

# The Basketmaker Communities Project Annual Report, 2016 Field Season

*Caitlin A. Sommer, Susan C. Ryan, Kari L. Schleher, Shanna R. Diederichs,  
Steven R. Copeland, Rebecca L. Simon, and Grant D. Coffey*



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## Introduction

In 2016, the Crow Canyon Archaeological Center (Crow Canyon) conducted its sixth year of field research as part of the Basketmaker Communities Project, a multi-year study of early Pueblo community development in the central Mesa Verde region. The first four years of the study focused on a pivotal, but under-investigated, time in Pueblo history—the Basketmaker III period (A.D. 500–750). The focus of Crow Canyon’s field research has been a settlement cluster consisting of more than 100 Basketmaker sites located within a 4.9 km<sup>2</sup> area near the town of Cortez, in southwestern Colorado. Currently, Crow Canyon’s field research focuses on the Hatch group—a series of four closely spaced multicomponent sites that date from the Basketmaker III (A.D. 500–750) and Pueblo II (A.D. 900–1150) periods. This temporal broadening is an effort to answer questions posed in Research Domains III and V in the Basketmaker Communities Project research design (Ortman et al. 2011) and in the research design addendum (Ryan and Diederichs 2014). These research domains address the following questions: (1) Is there evidence for changes in community organization over time? (2) Is there evidence for environmental change related to land-use patterns during the Basketmaker III–Pueblo III periods? (3) How did the momentary population change through time, and is there evidence for this change being linked to environmental degradation?

We also focused our field research on two additional Basketmaker III sites—Mueller Little House (5MT10631), and the Ridgeline site (5MT10711). The addition of these two sites will broaden our dataset for the Basketmaker III time period on Indian Camp Ranch and will help us address the following research question (Ortman et al. 2011): Is there additional public architecture that dates from the Basketmaker III period on Indian Camp Ranch? The inclusion of these two sites in our dataset may help us understand population change through time and how the wider Basketmaker III population related to the aggregated Basketmaker III settlement at the Dillard site.

In 2016, excavations were completed at the Pasquin site (5MT2037), Dry Ridge site (5MT10684), the Badger Den site (5MT10686), Sagebrush House (5MT10687), and Mueller Little House (5MT10631). Remote sensing was conducted on three sites, two of which date from the Basketmaker III period—the Elderpiñon site (5MT3873), and the Switchback site (5MT2032)—and one of which, Wheatfield Island (5MT3891) is multicomponent. Subsurface probing occurred at the Agatha site (5MT10632). Excavations are ongoing at the Ridgeline site (5MT10711), and these will be completed in the spring of 2017.

This report summarizes progress on the Basketmaker Communities Project during the 2016 Crow Canyon field season, which was conducted from March through December under the State of Colorado Archaeological Permit No. 2016-4. The 2016 field season was funded, in part, by a History Colorado State Historical Fund grant (No. 2015-01-005) and an Earthwatch Institute grant. Fieldwork and related Crow Canyon education programs were conducted by members of the archaeology and education staff with assistance from seasonal employees and interns. Field and laboratory work conducted by contractors is also summarized in this report. Upon completion of all fieldwork and laboratory analyses, Crow Canyon will publish detailed results of the Basketmaker Communities Project on its website ([www.crowcanyon.org](http://www.crowcanyon.org)).

## **Project Area Location and Ownership**

The Basketmaker Communities Project study area is located in the central Mesa Verde region (Figure 1). Specifically, the study area is located in the McElmo drainage unit, which is defined as lands that are drained by McElmo Creek. The settlement cluster that is the focus of Crow Canyon's research lies north of this creek, on a dissected upland between Alkali Canyon to the west and the less-substantial Crow Canyon drainage to the east, just over 6 km (about 4 mi) west of Cortez, Colorado.

The primary project area is defined by the property boundaries of Indian Camp Ranch, a 1,200-acre, 31-lot private residential community developed in the late 1980s and early 1990s. There are 208 known archaeological sites on lands within the Ranch (Ortman et al. 2011). Surface remains suggest that, of those sites, 107 date from the Basketmaker III period, 49 date from the Pueblo II period, three are multicomponent Basketmaker III/Pueblo II sites, and 10 are multicomponent Pueblo II/III sites. Figure 2 illustrates the boundaries of Indian Camp Ranch and of individual lots for which Crow Canyon obtained permission from individual landowners to conduct field investigations during the 2016 field season.

## **Permits and Permissions**

During 2016, excavation, testing, and survey were conducted under State of Colorado archaeological permit No. 2016-4 and with the permission of the Indian Camp Ranch Homeowners Association and individual landowners. Both the bylaws and covenants of Indian Camp Ranch (Indian Camp Ranch Homeowners Association 2007) were crafted to promote the preservation of, and research on, archaeological sites on the Ranch. In 2010, the Association granted Crow Canyon permission to conduct field research at Basketmaker sites located within the Ranch subject only to restrictions imposed by individual landowners and provided that the work complied with the professional and ethical standards established by the Society for American Archaeology and the Register of Professional Archaeologists. A contract signed with Galen Larson allowed Crow Canyon to conduct archaeological survey on his property through December 2016. Since 2010, 10 individual contracts have been signed between Indian Camp Ranch landowners and Crow Canyon. These contracts limit Crow Canyon activities on particular properties: two prohibit testing and excavation but permit surface mapping and remote sensing; a third allows less than 10 m<sup>2</sup> of excavation at two separate sites, which limits our work to test excavations at those sites. Five other contracts give permission for excavations at sites on the landowners' lots. The contract between Galen Larson and Crow Canyon allows for soil probing, remote sensing, and in-field artifact analysis.

## **Public Involvement**

A diverse segment of the public benefitted from Crow Canyon's research during the 2016 field season. Through our research and education programs, participants ranging in age from middle school through adult assisted with field and laboratory work. Specifically, 170 school children participated in excavations, and an additional 1,435 school children participated in programs on our campus, in a program called Outdoor Museum on the Ground, and/or in collaborative programs at the Anasazi Heritage Center, Dolores, Colorado. Additionally, 71 National

Endowment for the Humanities teachers, 18 Middle School Archaeology Camp participants, nine High School Field School participants, 32 High School Archaeology Camp participants, 20 College Field School participants, 65 participants in our Archaeology Research Program, and 57 Earthwatch Institute volunteers participated in the Basketmaker Communities Project. More than 100 additional individuals were provided with formal tours offered as part of single-day field trips, multiday non-excavation school-group programs, or other Crow Canyon-sponsored activities. Crow Canyon continued its partnership with the Earthwatch Institute in 2016; individuals from all over the world participated in this project. The number of people served reflects not only Crow Canyon's commitment to involving the public in its research but also the level of public interest in the ancient past of the Mesa Verde region.

### **American Indian Involvement**

American Indians were involved in the Basketmaker Communities Project in several ways during 2016. Scholarship funds totaling \$13,290 were disbursed to 150 American Indian students. Scholarships were provided to American Indian students attending Crow Canyon's High School Archaeology Camp.

Additional American Indian students were included in school groups that attended Crow Canyon programs with financial support from the Center. Such students were affiliated with Brave Girls in Santa Fe, Southern Ute Montessori, Shiprock High School, Newcomb Middle School, Southwest Open School, Isleta Pueblo, Nambé Pueblo, and Southern Ute Tribe.

As part of Crow Canyon's ongoing Pueblo Farming Project, Hopi farmers visited the Crow Canyon campus in 2016 to consult on our experimental gardens. Crow Canyon's Native American Advisory Group contributed to the Basketmaker Communities Project in several ways. The Group met four times in 2016, and Crow Canyon's Director of American Indian Initiatives Sharon Milholland consulted with particular members of the group on issues such as culturally sensitive items.

Throughout these activities, the insights and perspectives shared by American Indians informed Crow Canyon's research and enriched the experience of participants enrolled in the Center's education programs. We intend to build on our relationships with American Indians by providing scholarships for field programs and through continued consultation with our Native American Advisory Group and other interested parties as the Basketmaker Communities Project comes to a close.

### **Environmental Setting**

The topography of the Basketmaker Communities Project study area consists of gently rolling uplands where varying thicknesses of eolian silt loam overlie Dakota Sandstone. The elevation at the center of the project area is about 1890 m (6200 ft). Approximately 100 million years of geologic history dating from the late Triassic/Jurassic through the middle Cretaceous are exposed west of the project area in Alkali Canyon. The various geologic strata provided Pueblo people with construction stone and raw material for tools, and the permeable layers form a high-quality

aquifer that gives rise to numerous springs at the interfaces between fine sandstone beds and less-permeable mudstones.

Indian Camp Ranch was probably once completely covered by pinyon-juniper woodlands that were dominated by pinyon pine and Utah juniper and that included an understory of bunch grasses, yucca, and prickly pear cactus. Today, remnants of this woodland can be found in the northwest and south-central portions of the Ranch, but elsewhere the native vegetation has been replaced (in the past 100 years) by ranch land and farm fields. Properties in the eastern one-third of the Ranch have been cultivated and are planted in winter wheat. Vegetation on ranch lands is dominated by big sagebrush, rabbitbrush, and bunch grasses.

## **2016 Fieldwork**

Excavations during the 2016 field season were conducted on six sites: the Hatch group, which consists of the Pasquin site (5MT2037), the Dry Ridge site (5MT10684), the Badger Den site (5MT10686), and Sagebrush House (5MT10687); Mueller Little House (5MT10631); and the Ridgeline site (5MT10711). Remote sensing, but no excavation, was conducted at the Switchback site (5MT2032), the Elderpiñon site (5MT3873), and Wheatfield Island (5MT3891). Soil probing/augering, but no excavation, was conducted at the Agatha site (5MT10632). Table 1 lists all excavation units for the 2016 field season. Table 1 also specifies which units were completed in 2016 and which will be completed during the 2017 field season. By the end of the 2016 season, excavation had occurred in 122 excavation units at these six sites, and a total of 116 of those units had been fully excavated and documented. Before backfilling, exposed walls and floors within structures were protected with Geotech cloth—a breathable, synthetic fabric that does not deteriorate unless exposed to ultraviolet light. The backfilled sediment was tamped down to reduce settling, and the ground surface was restored as much as possible to pre-excavation condition. At the end of the 2016 field season, the six excavation units that were still in progress were covered with plywood and sealed with plastic sheeting to protect the units from damage during the winter. Work within these units will be completed during the 2017 field season.

### **The Pasquin Site**

The Pasquin site, 5MT2037 (Figure 3), is situated atop a north-south trending ridge. The location offers views of Mesa Verde to the southeast, the La Plata Mountains to the east, and Ute Mountain to the southwest. The site is in the southeastern portion of the Indian Camp Ranch subdivision (Figure 2). The site recorded as the Pasquin site in 1969 by Daniel Martin—during an archaeological survey conducted by the University of Colorado Department of Anthropology—was a cluster of several mounds. Crow Canyon continued that nomenclature when they re-recorded this site in 1983.

In 1986, according to records of the Woods Canyon Archaeological Consultants (Woods Canyon), Mounds 3, 4, and 5 at the Pasquin site experienced significant mechanical activity that destroyed some structures and disturbed most of the cultural deposits at the site. Individuals who conducted this field work with heavy machinery described Mound 3 as having two kivas, a roomblock with three rooms, and a plaza area (McClellan 1986). The individuals involved in the

disturbance further described Mound 3 by stating that one of the kivas was 9 ft deep, was 14 ft in diameter, and contained a bench 4 ft tall, whereas the other kiva was 7 ft deep, 12 ft in diameter, and contained no bench (McClellan 1986). Additionally, the north wall of the roomblock reportedly measured 4 ft tall, and each of the three rooms within the roomblock measured 10 ft by 8 ft. An area referred to as a plaza by McClellan (1986) was bordered on the west by a wall 22 ft long; a wall to the east was more deteriorated and measured 12.5 ft long and 2 ft tall. The kivas were located between these walls (McClellan 1986).

In 1991, Woods Canyon resurveyed the site and split it into four sites on the basis of four discrete rubble mounds: (1) the Pasquin site (5MT2037), which had been previously designated Mound 3; (2) Site 5MT10684, previously designated Mound 2; (3) Site 5MT10686, previously designated Mound 4; and (4) Site 5MT10687, previously designated Mound 5. During this resurvey, Woods Canyon re-recorded Mound 3, documenting a disturbed midden deposit and one feature composed of thermally altered rocks.

In the summer of 2014, as part of the Basketmaker Communities Project, Crow Canyon remapped Mound 3 (the Pasquin site); three depressions, a concentration of rubble, a midden, and a possible plaza edge were recorded (Figure 3). In 2015, Site 5MT10684 was named the Dry Ridge Site, Site 5MT10686 was named the Badger Den site, and Site 5MT10687 was named Sagebrush House. The name “Pasquin” was retained for Site 5MT2037, which by this time consisted only of Mound 3. Crow Canyon refers to these four sites collectively as “the Hatch group.”

To investigate the midden (Nonstructure 106) at the Pasquin site (Figure 3), 28 1-x-1-m units were excavated. Of those 28, four units were excavated and fully documented in 2015. During the 2016 field season, efforts focused on excavating the remaining midden units; that is, the remaining 24 midden units were excavated, documented, and backfilled. The midden deposit at Pasquin is thicker than midden deposits at the other three sites in the Hatch group and has a moderate-to-heavy artifact density. Pottery sherds, flaked-lithic artifacts, ground-stone tool fragments, charcoal, a projectile point, nonhuman bone, and a burned bead were recovered. Flotation and pollen samples were taken from appropriate contexts. All units were excavated, documented, and backfilled.

### **The Dry Ridge Site**

The Dry Ridge site, 5MT10684 (Figure 4), is situated atop a ridge in the southeastern portion of the Indian Camp Ranch subdivision (Figure 2). Documented in a Crow Canyon survey report of 1983 as Mound 2 of the Pasquin site (5MT2037), it apparently did not experience the same degree of mechanical disturbance in 1986 as the other mounds. In that survey, Mound 2 (Dry Ridge) was described as having a large mound that rose 1.05 m above the surrounding modern ground surface. A shallow depression was observed and documented by Woods Canyon during their 1991 resurvey of the site, as was a midden measuring about 18 m by 14 m (Honeycutt and Fetterman 1991). In 2014, Crow Canyon remapped Mound 2, named it the Dry Ridge site, and observed the same features as those recorded in the 1991 survey. During the 2016 field season, our efforts focused on excavating and documenting the midden (Nonstructure 106) and a kiva (Structure 108).

### *Nonstructure 106*

During the 2016 field season, five of 11 1-x-1-m units were excavated into the midden we designated Nonstructure 106. This midden is approximately 25 cm thick and is located within the plow zone. Artifact density was greater toward the modern ground surface and decreased with increasing depth. Artifacts recovered include red ware, black-on-white, and corrugated sherds, as well as flaked-lithic artifacts, ground-stone tool fragments, and a piece of azurite. All five units excavated in 2016 terminated at undisturbed native sediment and were documented and backfilled.

### *Structure 108*

A geophysical anomaly was detected as a result of our electrical resistivity survey in the spring of 2015. A backhoe trench (Segment 1) was excavated through the center of the anomaly; this trench was designed to determine whether the anomaly reflected a cultural or geological deposit. Upon confirming that the anomaly was cultural, we placed a 3-x-2-m unit contiguous and north of the backhoe trench, whereas a 1-x-2-m unit was laid in contiguous and south of the backhoe trench.

During the 2015 field season, postabandonment sediments, wall fall, and upper roof fall were removed from the structure depression. Red ware and gray ware sherds, flaked-lithic artifacts, ground-stone fragments, projectile points, and charred maize kernels were removed from this upper fill. The artifact density was moderate; these artifacts did not appear to be secondary refuse. One pilaster and a section of bench were revealed within the structure. The pilaster was constructed of stacked masonry, but the bench surface and bench face appear to have been carved out of undisturbed native sediment and not faced with stone.

During the 2016 field season, the remaining roof fall was removed to reveal the primary use surface, or floor, of Structure 108. The roofing was not thoroughly burned, and no dendrochronological samples were recoverable. The builders had dug into a stratum of undisturbed calcium carbonate in some areas and to bedrock in other areas when constructing this kiva. The floor of Structure 108 was only partly plastered; red plaster had been applied directly the underlying bedrock and undisturbed calcium carbonate in the southern portion of our excavation trenches (Figure 5). Artifacts were observed lying on the plaster. The northern portion had no plaster; artifacts in that area were lying on undisturbed calcium carbonate (Figure 6).

A hearth and sipapu were revealed by our excavations (Figure 7). The hearth had not been sealed. This feature contained primary refuse; more than 10 liters of ash were collected in flotation samples in the hope that charred annual-plant material would be found. When first exposed, the hearth fill emitted an aroma not unlike that of fennel or licorice; it will be interesting to learn what species of flora are found in the flotation samples. Pollen scrapes were taken from the base of the hearth. The sipapu had been filled with brown silt before the roof collapsed. Roof fall rested on this brown silt. A flotation sample and a pollen sample were taken from the sipapu. No artifacts were recovered from the fill within this feature. Structure 108 was

excavated, documented, and backfilled.

### **The Badger Den Site**

The Badger Den site, 5MT10686 (Figure 8), is located south of the Pasquin site (5MT2037) and north of Sagebrush House (5MT10687). It was recorded as Mound 4 of the Pasquin site both by Crow Canyon in 1983 and by Woods Canyon in 1991 (Honeycutt and Fetterman 1991). The 1983 survey described the mound as containing a roomblock 23 m long, two kivas south of the roomblock, and an associated midden.

As previously stated, this site experienced significant mechanical disturbance, reportedly in February 1986. Records of those activities state that the roomblock had been removed by plowing before 1986, but that, in 1986, a trash mound was observed, and the fill was removed from a kiva 7 ft deep and a trash-filled pit 4 ft deep.

In the 1991 survey by Woods Canyon, this site is described as containing a “bulldozed mound”—beneath which remnants of a roomblock survive today—a kiva depression, and a midden (Honeycutt and Fetterman 1991). In the results of Crow Canyon’s geophysical survey of the site, the roomblock does appear as an anomaly; however, no anomalies indicate the presence of the kiva reportedly excavated in 1986 or of a second kiva. During the 2016 field season, excavations continued in the midden (Nonstructure 106), and the roomblock (Structure 111).

#### *Nonstructure 106*

Seventeen 1-x-1-m excavation units were randomly selected to investigate midden at the Badger Den site. Of those 17, two units were completed and documented in 2015. In 2016, the remaining 15 units were excavated and documented. These midden deposits are somewhat disturbed by mechanical activity. Artifact density is moderate, and the artifacts recovered include pottery sherds, flaked-lithic artifacts, ground-stone tool fragments, charcoal, and a bead. Flotation and pollen samples were taken from appropriate contexts. All remaining units were excavated, documented, and backfilled.

#### *Structure 111*

Structure 111, a masonry room, is visible from the modern ground surface; the structure is also represented as an anomaly in the results of a geophysical survey. A 3-x-1-m unit that was designed to cross-section the north wall exposed extramural deposits, the wall itself, and a small area within the structure. In 2015, roofing debris in Structure 111 was removed to reveal the floor of the room, which is composed of redeposited native sediment and adobe with charcoal and some calcium carbonate inclusions. Three ash-filled pits are associated with the floor, as are two pottery sherds, a jar, and one flaked-lithic artifact (Figure 9). The north wall of the structure appears to have been disturbed, probably either from plowing or bulldozing. However, an upright slab with two sandstone blocks stacked on top of it is probably a small section of intact wall (Figure 10).

Excavations in 2016 focused on the excavation and documentation of the three ash-filled pits. Flotation samples, pollen samples, and artifacts were recovered from each pit feature. One of the pits displayed a fire-reddened edge; the ash in that pit might be primary refuse. The other two pits contained secondary-refuse ash deposits. The integrity of Structure 111 was affected by either plowing or bulldozing, which reduces its interpretability. Details of the 1983 survey map suggest that Structure 111 was a room within a roomblock. Structure 111 was fully excavated, documented, and backfilled.

### **Sagebrush House**

Sagebrush House, 5MT10687 (Figure 1), is located on the south end of a low ridge in the southeastern portion of the Indian Camp Ranch subdivision (Figure 2). It was recorded as Mound 5 of the original Pasquin site both by Crow Canyon in 1983 and by Woods Canyon in 1991 (Honeycutt and Fetterman 1991). Woods Canyon characterized the mound as a Pueblo II habitation with a Basketmaker III component but noted that the site had been bulldozed and vandalized in the late 1980s. The results of Crow Canyon's electrical resistivity survey revealed remnants of one kiva; however, the roomblock and the Basketmaker deposits had apparently been destroyed by mechanical activity. In 2016, we focused on excavating unfinished midden (Nonstructure 105) units.

During the 2015 field season, 29 1-x-1-m units were randomly selected to investigate midden deposits (Nonstructure 105) at Sagebrush House. Nineteen of the 29 midden units were excavated and documented in 2015. During the 2016 field season, the remaining 10 midden units were excavated, documented, and backfilled. The midden had been impacted by plowing and bulldozing activities; the units farther north and west contained the highest artifact densities and the deposits that were the most intact, whereas those units farther south and east had lesser artifact densities and more-disturbed deposits. Pottery sherds, flaked-lithic artifacts, charcoal, ground-stone tool fragments, and nonhuman bones were recovered from these midden units.

### **Mueller Little House**

Mueller Little House, 5MT10631 (Figure 12), is situated on the north end of a low ridge in the eastern portion of the Indian Camp Ranch subdivision (Figure 2). This site was identified by Woods Canyon in 1991 (Honeycutt and Fetterman 1991) and was surveyed using electrical resistivity in 2011 (Diederichs and Copeland 2012). The results of both surveys suggest that the site dates from the Basketmaker III period. During the 2016 field season, we focused on excavating the east half of the pithouse (Structure 101-102-114), the associated midden deposit (Arbitrary 104), and an extramural surface (Nonstructure 110).

#### *Structure 101-102-114*

Structure 101-102-114 is a Basketmaker III pithouse with a main chamber (Structure 101), an antechamber (Structure 102), and a side room (Structure 114) that was constructed through the east wall of the main chamber (Figure 12). The length of the pithouse is approximately 9 m along its north-south axis. The width of the main chamber is approximately 6 m along its east-west axis. The width of the main chamber including the side room (Structure 114) is slightly less than

7 m along its east-west axis. The antechamber is approximately 3.5 m wide along its east-west axis. The east halves of the main chamber and antechamber, as well as the entire side room, were excavated.

Using the map from the 2011 remote sensing survey as a guide, we mechanically stripped plow-zone overburden from above Structure 101-102-114. Subsequent to the stripping, the main chamber and antechamber were bisected along the north-south axis. The main chamber was then bisected along its east-west axis to create northeast- and southeast-quadrant excavation units. The east half of the antechamber was not further subdivided. The side room (Structure 114) was excavated as a separate study unit.

Upper-fill sediments were mottled reddish-brown silty clays containing low densities of artifacts; no secondary refuse was observed. The roof had been thoroughly burned, and several dendrochronological samples were recovered. The artifact density increased in the lowermost few centimeters of roofing debris, which rested on the floor. Artifacts recovered from the floor and just above the floor include gray ware sherds, ground-stone artifacts, flaked-lithic artifacts, reconstructible vessels, mule deer bones, pigment/minerals, and tempered raw clay. The floor assemblage in the main chamber (Structure 101) was more robust than that in the antechamber (Structure 102) and side room (Structure 114). However, the remains of a turkey that might have been sacrificed were found on the floor of the antechamber (Figure 13).

The floors were not plastered; the floors of the antechamber and side room were composed solely of use-compacted, undisturbed native sediment, whereas the floor of the main chamber was composed of undisturbed, use-compacted native sediment and undisturbed calcium carbonate (Figure 14). Presumably, the natural calcium carbonate layer was not exposed during the use-life of this structure but was covered or plastered. However, at the time of our excavations, only the calcium carbonate remained. Patches of tan-to-brown sand were located in the northwestern portion of the northeastern quadrant of Structure 101.

The pithouse was constructed using four main support posts. Fifty-one features were identified in the pithouse, including a wing wall, hearth, floor vault, postholes, a doorway between Structures 101 and 102, and a ramp between Structures 101 and 114. Several pit features had been remodeled and contained intrusive pits, suggesting that the pithouse had undergone at least two construction events (Figure 15). Flotation samples, pollen samples, and artifacts were recovered from various feature contexts. Archaeomagnetic samples were taken from the hearth; the resulting dates should be available early in 2017. Excavation and documentation of these structures was completed, and the structures were backfilled, in late November 2016.

#### *Arbitrary Unit 104*

During the 2016 field season, seven 1-x-1-m units were randomly selected to investigate a midden associated with Structure 101-102-114. Similar to middens at other Basketmaker III habitations at Indian Camp Ranch, this midden had low artifact density. An “arbitrary unit” rather than a “nonstructure” designation was assigned to this deposit because all secondary refuse was recovered from the plow-zone stratum, and it is thus likely that the original midden sediments were affected, and removed, by modern agricultural activity. The low density of

artifacts is probably the result of the midden being impacted by plowing and other erosional events. Artifacts collected include gray ware sherds, flaked-lithic artifacts, and ground-stone objects. All seven midden units were excavated, documented, and backfilled.

### *Nonstructure 110*

Nonstructure 110 is an extramural use surface that was identified in one 1-x-1-m unit and one 2-x-2-m unit (Figure 12) within the light refuse area labeled Arbitrary Unit 104 and is composed of pre-occupational Mesa Verde loess. One posthole was identified in randomly selected 1-x-1-m unit, whereas another posthole was identified in the 2-x-2-m unit that was placed in an attempt to expose additional postholes. These postholes might have been the remains of a stockade constructed around the habitation or might have held support posts for a ramada roof over an extramural work area. One posthole was 24 cm deep, and the other was 26 cm deep. An additional, uppermost, 5 cm of posthole depth was probably destroyed during plowing. It is possible that other postholes were completely destroyed by the plow. These two units were excavated, documented, and backfilled.

### **The Ridgeline Site**

The Ridgeline Site, 5MT10711 (Figure 16), is located on the westernmost ridge in the Indian Camp Ranch subdivision (Figure 2). This site was identified by Woods Canyon in 1991 (Honeycutt and Fetterman 1991) and was surveyed using electrical resistivity in 2012 (Charles 2012). The results of both surveys suggest that the site dates from the Basketmaker III period. During the 2016 field season, we focused on excavating the east half of a pit structure (Structure 101-103) and on testing an associated midden (Nonstructure 106), two extramural surfaces (Nonstructures 109, 112), and a pit room (Structure 110). Winter weather prevented the completion of these units in 2016. We will finalize excavations and documentation at this site in the spring of 2017.

### *Structure 101-103*

Structure 101-103 is a large pit structure that measures approximately 11 m from the north wall of the main chamber (Structure 101) to the south wall of the antechamber (Structure 103). The main chamber measures approximately 9 m east-west, and the antechamber measures approximately 6 m east-west. Using a map that depicts the results of a remote-sensing survey performed in 2012, we mechanically stripped postoccupational overburden from above Structure 101-103. The main chamber and antechamber were then bisected along their north-south axes. Additionally, the main chamber was bisected along its east-west axis to create a northeast-quadrant excavation unit and southeast-quadrant excavation unit. The antechamber was not bisected east-west.

Upper-fill sediments were mottled, reddish-brown silty clays with low artifact density; no secondary refuse was observed. The roof of the structure was thoroughly burned, and several dendrochronological samples were recovered. Artifact densities in the fill of the structure were consistently low until about 10 cm above the floor in each chamber. At these elevations, artifact densities increased. Artifacts collected from the floor and from as high as 10 cm above the floor

included gray ware sherds, fugitive red sherds, flaked-lithic artifacts, projectile points, beads, red and yellow pigment/minerals, ground-stone artifacts, remnants of a textile that was probably a plaited sandal (Webster 2016), an elk or large mule deer antler exhibiting red pigment, a ground-stone maul, and a few Chapin Black-on-white sherds.

The benches in both the main chamber and antechamber were carved out of undisturbed, pre-occupational Mesa Verde loess. Bench faces in both chambers were plastered. Although the bench surface in the antechamber had not been plastered, the bench in the main chamber had been coated with red plaster (Figure 17). Postholes were dug into the bench surfaces of both chambers. The form of the plaster around each posthole in the main chamber indicates that the associated posts had been placed in their sockets before the bench was plastered.

The floor of the main chamber (Structure 101) was formally prepared with both red plaster and tan-to-brown sand (Figure 18). In some areas, the plaster overlies the sand, but in other places the sand overlies the plaster. Excavations are ongoing, but a hearth has been defined in the southeastern quadrant of the main chamber, and preliminary observations suggest that this feature was remodeled at least once. The wing wall, also located in the southeastern quadrant of the main chamber, was constructed with upright sandstone slabs, plaster, and adobe, and perhaps with wooden posts. At least three coats of plaster are visible on the wing wall.

The floor of the antechamber (Structure 103) is not plastered but is use-compacted undisturbed native sediment. Northeast and southeast main support posts have been identified in the antechamber. No other features were identified before the structure was covered for the winter.

#### *Nonstructure 106*

During the 2016 field season, five 1-x-1-m units were randomly selected to investigate midden deposits at the Ridgeline site (Figure 16). The sediments in this midden (Nonstructure 106) are mixed refuse deposits and post-occupational sediments. Low artifact density—some sherds and flaked-lithic artifacts were recovered—suggests that a portion of the original midden associated with Structure 101-103 was damaged or destroyed by construction of a modern driveway, which is located directly adjacent to, and east of, the area we defined as midden. However, with the exception of the Dillard site (5MT10647), none of the Basketmaker III sites investigated as part of this project have contained high artifact densities. All five midden units were excavated, documented, and backfilled.

#### *Nonstructure 109*

Nonstructure 109 is an extramural surface composed of native sediment containing charcoal and calcium carbonate inclusions. A 2-x-2-m unit was placed in this location to investigate whether exposed upright slabs were part of a pit room (Figure 16). The western edge of a pit room (Structure 110) and a slab-lined pit feature that had been dug into Nonstructure 109 were exposed in this unit. A cluster of gray ware sherds and one turquoise pendant were recovered from the surface of Nonstructure 109. Winter weather late in 2016 prevented the completion of this unit, which was covered for the winter. Excavations will be completed in the spring of 2017.

### *Structure 110*

Structure 110 is a slab-lined pit room north of Structure 101-103 (Figure 16). Several upright sandstone slabs were observed rising above the modern ground surface in the 2-x-2-m unit described above. A 1-x-2.30-m unit was placed contiguous to, and east of, this 2-x-2-m unit in order to capture more of the slab-lined pit room. To date, upper fill and roof fall have been removed, but the floor has not yet been revealed. The structure does not contain secondary refuse, although some sherds and flaked-lithic artifacts were collected. The roof of Structure 110 was burned, and several dendrochronological samples were obtained. The room appears to be about 2.40 m wide along its east-west axis. The two excavation units were covered for the winter, and excavations will be completed in the spring of 2017.

### *Nonstructure 112*

Nonstructure 112 is an extramural surface composed of undisturbed pre-occupational Mesa Verde loess. A 2-x-2-m unit was placed in this location because several upright sandstone slabs were visible from the modern ground surface (Figure 16). Numerous gray ware sherds, perhaps representing a reconstructible vessel, were recovered from this extramural surface, as was a polishing stone. At least one slab-lined pit feature has been identified, although at least four additional pit features might be present as well. Winter weather prevented the excavation of the identified pit feature and the additional possible features. The excavation unit was covered for the winter, and excavations will be completed in the spring of 2017.

## **Electrical Resistivity Survey and Subsurface Probing**

During the 2016 field season, electrical resistivity survey was conducted on three sites within Indian Camp Ranch; one site is owned by Jane Dillard, one is owned by Bob and Diane Greenlee, and one is owned by Arleen and Richard Blake. This work had three primary objectives: (1) to locate subsurface structures and activity areas, (2) to help develop plans for targeted excavations, and (3) to clarify data collected during previous excavations. Surveys for the Switchback site (5MT2032), the Elderpiñon site (5MT3873), and Wheatfield Island (5MT3891) are summarized in this report. A more detailed discussion of the geophysical work done at these sites is also available (Charles 2016).

To generate comparable data across the Basketmaker Communities Project study area, remote-sensing surveys were conducted in standard grids measuring 20-x-20 m. These remote-sensing blocks were laid out on a generally north-south axis. Anomalies that, on the basis of preliminary data, seemed most likely to indicate the presence of buried structures were probed with a 2-inch-diameter soil auger. The characteristics of any cultural deposits were documented, and the depth of the reddish loess that forms undisturbed native sediment was recorded.

Remote sensing has been invaluable to our Basketmaker Communities Project research. Even on pristine sites, Basketmaker III structures are difficult to detect and interpret from indications on the modern ground surface. Sites in disturbed settings such as cultivated fields can be nearly impossible to decipher. With the aid of remote-sensing technology, researchers are able to collect site-size and site-layout information for Basketmaker sites that is comparable to that obtained

through pedestrian survey of later, more visible, ancestral Pueblo sites. In addition, it has been demonstrated that multiple methods of remote sensing lead to more accurate predictions of subsurface phenomena.

Surface probing took place at one site, the Agatha site (5MT10632). This site had been surveyed by remote sensing during the 2011 field season, and an anomaly was identified (Diederichs and Copeland, 2012). Data from augering these anomalies have been informative and have provided information on the size and shape of pit structures for which excavation is not an option (Diederichs et al. 2014).

#### *The Switchback Site*

One 20-x-20-m grid was surveyed for electrical resistivity at the Switchback site (5MT2032) in 2016. Excavation of a 2-x-2-m unit into Structure 110, a pit structure, which had occurred during the 2013 and 2014 field seasons, had failed to reveal the size and orientation of the structure. Electrical resistivity work was conducted in 2016 to clarify the size and orientation of the structure (Figure 19). The resistivity results provided the additional data needed to refine interpretations of this Basketmaker III pit structure.

#### *The Elderpiñon Site*

At the Elderpiñon site (5MT3873), two 20-x-20-m grids were surveyed using electrical resistivity (Figure 20). Previous survey reports indicate the possibility of buried Basketmaker III structures in this area. Unfortunately, the electrical resistivity instrument did not register any anomalies of interest at this site, possibly as a result of modern disturbance from road and driveway construction.

#### *Wheatfield Island*

Nine 20-x-20-m grids were surveyed for electrical resistivity at Wheatfield Island (5MT3891), and 15 total anomalies were detected (Figure 21). Per Charles' report (Charles 2016), the anomalies probably represent pit structures, roasting pits, roomblocks, subsurface storage rooms, and hearths. Artifacts on the modern ground surface suggest that this site dates from late Basketmaker III/early Pueblo I times.

#### *The Agatha Site*

An anomaly identified during a 2011 survey at the Agatha site (5MT10532) suggested the presence of a buried Basketmaker III pit structure. During the 2016 field season, 44 auger probes were used to assess the size, shape, and orientation of the buried deposit (Figure 22). One auger transect, oriented north-south, attempted to capture the length of the pit structure. Two other transects, oriented east-west, were used to capture the widths of the antechamber and main chamber. The probes were spaced 1 m apart within each transect except where burned deposits were encountered, or the sediments drawn up in the auger were ambiguous, in which cases auger probes were spaced 25 to 50 cm apart.

Several flotation samples were collected from burned deposits in the hope that a charred seed or maize kernel would be recovered for accelerator mass spectrometry dating. A few artifacts (sherds and flaked-lithic debitage) were collected from auger probing as well. Although pottery dating suggests that the buried structure dates from the Basketmaker III period, we had received no absolute dates at the time of this writing.

## **Plant and Artifact Analyses**

### **Pollen Analysis**

Thirty-nine pollen samples collected during the Basketmaker Communities Project were processed by the Palynology Laboratory at Texas A&M University, where pollen grains were separated and concentrated utilizing protocols developed and tested by Vaughn Bryant, Jr. The pollen was identified and analyzed by Susan Smith. During the 2016 season, Smith analyzed five samples from the Dillard site (5MT10647), two samples from the Dry Ridge site (5MT10684), seven samples from the Badger Den site (5MT10686), three samples from Sagebrush House (5MT10687), 10 samples from Portulaca Point (5MT10709), and 12 samples from the Shepherd site (5MT3875). One report (Smith 2016) discusses all 39 pollen samples. The following is a summary of Smith's findings.

#### *The Dillard Site*

The pollen results from the Dillard site (5MT10647) received in 2016 document a variety of native plant resources that might have contributed to subsistence. Of the five samples analyzed, three are from Structure 232, and two are from Structure 220. With a ubiquity rate of 67 percent, prickly pear pollen was noteworthy in Structure 220. This percentage is high when compared to results in a regional database (Smith 2016). More maize pollen was found in the samples from Structure 220 than Structure 232, but more cholla pollen (a ubiquity rate of 75 percent) was recovered from Structure 232 (Smith 2016). Smith notes that cholla pollen is sparse in the 108 total samples she has analyzed for the Basketmaker Communities Project; the high percentage for Structure 232 is thus noteworthy.

Overall, samples from Structure 220 show a greater diversity of pollen types than those from Structure 232, and some pollen types for the former are rare taxa such as pea family and phlox. This could indicate that more activity occurred in Structure 220 than in Structure 232. It could also indicate seasonal use, such that Structure 220 was used year-round but Structure 232 was used only seasonally.

#### *The Dry Ridge Site*

The two samples analyzed from the Dry Ridge site (5MT10684) are from pit features located in the midden. The sample from one of the pits yielded a greater variety of economic pollen taxa (Smith 2016) and included maize, prickly pear, beeweed, and carrot family. The sample from the other pit had a higher percentage of grass pollens. Both samples showed the presence of juniper and pinyon pollen.

### *The Badger Den Site*

The seven pollen samples from the Badger Den site (5MT10686) were collected from an extramural pit associated with Nonstructure 109 and from a masonry surface structure (Structure 111). The majority of pollens from the Nonstructure 109 pit are water indicators such as willow, cattail, and hackberry, but Smith cautions that the willow pollen is so well preserved that it is probably from a modern source (Smith 2016). This might be correct—Nonstructure 109 is adjacent to a two-track road, and this surface showed signs of disturbance.

The pollen samples from Structure 111 were collected from two intramural pits and show high percentages of maize and prickly pear pollen (Smith 2016). These findings are similar to the pollen signatures for the Dillard site (5MT10647) and show subsistence use of local cacti. One of the two intramural pits contained evidence of a rare sumac type, which may reflect another food source (Smith 2016).

Maize pollen was found in all seven samples as were other archaeological markers such as beeweed pollen and pollen from the carrot family. Although the site experienced significant disturbance from plowing and bulldozing, Smith notes that a strong ethnobotanical imprint is preserved at the site (Smith 2016).

### *Sagebrush House*

Three pollen samples from Sagebrush House (5MT10687) were submitted for analysis. Each sample contained low pollen concentrations, which might relate to the extensive disturbance of this site. Nonetheless, the pollen samples were collected from kiva (Structure 113) floor contexts and show strong economic signatures (Smith 2016). Willow, cattail, beeweed, prickly pear, cholla, and maize pollens were documented. Cacti pollen co-occurred in samples with maize pollen.

### *Portulaca Point*

Eight of the 10 samples submitted from Portulaca Point (5MT10709) yielded significant pollen counts. Samples from two contexts were submitted for analysis: Structure 115, a pit room; and Structure 106, a pithouse. Maize pollen was found in samples from both structures. The samples from Structure 106 contained the highest occurrence of maize pollen (42 percent). Such a high percentage of maize pollen indicates that ancestral populations were directly transporting maize pollen into that structure, and/or that maize still in the husk with flowered tassels was brought into the structure (Smith 2016). Further, samples from Structure 106, which contained pollen of beeweed, cherry, Indian wheat, large grasses, and rose family, displayed a higher diversity of economic taxa than the samples from Structure 115. Smith suggests that the contrast between the two structures may be a result of the two structures being used differently; Structure 106 was probably a habitation structure, whereas Structure 115 might have seen more specialized use (Smith 2016).

## *The Shepherd Site*

Twelve pollen samples from the Shepherd site (5MT3875) were analyzed. Four of the 12 samples were collected from a masonry structure (Structure 106), whereas the other eight samples were taken from pit features dug into three extramural surfaces (Nonstructures 119, 122, and 129). Few grains of maize pollen were found in these samples; only six of the 12 samples contained maize pollen, and the percentages of maize pollen are relatively low (Smith 2016). This pattern is similar to that for the Dillard site (5MT10647), for which low maize counts characterize six of 10 samples (Smith 2016).

Samples from Structure 106 contained pollen of willow, prickly pear, and large grasses. Smith notes that the presence of the pollen of large grasses in Structure 106 indicates cultural uses of particular grasses (Smith 2016). Willow pollen was found in a sample from a posthole, and prickly pear pollen was found in three of the four samples submitted from this structure.

The eight samples from three extramural pits contained no pollen from large grasses or prickly pear cactus (Smith 2016). The sample from a pit in Nonstructure 129 contained squash pollen, which is one of only two samples (of 108 total pollen samples) sent in for the Basketmaker Communities Project that contains squash pollen. According to Smith (2015), squash pollen was also found in Structure 508 at the Dillard site (5MT10647). Also found in these three extramural pits include pollens from beeweed, willow, and the carrot family.

## **Textile Analysis**

In 2016, a fragment of a carbonized sandal was found a few centimeters above the floor of an antechamber (Structure 103) at the Ridgeline site (5MT10711). The sandal fragment was analyzed by Laurie Webster (Webster 2016), who identified it as a portion of a sandal produced using a twill plaiting technique. The plaiting elements were made from the whole leaf of narrowleaf yucca. A hint of a selvage along one edge suggests that the full width of the sandal is present, and that the complete sandal was approximately 10 cm wide. This fragment represents the earliest reported example of a twill-plaited sandal from the Montezuma Valley or Mesa Verde areas; most Basketmaker III sandals are twined rather than plaited (Webster 2016).

## **Artifact Analysis**

In-house artifact cataloging and analysis for the Basketmaker Communities Project is ongoing. More than 37,000 flaked-lithic artifacts and 38,600 pottery sherds have been analyzed for the Basketmaker Communities Project thus far, and 1,600 flotation samples have been processed. Of the 37,000 pieces of chipped stone, 11,000 pieces were analyzed in 2016, and 6,500 of these artifacts were collected from sites in the Hatch group (Sagebrush House, the Pasquin site, the Badger Den site, and the Dry Ridge site), the Ridgeline site, or Mueller Little House. Of the 38,600 pottery sherds analyzed, 15,300 sherds were analyzed in 2016, and 13,200 of these sherds were collected from sites in the Hatch group, Ridgeline, or Mueller Little House. Of the 1,600 flotation samples processed, 280 were collected from sites in the Hatch group, Ridgeline, or Mueller Little House.

## **Petrographic Analysis of Pottery**

Thirty-five pottery sherds from the Dillard site (5MT10647) were subjected to petrographic analysis by Emma Britton (2016) to identify temper and other inclusions. Petrographic thin sections were prepared by Spectrum Petrographics Inc. in Vancouver, Washington, and all analyses were conducted in Britton's lab in Albuquerque, New Mexico. Numerous aplastic inclusions, including a variety of igneous rock and multi-lithic sand tempers and natural inclusions of shale or unmodified clay pellets, were identified during petrographic analysis.

## **Chronometric Analyses**

One of the primary objectives of the Basketmaker Communities Project is to create a Basketmaker III settlement history of the project area by collecting materials from habitation and ancillary structures that yield absolute dates. Three dating methods are being applied: radiocarbon accelerator mass spectrometry, archaeomagnetism, and dendrochronology. Dating results from radiocarbon accelerator mass spectrometry and archaeomagnetism were not available as of December 2016.

Fifty-nine dendrochronological samples were submitted to the Laboratory of Tree-Ring Research at the University of Arizona in the fall of 2014, and 28 samples were submitted in the spring of 2015. In 2016, we received results for 19 of those 87 dendrochronological samples. Of those 19, only six yielded dates, and none yielded a cutting date. The six datable samples were from the Dillard site (5MT10647) and are from Structures 220, 228, 231, and Structure 102 (the great kiva). The dates for Structure 220 are A.D. 607vv, A.D. 623+vv, and A.D. 625+vv; the only datable sample from Structure 228 yielded a date of A.D. 601+vv. The datable sample from Structure 231 yielded a date of A.D. 623vv, and the datable sample from the great kiva (Structure 102) yielded a date of A.D. 621+vv.

## **Human Remains**

Isolated human remains, defined as fewer than five disarticulated elements (Crow Canyon Archaeological Center 2001), were found in 25 excavation units at the six sites investigated during the 2015 and 2016 field seasons, which consist of sites in the Hatch group (Sagebrush House, the Badger Den site, the Pasquin site, and the Dry Ridge site), Mueller Little House, and the Ridgeline site. All remains were analyzed in the field by bioarchaeologist Kathy Mowrer. Table 2 provides the site designation, element identification and characteristics, and age of the human remains found in 2015 and 2016. Following analysis, in accordance with Crow Canyon's Policy on the Treatment of Human Remains and Associated Funerary Artifacts (Crow Canyon Archaeological Center 2001), all remains were reburied in the locations in which they were found.

## **Faunal Analysis**

Analysis on faunal remains from the following six sites was completed by Kari Cates (Cates 2016): the Switchback site (5MT2032), the Shepherd site (5MT3875), the Dillard site (5MT10647), Portulaca Point (5MT10709), Site 5MT10718, and the TJ Smith site (5MT10736). The faunal assemblages from these six sites are typical of faunal assemblages from the central Mesa Verde region. Lagomorphs are the dominant taxa represented in each assemblage. Cates notes that the skeletal representations suggest that complete animals were brought to the sites for processing and consumption, and that the hunting of large animals and carnivores was less common. With the exception of squirrel remains, the presence of rodent remains appears to be the result of natural taphonomic processes rather than cultural activities.

Intrasite analysis of faunal remains from the Dillard site (5MT10647) yields an interesting pattern for Block 300 (Cates 2016). In Block 300, jackrabbit remains outnumber cottontail remains, whereas the opposite pattern was found for Block 200. Further, artiodactyl remains were found almost exclusively in Block 200, although a few specimens were found in Block 300. Cates (2016) notes that the majority of these artiodactyl remains were fashioned into tools and other artifacts, and it is interesting that artiodactyl remains were not more numerous in the middens.

## **Curation**

Crow Canyon has an executed agreement with the Anasazi Heritage Center, Dolores, Colorado, for the curation of collected materials and associated documentation from the Basketmaker Communities Project. The Anasazi Heritage Center will curate materials generated as a result of the 2011–2016 field seasons of the project.

## **Summary and Work Plan for 2017**

The goals of the sixth year of the Basketmaker Communities Project were the following: (1) complete all excavations at sites in the Hatch group (Sagebrush House, the Pasquin site, the Badger Den site, and the Dry Ridge site), Mueller Little House, and the Ridgeline site; (2) conduct remote-sensing at the Switchback site, the Elderpiñon site, and Wheatfield Island; and (3) conduct soil augering/probing at the Agatha site. With the exception of completing excavation and documentation at the Ridgeline site, these goals were achieved in 2016. We utilized several methods in our investigations including surface documentation, geophysical survey, targeted soil probes, and excavation. Several analyses were completed, and the resulting data provide us with a greater understanding of the ancestral Pueblo community that inhabited the landscape that is today occupied by Indian Camp Ranch. The Basketmaker Communities Project continues to shed light on the nature of community formation and change through time, the identities of the first farmers in the central Mesa Verde region, the ways in which growing Pueblo populations impacted environmental resources through time, and resource sustainability.

Two research designs (Ortman et al. 2011; Ryan and Diederichs 2014) will guide the final field work in the spring of 2017, when Crow Canyon researchers will complete excavations at the

Ridgeline site. Also planned for 2017 are several special analyses. The following materials from the Basketmaker Community Project sites have been selected and will be submitted to specialists for analysis: pollen samples, faunal remains, archaeomagnetic samples, accelerator mass spectrometry samples, petrographic thin-sections, and dendrochronological samples. A comprehensive report on all excavations conducted as part of Crow Canyon's Basketmaker Communities Project will be published on Crow Canyon's website at [www.crowcanyon.org](http://www.crowcanyon.org).

## **Personnel, 2016 Field Season**

### **Archaeology Department Staff**

Shirley Powell, vice president of programs  
Sharon Milholland, director of programs  
Susan Ryan, director of archaeology  
Caitlin Sommer, supervisory archaeologist  
Shanna Diederichs, supervisory archaeologist  
Steve Copeland, field archaeologist  
Rebecca Simon, field archaeologist  
Grant Coffey, GIS archaeologist  
Kristin Kuckelman, research publications manager  
Jamie Merewether, collections manager  
Kari Schleher, laboratory analysis manager  
Michael Lorusso, laboratory education coordinator  
Kate Hughes, laboratory assistant  
Jonathan Dombrosky, seasonal field archaeologist  
Jonathan Walker, temporary field archaeologist  
Lyneve Begaye, field intern  
Kelsey Hanson, field intern  
Daniel Hampson, field intern  
Mairead Poulin, field intern  
Allison Jordan, lab intern  
Rebecca Morris, lab intern  
Tara Beresh, lab intern  
Bethany Wurster, lab intern

### **Education Department Staff**

Kathy Stemmler, director of education  
Sean Gantt, assistant director of education  
Paul Ermigiotti, educator  
Rebecca Hammond, educator  
Tyson Hughes, educator  
Cara McCain, educator  
Anna Cole, curriculum developer  
Quincey Kennedy, education intern

### **American Indian Initiatives Department Staff**

Dan Simplicio, cultural specialist  
Daliyah Tang, American Indian Initiatives intern

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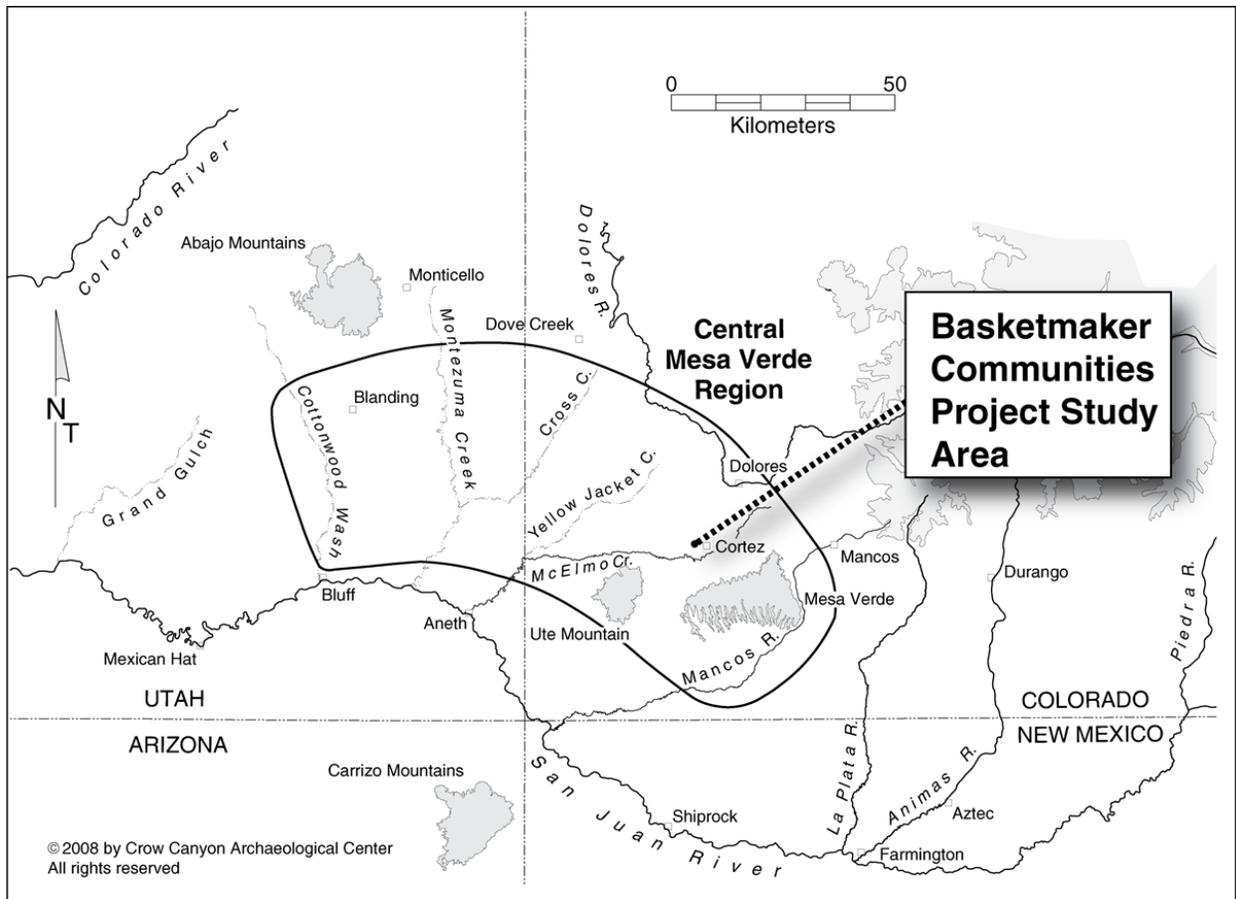
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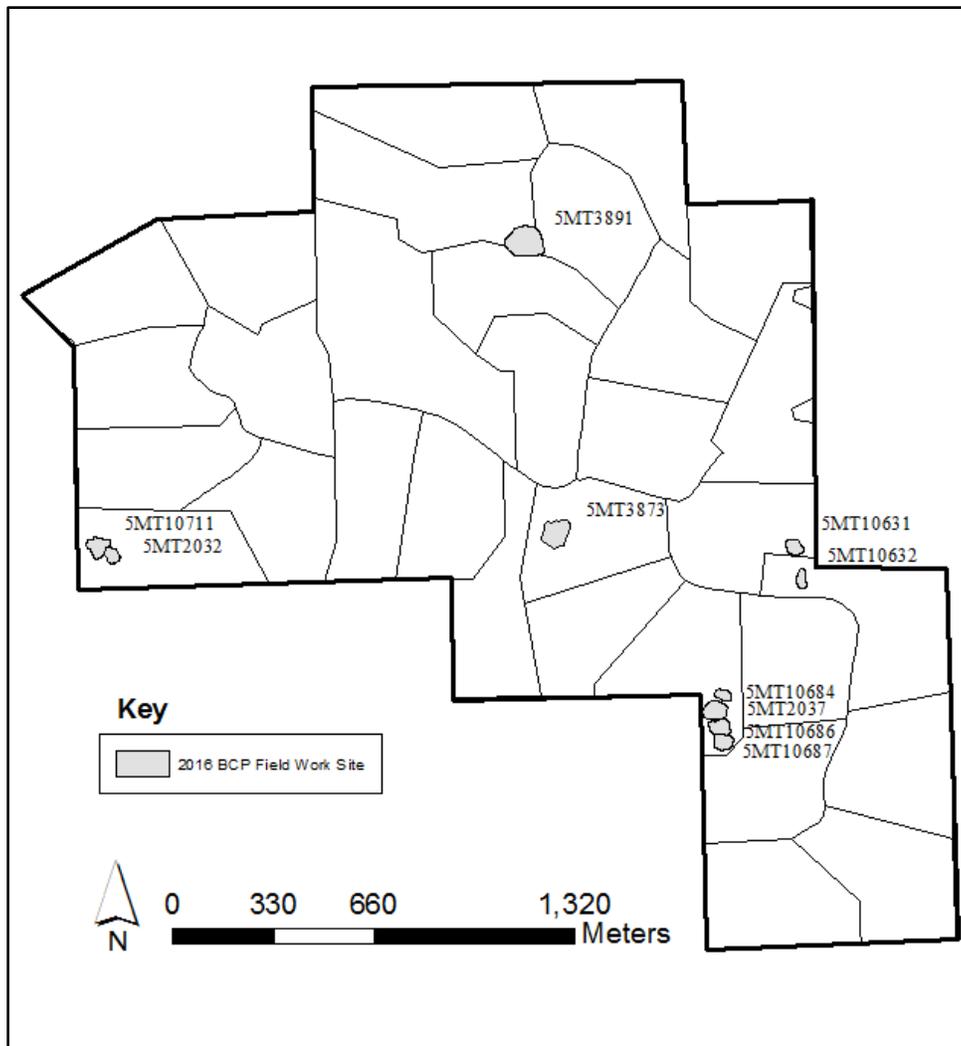
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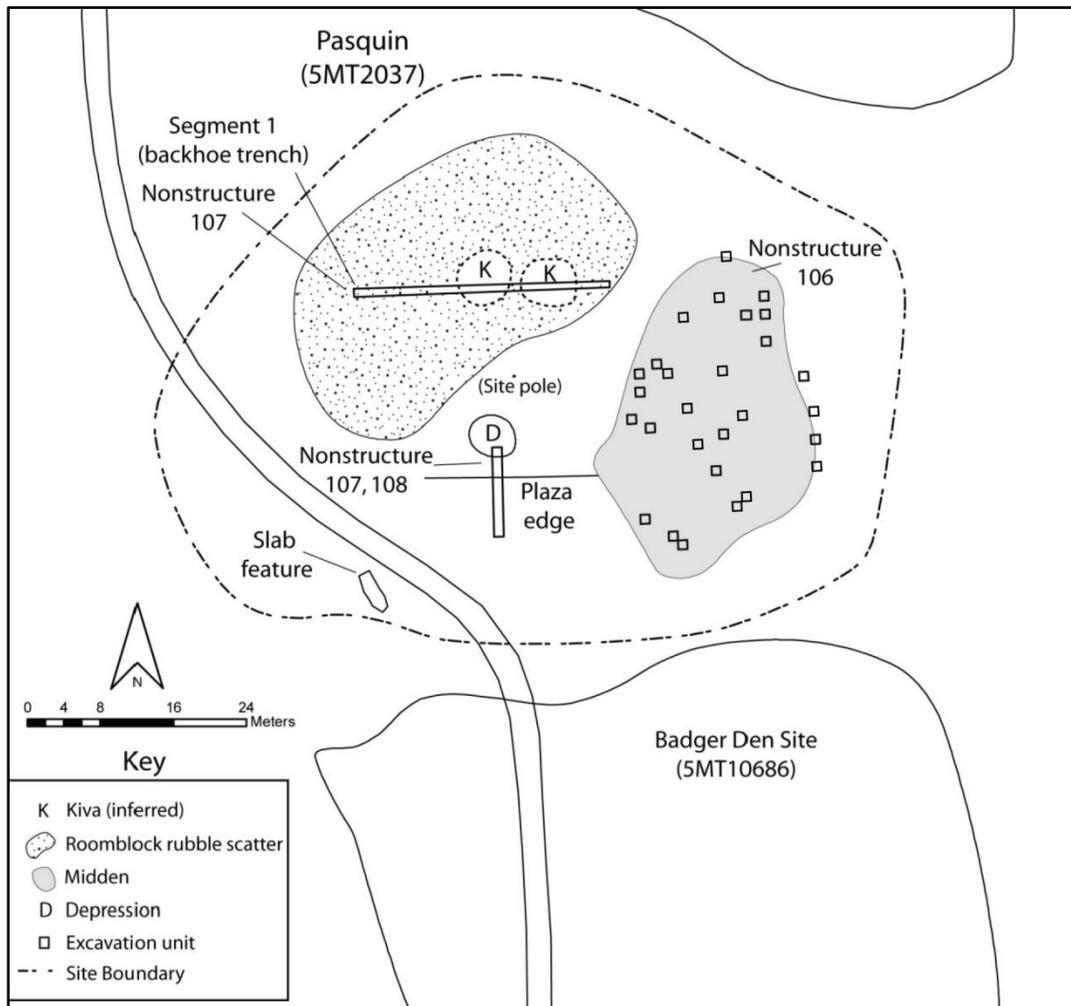
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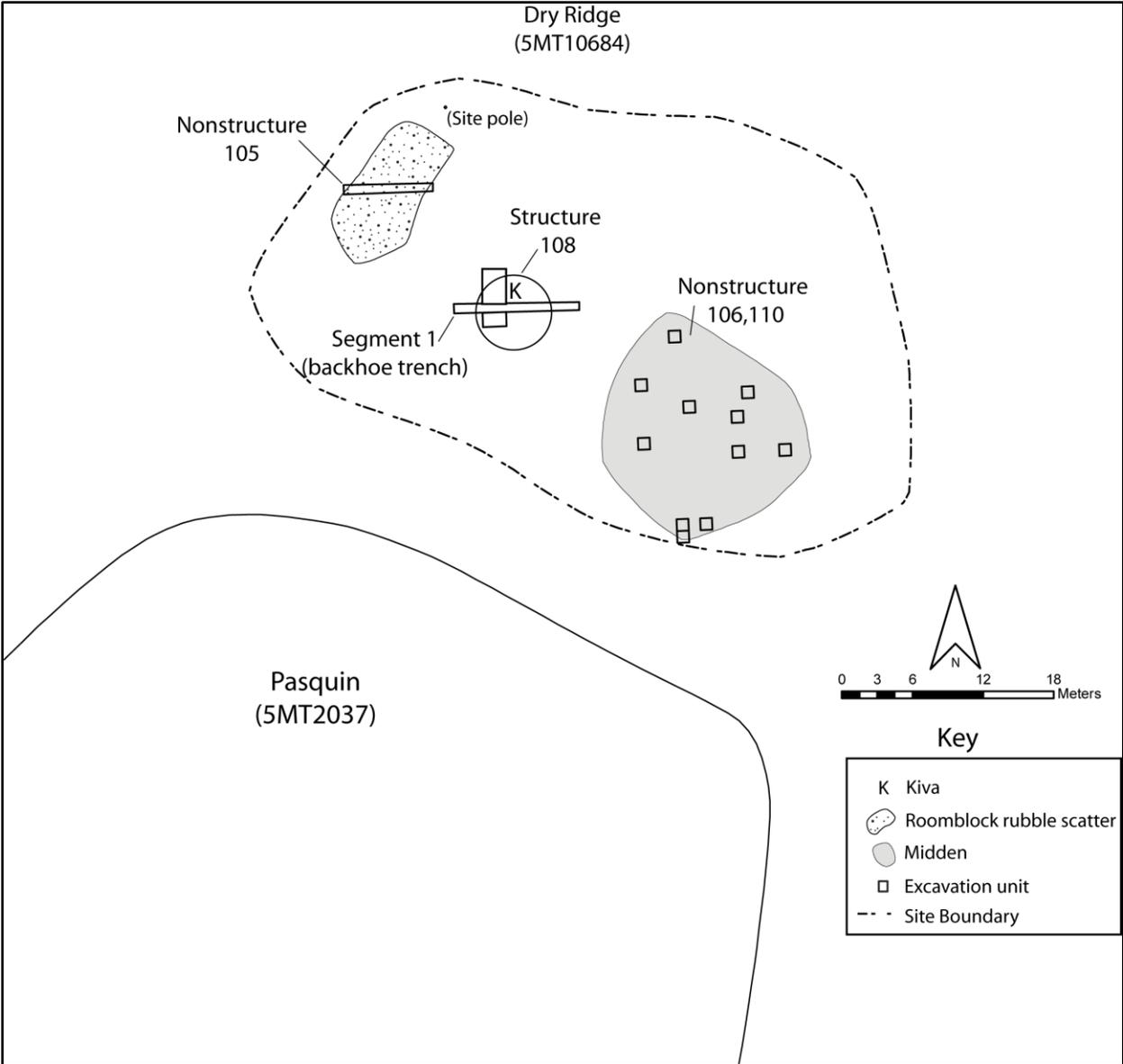
**Figure 1. Location of the Basketmaker Communities Project study area in the central Mesa Verde region.**



**Figure 2. The Indian Camp Ranch subdivision showing properties and sites investigated during the 2016 season.**



**Figure 3. The Pasquin site (5MT2037).**



**Figure 4. The Dry Ridge site (5MT10684).**



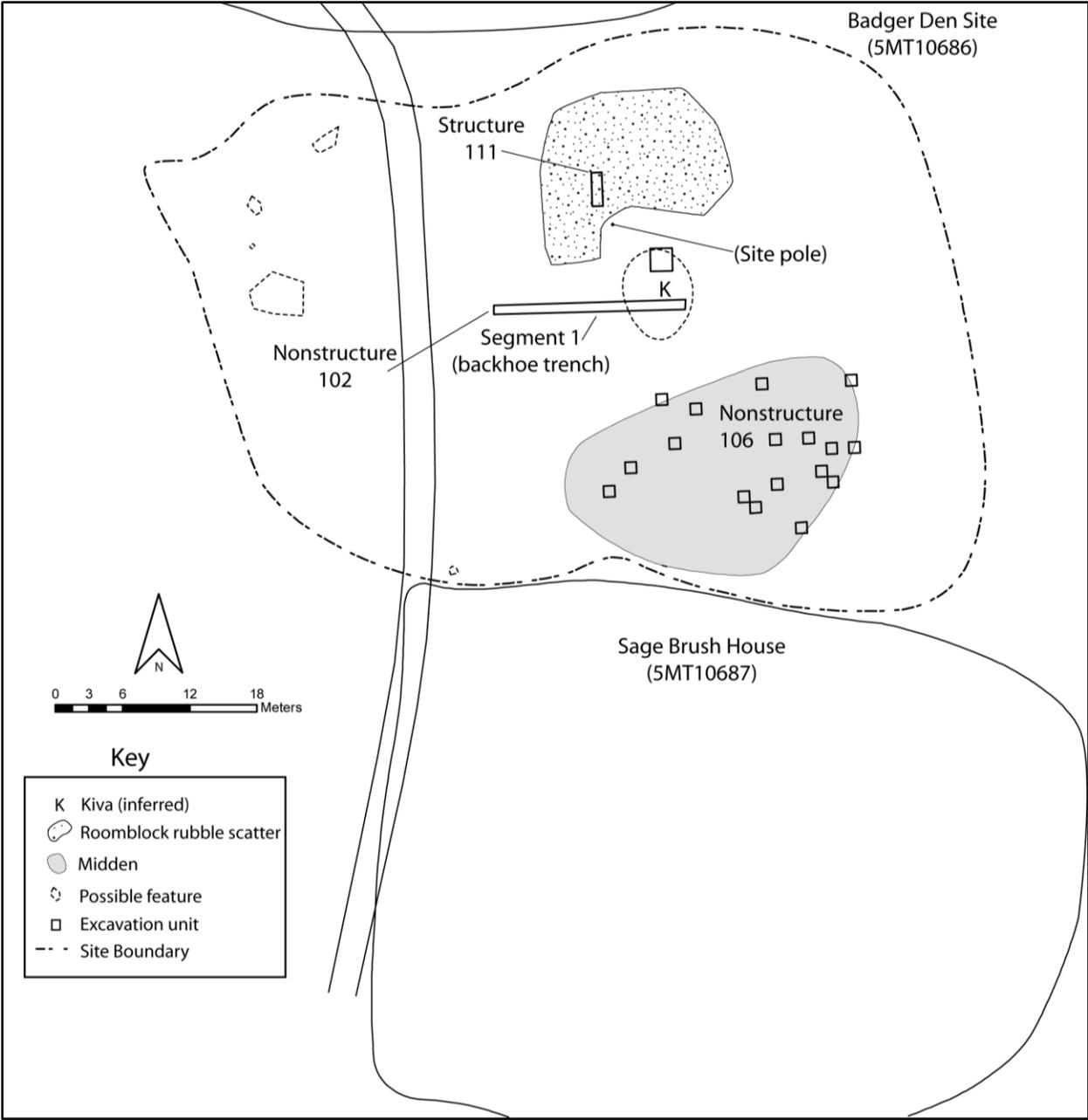
**Figure 5. Floor of Structure 108 at the Dry Ridge site (5MT10684). Plaster was only present on the floor in the southern portions of the excavation unit.**



**Figure 6. Floor assemblage in Structure 108 at the Dry Ridge site (5MT10684). Artifacts are lying on undisturbed calcium carbonate.**



**Figure 7. Hearth and sipapu in Structure 108 at the Dry Ridge site (5MT10684). The pit west of the hearth is an animal burrow.**



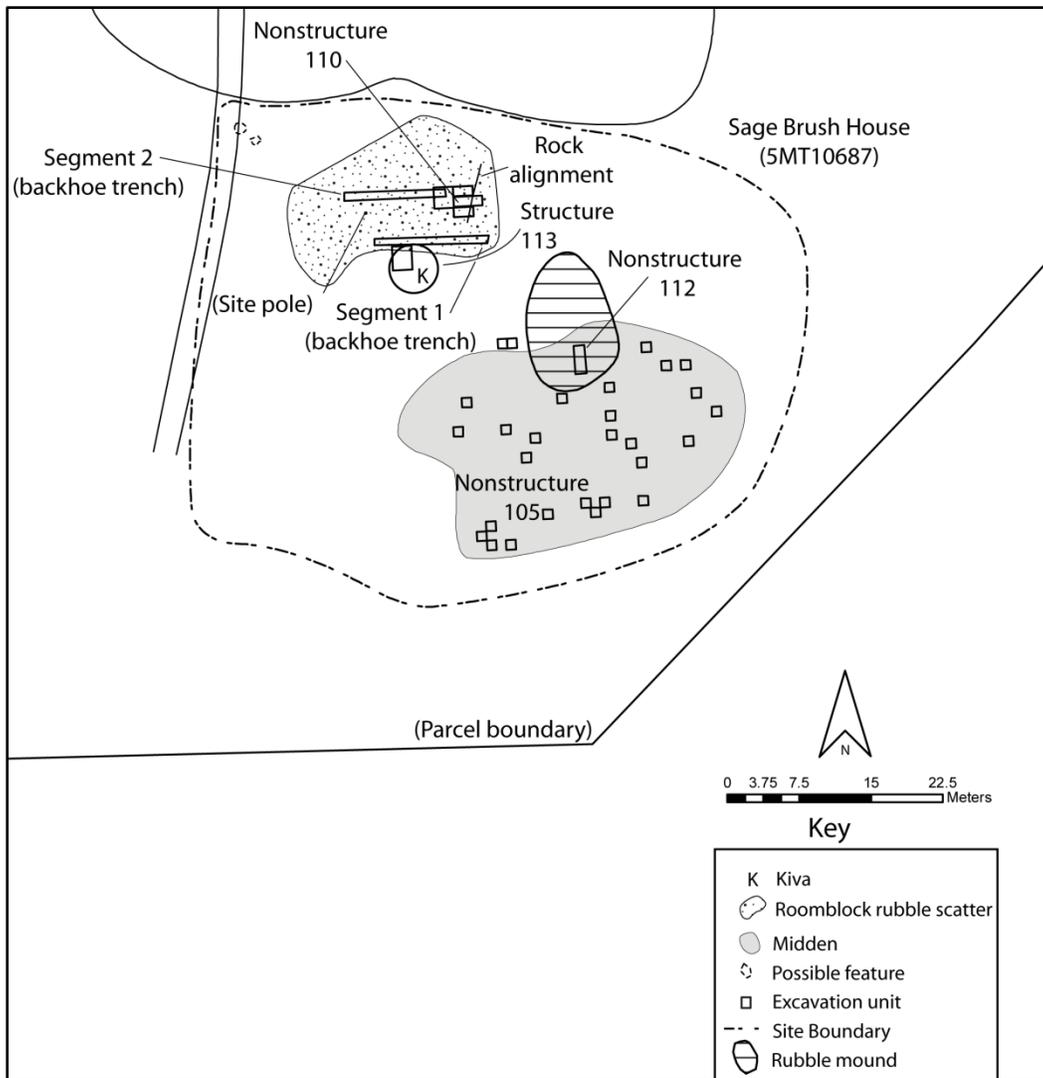
**Figure 8. The Badger Den site (5MT10686).**



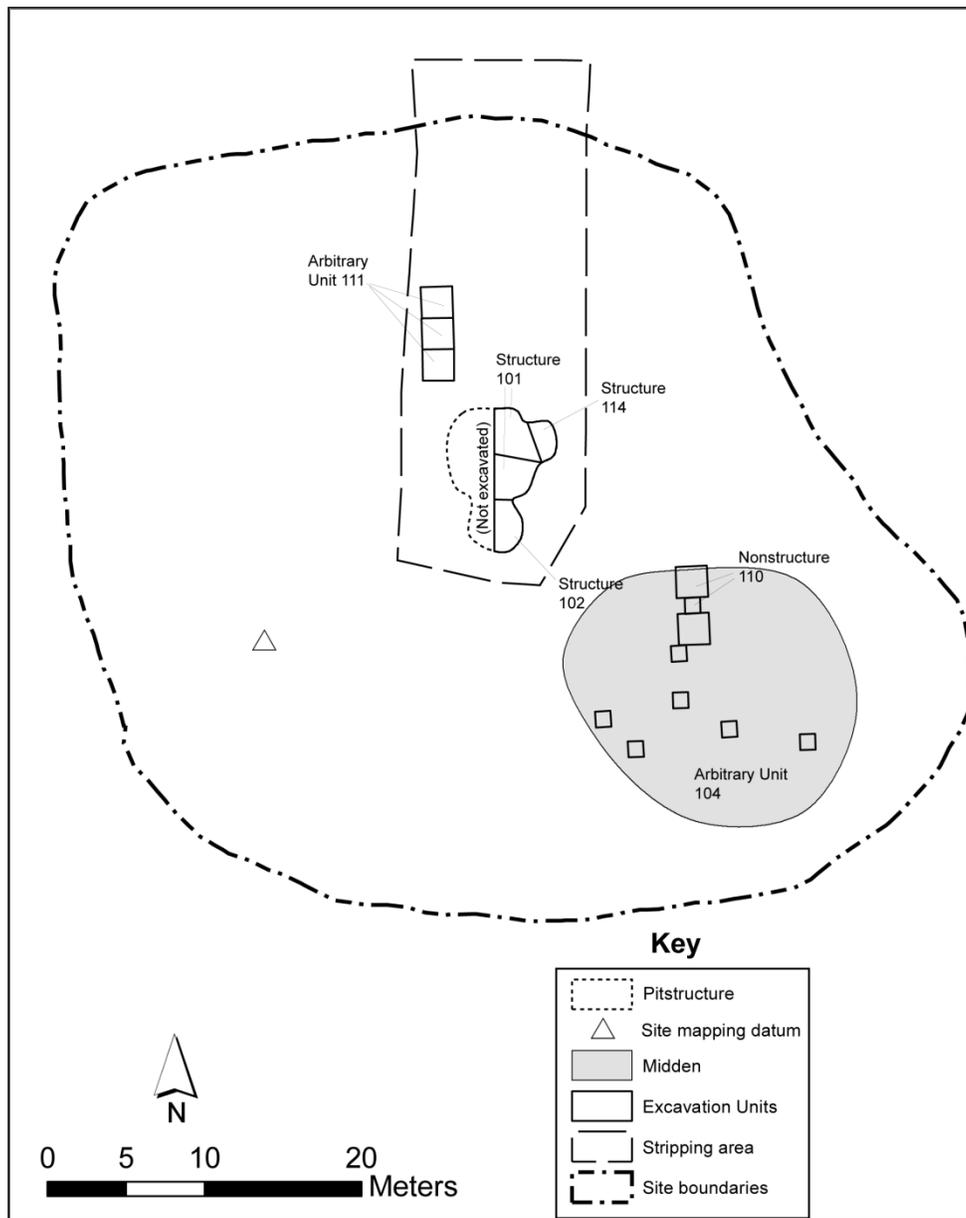
**Figure 9. Structure 111 at the Badger Den site (5MT10686).**



**Figure 10. Structure 111 wall remains at the Badger Den site (5MT10686).**



**Figure 11. Sagebrush House (5MT10687).**



**Figure 12. Mueller Little House (5MT10631).**



**Figure 13. Remains of a turkey on the floor of an antechamber (Structure 102) at Mueller Little House (5MT10631).**



**Figure 14. Floor assemblage in the main chamber (Structure 101) at Mueller Little House (5MT10631).**



**Figure 15. Evidence of two construction episodes associated with the northeast main support post in the main chamber (Structure 101) at Mueller Little House (5MT10631).**

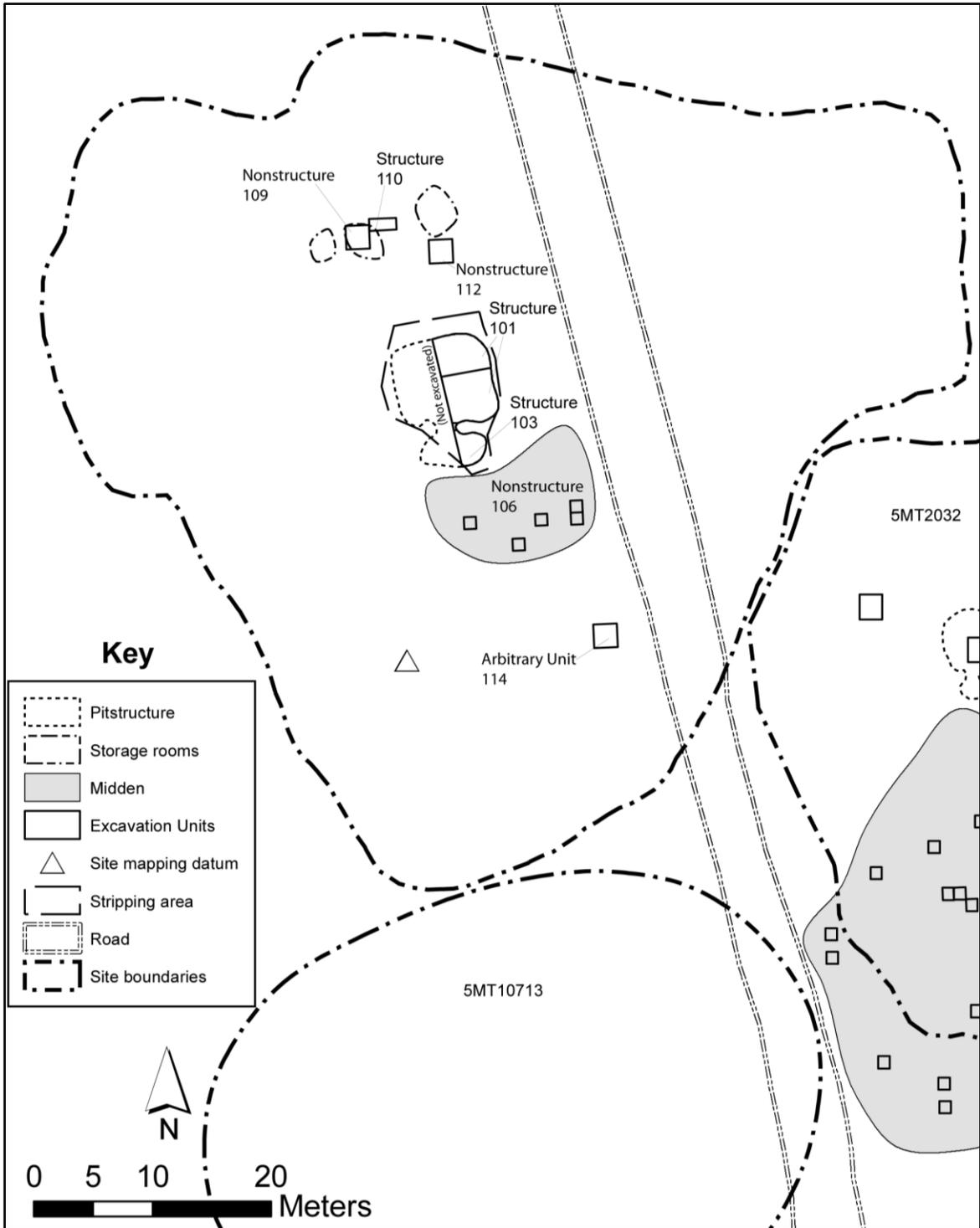


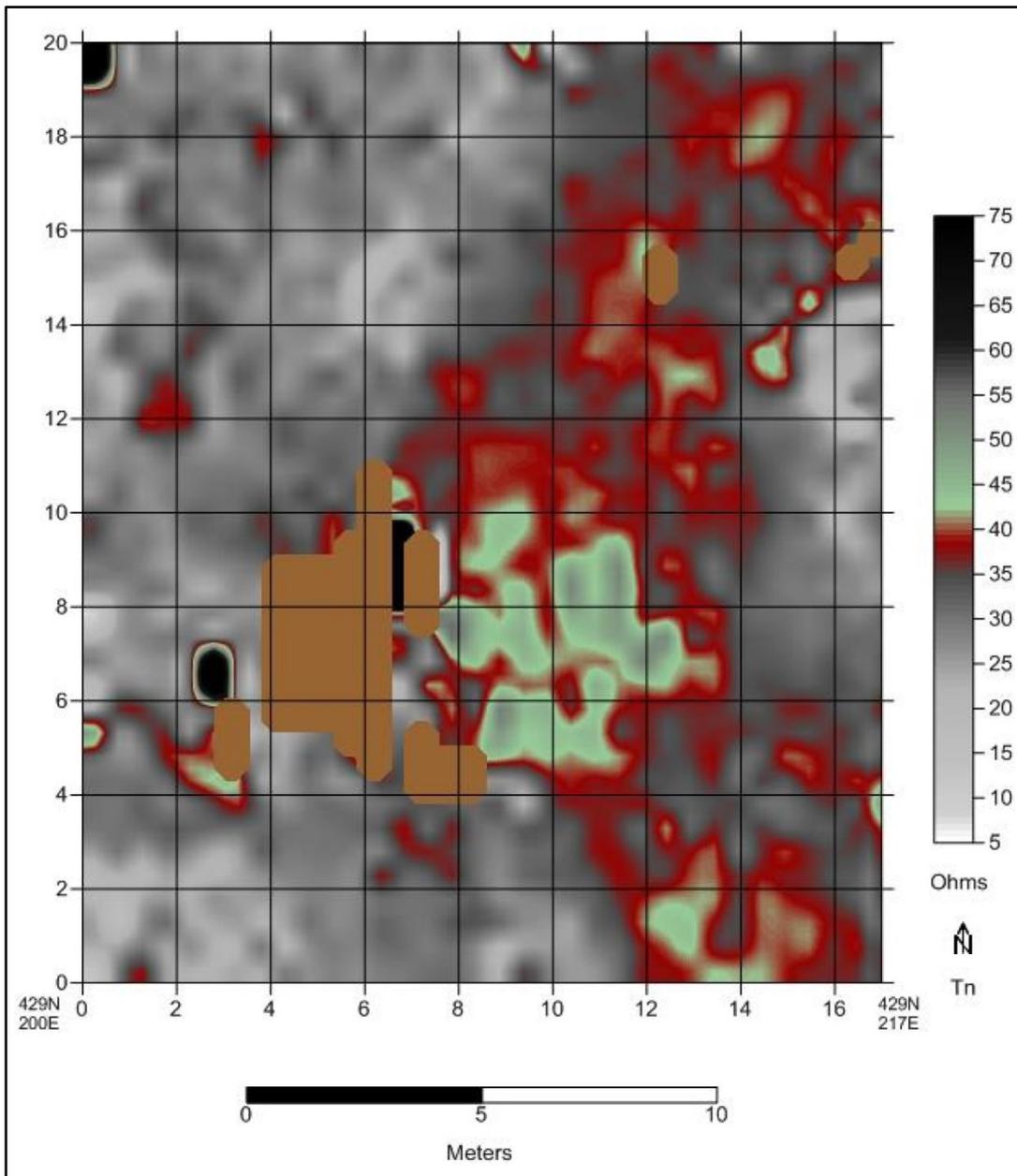
Figure 16. The Ridgeline site (5MT10711).



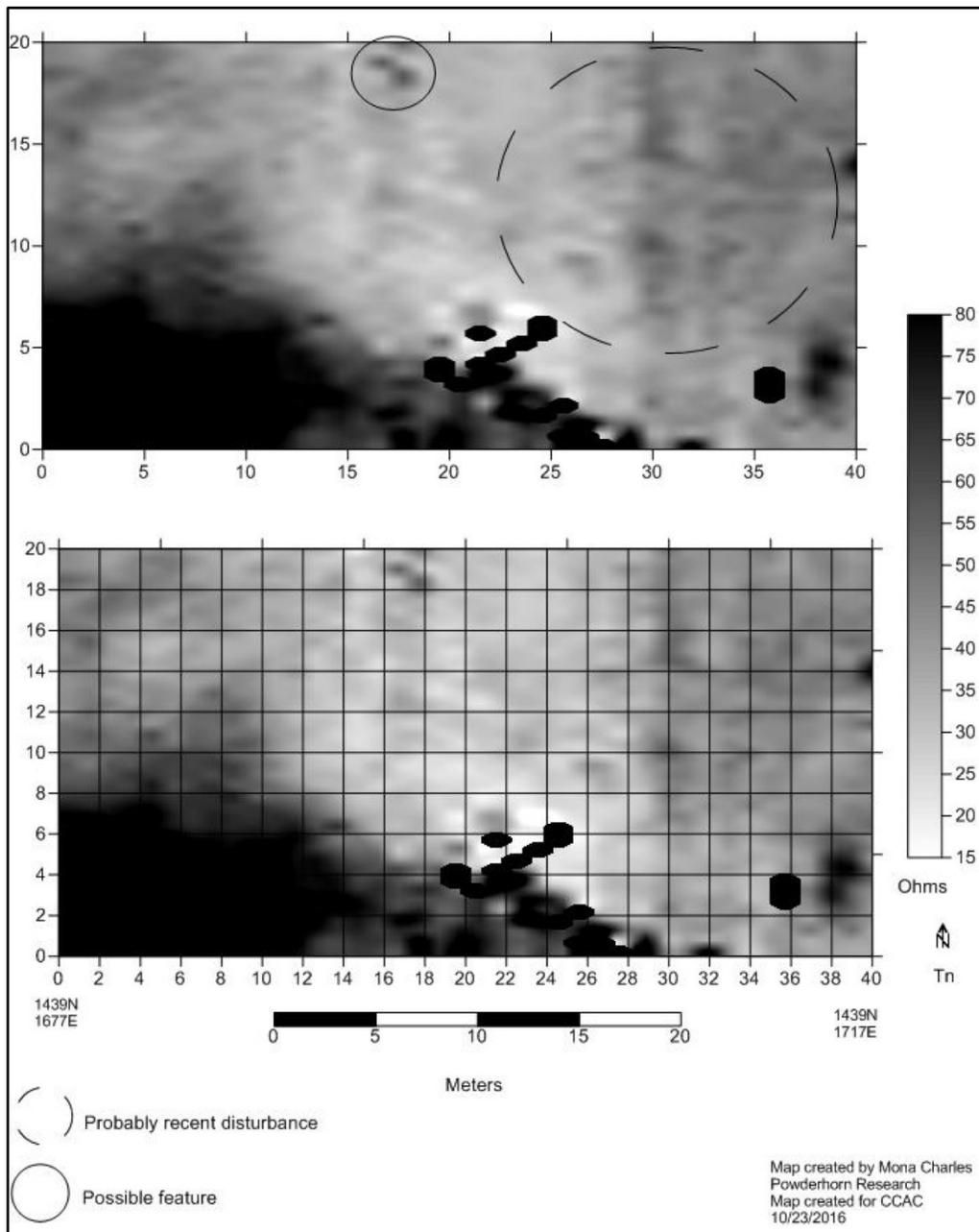
**Figure 17. Bench in the main chamber (Structure 101) at the Ridgeline site (5MT10711). Note the plaster on the bench.**



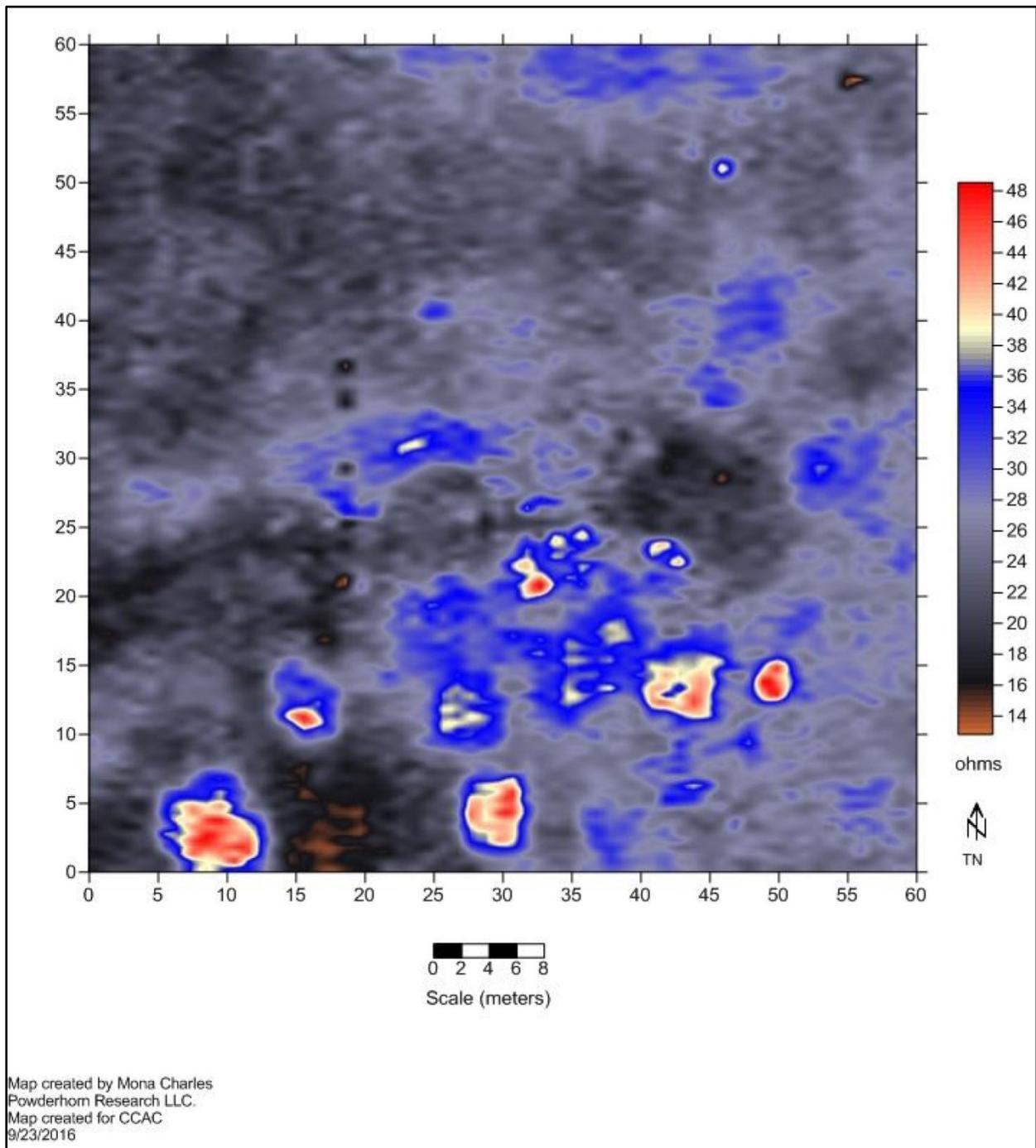
**Figure 18. Floor of the main chamber (Structure 101) at the Ridgeline site (5MT10711). The floor assemblage is present in the southeast quadrant.**



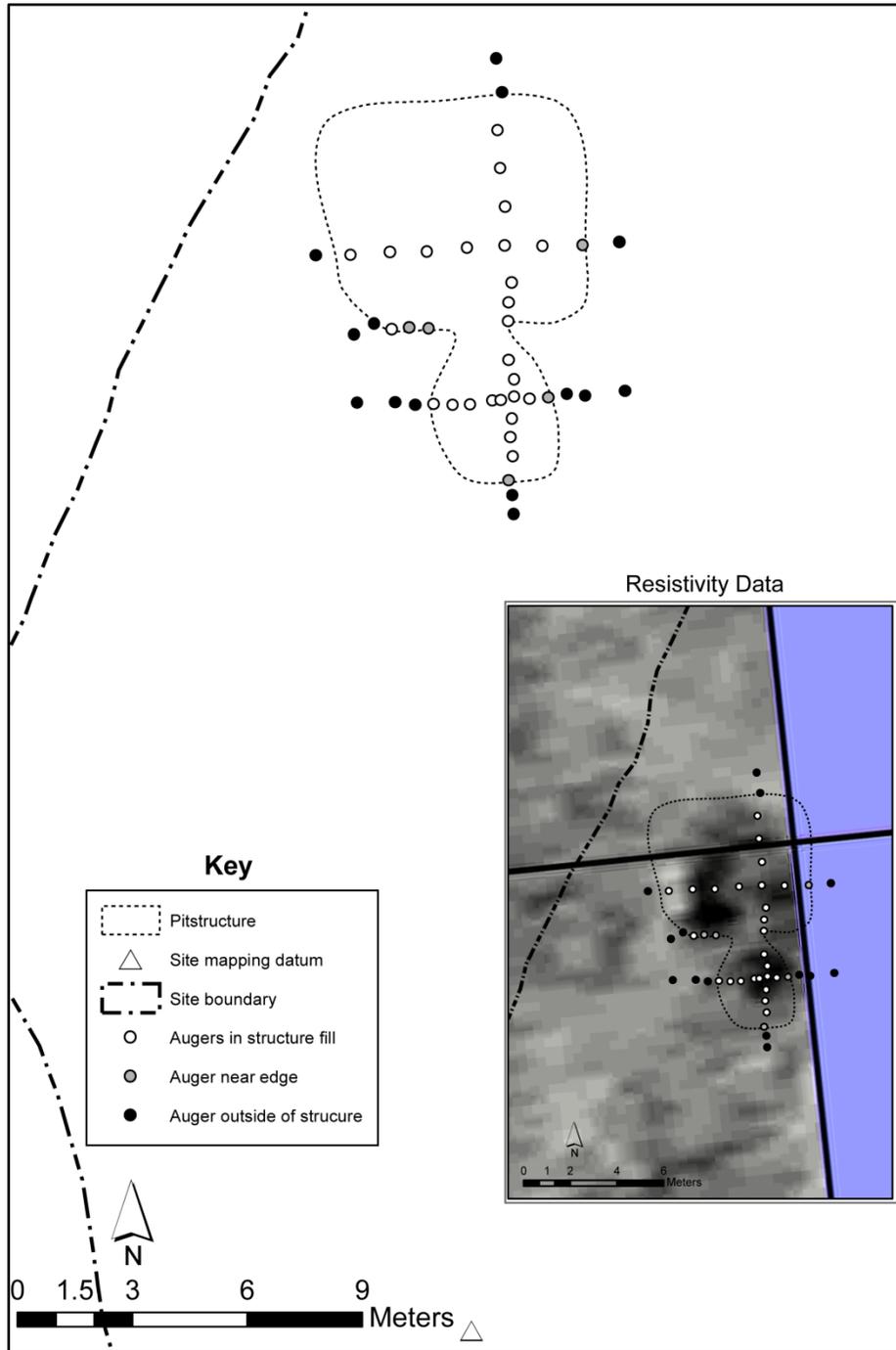
**Figure 19. Electrical resistivity image of the pithouse at the Switchback site (5MT2032).**



**Figure 20. Electrical resistivity image of the Elderpiñon site (5MT3873).**



**Figure 21. Electrical resistivity image of Wheatfield Island (SMT3891).**



**Figure 22. Map and electrical resistivity image of the pit structure at the Agatha site (5MT10632), showing auger locations.**

Table 1. Excavation Units, 2016 Field Season, Basketmaker Communities Project.

Site	Block	Northing	Easting	Dimensions (m)	SU Primary	Open	Closed
5MT2037	100	SEG 1			NST 107		X
5MT2037	100	819	2191	(1-x-1)	NST 106		X
5MT2037	100	820	2190	(1-x-1)	NST 106		X
5MT2037	100	822	2187	(1-x-1)	NST 106		X
5MT2037	100	824	2171	(5-x-1)	NST 107		X
5MT2037	100	827	2195	(1-x-1)	NST 106		X
5MT2037	100	829	2171	(2-x-1)	NST 107		X
5MT2037	100	830	2206	(1-x-1)	ARB 101		X
5MT2037	100	831	2171	(3-x-1)	NST 107		X
5MT2037	100	831	2196	(1-x-1)	ARB 101		X
5MT2037	100	832	2188	(1-x-1)	NST 106		X
5MT2037	100	833	2186	(1-x-1)	NST 106		X
5MT2037	100	836	2187	(1-x-1)	ARB 101		X
5MT2037	100	837	2205	(1-x-1)	ARB 101		X
5MT2037	100	838	2187	(1-x-1)	ARB 101		X
5MT2037	100	839	2189	(1-x-1)	ARB 101		X
5MT2037	100	841	2201	(1-x-1)	ARB 101		X
5MT2037	100	844	2199	(1-x-1)	ARB 101		X
5MT2037	100	844	2201	(1-x-1)	ARB 101		X
5MT2037	100	846	2201	(1-x-1)	ARB 101		X
5MT10631	100	1349	2468	(1-x-1)	ARB 104		X
5MT10631	100	1349	2479	(1-x-1)	ARB 104		X
5MT10631	100	1350	2474	(1-x-1)	ARB 104		X
5MT10631	100	1351	2466	(1-x-1)	ARB 104		X
5MT10631	100	1352	2471	(1-x-1)			X
5MT10631	100	1355	2471	(1-x-1)	ARB 104		X
5MT10631	100	1358	2472	(1-x-1)	ARB 104		X
5MT10631	100	1377.50	2458	(2-x-2)	ARB 108		X

Site	Block	Northing	Easting	Dimensions (m)	SU Primary	Open	Closed
5MT10631	100	1356	2471.50	(2-x-2)	NST 110		X
5MT10631	100	1359	2471.50	(2-x-2)	ARB 104		X
5MT10631	100	1373.50	2458	(2-x-2)	ARB 105		X
5MT10631	100	1374.50	2458	(2-x-2)	ARB 107		X
5MT10631	100	QUA NE			STR 101		X
5MT10631	100	QUA SE			STR 101		X
5MT10631	100	HAF E			STR 102		X
5MT10684	100	SEG 1			STR 108		X
5MT10684	100	868	2210	(1-x-1)	NST 106		X
5MT10684	100	869	2210	(1-x-1)	NST 106		X
5MT10684	100	869	2212	(1-x-1)	NST 106		X
5MT10684	100	875	2215	(1-x-1)	NST 106		X
5MT10684	100	875	2219	(1-x-1)	NST 106		X
5MT10684	100	876	2207	(1-x-1)	NST 106		X
5MT10684	100	878	2215	(1-x-1)	NST 106		X
5MT10684	100	879	2211	(1-x-1)	NST 106		X
5MT10684	100	880	2216	(1-x-1)	NST 106		X
5MT10684	100	881	2207	(1-x-1)	NST 106		X
5MT10684	100	885	2210	(1-x-1)	NST 106		X
5MT10684	100	887	2194.25	(1-x-2)	STR 108		X
5MT10684	100	889	2194.25	(3-x-2)	STR 108		X
5MT10684	100	898	2182	(1-x-8)	NST 105		X
5MT10686	100	SEG 1			NST 102		X
5MT10686	100	760.50	2175.50	(1-x-1)	NST 109		X
5MT10686	100	763	2207	(1-x-1)	NST 106		X
5MT10686	100	765	2203	(1-x-1)	NST 106		X
5MT10686	100	766	2202	(1-x-1)	ARB 101		X
5MT10686	100	767	2190	(1-x-1)	NST 106		X
5MT10686	100	767	2205	(1-x-1)	NST 106		X

Site	Block	Northing	Easting	Dimensions (m)	SU Primary	Open	Closed
5MT10686	100	767	2210	(1-x-1)	ARB 101		X
5MT10686	100	768	2209	(1-x-1)	ARB 101		X
5MT10686	100	769	2192	(1-x-1)	NST 106		X
5MT10686	100	770	2210	(1-x-1)	NST 106		X
5MT10686	100	770	2212	(1-x-1)	ARB 101		X
5MT10686	100	771	2196	(1-x-1)	NST 106		X
5MT10686	100	771	2205	(1-x-1)	ARB 101		X
5MT10686	100	771	2208	(1-x-1)	NST 106		X
5MT10686	100	774	2198	(1-x-1)	NST 102		X
5MT10686	100	775	2195	(1-x-1)	NST 102		X
5MT10686	100	776	2204	(1-x-1)	ARB 101		X
5MT10686	100	776	2212	(1-x-1)	ARB 101		X
5MT10686	100	787	2195	(2-x-2)	NST 102		X
5MT10686	100	793	2190	(3-x-1)	STR 111		X
5MT10687	100	SEG 1			STR 113		X
5MT10687	100	SEG 2			NST 102		X
5MT10687	100	SEG 3			NST 102		X
5MT10687	100	714	2198	(1-x-1)	ARB 114		X
5MT10687	100	715	2204	(1-x-1)	ARB 114		X
5MT10687	100	715	2209	(1-x-1)	ARB 115		X
5MT10687	100	715	2213	(1-x-1)	ARB 115		X
5MT10687	100	716	2208	(1-x-1)	ARB 114		X
5MT10687	100	716	2210	(1-x-1)	ARB 114		X
5MT10687	100	717	2215	(1-x-1)	ARB 114		X
5MT10687	100	720	2214	(1-x-1)	ARB 114		X
5MT10687	100	721	2202	(1-x-1)	NST 105		X
5MT10687	100	722	2211	(1-x-1)	ARB 101		X
5MT10687	100	722	2213	(1-x-1)	NST 105		X
5MT10687	100	722	2219	(1-x-1)	ARB 114		X

Site	Block	Northing	Easting	Dimensions (m)	SU Primary	Open	Closed
5MT10687	100	723	2203	(1-x-1)	NST 105		X
5MT10687	100	724	2195	(1-x-1)	NST 105		X
5MT10687	100	724	2200	(1-x-1)	NST 105		X
5MT10687	100	725	2211	(1-x-1)	ARB 101		X
5MT10687	100	725	2222	(1-x-1)	ARB 114		X
5MT10687	100	727	2196	(1-x-1)	NST 105		X
5MT10687	100	727	2206	(1-x-1)	NST 105		X
5MT10687	100	727	2220	(1-x-1)	ARB 114		X
5MT10687	100	728	2211	(1-x-1)	ARB 101		X
5MT10687	100	730	2208	(3-x-1)	NST 112		X
5MT10687	100	730	2217	(1-x-1)	ARB 101		X
5MT10687	100	730	2219	(1-x-1)	ARB 101		X
5MT10687	100	732	2215	(1-x-1)	ARB 101		X
5MT10687	100	733	2200	(1-x-1)	NST 105		X
5MT10687	100	733	2201	(1-x-1)	NST 105		X
5MT10687	100	741.60	2189.40	(2-x-2.5)	STR 113		X
5MT10687	100	747	2197	(1-x-2)	NST 110		X
5MT10687	100	747.50	2185.50	(5-x-5)	NST 102		X
5MT10687	100	748	2196	(1-x-3)	NST 110		X
5MT10687	100	749	2194	(2-x-2)	NST 102		X
5MT10687	100	749	2196	(1-x-2)	NST 110		X
5MT10687	100	755.50	2175	(1-x-1)	NST 102		X
5MT10711	100	1473	159	(2-x-2)	NST 109	X	
5MT10711	100	1450	177	(1-x-1)	NST 106		X
5MT10711	100	1449	177	(1-x-1)	NST 106		X
5MT10711	100	1449	174	(1-x-1)	NST 106		X
5MT10711	100	1449	168	(1-x-1)	NST 106		X
5MT10711	100	1447	172	(1-x-1)	NST 106		X
5MT10711	100	SEG 1			ARB 102	X	

Site	Block	Northing	Easting	Dimensions (m)	SU Primary	Open	Closed
5MT10711	100	HAF E			STR 103	X	
5MT10711	100	QUA NE			STR 101	X	
5MT10711	100	QUA SE			STR 101	X	
5MT10711	100	1474.50	161	(1-x-2.30)	STR 110	X	
5MT10711	100	1438.50	178.50	(2-x-2)	ARB 114		X
5MT10711	100	1471.50	166	(2-x-2)	NST 112	X	
Note: SU = study unit; NST = nonstructure; STR = structure; ARB = arbitrary unit							
<b>Total Excavation Units: 122</b>							
<b>Total Closed: 116</b>							
<b>Total Open: 6</b>							

Table 2. Isolated Human Remains, 2015–2016 Seasons.

Site	Element	Age
5MT10631	unidentified	unknown
5MT10631	unidentified	unknown
5MT10631	unidentified	unknown
5MT10631	long bone fragments	unknown
5MT10631	unidentified	unknown
5MT10631	cranial fragment, temporal portion	adult
5MT10684	right carpal	adult
5MT10684	unidentified, burned	N/A
5MT10684	tooth	9 months +/- 3 months
5MT10684	unidentified, burned	subadult +
5MT10684	unidentified	unknown
5MT10684	cranial fragment	infant
5MT10684	cranial fragment	unknown
5MT10684	long bone fragment	adult
5MT10684	rib fragment	subadult
5MT10684	cranial fragments	infant
5MT10686	unidentified	unknown
5MT10686	maxilla	6 years +/- 24 months
5MT10686	scapula fragment	adult
5MT10686	vertebrae fragments; cranial fragments; rib fragment	4–8 years
5MT10686	right metatarsal	adult
5MT10686	cuneiform	adult
5MT10687	cranial fragment, temporal portion	adult
5MT10687	unidentified	unknown
5MT10687	thoracic vertebra	adult, 45–55 years
5MT10687	thoracic vertebra, with lipping; older	adult, 35–45 years
5MT10687	rib fragment	subadult
5MT10687	tooth	subadult
5MT10687	cranial fragment; parietal	sub-adult
5MT10687	long bone fragments	less than 4 years
5MT10687	tibia fragment	child
5MT10687	neural arch	infant
5MT10687	unidentified	possibly adult
5MT10711	intermediate phalanx	adult
5MT10711	cranial fragment	indeterminate
5MT2037	unidentified	subadult, adult

Site	Element	Age
5MT2037	unidentified	N/A
5MT2037	unidentified	unknown
5MT2037	vertebra fragment	less than 4 years
5MT2037	fifth metacarpal	young adult
5MT2037	vertebra fragment	less than 4 years
5MT2037	unidentified	unknown
5MT2037	long bone fragments	adult
5MT2037	long bone fragments	adult
5MT2037	tooth—very worn	middle-aged adult
5MT2037	rib fragment	adult
5MT2037	rib fragments	subadult
5MT2037	long bone fragments	adult
5MT2037	unidentified	unknown
5MT2037	unidentified	unknown
5MT2037	unidentified	unknown
5MT2037	left maxilla	adult
5MT2037	phalanx, distal	adult
5MT2037	rib fragment	less than 4 years
5MT2037	long bone fragments	subadult, adult
5MT2037	long bone fragments	subadult, adult

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To cite this publication:

Sommer, Caitlin A., Susan C. Ryan, Kari L. Schleher, Shanna R. Diederichs, Steven R. Copeland, Rebecca L. Simon, and Grant D. Coffey  
2017 *The Basketmaker Communities Project Annual Report, 2016 Field Season*. Electronic document, <http://www.crowcanyon.org/basketmaker2016>, accessed day month year.\*

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