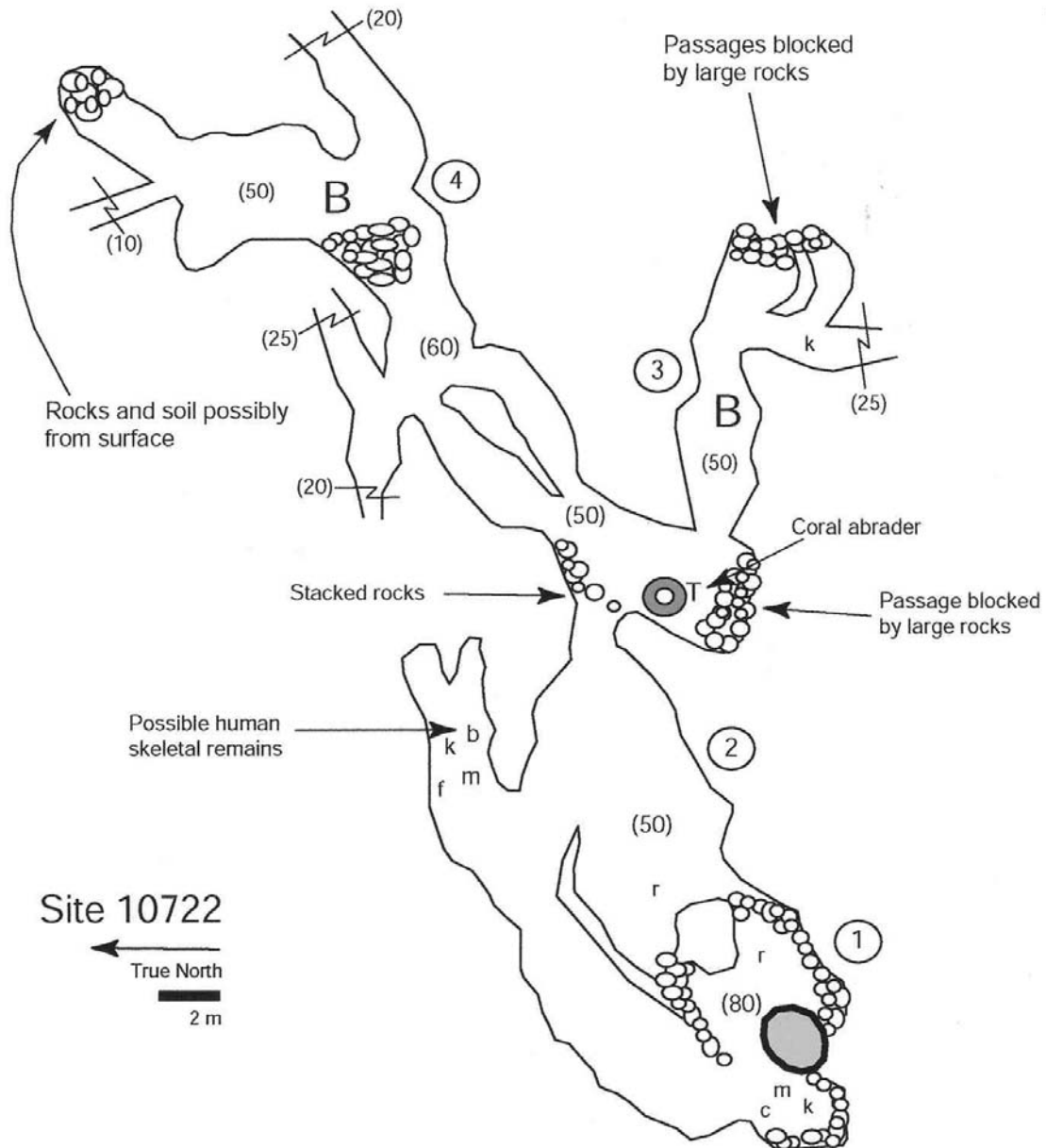
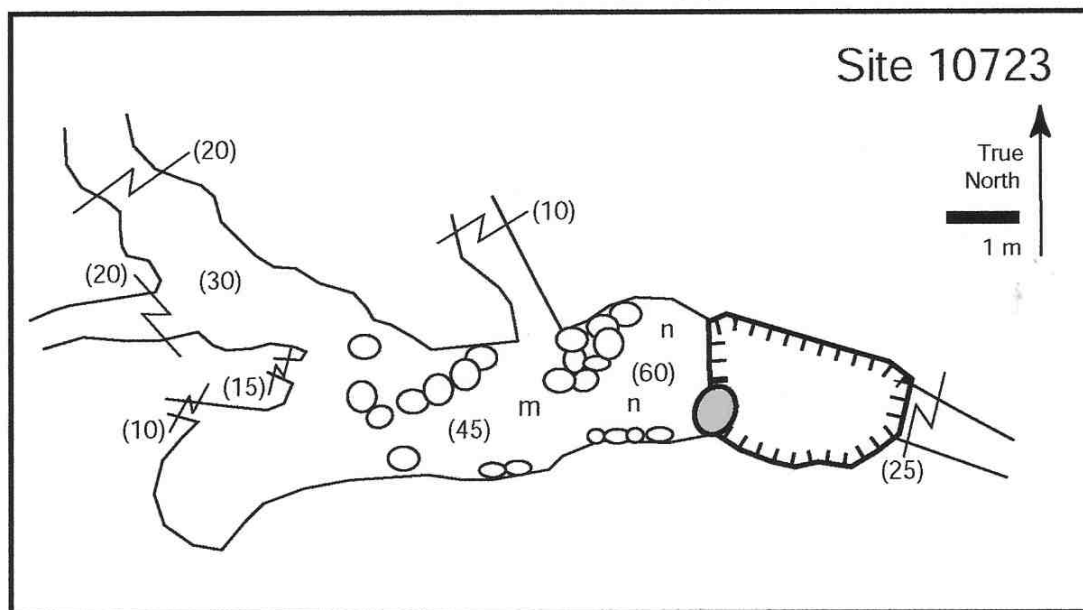


Figure 116. Site 10722, plan view.

The diverse set of artifacts in association with a burial that is elsewhere in the cave may indicate that distinctly different activities took place within this medium sized cave. This site is interpreted as a pre-Contact burial and habitation local.

### SITE 10723

Site 10723 is a cave in Kohanaiki Ahupua‘a at the 1010 ft. elevation. A small opening in the western end of a sink leads into the soil covered, low ceiling chamber (Figure 117). There are dog teeth, a possible bird bone, and a cowrie shell near the cave entrance. Two lines of loosely-piled rocks section off the cave into three small areas. The alignments and the few artifacts within this small cave indicate it functioned as a temporary habitation.

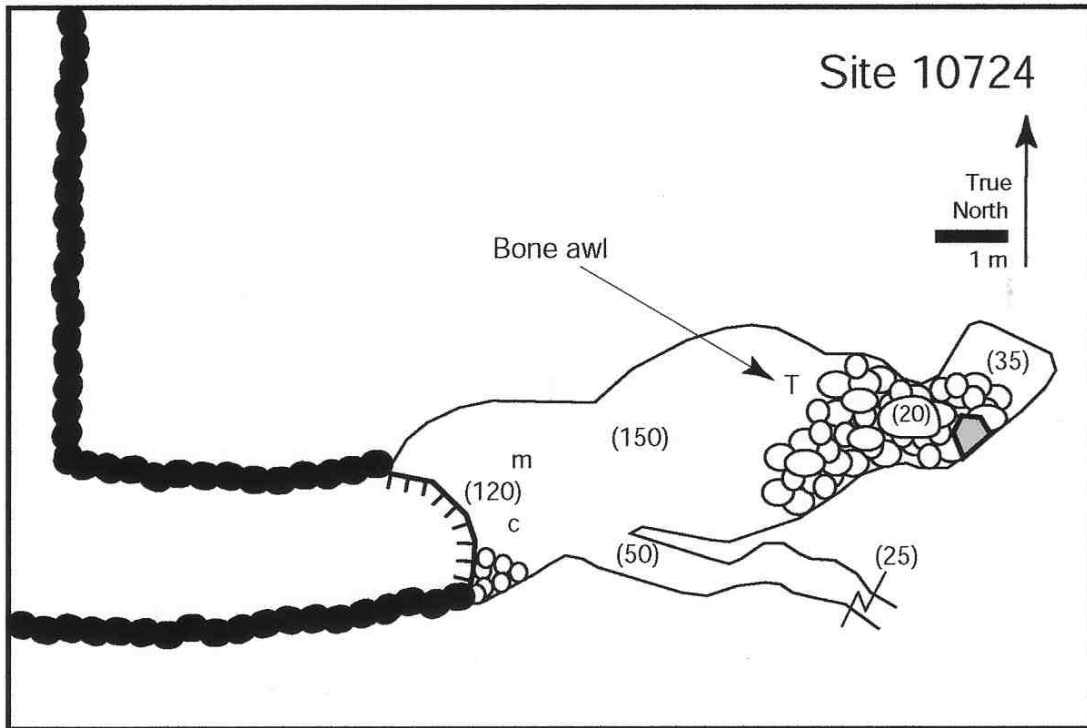


**Figure 117. Site 10723 plan view.**

### SITE 10724

Site 10724 is a cave in Kohanaiki Ahupua‘a at the 920 ft. elevation. The natural opening forms a part of a walled enclosure (Figure 118). Charred material and marine shell are near the opening, and there is a bone awl deeper into this small cave. With the small non-passable opening at the other end, this cave is illuminated with ambient light throughout. The lack of modified floor features, the appearance of a tool, the small size, and ambient light suggest that this cave was used as a temporary habitation, perhaps a sheltered work area. The meaning of the direct association with the enclosure is unclear.





**Figure 118. Site 10724 plan view.**

**SITE 10725**

Site 10725 is a cave in Kohanaiki Ahupua‘a at the 890 ft. elevation. The natural opening is small and narrow (Figure 119). There is a pathway that was created by moving and piling rocks ten meters from opening. Beyond the trail there are six rock circles in the central portion of the cave. The cave is damp with water dripping from the ceiling. Charred material is plentiful, and scattered throughout most of the many chambers of the cave. Charred material occurs in the lower, narrow chamber, too.

This large and complicated cave system was used for fresh water collection. Artifacts are limited to *kukui* and charred material. The association of the rock circles with an internal pathway, and difficult to access opening is also consistent with other water collection caves in the project area.

# Site 10725

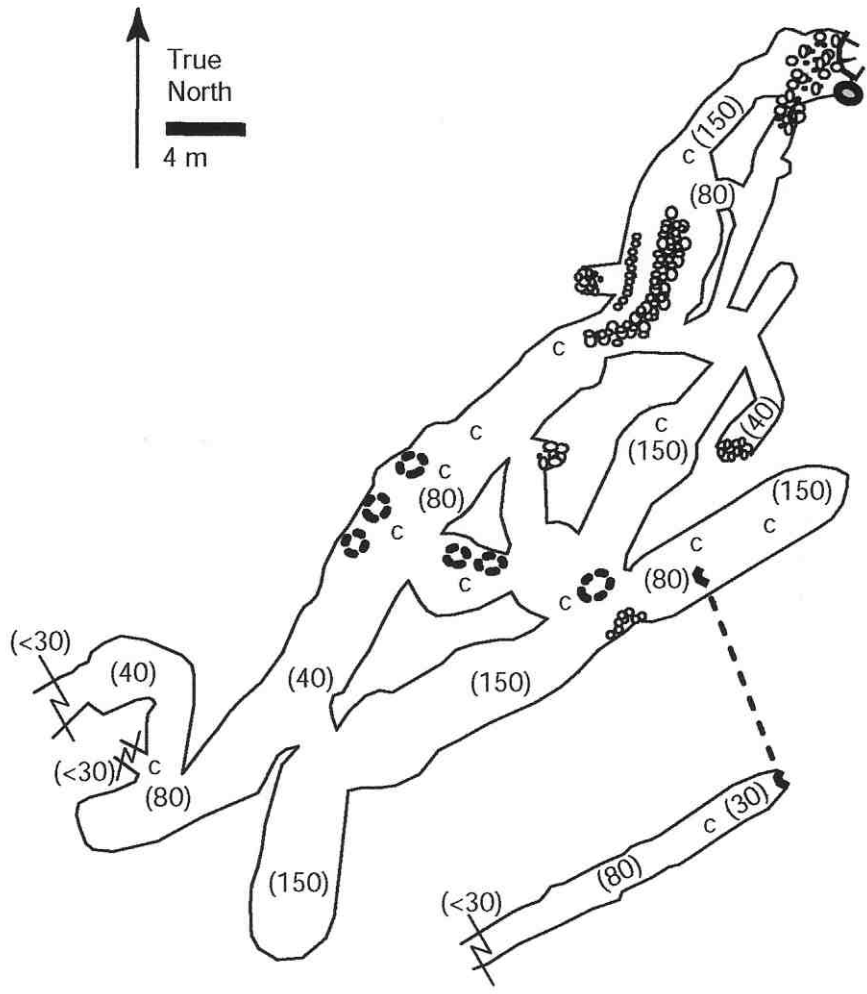


Figure 119. Site 10725 plan view.

### SITE 10726

Site 10726 is a cave in Kohanaiki Ahupua'a at the 870 ft. elevation. There is a chamber with a large quantity of roof fall connecting to the opening (Figure 120). The only indication the people used this cave is one large piece of charred material in the central chamber, and a *kukui* nut in the southern chamber. This lightly used, and unmodified small cave interior may have been used as a temporary habitation.

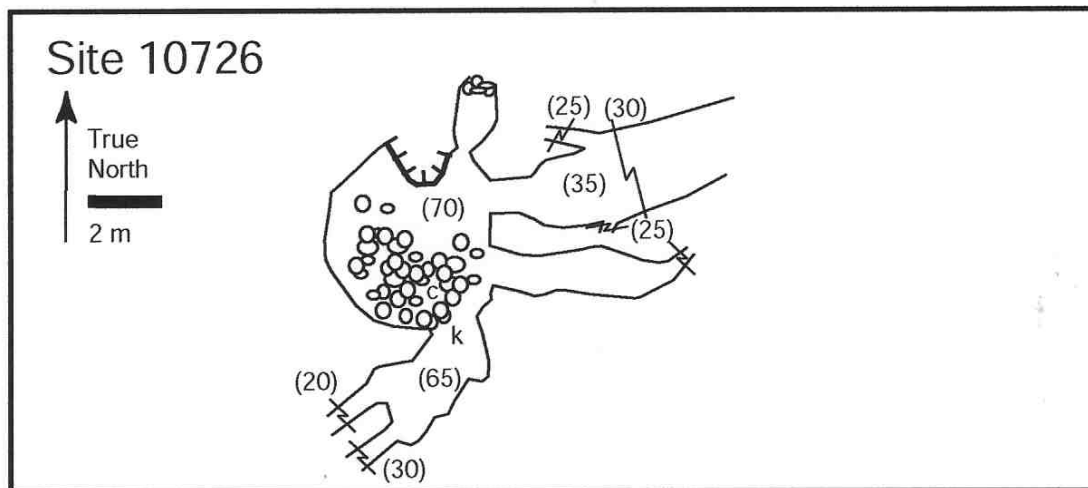
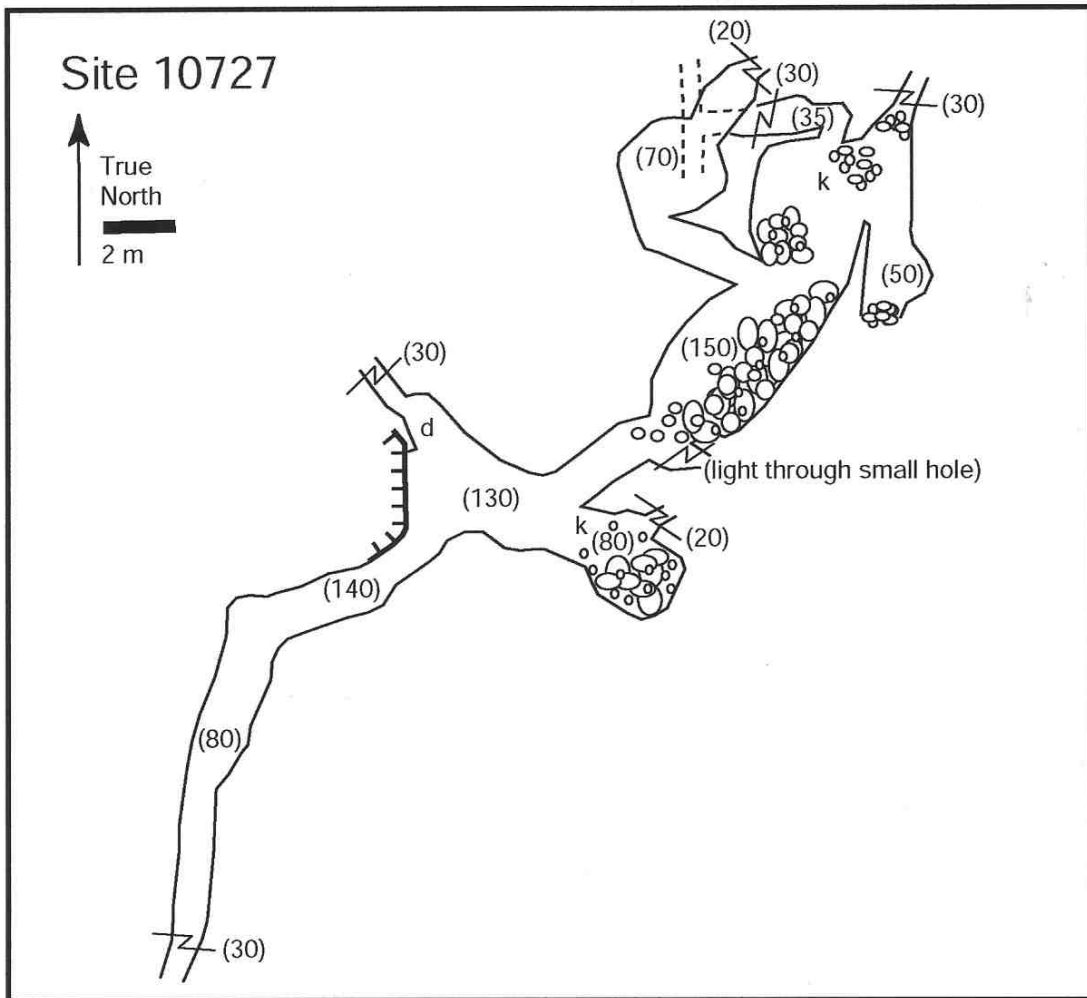


Figure 120. Site 10726, plan view.

### SITE 10727

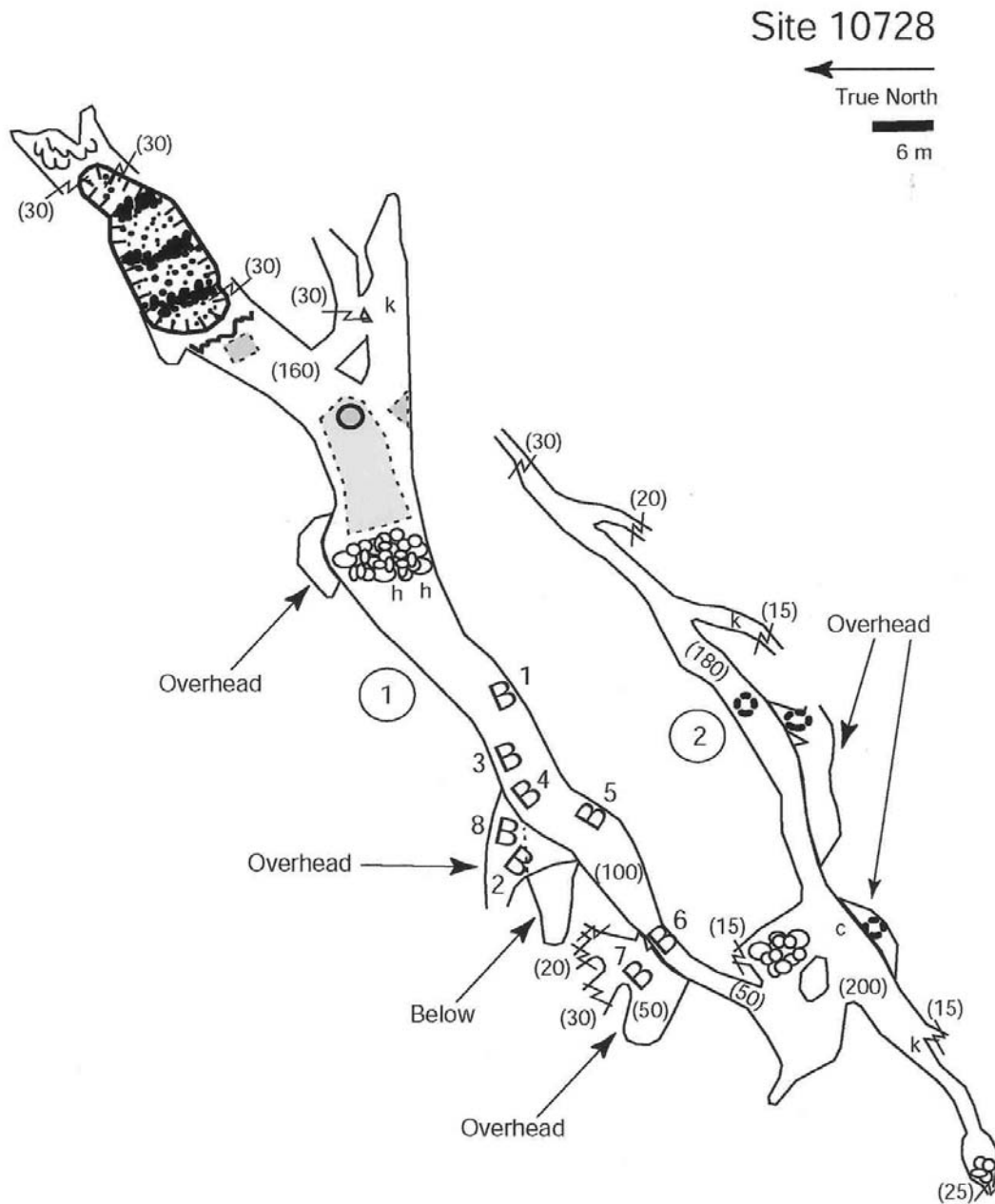
Site 10727 is a cave in Kohanaiki Ahupua'a at the 850 ft. elevation. A few pieces of *kukui* nut are the only potentially cultural items in this cave (Figure 121). Roof fall covers much of the cave floor in the northeastern portion of the cave. A slight modification to the cave entrance is the only sure sign that people used this small cave as a temporary habitation.



**Figure 121. Site 10727, plan view.**

### SITE 10728

Site 10728 is a cave in Kohanaiki Ahupua'a at the 830 ft. elevation. There is a short chamber that connects to the northwestern portion of the sink, but there is no indication that people used that portion of the cave (Figure 122). The sink has been modified with several terraces. A long and relatively complicated cave system connects to the southwestern portion of the sink.



**Figure 122. Site 10728, plan view.**

A 3.0 by 4.0 m platform paved with *'ili 'ili* is situated near the cave entrance at the base of the roof fall and is associated with the opening to the ground surface at the sink. There is a skylight further in that has been mostly filled in (presumably during prehistory), but it still lets some light into the cave. There is a set of architectural modifications below the skylight, with a paving along the northern cave edge being the

largest of these. The small modifications occur over a 20.0 m long segment of cave. Two burnt torches are located at the distal end of the modifications.

There is a short empty space in the cave beyond the modified area, and then there is a set of eight human *iwi* (Table 45). The set of *iwi* at location 1 is unlike the other sets, and may represent *iwi* that have been moved (by human or animal agent) from one of the other sets of *iwi*. The set of *iwi* at location 2 are too far away to clearly assess. There may be 1 or 2 individuals in that set.

**Table 45. Distribution of *iwi* in Site 10728.**

<i>Iwi</i> set #	<i>Iwi</i> present	Coffin	Artifacts	Comment
1	Digits, vertebrae, patella	None	Charred wood	Scattered remains
2	Cranium, limb bones	None	Could not assess	1 or 2 individuals
3	Nearly complete set	None	None	On shelf, some bones below shelf
4	Lower body complete	Yes	Ivory or bone buttons (n=2), woven fabric	
5	Full set of <i>iwi</i>	Yes	Shoe parts, nails in wood, buttons (n=7)	Rock on chest
6	Limb, others decomposed	None	Kukui nut	
7	Teeth, others decomposed	None	Button (n=1), kukui	
8	<i>Iwi</i> covered by wood	Yes	Unknown	

The *iwi* at location 3 represent a nearly complete bundle burial of an adult gracile male. The assessment of male is based on sloping forehead, small brow ridge, broken but large mastoid process, and medium nose). All visible epiphyses are fused, and there is medium wear on teeth. The vertebrae are articulated, the head is oriented *makai*, and the limb bones were placed on the chest.

The *iwi* at location 4 represent the lower body of an extended burial in a coffin. The feet are oriented *makai*. The coffin has decomposed, but wood fragments are present under and on top of the *iwi*. Where the upper body *iwi* should be is a woven fabric, resembling burlap. The relationship of the missing *iwi* here and the fabric present here is not known. There is water that drips from the ceiling directly on the place where the upper body should be. It is likely that the water has expedited the decomposition of the *iwi* in this portion of the body. There are two ivory, or bone, buttons that are pure white and precisely circular.

The *iwi* at location 5 are a fully extended adult male of advanced age at death. The age at death is indicated by fully absorbed bone in the maxilla and mandible where teeth should be. A large mastoid and large brow ridge indicate that this was a male. A rock was placed on the chest of this man, and a possible pillow rested under his head. Portions of shoes and the buttons indicate that this man was buried in the historic era fully clothed.

The *iwi* at location 6 represent a fully extended adult. There are few identifiable bones, but the limb bones have fused epiphyses, indicating an adult.

The *iwi* at location 7 are an extended youth. The *iwi* are very decomposed, but the teeth show very little wear. There is one button, and some *kukui*.

The *iwi* at location 8 were placed in a coffin. The coffin lid covers the *iwi*, and the lid was not moved during this investigation. Consequently, the *iwi* are covered precluding an assessment.

Based on the very limited investigation of the *iwi* in this cave, there are several observations and speculations that can be made. There are indications that these *iwi* were placed in this cave during the historic era: there are buttons and shoes, coffins, and most are in an extended position. This is a wet cave, which increases the speed of decomposition. The fact that so much of the *iwi* is still present probably reflects a relatively recent time of placement of the *iwi* in this cave. Based on this assessment, all of the *iwi* here, even those that do not have historic artifacts, can be presumed to have been placed in this cave during the historic era.

No assessment of ethnicity was attempted in this field analysis. Preliminary field assessment does suggest that a wide range of ages at death are present in this group, ranging from young adult to aged. There are no indications of infant or teenaged individuals. *Kukui* nut, particularly for lighting, may have played a part in the process of interring the *iwi* here. Alternatively, the *kukui* nut may not be associated with the burial process. The other features in the cave are almost certainly prehistoric features, and the *kukui* may have been left behind in the cave decades or centuries before the *iwi* were placed here.

The *iwi* were treated in a couple different ways, although decomposition precludes a full assessment. Several *iwi* were placed in coffins in an extended position fully clothed. This kind of treatment is not consistent with traditional burial practices (Malo 1951; Handy and Pukui 1996). Rather, this treatment is associated with Christian burial practices, suggesting that these *iwi* were placed in the cave at least after 1820, and probably closer to, and after, the time that the Protestant church was built in Kohanaiki Homesteads in the mid-1870s (Kelly 1971:14).

There is at least one set of *iwi* (those at location 3), however, that was bundled prior to placement in the cave. If all of these were indeed placed in the cave during the historic era, then this set of *iwi* indicates that one of the traditional styles of bodily treatment was still being used, perhaps as late as the late 1800s. What this might mean with regard to religious practices, chronology of the burials, and other aspects of the social setting in this area is beyond the scope of this report.

SHPD staff archaeologists reviewed an earlier draft of this report, and made two comments germane to the discussion presented above. One is that “the suggestion that the

coffin burials probably occurred after the construction of the Protestant church in Kohanaiki Homesteads in the mid 1870s is fairly speculative without a discussion of any burial sites associated with the church” (SHPD letter dated July 13, 2005, LOG NO> 2005.1457: Attachment page 3). The other: “We believe it is far more likely that the bundle burial was moved from elsewhere and joined with the coffin interments, or was interred prior to the historical period and reflects pre-contact or early post-contact practices” (ibid).

The cave passage becomes narrow just beyond the *iwi* at location 6. It would have been very difficult place an intact body beyond that spot. Consequently, the *iwi* were placed as far into the cave as the conditions of the cave and the manner of treatment allowed. With this in mind, it is conceivable that the *iwi* were not all placed in the cave at the same time. The first *iwi* may have been the two at locations 6 and 7, the furthest in to the cave that was possible. The other *iwi* may have been interred after that, with some sequence within that group that might be associated with coffins, or lack of coffins.

There are three rock circles in the chamber (Chamber 2) that is further in, and parallels, the main chamber (Chamber 1). Charred material and *kukui* are also present in Chamber 2.

There is a variety of features representing a variety of activities conducted over different eras in this large cave. Rock circles deep within the cave indicate that water collection was performed, probably during the prehistoric and historic eras. The complex of pavings and platforms under the small skylight near the cave entrance is reminiscent of refuge activity, but the opening is lacking constrictions which would be expected for the refuge function. Consequently, it is possible that the feature complex is associated with prehistoric habitation activity. The final, or at least one of the most recent, activities conducted within this cave was the placement of *iwi* during the historic era. Eight or nine people of various ages were placed in the distal reaches of the main chamber.

### **SITE 10729**

Site 10729 is a cave in Kohanaiki Ahupua‘a at the 830 ft. elevation. There are two openings in the modified sink, and the chambers from both openings connect in a network of complicated passages (Figure 123). There are several terraces in the sink, and one 2.0 by 1.0 m depression in the western portion of the sink. This western portion was filled to fill the cave opening, and create a constricted access passageway in the cave system. The opening at the east end of the sink is easily to access. It seems counterintuitive to provide one easy access to the cave system and one difficult one; the easy accessible entrance would defeat the purpose of the difficult one. It should be noted here that the one passage where the eastern and western chambers connect is a very small passage, about 30 cm high/wide. That passage is at the threshold for the "cultural end" of caves used in this research. It is possible for a small, slender person to pass through that passage, however. We did. Nevertheless, based on that one connection location being so small, and the different ways that the openings facilitate (east sink) or deter (west sink)



passage, it is assumed that the *mauka* and *makai* chambers were used and thought of as two separate caves.

There are three areas that have been cleared of the usual rocks on the cave floor in the *mauka* chamber. One is near the cave entrance, and the other two are only a few meters in from there. These features may have served as places where people congregated within the cool protection of the cave. The nature of any activities that might have been conducted here is not clear due to the lack of any associated artifacts.

The *makai* (west) entrance is constricted in a major way. One person can pass through the single file tube created at this opening. There is a pavement at that based of the modified roof fall beyond the entrance area. There are 10 rock circles in the chamber directly *makai* of the paving. Further *makai*, sunlight is visible through cracks in the impassable roof fall at the "cultural end" of the chamber.

Charred material and *kukui* are scattered throughout the many other chambers, indicating that the cave was fully explored. There are several other features situated in various places in the cave system. There are three stone alignments that serve an unknown function. There is a stone "box" made out of slabs, lacking any internal contents. A paved terrace is near the box. There is one rock circle next to a slab that has apparently been placed on its side.

This cave was used in a variety of ways. Water collection is the most obvious of the functions, based on the constricted entrance, associated paving near the opening, and 10 rock circles nearby. The easily accessible cleared areas in the small *mauka* chamber was associated with some activity that involved few, if any, material remains. The features scattered about the remainder of this very large cave are even more perplexing: a single rock circle next to a probable *ahu*, a stone slab box, and three alignments. Another potentially important natural spot is the round "room" at the southwest terminus of the cave. A very difficult to crawl through passage connects to a round, high ceiling room. *Kukui* nut here indicates people did reach this place. The *ahu* is in the passage that leads to this room. Although not clearly spelled out with obvious features and artifacts, it seems plausible to suggest that these unusual natural and cultural items in the complicated network of cave chambers reflects special activities in the cave. Based on all of the data collected this site is interpreted as having three functions; a water source, habitation, and ceremonial.