

**FINAL REPORT**

**Burial Treatment Plan for Burial Sites in the  
Mauna Kea Science Reserve and the Mauna  
Kea Access Road Corridor, Ka'ohē Ahupua'a,  
Hāmākua District, Island of Hawai'i.**

TMK: (3) 4-4-015:009 and (3) 4-4-015:por.001

*Prepared for:*

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July 2014

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Ka'ohē Ahupua'a,  
Hāmākua District, Hawai'i Island  
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## INTRODUCTION

The Office of Mauna Kea Management (OMKM) prepared a burial treatment plan (BTP) for 34 Native Hawaiian burial sites documented during archaeological inventory surveys of the Mauna Kea Science Reserve (MKSR) and the Mauna Kea Access Road Corridor (MKARC). The preparation of this BTP is *not* driven by a construction project, but instead, the BTP is part of OMKM's management responsibilities described in the Board of Land and Natural Resources-approved Comprehensive Management Plan (CMP) for the University of Hawaii's managed lands on Mauna Kea. A BTP is required by Hawaii Administrative Rules (HAR) 13-300-33 when there is a request to preserve in place or relocate a previously identified burial.<sup>1</sup> Figure 1 shows the general locations of the MKSR and the MKARC on Hawai'i Island.

The CMP contains two management actions related to planning documents concerning identified burials in the Mauna Kea Science Reserve. Management Action CR-13 of the Mauna Kea Comprehensive Management Plan (CMP) states the following:

Develop and implement a burial treatment plan for the UH Management Areas in consultation with Kahu Kū Mauna Council, MKMB's Hawaiian Culture Committee, the Hawai'i Island Burial Council, recognized lineal or cultural descendants, and SHPD (Ho'akea 2009:7-8).

The CMP also states that:

Components of the burial treatment plan should include documenting inadvertently exposed burials and reburial sites for inclusion in the historic property catalogue; appropriate treatment protocols for human remains exposed due to natural causes; and monitoring protocols for burial sites (Ho'akea 2009:7-10).

Management Action 5 of the Cultural Resources Management Plan (CRMP), one of the sub-plans of the CMP, is listed as a high priority management action for the protection of burial sites. It states that:

Once the final AIS report is completed and submitted, a Burial Treatment Plan (BTP) will be prepared for all of the confirmed and possible burial sites documented for the three U.H. Management Areas using guidelines set forth in the CRMP. The BTP will detail how the burials will be preserved and protected (including any site stabilization measures), suggest the enforcement responsibilities OMKM Rangers will have, and describe any provisions for visitation by recognized descendants (McCoy et al 2009:5-4).

## DESCRIPTION OF PROJECT AREAS

The Mauna Kea Science Reserve (TMK: [3]4-4-015:009) and the Mauna Kea Access Road Corridor (TMK: [3]4-4-015: por. 001) are two of three parcels of State-owned land on Mauna Kea leased to the University of Hawai'i. The third parcel, Hale Pohaku, did not contain burials. Both the MKSR and the MKARC parcels are within Ka'ohē Ahupua'a in the Hāmākua District of Hawai'i Island. The MKSR and the MKARC are managed by the Office of Mauna Kea Management (OMKM) on behalf of the university. The OMKM is located at the University of Hawai'i at Hilo, 640 N. A'ohoku Place, Hilo, HI 96720.

The 11,288-acre Mauna Kea Science Reserve underwent an archaeological inventory survey over a period of 20 weeks by Pacific Consulting Services, Inc. between 2005 and 2009 (McCoy and Nees 2010). A total of 263 historic sites were identified of which 34 are burial or possible burial sites.

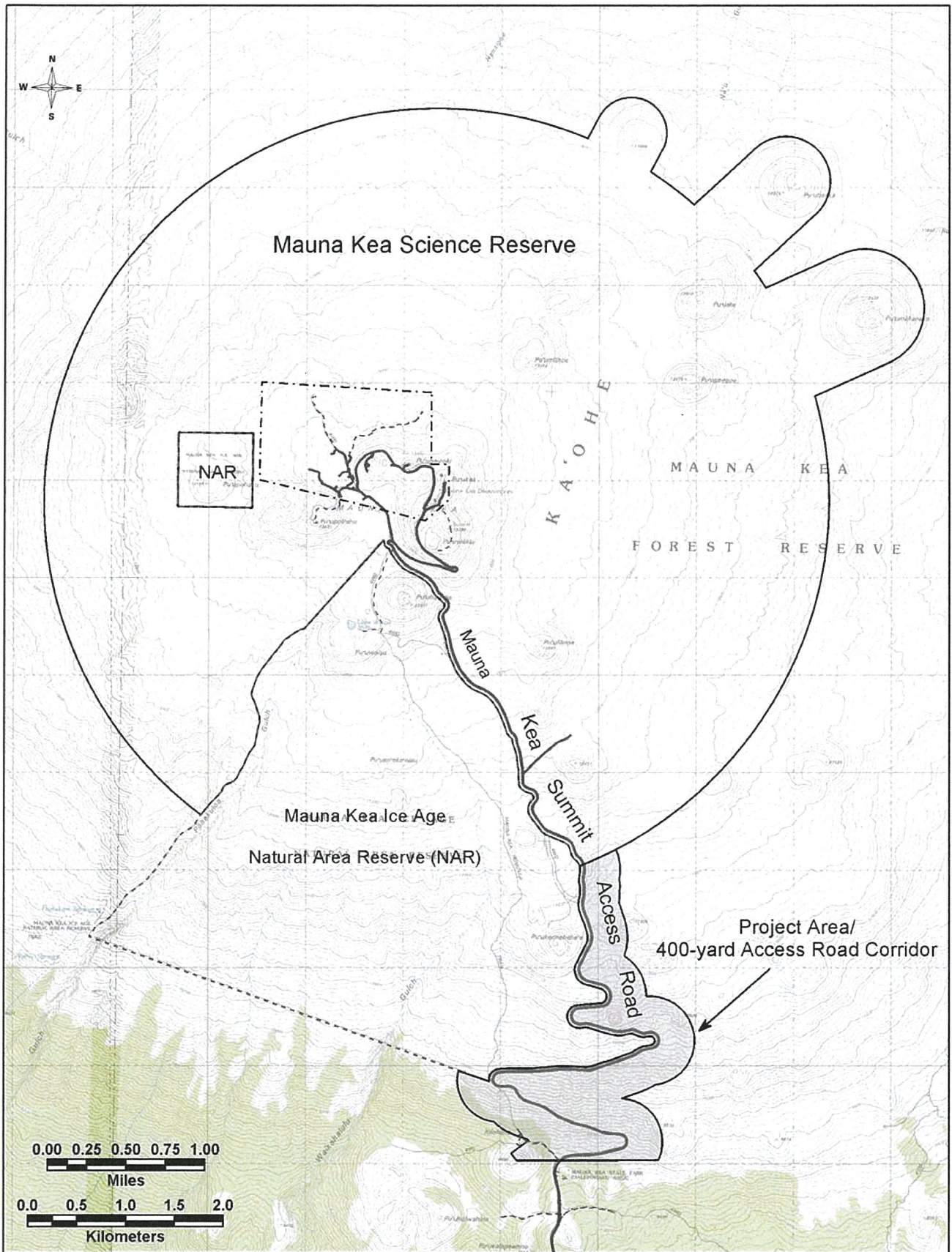


Figure 1. Project Area Location on U.S.G.S. Mauna Kea Quadrangle (1983).

Nearly all of the burial sites are located in remote portions of the Science Reserve, well away from areas frequented by the public. It should be noted that, beginning with a 1982 reconnaissance survey on Mauna Kea (McCoy 1982; McEldowney 1982) the practice in all subsequent archaeological surveys in the MKSR has been to not test possible burial features to determine the presence/absence of human remains. This same practice was adhered to in the Archaeological Inventory Surveys of the MKSR and the MKARC out of respect and because the sites are being preserved. One result of this decision is that many structural features believed to be burials are classified in the AIS reports for these two parcels (McCoy and Nees 2010; McCoy et al. 2010) and in this burial treatment plan as “possible burials” because no human remains were observed at the time the site was recorded.

The approximately 70.8 acres of the Mauna Kea Access Road Corridor extend along the summit access road from Hale Pōhaku at about the 9,000-foot elevation to the lower boundary of the MKSR at approximately the 12,000-foot elevation (see Figure 1)(McCoy et al. 2010). The corridor includes a non-exclusive easement (Grant of Easement No. S-4697) approximately 400 yards wide on either side of the road, except for sections that fall within the boundaries of the Natural Area Reserve (McCoy et al. 2009). The MKARC underwent an archaeological inventory survey in 2009 and four (4) historic sites were recorded of which three (3) were possible burial sites (McCoy et al. 2010). Copies of the letters from the State Historic Preservation Division that approve and accept the inventory survey reports are in Appendix A.<sup>2</sup>

#### **LAND OWNERSHIP**

At the completion of the Māhele in 1848, King Kamehameha III executed two additional instruments covering lands under his control. These instruments created what are known as Crown Lands and Government Lands (Chinen 1958: 25-26). The King reserved the Crown Lands, a smaller portion, for his personal use and designated the Government Lands to be given to the “chiefs and the people” (Chinen 1958: 26). Ka’ohe Ahupua’a was first designated as Crown Lands, and given to Princess Victoria Kamamalu. Subsequently, she relinquished Ka’ohe to King Kamehameha III who assigned it to the government land inventory in January 1848 (Maly & Maly 2005: 269).

During the Māhele, only four native tenants who made claims for land rights for Ka’ohe Ahupua’a were identified, and all of these claims were well below the summit at lower elevations. By the close of the Māhele, one native tenant was granted land in lower portions of Ka’ohe Ahupua’a.

In 1857, Francis Spencer and the Waimea Grazing and Agricultural Company leased the upland portions of the Crown and Government lands of Humu’ula and Ka’ohe Ahupua’a. They subsequently established ranching operations, with cattle ranches and stations, throughout this area (Maly & Maly 2005:viii). In 1870, Parker Ranch acquired this lease and held it until 1905 when the Mauna Kea Forest Reserve – including the summit of Mauna Kea -- was established by the Governor’s Executive Order 1719 and these lands were removed from the lease (Maly & Maly 2005: viii).

At statehood, in 1959, responsibility for and oversight of Hawai’i’s public lands were transferred to the newly created Department of Land and Natural Resources (DLNR), formed from a number of existing territorial agencies and divisions, under the Hawaii State Government Reorganization Act of 1959. A newly created public commission – the Board of Land and Natural Resources (BLNR) – became responsible for the disposition of state lands, including leases, sales, and acquisitions (DLNR 1962: 5).

In 1968, the State Legislature recognized the importance of Mauna Kea for astronomy observations, and passed Senate Concurrent Resolution 16 in which it was resolved that the

Governor set aside and establish an appropriate area on the summit of Mauna Kea for the installation and operation of telescope observatory and astronomical activities. On January 1, 1968, DLNR and the University of Hawaii entered into an agency-to-agency 65 year lease (General Lease S-4194). In 1998, a portion of the lease area known as the Mauna Kea Science Reserve was modified to exclude the Natural Area Reserve parcels (designated in 1981) leaving a total area of 11,288 acres under the agreement. The Mauna Kea Access Road Corridor consists of a non-exclusive easement (Grant of Easement No. S-4697) granted by the BLNR in 1974. The BLNR stipulated that the Access Road Corridor easement would be coterminous with General Lease S-4191, both of them terminating on December 31, 2033. Figure 2 presents a current tax map that provides land ownership information on file at the Bureau of Conveyances.<sup>3</sup>

## THE NATURAL CONTEXT

### GEOLOGY OF THE SUMMIT REGION

Mauna Kea, the highest (13,796 feet above sea level [ft asl]) and second largest of the five shield volcanoes that form the Island of Hawai'i, is estimated to be between 600,000 and 1.5 million years old (Moore and Clague 1992; DePaolo and Stolper 1996; Wolfe et al. 1997; Sharp and Renne 2005). There are numerous cinder cones and associated lava flows on what is commonly (and popularly) known as the summit plateau of Mauna Kea. The summit region resembles a stony alpine desert. The soils, like those in alpine environments generally, are poorly developed (Ugolini n.d.). In the absence of a vegetative cover and, thus, a surface organic layer, or A horizon, the ground surface in many places consists of a desert pavement (Ugolini 1974:189). The primary evidence of a periglacial climate and geomorphic processes is the occurrence of diverse forms of patterned ground, such as stone stripes (Figure 3) and polygons that are widespread in the cold regions of the world (Washburn 1956, 1979). The most common type of mass-movement landform in the summit region of Mauna Kea is the stone-banked terrace or lobe (Davies 1972:49-51) which is variably called either solifluction or gelifluction terraces and lobes (Figure 4).

### CLIMATE OF THE SUMMIT REGION

The summit region climate is both dry and cold. Precipitation at the higher elevations frequently averages less than one inch in every month of the year, primarily in the form of sleet, hail and snow, which rarely accumulates on the ground for any length of time below the 10,000 foot (3,050 m) elevation, however. The prevailing winds are from the east-northeast. Fog and other forms of ground condensation are not uncommon, with cloud banks often encompassing the summit region by midday.

### FLORA AND FAUNA OF THE SUMMIT REGION

The vegetation above the 9,840 foot (3,000 m) elevation has been classified as a semiarid, barren alpine tundra (Krajina 1963). It consists of lichens, mosses, and a few bunch grasses such as *Trisetum glomeratum* and *Agrostis sandwichensis* (Hart and Neal 1940; Krajina 1963; Mueller-Dombois and Kajina 1968; Smith, Hoe and O'Connor 1982). There is some evidence, including the discovery (during the course of archaeological investigations of the Mauna Kea Adze Quarry in 1975-76) of the remains of a silversword colony (*Argyroxiphium sandwichensis*; 'āhina or 'āhinahina) at the 11,398 to 11,998 foot (3,475 to 3,658 m) elevation, that this zone formerly contained a much richer flora, such as the arborescent *Dubautias* (Allen 1981:46). The only resident fauna thought to be in the summit region, prior to European contact, is a variety of insects, including the Wekiu Bug (*Nysius wekiuicola*) (Howarth and Montgomery 1980; Papp







Figure 3. Photographs Showing Examples of Stone Stipes.



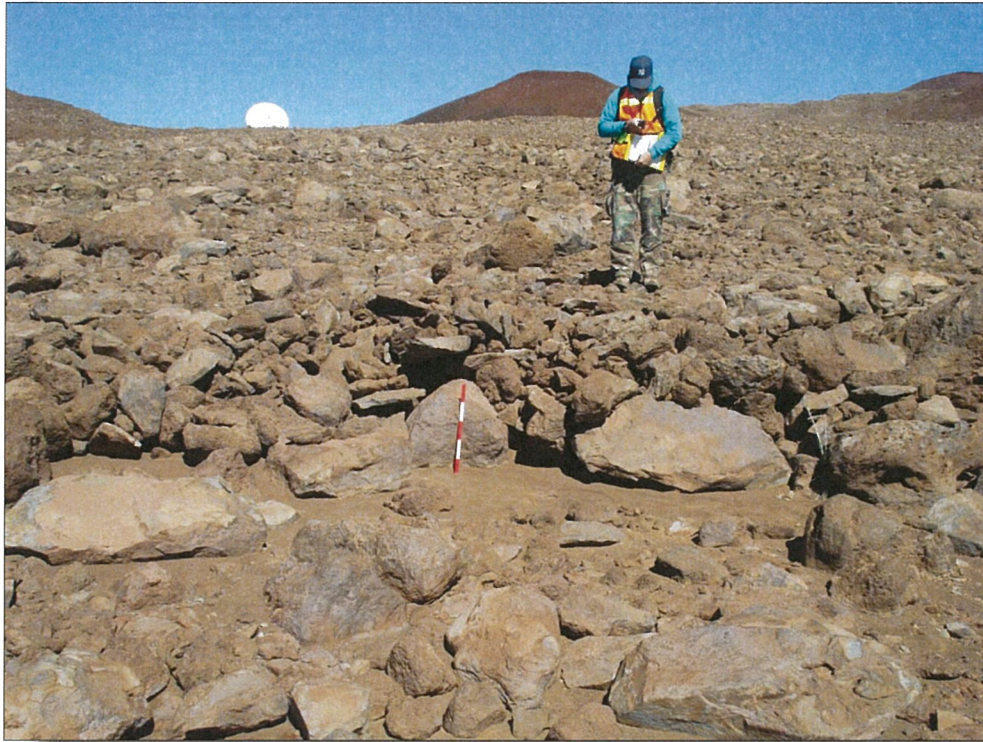


Figure 4. Photographs Showing Gelifluction Lobe- Terraces.

1981). In post-contact times, feral ungulates such as the Mouflon Sheep (*Ovis montanus*) may transit the summit region but do not reside in the region.

### TRADITIONAL CULTURE-HISTORIC CONTEXT

Much of what is known concerning the traditional culture history of the summit region of Mauna Kea was summarized by Holly McEldowney in a 1982 report, based on a review of early journal accounts and maps, ethnographic collections, and the Boundary Commission Book for Hawai'i (McEldowney 1982). More recent research by Kepa Maly (1998, 1999) and Charles Langlas (Langlas et al. 1997; Langlas 1999), both of whom have conducted oral interviews in addition to archival research, have provided additional information on the traditions associated with Mauna Kea and its cultural and spiritual significance for Hawaiians today. A major compilation of native traditions, historical accounts and oral history interviews on Mauna Kea and surrounding lands can be found in a study entitled "Mauna Kea—Ka Piko Kaulana o Ka 'Aina (Mauna Kea—the Famous Summit of the Land) by Maly and Maly (2005) that was commissioned by OMKM. The overview that follows is based on these studies which should be consulted for more detailed information.

### SOCIO-POLITICAL CONTEXT

The summit of Mauna Kea is located in Ka'ohē Ahupua'a (a territorial unit generally equated with the community) in Hāmākua District (Figure 5). Ka'ohē is perhaps the classic example of the unusually large *ahupua'a* found in what Lyons referred to as the "almost worthless wastes of interior Hawaii" in the following account:

Then there are the large ahupuaas which are wider in the open country than the others, and on entering the woods expand laterally so as to cut off the smaller ones, and extend toward the mountain till they emerge into the open interior country; not however to converge to a point at the tops of the respective mountains. Only a rare few reach those elevations, sweeping past the upper ends of all the others, and by virtue of some privilege in bird-catching, or some analogous right, taking the whole mountain to themselves...The whole main body of Mauna Kea belongs to one land from Hamakua, viz., Kahoē, to whose owners belonged the sole privilege of capturing the *ua'u*, a mountain-inhabiting but sea-fishing bird.

These same lands generally had the more extended sea privileges. While the smaller ahupuaas had to content themselves with the immediate shore fishery extending out not further than a man could touch bottom with his toes, the larger ones swept around outside of these, taking to themselves the main fisheries much in the same way as that in which the forests were appropriated. Concerning the latter, it should here be remarked that it was by virtue of some valuable product of said forests that the extension of territory took place. For instance, out of a dozen lands, only one possessed the right to *kalai wa'a*, hew out canoes from the koa forest. Another land embraced the *wauke* and *olona* grounds, the former for kapa, the latter for fish-line (Lyons 1875:111).

The boundaries of Ka'ohē, as shown on modern maps, are open to question. A map of the adjoining *ahupua'a* of Humu'ula made by S.C. Wiltse in 1862 (Register Map No. 668) included the adze quarry and Lake Waiau, which was labeled on the map as "Pond Poliahu" (Figure 6). Maly and Maly note that "By the time the Commissioners of Boundaries were authorized to certify the boundaries for lands brought before them in 1874, disputes over the boundary of Humu'ula and Ka'ohē had arisen" and "by the time of settlement in 1891, the boundary of Humu'ula was taken down to around the 9,000 foot elevation, with Ka'ohē taking in the entire summit region" (Maly and Maly 2005:280). The testimony of Kahue of Humu'ula, presented in



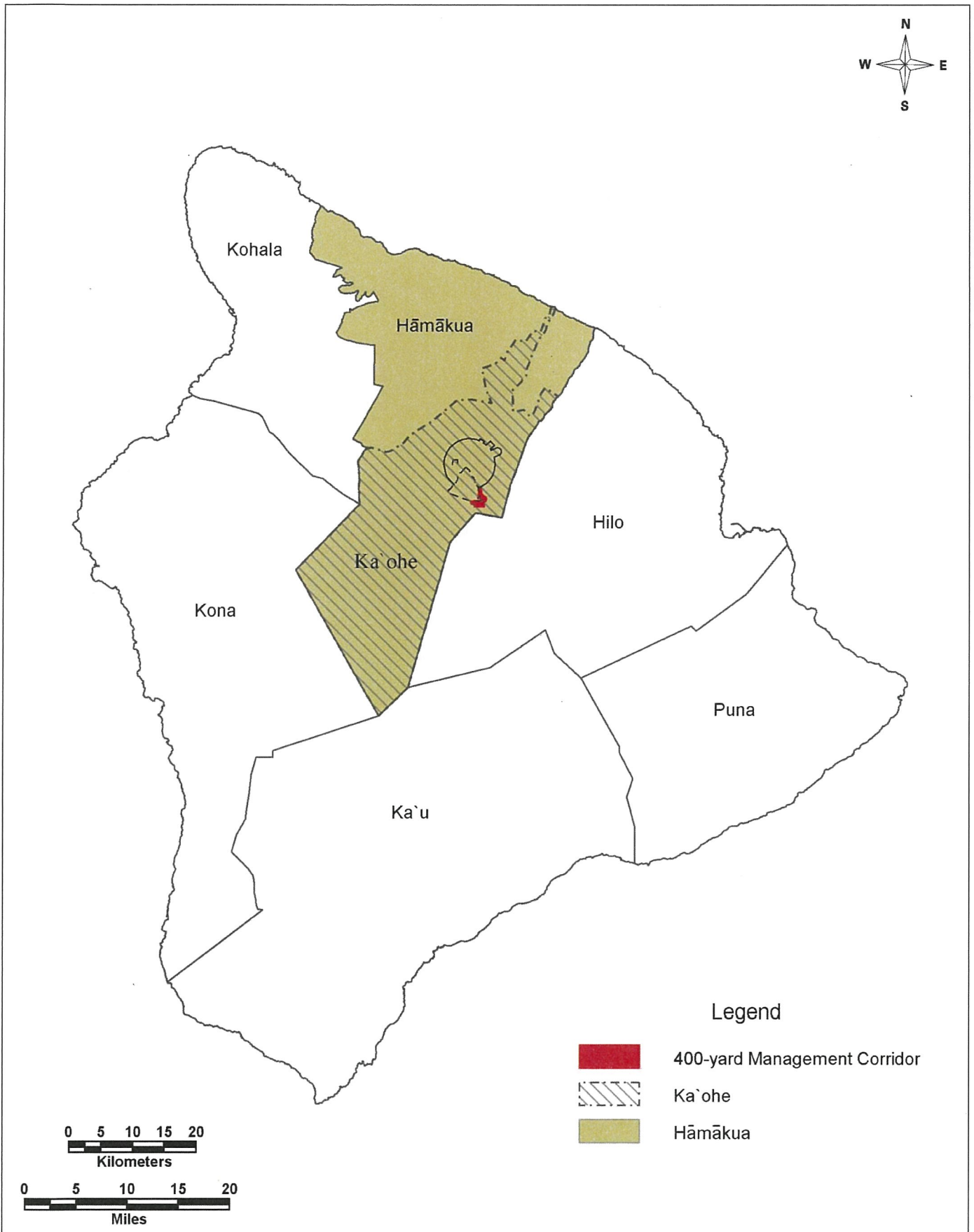


Figure 5. Social-Political Map of Hawai'i Showing the location of the Project Area in the Ka`ohe Ahupua`a, Hāmākua District.



Maly and Maly (2005:287), mentions the boundary running from a gulch called Kahawai Koikapue, where *mele* were sung, to Waiau and then to the summit which was called Pu'uokūkahau'ula. In parentheses there is a notation that "half of the water in the gulch belonging to Ka'ōhe and half to Humu'ula".

The name of the gulch does not appear on any known maps, but in all probability is what is now called Pōhakuloa Gulch, since this is not only the major gulch below the lake but the only one on the south side of the mountain that is described in historic and modern times as containing running water. The reference to Waiau is presumably to the cinder cone, rather than the lake which according to the name on the 1862 Wiltse map was associated with the goddess Poli'ahu, although Waiki [or Haiki], a contemporary of Kahue, claimed the lake was called Waiau.

Waiki, who gave testimony at the same time as Kahue (McEldowney 1982:1.7), claimed that Kaluaka'akoi, "the cave where they used to get stone adzes out" was in Ka'ōhe as was Poli'ahu, which he described as a cave where Līlinoe used to live (Maly and Maly 2005:291).

They told me Kaohe bounded Humuula from Pohakuhanalei down Mauna Loa, on the Kona side. I never heard my parents say that Kaalaala joined Humuula. The pond of water called Waiau is on Kaohe and not on Humuula. My parents told me Humuula went to Kaluakaakoi and Poliahu. We used to go there after adzes for the Humuula people (Maly and Maly 2005:292).

In addition to the district and *ahupua'a* system of land tenure, there were other traditional land classifications, including one that employed the term *wao* for a series of natural and cultural zones (Malo 1951:16-18). According to some descriptions the *wao kanaka* was a low-lying coastal area where the *maka'āinana* were free to move and inhabit. The *wao kele* was the upland forested area that the *maka'āinana* could only access for gathering purposes. The *wao akua*, which was believed to be inhabited by *akua*, was the subalpine desert region above the tree line. The *maka'āinana* were hesitant to venture into the *wao akua* and could do so only by offering prayer and displaying great respect (NASA 2005:3-18, 3-19).

The Mauna Kea summit region is commonly described today as lying within the *wao akua*, which is different, however, from Malo's description of this zone which placed it at a lower elevation in forested lands (Malo 1951:17). As noted in the footnotes to Malo's *Hawaiian Antiquities* (Malo 1951:18), *wao akua* can also be understood to mean "a remote desolate location where spirits, benevolent or malevolent, lived and people did not live. Usually these places were deep interior regions, inhospitable places such as high mountains, deserts and deep jungles. These areas were not necessarily *kapu* but were places generally avoided out of fear or respect" (PHRI 1999, 24). Indeed, when Rev. William Ellis toured the island in 1823, he noted the reluctance of native Hawaiians to venture into the summit areas of Mauna Kea.

...numerous fabulous tales relative to its being the abode of the gods, and none ever approach the summit---as, they say, some who have gone there have been turned to stone. We do not know that any have been frozen to death; but neither Mr. Goodrich, nor Dr. Blatchely and his companion, could persuade the natives, whom they engaged as guides up the side of the mountain, to go near its summit (Ellis 1979:292).

Today, the *ahupua'a* system of land and resource management, with *kapu* restrictions, is no longer in existence legally, due to the collapse of the *ali'i – maka'āinana* social and cultural system. Still, knowledge of the some traditional *kapu* restrictions endures, although both traditional and contemporary cultural practices and belief are apparent. One cultural practitioner, Pualani Kanaka'ole Kanahale reveals traditional knowledge of *kapu* restrictions and her traditional cultural practice regarding entering *kapu* areas. She learned from her *kūpuna*

that the forested regions are not the realm of humans; instead, the forest's *kupa* (citizens) are the trees. Kanahale says that "when I go *maha'oi* [intrude] in their realm, I have to ask permission to be up there" (Maly 1999:A-371). In a similar sense, Irene Loeyland Lindsey-Fergerstrom reveals, in the context of taking *piko* up to the Mauna Kea summit, that her *tūtū* (grandmother) had knowledge of the *kapu* restriction that only *ali'i* were permitted on the summit. Yet, Lindsey-Fergerstrom's *tūtū* instructed her to take her family's *piko* to the summit anyways, saying "it's not like we going be *ali'i*, but at least you can try..." (Maly 1999:A-390).

### MYTHS, LEGENDS, AND TRADITIONAL HISTORIES

Native Hawaiian traditions state that ancestral *akua* (gods, goddesses, deities) reside within the summit area. These personages are embodied within the Mauna Kea landscape – they are believed to be physically manifested in earthly form as various *pu'u* and as the waters of Lake Waiau. Because these *akua* are connected to the Mauna Kea landscape in Hawaiian genealogies, and because elders and *akua* are revered and looked to for spiritual guidance in Hawaiian culture, Mauna Kea is considered a sacred place.

Native Hawaiian genealogical *mele* (songs; chants) explain the centrality of Mauna Kea within Hawaiian genealogy and cultural geography. *Mele* recount that as a result of the union of Papa and Wākea, who are considered the ancestors of Native Hawaiians, the Island of Hawai'i was birthed. In the *Mele a Paku'i*, a chant describing the formation of the earth, Mauna Kea is likened as the first-born of the island children of Papa and Wākea, who also gave rise to Hāloa, the first man from whom all Hawaiians are descended (Kamakau 1991:126 in Maly and Maly 2005:7-8). A *mele hānau* (birth chant) for Kamehameha III, who was born in 1814, describes the origins of Mauna Kea:

Born of Kea was the mountain,  
The mountain of Kea budded forth.  
Wākea was the husband, Papa Walinu'u  
was the wife,  
Born was Ho'ohoku, a daughter, Born  
was Hāloa, a chief,  
Born was the mountain, a mountain-son of Kea  
(Pukui and Korn 1973:13-28 in Maly and Maly 2005:9).

Some contemporary Native Hawaiian cultural practitioners continue to view Mauna Kea as a first-born child of Papa and Wākea, and thus, the mountain is revered as "the *hiapo*, the respected older sibling of all Native Hawaiians" (Kanahale and Kanahale 1997 in Langlas 1999:7). Cultural practitioner Kealoha Piscotta explains that this link to Papa and Wākea "is the connection to our ancestral ties of creation" (Orr 2004:61). Pualani Kanaka'ole Kanahale states that "the very fact that it is the 'Mauna a Wākea' tells you that it is the *mauna* that is meeting Wākea" (Maly 1999:A-368).

Traditional genealogical *mele* and *mo'olelo* (stories, traditions) recount associations between Mauna Kea and the following *akua* – Poli'ahu, Līlīnoe, Waiau, and Kahoupakane. In a *mo'olelo* recounting the travels of Pūpū-kani-'oe, it was said that Mauna Kea was a mountain "on which dwell the women who wear the *kapa hau* (snow garments)" (Maly and Maly 2005:31). Yet another *mo'olelo*, which dates to the 1300s, explains that Ka-Miki was sent atop Mauna Kea's summit to the royal compound of Poli'ahu, Līlīnoe, and their ward, Ka-piko-o-Waiiau, to fetch water for use in an *'ai-lolo* ceremony (Maly and Maly 2005:42-43).

In the post-Contact period, Native Hawaiian historian S.N. Haleole transcribed *Ka Mo'olelo o Laiekawai* in 1844, which tells that after Poli'ahu broke her engagement to Aiwohikupua, she took up residence on Mauna Kea along with her three maidens Līlīnoe, Waiaie (Waiau), and

Kahoupakane (Maly and Maly 2005:20-26). As well, other 19<sup>th</sup> century ethnographers published on the associations between Mauna Kea and Poli'ahu, Līlīnoe, and Wai'au. W.D. Westervelt claimed that Poli'ahu, Līlīnoe, and Wai'au were snow goddesses "who embodied the mythical ideas of spirits carrying on eternal warfare between heat and cold, fire and frost, burning lava and stony ice" (Westervelt 1963:55-56). Westervelt also credits Poli'ahu as the rival of the fire-goddess, Pele, said that she battled Pele on numerous occasions, and credits her with having "kept the upper part of the mountain desolate under her mantle of snow and ice" (Westervelt 1963:62).

In 1931, Emma Ahu'ena Taylor, a historian of Hawaiian descent and with genealogical ties to the lands of Waimea and Mauna Kea, reported on Poli'ahu's residence at Mauna Kea, but also described the creation of Lake Wai'au. She wrote:

Poliahu, the snow-goddess of Mauna-kea, was reared and lived like the daughter of an ancient chief of Hawaii. She was restricted to the mountain Mauna-kea by her godfather Kane. She had a nurse Lihau who never left her for a moment. Kane created a silvery swimming pool for his daughter at the top of Mauna-kea. The pool was named Wai-au. The father placed a supernatural guard [Mo'o-i-nanea] at that swimming pool so that Poliahu could play at leisure without danger of being seen by a man... (in Maly and Maly 2005:53).

According to Taylor, on Mauna Kea, Poli'ahu's attendants – Līlīnoe, Lihau, and Kipu'upu'u drove away her suitor, Kūkahau'ula (the pink-tinted snow god). But Mo'o-i-nanea allowed the snow god to embrace Poli'ahu, and to this day, Taylor reports, "Ku-kahau-ula, the pink snow god, and Poli'ahu of the snow white bosom, may be seen embracing on Mauna-kea" (Maly and Maly 2005:53).

In modern-day accounts, Poli'ahu continues to be commonly referred to as "the beautiful snow goddess of Mauna Kea" while Līlīnoe is called "a goddess of the mists and younger sister of the more famous Poli'ahu" (Pukui and Elbert 1971:392, 396). Langlas reports that Pualani Kanaka'ole Kanahale told him that three *pu'u*—Poli'ahu, Līlīnoe, and Wai'au, were sister goddesses who are female forms of water and that all three of the cinder cones or *pu'u* that bear their names are important religious sites (Langlas 1999). McEldowney (1982:1.3-1.4) recounts that Fornander included Līlīnoe as a person in his genealogies and legends, including a reference to her as the "wife of Nu'u, the "Noah", of the discredited Hawai'i Loa legend involving a great flood. McEldowney (1982:1.4) noted that Kamakau called Līlīnoe "the woman of the mountains" and named her as ancestress of Pae, a *kahuna* of Umi's time (Kamakau 1961:215)."

There are several myths concerning Poli'ahu and Līlīnoe. W.D. Westervelt claimed that Poli'ahu was one of four snow goddesses "who embodied the mythical ideas of spirits carrying on eternal warfare between heat and cold, fire and frost, burning lava and stony ice" and who, according to several legends, was the rival of the fire-goddess, Pele (Westervelt 1963:55). Poli'ahu, who battled Pele on numerous occasions, is credited by Westervelt as having "kept the upper part of the mountain desolate under her mantle of snow and ice... (Westervelt 1963:62). Poli'ahu continues to be commonly referred to as the "The beautiful snow goddess of Mauna Kea" (Pukui and Elbert 1971:396). Kealoha Piscotta also retains knowledge that Mo'o Ina'ne'a was the guardian for Poli'ahu and Līlīnoe (Orr 2004:51).

Today, in regards to Lake Wai'au, cultural practitioner Pualani Kanaka'ole Kanahale believes that because the waters of Wai'au have not "had a chance to come down to the rest of us, then it is sacred water...that water, Wai'au, is the most sacred because it isn't the water that has been spilled, it is still up there in the realm of Wākea" and in her estimation, "water is the source of life" (Maly 1999:A-368, A-370). Kealoha Piscotta believes the cultural significance of Lake

Wai'au rests in several facts - the Kūmulipo creation chant describes a lake that resides in the heavens, the ancient trails meet at the lake, the lake is a navigational gourd, and it is a jumping off point for ancient Hawaiian souls (Orr 2004:44-45).

While there are a number of myths and legends associated with the summit area of Mauna Kea, the higher elevation areas of the mountain do not figure prominently in Hawaiian traditional histories, which McEldowney points out:

...revolve mainly around the lives and exploits of prominent chiefs, as passed down through genealogies, chants, and stories, and recorded primarily in works by Fornander and Kamakau (Barrere 1962:62-63. No major events from these histories occur within the summit plateau of Mauna Kea (McEldowney 1982:1.4).

The origins of Mauna Kea and its central place in Hawaiian genealogy and cultural geography are told in myths and chants. Pualani Kanaka'ole Kanahēle and her deceased husband, Edward Kanahēle, who were interviewed by Dr. Charles Langlas for the Hawaii Defense Access Road and Saddle Road Improvement Project in 1998, referred to two chants, *Mele a Paku'i* and *'O Hānau ka Mauna a Wakea*. These chants:

describe, respectively, the birth of Hawai'i island from the union of Papa and Wakea, the ancestors of Native Hawaiians, and the birth and "budding upward" of Mauna Kea a mountain named for Wakea. As the firstborn of Papa and Wakea, Hawai'i island is the *hiapo*, the respected older sibling of all Native Hawaiians. The mountain of Mauna Kea is the *piko* or origin point for the island, more specifically for its northern half, and therefore is a place of great *mana*. Because of the mana of the mountain and of Lake Wai'au at its summit, Queen Emma went there to bathe in the water in 1874 (Langlas 1999:7).

Wai'au is also mentioned as a goddess in several legends. Westervelt (1963:56) wrote that she was another of the snow-goddesses or maidens, as he sometimes referred to them. Langlas (1999) reports that Pua Kanahēle told him that three *pu'u*—Poli'ahu, Līlīnoe, and Wai'au, were sister goddesses who are female forms of water and that all three of the cinder cones or *pu'u* that bear their names are important religious sites.

### TRADITIONAL LAND USES

On present evidence the slopes of Mauna Kea, above the limits of agriculture and permanent settlement, were a vast montane "wilderness" probably known to only a small number of Hawaiians engaged in primarily "special purpose" activities, such as bird-catching, canoe making, stone-tool manufacture, or burial of the dead (McEldowney 1982). Ethnographic information relating to a specific locality in this and other mountainous regions in Hawai'i is either sketchy, or, as is more frequently the case, lacking altogether.

Little is known ethnographically about the uses of the alpine and sub-alpine zones on Mauna Kea except for brief accounts about adze manufacture and burials. Most of what is known regarding traditional land uses is the result of archaeological investigations undertaken since the mid-1970s.

While there is good reason to believe that the summit region was known to early Hawaiians because of the probable desire to investigate the snow-capped mountain, the only activity that is known with certainty to have occurred in the pre-Contact period is the manufacture of stone adzes. Radiocarbon dates of wood charcoal and <sup>230</sup>Thorium dates of branch coral indicate that the adze quarry was in use over a period of possibly as much as 700 years between ca. A.D. 1100 and 1800 (McCoy 1986:Figure 28; 1990:Figure 4), although a shorter chronology of perhaps just 500 years now seems more likely. When the quarry was abandoned is unknown and may never be known with any certainty, but there is some evidence that it may have

occurred as late as European contact in 1778 or shortly thereafter.

William Brigham, of the Bernice Pauahi Bishop Museum, published an account of the adze quarry at the turn of the 20<sup>th</sup> century:

Let us climb to the workshop of the adze maker. All these were in high places, and one on Mauna Kea, Hawaii, was nearly 12,900 ft. above the sea. As good clinkstone was not found in many places the known quarries hardly exceeded half-a-dozen. On Hawaii was the most important of all, that on Mauna Kea, where the workmen could only work in favorable seasons for the snow frequently covered the quarry, but from the immense quantity of fragments and chips the work must have extended over many generations; so far as known, this was the earliest quarry exploited, and it is puzzling how the place was discovered when we consider the aversion the Hawaiians had to even visiting those high, bleak and desert regions, the supposed abode of spirits not always friendly. It is possible that the tradition which speaks of the survivor of the deluge of Kahinalii grounding on Mauna Kea and following the receding waters to the lower levels, discovering the koi pohaku on the way, may point to the considerable antiquity of adze-making in this place, but I am inclined to believe that all traditions of the Hawaiian deluge date after the coming of the Spanish discoverers. It has always seemed strange that the axe-makers did not bring the raw material down to their homes and work it up in comfort instead of freezing in their kapa garments at this great altitude. It may be that the mystery of the place and its very solitude kept the trade in few hands and so enhanced the value of a tool that so many must have (Brigham 1902:75-76).

Brigham's account, though lacking documentation of some of the information presented, is nevertheless of great interest for several reasons, including: (1) the reference to a legend connected with the discovery of the source; (2) the general agreement between the legendary evidence and the immense quantity of waste material in pointing to a quarry of great antiquity compared to the few other quarries known at the time; (3) the reference to the aversion of Hawaiians to high desolate places and the discomfort of working under such conditions, and (4) the possible link between environmental conditions and the labor component of the production process and the probable influence this had on the value of a tool that as Brigham (1902) so neatly puts it "so many must have."

### ***Piko* Beliefs and Practices**

The cultural weight that Mauna Kea carries within the Hawaiian community is also evident in the phrase, "*piko kaulana o ka 'āina*," which translates as "the famous summit of the land" and is used as a term of endearment (Maly 1999:A-3). However, the phrase also expresses the belief that the mountain is a *piko* (the navel, the umbilical cord) of the island and for this reason it is sacred (Maly 1999:D-20). In this context, the significance of the cultural practice of transporting and depositing a baby's *piko* on Mauna Kea may be better understood. Pualani Kanaka'ole Kanahahele explains the symbolic importance of this practice, saying that:

the *piko* is that part of the child that connected the child back to the past. Connected the child back to the mama. And the mama's *piko* is connected back to her mama and so on. So it takes it back, not only to the *wā kahiko* [ancient times], but all the way back to Kumu Lipo...So it's not only the *piko*, but it is the extension of the whole family that is taken and put up in a particular place, that again connects to the whole family line. And it not only gives *mana* or life to that *piko* and that child, but life again to the whole family (Maly 1999:A-376).

Other Native Hawaiian cultural practitioners illustrate that for some families the practice of *piko* deposition on Mauna Kea is a long-standing traditional cultural practice. In 1956, Kaleohano

Kalihi revealed that his grandfather had taken a gourd container “the *piko* of Mauna Kea. The place of the *punawai* [spring]...” which had been filled with 40 *piko* from “all of the people that had been born into this family” (Maly 1999:A-1). Kahili also mentioned that until he took the *piko* to Lake Waiau, his grandfather had “taken care of” those *piko*. Another practitioner, Elizabeth ‘Tita’ Lindsey Kimura, describes being a *piko* caretaker for her family – “I still have some of her *piko* that she [her mother] collected. Not collected, but when she goes to my sisters that have babies and the *piko hā’ule* [a *piko* that has fallen off], she’d pick it up and bring it home. ...yes, I have it in the ‘*ōmole* [bottle]...And I’m waiting for somebody to go up to Mauna Kea with it” (Maly and Maly 2005:A-217). One of Kimura’s relatives, Irene Loeyland Lindsey-Fergerstrom, also confirms that she took her children’s *piko* and the *piko* of her one of her relatives up to Mauna Kea (Maly 1999:390).

These cultural practitioners also provide insight into the proper means of placing the *piko*. Irene Loeyland Lindsey-Fergerstrom recalls that “we put the *piko* in a little cotton and put ‘em in a bottle. And sometimes it’s hard to come out, so *kūkū* [grandmother] Laika said all you do is take the cover off and put it on the ground and it will just deteriorate” (Maly 1999:A-392). Also, when Lindsey-Fergerstrom took *piko* to Mauna Kea, her husband “dug a little hole and put the *piko* in...the summit” (Maly 1999:A-391). Elizabeth ‘Tita’ Lindsey Kimura relates that her mother “was very particular...you don’t just *hana kapulu* [to act carelessly or slovenly]...you got to treat it with respect” (Maly and Maly 2005:A-217). Kimura also says that the reason for taking the *piko* up to Mauna Kea is that the mountains is “neat” and “clean,” practitioners “don’t want any *kapulu*...in the discarding of the *piko*” (Maly and Maly 2005:A-217). It is clear that maintaining cleanliness and purity is an important component in this cultural practice. Kealoha Piscotta explains that in light of some practitioners belief that Lake Waiau has become polluted, she fears that “people won’t put the *piko* of the baby in there it it’s polluted” (Orr 2004:45).

There were many reasons for hiding the *piko* of newborn babies. One was to ensure a long life. Another was to avoid the person from growing up as an irresponsible adult. There is a well known Hawaiian proverb concerning *piko*--*He piko pau’iole* which translates as “an umbilical cord taken by a rat.” Pukui interpreted the proverb to mean:

A chronic thief. The umbilical cords of infants were taken to special places where the cords of other family members were kept for many generations. If a rat took a cord before it was hidden away safely, the child became a thief (Pukui 1983:96).

## Human Burial

There are numerous references to human burials at high elevations on the northern and eastern slopes of Mauna Kea (see discussion in McEldowney 1982). The practice of burying the dead in remote, high elevation areas may have been a common practice, based on the information collected by Thomas Thrum for Haleakalā on Maui:

The use of the craters within Haleakala as burial places, far removed from places of habitation, is quite in keeping with ancient Hawaiian practice. Distances and difficulties were no bar to faithful execution in carrying out the instruction of a dying relative or friend (Thrum 1921:258).

One reason, but undoubtedly not the only one, for taking the dead to remote areas was the fear that the bones might be used to make fishhooks. A person named Nainoa gave such an explanation in testimony before the Boundary Commission:

In old times, if anyone died, could not wail, but people come and steal shin bones for fishhooks, so used to carry body secretly and bury in mountains (quoted in McEldowney 1982:1.9).



There are a couple of early accounts of burials having been found in the general vicinity of Pu'u Līlinoe. E.D. Preston's account of his work at Lake Waiau, in 1892, noted that "At an elevation of nearly 13,000 feet, near Līlinoe, a burying ground was found, where the ancient chiefs were laid to rest in the red volcanic sand" (Preston 1895:601). W.D. Alexander's surveying party saw what they interpreted as graves on the top of Pu'u Līlinoe, also in 1892:

The same afternoon [July 25, 1892] the surveyors occupied the summit of Līlinoe, a high rocky crater, a mile southeast of the central hills [the 'summit'] and a little over 13,000 feet in elevation. Here, as at other places on the plateau, ancient graves are to be found. In olden times, it was a common practice of the natives in the surrounding region to carry up the bones of their deceased relatives to the summit plateau for burial (Alexander 1892).

Kamakau indicated that Queen Ka'ahumanu, who like Fornander also considered Līlinoe a person, made an unsuccessful attempt to recover Līlinoe's bones on Mauna Kea in 1828 (McEldowney 1982:1.4). Kamakau added that the body of Līlinoe "was said to have lain for more than a thousand years in a well-preserved condition, not even the hair having fallen out" (Kamakau 1961:285). Kamakau's description of Līlinoe's body is probably the source of modern stories about a mummified body having been found on Mauna Kea and removed to some unknown location.

Of the many locations with confirmed and possible burial sites, Pu'u Mākanaka is perhaps the best known. The 1925-26 USGS survey team found human remains on the summit (cinder cone rim) of Pu'u Mākanaka:

To set up Camp Four at 12,400 feet near Puu Makanaka, we had difficulty finding a small flat area for the tents. Makanaka is the largest and most perfectly formed cone in the summit area, 1,500 feet in diameter at the rim and 300 feet deep, while the base is more than 600 feet below the rim at one point. On the rim I found a partially uncovered grave, eroded by high winds, with an incomplete human skeleton. This was unknown, as far as I could discover, to anyone familiar with the area. The name Puu Makanaka means "Hill crowded with many people" and the grave must have been ancient (Kilmartin 1974:15).

Ed Stevens maintains that "oral history and traditions tell us that...the bones of very special personages were placed in the *pu'u* at or near the summit for safekeeping... they were the special ones" (Maly 1999:C-10, 13). Daniel Kaniho Sr. suggests that "they were all *alii*...they were kind of high-ranking people" (Maly 1999:A-169).

Cremation of human remains was rarely carried out in pre-Contact Hawai'i and then only in prescribed situations. David Malo (1951:20) indicates that cremation was restricted to "the body of anyone who had made himself an outlaw beyond the protection of the *kapu*." While cremated human remains have been encountered during archaeological surveys of the MKSR, all such finds are believed to be modern in origin, due to the distinctive post-cremation treatment of the remains. Consequently, none of the cremation burials encountered during recent surveys is subject to the provisions of Chapter 6E, Hawaii Revised Statutes, nor are they included in this burial treatment plan.

### **The Spiritual Resonance of Mauna Kea: Modern Pilgrimages to Chant, Pray and Make Material Offerings**

In public testimony before the Mauna Kea Advisory Committee, Ed Stevens ascribed Mauna Kea's spiritual significance to the fact that it is the highest point in Polynesia. Stevens states the mountain is significant "because it was considered to be the gateway to heaven. When the

ancient *kāula* (priests, prophets) made their treks to the summit, it was to be nearest to *akua* where prayers could be offered in the highest reverence” (Maly 1999:C-10).

Instances of the cultural importance of Mauna Kea are related in several pilgrimages made to the mountain by royalty to partake in ceremonial practices in the post-Contact period. During the reign of Kamehameha I, fearing dissension amongst some of his chiefs, in the company of Kekuhaupī’o, the king is reported to have traveled to Mauna Kea to make a ceremonial offering close to Lake Waiau (Desha 2000:94 in Maly and Maly 2005:50). In 1881 or 1882, Queen Emma ascended Mauna Kea and at Lake Waiau, she swam across the lake, riding on the back of Waiaulima (de Silva and de Silva 2006 in McCoy and Nees 2010; Maly and Maly 2005:158; Maly 1999:A-4, -5, -387). Queen Emma’s swim across Waiau was a cleansing ceremony initiated in an effort to prove her genealogical connection to Wākea and Papa (Kanahele and Kanahele 1997:9 in Maly 1999:D-21).

In addition, some oral history interviewees reveal seeing offerings left on Mauna Kea in recent times. Libert Landgraf recalls seeing *pu’olo* (offerings) left at Lake Waiau and on the summit of Mauna Kea, which he describes as “a gift or something wrapped in *ti* leaves. My feeling of that is it has cultural, I don’t want to go out on a limb and say religious, but it has a significant cultural significance...someone is taking a gift or presentation to a particular area” (Orr 2004:51). Other interviewees, including Rally Greenwell, Hisao Kimura, Coco Vredenburg-Hind, and Daniel Kaniho Sr., testify that they either saw or had heard that ‘*opihi* shells were present in the Mauna Kea adze quarry (Maly and Maly 2005:A-37, -215; Maly 1999:A-118, -260). Archaeologists theorize that because these ‘*opihi* shells are too few to be interpreted as the remains of food consumption activities; it is more likely that they were offerings to the *akua* (McCoy 1990:108).

Other oral history interviewees demonstrate the spiritual resonances of Mauna Kea in the following statements:

Libert Landgraf – “I looked at sites, the area, as the church. ...In this instance maybe the summit of Mauna Kea represents to us what the church is, and the individual sites or the individual platforms is the altar” (Orr 2004:49).

Kealoha Piscotta – “This is a really hard issue for Hawaiian people, because Hawaiian people have really no temples. [They’re] in the state or national parks....So Mauna Kea represents one of the last kind of places where the practice can continue. ...But for Mauna Kea, it’s not a temple built by man. It’s built by Akua...” (Orr 2004:49).

Pualani Kanaka’ole Kanahele – “If you want to reach *mana*, that [the summit] is where you go” (Maly 1999:A:372).

Pualani Kanaka’ole Kanahele – “Mauna Kea was always *kūpuna* [an elder, ancestor] to use. ...And there was no wanting to go on top. You know, just to know that they were there...was just satisfying to us. And so it was kind of a hallowed place that you know it is there, and you don’t need to go there. You don’t need to bother it. ...And it was always reassuring because it was the foundation for our island” (Maly 1999:A:366).

Florence La’i-ke-aloha-o-Kamāmalu ‘Coco’ Vredenburg-Hind oral history – “I don’t think I could live anywhere else. I feel like it’s right, I belong to the dirt, the soil....It just like they protect all of us. These mountains protect us” (Maly 1999: A-117, 120).

Alexander Kanani’alika Lancaster – “My grandmother...she said, ‘When you go up there, you going feel the spirit.’ And you do feel the spirit” (Maly 1999:A:234).

Tita Elizabeth Kauikeōlani Ruddle-Speilman – “Yes the *mana* is there. There is no question” (Maly 1999: A-286).

Clearly, these statements demonstrate that Mauna Kea continues to be viewed as a realm of great spiritual and sacred importance, a belief rooted in Hawaiian tradition.

### **Collection of Water for Healing**

Little documentation exists that Hawaiians sought to collect water or snow in ancient times, yet Lloyd Case says that “they went there because that mountain has the power to heal and it still does...I’ve heard of the old ones getting water from Waiau to use for healing...” (Maly 1999:A-353). Presently, cultural practitioners engage water and snow collection for ceremonial and medicinal purposes. Regarding the waters on the mountain, Anita Leilani Kamaka’ala Lancaster and Alexander Kanani’alika Lancaster explain that their family uses the “sacred water” of Waiau for baptisms (Maly 1999:A:246). And Kealoha Piscotta states that “its for medicine...all of these waters” (Orr 2004:45). However, concern surrounding the purity of Lake Waiau is also a factor influencing the contemporary practices of Lake Waiau water collection and snow collection on Mauna Kea. Some cultural practitioners believe that effluent from the observatories enters the aquifer and has caused the green coloration of Lake Waiau’s water. Although scientific studies disprove the theory that effluent has in fact leached into the aquifer, Kealoha Piscotta states that “we are not really trusting to take the water for the medicine anymore” (Orr 2004:45). Piscotta states that because she is unsure about the purity of the Waiau waters, she gathers snow instead. In her words, “the snow along this ridge in here and by the lake, is what I was told is the snow to collect. It’s powerful snow...” (Orr 2004:51).

### **Adze Manufacture**

The manufacture of stone adzes made from discarded preforms left by ancient Hawaiian adze makers or from unmodified pieces of raw material in the Mauna Kea Adze Quarry is a practice occurring today, about which relatively little is known, however. One reason is that the collection of material from the quarry, a large part of which is located in the Mauna Kea Ice Age Natural Area Reserve (NAR), is not a permitted activity under the NAR rules. The collection and use of material from the quarry thus tends to be clandestine.

Cultural practitioners also have different beliefs concerning the appropriateness of using material from the quarry for adze manufacture and whether this activity should be taking place at all. For instance, Lloyd Case does not believe adze collection should take place whatsoever. Case states:

I think that whatever is there should stay there. Because not only would it be a resource that people can go and see, what the old Hawaiians did and how things were. But if you take everything off of that mountain, and people keep taking things, you have nothing to show for our past (Maly 1999:A-352).

On the other hand, Hannah Springer believes that if it can be demonstrated that the quarries lack potential for archaeological analysis, adze quarrying could be permitted. She expresses that she does not know how access could or should be regulated, but expects that if it were stipulated that practice be done in a traditional manner, not many individuals would engage in quarrying. Springer says:

Should there be fresh mining? I don’t know if there’s information that can still be extracted from the fragments that remain from past work done there. If already there has been tremendous removal of material, how valid is the data that remains? What sort of picture would we get from analysis of it? I cannot answer that. If it has relatively low value maybe we would want people to continue to mine an already tapped source. Hundred and eighty degrees away from that, I can’t imagine how many people would make the effort if they had to go *kālai* [carve or cut] the *pōhaku* [stone]. So that might be

self regulation, right there. To identify and designate an area where people could go. And again I don't know how you determine who's authentic to go up there (Maly 1999:A-310).

Pualani Kanaka'ole Kanahale believes that adze quarrying should be permitted, but only if those quarrying can demonstrate a genealogical tradition of adze quarrying. She says:

I have two *mana'o* [opinion, thought] for that. One is, an old site should be approached...it depends on what you are taking it for. I can only say, 'Yes, take it if I see that you bring down the *ko'i* [adze] and you use it for something.' It has to be functional for you, and not just a show piece or something that you want to use commercially. ...So I am thinking that if you would go to an old place to mine the *ko'i*, then you need to show some kind of genealogy where your *kūpuna* also had that kind of function. So if your *kūpuna* were some kind of *kālai ki'i* [carvers of images] or *kālai wa'a* [canoe makers] or had some kind of function with the *ko'i*, if you have that...Because then it would make us stronger to know that you still have that and that you still continue this in some form. ...So it's not like saying, 'Oh you cannot, first you have to show us your genealogy.' No. 'Show us what your genealogy is because that makes you stronger, that makes us stronger, that brings *mana* to the place.' That it is still being continued by the *mo'opuna kuakāhi, kualua, kuakolu* [the great; great great great; and great great great grandchildren] of this *kūpuna* (Maly 1999:A-373-374).

Modern-day adze collection and quarrying can be considered a traditional cultural practice that has been modified to include the use of contemporary methods and tools (such as steel rock hammers).

### Navigation/Orienteering

Kepā Maly notes in his collection of archival documentation on traditional practices that no specific references to *kilo hōkū* (observing and discerning the nature of the stars) upon Mauna Kea are present (Maly and Maly 2005:95). Maly speculates it is likely that *kilo hōkū* was practiced upon the mountain, as the gods and deities associated with the mountain are also embodied in the heavens, but such accounts are absent from the historical literature (Maly and Maly 2005:95). Libert Landgraf also says that he has "no personal knowledge of it," but he suspects "that it probably was a very good observation [point]" (Orr 2004:55). Lloyd Case says that he believes a platform, which he believes to have been a "navigational *heiau*" was present on the Mauna Kea summit. He states that "before the observatories were there, they had one when all the stones were piled up, kind of similar to some of the *heiau* at Mahukona" (Maly 1999:A-349).

In contrast to Maly's statement that there is an absence of evidence of traditional Hawaiian astronomical observations, cultural practitioner Kealoha Piscotta believes that "the lake [Wai'au] is like the navigation gourd," a concept which she learned from her auntie (Orr 2004:45). According to Piscotta, her auntie also instructed her to go to the lake and when she did, Kealoha says "I could see clearly why she wanted to look into the lake. Because when you look into the lake, the whole heavens are reflected in it and it's just like the gourd that they carry on the canoe with the water and the *ane ane*" (Orr 2004:45).

Piscotta states that *mo'olelo* passed down from her auntie describe solstice alignments with Mauna Kea, thus she believes that the solstices were marked from the Mauna Kea summit. Piscotta emphasizes that she does not doubt the validity of *mo'olelo*, but she is interested in understanding how the solstice alignments work. Thus, she has concerns that the view plane from Mauna Kea has been diminished and obstructed by the leveling of *pu'u* and the erection of observatory domes (Orr 2004:54-55). Piscotta reveals the importance of the solstice alignments

by stating that “if you do not measure the solstice and the equinox, you cannot keep track of the sacred time. And if you don’t know what year you’re at, you don’t know part of the *wā* or the epic period you’re in, so you don’t know where you are in the prophesy either” (Orr 2004:58-59). It is noteworthy that not only is Piscotta interested in validating traditional Hawaiian astronomy techniques, she also holds a degree in physics and has worked as a telescope systems specialist at a Mauna Kea observatory.

On a similar note, Tita Elizabeth Kauikeōlani Ruddle-Spielman conveys the significance of the Mauna Kea view plane, but as a landscape viewed from the sea. She says:

It was so important when we used to go fishing with Uncle Francis, I used to go with him. From Keawaiki. When we started out, he’d say ‘Now watch the *pu’u* on the mountain.’ And we’d go out, and that was my job to watch the *pu’u* as we went along. And as soon as a cloud came down to that certain *pu’u* we’d turn around and go right home again, because he knew that the ocean would change. It was anywhere that we went, whether we were going towards Kona or coming this side towards Kohala. He said ‘You watch that *pu’u* and as soon as you see the clouds hug it, or heading towards it, let me know, because we are turning around and going home.’ And he never failed. ....No, it was on the side, the slopes [not the *pu’u* near the summit, but on the slopes]. But he knew, and sure enough, by the time we got home, that wind would change, but we had gotten home safely. ...that is very important, this whole idea of line of sight, cultural landscape. So not only is it important close up on top, but as viewed from afar (Maly 1999:A-282).

## **HISTORIC LAND USE**

Changes to the traditional Hawaiian lifestyle began soon after the arrival of Captain James Cook in 1778. One significant change was the rapid adoption in the major trading centers and nearby communities of Western tools, clothing and other items, initially by the chiefs and then the common people. The impact on traditional technologies is known in a general way from historic accounts, such as diaries and newspapers, but for remote centers of traditional crafts, such as the Mauna Kea Adze Quarry, there is little or no information on how long they continued to be utilized before abandonment.

During the *Māhele*, in the mid-1800s, Ka’ohe Ahupua’a was designated as Crown Land. Victoria Kamamalu relinquished title to Ka’ohe Ahupua’a to Kamehameha III in January 1848, and Kamehameha III turned Ka’ohe over to the Government Land Inventory (*Māhele Book 1848: 5-6; 191*). Four native tenants with claims for land rights were identified at the time and all of these claims were at lower elevations. By the close of the *Māhele*, one native tenant was granted land in the lower region of Ka’ohe Ahupua’a. In 1857, Francis Spencer and the Waimea Grazing and Agricultural Company leased the upland portions of the Crown and Government lands of Humu’ula and Ka’ohe Ahupua’a. They subsequently established ranching operations, with cattle ranches, throughout this area (Maly & Maly 2005 ).

Hawaiian *ali’i* were among those whose trips to the summit region in the post-Contact era are recorded. Kamehameha, in the company of Kekuhaupi’o, is reported to have made an offering close to Lake Waiau (Desha 2000:94; Maly and Maly 2005:50). Of the many people that made the arduous ascent of the mountain in the 19<sup>th</sup> century, the trip made by Queen Emma in the early 1880s (1881 or 1882) is one of the best known (de Silva and de Silva 2006). Queen Emma’s trip, made on horseback, started at Mānā in Waimea and progressed up the mountain from its southwest and southern flanks.

The first recorded ascent of Mauna Kea by a European was made by the Rev. Joseph Goodrich on August 26, 1823 (Goodrich 1833:200). A number of European visitors followed shortly thereafter, including ones by such prominent figures as the renowned botanist David Douglas

(see Maly and Maly 2005 for a comprehensive overview of early visits and expeditions to the top of Mauna Kea). By the end of the 19<sup>th</sup> century, a number of scientists and geographers were carrying out studies in the summit region, such as the major scientific investigations carried out at Lake Waiau in 1892.

The early 20<sup>th</sup> century for all practical purposes marked the beginning of a new era in the land use history of Mauna Kea. Large numbers of wild sheep had devastated the forests below the summit by the early part of the century. The decades of leases to ranching interests only exacerbated deforestation of the upper portions of Mauna Kea. The extent of the devastation was the impetus for a monumental fencing program undertaken by the Civilian Conservation Corps (CCC) in the 1930s. The CCC was also engaged at the same time in improving roads and building facilities for visitors to the area. In 1936 the CCC made improvements to what is believed to have been a section of the old Mauna Kea-Humu'ula Trail, from near the Humu'ula Sheep Station at Kalaieha to the summit (Bryan 1939:11). According to Bryan (1939:11), the first stone cabin, from which Hale Pōhaku takes its name (Hale Pōhaku- "House of Stone"), was built by the CCC about this same time. Prior to the construction of a road above Ho'okomo, the cabin at Hale Pōhaku provided a convenient overnight rest spot for hikers and ski enthusiasts (McCoy 1984a:8; Park and Walden 2010).

#### **IDENTIFICATION OF POTENTIAL DESCENDANTS AND CONSULTATION WITH INTERESTED PARTIES<sup>4</sup>**

The results of the foregoing research into the land use history of Ka'ōhe Ahupua'a and the summit region of Mauna Kea indicate that there were no Land Commission awardees within or near the MKSR or the MKARC. Furthermore, available land records do not contain the names of individuals or families who were possibly associated with the burial sites or the properties where the burials sites are located. Public notices concerning these burial sites were published in the *Star-Advertiser*, *West Hawaii Today*, and the *Hilo Tribune Herald* on January 22, 25, and 29, 2012, and in the February 2012 edition of the Office of Hawaiian Affairs' *Ka Wai Ola*. Copies of these notices are included in Appendix B.

In addition to efforts at locating cultural or lineal descendants, consultation has been conducted with the Kahu Kū Mauna Council, and the Hawai'i Island Burial Council (HIBC). The Kahu Kū Mauna is a nine-member council that advises the OMKM, MKMB, and the Chancellor of the University of Hawai'i at Hilo on matters of Hawaiian culture affecting the UH management areas on Mauna Kea. Members of Kahu Kū Mauna are drawn from the Native Hawaiian community; members and were consulted on March 20, 2012.

#### **BURIAL SITES ON MAUNA KEA<sup>5</sup>**

A total of 34 burial sites containing a total of 60 component features were identified during the archaeological inventory surveys of the MKSR and MKARC (McCoy and Nees 2010; McCoy et al. 2010). Table I below lists the 34 burial sites and identifies the feature types present at each site. Figure 7 shows the location of the 31 burial sites located in the MKSR and the three (3) burial sites located in the MKARC. Appendix C contains detailed descriptions of the present condition of all burial sites.

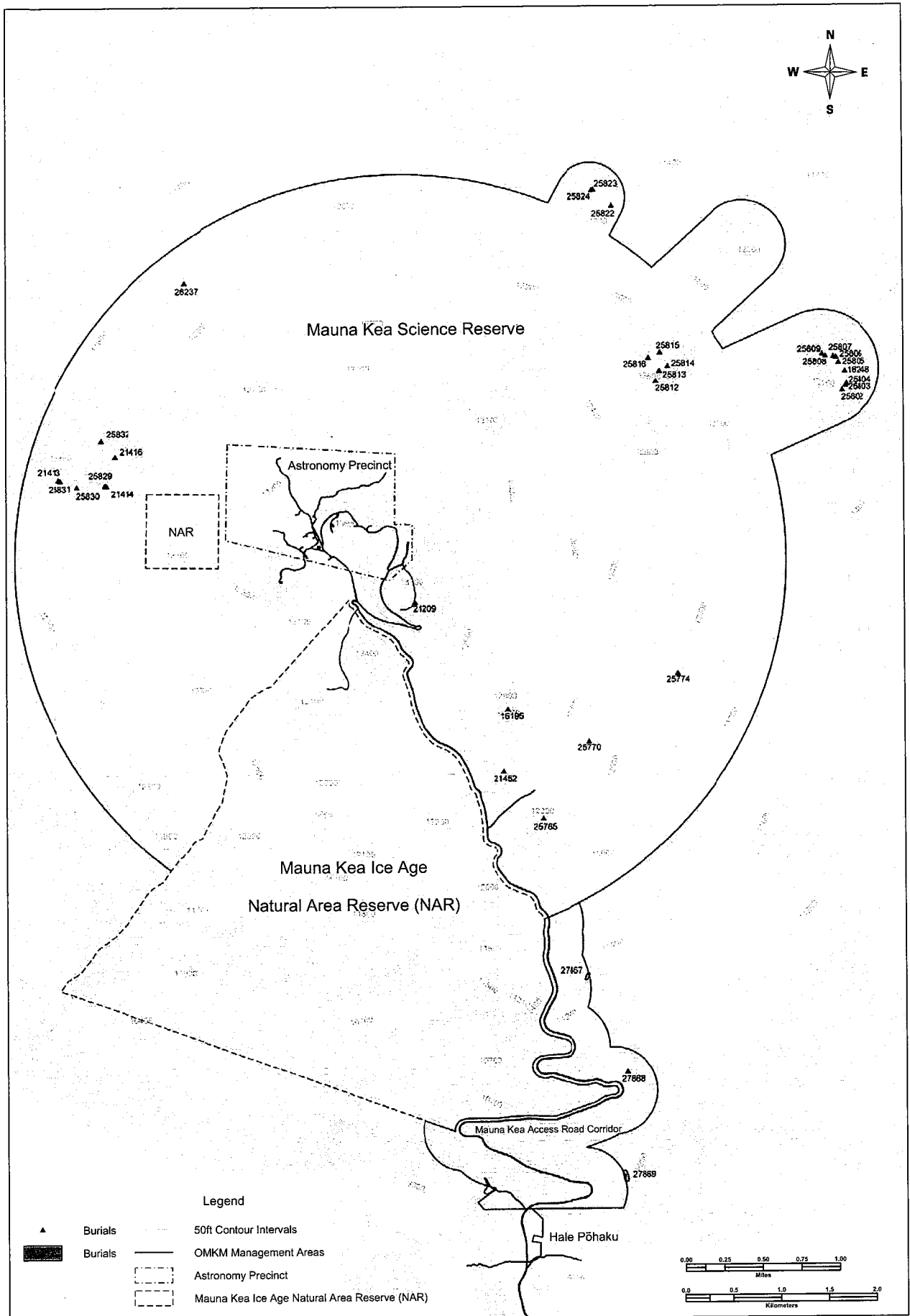


Figure 7. Location of Burial Sites in the OMKM Management Areas.

**Table 1. Summary of Burial Sites in the Mauna Kea Science Reserve and Mauna Kea Access Road Corridor.<sup>7</sup>**

Site No. (50-10-23-)	General Location	Number of Burial Features	Burial Feature Types	Comments
16195	MKSR*	2	Platform, mound	Possible burials
16248	MKSR	3	Mounds	Possible burials; wood fragments visible within Fe. 1 mound
21209	MKSR	2	Mound, oval alignment	Possible burials
21413	MKSR	1	Platform	Possible burial
21414	MKSR	1	Mound	Possible burial
21416	MKSR	1	Mound	Possible burial
21452	MKSR	2	Platform, mound	Possible burials
25765	MKSR	1	Platform	Possible burial
25770	MKSR	2	Mound, filled crevice	Possible burials; site also contains lithic scatters
25774	MKSR	4	Mounds	Possible burials; site also contains lithic scatters
25802	MKSR	2	Terrace, mound	Feature 1 is possible burial; Fe. 2 is confirmed burial (skeletal remains and wood fragments visible in Fe. 2)
25803	MKSR	1	Mound	Possible burial
25804	MKSR	1	Mound	Possible burial
25805	MKSR	1	Mound	Possible burial; wood fragments visible adjacent to mound
25806	MKSR	3	Mounds	Possible burials
25807	MKSR	3	Mounds	Fe. 1 is confirmed burial (wood fragments and skeletal remains visible on Fe. 1); Fe.'s 2 and 3 are possible burials
25808	MKSR	7	Platform, mound, terrace, level cinder areas	Fe.1 is confirmed burial (skeletal remains eroding from cinders in Fe. 1); wood fragments visible next to Fe.'s 3 and 4; Fe.'s 2-7 are possible burials
25809	MKSR	1	No surface structure present	Confirmed burial; skeletal remains eroding from cinders
25812	MKSR	1	Overhang	Possible burial
25813	MKSR	1	Mound	Possible burial
25814	MKSR	3	Mounds	Possible burials
25815	MKSR	1	Mound	Possible burial
25816	MKSR	1	Mound	Possible burial
25822	MKSR	1	Terrace	Possible burial
25823	MKSR	1	Mound	Possible burial



**Table 1. Summary of Burial Sites in the Mauna Kea Science Reserve and Mauna Kea Access Road Corridor.<sup>7</sup>**

Site No. (50-10-23-)	General Location	Number of Burial Features	Burial Feature Types	Comments
25824	MKSR	1	Mound	Possible burials
25829	MKSR	1	Mound	Possible burials; wood fragments visible within Fe. 1 mound
25830	MKSR	1	Platform	Possible burials
25831	MKSR	1	Mound	Possible burial
25832	MKSR	1	Mound	Possible burial
26237	MKSR	1	Mound	Possible burial
27867	MKARC**	4	Mounds	Possible burials
27868	MKARC	1	Mound	Possible burial
27869	MKARC	2	Mounds	Possible burial

\* MKSR: Mauna Kea Science Reserve

\*\* MKARC: Mauna Kea Access Road Corridor

All of the historic properties in the MKSR, including the burials, are located in the Mauna Kea Summit Region Historic District (Site 50-10-23-26869). The sites are contributing properties to the district which is significant under all four National Register criteria ("A" through "D") and criterion "E" of the Hawaii Administrative Rules, Chapter §13-275-6 (*Rules Governing Procedures for Historic Preservation Review for Governmental Projects Covered Under Chapter 6E-7 and 6E-8, HRS*). The historic burial sites in the MKARC fall outside of the currently proposed boundaries of the historic district and cannot therefore be evaluated as potential contributing properties to the historic district. Consequently, they have been evaluated as significant under Criterion "D" because of the potential they hold to contribute to an understanding of mortuary practices in the high elevation regions of Mauna Kea, and Criterion "E" because of their probable association with Hawaiian beliefs and cultural practices (McCoy et al. 2009).

## PROTECTION AND PRESERVATION

As stated in the introduction of this report, the preparation of this BTP is *not* driven by a construction project. Instead, the BTP is part of the management responsibilities of the OMKM. Consequently, the inventory survey reports for the MKSR and MKARC, and the CRMP sub-plan of the CMP for Mauna Kea, do not recommend some of the protection measures (such as landscaping) that are often included in burial treatment plans prepared within the context of construction activities (i.e., ground disturbing activities normally associated with construction projects).

Table 2 below presents recommended preservation measures for the 34 burial sites identified in the MKSR and the MKARC. In Table 2, "Regular Monitoring" refers to monitoring conducted on an annual basis (every year), and "Periodic Monitoring" refers to monitoring conducted every three (3) years. One possible burial, Site 21209 on Pu'u Wekiu, will be monitored every six (6) months (see Table 2).

**Table 2. Recommended Preservation Measures for Burial Sites in the MKSR and MKARC<sup>5</sup>.**

<b>SIHP No. (50-10-23-)</b>	<b>Short-term Preservation Measures</b>	<b>Long-term Preservation Measures</b>
-16195	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-16248	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-21209	None	Preservation in place; monitoring every 6 months; 200-ft buffer zone around site
-21413	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-21414	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-21416	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-21452	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25765	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25770	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25774	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25802	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25803	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25804	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25805	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25806	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25807	Restoration work	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25808	Restoration work	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25809	Restoration work	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25812	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25813	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25814	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25815	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25816	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25822	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25823	None	Preservation in place; Periodic Monitoring (every 3

**Table 2. Recommended Preservation Measures for Burial Sites in the MKSR and MKARC<sup>5</sup>.**

SIHP No. (50-10-23-)	Short-term Preservation Measures	Long-term Preservation Measures
		years); 200-ft buffer zone around site
-25824	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25829	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25830	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25831	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25832	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-25837	None	Preservation in place; Periodic Monitoring (every 3 years); 200-ft buffer zone around site
-27867	None	Preservation in place; Regular Monitoring (every year); 200-ft buffer zone around site
-27868	None	Preservation in place; Regular Monitoring (every year); 200-ft buffer zone around site
-27869	None	Preservation in place; Regular Monitoring (every year); 200-ft buffer zone around site

As can be seen in Table 2, short-term preservation measures<sup>5</sup> in the form of restoration work have been proposed for three burial sites in the MKSR, including Sites 25807, 25808, and 25809. At these three sites human remains were exposed on the ground surface at the time they were recorded during archaeological inventory survey work. The restoration work was conducted on August 16, 2013, and led by Mr. Michael Vitousek of SHPD. Appendix D provides a summary of this restoration work.

Table 2 also indicates that 200-ft- buffer zones will be established around all burial sites. The 200-foot buffer was suggested in the 2000 Mauna Kea Science Reserve Master Plan (Group 70 2000), and is 10 times the setback distance usually required by the Hawai'i Island Burial Council for development near existing burials. Figure 8 shows the 200-ft buffer zones around each burial site in the MKSR, and Figure 9 shows the buffer zones around burial sites in the MKARC.

Due to the close proximity of Sites 27867, 27868, and 27869 to the MKARC (Table 3), buffer zones will provide added protection for these sites. Sites 27867, 27868, and 27869 will be monitored regularly (annually) as indicated in Table 2. Because these sites are located between the eastern edge of the MKARC and the Mauna Kea Forest Reserve (MKFR) boundaries, the portion of the buffers for these sites that fall inside the MKFR are shown as a dashed lines.

**Table 3. Distance from MKARC to Burial Sites 27867, 27868, and 27869.**

Site Number	Distance in meters to MKARC	Distance in feet to MKARC
27867	309	1,015
27868	141	465
27869	349	1,145



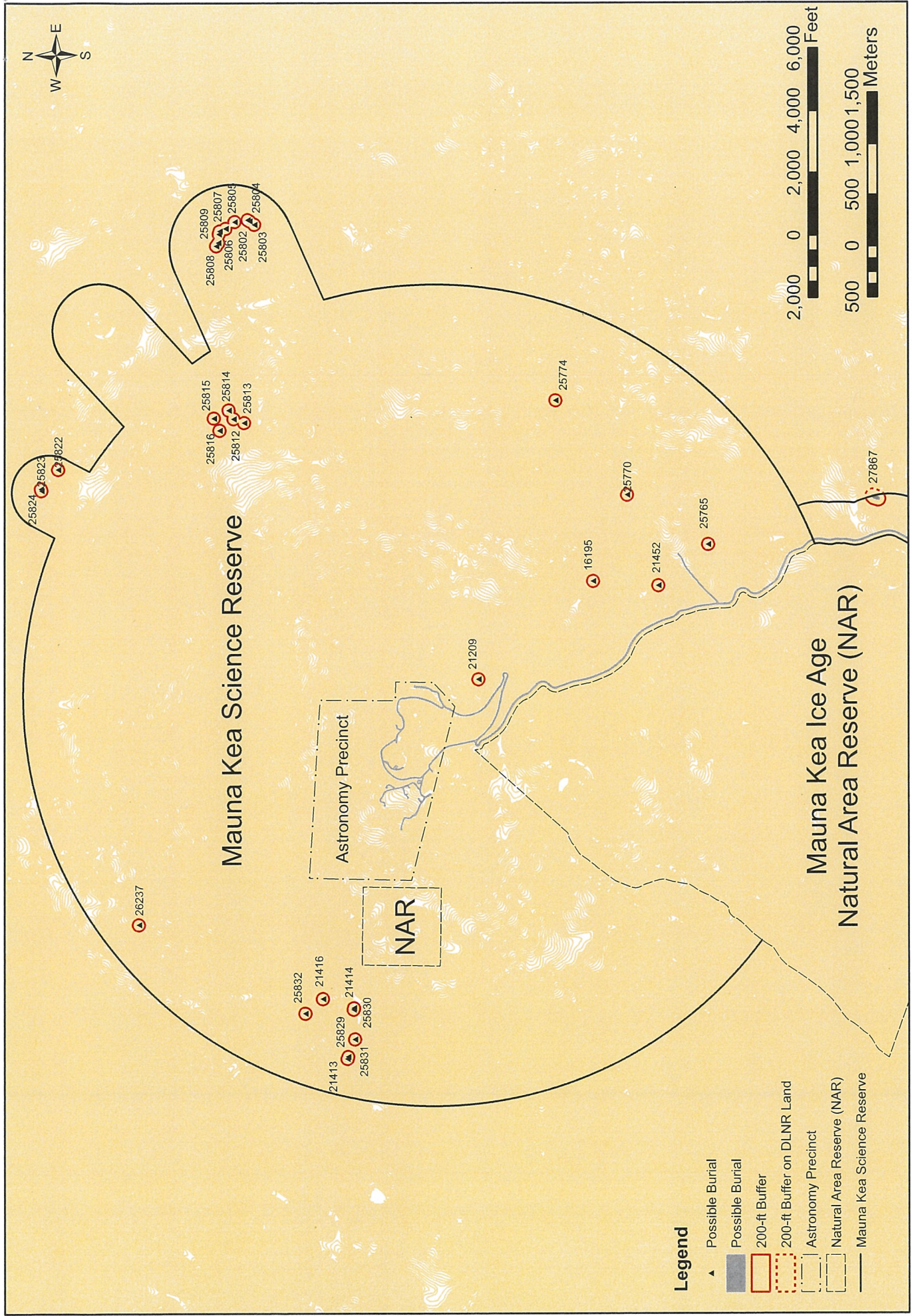


Figure 8. Burial Sites in the Mauna Kea Science Reserve Showing Proposed Buffer Zones.



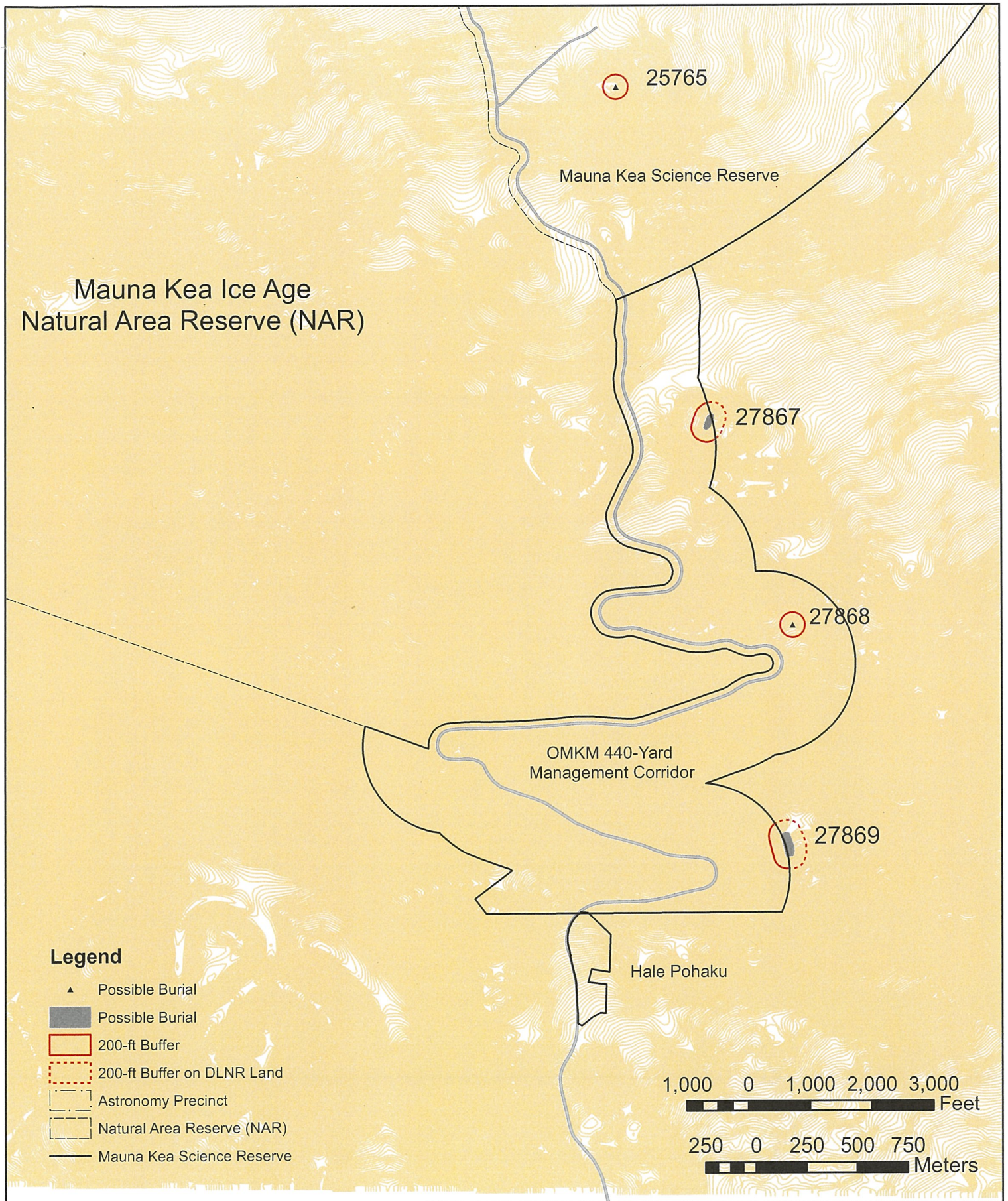


Figure 9. Location of Possible Burial Sites 27867, 27868, and 27869 and Proposed Buffer Zones in the Mauna Kea Access Road Management Corridor.



The remaining burial sites will also be visited as part of OMKM's long-term monitoring program. All but one of these burial sites (Site 21209) are scheduled for periodic monitoring. Periodic monitoring means that the sites will be visited every three years. Site 21209 is scheduled for regular monitoring, indicating that this site will be monitored annually.

During consultation with the Kahu Kū Mauna and the HIBC, members of these Native Hawaiian organizations strongly stated the belief that human skeletal remains exposed on the ground surface are at risk of imminent harm since they are visible and, therefore, vulnerable to further disturbance in particular from natural weathering processes

Due to the remoteness of many of the sites and to health and safety concerns in accessing these sites by foot without ready access to emergency services, the archaeological monitors shall immediately cover exposed remains with cinder and other natural materials after documenting them by recording the GPS location and pertinent descriptive information. If necessary, actions to stabilize the site may be required.

Long-term preservation measures<sup>5</sup> in support of "preservation in place" followed by periodic monitoring through site visits by archaeological monitors will apply to all burial sites in the Science Reserve and Access Road Corridor. Specific long-term measures include the following:

1. Preservation in place.
2. Periodic site inspections (every three years) through an ongoing monitoring program in order to ensure that the burial sites remain intact and to document any impacts to burial sites by user groups.
3. Upon notification to SHPD, and following SHPD's consultation with recognized cultural descendants, the monitors may take necessary protection measures to cover exposed human skeletal remains upon discovery, and will document the protective measures taken.
4. Should exposed human skeletal remains be encountered during time periods not covered by the monitoring program, the remains should be covered as soon as possible. If this situation occurs, both archaeological monitors as well as OMKM Rangers are authorized to cover the exposed human skeletal remains after documentation, including the recordation of the GPS location and descriptive information. Such finds shall be reported immediately to SHPD and OMKM.
5. One site on Pu'u Weki'u – SIHP No. 50-10-23-21209– is recommended for monitoring every 6 months due to its proximity to the summit and resulting poor visitor impacts.
6. Three sites in the MKARC, Sites 27867, 27868, and 27869, are recommended for regular monitoring (every year) due to their location in the MKARC.
7. Establish 200-foot buffer zones around all burial sites in the MKSR, and around all burials sites in the MKARC (Sites 27867, 27868, and 27869).
8. Out of respect for descendants' expressed wishes to manage and control their own access without government intervention, perpetual access shall be granted to all recognized descendants, subject to Hawaii Administrative Rules (HAR 13-300<sup>5</sup>)
9. No astronomy development shall occur within the 200 foot buffer zone of a burial site located outside the Astronomy Precinct.

## **TREATMENT OF FUTURE INADVERTENTLY DISCOVERED BURIALS AND REBURIAL SITES**

As required by the Mauna Kea CMP, a section of this BTP must contain provisions for the treatment of any burials that may be inadvertently discovered in the future and for any future reburial sites that may be established in the MKSR or the Access Road Corridor.

In the event a burial is inadvertently discovered the following actions will be carried out:

- Determinations on the treatment and disposition of inadvertently discovered burial sites will be made by the DLNR in consultation with the OMKM, HIBC, Office of Hawaiian Affairs, and any recognized descendants.
- Inadvertently discovered burials will be treated in accordance with Chapter 6E-43.6 HRS and HAR 13-300.
- Should human skeletal remains at an inadvertently discovered burial site under the jurisdiction of Chapter 6E, HRS, be exposed due to natural causes, they will be considered at risk of imminent harm, and may be temporarily protected by being covered after documentation, including recordation of GPS data and other descriptive information. SHPD will be contacted and consulted regarding the appropriate treatment. Following notification and consultation with recognized descendants, HIBC and SHPD, according to HAR 13-300-40, proper burial treatment will be submitted in a Burial Site Component of a Preservation Plan for SHPD approval.

If it is determined that a re-interment site needs to be established within the MKSR or the Access Road Corridor, this action shall only occur subject to the following conditions:

- Re-interment sites may only be established in accordance with the HAR governing activities in the Conservation District (HAR 13-5), and with the concurrence of the Kahu Kū Mauna Council, the OMKM, and the SHPD. The location of any authorized reburial site must be recorded by GPS, and reasonably detailed descriptions, including photographs, of the reburial sites must be provided to OMKM and to the SHPD for their records. Following notification and consultation with recognized descendants, and SHPD, according to HAR-13-300-40, proper burial treatment will be submitted in a required Burial Site Component of a Data Recovery Plan for SHPD approval.

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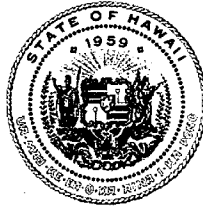
FOOTNOTES

- <sup>1</sup> HAR §13-300-33 (b) The applicant shall submit a request to preserve in place or relocate a Native Hawaiian burial site to the department in the form of a burial treatment plan.
- <sup>2</sup> HAR §13-300-33 (b) [The burial treatment plan shall include]: (12) Where applicable, proof that the archaeological inventory survey report has been accepted by the department;
- <sup>3</sup> HAR §13-300-33 (b) [The burial treatment plan shall include]: (7) The tax map key number for the property;
- <sup>4</sup> HAR §13-300-33(b)[The burial treatment plan shall include]: (1) Evidence of a good faith search for lineal and cultural descendants, including:
- (A) Research of relevant land conveyance documents including identification of land commission awardees located at or near the burial site;
  - (B) An inquiry to any person who may have knowledge of families possibly affiliated with the Native Hawaiian remains;
  - (C) Publication of notice in a newspaper of general circulation in the county in which the burial site is located and a newspaper of statewide circulation for a minimum of three days, including Sunday and Wednesday. At a minimum, the notice shall contain:
    - (i) A general description of the property including any identifying features and the tax map key, ahupua`a, district, and island;
    - (ii) The names of individuals or families including land commission awardees possibly associated with the burial site or property where the burial site is located;
- <sup>5</sup> HAR §13-300-33(b) [The burial treatment plan shall include]: (3) A description of proposed treatment of all burial sites including a statement of preservation in place or relocation:
- (A) In the event preservation in place is proposed, statements describing:
    - (i) Short term measures to immediately protect all burial sites including, but not limited to, fencing, buffers, and site restoration; and
    - (ii) Long term measures to properly manage and protect all burial sites including, but not limited to, buffers, landscaping, and access by known lineal or cultural descendants;
  - (B) In the event relocation is proposed, statements describing:
    - (i) Reasons that warrant relocation;
    - (ii) The methods to be utilized to conduct disinterment;
    - (iii) The location and manner by which Native Hawaiian skeletal remains and any burial goods will be curated where reburial will not occur immediately following disinterment;
    - (iv) The proposed reburial site location mutually agreed upon by the landowner and any recognized lineal descendant;
    - (v) The manner in which the reburial site will be prepared;
    - (vi) Short term measures to immediately protect the reburial site, including but not limited to fencing and buffers; and
    - (vii) Long term measures to properly manage and protect the reburial site including, but not limited, to buffers, landscaping, and access by known lineal or cultural descendants;
- <sup>6</sup> HAR §13-300-33(b) [The burial treatment plan shall include]: (4) Maps clearly indicating the location of all identified Native Hawaiian burial sites located at the property, including where applicable, the spatial relationship between Native Hawaiian burial sites and any proposed construction activities, drawn to scale;
- <sup>7</sup> HAR §13-300-33(b) [The burial treatment plan shall include]: (9) A description of the present condition of all previously identified Native Hawaiian burial sites located at the property;

## **APPENDIX A**

Review Letters from the State Historic Preservation Division for the Mauna Kea Science Reserve and the Mauna Kea Summit Access Road Archaeological Inventory Surveys

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

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

May 26, 2010

Patrick McCoy, Ph. D.  
Principal Investigator  
Pacific Consulting Services, Inc.  
720 Iwilei Road, Suite 424  
Honolulu, Hawai'i 96817

LOG NO: 2010.0066  
DOC NO: 1005TD05  
Archaeology

Dear Dr. McCoy:

Subject: **Chapter 6E-7 Historic Preservation Review –  
Archaeological Inventory Survey Report, Mauna Science Reserve (11,288 Acres)  
Ka'ohē Ahupua'a, Hāmakua District, Island of Hawai'i  
TMK: (3) 4-4-015: 009 (por.)**

Thank you for submitting the draft report entitled *Archaeological Inventory Survey of the Mauna Kea Science Reserve, , Ka'ohē Ahupua'a, Hāmakua District, Island of Hawai'i, TMK: (3)4-4-015: 09 (por.)* (P. C. McCoy and R.C. Neese, January 2010). We received this submittal January 21, 2010 and we apologize for the delay in returning our comments.

The report is based on inventory survey work conducted between 2005 and 2009 (20 weeks of field work), and was prepared at the request of the Office of Mauna Kea Management, University of Hawai'i at Hilo, in connection with the 2000 Master Plan and the 2009 Comprehensive Management Plan (CMP) for the Science Reserve. The survey was a continuation of DLNR-SHPD reconnaissance efforts within the Science Reserve that occurred in 1982, 1984, 1995, 1997 and 1999. The current survey was not triggered by a specific permit; however, it provides the baseline data for the Cultural Resources Management Plan (CRMP), a Sub-Plan of the 2009 CMP, which was designed to ensure that the Office of Mauna Kea Management is in compliance with the conditions of its 1968 lease agreement with DLNR.

The report consists of two volumes: Volume 1 contains the background, summary, analysis and recommendation sections (353 pages) and thirteen appendices. Volume 2 contains site descriptions organized by functional group (588 pages), and appended maps. A total of 263 historic properties are described and analyzed, 97 of which were previously recorded. In-depth analysis is included for the shrines (173 identified) and for artifacts collected from adze manufacturing workshops. Controlled subsurface testing was conducted at two sites (Sites 21449 and 26253), and one radiocarbon date (AD 1420-1480) was obtained from charred wood. In addition, information is provided for 339 find spots, which are assumed to be less than 50 years in age. Some of the find spots could not be definitely dated and could possibly be over 50 years in age. All of the identified sites are located within the Mauna Kea Summit Region Historic District (SIHP 50-10-23-26869), which is significant under all five of the Hawai'i Register of Historic Places and Hawai'i Administrative Rule (§13-275) Criteria; and under all four of the National Register Criteria.

The report includes full discussions of previous archaeological work in and around the project area, environmental features, and a summary of the survey findings. The data analysis section is very well



done, and includes theoretical concerns, detailed typology development, and clear data tables and graphs. The shrine analysis considers attributes of the component parts of a shrine (uprights, pavement, court); shrine location and orientation; and topographic setting. Artifact analysis includes metric and non-metric attribute analysis of adze performs and hammerstones, based on measurements taken in the field and in the laboratory. Findings and conclusions are compared with other interpretations of the technology and social framework of adze production and distribution. Site descriptions are consistent and adequate maps and photographs are included.

We concur with the significance evaluation that all the identified sites are contributing properties within the Mauna Kea Summit Region Historic District because they were present during the period of significance, they possess historic integrity and they independently meet one or more of the National and Hawai'i Register significance criteria. As noted above, the Mauna Kea Summit Region Historic District meets all four National Register Criteria and all five Hawai'i Register Criteria.

All of the identified sites within the Mauna Kea Science Reserve will be preserved. Twenty-six recommendations are included in the report, most of which are measures that will directly or indirectly ensure that the sites are preserved. These recommendations include provisions for consultation, prohibitions for off-road vehicular traffic, preparation and implementation of a burial treatment plan, preparation and implementation of a monitoring program, a staff training program, an education and interpretation program, a collection curation program, a GIS database, and other measures that are included in the Cultural Resources Management Plan (CRMP) for the Science Reserve. We concur with these recommendations and wish to add that we would like to work with the Office of Mauna Kea Management and DLNR to complete the State and National Register nomination paperwork for the Summit Region Historic District. We also have one question regarding the status is the Mauna Kea Adze Quarry National Historic Landmark (see attachment).

The report exceeds minimal requirements for inventory survey reports as found in Hawaii Administrative Rule §13-276 and is accepted. Please address the attached comments and send revised hardcopy sections of the document to the Hilo office, along with a cover sheet and title page marked FINAL. Please send one hard copy of the revised report, marked FINAL, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention of "SHPD Library". If you have any questions or wish to further discuss the conclusion of this letter, please contact Theresa Donham at (808) 933-7653.

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
Historic Preservation Division

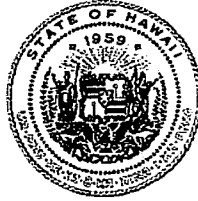
### ATTACHMENT

Comments and Questions: *Archaeological Inventory Survey of the Mauna Kea Science Reserve, , Ka'ohe Ahupua'a, Hāmakua District, Island of Hawai'i, TMK: (3)4-4-015: 09 (por.)* (P. C. McCoy and R.C. Neese, January 2010).

1. A complete reference check was not conducted during this review; however a sample indicates that a number of citations are missing from Section 10. Examples include the following:
  - Page 4-4: Johnson 2007, Pauketat 2004, Kirch 1984
  - Page 5-5: Lewontin 1994 – is this 1994a or 1994b as listed in Section 10?
  - Page 5-8: Hommon 1980b (there is no Hommon 1980a or 1980b in Section 10)
  - Page 5-15: Schaafsma 1989
  - Page 5-17: Cowgill 1989 – is this 1989a or 1989b? Grover 1974, 1979
  - Page 5-22: Reinman & Pantaleo 1998
  - Page 5-33: McCallister 1930 (1933 listed in Section 10)
  - Page 5-41: McCoy and Nees 2007 (2006 listed in Section 10)
  - Page 5-56: Menzies 1920
  - Page 6-1: Stern 1990 is incomplete (highlighted in Section 10)
  - Page 6-2: Gould 2000
  - Page 6-20: Cox and Davenport 1988
  - Page 6-30: Bringham 1908 (1902 listed in Section 10)
  - Page 6-54: Bayman and Moniz 2001 (2000 listed in Section 10)
  - Page 6-59: Isaac 1972
  - Page 6-61: Phagan 1972
  - Page 6-86: Abbott 1992, Van Riper 1990
  - Page 6-87: Mills and Lunblat 2006 (2008 listed in Section 10), Wilson 1997
  - Page 6-94: Figure citation Porter 1979 – is this a, b or c?
  - Page 7-13: Geertz 1996
  - Page 7-14: Colpe 1987
  - Page 7-17: Douglas 1975
  - Page 7-21: Ortner 1989
  - Page 7-30: Clark 1995, Renfrew 1975
  - Page 7-42: Welch 1991
  - Page 7-58: Gell 1998 (is this supposed to be Gill?)
  - Page 7-59: Firth 1970
  - Page 8-1: Bowdler 1977
2. SIHP Sites 27579 – 27618 were assigned numbers in December 2009. Our records show that the UTM coordinates for these sites were not submitted with the site number requests. This information is not in the report. Please resend the site request spreadsheet (excel) with the UTM data via email to [Theresa.K.Donham@hawaii.gov](mailto:Theresa.K.Donham@hawaii.gov). UTM data was not required at the time site numbers were assigned in 2007 (Sites 26178-26256); however, if this data is already in an electronic file, we would appreciate if you could send it as well.
3. In Sections 6, Vol. 1 and Section 3, Vol. 2, it is stated that the previously unrecorded Pohakuloa Gulch Adze Quarry and Workshop Complex is considered to be within the Mauna Kea Adze Quarry Complex, which is a national historic landmark. It appears that the boundaries of the Mauna Kea Adze Quarry (and the information on file in the HRHP and NRHP) may need to be updated. If you agree, we request that you include a recommendation for the update in Section 9.
4. The map provided for Site 27606 (Vol. 2, page 3-99) is labeled “Showing Locations of Site Components”. According to the site description, there are four components. The map shows only one (the rockshelter). Please include locations of the terrace, the wall remnant and the workshop on the site map.

5. In Section 4, Vol. 2, it is noted that some of the burial/possible burial sites were not mapped or photographed due to adverse weather conditions. Please include a statement in Item 3 of the Recommendations (Section 9, Vol. 1) that includes full documentation of these burial sites as part of the BTP preparation. The need for the BTP should be emphasized, given the presence of exposed human remains at sites on Pu`u Makanaka.

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

February 11, 2010

Steve Clark  
Pacific Consulting Services, Inc.  
720 Iwilei Road, Suite 424  
Honolulu, Hawaii 96817

LOG NO: 2010.0760  
DOC NO: 1002MD28  
Archaeology

Dear Mr. Clark:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –  
Archaeological Inventory Survey of 722 Acres with Three New Sites  
Ka'ohe Ahupua'a, Hāmākua District, Island of Hawai'i  
TMK: (3) 4-4-015:001 (por.)**

This letter reviews the aforementioned report (*McCoy, Nees, and Mintimer 2010; Draft Report Archaeological Inventory Survey of the Mauna Kea Access Road Management Corridor, Ka'ohe Ahupua'a, Hāmākua District, Island of Hawai'i, TMK: [3] 4-4-015: 01 [por.]*) which we received on February 2, 2010. This report summarizes an archaeological inventory survey in which three new sites were recorded and one previously known site was relocated. Sites 50-10-23-27867, -27868 and 27869 are believed to be burial locations and as is standard for sites on Mauna Kea no archaeological testing is anticipated. These sites are considered significant under criteria "d" and "e" and we concur with that assessment. The previously identified site, -10314, a lithic scatter which is the by-product of adze and octopus lure sinker manufacture, has been considered significant under criteria "a" and "d" and we also concur with that assessment.

Data collection has been recommended for site -10314 because of its vulnerability to disturbance and loss of integrity and we agree. The three burials will be included in the Office of Mauna Kea Management's upcoming burial treatment plan for Mauna Kea.

Before we can accept this report as final please correct the following:

- The significance assessments appear differently in the Executive Summary (i) and Significance Evaluations (7-2). We assume 7-2 was correct and that is reflected in this letter.

Because this is only one page of a large document you may want to have a staff member from your office take the draft back for page replacements (p. i and the title changes as the month will change with the new submission) in order to avoid a full reprint. If you have questions about this letter please contact Morgan Davis of our Hawaii Island Section at (808) 896-0514 or via email to: [morgan.e.davis@hawaii.gov](mailto:morgan.e.davis@hawaii.gov).

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State Historic Preservation Division

**APPENDIX B**  
**PUBLIC NOTICES AND AFFIDAVITS OF PUBLICATION**





AFFIDAVIT OF PUBLICATION

State of Hawaii )  
 ) SS:  
County of Hawaii )

Verna Lee, being first duly sworn, deposes and says:

1. That she is the Executive Secretary of WEST HAWAII TODAY, a newspaper published in the City of Kailua Kona, State of Hawaii.

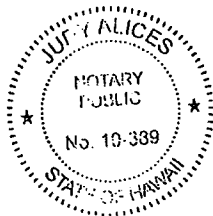
2. That "NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that 32 historic properties believed to be traditional Native Hawaiian burial sites" of which a clipping from the newspaper is attached hereto, was published in said newspaper on the following date(s) January 22, 25 and 29, 2012 (etc.)

Verna Lee

Subscribed and sworn to before me  
This 30th day of January, 2012

Judy Alices

Notary Public, Third Circuit,  
State of Hawaii  
Is



Judy Alices  
My Commission expires:  
# Page(s): 1 NOV 14 2014

Doc. Date: 1/30/12 # Pages: 1

Notary Name: Judy Alices Third Circuit

Doc. Description: Affidavit of Publication

Judy Alices 1/30/12  
Notary Signature Date

NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that 32 historic properties believed to be traditional Native Hawaiian burial sites were documented by Pacific Consulting Services, Inc. during the course of an archaeological inventory survey of the Mauna Kea Science Reserve at Tax Map Key (3) 4-2-015-009 and in the Mauna Kea Access Road Corridor at TMK (3) 4-2-015-001. Both survey areas are located in the arid upland portions of Ka'ohu Ahupua'a, Hamakua District, Hawaii Island, and are managed by the Office of Mauna Kea Management for the State of Hawaii, which holds a lease issued by the landowner, the University of Hawaii. Background research indicates that Ka'ohu Ahupua'a was designated as Crown Lands at the time of the Mahele, no claims were made or awarded for these areas within Ka'ohu Ahupua'a following the procedures of Hawaii Revised Statutes (HRS) Chapter 6B-43 and Hawaii Administrative Rules (HAR) Chapter 16-300; the burials are believed to be over 50 years old. The Office of Mauna Kea Management would prefer to preserve all burials in place. However, the decision to preserve in place or relocate these previously identified burials shall be made by the Hawaii Island Burial Council and the State Historic Preservation Division (SHPD) in consultation with any recognized lineal and/or cultural descendants, per the requirement of HAR Chapter 16-300-33. Proper treatment of the burials shall occur in accordance with HAR Chapter 16-300-33 or 16-300-39. SHPD requests persons having any knowledge of the identity or history of these burials to contact the following individuals within thirty days to provide information regarding appropriate treatment of the unmarked burials: Ms. Rua'Alua SHPD, located at Suite 555, Kalihuewa Building, 601 Kamohila Boulevard, Kapa'ala, Hawaii 96707, (Tel. (808) 692-3015 / Fax: (808) 692-8020 / Email: Rua'Alua@hawaii.gov) or Mr. Steve Clark at Pacific Consulting Services, Inc. located at 7201 Wilei Road, Suite 424, Honolulu, Hawaii 96817, (Tel. (808) 546-5557 / Fax: (808) 546-5557 / Email: steve.clark@pcshawaii.com. All interested parties should respond to this notice by filing descendant claim forms with the SHPD and/or by providing information to SHPD that adequately demonstrates lineal descent from these specific burials or cultural descent from ancestors buried in the vicinity of the Ka'ohu survey area.  
(No. 54616 West Hawaii Today, January 22, 25 and 29, 2012)

AFFIDAVIT OF PUBLICATION

State of Hawaii )
) SS:
County of Hawaii )

LEILANI K. R. HIGAKI, being first

duly sworn, deposes and says:

1. That she is the BUSINESS MANAGER of HAWAII TRIBUNE-HERALD, a newspaper published in the City of HILO, State of Hawaii.

2. That the "NOTICE TO INTERESTED PARTIES...32 historic properties...Hawaiian burial sites...etc.,"

of which a clipping from the newspaper as published is attached hereto, was published in said newspaper on the following date(s) January 22, 25, 29, 2012, (etc.).

41552r1

Signature of Leilani K. R. Higaki

Subscribed and sworn to before me this 26th day of January, 2012.

Signature of Sharon H. P. Ogata

SHARON H. P. OGATA
Notary Public, Third Circuit, State of Hawaii
My commission expires October 1, 2012

Page(s): 1

NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that 32 historic properties believed to be traditional Native Hawaiian burials sites were documented by Pacific Consulting Services, Inc. during the course of archaeological inventory surveys of the Mauna Kea Science Reserve at Tax Map Key (3) 24-4-015-009 and in the Mauna Kea Access Road Corridor at TMK (3) 24-4-015-001. Both survey areas are located in the mid-upland portions of Ka'ohu Ahupua'a, Hamakua District, Hawaii Island, and are managed by the Office of Mauna Kea Management for the University of Hawaii, which holds a lease issued by the landowner, the State of Hawaii. Background research indicates that Ka'ohu Ahupua'a was designated as Crown Lands at the time of the Mahele; no claims were made or awarded for these areas within Ka'ohu Ahupua'a following the procedures of Hawaii Revised Statutes (HRS) Chapter 6E-49 and Hawaii Administrative Rules (HAR) Chapter 13-300; the burials are believed to be over 50 years old. The Office of Mauna Kea Management would prefer to preserve all burials in place. However, the decision to preserve in place or relocate these previously identified burials shall be made by the Hawaii Island Burial Council and the State Historic Preservation Division (SHPD) in consultation with any recognized lineal and/or cultural descendants; per their requirement of HAR Chapter 13-300-33. Proper treatment of the burials shall occur in accordance with HAR Chapter 13-300-38 or 13-300-39. SHPD requests persons having any knowledge of the identity or history of these burials to contact the following individuals within thirty days to provide information regarding appropriate treatment of the unmarked burials: Ms. Pua Aiu'a, SHPD, located at Suite 555, Kakuhewa Building, 601 Kamokila Boulevard, Kapolei, Hawaii 96707 (Tel: (808) 692-8015 / Fax (808) 692-8020 / Email Pua.Aiu'a@hawaii.gov); OR Mr. Steve Clark at Pacific Consulting Services, Inc. located at 720 Wilei Road, Suite 424, Honolulu, Hawaii 96817 (Tel: (808) 546-5557 / Fax (808) 546-5557 / Email steve.clark@pcsihawaii.com. All interested parties should respond to this notice by filling descendant claim forms with the SHPD and/or by providing information to SHPD that adequately demonstrates lineal descent from these specific burials or cultural descent from ancestors buried in the vicinity of the Ka'ohu survey area. (41552r1 Hawaii Tribune-Herald: January 22, 25, 29, 2012)

**Mauna Kea**

NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that 32 historic properties believed to be traditional Native Hawaiian burial sites were documented by Pacific Consulting Services, Inc. during the course of archaeological inventory surveys of the Mauna Kea Science Reserve at Tax Map Key (3) 4-4-015:009 and in the Mauna Kea Access Road Corridor at TMK: (3) 4-4-015:por. 001. Both survey areas are located in the arid upland portions of Ka'ohē Ahupua'a, Hāmākua District, Hawai'i Island, and are managed by the Office of Mauna Kea Management for the University of Hawai'i, which holds a lease issued by the landowner, the State of Hawai'i.

Background research indicates that Ka'ohē Ahupua'a was designated as Crown Lands at the time of the Mahele; no claims were made or awarded for these areas within Ka'ohē Ahupua'a. Following the procedures of Hawai'i Revised Statutes (HRS) Chapter 6E-43, and Hawai'i Administrative Rules (HAR) Chapter 13-300, the burials are believed to be over 50 years old. The Office of Mauna Kea Management would prefer to preserve all burials in place. However, the decision to preserve in place or relocate these previously identified burials shall be made by the Hawai'i Island Burial Council and the State Historic Preservation Division (SHPD) in consultation with any recognized lineal and/or cultural descendants, per the requirement of HAR Chapter 13-

300-33. Proper treatment of the burials shall occur in accordance with HAR Chapter 13-300-38 or 13-300-39. SHPD requests persons having any knowledge of the identity or history of these burials to contact the following individuals within thirty days to provide information regarding appropriate treatment of the unmarked burials: Ms. Pua Aiu at SHPD, located at Suite 555, Kakuhihewa Building, 601 Kamokila Boulevard, Kapolei, Hawai'i 96707 [Tel: (808)692-8015/Fax(808)692-8020/Email Pua.Aiu@hawaii.gov], OR Mr. Steve Clark at Pacific Consulting Services, Inc., located at 720 Iwilei Road, Suite 424, Honolulu, Hawai'i 96817 [Tel: (808)546-5557x202/Fax(808)546-5557/Email steve.clark@pcsihawaii.com.

All interested parties should respond to this notice by filing descendant claim forms with the SHPD and/or by providing information to SHPD that adequately demonstrates lineal descent from these specific burials or cultural descent from ancestors buried in the vicinity of the Ka'ohē survey area. ■

**Pā'au'au**

**CULTURAL IMPACT ASSESSMENT NOTICE**

Information requested by SCS of cultural resources or ongoing cultural practices on or near Ka'ū High School, Pā'au'au 1 Ahupua'a, Pāhala, Ka'ū District, Island of Hawai'i, TMK: (3) 9-6-05:08. Please respond within 30 days to SCS at (808) 938-0968. ■

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**APPENDIX D**

**Results of SHPD Field Trip to Cover Exposed *Iwi* at Burial Sites on Pu'u Makaanaka**

## RESULTS OF SHPD FIELD VISIT TO COVER EXPOSED *IWI* ON PU'U MAKANAKA

On August 16, 2013, Mr. Michael Vitousek of the State Historic Preservation Division (SHPD) in Kona, met many of Ka'anohi Kaleikini's *'ohana* at the Visitor Information Station on Maunakea. Michael Vitousek, Jimmy Medeiros, Joel Kelly (an OMKM Ranger), and four or five members of the Kaleikini *'ohana* drove to the northeast side of Pu'u Makanaka using the R-1 (hunter's road). From there, Mr. Vitousek, Mr. Medeiros, Ranger Kelly, and one other person hiked to the base of Pu'u Makanaka. Only Mr. Vitousek, Mr. Medeiros, and Ranger Kelly hiked to the top of Pu'u Makanaka to cover exposed *iwi* with cinders. Based on conversations between Mr. Vitousek and Steve Clark, and a subsequent email exchange (on September 11, 2013), human skeletal remains at Sites 25802, 25807, 25808, and 25809 were covered with cinders. Mr. Vitousek provided the following information on the actions taken at each site.

Site 25802, Feature 2 (mound): At Feature 2 of Site 25802 (where wood and human skeletal remains (HSR) were observed within the mound), the top rocks of the mound were removed, and cinders from the ground surface adjacent to the mound were put into the mound filling in the cracks and covering the wood and HSR. Once cinders were put into the mound, the top rocks of the mound were replaced.

Site 25807, Feature 1 (mound): At Feature 1 of Site 25807, (where HSR were observed within the mound), the top rocks of the mound were removed, and cinders from the ground surface adjacent to the mound were put into the mound filling in the cracks and covering the wood and HSR. Once the cinder was removed, the top rocks of the mound were replaced.

Site 25808, Feature 1 (mound): At Feature 1 of Site 25807, (where wood and HSR's were observed within the mound), top rocks of the mound were removed, cinder from the ground surface adjacent to the mound was put into the mound filling in the cracks and covering the wood and HSR. Once the cinder was removed, the top rocks of the mound were replaced.

Site 25808, Feature 7: near Feature 7, a cranium was found eroding from the cinders. A small retaining wall was built just downslope from the cranium and the cranium was covered with cinders.

Site 25809: This site had HSR scattered on the sloping surface of the *pu'u*, just below the rim. A small hole was excavated and HSR from the surface were put in this hole. It was noted that where the small hole was excavated, in situ HSR were observed. Two small boulders (8-10 inches in diameter) were placed on top of the hole where HSR were reburied.

**APPENDIX C**

**Description of Burial Sites in the Mauna Kea Science Reserve and  
the Mauna Kea Summit Access Road Corridor**



This section presents descriptions for the 34 burial sites identified, including 31 in the Mauna Kea Science Reserve, and three (3) burial sites identified during the AIS for the Mauna Kea Access Road. All features of these 34 burial sites consist of confirmed or possible burials; there are no features in this BTP that have non-burial functions.

### Burials from the Mauna Kea Science Reserve

The following sites are burial and possible burial sites documented during the AIS for the Mauna Kea Science Reserve (McCoy et al. 2010a).

#### STATE SITE 50-10-23-16195

<b>Additional Site Numbers:</b> BPBM 50-Ha-G28-76	
<b>Site Function:</b> Possible Burials	<b>Number of Features:</b> 2
<b>Date First Recorded:</b> 1976	<b>Topographic Location:</b> Rim of Pu`u Līlinoe
<b>Subsequent Site Visits:</b> 1984, 2006	
<b>2006 GPS File No.:</b> P16195.20060901	
<ul style="list-style-type: none"> <li>• Feature 1: Garmin Point KN-04</li> </ul>	
<b>Site Dimensions:</b> 12.0 m by 9.5 m	<b>Approximate Elevation:</b> 12,964 ft a.m.s.l.
<b>Current Status:</b> Feature "type" changed	

#### DESCRIPTION:

Site 16195 consists of two features, a platform (Feature 1) and a mound (Feature 2) (Figure C1). This site, first recorded in 1976, consists of two adjacent features on the eastern rim of Pu`u Līlinoe, a traditional cultural property that was assigned SIHP number 50-10-23-21439 in 1999. The 1976 field records described one of Site 16195's features as a roughly C-shaped enclosure or wall, with a ca. 50.0 cm wide and 30.0 cm pit. The pit was assumed to have been the source of the stones in the wall. The second feature was described as an *ahu* or cairn, which had a wooden stick in the center. Some doubt existed at that time as to whether the features were historic or modern, partly because of the presence of milled wood, which may have been a survey stake. Both features were in poor condition and appeared to have been disturbed.

It appears that these features are the graves that W.D. Alexander's survey party saw on the top of Pu`u Līlinoe in 1892. Alexander wrote:

The same afternoon [July 25, 1892] the surveyors occupied the summit of Lilihoe, a high rocky crater, a mile southeast of the central hills [the 'summit'] and a little over 13,000 feet in elevation. Here, as at other places on the plateau, ancient graves are to be found. In olden times, it was a common practice of the natives in the surrounding region to carry up the bones of their deceased relatives to the summit plateau for burial (Alexander 1892).

During the 1976 survey it was noted that no human remains were visible and the features had the appearance of being dismantled. If these features were in fact the same graves, the remains may have been removed sometime prior.

In 2006, the two features were mapped and recorded in detail (Figure C2). No significant changes were observed when compared to the 1976 notes. No human remains were observed.

Feature 1 appears to be a dismantled platform (see Figure C2). The north, east, and a portion of the south sides appear intact with stacked cobbles. The west side appears to be dismantled with cobbles scattered to the west. A depressed area in the cinder is located adjacent (west) to the platform. The intact portion of the platform measures approximately 4.0 m long by 0.9 m high.

Feature 2 is a mound located approximately 1.6 m south of Feature 1. It is constructed of both piled and stacked cobbles and measures 4.0 m by 4.0 m and 0.8 m high. In the center of the mound is the milled-wood stake observed in the 1976 survey.



**Figure C1. Site 16195. View to the Northeast.**

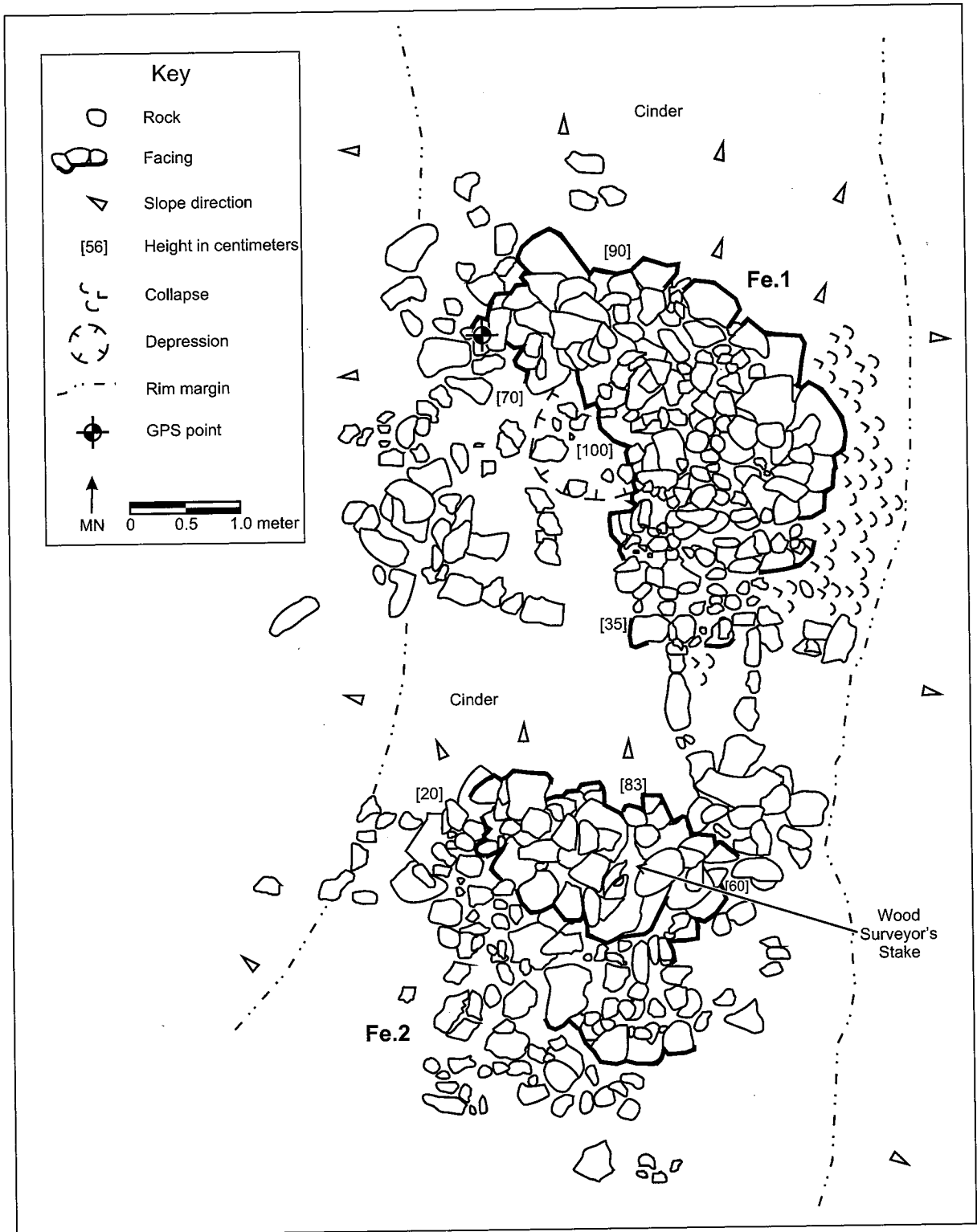


Figure C2. Site 16195, Plan View of Features 1 and 2.

**STATE SITE 50-10-23-16248**

<b>Additional Site Numbers:</b> Temporary Number: RN2006-030	
<b>Site Function:</b> Burials	<b>Number of Features:</b> 3
<b>Date First Recorded:</b> 1991	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b> 2006	
<b>2006 GPS File No.:</b> RN008	
<b>Site Dimensions:</b> 20.0 m by 15.0 m	<b>Approximate Elevation:</b> 12,292 ft a.m.s.l.
<b>Current Status:</b> Human skeletal remains observed in 1991 were not found.	

**DESCRIPTION:**

Site 16248 consists of three mounds (Features 1, 2, and 3) located on the east rim of Pu'u Makanaka (Figure C3). The mounds, which were photographed during a brief visit by SHPD staff in 1991, were assigned State Site Number 50-10-23-16248, but were not mapped or described in detail because of the lack of time and onset of bad weather. Some weathered human skeletal remains were seen on the edge of one of the mounds in 1991. Whether these are the same remains that were seen by a United States Geological Survey team in 1925 (Kilmartin 1974) is impossible to say. No human remains were found on the site in 2006, which would seem to indicate that they were either deliberately buried or covered by eroding cinder since 1991.

Feature 1 is a mound that appears to be disturbed (see Figure C3). The cobbles are scattered over an area measuring approximately 4.1 m by 3.1 m with a maximum height of 0.58 m. Wood fragments were observed in the center of the mound.

Feature 2, a mound, is located approximately 8.0 m south-southeast of Feature 1. It is constructed of piled and stacked cobbles. It measures 2.8 m by 2.3 m with a maximum height of 0.64 m. No cultural material was observed at the feature.

Feature 3, also a mound, is located approximately 4.0 m south-southeast of Feature 2. It is constructed of boulders (forming the base) with cobbles on top. It measures 3.8 m by 3.6 m and 0.65 m high. Rocks in the center of the mound have been removed, creating a hole measuring 0.7 m by 0.6 m and 0.7 m deep. No cultural material was observed.

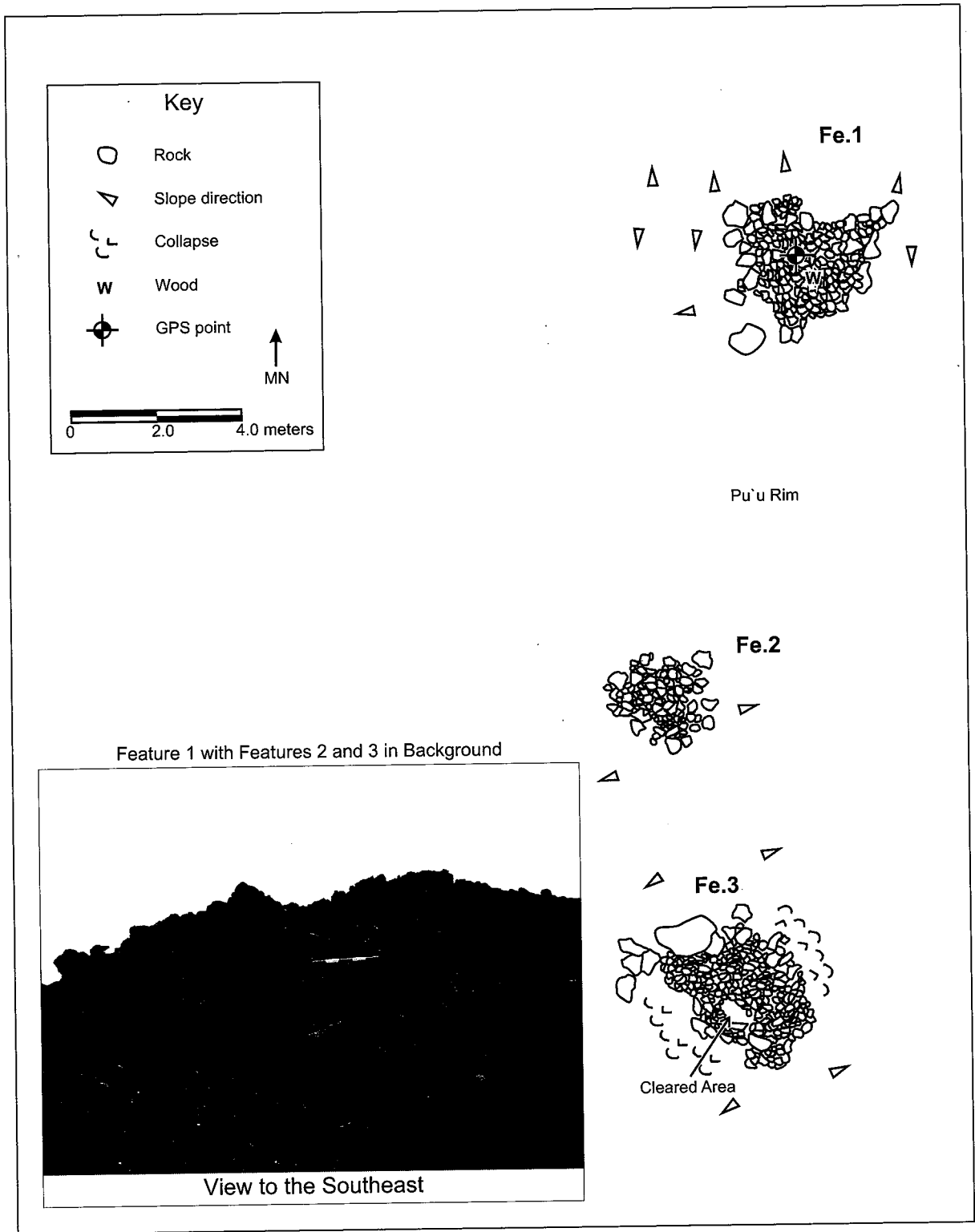


Figure C3. Site 16248, Features 1 through 3, Plan View and Photograph.

**STATE SITE 50-10-23-21209**

<b>Additional Site Numbers:</b> Temporary Number: T-13	
<b>Site Function:</b> Burials	<b>Number of Features:</b> 2
<b>Date First Recorded:</b> 1999	<b>Topographic Location:</b> Rim of Pu'u Wekiu
<b>Subsequent Site Visits:</b> 2006	
<b>2006 GPS File No.:</b> Garmin Points 01-04	
<b>Site Dimensions:</b> 10.0 m by 3.0 m	<b>Approximate Elevation:</b> 13,714 ft a.m.s.l.
<p><b>Current Status:</b> Altered. Feature 1 has been extensively disturbed. A portion of the structure was dismantled and the rocks used to build a C-shape shelter on the other side of a modern trail that encircles Pu'u Wekiu. Fragmented mammal bone was noted on the trail near Feature 1. One basalt flake was also found along the trail between Features 1 and 2. Feature 2 has been completely destroyed; the rocks were likely used in the enlargement of the modern <i>lele</i> (altar) located nearby.</p>	

**DESCRIPTION:**

Site 21209 was not recorded until 1999 (McCoy 1999) because of the snow that covered the area during the 1982 reconnaissance survey. It is comprised of two features--a mound (Feature 1) and an oval shaped alignment (Feature 2) located on the southeastern rim of Pu'u Wekiu (Figures C4 and C5), one of several overlapping cinder cones that form the "summit" of Mauna Kea. The site, which is of unknown function and age, has been extensively altered in the last six years.

Feature 1 is a mound that was photographed by the Hawaiian Academy of Sciences Expedition in 1935 (Bryan 1979:35). A comparison of photographs taken in 1935 and 1999 indicate that the site had been modified in the intervening 64 years. The mound appeared to be substantially larger than it was in 1935. In 1999 it measured 4.8 m (east/west) by 3.7 m (north/south) with an average height of 0.5 m. One of the lighter colored stones visible in the 1935 photographs has been set on top of the mound, presumably as an "upright" which it does resemble from a distance. This stone projects 20.0 cm above the top of the mound. The mound is constructed of fine-grain grey basalt and red cinders, all of which are locally available. There are no tabular slabs and no indication that any of the construction material had been imported from elsewhere on the mountain. The base of the mound is comprised of larger stones. A piece of clear thick glass was found on the surface inside the mound in 1999.

Feature 2 was recorded in 1999 as an oval-shaped rock outline (alignment) found 15.5 m south of the USGS survey marker located on the summit. The outline measured 2.7 m (east/west) by 2.5 m (north/south) and was one rock high and was built on top of and around the edges of a low rock outcrop using locally available rocks. Unidentified organic matter was observed under a stone on the southeast side. It does resemble some rock alignments located on the east rim of Pu'u Waiiau, which has been recently designated an historic property (Site 21440) based on ethnographic and archaeological evidence.



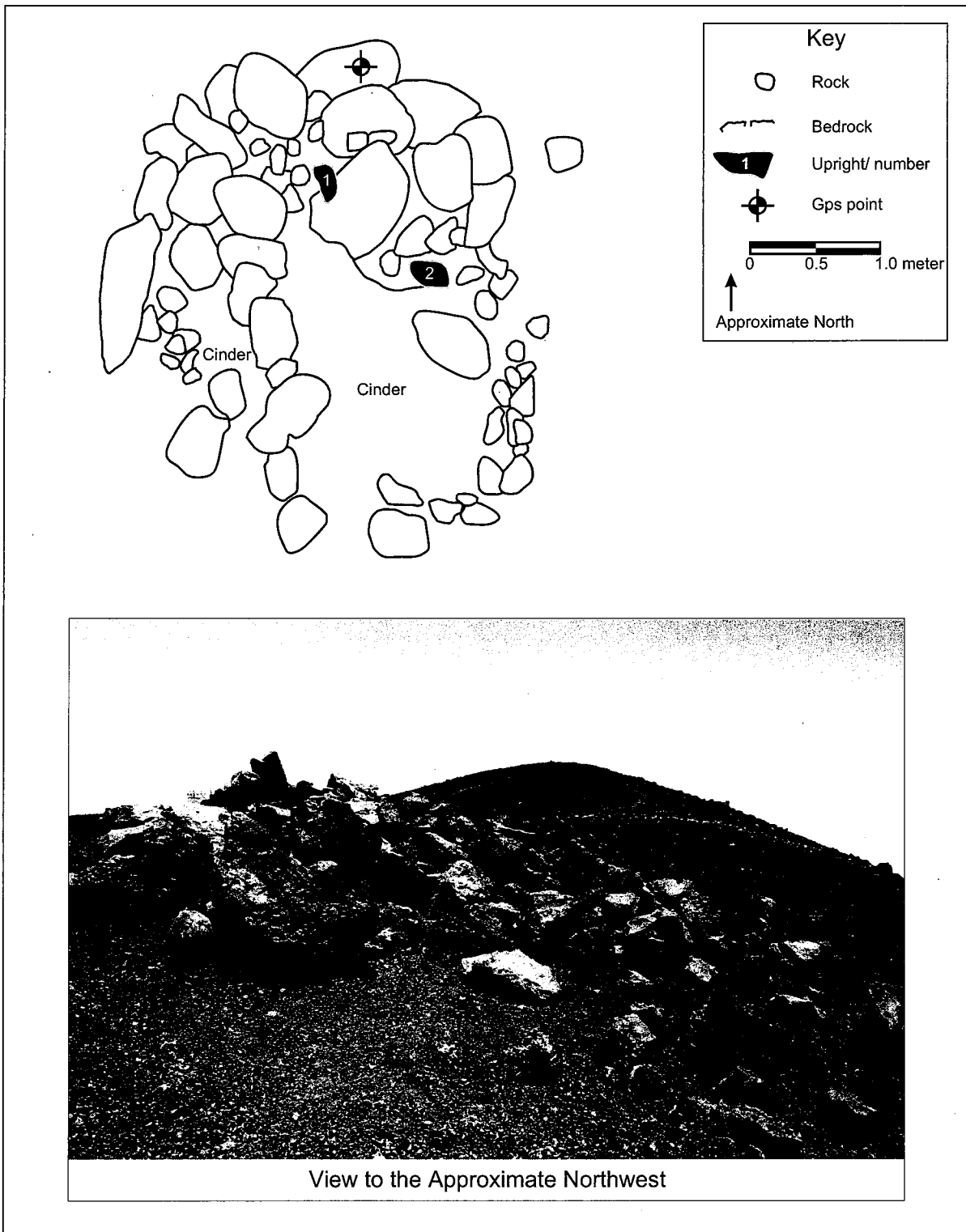


Figure C4. Site 21209, Feature 1, Plan View and Photograph.

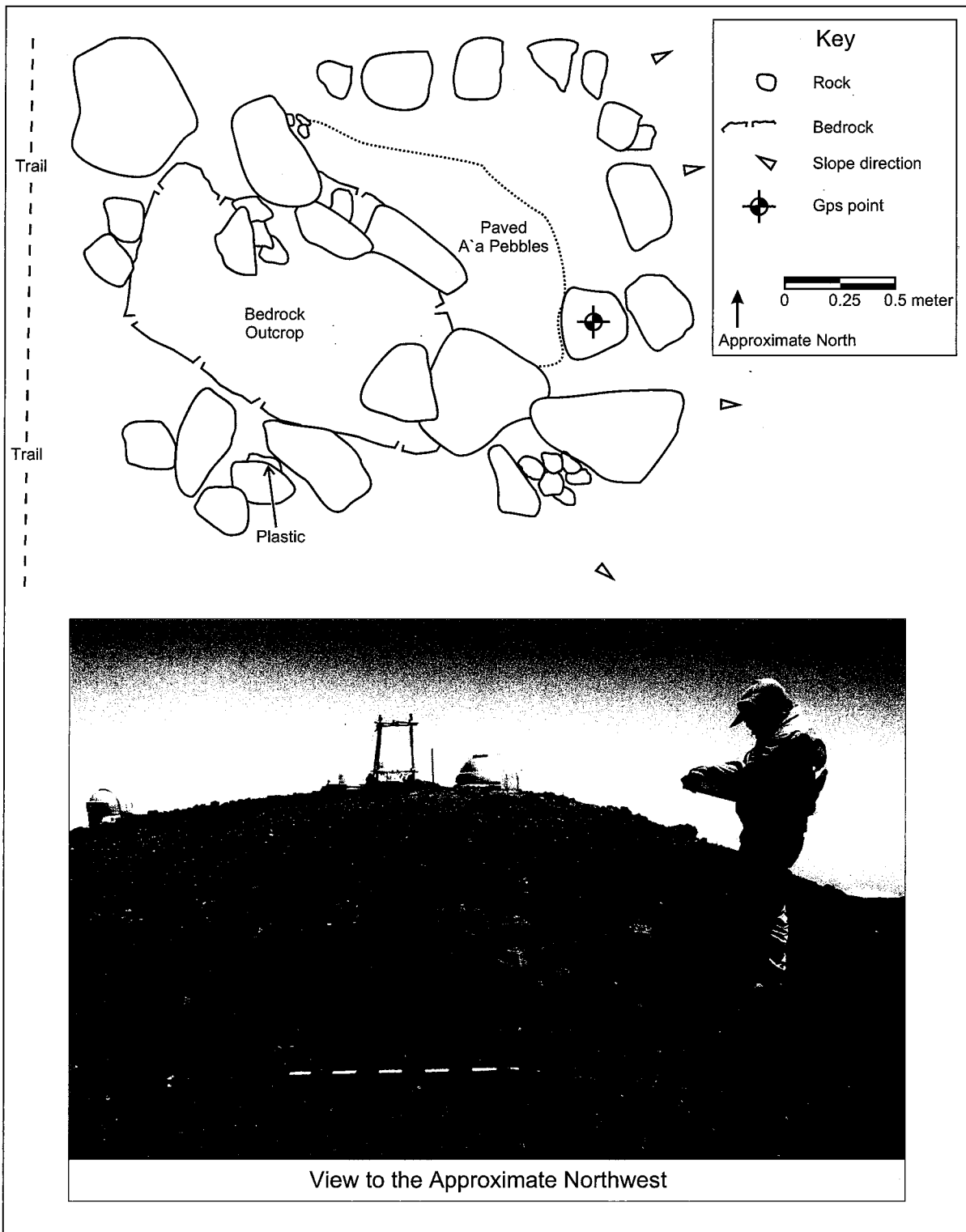


Figure C5. Site 21209, Feature 2, Plan View and Photograph.

**STATE SITE 50-10-23-21413**

<b>Additional Site Numbers:</b>	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 1997	<b>Topographic Location:</b> Rim of an unnamed cinder cone
<b>Subsequent Site Visits:</b> 2006	
<b>2006 GPS File No.:</b> RN015	
<b>Site Dimensions:</b> 2.0 m by 2.0 m	<b>Approximate Elevation:</b> 12,626 ft a.m.s.l.
<b>Current Status:</b> Unchanged	

**DESCRIPTION:**

Site 21413 consists of a single platform, Feature 1. This site, earlier described as a cairn when it was first found in 1997 (McCoy 1999), is a free-standing, rectangular platform located on the south rim of a large unnamed cinder cone on the western slope of the mountain (Figure C6). The platform, which is constructed of large cobbles, is 1.7 m (north/south) by 1.7 m (east/west) and 0.8 m high. The upslope side is faced. The downslope side, which has collapsed, may have also been faced. No cultural material was found on or near the site, which is inferred to be a possible burial based on its location and morphological similarities to other mounds and platforms in the summit region with associated human skeletal remains.

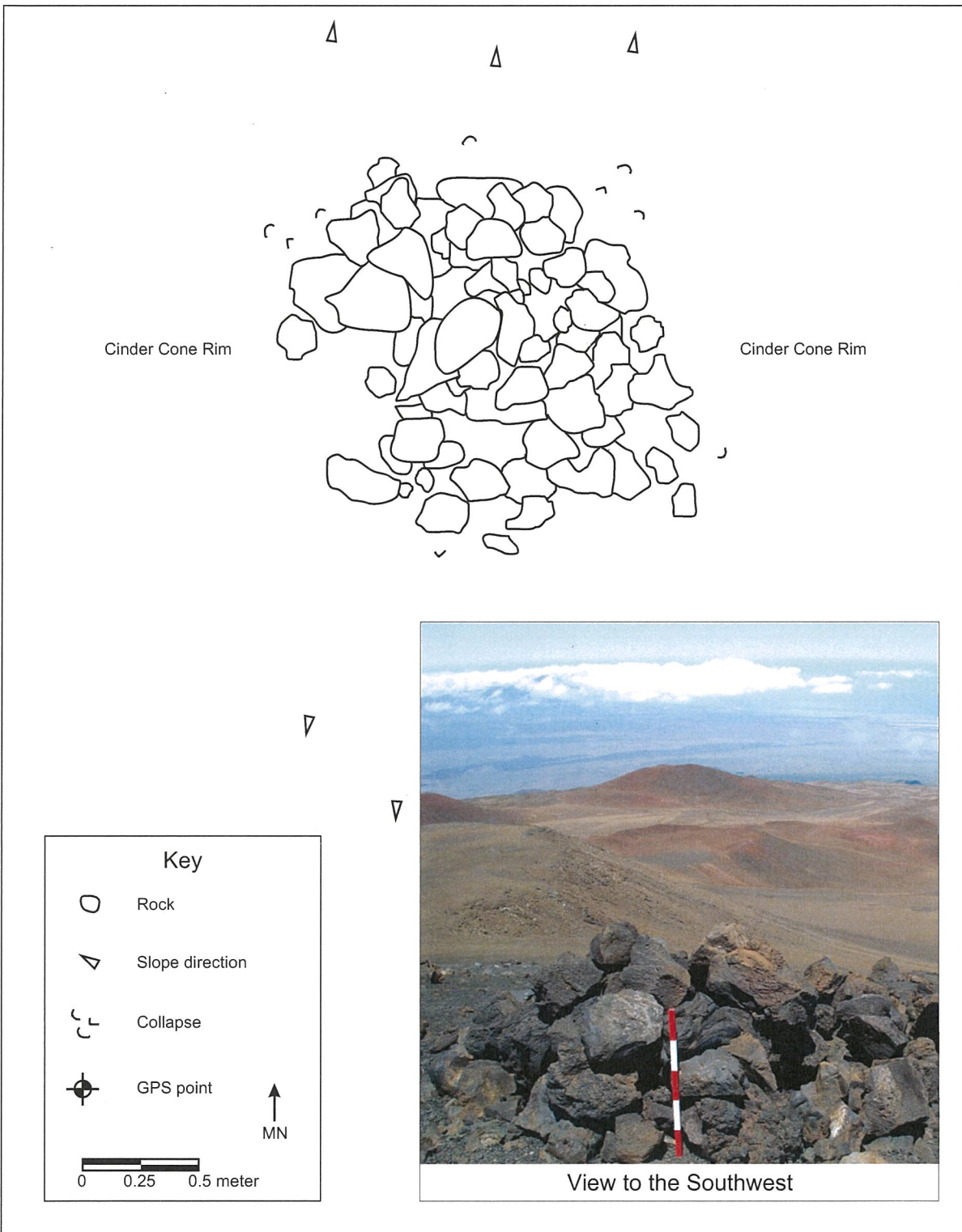


Figure C6. Site 21413, Plan View and Photograph.

**STATE SITE 50-10-23-21414**

<b>Additional Site Numbers:</b>	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 1997	<b>Topographic Location:</b> Rim of an unnamed cinder cone
<b>Subsequent Site Visits:</b> 2006	
<b>2006 GPS File No.:</b> PM017	
<b>Site Dimensions:</b> 2.0 m by 2.0 m	<b>Approximate Elevation:</b> 12,804 ft a.m.s.l.
<b>Current Status:</b> Unchanged	

**DESCRIPTION:**

Site 21414 consists of a single mound designated Feature 1 (Figure C7). This site, earlier described as a cairn when it was first found in 1997 (McCoy 1999), is more accurately described as an oval-shaped mound. It is located on the east rim of a large unnamed cinder cone. Several large boulders were used as a foundation in the construction of the mound, which consists of piled and stacked cobbles and boulders. The mound is 1.7 m (north/south) by 2.1 m (east/west) by and 0.8 m high. Scattered cobbles and boulders on the west side suggest that it has partially collapsed and may originally have been somewhat wider and higher. No cultural materials were noted on or near the site, which is of similar size and construction as Sites 21413 and 21416, both interpreted as possible burials.

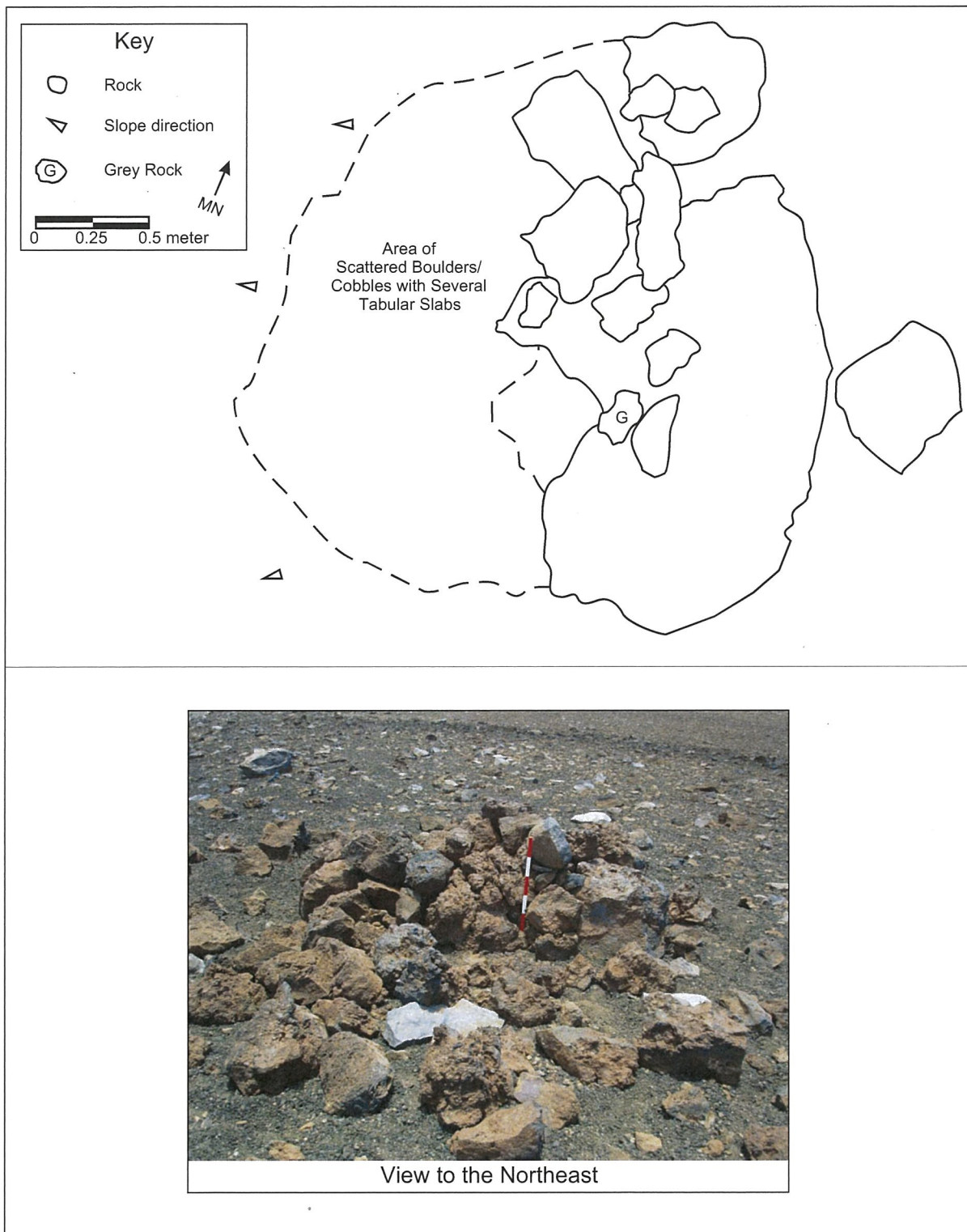


Figure C7. Site 21414, Plan View and Photograph.

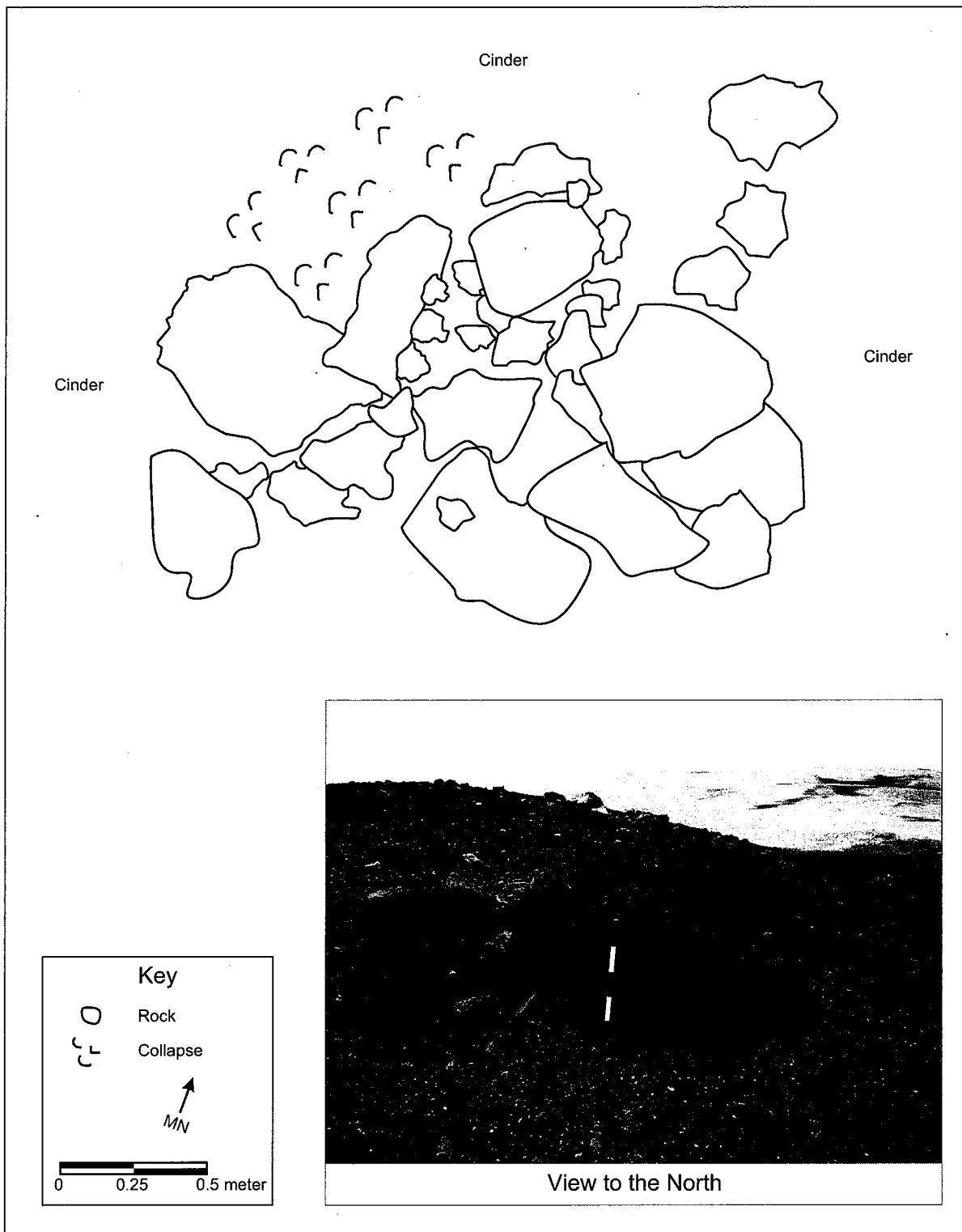


**STATE SITE 50-10-23-21416**

<b>Additional Site Numbers:</b> Temporary Site E-26	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 1997	<b>Topographic Location:</b> Rim of an unnamed cinder cone
<b>Subsequent Site Visits:</b> 2006	
<b>2006 GPS File No.:</b> PM019	
<b>Site Dimensions:</b> 2.0 m by 2.0 m	<b>Approximate Elevation:</b> 12,688 ft a.m.s.l.
<b>Current Status:</b> Unchanged	

**DESCRIPTION:**

Site 21416 consists of a single mound designated Feature 1 (Figure C8). This site, described as a cairn when it was first found in 1997, is more accurately described as a roughly oval-shaped mound located on the eastern rim of an unnamed cinder cone. The mound is 1.8 m by 1.8 m with a maximum height of 0.85 m. There are three to four courses of stones, the largest of which are on the top. Collapse is evident in several places. The mound is interpreted as a possible burial based on its location, form, and size.



**Figure C8. Site 21416, Plan View and Photograph.**

**STATE SITE 50-10-23-21452**

<b>Additional Site Numbers:</b> Temporary Site 2005-13	
<b>Site Function:</b> Possible burials	<b>Number of Features:</b> 2
<b>Date First Recorded:</b> 2005	<b>Topographic Location:</b> Unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2005 GPS File No.:</b> Trimble Point R090823a	
<b>Site Dimensions:</b> 5.0 m by 4.0 m	<b>Approximate Elevation:</b> 12,541 ft a.m.s.l.
<b>Current Status:</b> New site	

**DESCRIPTION:**

Site 21452 consists of two features, a platform (Feature 1) and a mound (Feature 2), located on a ridge crest at the southern end of an unnamed cinder cone south of Pu'u Līlinoe (Figure C9).

Feature 1 is constructed of stacked cobbles and small boulders with some tumbling present along the northeast and southeast corners and the west side. The surface of the platform is paved with small cobbles and two large slabs near the center. The platform measures 3.5 m by 2.25 m, with a maximum height of 0.95 m.

Feature 2, a mound, is located approximately 0.75 m north of the northeast corner of Feature 1. It is constructed of piled cobbles and measures 1.0 m in diameter.

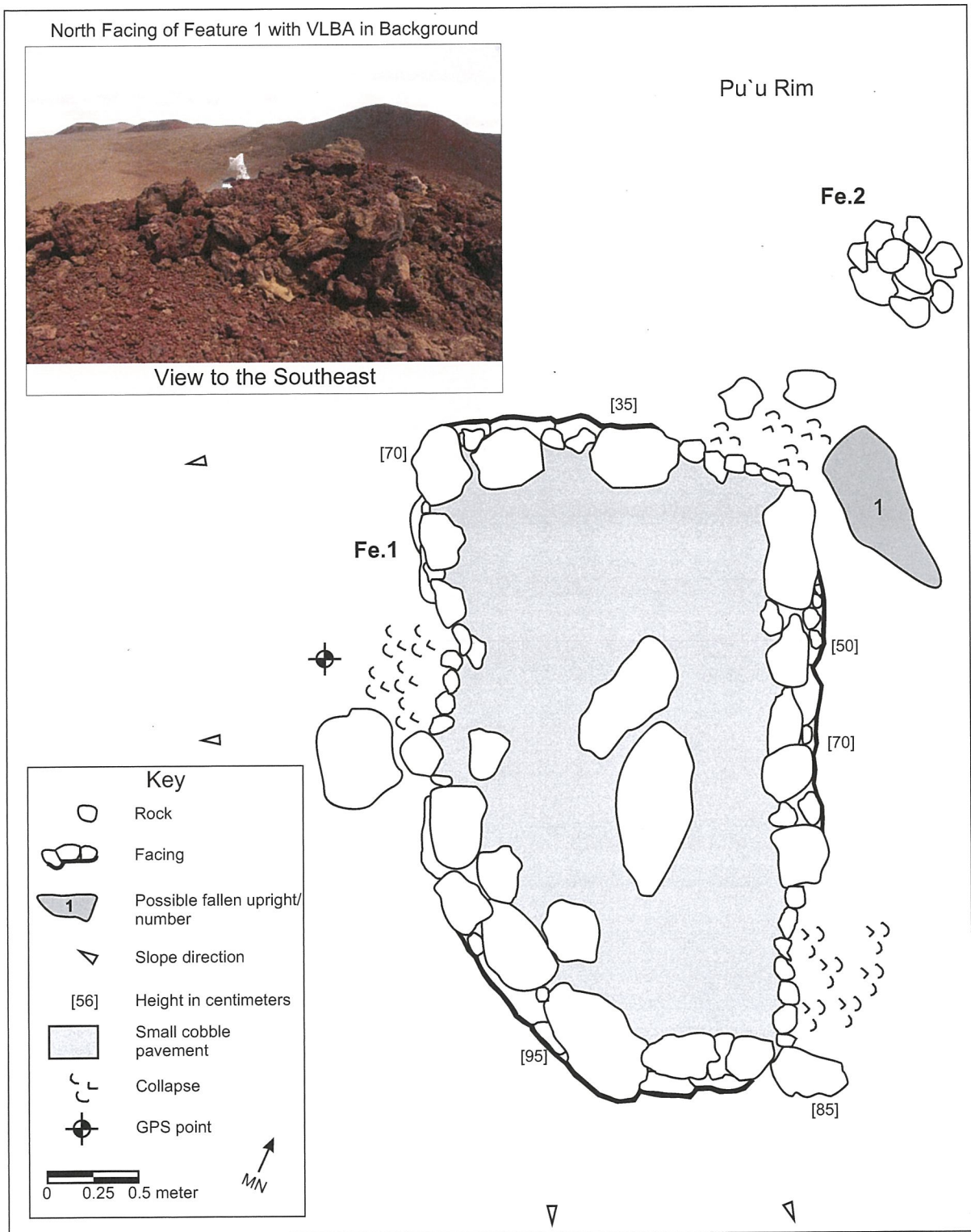


Figure C9. Site 21452, Features 1 and 2, Plan View and Photograph.

**STATE SITE 50-10-23-25765**

<b>Additional Site Numbers:</b> PM2006-16	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of an unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM107	
<b>Site Dimensions:</b> 3.5 m by 3.4 m	<b>Approximate Elevation:</b> 12,416 ft a.m.s.l.
<b>Current Status:</b> New site	

**DESCRIPTION:**

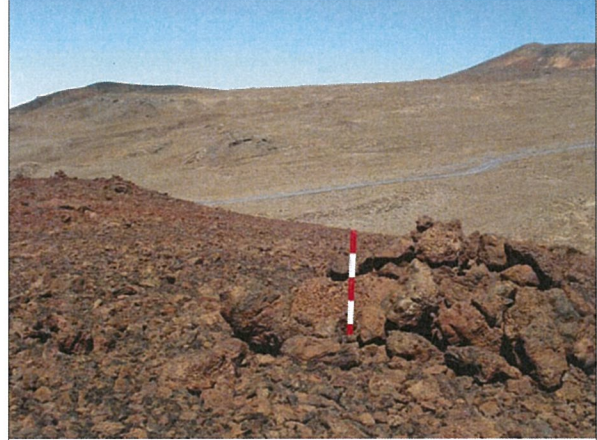
Site 25765 is a crude stone platform (Feature 1). It is 3.5 m by 3.4 m with a maximum height of 0.6 m. The site is located on the north-northeast rim of a large, unnamed cinder cone south of the road leading to the Very Long Base Array (VLBA) facility. The mound, faced on the west and south sides, is constructed of locally occurring cinder blocks (Figure C10). The site is inferred to be a possible burial based on the form, size, and location on the top of a large, prominent cinder cone.

Mound with Pu`u Lilinoe and Summit in Background



View to the Northwest

Mound with Pu`u Wai`au and Road in Background



View to the West

Pu`u Rim

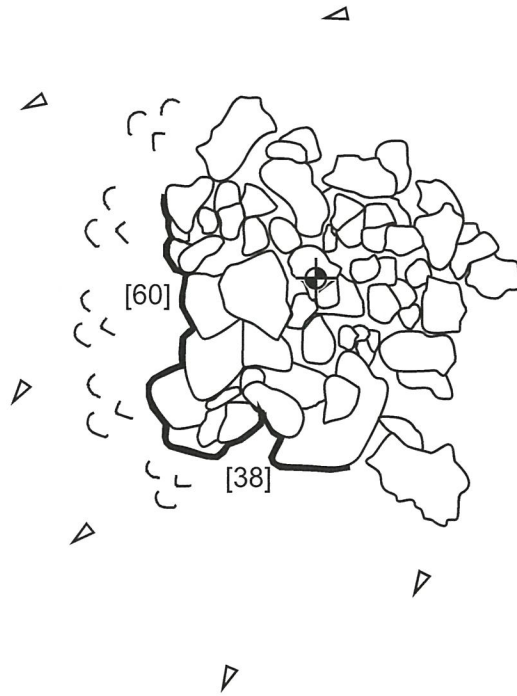
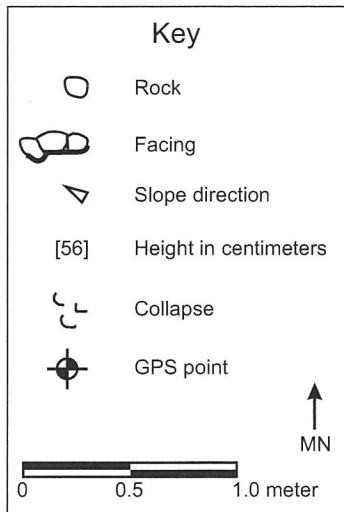


Figure C10. Site 25765, Plan View and Photographs.



**STATE SITE 50-10-23-25770**

<b>Additional Site Numbers:</b> Temporary Site RN2006-11	
<b>Site Function:</b> Possible burial, temporary habitation, and adze manufacturing	<b>Number of Features:</b> 4 (two of which are burials)
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Gelifluction lobe
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN084	
<b>Site Dimensions:</b> 20.0 m by 10.0 m	<b>Approximate Elevation:</b> 12,164 ft a.m.s.l.
<b>Current Status:</b> New site	

**DESCRIPTION:**

Site 25770 is a complex of four features, a mound (Feature 1), a crude stone enclosure (Feature 2), a large boulder with a crack filled with cobbles (Feature 3), and a diffuse scatter of basalt flakes (Feature 4).

Feature 1 is a roughly rectangular mound of cobbles and boulders on a gelifluction lobe (Figure C11). The mound, which is oriented parallel to the slope, is 8.0 m long and a maximum of 9.0 m wide and 65.0-70.0 cm in height at the center. The lower end, which is partially collapsed, abuts a boulder. The feature is otherwise in good condition, but what it represents is unclear. The size and morphology suggest that this is a possible burial feature.

Feature 2 is a small U-shaped enclosure formed by three naturally occurring boulders. It is located 14.0 m south of Feature 1. There are five placed cobbles on top and in the space between two of the boulders. The enclosure has a maximum depth of 2.1 m and breadth of 1.8 m at the opening. The maximum height, at the rear, is 1.1 m. The enclosure, which is of unknown age, could have been used as a temporary shelter from the prevailing winds.

Feature 3 is 4.0 m (east/west) by 2.25 m (north/south) and 1.15 m high boulder with a 0.5 m wide crack in the center that is filled with cobbles just below the top. It is located 12.0 m northeast of Feature 1. No cultural materials or skeletal remains were observed in the fill, not all of which can be seen, however. It is possible that the fill may conceal human remains.

Feature 4 is a diffuse scatter of basalt flakes that was found upslope of Feature 1. The areal extent of the scatter is unknown. Also unknown is the meaning of a few scattered flakes, which might indicate either the working of adze blanks or preforms at this locale, or the purposeful discard of adze manufacturing waste flakes brought from the quarry.

If Features 1 and 3 are indeed burials, the presence of a diffuse lithic scatter in close proximity to the features may be coincidental. But if human skeletal remains do exist at this site, the presence of adze manufacturing waste flakes might indicate a direct relationship, assuming the remains are those of an adze maker.

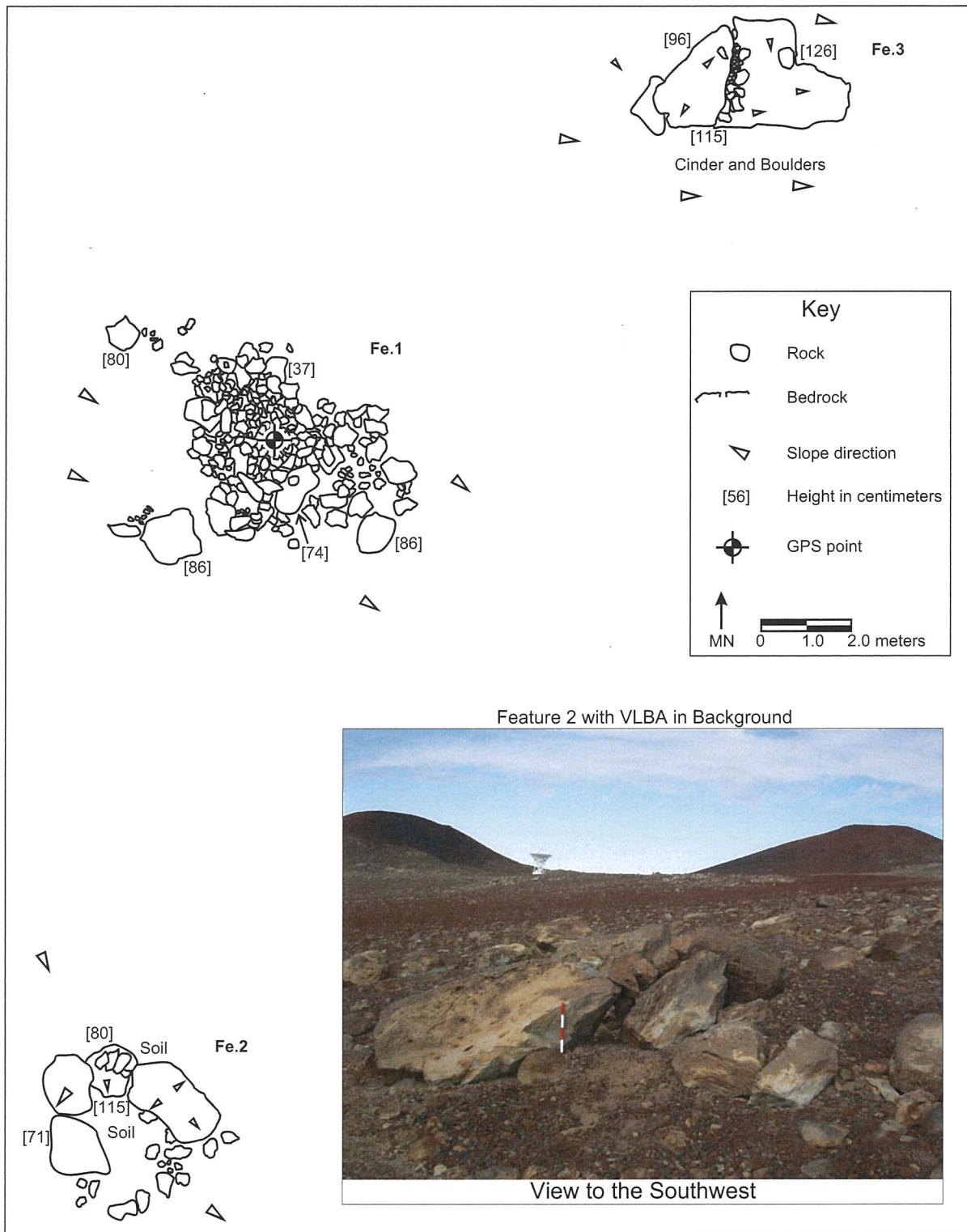


Figure C11. Site 25770, Features 1 Through 3, Plan View and Photograph.

**STATE SITE 50-10-23-25774**

<b>Additional Site Numbers:</b> PM2006-09	
<b>Site Function:</b> Possible burials and adze manufacturing	<b>Number of Features:</b> 5 (4 of which are possible burials)
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Glacial outwash plain and gelifluction terraces/lobes
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM062-065	
<b>Site Dimensions:</b> 35.0 m by 10.0 m	<b>Approximate Elevation:</b> 11,971 ft a.m.s.l.
<b>Current Status:</b> New site	

**DESCRIPTION:**

Site 25774 consists of a complex of five features, including four mounds (Features 1, 2, 3, and 4) and a lithic scatter (Feature 5). The site is positioned on a gently sloping glacial outwash plain located roughly 30.0 m southeast and below the ridge on which Site 25776 is located. The mounds are aligned parallel to the slope contour in a linear configuration that spans a distance of approximately 24.0 m between the two most distant features (Features 1 and 4). The mounds are constructed of cobble and small boulder size stones from the glacial till deposits in the outwash, which are widely scattered over the eastern side of the summit plateau. The central portions of the mounds appear to be somewhat recessed and roughly level with the adjacent ground surface, in contrast to some portions of the edges, which are built up. The mounds on this site, which are low and in some respects more like boulder pavements, are quite unlike the mounds found elsewhere in the 2005 and 2006 survey areas. They bear some resemblance, however, to features found at Lake Waiau, which have been interpreted as possible burials (Figure C12).

Feature 1 is a roughly 4.0 m by 4.0 m and 1.0 to 1.5 m high mound constructed between and to the sides of two boulders, 0.9 and 1.1 m high. Some of the stones are piled against the sides of the boulders. The sides of the mound, especially on the south, have collapsed. Adjacent to the mound on the east is a third relatively large boulder (1.0 m in diameter by 0.75 m high) with a 50.0 cm thick slab on top. The slab, which does not appear to be a fallen shrine upright, may have been placed on the boulder sometime in the recent past. One basalt flake was found on the eastern edge of the main mound.

Feature 2 is a mound 4.5 m by 3.0 m and 0.15 m high. It is aligned with Feature 3, which is approximately 6.0 m northeast. Most of the mound consists of a single course (level) of stones; thus, it appears more like a pavement. The southern and eastern edges are somewhat disaggregated.

Feature 3 is approximately 5.5 m northeast of Feature 2 and 3.8 m northwest of Feature 4. It is similar to Feature 2 in size (4.0 m by 2.5 m), shape (roughly rectangular), and construction (a single course) of stones except for a few piled stones along the edge). Like Feature 2, the southern and eastern edges are somewhat disaggregated. One basalt flake was found in the northwest corner on the surface.

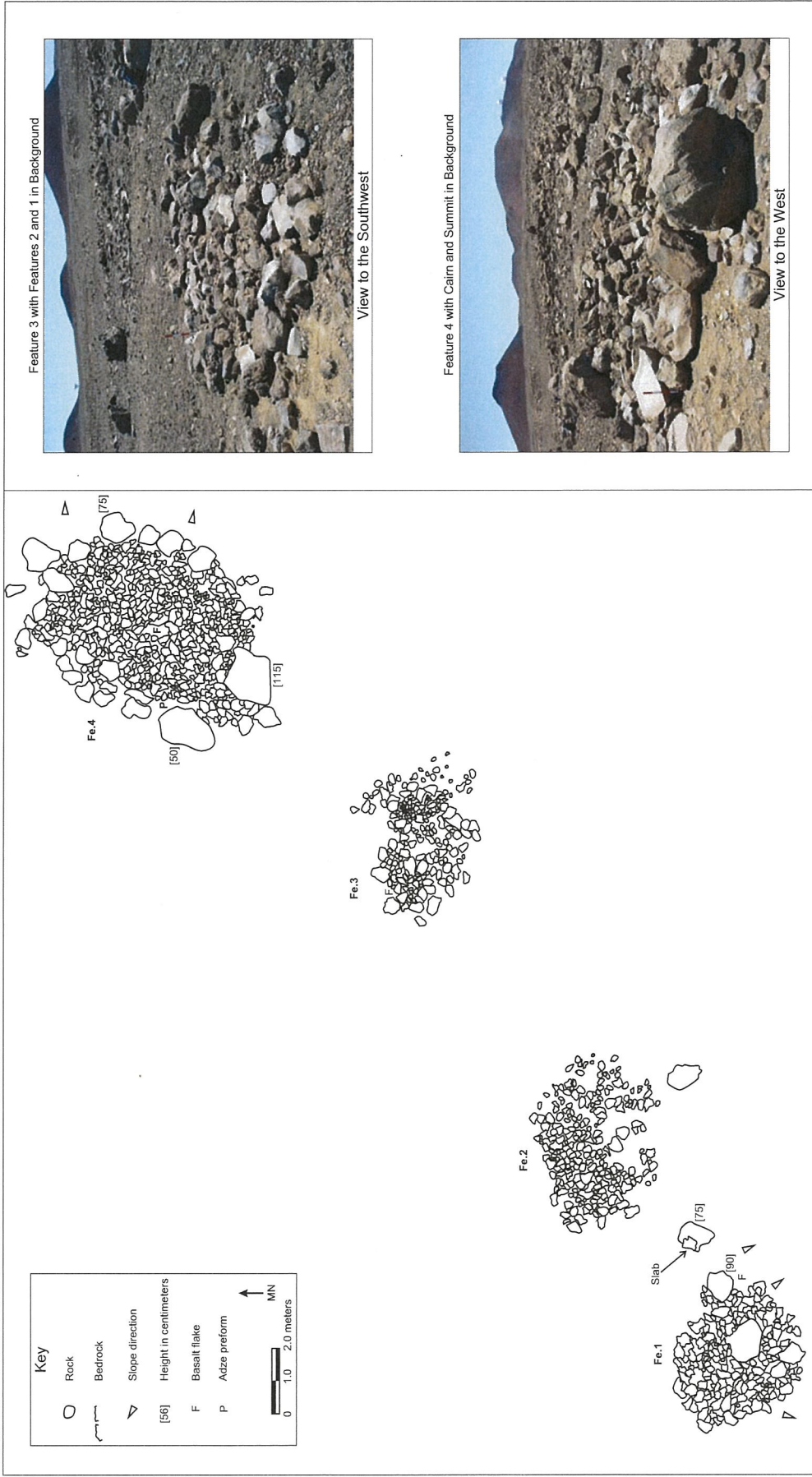


Figure C12. Site 25774, Features 1 Through 4, Plan View and Photographs.

Feature 4 is the largest of the four mound features, measuring 9.0 m by 6.5 m with a maximum height of 1.15 m. It is located approximately 4.0 m north of Feature 3. It is similar to Feature 1 in that the edges of the mound are defined by boulders, some of which form the rampart of a gelifluction lobe. In places there are two to three courses of stones. A basalt flake and the butt end of adze preform fragment were found on the mound. Although there is nothing to suggest a direct relationship between the lithic artifacts and the mound, the presence of two artifacts on this mound and one flake on the Feature 1 mound may be significant; at least, there is no conclusive evidence that the artifacts were deposited in the process of gelifluction lobe or terrace development.

Feature 5 is a sparse basalt flake scatter spread over a large area, above and below the site, with a few flakes also located on Features 1, 3, and 4. Some of this material could possibly have eroded downslope from Site 25776. A find spot (PM2006-42) was found between Features 1 and 2.

**STATE SITE 50-10-23-25802**

<b>Additional Site Numbers:</b> Temporary Site RN2006-033	
<b>Site Function:</b> Burials	<b>Number of Features:</b> 2
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of an unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN011	
<b>Site Dimensions:</b> 10.0 m by 10.0 m	<b>Approximate Elevation:</b> 12,266 ft a.m.s.l.
<b>Current Status:</b> New site	

**DESCRIPTION:**

Site 25802 consists of a terrace (Feature 1) and a mound (Feature 2) located on the south rim of Pu'u Makanaka.

Feature 1 is a terrace with a facing constructed of piled cobbles and boulders on the southeast side (downslope side). It is 3.0 m by 2.1 m with a maximum height of 0.67 m. While no human skeletal remains were observed, it is highly probable that this feature is a burial based on its proximity to Feature 2.

Feature 2 is a mound of stacked piled cobbles located 1.15 m from Feature 1. The stacking is visible along the south side. Wood fragments were observed along the northeast side. Human bone (long bones) was observed inside the mound.

**STATE SITE 50-10-23-25803**

<b>Additional Site Numbers:</b> Temporary Site RN2006-032	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN010	
<b>Site Dimensions:</b> 2.5 m by 2.5 m	<b>Approximate Elevation:</b> 12,253 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25803 consists of a single mound (Feature 1) located on the south rim of Pu'u Makanaka. The mound is rectangular and constructed of piled boulders and cobbles. It is 3.4 m by 2.4 m with a maximum height of 0.61 m. The mound appears to be disturbed, with cobbles removed from the center. The mound is inferred to be a possible burial feature based on its morphological similarities to other sites with human skeletal remains on Pu'u Makanaka.



**STATE SITE 50-10-23-25804**

<b>Additional Site Numbers:</b> Temporary Site RN2006-031	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN009	
<b>Site Dimensions:</b> 2.5 m by 2.5 m	<b>Approximate Elevation:</b> 12,251 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25804 consists of a single mound (Feature 1) located on the south rim of Pu'u Makanaka. The mound is constructed of piled cobbles and at least two boulders on the east side. The mound is 2.2 m by 1.92 m with a maximum height of 0.91 m. The north side of the mound is only 0.15 m high and the southeast side (down slope side) 0.91 m high. The lower height along the north side may be the result of collapse. The mound is inferred to be a possible burial feature based on its morphological similarities to other sites with human skeletal remains on Pu'u Makanaka.

**STATE SITE 50-10-23-25805**

<b>Additional Site Numbers:</b> Temporary Site RN2006-029	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN007	
<b>Site Dimensions:</b> 4.0 m by 3.0 m	<b>Approximate Elevation:</b> 12,320 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25805 consists of a single mound (Feature 1) located on the north rim of Pu'u Makanaka. The mound is constructed of dispersed cobbles with cinder located in the center of the mound (Figure C13). It measures approximately 3.5 m by 2.9 m with a maximum height of 0.52 m. Some stacking was observed along the southwest side. Wood fragments are visible along the west side. The mound is inferred to be a possible burial feature based on its morphological similarities to other sites with human skeletal remains on Pu'u Makanaka.

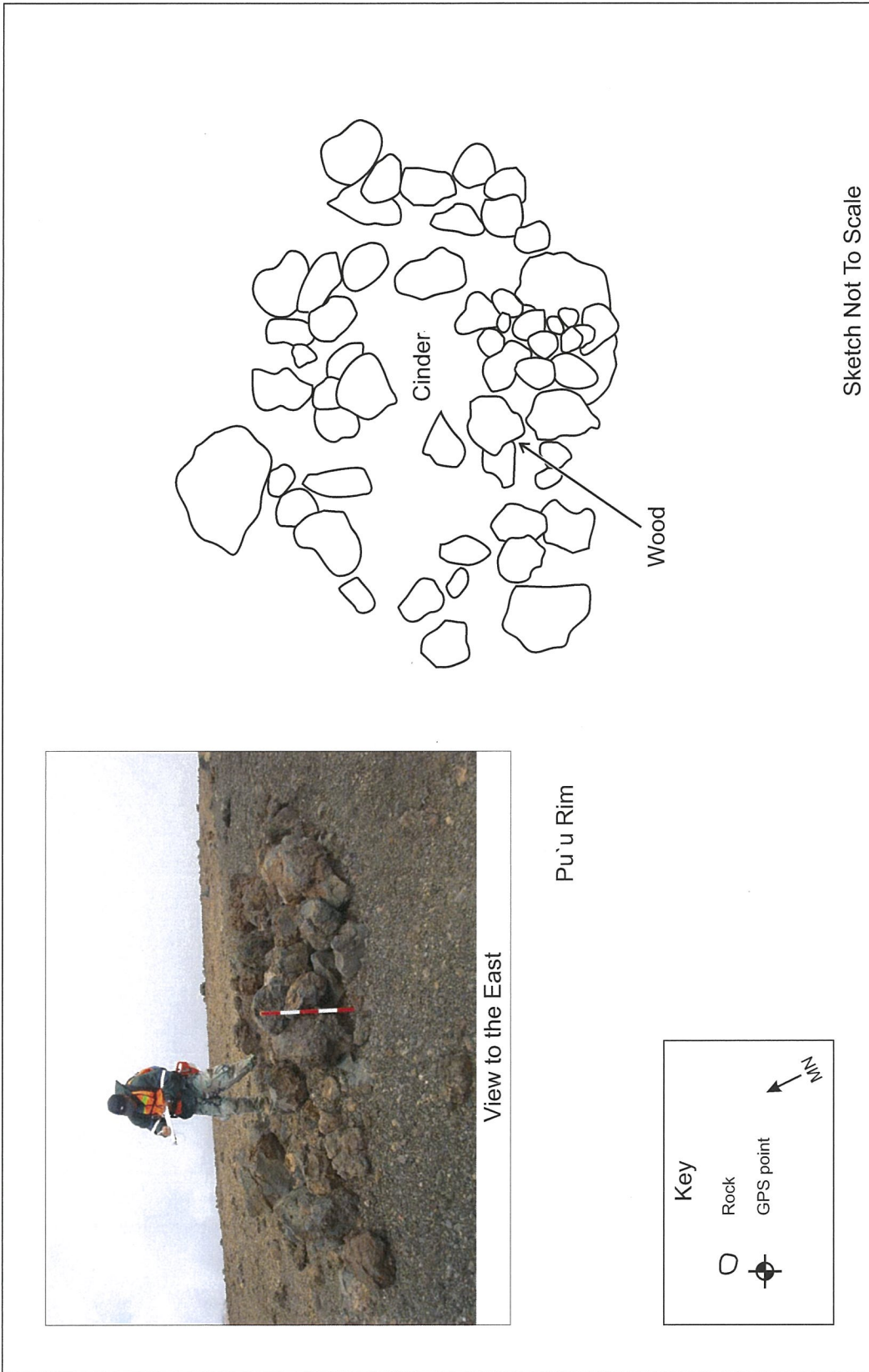


Figure C-13. Site 25805, Plan View and Photograph.

**STATE SITE 50-10-23-25806**

<b>Additional Site Numbers:</b> Temporary Site RN2006-028	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 3
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN006	
<b>Site Dimensions:</b> 10.0 m by 10.0 m	<b>Approximate Elevation:</b> 12,324 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25806 consists of three mounds (Features 1, 2, and 3) located on the north rim of Pu'u Makanaka (Figure C14). The mounds are inferred to be possible burial features based on their location and morphological similarities to other sites with human skeletal remains on Pu'u Makanaka.

Feature 1 is a mound constructed of piled cobbles. It measures approximately 2.15 m by 2.0 m with a maximum height of 0.38 m. No cultural material was observed.

Feature 2, a mound, is located approximately 5.0 m east of Feature 1. It is constructed of piled cobbles. It measures 1.2 m by 0.92 m with a maximum height of 0.48 m. No cultural material was observed.

Feature 3, also a mound, is located north and downslope of Feature 2. It is constructed of piled cobbles and measures 2.8 m by 2.15 m with a maximum height of 0.5 m. No cultural material was observed.

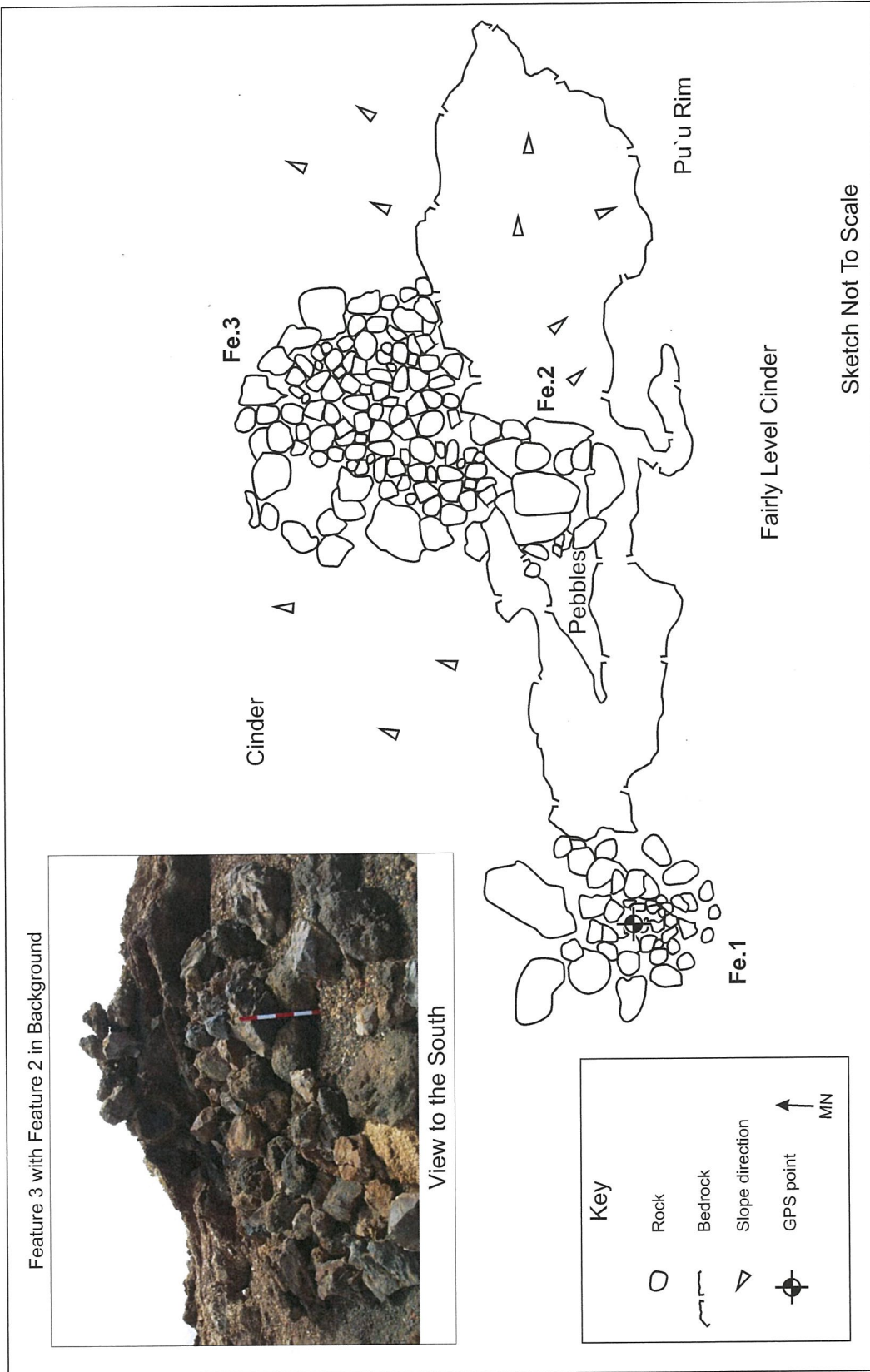


Figure C14. Site 25806, Features 1 through 3, Plan View and Photograph.

**STATE SITE 50-10-23-25807**

<b>Additional Site Numbers:</b> Temporary Site RN2006-027	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 3
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN005	
<b>Site Dimensions:</b> 20.0 m by 10.0 m	<b>Approximate Elevation:</b> 12,349 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25807 consists of three mounds (Features 1, 2, and 3) located on the north rim of Pu'u Makanaka. The mounds are inferred to be possible burial features based on their location and morphological similarities to other sites with human skeletal remains on Pu'u Makanaka.

Feature 1 is a mound constructed of piled cobbles and small boulders with the north and west sides abutting raised outcrops (Figure C15). It measures approximately 4.5 m by 3.3 m with a maximum height of 2.3 m. Pieces of wood and human skeletal remains were observed on the mound.

Feature 2, a mound, is located approximately 5.0 m northwest of Feature 1. It is constructed of piled cobbles with the north end abutting a raised outcrop. It measures 1.7 m by 1.6 m with a maximum height of 1.2 m. No cultural material was observed at this feature. A "Find Spot" is located near Feature 2.

Feature 3, also a mound, is located approximately 5.0 m northwest of Feature 2. It is constructed of piled cobbles, with a shallow overhang abutting the northwest side of the mound. It measures 2.45 m by 2.4 m with a maximum height of 1.6 m. The overhang is unmodified and no cultural material was observed.



**Figure C15. Site 25807, Feature 1; View to the Northwest**

**STATE SITE 50-10-23-25808**

<b>Additional Site Numbers:</b> Temporary Site RN2006-026	
<b>Site Function:</b> Burial and possible burials	<b>Number of Features:</b> 7
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN004	
<b>Site Dimensions:</b> 20.0 m by 15.0 m	<b>Approximate Elevation:</b> 12,372 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25808 is a complex of seven features, including eroding human remains (Feature 1), a platform (Feature 2), a mound (Feature 3), a terrace (Feature 4), and three cinder area features that may contain buried human skeletal remains (Features 5, 6, and 7). This site is located on the north rim of Pu'u Makanaka.

Feature 1 consists of visible human skeletal remains eroding out of the cinder. The skeletal remains are located on the north side of an uplifted pahoehoe outcrop (Figure C16). The only visible bone is the top of the cranium. This feature was previously identified in a photograph taken in 1926 (in the Gregory Collection-BPBM Photo No. CP 14970) (published in Maly 1999:Appendix A).

Feature 2 is a platform constructed between two outcrops at the west end of a larger outcrop and is 3.0 m west of Feature 1. The platform is approximately 2.0 m long by 1.0 m wide and has a maximum height of 0.65 m. The north and south sides of the platform abut raised outcrops, and the east and west side are constructed of piled and stacked cobbles and small boulders. The stacking is evident along the west side. The northwest corner has collapsed. The surface of the platform is cinder.

Feature 3 is a mound located on the east side of the same outcrop as Feature 2 and is 3.0 m north of Feature 2. The mound is constructed of piled cobbles and is approximately 1.2 m by 1.0 m and 0.3 m high. Along the north side is a piece of weathered wood.

Feature 4 is a terrace located approximately 2.5 m northwest of Feature 3. The terrace facing, slightly curving to the east, is approximately 3.0 m long by 0.5 m wide. The facing is constructed of stacked cobbles and small boulders 0.5 m high. The terrace is constructed of cobbles and measures 2.5 m long by 1.0 m wide. The east half of the feature has been constructed under a shallow overhang. A piece of weathered wood is located on the south side.

Feature 5 is a level cinder area located on the east side of the same outcrop as Features 1, 2, 3, and 4. It consists of cinder surrounded by outcropping and measures approximately 2.0 m by 2.0 m. There are scattered cobbles along the east side. The cobbles appear to be placed, possibly for retaining the cinder.

Feature 6 is another cinder area, similar to Feature 5, which slopes gently to the east. It is located adjacent to and south of Feature 5. The area measures 2.0 m by 2.0 m.

Feature 7 is a cinder-filled area approximately 5.0 m south of Feature 2. The feature is constructed between two raised outcrops.



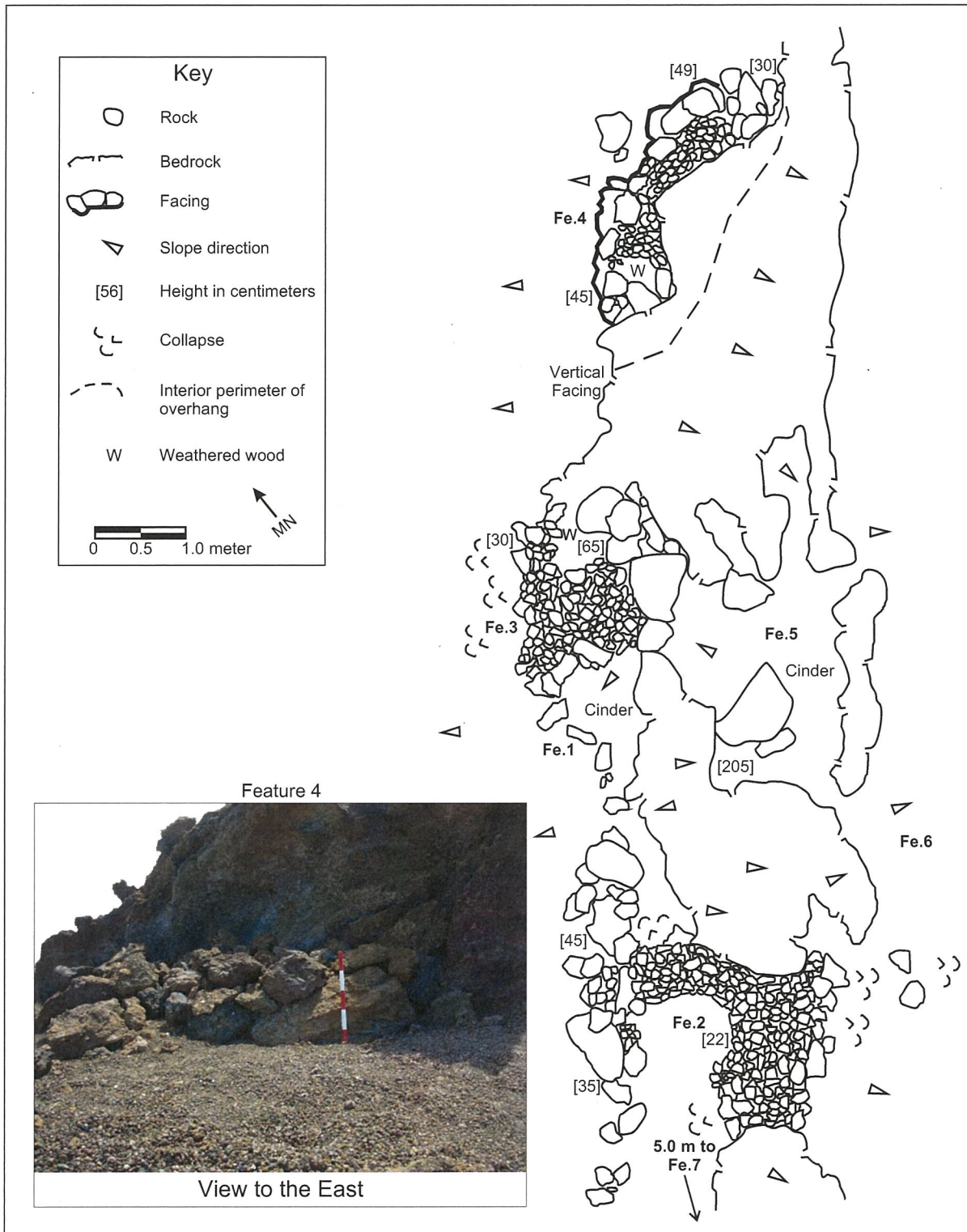


Figure C16. Site 25808, Features 1 through 6, Plan View and Photograph.

**STATE SITE 50-10-23-25809**

<b>Additional Site Numbers:</b> Temporary Site RN2006-025	
<b>Site Function:</b> Burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Makanaka
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN003	
<b>Site Dimensions:</b> 15.0 m by 5.0 m	<b>Approximate Elevation:</b> 12,359 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25809 consists of exposed human skeletal remains (Feature 1) located on the north slope of Pu'u Makanaka. The visible skeletal remains, eroding out of cinder deposits, include left and right humerus, right radius, unidentified long bone fragments, tibia fragments, another left humerus, and various rib fragments.

**STATE SITE 50-10-23-25812**

<b>Additional Site Numbers:</b> Temporary Site PM2006-024	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Slope of Pu'u Ala
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM024	
<b>Site Dimensions:</b> 3.5 m by 2.0 m	<b>Approximate Elevation:</b> 12,402 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25812 consists of one overhang with an enclosing wall (Feature 1) located approximately half way up the south slope of Pu'u Ala. The feature is an overhang with a crude, semi-circular shaped wall at the entrance (Figure C17). The overhang opens to the south and is over 20.0 m wide at the entrance and 1.4 m deep. The wall, which is constructed of piled cobbles and small boulders, is 2.5 m long and 0.8 m wide. The interior floor is a mixture of soil and cobbles.

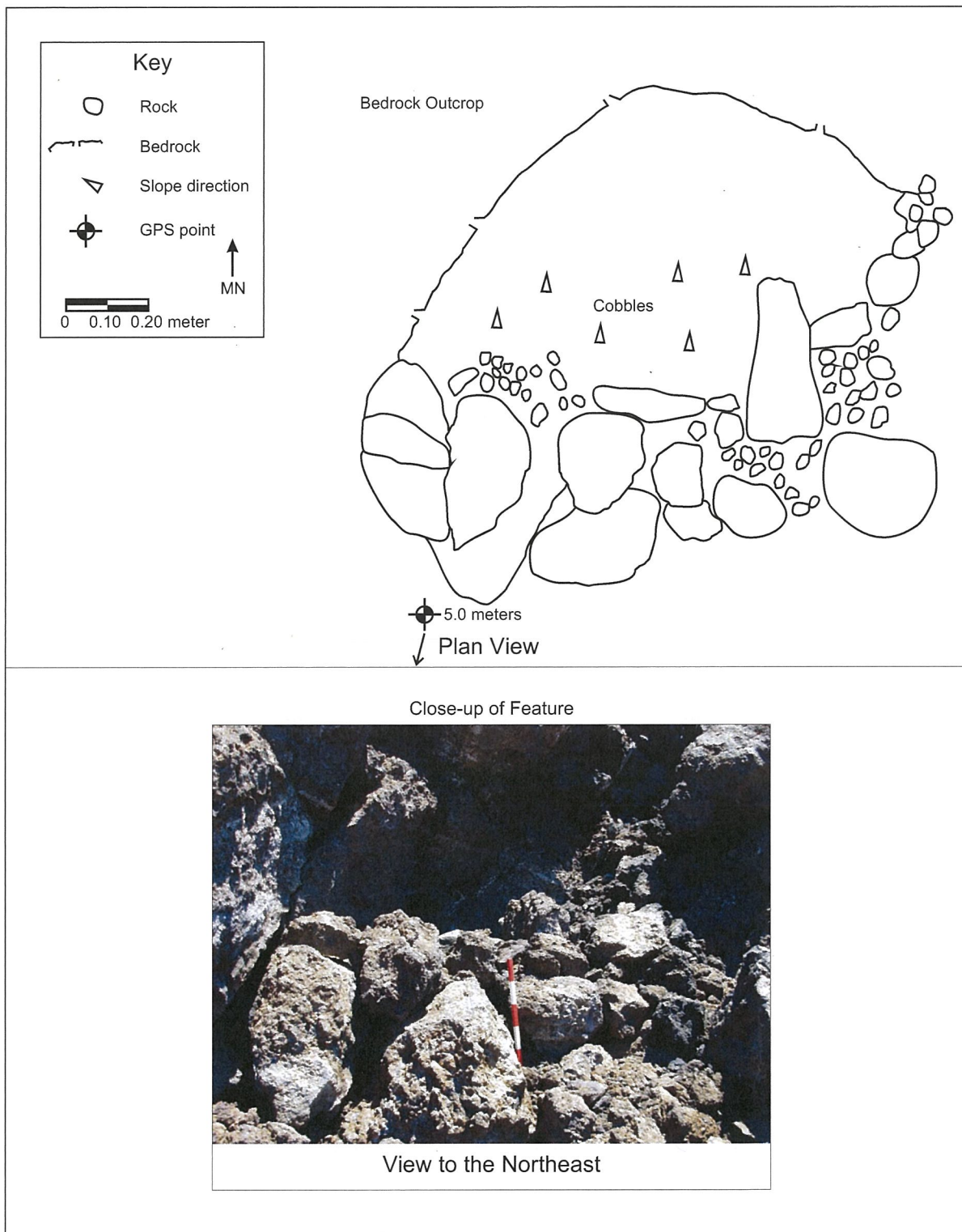


Figure C17. Site 25812, Plan View and Photograph.

**STATE SITE 50-10-23-25813**

<b>Additional Site Numbers:</b> Temporary Site RN2006-034	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Ala
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN022	
<b>Site Dimensions:</b> 3.0 m by 2.5 m	<b>Approximate Elevation:</b> 12,560 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25813 is a single feature, a mound, found on the rim of Pu'u Ala. The mound is 2.7 m by 2.2 m and 1.2 m high and is constructed of piled cobbles and a few stacked cobbles (Figure C18). The stacking is visible along the south side, where it is four courses high.

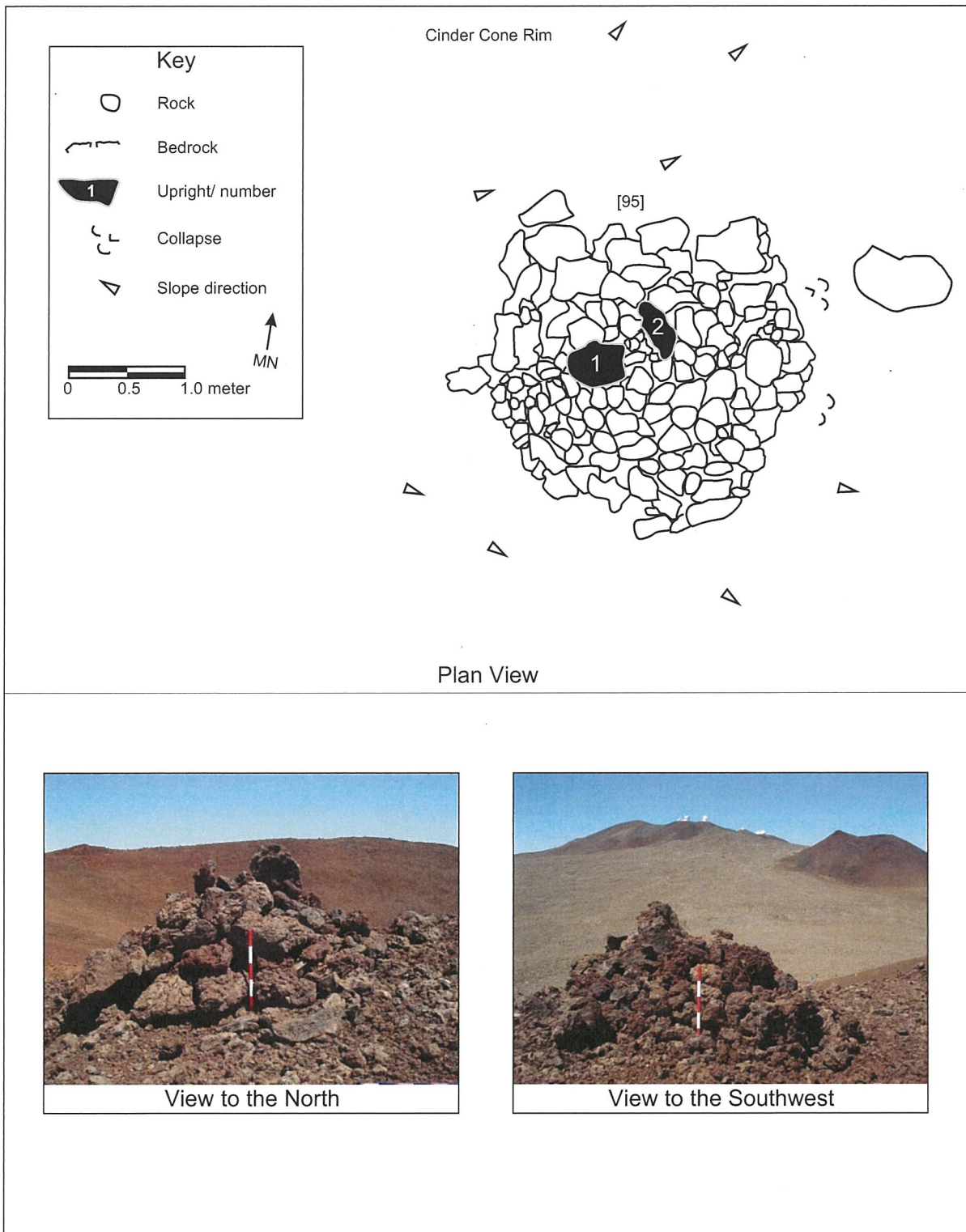


Figure C18. Site 25813, Plan View and Photographs.

**STATE SITE 50-10-23-25814**

<b>Additional Site Numbers:</b> Temporary Site RN2006-035	
<b>Site Function:</b> Possible burials	<b>Number of Features:</b> 3
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Ala
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN023	
<b>Site Dimensions:</b> 20.0 m by 20.0 m	<b>Approximate Elevation:</b> 12,544 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25814 consists of three mounds (Features 1, 2, and 3) located on the south rim of Pu'u Ala (Figure C19). The mounds are inferred to be possible burial features based on their location and morphological similarities to other mounds and platforms with human skeletal remains in the summit region.

Feature 1 is a large mound constructed of piled red cinder cobbles and small boulders with a large boulder along the south side. It is 3.3 m by 2.0 m with a maximum height of 1.25 m.

Feature 2 is a smaller mound located approximately 5.0 m away from Feature 1 and is constructed of piled cobbles. It is 2.3 m by 1.8 m with a maximum height of 0.68 m. It appears to be disturbed.

Feature 3 is a small mound located approximately 5.0 m north of Feature 1. It is constructed of piled cobbles and measures 2.0 m by 1.33 m with a maximum height of 0.57 m.



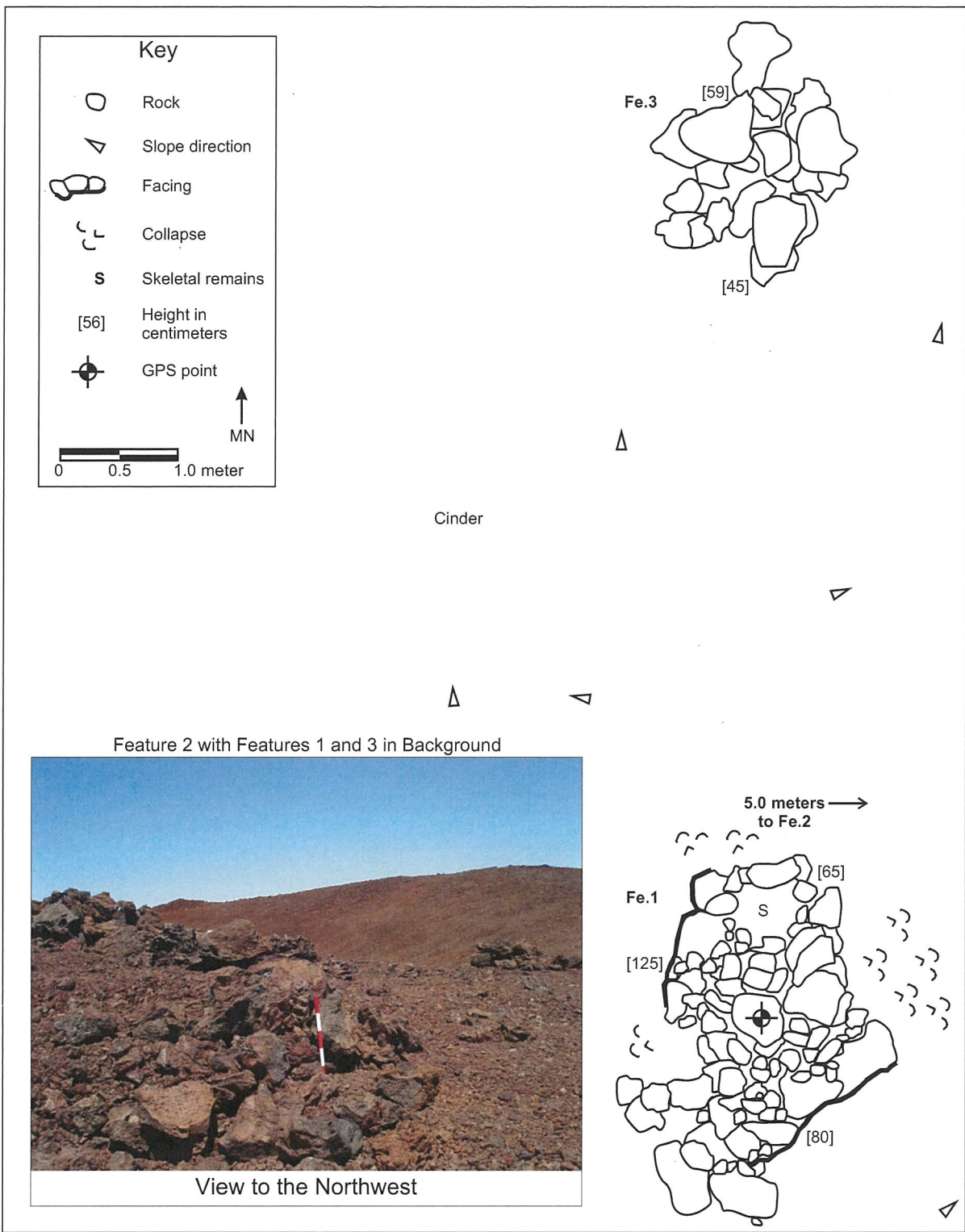


Figure C19. Site 25814, Features 1 and 3, Plan View and Photograph.

**STATE SITE 50-10-23-25815**

<b>Additional Site Numbers:</b> Temporary Site RN2006-036	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Ala
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN024	
<b>Site Dimensions:</b> 2.0 m by 2.0 m	<b>Approximate Elevation:</b> 12,603 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25815 consists of a single mound (Feature 1) located on the north rim of Pu'u Ala. The mound is constructed of piled cobbles and small boulders and measures 1.05 m by 0.93 m with a maximum height of 0.54 m. A wood pole or stick was observed on the ground next to the mound. Due to adverse weather conditions, a map was not made nor photographs taken. The mound is inferred to be a possible burial feature based on its location and morphological similarities to other mounds and platforms with human skeletal remains in the summit region.

**STATE SITE 50-10-23-25816**

<b>Additional Site Numbers:</b> Temporary Site RN2006-037	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of Pu'u Ala
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN024	
<b>Site Dimensions:</b> 2.0 m by 2.0 m	<b>Approximate Elevation:</b> 12,561 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

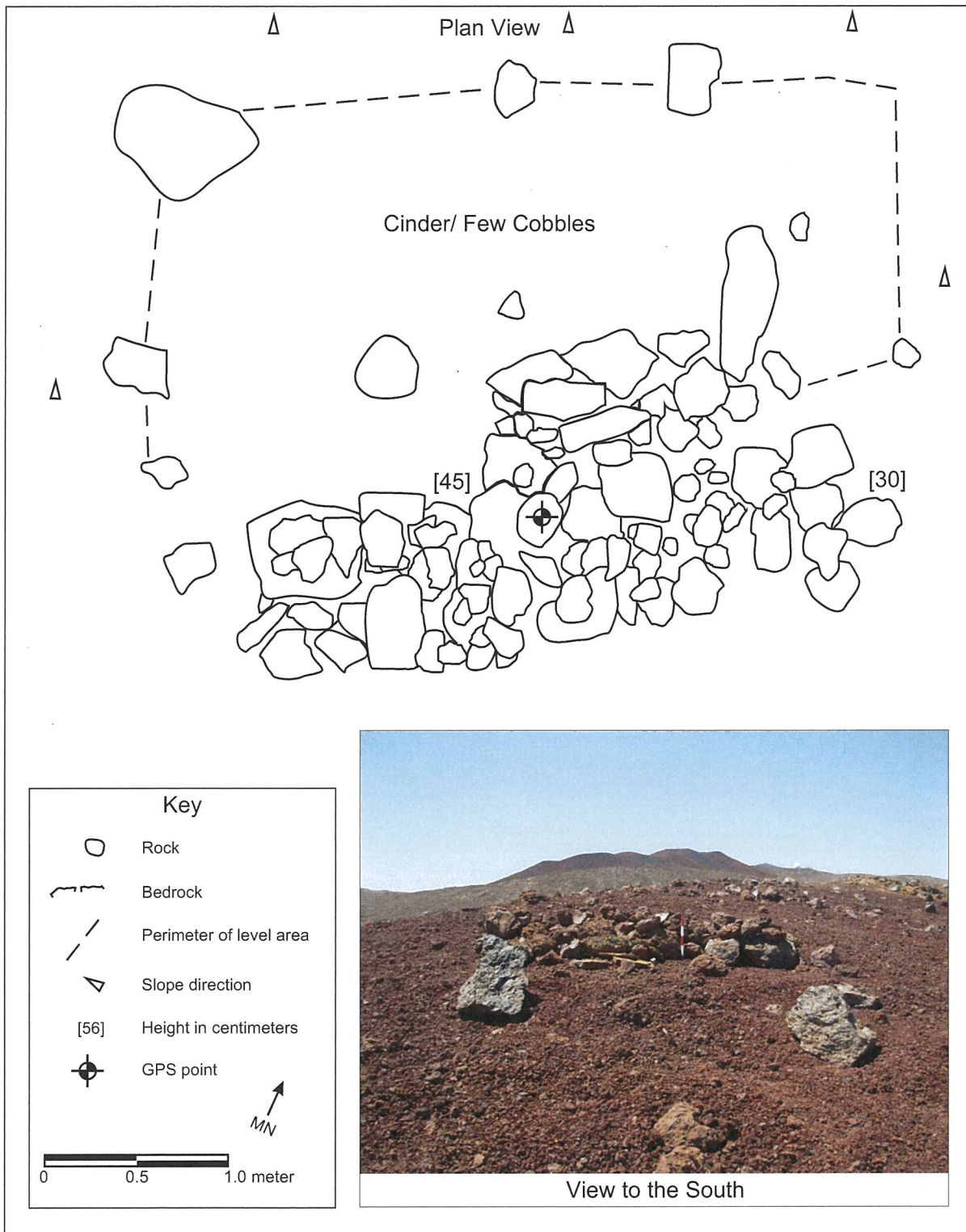
Site 25816 consists of a single mound (Feature 1) located on the north rim of Pu'u Ala. Due to adverse weather conditions, a map was not made nor photographs taken. The mound is constructed of piled cobbles and measures approximately 1.15 m by 1.12 m with a maximum height of 0.62 m.

**STATE SITE 50-10-23-25822**

<b>Additional Site Numbers:</b> Temporary Site PM2006-023	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM023	
<b>Site Dimensions:</b> 4.1 m by 3.2 m	<b>Approximate Elevation:</b> 11,917 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25822 is a terrace (Feature 1) located on the northeast rim of an unnamed cinder cone west/northwest of Pu'u Hoaka. The terrace facing is constructed of stacked cobbles/small boulders 2-3 courses high and is 3.5 m long by 1.0 m wide (Figure C20). The terrace surface, located on the east side of the facing, consists of cinder pebbles that form a level surface. Along the east side of the facing, near the center, are a number of flat laying slabs that appear to have been collected from an outcrop located 35.0 m upslope.



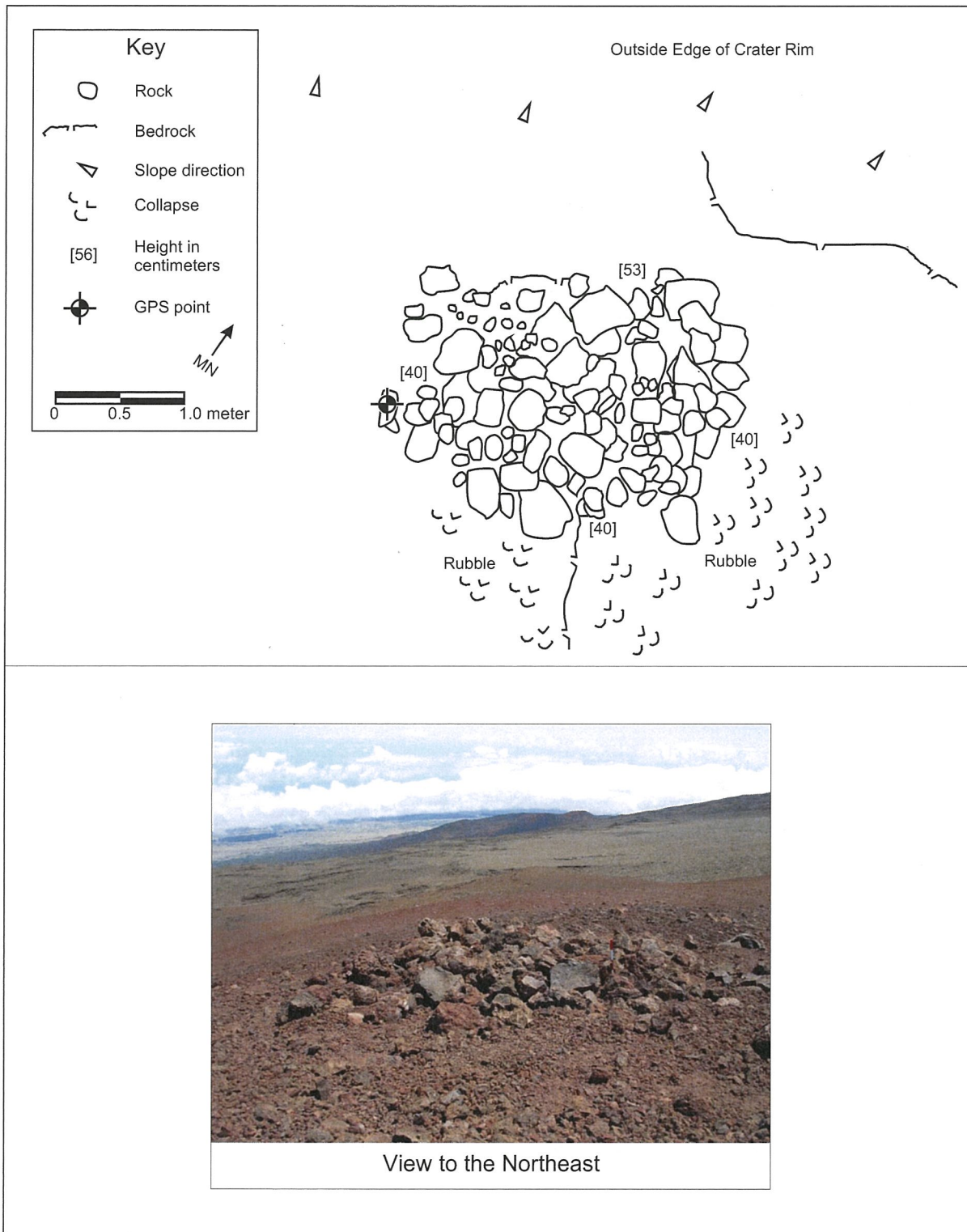
**Figure C20. Site 25822, Plan View and Photograph.**

**STATE SITE 50-10-23-25823**

<b>Additional Site Numbers:</b> Temporary Site PM2006-022	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM022	
<b>Site Dimensions:</b> 2.5 m by 2.0 m	<b>Approximate Elevation:</b> 11,882 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25823 is a mound (Feature 1) located on the rim of an unnamed cinder cone northwest of Pu'u Hoaka. The mound is constructed of piled cobbles and measures 2.0 m by 1.4 m and 0.4 m high (Figure C21). It is inferred to be a possible burial feature based on its location and morphological similarities to other mounds and platforms with human skeletal remains in the summit region.



**Figure C21. Site 25823, Plan View and Photograph.**

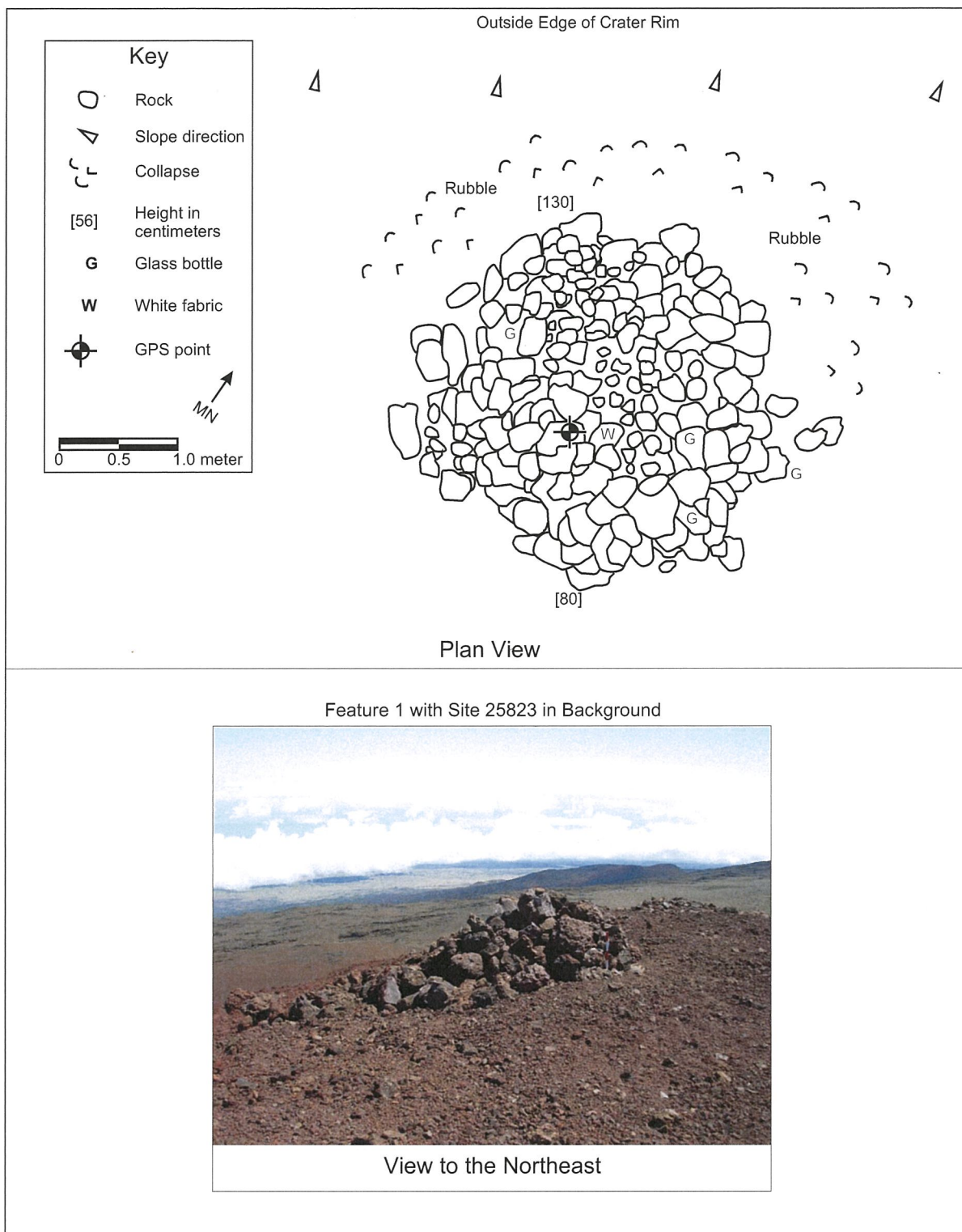


**STATE SITE 50-10-23-25824**

<b>Additional Site Numbers:</b> Temporary Site PM2006-021	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM021	
<b>Site Dimensions:</b> 5.0 m by 4.0 m	<b>Approximate Elevation:</b> 11,893 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25824 is a mound (Feature 1) located on the northwest rim of an unnamed cinder cone. It is constructed of small boulders and cinder with stacking (seven courses high) present on the north side (Figure C22). The mound is 4.5 m by 3.8 m with a maximum height of 1.3 m. A bottle, bottle glass fragments, and a fabric-like object were visible on the mound and along the southeast side of the mound. The mound is inferred to be a possible burial feature based on its location and morphological similarities to other mounds and platforms with human skeletal remains in the summit region.



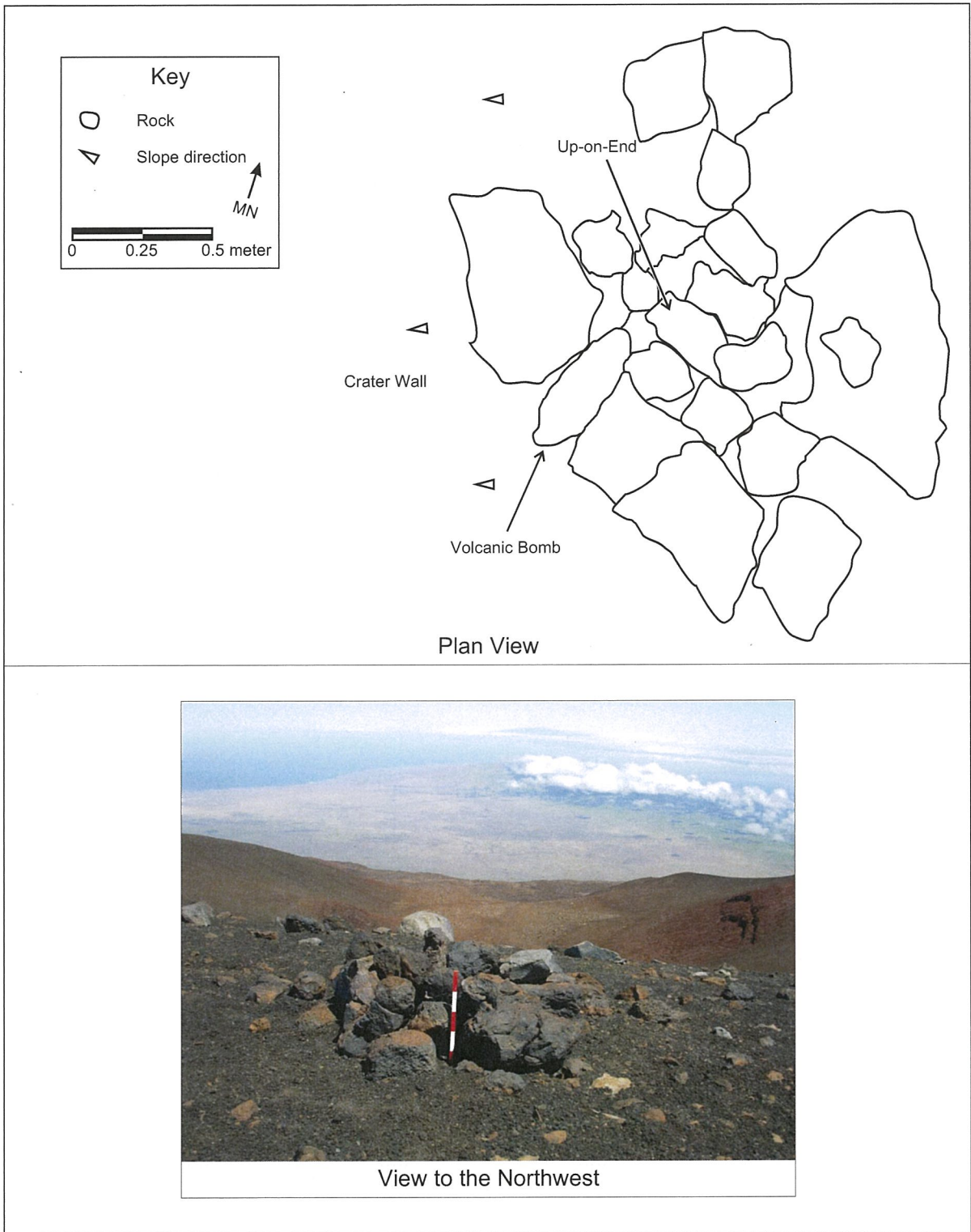
**Figure C22. Site 25824, Plan View and Photograph.**

**STATE SITE 50-10-23-25829**

<b>Additional Site Numbers:</b> Temporary Site PM2006-01	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> PM016	
<b>Site Dimensions:</b> 2.3 m by 2.0 m	<b>Approximate Elevation:</b> 12,780 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25829 is a cobble mound (Feature 1) located 14.0 m west of Site 21414, on the eastern rim of a large, unnamed cinder cone, which is mantled with dispersed boulders and cobbles. The mound is 2.3 m by 1.9 m and 0.55 m high, and is of piled construction and consists of locally occurring cobbles and boulders (Figure C23). The construction includes a large volcanic bomb placed between and on top of several low boulders, which in places form the base of the structure. In the middle of the structure is a vertically oriented stone of non-tabular basalt, which does not appear to be a shrine upright, however. The northwestern edge of the structure appears to be partially collapsed. The site is inferred to be a possible burial based on its form and topographic location.



**Figure C23. Site 25829, Plan View and Photograph.**

**STATE SITE 50-10-23-25830**

<b>Additional Site Numbers:</b> Temporary Site RN2006-018	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN013	
<b>Site Dimensions:</b> 3.0 m by 2.0 m	<b>Approximate Elevation:</b> 12,729 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25830 consists of a small platform (Feature 1) located on the south rim of an unnamed cinder cone (see Figure C24). It is constructed of cobbles and small boulders. The platform, stacked 2-3 courses (0.58 m high), has partially collapsed on the south side. No cultural material was observed at this site.

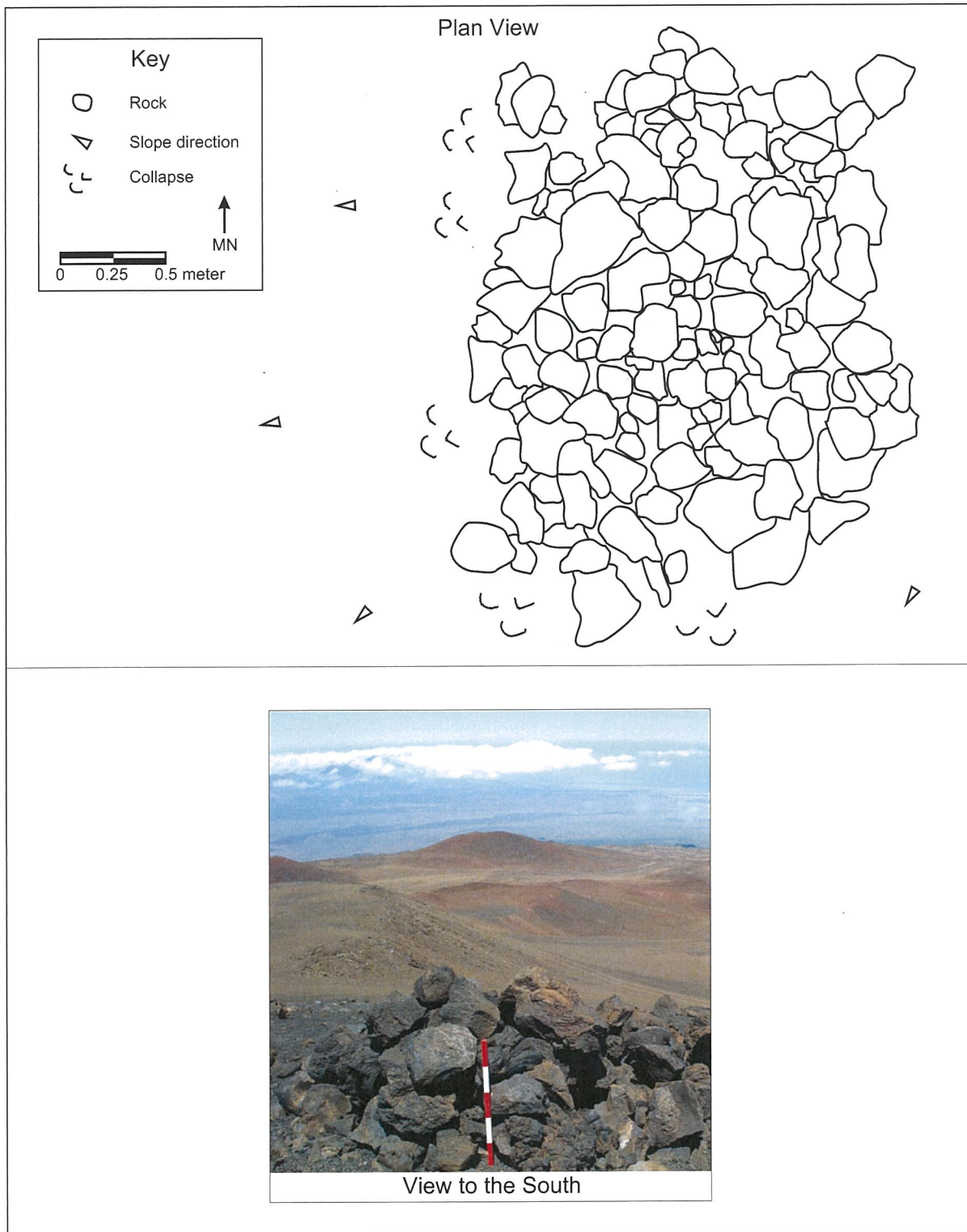


Figure C24. Site 25830, Plan View and Photograph.

**STATE SITE 50-10-23-25831**

<b>Additional Site Numbers:</b> Temporary Site RN2006-01	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN016	
<b>Site Dimensions:</b> 2.5 m by 2.5 m	<b>Approximate Elevation:</b> 12,638 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25831 consists of a cobble mound (Feature 1) located approximately 25.0 m upslope of Site 21413. This feature is a mound of cobbles placed between two large boulders, with additional cobbles placed on the north side of the boulders (Figure C25). The site is roughly 2.6 m long (north/south) by 2.3 m wide (east/west), with a maximum height of 0.93 m. The area between the boulders is approximately 0.25 m wide, and filled with piled cobbles.

Along the north side of the boulders is a concentration of cobbles that appear deliberately placed. This pile of cobbles measures approximately 1.2 m (east/west) by 1.0 m (north/south). No cultural material was observed at the site. This site is most likely a burial based on the similarities in form and size to other sites located on the rim of a cinder cone that appears to have been a major burial area.



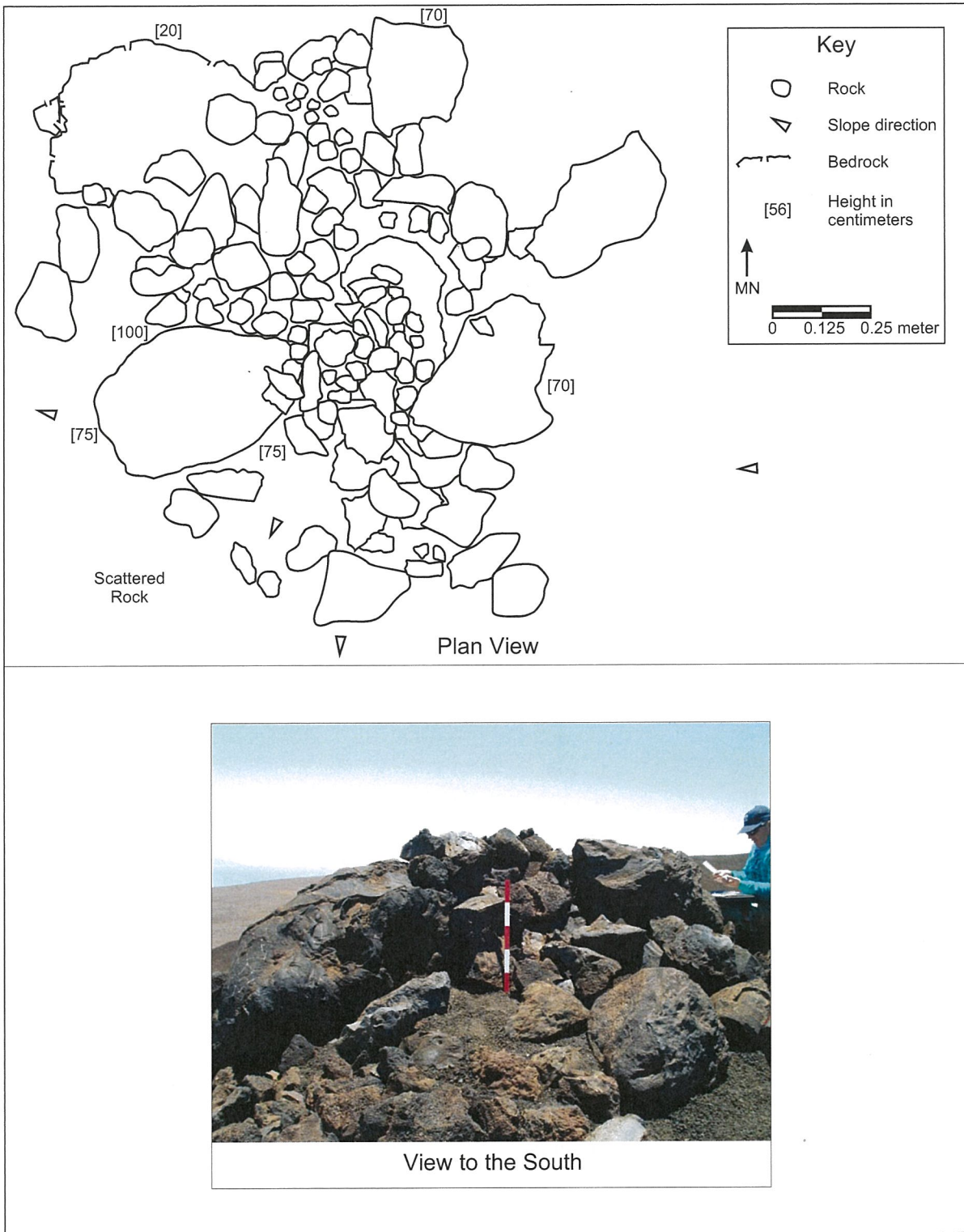


Figure C25. Site 25831, Plan View and Photograph.

**STATE SITE 50-10-23-25832**

<b>Additional Site Numbers:</b> Temporary Site RN2006-02	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> RN017	
<b>Site Dimensions:</b> 1.5 m by 1.5 m	<b>Approximate Elevation:</b> 12,510 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 25832 is a mound (Feature 1) located on the rim of an unnamed cinder cone. It measures approximately 1.5 m by 1.5 m with a maximum height of 0.48 m (Figure C26), and is constructed of piled cobbles and small boulders. No cultural material was observed in the area. The mound is similar to the other mounds found in this general area, all of which have been interpreted as possible shrines.

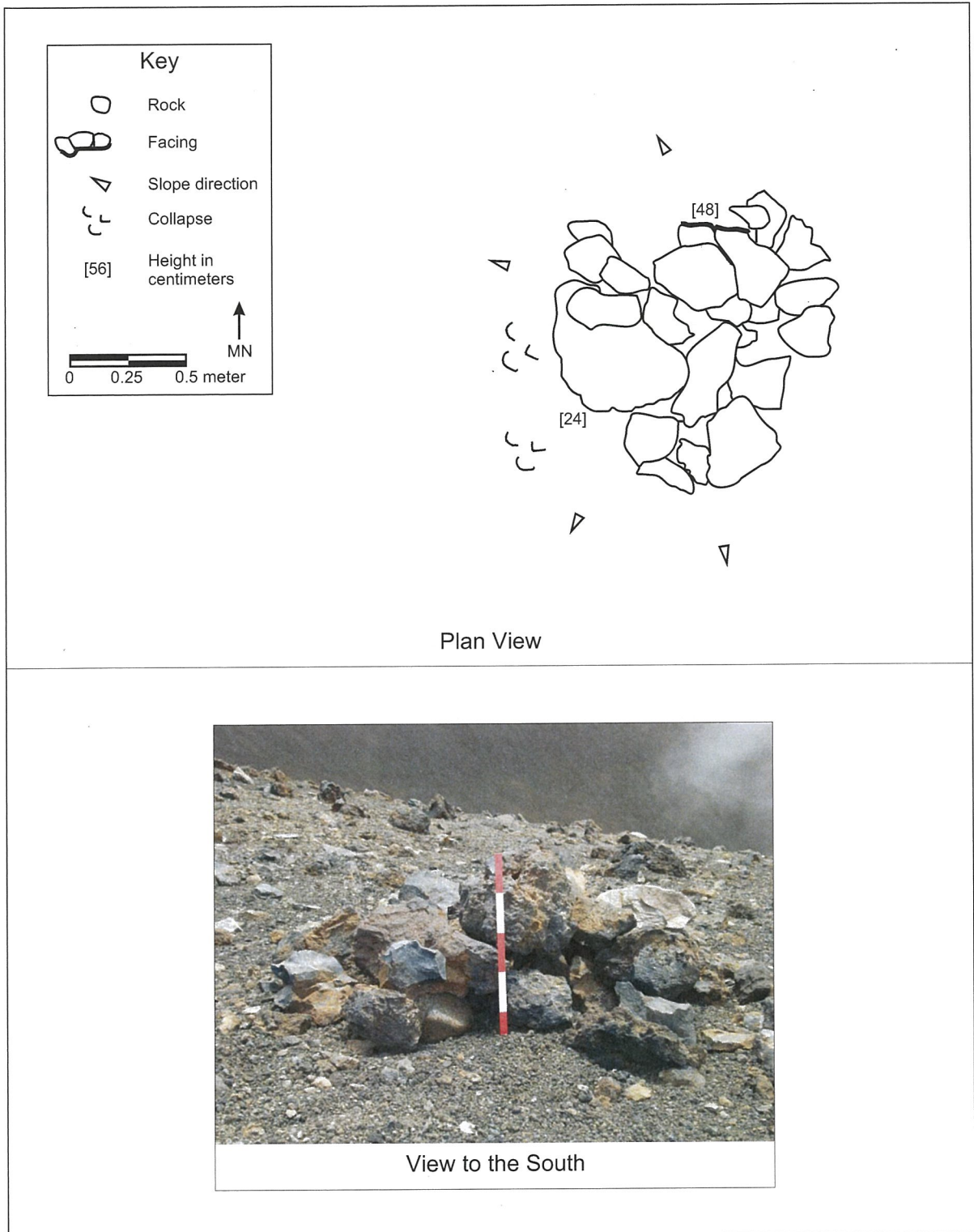


Figure C26. Site 25832, Plan View and Photograph.

**STATE SITE 50-10-23-26237**

<b>Additional Site Numbers:</b> Temporary Site PM2007-011	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2007	<b>Topographic Location:</b> Gelifluction terrace
<b>Subsequent Site Visits:</b>	
<b>2007 GPS File No.:</b> KN48	
<b>Site Dimensions:</b> 4.0 m by 3.0 m	<b>Approximate Elevation:</b> 12,062 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 26237, located on a gelifluction terrace, consists of a mound constructed of piled cobbles and small boulders (Figure C27). It is 3.3 m long (southeast/northwest) by 2.25 m wide and has a maximum height of 0.9. No cultural material was observed at the site.

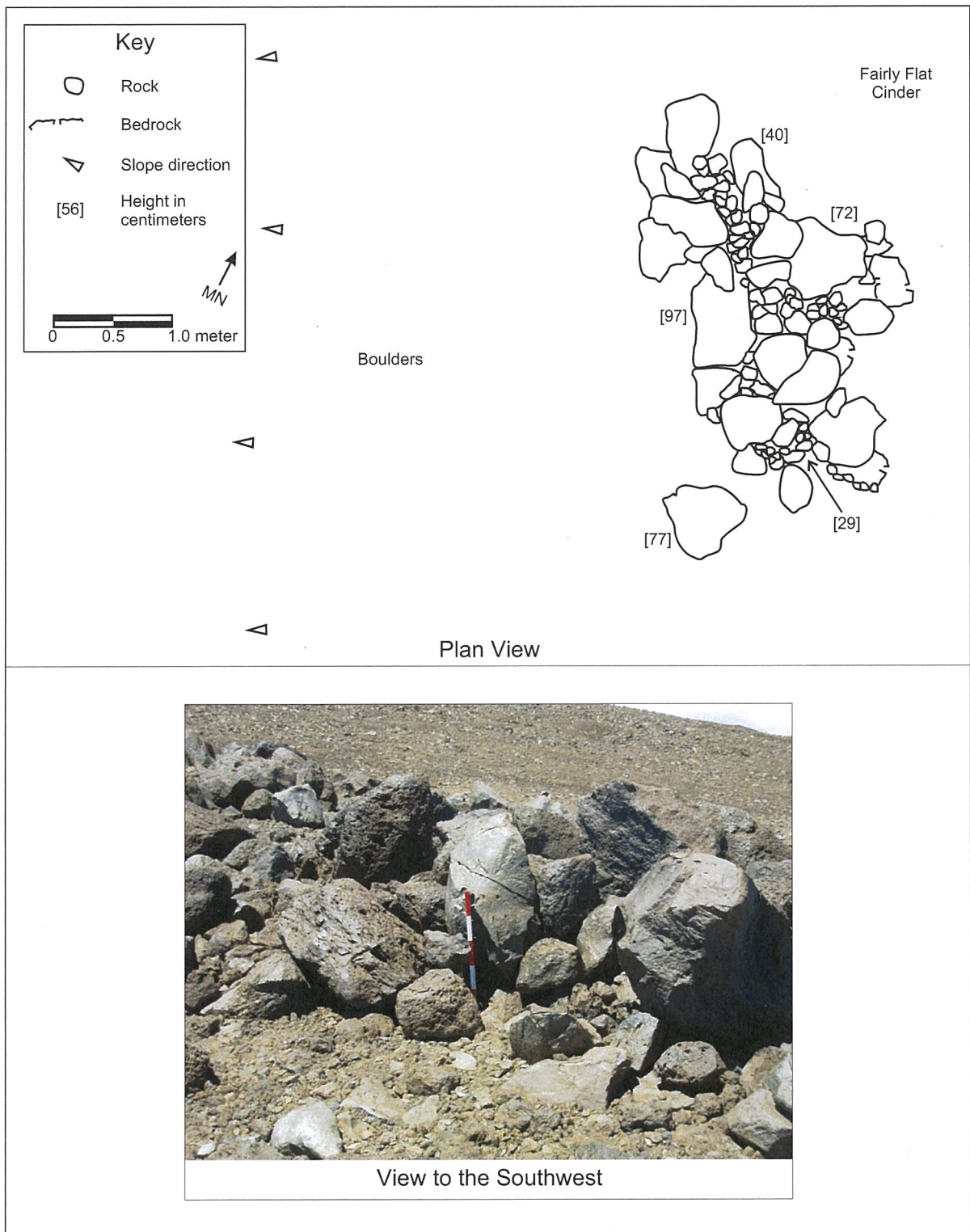


Figure C27. Site 26237, Plan View and Photograph.

### Burials from the Mauna Kea Access Road Corridor

The following sites are possible burial sites documented during the AIS for the Mauna Kea Summit Access Road (McCoy et al. 2010b).

#### STATE SITE 50-10-23-27867

<b>Additional Site Numbers:</b> Temporary Site VP2009-01	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 4
<b>Date First Recorded:</b> 2006	<b>Topographic Location:</b> Rim of unnamed cinder cone
<b>Subsequent Site Visits:</b>	
<b>2009 GPS File No.:</b> Fe.1: KN-100; Fe.2: KN-101; Fe.3:KN-99; Fe.4: KN-102	
<b>Site Dimensions:</b> 80.0 m by 30.0 m	<b>Approximate Elevation:</b> 11,659 to 11,667 ft a.m.s.l.
<b>Current Status:</b> New Site	

#### DESCRIPTION:

Site 27867 consists of four mound features designated Features 1 to 4. The site is located on the crater rim of an unnamed cinder cone (*pu'u*) in the northern portion of the Road Easement survey area at the c. 11,659 to 11,667 ft elevation. The site is in good condition with evidence of only limited disturbance, most likely from natural elements.

Feature 1 is a well defined stone mound, approximately 1.5 by 1.25 m in area and 0.31 m in height (Figure C28). It consists of aa cobbles and several small boulders, stacked in two to three courses. It is located on the southeast crater rim of an unnamed *pu'u*. No artifacts or other remains were observed in association with this feature.

Feature 2 is a well defined stone mound, approximately 1.5 by 1.3 m in area and 0.25 m in height (see Figure C28). It consists of aa cobbles and several small boulders, stacked in two courses. It is located on the southeast crater rim of an unnamed *pu'u*. No artifacts or other remains were observed in association with this feature.

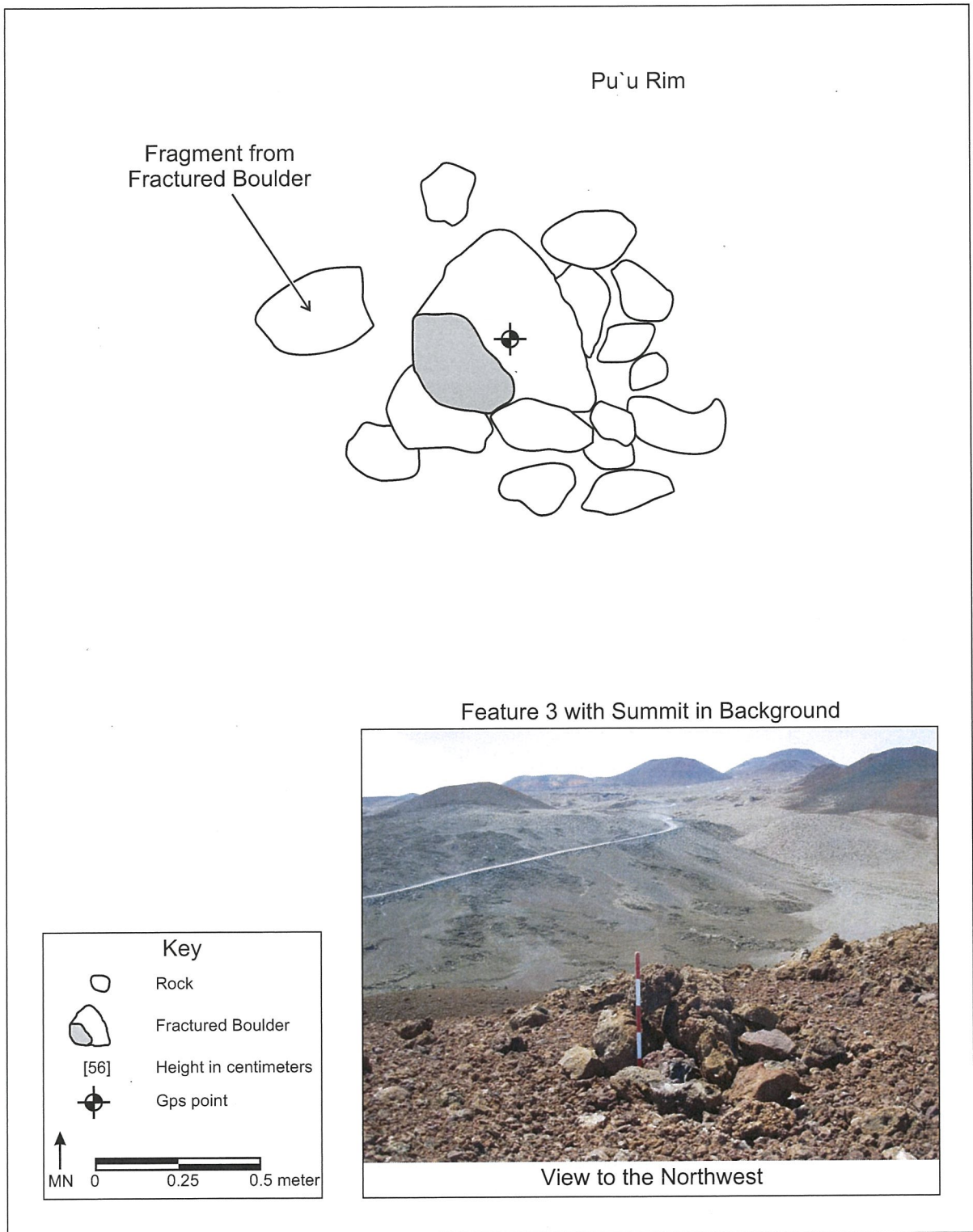
Feature 3 is a well defined stone mound, approximately 1.38 by 0.9 m in size and 0.46 m in height (Figure C29). It consists of 14 aa cobbles and a small fractured aa boulder, stacked in two to three courses. It is located on the east crater rim of an unnamed *pu'u*. No artifacts or other remains were observed in association with this feature.

Feature 4 is a well defined stone mound, approximately 2.1 by 1.3 m in size and 0.24 m in height (Figure C30). It consists of aa cobbles, small boulders, and one fractured volcanic bomb, stacked in two courses. It is located on the east crater rim of an unnamed *pu'u*. No artifacts or other remains were observed in association with this feature.









**Figure C29. Site 50-10-23-27867, Feature 3, Plan View and Photograph.**

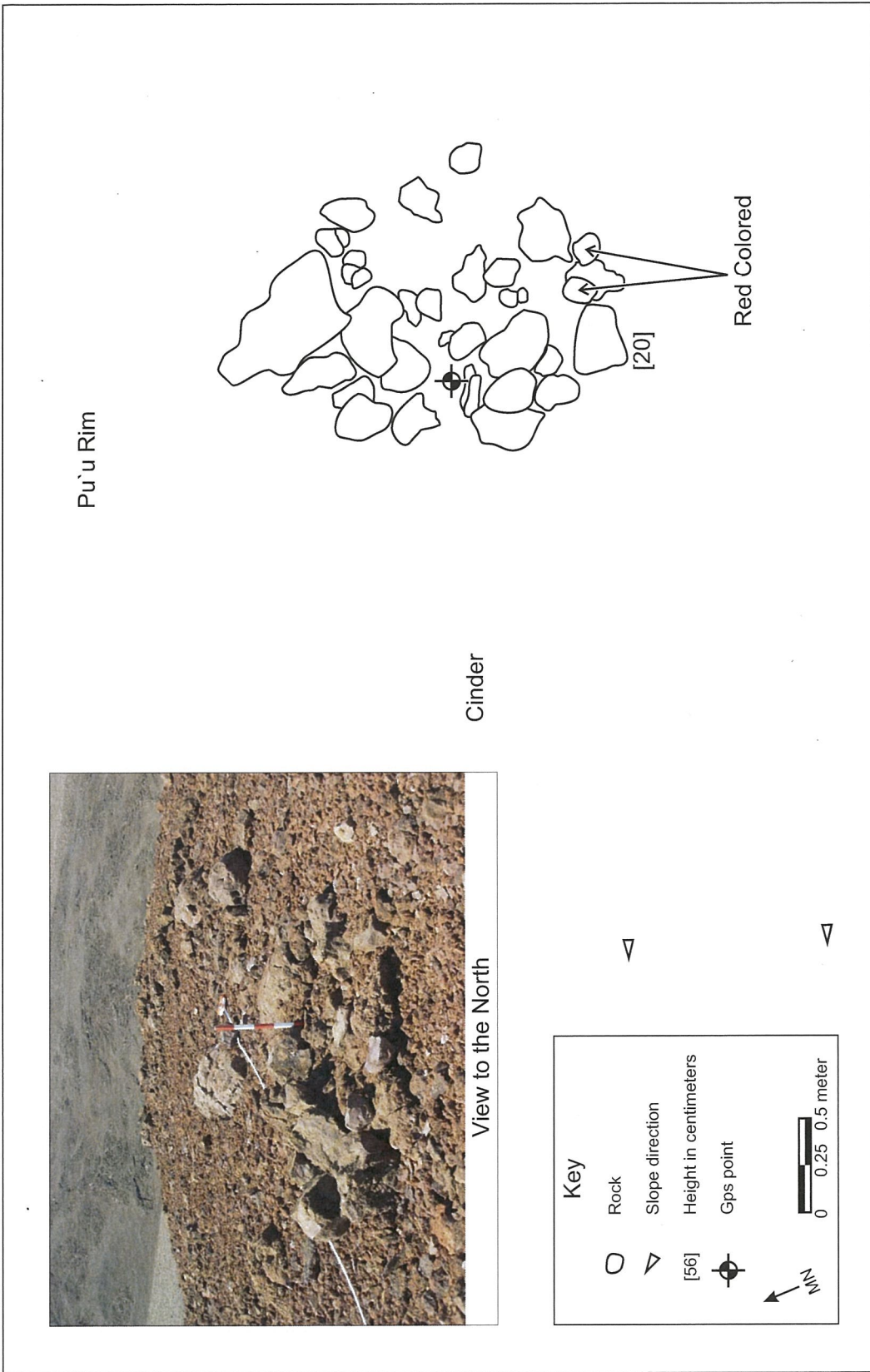


Figure C30. Site 50-10-23-27867, Feature 4, Plan View and Photograph.

**STATE SITE 50-10-23-27868**

<b>Additional Site Numbers:</b> Temporary Site VP2009-02	
<b>Site Function:</b> Possible burial	<b>Number of Features:</b> 1
<b>Date First Recorded:</b> 2009	<b>Topographic Location:</b> Ridge crest (summit)
<b>Subsequent Site Visits:</b>	
<b>2006 GPS File No.:</b> KN-04	
<b>Site Dimensions:</b> 2.0 m by 2.0 m	<b>Approximate Elevation:</b> 10,044 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION:**

Site 27868 consists of one stone mound designated Feature 1. The site is located on a flat cinder surface on a summit ridge crest in the central portion of the Road Easement survey area at the c. 10,044 ft elevation. The site is in good condition with evidence of only limited disturbance, most likely from natural elements.

Feature 1 is a well-constructed stone mound, approximately 1.55 by 1.15 m in area and 0.56 m in height (Figure C31). It consists of small to medium aa boulders and large cobbles, stacked in three to four courses. No artifacts or other remains were observed in association with this feature.

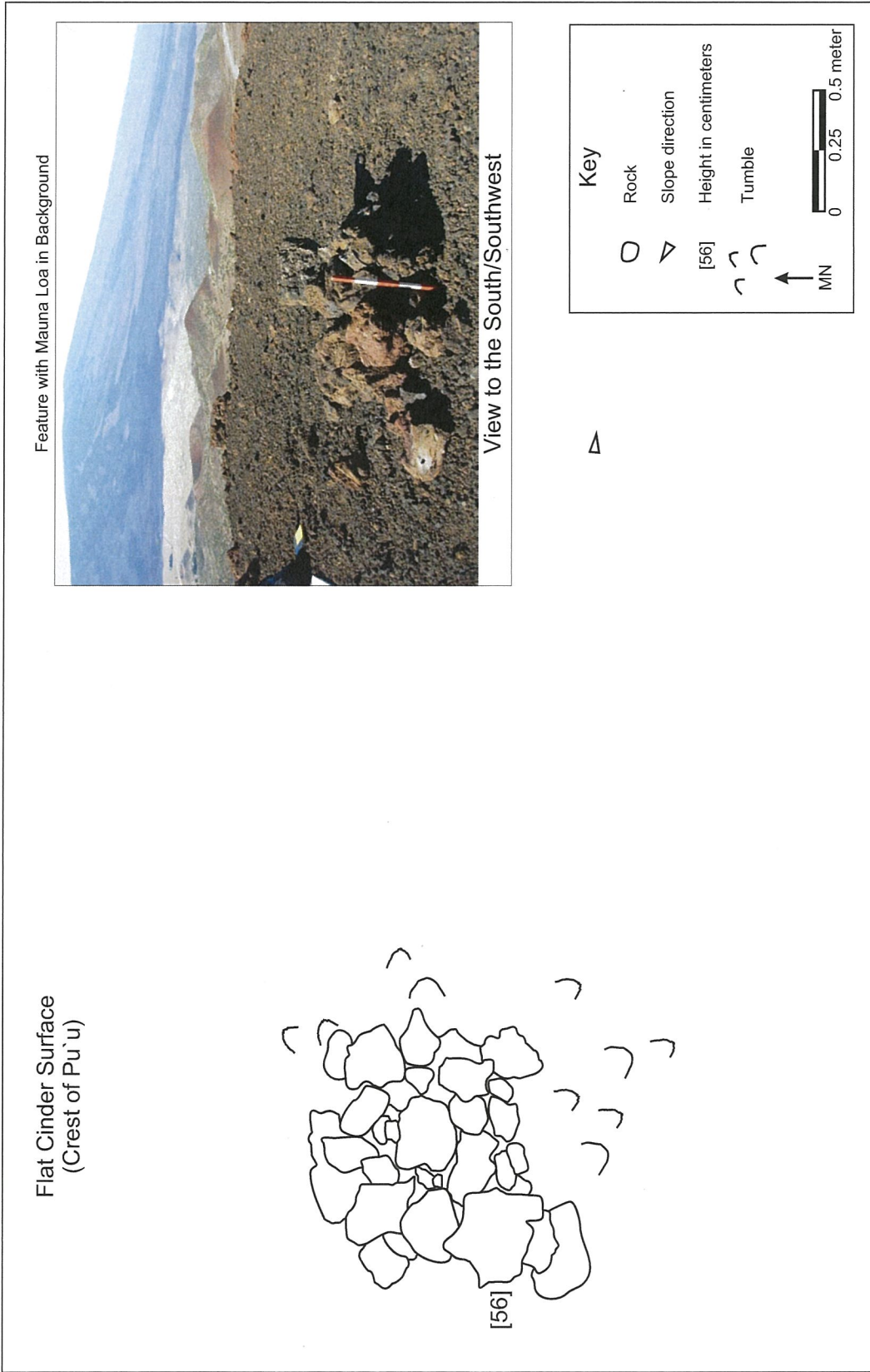


Figure C31. Site 50-10-23-27868, Feature 1, Plan View and Photograph.

**STATE SITE 50-10-23-27869**

<b>Additional Site Numbers:</b> Temporary Site VP2009-03	
<b>Site Function:</b> Possible burial, Stone Marker/Memorial	<b>Number of Features:</b> 2
<b>Date First Recorded:</b> 2009	<b>Topographic Location:</b> Ridge crest (summit)
<b>Subsequent Site Visits:</b>	
<b>2009 GPS File No.:</b> Fe.1: KN-12; Fe.2: KN-13	
<b>Site Dimensions:</b> 75.0 m by 30.0 m	<b>Approximate Elevation:</b> 10,016 to 10,044 ft a.m.s.l.
<b>Current Status:</b> New Site	

**DESCRIPTION**

Site 27869 consists of two mounds designated Features 1 and 2. The site is located on a flat cinder surface on a summit ridge crest in the southern portion of the survey area at the c. 10,016 to 10,044 ft elevation. The site is in good condition and appears to be undisturbed.

Feature 1 is a well defined stone mound, approximately 2.3 by 2.2 m in area and 1.2 m in height (Figure C32). It consists of small to large aa cobbles and boulders, stacked in three courses. No artifacts or other remains were observed in association with this feature.

Feature 2 is a well defined stone mound, approximately 1.8 by 1.6 m in area and 1.0 m in height (Figure C33). It consists of small to large aa cobbles and boulders, stacked in two courses with two loose boulders stacked on top. No artifacts or other remains were observed in association with this feature.



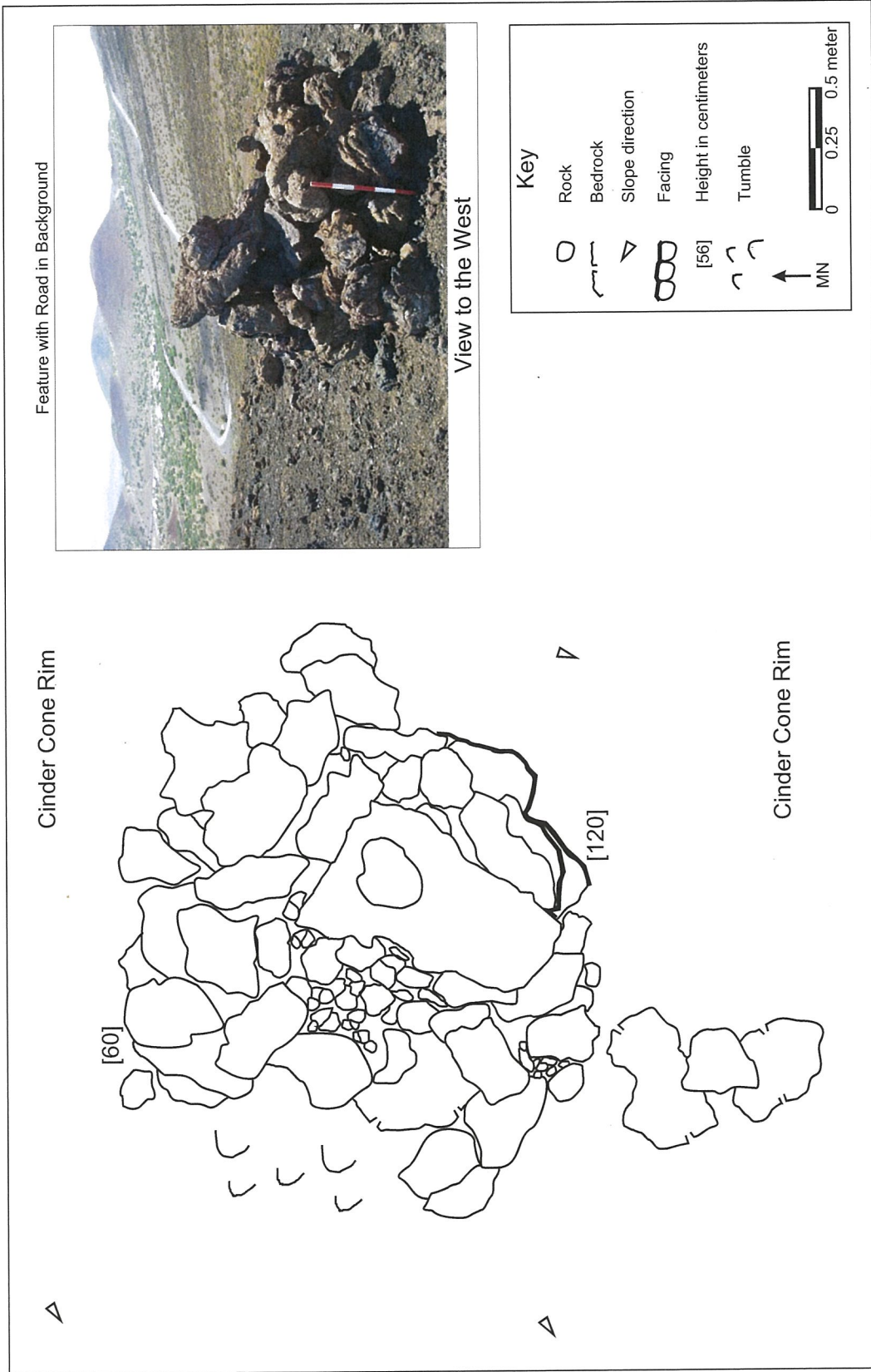


Figure C32. Site 50-10-23-27869, Feature 1, Plan View and Photograph.

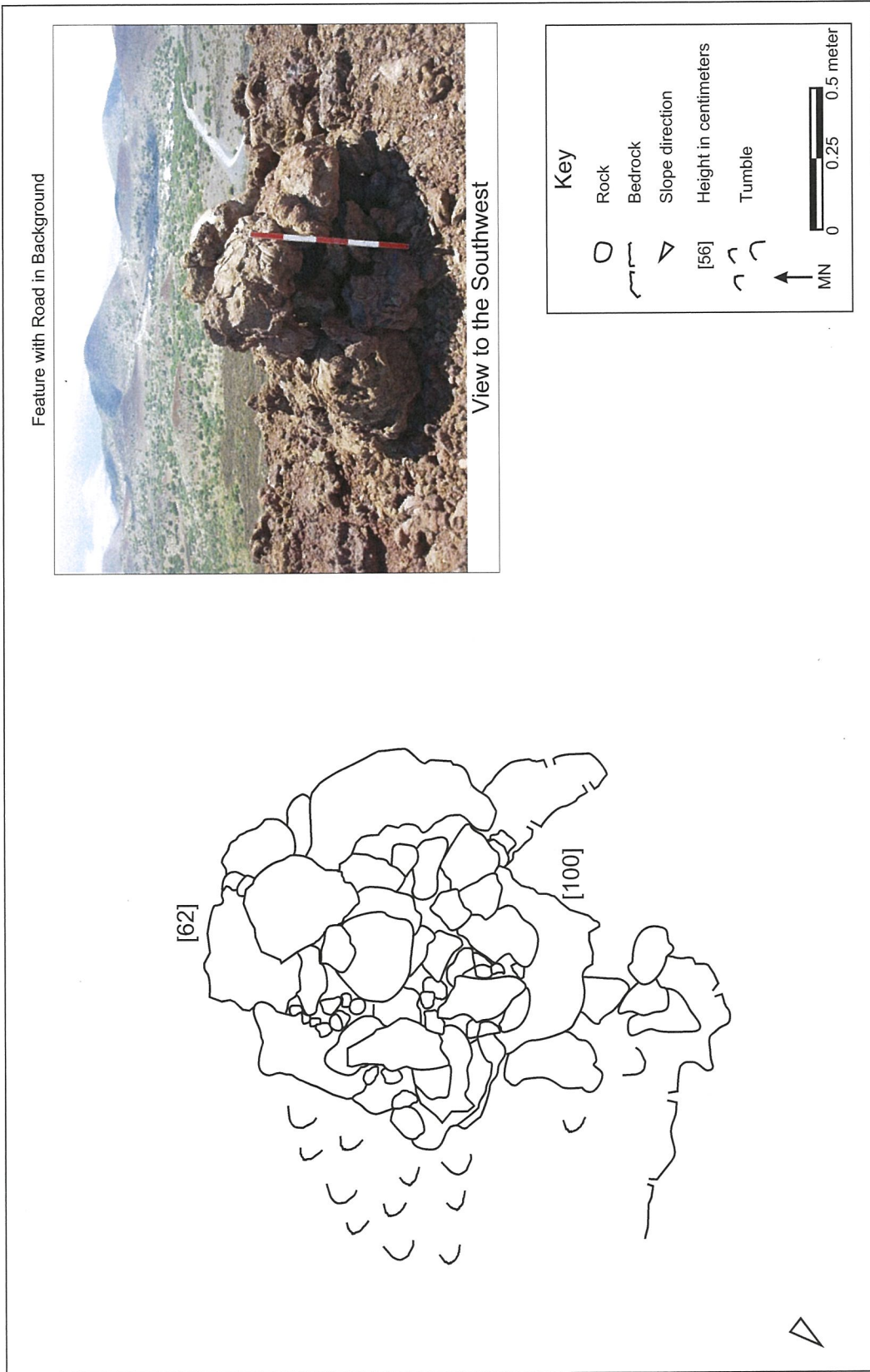


Figure C33. Site 50-10-23-27869, Feature 2, Plan View and Photograph.