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Title

Home Away from Home: Ancestral Pueblo Fieldhouses in the Northern Rio Grande

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Prepared by

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Cover image photograph: Phillip E. Harroun, *Man standing next to structure in the fields, San Ildefonso Pueblo, New Mexico*, 1910?, Courtesy of the Palace of the Governors Photo Archives (NMHM/DCA), Negative Number 028942.

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Executive Summary

This historic context document summarizes archaeological research on fieldhouses (one- to three-room structures) located within the boundaries of Los Alamos National Laboratory, Bandelier National Monument, and the Valles Caldera National Preserve, with additional data sources from the Santa Fe National Forest. This document is the result of a stipulation in the June 2016 *Memorandum of Agreement Between the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office and the New Mexico Historic Preservation Officer: Regarding the Mitigation of Cultural Resources Impacted by Activities at the Minie Firing Site, Technical Area 36, Los Alamos National Laboratory, Los Alamos, New Mexico*.

This study incorporates three major themes:

1) An overview of previous research on fieldhouses.

2) A quantitative analysis of fieldhouses from excavated and unexcavated sites (A.D. 1200–1600).

3) A discussion of fieldhouse eligibility for listing in the National Register of Historic Places, future research, and alternatives to excavation.

Oral histories and historic records have identified fieldhouses as small structures built adjacent to agricultural fields and inhabited during the farming season. From these structures, people could watch and protect their crops from animals and other people. Early archaeologists documented the remains from these small houses scattered across the Pajarito Plateau and adjacent regions, but their investigations focused instead on large, multi-storied pueblos. From the late twentieth century and into the present, fieldhouses have been the subject of several archaeological investigations seeking to understand the dynamic role they played in Ancestral Pueblo societies.

For this study, fieldhouse data from the areas described above are synthesized. Many similarities, and a few differences, between fieldhouses from the Pajarito Plateau, fieldhouses from the region along the Rio Grande Valley near present-day Cochiti Lake, and select fieldhouses from the Jemez Plateau are described and interpreted. Fieldhouses in these areas most commonly contain one room that is on average four square meters in size, but Jemez fieldhouse rooms are on average twice the size of those found on the Pajarito Plateau and the Rio Grande Valley. Most fieldhouses are rectangular, but there are relatively more square one- to three-room structures on the Pajarito Plateau and more circular one- to three-room structures in the Rio Grande Valley. Hearths occur in only 25 percent of excavated fieldhouses on the Pajarito

Plateau, but in 86 percent of those in the Rio Grande Valley, and in 61 percent of those in the Jemez Plateau. The artifacts recovered from these fieldhouse sites include more utilityware than painted pottery, and the majority of pottery vessels were cooking jars rather than bowls. There is also evidence for manos, metates, and stone tool manufacturing inside fieldhouses. Remains of domesticated crops including maize, beans, and squash are found at fieldhouse sites, but few faunal remains are present.

Fieldhouses are the most common archaeological site-type on the Pajarito Plateau, with 491 identified at Los Alamos National Laboratory and 1,312 at Bandelier National Monument. The information compiled here, based on previous surveys and excavations, indicates consistent regional patterns in fieldhouse architecture, artifact ratios, and chronologies. While there is still much to be learned about fieldhouse origins, functions, and changes through time, future research will arguably benefit more from studies of previously excavated collections and analyses of spatial data than from additional excavations of fieldhouses.

To maximize data potential and resources in cases of adverse effects to fieldhouses: 1) consider determining fieldhouses not eligible for listing in the National Register of Historic Places after rigorous surface documentation of their location, period of occupation, and other features, if subsurface remains are lacking or highly disturbed, and 2) when mitigations are necessary, consider mitigations that involve analysis of previously excavated sites rather than new excavations. Test excavations of specific locations within fieldhouse structures (e.g., hearths) also provide an alternative mitigation strategy that is focused on gaining valuable new information while limiting large-scale, destructive excavations and analyses.

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Chapter 1. Introduction

> *Only a multitude of "small house" pueblos and innumerable cliff-dwellings of minor importance are passed without notice.* Edgar Lee Hewett (1906:14)

Around 800 years ago, the population of the northern Rio Grande region of New Mexico increased when Ancestral Pueblo groups migrated to the Pajarito Plateau and its adjacent lands (Cordell 1995; Crown et al. 1996; Kohler and Root 2004a; Ortman 2012, 2016). Migrants to the region in the late A.D. 1200s found people exploiting the rich natural resources of the area, including the riparian environment of the Rio Grande and the woodlands and forests in the higher elevations. Peoples of the Pajarito Plateau and canyonlands were farmers who grew maize, beans, and squash, to name a few, but also hunted large and small game. As more people arrived in the area and the number of permanent villages grew, competition for resources such as water and arable land increased (Duwe and Anschuetz 2013; Hill et al. 1996; Kohler and Root 2004a). During this time, people began constructing small, one- to three-room structures, commonly known as fieldhouses. Prior to the Coalition period (A.D. 1200-1325) , these small structures (Figures 1.1, 1.2., and 1.3) were rare or absent in northern New Mexico (Kulisheck 2005; Preucel 1990).

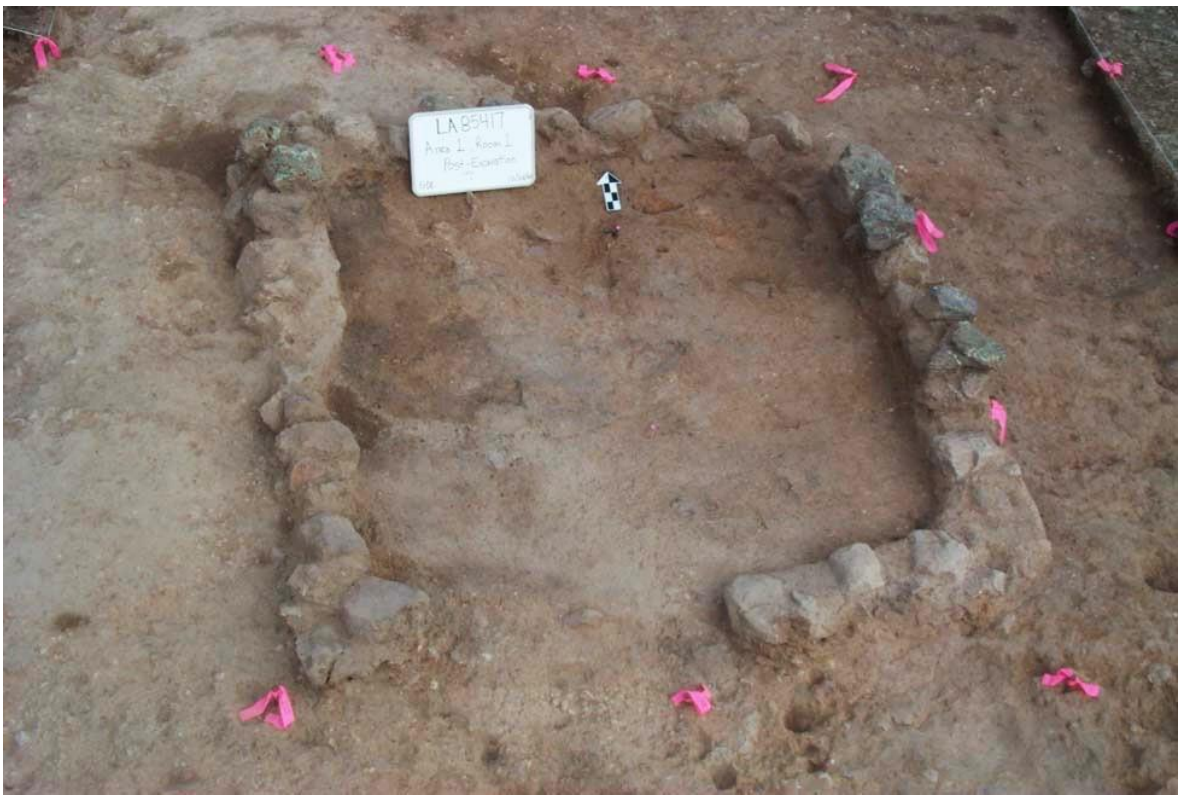

Figure 1.1 LA 85417, a one-room fieldhouse after excavation

Figure 1.2 LA 85411, a two-room fieldhouse after excavation

Figure 1.3 LA 12122, a three-room fieldhouse after excavation

Fieldhouses are known throughout the Ancestral Pueblo, Hohokam, and Mogollon cultural regions (Figure 1.4) (Crown 1985; Kohler 1992; Luebben et al. 1986; Stone 1993; Toney 2012; Ward 1978; Woodbury 1961). Historic evidence indicates fieldhouses were constructed from locally available materials like stone, brush, wood, and sometimes adobe; they primarily appeared in conjunction with increased agricultural activities on the landscape (Figure 1.5). Because of this association, as well as historic and ethnographic information (Russell 1978), their primary function has been tied to farming. Some theorize that the construction of fieldhouses in close proximity to agricultural lands allowed farmers to reduce transportation efforts when traveling to and from their villages; another theory is that fieldhouses are located strategically within fields to help monitor crop activity, provide protection from pests, and to provide care to the horticultural process by fending off drought, fires, and resource distrubance through the care and patience of living on-site (Haury 1956; Kohler 1992; Moore 1978, 1980; Preucel 1990; Sutton 1977; Wilcox 1978).

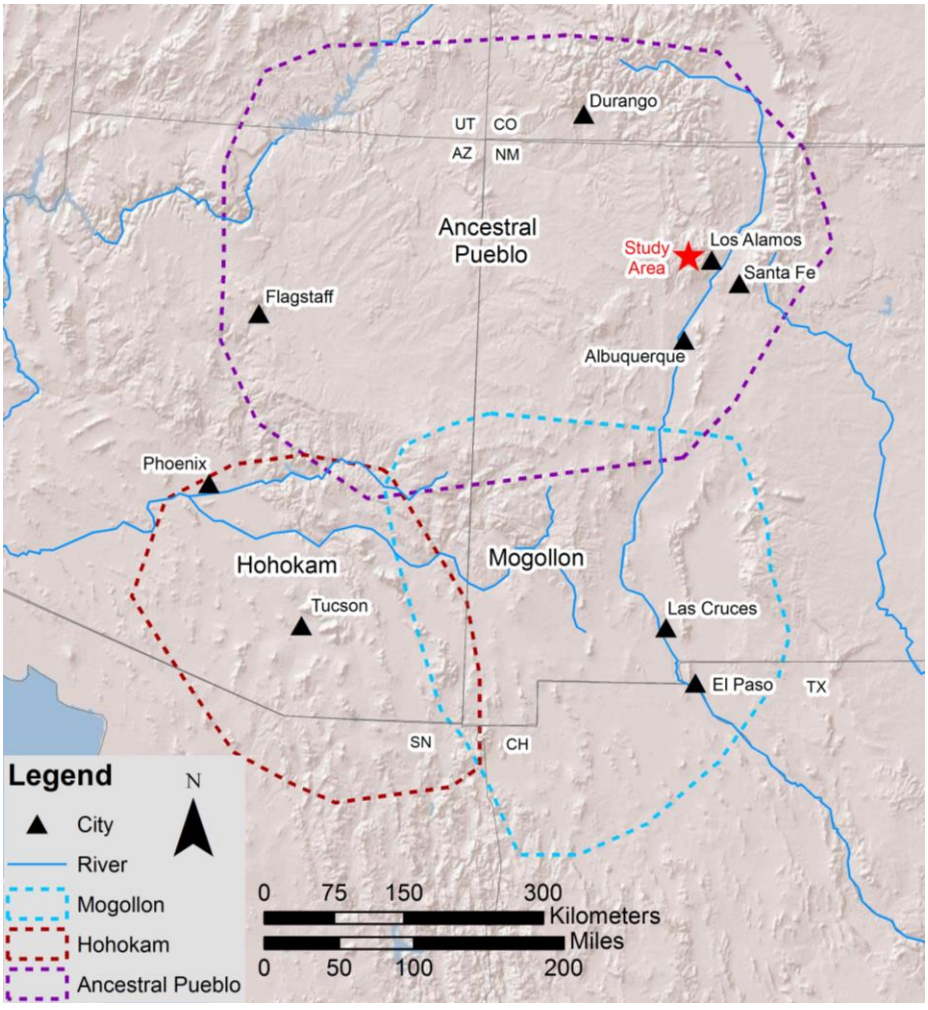

Figure 1.4 The Ancestral Pueblo, Hohokam, and Mogollon culture areas in the Southwest

Figure 1.5 Man standing next to structure in the fields, San Ildefonso Pueblo, New Mexico
Photographer: Phillip E. Harroun, 1910?, Courtesy of the Palace of the Governors Photo Archives (NMHM/DCA), Negative Number 028942

Adolph Bandelier (1892) and Edgar Lee Hewett (1904, 1906) were among the first social scientists to explore the northern Rio Grande Valley. Not surprisingly, they were attracted to the dynamic peoples, and their impressive high-profile, multi-storied pueblo villages and ancestral places such as Tsirege (LA 170) (Figure 1.6) and Tyuonyi (LA 82) (Figure 1.7) on the Pajarito Plateau. Hence, early research efforts concentrated on large village ancestral places whereas agricultural plots, like fieldhouses, were overlooked. Over the centuries, the organic nature of fieldhouse structures became weathered and did not preserve; today their appearance on the landscape is rather inconspicuous – what remains are stone footings, or foundations. They often appear as subtle mounds of earth, usually scattered with shaped or unshaped tuff blocks (Figure 1.8). In other words, fieldhouses on the surface are unimposing.

Figure 1.6 Aerial view of the Classic period pueblo of Tsirege

Figure 1.7 The Classic period pueblo of Tyuonyi

Figure 1.8 LA 85403, a one-room fieldhouse before excavation (Lockard 2008a:Figure 30.1)

Because of the regionally pioneering work brought forth through Hewett's observations of the cultural significance of the Pajarito Plateau and canyonlands, archaeological interest in fieldhouses has increased; particularly, interest in these archaeological contexts began to peak in the 1960s and 1970s when universities and museums conducted many survey and excavation projects. Within the advancement of curatorial and archaeological science, research driven by cultural resource management projects such as those funded by the National Science Foundation on public lands including Bandelier National Monument became the forefront of archaeological investigations in the late 1990s and early 2000s (Kohler 2004; Kohler and Linse 1993; Powers 2005; Powers and Orcutt 1999). After decades of research and data collection, archaeologists now recognize that small one- to three-room structures represent an essential component of Ancestral Pueblo life, equally deserving of archaeological inquiry (Kohler 1992; Kulisheck 2005; Preucel 1990; Ward 1978).

Archaeologists have recorded several thousand one- to three-room structures within the boundaries of Los Alamos National Laboratory (LANL or the Laboratory) (Figure 1.9), Bandelier National Monument, the Valles Caldera National Preserve, and adjacent public and private lands in northern New Mexico (Figure 1.10). Even though these ancestral places are much smaller and more rural than the pueblo villages, fieldhouses played a major role in the social , political, and economic development of pueblo life during the Coalition and Classic periods (A.D. 1200–1600). This document provides

discussion about the functions, variety, and significance of one- to three-room structures of the greater Pajarito region through synthesis of previous literature and inter-agency collaboration.

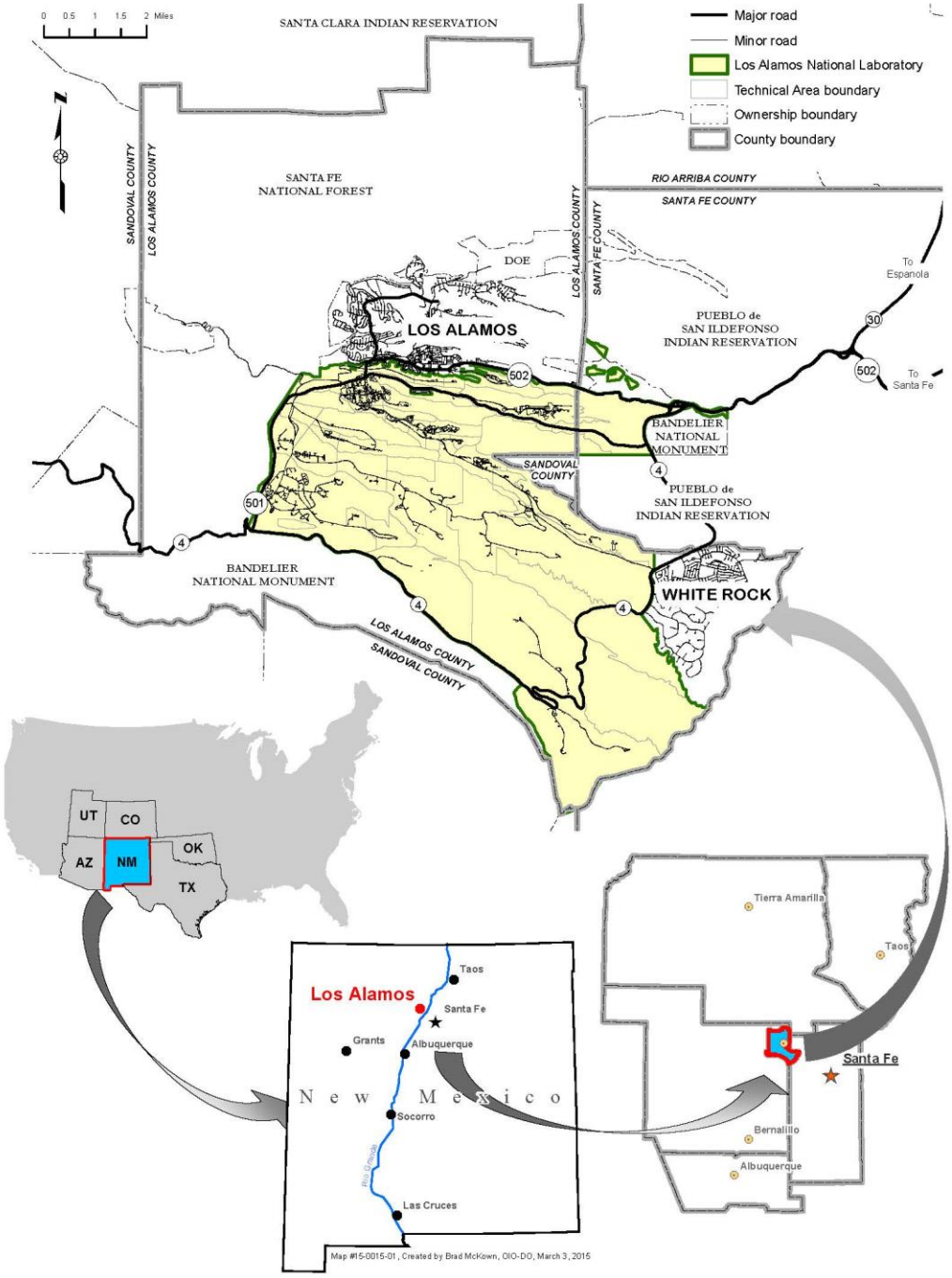

Figure 1.9 Location of Los Alamos National Laboratory

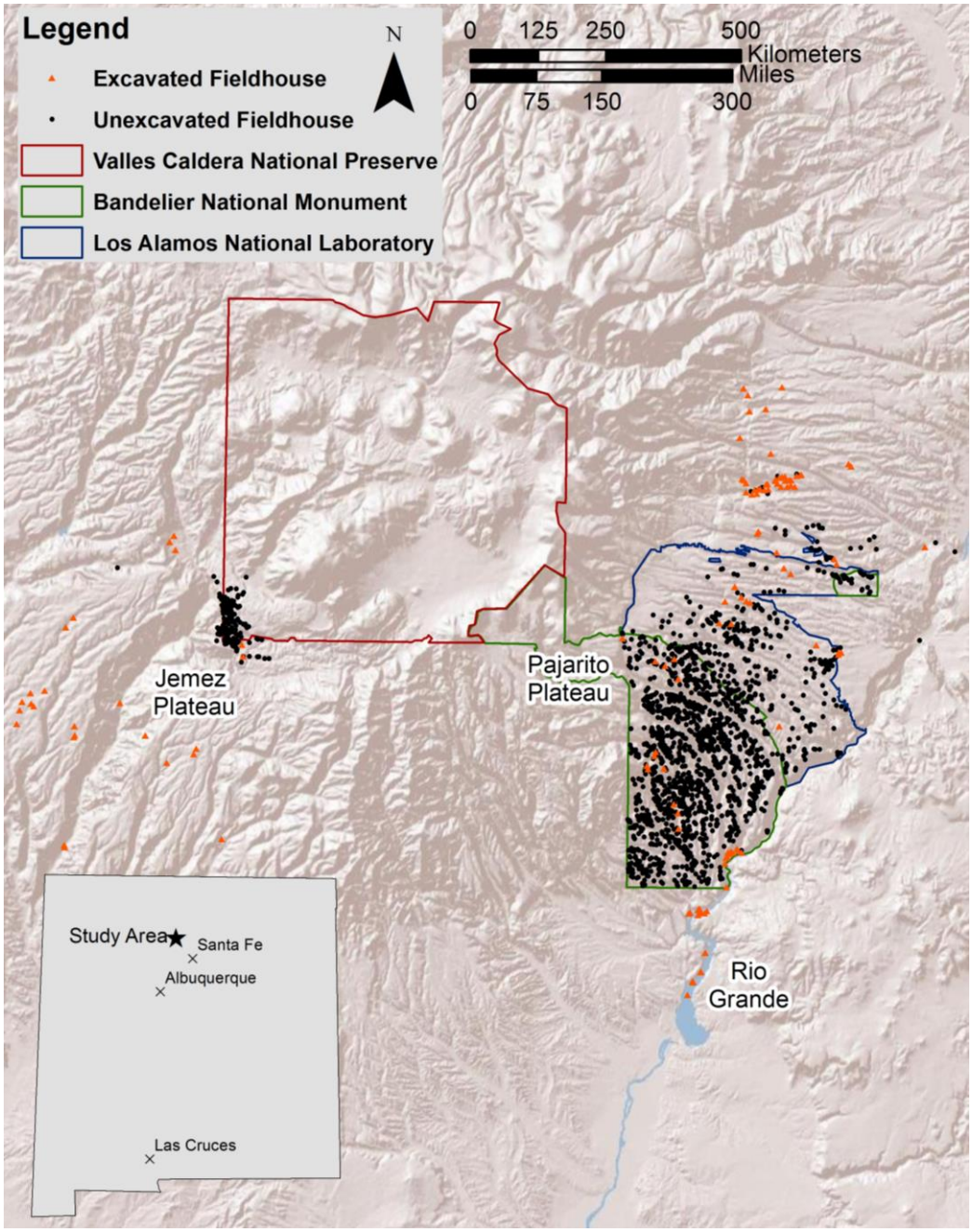

Figure 1.10 Fieldhouse sites analyzed in this study
(Black dots are unexcavated fieldhouses in current or former boundaries of LANL, Bandelier National Monument, and Valles Caldera National Preserve. Orange triangles are excavated fieldhouse, some of which are outside of the LANL, Bandelier National Monument, and Valles Caldera National Preserve boundaries. Unexcavated fieldhouses outside of the LANL, Bandelier National Monument, and Valles Caldera National Preserve boundaries are not marked.)

Purpose and Need of a Context Study

In 2012, LANL cultural resources program staff were informed that four one- to three-room fieldhouse sites (LA 136935, LA 86644, LA 26440, and LA 175258), and an Archaic period artifact scatter (LA 86645) were adversely affected by tree thinning and vegetation clearing activities. The U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office (Field Office), in accordance with the 2006 *Programmatic Agreement among the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office, the New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation Concerning Management of the Historic Properties at Los Alamos National Laboratory, Los Alamos, New Mexico*, notified the New Mexico State Historic Preservation Officer, the Pueblo de San Ildefonso, and the Advisory Council of Historic Preservation of damage to these ancestral places.

The Field Office submitted the report *Damage Assessment Report for Impacts to Five Historic Properties at Technical Area 36 (TA-36), Los Alamos National Laboratory, Los Alamos, New Mexico* to the New Mexico State Historic Preservation Officer (Madsen et al. 2013). The report documented the damage, and the Field Office requested the State Historic Preservation Officer to concur with the determination that the damage to the properties was an adverse effect under Section 106 of the National Historic Preservation Act. The State Historic Preservation Officer concurred in the finding of adverse effect and recommended developing a Memorandum of Agreement (MOA) to resolve the adverse effects to those sites through a variety of mitigation actions. In June 2016, the State Historic Preservation Officer and the Field Office Manager signed a MOA titled *Memorandum of Agreement Between the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office and the New Mexico Historic Preservation Officer: Regarding the Mitigation of Cultural Resources Impacted by Activities at the Minie Firing Site, Technical Area 36, Los Alamos National Laboratory, Los Alamos, New Mexico*.

In lieu of excavating fieldhouse sites at LANL to mitigate for the loss of the cultural resources, the MOA stipulated that the Field Office prepare a fieldhouse context document that addressed specific issues related to fieldhouses within LANL, Bandelier National Monument, and the Valles Caldera National Preserve. This document addresses the status and current knowledge of fieldhouses; how fieldhouses fit into Ancestral Pueblo agricultural strategies; other uses of this classification of site-type; future assessments of fieldhouses within the National Register of Historic Places eligibility criteria; recommendations for future mitigations; whether excavation of additional one- to three-room structures at LANL is necessary to understand the role of these structures in prehistory; and, future research. To accomplish the stipulations set out in the MOA, this project puts fieldhouses into socio-cultural consideration by using ethnographic and archaeological data from 1,884 unexcavated ancestral places, and data

from 139 excavated structures from within 127 ancestral places, all of which date to approximately the Coalition to the Classic periods (A.D. 1200–1600). We have also included fieldhouses dated later in time, but the majority of these lay marginally within, or just beyond, the boundaries of the collaborating federal landscapes.

Fieldhouses are the most ubiquitous structural ancestral place type identified in the American Southwest; however, a comparative synthesis of fieldhouse data from northern New Mexico has not been accomplished until now. The purpose of this report is to document fieldhouse contexts to help fill the gap for cultural resource managers, and land managing agencies that manage fieldhouses for heritage preservation. An additional application of this report is to provide regional scholars, federal contractors, and private industry archaeologists a literary resource for the identification of this type of ancestral place, and to provide a management perspective for eligibility determinations. This work exemplifies a preservation approach by synthesizing the results of previous research including published and unpublished data and gray literature. The research presented here reflects a collaborative effort between multiple agencies to coalesce data on fieldhouses. This context document also promotes transparency by sharing data with other Federal agencies, stakeholders, and the public. This study includes three research objectives:

1) Provide an overview of the current state of knowledge and research on fieldhouses. The discussion includes ethnographic, historic, and archaeological information pertaining to fieldhouse use, other uses of this class of site, and the role in Ancestral Pueblo agricultural systems.

2) Discuss the quantitative analyses of fieldhouse locations, features, artifacts, and architectural data from unexcavated sites (n = 1,884) and excavated structures (n = 139) at LANL, Bandelier National Monument, the Valles Caldera National Preserve, and adjacent lands.

3) Evaluate the framework for future National Register of Historic Places eligibility determinations of fieldhouses, including a discussion of whether additional excavation of fieldhouses at LANL is necessary, recommendations for future mitigation to fieldhouses, and strategies for future research.

Study Area

The study area is comprised of a contiguous area of land on the Pajarito and Jemez plateaus surrounding the Jemez Mountain Volcano of north-central New Mexico. There are three primary study areas, which includes data from excavated fieldhouses in nearby areas of the Jemez Plateau, Los Alamos County, and along the Rio Grande near Cochiti Lake. A brief description of the landscapes is organized by managing agency:

Los Alamos National Laboratory

The Laboratory was founded in 1943 during World War II for the development of the world's first atomic bomb as part of the Manhattan Project. Today, LANL consists of approximately 40 square miles of the Pajarito Plateau, bounded by Santa Clara Canyon to the north, Cochiti Canyon to the south, the rim of the Jemez Mountains caldera to the west, and the Rio Grande to the east. As of 2017, over ninety percent of LANL has been surveyed for cultural resources, and 1,886 prehistoric and historic sites have been recorded (LANL 2017; Mathien 2004:94–100; Steen 1977, 1982; Vierra and Schmidt 2008; Worman 1959, 1967; Worman and Steen 1978). The majority of the archaeological sites at LANL represent the villages, farmsteads, resource exploitation areas, rock art panels, trails, and shrines of the Ancestral Pueblo people. Approximately twenty-five percent of the known archaeological sites at LANL have been classified as one- to three-room structures, and the vast majority of those are also identified as fieldhouses.

Bandelier National Monument

Established in 1916 by President Wilson, Bandelier National Monument consists of approximately 50 square miles of discontinuous land south, east, and west of LANL and south and east of the Valles Caldera National Preserve. It is located in the most rugged southern portion of the Pajarito Plateau. The elevation ranges from about 1,600 meters (5,249 feet) near the Rio Grande to 3,100 meters (10,170 feet) at the top of the Cerro Grande watershed. Bandelier National Monument is divided into two areas including the detached Tsankawi unit located 11 kilometers (7 miles) to the northeast, near the town of White Rock. Approximately 3,000 archaeological sites have been documented at Bandelier National Monument; forty percent of these are small masonry structures that consist of five or fewer rooms (Powers et al. 1999).

Valles Caldera National Preserve

Previously known as the Baca Location No. 1, President Clinton signed the Valles Caldera Preservation Act in 2000 to create the Valles Caldera National Preserve in which the land was managed by a board of trustees (Anschuetz and Merlan 2007). The purpose of the Valles Caldera trust was to experiment with the creation of a self-sufficient land management agency. The experiment was given ten years to incentivize and restore the landscape. In October of 2015, the land was purchased by the National Park Service to become the nation's newest National Park Service-operated national preserve. The Valles Caldera National Preserve includes approximately 140 square miles in the center of the Jemez Mountains. Because the Valles Caldera was owned and operated as a private ranch since the early 1800s, much of the archaeological reconnaissance is a result of section 110 of the National Historic Preservation Act (Anschuetz and Merlan 2007). As of 2017, thirty percent of the land has been subject to

archaeological surveys, and approximately 680 archaeological sites have been documented (Steffen 2017). While the majority of archaeological sites consist of obsidian lithic scatters (approximately seventy percent), fieldhouses are the second largest category at eighteen percent. The fieldhouses at the Valles Caldera are unusual in that they are the highest-elevation fieldhouses in the region, placed at an elevation of approximately 2,500 meters (8,200 feet). The location for the fieldhouses at the Valles Caldera is in a secondary lava flow, overgrown by a ponderosa woodland. This area is known as the Banco Bonito, in which the woodland is distinguished by its gently rolling slopes. The majority of the fieldhouses lay upon the south-facing slope, which receives longer annual sunlight and warmth. In Towa, this region of the Preserve is known as *Say wa kin tu kwa* (Eagle Down Place) [Kulisheck 2005:339].

Chapter 2. Current and Paleoenvironmental Settings of the Study Area

Topography

The areas included in this study represent a variety of landforms in the Jemez Mountains of north-central New Mexico, including the Pajarito Plateau, the Jemez Plateau, and the Rio Grande Valley. LANL and Bandelier National Monument are both situated on the Pajarito Plateau, which is a dissected landscape of alternating mesas and canyons located between the east flank of the Jemez Mountains and the west shoreline of the Rio Grande. The canyon and mesa topography characterizes most of Bandelier's unique landscape, while the eastern margins reach into the Rio Grande Valley.

The Valles Caldera National Preserve lies at the intersection of the Jemez lineament and the Rio Grand Rift fault zone, two tectonically active geological systems that created an intercontinental caldera system. The region became known as the Valles Caldera for the sweeping valleys within the caldera, punctuated by the resurgent domes within it. Approximately 1.89 million years ago, the volcanic system erupted, creating the ash tuff and rhyolite deposits of the Jemez and Pajarito Plateaus. As the volcanic eruptions slowed, a great lake formed in the caldera of the volcano, which eventually burst through the southwestern portion of the volcanic rim; thus, the watershed carved the canyons of the Jemez Plateau. The Banco Bonito of the Valles Caldera system was a slower moving and later lava flow than these productive and ashy eruptions. The Banco Bonito is geologically unique in that the flows created soft, rolling hills – eventually overtaken by ponderosa pine and gentle a high-montane woodland.

The Jemez Plateau consists of rugged canyons and high mesas with numerous rivers and streams that eventually connect southwest of the Plateau to the Rio Grande. The mesa and canyon system trend north to south, radiating out from the Valles Caldera rim. The region is rich with cultural resources, with numerous large pueblo villages and thousands of fieldhouses. The Jemez Plateau is generally undeveloped, large swaths of land make-up the Jemez Ranger District within the Santa Fe National Forest, with few modern villages such as La Cueva, Jemez Springs, Ponderosa, and the Pueblo of Jemez.

The Rio Grande corridor lies at the base of the eastern flank of the Jemez Mountains. The general area is characterized by hills, mesas, and narrow canyons. Prominent features of the corridor include the terminal erosional canyons of the Pajarito Plateau to the west and the basalt mesas of the Cerros del Rio and the La Bajada fault scarp to the east (Chapman and Biella 1977). Elevations in the areas pertinent to this study range from approximately 1,738 to 1,804 meters (5,300 to 5,500 feet).

Figure 2.1 A view of an exposure of Bandelier Tuff, with Los Alamos and the Jemez Mountains in the background

The Pajarito Plateau consists of a series of narrow mesas and deep canyons that trend east-southeast from the Jemez Mountains to the Rio Grande. The defining feature of the plateau is the Tshirege Member of the Bandelier Tuff, a massive series of ignimbrites (or ash-flow tuffs) that erupted from the Jemez Mountains caldera 1 to 2 million years ago. The Tshirege Member buried most of the former topography between the Jemez Mountains and the Rio Grande, creating a new landscape. The subsequent erosion of this formation has resulted in the unique topography of the Pajarito Plateau shown in Figure 2.1 (Broxton et al. 2008; LASL 1976:4–6; Reneau and McDonald 1996:3).

The elevation gradient on the Pajarito Plateau is approximately 800 meters (2,400 feet), ranging from the Rio Grande Valley (1,600 meters; 5,400 feet) to the base of the Jemez Mountains (2,400 meters; 7,800 feet). This elevation change and a complex geologic history have created several different climatic zones, soil types, vegetative zones, and animal habitats (Balice et al. 1997; LASL 1976; Reneau and McDonald 1996). The topography is rugged and undulating and contains mesa tops, canyon bottoms, and their associated steep talus slopes and cliffs. Soils in the canyon bottoms and on the mesa tops of the south and southeastern part of LANL are mostly aridisols (saline or alkaline soils with little organic matter) and entisols (soils mostly unaltered from their parent material), with an abundance of alluvium on the steep slopes, large tuff rock outcrops, volcanic rock outcrops, talus slopes, and gravelly and sandy loams. The Pajarito Plateau has both permanent and ephemeral streams and some springs. The

permanent streams empty into the Rio Grande. Few canyons on the Pajarito Plateau have perennial water.

The Banco Bonito of the Valles Caldera National Preserve contains all of the identified one- to three-room sites found during pedestrian surveys at the Preserve. The Banco Bonito is a southwestern-trending sloping bench formed by volcanic flow between the East Fork of the Jemez River on the south, San Antonio Creek on the west, Redondo Creek on the northwest, and the slopes of Redondo Peak on the northeast. It was formed approximately 40,000 years ago and was the most recent geological formation produced in the Jemez volcanic field (Goff 2009). Highly productive volcanic soils are present (Gauthier et al. 2007), and the elevation ranges from 2,075 meters (6,800 feet) at the southwestern foot of the mesa to 2,745 meters (9,000 feet) at the base. The southwestern facing slopes are ideal for agricultural development since they receive the longest hours of solar exposure year-round.

Figure 2.2 A grassy swale near a Ponderosa pine forest in the Valles Caldera National Preserve (image from http://www.nationalparklover.com/valles01.htm)

In general, the Jemez Plateau has higher elevations than the Pajarito Plateau, with the surface sloping from northeast to southwest. Most of the streams of the Jemez Plateau empty first into the Jemez River and then into the Rio Grande. Elevations of the Banco Bonito portion of the Valles Caldera National Preserve range from 2,164 meters (7,100 feet) to 2,652 meters (8,700 feet), and it is comprised of an undulating series of north-south trending ridges, which are the remnant topographic features of the El Cajete volcanic vent (Gardner et al. 2010; Ramenofsky 2006). The most recent Valles rhyolite

eruption occurred approximately 600,000 years ago (Wolff et al. 1996), and there has been virtually no erosion of the surface geology on the Banco Bonito.

Grassy swales separate the ridges in the Valles Caldera National Preserve. These swales have deep loamy soils that retain moisture and provide extensive fodder for elk and deer even in mid-summer (Figure 2.2). Within the ridge and swale system, however, there is no interior drainage. When the heavy rains come during the summer monsoon season, water and sediment run down from the ridge tops concentrating in the intervening swales. These circumstances established conditions for prehistoric structures meant for agriculture (fieldhouses) and agricultural features in the heavily forested Banco Bonito.

The Pajarito Plateau consists of a series of high mesas and steep canyons that trend east-southeast from the Jemez Mountains to the Rio Grande. The defining feature of the plateau is the Tshirege Member of the Bandelier Tuff, a massive series of ignimbrites (or ash-flow tuffs) that erupted from the Jemez Mountains volcano approximately 1.89 million years ago. The Tshirege Member ash flow buried most of the former topography between the Jemez Mountains and the Rio Grande, depositing a new landscape. The subsequent alluvial erosion of this formation has resulted in the unique topography of the Pajarito Plateau shown in Figure 2.1 (Broxton et al. 2008; LASL 1976:4–6; Reneau and McDonald 1996:3).

Current Climate

The Pajarito Plateau has a semi-arid, temperate mountain climate. Climatic information for Los Alamos County extends back to 1910, and to 1924 for Bandelier National Monument (Bowen 1990; Scurlock 1998). The amount of precipitation (rain and snow) and the length of the growing season are critical factors for considering local agricultural potential. Less rainfall occurs at lower elevations, but the growing season is longer in part because of higher temperatures. The length of growing season varies due to temperature. Between 110 to 130 days are required for maize agriculture in the Southwest (Adams 2015; Adams et al. 2006; Muenchrath and Salvador 1995). The average growing season in Los Alamos and Bandelier National Monument is 157 frost-free days, but it could be more or less depending on temperature and elevation (Allen 2004). The number of frost-free days in Jemez Springs averages 170 days, with a range of 122 to 190 days reported over a period from 1911 to 1983 (Elliott 1986, 1991; Kulisheck 2003a). The number of frost-free days decreases at the rim of the Valles Caldera to between 90 and 100 days, rendering long-term agriculture unsustainable (Elliott 1986; Railey 1999).

No long-term climate records exist for the Valles Caldera National Preserve, but the contemporary temperature and precipitation pattern is similar to Los Alamos. Mean

precipitation values for the Pajarito Plateau over the last three decades indicate that higher elevations near Los Alamos receive approximately 48 centimeters (19 inches) of rain per year, while lower elevations near White Rock receive approximately 34 centimeters (13.5 inches). Annual precipitation in the Jemez Mountains is normally around 51 centimeters (20 inches). Precipitation amounts in all three areas vary considerably from year to year. For example, over a 69-year period, the annual precipitation extremes ranged from 17.8 to 77.1 centimeters [6.1 to 30.3 inches] (Balice et al. 1997; Bowen 1990).

Precipitation in all of these areas comes in the form of winter snows, spring runoff, and summer monsoonal rainfall. Because of the higher elevation of both the Jemez Plateau and the Banco Bonito, the temperature is cooler, and the precipitation values are higher. Mean temperatures vary with altitude and average 5°F higher in and near the Rio Grande Valley (1,980 meters; 6,500 feet) and 5°F to 10°F lower in the nearby Jemez Mountains [2,600 to 3,050 meters; 8,500 to 10,000 feet] (Bowen 1990:3–17) relative to the Los Alamos area. Figures 2.3 and 2.4 show the monthly temperature and precipitation for Los Alamos, Bandelier National Monument, and Jemez Springs. The Los Alamos climate data starts on January 1, 1902 to June 8, 2016, and the four weather stations on average are at 7,370 feet in elevation. The Bandelier National Monument data starts from May 1, 1924 to August 31, 1976, and the weather station is at 6,060 feet in elevation. The Jemez Springs data starts from May 1, 1910 to May 31, 2016, and the four weather stations on average are at 6,210 feet in elevation.

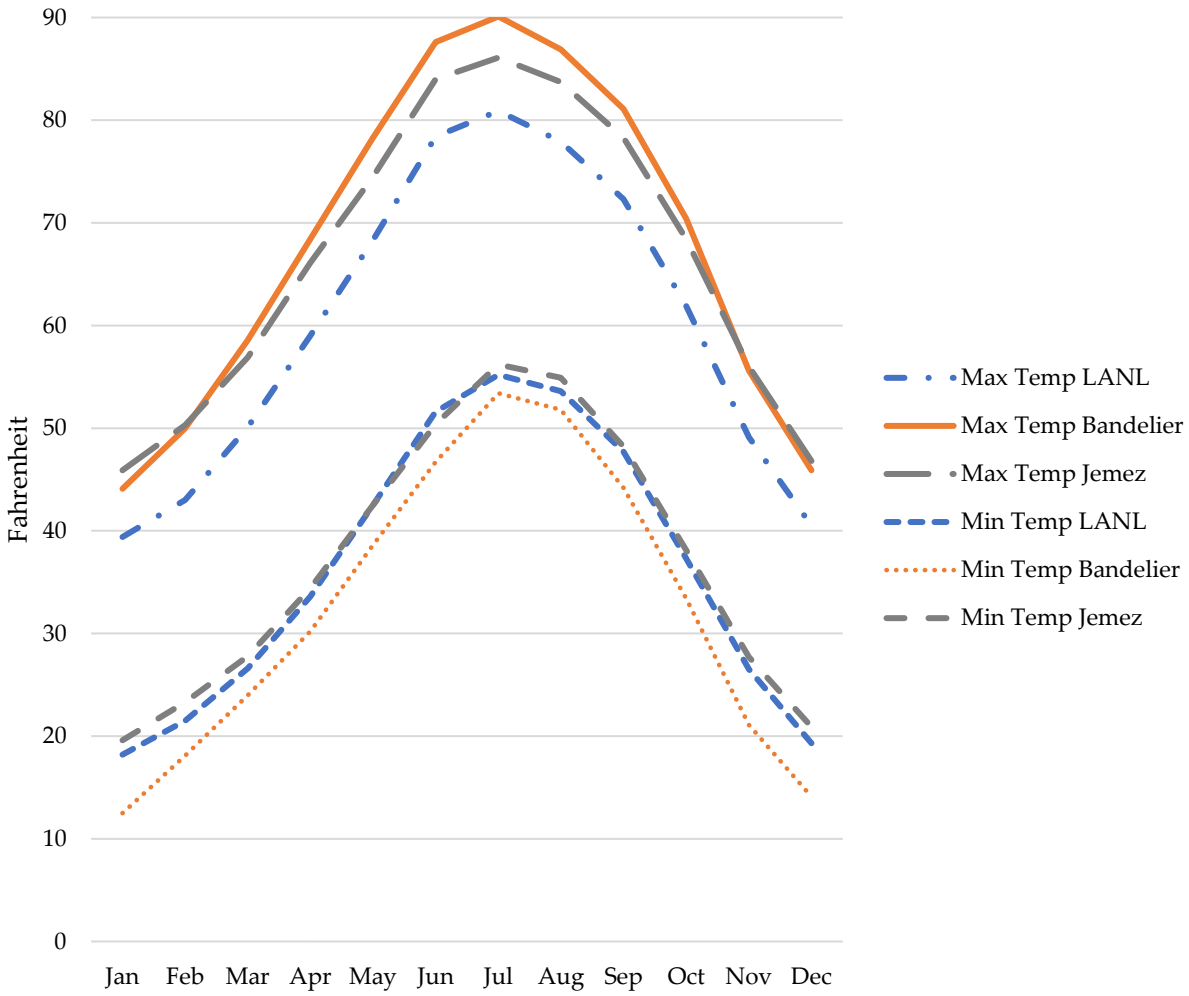

Figure 2.3 Monthly temperature summary for Los Alamos, Bandelier, and Jemez (WRCC 2004)

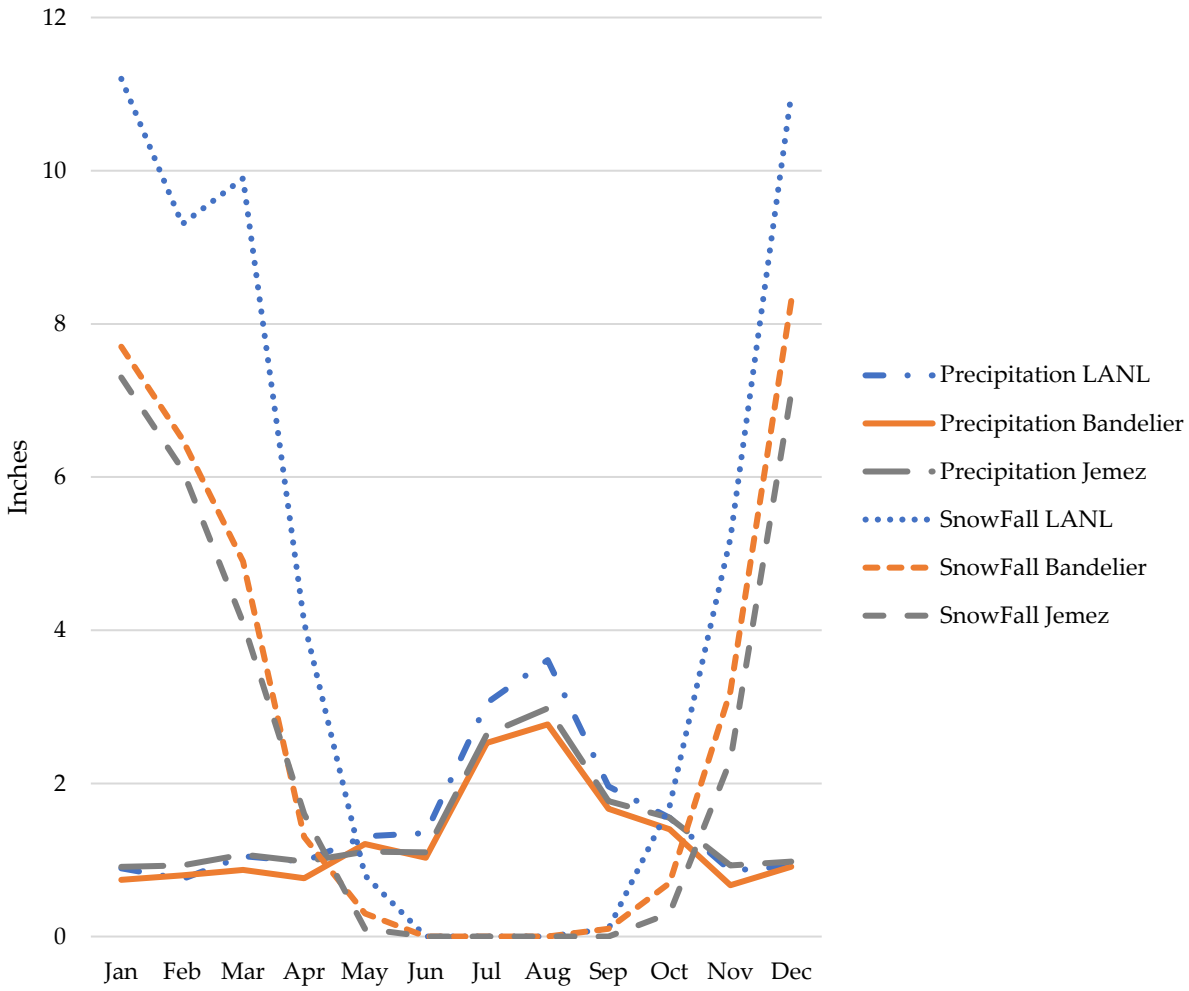

Figure 2.4 Monthly precipitation summary for Los Alamos, Bandelier, and Jemez (WRCC 2004)

Monsoon season on the Pajarito and Jemez plateaus span the months of June through September. Westerly winds push the thunderstorms above the Jemez Mountains towards Los Alamos. The large-scale atmospheric flows transport moisture from the Gulf of Mexico during the summer monsoons and from the Pacific Ocean during the winter, spring, and fall. Convection of warm air over the Jemez Mountains causes thundershowers to develop during the afternoon and early evenings, and these thundershowers drift over the plateaus causing brief, but intense, rains (Bowen 1990:3–17). Nearly 40 percent of the annual precipitation falls during the monsoon months. Winter precipitation falls primarily as snow. Snow accumulation averages 130 centimeters (51 inches) seasonally, but snowfall levels vary considerably from year to year.

Land Cover and Subsistence Resources

Koch et al. (1996) and Balice et al. (1997) developed land cover maps for the Pajarito Plateau and the adjacent east Jemez Mountains, which includes the Jemez Plateau and the Rio Grande. Hansen et al. (2018) updated the land cover maps for LANL property at high spatial resolution. Simplified land cover types include riverine zone, juniper savanna, piñon-juniper woodland, Ponderosa pine forest, mixed conifer forest, spruce-fir forest, and subalpine meadows (Koch et al. 1996; Balice et al., 1997). Virtually all fieldhouses occur in the juniper savanna, piñon-juniper woodland, and Ponderosa pine forest zones, with a handful occurring in the riverine zone of the Rio Grande corridor. The nature of this zone, however, has changed significantly in the last 150 years with the decrease of cottonwood and the increase of non-native species such as tamarisk and Russian olive (Foxx 2008). The relationship between these cover types and elevation is shown in Figure 2.5. Topography does not influence the other cover types (grassland, shrubland, open water, and unvegetated land).

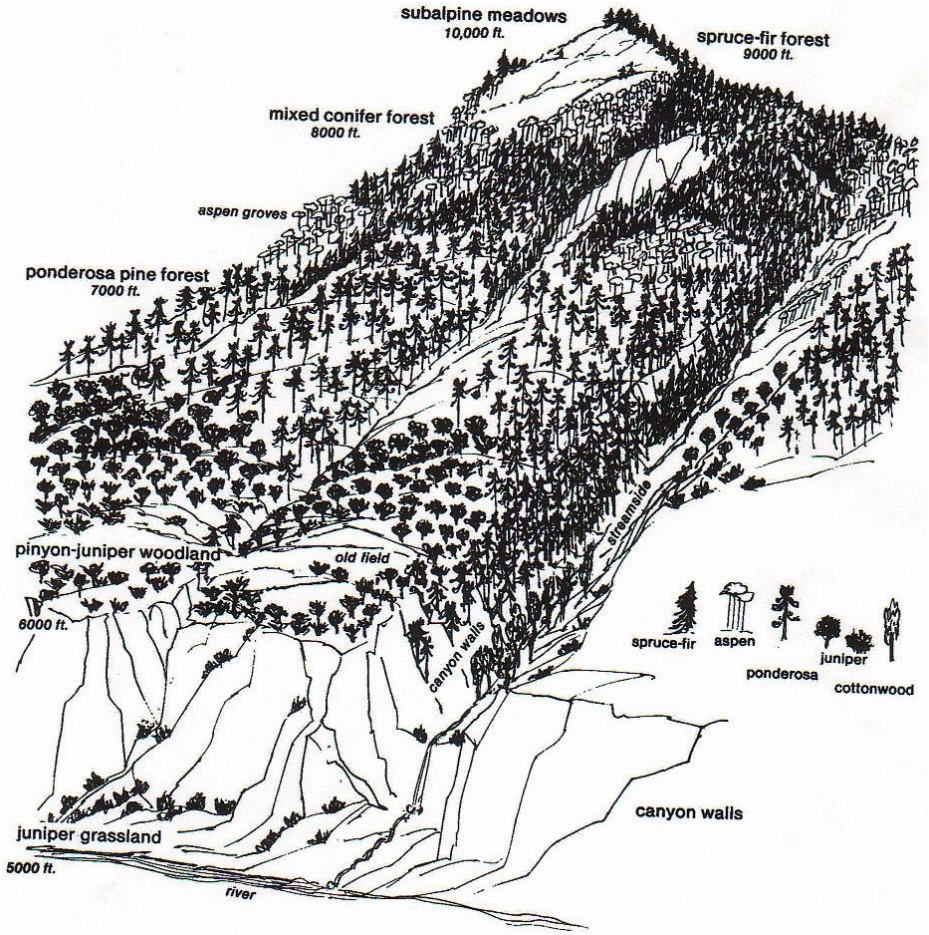

Figure 2.5 Land cover types by elevation (Foxx 2008:Figure 4.3)

The juniper savanna occurs primarily along the Rio Grande corridor and is an open grassland that is dominated by one-seed juniper (Figure 2.6). Land cover is between 10 and 30 percent, and understory species include gramma grasses. The juniper savanna ranges in elevation from 1,634 meters (5,360 feet) to 1,951 meters (6,400 feet). Prominent animal taxa include Abert's squirrel, black bear, big horn sheep, pinyon jays, rattlesnakes, red-tailed hawk, jackrabbit, coyote, bobcat, gray fox, and many small reptile and mammal species.

Figure 2.6 General overview of the juniper savanna zone near Los Alamos

The piñon-juniper woodland is dominated by one-seed juniper and piñon pine. One-seed juniper is more abundant at lower elevations, while piñon is more abundant at higher elevations. The piñon-juniper woodlands range between 1,890 meters (6,200 feet) and 2,195 meters (7,200 feet) within the canyons and on the mesatops. The understory at lower elevations is comprised of gramma grass, Indian ricegrass, and sand dropseed. At higher elevations, mountain muhly can also be found. Most of the fieldhouses are found within this zone. Prominent animal resources include coyote, raccoon, mountain lion, turkey vulture, hawks and falcons, small birds, quail, wild turkey, chipmunk, rock squirrel, cottontail, and mule deer.

Ponderosa pine forests extend to as low as 1,890 meters (6,200 feet) in some of the topographically protected areas like Ancho and Water canyons (Figure 2.7). Ponderosa pine is not normally found below 1,921 meters (6,300 feet), except in open canyons such as Sandia and Los Alamos. On the mesa tops and the lower slopes of the Valles Caldera,

Ponderosa pine forests extend to 2,378 meters (7,800 feet) in elevation. Douglas fir, White fir, spruce, and Ponderosa pine are found throughout the higher elevations. The understory characteristic of this community commonly consists of Gambel oak with numerous species of herbs and grasses. Prominent animal resources include long-tail weasel, spotted skunk, black bear, mule deer, mountain lion, chipmunks and squirrels, elk, and a variety of birds.

Figure 2.7 Ponderosa pine forest at LANL (Foxx 2008: Figure 4.14)

Soils

Soils on the Pajarito and Jemez plateaus are mountain soils that formed in volcanic materials. In general, the soils in these areas can be divided into three general categories: soils on the mesa-tops, soils at the mesa-edges and steeper slopes below canyon walls, and canyon bottom alluvial deposits (McFadden et al. 1996). The best-developed soils are on the mesa-tops, which are the product of alluvial fan formation that took place long before the major incision of canyons. Soils in the canyon bottoms are the most weakly developed due in large part to Pleistocene flooding events. Most mesatop soils are well-watered forest soils that were suitable for sustaining agriculture, given the appropriate rainfall and frost-free days. Although the soils in the canyon bottoms are more poorly developed, they would also have been suitable for cultivation as is evidenced by modern cultivation (with irrigation).

Multiple in-depth soil surveys have been completed for the study region (Earth Environmental Consulting 1978; Folks 1975; Nyhan 1978), but they were conducted with an engineering and recreational perspective rather than with the goal of understanding potential agricultural productivity of ancestral places (Preucel 1990:71). More significantly perhaps, is that many of the surveys used "somewhat different series names," making comparisons between regions difficult and making their general relevance to archaeological materials difficult to extrapolate across space (Preucel 1990:71).

In conjunction with the Land Conveyance and Transfer Project at LANL (Vierra and Schmidt 2008), Drakos and Reneau (2008, 2013) conducted geomorphic studies in direct support of archaeological investigations. They sampled soils from more than 50 archaeological sites and features across the Pajarito Plateau in five tracts of land to be transferred to either Los Alamos County or the Pueblo de San Ildefonso. Drakos and Reneau identified two major depositional events in the study area. The first occurred sometime after the Middle Coalition period and into the Classic period (i.e., between ca A.D. 1250–1350), and the second occurred after the widespread Classic period abandonment around A.D. 1600. Drakos and Reneau (2013) consistently identified a 25- to 30-centimeter thick eolian deposit in each mesa top location they sampled, 15 to 20 centimeters of which is associated with the earlier Coalition period event. In many cases, Drakos and Reneau were able to differentiate Coalition and Classic period sites based on soil stratigraphic relationships.

The depositional events described above have been important in the preservation of Ancestral Pueblo sites in the study area, and on the Pajarito Plateau mesa tops which Drakos and Reneau (2008, 2013) studied. These processes may have also contributed to the agricultural utilization of these areas. The first depositional event corresponds to The Great Drought of A.D. 1276–1299 and a locally drier period from A.D. 1250–1255, as well as a major regional event associated with the abandonment of the central Mesa Verde region in the northern San Juan, southwestern Colorado (Rose et al. 1981; Chapter 3). This eolian deposition may have been enhanced in abandoned Coalition period roomblocks and the presence of Classic period features on top of some of these locations suggests that these thicker soils may have been targeted for agricultural activities.

The type of soil and the degree of slope are important variables when considering the potential of agricultural soils. Slopes with northern exposures have a higher moisture content than southern slopes. Soil types vary across space, and so does their suitability for agriculture. Early farmers would have quickly learned the important differences (e.g., soil moisture, soil fertility, and length of growing season) between upland mesa tops and drainages, canyon side slopes, and canyon bottoms (Gauthier and Herhahn

2005; Sandor and Homburg 2015). To best deal with these differences, Ancestral Pueblo farmers used multiple farming techniques including irrigation, dry farming, and floodwater farming (Eiselt et al. 2017; Ford and Swentzell 2015; Hack 1942). Ethnohistoric records indicate that farmers placed their fields in the mouth of arroyos or on low-flood terraces near large arroyos (Hack 1942). Agricultural features such as check dams, grid gardens, and terraces were constructed to facilitate run-off farming (Ford and Swentzell 2015). These agricultural features helped to compensate for the unpredictable rainfall in the northern New Mexico semi-arid environment. Extensive agricultural features exist in the Chama region of northern New Mexico (Eiselt et al. 2017), but such features are less common to the south on the Pajarito and Jemez plateaus (Orcutt 1999). While grid gardens and check dams were constructed, Ancestral Pueblos on the Pajarito and Jemez plateaus were able to farm in pumice patches (Gauthier and Herhahn 2005).

While surveying for archaeological sites and ancestral places within Bandelier National Monument, Orcutt (1999) noted that over 40 percent of fieldhouses and pueblos were located on or within a short distance from one or more El Cajete pumice patches. El Cajete pumice soils trap and store moisture, which increases agricultural productivity (Gauthier and Herhahn 2005; Gauthier et al. 2007). However, pumice soils also contribute to nutrient loss (Gauthier et al. 2007). As a result, Ancestral Pueblo people appear to have used the combination of El Cajete pumice soils and agricultural features to improve farming capabilities. WoldeGabriel et al. (2013, 2016) examined the extent and thickness of El Cajete pumice and found the thickest extent near the El Cajete crater next to the Banco Bonito in the Valles Caldera National Preserve (Figure 2.8). Ancestral Pueblo occupation of the Banco Bonito was extensive and included growing crops, as evidenced by the presence of fieldhouses and agricultural features including terraces (Kulisheck 2003a; Ramenofsky 2006). This is notable given that elevations above 2,500 meters (8,200 feet) are at the extreme for growing maize. The ability to grow crops on the Banco Bonito, and elsewhere in the Jemez and Pajarito plateaus, was likely due to the presence of El Cajete pumice soils with its moisture retaining properties.

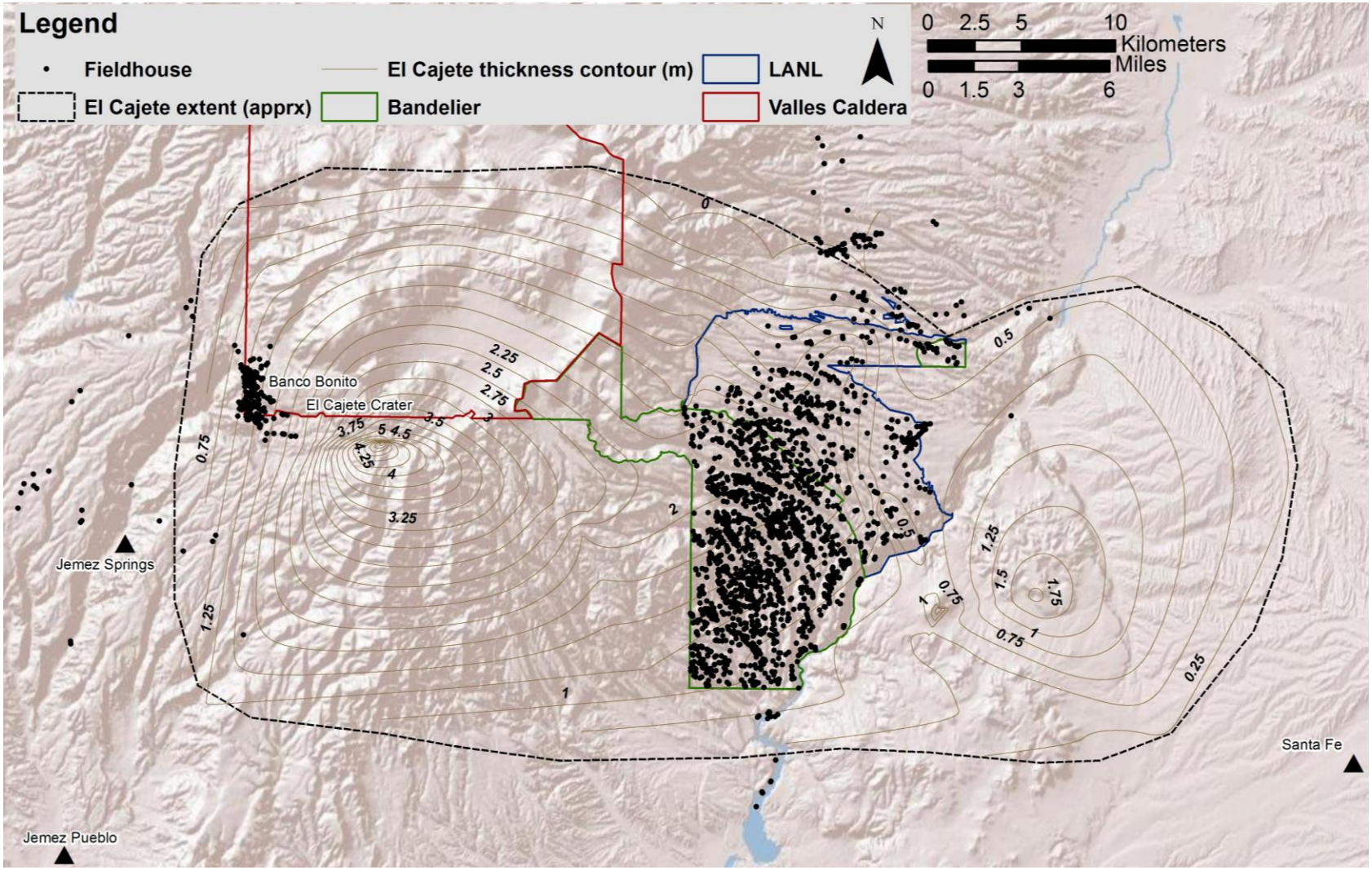

Figure 2.8 Location of fieldhouses in proximity to El Cajete pumice soils

Paleoenvironmental Setting

Climate and climate change are powerful forces that shape our daily, yearly, and decadal interactions with the landscape. Understanding how the climate and landscapes changed in the past involves deciphering several independent types of data, including the study of geomorphology and soils, pollen, macrobotanical remains, faunal remains, and tree-rings. Allen (2004) synthesized much of these data for the Pajarito Plateau. He concluded that, prior to approximately A.D. 1150, the Pajarito Plateau and its adjacent areas were dominated by open, grassy forests and woodlands that were maintained in large part by lightning fires. The Ancestral Pueblo populations prior to this time were small enough to incur only inconspicuous or localized effects. Marked population increase in the late A.D. 1200s necessitated the cutting and burning of piñon, juniper, and Ponderosa pine trees for cooking, heating, and building. These activities, combined with clear-cutting for increasing farming activities, likely contributed to the rapid deforestation of upland mesas and forests (Swetnam et al. 2016).

Dendroclimatology (the study of tree rings) is a particularly appealing method for reconstructing past environments because of its ability to provide high-resolution annual, or sometimes seasonal data (Bocinsky and Kohler 2014). In the Southwest, these reconstructions have established many episodes of dry and wet conditions that have recurred at annual, decadal, and longer time scales over the past 2,000 years (Allen 2004). Dry periods in this region include the mid- to late-twelfth century, the late-thirteenth century, the mid-fourteenth century, and the early- to mid-fifteenth century, including an extremely dry period in the late sixteenth century (Towner and Salzer 2008, 2013) (Figure 2.9). Temporal information suggests that use of the mesa-tops for agriculture generally coincides with periods of aridity.

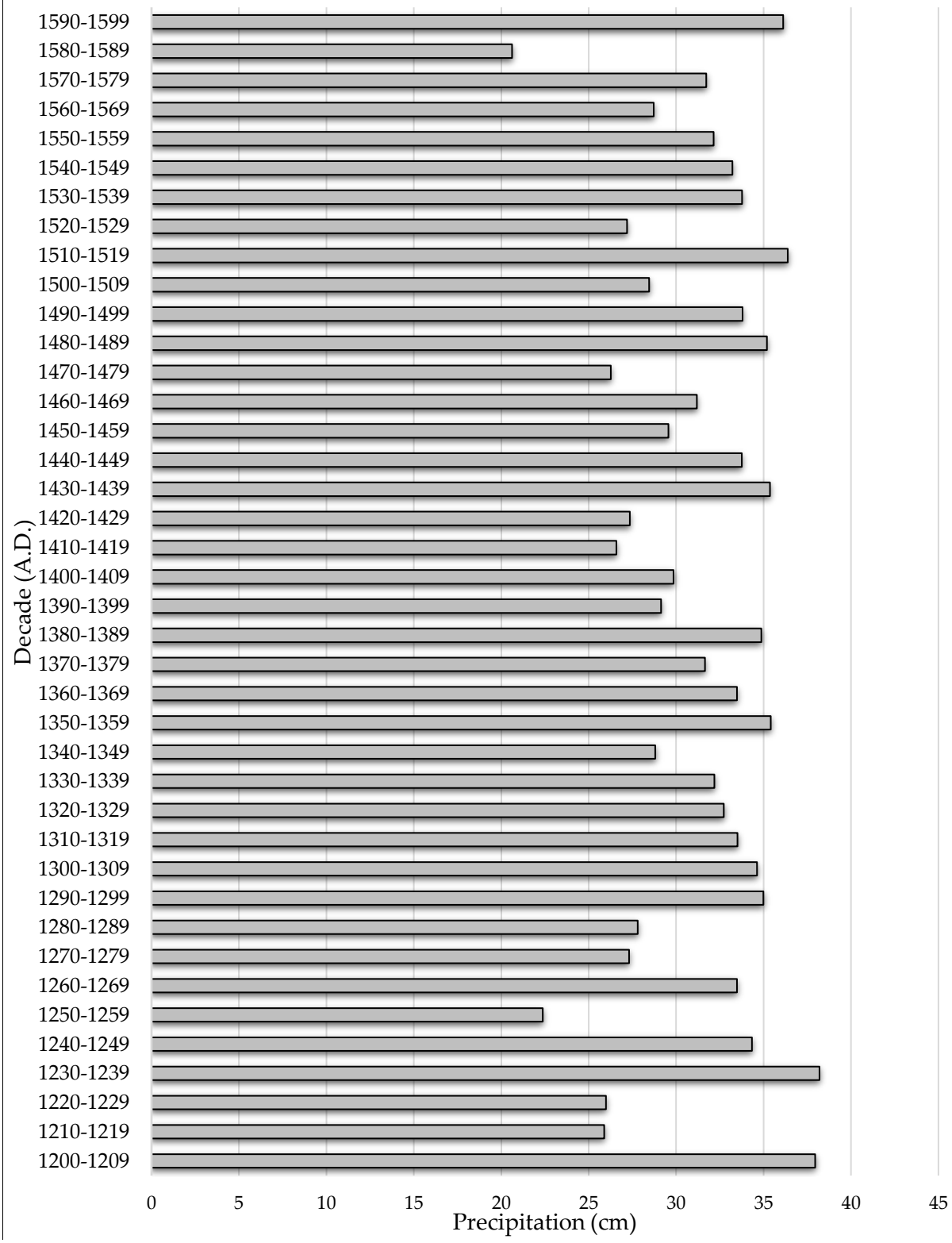

Figure 2.9 The average decadal precipitation from the Jemez Mountains from A.D. 1200 to 1599 (Towner 2008a:Appendix H; Towner and Salzer 2008, 2013)

Chapter 3. Culture History

Since the pioneering work of Bandelier (1892) and Hewett (1904, 1906), social scientists and archaeologists have investigated the cultural history of the northern Rio Grande region – which spans 10,000 years (Kohler 2004; Ortman 2012; Powers 2005; Powers and Orcutt 1999; Riley 1995; Stuart 2010; Vierra 2013; Vierra and Schmidt 2008). Wendorf (1954) and Wendorf and Reed (1955) first developed the still-used chronology for the Pajarito Plateau (Table 3.1). The first evidence of human occupation of the northern Rio Grande region begins with Paleoindian and Archaic period foragers, often referred to as *hunter-gatherers* because of their lack of sedentary lifestyle. Farming became a significant component of subsistence regimes beginning in the Ancestral Pueblo period, when fieldhouses first appeared during the Coalition period. Fieldhouses continued to be utilized by native peoples despite Spanish colonization of New Mexico; fieldhouses remain an important aspect of agriculture even today (Chapter 4).

Table 3.1 Culture History Chronology for the Pajarito Plateau

Culture	Period	Dates
Paleoindian	Clovis	9500 to 9000 B.C.
	Folsom	9000 to 8000 B.C.
	Late Paleoindian	8000 to 5500 B.C.
Archaic	Jay	5500 to 4800 B.C.
	Bajada	4800 to 3200 B.C.
	San Jose	3200 to 1800 B.C.
	Armijo	1800 to 800 B.C.
	En Medio	800 B.C. to A.D. 400
	Trujillo	A.D. 400 to 600
Ancestral Pueblo	Early Developmental	A.D. 600 to 900
	Late Developmental	A.D. 900 to 1200
	Early Coalition	A.D. 1200 to 1250
	Late Coalition	A.D. 1250 to 1325
	Early Classic	A.D. 1325 to 1400
	Middle Classic	A.D. 1400 to 1550
	Late Classic	A.D. 1550 to 1600
Native American, Hispanic, and Euro-American	Early Historic	A.D. 1600 to 1890
	Homestead	A.D. 1890 to 1942
Federal Scientific Laboratory	Manhattan Project	A.D. 1942 to 1946
	Cold War	A.D. 1946 to 1990

Developmental Period

Several significant cultural transformations occurred in the Developmental period. The Developmental period is divided into Early (A.D. 600–900) and Late (A.D. 900–1200) based on differences in pottery types and settlement patterns (Boyer and Lakatos 2000; Dickson 1979). During this period, ceramic technology expanded and then flourished; ceramics are plain gray, brown, and red slipped brown wares. Early Developmental period ancestral places are uncommon on the Pajarito Plateau. People became more sedentary and started living in small, below ground structures – commonly referred to as *pit houses*. Pit structures, rather than above ground pueblos, are typically located in lower elevations on low terraces overlooking the Rio Grande. During the Developmental period, peoples continued to forage for wild foods and resources but they also began to experiment with horticultural methods which lead to a reliance on agricultural products.

During the Late Developmental period, population size increased, and habitation sites were located at higher elevations more often than in previous centuries. Around A.D. 1000 there was a transition from pithouses to contiguous-walled adobe surface structures. Pueblo room counts also increased as some pueblos contain up to 100 rooms and have multiple kivas (structures with floors excavated below the ground for ceremonial purposes). New pottery styles like Red Mesa Black-on-white and Kwahe'e Black-on-white (Figure 3.1) were made starting around A.D. 1000.

Figure 3.1 Kwahe'e Black-on-white bowl: Photograph by Carol Price
http://ceramics.nmarchaeology.org/typology/type?p=233

Kwahe'e Black-on-white consists of a mineral paint black-on-white slip made sometime before A.D. 1023 (Schillaci and Lakatos 2017) until the late 1100s, (Habicht-Mauche 1993; Mera 1935; Wilson 2013). In addition to painted ceramics, indented corrugated pottery were used as cooking and storage vessels. The rarity of Kwahe'e Black-on-white ceramics and the small number of Developmental period archaeological sites on the Pajarito Plateau indicates a very small population during this time (Cordell 1989; Ortman 2012, 2016). Ortman (2016) estimates that less than 2,000 people lived on the Pajarito Plateau from A.D. 900–1200 (Figure 3.2).

Developmental period fieldhouses are rare, with no currently known sites at LANL or the Valles Caldera National Preserve. There are five possible Developmental period fieldhouse sites at Bandelier National Monument, but their chronological assignments are not secure as they are based solely on the surface ceramic assemblages from unexcavated sites (Chapter 5). Without absolute dates or the secure association of Kwahe'e Black-on-white or Red Mesa Black-on-white pottery, it is difficult to tell whether a fieldhouse was occupied during the Developmental period.

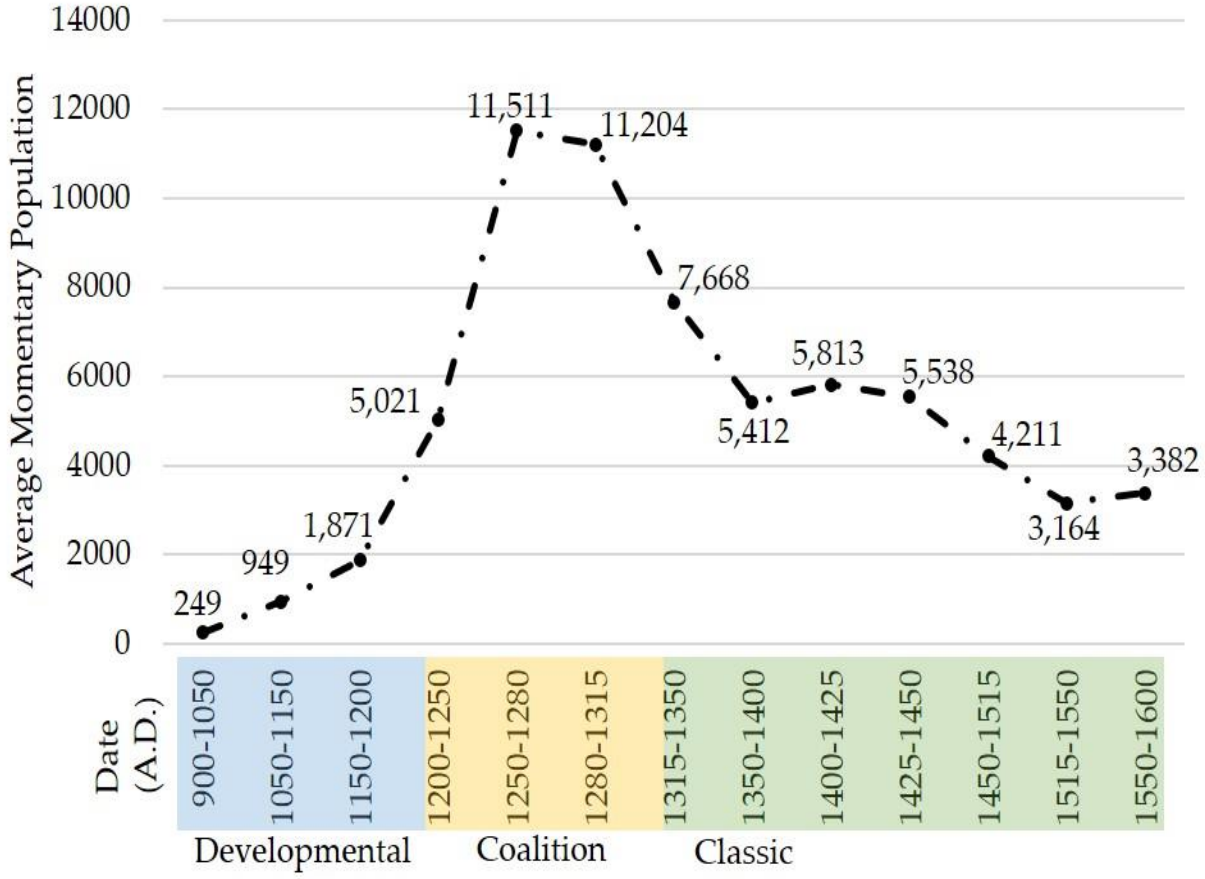

Figure 3.2 Pajarito Plateau population history from A.D. 900 to 1600 (Ortman 2016:Table 7 and Figure 4)

Coalition Period

The Coalition period is divided into the Early Coalition (A.D. 1200–1250) and the Late Coalition (A.D. 1250–1325). This period is the first substantial Ancestral Pueblo occupation of the Pajarito Plateau and adjacent areas, and when fieldhouses begin to appear. Increases in habitation sites, pottery manufacture, ceremonial activity, and farming all have been archaeologically documented (Cordell 1989; Crown et al. 1996; Kohler and Root 2004a, b; Kulisheck 2006). The typical architectural layout consisted of a pueblo village containing 13 to 30 rooms with a kiva and one or two stories of rooms facing a plaza. Larger pueblos containing hundreds of rooms also occur throughout the Rio Grande Valley. The construction of agricultural features such as terraces, gravel mulch gardens, and dams suggest an even greater reliance on maize agriculture during the Coalition period.

The beginning of the Coalition period coincides with the shift from mineral-painted pottery (Kwahe'e Black-on-white) to organic-painted pottery, including Santa Fe Black-on-white (Figure 3.3) and Wiyo Black-on-white (Figure 3.4). Schillaci and Lakatos (2017) suggest that Santa Fe Black-on-white was possibly made before A.D. 1145. Potters made Santa Fe Black-on-white in the northern Rio Grande Valley until A.D. 1425 (Eckert et al. 2015; Habicht-Mauche 1993). Coalition period cooking and storage vessels are mainly produced using a smeared indented corrugated style.

Figure 3.3 Santa Fe Black-on-white vessel from Otowi Pueblo (Owens and Wilson 2008:P.1)

Figure 3.4 Wiyo Black-on-white vessel (Owens and Wilson 2008:P.9)

Ortman (2016) estimates that approximately 5,000 people lived on the Pajarito Plateau during the Early Coalition period (Figure 3.2), more than doubling the Late Developmental period (A.D. 1150–1200) population. Archaeologists debate whether the population increase was a result of immigration or local population expansion; regardless, people began moving into previously unoccupied or sparsely occupied parts of the Pajarito Plateau. Preucel (1987) characterized the Early Coalition period as a colonization stage in Ancestral Pueblo history. Early and Middle Coalition period pueblos on average contained less than ten rooms (Preucel 1988), like LA 86534 located in Los Alamos (Figure 3.5).

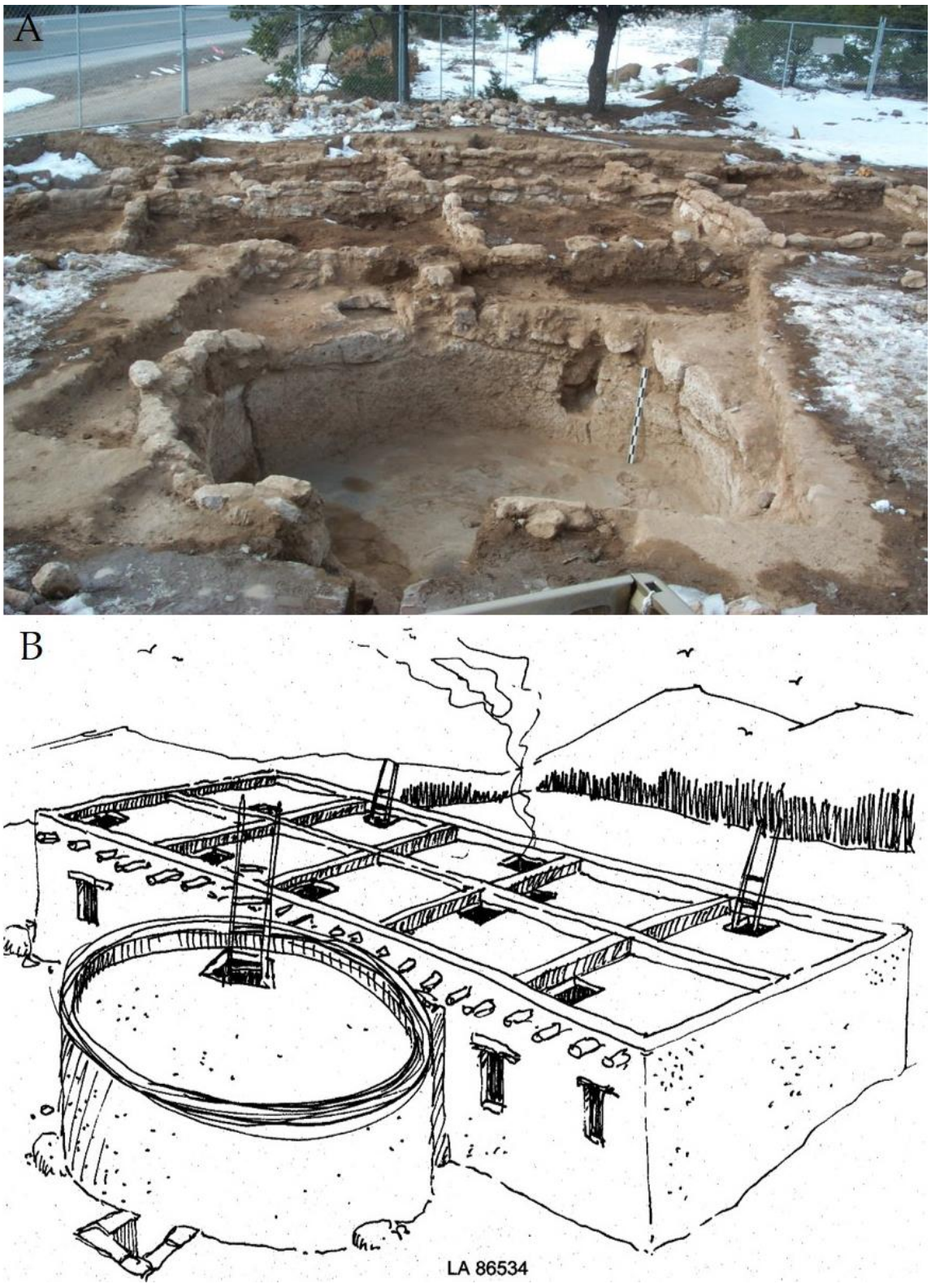

Figure 3.5 LA 86534, a Middle Coalition period site: (A) After excavation and (B) reconstruction by Dave Brewer (Schmidt 2008a:Figures 24.13 and 24.48)

Preucel (1987) described the Late Coalition period on the Pajarito Plateau as a spreading stage. There was a substantial increase in the frequency, size, and distribution of pueblos and year-round settlements (Crown et al. 1996). Competition for natural resources like water and agricultural land increased due to farming activities and farming on inferior land (Hill and Trierweiler 1986; Hill et al. 1996; Kohler and Linse 1993; Preucel 1990; Walsh 1998). Late Coalition plaza pueblos (also known as complex pueblos) contain a pueblo roomblock that partially (on three sides) or completely encloses a plaza and/or contains two or more roomblocks located nearby. Plaza or complex pueblos were typically two or three stories high, and occupied year-round, encompassing the full range of activities related to pueblo life. Burnt Mesa Pueblo (LA 60372) at Bandelier National Monument, and Sandia Pueblo (LA 12609) and LA 4693 at LANL are examples of Coalition period complex pueblos.

Coalition to Classic Period Transition

The late A.D. 1200s and early 1300s are characterized by large-scale population movement, changes in material culture, and the rise of new religious iconography and ceremonial, economic, and political centers throughout the Southwest (Adams 1991; Crown 1994; Di Peso 1974; Hill et al. 2010). In the northern Rio Grande region, these changes occurred during the Coalition to Classic period transition.

This transitional period coincides with the origin of long-term tribal, ethnic, linguistic, and territorial boundaries between Ancestral Keres and Tewa groups (Habicht-Mauche 1993; Harrington 1916; Ortman 2012; Walsh 2000). A territorial boundary emerged at Frijoles Canyon between Tewa-speaking people to the north near present-day Los Alamos, and Keres-speaking people to the south in and around present-day Bandelier National Monument (Ford et al. 1972; Harrington 1916; Ortiz 1969; Ortman 2012). These cultural differences are exemplified in the ceramics they made; glazewares were made by Keres potters, while carbon matte paint wares like biscuitwares were primarily manufactured by Tewa potters (Habicht-Mauche 1995; Wilson 2013). However, the Tewa and Keres groups traded these wares (Vint 1999). For example, glazewares account for 7.6 percent of the analyzed sherds at the Tewa site of Tsirege (Duwe 2011).

The population in the northern Rio Grande region increased dramatically in the late A.D. 1200s (Figure 3.2), but there is ongoing debate about exactly how that increase occurred. While some arguments favor population increase as a result of people migrating from the south or through in situ population increase (e.g., Boyer et al. 2010), other lines of evidence suggest that the population increase was a result of migrations from the northern San Juan and Mesa Verde region in southwestern Colorado (Jeançon 1923; Kemp et al. 2017; Ortman 2012; Reed 1949). The late thirteenth century was difficult for

people in the Mesa Verde region due to environmental instability, violence, social and religious unrest, and the region was largely depopulated by A.D. 1280 (Ahlstrom et al. 1995; Glowacki 2015; Kuckelman et al. 2000; Schwindt et al. 2016; Van West and Dean 2000; Varien et al. 2007). Evidence from linguistics, skeletal morphology, obsidian sourcing, and ceramic analysis support the hypothesis that people from the Mesa Verde region migrated south into the northern Rio Grande Valley and Pajarito Plateau during the Late Coalition period, bringing some part of Ancestral Tewa culture and identity from the north (Ahlstrom et al. 1995; Arakawa et al. 2011; Cordell 1995; Ford et al. 1972; Kemp et al. 2017; Ortman 2010, 2012, 2016).

While some evidence indicates that Mesa Verde groups likely brought their language and their genealogy (DNA) into the Pajarito Plateau, archaeological evidence also suggests that they left behind most of their religious and ceremonial traditions and practices (Glowacki 2015). For example, domestic architecture in Mesa Verde includes south-facing, keyhole-shaped kivas with cribbed-log roofs, six masonry pilasters, and a masonry-lined bench (Lipe 2010; Ortman 2016; Stone and Lipe 2011). Unlike Mesa Verde kivas, kivas on the Pajarito Plateau face to the east, were round instead of keyhole-shaped, have flat roofs, and had four internal wooden support posts (Boyer et al. 2010; Lakatos 2007). Of all the kivas recorded in the Tewa Basin of northern New Mexico, only three show signs of Mesa Verde architectural elements (Carlson and Kohler 1990; Kohler and Root 2004a; Snow 1974). These three kivas were built prior to the depopulation of Mesa Verde around A.D. 1280 (Varien et al. 2007).

The lack of material evidence linking sites in northern New Mexico or anywhere else to the depopulation of a Mesa Verde homeland was one of the biggest mysteries in early archaeology of the American Southwest (Ellis 1967). This lack of Mesa Verde site-unit intrusions is the reason that some archaeologists reject the hypothesis that Mesa Verde migrants had a profound impact on the indigenous people already on the Pajarito Plateau (Boyer et al. 2010; Lakatos 2007; Schillaci and Lakatos 2016; Schillaci et al. 2017, Steen 1977; Wendorf and Reed 1955). These archaeologists argue that the increase in population was a result of local population growth, and that Ancestral Tewa culture and identity grew from the earlier northern Rio Grande Developmental period groups.

Classic Period

The Classic period is divided into the Early Classic (A.D. 1325–1400), the Middle Classic (A.D. 1400–1525), and the Late Classic (A.D. 1525–1600). Major changes in population size, aggregation, and settlement location occurred in the Early Classic period (Crown et al. 1996; Kohler 1993; Kohler and Root 2004a; Kohler et al. 2004a,b; Orcutt 1993; Snead et al. 2004). These changes may have resulted from fluctuations in the climate, resource depletion, and competition over agricultural land (Ahlstrom et al. 1995; Crown et al.

1996; Hill et al. 1996; Orcutt 1991, 1993). Preucel (1987) characterized the Classic period as a competition stage. Large pueblos were spaced about 5 kilometers (3 miles) apart on the Pajarito Plateau, and groups could exercise dominance over territories possibly separated by buffer zones (Preucel 1987:24).

The Classic period on the Pajarito Plateau is characterized by intensive maize agriculture, population aggregation, and the introduction of glazeware ceramics (Figure 3.6) to the south of Frijoles Canyon and the production of biscuitware (Figure 3.7) in the northern Rio Grande Valley (Habicht-Mauche 1993; Kohler and Root 2004a; Kohler et al. 2004a,b). There is an overall decrease in the number of archaeological sites dating to the Classic period on the Pajarito Plateau because people came to live together in large, multi-storied pueblos with hundreds of rooms. These large pueblos were associated with numerous outlying fieldhouses. Large Classic period pueblos within the vicinity of the study area are shown in Figure 3.8. There are four temporally overlapping large Tewa pueblos north of Frijoles Canyon that were occupied in the fourteenth century. These large pueblos are commonly known as: Navawi (LA 257), Otowi (LA 169), Tsirege (LA 170), and Tsankawi (LA 211). Tsirege is located on LANL property, while Tsankawi is part of Bandelier National Monument. These four Classic period sites are thought to be ancestral to the Tewa speakers currently living at pueblos along the northern Rio Grande (e.g., the Pueblo de San Ildefonso; LANL 2007).

Figure 3.6 Exterior of San Lazaro Glaze D Glaze-on-red bowl (Owens and Wilson 2008:P.13)

Figure 3.7 Biscuit B vessel from Tsirege Pueblo (Owens and Wilson 2008:P.3)

To the south of Frijoles Canyon are the large Keres pueblos of Tyuonyi (LA 82), Yapashi (LA 250), Haatse or San Miguel (LA 370) at Bandelier National Monument, and Kuapa (LA 3444) (Kohler et al. 2004a,b; Powers 2005; Powers and Orcutt 1999). Just north of the area depicted in Figure 3.8 are large pueblos associated with Puyé and present-day Santa Clara Pueblo.

Population estimates for the start of the Classic period (Figure 3.2) indicate a decrease in population size on the northern Pajarito Plateau as people moved to the southern Pajarito Plateau in lower elevations near Bandelier National Monument (Crown et al. 1996; Orcutt 1999; Ortman 2016). The archaeological evidence for the occupation of the Pajarito Plateau during the Late Classic period is sparse, reflecting the movement of people down into the Rio Grande Valley to locations such as Cochiti, San Ildefonso, and Santa Clara pueblos.

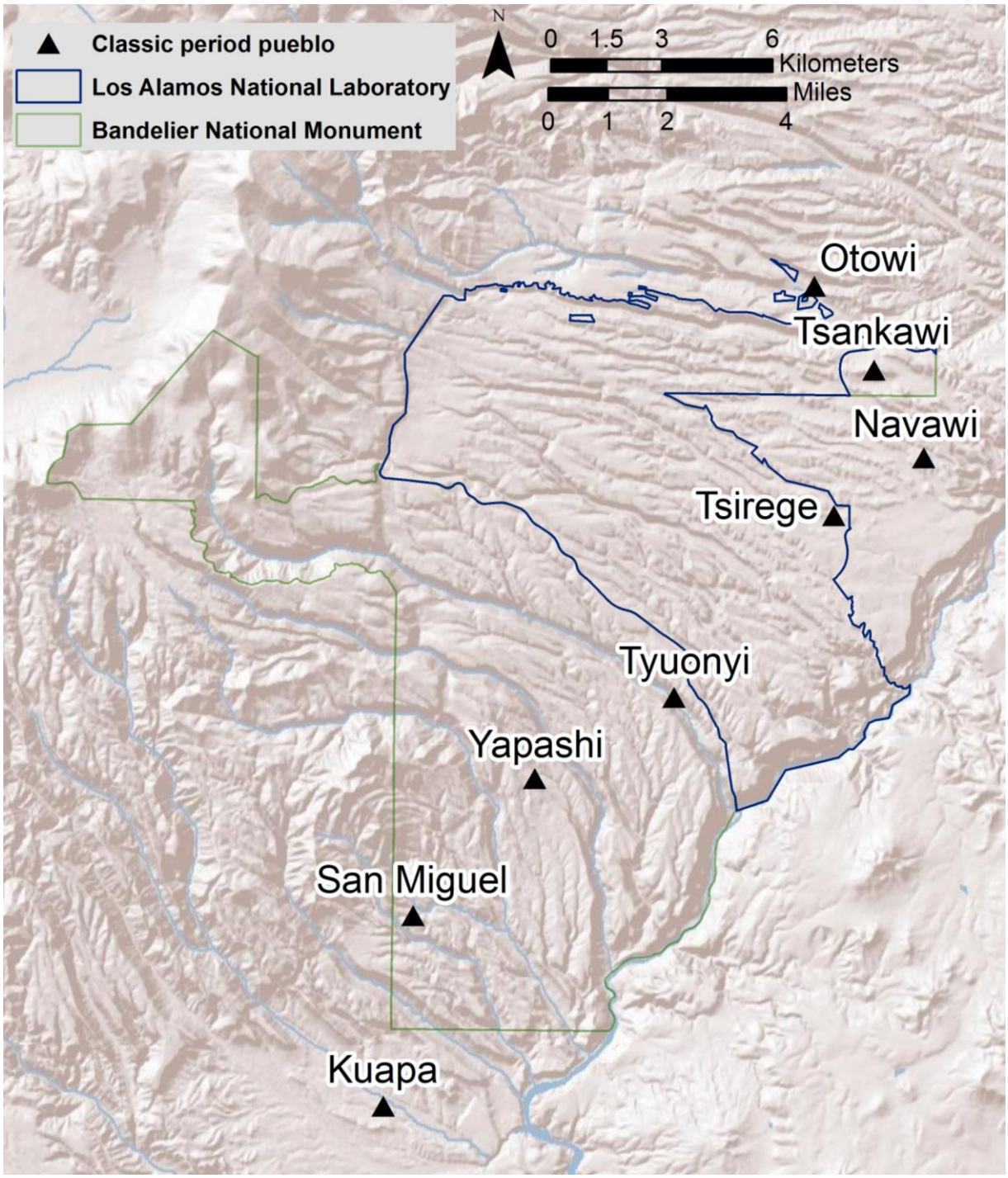

Figure 3.8 Tewa and Keres Classic period pueblo sites on the Pajarito Plateau

Postclassic Period

The Pueblo peoples first encountered European explorers between A.D. 1539 and 1542; during which, most of the peoples left the large Classic period villages and moved to

the Rio Grande where the modern-day pueblo villages of Pueblo de San Ildefonso, Tesuque, and Pojoaque are located.

The first permanent Spanish settlements and Catholic missions were established in New Mexico in A.D. 1598 by Don Juan de Oñate; thus, Pueblo life was transformed dramatically during the Spanish conquest. Pueblo settlement patterns, and the value of and access to natural and cultural resources began to shift to a Eurocentric system, and Puebloan religious freedom became restricted because of the Spanish Catholic perspective (Knaut 1995; Liebmann 2012, 2017a). Estimates suggest that Pueblo population declined as much as 50 to 75 percent as disease and oppression decimated the people (Palkovich 1985). The spatial area of ancestral places also began to decrease during this time because of population decline and changes such as forced resettlement, which altered Pueblo lifeways (Kulisheck 2010).

Compared with the earlier Coalition and Classic period occupation, relatively few fieldhouses date to the Postclassic period, but more fieldhouses occur in the Jemez region compared with elsewhere in northern New Mexico at this time. During the late A.D. 1600s, people lived in the Jemez at large pueblos like Patokwa (LA 96), Boletsakwa (LA 136), Cerro Colorado (LA 2048), and Astialakwa (LA 1825) (Liebmann 2012; Liebmann et al. 2017). Fieldhouses were present and were an important part of settlement systems before and after Spanish arrival (Kulisheck 2005, 2010). The Jemez region around A.D. 1600 is estimated to have been home to around 5,000 to 8,000 people, but after the Pueblo Revolt of 1680, fewer than 900 people remained in the area (Liebmann 2017b). Kulisheck (2010:184) argues that seasonal movement from pueblo villages to fieldhouses buffered against disease and Spanish oppression.

Although few, at least one notable ancestral place that dates to the Postclassic period is located on LANL property; oral traditions from Pueblo de San Ildefonso indicate that during the Pueblo Revolt of A.D. 1680, women and children took refuge at Nake'muu Pueblo (LA 12655) (Figure 3.9). Nake'muu is located on LANL property (Vierra et al. 2003). Some Postclassic rock art and pottery also occur in association with cavates at Bandelier National Monument (Liebmann 2002:136).

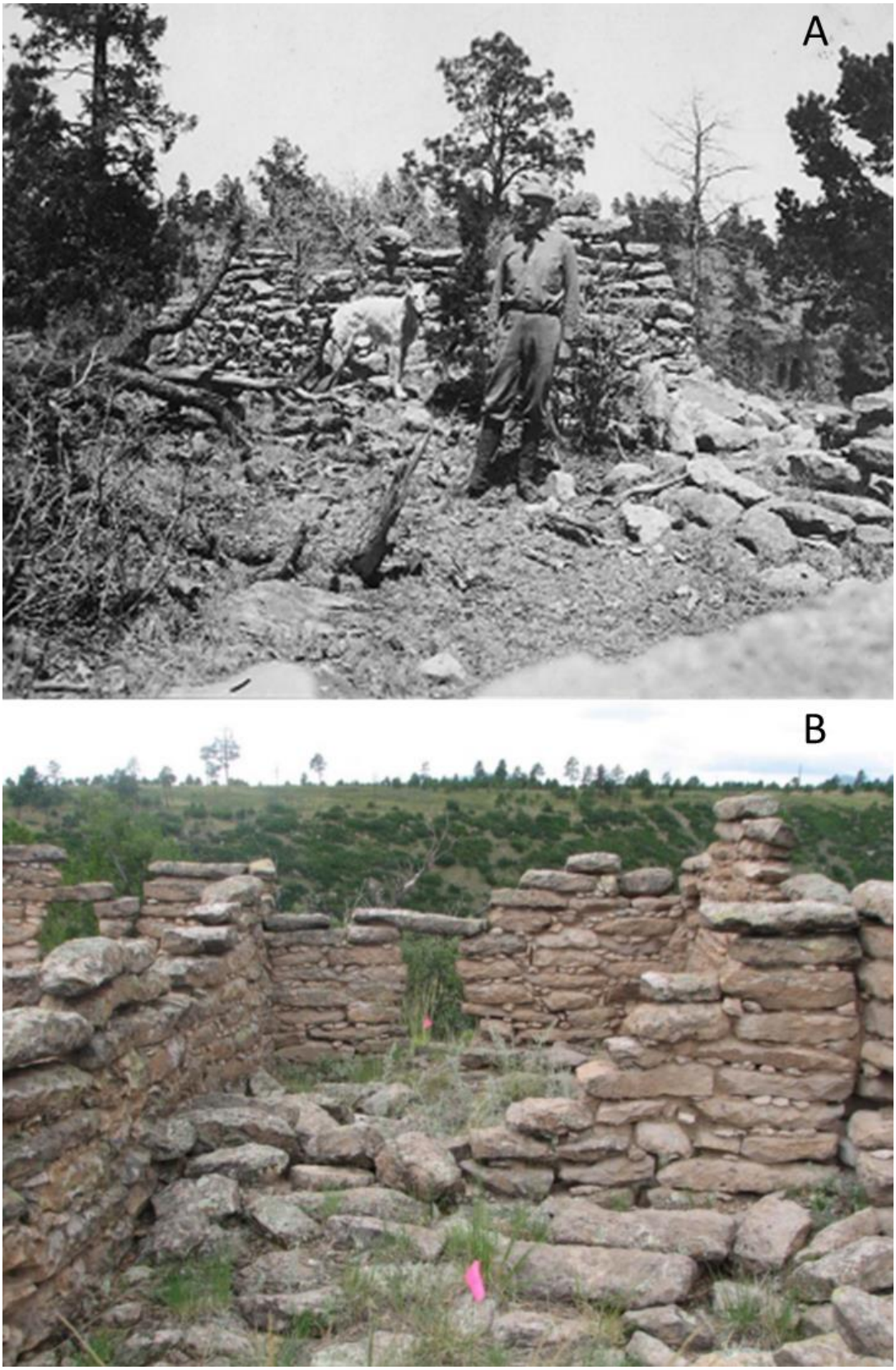

Figure 3.9 Nake'muu Pueblo in 1915 (A) and in 2015 (B)

Chapter 4. Current State of Knowledge and Research on Fieldhouses

Small, one- to three-room structures, or fieldhouses, are arguably the most ubiquitous structural site-type in the American Southwest, and have been found in all parts of the Ancestral Pueblo, Hohokam, and Mogollon regions (Crown 1985; Kohler 1992; Lambert 2006; Preucel 1990; Snead 2008; Stone 1993; Toney 2012; Ward 1978; Woodbury 1961). Historical evidence also indicates that fieldhouses were a common and important component of indigenous settlement and agricultural systems throughout the Southwest, including on the Pajarito Plateau and its adjacent lands (Ellis 1978; Goodman 2012; Hoover 1920). In this chapter, historical accounts and archaeological studies of fieldhouses from across the Southwest are summarized, including early Spanish accounts, early archaeological research, and contemporary archaeological research.

Historic Accounts from Spanish Explorers

Spanish explorers in the sixteenth century documented small structural sites in the Southwest and these were likely fieldhouses. Moore (1980:20–24) compiled many of the earliest accounts of fieldhouses, and the passages below highlight what Spanish explorers witnessed as they traversed the southern and northern American Southwest. The first definitive reference to a fieldhouse by the Spanish is from Pérez de Luxán who was the chronicler of the Antonio de Espejo expedition (1582–1583). He described small sites near the Rio Grande and Rio Conchos in eastern Chihuahua, Mexico (Luxán 1966:164):

> *All the Indians of this community [Santiago] are farmers, the river being very appropriate for agriculture because it forms many damp lands and bays; and even though they live in the pueblos, they have flat-roofed houses in their fields where they reside during harvest time.*

Luxán's quote suggests that at least some fieldhouses were flat-roofed, were located in agricultural fields, and that people lived in them during the harvest season. Further north along the Rio Grande in New Mexico, Antonio de Espejo (1966:220) gave an account of shelters belonging to Piro-speaking farmers:

> *…and in each planted field the worker has a shelter, supported by four pillars, where food is carried to him at noon and he spends the siesta; for usually the workers stay in their fields from morning until night just as do the people of Castile.*

In the sixteenth century, Baltasar de Obregón (1928:325) gave a second-hand account of small, isolated structures at Acoma Pueblo in New Mexico:

> *Their fields are down below, surrounding the town. They have other fields three leagues away which are irrigated. Each Indian has a shack on his field where they gather their harvest.*

Although undoubtedly not the focus of their explorations, and not the largest habitation sites they encountered, these small structures were both prevalent and conspicuous enough to warrant repeated mention by mission chroniclers throughout the Southwest.

Accounts from Recent Historic Times

The following passages represent a selection of early fieldhouse descriptions from the early archaeological and historical literature. In general, they support the idea that at least some small structures were associated with agricultural pursuits among Ancestral Pueblos and among members of the modern Pueblos.

Adolph Bandelier visited many areas in the northern Rio Grande region, including the Pajarito Plateau. In the following quote, he describes small houses near Tonque Pueblo in the Middle Rio Grande Valley near Santa Fe. Bandelier (1892:110–111) suggested that these small structures might have served as watchhouses or guard stations near the farming fields. Bandelier incorrectly believed that fieldhouses were built before the multi-component pueblos that exist across New Mexico:

> *The former fields of the pueblo can be traced along the Arroyo del Tejon, and line the dry Arroyo de la Yuta, in places at a distance of two and three miles from the ruins. Little watchhouses of which only the foundations are visible indicate their location. These watchhouses, equivalent to the 'summer ranchos' of the Indians of today, are usually quadrangular and of one room only; still I found one with two rooms and of an L shape. Their average size corresponds nearly to that of a single room in a pueblo of the ancient pattern with two exceptions. These two, being very small, may have been guardhouses nearly, where the crops were watched in the daytime or at night, whereas the other may have sheltered entire families during summer. The foundations are rubble, and the same kind of potsherds are scattered about at the pueblo.*

Victor Mindeleff (1896) inferred that fieldhouses were contemporaneous with larger pueblos, were occupied during the farming season, and served an important role for the agricultural system (Pilles and Wilcox 1978:2). After visiting the Verde Valley in central Arizona, Mindeleff (1896:246–247) wrote:

Scattered over the whole area formerly under cultivation along Clear Creek are the remains of small, single rooms, well marked on the ground, but without any standing wall remaining. These remains are scattered indiscriminately over the terrace without system or arrangement; they are sometimes on the flat, sometimes on the slight knowls…It will be noticed that the masonry was composed of river boulders not dressed or prepared in any way, and that debris on the ground would raise the walls scarcely to the height of a single low story. The location of these remains, their relation to other remains in the vicinity, and their character all support the conclusion that they were small temporary shelters or farming outlooks occupied during the season when the fields about them were cultivated, and during the gathering of the harvest, as is the case with analogous structures used in the farming operations among the pueblos of to-day…There were doubtless other villages and small settlements whose remains are not now clearly distinguishable, and it is quite probable that some of the inhabitants of the large villages in the vicinity…had a few farming houses and some land under cultivation on the terrace.…The relation of the stone villages to the area formerly cultivated, the relation of the single-room remains of the area immediately about them, the character of the remains, and the known methods of horticulture followed by the Pueblo Indians, all support the conclusion that these remains were not only contemporaneous but also related to one another.

William Henry Holmes (1905:211–212) noticed the prevelence of small-scattered stone lodges in various areas of the Jemez Valley:

A unique feature of the antiquities of the Jemez Valley are the ruins of small houses that are encountered by the explorer at every turn in the tributary valleys, on the steep slopes of the plateaus, and scattered over the upper surfaces of the wooden tablelands. In the foothills they are seen sometimes occupying very precipitous sites, and in riding through the deep forests of the uplands they may be counted by the score. They consist of generally of a single room, rarely two or more rooms, and the dimensions of the apartments rarely exceed ten or twelve feet. The walls are thin and loosely laid up, and today are rarely more than three or four feet in height, the dearth of debris indicates that they could not have been more than one story in height at any time. A few of the sherds with the white ware and black decoration are about all that could be found in the way of artifacts around these structures….

These houses occur in considerable numbers in the Valley of San Diego near the great bend, twenty miles above Jemez pueblo; in the vicinity of the warm springs a few miles above the bend; on the plateau east of Jemez springs; and

along the terrace like projections of the western slope of the canyon wall. The use of these small structures can only be surmised. They were hardly permanent abodes for families, but seem rather to have been designed for some temporary purpose, as lodges for waters, hunters, herders (if within the Spanish period), shrines or places of resorts on special occasions connected with religious observances.

In addition to observations about small structures near Santa Fe, Bandelier (1892:15–16) also described structures in western New Mexico, specifically the distance between field and fieldhouse:

Cultivable soil need not be in the immediate neighboring of a village or be contiguous to it. A pueblo might be, as is Acoma today, ten or even fifteen miles from its fields. The custom of emigrating en masse to these fields in summer, leaving at home only a small portion of the people to guard it, explains why we find ruins in places where the nearest tillable patch is quite distant.

Bandelier (1892:313–314) indicates that the mass movement of Native American people into the fields during the summer was common during historic times:

In summer, as is well known, the pueblos are nearly deserted. The Zuñis move to Pescado, to Aguas Calientes, to Nutria, etc., at distances of ten to twenty miles away; all the other tribes emigrate into their fields, leaving but a few families at home, until the time comes for housing the crops. Then the return begins, one after another the summer ranchos are abandoned; their inmates move the few household utensils they have taken with them in spring back to their original quarters.

Similarly, there is evidence that the people of Cochiti Pueblo in New Mexico moved into fieldhouses during the summer in the early to mid-twentieth century (Goodman 2012:116):

In 2001, two Cochiti residents, each in their 50s (who asked to remain anonymous), stated that a great many small fieldhouses had formerly occupied the terraces above the agricultural fields east of the Rio Grande. The whole area was filled with them. (One of these individuals, as a very young child, spent several summers with parents and grandparents living in their fieldhouse. The other resident had heard stories about summers spent at the fieldhouses as told by family elders.) Many families crossed the river to work in their fields and either stayed in their little houses for several months each summer, or utilized these living spaces on a daily basis but returned to the pueblo at dusk. This was

> *an enjoyable time, as children, parents, and grandparents often worked and relaxed together in a less formal setting, away from the pueblo. Their fieldhouses usually consisted of only one room and did not include an interior fireplace or hearth. Rather, the women built a cooking fire outside, often under a ramada, in front of the structure.*

In the nineteenth and early twentieth centuries, the Hopi constructed temporary shelters called hogans. Hogans are slightly larger than the typical fieldhouse structure seen in the archaeological record, but Hoover (1930:434) described them as being used for temporary shelter while farmers worked in the fields and protected their crops:

> *Before the government came in, it is said that some of the [Hopi] Indians used to go as far as 45 miles to the fields every day…Some one goes out to the fields every day, or some go and stay for a number of weeks but return to the villages for dances and for the winter. Temporary shelters are built for those who tend the crop.*

A *kìisi* (field hut), shown in Colwell and Ferguson (2017:Figure 10), is a traditional Hopi structure consisting of brush that was constructed near agricultural fields and used during sheepherding practices (Hill et al. 1998:139). Fewkes (1900:1005) thought these field huts were used by Hopi members during ceremonies at First Mesa. Mindeleff (1891:217–219) recorded several other structures like the Hopi *kìisi* . Children watched over melon fields inside a *tuwahlki*, along with a *kishoni*, which is an open shade structure made of various local grasses and available materials. Hopi *makki*, or hunting shelters, were also constructed of brush and other local materials (Hill et al. 1998:223). Another Hopi hunting structure, the *kwaamakki*, was a small, stone enclosure built from brush and grass to help capture live eagles (Beaglehole 1936:19; Curtis 1922:34; Fewkes 1900:700).

Some small structures had non-agricultural functions, serving as sweat lodges, menstrual or childbirth huts, houses for the elderly, or for cleansing and purification rituals, for example (Crown 1985:91). Others functioned as shrines, playhouses, hunting lodges, gathering stations, or herding shelters (Ellis 1978, 1979; Wilcox 1978:26). Whether the different activities occurred at the same structure or different structures, however, is less clear. Several specific examples of the variable uses follow.

The Pima and Maricopa tribes in southern Arizona and northern Sonora had fieldhouses that were typically located in the agricultural fields at a distance from permanent habitation structures, but they also used small structures for a variety of purposes (Crown 1985). However, no additional information is given to differentiate between fieldhouses and non-fieldhouse small structures like size, shape, or construction techniques. As cited in Crown (1985), small structures were used as temporary shelters for women needing to be secluded during menstruation or

childbirth (Grossman 1873:416; Lange and Riley 1970:132; Russell 1908:183; Spier 1933:91). Menstruation or childbirth huts were located either "in the vicinity of the…dwelling place" (Grossman 1873:416), or "in the bushes near the village" (Russell 1908:155). Pima huts used for these activities were specifically located on the western portions of sites (Russell 1908:181), and women occupied their time away by making baskets (Russell 1908:183).

Small structures also functioned as places for Pima and Maricopa warriors who had killed an enemy (Russell 1908:204; Spier 1933:180; Whittemore 1893:71; all cited in Crown 1985). Warriors needed to be purified/cleansed after battle and were secluded from others in small structures away from the village for periods as long as a month. Similar purification rituals were required for men returning from salt-gathering trips (Russell 1908:94; Stewart 1965:84).

Ellis (1978, 1979) documented four types of herding shelters used at Laguna Pueblo in western New Mexico. These included available caves, small rectangular houses near cliffs or on talus slopes, brush structures, and cone-shaped huts constructed over a shallow pit. This is notable because the same activity occurred at four different types of structures. Ellis (1979:443) describes the structures as:

> *Available caves could be walled almost to the overhang, thus allowing escape of smoke from a fire. For lambing … for the winter, a small rectangular house was built near a cliff or on a talus slope, which reflected warmth. The most typical herding shelter … [was] logs being laid horizontally into a rough-horseshoe shape to hold brush or branches upright with the back sometimes a dry-laid stone wall … A low cone-shaped sweathouse constructed over a shallow pit or dug into the earth was a common adjunct to a central herding camp.*

Small structures were also used as sweat lodges for people ridding the body of illness (Spier 1933:92; cited in Crown 1985). Pima and Maricopa tribes used small structures for shelter during fishing expeditions, to escape pestilence, for keeping baskets moist during weaving, for storage, and for housing the elderly (Spier 1933:92).

Although these ethnographic accounts for non-agricultural functions are from southern Arizona, northern Mexico, and western New Mexico, similar customs may have applied to the prehispanic northern Rio Grande region. These ethnographic examples indicate that non-agricultural functions are important to consider when interpreting small structures in the archaeological record (Crown 1985:91).

Archaeological Studies of Fieldhouses

As outlined above, fieldhouses were observed and recorded by Spanish explorers in the 1600s, and by early anthropologists centuries later (Bandelier 1892; Hewett 1904, 1906;

Moore 1980). Bandelier hypothesized that Native Americans lived in the small houses (fieldhouses) in earlier times, and only later came to live in the larger, multi-storied pueblos that also occur across the landscape. Mindeleff (1896:246–247) was the first archaeologist to recognize that fieldhouses and the ancient large pueblos were contemporaneous.

In the 1950s and 1960s, archaeological research began to focus on fieldhouse landscape distribution, function, use, and significance to prehistoric agriculture and settlement patterns (Haury 1956; Skinner 1965; Woodbury 1961). More recent research has investigated fieldhouses as reflecting community practices in land ownership, control over farming resources, and seasonal circulation and movement (Kohler 1992; Preucel 1988, 1990).

Haury and Woodbury

By the 1950s, most researchers believed that fieldhouses were temporary seasonal structures occupied by farmers who worked the fields. The fieldhouse concept as used and understood by southwestern archaeologists today was first articulated in Emil Haury's (1956) discussion of prehistoric settlement patterns. Haury (1956) argued that these small structures were built as a result of the effects of population increase. When people aggregated into large pueblo villages, their fields were located further from their habitation pueblos. Instead of moving back and forth to maintain and protect the fields, people built farmhouses next to their fields. To Haury, farmhouses were a result of urbanization and population aggregation, and since these processes did not happen until later in time, he predicted that these small structures would not be found in the archaeological record of the Southwest before about A.D. 1000. Haury (1956:7) explains the fieldhouse (or farmhouse, as he termed them) as follows:

> *Previously, it would appear that household groups, living as small independent communities, were close to their fields. Nucleation meant that some fields were far away. This demanded more time in transit to and from field work and greater risk of loss of crops to marauders. The distant farmhouse, strategically located with respect to the fields, was the solution. This served as a temporary home, as an observation post, and for crop storage at harvest time*.

Although Haury first articulated the fieldhouse concept, Richard Woodbury (1961) is credited with the term fieldhouse to describe small, masonry structures in the Southwest. During fieldwork at Point of Pines in eastern Arizona, Woodbury (1961:xiii) defined fieldhouses as "one-room structures associated with prehistoric fields, serving as summer shelter for farmers and temporary storage of the harvest." Both Haury's and Woodbury's definitions encapsulate two widely held assumptions regarding small structures in the Southwest. The first is that their appearance and proliferation is

associated with the process of aggregation. The second is that their function is related to agriculture specifically in that they functioned as a temporary shelter for farmers working in nearby fields and as temporary storage during the harvest. The definitions of Haury and Woodbury are at least partially supported by ethnohistoric documents, as outlined in the previous section. Importantly, both definitions have been used by southwestern archaeologists as starting points upon which to build and refine the fieldhouse concept (Buck and Sabol 2014; Kohler 1992; Kulisheck 2005; Moore 1978; Preucel 1986, 1988, 1990; Ruscavage-Barz 2002; Stone 1993; Sutton 1977; Toney 2012; Wilcox 1978).

By the 1970s and 1980s, many fieldhouses had been recorded by survey and excavation projects, but their function within the larger context of Ancestral Pueblo settlement patterns and agricultural systems was still unclear. Ward's (1978) edited volume, *Limited Activity and Occupation Sites*, was the first serious cooperative effort made to examine small, fieldhouses from theoretical, ethnographic, and archaeological perspectives. In the volume, Pilles and Wilcox (1978) rejected Haury's (1956) term *farmhouse* and Woodbury's (1961) term *fieldhouse* and arbitrarily chose the term *small site*. Pilles and Wilcox (1978:1) defined a small site as:

> *…ones whose size and artifactual assemblage suggest a limited temporal occupation by a small group of people, gathered at the locality to carry out a specific, seasonally-oriented set of activities.*

In this historic context document, fieldhouse is used instead of small site because Pilles and Wilcox's definition lacks any mention of an actual structure. Using their definition, a small site could include an artifact scatter with no structure nearby.

Wilcox

David Wilcox (1978:26) argued that fieldhouses were architectural facilities built in or adjacent to fields, and were the location where people lived on a temporary basis during the growing season. He considered how fieldhouses fit into Ancestral Pueblo subsistence and settlement patterns by synthesizing Haury (1956) and Moore's (1975) interpretations of the fieldhouse concept. Haury (1956) argued that fieldhouses first appeared due to urbanization around A.D. 1000, and did not believe that fieldhouses were constructed before this time. Indeed, few fieldhouses exist prior to the eleventh century in most parts of the Southwest.

Conversely, Moore (1975) argued that fieldhouses were built more as a function of distance than of urbanization since they were an essential part of the agricultural process. Moore posited that increased numbers of small structures would be placed further from good agricultural land because more plots were being cultivated by more farmers. Using ethnographic examples from the Navajo (Russell 1978), Moore argued

that dispersed and seasonally mobile farming populations used small structures in the fields when their main habitation area was inconveniently distant from their farms.

Wilcox cautioned against catchall interpretations of fieldhouses since they contain a considerable amount of variation. Not all one-room structures were used as temporary shelter and storage during the agricultural season. Small, one-room sites could have served a multitude of functions including ceremonial shrines, playhouses, hunting lodges, gathering stations, or even permanent year-round dwellings for bachelors or outcasts. Wilcox also wisely cautioned that variation in the number of rooms, site size, and artifact counts are difficult to interpret when solely using survey data.

The 1990s and Beyond

Since the 1990s, archaeologists have used fieldhouse data to more broadly examine anthropological issues such as land ownership, territorial control over farming resources, and seasonal circulation and movement. New technologies are being used to aid in the detection and modeling of ancient agricultural fields, which are often difficult to locate in the archaeological record. Several key fieldhouse studies in the Southwest are highlighted below.

Preucel

Observing that archaeologists had no formal model to explain how fieldhouses were incorporated into the farming strategies of Ancestral Pueblo farmers, Robert Preucel (1986, 1987, 1988, 1990) set about addressing this issue by investigating fieldhouses on the Pajarito Plateau. Preucel surveyed land north of Los Alamos and recorded fieldhouses. He also excavated seven one-room structures to determine whether Coalition and Classic period Ancestral Pueblos practiced seasonal circulation patterns.

Preucel (1990:53) envisioned that the Ancestral Pueblo settlement system was a network of permanently and seasonally occupied nodes. Permanent nodes were villages and hamlets that were characterized by relatively large populations and contained kivas. Farming communities and fieldhouses were seasonal nodes because they were only occupied by individuals or small nuclear families during the farming season. Preucel defined a farming community as consisting of more than one extended family group. Fieldhouses, on the other hand, were small structures occupied during the growing season by nuclear families that exhibited tremendous variability in construction.

Preucel (1988) found that the number of fieldhouses on the Pajarito Plateau increased from the Late Coalition period (A.D. 1275–1325) to the Early Classic period (A.D. 1325–1450). The number of fieldhouses declined during the Middle and Late Classic periods when people began to abandon the area. In addition, he found that the average distance between fieldhouses and residential pueblo villages increased through time (Preucel

1990). Fieldhouses and villages were spaced on average 0.41 kilometers (0.25 miles) apart during the Early Coalition period and 0.63 kilometers (0.39 miles) apart during the Late Coalition period. By the Early Classic period, the distance between fieldhouses and residential pueblo villages increased to 1.62 kilometers (1 mile), and then to 3.14 kilometers (2 miles) by the Middle Classic period. Because of the short distance in the Early Coalition period, Preucel suggested that, in contrast to Moore (1975, 1978, 1980), the initial construction of fieldhouses was not meant to reduce transportation costs between fieldhouses and villages. Rather, it represented a staked claim and a symbolic ownership of agricultural land. However, the increase in distance during the Early and Middle Classic periods was likely due to the lack of good arable land, and people were required to travel further to plant their crops (Kohler 1992; Wilcox 1978:27).

Kohler

In light of Hardin's (1968) economic theory of the "tragedy of the commons," Timothy Kohler (1992) studied Ancestral Pueblo property rights and agricultural land-tenure systems in the Dolores area of southwestern Colorado from A.D. 600–950 using fieldhouse survey data. He predicted that fieldhouses were built to make a claim about land ownership, and therefore more fieldhouses should be constructed during times of relatively high population and inter-settlement competition for agricultural land. Kohler argued that fieldhouses that were located in areas with less than adequate soil quality would not have been occupied for a long period of time and few ceramics would be present. On the other hand, fieldhouses located in areas with productive soils would have been occupied over a longer period of time and include a larger ceramic assemblage. Similar to Preucel (1987, 1990), Kohler predicted that fieldhouses would be located at greater distances from villages as nearby fields became less productive.

Using fieldhouse data from 119 sites recorded by survey, Kohler examined the numbers, size, characteristics, and distribution of fieldhouses relative to fields (vegetation zones) and relative to habitation sites; and the size and location of habitation sites relative to fields. Orcutt (1987) demonstrated that productive fields in the Dolores area are indicated by sagebrush and more "good" and "adequate" soil quality of low and moderate cold-air-drainage to support a longer growing season (Kohler 1992:622). Other vegetation types like piñon-juniper are located in poorer soils with a shorter growing season.

Kohler found that the longer-occupied fieldhouses with more ceramics tended to be located in sagebrush and in oak zones, while the fieldhouses with less ceramics were located in piñon-juniper zones. The results of Kohler's study indicate that during the time of maximum village size between A.D. 860–880, more fieldhouses were constructed to limit access to previously unregulated farmlands in response to resource scarcity. Kohler (1992:631) argues that a small proportion of the villagers monopolized

the better field locations as a result of the population aggregation. Before this time, however, land ownership was not formalized since the population was more dispersed and there was less competition for agricultural resources. However, unlike Preucel (1987, 1990), Kohler found that fieldhouses are located more or less randomly with respect to villages. He also found no real association between fieldhouse location and distance to fields.

Stone

Working in the Hohokam area of southern Arizona, Tammy Stone (1993) evaluated the usefulness of a system in which archaeological sites are classified as limited activity loci, fieldhouses, farmsteads, and hamlets. In this system, fieldhouses were assumed to be seasonally occupied structures used for agricultural purposes. Fieldhouses in the Hohokam region played an important role in people's food economy. Farmers and their families lived in these small structures (less than nine square meters) seasonally, and there is some evidence for reoccupation. Hohokam fieldhouses lacked formal extramural features like sheet trash middens.

Stone argued that archaeological remains from Hohokam fieldhouses should consist of a limited inventory of ceramic trade wares and vessel forms, lack storage jars, have a limited ground stone assemblage, and have limited chipped stone tool types but have evidence of tool production and maintenance. Using data from 20 excavated sites, including two fieldhouses, Stone compared the ratios of various artifacts between site-types as defined in the classification scheme. For example, she examined the proportion of buffware ceramics to plainware ceramics and the proportion of bowl sherds to jar sherds (Stone 1993:Table 5). Her results showed no clear-cut relationships between site-type and artifact ratios, implying that it is unjustified to assume that the same activities occurred in all sites classified as a particular type. She inferred that the difference between site-types is more a reflection of the duration of occupation rather than the types of activities conducted. In other words, this study found no archaeological evidence that activities conducted at fieldhouses in the Hohokam area differed substantially from activities carried out at the other site-types.

Ruscavage-Barz

Samantha Ruscavage-Barz (2002) examined fieldhouse variability during the Coalition and Classic periods using four one- or two-room fieldhouses at Bandelier National Monument. LA 3839, LA 71144, LA 115152, and LA 118345 were partially excavated in the late 1990s. Summaries of these four sites can be found in Appendix A. Room sizes ranged from 3.2 to 6.2 square meters and sites were constructed from shaped and unshaped tuff blocks. Ruscavage-Barz determined that site function was variable, with evidence that LA 71144 and LA 115152 were both used as fieldhouses, but that

LA 71144 was also used for hunting activities and LA 115152 for wild resource procurement and processing. The ground stone assemblage and paleobotanical data at LA 3839 suggested that people processed food at the site. All of the sites except for LA 118345 had evidence for tool manufacture. Pollen and macrobotanicals suggested that LA 118345 may have been used to store wild plants and cultigens, but the single ground stone artifact found at the site suggested limited plant processing.

Ruscavage-Barz concluded that these four small structures varied in season of occupation and in the duration and intensity of use, and probably served a variety of functions. Similar to Wilcox (1978), she cautioned against using the term fieldhouse indiscriminately for small structures, because it obscures the full range of activities that may have occurred at a site.

Toney

Elizabeth Toney (2012) investigated 623 small structural sites (fieldhouses) in three study areas in the Mimbres region of southwestern New Mexico to determine whether or not fieldhouses were located on, or near, good agricultural land. Mimbres archaeologists typically define fieldhouses as one- to ten-room structures, while archaeologists in most other parts of the Southwest use a smaller room count. Following methods developed by Schollmeyer (2009; 2011), Toney integrated datasets of prehistoric precipitation rates, landforms, and soil permeability into geographic information systems (GIS) layers to define the locations of viable agricultural soils in the past. She concluded that the majority of the small sites were not located within areas of agriculturally productive land.

In all three of her study areas, there were differences in the frequency of total agriculturally viable soils in relation to fieldhouses. For the Burros area, approximately 80 percent of the sites were located in non-agriculturally viable soils. However, 60 percent of the sites in the Fort Bayard study area were placed on viable soils. In the larger Mimbres study area that included more sites, 60 percent of the sites were not constructed in areas with agriculturally viable soils. Toney also examined if a correlation existed between room count and viable soils. She found that 65 percent of one-room sites, 60 percent of the three- to four-room sites, and 40 percent of five-to six-room sites were not located on or near agriculturally viable soils. Toney's research on Mimbres fieldhouses challenges the long-held assumption that fieldhouses are associated with agricultural activities.

Buck and Sabol

Paul Buck and Donald Sabol (2014) investigated whether one- to two-room structures were located near the most optimal areas for maize agriculture in the Mount Trumbull

region of northwestern Arizona. Using an approach different than Scholmeyer's (2009) method for defining viable agricultural soils, Buck and Sabol developed GIS layers using radiant surface temperature and soil moisture with the aid of the Advanced Spacebourne Thermal Emission and Reflection Radiometer satellite. Their results indicate that small sites, or fieldhouses, are not located preferentially close to optimal maize areas. Interestingly, their study demonstrates that larger sites are closer to optimal maize areas. This suggests that small sites in the Mount Trumbull region may have served other purposes. As with the findings of Toney (2012), the results of their study challenge the assumed primary association between fieldhouses and agricultural fields.

In contrast, there is a strong relationship between fieldhouses and agriculturally viable soils at Bandelier National Monument (Chapter 2). Orcutt (1999) found that over 40 percent of pueblos and fieldhouses are located on, or within a short distance of, El Cajete pumice soils, which trap moisture and help with agricultural viability.

Summary of Archaeological Fieldhouse Research

Fieldhouses are part of the living memory or oral histories of many members of modern Pueblos. Fieldhouses were observed by Spanish explorers in the 1600s, and by the late 1800s and early 1900s, archaeologists were pondering the possible roles of these plentiful structures. By the 1950s and 1960s, most researchers had concluded that fieldhouses were temporary seasonal structures occupied by farmers who worked the fields. Survey and excavation projects in the 1970s and 1980s continued to identify additional fieldhouses, and projects since the 1990s have used fieldhouse data to examine important anthropological topics. While the term fieldhouse specifically refers to structures in which people lived during the farming season, small structures may have served multiple purposes, and careful attention must be paid to subtle nuances to elucidate these differences.

New technologies are being used to aid in the detection and modeling of ancient agricultural fields, which are difficult to locate in the archaeological record (Sturm 2016). Future research using sophisticated spatial analyses in GIS should improve our understanding of the relationships between fieldhouses, pueblos, and other aspects of the landscape including agricultural fields (see Chapter 6). The persistent use of fieldhouses for hundreds of years, even into the twentieth century, attests to their importance in indigenous settlement and subsistence systems. The research referenced here demonstrates the significant challenges archaeologists face when trying to classify and define small sites.

Chapter 5. Analysis and Discussion of Fieldhouses in the Study Area

In this chapter, data is analyzed and summarized to help clarify the role of fieldhouses in northern New Mexican Ancestral Pueblo lifeways (A.D. 1200–1600, and shortly after). Data include location, chronology, number, size, shapes of rooms, features and artifacts from 2,011 ancestral places defined with an LA number; data was collected from 1,884 unexcavated sites and 127 excavated sites that included 139 excavated fieldhouse structures. (Some ancestral places defined as archaeological sites and given a single LA number contain multiple fieldhouses whereas others contain a single fieldhouse; hence the differences between numbers of "sites" versus numbers of "structures".) The fieldhouses are from eight temporal categories (Table 5.1) and three adjacent regions (Table 5.2): the Pajarito Plateau, the Rio Grande Valley near present-day Cochiti Lake, and the Jemez Plateau (Figure 1.10).

Table 5.1 Total Number of Sites by Time Period in All Regions

Time Period	Unexcavated Sites	Excavated Structures
Undetermined	933	0
Developmental	4	0
Developmental/Coalition	34	0
Coalition	243	26
Coalition/Classic	359	22
Classic	301	73
Classic/Postclassic	10	13
Postclassic	0	5
Total	1,884	139

Although archaeologists have previously examined fieldhouses from the Pajarito Plateau (e.g., Orcutt 1993; Preucel 1990; Ruscavage-Barz 2002), this study amasses data from a broader region that spans the Jemez Mountains to the Rio Grande. Archaeological data are compiled in this chapter to address hypotheses about functional roles such as agricultural processing and seasonal usage, potential non-agricultural uses of fieldhouses (or one- to three-room structures), and whether local cultural traditions and patterns in fieldhouse architecture and other characteristics (e.g., features) vary over time and by region.

The first section compiles chronological information on the fieldhouses, which helps to establish local occupational histories, give an indication of population movements, and set the scene for temporal analysis of the other aspects of fieldhouses. The remaining

data summaries and analyses focus on the excavated structures for which more details are available. Statistical comparisons involve the numbers of rooms, the room size, and the room shape among the excavated fieldhouses over time and across space. Information on thermal, storage, architectural, and other features are compiled and statistically analyzed for patterning. Masonry type for construction materials are compared among the excavated fieldhouses across the study area. Artifact analyses from previous studies are summarized, and new analyses of the compiled artifact data are also undertaken.

Results indicate fieldhouses in the study area do not become part of the built Ancestral Pueblo landscape until the Coalition period. Fieldhouses occur with many similarities across the region over a period of more than four centuries, but with some locally distinct sub-patterns and changes over time. For example, one-room structures are most common, two-room structures are less common, but are more common later in time, and three-room structures are rare. The average room size is around four square meters, but room size in the Jemez region is closer to eight square meters. The most common room shape is rectangular. Thermal features including hearths are the most common feature type, occurring in half of the excavated structures. Fieldhouses in the Jemez region have significantly more storage features than fieldhouses on the Pajarito Plateau or the Rio Grande.

A variety of artifacts have been recovered from fieldhouses, including ceramics, lithics, floral and faunal remains. Fieldhouses typically have more utilityware ceramics than other types, and the majority of vessels were cooking jars, which is the same pattern found at larger pueblo roomblocks. Manos and metates were used at fieldhouses, and there is evidence that formal stone tools like projectile points were manufactured at sites. Macro- and micro-botanical remains from fieldhouses show evidence for the presence of domesticated crops, including maize, beans, and squash.

Table 5.2 Summary of Total Number of Unexcavated and Excavated Fieldhouses in the Study Regions

BAND = Bandelier National Monument, LANL = Los Alamos National Laboratory, LAC = Los Alamos County, USFS = U.S. Forest Service, CL/D = Cochiti Lake/Dam, SIP = Pueblo de San Ildefonso, BB = Banco Bonito, Valles Caldera National Preserve, JP = Jemez Plateau

Pajarito Plateau		Rio Grande		Jemez Plateau	
Subregion	**# Sites (Structures)**	**Subregion**	**# Sites (Structures)**	**Subregion**	**# Sites (Structures)**
BAND (unexcavated)	1,299	CL/D (excavated)	28 (36)	BB (unexcavated)	140
BAND (excavated)	13 (14)	SIP (excavated)	1 (1)	JP (excavated)	25 (28)
LANL (unexcavated)	445				
LANL (excavated)	49 (49)				
LAC (excavated)	9 (9)				
USFS (excavated)	2 (2)				
Total		**Total**		**Total**	
1,817 sites		29 sites		165 sites	

Methods

Data on the 2,011 unexcavated and excavated fieldhouses were compiled from cultural resource management reports, field notes, published sources, and internal LANL, Bandelier National Monument, Santa Fe National Forest, and Valles Caldera National Preserve databases (see reference list in Appendix A for sources of excavated fieldhouse data). The ability to compare some variables across all sites is limited, however, because there is an overall lack of consistency in recording and reporting techniques. Spanning a period of around five decades, and including many land managing agencies and cultural resource management firms, the various projects documented fieldhouses, features, and artifacts differently, but all are included in this broader analysis to the extent possible.

Statistics

Statistical testing of fieldhouse variables, primarily from excavated structures, includes Pearson's chi-squared (χ^2; and Cramer's V), Mann-Whitney-Wilcoxon (MWW) tests and linear regression analyses. All statistical tests and significance values are reported based on 95 percent confidence intervals (i.e., $p \leq 0.05$) using R (version 3.3.3), and RStudio (version 1.0.136). Maps are produced using ESRI ArcGIS (v. 10.3.1). All fieldhouse variables are archived in a master site database using Microsoft Excel 2016 (Appendices B and C are abbreviated versions of this database).

Unexcavated Fieldhouses

Of the 2,023 fieldhouses included in this study, 1,884 have not been excavated (93.1 percent; Table 5.1) and were recorded as fieldhouses based only on surface manifestations. Data available from unexcavated sites includes location and, in some cases, time period based on surface artifacts. The unexcavated sites derive from only two of the three study regions (Figure 5.1). The Pajarito Plateau region includes fieldhouses at LANL, Bandelier National Monument, and to the north of the Los Alamos town site (Figure 5.2). Unexcavated fieldhouses on the Jemez Plateau region for this study include only those located in the southwestern-most portion of the Valles Caldera National Preserve on the Banco Bonito, and additional ancestral places slightly outside the Preserve boundaries (Figure 5.3). It should be noted that there are many additional unexcavated fieldhouses located on the Jemez Plateau outside of the Valles Caldera National Preserve that were not included in the data compiled for this study, although known excavated fieldhouses from the Jemez Plateau were incorporated.

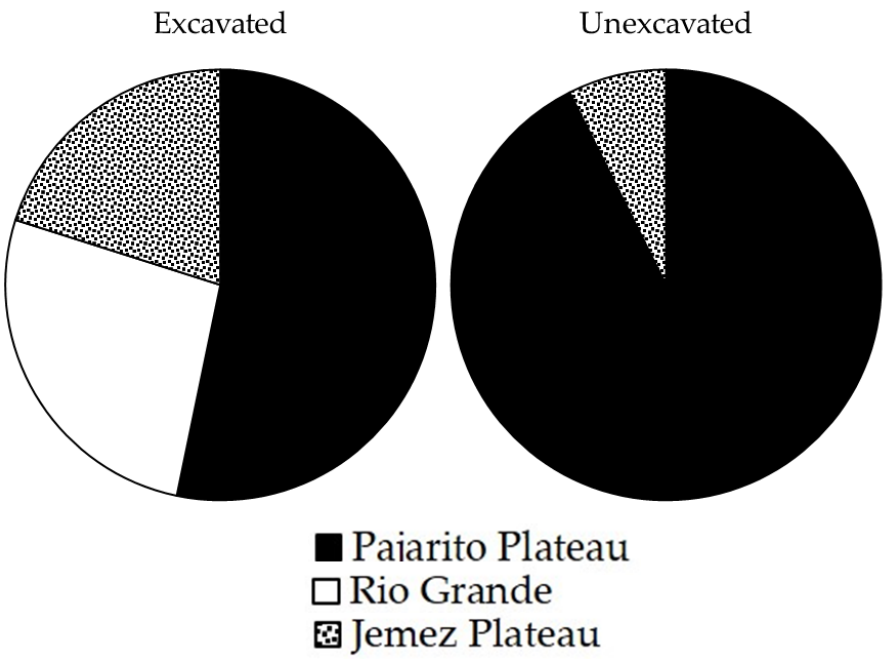

Figure 5.1 Proportions of excavated and unexcavated fieldhouses by region

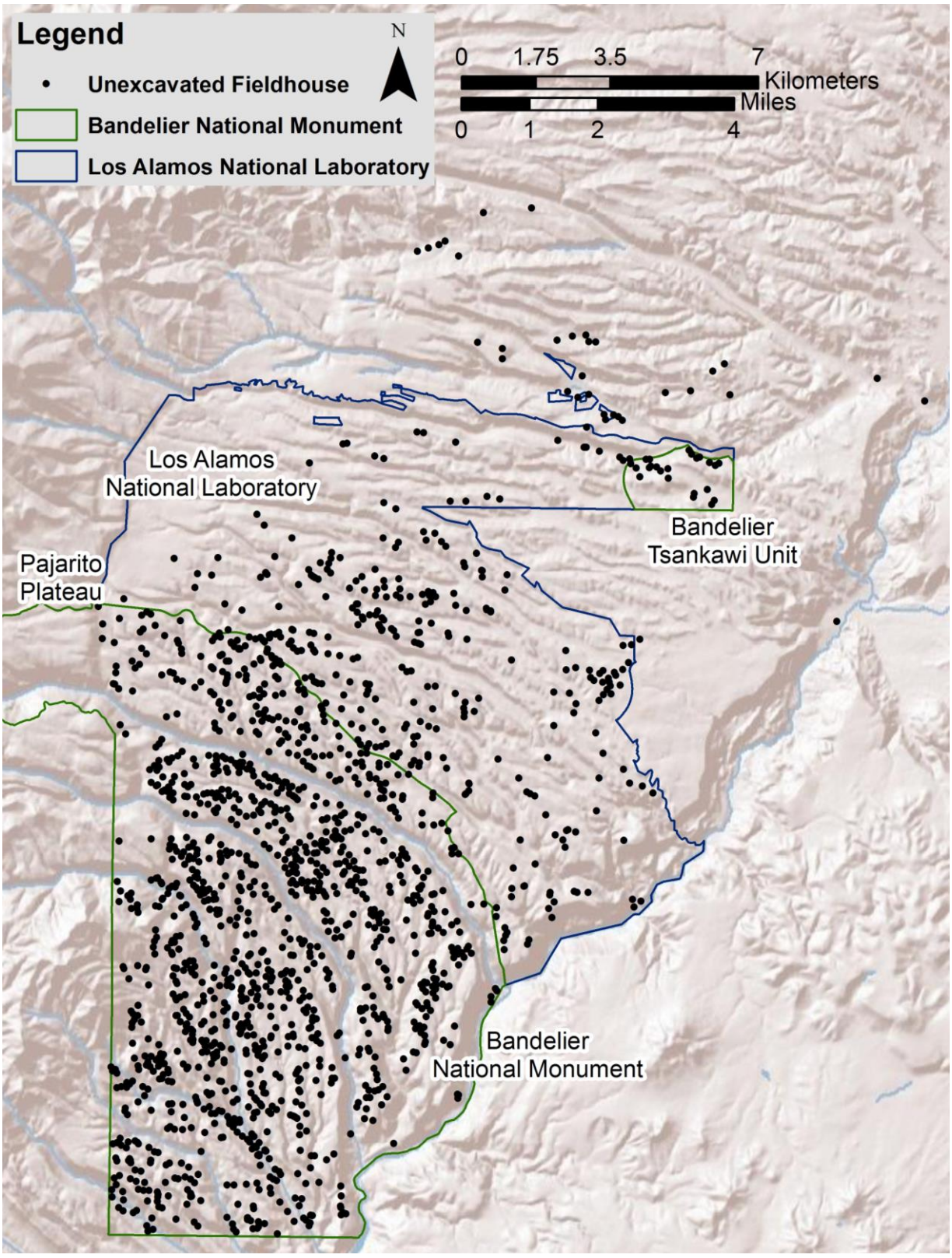

Figure 5.2 Location of unexcavated fieldhouses on the Pajarito Plateau

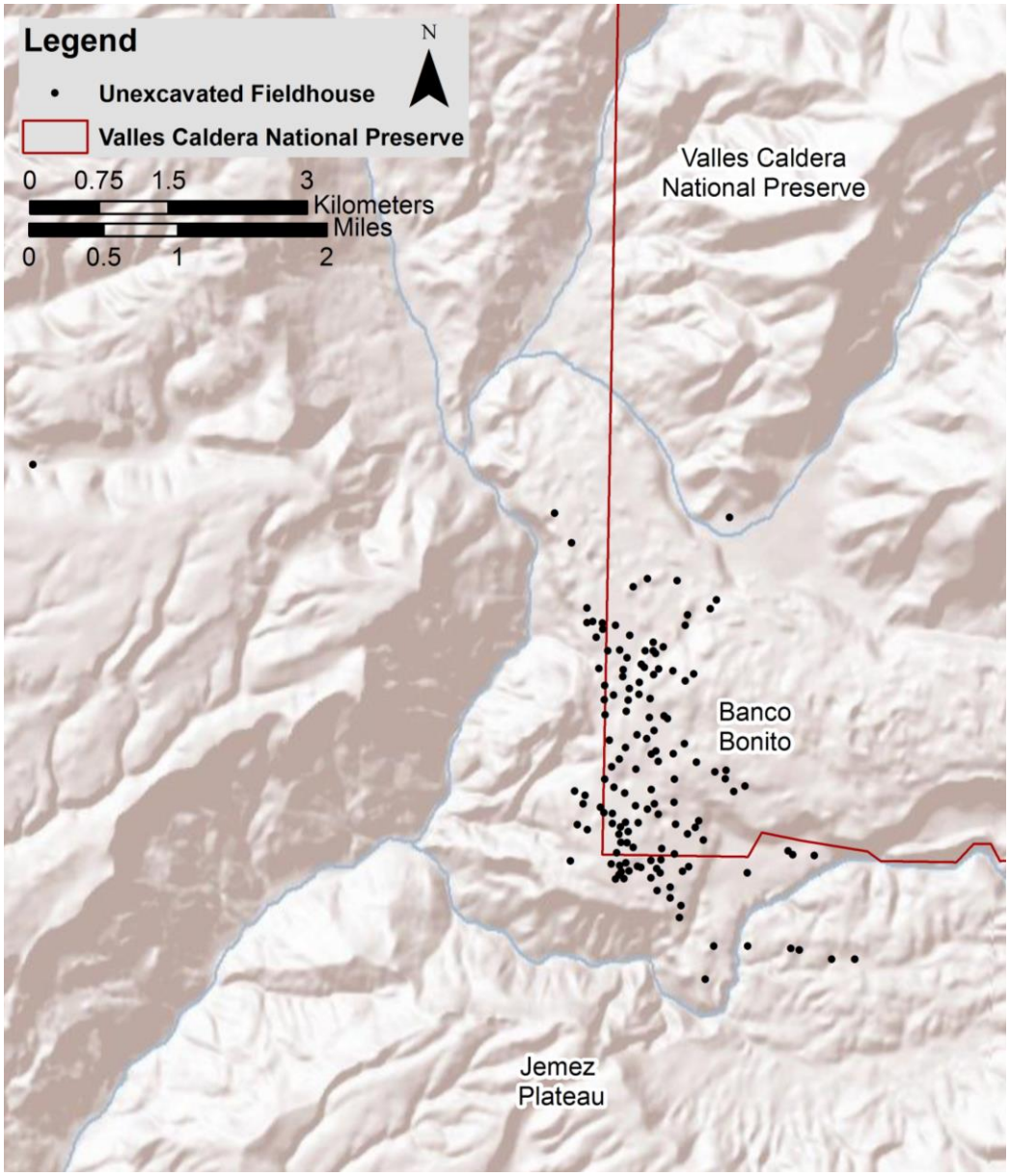

Figure 5.3 Location of unexcavated fieldhouse sites at the Valles Caldera National Preserve and the Jemez Plateau

Excavated Fieldhouses

In this study, data are compiled from 139 excavated fieldhouse structures from 127 sites. Appendix A includes a summary description of each of the 139 excavated structures with information such as who excavated and recorded the structure, the period and date of occupation, the presence or absence of artifact and feature types, room count, room shape, and construction material. Appendices B and C present the data for the 139 excavated structures in table format. Appendix D gives artifact information including counts and ceramic wares at the 127 excavated sites. Appendix E lists ceramic and chipped stone counts for excavated LANL fieldhouses.

Seventy-four excavated fieldhouses are within the Pajarito Plateau region, including sites at LANL and Bandelier National Monument, and to the north of the Los Alamos town site (Figure 5.4). Thirty-seven fieldhouses are within the Rio Grande study region and were excavated as part of the Cochiti Reservoir Project to the south of Bandelier National Monument (Figure 5.5). Twenty-eight fieldhouses are in the Jemez Plateau region, southwest of the Banco Bonito portion of the Valles Caldera National Preserve (Figure 5.6). Excavated fieldhouses located well outside of the formal boundaries of LANL, Bandelier National Monument, and the Valles Caldera National Preserve (76 of the 139 excavated structures) were included to increase the number of excavated fieldhouses in this analysis (Table 5.2). The majority of the excavated fieldhouses are located in elevation zones of 6,000 to 6,999 feet (n = 48) and 7,000 to 7,999 feet (n = 43). The 32 fieldhouses located below 5,999 feet are closer to the Rio Grande. Only a handful of fieldhouses are above 8,000 feet (n = 4), and these are all located on the Jemez Plateau.

As depicted in Table 5.3, seven excavated fieldhouse sites (designated by a single LA number) contain multiple fieldhouse structures (see Appendix A for details).

Table 5.3 Excavated Fieldhouse Sites that Contain More than One Structure

Site (LA)	Region	Number of fieldhouses	Notes
12761	Jemez Plateau	3	All are two-room structures
75719	Jemez Plateau	2	Both are one-room structures
71099	Pajarito Plateau (Bandelier National Monument)	2	One is a one-room structure, and one is a two-room structure
9138	Rio Grande Valley	2	Both are one-room structures
13076	Rio Grande Valley	2	Both are one-room structures
13084	Rio Grande Valley	5	Four are one-room structures, and one is a two-room structure
13086	Rio Grande Valley	3	Two are one-room structures, and one is a three-room structure

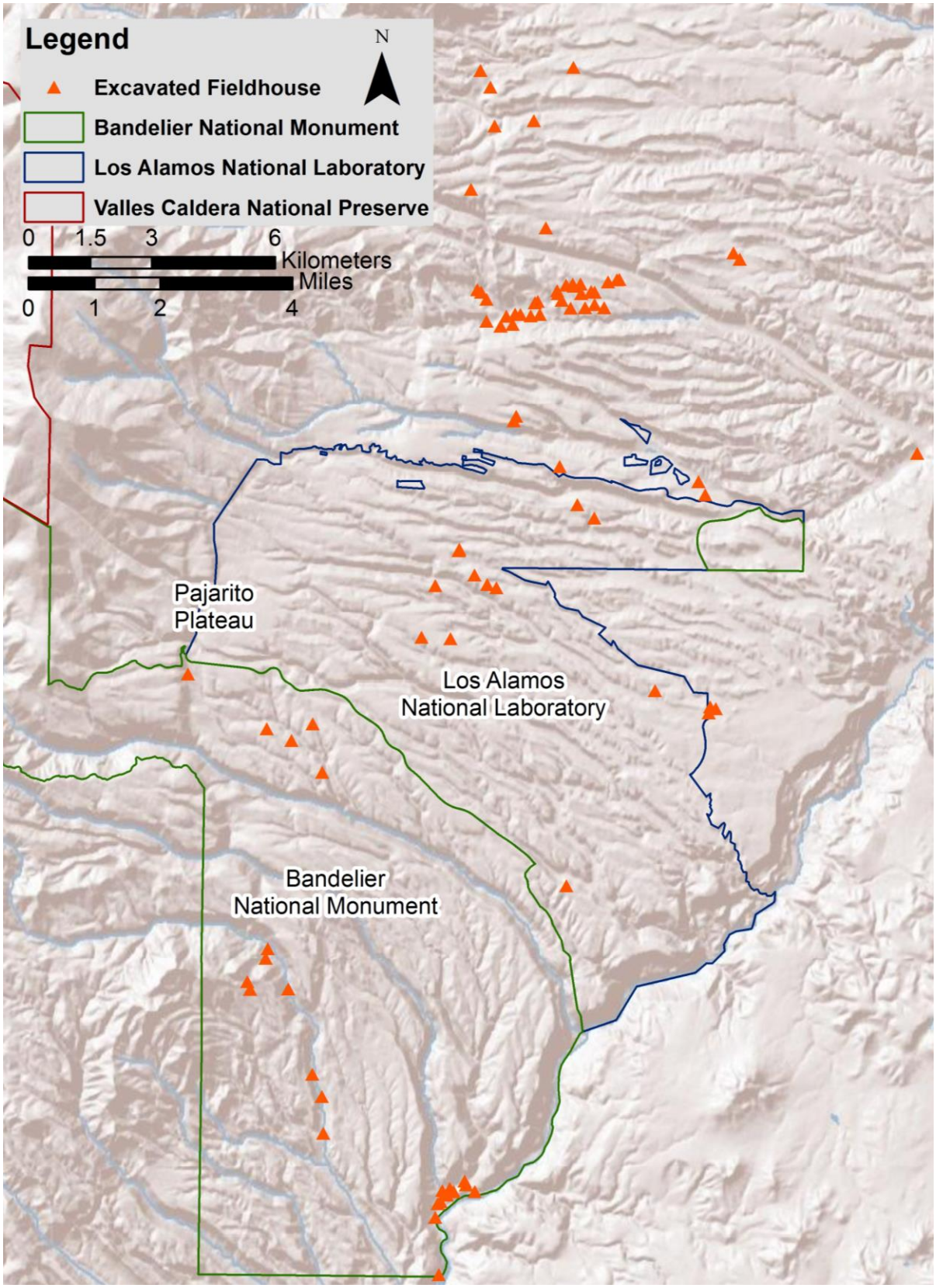

Figure 5.4 Excavated fieldhouses on the Pajarito Plateau

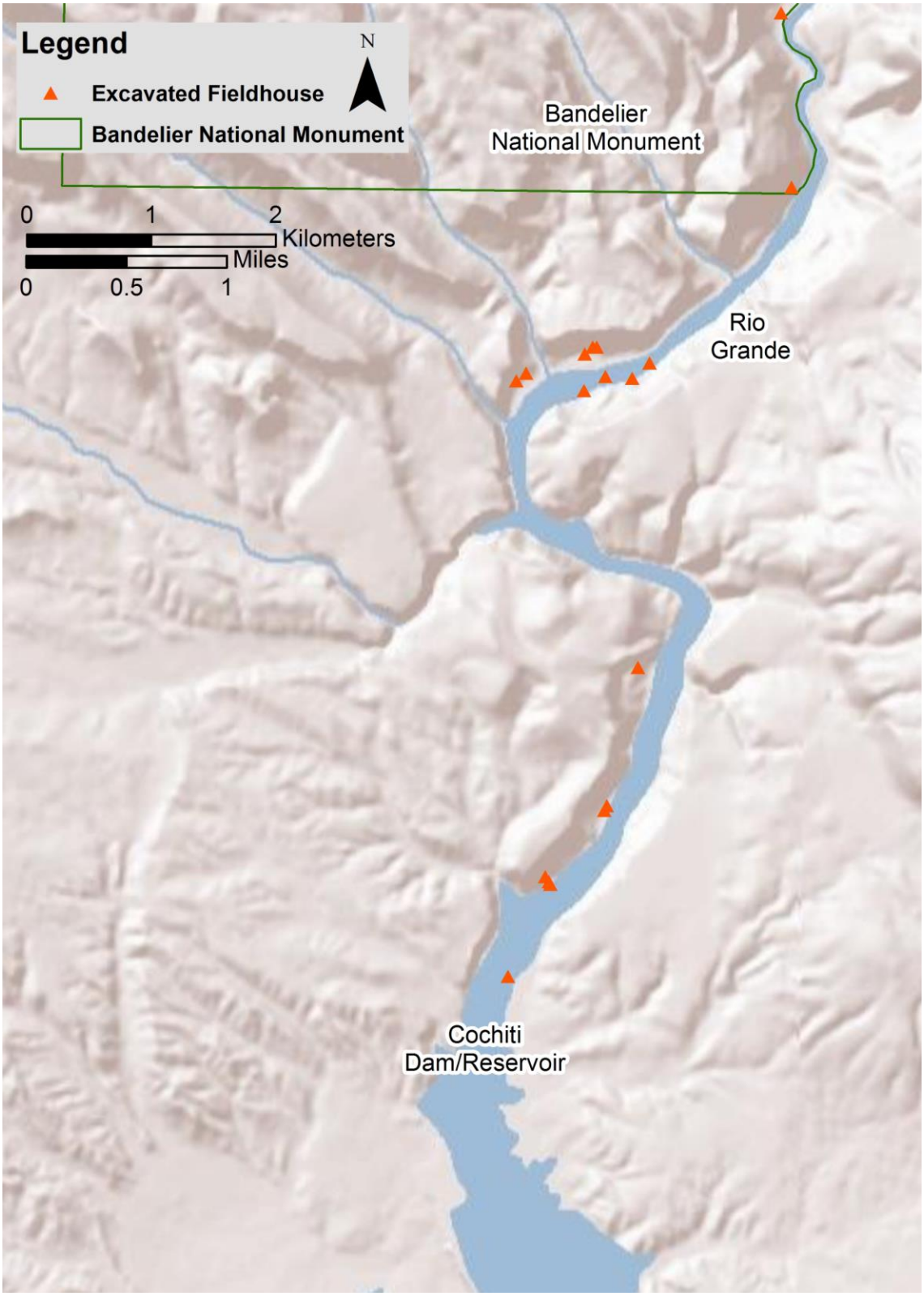

Figure 5.5 Excavated fieldhouses along the Rio Grande near Cochiti Lake

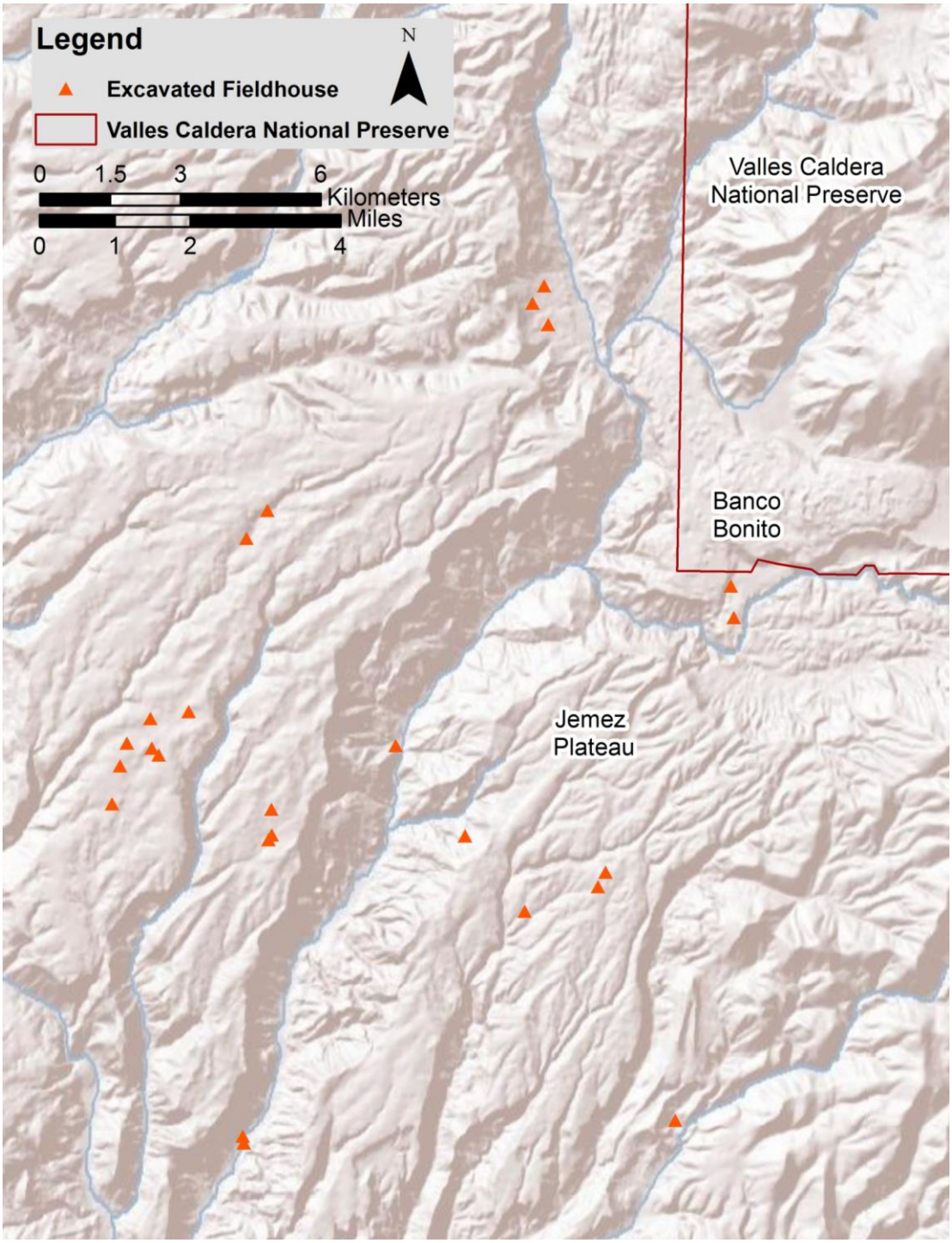

Figure 5.6 Excavated fieldhouses southwest of the Valles Caldera National Preserve (Jemez Plateau)

Time Periods of Fieldhouses

The time periods by region for the 2,023 fieldhouses are given in Figure 5.7. The period names were assigned by the original recorders of these ancestral places. The 139 excavated fieldhouse structures were assigned to archaeological time periods by the original excavators based on the presence of diagnostic artifacts and architectural features (where appropriate). In addition, absolute dates from radiocarbon, thermoluminescence, archaeomagnetic, and obsidian hydration methods were available for some ancestral places. For this study, fieldhouses were grouped into general time periods. For example, some were originally assigned an Early Classic period date, but for this analysis, a Classic period date was assigned. The majority of fieldhouses assigned to known dates fall within the Coalition, Coalition/Classic, and Classic periods (n = 1,024). This 400-year time span is when the Pajarito Plateau, Rio Grande, and Jemez Plateau regions experienced the most cultural activity prior to Spanish arrival (Crown et al. 1996; Duwe and Anschuetz 2013; Kulisheck 2005; Liebmann 2017b; Ortman 2012, 2016; Snead et al. 2004).

The date from 933 unexcavated fieldhouses was undetermined (Figure 5.7). The undetermined category includes fieldhouses assigned by their recorders to broad classifications such as Anasazi, Ancestral Pueblo, or prehistoric.

Less than one percent of the unexcavated fieldhouses were given a Developmental period date (n = 4), while two percent were given a Developmental/Coalition period date (n = 34). All Developmental and Developmental/Coalition period fieldhouses are from Bandelier National Monument (Table 5.4 and Figure 5.8). The population during the entire Developmental period and the Early Coalition period was sparse on the Pajarito Plateau compared with other regions of central and northern New Mexico (Boyer et al. 2010; Orcutt 1999; Ortman 2016; Schillaci and Lakatos 2016).

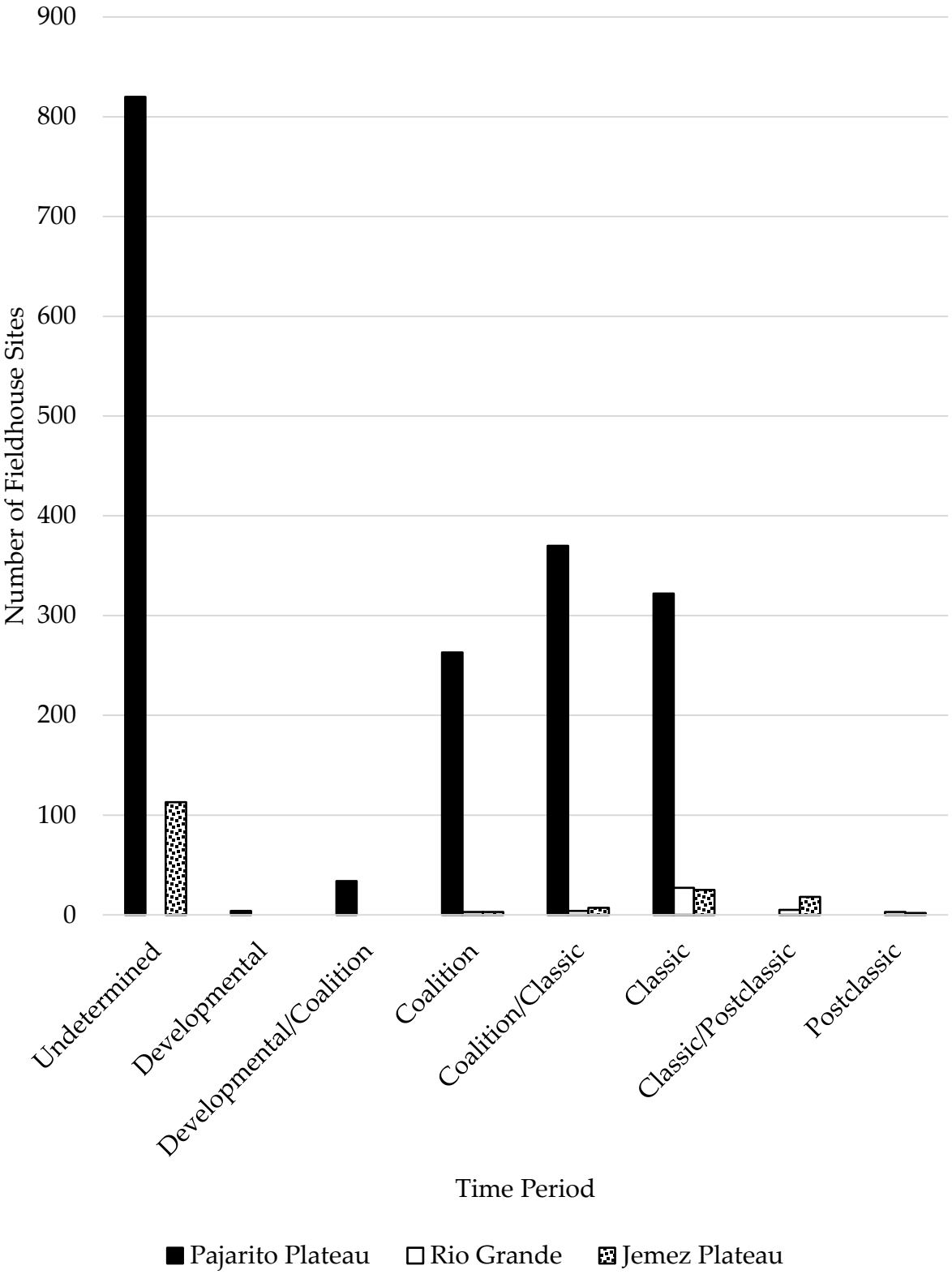

Figure 5.7 Unexcavated fieldhouse sites and excavated structures by time period and region

Table 5.4 Number of Unexcavated Fieldhouse Sites and Excavated Fieldhouse Structures by Region and Time Period

Time Period	Unexcavated			Excavated		
	Pajarito Plateau	Rio Grande	Jemez Plateau	Pajarito Plateau	Rio Grande	Jemez Plateau
Developmental	4	0	0	0	0	0
Developmental/Coalition	34	0	0	0	0	0
Coalition	243	0	0	20	3	3
Coalition/Classic	352	0	7	18	4	0
Classic	286	0	15	36	27	10
Classic/Postclassic	5	0	5	0	0	13
Postclassic	0	0	0	0	3	2
Undetermined	820	0	113	0	0	0
Total	1,744	0	140	74	37	28

Fieldhouse construction increased dramatically in the Coalition period (n = 269), and again in the Coalition/Classic period (n = 381), followed by a slight decrease in the Classic period (n = 374). The Classic period is also when a larger population is present on the Jemez Plateau to the west of the Pajarito Plateau.

Only 23 fieldhouses in the study area were assigned a Classic/Postclassic period designation, including five unexcavated fieldhouses at Bandelier National Monument, five unexcavated fieldhouses from the Jemez Plateau, and 13 excavated fieldhouses on the Jemez Plateau (Figures 5.8 and 5.9). Five fieldhouses date to the Postclassic period (after A.D. 1600) (Figure 5.7). Three of these are in the Rio Grande Valley and two are on the Jemez Plateau.

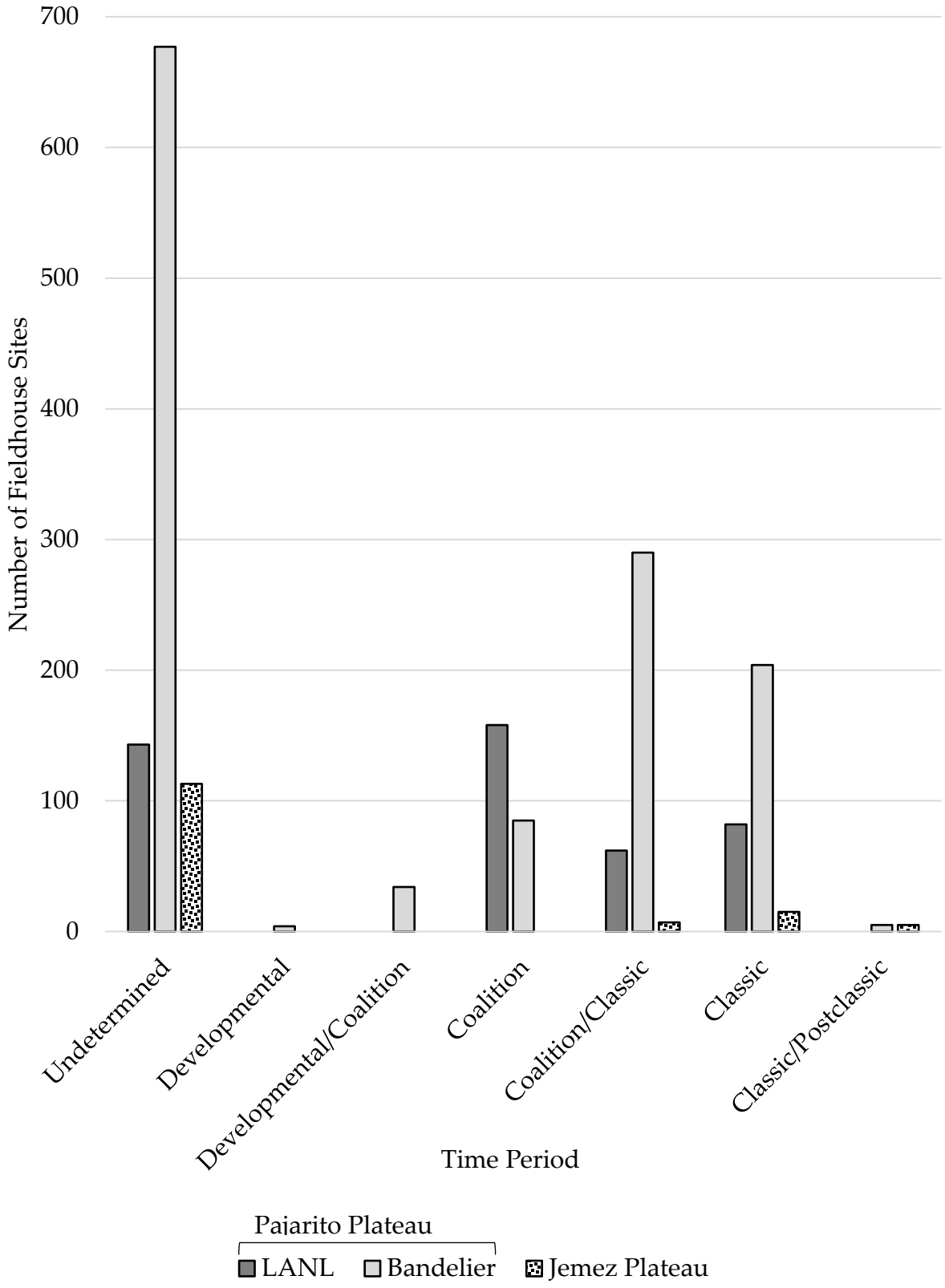

Figure 5.8 Number of unexcavated fieldhouses by time period and region

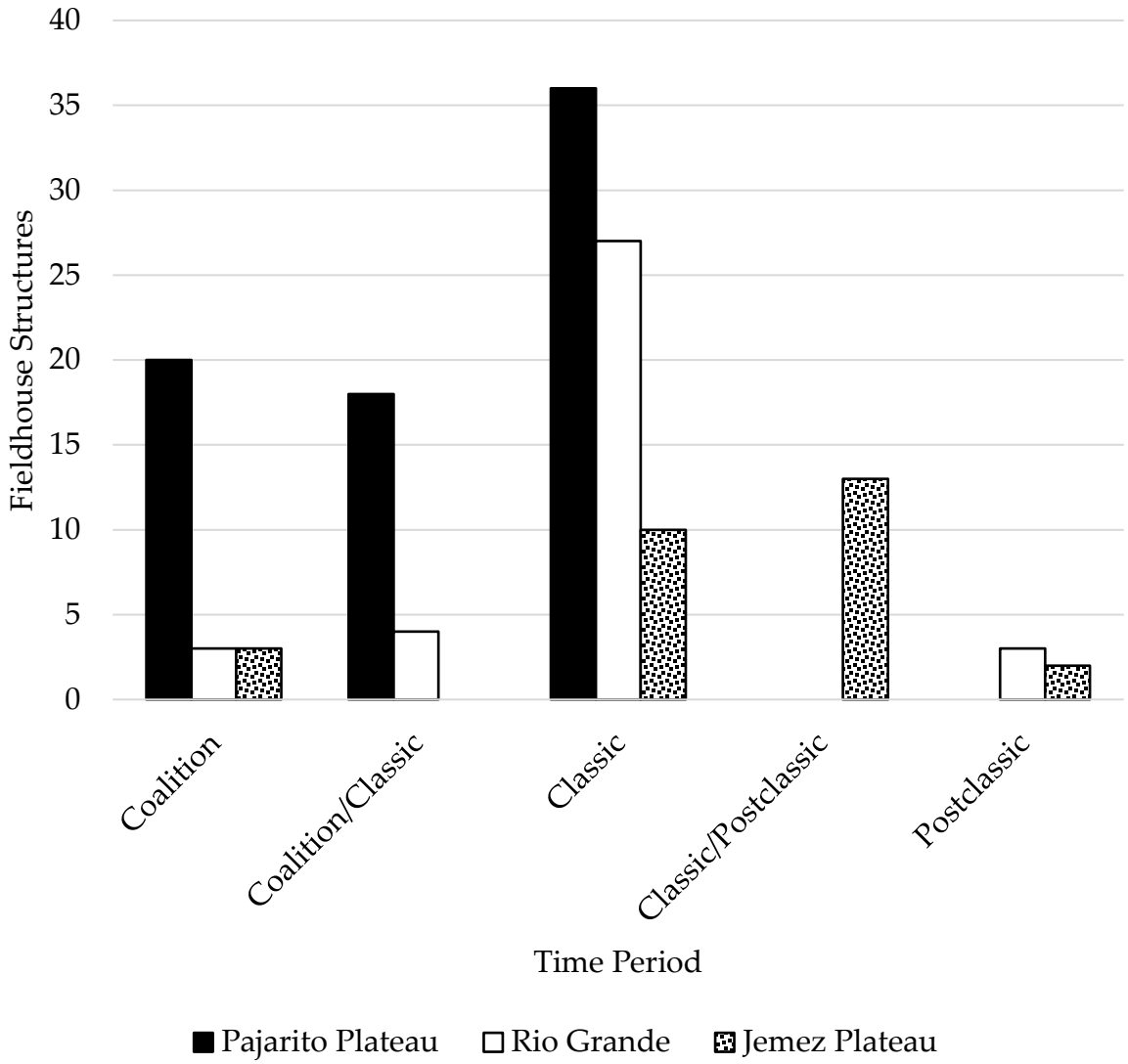

Figure 5.9 Number of excavated fieldhouses by time period and region

Fifty-three percent of the excavated structures date to the Classic period, but Classic period structures comprise only 20 percent of the total excavated and unexcavated sites considered together (Table 5.4). Furthermore, many of the excavated Classic period structures are located on the Pajarito Plateau at LANL.

Chronometric Dating

As part of various excavation projects, some of the fieldhouses were dated using chronometric analyses including radiocarbon, thermoluminescence, and archaeomagnetic techniques. Thermoluminescence dating is used to date materials containing crystalline minerals to a specific heating event (Feathers 2008a). Since thermoluminescence measurements date the last time that the artifact was exposed to sufficient heat to reset the luminescence clock (Feathers 2008a:341), ceramic sherds and

burned lithics are often sampled. Thermoluminescence dating is less reliable than radiocarbon and tree-ring dating because of the complicated underlying physics involved and the large number of variables that must be estimated to establish a date (Feathers 2000, 2008a). Fifteen thermoluminescence dates from eight LANL fieldhouse structures are listed in Table 5.5. The thermoluminescence dates generally corroborate other lines of evidence (i.e., ceramics), as the ages are either the same or are older than the generally accepted ceramic type dates (Harmon and Vierra 2008:796).

Table 5.5 Thermoluminescence Dating Results for Excavated Fieldhouses at LANL
(Harmon and Vierra 2008: Table 69.9) TL = thermoluminescence, OSL = optically stimulated luminescence, IRSL = infrared stimulated luminescence. Confidence based on Feathers (2008b; [1 = best, 3 = worst])

Site (LA)	Material	Basis	Age Range (A.D.)	Confidence
85411	Biscuit A	TL/OSL	1395 ± 43	3
	Biscuit A	TL/IRSL	1205 ± 114	3
87430	Biscuit B	TL/OSL	1384 ± 39	2
127634	Biscuit B/C	OSL	1464 ± 33	3
	Biscuit B	OSL	1494 ± 28	3
85404	Plaster	TL/OSL	1388 ± 49	2
85861	Smeared-plain corrugated	TL	1211 ± 73	3
	Daub/Adobe	OSL	1193 ± 53	3
127635	Sapawe Micaceous	TL	1253 ± 108	3
85417	Daub/adobe	TL	1277 ± 58	3
	Santa Fe B/W	TL/OSL/IRSL	1284 ± 47	2
	Daub/Adobe	TL/OSL	992 ± 59	3
	Plaster	TL/OSL	1415 ± 39	2
99396	Incised corrugated	TL/OSL	1158 ± 63	1
	Santa Fe B/W	OSL	836 ± 134	3

Samples that work best for radiocarbon dating include cultigens or charred seeds, viga and latilla beams, and charcoal from firmly identifiable provenienced cultural contexts. Radiocarbon dates from 18 excavated structures from the Pajarito Plateau at LANL (n = 14), Los Alamos County (n = 2), and Bandelier National Monument (n = 2) are given in Table 5.6.

Table 5.6 Radiocarbon Dating Results for Excavated Fieldhouses

Site (LA)	Region	Two-Sigma Range (A.D.)	Material	Reference
3839	Bandelier	1435–1665	Wood Charcoal	Ruscavage-Barz (1999:53)
16097	Bandelier	1567–1630	N/A	Traylor et al. 1990
21473	LA County	1250, 979	Charcoal	Preucel (1988:Table 7)
29750	LA County	1492, 1502, 1506, 1605	Charcoal	Preucel (1988:Table 7)
85403	LANL	1470–1660	Maize	Harmon and Vierra (2008:Table 69.7)
85404	LANL	1430–1530 1560–1630	Maize	Harmon and Vierra (2008:Table 69.7)
85411	LANL	1290–1410	Maize	Harmon and Vierra (2008:Table 69.7)
85413	LANL	1440–1640	Maize	Harmon and Vierra (2008:Table 69.7)
85861	LANL	1020–1200	Maize	Harmon and Vierra (2008:Table 69.7)
86605	LANL	1440–1640	Maize	Harmon and Vierra (2008:Table 69.7)
87430	LANL	1440–1640 1430–1530 1550–1630	Maize	Harmon and Vierra (2008:Table 69.7)
99396	LANL	1030–1240 1020–1200 1040–1260	Piñon	Harmon and Vierra (2008:Table 69.7)
		980–1060 1080–1150	Juniper	
127627	LANL	1440–1640 1430–1530 1560–1630	Maize	Harmon and Vierra (2008:Table 69.7)
127631	LANL	1300–1430	Juniper	Schmidt (2008c:Table 18.4)
127634	LANL	1450–1650	Maize	Harmon and Vierra (2008:Table 69.7)
127635	LANL	1210–1290	Maize	Harmon and Vierra (2008:Table 69.7)
128805	LANL	1420–1500	Maize	Schmidt 2008b: Table 21.3)
135291	LANL	1430–1520	Maize	Dilley and Vierra (2008a:1133)

Archaeomagnetic dating works best on fired soils (e.g., hearth features) that contain iron oxide minerals that retain a magnetism parallel to the direction to the intensity of the earth's magnetic field (Wolfman 1984). Although archaeomagnetic dating can be as accurate as radiocarbon dating, there are inherent problems and limitations (Harmon and Vierra 2008:791; Wolfman 1984). Three samples for archaeomagnetic dating were taken at two excavated fieldhouses at LANL (Harmon and Vierra 2008: Table 69.8). One sample from LA 99396 has a date of A.D. 1175–1260, and two samples from LA 127635 have dates of A.D. 1210–1250 and A.D. 1200–1225. These samples generally corroborate the ceramic assemblage from the three fieldhouses.

Number of Rooms

Fieldhouses on the Pajarito Plateau area typically have up to three rooms. Sutton (1977:42) argues that a structure with more than four rooms is inconsistent with the definition of a fieldhouse. A broader question is whether small structures (fieldhouses) do in fact serve a common and distinct function separate from larger pueblo roomblocks and complex pueblos. Another possibility is that there is a continuum of room count and roomblock sizes that all function as generalized living structures. For example, Stone (1993) found no archaeological evidence based on artifact analyses that activities conducted at fieldhouses in the Hohokam area differed substantially from activities carried out at the other site-types. Also, Mimbres archaeologists use a broader definition and define fieldhouses as having up to ten rooms (Nelson et al. 1978; Toney 2012). A ten-room structure would be classified as a pueblo roomblock for most other regions of the Southwest, including the northern Rio Grande.

Kohler (1992) hypothesized that greater numbers of rooms within a fieldhouse should correlate with proximity to agricultural fields. Possible reasons for fieldhouses to have more than one room or larger-sized rooms include larger family groups using fieldhouses, larger storage requirements, more permanent use of these structures, or greater need for space due to fieldhouses being located further away from large Pueblo villages.

The 139 excavated fieldhouses include a total of 184 rooms. There are 98 one-room structures, 37 two-room structures (74 rooms), and four three-room structures (12 rooms; Table 5.7). There is a strong Cramer's V measure (0.32) and significant relationship (p-value < 0.01) between number of rooms and region. Examining the residuals in Table 5.8 indicates that there are more one-room structures in the Pajarito Plateau, more two-room structures in the Jemez Plateau, and more three-room structures in the Rio Grande than expected from a random distribution.

Table 5.7 The Number of One-, Two-, and Three-Room Excavated Structures by Region

Number of Rooms	Pajarito Plateau	Rio Grande	Jemez Plateau	Total
One	65	20	13	98
Two	8	14	15	37
Three	1	3	0	4
Total	74	37	28	139

Table 5.8 Residuals for Number of Excavated Rooms by Region

Number of Rooms	Pajarito Plateau	Rio Grande	Jemez Plateau
One	**1.8**	-1.2	-1.5
Two	-2.6	1.3	**2.8**
Three	-0.8	**1.9**	-0.9

There is also a strong Cramer's V measure (0.31) and significant relationship (p-value < 0.01) indicating a difference between the number of rooms by time period (Table 5.9). Examination of the residuals (Table 5.10) indicates that there are more two-room structures dating to the Classic/Postclassic period than expected, and likely fewer two-room structures dating to the Coalition period than expected. It is possible that increased population aggregation during the Classic period is influencing the result, but this requires further testing.

Table 5.9 Comparison of Time Period and One-, Two-, and Three-Room Structures

	One-Room		Two-Room		Three-Room		Total	
Time Period	Count	%	Count	%	Count	%	Count	%
Coalition	23	23.4	2	5.4	1	25	26	18.7
Coalition/Classic	19	19.3	3	8.1	0	0	22	15.8
Classic	50	51	20	54	3	75	73	52.5
Classic/Postclassic	3	3	10	27	0	0	13	9.3
Postclassic	3	3	2	5.4	0	0	5	3.5
Total	98	100	37	100	4	100	139	100

Table 5.10 Residuals for Time Period and One-, Two-, and Three-Room Structures

Time Period	One-Room	Two-Room	Three-Room
Coalition	1.09053	**-1.87051**	0.29110
Coalition/Classic	0.88595	-1.18024	-0.79567
Classic	-0.10703	-0.03780	0.64474
Classic/Postclassic	-2.03652	**3.51547**	-0.61164
Postclassic	-0.59814	1.11007	-0.41553

Room Size

An analysis was conducted to compare and contrast regional and temporal variation in fieldhouse interior space. Not all 184 excavated rooms in the 139 structures could be included in this analysis because data were lacking for some individual rooms (see Appendix C for all room measurements). For example, if a two-room structure did not have a room size for one of the rooms, it was not included. Only 129 rooms from 95 structures with complete length and width room sizes were included. Sixty-five of the one-room structures, 26 two-room structures (52 individual rooms), and all 4 three-room structures (12 individual rooms) were included.

The average interior space of a single room in any fieldhouse structure is 4.8 square meters. Table 5.11 provides a summary of interior room size for one-room, two-room, and three-room structures. Although 38 percent (n = 14) of all excavated fieldhouses in the Rio Grande region are two-room structures, they have a smaller average single room size relative to the Pajarito Plateau and Jemez structures (Table 5.12). Fieldhouses in the Jemez region are larger in general than the other two regions, and two-room structures in the Jemez have the highest maximum room size.

Table 5.11 Summary Statistics for Interior Room Size (m^2) by One-, Two-, and Three-Room Excavated Structures

	One-Room	Two-Room	Three-Room
Average	4.6	5.3	4.1
Standard Deviation	2.1	3.8	0.6
Minimum	1.1	1.3	2.9
Maximum	12	22.5	4.8
Rooms	65	52	12

Table 5.12 Summary Statistics for Interior Room Space by Region and Number of Rooms

	Pajarito Plateau			Rio Grande			Jemez Plateau	
	One	Two	Three	One	Two	Three	One	Two
Average	4.1	4.3	4.3	4.4	3.2	4.1	7.8	7.8
Standard Deviation	1.3	1.5	0.1	2.2	1.3	0.7	2.8	4.6
Minimum	1.6	2.6	4.2	1.1	1.3	2.9	3.1	2
Maximum	7.3	7	4.4	8	6.5	4.8	12	22.5
Rooms	40	6	3	18	24	9	7	22

The average fieldhouse room is about the same size as the small back storage rooms found in Coalition period pueblo roomblocks from the Pajarito Plateau. Bandelier (1892:110–111) also noted that the size of fieldhouse rooms was similar to the smallest room in a pueblo (see quote in Chapter 4). For example, LA 135290, an excavated ten-room structure at LANL dating to the Middle Coalition period has an average interior room space of 9.19 square meters (Vierra 2008:Table 25.38). The two smallest rooms were back rooms that had floor areas of 3.1 and 5.9 square meters, while the largest single room was 15.7 square meters. LA 86534 (Figure 3.5), an excavated Middle Coalition eight-room structure with a kiva, has an average interior room space of 6.3 square meters (Schmidt 2008a:Table 24.5). The smallest room at LA 86534 is 4.68 square meters, and the largest is 8.05 square meters. An excavated seven-room structure at LA 12587 (Roomblock 1) dating to the Coalition period has an average interior room space of 8.88 to 9.18 square meters (Harmon and McVickar 2008:Table 14.3). The smallest room is 6.1 square meters, while the largest is 10.4 square meters. Roomblock 3 at LA 12587 has thirteen rooms (Harmon and McVickar 2008:Table 14.36). Three of the rooms have incomplete measurements, so the average interior space of ten of the rooms is 9.32 square meters. The smallest room is 6.9 square meters, while the largest is 15.6 square meters.

Fieldhouse room size also increases during the Classic and Postclassic period, correlating to larger sized fieldhouses on the Jemez Plateau compared with the Pajarito Plateau and Rio Grande (Figure 5.10 and Table 5.13). There are no significant differences in the average room size between Pajarito Plateau and Rio Grande structures (Mann-Whitney-Wilcoxon [MWW] test: $U = 899.5$, $p = 0.28$), but Jemez Plateau structures are significantly larger in average room size than Pajarito Plateau structures (Mann-Whitney-Wilcoxon [MWW] test: $U = 794.5$, $p < 0.01$) and Rio Grande structures (Mann-Whitney-Wilcoxon [MWW] test: $U = 603.5$, $p < 0.01$) (Figure 5.11).

For example, the two outliers in the upper right of Figure 5.12 belong to LA 67034, a Classic period two-room structure in the Jemez Plateau.

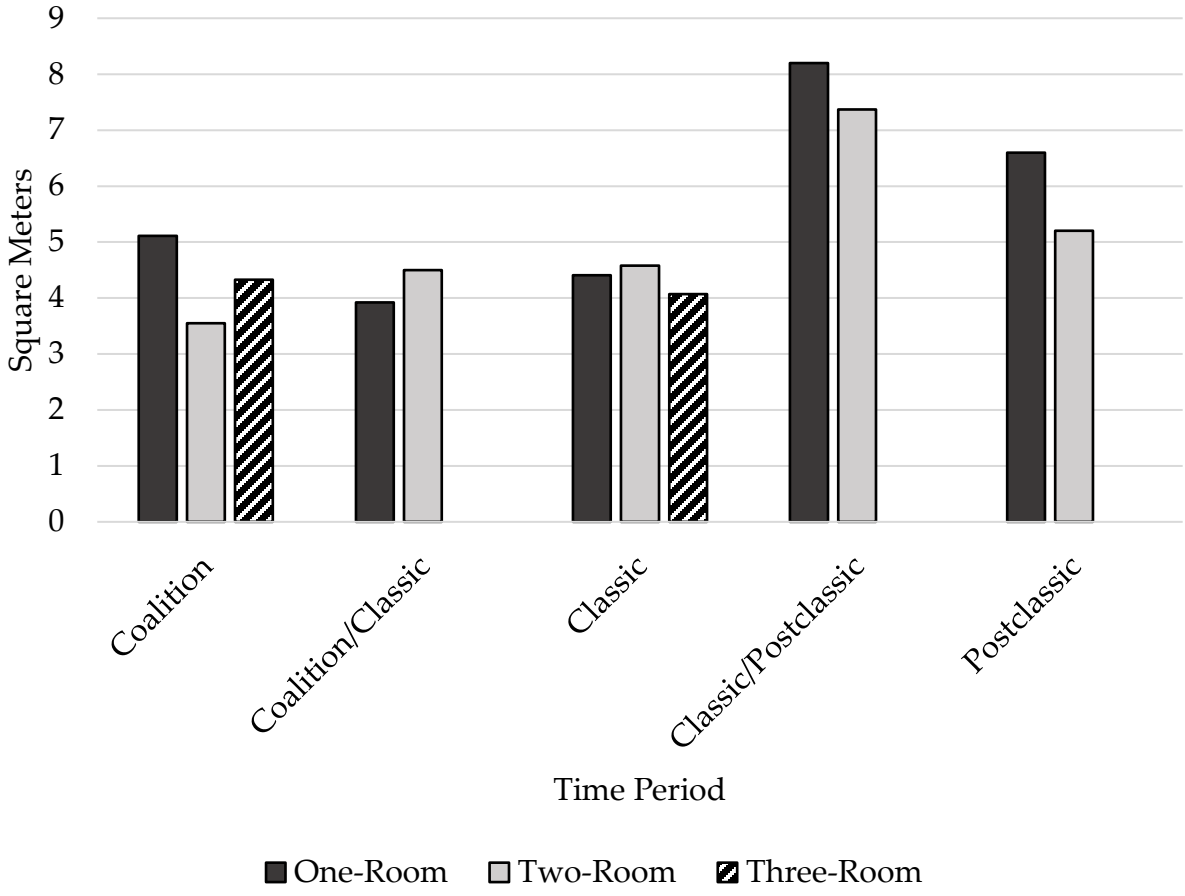

Figure 5.10 Average size of a single fieldhouse room through time

Table 5.13 Summary Statistics for Interior Room Size (m²) for Time Period and Number of Rooms

	Coalition			Coalition/Classic		Classic			Classic/Postclassic		Postclassic	
	One	Two	Three	One	Two	One	Two	Three	One	Two	One	Two
Average	5.1	3.6	4.3	3.9	4.5	4.4	4.6	4.1	8.2	7.4	6.6	5.2
Standard Deviation	2.2	0.9	0.1	1.7	0	2	4.7	0.7	N/A	1.7	1.8	1.7
Minimum	1.8	3.1	4.2	1.6	4.5	1.1	1.3	2.9	8.2	4.53	5.3	2.9
Maximum	9.9	4.9	4.4	7.3	4.5	12	22.5	4.8	8.2	11.5	7.9	6.6
Rooms	14	4	3	12	2	36	28	9	1	14	2	4

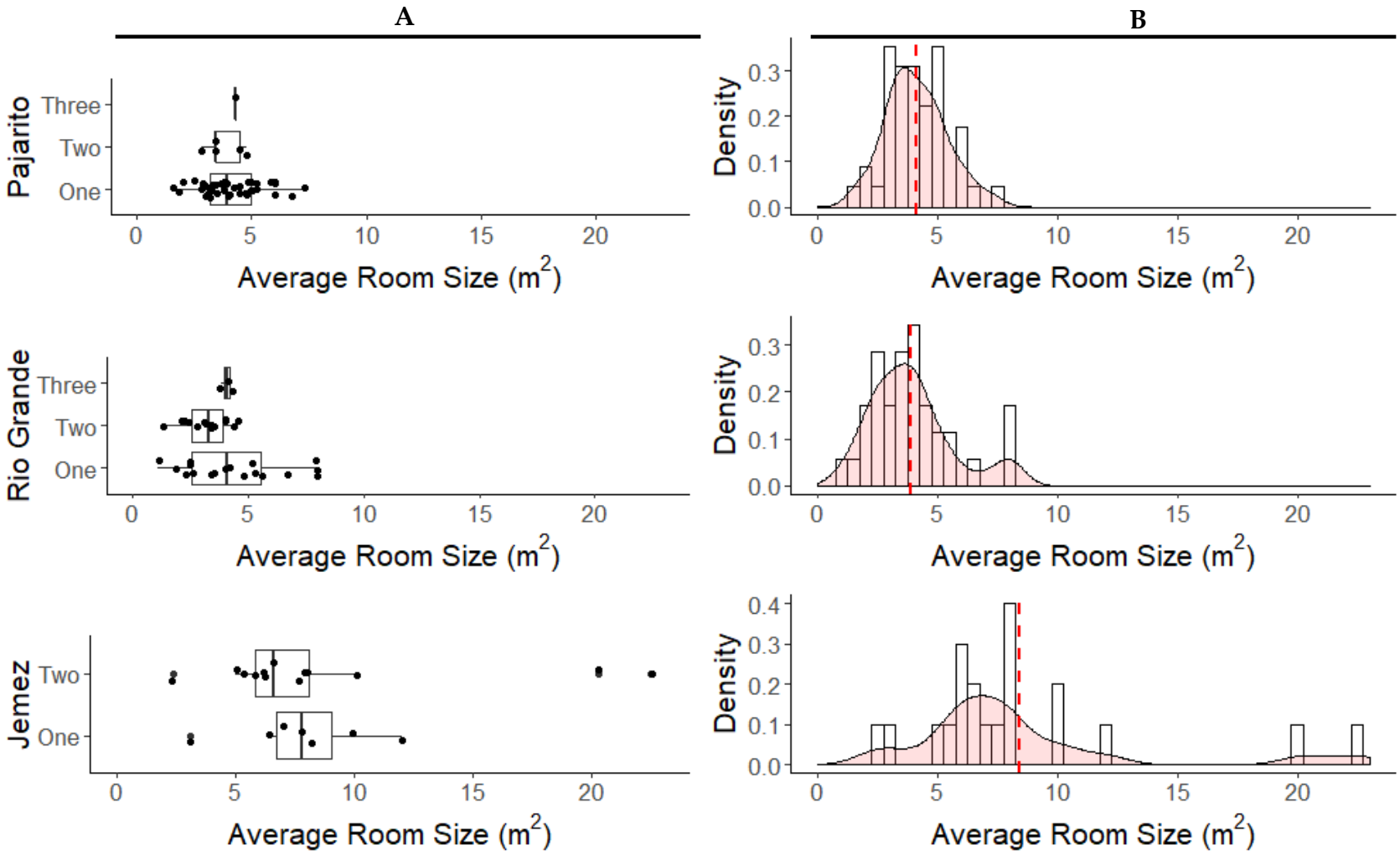

Figure 5.11 Average interior room size by region
(A) Boxplots for one-, two-, and three-room structures. (B) Histogram of room size with kernel density plot overlain.

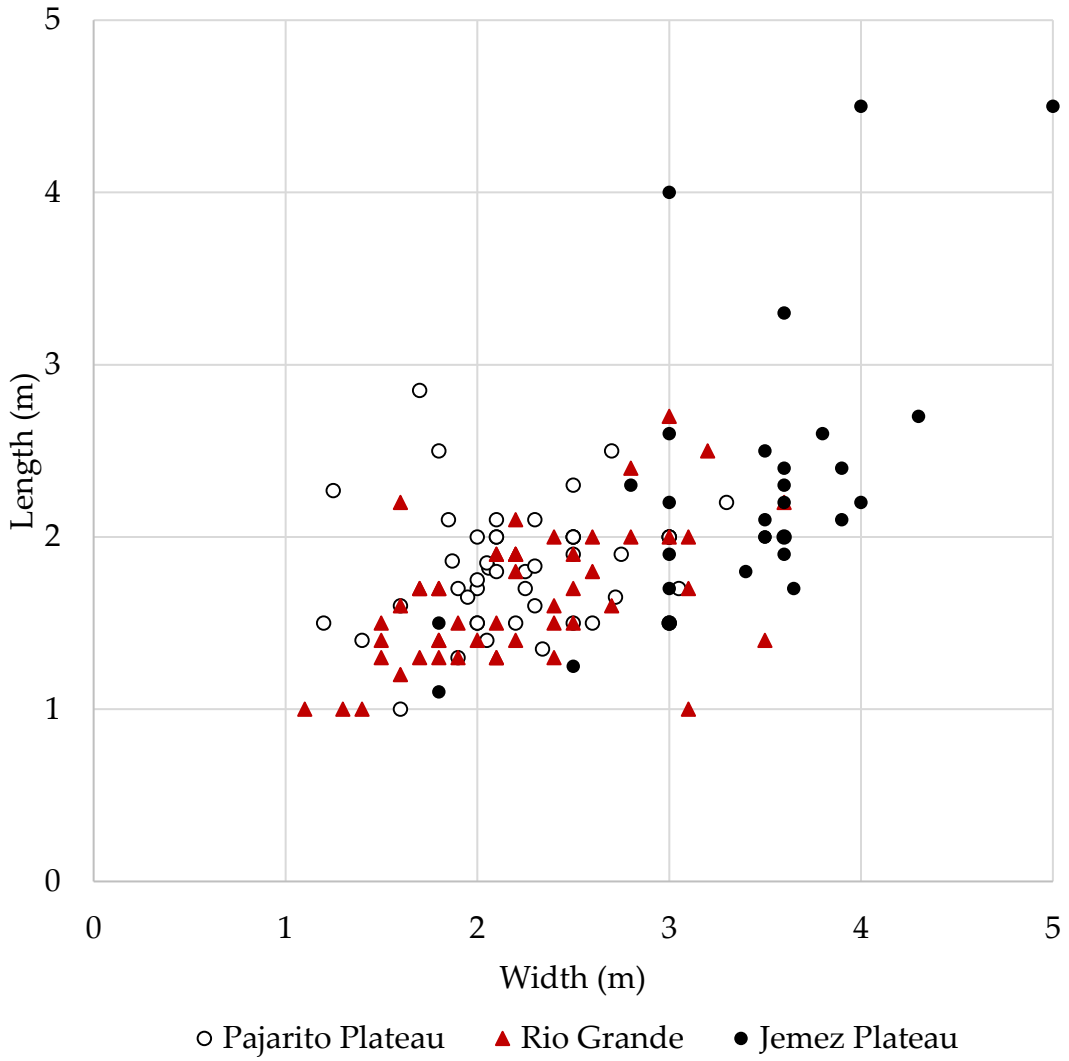

Figure 5.12 Scatterplot comparing length and width of interior room size among the study regions
Pajarito Plateau (n = 49 rooms), Rio Grande (n = 51 rooms), Jemez Plateau (n = 29 rooms)

The presence of larger fieldhouse structures and more storage features in the Jemez Plateau suggests that peoples expended additional effort and resources to construct fieldhouses compared with the Pajarito Plateau and Rio Grande. These data corroborate Elliot's (1986:32) findings that Jemez fieldhouses are more complex architecturally than fieldhouses in other regions, and support the possibility of a more diverse suite of roles and functions for fieldhouse structures. It is possible that since Jemez fieldhouses are located at higher elevations and were occupied during periods of climatic fluctuation,

people there were at risk of more frequent cold weather events (Elliott 1986, 1991; Kulisheck 2005). One hypothesis is that as a response to climatic factors, people occupying Jemez fieldhouses constructed them to be larger and hold more storage to defend against periods of environmental stress. There are also more Postclassic fieldhouses in this region, and Kulisheck (2010:184) suggests that Native Americans took refuge and moved into fieldhouses to avoid Spanish oppression.

Room Shape

Of the 184 individual excavated rooms, the most common shapes are rectangular (n = 102, 55.4 percent), subrectangular (n = 21, 11.4 percent), and square (n = 13, 7 percent) (Figure 5.13). Room shapes for 29 rooms (15.7 percent) were not specified, and are labeled here as undetermined. Statistical analysis was conducted on five aggregated room shape categories defined as follows. Circular includes rooms originally described as circular, elliptical, oval, and ovoid. Rectangular includes rectangular and subrectangular-shaped rooms. Irregular includes trapezoidal, triangular, and quadrilateral-shaped rooms. Square and undetermined are also room-shape types. The analysis indicates significant differences between regions (χ^2 $p < 0.01$, Cramer's V = 0.29; Table 5.14). Fieldhouses on the Pajarito Plateau exhibit significantly larger numbers of square-shaped rooms (n = 11), like that illustrated in Figure 5.14, than either the Rio Grande (n = 2) or the Jemez Plateau (n = 0). The Rio Grande has considerably more circular-shaped rooms (n = 10) like that illustrated in Figure 5.15. The Jemez Plateau has the smallest sample size for excavated rooms (n = 43) and has significantly more undetermined room shapes (n = 13).

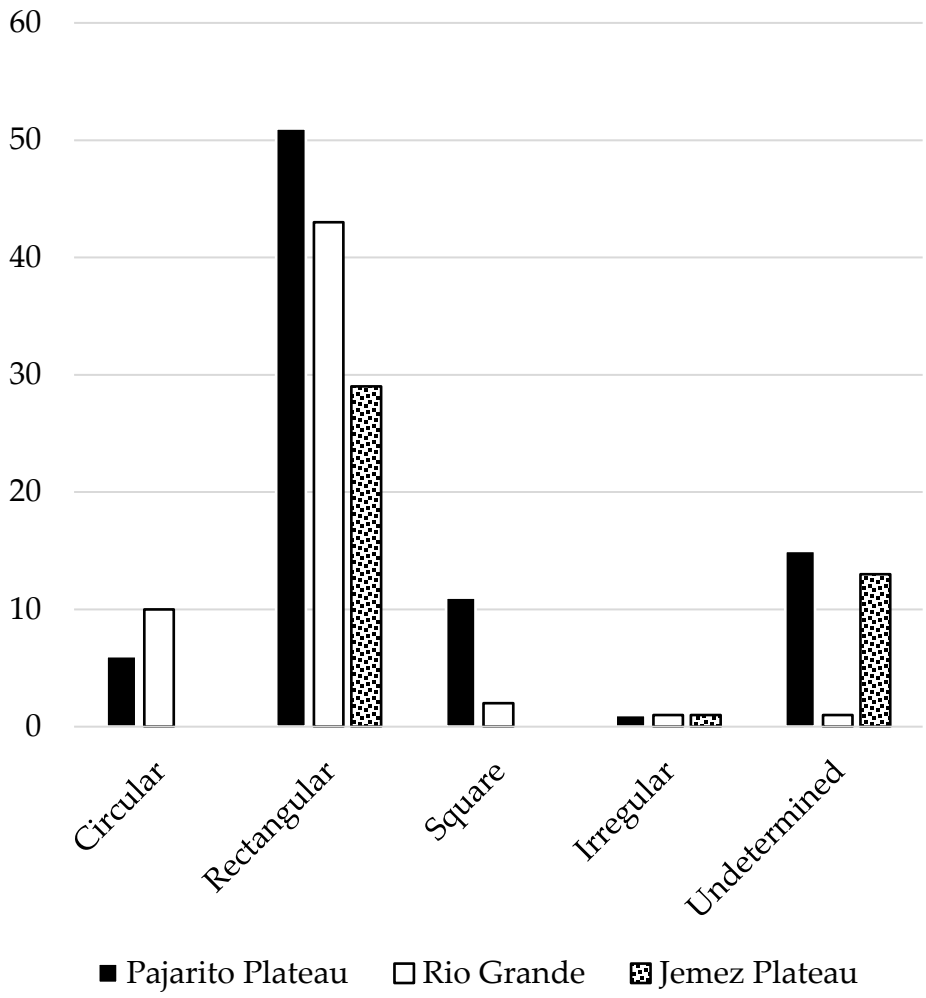

Figure 5.13 Room shape by region

Table 5.14 Residuals from the Chi-squared Analysis for Room Shape and Region

Room Shape	Pajarito Plateau	Rio Grande	Jemez Plateau
Circular	-0.5	**2.3**	-1.9
Rectangular	-0.7	0.8	0.0
Square	**2.1**	-1.0	-1.7
Irregular	-0.3	0.1	0.4
Undetermined	0.5	-2.7	**2.4**

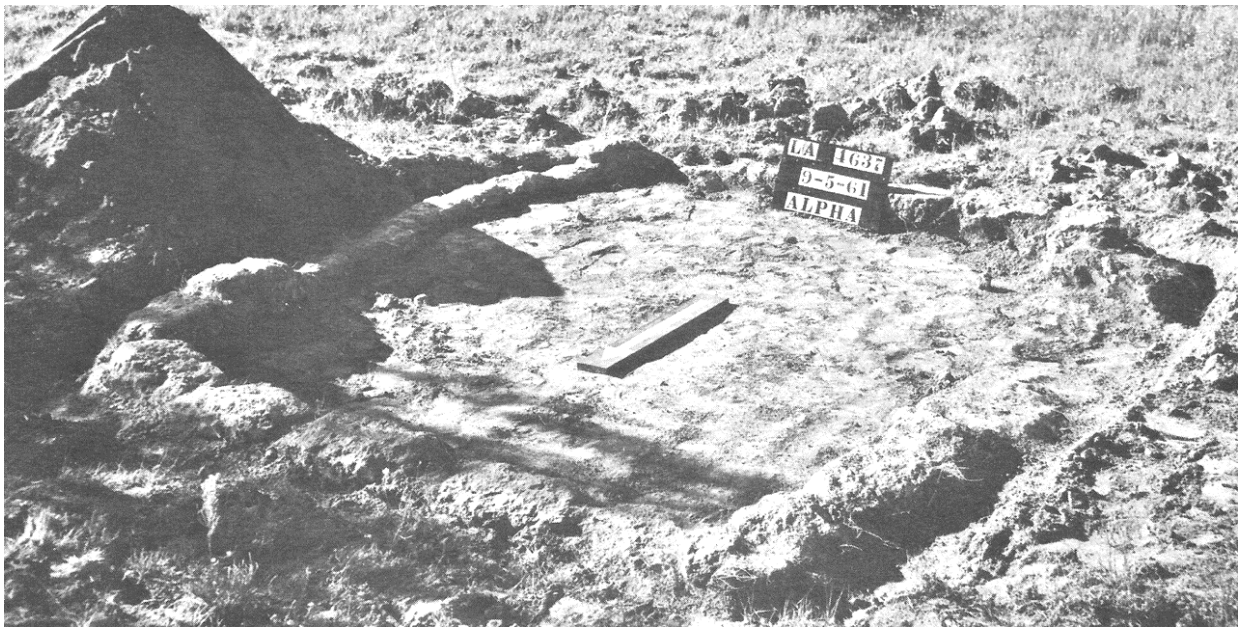

Figure 5.14 LA 4637, a Coalition/Classic period square one-room structure on the Pajarito Plateau after excavation (Steen 1977:Figure A-11)

Figure 5.15 LA 12568, a Classic period one-room circular structure in the Rio Grande area after excavation (Hubbell and Traylor 1982:Figure 69)

While the majority of fieldhouses are rectangular, square- and circular-shaped small structures are of particular interest. Eleven of the 13 excavated square-shaped structures are on the Pajarito Plateau. Steen (1977) referred to some squared-shaped small structures on the Pajarito Plateau as box-type shrines, including LA 4637 (Figure 5.14), LA 4638, and LA 4658, which Worman excavated (Appendix A). Worman, however, called them field storehouses. Steen (1977:20) thought that these structures were more than simple field storehouses because they were "made of finely dressed blocks of tuff," and…"the stone work of the walls is as fine as any on the Pajarito Plateau." Steen (1977) also noted that they tend to be located at high elevations and up to a half kilometer from the nearest habitation, and when they are near habitation sites, they are not contemporaneous with them. On the Pajarito Plateau, finely dressed and shaped tuff blocks are typical of the Classic period. Ethnographic evidence does show that small structures that were away from the community typically served non-agricultural purposes (Crown 1985). However, without any additional defining features or characteristics other than shaped architectural tuff blocks and location, it is unclear whether these structures are typical Classic period fieldhouses related to agricultural activities, or if they are associated with ceremonial activities, or both.

Ten of the 16 circular-shaped small structures are in the Rio Grande Valley near present-day Cochiti Lake. Small circular structures (Figure 5.15) are sometimes interpreted as shrines. For example, working at Bandelier National Monument, Powers et al. (1999:123) defined a shrine as "a circular, C- or U-shaped rubble enclosure with or without entries or stone effigies." Many one- to three-room fieldhouses, in fact, look similar to that description on the surface, although without the stone effigies. Also working at Bandelier, Snead (2002:760) interpreted LA 84138 as a "shrine consisting of a circle of stacked, unshaped masonry blocks on a point overlooking a deep canyon." Coalition period fieldhouses on the Pajarito Plateau can have unshaped masonry blocks. These superficial similarities, along with a lack of artifacts indicative of site function, make it difficult to determine whether circular-shaped structures are also related to ceremonial activities.

Features

If fieldhouses functioned as temporary residences and for crop processing and storage during the farming season, then they may be expected to contain particular types of features (Ruscavage-Barz 2002; Sutton 1977). Thermal features (Figure 5.16) would be useful in a residence since heat and fire are essential components of everyday cooking and comfort. Storage features (Figure 5.17) might also be expected to help hold crops. Because of the variety of naming conventions for features used by the archaeologists in different studies, the features from fieldhouses examined in this study were combined into four general categories (Figure 5.18). The thermal feature category consists of all

mentions of a hearth, including extramural hearth, collared hearth, plaster-lined hearth, slab-lined hearth, subfloor hearth, as well as firepit, ash concentration, and ashpit. The storage feature category consists of storage bin, extramural storage bin, plastered storage bin, milling bin, plastered pit, pit, external pit, plastered bin, borrow pit/trash receptacle, and cist. The architecture feature category consists of deflector/windbreak, auxiliary wall, retaining wall, walled-in work area, posthole, ramada, possible roof support, bench, door jamb/sill, and possible stairway. The other feature category consists of midden, check dam, slab feature, rock pile/alignment, and pot rest.

Feature data from the 139 excavated fieldhouse structures were combined to test the null hypothesis that the abundance of thermal, storage, architectural, and other features is independent of region. Results indicate that there is a significant difference between feature type and region (χ^2 $p < 0.01$, Cramer's $V = 0.24$). Thermal features are not impacting this result, but the presence and abundance of storage features do impact this relationship. Compared with the Pajarito Plateau and the Rio Grande regions, storage features occur in much greater abundance on the Jemez Plateau. Examining the residuals in Table 5.15 also indicates that there are more architectural features on the Pajarito Plateau than expected, and fewer other features on the Jemez Plateau than expected.

Figure 5.16 Examples of thermal features in excavated fieldhouses

A: rectangular slab-lined hearth at LA 69563 (Acklen and Railey 1999: Figure 6.11), B: ash pit or possible hearth at LA 85417 (Lockard 2008g: Figure 37.6), and C: a slab-lined hearth at LA 87430 (Lockard 2008c: Figure 46.5).

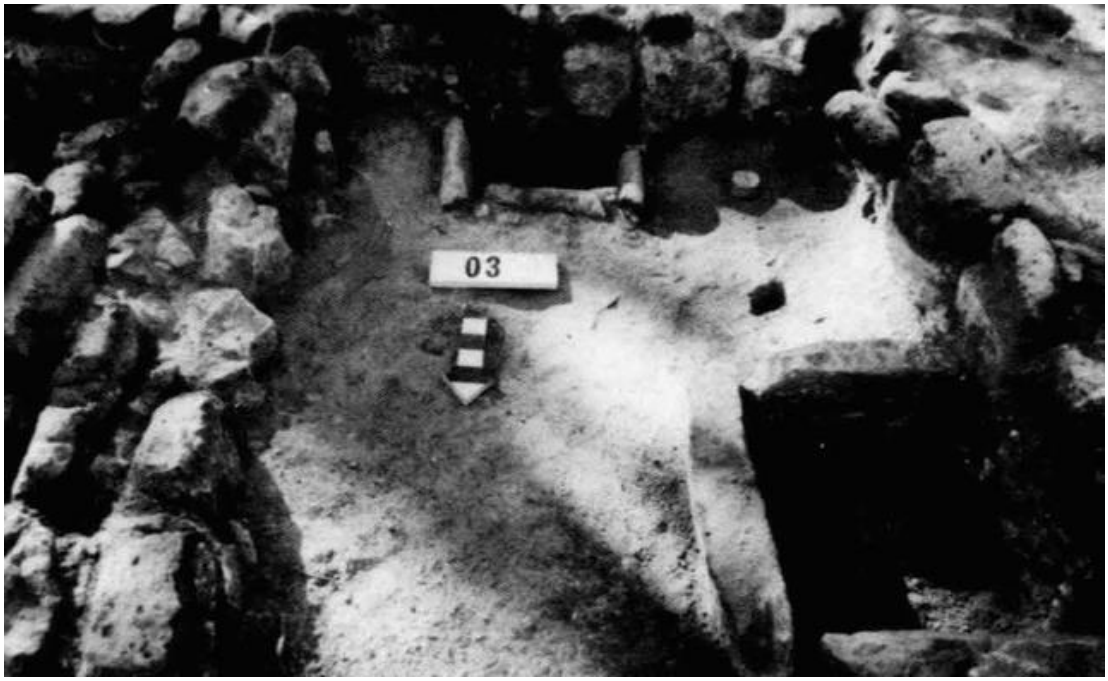

Figure 5.17 Room interior of LA 16114 with storage bin (Traylor et al. 1990:Figure 28)

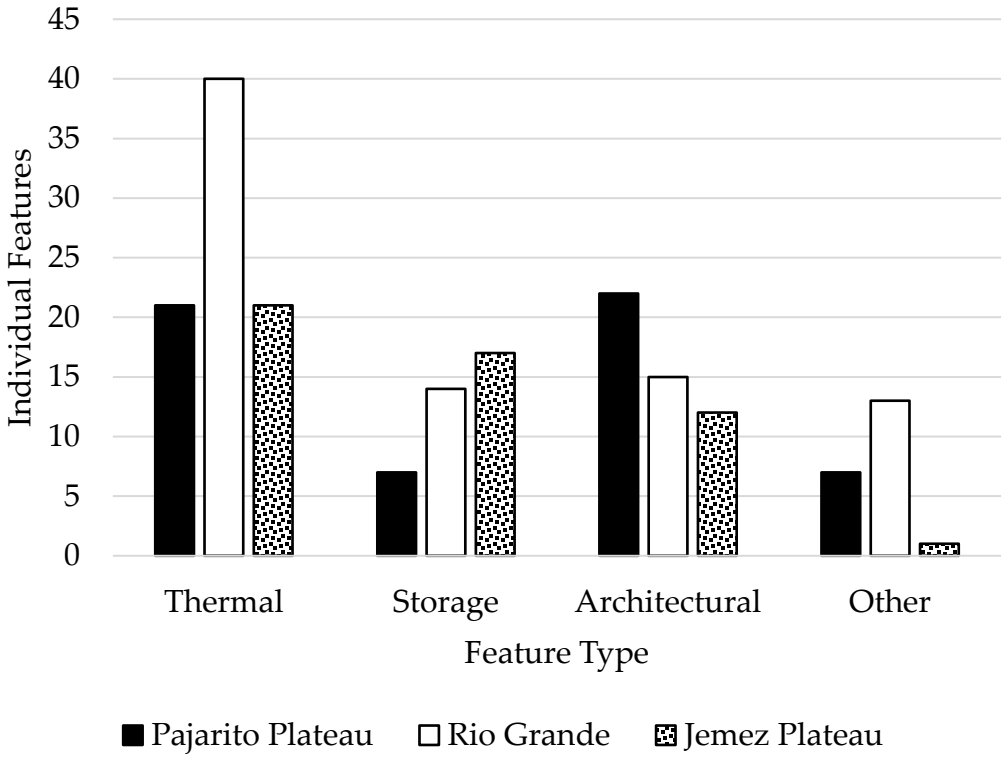

Figure 5.18 Number of thermal, storage, architectural, and other individual features present in excavated fieldhouses by region

Table 5.15 Residuals from the Chi-squared Analysis for Feature Type to Region

Feature Type	Pajarito Plateau	Rio Grande	Jemez Plateau
Thermal	-0.7	0.7	-0.2
Storage	-1.3	-0.6	**2.0**
Architectural	**2.2**	-1.4	-0.5
Other	0.3	1.3	**-1.9**

Thermal Features

Thermal features are the most common floor feature type among the excavated fieldhouses. Eighty-two thermal features were identified in the 139 excavated structures. Thermal features were categorized by the original excavators as hearth (n = 55), extramural hearth (n = 6), collared hearth (n = 1), plaster-lined hearth (n = 2), slab-lined hearth (n = 6), subfloor hearth (n = 2), firepit (n = 2), ash concentration (n = 4), and ashpit (n = 4). The presence or absence of a thermal feature may help indicate the use of the structure. For example, ethnographic evidence (Chapter 4) suggests that hot ashes were spread across the floor of sweat lodges. If a family lived inside the structure during the summer agricultural season, a hearth would be important for keeping warm at night and for cooking. Historic accounts of fieldhouses at Cochiti Pueblo indicate that their cooking fires were typically built outside of the structure under a ramada (Goodman 2012).

Differences are found in the total number of thermal features between the three regions (Figure 5.19). Out of the 74 excavated structures on the Pajarito Plateau, 25.6 percent have a thermal feature (n = 19), with 21 individual thermal features in those 19 structures (meaning some structures had multiple hearths). A hearth (n = 13) was the most common thermal feature type on the Pajarito Plateau. Some effort was put into constructing hearths in the three study regions. For instance, Ancestral Pueblo groups lined some hearths with upright rocks or with plaster (Table 5.16). Other thermal features included extramural hearth (n = 3), slab-lined hearth (n = 2), firepit (n = 1), ash concentration (n = 1), and ashpit (n = 1). For the 37 excavated structures in the Rio Grande region, 86.4 percent have a thermal feature (n = 32), with 40 individual thermal features. A hearth (n = 22) was the most common thermal feature among the Rio Grande fieldhouses, but extramural hearth (n = 3), collared hearth (n = 1), plaster-lined hearth (n = 2), slab-lined hearth (n = 4), subfloor hearth (n = 2), firepit (n = 1), ash concentration (n = 2), and ashpit (n =3) were also noted. There are fewer excavated structures on the Jemez Plateau (n = 28), but 60.7 percent of the structures (n = 17) have

thermal features, and only two types of thermal features (hearth, n = 16 and ash concentration, n = 1) were noted.

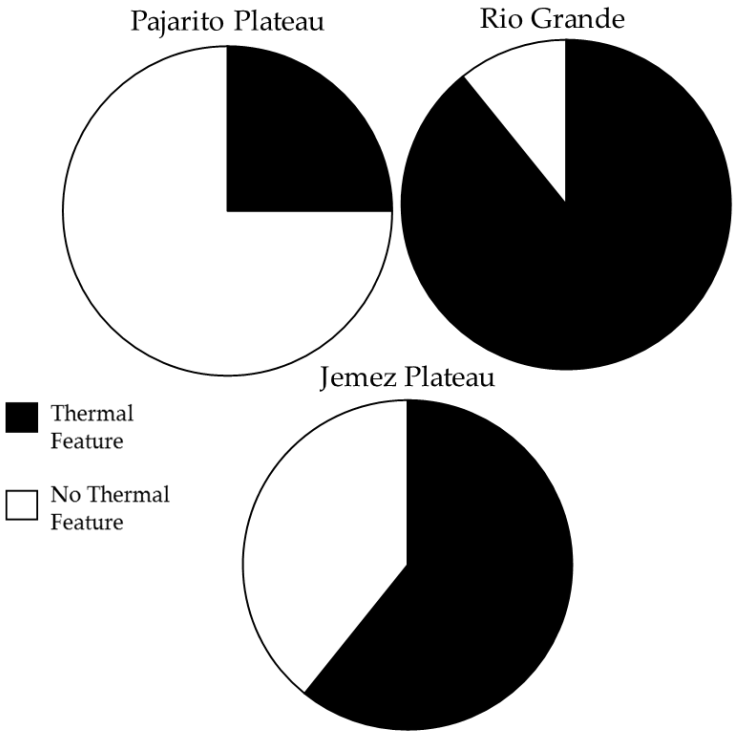

Figure 5.19 Proportion of thermal features in excavated fieldhouses by region

Table 5.16 Number of Thermal Features in Excavated Fieldhouses by Region

Thermal Feature Type	Pajarito Plateau	Rio Grande	Jemez Plateau
Hearth	11	17	17
Extramural hearth	3	3	0
Slab-lined hearth	2	3	0
Collared hearth	0	2	0
Plaster-lined hearth	0	2	0
Ashpit/ash concentration	2	4	1
Firepit	1	1	0

The proportion of fieldhouse structures with thermal features increases with the number of rooms per structure. Thirty-three of the 98 excavated one-room structures have thermal features (33.6 percent). In those 33 rooms, 39 individual thermal features were recorded. A hearth (n = 26) was the most common feature, followed by extramural hearth (n = 5), then ash concentration (n = 3), collared hearth (n = 1), plaster-lined hearth (n = 1), firepit (n = 1), ashpit (n = 1), and slab-lined hearth (n = 1). Twenty-three of the 37

excavated two-room structures have thermal features (62.1 percent). In those 46 total rooms, 31 thermal features were noted. A hearth (n = 23) was the most common thermal feature present, in addition to slab-lined hearth (n = 4), plaster-lined hearth (n = 1), firepit (n = 1), ashpit (n = 1), and ash concentration (n = 1). Three of the four excavated three-room structures have thermal features (n = 75 percent). In those nine rooms, 12 thermal features were present, including hearth (n = 6), external hearth (n = 1), ash pit (n = 2), slab-lined hearth (n = 1), and subfloor hearth (n = 2).

Hearth Orientation

The orientation of hearths within a structure was analyzed for 67 hearths in 55 excavated fieldhouses from the Pajarito Plateau, Rio Grande region, and Jemez Plateau (Appendix B). This analysis aggregates the orientation data into classifiable directions. For example, some structures have hearths in the southwest or northeast corner (south and north for this analysis), but the trends remain similar whether aggregating orientation or not. The majority of hearths, shown in Table 5.17, are placed closer to the north or south wall (n = 39/55; 71 percent). Hearths also occur along the east and west walls, and in the center of structures, but more rarely.

A more intriguing pattern in the location of hearth features occurs when comparing the three study regions (Table 5.17). Although there are unequal sample sizes between regions, the majority of north-sided hearths occur in the Rio Grande region with few appearing in the Pajarito and Jemez plateau fieldhouses. There are more center-placed hearths on the Pajarito Plateau, but the Jemez Plateau has more hearths near the southern wall. Given that Rio Grande fieldhouses have significantly different shapes (more circular structures), compared with the Pajarito and Jemez plateaus, the identification of hearth features consistently along the north wall is suggestive of a specific placement. While the reasons for this placement are unclear, future research may help shed new insight into this pattern.

Temporal analysis of hearth location also suggests patterns in their placement through time (Table 5.17). Again, unequal sample size likely results in some influence in this analysis since there are more excavated Classic period fieldhouses. However, if these temporal trends prove accurate with additional research, then it is important to note that hearth locations follow the same trend – increasing in abundance through time, except for center-located hearths. North-, south-, east-, and west-oriented hearths increase in abundance through time, but center-oriented hearths appear to decrease. Room size data suggest that there is an increase from one-room to two-room fieldhouses through time. Therefore, it is possible that a decreasing trend in center-placed hearths is expected if more fieldhouses have two rooms, which places a greater limitation on how a central hearths are constructed and used by small family groups.

Table 5.17 Summary Counts of Hearth Feature Orientation in Excavated Fieldhouses

	North	South	East	West	Center	Unknown
Inside	17	18	9	4	7	5
Outside	2	2	2	0	0	1
Pajarito Plateau	3	4	4	1	5	3
Rio Grande	13	8	2	2	2	2
Jemez Plateau	3	9	4	1	0	1
Coalition	2	6	0	1	4	2
Coalition/Classic	3	0	1	0	2	0
Classic	12	14	9	3	1	4
Postclassic	2	1	0	0	0	0

Orientation data on fieldhouse hearths, and possibly storage feature types, have the potential to answer important questions regarding the built environment in the Ancestral Pueblo world. However, this orientation analysis is limited due to the availability and non-standardization of recording hearth feature data, but it is suggestive and clearly necessary as a baseline for future studies of fieldhouses. Available space inside most fieldhouses is limited, but research on pueblo construction and use of space indicate that this is an area with future research potential (e.g., Bustard 1999).

Storage Features

Fieldhouses were likely used to store and process some crops, which would benefit people in part by decreasing the amount of travel time from fieldhouse and field to the village (Haury 1956; Preucel 1990; Woodbury 1961). Unprocessed crops may have been kept inside storage features built inside the fieldhouse as well as in storage jars. Thirty-eight individual storage features were recorded in 33 of the 139 excavated structures (23.7 percent) (Figure 5.20). Overall, there were fewer storage features than thermal features. There are absolutely and relatively more storage features in excavated fieldhouses from the Jemez region (17 in 28 structures) compared with the Rio Grande region (14 in 37 structures) and Pajarito Plateau (7 in 74 structures). The most common storage features from the Pajarito Plateau are storage bins (n = 2) and pits (n = 2). Similar to thermal features, Ancestral Pueblo groups sometimes lined their storage bins with upright stone slabs or with plaster (Table 5.18). Other types include bin (n = 1), plastered pit (n = 1), and external pit (n = 1). For the Rio Grande region, out of the 37 excavated structures, 14 structures (37.8 percent) have storage features. Fourteen storage features were found in those 14 structures, including storage bin (n = 3), slab-lined bin (n = 3), extramural storage bin (n = 2), bin (n = 1), plastered storage bin (n = 1), pit (n = 1), plastered bin (n = 1), borrow pit/trash receptacle (n = 1), and cist (n = 1). In the

28 excavated structures on the Jemez Plateau, 13 structures (46.4 percent) have storage features. Seventeen storage features were excavated, including pit (n = 5), bin (n = 4), storage bin (n = 4), and milling bin (n = 4).

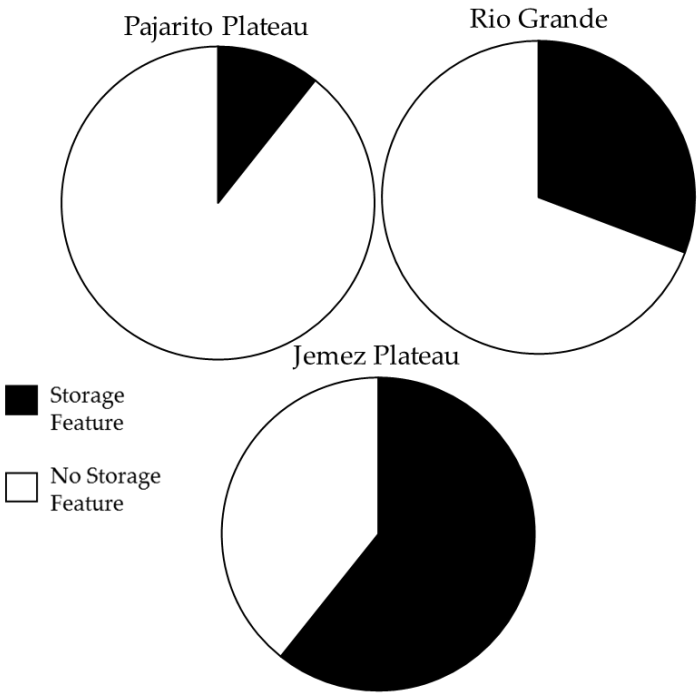

Figure 5.20 Proportion of storage features by region

Table 5.18 Number of Storage Features in Excavated Fieldhouses by Region

Storage Type	Pajarito Plateau	Rio Grande	Jemez Plateau
Bin	3	4	8
Plastered bin	0	2	0
Extramural bin	0	2	0
Slab-lined bin	0	3	0
Milling bin	0	2	0
Pit	2	1	5
Plastered pit	1	0	0
External pit	1	0	0
Borrow pit/trash receptacle	0	2	0
Cist	1	0	0

There are some differences in the number of storage features between one- and two-room structures. No three-room structures had storage features, as the only three-room structures occurred on the Pajarito Plateau (n = 1) and Rio Grande region (n = 3). Although Rio Grande fieldhouses had the second most storage features, the Jemez Plateau structures had the most, and no excavated three-room structures from the Jemez Plateau are part of this study. For the one-room structures, the storage bin (n = 4)

was the most common storage feature recorded by the excavators. Pit was the second most common (n = 3), followed by rectangular bin, cist, slab-lined bin, bin, floor pit, and borrow pit/trash receptacle, each with one. For the two-room structures, storage bin, bin, and milling bin each had four instances. Pit, basin-shaped pit, plastered bin, and extramural storage bin each had two. Plastered pit and extramural pit each had one.

Architectural Features

Forty-nine individual architectural features were recorded in the 139 excavated fieldhouse structures (Table 5.19). Architectural features include deflector/windbreak (n = 3), auxiliary wall (n = 1), retaining wall (n = 3), walled-in work area (n = 3), posthole (n = 17), ramada (n = 11), roof support (n = 1), bench (n = 2), door jamb/sill (n = 7), and possible stairway (n = 1). Postholes are the most common architectural feature, and they are likely associated with ramada structures. Ramadas are the second most noted architectural feature at fieldhouse structures. Ramadas are identified archaeologically by the presence of postholes, but also by open-ended rooms like at LA 1067, extramural features, and high artifact densities within these walled areas as indicated by foundations. Ramadas are side-structures used for shade and places to dry food and put other goods (Figure 5.21). For example, in more recent times at Cochiti Pueblo, women built a cooking fire under the ramada in front of their fieldhouse (Goodman 2012:116).

Table 5.19 Number of Individual Architectural Feature Types by Study Region

Feature	Pajarito Plateau	Rio Grande	Jemez Plateau
Deflector/windbreak	3	0	0
Auxiliary wall	1	0	0
Retaining wall	0	0	3
Walled-in working area	0	0	3
Posthole	11	2	4
Ramada	5	6	0
Roof support	1	0	0
Bench	0	0	2
Door jamb/sill	0	7	0
Stairway (possible)	1	0	0

There are regional differences in architectural features. Structures on the Pajarito Plateau have more posthole features compared with the other two regions, while the Rio Grande has more door jamb/sill features. The one possible stairway/staircase (Figure 5.22 B) is composed of dacite cobbles and shaped tuff blocks comes from LA 127634 at LANL (Lockard 2008d).

Figure 5.21 Historic field shelter and ramada in northern Arizona (Mindeleff 1891:Figure 113)

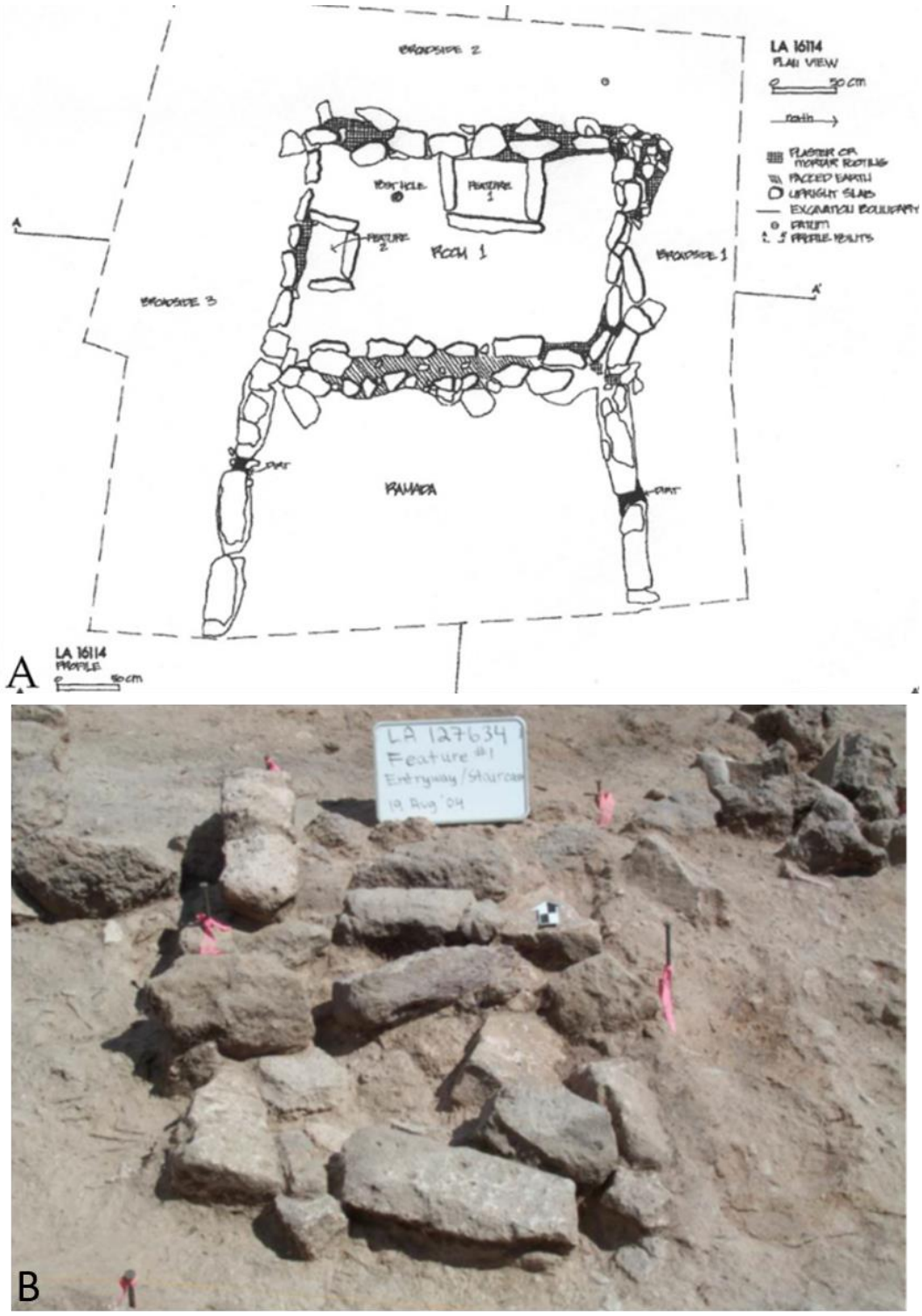

Figure 5.22 Examples of architectural features in excavated fieldhouses

A: a one-room fieldhouse (LA 16114) with an attached ramada (Traylor et al. 1990:Figure 26), B: a possible staircase/entryway at LA 127634 (Lockard 2008d:Figure 51.4)

Three long, flat dacite rocks are located within the feature, and they are oriented east to west and may have functioned as steps leading up to the structure's entryway (Lockard 2008d:1087–1088). No other stairway or staircase leading to a structure is noted in the other excavated structures.

Other Features

The other feature category consists of all features that were not thermal, storage, or architectural features (Table 5.20). Twenty-three features from the 139 excavated fieldhouse structures fit into this category. Fourteen individual structures had features in this category. Six other features were recorded for the Pajarito Plateau region, 16 in the Rio Grande region, and only one in the Jemez Plateau.

Table 5.20 Number of Other Features in or near Excavated Fieldhouses by Region

Feature	Pajarito Plateau	Rio Grande	Jemez Plateau
Midden	0	2	1
Check dam	4	5	0
Slab	0	3	0
Rock pile/alignment	1	4	0
Pot rest	1	2	0

Summary of Features

Features were found in excavated fieldhouses in all three study regions. Thermal features were by far the most abundant type of feature, with 82 identified in the 139 excavated structures (59 percent). Regionally, 26, 86, and 61 percent of the structures in the Pajarito Plateau, Rio Grande corridor, and the Jemez Plateau, respectively, had thermal features. The proportion of fieldhouse structures with thermal features increases with the number of rooms per structure, meaning that 34 percent of the one-room structures, 62 percent of the two-room structures, and 75 percent of the three-room structures contained thermal features

Overall, fewer storage features were found relative to thermal features (n = 33, 24 percent). Storage features were found more frequently in Jemez Plateau structures (61 percent) than in structures on the Pajarito Plateau and in the Rio Grande region. Storage features included bins of various types (milling, slab-lined, plastered), pits, and a single cist feature. Storage bins were the most common type of feature in both one- and two-room structures, while none of the three-room structures contained storage features.

Forty-nine architectural features were recorded in the excavated structures. Postholes (n = 17), ramadas (n = 11), and door jamb/sills (n = 7) were the most common, with other

types including deflector/windbreaks, auxiliary walls, retaining walls, walled-in work areas, roof supports, benches, and one possible stairway. Structures on the Pajarito Plateau have more posthole features compared with the other two regions, while the Rio Grande has more door jamb/sill features.

Features that did not fit into thermal, storage, and architectural categories were classified as other. These features were quite variable and included check dams, rock pile/alignments, pot rests, middens, and slab features.

Material Type

Both historic accounts and early twentieth century photographs of fieldhouses (Figure 5.23) reveal they were constructed out of locally available materials (Colwell and Ferguson 2017:Figures 3 and 8). Excavation data demonstrates this is true as fieldhouses in the Pajarito Plateau, Rio Grande region, and Jemez Plateau were constructed out of basalt, dacite, limestone, rhyolite, or tuff (Table 5.21). These data exclude 30 rooms made with more than one rock material. Unsurprisingly, masonry type for construction material differs significantly between regions and directly tracks local raw material type (χ^2 $p < 0.01$, Cramer's $V = 0.64$). In the Rio Grande region, there is more basalt masonry used in fieldhouse construction compared with the Pajarito Plateau and Jemez Plateau (Table 5.21). More dacite was used on the Pajarito Plateau than expected, more tuff was used in the Jemez region, and less tuff was used in the Rio Grande region than expected based on the results of a chi-squared analysis.

Table 5.21 Rock Type by Region

Feature	Pajarito Plateau	Rio Grande	Jemez Plateau
Basalt	0	27	0
Dacite	11	0	0
Limestone	0	0	1
Rhyolite	3	0	3
Tuff	36	6	22
Undetermined	12	1	1

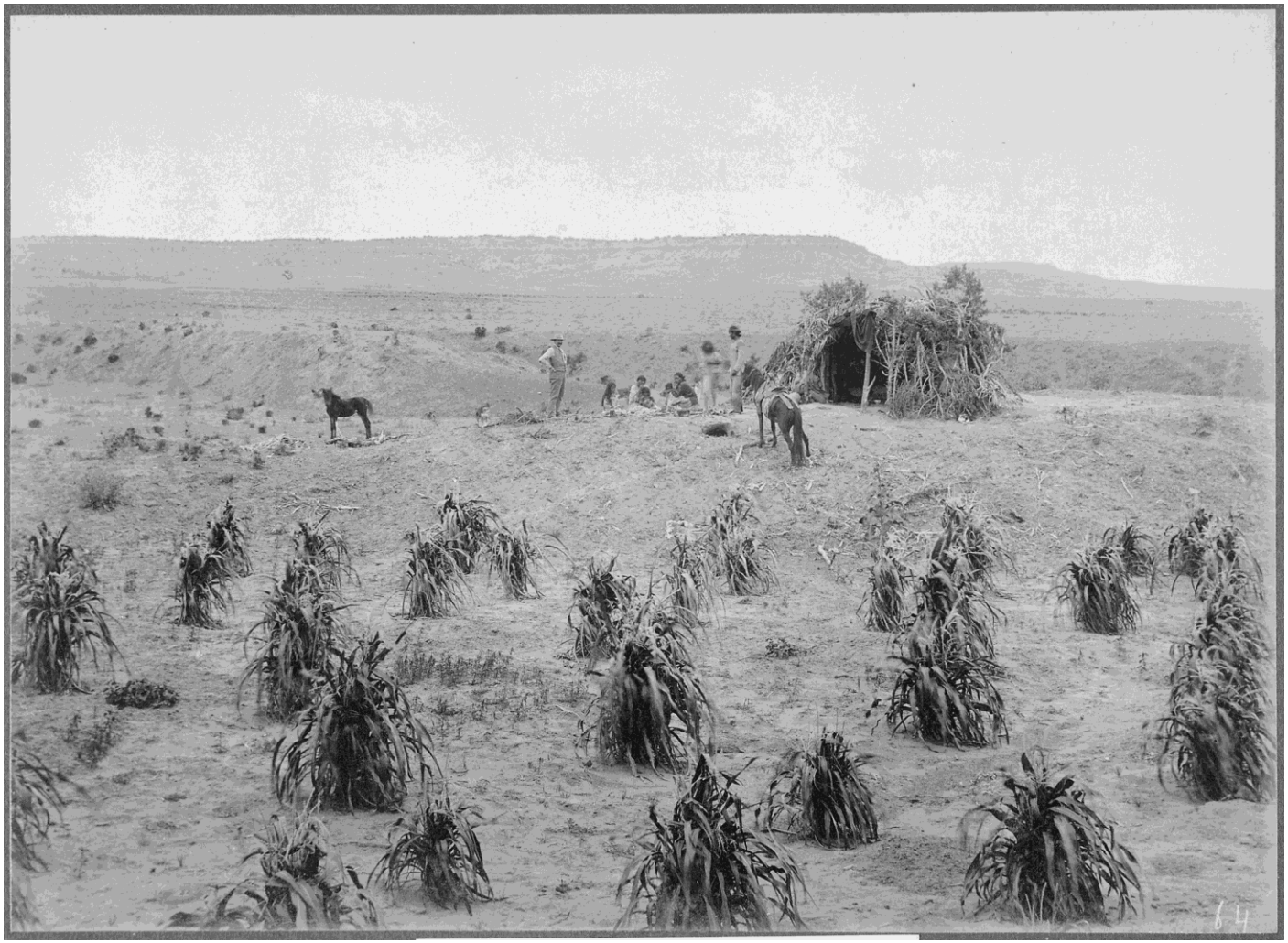

Figure 5.23 A Navajo fieldshade next to a cornfield (Courtesy National Archives, photo no. 106-FAA-54)

Ceramics

Ceramics tend to accumulate after use and discard in a systematic fashion (Mills 1989; Varien and Mills 1997). Ancestral places that were occupied for short durations exhibit a low diversity of ceramic classes with high variability in their relative frequency, while sites occupied for long term exhibit the opposite pattern, high diversity of ceramic types but with consistent relative frequency.

The number of ceramics found at excavated fieldhouses on the Pajarito Plateau, Rio Grande region, and Jemez Plateau ranges from 0–808 sherds (Appendix D). Of the 127 excavated sites, at least 72 percent contained ceramics. Fifty-two sites (41 percent) had between 1–99 sherds and 39 had more than 100 sherds (31 percent). Ceramics were not documented in 36 sites (28 percent), although in the case of historic excavations, this could be due to lack of screening. Whole or partially reconstructable vessels are extremely rare at fieldhouses. They have been found in some cases, for example, a reconstructed Jemez Black-on-white olla was found at LA 12761 and two ceramic vessels were recovered intact on the floor of LA 13086.

There are differences between the three study regions regarding ceramic type, but not abundance. For the Pajarito Plateau, ceramic types included mainly biscuitwares, glazewares (e.g., Cieneguilla, Agua Fria, and San Lazaro), Sapawe Micaceous, Santa Fe Black-on-white, Wiyo Black-on-white, and utilitywares. In the Rio Grande Valley, the sites have mainly glazewares (e.g., San Clemente and Largo) and utilitywares. On the Jemez Plateau, most fieldhouses had Jemez Black-on-white, some polychromes (e.g., Puname and Tewa), and utilitywares. A histogram of sherd count frequency from excavated fieldhouses suggests few differences between fieldhouses and region (Figure 5.24). The majority of fieldhouses have small assemblages of ceramic artifacts and are skewed by a small number of sites with large sherd abundances. This could relate to different occupation lengths for fieldhouses. Examination of ceramic sherd count in fieldhouse sites through time also shows few trends (Figure 5.25). There are no major shifts in the amount of ceramics being discarded at fieldhouses regardless of time period.

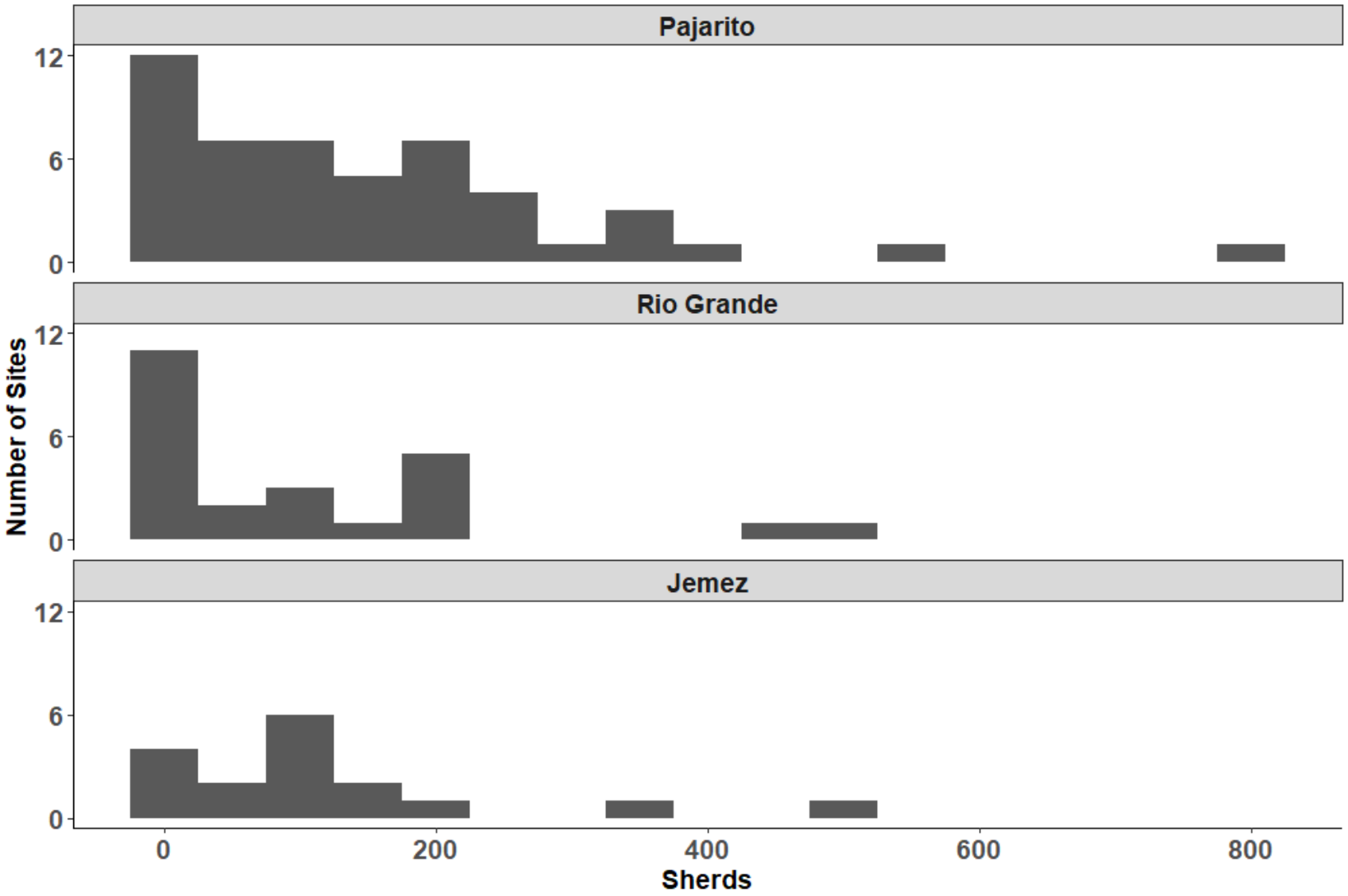

Figure 5.24 Histogram of sherd count frequency in excavated fieldhouses by region

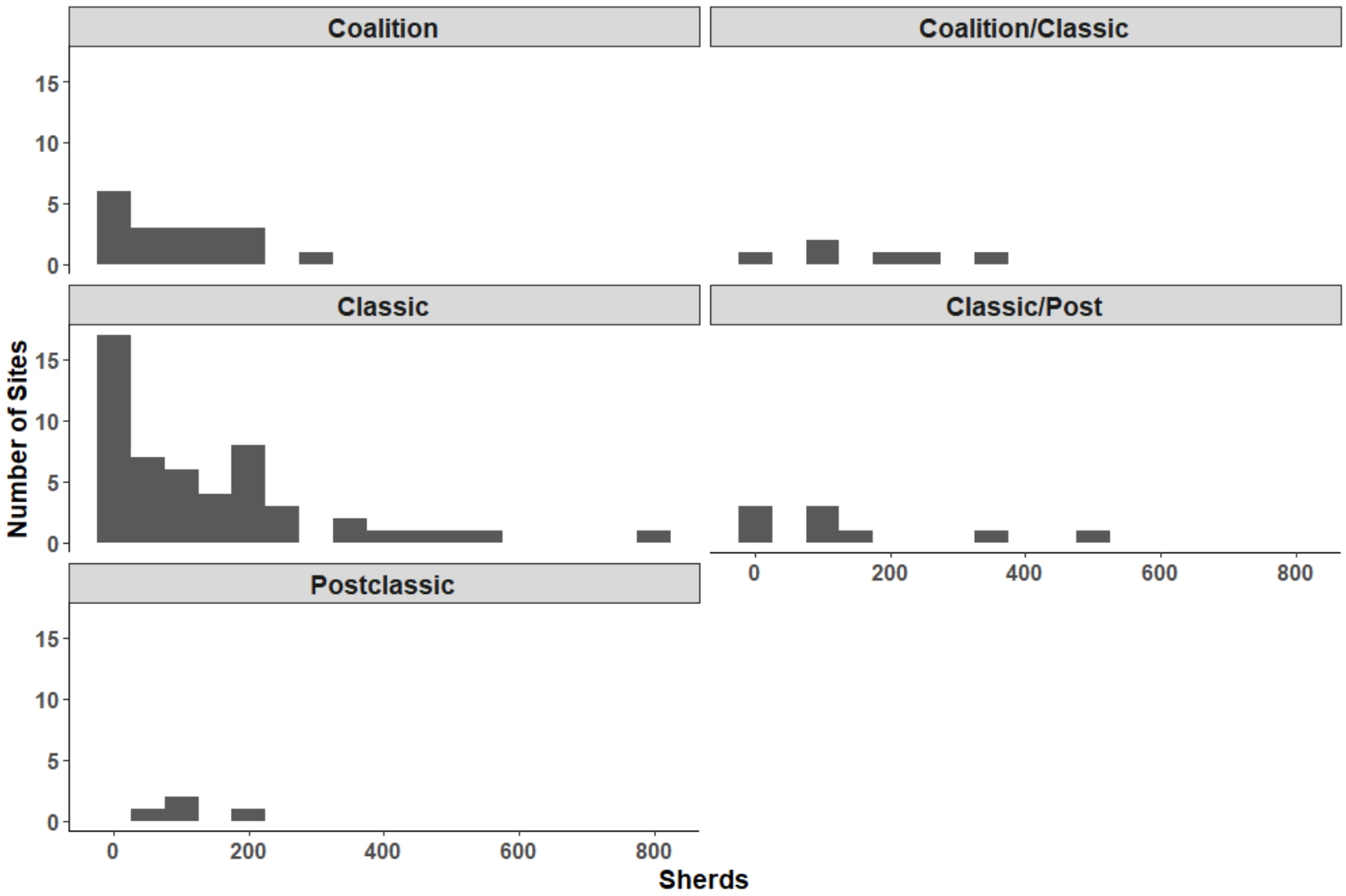

Figure 5.25 Histogram of sherd count frequency in excavated fieldhouses by time period

Seasonally occupied fieldhouses that were used predominantly for storage and processing of agricultural resources might be expected to have ceramic assemblages dominated by vessels used for cooking or for food processing activities, and lacking decorated and non-utilitarian wares (Crown 1985; Stone 1993; Sutton 1977). Bowl vessels should be less common than jar vessels, (measured by the relationship of bowl sherds to jar sherds) as a reflection of the importance of storage versus serving activities (Stone 1993:74–75).

To quantitatively identify whether fieldhouses match these expectations, this analysis reinvestigated the ceramic assemblages from Coalition and Classic period fieldhouses that were excavated at LANL (Wilson 2008). Wilson's (2008) counts and ratio for the number of bowl to jar sherds at 24 fieldhouses are provided in Appendix E (Table E.1). Results indicate there is a statistically significant relationship between the count of bowl sherds to jar sherds in fieldhouses (adjusted $r^2 = 0.46$, $p < 0.01$), with the ratio being less than one in all but 2 out of 24 cases (mean = 0.5, standard deviation = 0.2). Wilson (2008:241) also indicates that jars consistently had wide mouths and sooted interiors, characteristics that are both indicative of cooking activities. Combined, these data suggest that people at fieldhouses cooked food resources.

Excavated fieldhouses from LANL have utilitywares and whiteware sherds consisting of Santa Fe Black-on-white, Wiyo Black-on-white, and Biscuit A or B (Appendix E:Table E.2). Nine sites have evidence of glazewares in low abundances, indicating that glazeware ceramics are rare and utlity and whiteware sherds are more common. Although the majority of the fieldhouses analyzed here date to the Classic period, the frequency of glazeware sherds is low. This is consistent with evidence that glazewares were not common on the northern Pajarito Plateau, but biscuitwares were common in this region during the Classic period (Habicht-Mauche 1993; Mera 1934, 1935; Wilson 2008, 2013).

Sherd counts from three excavated Coalition period roomblock pueblos were also investigated and compared with the fieldhouse data (Appendix E:Table E.2). The ceramic assemblages at fieldhouses and pueblo roomblocks have statistically indistinguishable percentages of utilitywares and bowl to jar ratios (Mann-Whitney-Wilcoxon [MWW] test, utilityware: $U = 19$, $p = 0.26$; ratio: $U = 42$, $p = 0.48$). These results suggest that people who occupied fieldhouses and pueblo roomblocks used ceramics in similar ways.

Lithics

Lithic artifacts at fieldhouses include ground stone tools like manos and metates, chipped stone tools such as projectile points and scrapers, and the stone debris resulting from their manufacture. Lithics in northern New Mexico are primarily made from

dacite, basalt, obsidian, and chert (Head 1999; Vierra and Dilley 2008). The number of lithics found at excavated fieldhouses on the Pajarito Plateau, Rio Grande region, and Jemez Plateau ranges from 0–1,400 (Appendix D). Of the 127 excavated fieldhouse sites, 70 percent contained lithics. Sixty-seven sites (53 percent) had between 1–99 lithics, 18 sites (14 percent) had 100–999 lithics, and 4 sites (3 percent) had more than 1,000 lithics. Lithic artifacts were not documented in 38 fieldhouse sites (30 percent).

Comparison of lithic artifact counts from excavated fieldhouses between regions (Figure 5.26) and through time (Figure 5.27) indicates that the majority of fieldhouses have small lithic assemblages and that these patterns do not shift from the Coalition period to the Postclassic period. There is no correlation between fieldhouses with large lithic assemblages and large ceramic assemblages. For example, one of the largest lithic assemblages was recovered from LA 65013, a Classic period one-room structure near the Rio Grande. This fieldhouse included 1,388 lithic artifacts and 82 ceramic artifacts. In contrast, LA 68522, a Classic period two-room structure on the Jemez Plateau, included 808 ceramic artifacts and only 81 lithics. These trends suggest that some fieldhouses may have similar long-term occupation histories, but different life-use histories.

If fieldhouses were used primarily for agricultural activities and food preparation for a small family, then a lithic assemblage might be expected to include stone axes/hoes, milling stones, manos, and metates. Ground stone was present at 57 percent of the 127 excavated sites. Together the sites included 55 one- and two-handed manos, 23 metates, 17 axes/hoes, 9 abraders/shaft straighteners, 17 polishing stones, 39 grinding slabs, 24 mano fragments, 62 metate fragments, and 29 indeterminate fragments of ground stone (Appendix D).

More details on lithic assemblages are available from a subset of fieldhouses that were excavated at LANL and date to the Coalition and Classic periods (Vierra and Dilley 2008). Seventy-nine percent (n = 15/19) of these fieldhouses had ground stone, variously comprised of mano/metate, millingstone, axe, and other specimens. Of the fieldhouses with ground stone present, all had manos (n = 15/15), while axes and hoes were less common (n = 5/15). One fieldhouse had two stone hoes and a grooved abrader (Figure 5.28), suggesting that that arrows were made at the fieldhouse (Vierra and Dilley 2008). The stone axes found at fieldhouses could have been used to assist in the construction of the fieldhouse or to clear forested land for agricultural plots.

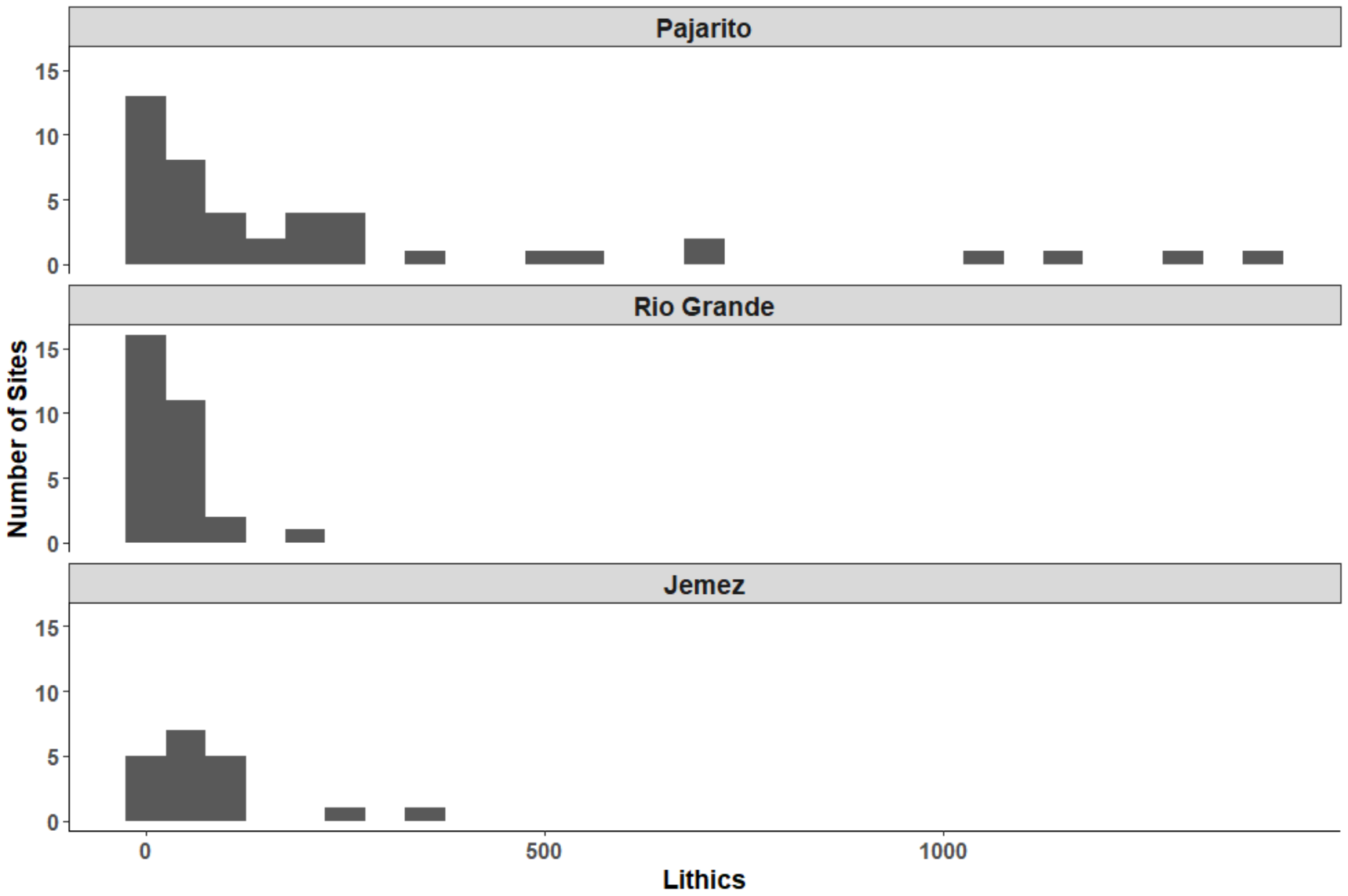

Figure 5.26 Histogram of lithic count frequency in excavated fieldhouses by region

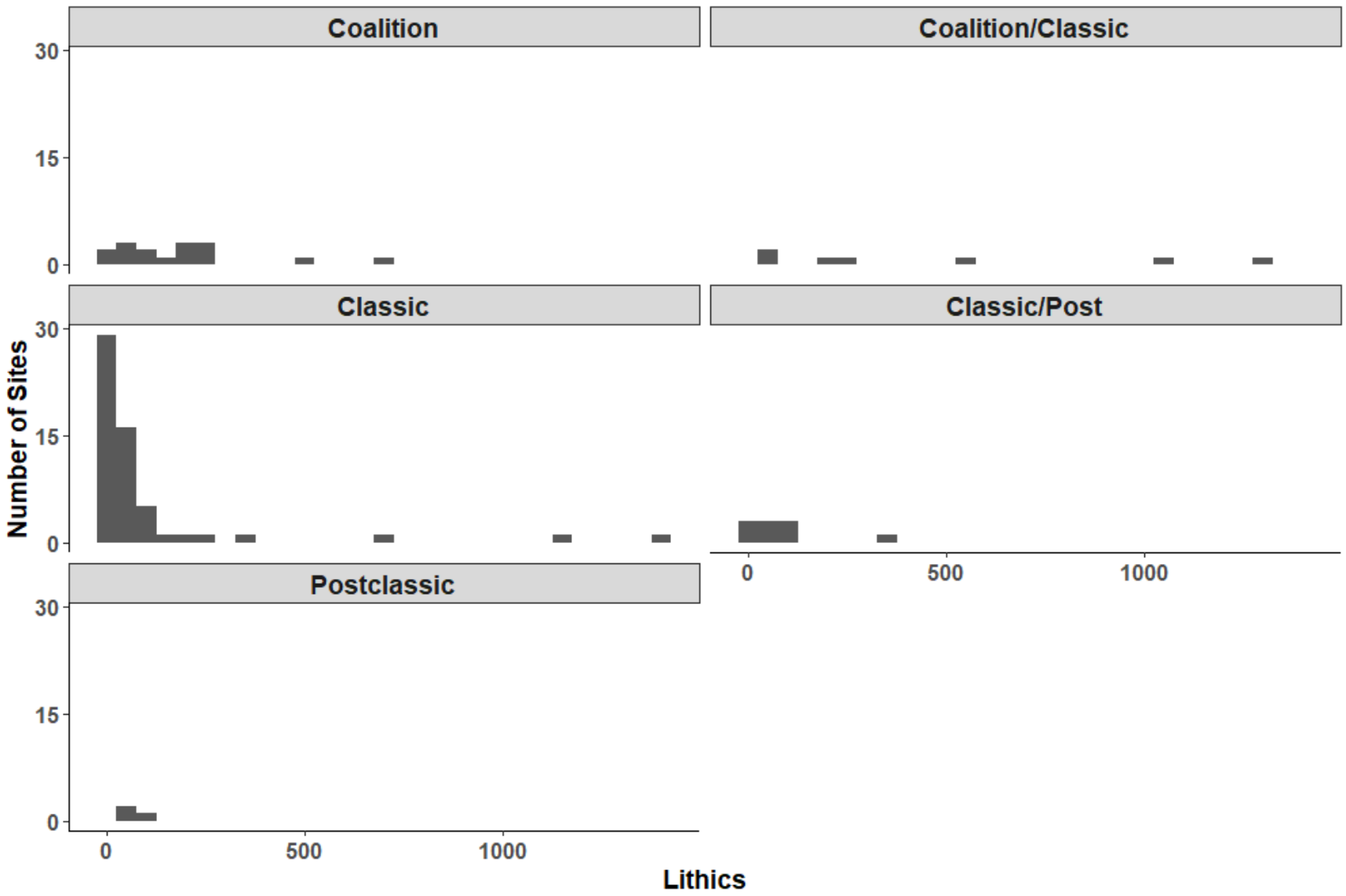

Figure 5.27 Histogram of lithic count frequency in excavated fieldhouses by time period

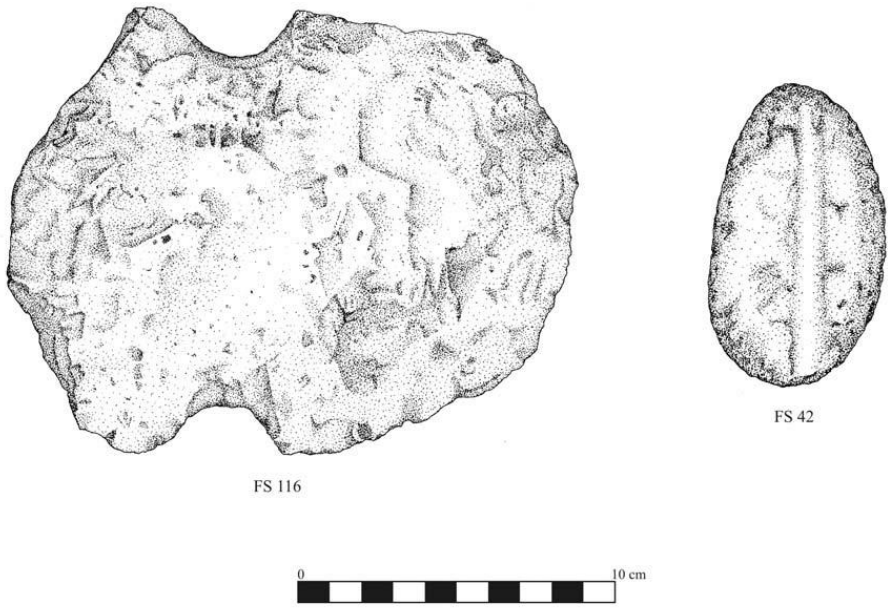

Figure 5.28 Stone hoe (left) and grooved abrader (right) from LA 85861 (Vierra and Dilley 2008:Figure 39.8)

The greater abundance of manos might suggest that people at fieldhouses participated in food processing activities more commonly than digging and chopping activities using axes and hoes. However, the lower abundance of axe and hoe tools is potentially a reflection of their mobile utility. Given the heavy investment in their manufacture, people using axes and hoes would likely carry these tools with them when departing seasonally occupied fieldhouses. Larger and more immobile milling stones, manos, and metates would presumably be left within the structures.

The mean number of chipped stone artifacts from the 22 excavated fieldhouses at LANL is 69, with a minimum of 13, and a maximum of 331 (Appendix E:Table E.3; Vierra and Dilley 2008). Six debitage and flake type categories were identified from the chipped stone assemblage, and they help to distinguish manufacturing techniques and artifacts present (Appendix E:Table E.3; Vierra and Dilley 2008). It is possible that fieldhouses with more debitage were located closer to a source of raw material, or were occupied for a longer period of time, which allowed for the accumulation of more chipped stone debris. Another possibility is that people brought in finished tools to use rather than making tools at the fieldhouse. Differences in the amount and types of debitage could also relate to site function. Sites may have served as a stone tool production loci as indicated by a diverse array of chipped debris consisting of all levels of manufacture, while stone tool production may not have occurred at all at others based on the lack of diversity.

There is evidence for biface and projectile point manufacture at the LANL fieldhouses based on the presence of biface flakes (Vierra and Dilley:Table 60.57). Projectile point manufacture is also corroborated by the presence of grooved abraders at some places. Ancestral Pueblo farmers could have manufactured projectile points while they watched and protected their agricultural fields. In addition, Vierra and Dilley (2008:374) argue that the presence of single, bidirectional, and multi-directional cores at Classic period fieldhouses may indicate that the cores represented extended use of that ancestral place. Early-stage cores were brought into the pueblo more recently, but the multi-directional cores were at the pueblo for a longer period of time; these cores would have been left at the fieldhouse throughout the year and could be used when people returned the following season.

Flora and Fauna

Macrobotanical, pollen, and faunal remains recovered from fieldhouses provide a useful dataset to examine the use and function of these structures. There are several general expectations for the type and quantity of flora and fauna that may be recovered from fieldhouses given complete preservation and recovery (McBride 2008; Ruscavage-Barz 2002; Schmidt 2007, 2008d; Smith 2008; Sutton 1977). If fieldhouses served as temporary structures for agriculturally related activities during the growing season, then the floral remains should primarily reflect crops that were grown near these places or were stored in them (McBride 2008; Ruscavage-Barz 2002; Smith 2008; Sutton 1977). Domesticated cultigens should be relatively abundant compared with non-domesticated, but potentially managed or gathered, wild plants. Faunal remains should also reflect this pattern and primarily consist of animals hunted and killed locally as agricultural pests, for subsistence purposes, or both (Ruscavage-Barz 2002; Schmidt 2008d; Sutton 1977). Given the primary function of fieldhouses for agricultural activities, then faunal remains should also rarely occur in large abundances. Previous investigations of Ancestral Pueblo fieldhouses throughout the Pajarito Plateau and adjacent regions support these hypotheses.

Compared with ceramics and lithics, faunal remains are rare at fieldhouses throughout the Pajarito Plateau, Rio Grande, and Jemez Plateau regions, occurring at only 23 percent of excavated fieldhouse sites (Appendix D). Deer, rabbit, squirrel, turkey, and gopher are the most common species identified. Temporal and regional patterns of animal consumption are difficult to assess based on the small sample size of faunal remains at fieldhouses . The general rarity of animal bones could indicate that people ate more plant-based diets while inhabiting these structures. Alternatively, people may have disposed of food animal carcasses elsewhere. The lack of faunal remains may also indicate that a structure was not used as a place to process animals acquired on hunts.

Floral and faunal evidence from 24 fieldhouse sites excavated at LANL (McBride 2008; Smith 2008) are consistent with the interpretation that these structures were used primarily for agricultural purposes and not for hunting activities. Macrobotanical remains recovered through flotation, and microbotanical remains identified through pollen analysis, support an agricultural role. Maize macrobotanicals appear at 50 percent of excavated fieldhouses (n = 12/24) and beans at the Classic period fieldhouse LA 127634 (McBride 2008:471). No squash macrobotanicals were recovered. Pollen evidence indicates that 67 percent (n = 16/24) of fieldhouses have maize while LA 85404 and LA 85411 include squash (Smith 2008:Table 63.22). No bean pollen was recovered. These data are consistent with Bandelier's (1892:16) historic interpretations of Ancestral Pueblo agriculture on the Pajarito Plateau:

> *The people who dwelt in the caves of the Pu-yé and on the mesas around it, the inhabitants of Tzi-re-ge, of the Potrero de las Vacas, etc., had their patches of corn, of beans and squashes, on the same plateau as their dwellings.*

Although these primary domesticated cultigens appear in fieldhouses, there are also important wild, and potentially managed plants that occur synchronously. Tobacco, beeweed, goosefoot, piñon, sunflower and several varieties of cactus are examples of plants also present in fieldhouses, occasionally in large abundances (McBride 2008; Smith 2008). Ancestral Pueblo groups likely encouraged the growth of these annuals and perennials in their fields as additional dietary and economic resources (Castetter 1943; Huckell and Toll 2004; Kinder et al. 2017).

Animal bones were rare at the LANL excavated fieldhouses (total number of identified specimens [NISP] = 32; Schmidt 2008d) and only consist of four identified taxa—pocket gopher (NISP =2; *Thomomys* sp.), cottontail rabbit (NISP = 1; *Sylvilagus* sp.), mule deer (NISP = 13; *Odocoileus hemionus*), and elk (NISP = 1; *Cervus elaphus*)—with several additional bones identified to Family (NISP = 1; Leporidae) and Class (NISP = 14; Mammal). Since there is a low abundance of faunal remains, the presence of domesticated plants tends to support the hypothesis that fieldhouses were used for agricultural purposes and not for hunting. Pocket gopher and cottontail rabbit may represent agricultural pests or garden hunting activities by Ancestral Puebloans protecting and taking advantage of fauna in their fields (Linares 1976; Neusius 2008), but these taxa are only represented by three specimens. Furthermore, the single cottontail bone may not be directly associated with prehistoric human activities due to its recovered provenience (Schmidt 2008d:613).

A relatively large abundance of deer remains (and a single elk bone) are suggestive of hunting activities, but a larger sample size is required to fully understand the exact nature of artiodactyl deposition at fieldhouses. For example, two of the mule deer

specimens (15 percent; n = 2/13), one each from LA 85404 and LA 85414, exhibit signs of modification. They are both worked into bone awls (Schmidt 2008d:633,635). Bone awls, and bone tools in general, are an important component of Ancestral Pueblo animal exploitation and use (Olsen 1979). Excavations at the Classic period large pueblos Otowi and Tsirege on the Pajarito Plateau recovered extensive evidence for the manufacture and use of bone tools (Hewett 1906; Wilson 1916, 1917, 1918). Presence of these implements in fieldhouses may suggest that primary hunting, butchering, and processing of animals did not occur in these places, but that they served as important secondary centers for processing animal bones into tools (and/or other artifacts). However, with the faunal data currently available from fieldhouses, equifinality remains an issue when determining if these bone tools were manufactured onsite or were brought to the site as completed implements. Additional faunal data are required to understand the nuances of these processes during the Coalition to Classic period.

Fieldhouses in Bandelier National Monument have evidence for pollen indicating cultivation and farming activities (i.e., maize), but no faunal remains (Ruscavage-Barz 2002). It is possible that if fieldhouses were used for hunting, and lithic evidence potentially supports this hypothesis (see above), then these structures only served as temporary camps or shelters for hunters, and the processing of game either occurred at kill sites or in larger Pueblo structures (Ruscavage-Barz 2002; see also Schmidt 2008d). Consistent lack of faunal remains at fieldhouses suggests the latter process is occurring.

An intriguing aspect of the faunal data from fieldhouses on the Pajarito Plateau is the lack of turkey remains, either as subsistence refuse or modified bone tools. However, turkey bones and tools made from turkey bones do appear at two fieldhouses in the Rio Grande Valley (LA 13050 and LA 13054). One turkey (*Meleagris gallopavo*) bone was also recovered at LA 21473 north of Los Alamos (Preucel 1988). Turkeys typically comprise a large component of faunal assemblages on the Pajarito Plateau during the Coalition and Classic period (Schmidt 2007). Ethnographic documentation also indicates that Ancestral Puebloans brought domesticated turkeys into agricultural fields to eat insects that might otherwise damage crops (Lang and Harris 1984). Therefore, the lack of turkeys at LANL fieldhouses is surprising. This discrepancy requires further research to identify why turkeys are absent from the majority of fieldhouses, why small-sized game (ideal for garden hunting) are rare, and why artiodactyls elements are more abundant but in the form of modified bone tools.

Comparison of Surface and Excavated Fieldhouse Data

Wilcox (1978) cautioned that variation in the number of rooms, site size, and artifact counts are difficult to interpret when solely using fieldhouse survey data. How accurate are the interpretations made based on surface information compared with the

interpretations made once the fieldhouses are excavated? The majority of fieldhouses are recorded based solely on surface manifestations, such as a count and listing of artifact types, a sketch map detailing the visible architectural features such as wall alignments, and visual documentation through photographs. The time period and site type are assigned based on diagnostic ceramics, projectile points, and architectural remains. Using data from 21 fieldhouses at LANL, interpretations based on pre-excavation surface surveys were compared with the interpretations made after excavation of the fieldhouses (Table 5.22; Appendix A). The surface- versus excavation-based comparisons include number of artifacts, presence of subsurface features, temporal designations, and number of rooms.

The fieldhouse surface assemblages typically contained well under 100 artifacts, while excavations produced assemblage sizes ranging from 9 to 740 artifacts (mean = 257; n = 21). The number of surface artifacts was not a clear indicator of whether subsurface artifacts would be sparse or abundant.

Floor features are typically not visible from the surface, with the possible exception of detection through ground penetrating radar (GPR) or another geophysical technique. Floor features were found in 12 of the 21 fieldhouse structures (57 percent). Thirty-three percent of the fieldhouses contained thermal features, which can be useful for obtaining chronometric dates. The precise number of rooms in the fieldhouse was also not always visible from the surface, but in all 21 cases, excavations revealed a structure with either one or two rooms. All 21 structures were correctly identified as fieldhouses prior to excavation.

At least 14 of the 21 (but more likely all) were assumed to date to the Coalition and/or Classic period prior to excavation, even if a more precise designation was not possible. In 71 percent of cases, the surface-based designations could be described as good estimates that were either the same as the post-excavation temporal designation, or were broader or more specific but not incorrect. Only 28 percent could be described (conservatively) as incorrect in that they were either originally designated as unknown or assigned to Classic rather than Coalition or vice versa.

Table 5.22 Comparison of Surface and Excavated Data of 21 fieldhouses at LANL

Site (LA)	Surface Artifacts	Excavated Artifact Assemblage	Time Period Estimated from Surface	Time Period	Surface Survey Notes	Number of Rooms	Features
[1]15116	0	124	No information	Late Classic	1-room structure	1	Auxiliary wall
[2]70025	4	204	Coalition	Late Classic	None	1	None
[3]85403	3	33	Post A.D. 1200	Classic	1 - 2-room structure	1	Posthole, pit, door jamb
[3]85404	10s	265	Coalition/Classic	Coalition/Classic	None	1	None
[3]85408	10s	151	Classic	Late Classic	Structure with at least 2 rooms	1	None
[3]85411	10s	433	Classic	Early-Late Classic	1-room structure	2	2 hearths
[3]85413	No count given	740	Classic	Early Classic	2-room structure	1	Posthole
[3]85414	No count given	70	Post A.D. 1100	Classic	None	1	None
[3]85417	10s	146	Post A.D. 1100	Classic	2-room structure; possible hearth	1	Firepit
[3]85861	No count given	537	Coalition	Coalition/Classic	Ephemeral structure	1	Hearth
[3]85867	10s	122	Classic	Classic	None	1	None
[2]86605	13	189	Classic	Late Classic	1-2 room structure	1	None
[2]86606	0	171	Unknown	Coalition/Classic	1-room structure; heavy pine duff	1	Ashpit and windbreak

Site (LA)	Surface Artifacts	Excavated Artifact Assemblage	Time Period Estimated from Surface	Time Period	Surface Survey Notes	Number of Rooms	Features
[2]86607	3	9	Unknown	Coalition	2–4 room structure	1	None
[2]87430	10s	583	Coalition/Classic	Late Classic	1–3 room structure	1	Extramural hearth
[2]127627	13	156	Classic	Classic	None	1	None
[2]127631	1	40	Coalition	Coalition/Classic	Eroded fieldhouse	1	None
[2]127634	19	243	Classic	Late Classic	2–3 room structure	1	hearth, posthole, possible stairway/case
[2]127635	3	448	Classic	Coalition/Classic	Heavy pine duff	1	Hearth and rock pile
[2]128805	10s	552	Coalition	Late Classic	1-room fieldhouse	1	None
[2]135292	No count given	178	Unknown	Late Classic	None	1	None

[1]Steen 1976 notes; [2]LANL site forms; [3]Hill 1992

Chapter Summary

Excavated fieldhouse data presented in this chapter from the Pajarito Plateau, Rio Grande region, and Jemez Plateau share broad similarities in size and design, but also suggest some differences in function and construction between regions and cultural groups. Ancestral Pueblos practiced common farming strategies with a similar suite of domesticated and cultivated plant resources. Fieldhouses functioned in agricultural systems, but small structures – possibly fieldhouses themselves – were likely also used for non-agricultural purposes, perhaps as hunting camps, waypoints, ceremonial structures, or longer-term residences for small family groups. The analyses of artifacts, architecture, features, and occupation histories presented in this chapter do not provide evidence that the activities conducted at fieldhouses differed systematically or substantially from activities carried out at pueblo roomblocks, a finding similar to Stone's (1993) conclusions about Hohokam small structures.

Thermal features such as hearths were the most abundant type of floor feature at fieldhouses. Twenty-six, 86, and 61 percent of the fieldhouses in the Pajarito Plateau, Rio Grande region, and the Jemez Plateau, respectively, had thermal features, and 82 thermal features were identified in the 139 excavated structures (59 percent). Pajarito Plateau hearths were more often built in the center of the structure, Rio Grande hearths were more often built against the northern wall, and Jemez Plateau hearths were more likely to be built against the southern wall, but these differences are not statistically significant and there is a great deal of overlap. Twenty-four percent of excavated fieldhouses had storage features. Storage features were significantly more common on the Jemez Plateau than the Pajarito Plateau and the Rio Grande region.

Ceramic data indicate that people inhabiting fieldhouses often used utilityware rather than whiteware or glazeware, and that the majority of vessels were jars rather than bowls. Analysis of lithic artifacts shows evidence for agricultural tools, especially manos and metates, but there is also evidence that formal chipped stone tools were manufactured at some fieldhouses. Macro- and microbotanical remains from fieldhouses show evidence for domesticated crops, including maize, beans, and squash.

Fieldhouses most often have one room, but also occur with two rooms, and, in rare instances, three rooms. A shift from one-room to more two-room structures occurs from the Coalition to the Classic period. Pajarito Plateau and Rio Grande fieldhouses have virtually identical average room sizes, but Jemez Plateau room sizes are significantly larger. In all regions, people constructed fieldhouses out of locally available raw materials. Although the majority of fieldhouses in northern New Mexico are rectangular one-room structures, there are some differences in fieldhouse room shape across the

three regions, with more square rooms in the Pajarito Plateau and more circular rooms in the Rio Grande.

Three commonalities exist among fieldhouses across the Pajarito Plateau:

1) Fieldhouses are typically rectangular one-room structures.

2) Fieldhouses have an average room size of approximately four square meters.

3) Fieldhouses are constructed using locally available materials.

Questions concerning fieldhouses still remain, and they require further investigation. Jemez Plateau fieldhouses have larger rooms and contain more storage features, but is this due to environmental factors (i.e., heat requirements, seed/food storage), some other factors relevant to farming, or does it reflect cultural differences in the local tradition? If fieldhouses are typically rectangular structures, are the Pajarito Plateau square structures and the Rio Grande circular structures truly fieldhouses related to agricultural activities?

The current analysis of fieldhouse features and artifacts highlights the diverse nature of fieldhouse function and use on the Pajarito Plateau and adjacent regions. Ceramic artifacts and botanical data are consistent with an agricultural role for fieldhouses, but diversity in features and lithic artifacts suggests that other roles are possible and likely. Technological evidence points towards activities including farming, hunting, and tool manufacture. Given that archaeological deposits in fieldhouses represent palimpsests of multiple seasons and years of use by one, or multiple, individuals and families, it is not surprising that artifact data do not describe a single fieldhouse story (Crown 1985; Ruscavage-Barz 2002; Wilcox 1978). Instead, technological remains suggest heterogeneity in fieldhouse function through space and time. These results also question whether the term fieldhouse is appropriate for all one- to three-room structures.

Chapter 6. Conclusions: Fieldhouse Eligibility and Future Research

This chapter includes a discussion of National Register of Historic Places eligibility determinations of one- to three-room structures. It presents evidence for the advantages and disadvantages of additional excavations of fieldhouses at LANL, recommendations for future mitigations, and strategies for future research.

Assessing Fieldhouse Eligibility

Archaeological sites at LANL are evaluated for National Register of Historic Places eligibility as described in the LANL Archaeological Site Significance and Eligibility Standards document (LANL 2017:Appendix B) and in National Register Bulletin 15, *How to Apply the National Register Criteria Evaluation* (NPS 1997:3). All properties that have an undetermined eligibility assessment are treated as Register-eligible properties. The five steps in evaluating the eligibility of historic properties, including fieldhouses, listed in National Register Bulletin 15 are:

1. Categorize the property;
2. Determine which historic context(s) the property represents and how property types relate to the archaeological resources;
3. Determine whether the property is significant under National Register of Historic Places criteria A–D;
4. Determine if the property represents a type usually excluded from the National Register of Historic Places; and,
5. Determine whether the property retains sufficient integrity to convey its significance.

Step 1 in the evaluation process is to determine whether the property can be categorized as an object, building, structure, site, or district for inclusion in the National Register of Historic Places (NPS 1997:4–6). Fieldhouses are categorized as sites—locations of prehistoric occupation or activity.

Step 2 is to determine whether a property is significant within its historic context(s) (NPS 1997:7–10). Fieldhouses on the Pajarito Plateau typically date to the Coalition or Classic periods and must be considered in the context of Ancestral Pueblo settlement patterns and spatial organization.

Step 3 is to evaluate eligibility by determining whether a historic property meets the registration requirements for listing on the National Register of Historic Places (NPS 1997:11–24). To be eligible, a property must meet at least one of the four criteria (A-D):

A) Historic properties that are associated with events that have made a significant contribution to the broad patterns of our history; or

B) Historic properties that are associated with the lives of persons significant in our past; or

C) Historic properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) Historic properties that have yielded, or may be likely to yield, information important in prehistory or history.

Step 4 is to determine whether the property represents a type usually excluded from the National Register of Historic Places. Types usually excluded include birthplaces, cemeteries, religious properties, properties moved from their original location, reconstructed buildings, and properties less than 50 years old (NPS 1997:25–43). Fieldhouses do not typically fit into any of these categories.

Step 5 is to determine if the property retains sufficient integrity to convey its significance. To retain integrity, a fieldhouse will possess several of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

Assessing the Criteria for Evaluation

Fieldhouses could potentially meet any of the four criteria (A–D), but are most likely to meet Criterion D. Fieldhouses at LANL could potentially be eligible under Criterion A if they were associated with events that have made a significant contribution to the broad patterns of history, including if they were key to defining a particular archaeological complex or time period.

Under Criterion B, a fieldhouse must be illustrative of a person's life. Although fieldhouses are associated with Ancestral Pueblo peoples during the Coalition, Classic, and Postclassic periods, fieldhouses at LANL have traditionally not been linked to specific persons or families of important historical significance.

Under Criterion C, a fieldhouse must embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high

artistic values. To date, no fieldhouses on the Pajarito Plateau are known to fulfill any of these requirements.

As of 2018, 154 fieldhouses at LANL have been determined eligible under Criterion D (Table 6.1). According to National Register Bulletin 15, important information is defined as having a "significant bearing on a research design that addresses (1) current data gaps or alternative theories that challenge existing ones, or (2) priority areas identified under a State or Federal agency management plan" (NPS 1997:21; see also Barker 2010). Any fieldhouse found to be eligible under A, B, or C would likely also be eligible under Criterion D due to its potential to yield information important in prehistory.

Table 6.1 Eligibility Status for One- to Three-Room Sites at LANL

Eligibility Determination	Number of Sites
Eligible Under D (concurred by the State Historic Preservation Officer)	154
Not Eligible (concurred by the State Historic Preservation Officer)	57
Potentially Eligible (concurred by the State Historic Preservation Officer)	37
Requires Eligibility Determination and Concurrence	243

The following is a basic framework for fieldhouse eligibility determinations at LANL under Criterion D. For fieldhouses to have the potential to yield information important in prehistory or to contain additional data through testing or research, they should meet one or more of the following conditions based on the LANL Archaeological Site Significance and Eligibility Standards (LANL 2017:Appendix B; Elliott 1990):

1. Contain undisturbed deposits sufficient to demonstrate meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.
2. Contain structures, features, or artifacts that permit inferences regarding human activities and site function on the Pajarito Plateau.
3. Contain structures, features, or artifacts that permit inferences regarding settlement patterns on the Pajarito Plateau.
4. Contain macrobotanical, microbotanical, ground stone, or faunal remains indicative of subsistence practices.
5. Contain dateable ceramics, wood, charcoal, baked clay, or obsidian that permit chronological placement.
6. Contain intact architectural features that permit analysis of floor space, floor features, and other spatial organizational characteristics.

In order to be eligible, a fieldhouse must not only meet at least one criterion, but also must contain sufficient integrity. Integrity can be determined from intact architecture, features, and undisturbed subsurface cultural deposits by assessing topographic location, the amount of deposition and erosion, depth of soil deposits, evidence of bioturbation, and evidence of impacts from previous archaeological excavations, historic or modern-day land development, or vandalism.

The New Mexico State Historic Preservation Officer has concurred on eligibility determinations for 248 one- to three-room sites at LANL (Table 6.1). Fifty-seven of those were determined not eligible because they were either tested or excavated (n = 46), or were not eligible due to lack of integrity (n = 11). Opportunities now exist to address eligibility determinations for the 243 fieldhouses at LANL that remain unevaluated.

Future Research and Alternatives to Excavation

Greater recognition of Native Americans rights and concerns in archaeological practice has led to a focus on a preservation approach in American archaeology (Colwell-Chanthaphonh and Ferguson 2008; Kintigh et al. 2014). This approach emphasizes the study of existing site records and artifacts from previously excavated sites. Large excavations like those of the Land Conveyance and Transfer project (Vierra and Schmidt 2008) will be less common in the future, but existing artifact collections and site records provide many opportunities for new research and insights into Ancestral Pueblo lifeways. Would additional fieldhouse excavations at LANL provide new insights into the role of these structures in prehistory?

Given the consistent and well-documented patterns of fieldhouses across LANL property, future excavations of these places are likely to yield diminishing returns. More fieldhouses have been excavated on the Pajarito Plateau than in many other regions of the Southwest. Since the 1950s, archaeologists have excavated 49 fieldhouses on Laboratory property (Figure 5.4) (Hoagland and Manz 1997; Peterson and Nightengale 1993; Steen 1977; Vierra and Schmidt 2008; Worman 1967; Worman and Steen 1978), nine fieldhouses in Los Alamos County (Poor 1981; Preucel 1988), and 14 fieldhouses at Bandelier National Monument. Appendix A describes these excavated fieldhouses, which are part of the 139 excavated fieldhouses analyzed and summarized in Chapter 5.

Nonetheless, questions remain surrounding fieldhouse origins, functions, changes through time, and most importantly, whether fieldhouses primarily served agricultural purposes. Instead of excavating additional fieldhouses to answer these questions, there is substantial information potential in existing, unanalyzed collections from previously excavated fieldhouses and other Ancestral Pueblo places. Targeted future research on

specific artifact types and GIS analyses will help answer these questions. Some ideas for future research are outlined below.

Ceramics

A comparison of pre- and post-excavation data from 21 fieldhouses (Table 5.22) demonstrates that excavation produces more ceramic sherds and sometimes a broader diversity of ceramic wares than surface observations alone. Analysis of the ceramic assemblages from previously excavated LANL fieldhouses (Wilson 2008) indicates a strong and consistent pattern of high percentages of utilitywares and high bowl to jar ratios at these sites (Chapter 5). A further comparison of fieldhouse ceramic assemblages to three previously excavated Coalition period roomblocks (Chapter 5) suggests that people who occupied fieldhouses and pueblo roomblocks used ceramics in similar ways.

Future research could expand upon these findings by analyzing similar data from a broader range of previously excavated sites and expanding the research methods. For example, a potentially useful method for determining whether ceramics were used for cooking or storage is to examine carbon deposits on the interior of jars, and sooting on the exterior of these ceramic vessels (Beck 2010; Skibo and Blinman 1999).

Another line of inquiry associated with ceramic assemblages involves the identification of organic residues on pottery (Crown et al. 2015; Skibo 1992). Ceramic vessels accumulate food particles on interior vessel walls during cooking. Gas chromatography-mass spectrometry (GC-MS) provides a technique to identify those residues. In addition, morphometric analyses on vessel shape and size allow for an understanding of how much food and water storage potential existed. This is also a metric proxy for identifying how many people inhabited a fieldhouse (e.g., larger-rimmed bowls for families and smaller-rimmed bowls for individuals). These analyses could answer subsistence questions including what people cooked, ate, and stored at fieldhouses.

Lithics

Analyses of lithics from previously excavated fieldhouses on the Pajarito Plateau identify several patterns (Vierra and Dilley 2008). Manos are common, indicating food processing at fieldhouses, which is consistent with ceramic indicators of cooking. Agricultural tools such as ground stone axes and hoes are less common. Since the occupants may have carried these farming tools with them upon departure, their absence is not necessarily indicative of the activities that took place at the fieldhouses.

Chipped stone debitage indicates specific tool-making activities, and the absence of small debitage is arguably a reliable indicator of the lack of stone tool processing.

Therefore, analysis of chipped stone lithic assemblages from previously excavated fieldhouses has the potential to shed light on particular activities that took place at that location, such as the production of bifacial tools, as documented in several excavated fieldhouses at LANL (Chapter 5; Vierra and Dilley 2008). Research focusing on collections of previously excavated fieldhouse lithic assemblages could address current data gaps and answer broader archaeological research questions relating to Ancestral Pueblo occupation of the Pajarito Plateau.

Pollen and Macrobotanicals

Pollen and macrobotanical samples are typically obtained from excavated floor features. Pollen and macrobotanical analyses have been conducted at 24 excavated fieldhouses at LANL (McBride 2008; Smith 2008), Bandelier National Monument (Ruscavage-Barz 2002), and in the surrounding region (Preucel 1988). These analyses show the presence of corn, beans, squash, and useful wild plants, consistent with the general interpretation that fieldhouses may have been associated with agricultural activities. While new fieldhouse excavations could uncover previously undocumented domesticates or wild plants, it is also likely a situation of diminishing returns given the amount of previous work already completed on the Pajarito Plateau.

Faunal Remains

Faunal remains provide insights into hunting, diet, and food processing, and often derive only from excavation contexts. However, faunal remains are particularly rare at fieldhouses on the Pajarito Plateau (Chapter 5). Only 32 faunal specimens were identified from 24 fieldhouses excavated at LANL. Additional excavation of fieldhouses is therefore unlikely to result in new insights based on faunal data. In contrast, analyses of previously excavated faunal remains housed in museums have greater potential to provide new insights into Ancestral Pueblo subsistence and population movements. For example, recently published archaeological turkey genetic data may provide evidence of prehispanic population movement (Kemp et al. 2017), and bone stable isotope studies suggest complexity in the nature of turkey domestication and management (Jones et al. 2016; Lipe et al. 2016).

Proximity of Fieldhouses to Agricultural Fields

The search for prehispanic agricultural fields continues to create innovative techniques for research in the Southwest (Healy et al. 2017; Pool 2013; Sturm 2016). Ethnographic evidence suggests that fieldhouses were built on or near agricultural fields. Therefore, if a small structure is far from agricultural fields, then that is an indicator the structure's function was not associated with agriculture (Crown 1985). The challenge for modern researchers is to identify the locations of ancient agricultural fields after hundreds of

years of Ancestral Pueblo, Spanish, Anglo-American, and modern-day land-use, construction, soil degradation, and pollution. In 1992, Kohler observed "…no actual field locations, other than those presumably adjacent to fieldhouses, can be recognized in the local archaeological record" (p. 626).

However, GIS technology is a powerful tool for predicting the locations of prehistoric agricultural fields. For example, Toney (2012, following methods from Schollmeyer (2009; 2011), and Buck and Sabol (2014) use GIS technology to examine the relationships between soil types, landforms, and degree of slope to fieldhouse locations (Chapter 4). These studies concluded that fieldhouses were not always located near agriculturally productive lands. However, Ancestral Pueblo people used many techniques to enhance the productivity of the land and to decrease the chance of poor yields, including construction of grid gardens, check dams, and the use of gravel mulch (Ford and Swentzell 2015). The challenge for future studies is to create models of agriculturally viable soil distribution that are accurate at localized scales, to find ways to verify their accuracy (e.g., bulk soil stable isotope analysis), and to incorporate relevant archaeological data.

Fieldhouses and Larger Habitation Sites

Many broader research questions related to the origin and evolution of fieldhouses require additional analyses. For example, how and why did small-scale semi-sedentary farming societies during the Coalition period grow into spatially and demographically larger and more socially complex aggregated communities in the Classic period? What cultural and environmental factors led to the development and growth of fieldhouse structures in northern New Mexico? Why are there so few fieldhouses in the area before the Coalition period, and did the influx of migrants from other areas (e.g., Mesa Verde) provide a reason to change settlement-subsistence practices? The answers to these questions hinge on understanding the relationships between fieldhouses and contemporaneous larger pueblo roomblocks and complex pueblos on the landscape.

Preucel (1987) pioneered this work on the Pajarito Plateau by examining the distance of fieldhouses to pueblo villages using a nearest neighbor analysis. Results from his work suggested that the distance from fieldhouses to pueblo roomblocks increased over time, possibly reflecting changes in community structure and land ownership (Chapter 4). More recent spatial analyses of fieldhouses and water sources suggests that these small structures continued to play a role in dual-settlement strategies within portions of the Jemez Mountains during the Coalition-Classic period (Aiuvalasit 2017). Future research could expand on this work with updated site databases that contain spatial data and other associated architectural and artifact variables.

Future Mitigation

If data recovery from LANL fieldhouses was prioritized in future cases when adverse effects are expected, then targeted excavation testing might be a viable alternative to the more standard complete excavation strategy. Research on fieldhouses indicates that some of the most useful information, including chronometric dates, pollen, and macrobotanical remains, come from samples taken in hearths or storage features. On the Pajarito Plateau, hearths in fieldhouses are most often located in the center of the structure (n = 5 out of 20 cases), but also have been documented along each structural wall (Table 5.17). A successful sampling strategy could test, or core, these features to obtain samples for chronological dating and other analyses (e.g., pollen). If the entire site would likely be disturbed or destroyed by project activities, shallow excavation to identify wall orientations and outlines would help elucidate the size, number of rooms, and extent of the structure. Since many fieldhouses have few surface artifacts, then conducting limited test excavations to determine if significant intact subsurface deposits exist could also be an effective strategy to help with data recovery and eligibility determinations.

At LANL, in accordance with the Cultural Resources Management Plan (LANL 2017), projects and activities preferably avoid impacts to archaeological sites. However, if excavations are necessary, mitigation strategies could include analyses of previously excavated assemblages of fieldhouses and artifacts, or limited test excavations of fieldhouse structures likely to return information on temporal-economic variables (e.g., samples for radiocarbon dating and pollen analysis). Rigorous surface documentation, including measurements and geo-spatial recording of artifacts and architectural features, may also exhaust research potential if there are no subsurface remains, or if those remains are minimal or highly disturbed.

Conclusion

This fieldhouse historic context analyzed data from previously excavated fieldhouses, and compiled a GIS database of unexcavated fieldhouses, to expand our knowledge regarding the functions, variety, and significance of fieldhouses. This study highlights the similarities among the fieldhouses found across the northern Rio Grande region, as well as regional patterns and variability in room size, room shape, and floor features.

Archaeologists have recognized fieldhouses for more than a century, and thousands have been recorded throughout the Southwest. Nonetheless, many unanswered research questions exist regarding the cultural and environmental factors that led to the development and use of fieldhouses. An efficient and non-destructive way to learn more about these structures is through the study of previously excavated assemblages from fieldhouses. Future studies using GIS will provide additional insights into the

spatial and temporal relationships between fieldhouses and other cultural resources on the landscape.

Archaeological and ethnographic evidence suggest that Ancestral Pueblo people engaged in varied activities at fieldhouses, including cooking food, making tools, building fires, and storing and processing crops. Future research will help shed light on the integral roles that these structures played in Ancestral Pueblo community life.

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Appendix A: Site Summaries for Excavated Fieldhouses

LA 1067[1]

Laboratory of Anthropology site number (LA) 1067 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on a west-facing, steeply-sided ridge in a piñon-juniper woodland at 5,380 feet, this two-room structure with an attached ramada (porch-like structure) was occupied during the A.D. 1300s. The structure was freestanding with three adjoining components and was constructed from roughly shaped, but mostly oblong, basalt and tuff blocks (Figure A.1). These blocks were used to form the wall foundations and were placed in a shallow trench, typically two rows wide. The floor in both rooms was hard-packed mud with small fragments of plaster found near the base of several walls. Room 1 was a featureless circular room that measured 1.8 meters by 1.7 meters (3.1 square meters of interior space) and was abutted to the north wall of Room 2. Room 2 measured 2.2 meters by 1.4 meters (3.1 square meters of interior space), was neatly coursed, rectangular in shape, and contained a sub-floor, slab-lined hearth. The ramada was open-ended to the east and attached via an auxiliary wall to the west wall of Room 1 (Figure A.2).

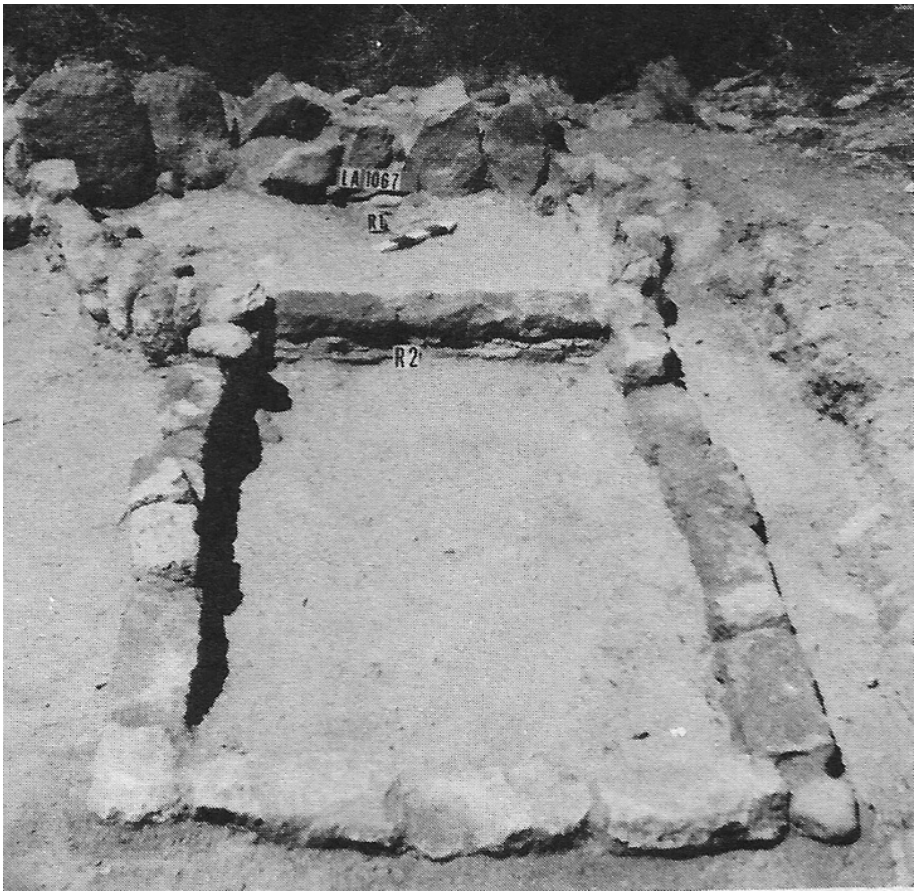

Figure A.1 Overview of LA 1067 after excavation ([1]Zier 1982:Figure 71)

A total of 252 artifacts were recovered from the structure including 221 ceramics, the majority of which were utilitywares and Santa Fe Black-on-white. Kwahe'e Black-on-white, Socorro Black-on-white, and Agua Fria Glaze-on-red sherds were also identified. The 31 lithic artifacts included two grinding slabs, one axe, one abrader, and chipped stone debitage. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Classic period date was assigned.

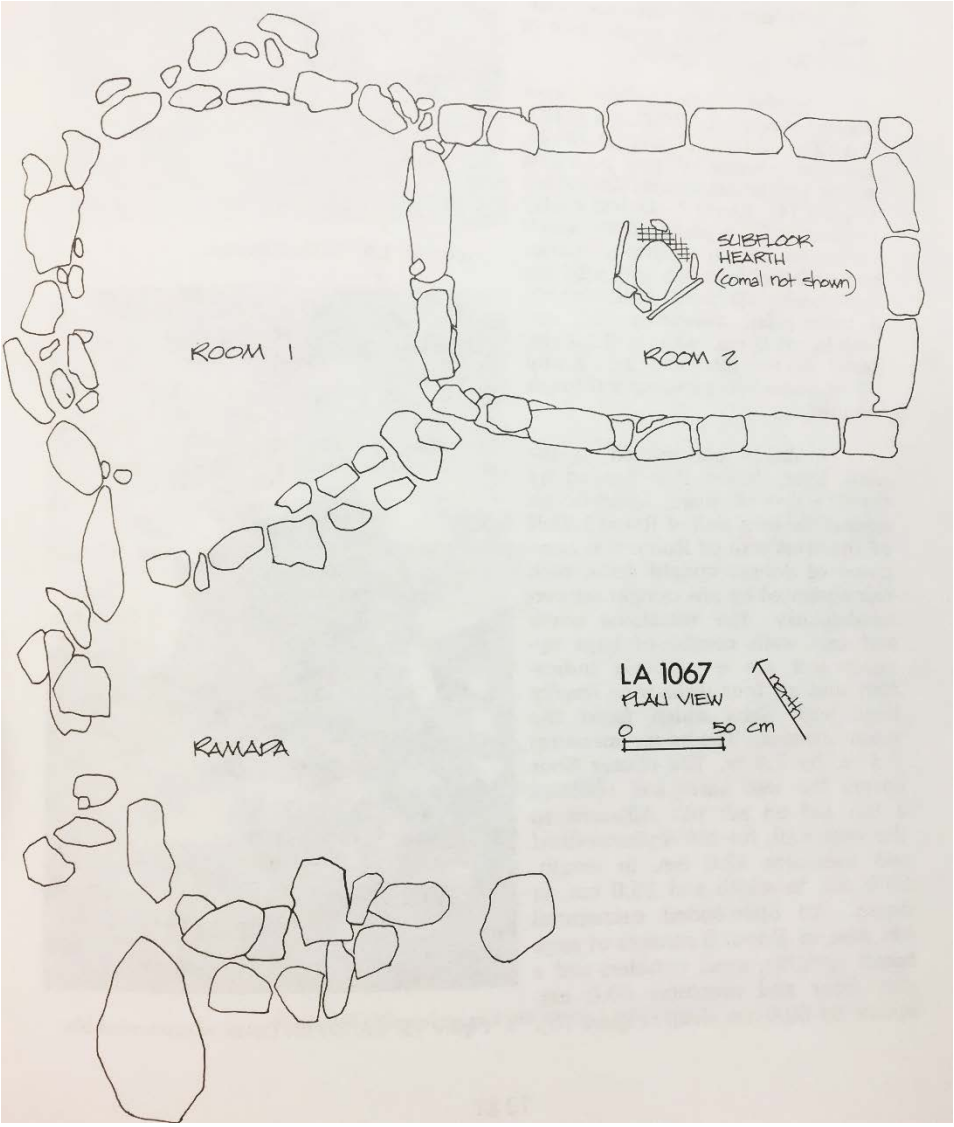

Figure A.2 LA 1067 plan view ([1]Zier 1982:Figure 72)

LA 3839[2]

LA 3839 was partially excavated in 1997 by Bandelier National Monument archaeologists as part of a post-Dome Fire study undertaken to contribute to the

scientific understanding of the effects of fires on cultural resources. Located on the first terrace of the perennially flowing Capulin Creek in a transitional piñon-juniper and Ponderosa pine woodland at 6,020 feet, this two-room structure (Feature 2) was occupied during the Middle Classic period (A.D. 1325–1525). A second two-room structure was located 30 meters northwest of Feature 2, but was not excavated because no damage was sustained during the Dome Fire. The Feature 2 structure was freestanding with two adjoining rooms and was constructed from shaped and unshaped tuff blocks. A shallow pit trench was excavated, and upright tuff slabs were placed against the dirt sidewalls; a course of flat tuff stones was then set upon the upright slabs. Room 1 was not excavated because of significant disturbance from previous episodes of pot-hunting. Room 2 measured 1.8 meters by 1.6 meters (2.8 square meters of interior space), had a plastered floor, was subrectangular in shape, and contained a rimless slab-lined hearth. Mano and metate fragments and a Glaze C rim were recovered from the floor.

A total of 69 artifacts were recovered from the structure including 21 ceramics, the majority of which were utilitywares, followed by equal amounts of glaze red body sherds and glaze polychrome sherds. The 48 lithic artifacts included six ground stone tools including three two-handed mano fragments, two mano fragments, and an indeterminate metate fragment. No faunal remains were recovered. Maize pollen was identified both inside and outside of the structure. Charcoal from the floor of Room 2 was radiocarbon dated to A.D. 1435–1650 (two sigma), but the predominance of Glaze B and C ceramics suggests that the site was likely occupied between A.D. 1325–1525.

LA 4633[3]

LA 4633 was excavated in 1957 as part of a project designed to salvage four sites in the path of expansion activities at Los Alamos Scientific Laboratory. Located on Mesita del Buey, a long, narrow mesatop in a transitional piñon-juniper woodland at 6,665 feet, the site was a three-room structure occupied during the Coalition period. The structure was featureless, had a floor surface compacted from use, and very symmetrically constructed rooms. Room 1 measured 2.1 meters by 2.1 meters (4.4 square meters of interior space), and Rooms 2 and 3 both measured 2.1 meters by 2.0 meters (4.2 square meters of interior space). Only one course of masonry remained, and the shaped tuff blocks were laid "sidewise" as opposed to end-to-end (Worman 1967:3).

Only four artifacts were recovered (and/or mentioned), including three ceramic artifacts (one utilityware, one Santa Fe Black-on-white, and one Wiyo Black-on-white sherd) and one partial grinding slab. No chipped stone, faunal remains, or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but

based on the ceramic assemblage and architectural characteristics, a Coalition period date was assigned.

LA 4637[4]

Frederick C. V. Worman served as the Los Alamos Scientific Laboratory archaeologist from 1950 to 1971. Upon his death in 1971, Charlie Steen subsumed Worman's duties and generated publications and summaries of Worman's unfinished work with the available data. LA 4637 was excavated by Worman in 1961. Located on a mesatop in a piñon-juniper woodland at 7,160 feet, the site was a one-room structure probably occupied during the Late Coalition and Early Classic periods (A.D. 1300–1500). The temporal designation was based largely on the architectural style since artifacts were virtually non-existent or missing from the available documentation. The square structure, termed a box-type shrine, was featureless and had a floor surface compacted from use, and was constructed in a style that was "as fine as any on the Pajarito Plateau" (Steen 1977:20). Room measurements were not provided for this site, but elsewhere it was noted that these types of structures vary in size from 1 to 2 meters on a side. This site had a single, basal course of well-shaped tuff blocks with a few small, unshaped tuff blocks and cobbles used as fillers in the adobe walls (Figure A.3). No ceramics, lithics, faunal remains, or economically significant plant resources or cultigens were reported. No chronometric dates were obtained. It is uncertain whether this type of structure is related to agricultural activities or associated with ceremonial activities.

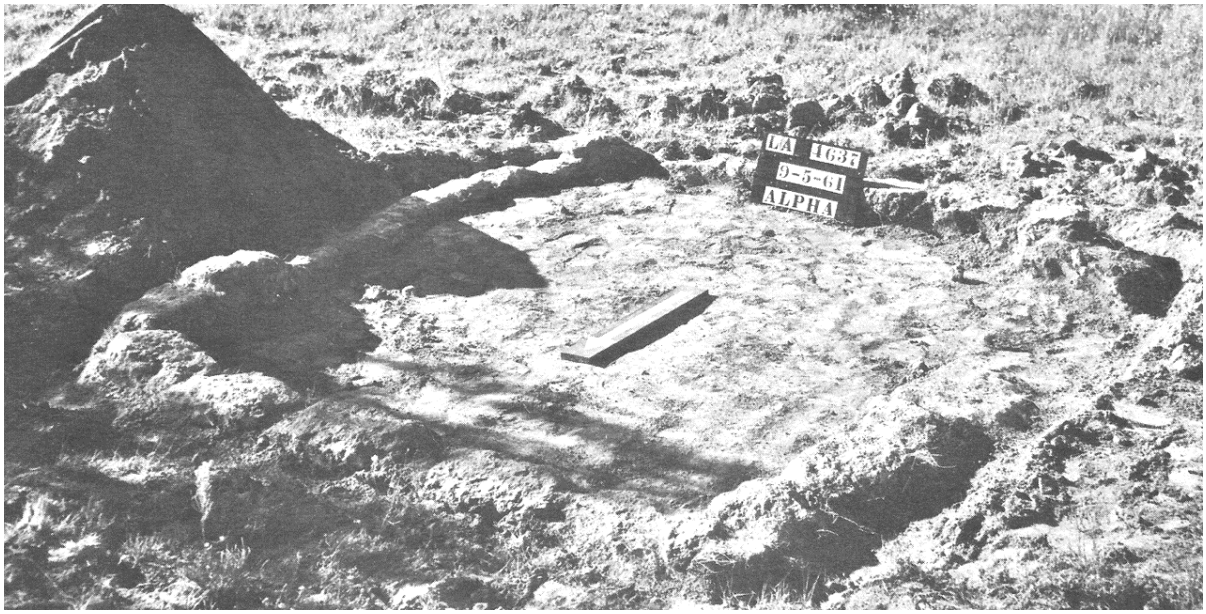

Figure A.3 Post-excavation photo of LA 4637 ([4]Steen 1977:Figure A-11)

LA 4638[4]

LA 4638 was excavated by Worman in 1961. Located on a mesatop in a piñon-juniper woodland at 7,170 feet, the site was a one-room structure probably occupied during the Late Coalition/Early Classic periods (A.D. 1300–1500). The temporal assignation was based largely on the architectural style since artifacts were virtually non-existent or not reported. The square structure, termed a box-type shrine, was featureless, had a floor surface compacted from use, and was constructed in a style that was "as fine as any on the Pajarito Plateau" (Steen 1977:20). Room measurements were not provided for this site, but elsewhere it was noted that these types of structures vary in size from 1 to 2 meters on a side. This site had a single, basal course of well-shaped tuff blocks with a few small, unshaped tuff blocks and cobbles used as fillers in the adobe walls. No ceramics, lithics, faunal remains, or economically significant plant resources or cultigens were identified. No chronometric dates were obtained. It is uncertain whether these types of structures are related to agricultural activities or if they are associated with ceremonial activities.

LA 4658[4]

LA 4658 was excavated by Worman in 1964 in advance of Pajarito Road construction. Located at the upper end of the Mesita del Buey mesatop in a piñon-juniper woodland at 7,130 feet, the site was a one-room structure probably occupied during the Late Coalition period (A.D. 1250–1325). The square structure, termed a box-type shrine, was featureless, had a floor surface compacted from use, and was constructed from well-laid shaped tuff blocks. Room measurements were not provided for this site, but elsewhere it was noted that these types of structures vary in size from 1 meters to 2 meters on a side (Steen 1977:20). Thirty-five surface artifacts were collected, including 20 ceramics. Types included utilitywares, Santa Fe Black-on-white, Wiyo Black-on-white, and Biscuit B. Chipped stone artifacts were few and included debitage and angular debris. No ground stone, faunal remains, or economically significant plant resources or cultigens were identified. No chronometric dates were obtained. It is uncertain whether these types of structures are related to agricultural activities or if they are associated with ceremonial activities.

LA 4660[4]

LA 4660 was excavated by Worman in 1964 in advance of Pajarito Road construction. Located on a mesatop in a piñon-juniper woodland at 6,900 feet, the site was a two-room structure. The rooms were attached in one corner, with the southwest corner of Room 1 attached to the northeast corner of Room 2 (Figure A.4). Based primarily on inspection of photos, the rectangular rooms were featureless, had floors compacted from use without formal plastering, and were constructed from roughly shaped and unshaped tuff blocks. The original plan view map had no scale, so it was not possible to

generate room measurements. No ceramics, lithics, faunal remains, or economically significant plant resources or cultigens were identified. No chronometric dates were obtained. Fine-grained temporal placement of this site is difficult given the lack of information and recovered materials, but based on the style of the architectural remains, the site was occupied sometime during the Coalition and Classic periods.

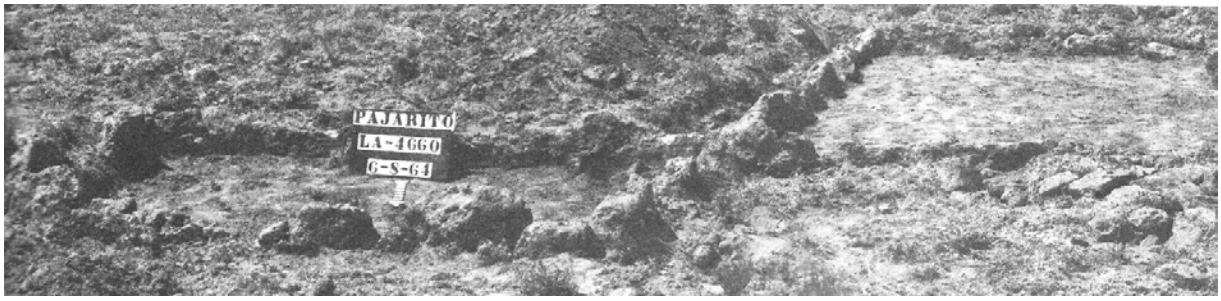

Figure A.4 Post-excavation photo of LA 4660 ([4]Steen 1977:Figure A-20)

LA 4680[4]

LA 4680 was excavated, but it is not known by whom or when. Located on a mesatop in a transitional piñon-juniper and Ponderosa pine woodland at 7,120 feet, the site was a one-room structure probably occupied during the Classic period. The temporal assignation was based largely on the architectural style. The square structure, referenced as a box-type shrine, was featureless, had a floor surface compacted from use, and was constructed from loaf-shaped tuff blocks. The room measured 1.4 meters by 1.4 meters (2.0 square meters of interior space). No ceramics, lithics, faunal remains, or economically significant plant resources or cultigens were identified. No chronometric dates were obtained. It is uncertain whether this structure is related to agricultural activities or if it is associated with ceremonial.

LA 4686[4]

LA 4686 was excavated, but it is not known by whom or when, and it was possibly pot-hunted. Located on a south-facing slope in a transitional piñon-juniper and Ponderosa pine woodland at 7,180 feet, the site was a one-room structure probably occupied during the Classic period. The temporal assignation was based largely on the architectural style that used uniform loaf-shaped tuff blocks. The square structure, referenced as a box-type shrine, was featureless, had a floor surface compacted from use, and measured 2 meters by 2 meters (4.0 square meters of interior space). No ceramics, lithics, faunal remains, or economically significant plant resources or cultigens were identified and/or reported. No chronometric dates were obtained. It is uncertain whether this structure is related to agricultural activities or if it is associated with ceremonial activities as Worman and Steen tentatively suggest (Steen 1977:20).

LA 4717[5]

LA 4717 was excavated in 1965 as part of salvage activities associated with the construction of Los Alamos Scientific Laboratory's Meson Physics facility. Located on a mesatop in a piñon/juniper pine woodland at 7,162 feet, the site was a one-room structure probably occupied during the Coalition period. The temporal assignation was based on the presence of Santa Fe Black-on-white and Wiyo Black-on-white ceramics. The square structure, referenced as a possible box-type shrine, was featureless, had a floor surface compacted from use, and measured 1.5 meters by 1.2 meters (1.8 square meters of interior space). Thirty-six ceramics were recovered, but no lithics, faunal remains, or economically significant plant resources or cultigens were identified and/or reported. No chronometric dates were obtained. It is uncertain whether this structure is related to agricultural activities or if it is associated with ceremonial activities as Worman and Steen tentatively suggest in their discussions of box-type shrines (Steen 1977:20).

LA 4727[5]

LA 4727 was excavated by Worman, but the only information is that the site is apparently a one-room structure (Worman and Steen 1978:2). No map or excavations notes were found. No other information exists.

LA 4728[4]

LA 4728 was excavated in 1964 during Pajarito Road construction. Located on a mesatop in a transitional piñon-juniper and Ponderosa pine woodland at 6,900 feet, the site was a one-room structure. A temporal assignation was not possible based on the lack of artifacts. The square structure, referenced as a box-type shrine, was featureless. No measurements were available. No ceramics, lithics, faunal remains, or economically significant plant resources or cultigens were identified and/or reported. No chronometric dates were obtained. It is uncertain whether this structure is related to agricultural activities or if it is associated with ceremonial activities.

LA 5011[6]

LA 5011 was excavated in 1976 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located on a talus slope on the west side of the Rio Grande in a juniper grassland at 5,330 feet, the site was a one-room structure that was occupied during the Late Coalition and Early Classic period (A.D. 1175–1490). The structure was freestanding and was constructed from unshaped basalt clasts from the surrounding slope (Figure A.5). Room 1 was subrectangular in shape, measured 1.7 meters by 1.7 meters (3.4 square meters of

interior space), had a floor compacted from use, and contained a slab-lined hearth along the north wall.

Figure A.5 LA 5011 after excavation ([6]Biella et al. 1979:Plate 3.1)

A total of 355 artifacts were recovered from the structure including 130 ceramics, the majority of which were smeared-indented utilitywares and Cieneguilla Glaze-on-polychrome. The 225 lithic artifacts did not include any ground stone tools. Sixteen pieces of animal bone were recovered, all of which were intrusive rodents or undetermined mammal remains. No economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Late Coalition/Early Classic period date was assigned.

LA 5013[7]

LA 5013 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located on a steep talus slope on the west side of the Rio Grande in a juniper grassland at 5,290 feet, the site was a one-room structure that was occupied during the Postclassic period (A.D. 1650). The structure was semi-subterranean and was dug into the talus slope. Three walls were constructed from unshaped basalt clasts mortared and chinked with basalt fragments,

with the fourth wall formed by a large boulder on the existing hillslope. The room was rectangular in shape, measured 3.1 meters by 1.7 meters (5.3 square meters of interior space), and had a floor compacted from use. An adobe-lined, collared hearth was identified in the southwest corner, and a door opening was identified in the east wall, which had sub-floor stones creating a small ramp leading up to it.

A total of 23 artifacts were recovered from the structure including one Tewa Polychrome sherd and 22 chipped stone artifacts. No ground stone, faunal remains, or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the single Tewa Polychrome sherd and architectural features (a corner hearth and the use of a large boulder as part of the structure), a Postclassic period date was assigned.

LA 5688[8]

LA 5688, also called the Cañon de San Diego Ruin, was excavated in 1960 by James Sciscenti as part of a New Mexico State Highway Commission project for the improvement of two miles of New Mexico State Road 4 north of Jemez Springs. Located in the highway right-of-way, the site was a one-room structure dating between A.D. 1630 and 1700. The structure was freestanding, rectangular in shape, had a floor compacted from use, and was constructed from roughly shaped limestone blocks. Evidence of roof material suggests that poles had been laid across the short axis of the room with the ends resting on the walls. No entryway was found, suggesting entry was probably through the roof. This tenet is further supported by the presence of two postholes in the floor near the north end of the room. No other features were identified.

A total of 328 ceramic artifacts were recovered from the structure, the majority of which were Jemez utilitywares and Jemez Black-on-white. One mano was found in the wall and was being used as a chinking stone. No lithic remains, faunal remains, or economically significant plant resources or cultigens were identified and/or reported. No chronometric dates were obtained, but based on the ceramic assemblage, the site dates to the Classic or Postclassic periods.

LA 9138[9]

LA 9138 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located at the base of a talus slope on the west side of the Rio Grande in a juniper grassland at 5,300 feet, the site consisted of two non-contiguous one-room structures (Rooms 6 and 7). Room 6 was a nearly circular, slightly semi-subterranean structure encompassing 3.1 square meters that contained an adobe-lined hearth in the northeast quadrant. The room differs considerably in construction technique from other contemporaneous structures in the

surrounding area in that it was circular and exhibited no masonry footings for the wall superstructure. No direct evidence of food resources was procured, although one mano fragment was found. Ceramics and lithics were recovered and a temporal assignation of Late Coalition period (A.D. 1275–1350) was derived.

Room 7 was a semi-subterranean room that contained 2.1 square meters of floor space. This room was constructed from local basalt slabs and clasts and was occupied during the Classic period. Two construction episodes were identified. The first contained a collared hearth and an above-floor wall entrance to the east. The second occupation was represented by a new floor surface 24 centimeters above the original. It also resulted in the modification of the east entrance into a floor-level rather than above-floor entry without a hearth. No direct evidence of food resources was found in this room, except for a single fish bone. A single burial was identified outside the structure. The adult female was in her early twenties. Identified ceramics point to occupation and use of A.D. 1275–1525.

LA 12120[1]

LA 12120 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. The site is located on the southernmost tip of a steeply sided talus slope between Alamo and Lummis canyons in a piñon-juniper woodland at 5,380 feet. This one-room structure measures 1.2 meters by 1.6 meters, and a rectangular storage bin formed by basalt slabs was set against the middle of the south wall (Figure A.6). The storage bin feature measures 75 centimeters long by 53 centimeters wide by 27 centimeters deep. Walls were constructed of very large, blocky, unshaped tuff and a few basalt rocks. The walls stood 35 to 70 centimeters high and generally are 30 centimeters thick. Only the west wall had more than one course, but due to the amount of rock fall (some shaped tuff), this structure had high walls (Figure 5.7). The floor was hard packed, but no plaster or mortar is evident.

A total of seven artifacts were recovered from the one-room structure including four ceramics, the majority of which were Glaze I Red (n = 2), Kwahe'e Black-on-white (n = 1), and utilityware (n = 1).The three lithic artifacts included one large obsidian core, one piece of obsidian debitage, and a large basalt core used as a hammerstone. The lack of chipped stone artifacts indicates people were not processing or manufacturing stone tools at the site. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Classic period date was assigned.

Figure A.6 LA 12120 after excavation ([1]Zier 1982:Figure 66)

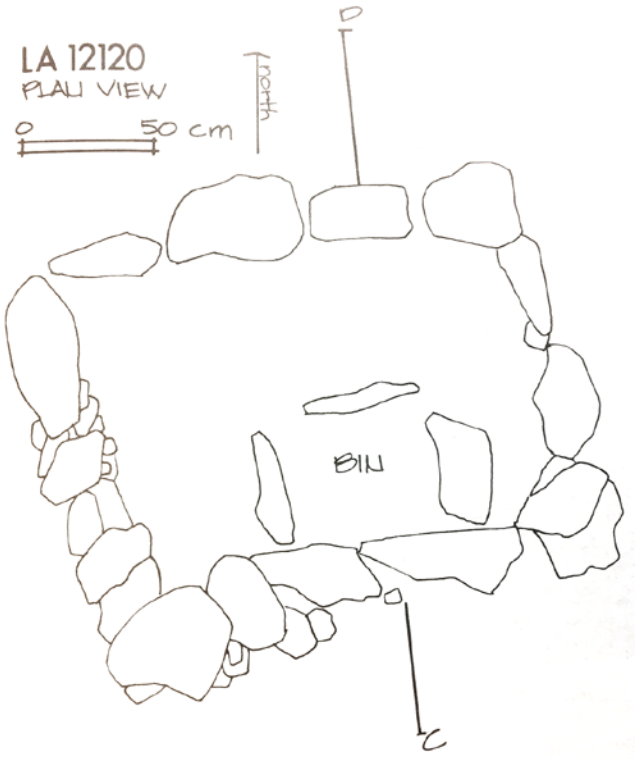

Figure A.7 LA 12120 plan view ([1]Zier 1982:Figure 65)

LA 12122[1]

LA 12122 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on a talus slope overlooking Lummis Canyon in a piñon-juniper grassland at 5,430 feet, the site was a three-room structure occupied during the Early Classic period (A.D. 1315–1425). The structure was freestanding, and all three rooms displayed coursed and shaped tuff walls and plastered floors. The rooms shared a north wall and were constructed simultaneously (Figure A.8). Room 1 measured 2.2 meters by 1.8 meters (4 square meters of interior space), contained double (north and east) and single (south and west) coursed walls, two plastered floors, and two hearths, both on the lower floor (Figure A.9). One hearth was rectangular, and the other was ovoid, but both were plaster-lined and rimless. Room 2 measured 2.4 meters by 1.3 meters (3.1 square meters of interior space), was neatly and singly coursed, rectangular in shape, and contained two plastered floors. Two possible potrests were identified in the southeast corner. Room 3 contained only one floor and was missing the eastern portion of the room, which had eroded downslope thereby precluding accurate measurements. A partially slab-lined hearth was found in the southwest corner. An external hearth lined with irregularly shaped stones was identified outside the northeast corner of Room 2.

Figure A.8 LA 12122 after excavation ([1]Zier 1982:Figure 86)

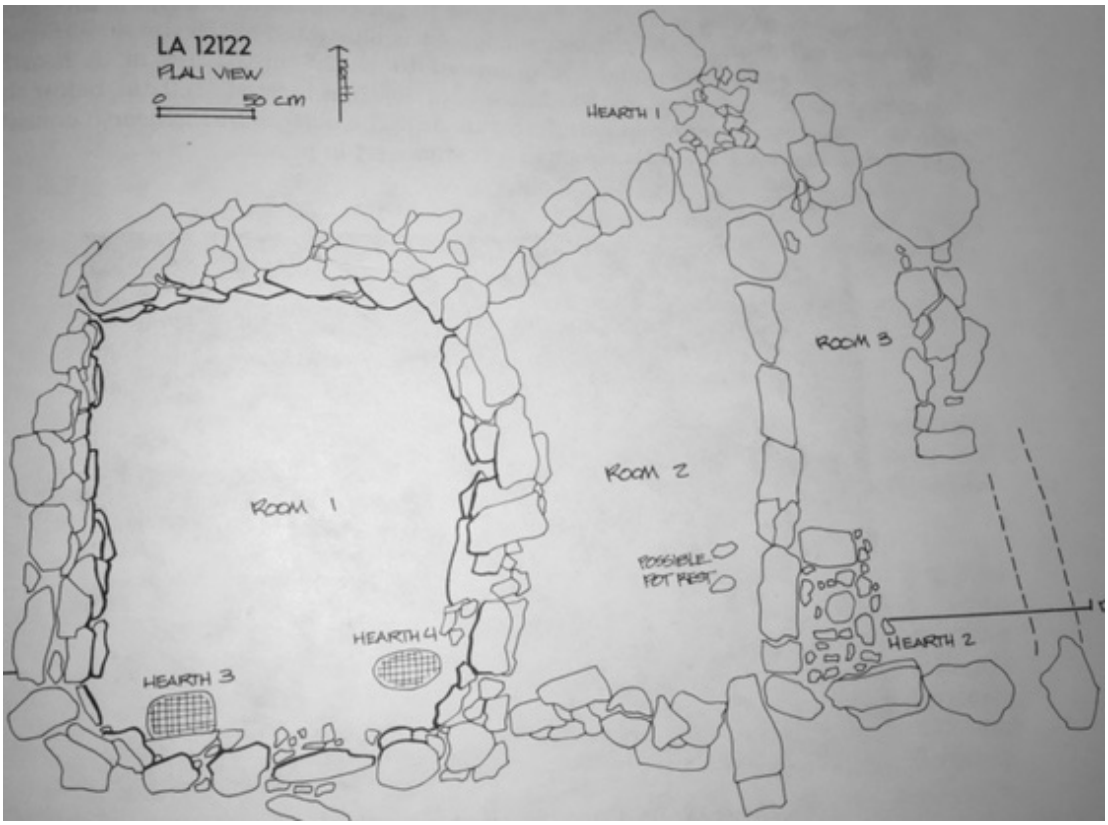

Figure A.9 LA 12122 plan view ([1]Zier 1982:Figure 87)

A total of 383 artifacts were recovered from the three-room structure including 216 ceramics, the majority of which were utilitywares and Glaze A wares (e.g., San Clemente Glaze-on-polychrome and Agua Fria Glaze-on-red). Two partially restorable San Clemente Glaze-on-polychrome bowls were recovered from Room 1. The 161 lithic artifacts included one two-handed mano, one floor polisher, one hammerstone, one grinding slab, two miscellaneous ground stone items, and chipped stone debitage. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date was assigned.

LA 12124[1]

LA 12124 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on a talus slope overlooking Lummis Canyon in a piñon-juniper grassland at 5,460 feet, the site was a three-room structure occupied during the Early Classic period (A.D. 1315–1425). The site consists of two adjoining rooms with an auxiliary wall/ramada foundation off the northwest corner, and an isolated third room located approximately 3 meters to the north (Figure A.10). Room 1 is elliptical with an entryway in the south wall and measured 2.5 meters by 1.7 meters (4.3 square meters of

interior space). The walls were simple dry-laid masonry construction and the floor was hard packed soil. Rooms 2 and 3 were more substantial in construction than Room 1, with Room 2 being a coursed masonry room abutted by a second room with upright slab foundations, a construction pattern that is very common in the Rio Grande corridor in this area (Figure A.11).

Rooms 2 and 3 were both rectangular in shape, contained two plastered floors, and were constructed from roughly shaped and unshaped tuff rocks. Room 2 was represented by the upright type of construction with oblong tuff uprights interspaced with tuff rocks placed lengthwise. Room 2 measured 2.6 meters by 1.8 meters (4.7 square meters of interior space) and had three hearths. Two hearths were represented on the upper floor, including a slab-lined circular hearth and a slab-lined rectangular hearth. The lower floor contained a circular, plaster-lined hearth. Room 3 measured 2.4 meters by 1.6 meters (3.9 square meters of interior space). Two small ash pits were found in the southwest corner of the room in the lower floor. An auxiliary wall constructed from unshaped rocks extended 2.6 meters from the northwest corner of Room 3. This wall likely functioned as a basal support for a brush ramada whose roof stretched between it and Room 3.

A total of 163 artifacts were recovered from the three-room structure, including 54 ceramics, the majority of which were Agua Fria Glaze-on-red. The 105 lithic artifacts included one hammerstone, two grinding slabs, one miscellaneous ground stone item, and chipped stone debitage. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date was assigned.

Figure A.10 Overview of LA 12124 ([1]Zier 1982:Figure 89)

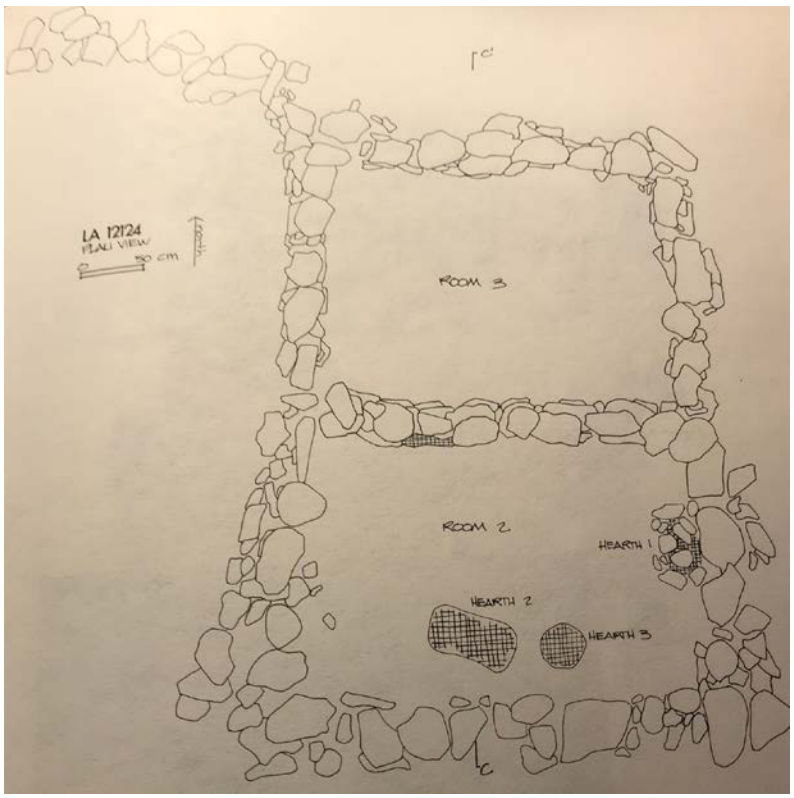

Figure A.11 Plan view of Rooms 2 and 3 at LA 12124 ([1]Zier 1982:Figure 91)

LA 12125[1]

LA 12125 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on the edge of a terrace overlooking Lummis Canyon in a piñon-juniper woodland at 5,460 feet, the site was a two-room structure that was occupied during the A.D. 1300s. The structure was freestanding with two contiguous rooms and was constructed from neatly coursed, but roughly shaped basalt and tuff upright blocks (Figure A.12). These blocks were used to form the wall foundations and were placed in a shallow trench. The floors in both rooms were plastered and curved upward to cover the lowest course. Room 1 is rectangular and measured 2.1 meters by 1.5 meters (3.2 square meters of interior space). A sub-floor rectangular bin was identified along the north wall. Room 2 was sub-rectangular and measured 2.4 meters by 1.5 meters (3.6 square meters of interior space). It was formed by three walls of large upright blocks abutted to the west wall of Room 1. A plaster-lined bin and an ash pit were found. An open-ended extramural bin was found 1 meter west of Room 2.

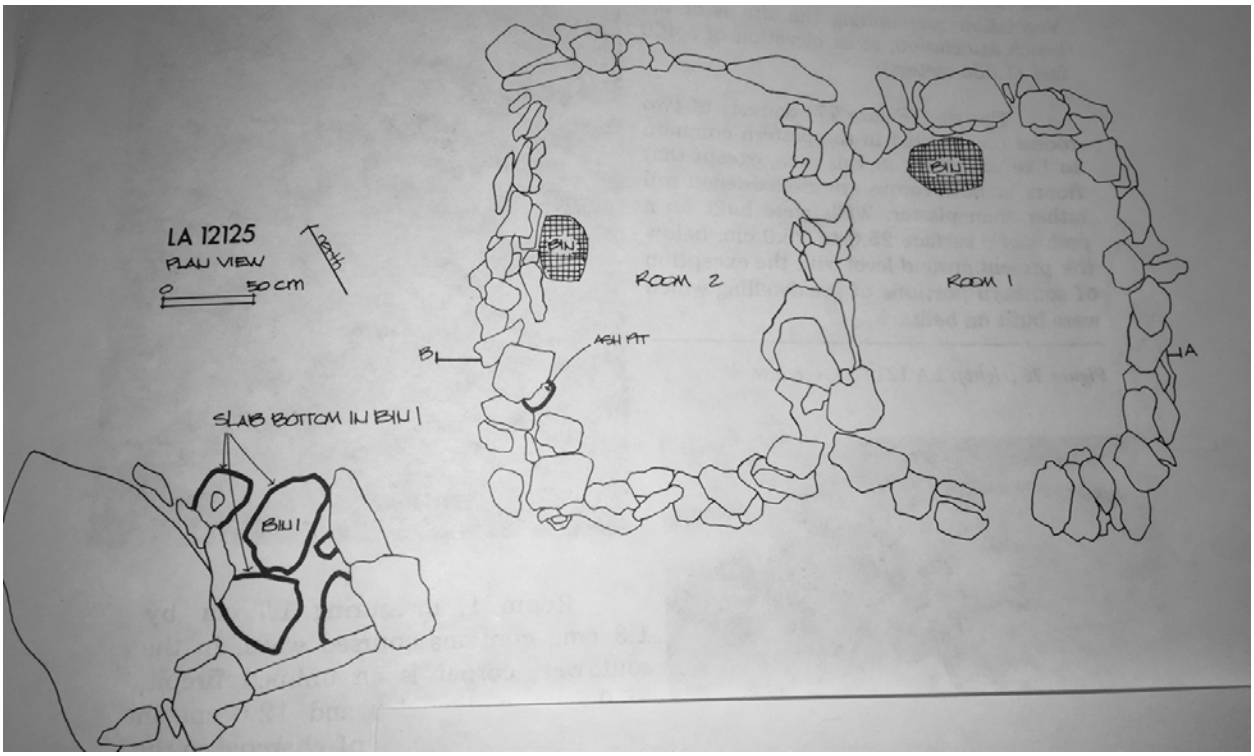

Figure A.12 LA 12125 plan view ([1]Zier 1982:Figure 74)

A total of 54 artifacts were recovered from the structure including 13 ceramics, the majority of which were Agua Fria Glaze-on-red and San Clemente Glaze-on-polychrome. The 41 lithic artifacts included two hammerstones, one small hafted tool, and chipped stone debitage. No faunal remains or economically significant plant

resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation during the Classic period of A.D. 1315–1425 is probable.

LA 12127[1]

LA 12127 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on an alluvial ridge between Lummis and White Rock canyons in a piñon-juniper woodland at 5,460 feet, the site was a two-room structure that was occupied during the A.D. 1300s. The structure was freestanding with two contiguous rooms and was constructed from coursed, but roughly shaped basalt upright blocks (Figure A.13). These blocks were used to form the wall foundations and were placed in a shallow trench. The floors in both rooms were formed from use-hardened soil. Room 1 is sub-rectangular, measured 1.7 meters by 1.3 meters (2.2 square meters of interior space), and contained an unlined firepit in the north wall (Figure A.14). The west wall was abutted to a large boulder. Room 2 was featureless, rectangular in shape, and measured 2.1 meters by 1.3 meters (2.7 square meters of interior space).

A total of 248 artifacts were recovered from the structure including 10 ceramics, all of which were either Agua Fria Glaze-on-red or Cieneguilla Glaze-on-yellow. The 238 lithic artifacts included two hammerstones, one small polishing stone, and chipped stone debitage. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Classic period occupation of A.D. 1315–1425 is probable.

Figure A.13 LA 12127 after excavation ([1]Zier 1982:Figure 76)

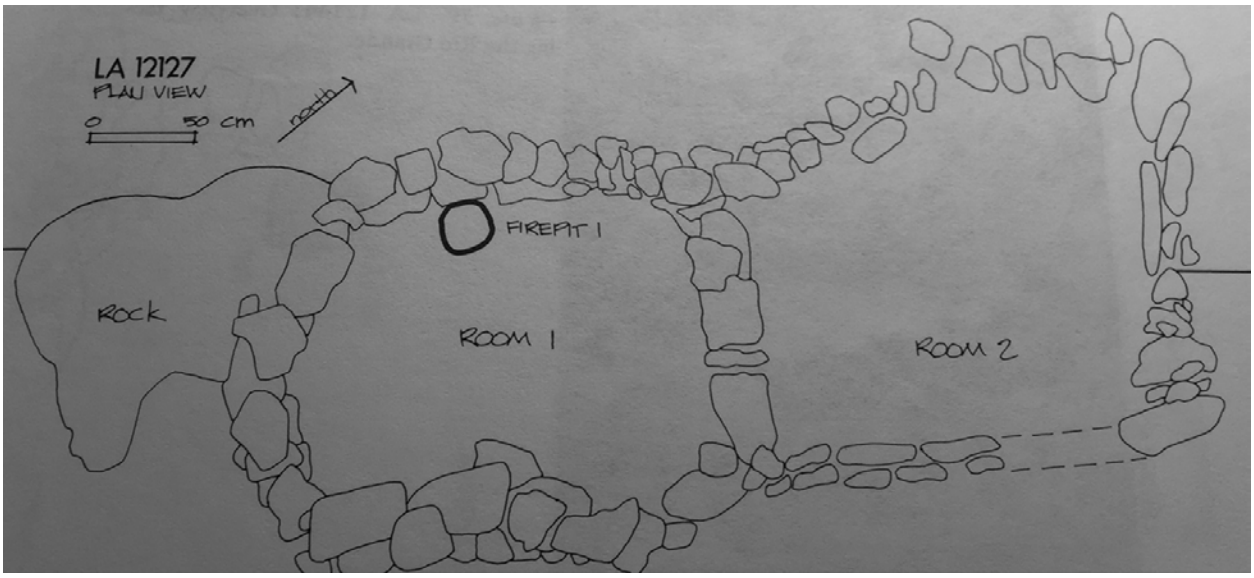

Figure A.14 LA 12127 plan view ([1]Zier 1982:Figure 77)

LA 12144[1]

LA 12144 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on a terrace that is 10 meters above the Rio Grande at 5,360 feet, the site was a two-room structure that was occupied during the A.D. 1300s (Figure A.15). The structure was freestanding with two contiguous rooms and was constructed from crudely coursed, but roughly shaped basalt upright blocks. Room 1 is rectangular, measuring 3.0 meters by 2.0 meters (6.0 square meters of interior space), retained only a small portion of its original plastered floor, and contained a plastered bin with a slab bottom (Figure A.16). Room 1 was abutted to the south wall of Room 2, which was featureless, rectangular in shape, and measured 2.1 meters by 1.3 meters (2.7 square meters of interior space).

A total of 496 artifacts were recovered from the structure including 319 ceramics, the majority of which were utilitywares, Agua Fria Glaze-on-red, Cieneguilla Glaze-on-yellow, and San Clemente Glaze-on-polychrome. The 177 lithic artifacts included three axes, three small polishing stones, and chipped stone debitage. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Classic period occupation of A.D. 1315–1425 is probable.

Figure A.15 Overview of LA 12144 ([1]Zier 1982:Figure 79)

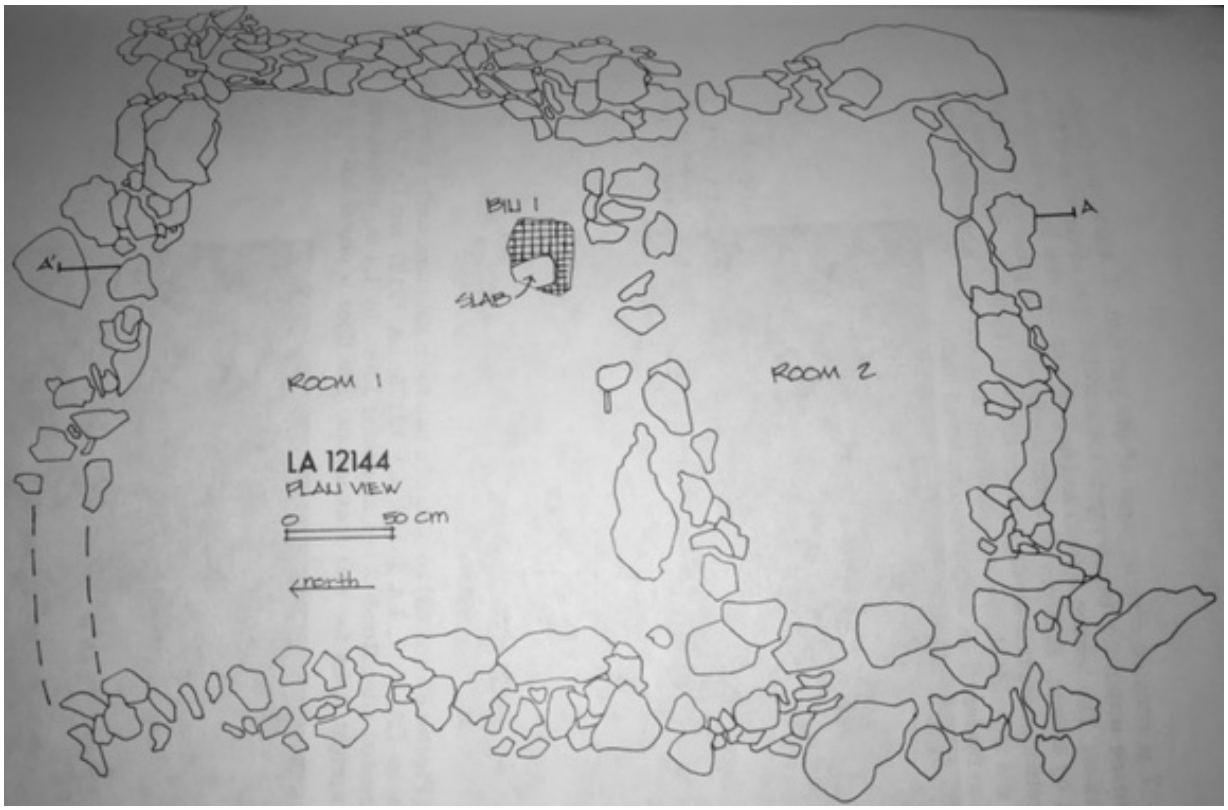

Figure A.16 Plan view of LA 12144 ([1]Zier 1982:Figure 80)

LA 12161[9]

LA 12161 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on an alluvial bench on the west bank of the Rio Grande in a juniper grassland at 5,320 feet, the site was a one-room Spanish Colonial structure. The structure was freestanding and was constructed from crudely coursed and unshaped basalt clasts. Room 1 was rectangular, measured 3.6 meters by 2.2 meters (7.9 square meters of interior space), retained much of its original adobe floor, and contained a hearth and associated cist in the northeast corner. The corners of the room were rounded, and interlocking and a midden area were located northeast of the structure.

The types of ceramic vessels recovered at the site point to a Spanish Colonial occupation in the early eighteenth century. A large number of domestic sheep/goat bones and the presence of spindle whorls suggest that raising and/or wool processing activities were performed at the site. The high density of artifacts indicates an intensive and likely year-round occupation, a characteristic that directly contrasts the majority of similar structures in the site area and across the Pajarito Plateau.

LA 12443[9]

LA 12443 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on an alluvial slope on the east side of the Rio Grande at 5,305 feet, the site was a one-room structure that was occupied during the A.D. 1300s (Figure A.17). The structure was freestanding, rectangular in shape, had an adobe floor, and was constructed from unshaped basalt and quartzite cobbles and blocks. Room 1 measured 2.1 meters by 1.9 meters (4.0 square meters of interior space) and had a rectangular slab-lined bin abutted to the center of the north wall. The west wall of the room was largely eroded, having fallen down the fairly steep alluvial slope.

A total of 391 artifacts were recovered from the structure. Ceramics (n = 133) were present and the majority of which were glazewares and Bandelier Black-on-gray. The 258 lithic artifacts included one basalt mano. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation of A.D. 1325–1425 is probable.

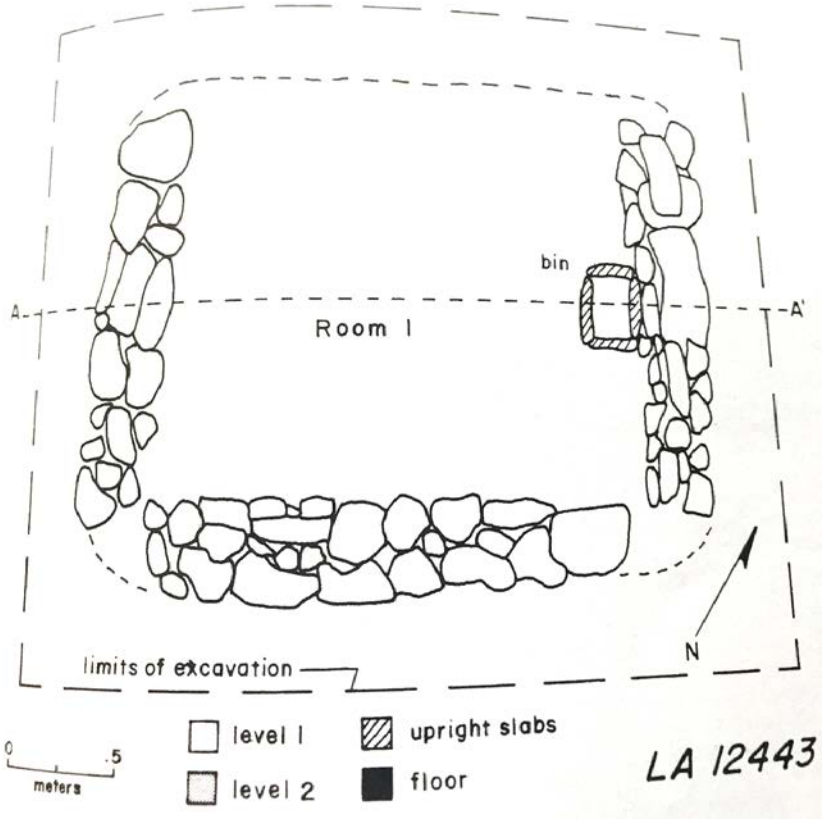

Figure A.17 Plan view of LA 12443 ([9]Chapman et al. 1977:Figure 9.20)

LA 12454[9]

LA 12454 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on a flat bench on the east side of the Rio Grande at 5,290 feet, the site was a two-room structure that was occupied during the A.D. 1300s (Figure A.18). The structure was freestanding with two bonded, contiguous rooms constructed from a single-wide course of basalt slabs and clasts. The foundation elements were large and laid vertically in adobe mortar. Room 1 was semi-subterranean, rectangular in shape, had the floor compacted from use, and measured 2.2 meters by 1.9 meters (4.2 square meters of interior space). A slab-lined hearth was built against the west wall, and a rectangular slab-lined bin was constructed on the floor along the north wall. Room 2 was a rectangular surface room abutted to the south wall of Room 1. It measured 2.5 meters by 1.5 meters (3.8 square meters of interior space) and had the floor compacted from use. An ovoid-shaped hearth was located at floor level just south of the doorway between Rooms 1 and 2.

A total of 291 artifacts were recovered from the structure including 94 ceramics, the majority of which were utilitywares and Cieneguilla Glaze-on-yellow. The 197 lithic artifacts included two two-handed basalt manos and chipped stone. Three artiodactyl skull bones were identified. No economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation of A.D. 1325–1425 is probable. This site is very typical of Classic period two-room structures within the Cochiti Reservoir, which have one semi-subterranean room with a hearth and one surface room with a hearth. The surface room was often abutted to a wall of the first room with a doorway between the two rooms.

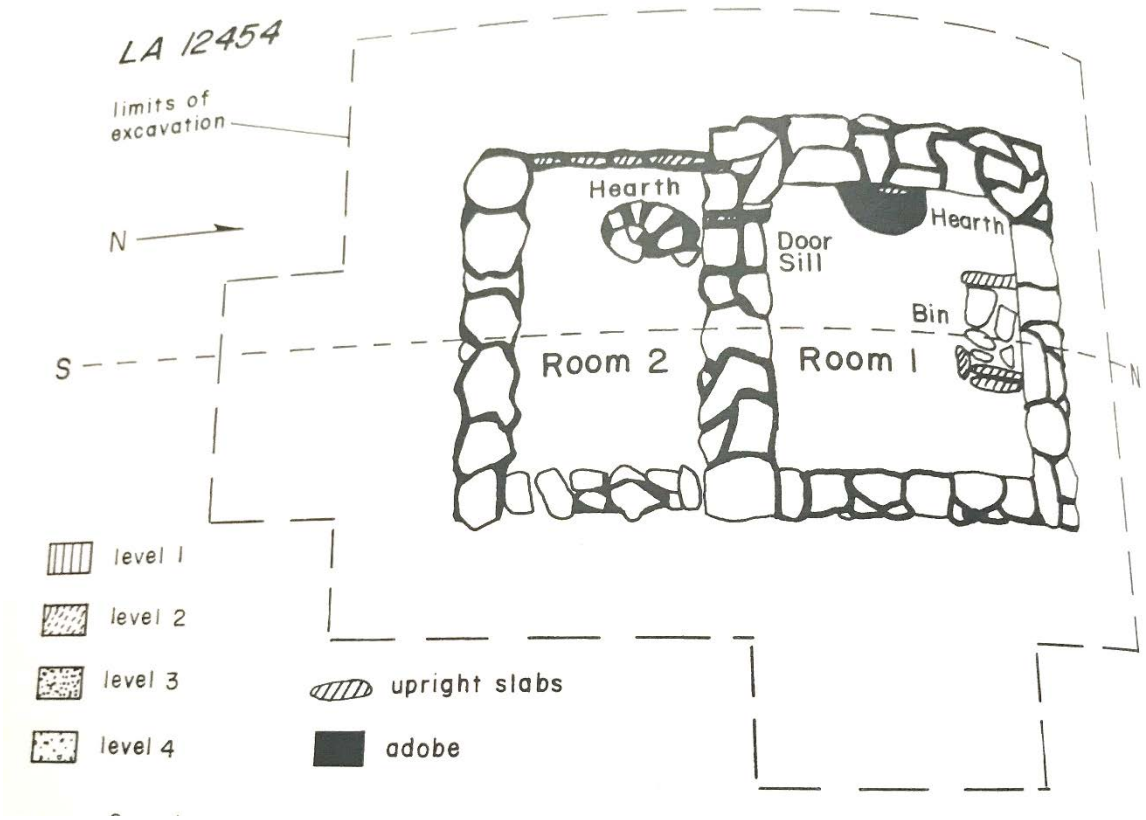

Figure A.18 Plan view of LA 12454 ([9]Chapman et al. 1977:Figure 9.31)

LA 12511[7]

LA 12511 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on a small knoll on the west side of the Rio Grande in a juniper grassland at 5,290 feet, the site was a two-room structure that was occupied during the early part of the Coalition period. The structure was freestanding with two contiguous rooms constructed from a single-wide course of basalt slabs and clasts. The foundation elements were large and laid vertically in adobe mortar. Room 1 was rectangular in shape, had a floor compacted from use but with some plaster patches, and measured 3.1 meters by 1.0 meter (3.1 square meters of interior space). A circular slab-lined hearth was identified in the center of the room. Room 2 was rectangular, measured 3.5 meters by 1.4 meters (4.9 square meters of interior space), and had a floor compacted from use. The eastern and southern walls were absent, suggesting this area may have been an outdoor activity area/ramada. Two slab features were exposed in this area.

A total of 129 artifacts were recovered from the structure including 49 ceramics, the majority of which were utilitywares and Santa Fe Black-on-white. The 80 lithic artifacts included one complete mano, one mano fragment, and chipped stone. No faunal

remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Coalition period occupation of A.D. 1200–1325 is probable.

LA 12512[7]

LA 12512 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on the southwestern exposure of the talus slope on the west side of the Rio Grande in a juniper grassland at 5,300 feet, the site was a two-room structure that was occupied during the Early Classic period (A.D. 1350–1425). The rooms were semi-subterranean, and the west walls were dug into the hillslope. The structure is constructed from unmodified basalt blocks with adobe mortar. The foundation was constructed of vertical slabs of basalt overlain with horizontal blocks. Room 1 was rectangular in shape, had a floor compacted from use, measured 2.3 meters by 1.5 meters (3.5 square meters of interior space), and had a doorway to Room 2 in the north wall (Figure A.19). Room 2 was roughly rectangular, contained a slab-lined bin that was flush with the floor and had a floor compacted from use. The room was severely damaged by erosion, so dimensions were incomplete. The east-west wall was 1.5 meters, but the north and south walls were incomplete.

A total of 440 artifacts were recovered from the structure including 207 ceramics, the majority of which were unidentified glazewares, Socorro Black-on-white, and Agua Fria Glaze-on-red. The 233 lithic artifacts included one vesicular basalt metate and chipped stone. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date of A.D. 1200–1325 is probable.

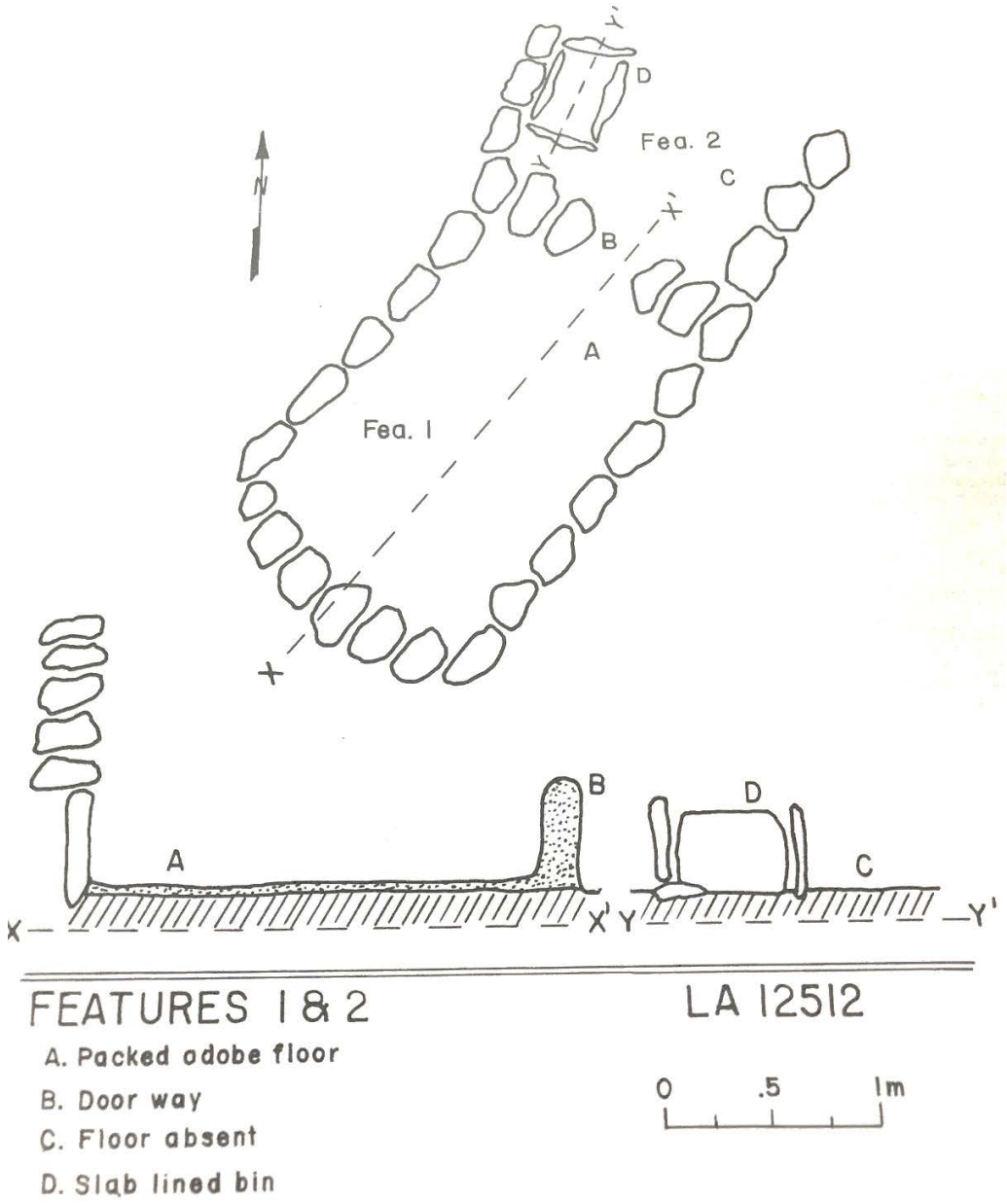

Figure A.19 Plan view of LA 12512 ([7]Chapman et al. 1977:Figure 3.23)

LA 12517[9]

LA 12517 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on a basalt ridge on the west side of the Rio Grande at 5,320 feet, the site was a one-room structure that was occupied during the Early Classic period (A.D. 1400–1450). The structure was built directly on a basalt talus outcrop. Unmodified basalt boulders and clasts were dry-stacked with the exception of a portion of the south wall that was formed by a large,

basalt boulder (Figure A.20). Room 1 was a freestanding surface structure, was ovoid in shape, had a floor compacted from use, and measured 1.1 meters by 1.0 meter (1.1 square meters of interior space).

A total of 519 artifacts were recovered from the structure including 10 ceramics, all of which were from a Largo Glaze-on-polychrome bowl, and 509 chipped stone lithic artifacts. No ground stone, faunal remains, economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the Largo Glaze-on-polychrome bowl, an occupation of A.D. 1400–1450 is probable.

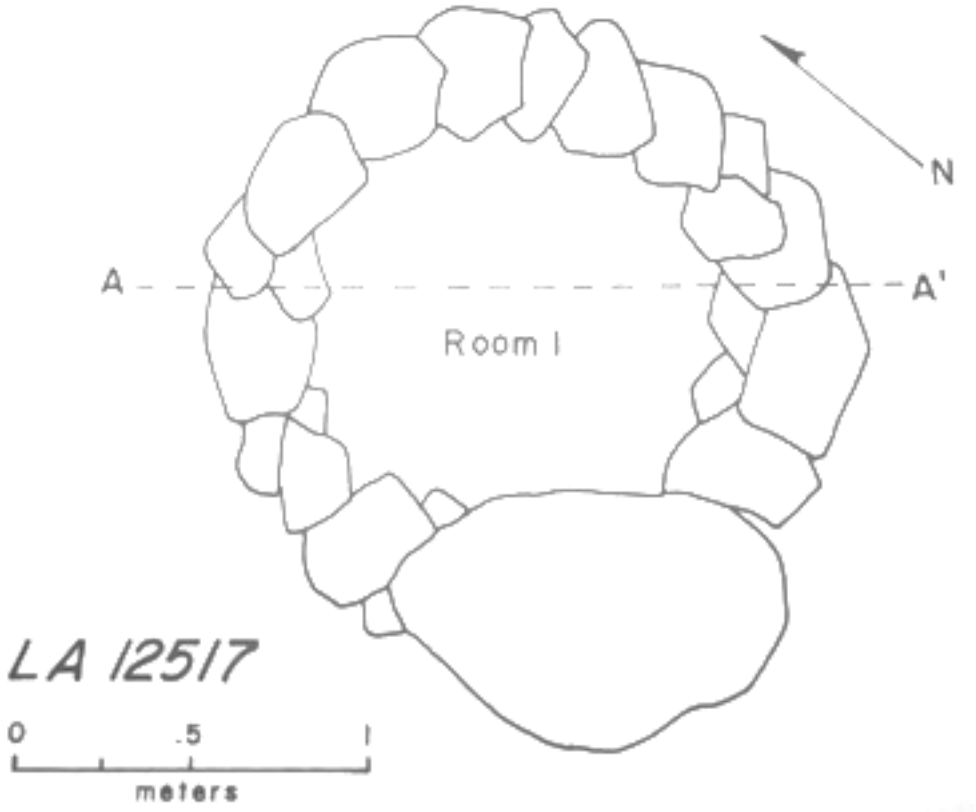

Figure A.20 Plan view of LA 12517 ([9]Chapman et al. 1977:Figure 9.53)

LA 12518[9]

LA 12518 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on a wide bench on the west side of the Rio Grande at 5,305 feet in a juniper grassland, the site was a two-room structure that was occupied during the Classic period. The structure was freestanding with two contiguous rooms constructed from unmodified basalt slabs and clasts (Figure A.21). The foundation elements were laid horizontally. Room 1 was sub-rectangular in shape, had a floor compacted from use, and measured 1.3 meters by

1.0 meter (1.3 square meters of interior space). Room 2 was a rectangular room that measured 1.4 meters by 1.0 meter (1.4 square meters of interior space) and had a floor compacted from use. The dividing wall between the two rooms was abutted to the outer rectangular structure. No features were found in either room.

A total of 817 artifacts were recovered from the structure including, 92 ceramics, the majority of which were utilitywares and Largo Glaze-on-polychrome. The 725 lithic artifacts included two mano fragments, one metate fragment, and chipped stone. Four cottontail (*Sylvilagus* sp.) vertebral bones were identified. No economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, the site was occupied during the Classic period.

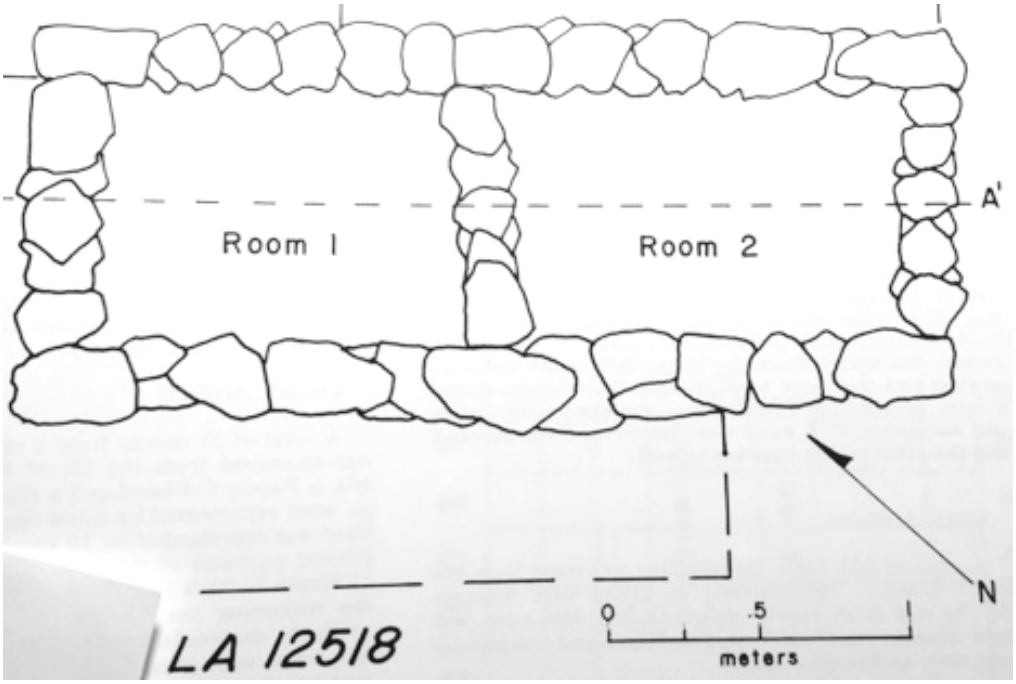

Figure A.21 Plan view of LA 12518 ([9]Chapman et al. 1977:Figure 9.54)

LA 12519[9]

LA 12519 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by the floodwaters retained by Cochiti Dam. Located on the edge of a bench on the west side of the Rio Grande at 5,305 feet, the site was a two-room structure that was occupied during the Classic period. The structure was built at the base of a talus ridge and constructed from unmodified basalt boulders, slabs, and clasts that were dry-stacked (Figure A.22). Room 1 was a rectangular surface room, had a floor compacted from use, and measured 2.0 meters by 1.4 meters (2.8 square meters of interior space). A rimless circular hearth was found in the northeast corner. Room 2 was

a featureless, rock-lined structure contiguous to the east wall of Room 1. It was a semi-subterranean circular room that was badly eroded but constructed from unmodified basalt boulders and clasts. It measured 2.1 meters by 1.9 meters (4.0 square meters of interior space) and had the floor compacted from use.

A total of 77 artifacts were recovered from the structure including, 23 ceramics, the majority of which were unidentified glazewares, and 54 chipped stone artifacts. Three faunal remains were identified including two cottontail (*Sylvilagus* sp.) bones and one woodrat (*Neotoma* sp.) bone, which may have been intrusive. No ground stone remains, economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the glazeware ceramics, a Classic period occupation was probable. This site is very typical of Classic period two-room structures within the Cochiti Reservoir, which have one semi-subterranean room and a one surface room with a hearth. The surface room was often abutted to a wall of the first room with a doorway between the two rooms, but that was not the case at this particular site.

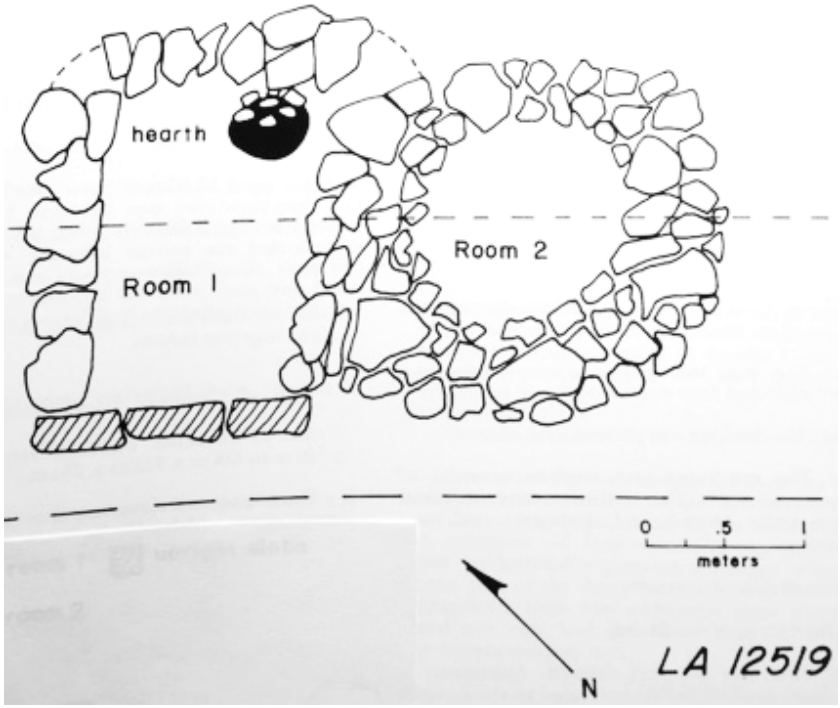

Figure A.22 Plan view of LA 12519 ([9]Chapman et al. 1977:Figure 9.55)

LA 12568[1]

LA 12568 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Built into a steep rocky hillside just above the Rio Grande at 5,340 feet, the site was a one-room circular structure that was occupied during the A.D. 1400s (Figure A.23). The structure was 2.8 meters in diameter and lined with dry-laid basalt rocks of

various sizes. The rocks were coursed in some areas, but most were placed where they would fit. A large natural boulder was incorporated into the southeast side of the structure. Entry was through the east, or river, side, and a doorsill was identified (Figure A.24). The featureless floor was hard packed mud.

A total of 204 artifacts were recovered from the structure including, 139 ceramics, the majority of which were utilitywares. Twelve Bandelier Black-on-gray and one San Clemente Glaze-on-polychrome were the only non-utilitarian wares. The 65 lithic artifacts included one grinding slab, one hammerstone, and chipped stone. Nine faunal remains, including one fish, one duck, three cottontail, and four wood rat, were identified. No economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Classic period occupation of A.D. 1400–1500 is likely.

Figure A.23 LA 12568 after excavation ([1]Zier 1982:Figure 69)

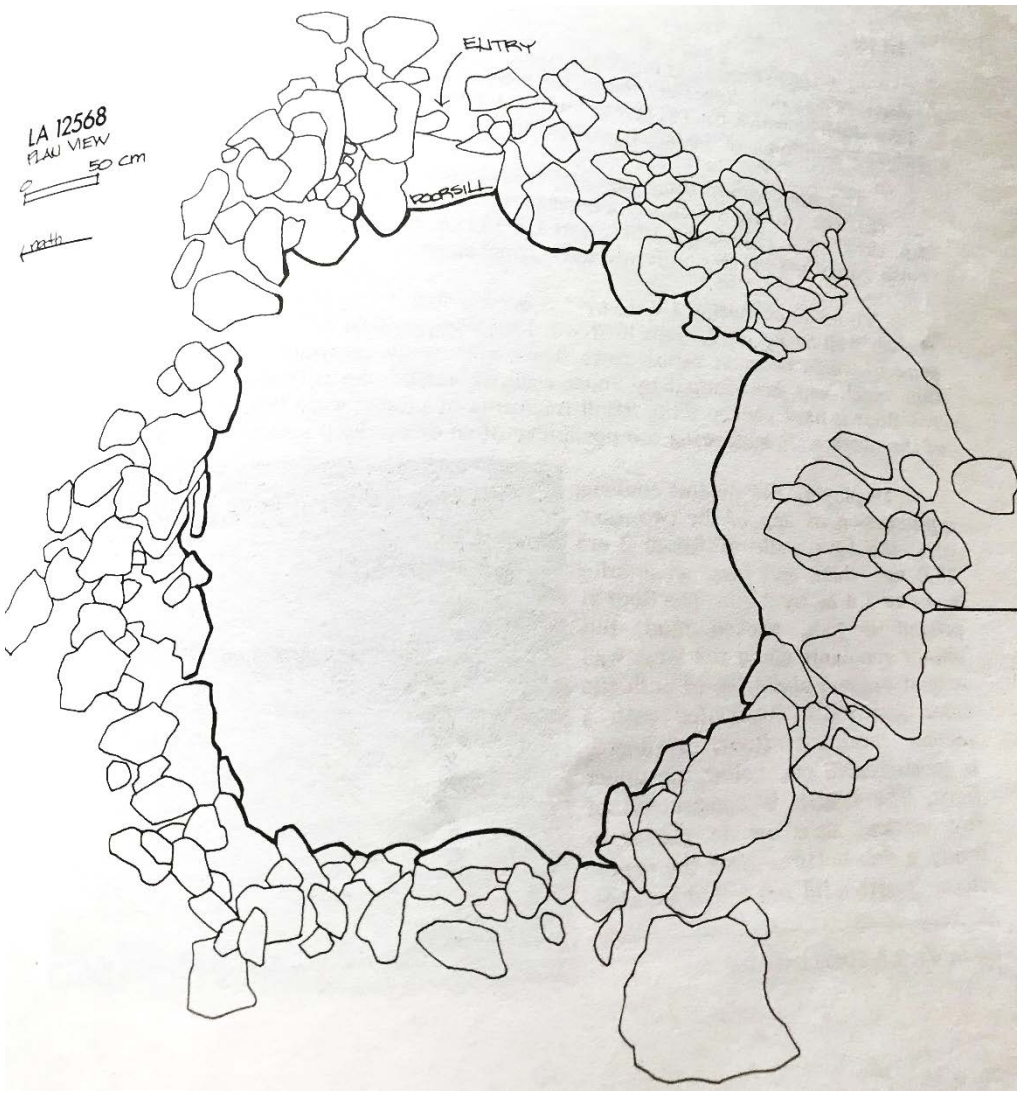

Figure A.24 LA 12568 plan view ([1]Zier 1982:Figure 70)

LA 12577[1]

LA 12577 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located directly west of the junction of Alamo and Lummis canyons on a terrace at 5,360 feet, the site was a two-room structure that was occupied during the A.D. 1300s. The structure was freestanding with two contiguous rooms and was constructed from large, unshaped tuff upright slabs for the wall foundations. Room 1 is rectangular, measuring 1.8 meters by 1.4 meters (2.5 square meters of interior space), retained portions of a plastered floor, and contained a collared semi-circular hearth in the north corner (Figure A.25). Four small basalt slabs were located parallel to the south wall. These were assumed to form a boundary between the storage and living spaces. Room 2 was abutted to the east wall of Room 1, was featureless, sub-rectangular in

shape, and measured 1.8 meters by 1.7 meters (3.1 square meters of interior space). One check dam was identified upslope of the structure, and two were identified downslope.

A total of 304 artifacts were recovered from the structure including, 63 ceramics, the majority of which were utilitywares. Small numbers of Santa Fe Black-on-white, Agua Fria Glaze-on-red, and Cieneguilla Glaze-on-yellow were also identified. The 241 lithic artifacts included five two-hand manos, one one-hand mano, two hammerstones, one polisher, and chipped stone. One mule deer bone was identified. No economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation of A.D. 1315–1450 is likely.

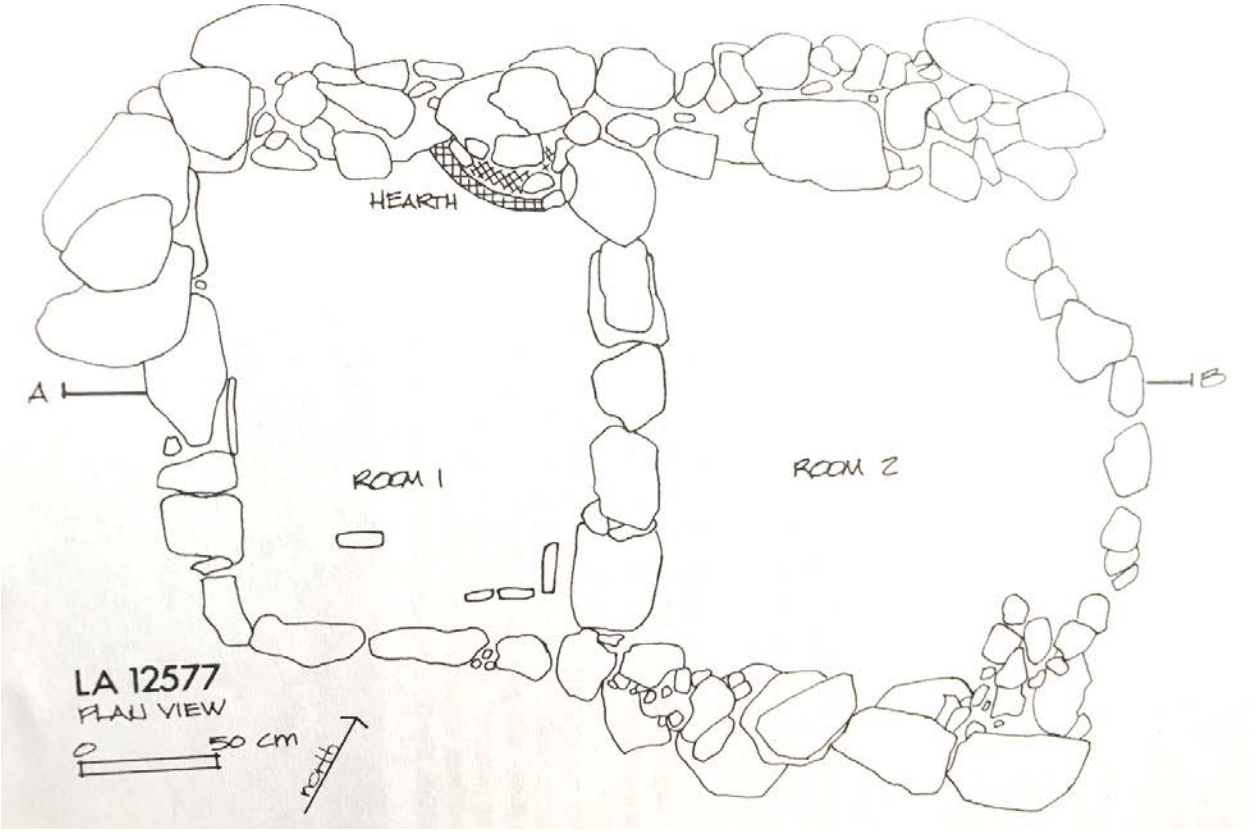

Figure A.25 LA 12577 plan view ([1]Zier 1982:Figure 83)

LA 12581[1]

LA 12581 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located beside the Rio Grande near the junction of Alamo Canyon at 5,320 feet, the site was a two-room structure that was occupied in the mid-seventeenth century. The structure was freestanding with two contiguous rooms. A post-abandonment landslide deposited a large boulder between the rooms (Figures A.26 and

A.27). The walls were constructed from dry-laid basalt and unshaped tuff blocks and had use-hardened compact floors. Room 1 was featureless, rectangular in shape, and measured 3.1 meters by 2.0 meters (6.2 square meters of interior space). Room 2 was sub-rectangular in shape, measured 1.9 meters by 1.5 meters (2.9 square meters of interior space), and contained a slab and plaster-lined hearth in the northeast corner. A possible external storage bin was identified outside the northeast corner. Several check dams were identified north of the structure.

A total of 187 artifacts were recovered from the structure including, 94 ceramics, the majority of which were utilitywares. Other prominent types included Kapo Black and Salinas Red. A total of 193 lithic artifacts were recovered. One unidentified large mammal bone was identified. No economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Postclassic occupation is likely.

Figure A.26 LA 12581 overview ([1]Zier 1982:Figure 84)

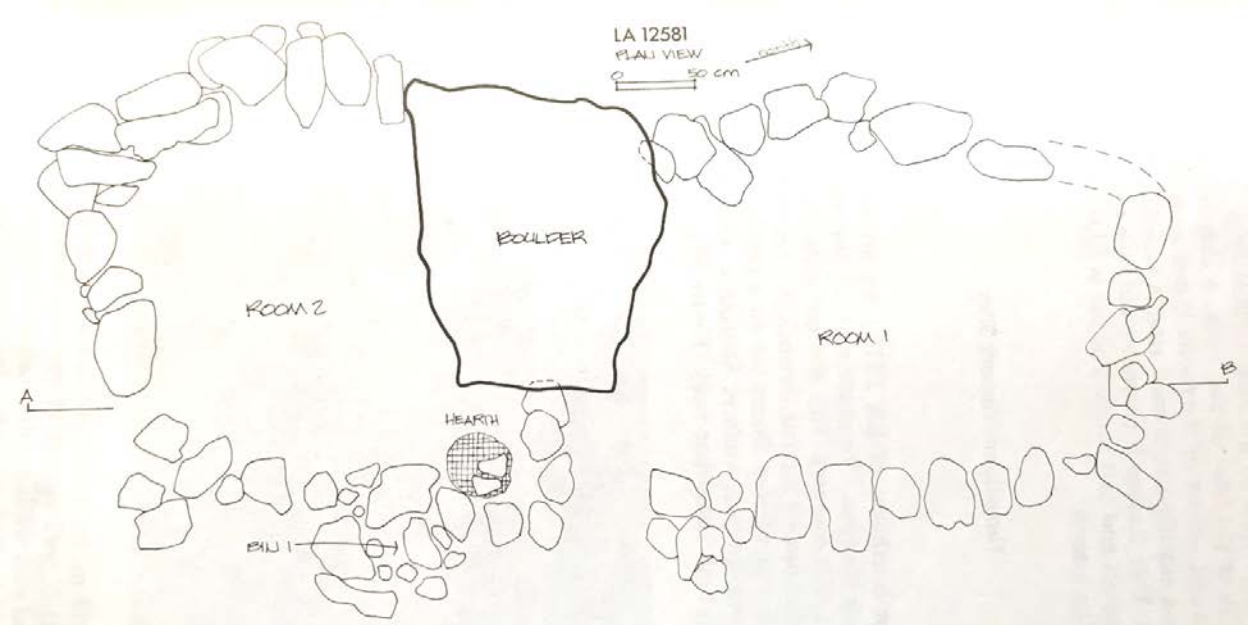

Figure A.27 LA 12581 overview ([1]Zier 1982:Figure 85)

LA 12582[1]

LA 12582 was excavated in 1974 by the National Park Service and the Office of Contract Archeology, University of New Mexico as part of mitigative work in the flood pool of Cochiti Lake. Located on a talus slope overlooking the Rio Grande at 5,380 feet, the site was a one-room sub-rectangular structure that was occupied during the early A.D. 1300s (Figure A.28). As most of the site has eroded away, all that remains are the plastered floor, the plaster-lined hearth, and the lowest single course of unshaped tuff and basalt wall rocks. Room 1 measured 2.8 meters by 2.4 meters (6.7 square meters of interior space) and contained a circular, plaster-lined and flat-bottomed hearth with a slightly raised rim (Figure A.29).

A total of 46 artifacts were recovered from the structure including, 19 ceramics, the majority of which were utilitywares. Two Santa Fe Black-on-white, one Wiyo Black-on-white, and one red glazeware were the only non-utilitarian wares recovered. The 27 lithic artifacts included one grinding slab and chipped stone. No faunal remains or economically significant plant resources or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation in the A.D. 1300s is likely.

Figure A.28Plan view map of LA 12582 ([1]Zier 1982:Figure 68)

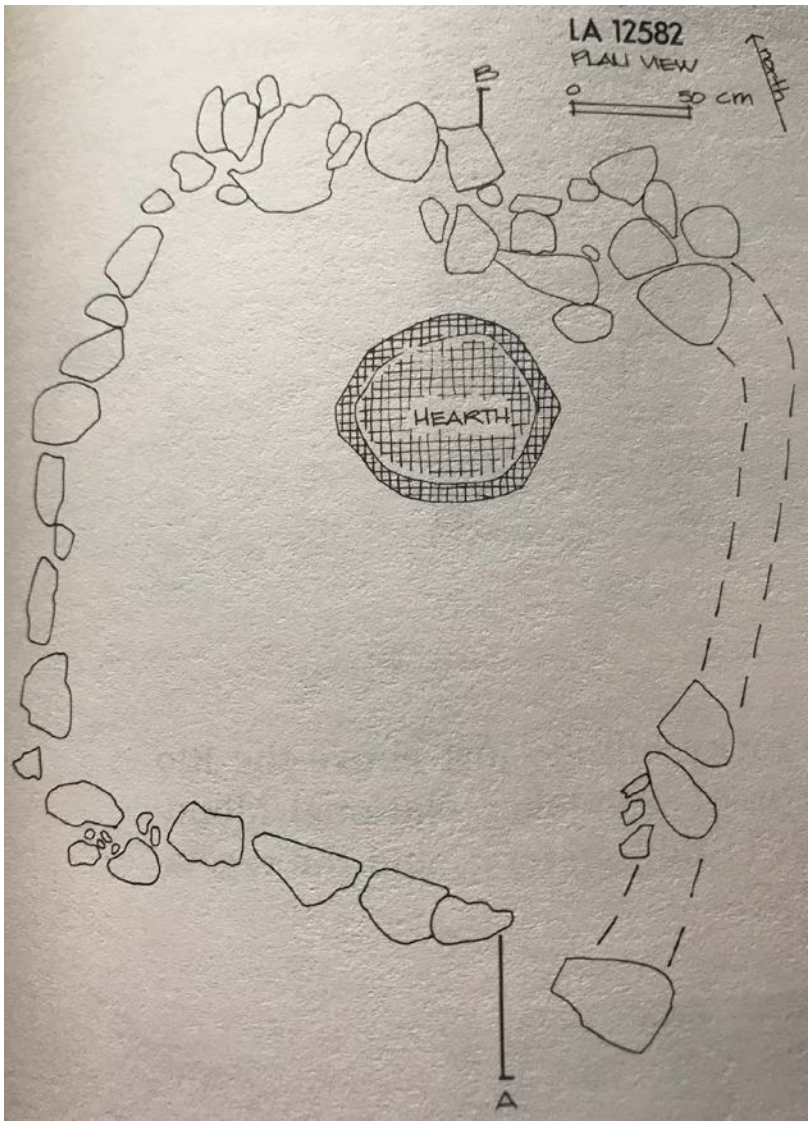

Figure A.29 Plan view map of LA 12582 ([1]Zier 1982:Figure 67)

LA 12587[10]

LA 12587 was excavated in 2004 by Los Alamos National Laboratory (LANL) archaeologists as part of the Land Conveyance and Transfer project. Located on a wide ridge at the east end of Mesita del Buey in a piñon-juniper woodland at 6,500 feet, the site consisted of two roomblocks and a superimposed one-room structure. Only the one-room structure (designated Room 3 in the original report) is discussed here. The structure was freestanding, and the walls were constructed of a single row of horizontally laid, unshaped and roughly shaped tuff blocks held together by mortar (Figure A.30). Room 3 was sub-rectangular, measured 1.9 meters by 1.7 meters (3.2 square meters of interior space), and had a prepared floor with several small patches of plaster in the northeast corner.

Figure A.30 Room 3 at LA 12587 after excavation ([10]Harmon and McVickar 2008:Figure 14.36)

A total of 492 artifacts were recovered from the one-room structure including, 358 ceramics (biscuitwares and glazewares), 122 lithic artifacts, and seven ground stone artifacts. Economically significant plant resources and cultigens included maize kernel fragments. No chronometric dates were obtained, but the ceramic assemblage indicates the room was occupied during the Early to Middle Classic period.

LA 12650[11]

LA 12650 was tested in 1993 by LANL archaeologists to determine if the site would be impacted by the construction of a mixed waste disposal facility. Located on a southeast-facing mesatop in a piñon-juniper woodland at 7,180 feet, the tested portion of the site contained a one-room structure that was probably occupied during the Classic period. The structure was freestanding with at least two courses present at the time of testing and was constructed from loaf-shaped tuff blocks. The amount of wallfall in the vicinity of the site prompted researchers to suggest the site may have had up to nine courses of masonry. Room 1 was rectangular in shape, measured 2.7 meters by 2.5 meters (6.8 square meters of interior space), and had a floor compacted from use. No features or an entryway were identified. The recovery of an axe and burned daub were

mentioned in the notes. Artifacts were concentrated to the south and east of the structure. A possible second structure was located 6 meters east of the site, but no additional information was provided. Ceramics mentioned in the notes include brownwares, corrugated wares, and Santa Fe Black-on-white, but the loaf-shaped tuff blocks are reminiscent of other Classic period sites on the Pajarito Plateau. Based on the limited data available, it is possible this site was a multi-component site with occupations in the Late Coalition and Classic periods.

LA 12761[12]

LA 12761 was excavated in 1975 by University of California archaeologists to find archaeological remains intermediate between the thirteenth century Gallina phase and the fifteenth to sixteenth-century Jemez sites ancestral to the Towa speakers at Jemez Pueblo. Located one mile east of Jemez State Monument at 7,175 feet, the site contained three two-room masonry structures (Structures 1, 2, and 3) dating between A.D. 1500–1700 (Figure A.31). No chronometric dates were obtained, but it is assumed the three structures were constructed over an estimated 200-year period between A.D. 1500 and A.D. 1700 and were occupied by residents of the nearby Towa-speaking pueblos during the agricultural season.

Structure 1 (Rooms 1 and 2) consisted of two adjacent and contiguous, rectangular rooms that were constructed in a single building episode. Masonry in both rooms consisted of unshaped tuff rocks that were dry-laid with clay mortar and were three to four courses high at the time of excavation. Both rooms had clay-lined floors. Room 1 measured 4.0 meters by 2.2 meters (8.8 square meters of interior space) and contained two hearths, one in the center of the west wall and one in the center of the south wall. A total of 163 sherds were recovered in this room, the majority of which were utilitywares, Jemez Black-on-white, and Glaze E/F. Two chipped stone artifacts were recovered. Room 2 measured 4.3 meters by 2.7 meters (11.5 square meters of interior space) and had one hearth in the center of the west wall. A slab was found in the southern portion of Room 2 and no ceramics or lithics were reported.

Structure 2 consisted of one complete room (Room 5) and a partially eroded and collapsed room (Room 6) that were constructed in a single building episode from the roughly shaped tuff rock (Figure A.32). Unlike Structures 1 and 3, however, these rooms were situated end-to-end as opposed to adjacent to one another. Room 5 measured 2.7 meters by 2.0 meters (5.4 square meters of interior space) and had a hearth in the northeast corner. The hearth was slab-lined on two sides and used the inside of the room for the other two sides of the feature. One posthole was present in the southwest corner. The floor of the room was made from clay mortar. No information existed for

Room 6, except that the north wall was 2.0 meters long because it shared a wall with Room 5. No artifacts were recovered from either room.

Structure 3 (Rooms 3 and 4) consisted of two adjacent and contiguous, rectangular rooms that were constructed in a single building episode (Figure A.33). Walls were built using tuff rock and mortar. Room 3 measured 3.5 meters by 2.0 meters (7.0 square meters of interior space) and had a rectangular hearth in the center of the south wall. A total of 63 sherds were recovered in this room, the majority of which were utilitywares and Jemez Black-on-white. A reconstructable Jemez Black-on-white olla was recovered. A core, a scraper, and a flake were also found. Room 4 measured 3.4 meters by 1.8 meters (6.1 square meters of interior space), contained a storage bin that was remarkably similar to earlier Gallina phase bins and had a sub-floor hearth in the northwest corner. A sandstone slab was found against the north wall, and a possible posthole was found in the northeast corner of the room. A total of 32 ceramics were recovered from this room, the majority of which were utilitywares and Jemez Black-on-white. Two flakes and a sandstone ground stone item were also found.

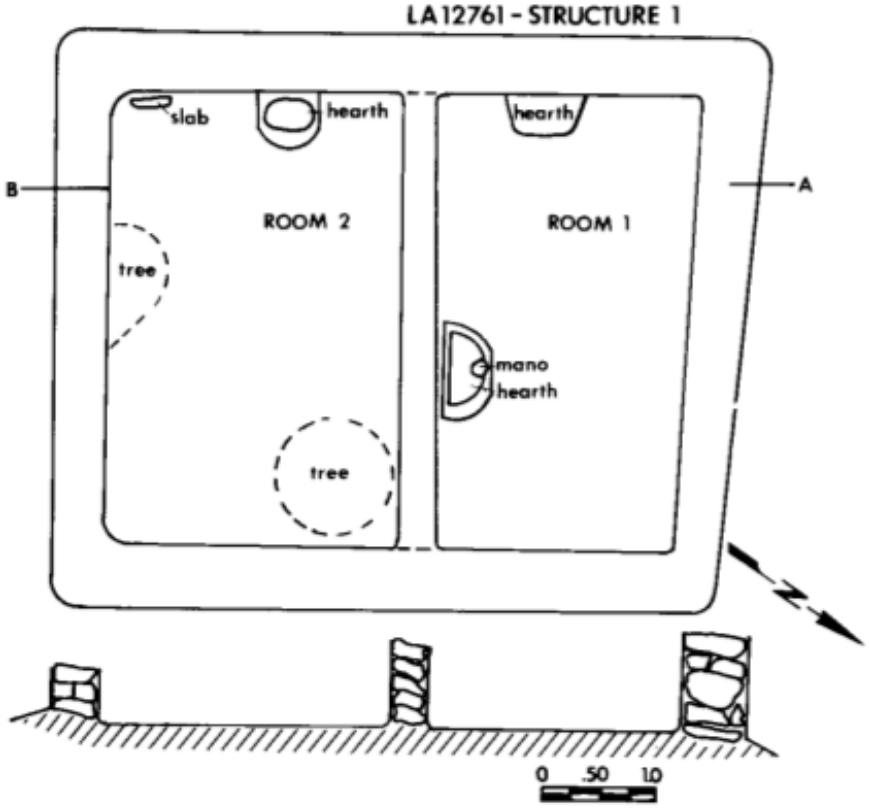

Figure A.31 Plan view of Structure 1 at LA 12761 ([12]Mackey 1982:Figure 6)

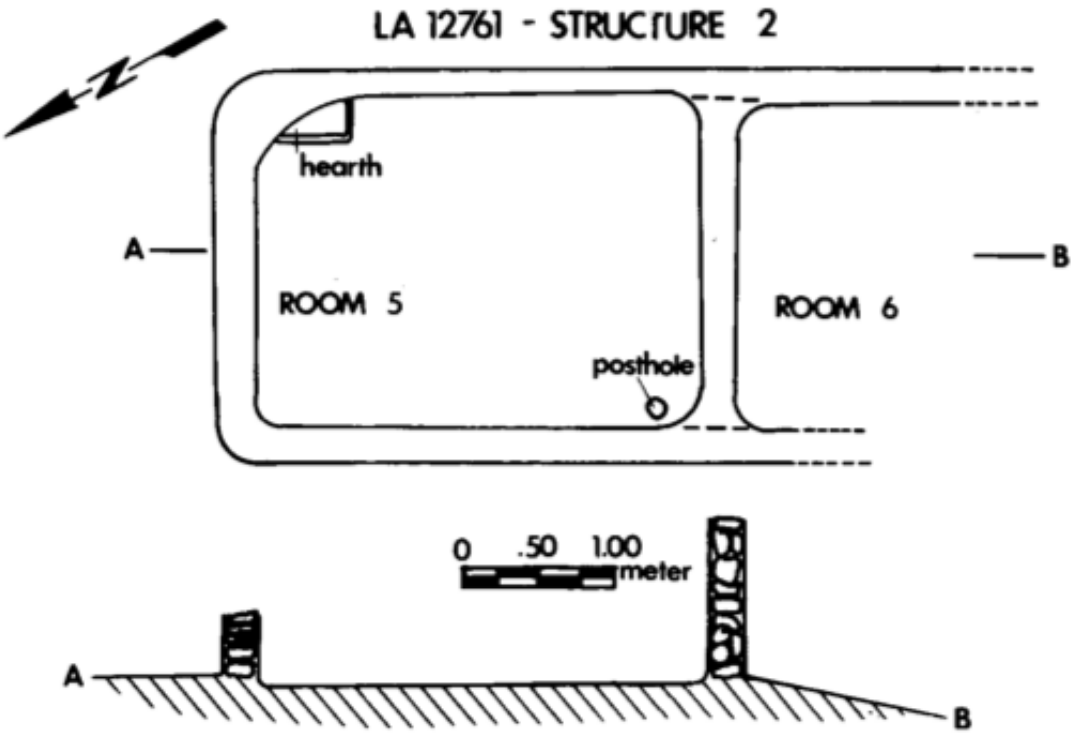

Figure A.32 Plan view of Structure 2 at LA 12761 ([12]Mackey 1982:Figure 8)

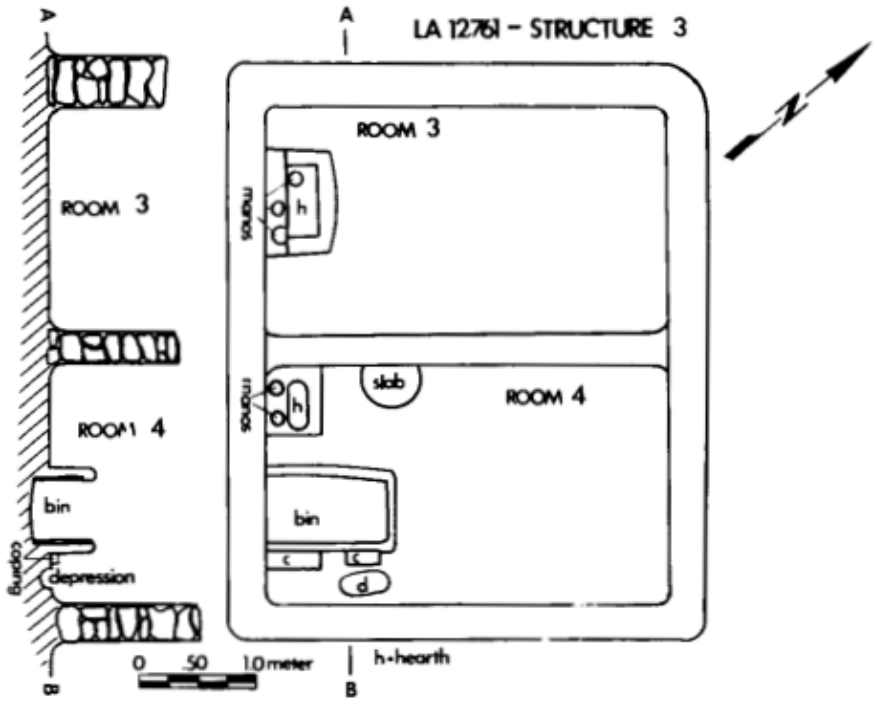

Figure A.32 Plan view of Structure 3 at LA 12761 ([12]Mackey 1982:Figure 7)

LA 13049[13]

LA 13049 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located on a small, flat portion of a ridge on the west side of the Rio Grande in a juniper grassland at 5,380 feet, the site was a one-room structure that was occupied during the Early Classic period (A.D. 1350–1425). Room 1 (Figure A.34) was a freestanding surface structure, ovoid in shape, had a floor compacted from use, and measured 2.8 meters by 2.0 meters (5.6 square meters of interior space). The south, east, and west walls were constructed from unmodified local basalt clasts; portions of the north wall had eroded away. There was no difference between the basal, middle, and upper wall elements, which were generally one element wide. The east wall abutted to a boulder in the northeast corner of the room. A possible entryway was identified in the remaining portion of the north wall between two boulders.

A total of 1128 artifacts were recovered from the structure including, one ceramic pipe and 76 sherds, the majority of which were glazewares, San Clemente Glaze-on-polychrome, and Cieneguilla Glaze-on-yellow. The 1,052 lithic artifacts included 15 cores, 276 pieces of debitage, five retouched tools, seven hammerstones, and six ground stone artifacts (two mano fragments, three milling slabs, and one abrader). One Artiodactyl long bone and one small mammal innominate were recovered. The tip of an awl was also recovered. No economically significant plant resources and/or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date was assigned.

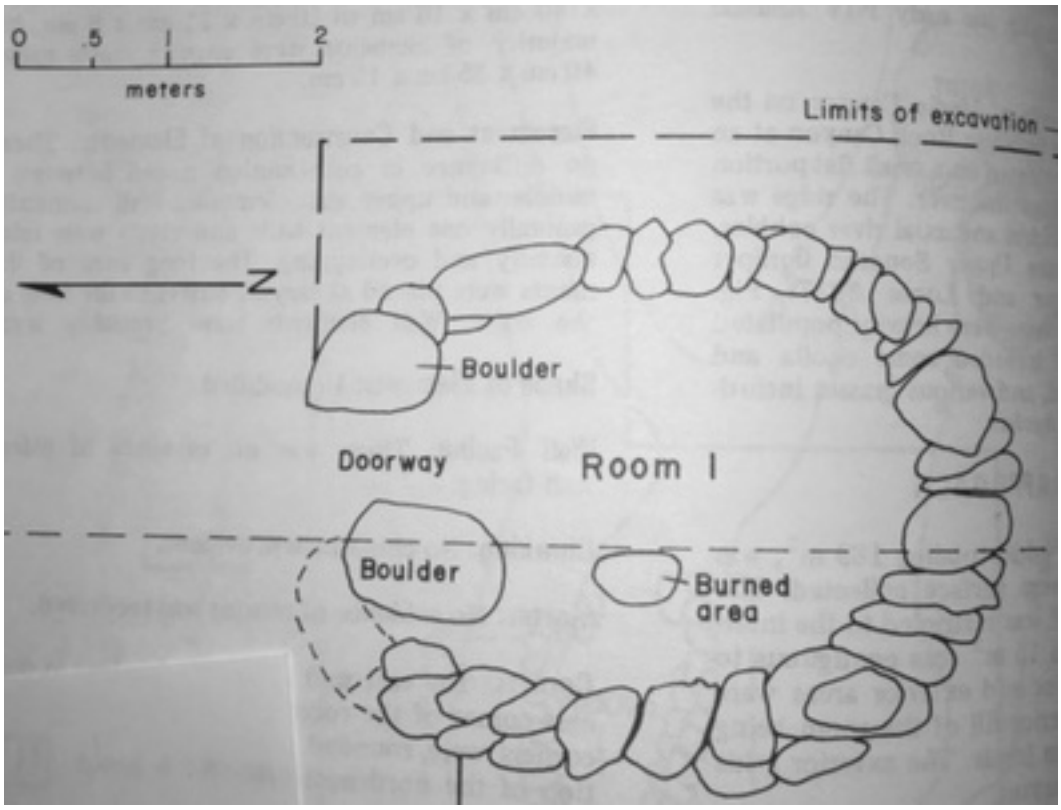

Figure A.34 Plan view of LA 13049 ([13]Hunter-Anderson 1979:Figure 5.2)

LA 13050[14]

LA 13050 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located just south of the mouth of Medio Canyon on the west side of the Rio Grande in a juniper grassland at 5,430 feet, the site consisted of two contiguous subrectangular surface structures that were occupied during the Early and Middle Classic period (A.D. 1325–1525). The walls were constructed from unmodified local basalt clasts and were generally one element wide and one course high. There was no difference between the basal, middle, and upper wall elements, and no foundation was present. Room 1 had a floor compacted from use and measured 1.5 meters by 1.3 meters (2.0 square meters of interior space). The northeast corner included a large, in situ dacite boulder. Room 2 had two floors, both compacted from use, and measured 1.5 meters by 1.5 meters (2.3 square meters of interior space). A slab-lined hearth was found centrally located on the north wall on the upper floor. The west wall abutted the south wall, but otherwise, all corners were bonded. A possible entrance was identified in the south wall (Figure A.35).

A total of 772 artifacts were recovered from the structure including, 241 sherds, the majority of which were utilitywares, San Largo Glaze-on-polychrome, and Cieneguilla

Glaze-on-yellow. The 531 lithic artifacts included three cores, 523 pieces of debitage, two hammerstones, and three ground stone artifacts (two milling slabs and one axe/maul). Fourteen faunal remains were recovered and included one woodrat, one gopher, two small rodents, three turtle scutes, one turkey bone, one large mammal, and five unidentified bones. A bone awl manufactured from a turkey tarsometatarsus was found in Room 2. No economically significant plant resources and/or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early-Middle Classic period date was assigned.

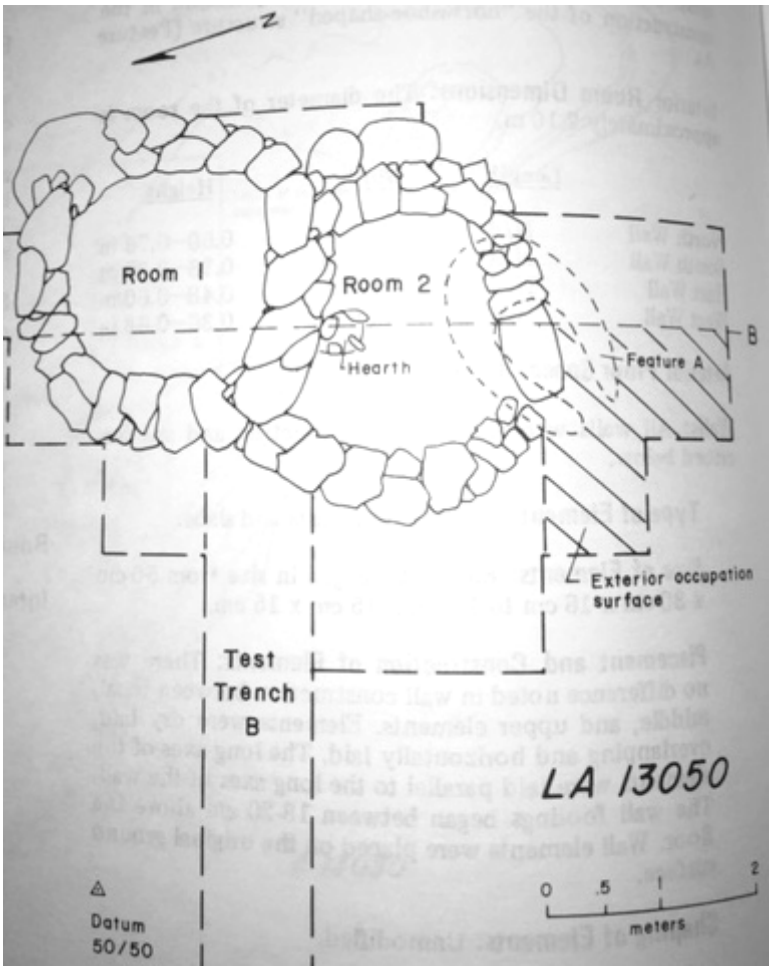

Figure A.35 Plan view of LA 13050 ([14]Schutt 1979:Figure 6.2)

LA 13054[15]

LA 13054 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located on a gravel ridge in White Rock Canyon on the west side of the Rio Grande in a juniper grassland at 5,340 feet, the site consisted of two noncontiguous rooms (Figure A.36) that were occupied

during the Early Classic period (A.D. 1350–1400). Room 1 is a subrectangular, semi-subterranean structure, measured 1.5 meters by 1.3 meters (2.0 square meters of interior space), and had a floor compacted from use. All corners were bonded. The walls were generally constructed from unshaped local basalt slabs that were one element wide and dry-laid (Figures A.37 and A.38). Basal elements were placed side by side, in vertical positions, forming the foundation of the room walls. These upright slabs were secured in a trench, and the spaces between were filled with smaller slabs that were laid horizontally and overlapped. A slab-lined hearth was found in the southeast corner. Room 2 (Figure A.39) is approximately 1 meter west of Room 1. The room was a rectangular surface structure with bonded corners, had a living surface compacted from use, and measured 2.2 meters by 1.9 meters (4.2 square meters of interior space). The room was heavily eroded, and only the basal elements remained. These consisted of unshaped local basalt slabs placed side by side in a vertical position. Two hearths were identified (Figure A.36). One was a shallow oval depression in the south wall (hearth A), and one was slab-lined in the northeast corner (hearth B).

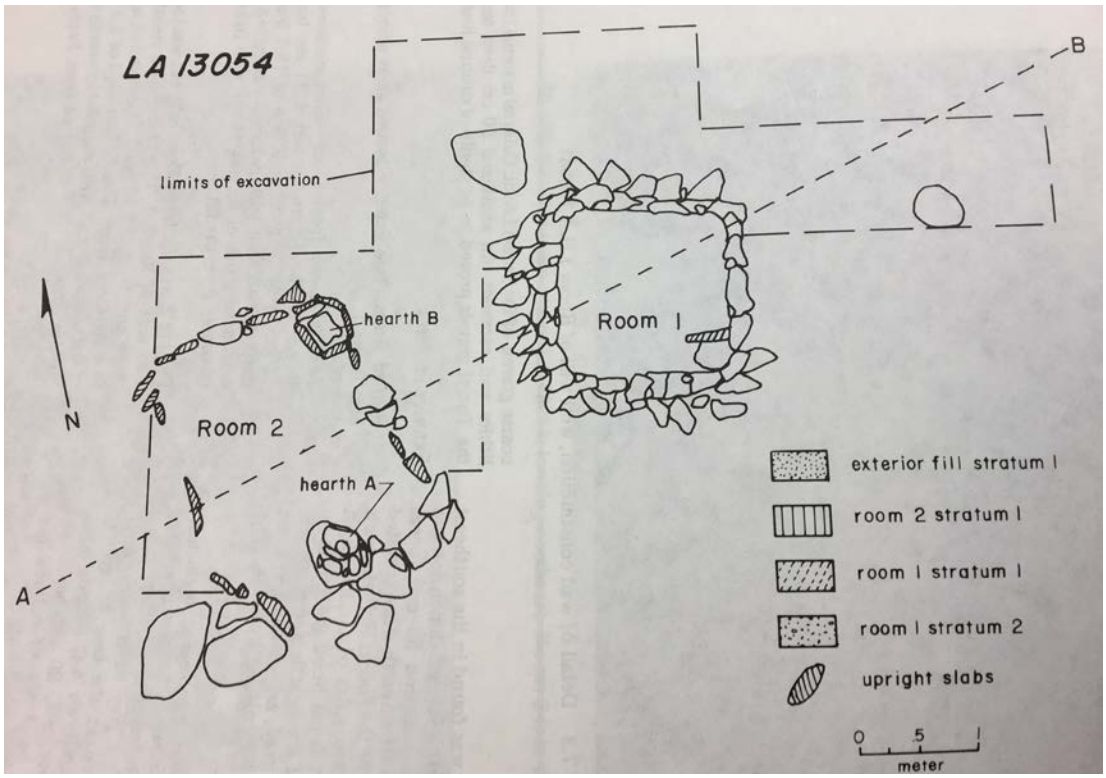

Figure A.36 Close-up of masonry at LA 13054 Room 1 ([15]Shutt 1979:Figure 7.2)

Figure A.37 LA 13054 Room 1 after excavation ([15]Schutt 1979:Plate 7.2)

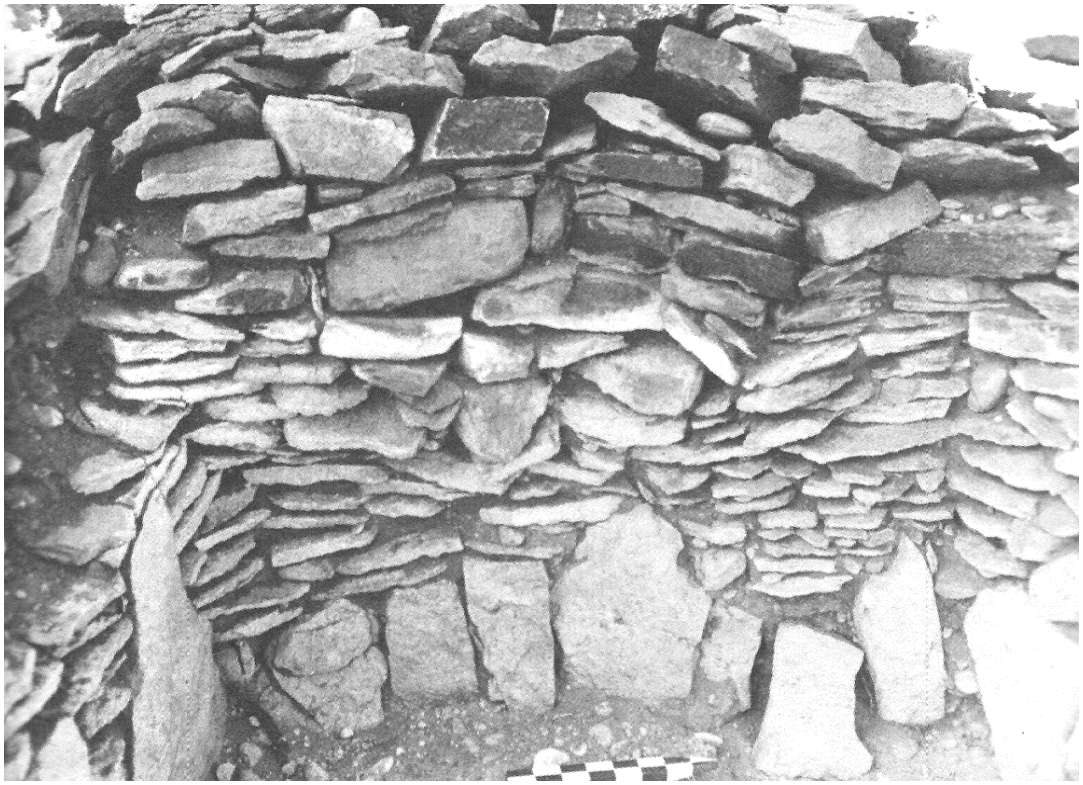

Figure A.38 Close-up of masonry at LA 13054 Room 1 ([15]Shutt 1979:Plate 7.3)

A total of 1,499 artifacts were recovered from the structure including, 200 sherds, the majority of which were utilitywares and glazewares. The 1,299 lithic artifacts included 11 cores, 1,273 pieces of debitage, four hammerstones, five retouched tools, and six ground stone artifacts (three manos, two milling slabs, and one abrader). Seventeen faunal remains were recovered and included one gopher, one rock squirrel, two Abert's squirrel, one turkey, 11 large mammal, and one medium mammal. A fish vertebra was recovered in the heavy fraction. Three long bone shaft fragments were manufactured into tools, two of which were awls and one of which was a needle. No economically significant plant resources and/or cultigens were identified. The architectural construction of these rooms is similar to many Classic period sites found in the Cochiti Reservoir area. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date was assigned.

Figure A.39 LA 13054 Room 2 after excavation ([15]Shutt 1979:Plate 7.4)

LA 13076[16]

LA 13076 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located on a steep, basalt talus slope on the east side of the Rio Grande in a juniper grassland at 5,320 feet, the site

consisted of two noncontiguous structures that were occupied during the Early Classic period (A.D. 1350–1450). Survey data identified a third structure, which was denoted as Room 1. When excavated, this feature turned out to be a midden and not a room. Room 2 is a square, surface structure, measured 1.6 meters by 1.6 meters (2.6 square meters of interior space), and had a floor compacted from use. All corners were bonded except in the east wall, which was abutted to a large boulder. An entryway was also found in the east wall. The other walls were generally constructed from unshaped local basalt slabs and clasts that were one element wide. Room 3 is located about 10 meters north of Room 2. The room was a triangular shelter formed by two large basalt boulders and a small, curved, dry-laid masonry wall that abutted the west boulder, had a living surface compacted from use, and measured 2.2 meters by 1.6 meters (3.5 square meters of interior space) (Figure A.40). An entryway was located between the east boulder and the end of the masonry wall. This wall was constructed of dry-laid, uncoursed masonry of basalt clasts of variable sizes. Two hearths were identified. One was against the west boulder opposite the entryway, and the other one was irregularly shaped and located just inside the entryway.

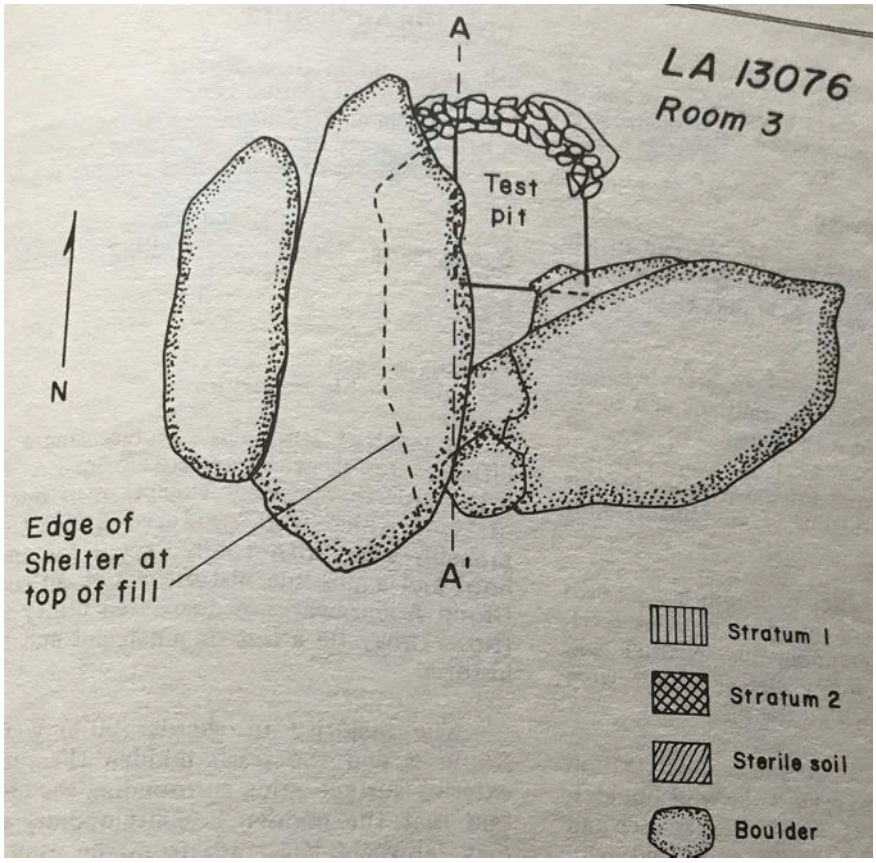

Figure A.40 LA 13076 plan map ([16]O'Leary 1979:Figure 8.3)

A total of 1,535 artifacts were recovered from the structure including, 126 sherds, the majority of which were utilitywares and Glaze A wares. The 1,409 lithic artifacts included one obsidian biface, seven cores, and 1,401 pieces of debitage. No ground stone artifacts or faunal remains were recovered. No economically significant plant resources and/or cultigens were identified. Most of the artifacts were associated with Room 2. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date was assigned to both structures. It is thought that the structures were either occupied simultaneously or were slightly staggered.

LA 13084[17]

LA 13084 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located on a basalt boulder field on the east side of the Rio Grande at 5,380 feet, the site consisted of three spatially discrete proveniences and five noncontiguous masonry structures that were occupied during the Early Classic period (A.D. 1350–1400). Provenience 1 was located on the northwest end of the site and consisted of one freestanding masonry structure. Room 1 in Provenience 1 (Figure A.41) is ovoid in shape, measured 2.6 meters by 2.0 meters (5.2 square meters of interior space), and had a floor compacted from use. An entryway was found in the south wall. Wall construction included the use of boulders already in place, with smaller unshaped elements then piled between and against the boulders. An irregular shaped hearth was found against a large boulder in the east wall (Figure A.42). Forty-nine sherds were recovered including mostly glazewares and San Clemente Glaze-on-polychrome. Lithics included 1,148 pieces of debitage and 7 cores.

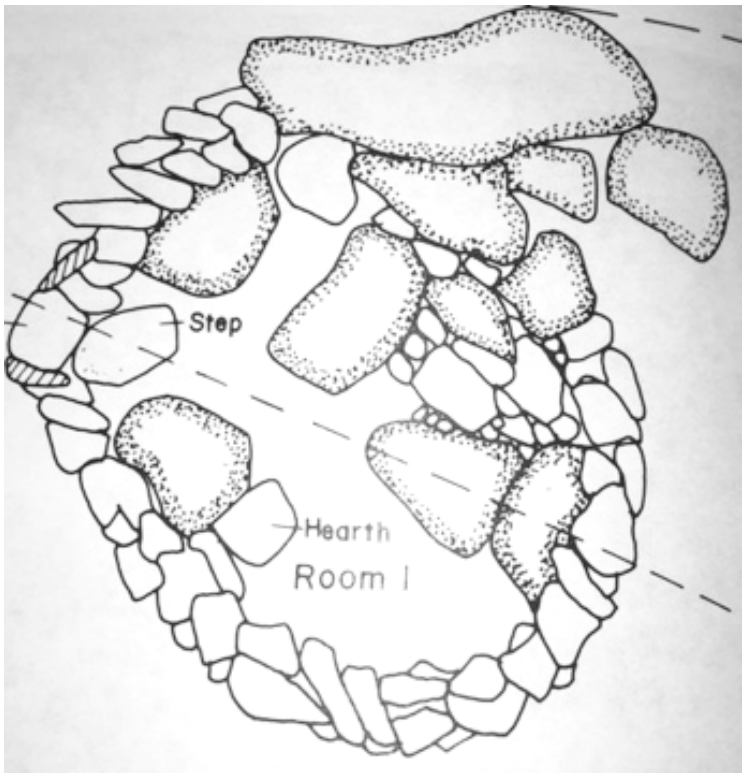

Figure A.41 Plan view of Room 1 ([17]Hunter-Anderson 1979:Figure 9.2)

Figure A.42 East wall of Room 1 in foreground ([17]Hunter-Anderson 1979:Plate 9.2). Note the extent of the boulder field

Provenience 2 consisted of a cluster of three noncontiguous structural features (Rooms 2, 3, and 4) located 20 meters east of Provenience 1. Room 2 was roughly rectangular and adjoined an open-ended space with two auxiliary walls to the south (Figure A.43). The walls were constructed of unmodified local basalt clasts and slabs. There was no difference in construction between the basal, middle, and upper wall elements and the wall footings began about 5 centimeters above the compacted occupation surface. The west wall abutted a large boulder in the north wall, forming the northwest corner of the room, which measured 1.7 meters by 1.3 meters (2.2 square meters of interior space) and had an entryway in the western portion of the south wall. A slab-lined hearth was found against the east wall approximately 1 meter from the room's southeast corner. All the ceramics in Provenience 2 were found in this room and included Agua Fria Glaze-on-red, San Clemente Glaze-on-polychrome, and Abiquiu Black-on-gray. Sixty-five subsurface lithic artifacts were found, most of which were flakes, but two cores were also identified.

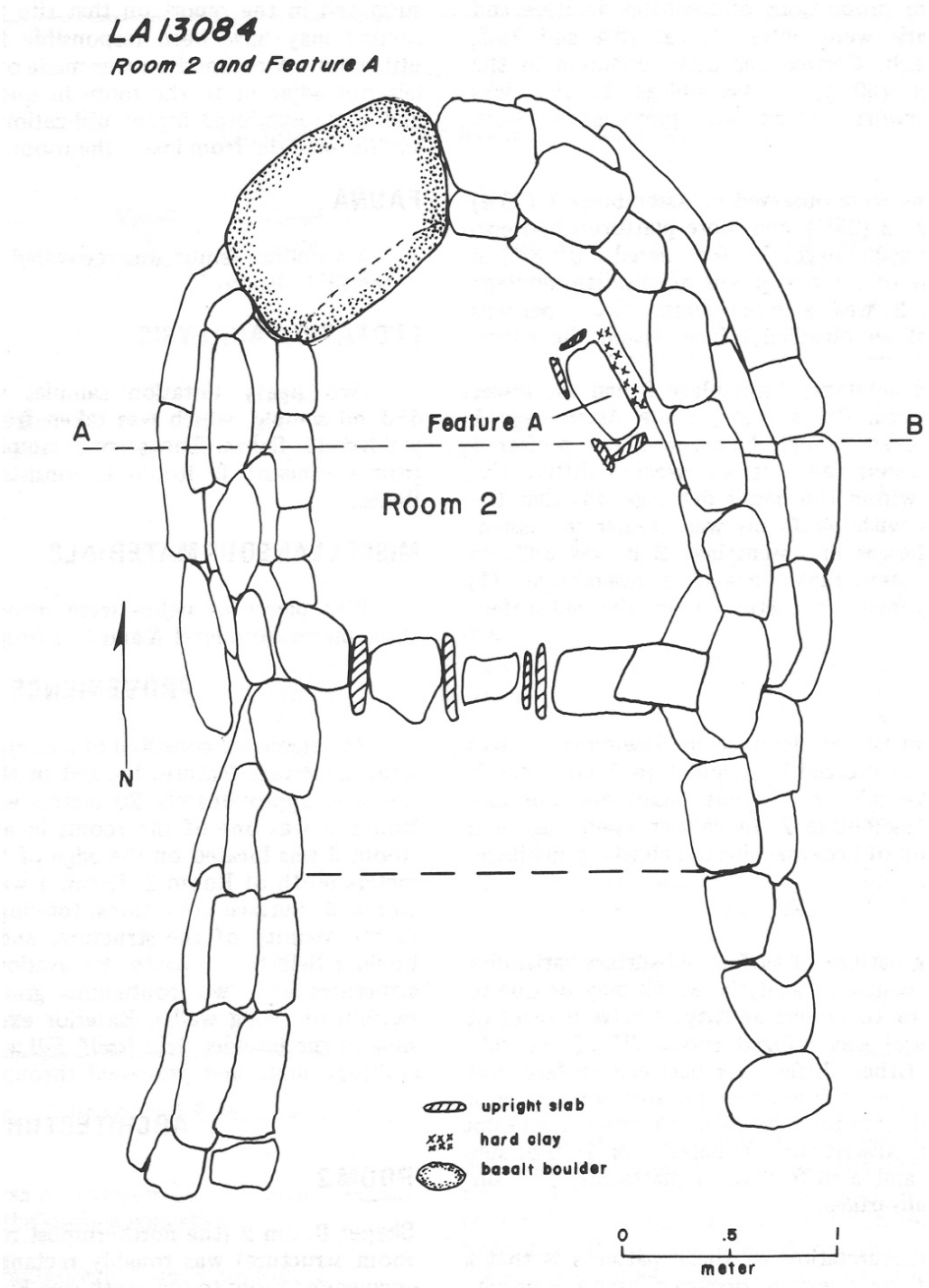

Figure A.43 LA 13084, Provenience 2 plan map ([17]Hunter-Anderson 1979:Figure 9.4)

Room 3 was formed by the intersection at a right angle of two basalt walls, which resulted in an L-shaped room, containing basalt boulders at the ends of the wall (Figure A.44). Basalt cobbles joined the two wings of the "L." Basalt clasts and slabs were piled haphazardly to the height of the existing boulders and were dry-laid in an overlapping fashion. Room 3 measured 3.0 meters by 2.7 meters (8.0 square meters of interior space)

and had a living surface that was compacted from use. No entryway or features were found. No ceramics were found, but one subsurface lithic artifact was identified.

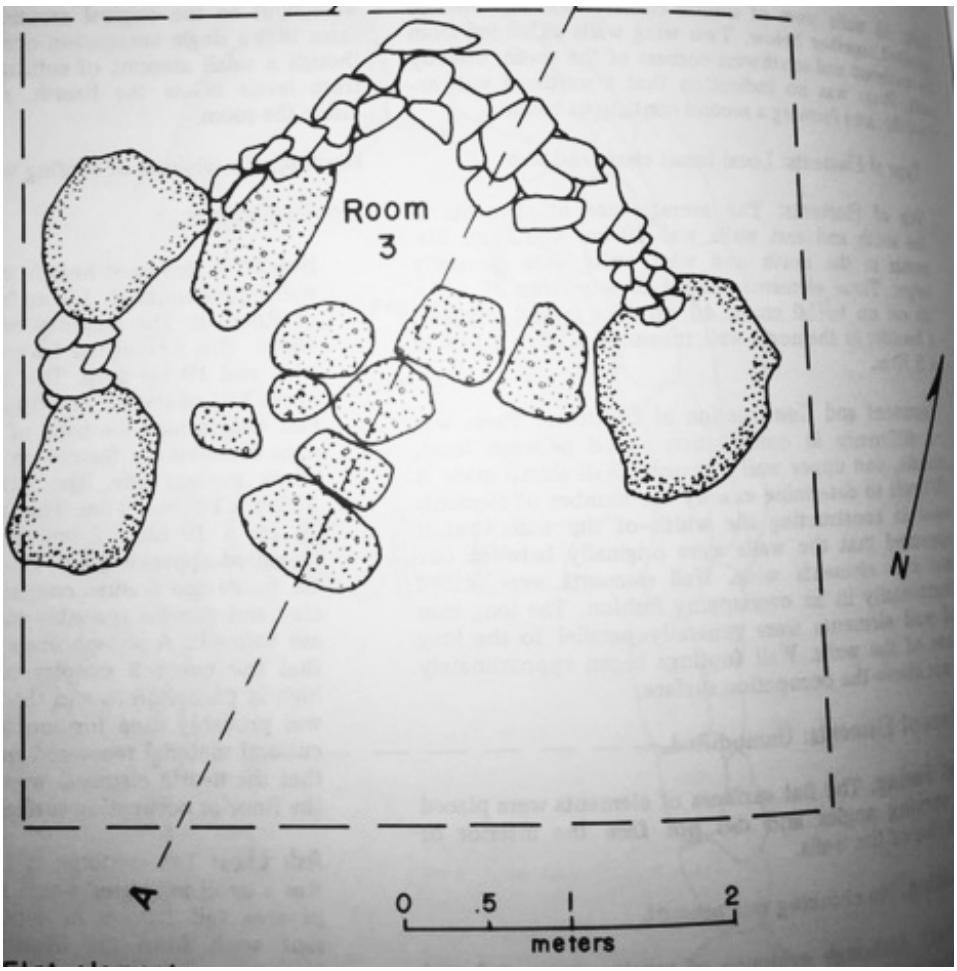

Figure A.44 Plan view of Room 3 ([17]Hunter-Anderson 1979:Figure 9.5)

Room 4 was an irregularly-shaped and scooped-out area within the boulder field. The walls were haphazardly stacked after the material was scooped out of the center. Room 4 measured 1.8 meters by 1.3 meters (2.3 square meters of interior space) and had a living surface that was compacted from use (Figure A.45). A possible ashpit was found in the southwest quadrant, but no cultural materials were associated with the feature. No ceramics were found, but 91 subsurface lithic artifacts were identified, including one core.

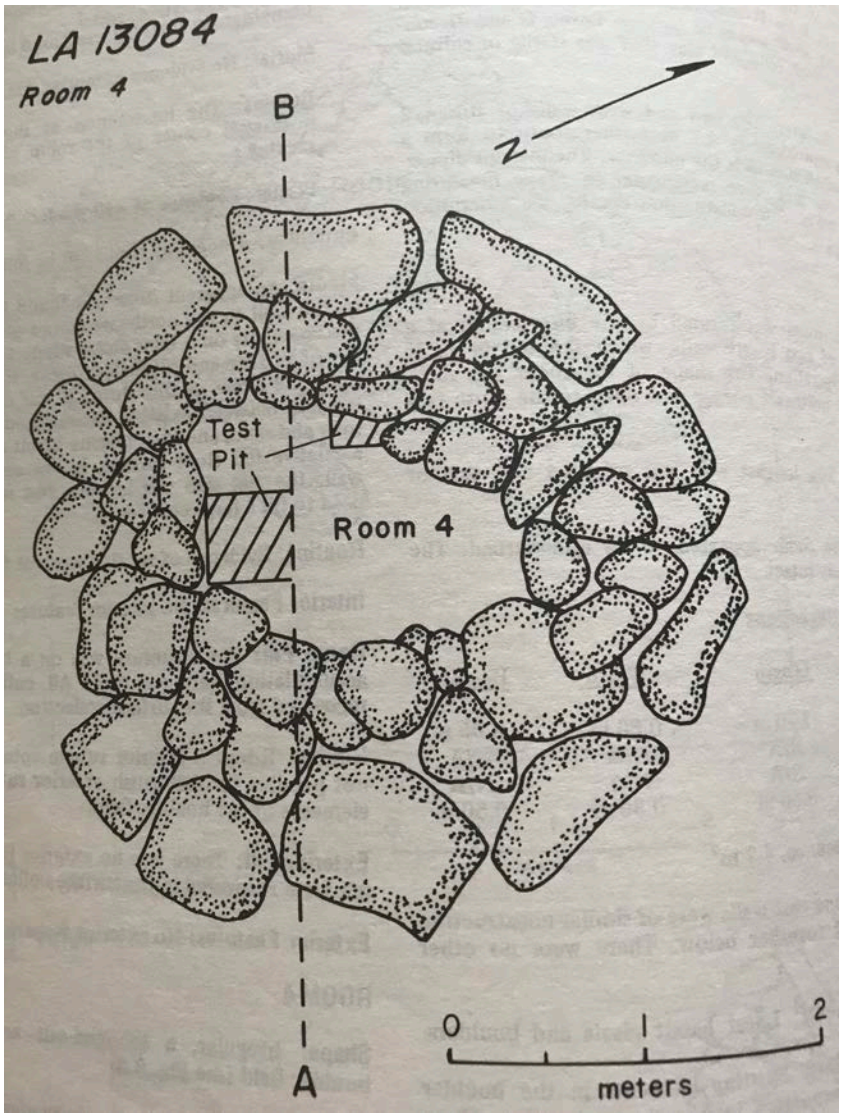

Figure A.43 Plan view of Room 4 ([17]Hunter-Anderson 1979:Figure 9.6)

Provenience 3 was located approximately 25 meters east of Provenience 2. It consisted of a semi-circular alignment of stacked rocks on the crest of the boulder field, labeled Room 5. Room 5 measured 2.5 meters by 1.9 meters (4.8 square meters of interior space) and had a living surface that was compacted from use. The structure was three-sided, with unmodified local basalt clasts dry-laid horizontally. The walls were between one and two elements wide, and the construction elements overlapped. The corners were rounded and interlocking. A formal entryway was not identified, though the structure was open to the south. No internal features were found. Four red glazeware body sherds were identified along with 681 lithic artifacts, including one core and one mano fragment.

LA 13084 contained five separate structures; one was a possible two-room structure, and the other four were single rooms, two that were open at one end, and two that were closed and circular in shape. No chronometric dates were obtained, but based on the ceramic assemblage, an Early Classic period date was assigned to all five structures, which were thought to be occupied simultaneously.

LA 13086[18]

LA 13086 was excavated in 1975 by the Office of Contract Archeology, University of New Mexico as part of a program for the mitigation of cultural resources that were to be adversely impacted by floodwaters retained by Cochiti Dam. Located in a rock-slide produced basin on the east side of the Rio Grande at 5,370 feet, the site consisted of two noncontiguous one-room masonry structures (Proveniences 1 and 3) that were occupied primarily during the Late Coalition period (A.D. 12350–1325) and one three-room structure (Provenience 2) that was occupied during the Early Classic period (A.D. 1375–1400).

Provenience 1/Room 1 was a freestanding subrectangular masonry structure, measured 1.9 meters by 1.3 meters (2.5 square meters of interior space), and had a prepared floor compacted from use (Figure A.46). A possible entryway was found in the east wall. Wall construction included the use of two in situ boulders, with smaller unshaped elements then piled between and against the boulders. The northwest and southwest corners were interlocking, while the east walls abutted the large boulders. No interior features were found, though an irregularly-shaped extramural hearth was identified southeast of the room. Seven sherds were recovered from a Prieta Smeared Indented jar/olla, as well as a handful of San Clemente Glaze-on-polychrome sherds, indicating both Late Coalition and Early Classic period occupations. A total of 338 lithic artifacts were also identified.

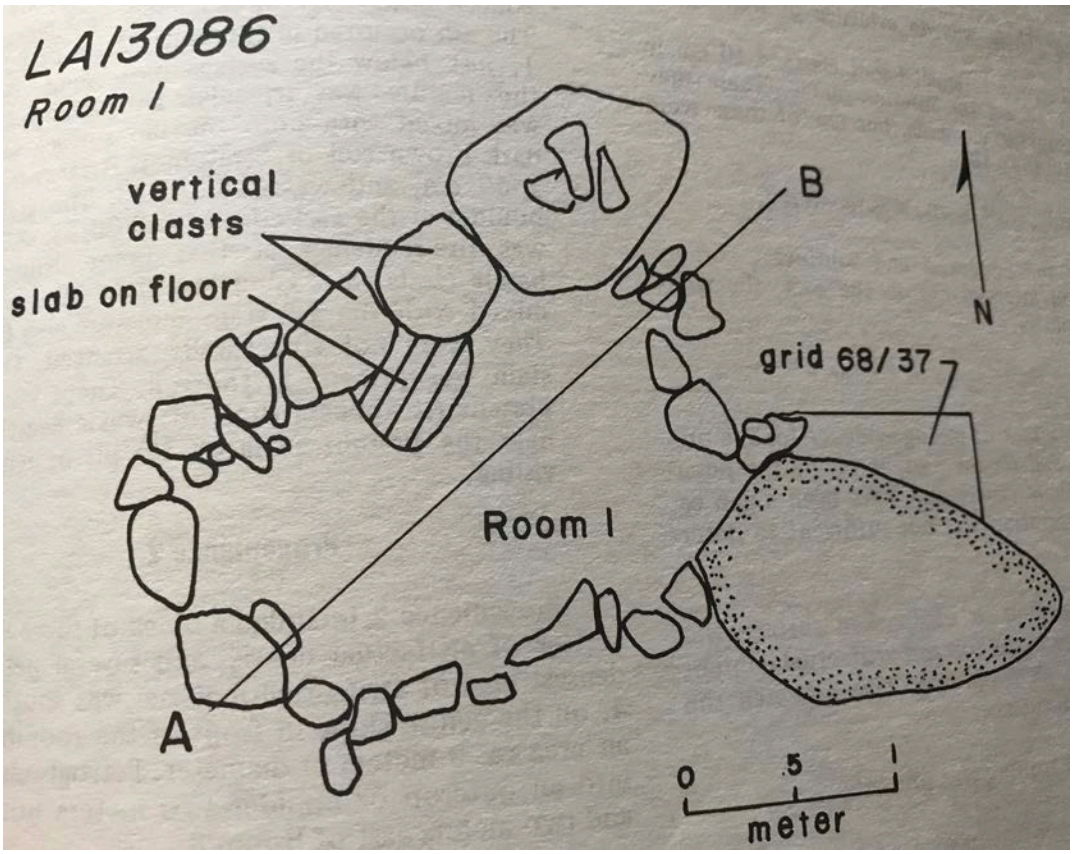

Figure A.46 LA 13086, Provenience 1, Room 1 ([18]Hunter-Anderson et al. 1979:Figure 10.2)

Provenience 2 included a block of three rooms (Rooms 2, 3, and 4) constructed against the east side of a large upright boulder that formed the back of Rooms 2 and 3 (Figure A.47). The roomblock was L-shaped, with Room 4 adjoining the east side of Room 3. The ceramic assemblage indicates a lengthy Early Classic period occupation (A.D. 1375–1500).

Figure A.47 LA 13086, Provenience 2, Rooms 2, 3, and 4 ([18]Hunter-Anderson et al. 1979:Plate 10.1)

Room 2 was subrectangular in shape, measured 2.4 meters by 2.0 meters (4.8 square meters of interior space), and had a prepared floor compacted from use. The three walls consisted of unmodified, stacked basalt clasts that were typically one element thick and two elements high, and had interlocking corners. No interior features or entryway was found.

Room 3 was square in shape and measured 1.7 meters by 1.7 meters (2.9 square meters of interior space). One wall was formed by a large basalt boulder, while the other three were constructed of unmodified basalt clasts that were laid horizontally parallel to the long axis of the walls. Three to four courses remained at the time of excavation. The walls abutted the large boulder but were otherwise interlocking. No interior features or entryway were identified.

Room 4 was a subrectangular masonry room that measured 2.9 meters by 2.2 meters (4.6 square meters of interior space). It abutted Room 3. The walls were constructed from mostly unmodified local basalt clasts, but also included vesicular basalt manos and metates in the walls. The west wall was different, constructed from local basalt clasts that were wet-laid horizontally. Wall plaster was evident as was floor plaster. The floor was very well preserved, and the plaster was approximately 1.5 to 2 centimeters thick. No entrances were evident, but four features were identified. These included a slab-lined hearth near the southwest corner of the room, a sub-floor, rectangular hearth built against the north wall, a sub-floor, rectangular hearth against the south wall, and a

burned and blackened area near the center of the room (Figure A.48; note the ceramic vessels on the floor).

Figure A.48 LA 13086, Room 4 ([18]Hunter-Anderson et al. 1979:Plate 10.2)

Provenience 3/Room 5 was a rectangular surface structure located 35 meters southwest of Provenience 2. The walls were heavily eroded and constructed of unmodified local basalt clasts that were a single element wide. The minimal amount of masonry rubble indicated the stones served as footings for a defunct adobe wall. All corners were interlocking and built in a single construction episode. Room 5 measured 3.2 meters by 2.5 meters (8.0 square meters of interior space) and contained a plastered floor that was 2 centimeters thick (Figure A.49). No entryway was identified, but the room contained four interior features. Features included a circular hearth found in the center of the room, an ash deposit north of the hearth, a storage bin built against the east wall, and a sub-floor pit located against the center of the south wall. Ceramics recovered from Room 5 included utilitywares and Santa Fe Black-on-white. A total of 126 pieces of debitage, one core, one hammerstone, one mano fragment, and six unidentified faunal remains were recovered. This provenience, unlike the other two, appears to have only been occupied during the Late Coalition period.

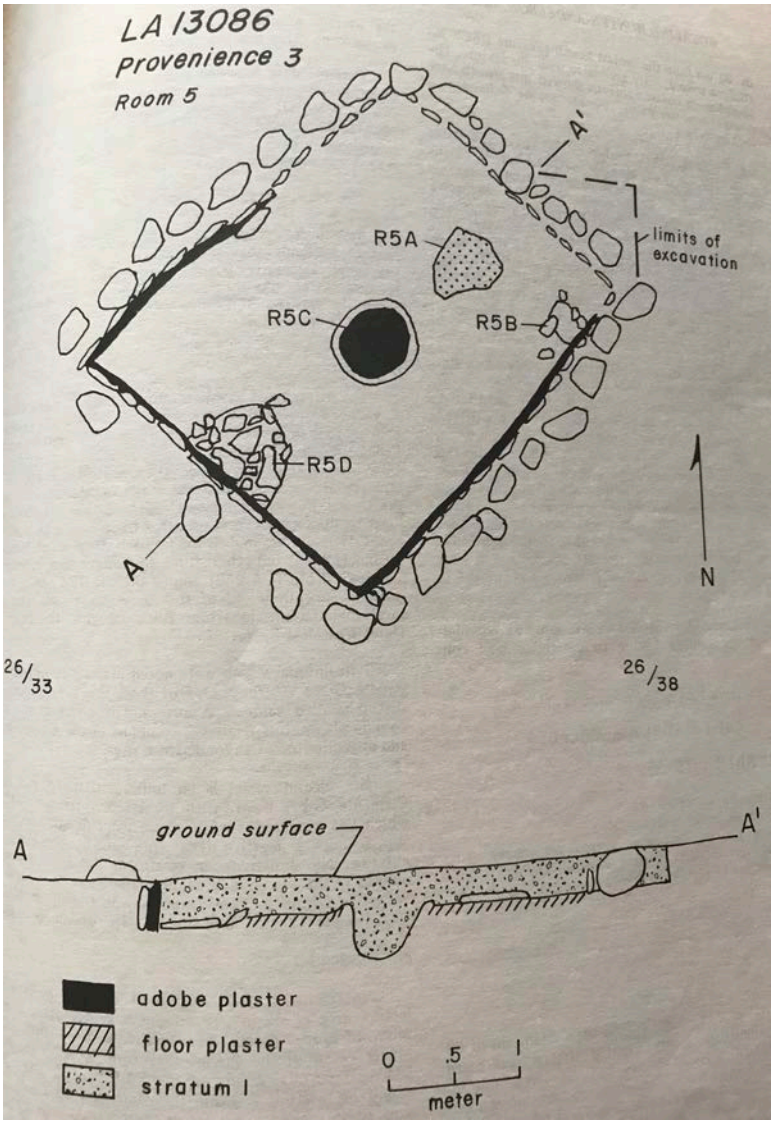

Figure A.49 Plan view of Room 5 ([18]Hunter-Anderson et al. 1979:Figure 10.4)

LA 14814[19]

LA 14814 was excavated in the late 1970s by the Los Alamos Archaeological Society as part of a project designed to salvage several archaeological sites in advance of a large housing development. Located near the top of the north wall of Pueblo Canyon on a north-facing slope in a Ponderosa pine forest at 7,090 feet, the site was a one-room structure that dated to the Classic period (Figure A.50). The structure was rectangular in shape, measured 2.6 meters by 1.5 meters (3.9 square meters of interior space) and had a prepared living surface. The walls were constructed of large, loaf-shaped tuff blocks, and some adobe plaster remained on the lowest courses. An ash concentration was located near the east wall, and a rectangular hearth was identified underneath the stain.

A deflector was found to the west of the hearth. The base of a Sapawe Micaceous bowl was found in the hearth and behind the deflector.

A total of 161 artifacts were recovered from the structure including, 146 ceramics, the majority of which were biscuitwares and Sapawe Micaceous. The 15 lithic artifacts included flakes. No ground stone, faunal remains or cultigens were reported. No chronometric dates were obtained, but based on the ceramic assemblage and architecture, a Classic period date was assigned.

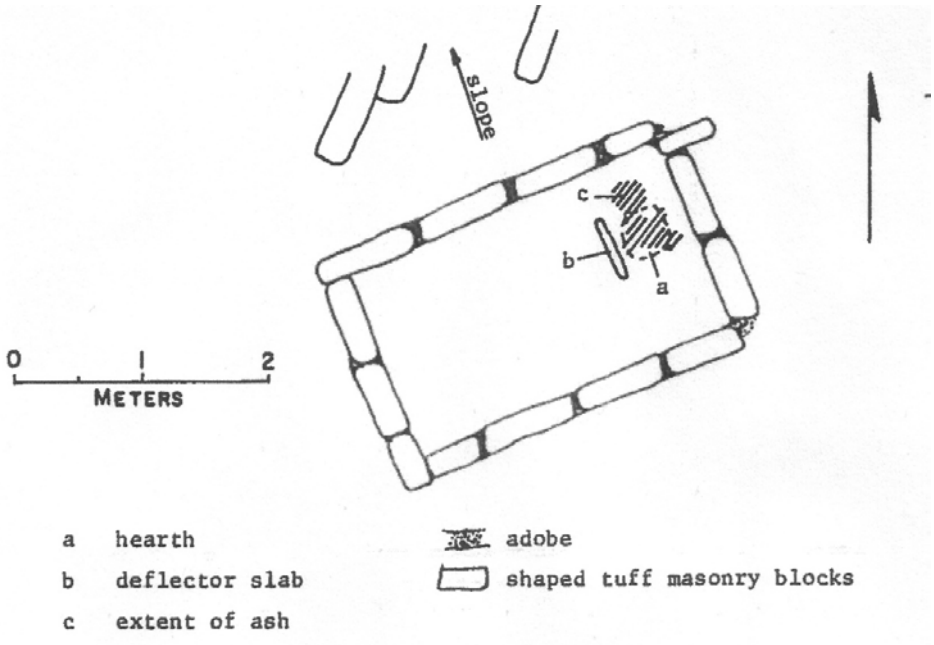

Figure A.50 Plan view of LA 14814 ([19]Poore 1981:Figure 5)

LA 15116[20]

LA 15116 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a north-facing slope in a transitional piñon-juniper and Ponderosa pine woodland at 6,944 feet, the site was a one-room structure that was occupied during the Middle Classic period (Figure A.51). The structure was freestanding and was constructed from a single row of unshaped tuff and dacite blocks. In most places, either a single row of large rocks or several small, unaligned rocks formed the wall foundation, with the exception of the south wall, which incorporated a large boulder.

Room 1 was probably elliptical, although its heavily eroded nature precluded a definite determination of its shape (Figure A.52). It measured 2.5 meters by 1.9 meters (4.75 square meters of interior space) and had a prepared living surface. An auxiliary wall extended in an arc shape from the southeast corner of the room, probably

enclosing an activity area east of the structure, which is where the majority of artifacts at the site were recovered. A possible entryway was located in the east wall, just north of the activity area.

A total of 124 artifacts were recovered including, 85 ceramics, the majority of which were Biscuit Black-on-cream body sherds, Biscuit B, and Sapawe Micaceous. The 39 lithic artifacts included one core and 38 pieces of debitage. No ground stone or faunal remains were recovered. Economically significant plant resources and cultigens included maize and cholla. No chronometric dates were obtained, but based on the ceramic assemblage, a Middle Classic period date was assigned.

Figure A.51 LA 15116 after excavation ([20]Lockard 2008:Figure 28.1)

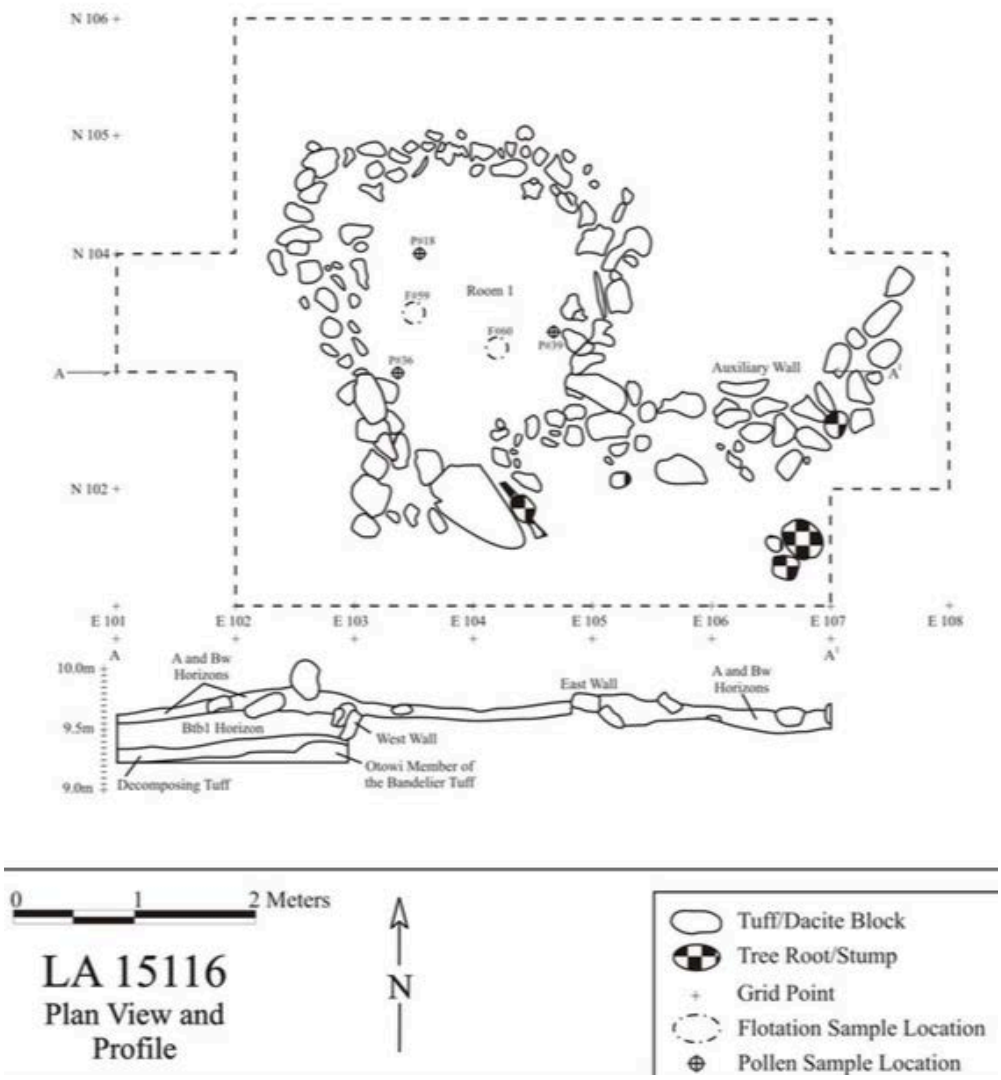

Figure A.52 Plan view and profile of Room 1 ([20]Lockard 2008:Figure 28.2)

LA 16097[21]

LA 16097 was excavated in 1977 as part of a study on the effects of the La Mesa fire and associated suppression activities on cultural resources in Bandelier National Monument. Located on a level finger of Burnt Mesa in a heavily burned portion of Ponderosa pine forest at 7,290 feet, the site was a one-room structure with an associated ramada (Figure A.53).

Figure A.53 LA 16097 after excavation ([21]Traylor et al. 1990:Figure 16)

The structure was freestanding and was constructed from shaped and unshaped tuff blocks. In most places, these blocks rested on a firm base of rubble and mortar footings. Both units were constructed simultaneously, with a central wall abutting the two long walls. Wall plaster was found in both rooms and on the floor of Room 1; the ramada area lacked evidence of plaster. Room 1 (Figure A.54) was rectangular and measured 3.0 meters by 2.0 meters (6.0 square meters of interior space). Two rectangular hearths and a bin were identified on the floor. A slab-lined hearth was centrally located along the north wall and contained a pot-rest with a large portion of a corrugated jar. A floor-level, plastered hearth was found in the extreme southeast corner of the room (Figure A.55), with a partially burnt post in a posthole found 3 centimeters to the east. An open-ended, slab-lined bin was found along the west wall. The presence of burned adobe and charred wood are indicative of a timber and mud canopy. Three possible postholes were excavated within the ramada suggesting an overhead shelter. The highest area of artifact density was identified in the open ramada area.

A total of 625 artifacts were recovered from the structure including, 408 ceramics, the majority of which were utilitywares, Bandelier Black-on-gray, and San Lazaro Glaze-on-polychrome. The 217 lithic artifacts included an axe head and two manos. No faunal remains or economically significant plant resources were noted. The ceramic assemblage and the tree-ring samples indicate an occupation in the Middle and Late Classic periods (A.D. 1400–1600).

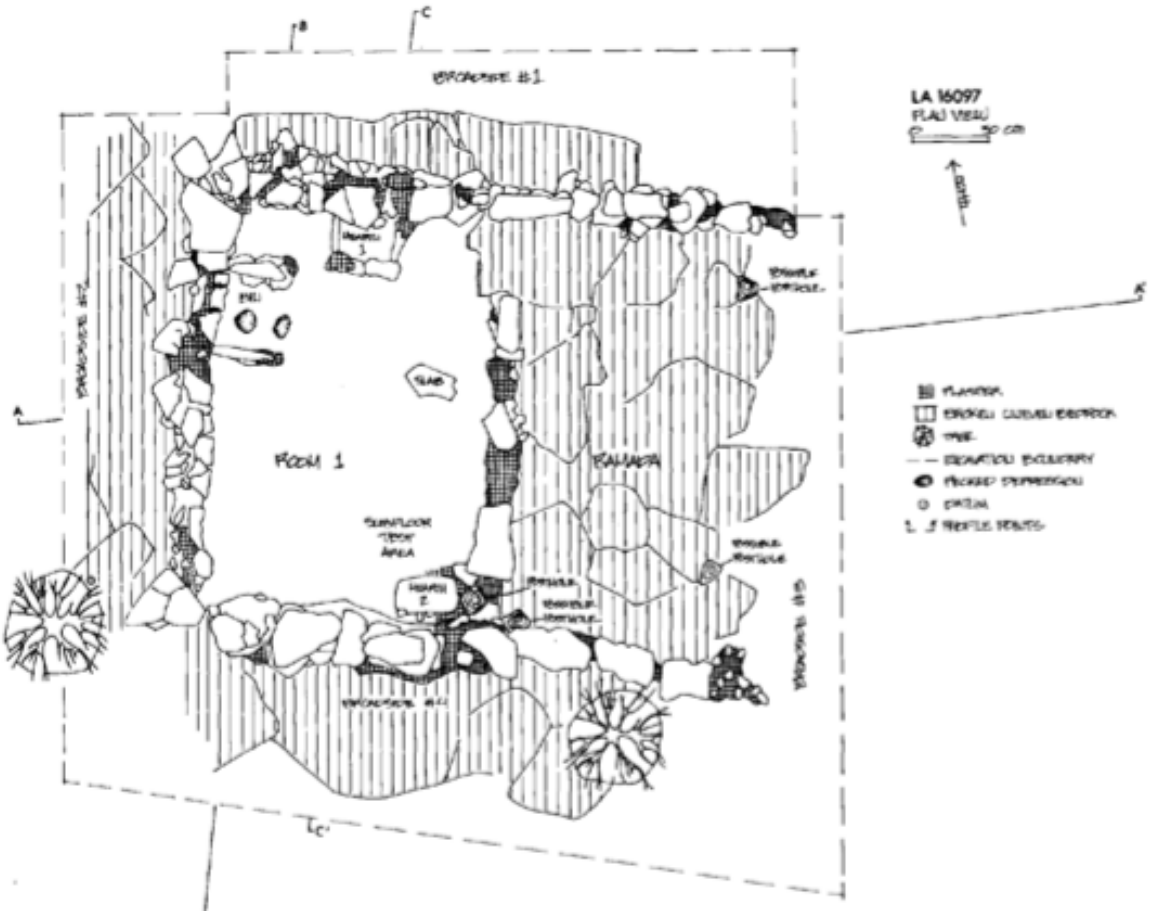

Figure A.54 Plan view of LA 16097 ([21]Traylor et al. 1990:Figure 17)

Figure A.55 Hearth 2 ([21]Traylor et al. 1990:Figure 20)

LA 16107[21]

LA 16107 was tested in 1977 as part of a study on the effects of the La Mesa Fire and associated suppression activities on cultural resources in Bandelier National Monument. Located on a previously burned, large meadow in a Ponderosa pine forest at 7,300 feet, the site was a two-room structure. In the search for features and floors, test pits were placed in obvious corners identified in the mound. The structure was constructed of tuff blocks, all of the identified portions of which were two courses. Only 17 artifacts were recovered from the structure including 16 ceramics, all of which were utilitywares and Bandelier Black-on-gray, and one lithic artifact. No ground stone, faunal remains, or cultigens were recovered. Ceramic remains were the only temporal indicator, pointing to an Early of Middle Classic period occupation (A.D. 1400–1550).

LA 16109[21]

LA 16109 was excavated in 1977 as part of a study on the effects of the La Mesa Fire and associated suppression activities on cultural resources in Bandelier National Monument. Located on a level clearing skirted by Ponderosa pines at 7,220 feet, the site was a one-room structure (Figure A.56). The structure was a freestanding, semi-subterranean room that was constructed of three horizontally stacked blocks, alternated with one vertical block and bonded with adobe mortar. Basal stones were recessed into the original ground surface then externally secured along the bottom edges with mud. Room 1 was rectangular and featureless, measured 3.0 meters by 2.0 meters (6.0 square meters of interior space), and had a living surface compacted from use.

Only 18 artifacts were recovered from the structure including, 13 ceramics, all of which were utilitywares and Santa Fe Black-on-white, and five chipped stone artifacts. No ground stone, faunal remains, or cultigens were recovered. The lack of artifacts suggests the site may have been used temporarily for short periods of time, and the absence of a hearth points to a possible storage function. Ceramic remains were the only temporal indicator, pointing to a Coalition period occupation.

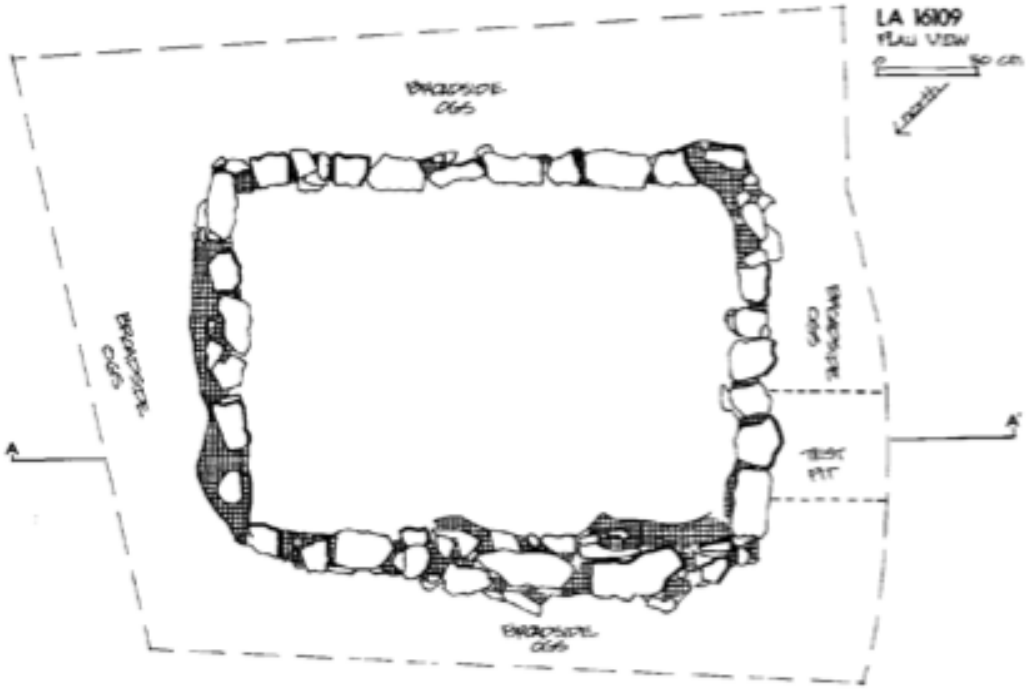

Figure A.56 Plan view of LA 16109 ([21]Traylor et al. 1990:Figure 35)

LA 16114[21]

LA 16114 was excavated in 1977 as part of a study on the effects of the La Mesa fire and associated suppression activities on cultural resources in Bandelier National Monument. Located on the edge of an open, grassy field bordered by two side drainages of Frijoles Canyon in a piñon-juniper woodland at 7,150 feet, the site was a one-room structure with an associated ramada. The structure was freestanding and was constructed from both upright tuff slabs and shaped tuff building blocks. Set into a plaster footing, single rows of uprights served as the base for more substantial blocks, except for the double east wall, which is common to both the room and the ramada. Both units were constructed simultaneously, with a central wall abutting the two long walls (Figure A.57).

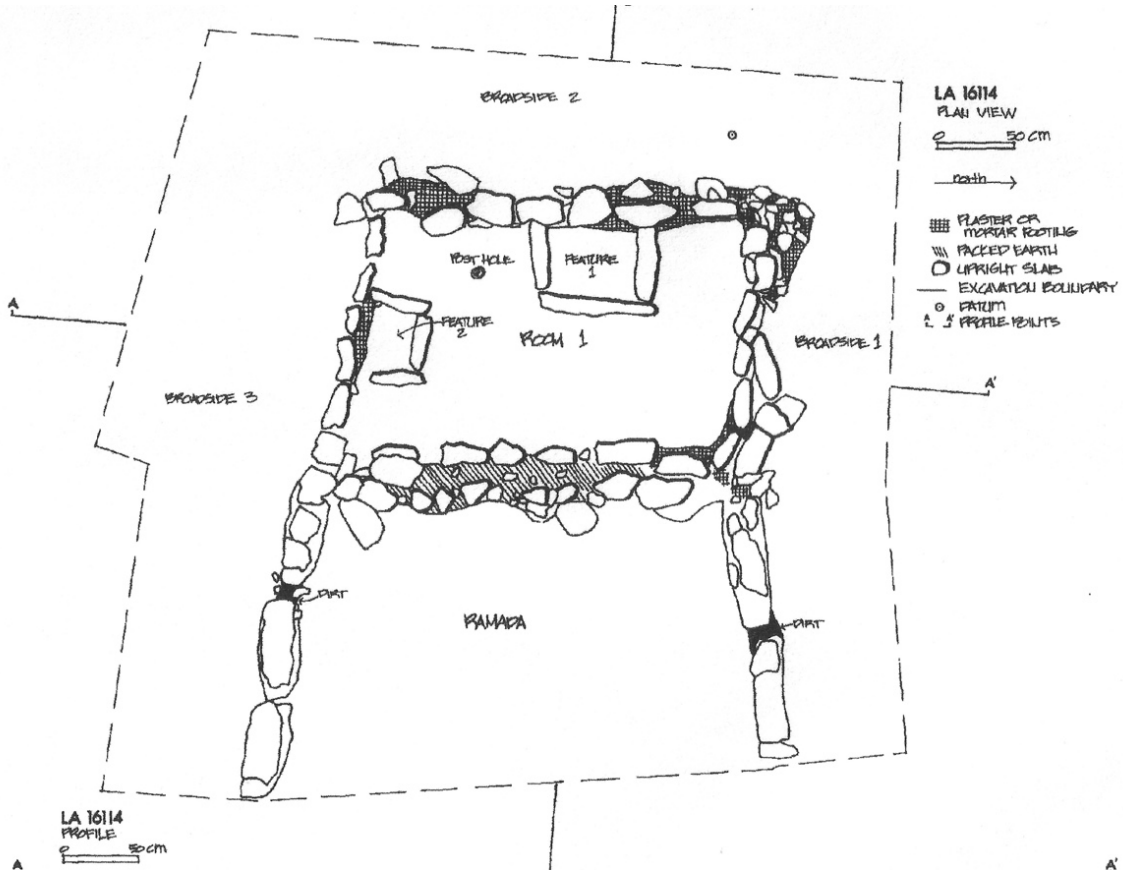

Figure A.57 Plan view and profile of LA 16114 ([21]Traylor et al. 1990:Figure 26)

Room 1 was rectangular, measured 3.0 meters by 2.0 meters (6.0 square meters of interior space), and had no evidence of a floor, just a slight texture change. The only cultural manifestations on the surface were two slab-lined, rectangular enclosures built against the west and south walls, one of which contained a small redware pot (Figure A.58). A posthole was found midway between the bins. The highest area of artifact density was identified in the open ramada area.

A total of 304 artifacts were recovered from the structure including, 209 ceramics, the majority of which were utilitywares, Santa Fe Black-on-white, and glazewares. The 95 lithic artifacts included two cores and a shaft straightener. Three faunal remains were recovered, including a cottontail rabbit leg bone, a large mammal long bone fragment, and a medium-sized artiodactyl antler fragment. A single maize kernel was identified. Similar to LA 16097, these sites seem to have functioned as seasonal fieldhouses surrounded by level, arable land. Ceramic remains were the only temporal indicator and spanned the majority of the Classic period. The site's architecture is reminiscent of other Early Classic period structures located in the Lummis Canyon area of Bandelier National Monument.

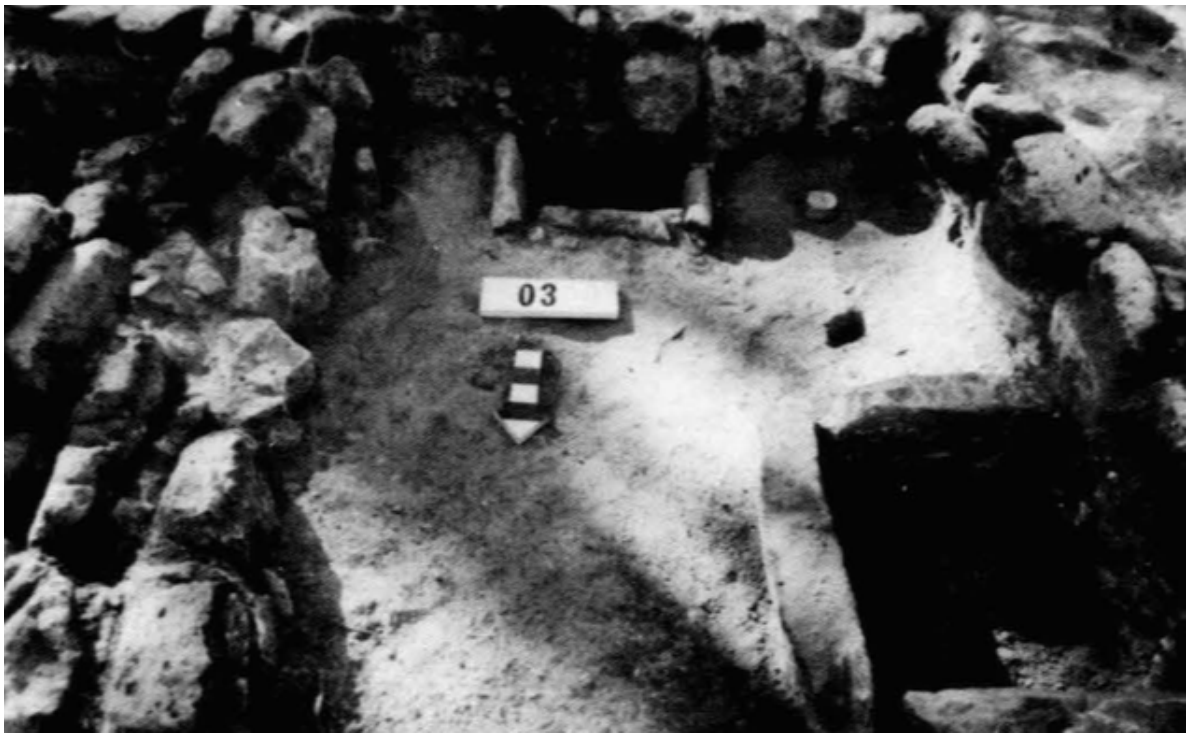

Figure A.58 Room interior of LA 16114 ([21]Traylor et al. 1990:Figure 28)

LA 21454[22]

LA 21454 was excavated in the summers of 1985 and 1986 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located on the northern edge of Guaje Mesa in a grassy meadow surrounded by a Ponderosa pine woodland at 7,560 feet, the site was a one-room structure that was occupied during the Late Coalition period. The structure was freestanding and constructed from shaped tuff blocks, only four courses of which were preserved. Room 1 was rectangular, measured 2.5 meters by 2.0 meters (5.0 square meters of interior space), and had a living surface compacted from use (Figure A.59). No features were identified. A total of 24 artifacts were recovered from the structure including five Santa Fe Black-on-white sherds, eight Tesuque corrugated sherds, one core, and seven flakes. No ground stone, faunal remains, or cultigens were recovered. No chronometric dates were obtained, but based on the ceramic assemblage, a Late Coalition period date was assigned.

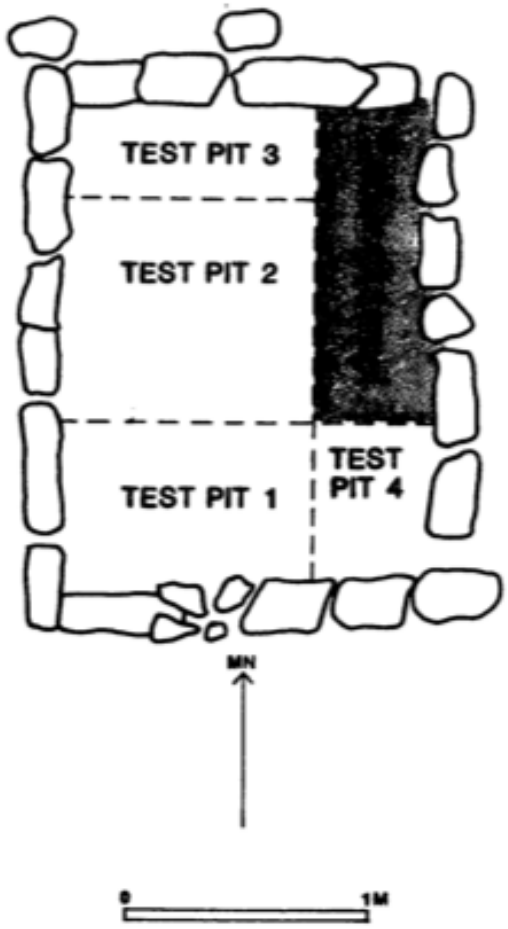

Figure A.59 Plan map of LA 21454 ([22]Preucell 1988:Figure 12)

LA 21472[22]

LA 21472 was excavated in the summers of 1985 and 1986 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located in an open canyon surrounded by a Ponderosa pine woodland at 7,300 feet, the site was a multicomponent, one-room structure occupied during both the Early and Late Coalition periods. The structure was freestanding and constructed from both shaped and unshaped tuff blocks that were two courses high. Room 1 was probably rectangular in shape and had a living surface compacted from use. The south wall measured 1.8 meters, but neither the east or west wall was complete; fragments of these walls and the entire north wall were completely missing due to an active arroyo. Two features were identified including a small rubble concentration that may have functioned to secure a roof support and an extramural hearth (Figure A.60). The hearth was located adjacent to the south wall and was protected by a semi-circular wing wall.

A total of 221 artifacts were recovered from the structure including, 190 ceramics. The ceramic assemblage included 32 Santa Fe Black-on-white sherds, three Rio Grande corrugated sherds, and 155 Tesuque corrugated sherds. The lithic assemblage included 25 flakes, one scraper, three andesite metates, one traprock slab, and one hoe fragment. No faunal remains or cultigens were recovered. Thermoluminescence dates from a clay sample in the hearth yielded a date of A.D. 1340 ± 100. The chronometric dates and the ceramic assemblage indicate two possible occupations, one in the Early Coalition period and one in the Late Coalition period.

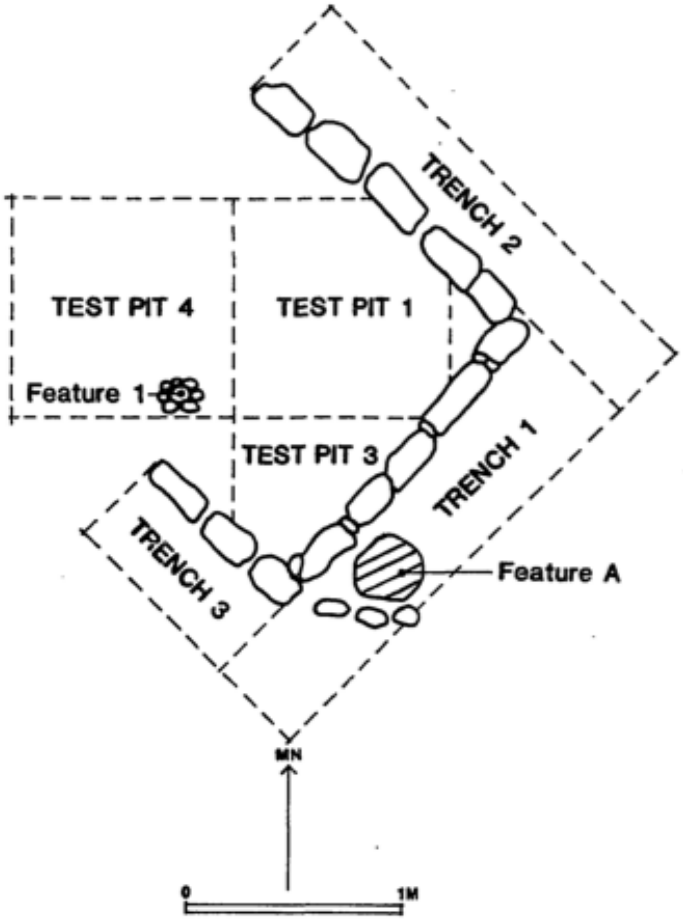

Figure A.60 Plan map of LA 21472 ([22]Preucell 1988:Figure 13)

LA 21473[22]

LA 21473 was excavated in the summer of 1985 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located on a gradual hill slope south of Garcia Canyon in a Ponderosa pine woodland at 7,300 feet, the site was a one-room structure occupied during the Late Coalition period. The structure was

freestanding and constructed from shaped and unshaped tuff blocks with some rhyolite clasts. Room 1 was rectangular in shape, measured 2.0 meters by 1.5 meters (3.0 square meters of interior space), and had a clay living surface compacted from use. A hearth was identified in the southwest corner of the room (Figure A.61). The hearth was formed from a semi-circular ring of andesite cobbles that enclosed a clay-lined depression filled with ashy soil.

The artifact assemblage included two Santa Fe Black-on-white sherds and 19 Tesuque corrugated sherds. The lithic assemblage included one rhyolite floor polisher, one flake, and one mano fragment. One turkey bone and corn cob fragments were also recovered. A large charcoal sample from the hearth was dated and yielded a calibrated date of A.D. 1250, suggesting the site was occupied during the Late Coalition period.

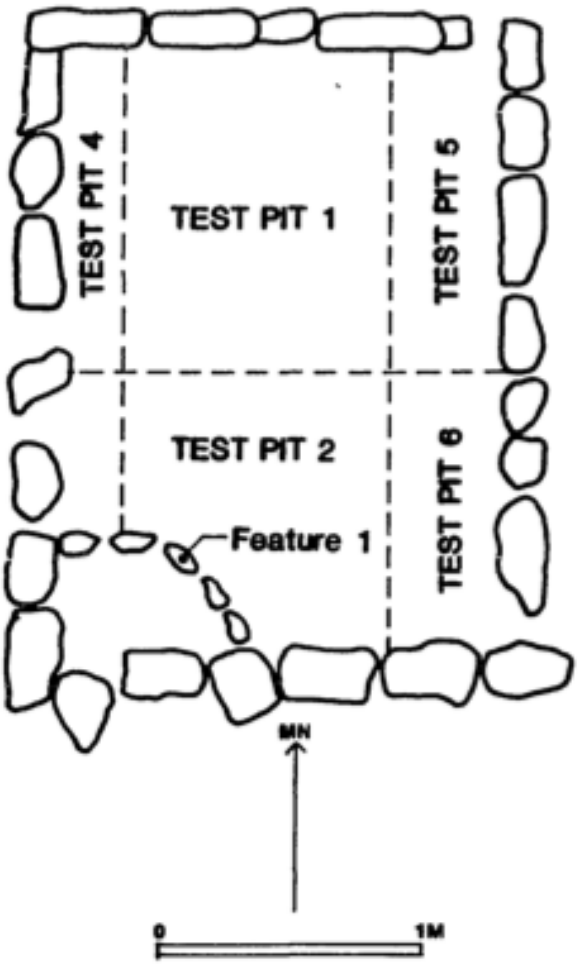

Figure A.61 Plan map of LA 21473 ([22]Preucell 1988:Figure 14)

LA 21607[22]

LA 21607 was excavated in the summers of 1985 and 1986 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located on the crest of a small hill in Sawyer Canyon in a Ponderosa pine woodland at 7,400 feet, the site was a ramada or windbreak that was occupied during the Late Coalition period. The site was formed by a rectangular foundation of rhyolite clasts with some surface rubble, measured 2.0 meters by 1.7 meters (3.4 square meters of interior space), and had a living surface compacted from use. Two post holes were found in the southeast and southwest corners of the structure (Figure A.62). The absence of postholes in the other two corners may indicate the site was a lean-to or ramada.

The ceramic assemblage was small and included six Tesuque corrugated sherds. The lithic assemblage included 10 flakes and one vesicular basalt metate. No faunal remains or cultigens were recovered. Five obsidian flakes were dated by obsidian hydration and clustered around A.D. 1270 ± 36, suggesting the site was occupied during the Late Coalition period.

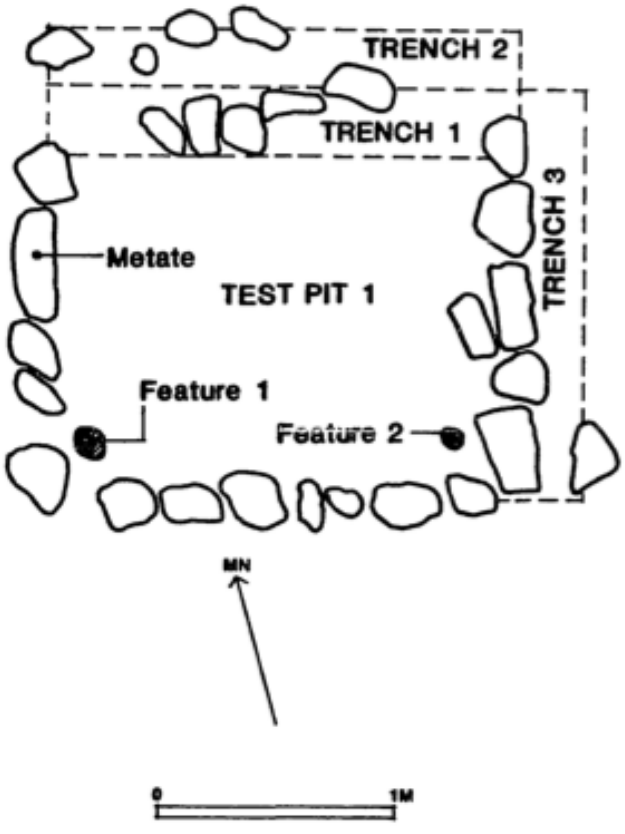

Figure A.62 Plan map of LA 21607 ([22]Preucell 1988:Figure 15)

LA 24552[23]

LA 24552 was excavated in 1985 as part of a project conducted by Santa Fe National Forest personnel to assess if archaeological data had been lost due to the operation of logging equipment within the site's boundary. Located near the edge of San Juan Mesa in a Ponderosa pine forest at 7,650 feet, the site was a one-room structure that was occupied during the Classic period. The structure was freestanding and was constructed from shaped rhyolite blocks, primarily a single element wide (Figure A.63). Four to six courses were present at the time of excavation. All four corners were bonded, indicating a single building episode, and no footing trench was identified. Room 1 was rectangular in shape, and measured 4.0 meters by 3.0 meters (12.0 square meters of interior space), and had a living surface compacted from use. A break in the southeast wall indicates an entryway. Two Jemez Black-on-white sherds and one obsidian projectile point were identified on the surface. Based on the presence of Jemez Black-on-white, the site can be assigned to the Classic period.

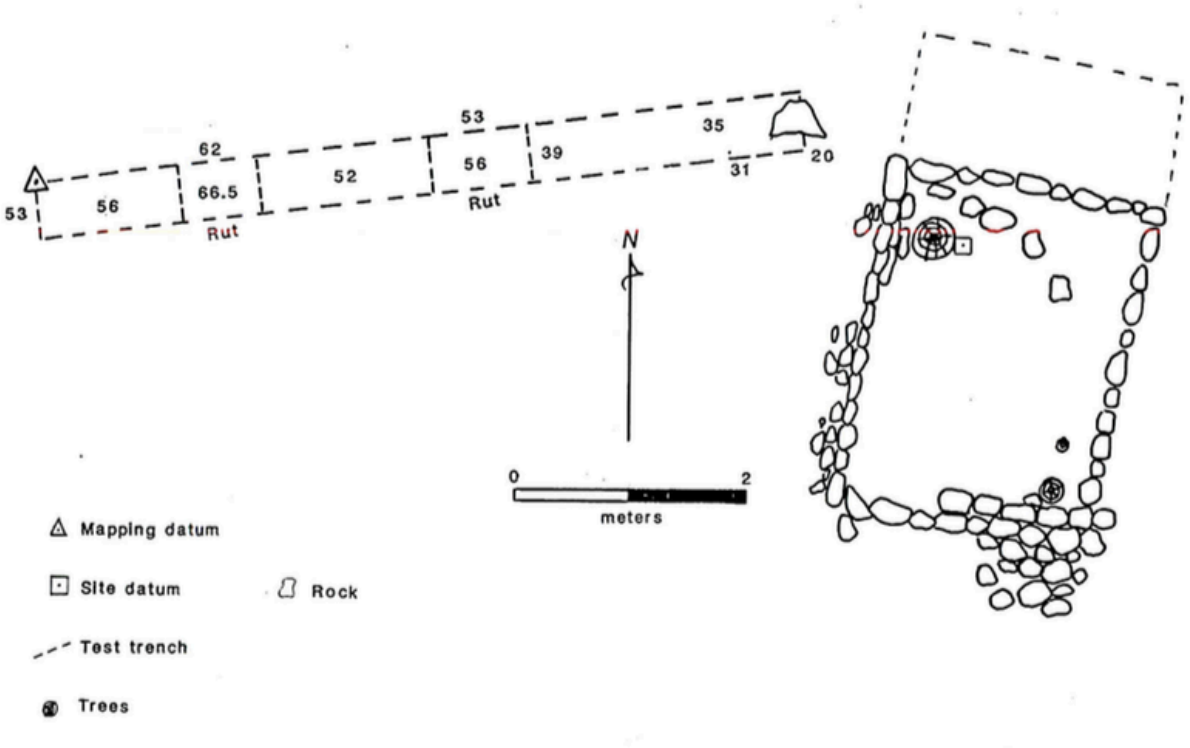

Figure A.63 Plan view of LA 24552 ([23]Elliott et al. 1988:Figure 9.1)

LA 24582[23]

LA 24552 was excavated in 1985 as part of a project conducted by Santa Fe National Forest personnel to assess if archaeological data had been lost due to the operation of logging equipment within the site's boundary. Located on a slope of San Juan Mesa in a Ponderosa pine forest at 8,050 feet, the site was a one-room structure that was heavily

damaged by logging activities and pot-hunting. The structure had two adjoining rooms and was constructed from a single row of roughly shaped tuff blocks. The structure was constructed in one building episode. Room 1 was rectangular in shape and measured 3.0 meters by 2.2 meters (6.2 square meters of interior space). Room 2 was rectangular in shape and measured 3.0 meters by 1.7 meters (5.1 square meters of interior space). No features were identified in either room nor was an entryway. A rectangular wall alignment with two visible corners emerged from beneath the southwest corner of the structure and at an angle to it (Figure A.64).

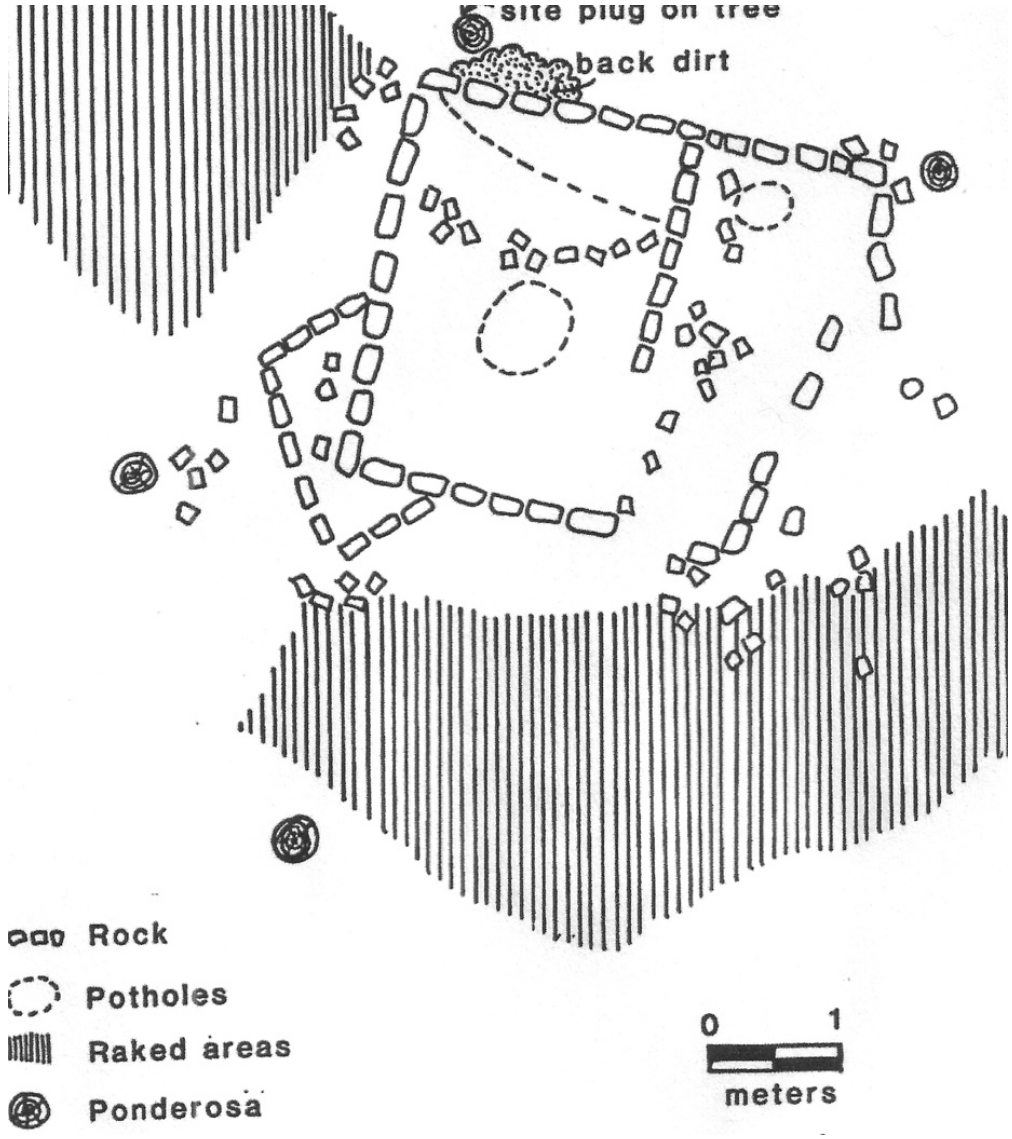

Figure A.64 Plan map of LA 24582 ([23]Elliott et al. 1988:Figure 9.5)

A total of 100 ceramics were collected including Jemez Black-on-white and Glaze E/F. Several of the Jemez Black-on-white sherds contained apparent Spanish and late Glaze

characteristics (Elliott et al. 1998:201). One plano-convex mano and one red sandstone mano were mentioned. Based on the presence of Glaze E/F, the site was probably occupied in the early seventeenth century.

LA 24584[23]

LA 24552 was excavated in 1985 as part of a project conducted by Santa Fe National Forest personnel to assess if archaeological data had been lost due to the operation of logging equipment within the site's boundary. Located on the level top of a broad ridge on San Juan Mesa in a Ponderosa pine forest at 7,980 feet, the site was a two-room structure. The surface of the site was heavily damaged by logging activities. The surface of the site was heavily damaged by logging activities. The structure was freestanding with two small adjoining rooms and was constructed from roughly shaped tuff blocks. Room 1 was rectangular in shape and measured 1.8 meters by 1.1 meters (2.0 square meters of interior space). Room 2 was rectangular in shape and measured 1.8 meters by 1.5 meters (2.7 square meters of interior space). Two features were identified including a charcoal-filled, basin-shaped hearth, and a cylindrical pit, which may have been a posthole. Eight ceramics were identified including four Jemez Black-on-white, two plainwares, and two Rio Grande glazewares. Based on the presence of glazewares, the site was thought to have been occupied in the Classic period.

LA 24595[24]

LA 24595 was excavated in 1980 by U.S. Forest Service archaeologists to mitigate the anticipated adverse effects of a gravel borrow pit. Located on the Jemez Plateau on a north-facing hillslope in a transitional piñon-juniper and Ponderosa pine woodland at 7,100 feet, the site was a one-room structure. The structure was constructed from large, unshaped tuff blocks with little evidence of coursing; the upper courses were likely constructed from perishable materials. Room 1 was rectangular in shape, and measured 2.5 meters by 1.3 meters (3.3 square meters of interior space), and had a living surface compacted from use (Figure A.65). A slab-lined hearth was located in the northeast corner. One sherd and corncob fragments were recovered from the hearth. An entryway was not identified.

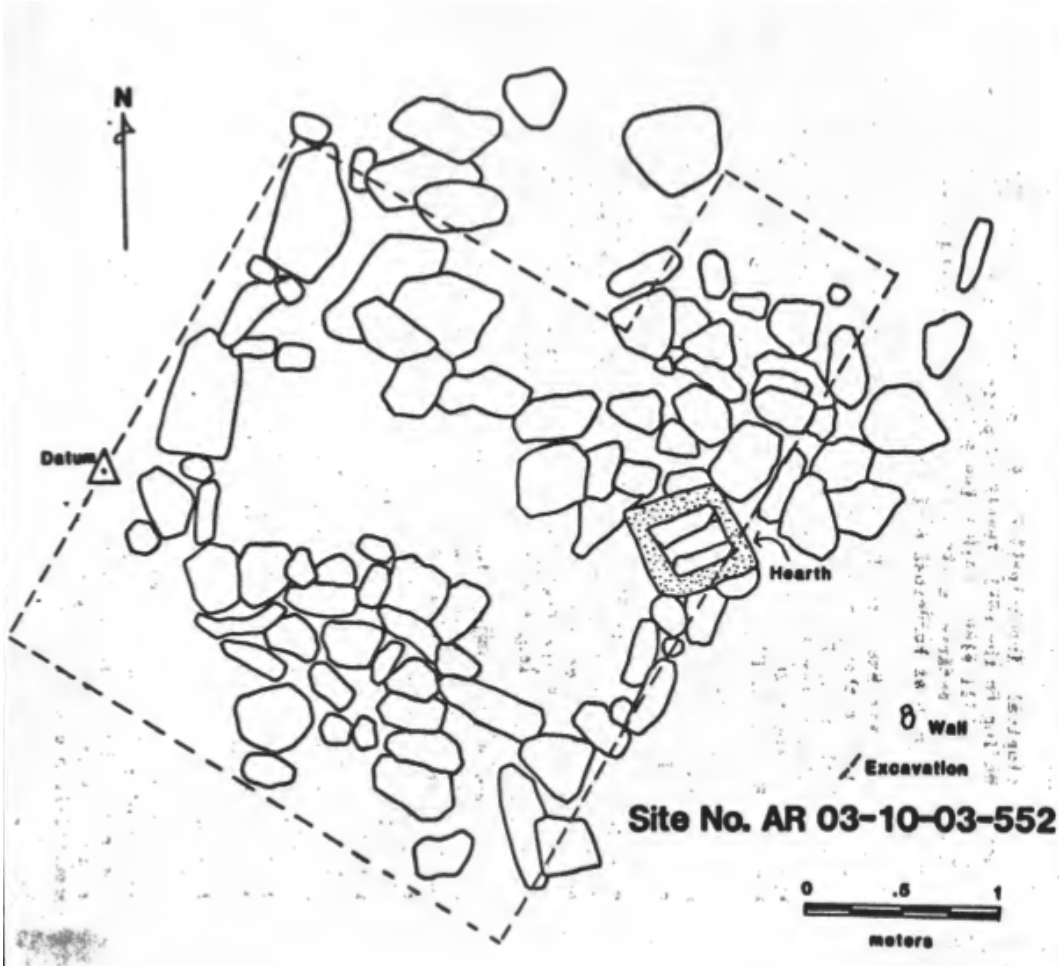

Figure A.65 Plan view of LA 24595 ([24]Gauthier and Elliott 1989:Figure 3)

Artifacts included nine ceramics, the majority of which were early Jemez Black-on-white, and seven lithic artifacts, including one basalt core. No ground stone or faunal remains were recovered. Based on ceramic types and styles of early Jemez Black-on-white ceramics, the site was occupied sometime during the Early and Middle Classic periods (A.D. 1350–1450

LA 24925[24]

LA 24925 was excavated in 1984 by U.S. Forest Service archaeologists to mitigate damage from a proposed construction of Forest Roads 606 and 608. Located on the Jemez Plateau on steeply sloping ground on the west side of Cebollita Canyon in a Ponderosa pine/spruce forest at 8,200 feet, the site was a two-room structure dating to the Classic period. The structure was constructed from locally available rhyolitic tuff that was one element thick. The masonry elements were neatly coursed and placed in mud mortar. Room 1 was rectangular in shape, measured 3.0 meters by 1.5 meters (4.5 square meters of interior space), and contained a slab-lined hearth on the southeast

wall and a bench along the north wall (Figure A.66). No evidence of a prepared floor was found. Room 2 was rectangular in shape, and measured 3.0 meters by 1.9 meters (5.5 square meters of interior space), and had two slab-lined hearths in the southwest portion of the room. A slab-lined bin was also located near the northeast wall. Room 2 had a flagstone floor of irregular rhyolite tuff slabs covered with a layer of mud plaster. A pollen sample from this floor contained maize.

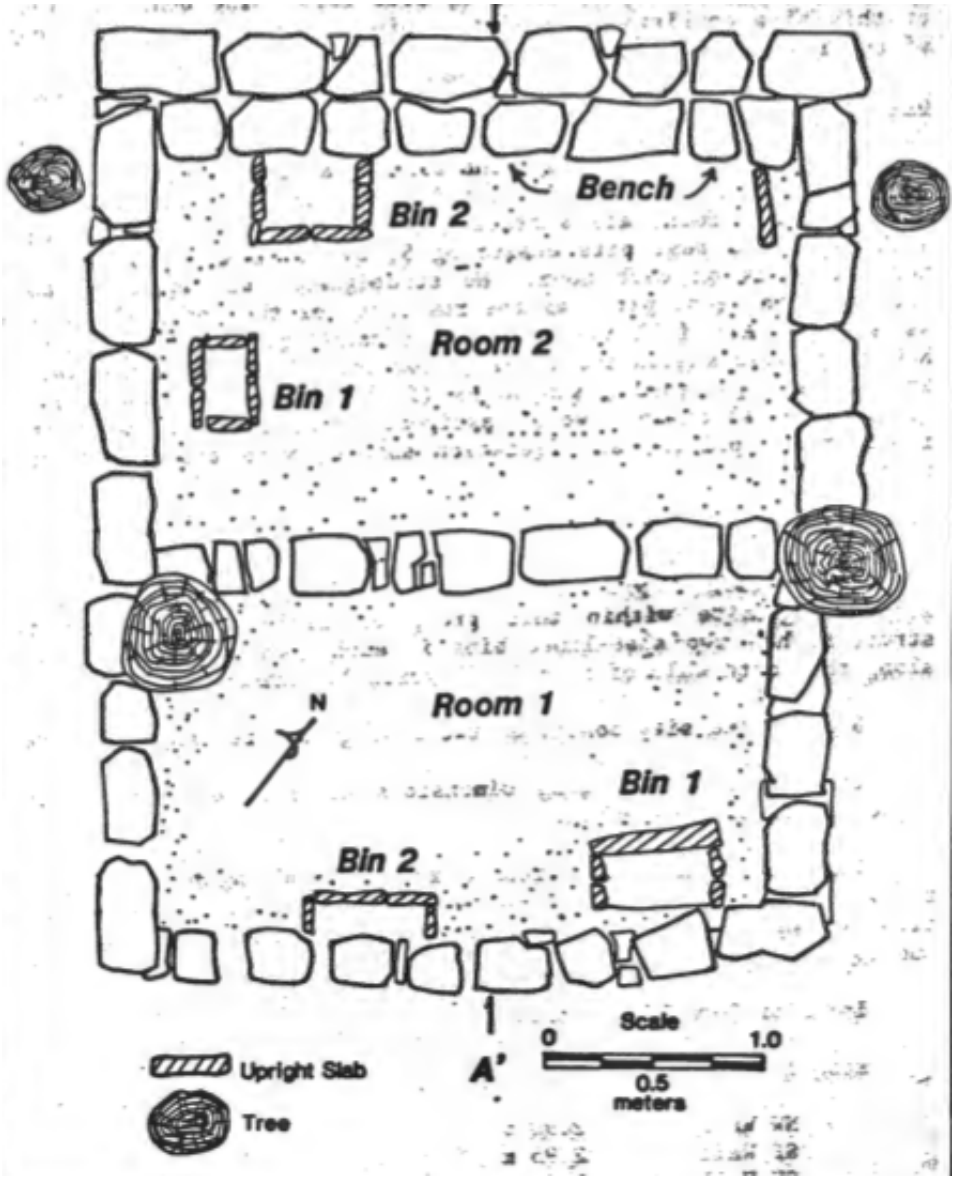

Figure A.66 Plan view of LA 24595 ([24]Gauthier and Elliott 1989:Figure 19)

Artifacts included 228 ceramics, the majority of which were utilitywares and Jemez Black-on-white, and 10 lithic artifacts. One mano fragment of rhyolite tuff was found on the surface. One maul was found on the floor of Room 1, and a small sandstone slab

was found in Room 2. No faunal remains were recovered. Based on ceramic types and styles of the late variety of Jemez Black-on-white, the site was occupied sometime during the Middle Classic periods (A.D. 1450–1650).

LA 24926[24]

LA 24926 was excavated in 1984 by U.S. Forest Service archaeologists to mitigate damage from a proposed construction of Forest Roads 606 and 608. Located on a gentle, east-facing slope on the west side of Cebollita Canyon in a Ponderosa pine-spruce forest at 8,180 feet, the site was a two-room structure that dated to the Latest Classic and Postclassic period. The structure was freestanding and was constructed from locally available rhyolitic tuff that was generally one element thick (Figure A.67).

The masonry elements were neatly coursed and placed in mud mortar. A foundation trench was dug. Room B was rectangular in shape, measured 3.7 meters by 1.7 meters (6.3 square meters of interior space), and had a living surface compacted from use. A slab-lined hearth was located near the middle of the east wall. A pollen sample from this feature yielded evidence for maize. Room C was rectangular in shape, and measured 3.5 meters by 2.0 meters (7.0 square meters of interior space), with a more formally prepared surface than Room B. A possible slab-lined bin was also located in the southwest corner. A possible opening is located in the west wall.

The ceramic assemblage included 361 sherds, the majority of which were utilitywares followed by Jemez Black-on-white, Glaze E (Puaray Glaze), and glazewares. The lithic assemblage included 30 items, including one projectile point. Ground stone items included five ephemerally-used slab fragments and one fragmentary two-hand mano. No faunal remains or cultigens were identified. Based on the ceramic assemblage and the finite span of Puaray Glaze E (A.D. 1600–1650), this site was occupied during the Latest Classic and Early Postclassic period.

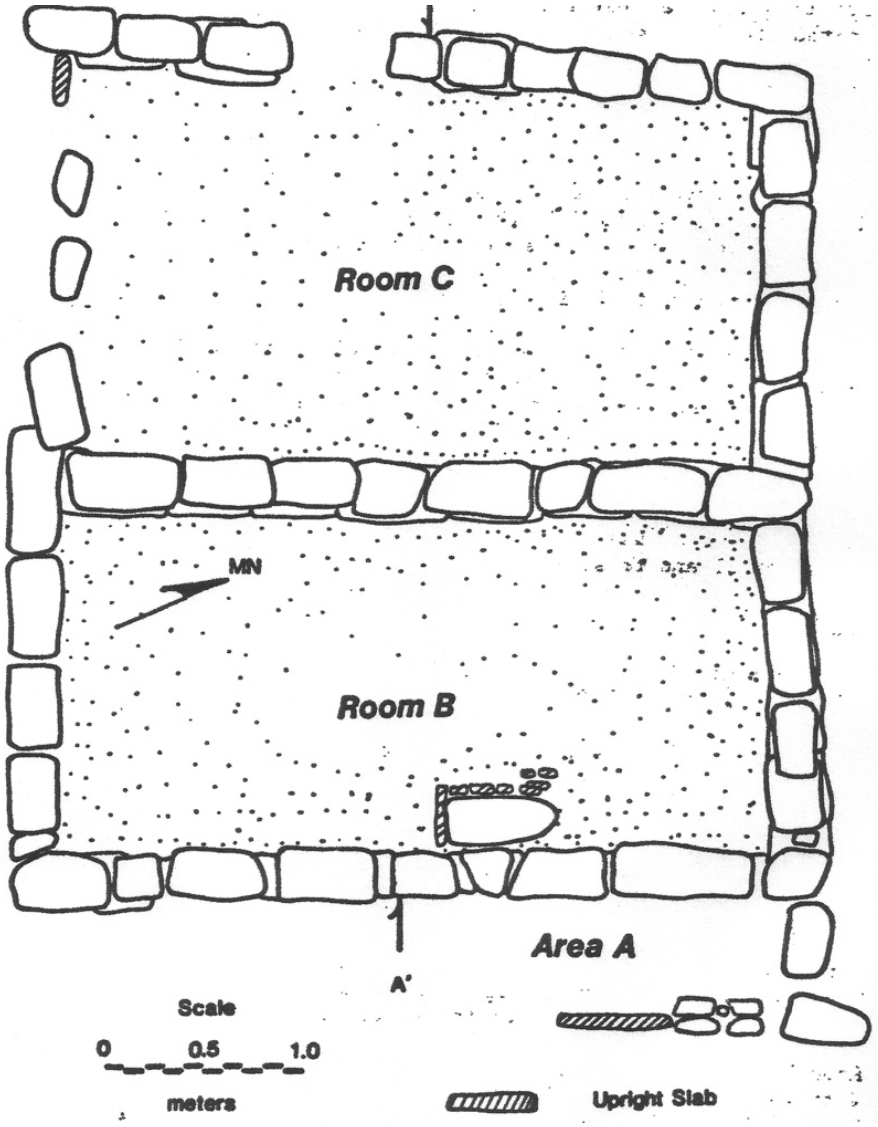

Figure A.67 Plan map of LA 24296 ([24]Gauthier and Elliott 1989:Figure 23)

LA 24927[23]

LA 24927 was excavated in 1985 as part of a data recovery project conducted by Santa Fe National Forest personnel to mitigate the adverse effects of road construction. Located on the slope of a small ridge in a Ponderosa pine forest at 7,760 feet, the site was a two-room structure that was occupied during the Late Classic and Postclassic period (A.D. 1450–1650). The structure was freestanding with two adjoining rooms and was constructed from unshaped tuff cobbles, primarily a single block wide (Figure A.68). It was constructed in one episode by preparing a level surface; the building stones were laid up from the surface and were not placed in a footing trench or foundation. Two compact living surfaces were identified in both rooms, separated by approximately 60 centimeters of fill.

Room 1 was rectangular in shape and measured 3.6 meters by 2.3 meters (8.1 square meters of interior space). A collared, slab-lined hearth was located in the southeast corner, and a two-hand mano was identified adjacent to the feature. Room 2 was rectangular in shape and measured 3.9 meters by 2.4 meters (8.0 square meters of interior space). Two Jemez Black-on-white sherds were found on its living surface, and a subfloor basin-shaped pit was excavated in the northern portion. A rectangular slab-feature was found in the southwest corner against the south wall and may have been used sporadically as a hearth. An entryway into the structure was not identified.

Artifacts included 258 ceramics, the majority of which were Jemez Black-on-white, and 15 lithic artifacts. The ground stone assemblage included two polishing stones and one two-hand mano. No faunal remains were recovered. Maize was the only economically significant plant resource and/or cultigen identified. Two radiocarbon samples yielded dates of A.D. 1600 ± 70 and A.D. 1660 ± 60.

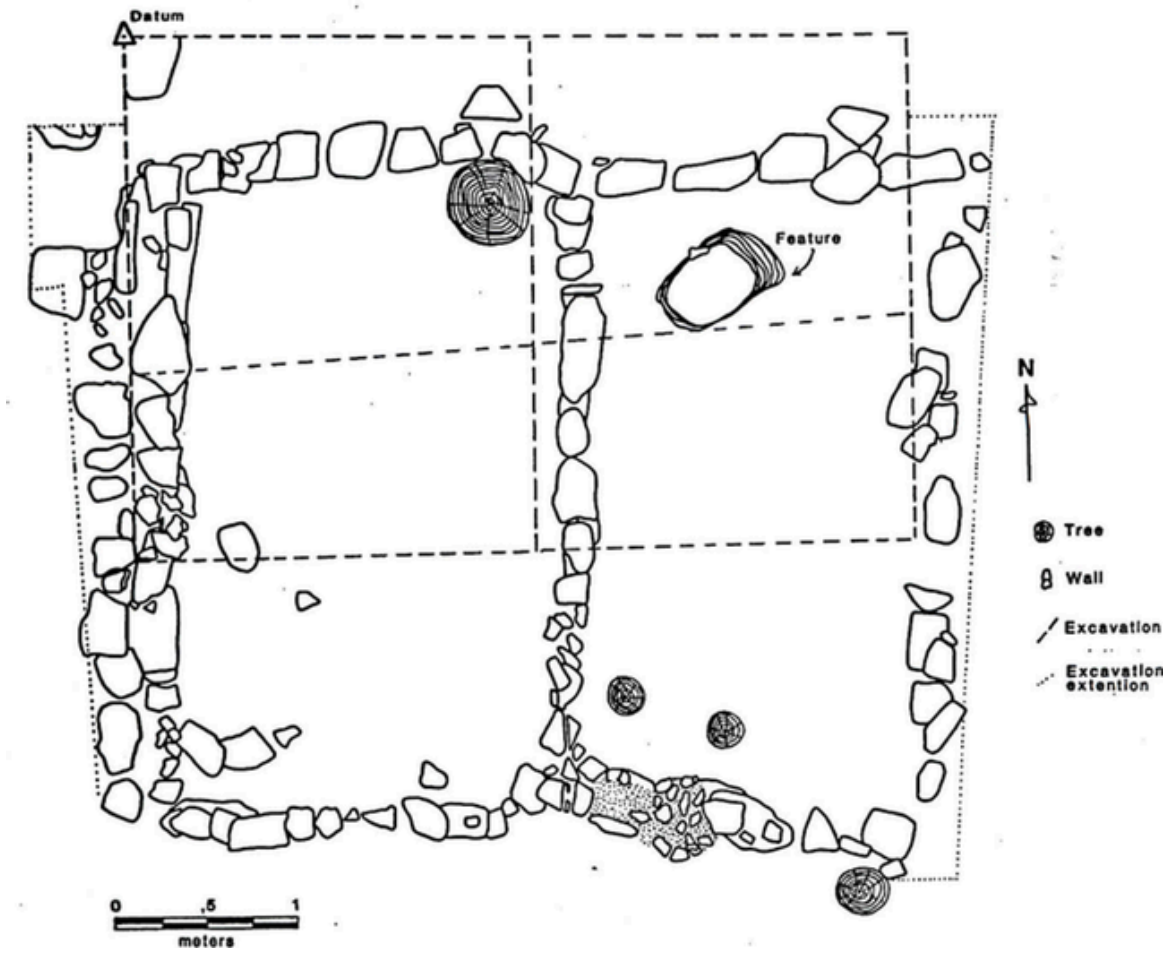

Figure A.68 Plan view of LA 24927 ([23]Elliott et al. 1988:Figure 6.2)

LA 24928[23]

LA 24928 was excavated in 1985 as part of a data recovery project conducted by Santa Fe National Forest personnel to mitigate the adverse effects of road construction. Located on the crest of a sharp, north-south running ridge in a Ponderosa pine forest at 7,720 feet, the site was a one-room structure that was occupied during the Classic period. The site was located 2 meters from a historically-used cabin. The structure was freestanding and was constructed from roughly shaped and unshaped tuff blocks, primarily a single element wide. A footing trench was dug along the north and west side of the room where the topsoil was deeper. All four corners were bonded, indicating a single building episode. Room 1 was rectangular in shape, and measured 2.8 meters by 2.3 meters (6.4 square meters of interior space), and had a living surface compacted from use (Figure A.69). A basin-shaped pit was located in the south corner. The sides were lined with small flat stones and contained a piece of ground stone on either end. An entryway into the structure was not identified.

Artifacts included 29 ceramics, the majority of which were Jemez Black-on-white, and 10 lithic artifacts. The ground stone assemblage included three metate fragments from the same implement and two vesicular basalt mano fragments. No faunal remains or cultigens were recovered. A radiocarbon sample yielded a date of A.D. 1500 ± 90. The chronometric date, along with the ceramic assemblage, suggests a probable Middle to Late Classic period occupation (A.D. 1425–1600).

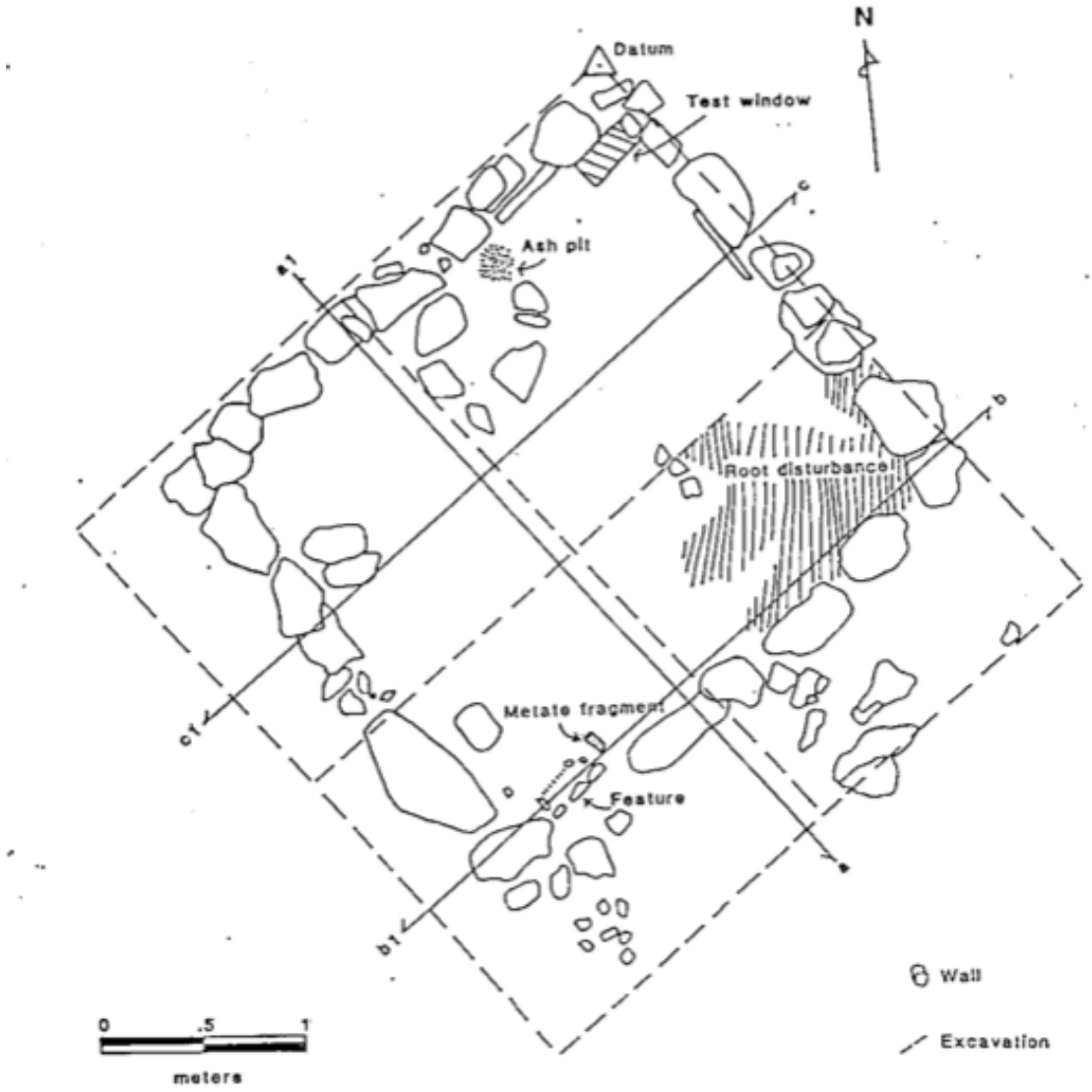

Figure A.69 Plan view of LA 24928 ([23]Elliott et al. 1988:Figure 6.13)

LA 24929[23]

LA 24929 was excavated in 1985 as part of a data recovery project conducted by Santa Fe National Forest personnel to mitigate the adverse effects of road construction. Located on a low ridge in a Ponderosa pine forest at 7,820 feet, the site was a one-room structure that was occupied during the Early Classic period. The structure was freestanding and was constructed from roughly shaped and unshaped tuff blocks that were a single element wide. Attempts to further define the structure proved mostly inconclusive, due in large part to significant damage sustained by a fire road cut. Several discontinuous wall segments were delineated, but a room per se was not identified. The longest wall section of the probable room was 2.4 meters; other sections measured 2.0 meters, 1.8 meters, and 1.1 meters. The two longest sections contained two

courses. A small ash lens was identified. The bottom of the lens was lined by four heavily charcoal-stained flat stones, which may indicate an ephemerally-used hearth.

Artifacts included 218 ceramics, the majority of which were utilitywares and Jemez Black-on-white, and 24 lithics. The ground stone assemblage included one wedge-shaped two-hand mano. No faunal remains or cultigens were recovered. A radiocarbon sample yielded a date of A.D. 1320 ± 60. The chronometric date, along with the ceramic assemblage, suggests a probable Early Classic period occupation (A.D. 1325–1425).

LA 29750[22]

LA 29750 was excavated in the summers of 1985 and 1986 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located on Corral Mesa in a piñon-juniper woodland at 7,130 feet, the site was a one-room structure that was occupied during the Coalition period. The walls were formed from well-shaped tuff blocks. The structure was rectangular in shape, measured 2.2 meters by 1.5 meters (3.3 square meters of interior space), and had a well-defined clay floor. One clay hearth, which was sealed prehistorically, was found in the center of the structure (Figure A.70). Three ground stone artifacts were found inside the hearth.

The ceramic assemblage was small and included only 51 Santa Fe Black-on-white sherds, one Galisteo Black-on-white, one Wiyo Black-on-white, and 163 Tesuque corrugated sherds. The lithic assemblage included 20 flakes, two scrapers, and one obsidian biface. No faunal remains or cultigens were recovered. Four obsidian flakes were dated by obsidian hydration and clustered around A.D. 1150 ± 32, suggesting the site was occupied during the Middle-Late Coalition period.

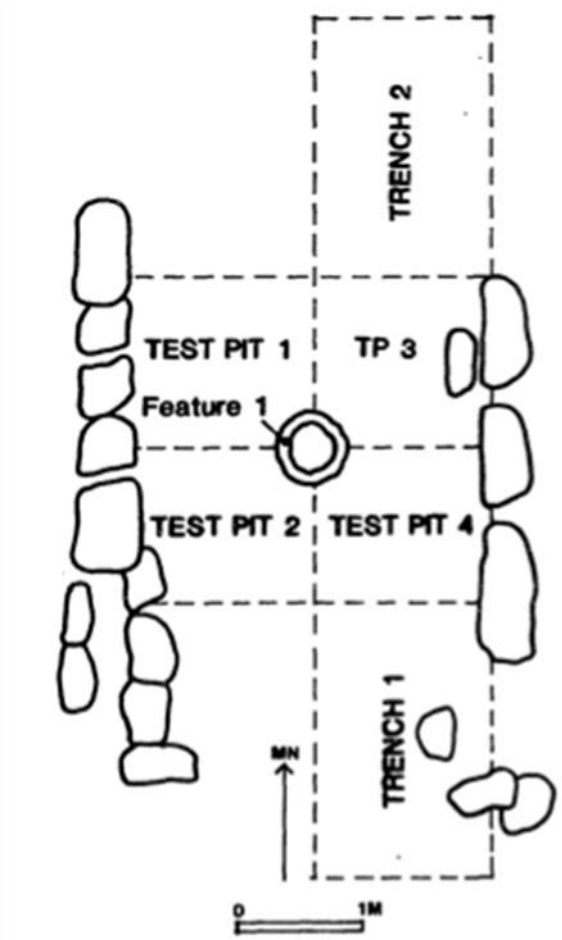

Figure A.70 Plan map of LA 29750 ([22]Preucell 1988:Figure 16)

LA 29995[19]

LA 29995 was excavated in the late 1970s by the Los Alamos Archaeological Society as part of a project designed to salvage several archaeological sites in advance of a large housing development. Located in a slight rise beside a small arroyo in a piñon-juniper woodland at 7,090 feet, the site was a one-room structure that dated to the Coalition period (Figure A.71). A well-worn prehistoric trail from Pueblo Canyon emerged just northwest of the site. The structure was circular, a diameter of 3.2 meters, and had a prepared living surface. The walls were constructed of roughly shaped tuff blocks. Some blocks were placed on end, and some were laid flat in a footing of adobe. A break in the south wall represented a possible entryway. A collared hearth was found just east of center. Two large stones placed one on top of the other were on the floor adjacent to the gap; these may have served to regulate the draft. Artifact counts were lacking, but a "numerous" number of cores and hammerstones were noted in the text (Poore 1981:48). This structure may or may not be a kiva, but it does share several similarities with the

kiva at LA 86534, a Middle Coalition period roomblock located across Pueblo Canyon near the Los Alamos airport.

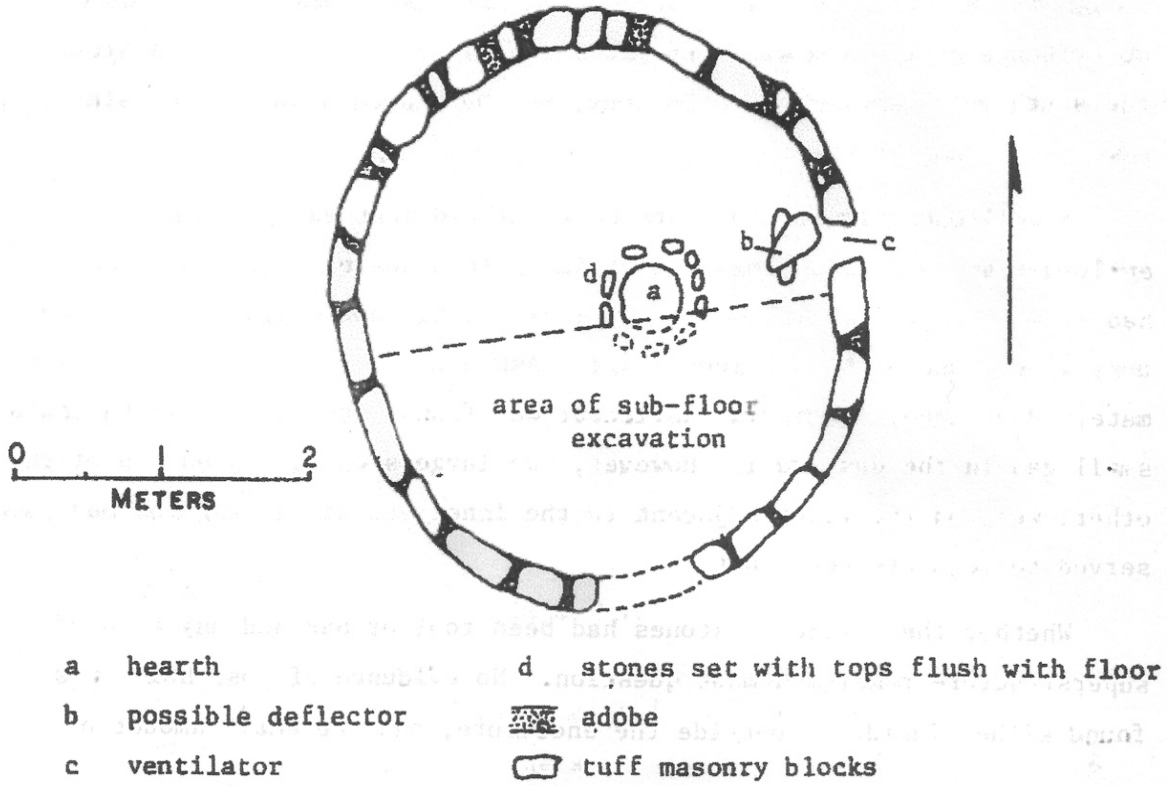

Figure A.71 Plan map of LA 29995 ([19]Poore 1981:Figure 4)

A total of 93 artifacts were recovered from the structure including 78 ceramics, the majority of which were Tesuque Smeared Indented and Santa Fe Black-on-white. The 15 lithic artifacts included flakes. No ground stone, faunal remains or cultigens were reported. No chronometric dates were obtained, but based on the ceramic assemblage and architecture, a Coalition period date was assigned.

LA 52320[22]

LA 52320 was excavated in the summer of 1985 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located on a gradual hill slope south of Garcia Canyon in a Ponderosa pine woodland at 7,200 feet, the site was a one-room circular structure (granary?) occupied during the Late Coalition period. Extensive terracing was identified on the hillslope all around the structure. The structure was freestanding and constructed from unshaped rhyolite clasts that were four courses high. The north wall was two blocks wide (Figure A.72). Room 1 was circular in shape and had a living surface compacted from use. No features or entryway

were found. The circular site is typologically distinct from known shrines in that they do not possess an opening to the east and are constructed of coursed masonry, perhaps representing storage facilities.

The ceramic assemblage included 15 Santa Fe Black-on-white sherds, four Galisteo Black-on-white, five Wiyo Black-on-white, and six Tesuque corrugated sherds. The lithic assemblage included two flakes, one obsidian biface, and one scraper. Two carbonized corncobs were recovered inside the structure. The obsidian biface was dated by obsidian hydration to A.D. 1186 ± 17 years, suggesting the site was occupied during the Late Coalition period.

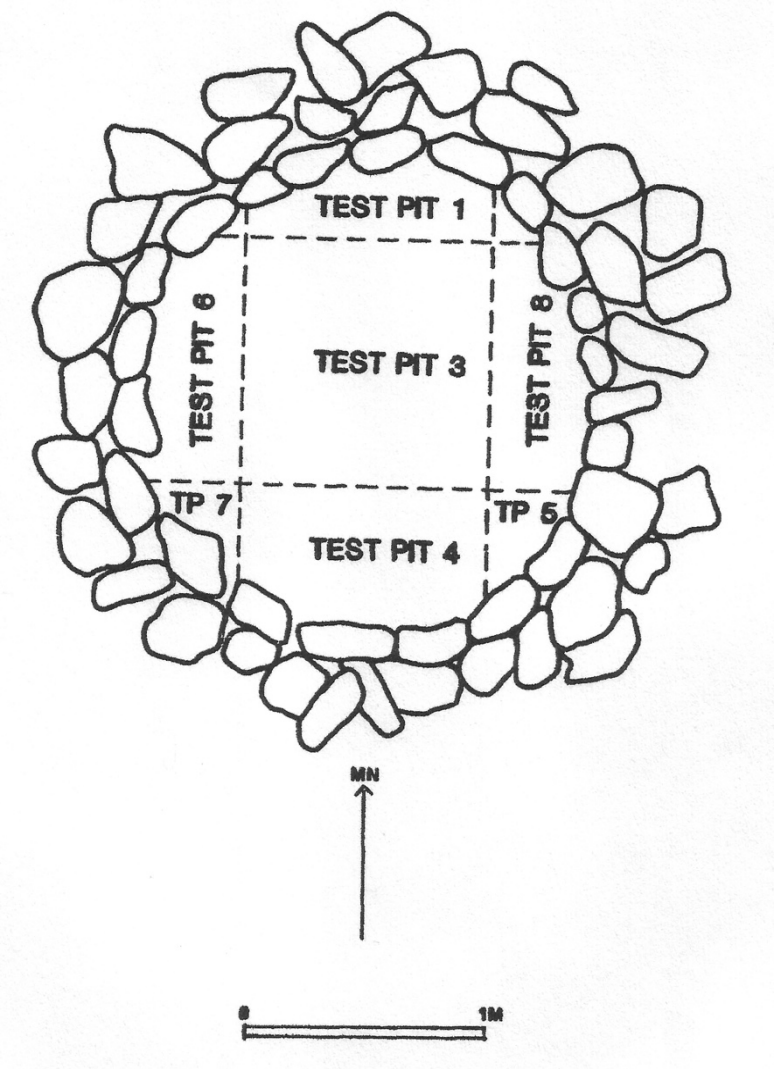

Figure A.72 LA 52320 plan view ([22]Preucel 1988:Figure 17)

LA 52327[22]

LA 52327 was excavated in the summer of 1985 by Robert Preucel as part of his dissertation research (Pajarito Field House Project) on the role of seasonal agricultural circulation in the Puebloan subsistence-settlement system. Located on the edge of an open flat area in a Ponderosa pine woodland at 7,200 feet, the site was a one-room circular structure (granary?) occupied during the Late Coalition period (Figure A.73). A large grassy meadow, perhaps the location of prehistoric fields, was immediately adjacent to the site and some terracing was identified on the hillslope surrounding the structure. The structure was freestanding and constructed from a single row of rhyolite clasts, three courses high in some places. The room had a living surface compacted from use, no features, and no discernable entryway. The circular site is typologically distinct from known shrines in that they do not possess an opening to the east and are constructed of coursed masonry, perhaps representing storage facilities.

The ceramic assemblage included 11 Santa Fe Black-on-white sherds and 10 Tesuque corrugated sherds. The lithic assemblage contained 15 flakes, one core, one obsidian projectile point, two slab metates, one mano, and two small cooking stones. No faunal remains were recovered. Two carbonized corncobs and a carbonized bean were identified. No chronometric dates were obtained, but the ceramic assemblage points to a Late Coalition period occupation.

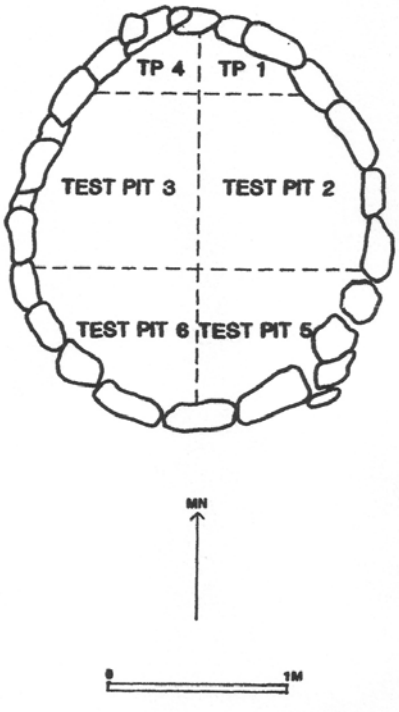

Figure A.73 LA 52327 plan view ([22]Preucel 1988:Figure 18)

LA 60497[25]

LA 60497 was excavated by Bandelier National Monument archaeologists in 1997 as part of a project designed to salvage cultural resources that were severely damaged by the Dome Fire. Located on the edge of a heavily eroded terrace overlooking a creek on the east side of Capulin Canyon, the site was located in a piñon-juniper woodland at 5,820 feet (1,774 meters). All of the two-room structure was excavated. Both rooms measured 3 meters by 1.5 meters (4.5 square meters of interior space) and were rectangular in shape. Two of the walls had three courses preserved. The site dates to the Coalition and/or Classic periods (A.D. 1200–1600). No other information was available.

LA 60510[25]

LA 60510 was excavated by Bandelier National Monument archaeologists in 1997 as part of a project designed to salvage cultural resources that were severely damaged by the Dome Fire. The site straddled an existing ephemeral channel on the west side of Capulin Canyon and was located in a piñon-juniper woodland at 5,700 feet (1,737 meters). The site consisted of a rectangular, one-room structure located very close to Lower Capulin Trail. The site dates to the Coalition and/or Classic periods (A.D. 1200–1600). No other information was available.

LA 65013[26]

LA 65013 was excavated in 1990 and 1991 by Office of Archaeological Studies, Museum of New Mexico archaeologists in response to the request of the New Mexico State Highway and Transportation Department to conduct data recovery along New Mexico State Road 502 in Santa Fe County. Located on an alluvial slope on the north edge of Totavi Wash in a juniper grassland at 5,699 feet, the site was a one-room structure that was occupied during the Early to Middle Classic period (A.D. 1350–1550). The structure was constructed from unshaped tuff cobbles. It was damaged such that its original shape could not be determined, nor could its interior dimensions be measured. A distinct section of wall in the southwest corner remained and was one course high with no foundation trench (Figure A.74). The room did have a prepared living surface that was compacted from use. Six extramural features were identified including a collared hearth (Figure A.75), a small pit, a charcoal stain that may have been an ephemeral hearth, two additional stains that contained upright slabs and charcoal, and a small borrow pit. It appears that all of these features were associated with a ramada on the west edge of the structure, which may suggest that only two walls were initially present at the site.

A total of 1,470 artifacts were recovered from the structure including, 82 ceramics, the majority of which were Sapawe Micaceous and Biscuit A sherds. The 1,388 lithic artifacts included two hammerstones, one chopper, and one biface. No ground stone

artifacts were identified. Thirteen faunal remains were recovered and included mostly unidentified mammal. Two cottontail bones were also identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early to Middle Classic period date was assigned (A.D. 1350–1550).

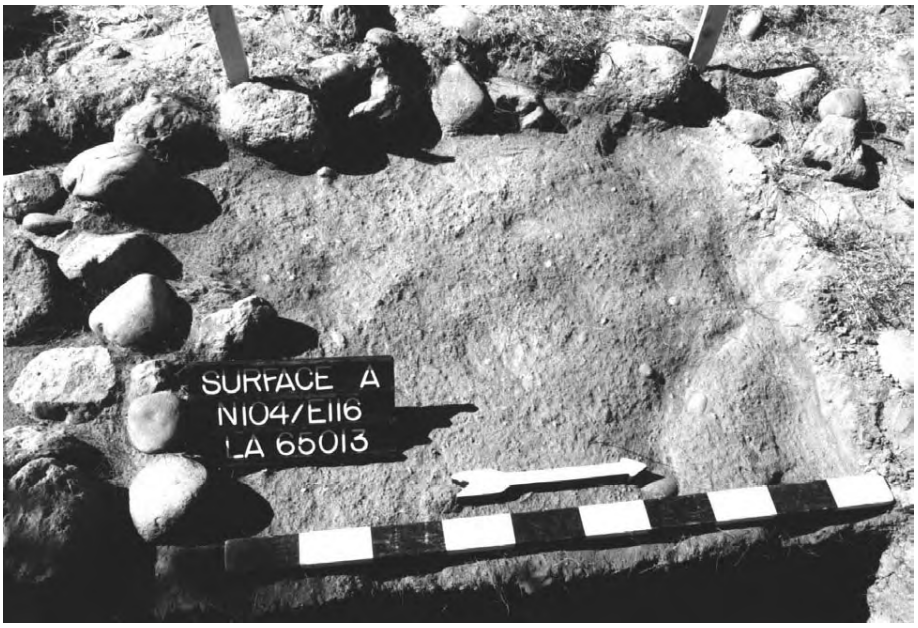

Figure A.74 LA 65013 floor and wall section ([26]Moore 2001:Figure 7.4)

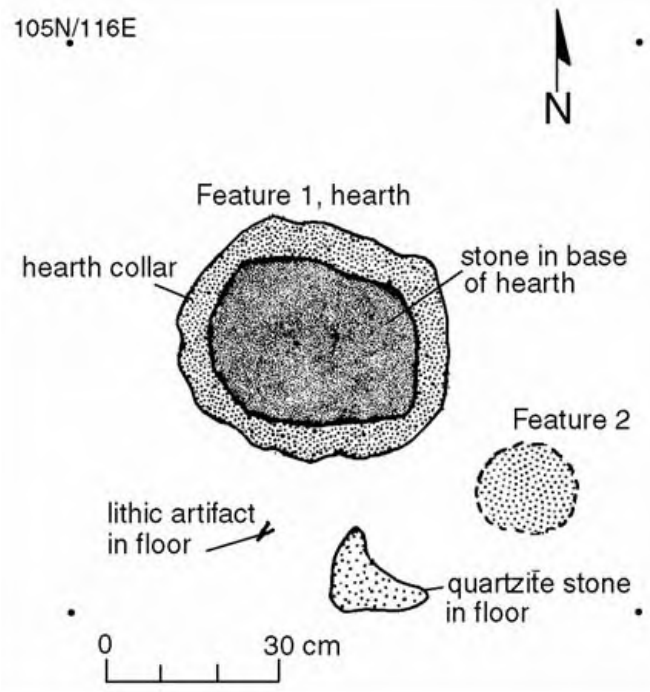

Figure A.75 Plan view of collared hearth at LA 65013 ([26]Moore 2001:Figure 7.7)

LA 66994[27]

LA 66994 was tested in 1992 by Office of Archaeological Studies, Museum of New Mexico and U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains. The unburned control site was mapped, surface collected, and one test pit was excavated. Located on a gentle south-facing hillslope in a stand of Ponderosa pine at 7,900 feet, the site was a masonry structure occupied during the Classic period. The one-room structure was constructed from shaped and unshaped tuff blocks. Not enough of the structure was excavated to determine its original shape, nor could its interior dimensions be measured. The highest concentration of artifacts was to the southeast of the rubble mound, which is where the test pit was placed. No features were identified. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained Tewa manufactured polychromes and historic Tewa red and brownwares, suggesting a multi-component occupation beginning in the Classic period and ending with a Refugee-phase. Ground stone artifacts included one mano and one metate, both recovered from the surface. Twelve pieces of chipped stone were recovered.

LA 67011[27]

LA 67011 was tested in 1992 by Office of Archaeological Studies, Museum of New Mexico and U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains. The moderately-burned site was mapped, surface collected, and two test pits were excavated. Located on a gentle south-facing hillslope in a stand of Ponderosa pine at 7,890 feet, the site was a masonry structure occupied during the Classic period (A.D. 1325–1600). The one-room structure was constructed from shaped and unshaped tuff blocks. Not enough of the structure was excavated to determine its original shape, nor could its interior dimensions be measured. The highest concentration of artifacts was in the southeast quadrant, which is where one of the test pits was placed; the other was placed on the rubble mound. No features were identified. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained an abundance of Jemez Black-on-white and Jemez utilitywares, suggesting an occupation in the Classic period. Ground stone artifacts included one mano and one metate, both recovered from the surface. Four pieces of chipped stone were recovered.

LA 67034[27]

LA 67034 was tested in 1992 by Office of Archaeological Studies, Museum of New Mexico and U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains.

The heavily-burned site was mapped, surface collected, and one test pit was excavated. Located on the southeast slope of a hill in a stand of Ponderosa pine at 7,880 feet, the site consisted of two noncontiguous masonry structures occupied (at least) during the Classic period. The structures were approximately 45 meters apart, and both were constructed from shaped and unshaped tuff blocks. Not enough of the structures were excavated to determine their original shape, nor could interior dimensions be measured. The highest concentration of artifacts from both structures was southeast of the rubble surface manifestations, which is where test pits were placed. No features were identified, but a mano and a glazeware sherd were found on the surface near Structure A. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained Jemez Black-on-white and Puname Polychrome, suggesting a multi-component occupation in the Classic and Protohistoric periods. One metate slab was recovered from the surface. Eight pieces of chipped stone were recovered.

LA 67035[27]

LA 67035 was tested in 1992 by Office of Archaeological Studies, Museum of New Mexico and U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains. The heavily-burned site was mapped, surface collected, and two test pits were excavated. Located on the crest of a low hill in a stand of Ponderosa pine at 7,840 feet, the site consisted of a two-room masonry structure occupied during the Classic period. The structure was constructed from shaped and unshaped tuff blocks. Not enough of the structure was excavated to determine its original shape, nor could interior dimensions be measured. The highest concentration of artifacts was southeast of the rubble surface manifestations, which is where test pits were placed. No features were identified, but a mano and a glazeware sherd were found on the surface near Structure A. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained an abundance of Jemez Black-on-white and Jemez utilitywares, suggesting an occupation in the Classic period. Ground stone artifacts included three slab metates. Seven pieces of chipped stone were recovered.

LA 67062[27]

LA 67062 was tested in 1992 by Office of Archaeological Studies, Museum of New Mexico and U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains. The lightly-burned site was mapped, surface collected, and one test pit was excavated. Located in an open, flat area in a sparse stand of Ponderosa pine at 7,960 feet, the site was a two-room masonry structure occupied during the Classic period. The structure was constructed from shaped and unshaped tuff blocks. Not enough of the site was

excavated to determine its original shape, nor could its interior dimensions be measured. A living surface compacted from use was identified in the test pit. No features were identified. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained Jemez Black-on-white and Puname Polychrome, suggesting a multi-component occupation in the Classic and Protohistoric periods. Ground stone artifacts included one mano and one metate, both recovered from the surface. Four pieces of chipped stone were recovered.

LA 68520[28]

LA 68520 was excavated in 1988 and 1989 by Jemez Mountains Research Center personnel to mitigate the potential effects of the construction of the Jemez Falls Campground in the Santa Fe National Forest. Located on the Banco Bonito on the slope of a low rise above a meadow in a Ponderosa pine woodland at 7,960 feet, the site was a one-room structure that was occupied during A.D. 1400–1500. The structure was freestanding and was constructed from unmodified rhyolite blocks laid in courses with rough mortar. The corners were all bonded, with the exception of the southwest corner that was a large boulder. Room 1 was rectangular, measured 3.4 meters by 2.2 meters (7.5 square meters of interior space), and included a semi-circular masonry wall attached to the southeast corner and arcing to the east and then south (Figure A.76). A one-course retaining wall was found off the northwest corner. The area within the arc to the southeast contained the highest number of artifacts and appeared to have been an activity area. The floor was plastered in small patches around a slab-lined hearth along the east wall, which was full of fine, gray ash, but in other places, it was only compacted from use. No entryway was identified. A partially burned viga fragment was found near the south wall.

A total of 256 artifacts were recovered from the structure including 227 ceramics, the majority of which were graywares and Jemez Black-on-white. The 29 lithic artifacts included three cores and 26 pieces of debitage. No ground stone or faunal remains were recovered. Maize was the only economically significant plant resource and/or cultigen identified. No chronometric dates were obtained, but based on the ceramic attributes of the Jemez Black-on-white sherds, a Classic period date of A.D. 1450–1550 was assigned.

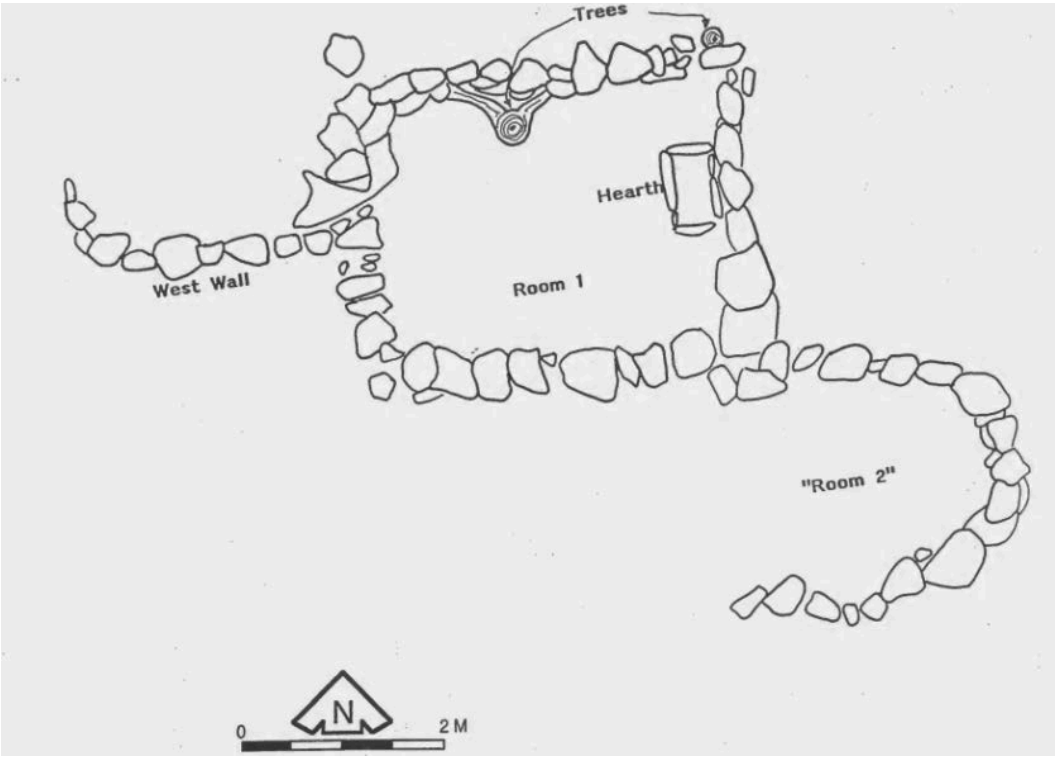

Figure A.76 LA 68520 plan view ([28]Elliott 1991:Figure 7.3)

LA 68522[28]

LA 68522 was excavated in 1988 and 1989 by Jemez Mountains Research Center personnel to mitigate the potential effects of the construction of the Jemez Falls Campground in the Santa Fe National Forest. Located on the Banco Bonito on the slope of a low rise above a meadow in a Ponderosa pine woodland at 8,007 feet, the site was a two-room structure that was occupied during A.D. 1400–1500. The structure was freestanding with two contiguous rooms, one large masonry room, and one smaller room addition with masonry and jacal walls (Figure A.77). The masonry walls were laid from unshaped rhyolite blocks by placing the rocks in a row and sealing the joints with thick mortar. The corners in Room 1 were all bonded. Room 1 was quadrilateral in shape, measured 3.2 meters by 2.8 meters (9.0 square meters of interior space), and had a well-plastered floor and walls. A large, slab-lined hearth was located midway along the southwest wall. A possible storage bin was found in the northeast corner, but heavy damage precluded a determination of function. A plastered depression was present in the middle of the floor near the southeast wall. No entryway was identified in the walls, but substantial evidence of roofing materials was recovered in the form of vigas and latillas.

Room 2 was rectangular, measured 3.1 meters by 1.5 meters (4.7 square meters of interior space), and had one masonry wall (west), one jacal wall (east), and one masonry

and jacal wall (south). This room was constructed by building an abutted L-shaped masonry wall off the west corner, and building an L-shaped jacal wall off the south corner. A slab-lined hearth was found midway along the southwest wall, in the same placement as the Room 1 hearth. An entryway was located in the south wall. An exterior test pit produced many large chunks of burned mortar, mud, and lumps of burned and unburned clay. The residents of this site may have been producing ceramics, but the exterior areas were not sufficiently tested due to time constraints.

A total of 889 artifacts were recovered from the structure including 808 ceramics, the majority of which were graywares, brownwares, and the early variety of Jemez Black-on-white. The 35 lithic artifacts included one core, two retouched tools, and 32 pieces of debitage. Forty-six ground stone fragments were recovered including 45 red sandstone metate fragments and one polishing stone. No faunal remains were recovered. Maize was the only economically significant plant resource and/or cultigen identified. Maize cupules were identified in the hearth of Room 2, and in several other contexts throughout the structure. One tree-ring date was obtained from the jacal wall in Room 2 and returned a date of A.D. 1434vv. This, along with the presence of early Jemez Black-on-white sherds, suggests the site was probably occupied between A.D. 1430 and A.D. 1550.

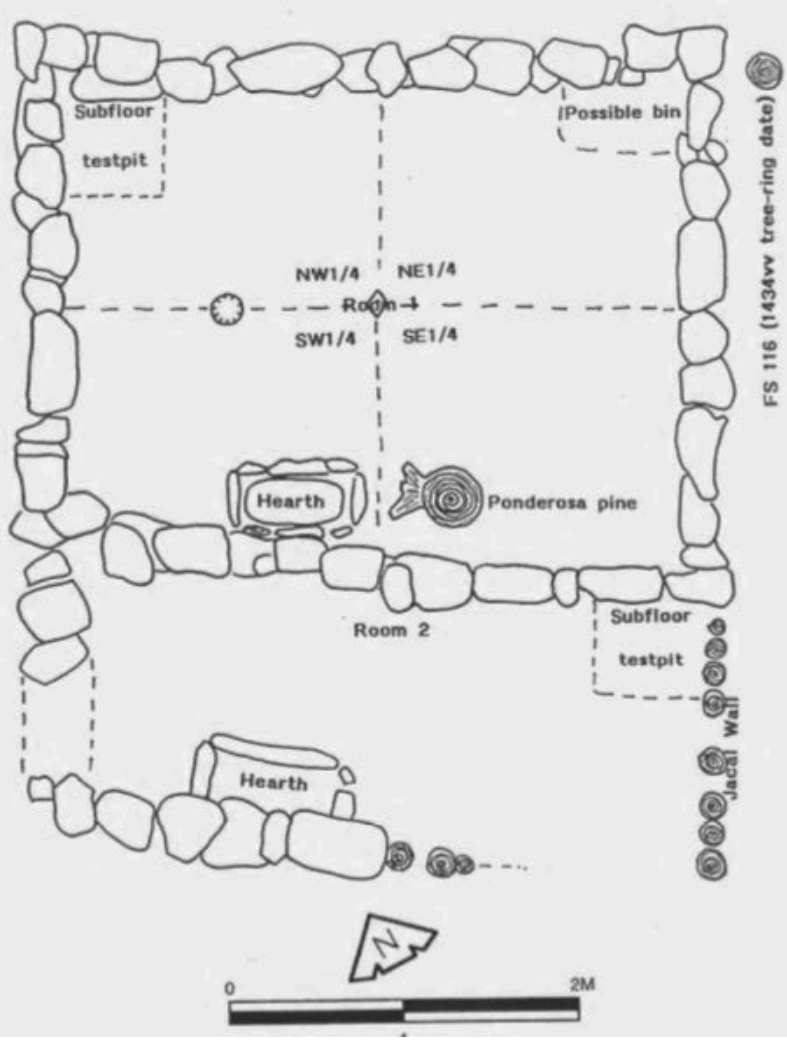

Figure A.77 LA 68522 plan view ([28]Elliott 1991:Figure 7.10)

LA 69562[29]

LA 69562 was excavated in 1998 by TRC, Inc. archaeologists to mitigate the potential adverse effects posed by a planned land exchange between the Santa Fe National Forest and the Horseshoe Springs Community. Located on a small bedrock finger in a Ponderosa pine woodland at 7,880 feet, the site was a freestanding, two-room structure that contained six internal floor features (Figure A.78). The masonry walls were constructed from shaped and unshaped tuff clasts, with five to seven intact courses.

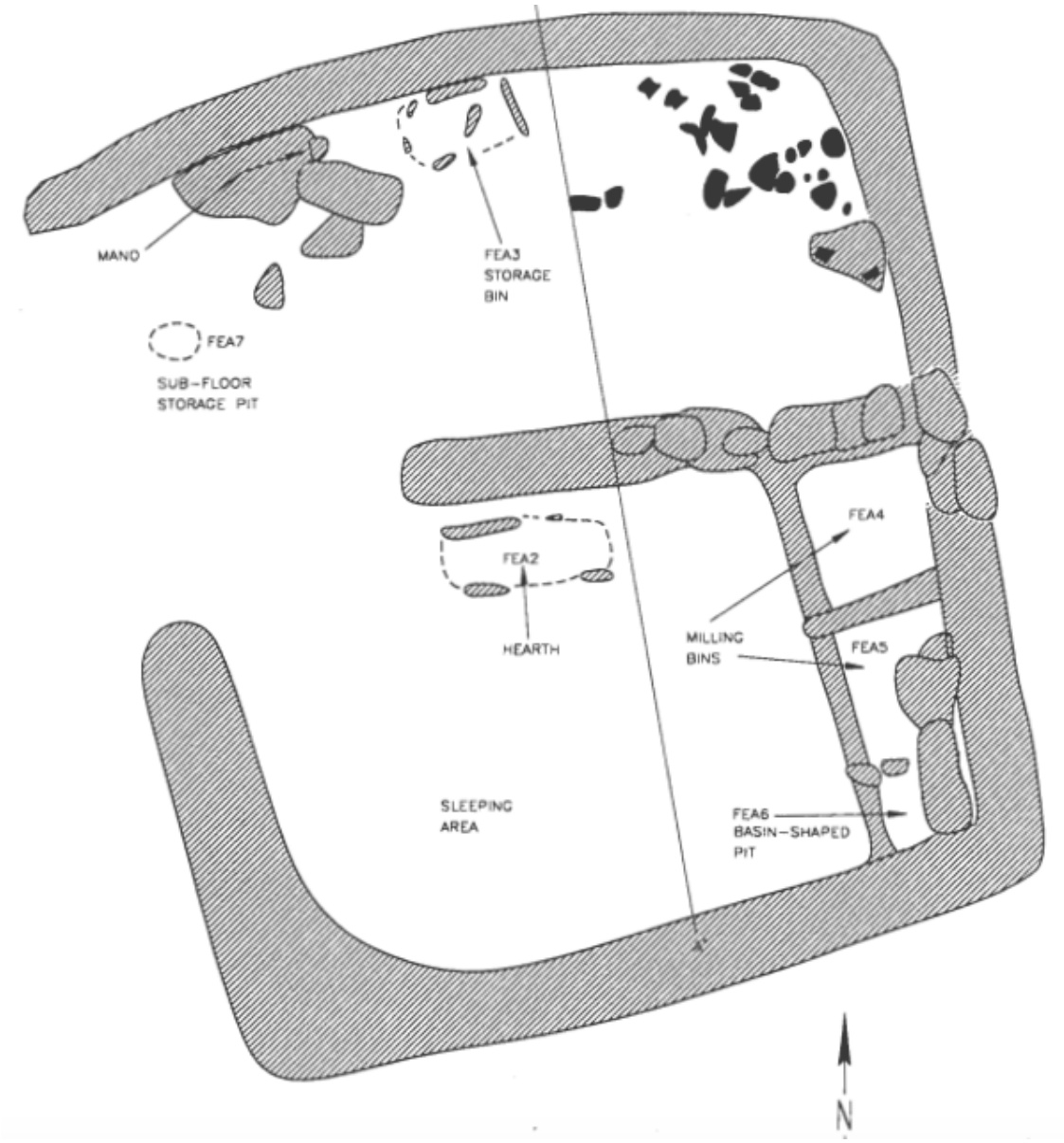

Figure A.78 LA 69562 plan view ([29]Acklen and Railey 1999:Figure 6.2)

Room 1 (the south room) was rectangular, measured 3.6 meters by 2.4 meters (8.6 square meters of interior space), and had a living surface compacted from use. The dividing wall between the rooms was not complete, nor was the northwest corner of the structure. The south room contained Features 2, 4, 5, and 6, a rectangular hearth located in the center of the north wall, two milling bins located along the east wall, and a basin-shaped storage pit located in the extreme southeastern corner, respectively. Room 2 (the north room) was also rectangular, measured 3.6 meters by 2.0 meters (7.2 square meters of interior space), and had a living surface compacted from use. The north room contained Features 2 and 7, a slab-lined storage bin along the north wall, and a sub-floor

storage pit in the northwest corner. The northeastern corner contained portions of seven reconstructed ceramic vessels including three Jemez Black-on-white bowls, three Jemez utilityware bowls, and one Jemez utilityware jar. The northwestern corner contained two reconstructed Jemez utilityware jars and one Jemez Black-on-white jar. The roof of the structure was of viga and latilla construction as was evidenced by the presence of burned beams in the post-occupational fill.

A total of 566 artifacts were recovered from the structure including 555 ceramics, the majority of which were Jemez Black-on-white, Jemez utilitywares, and glazewares. The 11 lithic artifacts included 10 pieces of debitage and one polished cobble. No ground stone or faunal remains were recovered. Surprisingly, cholla was the only economically significant plant resource and/or cultigen identified. Four tree-ring dates were obtained suggesting a late sixteenth to early seventeenth century use.

LA 69563[29]

LA 69563 was excavated in 1998 by TRC, Inc. archaeologists to mitigate the potential adverse effects posed by a planned land exchange between the Santa Fe National Forest and the Horseshoe Springs Community. Located on a small hill in a Ponderosa pine woodland at 7,960 feet, the site was a one-room structure that had three masonry walls, an eastern wall made of jacal with seven upright posts and burned daub, one internal hearth, one extramural bin, and a midden (Figure A.79). The masonry walls were constructed from shaped and unshaped tuff clasts, with five to seven intact courses. Room 1 was rectangular, measured 3.9 meters by 2.1 meters (8.2 square meters of interior space), and had a well-prepared clay surface that was up to 1 centimeter thick. A rectangular, slab-lined hearth was identified in the southern half of the structure. The east wall of the structure was jacal as evidenced by a series of eight extant, charred posts with a footer of supporting stones. The posts were spaced at 20 centimeters intervals, six posts were excavated, and two were destroyed by roots. A possible entryway was found near the southern end of the wall. The roof of the structure was of viga and latilla construction as was evidenced by the presence of burned beams in the post-occupational fill. The extramural bin was attached to the outside of the east wall. The midden was located northeast of the structure and found via shovel probing.

A total of 276 artifacts were recovered from the structure including 220 ceramics, the majority of which were Jemez Black-on-white, Jemez utilitywares, Puaray Glaze Polychrome, and biscuitwares. The 56 lithic artifacts included two cores, two retouched tools, two projectile points, and 49 pieces of debitage. One metate was also recovered. Faunal remains included one deer-sized shaft fragment and one deer-sized awl manufactured from the proximal end of a metapodial. Cholla and maize were the only economically significant plant resources and/or cultigens identified. A radiocarbon

sample returned a two-sigma date of A.D. 1425–1665, and along with the Glaze E vessels dating to ca. A.D. 1540–1625, the structure is believed to have been occupied nearer to the end of the sixteenth century and into the early part of the seventeenth century.

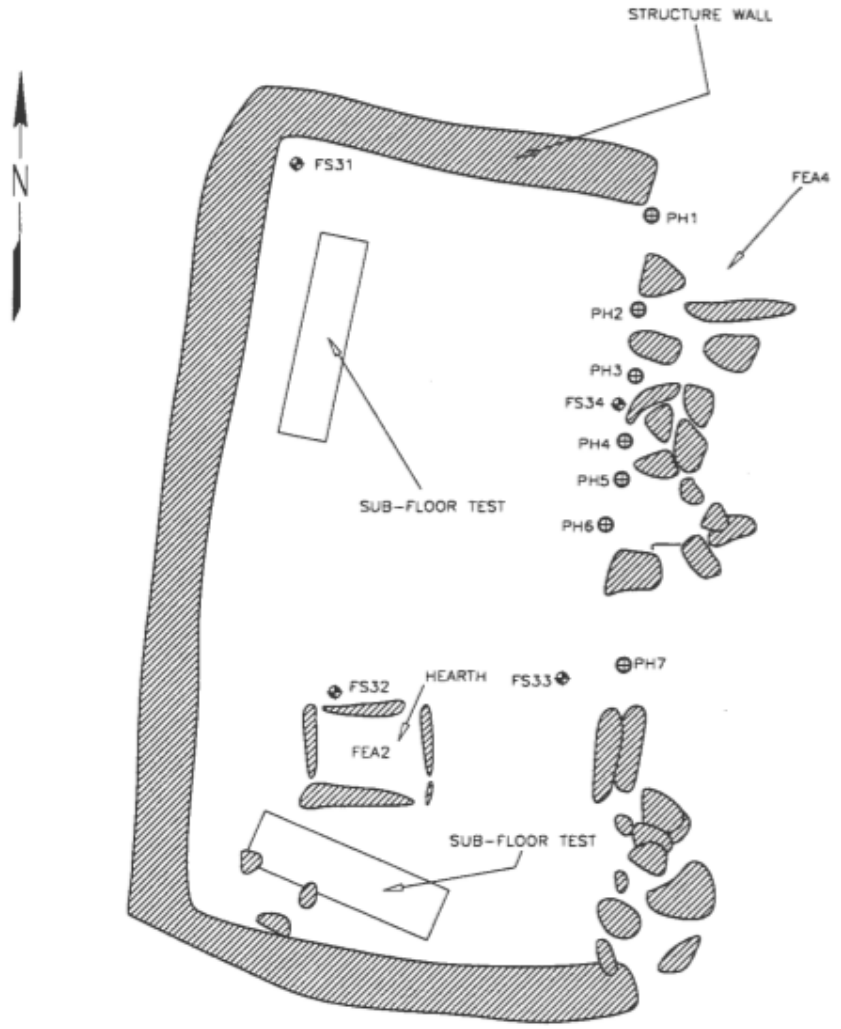

Figure A.79 LA 69563 plan map ([29]Acklen and Railey 1999:Figure 6.9)

LA 70025[30]

LA 70025 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.80). Located on a finger ridge extending into Cabra Canyon in a transitional piñon-juniper and Ponderosa pine woodland at 6,960 feet, the site was a heavily eroded one-room structure that was occupied during the Early/Middle Classic period (A.D. 1325–1525). The structure was freestanding and was constructed from a single row of unshaped tuff and dacite blocks. Room 1 was roughly rectangular, measured 2.7 meters by 1.7 meters (4.6 square meters of interior

space), and had a prepared living surface that was compacted from use (Figure A.81). A nearly complete Sapawe Micaceous jar was found on the living surface, and maize pollen was identified from its sampled fill. No interior features or entryway were identified.

Figure A.80 LA 70025 after excavation ([30]Dilley and Vierra 2008:Figure 29.2)

A total of 204 artifacts were recovered from LA 70025 including 185 ceramics, the majority of which were Biscuit A, Biscuit Black-on-cream, and Sapawe Micaceous types. The 19 lithic artifacts included one core, 14 pieces of debitage, and four ground stone artifacts including one two-hand mano, two unidentified manos, and one metate fragment. No faunal remains were recovered. Maize was the only economically significant plant resources and/or cultigen identified. No chronometric dates were obtained, but based on the ceramic assemblage, an Early to Middle Classic period date was assigned.

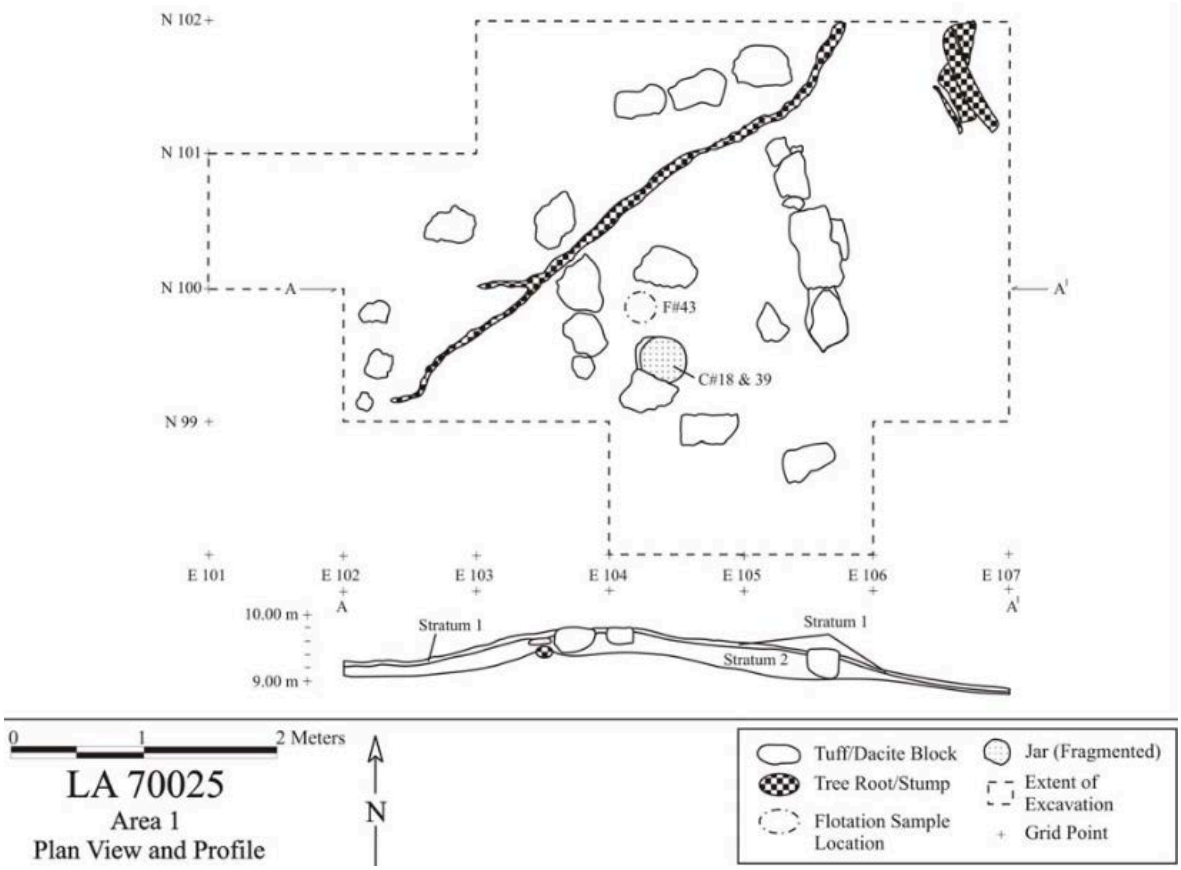

Figure A.81 Plan view and profile of LA 70025 ([30]Dilley and Vierra 2008:Figure 29.3)

LA 71099[25]

LA 71099 was partially excavated by Bandelier National Monument archaeologists in 1997 as part of a project designed to salvage cultural resources that were severely damaged by the Dome Fire. Four small structures were identified at the site, but only two were damaged by the fire; these two were excavated (Structures 1 and 2). Located on a steep talus slope on the west side of Capulin Canyon, the site was located in an open Ponderosa pine and piñon-juniper woodland at 6,580 feet (2,006 meters). Structure 1 had two rooms built against a free-standing boulder, and Structure 2 was an extremely eroded one-room structure that measured 2.3 meters by 1.6 meters (3.7 square meters of interior space). All three rooms were roughly rectangular in shape based on photographs. The site dates to the Coalition and/or Classic periods (A.D. 1200–1600). No other information was available.

LA 71104[25]

LA 71104 was excavated by Bandelier National Monument archaeologists in 1997 as part of a project designed to salvage cultural resources that were severely damaged by

the Dome Fire. Located on a slumping terrace west of Capulin Canyon in an open Ponderosa pine and piñon-juniper woodland at 6,551 feet (1,997 meters), the site was a free-standing, heavily eroded one-room structure and an extensive set of agricultural terraces. The room was completely excavated as was the extramural area surrounding the structure. The room measured 3.3 meters by 2.2 meters (7.3 square meters of interior space) and was rectangular in shape. One piece of ground stone was found on the surface. The site dates to the Coalition and Classic periods (A.D. 1200–1600). No other information was available.

LA 71108[25]

LA 71108 was excavated by Bandelier National Monument archaeologists in 1997 as part of a project designed to salvage cultural resources that were severely damaged by the Dome Fire. Located on a bench above Capulin Canyon in an open Ponderosa pine and piñon-juniper woodland at 7,159 feet (2,182 meters), the site consisted of one surface masonry room connected to a possible ramada. The room was completely excavated as was the extramural area surrounding the structure. The room measured 3.3 meters by 2.2 meters (7.3 square meters of interior space) and was rectangular in shape. Two partially reconstructable Rio Grande glazeware bowls were recovered. Based on this, the site dates to the Classic period (A.D. 1325–1600). No other information was available.

LA 71144[2]

LA 71144 was partially excavated in 1997 by Bandelier National Monument archaeologists as part of a post-Dome Fire study undertaken to contribute to scientific understanding of the effects of fires on cultural resources. Located on the mesa top west of the perennially flowing Capulin Creek in a transitional piñon-juniper and Ponderosa pine woodland at 7,159 feet, the site was a two-room structure that was occupied during the Early/Middle Classic period (A.D. 1315–1425). The structure was freestanding with two adjoining rooms and was constructed from roughly shaped to rectangular shaped tuff and sandstone blocks. Room 1 was not excavated because it was not damaged in the Dome Fire. Room 2 (the east room) measured 2.1 meters by 1.6 meters (3.4 square meters of interior space), had a floor compacted from use, was rectangular in shape, and contained a basin-shaped plaster-lined pit along the north wall. A single piece of ground stone and maize cupule and kernel fragments were recovered from the pit fill. An extramural U-shaped pit with some slab-lining was found outside the east wall. Rock alignments interpreted as check dams were identified both north and south of the structure.

A total of 47 artifacts were recovered from the structure including 14 ceramics, the majority of which were utilitywares, followed by glaze polychrome and unidentified

glazeware sherds. The 33 lithic artifacts did not include any ground stone tools. No faunal remains were recovered. Maize cupules and kernels were identified in the pit in Room 2, and maize pollen was identified above the compacted use surface. The presence of diagnostic rim sherds from one Glaze A bowl and one Glaze B bowl, as well as two Glaze C and one Biscuit B bowl from the surface, and subsurface smeared-indented utilitywares, suggests that the site was likely occupied between A.D. 1315–1425.

LA 75719[31]

LA 75719 was excavated in 1991 by New World Consultants, Inc. archaeologists in conjunction with the Santa Fe National Forest because it was going to be adversely affected by the development of the Jemez River Campground. Located on a rocky bench above the normal flood elevation of the Jemez River in a piñon-juniper woodland at 6,820 feet, the site consisted of two, noncontiguous one-room structures (Features 1 and 4) constructed from unshaped tuff cobbles. Feature 1 was rectangular, measured 3.0 meters by 2.6 meters (7.8 square meters of interior space), and had a prepared living surface that was compacted from use. A 2-centimeter-deep ash concentration was found in the southeast corner, which is also where a possibly reconstructable vessel was recovered. Another ash concentration was found in the southwest corner of the room; a fragment of charred maize was recovered. Feature 4 was an L-shaped wall that contained a slab-lined hearth. It was determined during excavation that the south and west walls of this room had eroded down the slope, making room measurements impossible. The slab-lined hearth was near what would have been the southwest corner of the room.

Ceramic counts were complicated because of the analytic units used, but the majority were brown and gray utilitywares, Santa Fe Black-on-white, and Jemez Black-on-white. The lithic artifacts included one tested cobble, one core fragment, and two hammerstones. Four ground stone artifacts were recovered and included one sandstone mano, two metate fragments, and two miscellaneous ground stone items. One rib fragment from a rabbit-sized mammal was recovered. Maize was the only economically significant plant resource and/or cultigen identified at the site. Based on information recovered, this structure was likely occupied during the Late Coalition period and Vallecitos phase (A.D. 1250–1350).

LA 84893[32]

LA 84893 was excavated in 1994 and 1995 by the Jemez Mountains Research Center personnel in conjunction with the Santa Fe National Forest because it was going to be adversely affected by the expansion of a mining pit at the Copar Pumice Mine northeast of Los Alamos. Located near an actively eroding area, in a sparse piñon-juniper

woodland at 6,620 feet, the site was a heavily eroded one-room structure. The structure was freestanding and was constructed from a single course of unshaped tuff building stone. Room 1 was ovoid, measured approximately 2.5 meters by 2.3 meters (5.8 square meters of interior space), and had a living surface that was compacted from use. A well-preserved, plastered, rock-lined hearth was found with a possible pot rest in the bottom of the feature (Figure A.82). An ash-filled, inverted bell-shaped plastered pit was found, as was a second poorly-preserved and shallow rock-lined hearth. No entryway was identified.

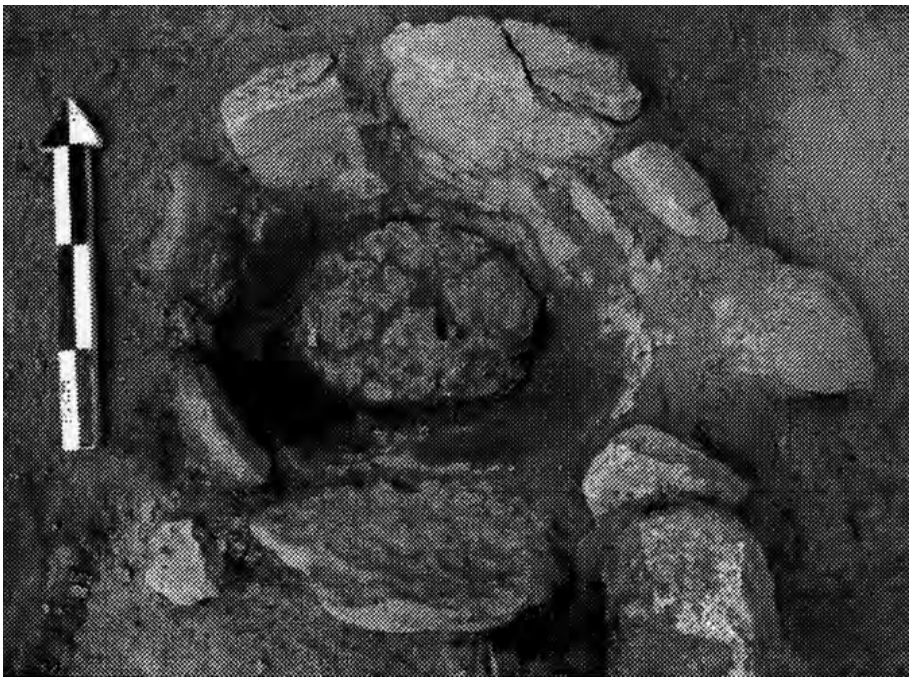

Figure A.82 Slab-lined hearth with pot rest at LA 84893 ([32]Elliott 2000:Figure 6.4)

A total of 108 subsurface artifacts were recovered during excavations including 82 ceramics, the majority of which were utilitywares and Santa Fe Black-on-white. One Wiyo Black-on-white sherd was also identified. The 26 lithic artifacts included one core, 15 pieces of debitage, six projectile points (Figure A.83), one retouched tool, and two ground stone artifacts, which included one rhyolitic tuff mano and one hammerstone. No faunal remains were recovered, and no economically significant plant resources and/or cultigens were identified. Based on the ceramics recovered, the site was occupied during the Late Coalition and earliest Classic period (A.D. 1300–1350).

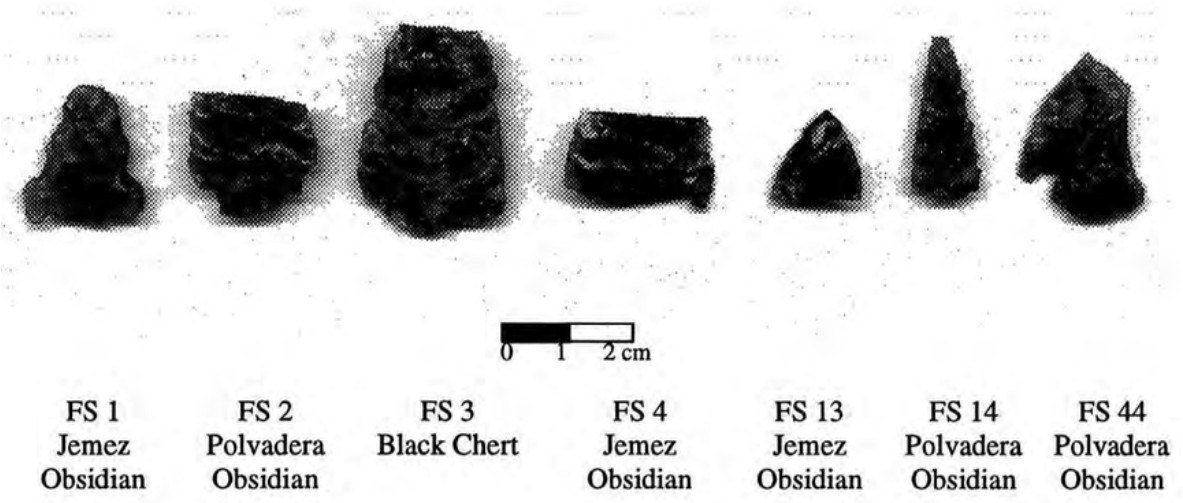

Figure A. 83 Projectile points from LA 84893 ([32]Elliott 2000:Figure 6.5)

LA 84897[32]

LA 84897 was excavated in 1995 by the Jemez Mountains Research Center personnel in conjunction with the Santa Fe National Forest because it was going to be adversely affected by the expansion of a mining pit at the Copar Pumice Mine northeast of Los Alamos. Located near an actively eroding area, in a sparse piñon-juniper woodland at 6,580 feet, the site was a heavily eroded one-room structure. The structure was freestanding and was constructed from a single course of unshaped tuff building stone. Room 1 was ovoid, measured approximately 2.5 meters by 2.0 meters (5.0 square meters of interior space), and had a living surface that was compacted from use. An ephemeral central hearth was located; it was heavily eroded and contained only a few charcoal flecks. A probable entryway was identified in the east wall. Two check dams were identified in the arroyo 15 meters northwest of the structure.

A total of 32 subsurface artifacts were recovered during excavations including 21 ceramics, the majority of which were utilitywares, Santa Fe Black-on-white, and Wiyo Black-on-white. The 11 lithic artifacts included eight pieces of debitage, one retouched tool, and two projectile point fragments. No ground stone artifacts or faunal remains were recovered, and no economically significant plant resources and/or cultigens were identified. Based on the ceramics recovered, the site was occupied during the Late Coalition and Early Classic period (A.D. 1300–1400).

LA 84924[31]

LA 84924 was excavated in 1991 by New World Consultants, Inc. archaeologists in conjunction with the Santa Fe National Forest because it was going to be adversely affected by the development of the proposed Jemez River Campground. Located on a rocky bench above the normal flood elevation of the Jemez River in a piñon-juniper

woodland at 6,990 feet, the site was a one-room structure that was occupied during the Late Coalition period and Vallecitos phase. The structure was freestanding and was constructed from unshaped large and small tuff cobbles (Figure A.84). An auxiliary wall extended approximately 1 meter from the southwest corner, which may have served to enclose an extramural activity area. Room 1 was roughly rectangular, measured 3.8 meters by 2.6 meters (9.9 square meters of interior space), and had a prepared living surface that was compacted from use. A slab-lined hearth was found in the middle of the south wall. A reconstructable ceramic vessel was found under the roots of juniper tree in the northeast corner of the room.

Ceramic counts were complicated because of the analytic units used, but the majority were brown and gray utilitywares and Jemez Black-on-white, and Santa Fe Black-on-white. Some of the lithic artifacts recovered included one hammerstone, two polishing stones, and one piece of petrified wood. One rectangular rhyolite ground stone fragment was identified. One squirrel-sized mandible fragment was the only bone recovered. Based on information recovered, this structure was likely occupied during the Coalition and Early Classic periods (A.D. 1250–1350).

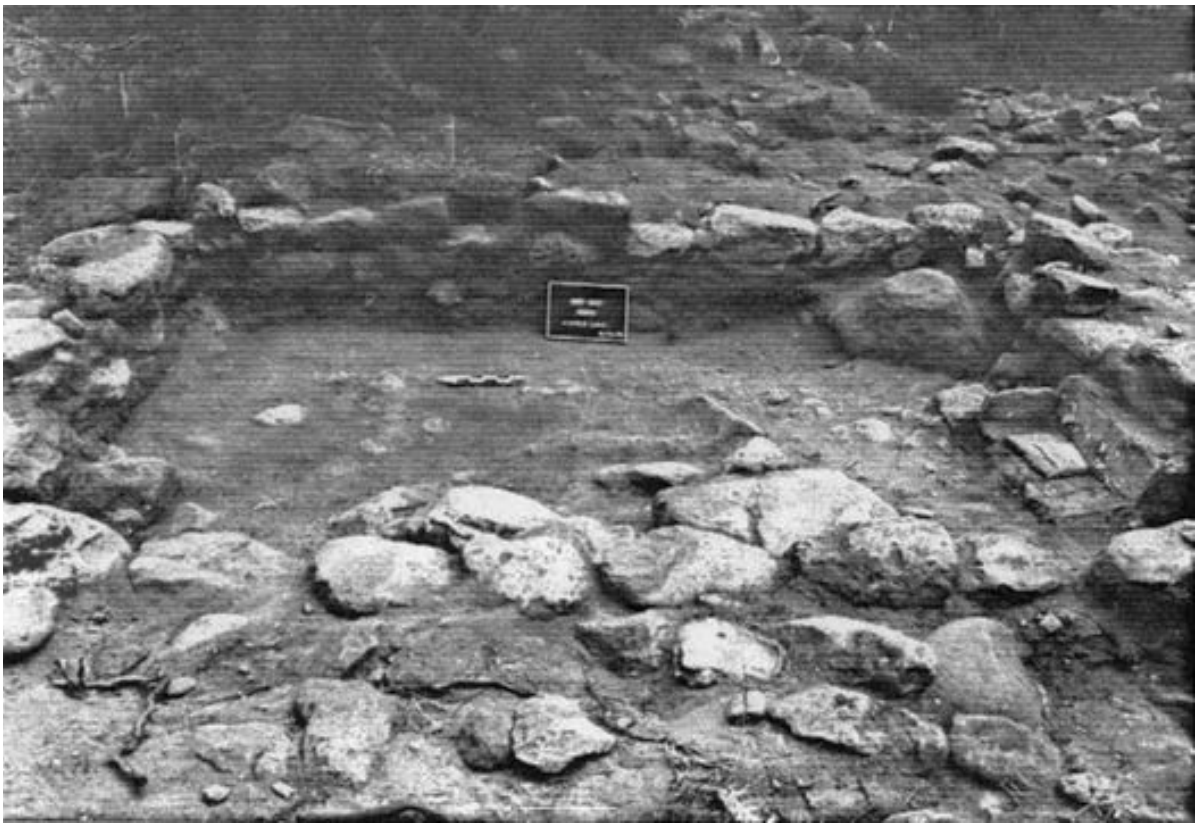

Figure A.84 LA 84924 after excavation ([31]Peterson et al. 1992:Figure 14)

LA 85403[33]

LA 85403 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a south-facing terrace in a transitional piñon-juniper and Ponderosa pine woodland at 6,990 feet, the site was a one-room structure that was occupied during the Classic period. The structure was freestanding and was constructed from a single row of unshaped dacite and tuff blocks (Figure A.85). Room 1 was rectangular, measured 2.1 meters by 1.8 meters (3.8 square meters of interior space), contained a dacite-lined pit, two postholes, and had a floor compacted from use (Figures A.86 and A.87). The two features were identified in the northwest quadrant of the room and both contained maize. An entryway was identified in the east wall. Artifact densities were highest just outside of the entryway, a pattern common among the excavated one-room structures in Rendija Canyon.

A total of 33 artifacts were recovered from the structure including, seven ceramics, all of which were utilitywares. The 26 lithic artifacts included four cores, 17 pieces of debitage, two retouched tools, and three ground stone artifacts, which included one mano and two miscellaneous ground stone items. No faunal remains were recovered. Maize was the only economically significant plant resource and/or cultigen identified at the site. One maize sample was accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1470–1660, with a calibrated intercept of A.D. 1530, suggesting the site was likely occupied during the Late Classic period (A.D. 1525–1625).

Figure A.85 LA 85403 after excavation ([33]Lockard 2008:Figure 30.3)

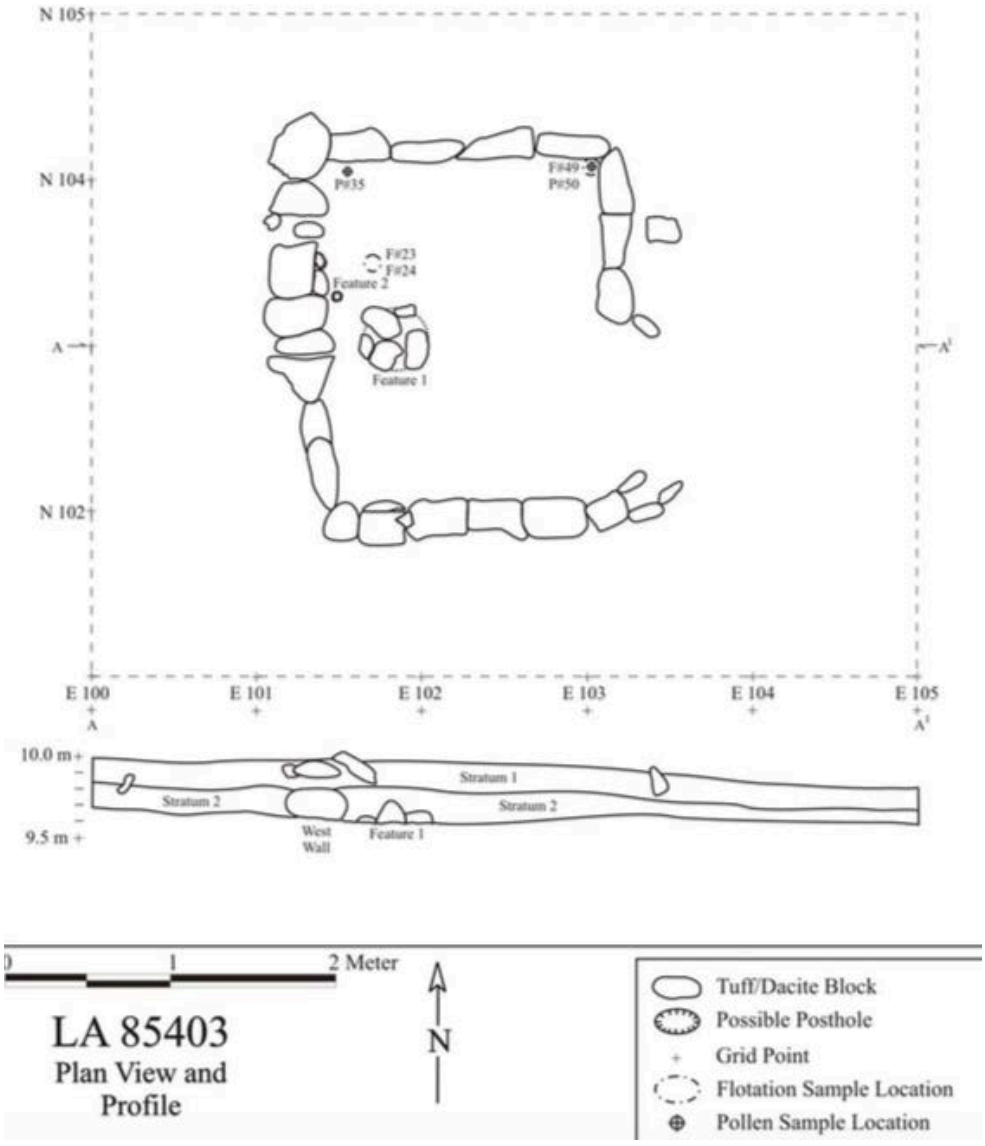

Figure A.86 Plan view and profile of LA 85403 ([33]Lockard 2008:Figure 30.2)

Figure A.87 Features 1 (pit) and 2 (postholes) at LA 85403 ([33]Lockard 2008:Figure 30.5)

LA 85404[34]

LA 85404 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on the Los Alamos Sportsmen's Club archery range in a transitional piñon-juniper and Ponderosa pine woodland at 6,954 feet, the site was a one-room structure that was occupied during the Early to Middle Classic period (A.D. 1325–1525). The structure was freestanding and was constructed from irregularly shaped dacite blocks of various sizes (Figure A.88). Most of the foundation rocks were placed in shallow trenches. Room 1 was rectangular, measured 2.3 meters by 1.7 meters (3.9 square meters of interior space), and had a clay-rich mud floor compacted from use with a burned patch in the northeast corner (Figure A.89). No features or entryway were identified.

A total of 265 artifacts were recovered from the structure including, 199 ceramics, the majority of which were utilitywares, glazewares, and Bandelier Black-on-gray. The 66 lithic artifacts included one core, 59 pieces of debitage, five retouched tools, and one hammerstone. One bone awl fragment from the distal metatarsal of a deer (*Odocoileus* sp.) was identified. Economically significant plant resources and cultigens included maize and squash. Tobacco was identified as well. One maize sample was accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1440–

1500, with a calibrated intercept of A.D. 1460. A sample of burned floor was thermoluminescence dated to A.D. 1388 ± 49. Both of these chronometric methods indicate the site was likely occupied during the fifteenth century, while the ceramics are more indicative of a fourteenth century use of the site.

Figure A.88 LA 85404 after excavation ([34]Lockard 2008:Figure 31.3)

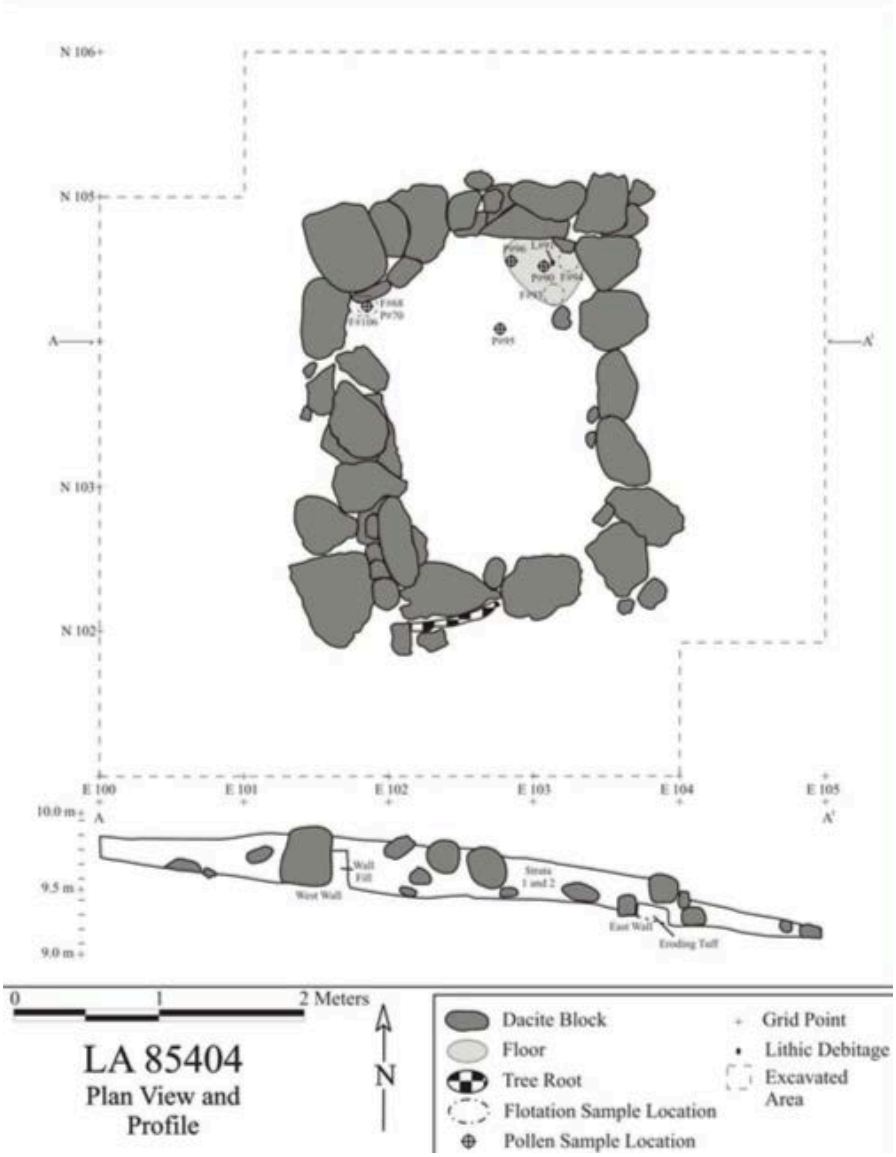

Figure A.89 Plan view and profile of LA 85404 ([34]Lockard 2008:Figure 31.2)

LA 85405[35]

LA 85405 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the Department of Energy (DOE) and the private sector. Located on a steep, east-facing slope in a transitional piñon-juniper and Ponderosa pine woodland at 7,000 feet, the site was a one-room structure that was occupied during the Middle Classic period. Three 1-meter by 1-meter units were excavated. The structure was constructed from unshaped tuff blocks. Wall segments of a rectangular structure were identified, but measurements were not able to be determined. A formal floor was not found, just a living surface compacted from use. Five Biscuit B ceramics were recovered from the structure, and 18 sherds were recovered from the surface, the majority of which were Biscuit A and B

wares. Six chalcedony lithics were recovered including a scraper and a core. No ground stone, faunal remains, or economically significant plant resources and cultigens were recovered. No chronometric dates were obtained, but based on the ceramic assemblage, a Middle to Late Classic period date was assigned (A.D. 1425–1600).

LA 85408[36]

LA 85408 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.90). Located on the east-facing slope of a narrow ridge between Rendija and Guaje canyons in a piñon-juniper woodland at 6,970 feet, the site was a one-room structure that was occupied during the Middle Classic period (A.D. 1425–1525). The structure was freestanding and was constructed primarily from a single row of oblong dacite cobbles ranging in size from fist-sized cobbles to small boulders. The exception to this was the northeast wall, which was two rows thick. The foundations were composed of dacite cobbles and upright slabs. These rocks were placed into a shallow trench dug into the compact layer of weathered bedrock that served as the room's living surface. Room 1 was trapezoidal in shape, with the northeast wall being approximately 20 centimeters longer than the southwest wall, measured 2.3 meters by 1.8 meters (4.1 square meters of interior space), and had floor compacted from use (Figure A.91). A wide 80-centimeter entryway was found in the southwest wall. No features were identified.

A total of 151 artifacts were recovered from the structure including, 80 ceramics, the majority of which were Biscuit Black-on-cream, Biscuit A, and Biscuit B. The 71 lithic artifacts included three cores, 62 pieces of debitage, four retouched tools, and two ground stone artifacts including a grinding slab and a polishing stone. One medium/large-sized mammal bone was identified. Maize was the only economically significant plant resource and/or cultigen identified and came from a sample taken from the living surface. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation in the fifteenth century was probable.

Figure A.90 LA 85408 after excavation ([36]Lockard 2008:Figure 33.3)

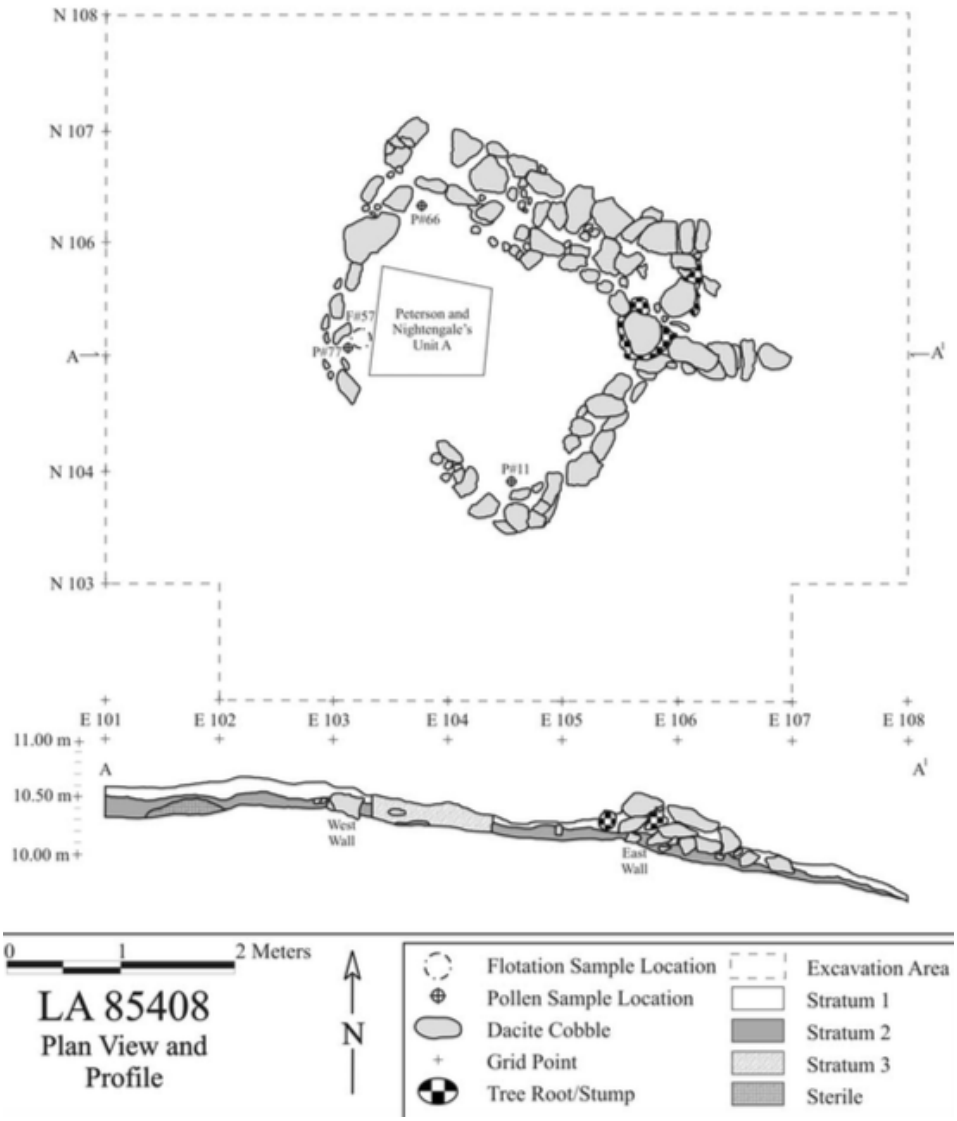

Figure A.91 Plan view and profile of LA 85408 ([36]Lockard 2008:Figure 33.2)

LA 85409[35]

LA 85409 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on a fairly steep, west-facing colluvial slope in a transitional piñon-juniper and Ponderosa pine woodland at 6,929 feet, the site was likely a one-room structure. A single 1-meter by 1-meter unit was excavated near the presumed north wall of the structure; no cultural materials were recovered, but 42 ceramics and lithics were recovered on the surface, including a core, 21 Biscuit A sherds, eight Biscuit B sherds, and utilitywares. The structure was constructed from unshaped tuff blocks. Wall segments were identified, but room shape and size were not able to be determined. No floor was identified. No ground stone, faunal remains, or

economically significant plant resources and cultigens were recovered. No chronometric dates were obtained, but based on the ceramic assemblage, a Middle-Late Classic period date was assigned (A.D. 1425–1600).

LA 85411[37]

LA 85411 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.92). Located on a south-facing ridge in a piñon-juniper woodland at 7,000 feet, the site was a two-room structure that was occupied during the Early to Middle Classic period. The structure was freestanding and was constructed from unshaped, but mostly oblong, dacite blocks. Dacite cobbles were used to form the wall foundations and were placed in a shallow trench, typically one row wide. Room 1 was rectangular, measured 3.6 meters by 2.0 meters (7.0 square meters of interior space), contained a slab-lined hearth (Figure A.93), and had a prepared floor with several small patches of plaster in the northeast corner. Two auxiliary walls extended from the northeast and southeast corners of the room, indicating an enclosed activity area to the east. Room 2 (Figure A.94) was a smaller, sub-rectangular room that measured 1.6 meters by 1.6 meters (2.6 square meters of interior space), contained a circular adobe-collared hearth, a compact living surface, and was abutted to the northern auxiliary wall off the northeast corner of Room 1 (Figure A.95).

Figure A.92 Post-excavation photo of LA 85411 ([37]Lockard 2008:Figure 34.2)

Figure A.93 Post-excavation photo of Feature 1 ([37]Lockard 2008:Figure 34.6)

Figure A.94 Post-excavation photo of Room 2 at LA 85411 ([37]Lockard 2008: Figure 34.8)

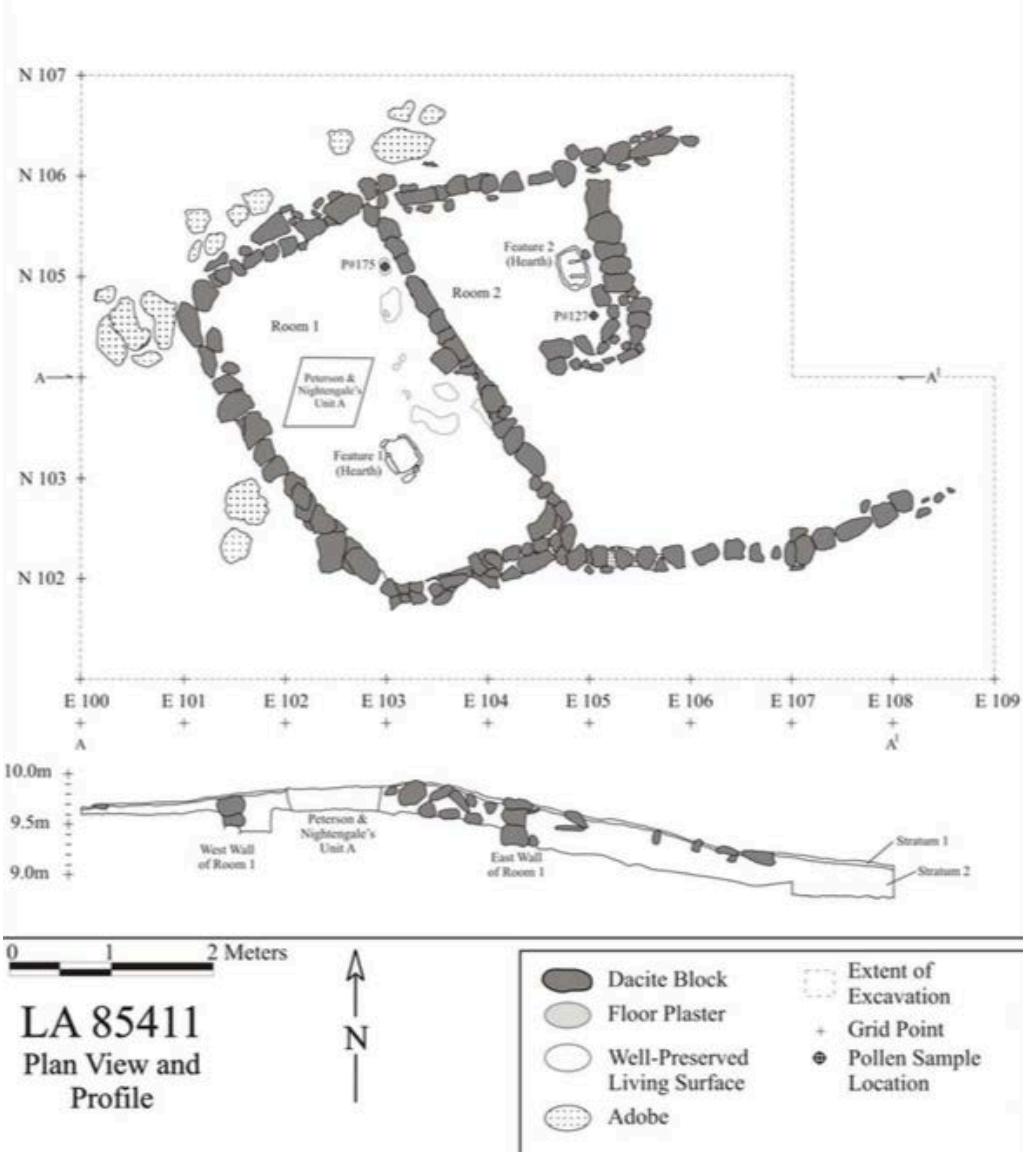

Figure A.95 Plan view and profile of LA 85411 ([37]Lockard 2008: Figure 34.3)

LA 85412[35]

LA 85412 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located at the point of a narrow ridge in a piñon-juniper woodland at 6,860 feet, the site was likely a one-room structure with a possible attached structure/activity area located downslope. Two 1-meter by 1-meter units were excavated, one within the structure mound and one in the area downslope. Artifacts recovered in the test units included utilityware ceramics, obsidian and chalcedony flakes, one large boulder metate, and two possible hoes/shaped stones. The metate and one of the hoes were both found at 38 centimeters below the surface, but no living surface was identified in the unit. Some pot-hunting occurred in the center of the

mound. The structure was constructed from unshaped tuff blocks. Small wall segments were identified, but room shape and size were not able to be determined. No floor was identified. No faunal remains or economically significant plant resources and cultigens were recovered. No chronometric dates were obtained, but based on the ceramics, a Coalition-Classic period date was assigned. No further testing was recommended.

LA 85413[38]

LA 85413 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.96). Located on the south-facing slope on the mesa between Rendija and Guaje canyons in a piñon-juniper woodland at 6,920 feet, the site was a one-room structure that was occupied during the Early Classic period (A.D. 1300–1425). The structure was freestanding and was constructed primarily from a single row of oblong dacite cobbles, with some areas two rows thick. The foundations were composed of dacite cobbles and a few upright slabs, but these were not placed in a trench as seen at other structures in the surrounding area. Room 1 was rectangular in shape, measured 2.3 meters by 1.8 meters (4.1 square meters of interior space), had a small posthole in the southernmost part of the room, and had a clay floor compacted from use (Figure A.97). A large patch of burned floor was found in the east corner of the room; maize was found in flotation samples taken from this area. A short auxiliary wall extended north from the rooms north corner. An entryway was likely present in the northwest wall.

A total of 740 artifacts were recovered from the structure including, 494 ceramics, the majority of which were Sapawe Micaceous, Biscuit A, and Cieneguilla Glaze-on-yellow. The 246 lithic artifacts included 9 cores, 224 pieces of debitage, one retouched tool, one hammerstone, and 11 ground stone artifacts. The ground stone assemblage included four one-hand manos, two millingstones, one metate fragment, one polishing stone, one abrading stone, one axe, and one undetermined piece of ground stone. Twelve pieces of bone were identified and included two mammal bones from the living surface. The other 10 bones (two pocket gopher, five mule deer, three unidentified) came from the other proveniences in the room. Maize was the only economically significant plant resource and/or cultigen identified and came from a sample taken from the living surface. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation in the Early Classic period was probable.

Figure A.96 Post-excavation photo of LA 85413 ([38]Lockard 2008:Figure 35.2)

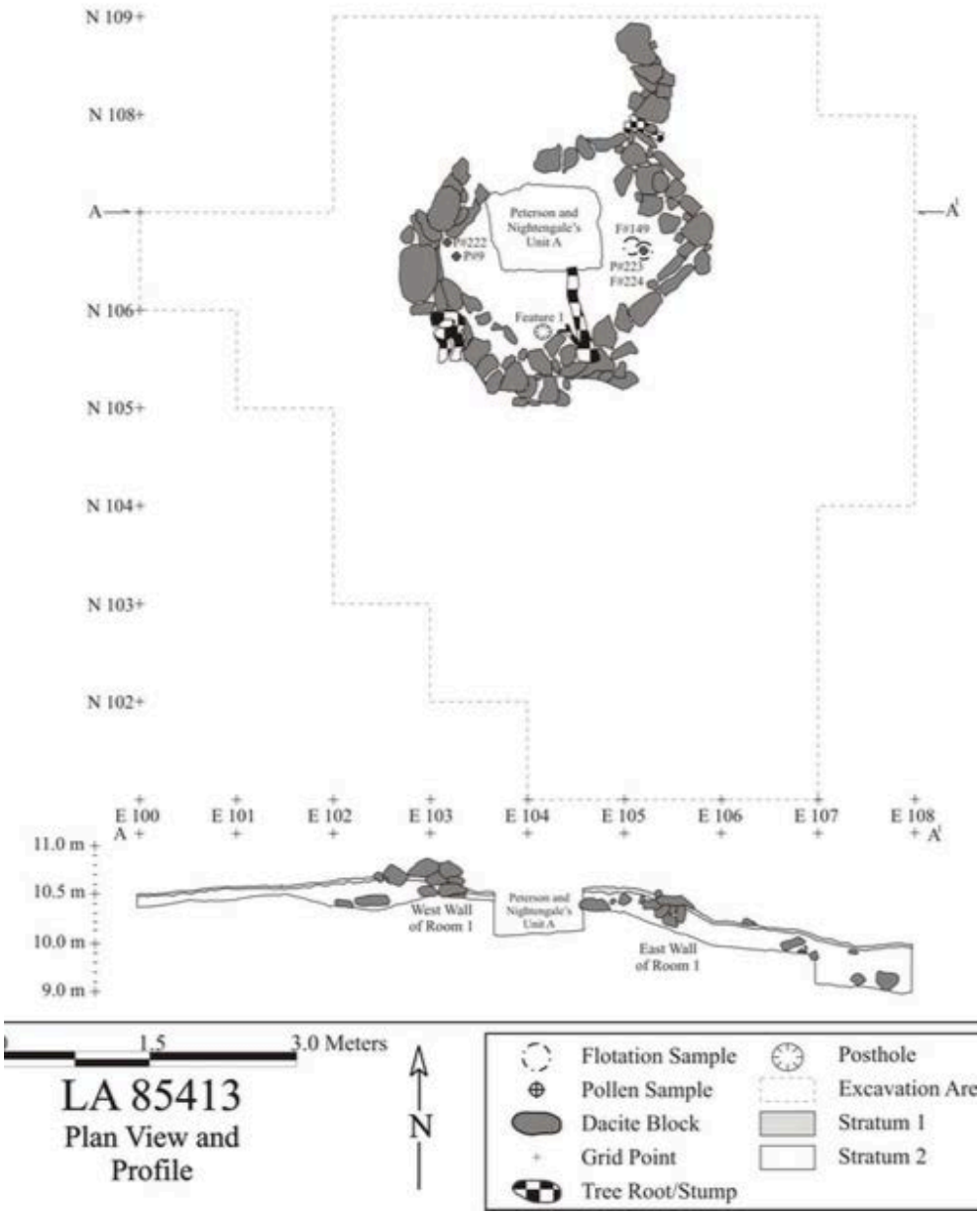

Figure A.97 Plan view and profile of LA 85413 ([38]Lockard 2008:Figure 35.3)

LA 85414[39]

LA 85414 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.98). Located on a southeast-facing ridge slope on the mesa between Rendija and Guaje canyons in a piñon-juniper woodland at 6,920 feet, the site was a one-room structure that was occupied during the Middle Classic period (A.D. 1425–1525). The structure was freestanding and was constructed primarily from a single row of dacite cobbles of various sizes (Figure A.99). The foundations were constructed by placing dacite cobbles in a shallow trench. Room 1

was roughly rectangular in shape, measured 2.1 meters by 1.4 meters (2.9 square meters of interior space), and had a floor compacted from use.

A total of 70 artifacts were recovered from the structure, including 35 ceramics, the majority of which were Sapawe Micaceous, Biscuit A, and unidentified glazewares. The 35 lithic artifacts included 28 pieces of debitage, two retouched tools, one hammerstone, and four ground stone artifacts. The ground stone assemblage included one one-hand mano, one millingstone, one grinding slab, one grooved abrader, and one undetermined piece of ground stone. One possible awl, fashioned from the proximal metacarpal of a mule deer, was recovered. No economically significant plant resources and/or cultigens were identified. No chronometric dates were obtained, but based on the ceramic assemblage, a Middle Classic period occupation was probable.

Figure A.98 Post-excavation photo of LA 85414 ([39]Lockard 2008:Figure 36.3)

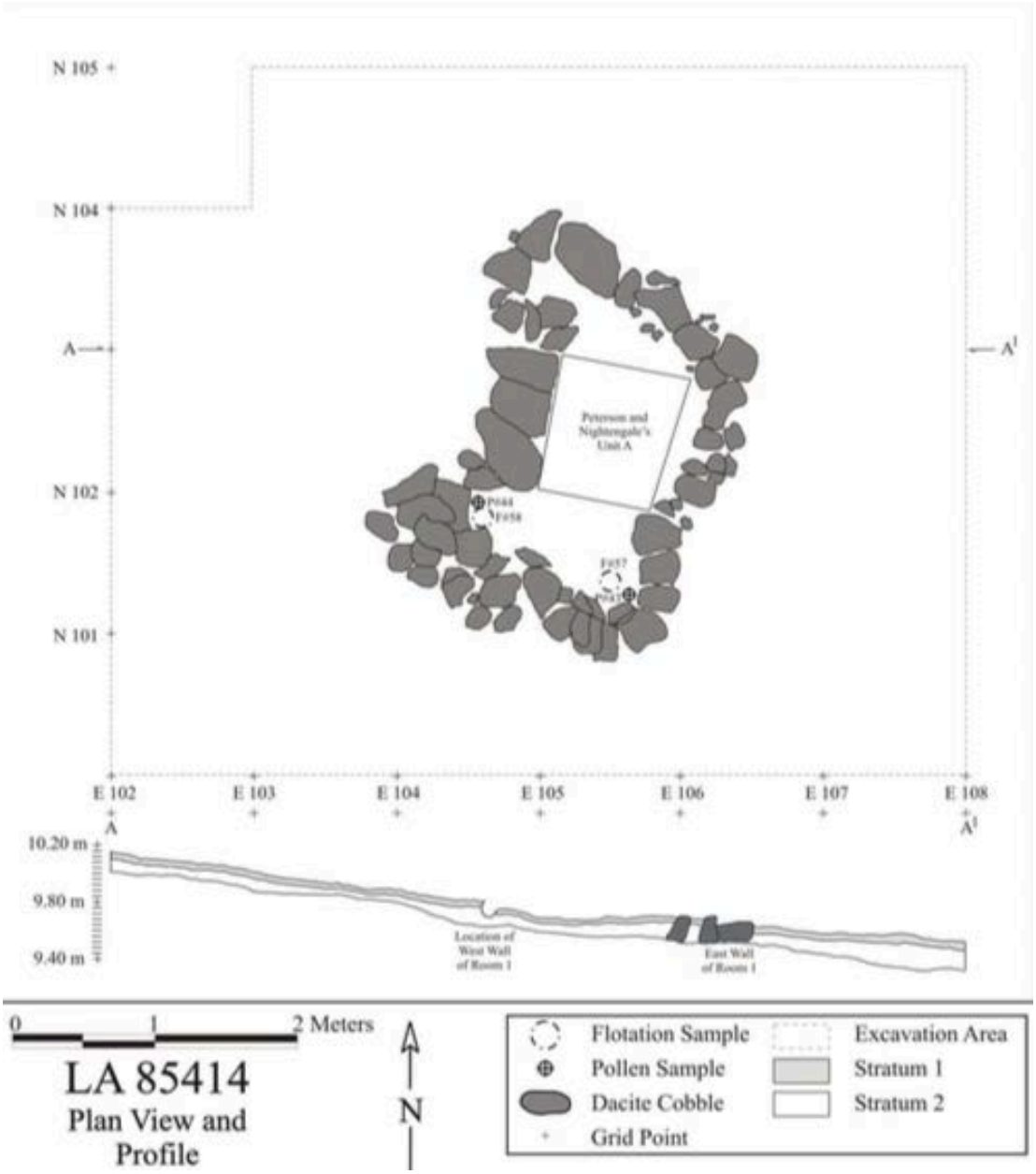

Figure A.99 Plan view and profile of LA 85414 ([39]Lockard 2008:Figure 36.2)

LA 85417[40]

LA 85417 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a south-facing ridge slope on the mesa between Rendija and Guaje canyons in a piñon-juniper woodland at 6,860 feet, the site was a one-room structure that was occupied during the Late Coalition to Early Classic period (A.D. 1250–1325). The structure was freestanding and was constructed primarily from a single row of dacite cobbles (Figure A.100). Numerous fragments of burned adobe with branch impressions were recovered suggesting that the upper portions of

the walls and roof were composed of wattle and daub. The foundations were constructed of small to medium-sized dacite cobbles of irregular shape and adobe mortar. Room 1 was rectangular in shape, measured 2.0 meters by 1.7 meters (3.4 square meters of interior space), and had a burned plaster floor (Figure A.101). It is thought the structure burned down either while the site was occupied or shortly thereafter. An entryway was located in the south wall and had an associated doorsill. A small extramural firepit/possible hearth was located east of the structure.

Figure A.100 LA 85417 after excavation ([40]Lockard 2008:Figure 37.3)

A total of 146 artifacts were recovered from the structure including, 129 ceramics, the majority of which were utilitywares with one Santa Fe Black-on-white and several buffwares. The 17 lithic artifacts included one core, 13 pieces of debitage, one hammerstone, and two ground stone artifacts (one two-hand mano and 1 grinding slab). No faunal remains were recovered. Maize was the only identified economically significant plant resource and/or cultigen. The chronometric dates returned for this site were less than straightforward. Three pieces of burned adobe and a Santa Fe Black-on-white sherd was submitted for thermoluminescence dating. The thirteenth century dates from the sherd (A.D. 1284 ± 47) and a piece of burned adobe (A.D. 1277 ± 58) appear to be in agreement with the ceramics, but two other pieces of adobe returned tenth century and fifteenth century dates. Ten specimens were collected as a set from

the burned floor for archaeomagnetic dating and suggest the structure burned in the Late Developmental through Early Classic period. Though the chronometric dates were varied, a Late Coalition and Early Classic occupation seem to be the most likely.

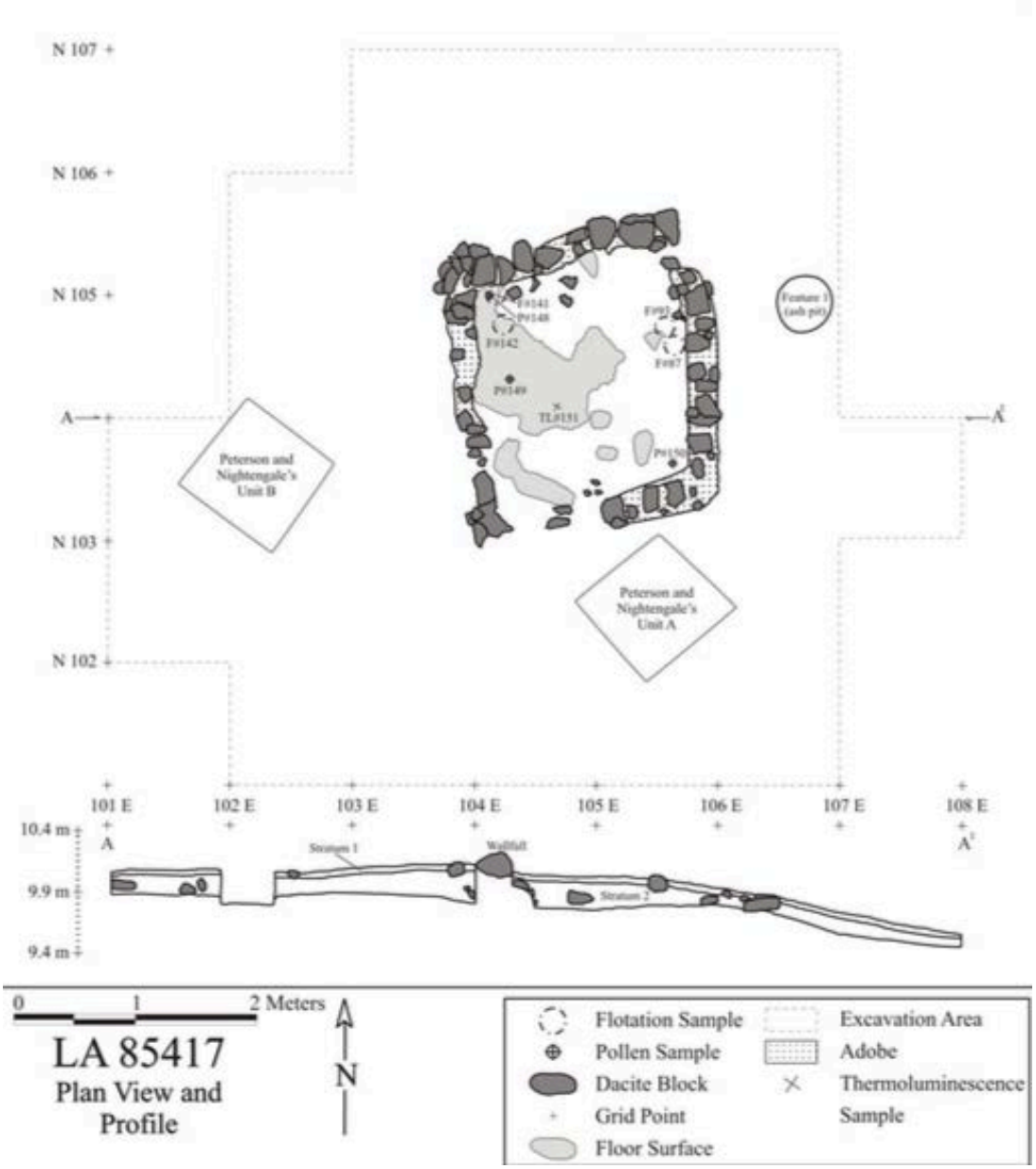

Figure A.101 Plan view and profile of LA 85417 ([40]Lockard 2008:Figure 37.2)

LA 85857[35]

LA 85857 was tested in 1992 by ARI, Inc. as part of a land exchange between the DOE and the private sector. Located on a south-facing erosional slope between two shallow drainages in a transitional piñon-juniper and Ponderosa pine woodland at 6,978 feet, the site was likely a one-room structure. Surface manifestations included an L-shaped

alignment of widely spaced tuff rocks, with the "L" pointing to the south-southeast. Surface artifacts were identified primarily on the open slope to the east of the feature. Two 1 by 1 meter units were excavated at the corner of the "L". No artifacts were recovered, but some small daub and charcoal fragments were collected. Two small flakes, a large boulder metate, four possible hoes/shaped stone, and 17 ceramics (16 utilitywares and one Wiyo Black-on-white) were found on the surface. Small tuff wall segments were identified, but room shape and size were not able to be determined. No floor was identified. No faunal remains or economically significant plant resources and cultigens were recovered. No chronometric dates were obtained, but based on the single Wiyo Black-on-white sherd, an Early Classic period date was assigned (A.D. 1325–1425). No further testing was recommended.

LA 85861[41]

LA 85861 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on an east-facing slope on the mesa between Rendija and Guaje canyons in a transitional piñon-juniper and Ponderosa pine woodland at 6,900 feet, the site was a one-room structure that was occupied during the Late Coalition period (A.D. 1250–1325). The structure was freestanding and was constructed primarily from dacite rocks, many of which were tall, thin, upright slabs (Figure A.102). The foundations were constructed by placing these in a shallow trench; the second and third courses tended to be roughly shaped tabular dacite cobbles placed atop the upright cobbles. Room 1 was rectangular in shape, measured 3.0 meters by 1.7 meters (5.2 square meters of interior space), and had a floor compacted from use (Figure A.103). A small, elliptical hearth was located just inside the west wall. An entryway approximately 55 centimeters wide was found in the east wall. A piece of burned daub from just south of the entryway was submitted for thermoluminescence dating. The uppermost portions of the walls, and perhaps the ceiling, were most likely composed of wattle and daub, samples of which were prolific in this structure.

A total of 537 artifacts were recovered from the structure including, 439 ceramics, the majority of which were utilitywares and Santa Fe Black-on-white. The 108 lithic artifacts included two cores, 79 pieces of debitage, 10 retouched tools, three hammerstones, and 14 ground stone artifacts. The ground stone assemblage included one one-hand mano, one mano fragment, four metate fragments, one polishing stone, one grooved abrader, two hoes, and four undetermined pieces of ground stone. Although most of the one-room structures in the surrounding area emphasize core reduction activities, the lithic assemblage from LA 85861 also includes evidence of biface production/maintenance. Five pieces of bone were recovered including, a mule deer second phalanx from the general fill, and a rabbit/hare molar and three mammal shaft fragments from the hearth. One of these, a medium-to large-sized mammal long bone fragment, was manufactured

into an awl. Maize was the only identified economically significant plant resource and/or cultigen. A maize sample was accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1020–1200. A single sherd and a piece of wall plaster were submitted for thermoluminescence dating; both dates correspond to the two-sigma range of the radiocarbon date (A.D. 1211 ± 73 and A.D. 1193 ± 53, respectively), suggesting the site was likely occupied during the Late Coalition period.

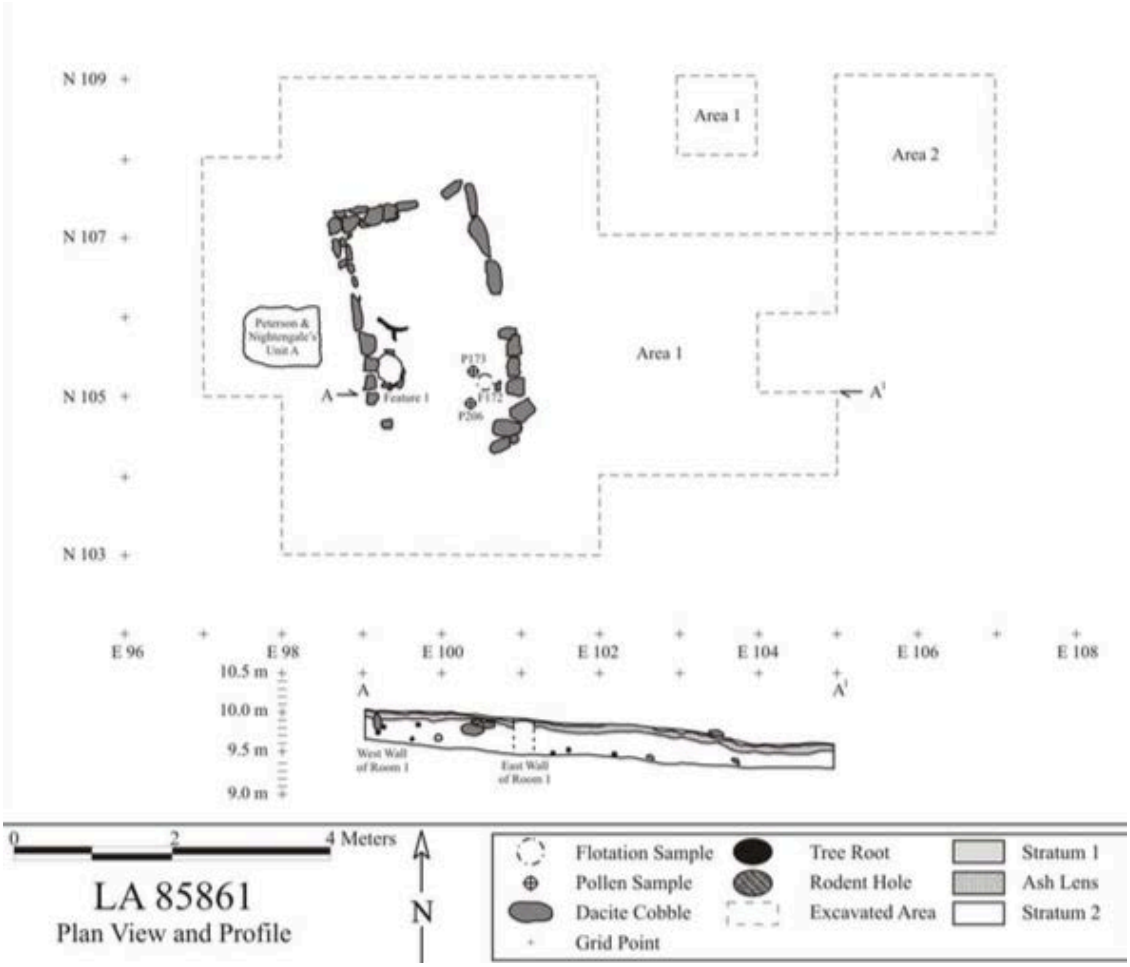

Figure A.102 Plan view and profile of LA 85861 ([41]Lockard 2008:Figure 39.2)

Figure A.103 Plan view and profile of LA 85861 ([41]Lockard 2008:Figure 39.3)

LA 85862[35]

LA 85862 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on a very low and narrow ridge between two drainages in a piñon-juniper woodland at 6,935 feet, the site was likely a one-room structure. Surface manifestations included rock alignments that formed the probable outline of a room, 11 lithic artifacts, and 13 utilitywares. A two-track road ran across the structure. Two 1-meter by 1-meter units were excavated, one in the middle of the alignments over a charcoal stain and one near a rock alignment. A single course of tuff stones was identified, but room shape and size were not able to be determined. Subsurface artifacts included 14 lithics and 23 ceramics, which included Biscuit B and utilitywares. A number of very recent historic materials (e.g., glass, shotgun shells, and metal) were also found. No floor was identified. No faunal remains or economically significant plant resources and cultigens were recovered. No chronometric dates were obtained, but the ceramic assemblage indicates a Late Classic period occupation (A.D. 1425–1550). No further testing was recommended.

LA 85863[35]

LA 85863 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on a fairly steep, south-facing rocky slope in a transitional piñon-juniper and Ponderosa pine woodland at 6,920 feet, the site was possibly a one-room structure. Surface manifestations included small rock alignments that formed the probable outline of a room and four artifacts. One 1-meter by 1-meter unit was excavated in the middle of the rock concentration. Several unshaped tuff stones were identified, but room shape and size were not able to be determined. No subsurface artifacts or floor were identified. No chronometric dates were obtained, but

the presence of Wiyo Black-on-white ceramics indicates the site was occupied during the Early Classic period (A.D. 1300–1400). No further testing was recommended.

LA 85866[35]

LA 85866 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on the crest and north-facing slope of a narrow ridge in a piñon-juniper woodland at 6,960 feet, the site may have been a one-room structure. Surface manifestations included small rock alignments that formed the possible outline of a room but were heavily eroded and displaced. Surface artifacts included 22 ceramics (Santa Fe Black-on-white, White Mountain Redware, and utilitywares) and 15 pieces of lithic debitage. A slab metate fragment was found in one of the tuff alignments. One 1-meter by 1-meter unit was excavated in the middle of the rock concentration. Several unshaped tuff stones were identified, but room shape and size were not able to be determined. One subsurface obsidian nodule was recovered, but a floor was not identified. No chronometric dates were obtained, but the ceramic assemblage indicates the site was occupied during the Coalition period (A.D. 1200–1325). No further testing was recommended.

LA 85867[42]

LA 85867 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.104). Located on the south-facing slope on the mesa between Rendija and Guaje canyons in a piñon-juniper woodland at 6,935 feet, the site was a one-room structure that was occupied during the Early Classic period (A.D. 1300–1425). The structure was freestanding and was constructed primarily from a single row of dacite cobbles and upright slabs. The foundations were composed of dacite upright stones and cobbles and a few upright slabs. Room 1 was rectangular in shape, measured 2.3 meters by 1.3 meters (3.0 square meters of interior space), and had a living surface compacted from use (Figure A.105). A large patch of burned floor was found in the northwest corner of the room; maize was found in flotation samples taken from this area. A possible entryway is located in the north wall; a linear concentration of compact adobe parallels the void and may have been a doorsill.

A total of 122 artifacts were recovered from the structure including, 68 ceramics, the majority of which were Sapawe Micaceous and Biscuit A types. The 54 lithic artifacts included six cores, 45 pieces of debitage, one retouched tool, and two ground stone artifacts (one two-hand mano and one mano fragment). A single large-mammal (elk-sized) rib fragment was identified. Maize was the only economically significant plant resource and/or cultigen identified. No chronometric dates were obtained, but based on the ceramic assemblage, an occupation in the Early Classic period was probable.

Figure A.104 LA 85867 after excavation ([42]Lockard 2008:Figure 41.3)

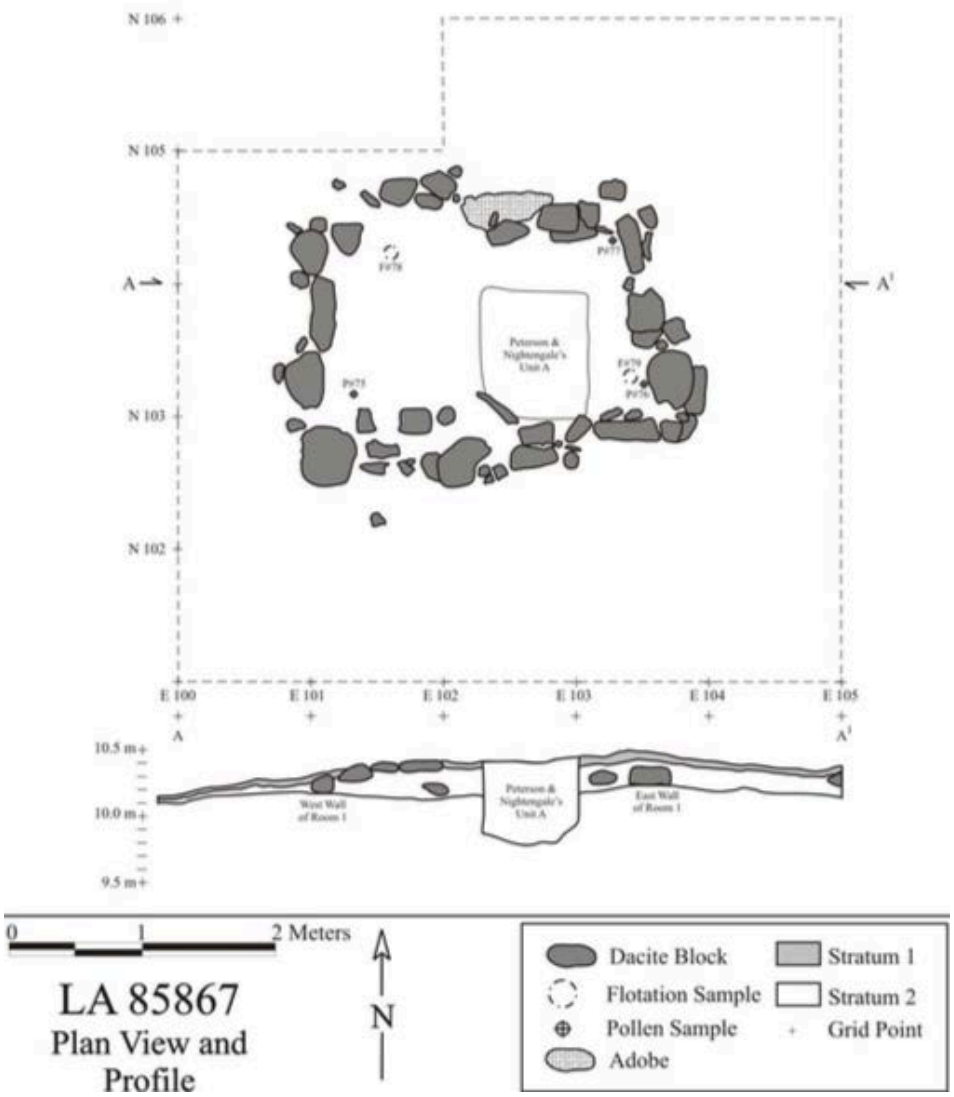

Figure A.105 Plan view and profile of LA 85867 ([42]Lockard 2008:Figure 41.2)

LA 86605[43]

LA 86605 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.106). Located on a broad, east-facing shoulder of a terrace above an ephemeral creek in Rendija Canyon in a Ponderosa pine forest at 6,920 feet, the site was a one-room structure that was occupied during the Late Classic period (A.D. 1525–1600). The structure was freestanding and was constructed primarily from tuff blocks and dacite cobbles. Most of the foundation stones were set horizontally, with a few upright slabs set into a trench. Room 1 was rectangular in shape, measured 2.0 meters by 1.8 meters (3.6 square meters of interior space), and had two living surfaces compacted from use (Figure A.107). Artifacts found on the upper

surface included a Pedernal chert flake, a mule deer bone, and a piece of burned adobe. The lower floor was found 20 centimeters below with a single associated chalcedony flake. Geomorphological analysis suggests there were two distinct occupations associated with the surfaces, one possibly during the Coalition period and the other during the Classic period.

A total of 189 artifacts were recovered from the structure including, 105 ceramics, the majority of which were Biscuit B, Biscuit C, Sankawi Black-on-cream, and Sapawe Micaceous types. The 72 lithic artifacts included 67 pieces of debitage, 4 retouched tool, and one grinding slab. One mule deer distal humerus was recovered from the structure. Maize was the only economically significant plant resource and/or cultigen identified. A sample of maize was accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1440–1640, with a calibrated intercept of A.D. 1500, suggesting a Late Coalition period occupation.

Figure A.106 LA 86605 after excavation ([43]Dilley and Vierra 2008:Figure 43.3)

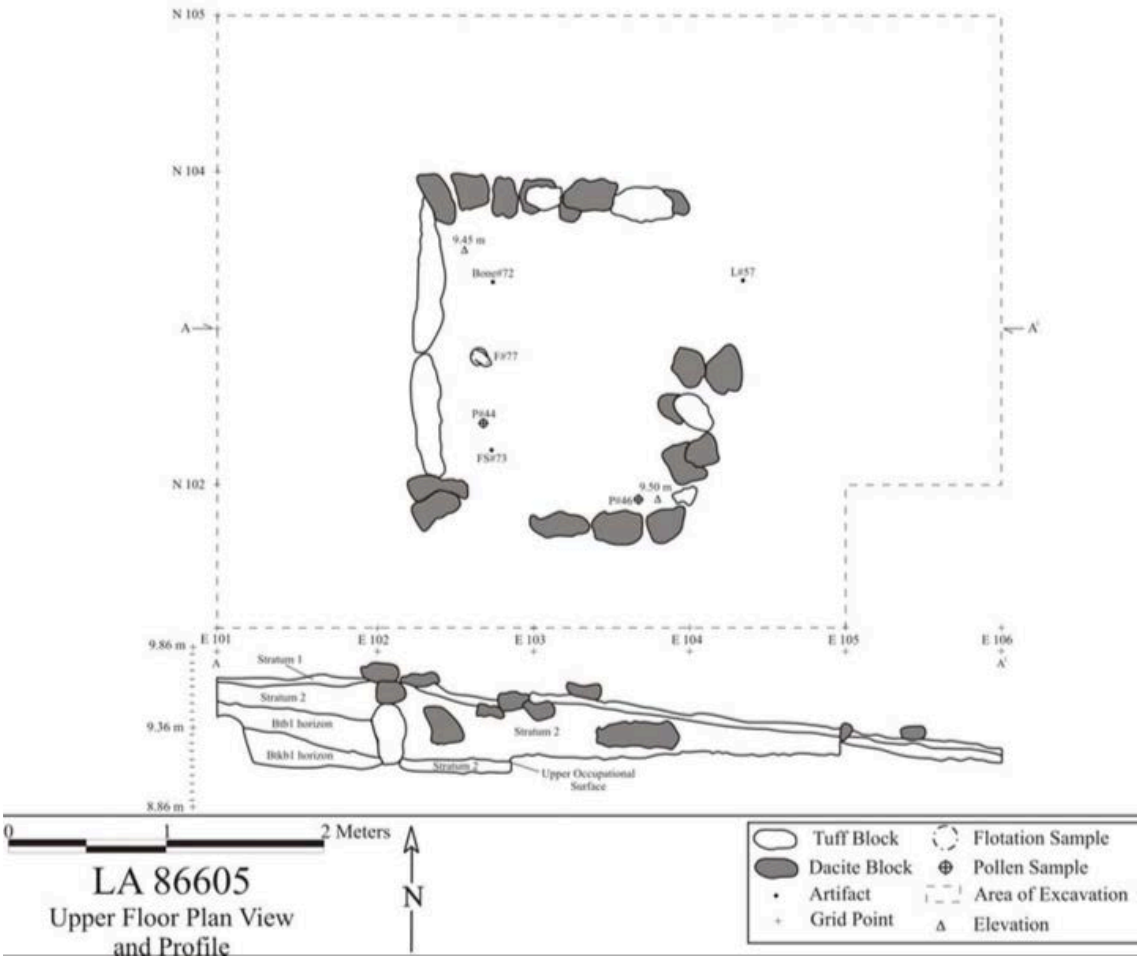

Figure A.107 Plan view and profile of LA 86605 ([43]Dilley and Vierra 2008:Figure 43.2)

LA 86606[44]

LA 86606 was excavated in 2004 and 2005 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on the tip of an east-facing ridge finger in Cabra Canyon in a Ponderosa pine woodland at 6,960 feet, the site was a one-room structure that was occupied during the Late Classic period (A.D. 1525–1600). The structure was freestanding and was constructed from dacite rocks of various shapes and sizes. The foundations of the north, south, and west walls were composed of large upright slabs with flat faces. The east wall was heavily eroded and may have been the location of the entryway, which further contributes to the lack of construction elements. Room 1 was square with slightly rounded corners, measured 2.0 meters by 1.9 meters (3.8 square meters of interior space), and had a prepared living surface compacted from use (Figure A.108). A short wall composed of unshaped dacite blocks of varying sizes was found a few meters southwest of the structure. It is thought this feature severed as

a windbreak to protect a possible hearth, which was suggested by a concentration of ash and charcoal among five dacite blocks immediately east of the wall (Figure A.109).

Figure A.108 LA 86606 after excavation ([44]Lockard 2008:Figure 44.3)

A total of 171 artifacts were recovered from the structure including, 143 ceramics, the majority of which were utilitywares, Santa Fe Black-on-white, Wingate Black-on-red, and biscuitwares. The Classic period biscuitwares all came from the area around the windbreak, while the Santa Fe Black-on-white and Wingate Black-on-red sherds came from the structure, suggesting a multi-component use of the site. The 28 lithic artifacts included one core, 17 pieces of debitage, one hammerstone, and nine ground stone artifacts. The ground stone items included one two-hand mano, one grinding slab, one metate fragment, one axe (Figure A.110), two undetermined pieces of ground stone, and three shaped slabs. One medium/large-sized (deer-sized) mammal long bone fragment was recovered from the structure. Maize was the only economically significant plant resource and/or cultigen identified. No chronometric dates were obtained, but based on the distinct components of the ceramic assemblage, the structure was occupied during the Late Coalition period, while the windbreak and hearth were used during the Classic period.

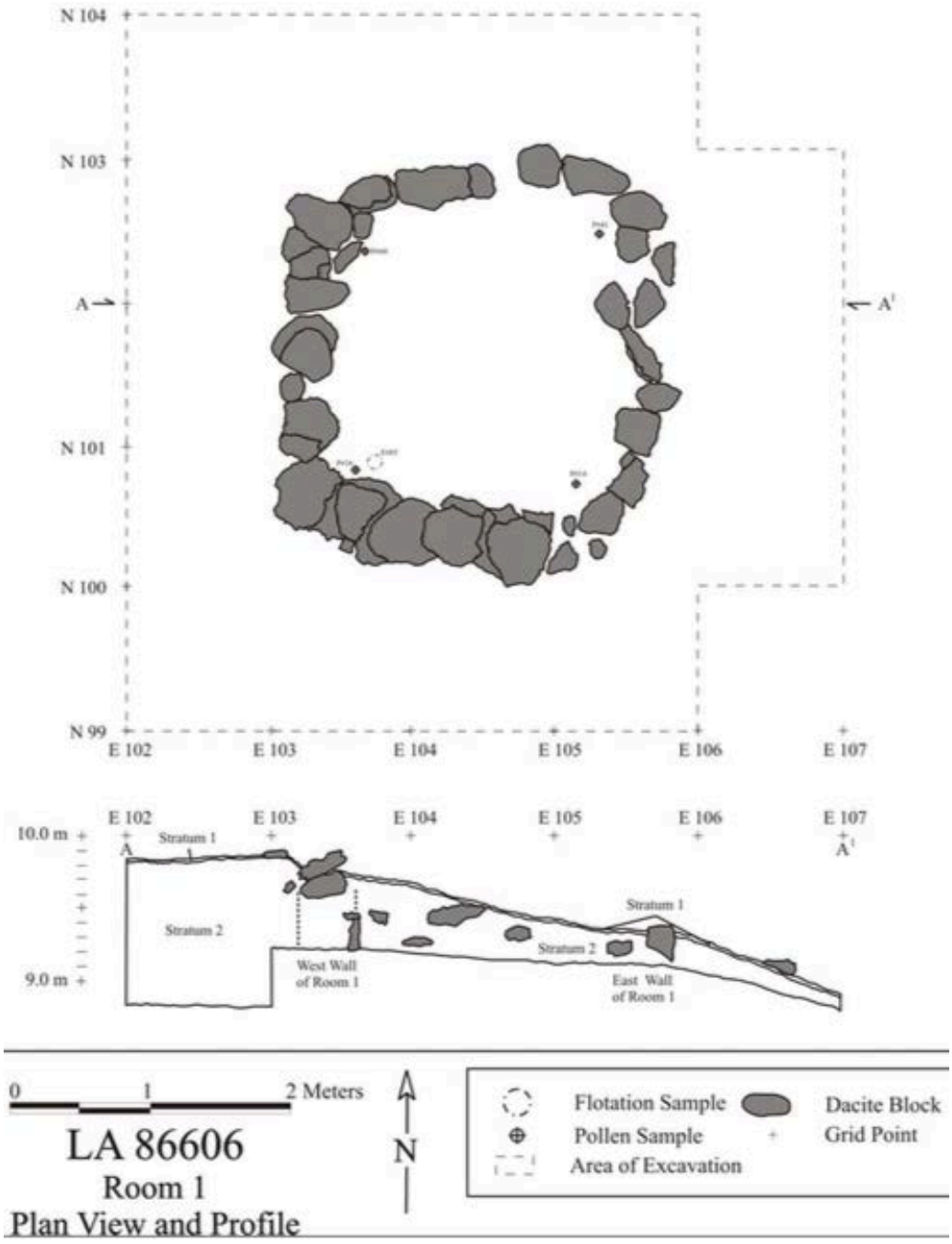

Figure A.109 Plan view and profile of LA 86606 ([44]Lockard 2008:Figure 44.2)

Figure A.110 Axe fragment from LA 86606 ([44]Lockard 2008:Figure 44.7)

LA 86607[45]

LA 86607 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.111). Located on top of a ridge in Cabra Canyon in a transitional piñon-juniper and Ponderosa pine woodland at 7,040 feet, the site was a one-room structure that was occupied during the Coalition period. The structure was freestanding and was constructed primarily from unshaped dacite cobbles. The foundation rocks, which had flat surfaces that formed the interior wall faces, were placed in a shallow trench. The northeast corner of the room was heavily disturbed, presumably by the Pajarito Trail, which runs adjacent to this portion of the site. Room 1 was sub-rectangular, measured 2.1 meters by 1.8 meters (3.8 square meters of interior space), and had a living surface compacted from use (Figure A.112) A Santa Fe Black-on-white sherd was found on the living surface. A gap in the east wall of approximately 70 centimeters signaled an entryway.

Only nine ceramics were recovered from the structure, the majority of which was Santa Fe Black-on-white. The paucity of artifacts is presumably related to the site's proximity to a walking trail. No lithic artifacts or faunal remains were recovered. No economically significant plant resources and/or cultigens were identified. No chronometric dates were obtained, but the ceramic assemblage indicates a Late Coalition period occupation.

Figure A.111 LA 86607 after excavation ([45]Lockard 2008:Figure 45.3)

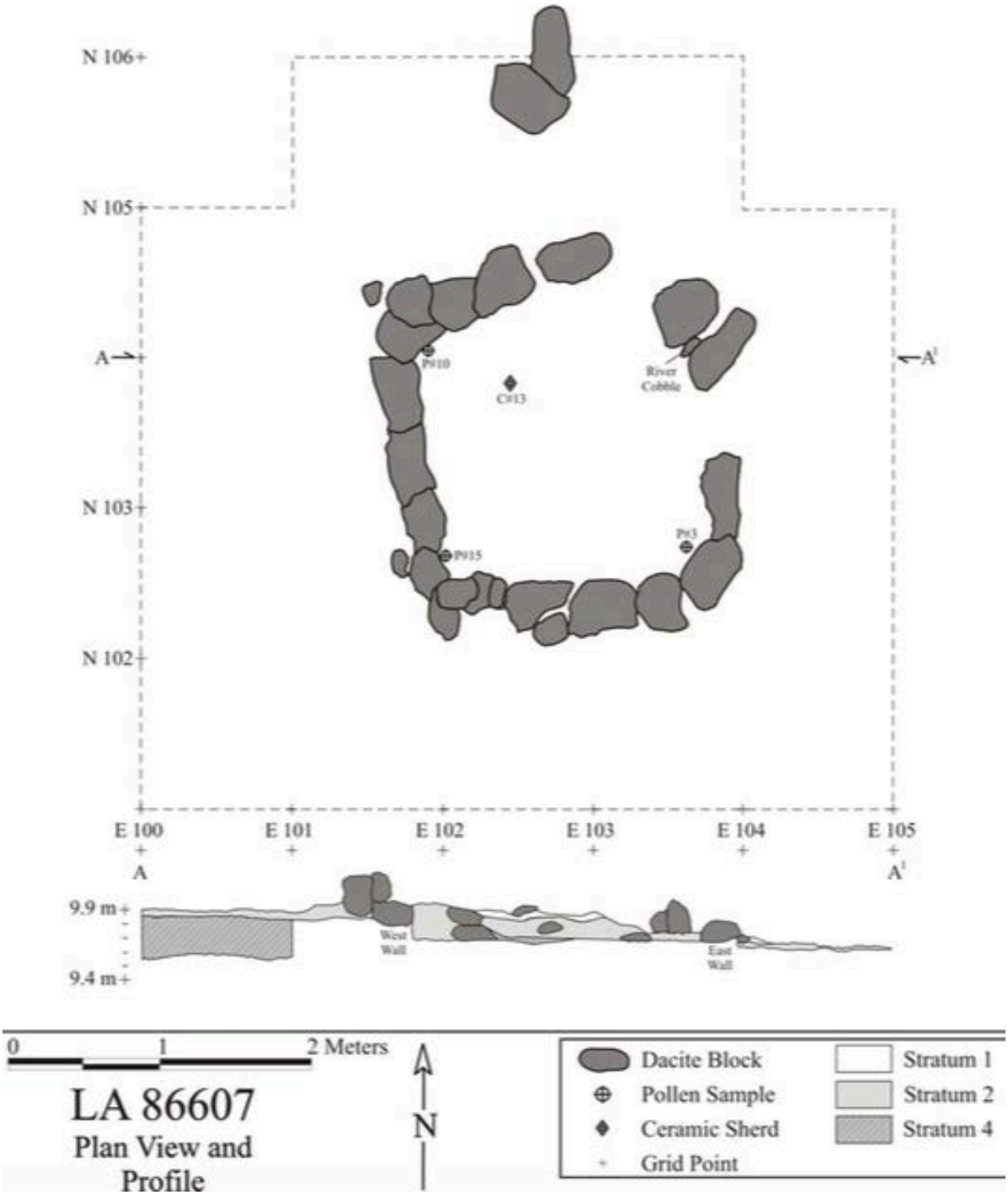

Figure A.112 Plan view and profile of LA 86607 ([45]Lockard 2008:Figure 45.2)

LA 87430[46]

LA 87430 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on the edge of a terrace south of a creek in Rendija Canyon in a Ponderosa pine forest at 6,925 feet, the site was a one-room

structure that was occupied during the Middle Classic period (A.D. 1425–1525). The structure was freestanding and was constructed primarily from one or two rows of dacite cobbles and upright slabs, with fewer tuff blocks (Figure A.113). The foundation rocks were mostly upright slabs in the western half and large cobbles in the eastern half. Room 1 was sub-rectangular in shape, measured 2.1 meters by 1.9 meters (4.0 square meters of interior space), and had a living surface compacted from use (Figure A.114). No artifacts were found in association with the living surface, but maize pollen was identified. An entryway was identified in the southern portion of the east wall, and an extramural slab-lined hearth was found 2 meters east of the structure (Figure A.115). The presence of a hearth along with elevated counts of artifacts in the intervening 2 meters suggests an activity area east of the structure.

Figure A.113 LA 87430 after excavation ([46]Lockard 2008:Figure 46.3)

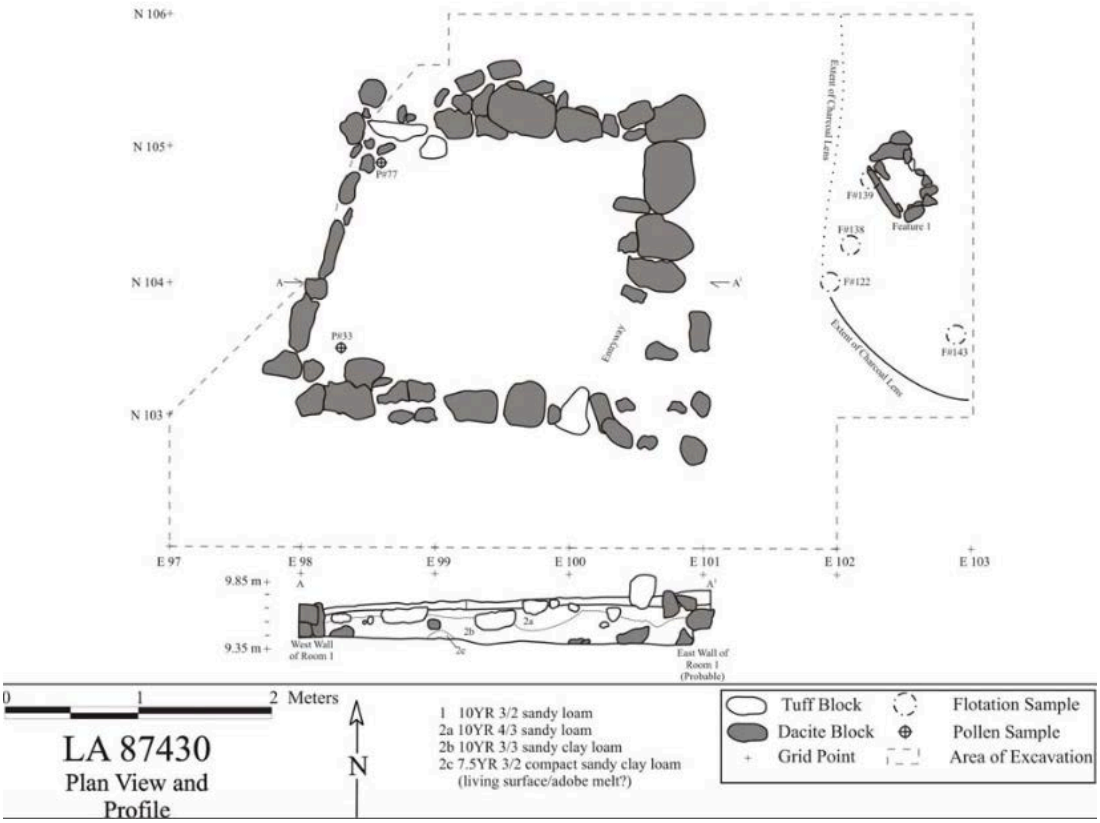

Figure A.114 Plan view and profile of LA 87430 ([46]Lockard 2008:Figure 46.3)

Figure A.115 Extramural slab-lined hearth at LA 87430 ([46]Lockard 2008:Figure 46.5)

A total of 583 artifacts were recovered from the structure including, 487 ceramics, the majority of which were Sapawe Micaceous, Biscuit B, and Biscuit Black-on-cream. The 96 lithic artifacts included four cores, 80 pieces of debitage, five retouched tools, and seven ground stone artifacts, including four mano fragments, two millingstones, and one abrading stone. No faunal remains were recovered. Maize was the only economically significant plant resource and/or cultigen identified. Two maize samples from the hearth were accelerator mass spectroscopy dated. One returned a two-sigma range of A.D. 1440–1640 and the other had a range of A.D. 1430–1630. A single Biscuit B sherd was thermoluminescence dated to about 100 years earlier than the radiocarbon dates, but did overlap at two-sigma, suggesting the site was occupied during the Middle Classic period.

LA 90186[27]

LA 90186 was tested in 1992 by the Office of Archaeological Studies, Museum of New Mexico and the U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains. The moderately-burned site was mapped, surface collected, and two test pits were excavated. Located on a west-facing hillslope in a stand of Ponderosa pine at 6,925 feet, the site was a masonry structure occupied during the Classic period. The one-room structure was constructed from shaped and unshaped tuff blocks. Not enough of the site was excavated to determine its original shape, nor could its interior dimensions be measured. The highest concentration of artifacts was southeast of the mound, which is where one of the test pits was placed; the other was placed on the rubble mound. No features were identified. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained an abundance of Jemez Black-on-white and Jemez utilitywares, suggesting an occupation in the Classic period. Ground stone artifacts included one mano and one metate, both recovered from the surface. Nearly 60 pieces of chipped stone were recovered.

LA 90189[27]

LA 90189 was tested in 1992 by the Office of Archaeological Studies, Museum of New Mexico and the U.S. Forest Service archaeologists as part of a Phase I project designed to evaluate the effects of wildland fire on cultural resources in the Jemez Mountains. The lightly-burned site was mapped, surface collected, and one test pit was excavated. Located atop a small hill overlooking a drainage in a stand of Ponderosa pine at 6,830 feet, the site was a masonry structure occupied during the Classic period. The structure was constructed from shaped and unshaped tuff blocks and based on the amount of tuff, the site may have included two rooms. Not enough of the site was excavated to determine its original shape, nor could its interior dimensions be measured. The highest concentration of artifacts was in the southeast quadrant, which is where the test pit was

placed. No features were identified. Artifacts were observed with an eye towards the effects of fire, but some general type observations were made. This site contained an abundance of Jemez Black-on-white and Jemez utilitywares, suggesting an occupation in the Classic period. Ground stone artifacts included one mano and one metate, both recovered from the surface. Five pieces of chipped stone were recovered.

LA 99392[35]

LA 99392 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on a northeast-facing slope near the base of a narrow ridge in a transitional piñon-juniper and Ponderosa pine woodland at 6,925 feet, the site was a three-sided rock structure. Multiple rock courses formed the southwest, southeast, and northwest walls, but the northeast side was open. Surface artifacts included six ceramics (Biscuit A and B). One 1-meter by 1-meter unit was excavated in the middle of the feature. Several unshaped tuff stones were identified, but room shape and size were not able to be determined. The room was almost entirely surficial. One subsurface biscuitware ceramic was recovered but a floor was not identified. No chronometric dates were obtained, but the ceramic assemblage indicates the site was occupied during the Classic period. No further testing was recommended.

LA 99393[35]

LA 99393 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on a fairly steep, south-facing ridge slope in a piñon-juniper woodland at 6,965 feet, the site was a one-room structure. The structure was comprised of roughly rectangular alignments of unshaped tuff cobbles and boulders. Surface artifacts included two ceramics (Biscuit B). One 1-meter by 1-meter unit was excavated in the middle of the feature. Though stone alignments were identified, room size was not able to be determined. Ten subsurface ceramics (utilitywares) and two pieces of lithic debitage were recovered, but a floor was not identified. No chronometric dates were obtained, but the ceramic assemblage indicates the site was occupied during the Middle Classic period (A.D. 1425–1550). No further testing was recommended.

LA 99395[35]

LA 99395 was tested in 1992 by ARI, Inc. personnel as part of a land exchange between the DOE and the private sector. Located on the crest and east-facing slope of a narrow ridge in a piñon-juniper woodland at 6,910 feet, the site was a one-room structure. Surface artifacts included 10 utilityware ceramics. One 1-meter by 1-meter unit was excavated in the middle of the feature, and no cultural materials or deposits were identified. No chronometric dates were obtained, but the ceramic assemblage indicates

the site was occupied during the Coalition to Classic period (A.D. 1200–1600). No further testing was recommended.

LA 99396[47]

LA 99396 was excavated in 2003 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on broad southeast-facing slope of a saddle in a piñon-juniper woodland at 6,925 feet, the site contained an Archaic period lithic scatter and a one-room Coalition period structure. The structure was semi-subterranean and the above-ground portion of the walls was constructed primarily from unshaped dacite and tuff cobbles (Figure A.116). The subterranean walls were outwardly sloped. Room 1 was sub-rectangular in shape, measured 2.3 meters by 2.1 meters (4.8 square meters of interior space), and had a living surface compacted from use. No artifacts were found in association with the surface. One hearth was identified in the center of the structure, and another extramural oval-shaped hearth was found north of the structure (Figure A.117). A post fragment was also found.

Eighty-five ceramics were found in or near the structure, the majority of which were utilitywares and Santa Fe Black-on-white. Because the site also contained an Archaic lithic scatter, it was difficult to discern which artifacts correspond to the Coalition period occupation. For this reason, lithic totals are not included, but 9 ground stone artifacts were recovered and included two one-hand manos, one two-hand mano, one mano fragment, two grinding slabs, two metate fragments, and one unidentified ground stone fragment. No faunal remains or economically significant plant resources and/or cultigens were identified. One sample of wood charcoal from the interior hearth was accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1040–1260, with an intercept date of A.D. 1180. A sample from the extramural hearth returned a two-sigma date of A.D. 1030–1240 with an intercept of A.D. 1170. The post fragment was also dated and returned a two-sigma date range of A.D. 1140–1290 with an intercept date of A.D. 1240. An archaeomagnetic date from the hearth returned a date of A.D. 1175–1260. These dates and the ceramic assemblage suggest the site was occupied during the Early-Middle Coalition period.

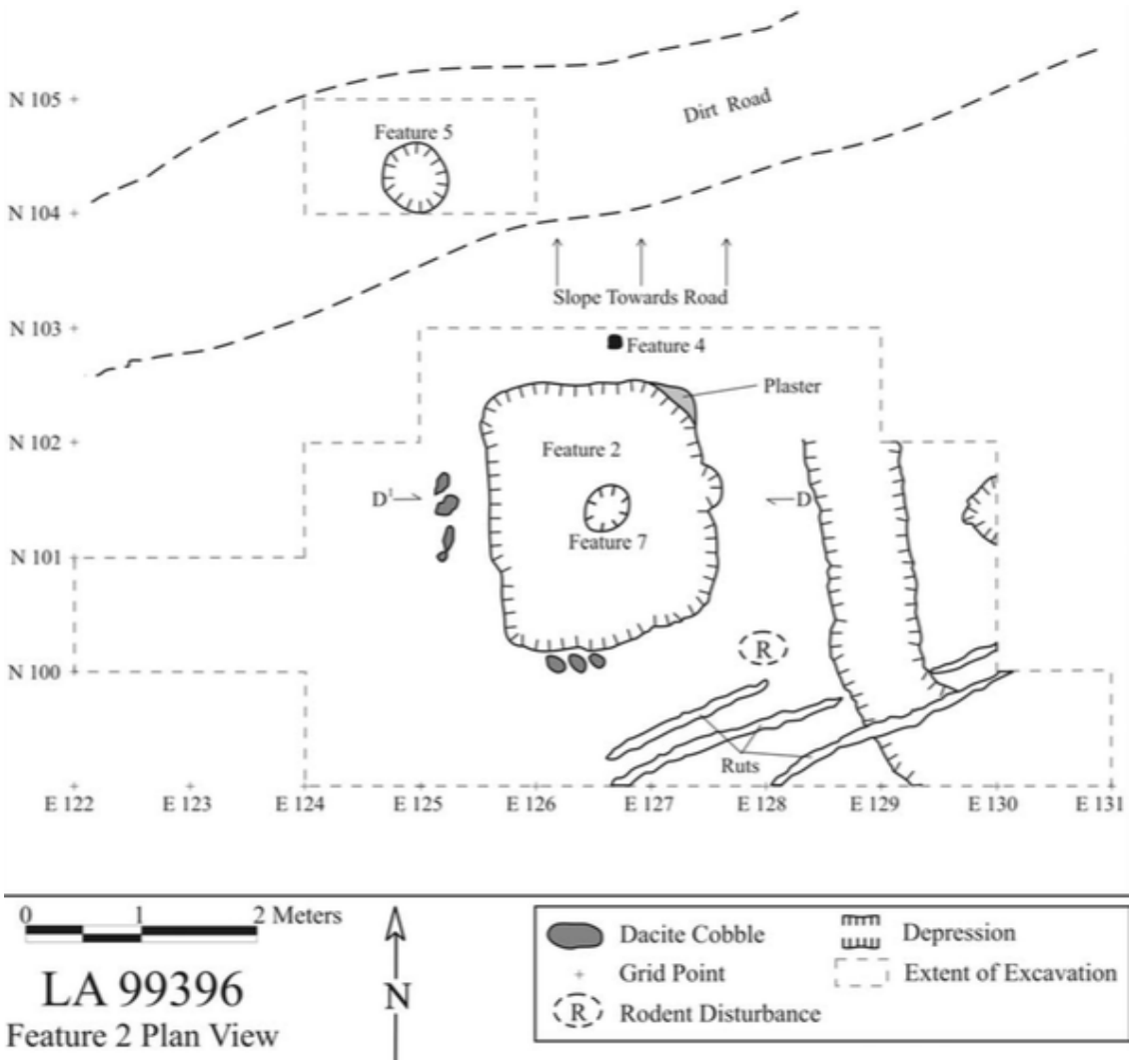

Figure A.116 Plan view of Feature 2 at LA 99396 ([47]Harmon 2008:Figure 47.8)

Figure A.117 Plan view of Feature 2 at LA 99396 ([47]Harmon 2008:Figure 47.8)

LA 102677[29]

LA 102677 was excavated in 1998 by TRC, Inc. archaeologists to mitigate the potential adverse effects posed by a planned land exchange between the Santa Fe National Forest and the Horseshoe Springs Community. Located on a small hillslope above San Antonio Creek in a Ponderosa pine woodland at 7,860 feet, the site was a freestanding, two-room structure that contained a midden deposit (Figure A.118). The site was located just north of an existing outhouse at the Horseshoe Springs Campground. The masonry walls were constructed from shaped and unshaped tuff clasts.

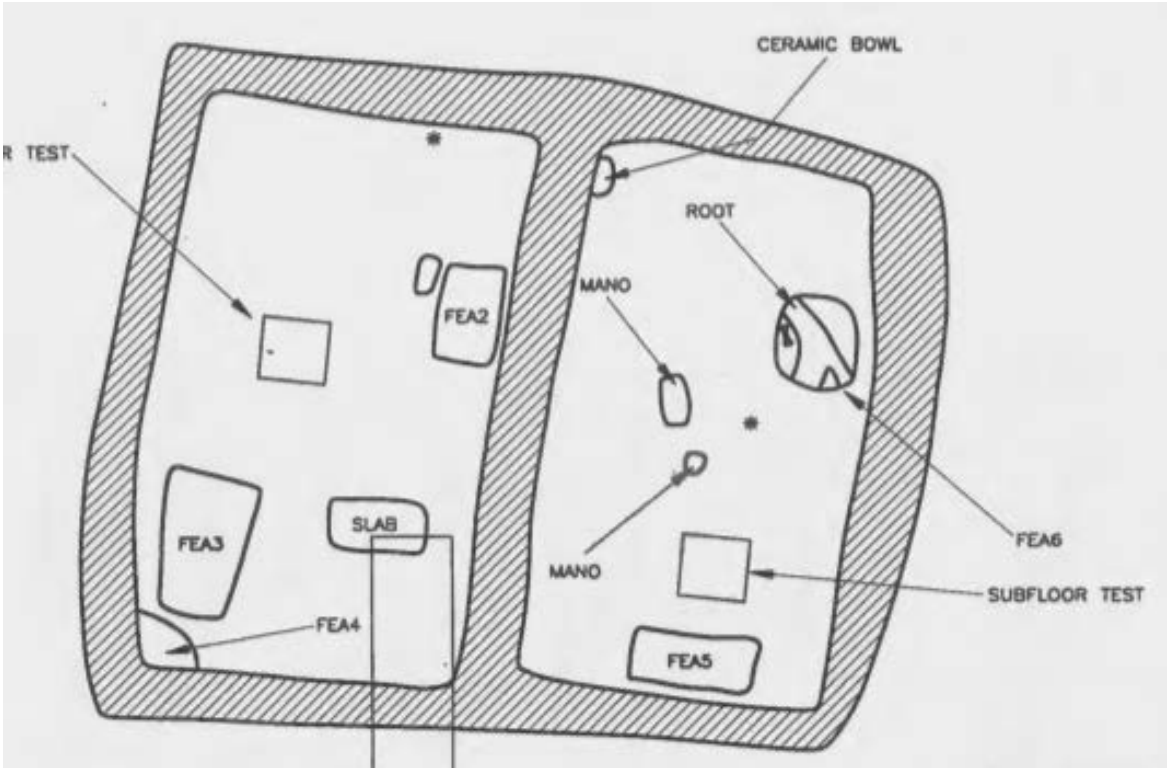

Figure A.118 LA 102677 plan map ([29]Acklen and Railey 1999:Figure 6.13)

Room 1 (the west room) was rectangular, measured 3.6 meters by 2.2 meters (7.9 square meters of interior space), and had a prepared living surface compacted from use. The west room contained three features including a milling bin and a basin-shaped pit in the southwestern corner and a slab-lined hearth in the center of the east wall. A large piece of tabular sandstone was found east of the milling bin. Room 2 (the east room) was also rectangular, measured 3.5 meters by 2.1 meters (7.4 square meters of interior space), and had an unprepared living surface compacted from use. A ceramic bowl was found on the floor in the northwest corner of the room, and two manos were found near its center. This room contained a slab-lined hearth in the center of the south wall and a heavily damaged circular hearth in the northeast corner. No passageway between the rooms was identified, and no entryway into the structure was observed. The roof of the structure was of viga and latilla construction as was evidenced by the presence of burned beams in the post-occupational fill. A thin sheet midden was found 20 meters northeast of the structure.

A total of 248 artifacts were recovered from the structure including, 191 ceramics, the majority of which were Jemez Black-on-white, Jemez utilitywares, Glaze C-D, and glazewares. The 57 lithic artifacts included one core, two retouched tools, one hammerstone, two projectile points, and 44 pieces of debitage. Seven ground stone fragments were recovered including three manos, two metates, one milling implement,

and one shaped slab. Faunal remains included one artiodactyl shaft fragment, 10 deer-sized shaft fragments, two small mammal fragments, one bone bead, and one bird bone shaft. No economically significant plant resources and/or cultigens were identified. Four tree-ring dates were obtained suggesting the structure was built in the late sixteenth century occupation. This, along with the ceramic assemblage, suggests the site was probably occupied in the latest Classic period and into the Early Mission period (A.D. 1598–1626).

LA 110126[48]

LA 110126 was tested in 2002 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a north-facing ridge finger in an open piñon-juniper and Ponderosa pine woodland at 6,430 feet, the site was an eroded one-room structure that was occupied during the Classic period. The structure was freestanding and was constructed from shaped and unshaped tuff blocks. Defining the original size and shape of the structure was impossible due to the high degree of erosion. No evidence of an occupational surface or features were found. No cultigens were recovered in the soil samples. Identified sherds include Biscuit B and Sapawe Micaceous, hence the Classic period assignation.

LA 110130[48]

LA 110130 was tested in 2002 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located at 6,410 feet on the north edge of a terrace above the Pueblo Canyon floodplain in a transitional piñon-juniper and Ponderosa pine woodland, the site was a one-room Classic period structure. The structure was represented by partial alignments of roughly shaped tuff blocks; a possible rock-lined grid garden was located to the northeast. No evidence of an occupational surface or features were recovered, but a handful of lithic materials were found. Identified sherds include Sapawe Micaceous and smeared-indented utilitywares, which points to a Classic period affiliation. This was corroborated by the accelerator mass spectroscopy dating of a corn cupule, which produced a two-sigma calibration date range of A.D. 1450–1640, and an intercept date of A.D. 1500.

LA 115152[2]

LA 115152 was excavated in 1997 by Bandelier National Monument archaeologists as part of a post-Dome Fire study undertaken to contribute to scientific understanding of the effects of fires on cultural resources. Located on the mesa top west of Capulin Creek in a Ponderosa pine forest at 7,271 feet, the site was a one-room structure that was occupied during the Late Coalition/Early Classic period (A.D. 1280–1425). The structure was freestanding and was constructed of coursed unshaped tuff and rhyolitic basalt cobbles and boulders. The masonry was dry-laid since no mortar was encountered.

Room 1 was rectangular, measured 1.6 meters by 1.0 meters (1.6 square meters of interior space), had a floor compacted from use, and two smeared indented corrugated sherds laying on the living surface. No features or an entryway were identified.

A handful of Santa Fe Black-on-white ceramics indicate the site was first occupied during the Late Coalition period. A sample of wood charcoal from the general fill yielded a two-sigma date of A.D. 1280–1425, corroborating the early occupation. Additionally, the majority of the ceramics consisted of glazewares and smeared-indented corrugated, which indicate a Middle Classic period occupation. Lithic artifacts were few and ground stone tools were absent in the subsurface excavations. No faunal remains were recovered. Maize pollen was recovered in the general fill. Agricultural terraces were identified on the surrounding hillslope and the saddle below the site.

LA 118345[2]

LA 118345 was partially excavated in 1997 by Bandelier National Monument archaeologists as part of a post-Dome Fire study undertaken to contribute to scientific understanding of the effects of fires on cultural resources. Located west of the Ponderosa Campground at Bandelier National Monument on a mesa dominated by Ponderosa pine at 7,658 feet, the site was a one-room structure that could not be assigned to a particular time period due to the lack of diagnostic artifacts. The one-room structure was freestanding and was constructed from roughly shaped stacked tuff blocks. The foundation consisted of unshaped cobbles resting on the bottom of a shallow trench. Room 1 was featureless, measured 1.9 meters by 1.3 meters (2.5 square meters of interior space), had a floor compacted from use, and was rectangular in shape. A single piece of ground stone and maize cupule and kernel fragments were recovered from the pit fill. An extramural U-shaped pit with some slab-lining was found outside the east wall. Rock alignments interpreted as check dams were identified both north and south of the structure.

The site was enigmatic in terms of temporal and cultural affiliation. Only one obsidian flake and a mano fragment were recovered. The absence of diagnostic artifacts also made it difficult to ascertain site function. The pollen data did not include any cultigens but had levels of cholla, grass, and piñon pollen on the floor that were high enough to suggest economic use, perhaps pointing to use of the site as a gathering camp. This is corroborated by the presence of a mano fragment. Four radiocarbon dates indicated the site could have been occupied between the Developmental and Classic periods, but the lack of diagnostic artifacts made it difficult to evaluate which set of dates were most likely. Nothing about the site was typical of the Developmental, Coalition, or Classic periods in this area.

LA 119423[49]

LA 119423 was tested in 1997 by LANL personnel to determine if the site would be impacted by the installation of new water lines and water tanks on DOE-managed lands. The southern portion of the site was heavily damaged by the prior installation of a utility corridor along New Mexico State Road 4, and the testing was done to see if the proposed water lines would be placed in already-disturbed portions of the site. Located on Frijoles Mesa directly north of New Mexico State Road 4 in a piñon-juniper woodland at 6,580 feet, the site contained an approximately 30-centimeter high mound associated with visible tuff alignments. The mound measured 7 meters by 4 meters, space enough for one or two subsurface rooms. A 1-meter by 1-meter test unit was placed away from the previously disturbed portion of the site and produced a total of 91 artifacts, the majority of which were ceramics, including utilitywares, Santa Fe Black-on-white, and Wiyo Black-on-white. Eleven chipped stone items and one ground stone item were also recovered. Based on the composition of the ceramic assemblage, it is assumed the site was occupied during the Coalition period (A.D. 1200–1325). Testing revealed undisturbed deposits and the water lines were re-routed.

LA 127627[50]

LA 127627 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.119). Located on a northwest-facing slope of a terrace south of an ephemeral creek in Rendija Canyon in a Ponderosa pine forest at 6,940 feet, the site was a one-room structure that was occupied during the Middle Classic period. The structure was freestanding and was constructed primarily from dacite cobbles and fewer tuff blocks. Some large in situ dacite boulders were incorporated into the walls, but no evidence for a foundation was found. Room 1 was sub-rectangular, measured 1.9 meters by 1.7 meters (3.2 square meters of interior space), and contained a compact surface hardened from use (Figure A.120). No artifacts were found in association with the surface, but charred maize remains were found in the flotation sample. A likely entryway was found in the northeast corner of the room. No internal features were identified.

A total of 156 artifacts were recovered from the structure including, 82 ceramics, the majority of which were utilitywares, Biscuit B, and Sapawe Micaceous. The 74 lithic artifacts included three cores, 68 pieces of debitage, two retouched tools, and four ground stone artifacts (one two-hand mano [Figure A.121], two mano fragments, and one unidentified ground stone). Two unidentified faunal remains were recovered from the structure. Maize kernels were the only recovered economically significant plant resource and/or cultigen. Two samples of maize were submitted for radiocarbon dating. The floor sample returned a two-sigma range of A.D. 1440–1640, with an intercept date of A.D. 1480. The second sample was taken from under a rock in the

northeast corner near the entryway and returned a two-sigma range of A.D. 1430–1530 with an intercept of A.D. 1460. Both the chronometric dates and the ceramic assemblage suggests the structure was occupied during the Middle Classic period.

Figure A.119 Post-excavation of LA 127627 ([50]Dilley and Vierra 2008:Figure 49.3)

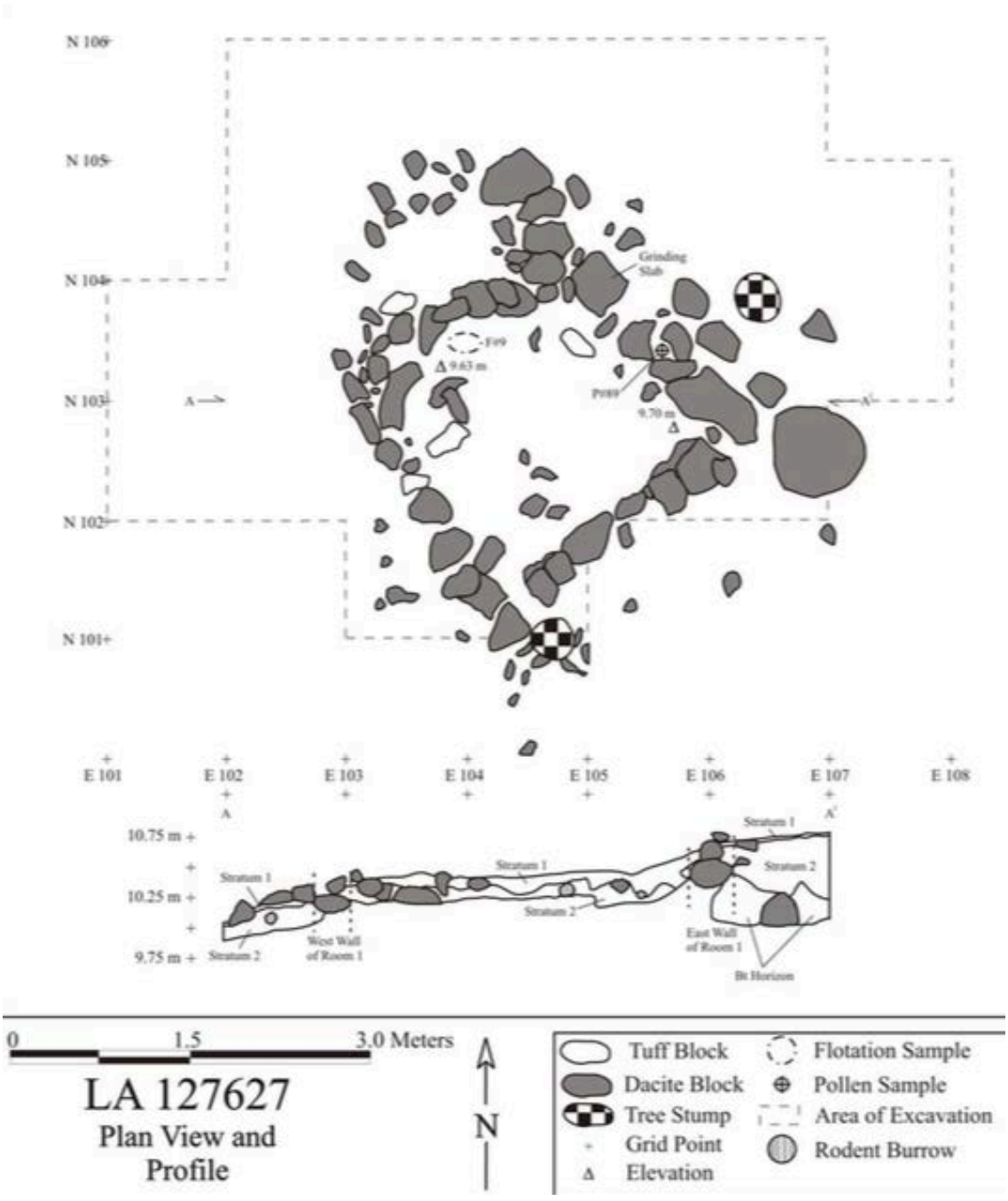

Figure A.120 Plan view and profile of LA 127627 ([50]Dilley and Vierra 2008:Figure 49.2)

Figure A.121 Two-hand mano from LA 127627 ([50]Dilley and Vierra 2008:Figure 49.4)

LA 127631[51]

LA 127631 was excavated in 2002 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a floodplain at the mouth of Pajarito Canyon in a piñon-juniper woodland at 6,494 feet, the site was a one-room structure that was occupied during the Early Classic period (Figure A.122). The structure was freestanding and was constructed from shaped and unshaped tuff blocks. Room 1 was rectangular, measured 2.0 meters by 1.5 meters (3.0 square meters of interior space), and contained a compact surface hardened from use (Figure A.123). A single bifacial core was found on the floor. No internal features were identified.

A total of 40 artifacts were recovered from the structure including, 12 ceramics, the majority of which were utilitywares, Santa Fe Black-on-white, Biscuit A, and Sapawe Micaceous. The 17 lithic artifacts included one core, 14 pieces of debitage, and two ground stone artifacts (one mano and one abrading stone). One burned cottontail (*Sylvilagus* sp.) femur was recovered from the structure. Economically significant plant resources and cultigens included maize kernels and squash rind. One juniper sample from the floor was accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1300–1430.

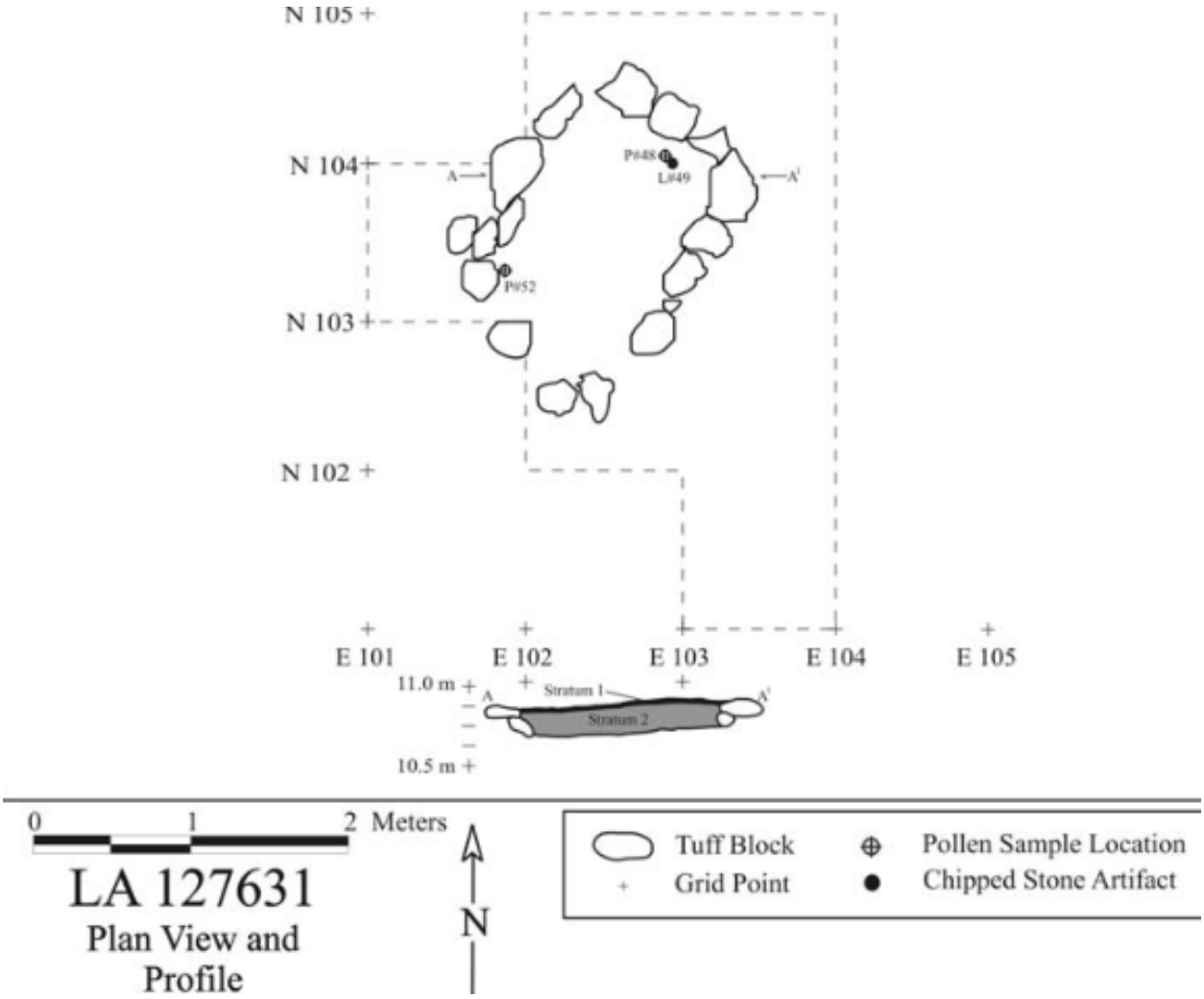

Figure A.122 Plan view and profile of LA 127631 ([51]Schmidt 2008:Figure 18.4)

Figure A.123 Post excavation photo of LA 127631 ([51]Schmidt 2008:Figure 18.2)

LA 127634[52]

LA 127634 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a ridge finger overlooking Rendija Canyon in a Ponderosa pine forest at 6,940 feet, the site was a one-room structure that was occupied during the Middle Classic period. The structure was freestanding and was constructed from loaf-shaped tuff blocks (Figure A.124). Dacite cobbles were also used, especially as foundation rocks. Room 1 was rectangular, measured 2.5 meters by 1.8 meters (4.5 square meters of interior space), and contained a compact surface hardened from use. Maize was found in both flotation and pollen samples taken from this surface. A small entryway was identified in the south wall, and included an external staircase leading to the entryway (Figure A.125). The partially-disturbed stairway was composed of dacite cobbles and shaped tuff blocks. A rectangular, slab-lined hearth was found in the far southeast corner of the room (Figure A.126). The presence of adobe on top of the dacite slabs suggested the hearth may have been collared. A posthole was identified in the southwest corner (Figure A.127).

Figure A.124 LA 127634 after excavation ([52]Lockard 2008:Figure 51.3)

A total of 243 artifacts were recovered from the structure including, 149 ceramics, the majority of which were Biscuit B and Sapawe Micaceous types. The 98 lithic artifacts included 94 pieces of debitage, one retouched tool, and three ground stone artifacts (one mano, one metate, and one miscellaneous ground stone). No faunal remains were recovered. Economically significant plant resources and cultigens included maize, beans, squash rind, and cholla, a floral assemblage that is quite remarkable for a one-room structure. Maize, beans, and tobacco were identified in samples from the hearth. Two samples of maize from the hearth were submitted for accelerator mass spectroscopy radiocarbon dating. The samples returned two-sigma ranges of A.D. 1470–1630 and A.D. 1480–1640. Two Biscuit B sherds were thermoluminescence dated; dates of A.D. 1464 ± 33 and A.D. 1494 ± 28 were returned. Both the chronometric dates and the ceramic assemblage suggests the structure was occupied during the Middle Classic period.

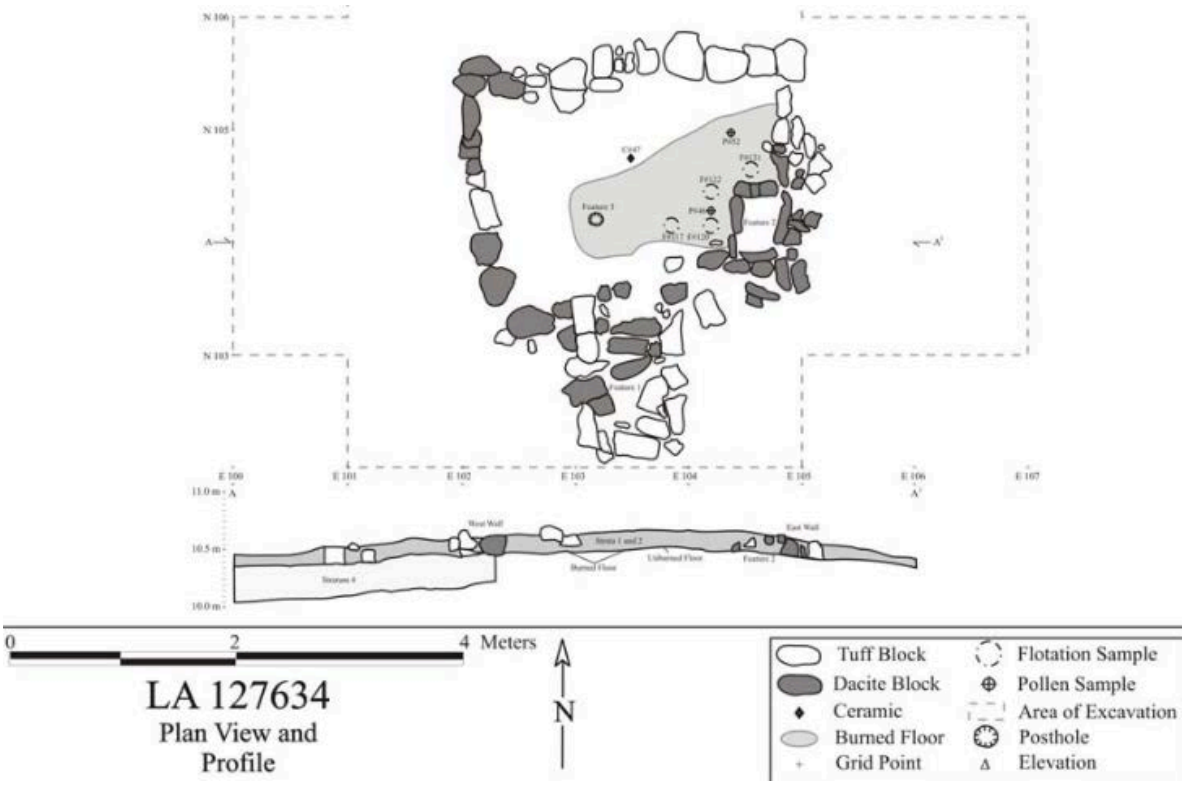

Figure A.125 Plan view and profile of LA 127634 ([52]Lockard 2008:Figure 51.2)

Figure A.126 Slab-lined hearth at LA 127634 ([52]Lockard 2008:Figure 51.5)

Figure A.127 Posthole at LA 127634 ([52]Lockard 2008:Figure 51.6)

LA 127635[53]

LA 127635 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located near the southern end of a low ridge overlooking Rendija Canyon in a Ponderosa pine forest at 6,950 feet, the site was a one-room structure that was occupied during the Late Coalition and Early Classic periods. The structure was freestanding and was constructed from two courses of shaped and unshaped tuff blocks (Figure A.128). Room 1 was rectangular, measured 2.8 meters by 1.9 meters (5.3 square meters of interior space), and contained a prepared clay-rich surface (Figure A.129). Two chipped stone artifacts were found on the floor. A plastered, ovoid-shaped hearth was found at floor level adjacent to the north wall (Figure A.130), and a subfloor pit was found in the southwest corner. The presence of adobe on top of the dacite slabs suggested the hearth was once collared. A possible entryway was located in the south wall.

A total of 448 artifacts were recovered from the structure including, 371 ceramics, the majority of which were utilitywares and Biscuit A. Santa Fe Black-on-white, Wiyo Black-on-white, Galisteo Black-on-white, and Sapawe Micaceous types were also identified. The 77 lithic artifacts included two cores, 71 pieces of debitage, three retouched tool, and one ground stone artifact (two-hand mano). No faunal remains were recovered. Economically significant plant resources and cultigens included maize and possible squash rind. Tobacco was found in 56 percent of the macrobotanical samples. Two samples of maize from the hearth were submitted for accelerator mass spectroscopy radiocarbon dating. The samples returned two-sigma ranges of A.D. 1180–1280 and A.D. 1210–1290, with calibrated intercepts of A.D. 1250 and A.D. 1270, respectively. A single Sapawe Micaceous sherd was thermoluminescence dated; a date

of A.D. 1253 ± 108 was returned. Both the chronometric dates and the ceramic assemblage suggests the structure was occupied during the Late Coalition and Early Classic periods (A.D. 1250–1325).

Figure A.128 LA 127635 after excavation ([53]Dilley and Vierra 2008:Figure 52.2)

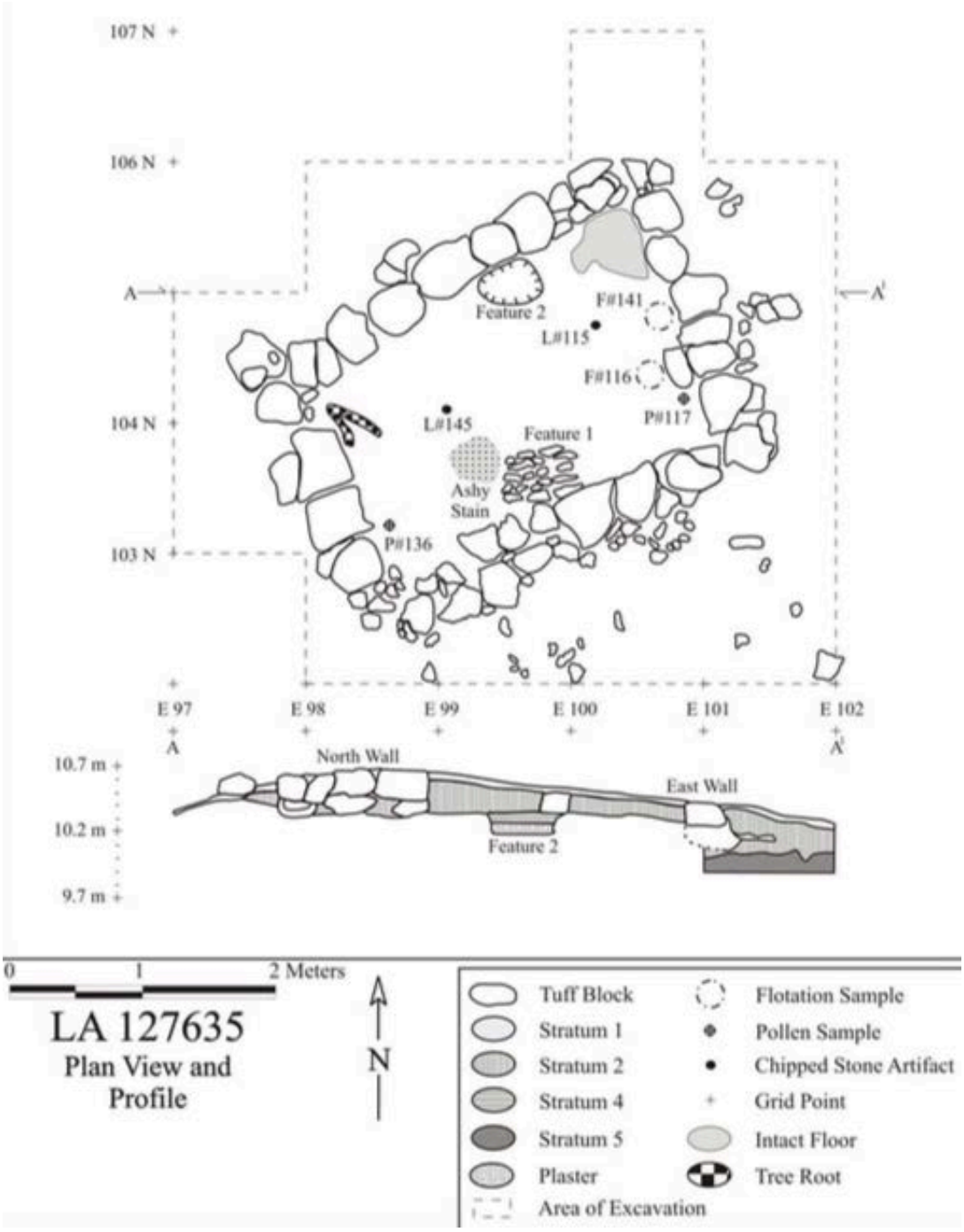

Figure A.129 Plan view and profile of LA 127635 ([53]Dilley and Vierra 2008:Figure 52.1)

Figure A.130 Plastered hearth at LA 127635 ([53]Dilley and Vierra 2008:Figure 52.3)

LA 128805[54]

LA 128805 was excavated in 2002 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on a floodplain between the mouth of Cañada del Buey and Pajarito Canyon in a piñon-juniper woodland at 6,490 feet, the site was a one-room structure that was occupied during the Middle Classic period. The structure was freestanding and was constructed from shaped and unshaped tuff blocks with smaller cobbles present to buttress the corners. Room 1 was rectangular, measured 2.5 meters by 2.0 meters (5.0 square meters of interior space), and contained a compact surface hardened from use. A single mano was found just above the floor. No internal features were identified.

A total of 552 artifacts were recovered from the structure including, 199 ceramics, the majority of which were utilitywares and biscuitwares. The 353 lithic artifacts included 331 pieces of debitage, four retouched tools, and 16 ground stone artifacts (one mano, one basin metate, nine metate fragments, one abrading stone, and four undetermined ground stone fragments). No faunal remains were recovered. Economically significant plant resources and cultigens included maize kernels and squash rind. Several maize cupules were accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1420–1500.

LA 135291[55]

LA 135291 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.131). Located on a north-facing slope of a terrace in Rendija Canyon in a Ponderosa pine forest at 6,915 feet, the site was a one-room structure that was occupied during the Early and Middle Classic periods. The structure was freestanding and was constructed from dacite cobbles with fewer tuff

blocks. The existing walls were two courses high with dacite cobbles composing the upper course and the more uniform tabular dacite cobbles the lower course. This basal course was placed a few centimeters below the surface of the foundation trench. Room 1 was rectangular, measured 2.9 meters by 1.7 meters (4.9 square meters of interior space), and contained a compact surface hardened from use (Figure A.132). A possible pot rest constructed from a circular set of upright dacite cobbles was found in the northeast corner. A small, extramural ash concentration was found east of the structure, probably representing a discard pile from a previous fire since no evidence of in situ burning was found. A possible entryway was identified in the east wall.

Figure A.131 LA 135291 after excavation ([55]Dilley and Vierra 2008:Figure 53.3)

A total of 114 artifacts were recovered from the structure including, 82 ceramics, the majority of which were utilitywares, biscuitwares, and Biscuit A. The 32 lithic artifacts included two cores, 14 pieces of debitage, two retouched tools, and 14 ground stone artifacts. The ground stone artifacts included one one-hand mano, one two-hand mano, one undetermined mano fragment, one undetermined metate fragment, and 10 shaped slab fragments, probably all part of the same dacite artifact. No faunal remains were recovered from the structure. Maize was the only identified economically significant plant resource and/or cultigen. A single maize sample was submitted for accelerator mass spectroscopy dated and returned a two-sigma range of A.D. 1430–1520, with a calibrated intercept of A.D. 1450. While the chronometric dates indicate a Middle

Classic period occupation, the predominance of Biscuit A in the ceramic assemblage would suggest an Early Classic period date. It seems likely that the site was occupied at the end of the Early Classic and the beginning of the Middle Classic periods.

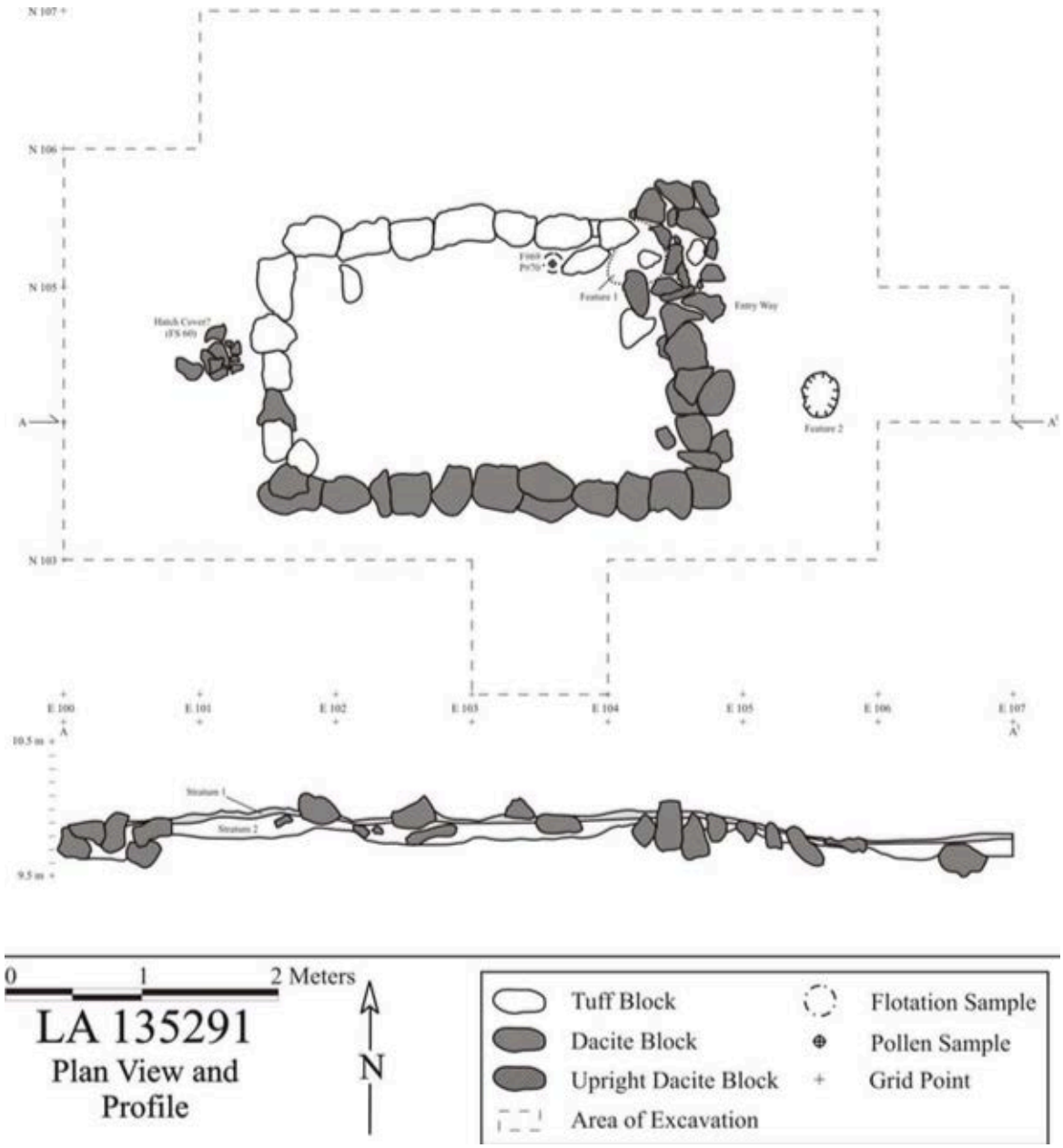

Figure A.132 Plan view and profile of LA 135291 ([55]Dilley and Vierra 2008:Figure 53.2)

LA 135292[56]

LA 135292 was excavated in 2004 by LANL archaeologists as part of the Land Conveyance and Transfer project (Figure A.133). Located on a terrace to the south of the Rendija Canyon channel in an open piñon-juniper woodland at 6,915 feet, the site was a

one-room structure that was occupied during the Late Classic period. The site was heavily damaged by vehicular traffic as it was located adjacent to a well-traveled dirt road. Only the southwest corner of the room remained. The structure was freestanding and was constructed from dacite cobbles with fewer tuff rocks. Small tuff rocks were utilized as foundations for, and placed in, the spaces between the larger dacite cobbles. Room 1 was a small structure of probable rectangular shape and unknown dimension and contained a compact surface hardened from use (Figure A.134).

A total of 178 artifacts were recovered from the structure including, 89 ceramics, the majority of which were utilitywares and Biscuit Black-on-cream, with lesser amounts of Biscuit A, Santa Fe Black-on-white, biscuitwares, and Sankawi Black-on-cream. The 89 lithic artifacts included one core, 78 pieces of debitage, six retouched tools, and four ground stone artifacts (one one-hand mano, one mano fragment [Figure A.135], one polishing stone, and one hoe, which is a butt fragment with a full groove [Figure A.135]). One unidentified piece of cancellous bone was recovered. Maize was the only identified economically significant plant resource and/or cultigen. No chronometric dates were obtained, but the presence of Biscuit Black-on-cream and Sankawi Black-on-cream in the ceramic assemblage indicates a Late Classic period occupation (A.D. 1525–1625).

Figure A.133 LA 135292 after excavation ([56]Lockard 2008:Figure 54.3)

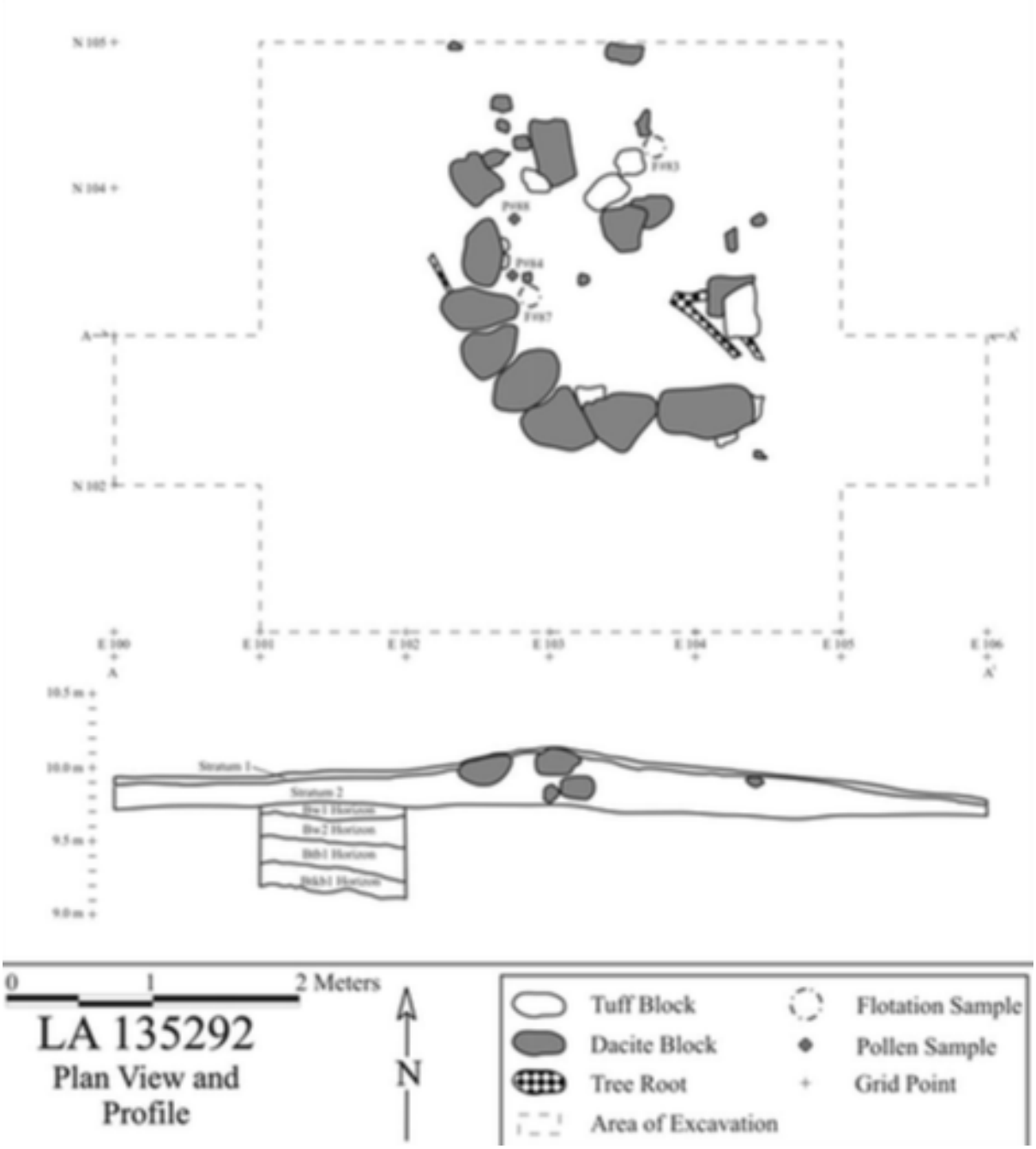

Figure A.134 Plan view and profile of LA 135292 ([56]Lockard 2008:Figure 54.2)

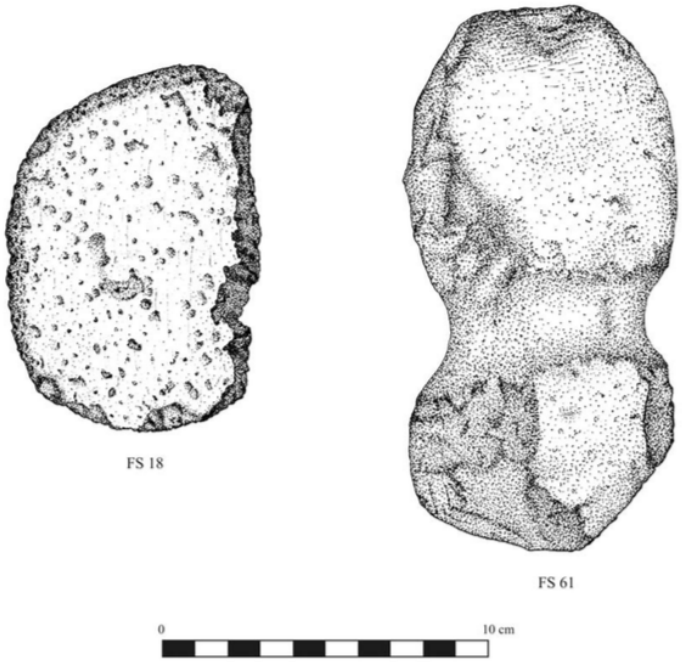

Figure A.135 Mano fragment and hoe from LA 135292 ([56]Lockard 2008:Figure 54.7)

LA 141505[57]

LA 141505 was excavated in 2002 by LANL archaeologists as part of the Land Conveyance and Transfer project. Located on the Los Alamos townsite mesa just north of New Mexico State Road 502 in a piñon-juniper woodland at 7,100 feet, the site was a two-room structure that was occupied during the Classic period. The structure was freestanding and was constructed from shaped tuff blocks that are horizontally laid with chinking stones. The walls, with the exception of the one-course south wall, were two courses high. No wall foundations were identified. Room 1 (Figure A.136) was rectangular, measured 2.5 meters by 1.5 meters (3.8 square meters of interior space), contained a compact surface hardened from use, and was abutted to the northeastern corner of Room 2 (Figure A.137). An entryway was identified in the east wall (Figure A.138).

Room 2 was rectangular, measured 2.3 meters by 1.4 meters (3.2 square meters of interior space), and had an unprepared living surface hardened by use. A small circular hole (function unknown) and a chalcedony flake were found on the floor. Two rock piles and two rock alignments were identified east of the structure. One of the alignments may have been a windbreak for the entryway into Room 1. The function of the other features was unclear.

A total of 55 artifacts were recovered from LA 141505 including, 29 ceramics, the majority of which were utilitywares and Santa Fe Black-on-white, with lesser amounts

of Sapawe Micaceous and glazewares. Though the majority of the pottery was from the Coalition period, it was determined that these likely came from a nearby roomblock (LA 135290) and the later ceramics were associated with the two-room structure, thereby suggesting a Classic period date. The 26 lithic artifacts included one core, 19 pieces of debitage, three retouched tools, and pieces of undetermined ground stone. No faunal remains were recovered from the structure. Maize was the only identified economically significant plant resource and/or cultigen.

Figure A.136 Room 1 at LA 141505 after excavation ([57]Vierra 2008:Figure 26.2)

Figure A.137 Room 2 at LA 141505 after excavation ([57]Vierra 2008:Figure 26.3)

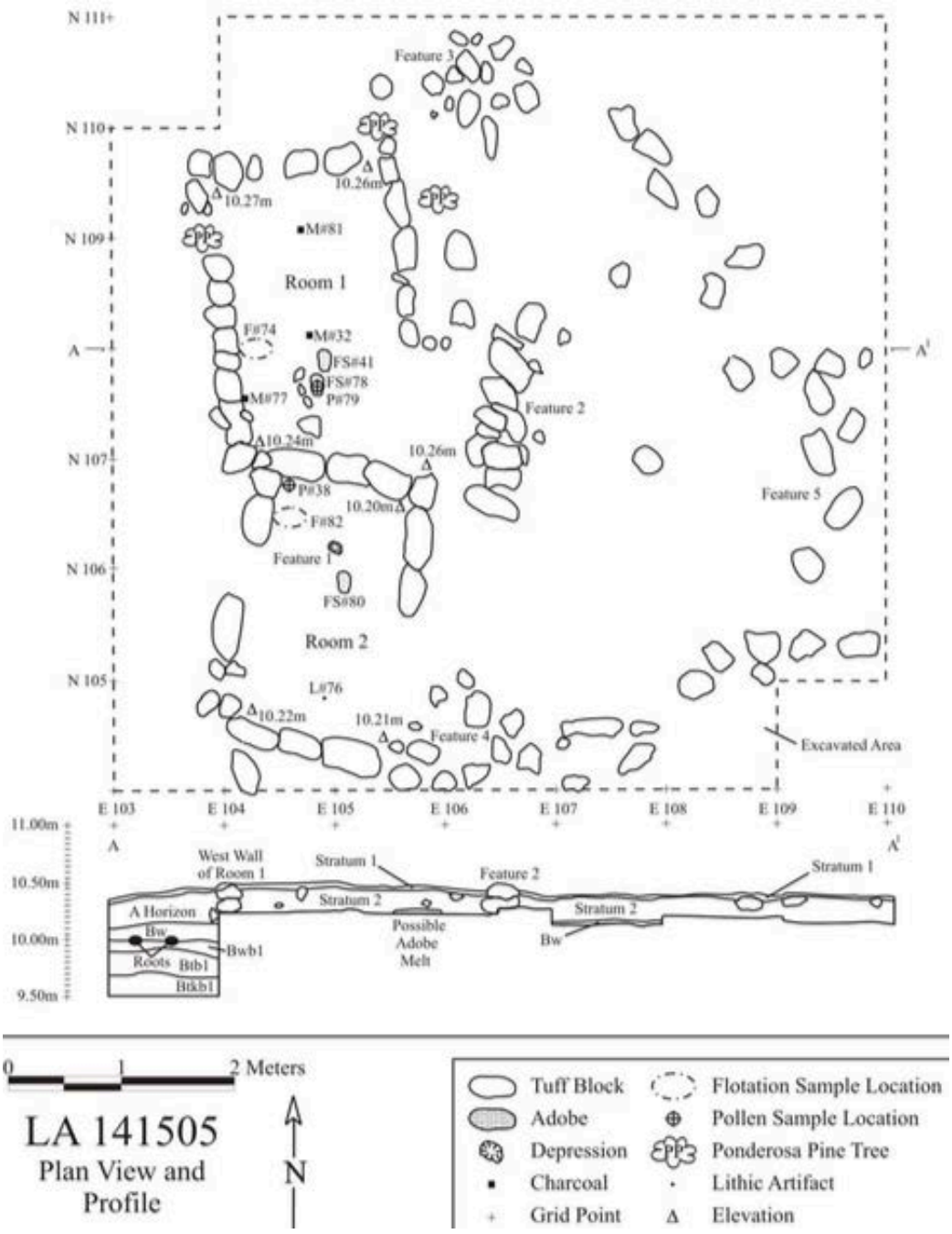

Figure A.138 Plan view and profile of LA 141505 ([57]Vierra 2008:Figure 26.1)

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Appendix B: Excavated Fieldhouse Summary Data

Table B.1 Summary Data from Excavated Fieldhouses

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
1067	Cochiti Lake (RG)	1100–1350	2	5,380	Rectangular (Rm1), Circular (Rm2)	Compact w/ plaster patches	Tuff, basalt	Hearth, ramada	Unknown	1
3839	Bandelier (PP)	1325–1525	2	6,020	Unknown (Rm1), Subrectangular (Rm2)	Plastered	Tuff	Hearth	Unknown	2
4633	LANL (PP)	1200–1325	3	6,665	Square (all)	Compact surface	Tuff	None	No hearth	3
4637	LANL (PP)	1300–1500	1	7,160	Square	Compact surface	Tuff	None	No hearth	4
4638	LANL (PP)	1300–1500	1	7,170	Square	Compact surface	Tuff	None	No hearth	4
4658	LANL (PP)	1250–1325	1	7,130	Square	Compact surface	Tuff	None	No hearth	4
4660	LANL (PP)	1200–1600	2	6,900	Rectangular (both)	Undetermined	Tuff	Ramada	No hearth	4
4680	LANL (PP)	1325–1600	1	7,180	Square	Compact surface	Tuff	None	No hearth	4
4686	LANL (PP)	1325–1600	1	7,162	Square	Undetermined	Tuff	None	No hearth	4
4717	LANL (PP)	1200–1325	1	6,910	Square	Undetermined	Undetermined	None	No hearth	5

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
4727	LANL (PP)	1200–1600	1	6,900	Unknown	Undetermined	Undetermined	None	No hearth	5
4728	LANL (PP)	1200–1600	1	5,330	Square	Undetermined	Undetermined	None	No hearth	4
5011	Cochiti Lake (RG)	1275–1490	1	5,290	Subrectangular	Compact surface	Basalt	Hearth	N	6
5013	Cochiti Lake (RG)	1630–1700	1	6,380	Rectangular	Compact surface	Basalt	Hearth	SW	7
5688	Jemez	1630–1700	1	5,300	Rectangular	Compact surface	limestone	Posthole (2)	No hearth	8
9138	Cochiti Lake (RG)	1275–1350	1	5,300	Oval	Compact surface	Basalt	Hearth	No hearth	9
9138	Cochiti Lake (RG)	1275–1525	1	5,300	Rectangular	Hard packed adobe, 2 floors separated by 24 cm of fill	Basalt	Hearth (collared) doorsill, burial	NE	9
12120	Cochiti Lake (RG)	1315–1425	1	5,430	Subrectangular	Compact surface	Tuff	Bin (rectangular), ramada	Unknown	1
12122	Cochiti Lake (RG)	1315–1425	3	5,460	Subrectangular (Rm1), Rectangular (Rm2), Rectangular (Rm3)	Plastered floors	Tuff	Hearth (3), hearth (rectangular), pot rest (2)	SW (inside), NE (outside)	1

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
12124	Cochiti Lake (RG)	1315–1425	3	5,460	Elliptical (Rm1), Rectangular (Rm2 and Rm3)	Plastered floors	Tuff	Hearth (3), ash pit (2), ramada	S	1
12125	Cochiti Lake (RG)	1315–1425	2	5,480	Rectangular (Rm1) and Subrectangular (Rm2)	Plastered	Tuff	Storage bin (extramural), storage bin (plastered), storage bin, ash pit	N	1
12127	Cochiti Lake (RG)	1315–1425	2	5,360	Subrectangular (Rm1) and Rectangular (Rm2)	Compact surface	Basalt	Firepit	N	1
12144	Cochiti Lake (RG)	1315–1425	2	5,320	Rectangular (both)	Plastered	Basalt	Bin (plastered)	No hearth	1
12161	Cochiti Lake (RG)	1600–1700	2	5,305	Rectangular	Compact surface	Basalt	Hearth, cist	NE	1
12443	Cochiti Lake (RG)	1325–1425	1	5,290	Rectangular	Adobe	Basalt and quartzite	Bin (storage)	No hearth	9
12454	Cochiti Lake (RG)	1325–1600	2	5,290	Rectangular (both)	Compact surface	Basalt	Hearth (2), Bin (slab-lined), doorway between rooms	W	9
12511	Cochiti Lake (RG)	1200–1325	2	5,300	Rectangular (both)	Compact surface with plaster patches	Basalt	Hearth, slab feature (2), ramada	Center	7

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
12512	Cochiti Lake (RG)	1350–1425	2	5,320	Rectangular (both)	Compact surface	Basalt	Bin (slab-lined), doorway between rooms	No hearth	7
12517	Cochiti Lake (RG)	1400–1450	1	5,305	Ovoid	Compact surface	Basalt	None	No hearth	9
12518	Cochiti Lake (RG)	1325–1600	2	5,305	Rectangular (Rm1) and Subrectangular (Rm2)	Compact surface	Basalt	None	No hearth	9
12519	Cochiti Lake (RG)	1350–1400	2	5,340	Rectangular (Rm1) and Circular (Rm2)	Compact surface	Basalt	Hearth	NE	9
12568	Cochiti Lake (RG)	1425–1550	1	5,360	Circular	Compact surface	Basalt	Doorsill	No hearth	1
12577	Cochiti Lake (RG)	1315–1450	2	5,320	Rectangular (Rm1) and Subrectangular (Rm2)	Plastered	Tuff	Hearth, slab square, check dam (2 – downslope), check dam (upslope)	N	1
12581	Cochiti Lake (RG)	1650	2	5,380	Rectangular (Rm1) and Subrectangular (Rm2)	Compact surface	Tuff and basalt	Hearth (plaster-lined), Bin (extramural, storage)	NE	1
12582	Cochiti Lake (RG)	early 1300s	1	6,500	Subrectangular	Plastered floor	Tuff	Hearth (plaster-lined)	N	1

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
12587	LANL (PP)	1325–1600	1	7,180	Subrectangular	Undetermined	Tuff	None	No hearth	10
12650	LANL (PP)	1325–1600	1	7,175	Rectangular	Undetermined	Tuff	None	No hearth	11
12761	Jemez	1500–1700	2	7,175	Rectangular (both)	Clay	Tuff	Hearth (3)	SW/E	12
12761	Jemez	1500–1700	2	7,175	Rectangular (Rm5) and Undetermined (Rm6)	Clay	Tuff	Hearth, posthole	W	12
12761	Jemez	1500–1700	2	7,175	Rectangular (both)	Clay	Tuff	Hearth, Bin (storage)	No hearth	12
13049	Cochiti Lake (RG)	1350–1425	1	5,430	Ovoid	Compact surface	Basalt	None	No hearth	13
13050	Cochiti Lake (RG)	1325–1515	2	5,340	Subrectangular (both)	Compact surface	Basalt	Hearth, check dam (2 – upslope), doorsill	N	14
13054	Cochiti Lake (RG)	1350–1400	2	5,320	Subrectangular (Rm1) and Rectangular (Rm2)	Compact surface	Basalt	Hearth (2 – slab-lined), hearth	SE/S/NE	15
13076	Cochiti Lake (RG)	1350–1400	1	5,320	Square	Compact surface	Basalt	Doorsill, midden	W	16
13076	Cochiti Lake (RG)	1350–1400	1	5,320	Triangular	Compact surface	Basalt	Hearth	No hearth	16

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
13084	Cochiti Lake (RG)	1350–1400	1	5,380	Ovoid	Compact surface	Basalt	Hearth	E	17
13084	Cochiti Lake (RG)	1350–1400	2	5,380	Ovoid (Rm1) and Rectangular (ramada)	Compact surface	Basalt	Hearth (slab-lined), doorsill, ashy area, ramada	E	17
13084	Cochiti Lake (RG)	1350–1400	1	5,380	Rectangular	Compact surface	Basalt	None	No hearth	17
13084	Cochiti Lake (RG)	1350–1400	1	5,380	Circular	Compact surface	Basalt	None	No hearth	17
13084	Cochiti Lake (RG)	1350–1400	1	5,380	Rectangular	Compact surface	Basalt	None	No hearth	17
13086	Cochiti Lake (RG)	1200–1600	1	5,370	Rectangular	Compact surface	Basalt	Hearth (extramural)	SE (outside)	18
13086	Cochiti Lake (RG)	1375–1400	3	5,370	Subrectangular (Rm2), Square (Rm3), Subrectangular (Rm4)	Adobe (Rms 3 and 4)	Basalt	Hearth (slab-lined Rm4), Hearth (2 - sub-floor Rm4), midden	SW/N/S	18
13086	Cochiti Lake (RG)	1200–1325	1	5,370	Rectangular	Adobe plaster	Basalt	Hearth, ash concentration, Bin (storage), Bin (slab-lined sub-floor)	C	18
14814	LA County (PP)	1325–1600	1	6,944	Rectangular	Compact surface	Tuff	Hearth, deflector	E	19

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
15116	LANL (PP)	1425–1550	1	7,290	Elliptical	Compact surface	Tuff and dacite	Auxiliary wall		20
16097	Bandelier (PP)	1400–1600	1	7,300	Rectangular	Plastered	Tuff	Hearth (2), bin, posthole in ramada (3)	N/SE	21
16107	Bandelier (PP)	1400–1550	2	7,220	Rectangular (Rm1) and Undetermined (Rm2)	Undetermined	Undetermined	None	No hearth	21
16109	Bandelier (PP)	1175–1300	1	7,150	Rectangular	Compact surface	Tuff	None	No hearth	21
16114	Bandelier (PP)	1200–1600	1	7,560	Rectangular	Compact surface	Tuff	Bin (2 – storage), posthole, ramada	No hearth	21
21454	LA County (PP)	1250–1325	1	7,300	Rectangular	Compact surface	Tuff	None	No hearth	22
21472	LA County (PP)	1200–1325	1	7,300	Rectangular	Compact surface	Tuff	Hearth (external), possible roof support	S (outside)	22
21473	LA County (PP)	1250–1325	1	7,400	Rectangular	Clay	Tuff	None	SW	22

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
21607	LA County (PP)	1250–1325	1	7,650	Rectangular	Undetermined	Rhyolite	Posthole (2), ramada	No hearth	22
24552	Jemez	1325–1600	1	8,050	Rectangular	Undetermined	Rhyolite	None	No hearth	23
24582	Jemez	Early 1600s	2	7,980	Rectangular (both)	Undetermined	Tuff	None	No hearth	23
24584	Jemez	1325–1600	2	7,120	Rectangular (both)	Undetermined	Tuff	Hearth, pit	Unknown	23
24595	Jemez	1350–1450	1	8,200	Rectangular	Undetermined	Tuff	Hearth	NE	24
24925	Jemez	1450–1650	2	8,180	Rectangular (both)	Flagstone	Tuff and rhyolite	Bin (3), bench, hearth	SE/SW	24
24926	Jemez	1550–1650	2	7,760	Rectangular (both)	Undetermined	Tuff	Hearth	E	24
24927	Jemez	1450–1640	2	7,720	Rectangular (both)	Compact surface	Tuff	Bin (milling), hearth, bench, bin (2 – storage), subfloor basin pit	SE	23
24928	Jemez	Early 1500s	1	7,820	Rectangular	Compact surface	Tuff	Pit (floor)	No hearth	23
24929	Jemez	1325–1425	1	7,130	Undetermined	Undetermined	Tuff	Hearth	No hearth	23

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
29750	LA County (PP)	1200–11250	1	7,090	Rectangular	Clay	Tuff	Hearth	C	22
29995	LA County (PP)	1200–1325	1	7,200	Circular	Compact surface	Tuff	Hearth, possible deflector	C	19
52320	LA County (PP)	1200–1325	1	7,200	Circular	Undetermined	Rhyolite	None	No hearth	22
52327	LA County (PP)	1200–1325	1	5,960	Circular	Undetermined	Rhyolite	None	No hearth	22
60497	Bandelier (PP)	1200–1600	2	5,820	Rectangular (both)	Undetermined	Undetermined	None	No hearth	25
60510	Bandelier (PP)	1200–1600	1	5,700	Rectangular	Undetermined	Undetermined	None	No hearth	25
65013	San Ildefonso (RG)	1350–1550	1	7,960	Undetermined	Compact surface	Undetermined	Hearth (collared), hearth (extramural), pit, posthole (2), borrow pit/trash receptacle, ramada	Unknown (outside)	26
66994	Jemez	1325–1600	1	7,900	Undetermined	Undetermined	Tuff	None	No hearth	27

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
67011	Jemez	1300–1750	1	7,890	Undetermined	Undetermined	Tuff	None	No hearth	27
67034	Jemez	1325–1600	2	7,880	Undetermined	Undetermined	Tuff	None	No hearth	27
67035	Jemez	1325–1600	2	7,840	Undetermined	Undetermined	Tuff	None	No hearth	27
67062	Jemez	1300–1750	2	7,960	Undetermined	Undetermined	Tuff	None	No hearth	27
68520	Jemez	1450–1550	1	8,007	Rectangular	Compact surface	Rhyolite	Hearth, retaining wall, walled-in work area	E	28
68522	Jemez	1325–1600	2	7,880	Quadrilateral (Rm1) Rectangular (Rm2)	Plastered, Rm 1	Rhyolite	Hearth, bin	SW	28
69562	Jemez	1578–1642	2	7,880	Rectangular (both)	Unprepared	Tuff	Hearth, bin (2 – milling), pit (2), bin (storage)	N	29
69563	Jemez	1425–1625	1	6,960	Rectangular	Clay	Tuff	Hearth, midden	S	29
70025	LANL (PP)	1315–1425	1	6,320	Rectangular	Compact surface	Tuff and dacite	None	No hearth	30
71099	Bandelier (PP)	1200–1600	2	6,580	Rectangular (both)	Undetermined	Undetermined	None	No hearth	36

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
71099	Bandelier (PP)	1200–1600	1	6,580	Rectangular	Undetermined	Undetermined	None	No hearth	36
71104	Bandelier (PP)	1200–1600	1	6,551	Rectangular	Undetermined	Undetermined	None	No hearth	25
71108	Bandelier (PP)	1325–1600	1	7,159	Rectangular	Undetermined	Undetermined	Ramada	No hearth	25
71144	Bandelier (PP)	1315–1425	2	5,480	Undetermined (Rm1), rectangular (Rm2)	Compact surface	Tuff and sandstone	Pit (plastered), Pit (extramural)	No hearth	2
75719	Jemez	1250–1350	1	6,820	Rectangular	Compact surface	Tuff	Hearth	SW	31
75719	Jemez	1250–1350	1	6,820	Rectangular	Compact surface	Tuff	Ash concentration	No hearth	31
84893	USFS (PP)	1300–1350	1	6,620	Ovoid	Compact surface	Tuff	Hearth (2), pit	Unknown	32
84897	USFS (PP)	1300–1400	1	6,580	Ovoid	Compact surface	Tuff	Hearth, check dam (2)	Center	32
84924	Jemez	1250-1350	1	6,990	Rectangular	Compact surface	Tuff	Hearth (2)	S	31
85403	LANL (PP)	1325–1600	1	6,970	Rectangular	Compact surface	Tuff and dacite	Posthole, pit, door jamb	No hearth	33
85404	LANL (PP)	1325–1525	1	6,883	Rectangular	Small burned patch	Dacite	None	No hearth	34
85405	LANL (PP)	1425–1600	1	7,000	Rectangular	Compact surface	Tuff	None	No hearth	35

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
85408	LANL (PP)	1425–1525	1	6,840	Trapezoid	Compact surface	Dacite	None	No hearth	36
85409	LANL (PP)	1425–1600	1	6,929	Undetermined	Undetermined	Tuff	None	No hearth	35
85411	LANL (PP)	1290–1410	2	6,920	rectangular (Rm1) and Subrectangular (Rm2)	Prepared surface, plaster patches in NE	Dacite	Hearth (slab-lined), hearth	Center/E	37
85412	LANL (PP)	1175–1600	1	6,860	Undetermined	Undetermined	Tuff	None	No hearth	35
85413	LANL (PP)	1300–1425	1	6,895	Rectangular	burned floor patch and compact surface	Dacite	Check dam (2), posthole	No hearth	38
85414	LANL (PP)	1425–1525	1	6,900	Rectangular	Compact surface	Dacite	None	No hearth	39
85417	LANL (PP)	1250–1325	1	6,880	Rectangular	plastered floor	Dacite	Firepit	E (outside)	40
85857	LANL (PP)	1325–1425	1	6,978	Undetermined	Undetermined	Tuff	None	No hearth	35
85861	LANL (PP)	1250–1325	1	6,880	Rectangular	Compact surface	dacite	Hearth	W	41
85862	LANL (PP)	1425–1550	1	6,935	Undetermined	Undetermined	Tuff and rhyolite	None	No hearth	35
85863	LANL (PP)	1300–1400	1	6,920	Undetermined	Undetermined	Tuff	None	No hearth	35

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
85866	LANL (PP)	1200–1325	1	6,960	Undetermined	Undetermined	Tuff	None	No hearth	35
85867	LANL (PP)	1300–1425	1	7,040	Rectangular	Compact surface	Dacite	None	No hearth	42
86605	LANL (PP)	1525–1625	1	6,925	Rectangular	Compact, 2 possible surfaces	Tuff and dacite	None	No hearth	43
86606	LANL (PP)	1200–1325	1	7,760	Square	Compact surface	Dacite	Ash pit, windbreak	No hearth	44
86607	LANL (PP)	1200–1325	1	7,880	Subrectangular	Compact surface	Dacite	None	No hearth	45
87430	LANL (PP)	1425–1525	1	6,865	Subrectangular	Compact surface	Dacite	Hearth (slab-lined, extramural)	E (outside)	46
90186	Jemez	1300–1750	1	6,925	Undetermined	Undetermined	Tuff	None	No hearth	27
90189	Jemez	1300–1750	2	6,830	Undetermined	Undetermined	Undetermined	None	No hearth	27
99392	LANL (PP)	1325–1600	1	6,925	Undetermined	Undetermined	Tuff	None	No hearth	35
99393	LANL (PP)	1425–1550	1	6,965	Rectangular	Undetermined	Tuff	None	No hearth	35
99395	LANL (PP)	1200–1600	1	6,910	Undetermined	Undetermined	Tuff	None	No hearth	35

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
99396	LANL (PP)	1200–1250	1	6,410	Subrectangular	Compact surface	Tuff and dacite	Hearth (internal), hearth (external), posthole	Center (inside)/N (outside)	47
102677	Jemez	1598–1626	2	7,271	Rectangular (both)	Prepared surface	Tuff	Bin (milling), hearth (2), posthole, basin-shaped pit	E/S/N	29
110126	LANL (PP)	1325–1600	1	7,658	Undetermined	Undetermined	Undetermined	None	No hearth	48
110130	LANL (PP)	1450–1640	1	6,580	Undetermined	Undetermined	Undetermined	None	No hearth	48
115152	Bandelier (PP	1280–1425	1	6,940	Rectangular	Compact surface	Tuff and basalt	None	No hearth	2
118345	Bandelier (PP)	1200–1600	1	6,494	Rectangular	Compact surface	Tuff	None	No hearth	2
119423	LANL (PP)	1200–1325	1	6,580	Undetermined	Undetermined	Tuff	None	No hearth	49
127627	LANL (PP)	1425–1525	1	6,950	Subrectangular	Compact surface	Tuff and dacite	None	No hearth	50
127631	LANL (PP)	1300–1425	1	6,490	Rectangular	Undetermined	Tuff	None	No hearth	51

LA	Location	Date (A.D.)	# of Rooms	Elevation (m)	Room Shape	Floor	Masonry	Feature(s)	Hearth Orientation	Reference (Appendix A)
127634	LANL (PP)	1425–1525	1	6,915	Rectangular	Compact surface	Tuff and dacite	Hearth (slab-lined), posthole, possible stairway	SE	52
127635	LANL (PP)	1250–1325	1	6,915	Rectangular	Prepared surface	Tuff	Hearth, rock pile	N	53
128805	LANL (PP)	1420–1500	1	7,100	Rectangular	Compact surface	Tuff	None	No hearth	54
135291	LANL (PP)	1430–1520	1	6,915	Rectangular	Compact surface	Tuff and dacite	Pot rest, external ash concentration	No hearth	55
135292	LANL (PP)	1525–1625	1	6,824	Rectangular	Undetermined	Tuff and dacite	None	No hearth	56
141505	LANL (PP)	1325–1600	2	7,100	Rectangular (both)	Compact surface	Tuff	Rock alignments, posthole	No hearth	57

Appendix C: Fieldhouse Room Measurements

Table C.1 Room Measurements from Excavated Fieldhouses

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
1067	2	1.8	1.7	3.1	2.2	1.4	3.1	-	-	-
3839	2	-	-	-	1.8	1.6	2.8	-	-	-
4633	3	2.1	2.1	4.4	2.1	2	4.2	2.1	2	4.2
4637	1	-	-	-	-	-	-	-	-	-
4638	1	-	-	-	-	-	-	-	-	-
4658	1	-	-	-	-	-	-	-	-	-
4660	2	-	-	-	-	-	-	-	-	-
4680	1	1.4	1.4	2	-	-	-	-	-	-
4686	1	2	2	4	-	-	-	-	-	-
4717	1	1.2	1.5	1.8	-	-	-	-	-	-
4727	1	-	-	-	-	-	-	-	-	-
4728	1	-	-	-	-	-	-	-	-	-
5011	1	1.7	1.7	3.4	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
5013	1	3.1	1.7	5.3	-	-	-	-	-	-
5688	1	-	-	-	-	-	-	-	-	-
9138	1	2.2	1.9	4.2	-	-	-	-	-	-
9138	1	1.8	1.4	2.5	-	-	-	-	-	-
12120	1	1.6	1.2	1.9	-	-	-	-		-
12122	3	2.2	1.8	4	2.4	1.3	3.1	2.7	1.6	4.3
12124	3	2.5	1.7	4.3	2.6	1.8	4.7	2.4	1.6	3.9
12125	2	2.1	1.5	3.2	2.4	1.5	3.6	-	-	-
12127	2	1.7	1.3	2.2	2.1	1.3	2.7	-	-	-
12144	2	3	2	6	2.1	1.3	2.7	-	-	-
12161	2	3.6	2.2	7.9	-	-	-	-	-	-
12443	1	2.1	1.9	4	-	-	-	-	-	-
12454	2	2.2	1.9	4.2	2.5	1.5	3.8	-	-	-
12511	2	3.1	1	3.1	3.5	1.4	4.9	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
12512	2	2.3	1.5	3.5	-	1.5	-	-	-	-
12517	1	1.1	1	1.1	-	-	-	-	-	-
12518	2	1.3	1	1.3	1.4	1	1.4	-	-	-
12519	2	2	1.4	2.8	2.1	1.9	4	-	-	-
12568	1	-	-	-	-	-	-	-	-	-
12577	2	1.8	1.4	2.5	1.8	1.7	3.1	-	-	-
12581	2	3.1	2	6.2	1.9	1.5	2.9	-	-	-
12582	1	2.8	2.4	6.7	-	-	-	-	-	-
12587	1	1.9	1.7	3.2	-	-	-	-	-	-
12650	1	2.7	2.5	6.75	-	-	-	-	-	-
12761	2	4	2.2	8.8	4.3	2.7	11.5	-	-	-
12761	2	2.65	2	5.3	-	-	-	-	-	-
12761	2	3.5	2	7	3.4	1.8	6.2	-	-	-
13049	1	2.8	2	5.6	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
13050	2	1.5	1.3	2	1.5	1.5	2.3	-	-	-
13054	2	1.5	1.4	2.1	2.2	1.9	4.2	-	-	-
13076	1	1.6	1.6	2.6	-	-	-	-	-	-
13076	1	1.6	2.2	3.5	-	-	-	-	-	-
13084	1	2.6	2	5.2	-	-	-	-	-	-
13084	2	1.7	1.3	2.2	-	-	-	-	-	-
13084	1	3	2.7	8	-	-	-	-	-	-
13084	1	1.8	1.3	2.3	-	-	-	-	-	-
13084	1	2.5	1.9	4.8	-	-	-	-	-	-
13086	1	1.9	1.3	2.5	-	-	-	-	-	-
13086	3	2.4	2	4.8	1.7	1.7	2.9	2.2	2.1	4.6
13086	1	3.2	2.5	8	-	-	-	-	-	-
14814	1	2.6	1.5	3.9	-	-	-	-	-	-
15116	1	2.5	1.9	4.75	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
16097	1	3	2	6	-	-	-	-	-	-
16107	2	-	-	-	-	-	-	-	-	-
16109	1	3	2	6	-	-	-	-	-	-
16114	1	3	2	6	-	-	-	-	-	-
21454	1	2.5	2	5	-	-	-	-	-	-
21472	1	-	1.8	-	-	-	-	-	-	-
21473	1	2	1.5	3	-	-	-	-	-	-
21607	1	2	1.7	3.4	-	-	-	-	-	-
24552	1	3	4	12	-	-	-	-	-	-
24582	2	3	2.2	6.6	3	1.7	5.1	-	-	-
24584	2	1.8	1.1	2	1.8	1.5	2.7	-	-	-
24595	1	2.5	1.25	3.1	-	-	-	-	-	-
24925	2	3	1.5	4.53	3	1.9	5.5	-	-	-
24926	2	3.65	1.7	6	3.5	2	6.5	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
24927	2	3.6	2.3	8.12	3.9	2.4	7.99	-	-	-
24928	1	2.8	2.3	6.4	-	-	-	-	-	-
24929	1	-	-	-	-	-	-	-	-	-
29750	1	2.2	1.5	3.3	-	-	-	-	-	-
29995	1	-	-	-	-	-	-	-	-	-
52320	1	-	-	-	-	-	-	-	-	-
52327	1	-	-	-	-	-	-	-	-	-
60497	2	3	1.5	4.5	3	1.5	4.5	-	-	-
60510	1	-	-	-	-	-	-	-	-	-
65013	1	-	-	-	-	-	-	-	-	-
66994	1	-	-	-	-	-	-	-	-	-
67011	1	-	-	-	-	-	-	-	-	-
67034	2	5	4.5	22.5	4	4.5	18	-	-	-
67035	2	5	4.5	22.5	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
67062	2	-	-	-	-	-	-	-	-	-
68520	1	3.5	2.5	7	-	-	-	-	-	-
68522	2	3.6	3.3	7.88	3.6	1.9	4.5	-	-	-
69562	2	3.6	2.4	8.6	3.6	2	7.2	-	-	-
69563	1	3.9	2.1	8.2	-	-	-	-	-	-
70025	1	2.72	1.65	4.5	-	-	-	-	-	-
71099	2	-	-	-	-	-	-	-	-	-
71099	1	2.3	1.6	3.7	-	-	-	-	-	-
71104	1	3.3	2.2	7.3	-	-	-	-	-	-
71108	1	-	-	-	-	-	-	-	-	-
71144	2	2.1	1.6	3.4	-	-	-	-	-	-
75719	1	3	2.6	7.8	-	-	-	-	-	-
75719	1	-	-	-	-	-	-	-	-	-
84893	1	2.5	2.3	5.8	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
84897	1	2.5	2	5	-	-	-	-	-	-
84924	1	3.8	2.6	9.9	-	-	-	-	-	-
85403	1	2.06	1.82	3.75	-	-	-	-	-	-
85404	1	2.25	1.7	3.83	-	-	-	-	-	-
85405	1	-	-	-	-	-	-	-	-	-
85408	1	2.25	1.8	4.05	-	-	-	-	-	-
85409	1	-	-	-	-	-	-	-	-	-
85411	2	3.6	2	7	1.6	1.6	2.6	-	-	-
85412	1	-	-	-	-	-	-	-	-	-
85413	1	2.3	1.83	4.21	-	-	-	-	-	-
85414	1	2.05	1.4	2.87	-	-	-	-	-	-
85417	1	1.95	1.65	3.22	-	-	-	-	-	-
85857	1	-	-	-	-	-	-	-	-	-
85861	1	3.05	1.7	5.19	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
85862	1	-	-	-	-	-	-	-	-	-
85863	1	-	-	-	-	-	-	-	-	-
85866	1	-	-	-	-	-	-	-	-	-
85867	1	1.25	2.27	2.84	-	-	-	-	-	-
86605	1	2	1.75	3.5	-	-	-	-	-	-
86606	1	2.05	1.85	3.79	-	-	-	-	-	-
86607	1	2.1	1.8	3.78	-	-	-	-	-	-
87430	1	1.85	2.1	3.89	-	-	-	-	-	-
90186	1	-	-	-	-	-	-	-	-	-
90189	2	-	-	-	-	-	-	-	-	-
99392	1	-	-	-	-	-	-	-	-	-
99393	1	-	-	-	-	-	-	-	-	-
99395	1	-	-	-	-	-	-	-	-	-
99396	1	2.3	2.1	4.83	-	-	-	-	-	-

		First Room			Second Room			Third Room		
Site (LA)	**# of Rooms**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**	**N_S (m)**	**E_W (m)**	**Interior Space (m^2)**
102677	2	3.6	2.2	7.9	3.5	2.1	7.4	-	-	-
110126	1	-	-	-	-	-	-	-	-	-
110130	1	-	-	-	-	-	-	-	-	-
115152	1	1.6	1	1.6	-	-	-	-	-	-
118345	1	1.9	1.3	2.5	-	-	-	-	-	-
119423	1	-	-	-	-	-	-	-	-	-
127627	1	1.87	1.86	3.1	-	-	-	-	-	-
127631	1	2	1.5	3	-	-	-	-	-	-
127634	1	1.8	2.5	4.5	-	-	-	-	-	-
127635	1	2.75	1.9	5.23	-	-	-	-	-	-
128805	1	2.5	2	5	-	-	-	-	-	-
135291	1	1.7	2.85	4.8	-	-	-	-	-	-
135292	1	-	-	-	-	-	-	-	-	-
141505	2	2.5	1.5	3.75	2.34	1.35	3.16	-	-	-

Appendix D: Artifacts from All Excavated Fieldhouses

Table D.1 Artifact Information from Excavated Fieldhouses

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
1067	252	221	31	Utilityware, Santa Fe Black-on-white, Kwahe Black-on-white, Socorro Black-on-white, Agua Fria Glaze-on-red	Grinding slabs, axe, abrader, debitage	0
3839	69	21	48	Utilityware, Glazeware	Two-handed mano fragments, mano fragments, indeterminate metate fragment	0
4633	4	3	1	Utility, Santa Fe Black-on-white, Wiyo Black-on-white	Partial grinding slab	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
4637	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given
4638	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given
4658	35 (surface)	20	15	Utilityware, Santa Fe Black-on-white, Wiyo Black-on-white, Biscuitwares	Debitage, no ground stone	0
4660	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given
4680	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
4686	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given
4717	36	36	0	Santa Fe Black-on-white, Wiyo Black-on-white	No lithics were identified and/or reported	0
4727	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given
4728	No count given	No count given	No count given	No ceramics were identified and/or reported	No lithics were identified and/or reported	No count given
5011	355	130	225	Smeared indented utilityware, Cieneguilla Glaze	No ground stone	Intrusive mammals
5013	23	1	22	Tewa Polychrome	No ground stone	0
5688	329	328	1	Utilityware and Jemez Black-on-white	Mano	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
9138	No count given	No count given	No count given	Ceramics present	Lithics present	Fish bone
12120	7	4	3	Glaze I Red, Kwahe Black-on-white, Utilityware	Obsidian core, obsidian debitage, basalt hammerstone	0
12122	383	216	161	Utilityware, Glaze A (San Clemente Glaze/poly and Agua Fria Glaze-on-red)	Two-handed mano, floor polisher, hammerstone, grinding slab, ground stone	0
12124	163	54	105	Agua Fria Glaze-on-red	Hammerstone, grinding slabs, ground stone	0
12125	54	13	41	Agua Fria Glaze-on-red, San Clemente Glaze/poly	Hammerstones, hafted tool	0
12127	248	10	238	Agua Fria Glaze-on-red or Cieneguilla Glaze/yellow	Hammerstones, polishing stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
12144	496	319	177	Utilitywares, Agua Fria Glaze-on-red, Cieneguilla Glaze/yellow, San Clemente Glaze/poly	Axes, polishing stones	0
12161	No count given, but high density	No count given	No count given	Spanish colonial ceramics, spindle whorls	No information given	Domestic sheep/goat bones
12443	391	133	258	Glazewares, Bandelier B/Gray	Basalt mano	0
12454	291	94	197	Utilitywares, Cieneguilla G/y	Two-handed manos	Artiodactyl skull bones
12511	129	49	80	Utilitywares, Santa Fe Black-on-white	Complete mano and mano fragment	0
12512	440	207	233	Glazewares, Socorro Black-on-white, Agua Fria Glaze-on-red	Vesicular basalt metate	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
12517	519	10	509	Sherds from a Largo Glaze-on-poly bowl	No ground stone	0
12518	817	92	725	Utilityware, Largo G/poly	Mano fragments and metate fragment	Cottontail vertebral bones
12519	77	23	54	Glazewares	No ground stone	Cottontail, woodrat
12568	204	139	65	Utilitywares, Bandelier B/gray, San Clemente G/poly	Grinding slab, hammerstone	Fish, duck, cottontail, wood rat
12577	304	63	241	Utilityware, Santa Fe Black-on-white, Agua Fria Glaze-on-red Cieneguilla G/y	Two-hand manos, one-hand mano, hammerstones, polisher	Mule deer
12581	187	94	193	Utilitywares, Kapo Black and Salinas Red	Lithics present	Unidentified large mammal

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
12582	46	19	27	Utilitywares, Santa Fe Black-on-white, Wiyo Black-on-white, Glazeware	Grinding slab	0
12587	492	358	122	Biscuitware, Glazeware	Ground stone	0
12650	No count given	No count given	No count given	Brownwares, utilitywares, Santa Fe Black-on-white	Axe	No count given
12761	258	258	No info	Utilityware, Jemez Black-on-white, Glaze E/F, reconstructable Jemez Black-on-white olla	Debitage, ground stone	0
13049	1,128	76	1,052	Glazewares, San Clemente G/poly, Cieneguilla G/y	Cores, debitage, tools, hammerstone, ground stone	Artiodactyl long bone, small mammal innominate, tip of bone awl

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
13050	772	241	531	Utilityware, San Largo G/poly, Cieneguilla G/y	Cores, debitage, hammerstones, milling slabs, axe/maul	Woodrat, gopher, rodents, turtle scutes, turkey, large mammal, unidentified bones, bone awl from turkey
13054	1,499	200	1,299	Utilityware, Glazeware	Cores, debitage, hammerstones, tools, manos, milling slabs, abrader	Abert squirrel, turkey, large mammal, medium mammal, fish vertebrae, long bone shafts made into tools (awls and needle)
13076	1,535	126	1,409	Utilityware, Glaze A	Obsidian biface, cores, debitage, no ground stone	0
13084	2,034	49	1,985	Glazeware, San Clemente G/poly, Agua Fria G/r, Abiquiu B/gray	Debitage, cores, mano frag	0
13086	471	7	464	Prieta Smeared indented, San Clemente G/poly, utility, Santa Fe Black-on-white, whole vessels	Debitage, core, hammerstone, mano fragment	Unidentified bones

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
14814	161	146	15	Sapawe Micaceous, Biscuitwares	No ground stone	0
15116	124	85	39	Biscuitware, Sapawe Micaceous	Core, no ground stone	0
16097	625	408	217	Utilitywares, Bandelier B/gray, San Lazaro Glaze/poly	Axe head, manos	0
16107	17	16	1	Utilitywares, Biscuitwares	No ground stone	0
16109	18	13	5	Utilitywares, Santa Fe Black-on-white	No ground stone	0
16114	304	209	95	Wtilitywares, Santa Fe Black-on-white, Glazewares	Cores, shaft straightener	Cottontail, large mammal long bone fragment, medium sized artiodactyl antler fragment
21454	24	16	8	Santa Fe Black-on-white, Tesuque corrugated	Core, lakes, no ground stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
21472	221	190	31	Santa Fe Black-on-white, Utilitywares	Debitage, scraper, metates, traprock slab, hoe frag	Turkey bone
21473	24	21	3	Santa Fe Black-on-white, Utilitywares	Floor polisher, debitage, mano fragment	0
21607	17	6	11	Utilitywares	Debitage, metate	0
24552	No subsurface given	No count given	No count given	Jemez Black-on-white sherds on surface	Obsidian projectile point on surface	0
24582	100	No count given	No count given	Jemez Black-on-white, Glaze E/F	Manos	0
24584	No count given	8	No count given	Jemez Black-on-white, Plainwares, Glazewares	No information given	0
24595	16	9	7	Jemez Black-on-white, Glazewares	Core, no ground stone	0
24925	238	228	10	Jemez Black-on-white	Mano fragment, maul, slab	0
24926	391	361	30	Utilitywares, Jemez Black-on-white	Projectile point, ground stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
24927	273	258	15	Utilitywares, Jemez Black-on-white, Glaze E (Puaray)	Polishing stones and two-hand mano	0
24928	39	29	10	Jemez Black-on-white	Metate and mano fragments	0
24929	242	218	24	Jemez Black-on-white	Two-hand mano	0
29750	239	216	23	Utilitywares, Jemez Black-on-white	Debitage, scrapers, obsidian biface	0
29995	93	78	15	Utilitywares, Santa Fe Black-on-white, Galiesteo Black-on-white, Wiyo Black-on-white	No ground stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
52320	19	15	4	Santa Fe Black-on-white, Galiesteo Black-on-white, Wiyo Black-on-white, Utilityware	Debitage, obsidian biface, scraper, no ground stone	0
52327	43	21	22	Santa Fe Black-on-white, Wiyo Black-on-white, Galiesteo Black-on-white	Debitage, core, projectile point, slab metates, mano, cooking stones	0
60497	No count given	No count given	No count given	No information given	No information given	No count given
60510	No count given	No count given	No count given	No information given	No information given	No count given
65013	1,470	82	1,388	Sapawe Micaceous, Biscuit A	Hammerstones, chopper, biface, no ground stone	Unidentified mammals, cottontail

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
66994	~ 12	No count given	12	Tewa polychrome, Historic Tewa reds and brownwares	Mano, metate	0
67011	~ 4	No count given	4	Jemez Black-on-white, Utilityware	Mano, metate	0
67034	~ 8	No count given	8	Jemez Black-on-white, Puname polychrome	Metate slab	0
67035	~ 7	No count given	7	Jemez Black-on-white, Utilityware	Slab metates	0
67062	~ 4	No count given	4	Jemez Black-on-white, Puname polychrome	Mano, metate	0
68520	256	227	29	Graywares and Jemez B Black-on-white	Cores, debitage, no ground stone	0
68522	889	808	81	Graywares, Brownwares, Jemez Black-on-white	Metate fragments, polish stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
69562	566	55	11	Jemez Black-on-white, Utilityware, Glazewares	Debitage, polished cobble	0
69563	276	220	56	Jemez Black-on-white, Utilityware, Puaray Glaze polychrome, Biscuitwares	Cores, tools, projectile points, debitage, metate	Deer-sized shaft fragment, deer-sized awl
70025	204	185	19	Biscuitwares, nearly complete Sapawe Micaceous jar	Core, debitage, two-hand mano, manos and metate fragments	No count given
71099	No count given	No count given	No count given	No info	No information given	No count given
71104	No count given	No count given	No count given	No info	Ground stone on surface	No count given
71108	No count given	No count given	No count given	Two partially reconstructable Glazeware bowls	No information given	No count given
71144	47	14	33	Utilityware, Glazewares	Debitage, no ground stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
75719	No count given	No count given	No count given	Brownwares, Graywares, Utilitywares, Santa Fe Black-on-white, Jemez Black-on-white	Cobble, core fragment, hammerstones, mano, metate fragments, miscellaneous ground stone	Rabbit
84893	108	82	26	Utilitywares, Santa Fe Black-on-white, Wiyo Black-on-white	Core, debitage, projectile points, tool, mano, hammerstone	0
84897	32	21	11	Utilitywares, Santa Fe Black-on-white, Wiyo Black-on-white	Debitage, tool, projectile point fragments, no ground stone	0
84924	No count given	No count given	No count given	Utilitywares, Jemez Black-on-white, Santa Fe Black-on-white W	Hammerstone, polishing stones, petrified wood, ground stone fragment	Squirrel-sized mandible
85403	33	7	26	Utilitywares	Cores, debitage, tools, mano, miscellaneous ground stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
85404	265	199	66	Utilitywares, Glazewares, Bandelier Black/gr	Core, debitage, tools, hammerstone	Awl fragment (deer)
85405	29	23	6	Biscuit A/B	Debitage, scraper, core, no ground stone	0
85408	151	80	71	Biscuit A/B	Cores, debitage, tools, one grind slab, one polishing stone	Medium/large sized mammal
85409	42 surface	No count given	No count given	Biscuit A/B, Utilitywares	No ground stone	0
85411	No count given	No count given	No count given	No information given	No ground stone	0
85412	No count given	No count given	No count given	Utilitywares	Debitage, metate, hoe-shaped stones	0
85413	740	494	246	Sapawe Micaceous, Biscuit A, Cieneguilla G/y	Cores, debitage, tool, hammerstone, one-hand manos, millingstones, metate fragment, polishing stone, abrading stone, axe	Mammal, gopher, mule deer

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
85414	70	35	35	Sapawe Micaceous, Biscuit A, Glazewares	Debitage, tools, hammerstone, one-hand mano, millingstone, grind slab, grooved abrader, undetermined ground stone	Possible awl (mule deer)
85417	146	129	17	Utilityware, Santa Fe Black-on-white, Buffwares	Debitage, core, hammerstone, one-hand mano, grind slab	0
85857	42 surface	17	7	Utilitywares, Wiyo Black-on-white	Debitage, metate, possible hoe-shaped stones	0
85861	537	439	108	Utilitywares, Santa Fe Black-on-white	Cores, debitage, tools, hammerstones, one-hand mano, mano frag, metate fragments, polish stone, grooved abrader, hoes, undetermined ground stone	Mule deer, rabbit, mammal, medium/large sized mammal bone awl

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
85862	37 subsurface; 24 surface	23 (subsurface)	14 (subsurface)	Biscuit B, Utilityware	No information given	0
85863	No subsurface artifacts	No count given	No count given	Wiyo Black-on-white	No information given	0
85866	37 (surface)	22	15	Santa Fe Black-on-white, White Mountain Redware, Utilitywares	Slab metate fragment, subsurface obsidian nodule	0
85867	122	68	54	Sapawe Micaceous, Biscuit A	Cores, debitage, tool, two-hand mano, mano fragment	Elk-sized rib fragment
86605	189	105	72	Biscuitware, Sapawe Micaceous	Debitage, tools, grinding slab	Mule deer humerus

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
86606	171	143	28	Santa Fe B Black-on-white, Wingate Black-on-red, Biscuitwares	Core, debitage, hammerstone, two-hand mano, grind slab, metate fragment, axe, undetermined ground stone, shaped slabs	1 medium/large deer long bone
86607	9	9	0	Santa Fe B/W Black-on-white	No lithics	0
87430	583	487	96	Sapawe Micaceous, Biscuitwares	Cores, debitage, tools, mano fragments, millingstones, abrading stone	0
90186	60 +	No count given	~ 60	Jemez Black-on-white, Utilityware	Mano, metate	0
90189	7 +	No count given	7	Jemez Black-on-white, Utilityware	Mano, metate, debitage	0
99392	6 surface 1 subsurface	6 surface 1 subsurface	No count given	Biscuit A/B	No information given	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
99393	2 surface 12 subsurface	2 surface 10 subsurface	2 subsurface	Biscuit B, Utilitywares	Debitage	0
99395	10 surface	10	0	Utilityware	No information given	0
99396	85 +	85	Archaic component difficult to discern debitage	Utilityware, Jemez Black-on-white, Utilityware, Wiyo Black-on-white, Biscuitware	One-hand manos, two-hand mano, mano fragment, grinding slab, metate fragment, undetermined ground stone	0
102677	248	191	57	Jemez Black-on-white, Utilityware, Glaze C/D	Core, tools, debitage, hammerstone, projectile points, debitage, manos, metates, milling implement, shaped slab	Artiodactyl fragment, deer-sized fragments, small mammal fragments, bird bone, bone bead
110126	No count given	No count given	No count given	Biscuit B, Sapawe Micaceous	No information given	0
110130	No count given	No count given	No count given	Spapawe Micaceous, Utilityware	Handful of lithics	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
115152	No count given	No count given	No count given	Jemez Black-on-white, Utilityware, Glazeware	Few lithics, no ground stone	0
118345	No count given	No count given	No count given	Absence of diagnostic artifacts	Obsidian flake, mano	0
119423	91	79	12	Utilityware, Santa Fe Black-on-white, Wiyo Black-on-white	Debitage, ground stone	0
127627	156	82	74	Utilityware, Biscuit B, Sapawe Micaceous	Core, debitage, tools, one-hand mano, mano fragments, unidentified ground stone	0
127631	40	12	17	Utilityware, Santa Fe Black-on-white, Biscuit A, Sapawe Micaceous	Core, debitage, mano, abrading stone	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
127634	243	149	98	Biscuit B, Sapawe Micaceous	Debitage, tool, mano, metate, miscellaneous ground stone	0
127635	448	371	77	Utilityware, Biscuit A, Santa Fe Black-on-white, Wiyo Black-on-white, Galiesteo Black-on-white, Sapwe Micaceous	Cores, debitage, tools, two-hand mano	0
128805	552	199	353	Utilityware, Biscuitware	Debitage, tools, mano, basin metate, metate fragments, abrading stone, undetermined ground stone	0
135291	114	82	32	Utilityware, Biscuitware	Cores, debitage, tools, one-hand mano, two-hand mano, ground stone fragments	0

Site (LA)	Total Artifacts	Ceramics	Lithics	Ceramic Notes	Lithic Notes	Faunal Remains
135292	178	89	78	Utility, Biscuitware Santa Fe Black-on-white	Core, debitage, tools, one-hand mano, mano fragment, polishing stone, hoe	Unidentified cancellous bone
141505	55	29	26	Utilityware, Santa Fe Black-on-white, Sapawe Micaceous, Glazeware	Core, debitage, tools, ground stone	0

Appendix E: Ceramic and Chipped Stone Counts from LANL Excavated Sites

Table E.1 Bowl and Jar Sherd Counts from Excavated LANL Fieldhouses and Pueblo Roomblocks (Wilson 2008). LA 85408 and LA 86607 do not have ware counts, but they have bowl and jar counts.

Time Period	Site Type	Site (LA)	Bowl Sherd Count	Jar Sherd Count	Bowl-Jar Ratio	Percent Utilityware
Coalition	Roomblock	86534	488	2,969	0.16	84%
Coalition	Roomblock	12587	1,651	8,349	0.20	82%
Coalition	Roomblock	135290	507	3,350	0.15	84%
Coalition	Fieldhouse	86607	6	3	2.00	N/A
Coalition	Fieldhouse	99396	21	59	0.36	75%
Coalition/Classic	Fieldhouse	127631	4	8	0.50	58%
Coalition/Classic	Fieldhouse	141505	8	17	0.47	55%
Coalition/Classic	Fieldhouse	85404	35	157	0.22	61%
Coalition/Classic	Fieldhouse	85861	84	345	0.24	80%
Coalition/Classic	Fieldhouse	86606	18	125	0.14	88%
Coalition/Classic	Fieldhouse	127635	60	308	0.19	84%
Classic	Fieldhouse	85403	1	6	0.17	86%
Classic	Fieldhouse	85411	85	231	0.37	73%
Classic	Fieldhouse	85414	3	31	0.10	77%
Classic	Fieldhouse	85417	1	108	0.01	99%
Classic	Fieldhouse	85867	14	54	0.26	79%
Classic	Fieldhouse	127627	6	62	0.10	88%
Early Classic	Fieldhouse	85413	60	434	0.14	86%
Early Classic	Fieldhouse	135291	25	54	0.46	65%
Late Classic	Fieldhouse	128805	28	158	0.18	66%
Late Classic	Fieldhouse	15116	15	48	0.31	22%
Late Classic	Fieldhouse	70025	14	162	0.09	79%
Late Classic	Fieldhouse	85408	61	13	4.69	N/A
Late Classic	Fieldhouse	86605	13	82	0.16	13%
Late Classic	Fieldhouse	87430	61	412	0.15	84%
Late Classic	Fieldhouse	127634	66	74	0.89	39%
Late Classic	Fieldhouse	135292	26	55	0.47	61%

Table E.2 Count of Whiteware, Utilityware, and Glazeware Sherds from Excavated LANL Fieldhouses (Wilson 2008)

Time Period	Site (LA)	Whiteware Sherds	Utilityware Sherds	Glazeware Sherds
Coalition	99396	21	64	0
Coalition/Classic	127631	4	7	1
Coalition/Classic	141505	12	16	1
Coalition/Classic	85404	43	122	34
Coalition/Classic	85861	89	350	0
Coalition/Classic	86606	17	125	0
Coalition/Classic	127635	59	312	0
Classic	85403	1	6	0
Classic	85411	88	232	0
Classic	85414	5	27	3
Classic	85417	1	128	0
Classic	85867	14	54	0
Classic	127627	7	72	3
Early Classic	85413	55	424	15
Early Classic	135291	29	53	0
Late Classic	128805	49	131	18
Late Classic	15116	63	19	3
Late Classic	70025	38	147	0
Late Classic	86605	91	14	0
Late Classic	87430	78	409	0
Late Classic	127634	84	58	6
Late Classic	135292	35	54	0

Table E.3 Chipped Stone Debitage Counts from Excavated LANL Fieldhouses (Vierra and Dilley 2008:Tables 60.30 and 60.37)

Time Period	Site (LA)	Debris	Core Flake	Biface Flake	Micro Debitage	Undetermined Flake	Other Debitage	Total
Coalition	85417	1	9	2	1	0	0	13
Coalition	85861	13	47	14	1	4	0	79
Coalition	86606	3	13	0	0	0	1	17
Classic	127631	1	9	1	2	0	0	13
Classic	128805	30	145	68	70	17	1	331
Classic	141505	2	16	0	0	0	1	19
Classic	15116	3	32	0	1	2	0	38
Classic	70025	0	14	0	0	0	0	14
Classic	85403	5	10	1	1	0	0	17
Classic	85404	21	34	1	2	1	0	59
Classic	85408	11	49	0	0	2	0	62
Classic	85411	11	68	8	3	2	3	95
Classic	85413	37	173	0	6	5	2	223
Classic	85414	5	23	0	0	0	0	28
Classic	85867	1	36	1	1	0	0	39
Classic	86605	7	50	2	5	2	1	67
Classic	87430	7	62	8	1	2	0	80
Classic	127627	3	59	2	1	3	0	68
Classic	127634	20	60	4	4	4	2	94
Classic	127635	6	41	2	11	11	0	71
Classic	135291	4	8	1	0	0	1	14
Classic	135292	9	45	11	4	9	0	78