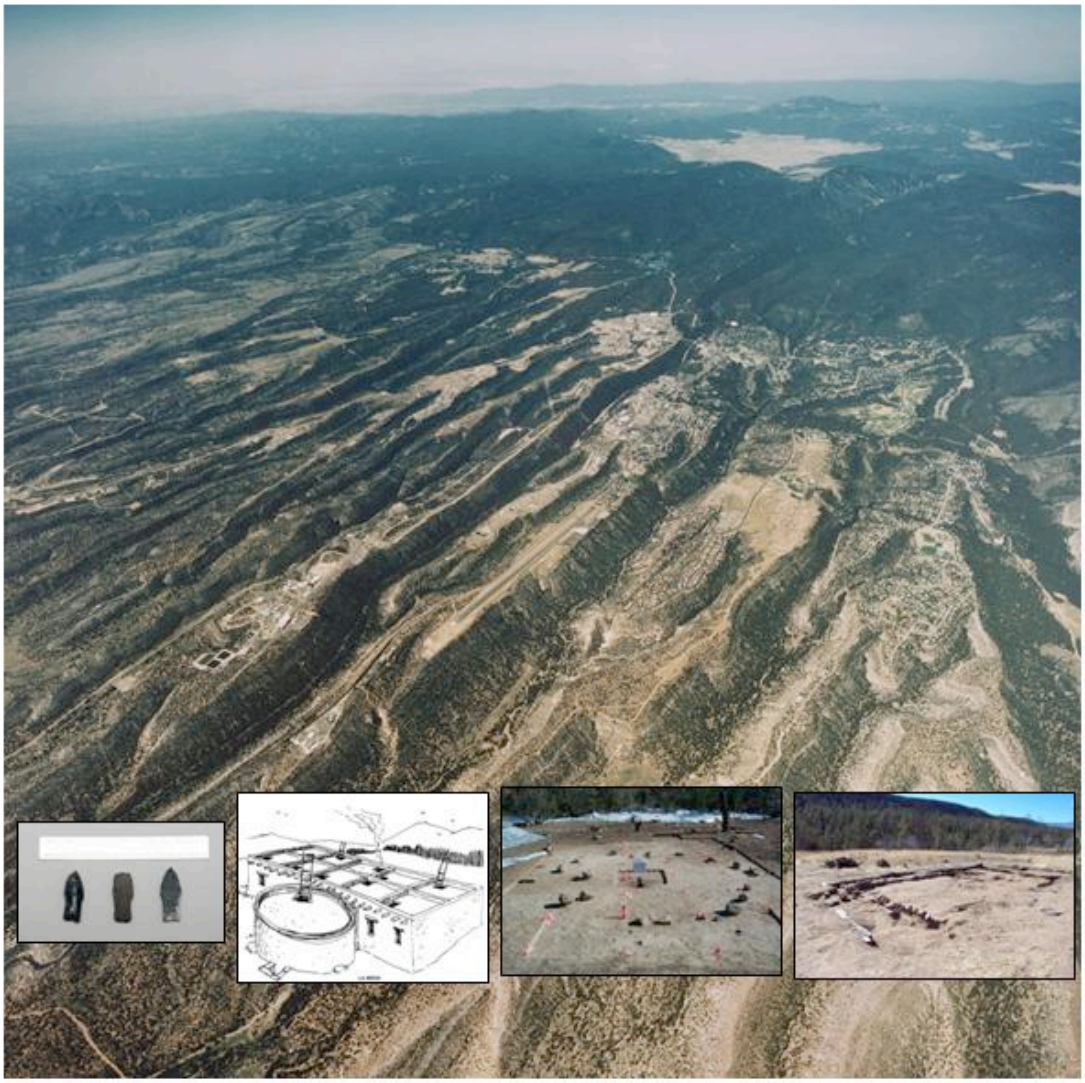
LA-UR-07-6205
Approved for public release; distribution is limited.

NMCRIS # 107505

THE LAND CONVEYANCE AND TRANSFER DATA RECOVERY PROJECT: 7000 YEARS OF LAND USE ON THE PAJARITO PLATEAU

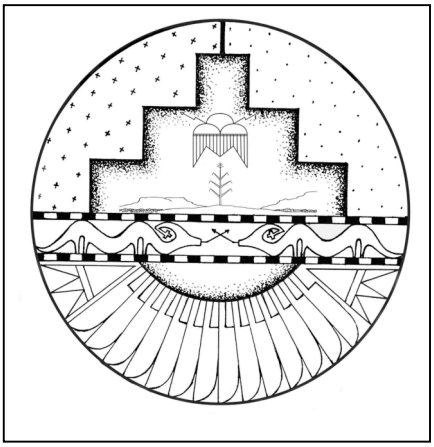


VOLUME 2: SITE EXCAVATIONS

Edited by Bradley J. Vierra, Kari M. Schmidt, and Brian C. Harmon

Ecology and Air Quality Group, Los Alamos National Laboratory
June 2008

Edited by Hector Hinojosa, Group IRM-CAS



Artistic representation of the Pajarito Plateau; drawn by Aaron Gonzales.

*An Affirmative Action/Equal Opportunity Employe*r

LA-UR-07-6205 NMCRIS # 107505

Title

THE LAND CONVEYANCE AND TRANSFER DATA RECOVERY PROJECT: 7000 YEARS OF LAND USE ON THE PAJARITO PLATEAU

Volume 2: Site Excavations

Cultural Resources Report No. 273

Prepared for

U.S. Department of Energy
National Nuclear Security Administration
Los Alamos Site Office

Prepared by

Bradley J. Vierra, Ecology and Air Quality Group
Kari M. Schmidt, Ecology and Air Quality Group
Brian C. Harmon, Ecology and Air Quality Group

Los Alamos, New Mexico 87545

June 2008

Contents

List of Figures

List of Tables

CHAPTER 13
INTRODUCTION TO THE LAND CONVEYANCE AND TRANSFER EXCAVATIONS

Bradley J. Vierra

Although the Pajarito Plateau has witnessed almost 100 years of archaeological research, very little of this work has been published in synthetic volumes. Most notable of the published reports is the work of Hewett and Wilson at the large Classic period sites of Otowi and Tsirege (Hewett 1906, 1938; Wilson 1916a, 1918b). In the 1950s to 1970s, there was a resurgence in the excavation of sites on the Pajarito Plateau. Worman, Steen, and the Los Alamos Archaeological Society were responsible for this increase, but little of it has been fully published (see Fretwell 1954, 1959; Maxon 1969; Poore 1981; Steen 1974, 1977, 1982; Worman 1967; Worman and Steen 1978; and Young 1954 for exceptions). More recently, three major survey projects have been conducted on the Pajarito Plateau. The Pajarito Archaeological Research Project (PARP) (Hill and Trierweiler 1986; Hill et al. 1996), the Bandelier Archaeological Survey (BAS) (Powers and Orcutt 1999b), and the Land Conveyance and Transfer Project (Hoagland et al. 2000). In the latter two cases, detailed reports presenting the results of these surveys were completed. Reports were also done for small-scale excavations conducted by Washington State University in conjunction with the BAS Project (Kohler 1989, 1990; Kohler and Linse 1993; Kohler and Root 1992b). For the PARP, however, only a series of theses and dissertations and a single summary article were written. All of this underscores the general lack of data currently available regarding the archaeology of the Pajarito Plateau. Nonetheless, three synthetic volumes have recently been produced that provide archaeological overviews of the Pajarito Plateau (Kohler 2004; Powers 2005; Vierra and Schmidt 2006).

This chapter provides a detailed review of the project field and laboratory methods. The results of the site excavations are presented in a series of descriptions for the White Rock, Airport, and Rendija Canyon tracts in Volume 2. As such, it represents the largest archaeological excavation dataset for the Pajarito Plateau.

FIELD METHODS

Geomorphic evaluations were conducted at each tract by Steve Reneau and Paul Drakos to assess the geomorphic context and integrity of the sites (see Volume 3, Chapter 57). Their assessments included a review of the previous geomorphic studies done in the project area, as well as digging a series of shovel test holes in various locations throughout the tracts. One- by one-m soil test pits were also hand excavated at each of the archaeological sites to identify the natural geomorphic sequence.

Geophysical studies using ground-penetrating radar (GPR) were also conducted at a select sample of sites to identify the presence of subsurface features (e.g., see Conyers and Goodman 1997). The GPR survey was conducted by Jennifer Nisengard, Kimberly Henderson, and John Isaacson and the results were interpreted primarily by Henderson (see Volume 3, Chapter 70).

The use of this technique was often limited by surface vegetation that obscured buried features, but did provide useful information in some cases.

Fieldwork began with a field assessment of each site. The crew initially walked over the site area and delineated the site boundaries and identified the presence of artifact concentrations and features. A central site datum and baselines for a 1- by 1-m grid system were established. The baselines were oriented to magnetic north, with the exception of LA 85859, LA 85464, and all of the tested sites, which were oriented to true north. The datum was located at the 100N/100E grid point with an elevation of 10.0 m. The intersection of the southwest corner of each grid determined its grid coordinates. Site elevation worked the same as topographic elevation (i.e., increasing with elevation). Site maps included a detailed topographic map. These maps contained topographic features, the site datum, surface collected areas, excavation units, the relationship of the site and features to other natural and cultural features, activity areas, site and provenience boundaries, and in some cases, point-provenienced artifacts. Each map was documented with a legend, site number, scale, north arrow, names of the recorders, and the date the map was drawn. Controlled surface collections were conducted and all materials were bagged separately by individual grid unit.

Site excavation involved the hand excavation of grid units. This technique was used to define the extent, depth, and character of subsurface deposits. Excavations were carried out by natural stratigraphic layer, or in cases where the stratum was greater than 10 cm in thickness, in arbitrary 10-cm levels. A stratum was defined as a distinct depositional unit. Descriptions for strata included soil kind, texture, compactness, and color (Munsell soil chart). Excavation units were profiled. Features were recorded in three dimensions when appropriate and included a cross-section with feature descriptions, including information on measurements, nature of the fill, stratigraphic context, construction data, and the relationship to other features. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh. The only exception was the three tipi rings at LA 85869; the soil matrix in these features was sieved through 1/16-in. mesh.

A daily log was maintained by each crew chief. These notes included summary information on daily activities and preliminary interpretations of site excavations. A series of recording forms were designed to document the expected variability at the sites, including a field specimen catalog, instrument mapping form, stratigraphy form, grid excavation form, sample log, feature form, room floor form, room summary form, photographic log, auger form, and burial form.

All samples suitable for dating (e.g., radiocarbon, archaeomagnetic, or obsidian hydration), pollen analysis, and macrobotanical analysis were recovered during fieldwork, and later selected for analysis on the basis of their potential to answer specific research questions. A catalog of all samples (sample log) was maintained throughout the project. Pollen and flotation samples were taken from each cultural stratum and feature. A trowel cleaned with distilled water and dried with a sterile laboratory wipe was used to take each pollen sample. Approximately one cup of sediment was collected and placed within a whirly-pac. Flotation samples consisted of two liters of sediment placed within a set of paper bags.

The sites, and the components that make up the sites, were photographed with a digital camera and black-and-white film. These photographs served as records of each excavation unit and feature and as evidence of disturbance. Primary documentation photographs contained a scale and north arrow. A photographic log was used to record all exposures, including photograph number, subject and provenience, direction of photograph, photographer, and date.

Human remains were encountered during site excavations. A comprehensive agreement between the United States Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, and San Ildefonso Pueblo in compliance with the Regulations of the Native American Graves Protection and Repatriation Act (NAGPRA) Title 43, Part 10, Subpart A was implemented before initiation of the project. This agreement outlined our field excavation, laboratory analysis, temporary storage, and final disposition procedures for the remains, associated funerary objects, sacred objects, and objects of cultural patrimony defined by NAGPRA and in consultation with San Ildefonso Pueblo. This agreement was also reviewed by Santa Clara Pueblo. Monitors from San Ildefonso Pueblo were present during the White Rock and Airport Tract excavations, with monitors from San Ildefonso and Santa Clara Pueblos being present during the excavations in the Rendija Tract. These monitors were responsible for observing the excavations, identifying any sacred objects, and reviewing the treatment of human remains.

SITE TYPES

Artifact Scatters

Artifact scatters consisted of Archaic lithic scatters or Ceramic period lithic and ceramic scatters. The surface areas of the sites were collected in 1- by 1-m grid units and the artifact distributions and features were identified. The surface artifact data were used to produce artifact density maps using Surfer Ver. 7.0. These maps are located in the individual chapters. Block excavations focused on the areas containing features and/or artifact concentrations (i.e., possible activity areas). Systematic augering and isolated 1- by 1-m test pits were also placed in other portions of the site to determine the nature and extent of subsurface deposits. Given the general lack of features on these sites, obsidian hydration dating was used when appropriate to develop a baseline for differentiating possible Archaic and Ceramic period sites and multiple site occupations. However, the Cerro Grande fire likely affected some of the surface materials present on the Rendija Canyon sites.

Roomblocks

Three Coalition period linear roomblocks were excavated. LA 86534 appeared to be disturbed, with a few rock alignments and a sparse surface artifact scatter. Initial excavations confirmed the partially disturbed nature of the site, but test pits identified the presence of an intact roomblock and kiva. There were no surface indications of a kiva, and the GPR study failed to identify the buried features because of the vegetation cover. LA 12587 also contained several areas of masonry blocks that may have represented a small roomblock. Excavations determined

that the site was a multi-component site and included a fieldhouse and two separate roomblocks. In contrast, LA 135290 consisted of a single linear-shaped mound that was in good condition. Excavations revealed the presence of an intact roomblock within the mound.

A basic stratigraphic sequence was identified during previous excavations conducted at Coalition period pueblos at Los Alamos National Laboratory. This sequence includes four major stratigraphic units at a typical roomblock site. From top to bottom these layers include 1) a recent surface soil, 2) a cap of rubble debris, 3) post-occupational fill that may or may not include some roofing material, and 4) interior room floor surfaces. Like the artifact scatters, surface collections were conducted in the site area, including the rubble mound, areas peripheral to the mound, and middens.

Isolated features and artifact concentrations were also identified during this process. Middens were lacking at LA 86534 and LA 135290, but were characterized by a concentration of artifacts located east of the roomblock at LA 12587. Excavations at the roomblocks began by defining wall alignments. Preliminary north-south trenches were excavated across the rubble areas to define wall alignments and the nature of subsurface deposits. Excavations continued by exposing the top of the wall alignments, until the outline of the roomblock was defined. Once the outline was defined, a map was made and individual rooms were designated by a sequential series of numbers (i.e., 1-n). Stratigraphic profiles were drawn and room fill was removed in natural layers. Each interior room floor was mapped. Maps included the location of features, samples, and all artifacts lying directly on the floor. Pollen samples were taken from underneath artifacts lying on the floor, features, and other locations where the context might preserve these remains. After all the floor artifacts were removed, samples taken, and the features excavated, a single subfloor test pit was excavated to identify the presence of any earlier floors or features.

Block excavations or a series of test pits were also excavated in the plaza areas surrounding the roomblocks. It was hoped that GPR studies would identify the presence of any subsurface features (e.g., kivas) located in this area, but the kiva at LA 86534 was identified by backhoe trenching across the plaza area to the east of the roomblock. The single kiva was excavated using the same method as those employed during the excavation of the roomblocks. Particular attention was also paid to identifying plaza features and activity areas. A midden was identified only at LA 12587 and a systematic set of test pits were hand excavated as were a series of backhoe trenches in the midden area. Care was taken to identify and remove individual strata to isolate a complete stratigraphic sequence. Lastly, small block excavations were also conducted around other features identified at the site. These excavations included possible agricultural features at LA 12587 and rock alignments in the plaza at LA 135290.

Fieldhouses

Possible fieldhouses consist of one- to three-room structures. These small structures were excavated using the same techniques discussed for the roomblocks. In addition, limited excavations were conducted around the periphery of the structure to identify the presence of any exterior occupational surfaces, features, and activity areas. The limited excavations consisted primarily of a single row of 1- by 1-m units located adjacent to the north, west, and south sides

of the fieldhouses; however, a larger block excavation was also excavated to the east of the fieldhouses since this is typically where midden deposits and activity areas are located. This excavation strategy was very successful in identifying the presence of exterior features and artifact scatters within the eastern sections of the site.

Agricultural Sites

Three agricultural sites were excavated, including two grid gardens (LA 128803 and LA 139418) and a possible check dam (LA 128804). Block excavations were conducted at the grid garden site to identify the construction techniques used for the feature. This approach included exposing rock alignments and excavating a cross-section through a series of grids that enabled the identification of the stratigraphic sequence present. Previous pollen studies in the area indicate that the surface of these ancient fields is relatively close to the modern surface. Samples taken from 0 to 20 cm below the surface yielded most of the cultigen pollen in one study (Smith 1997:7), whereas samples taken from deeper contexts within a B horizon yielded poor results (G. Dean 1989a, 1991, 1994). Pollen samples were therefore taken from the exposed stratigraphic column, including post-occupational fill, grid garden fill, and pre-occupational fill. In addition, samples were also taken from the exposed profile continuing outside and adjacent to the grid garden feature.

A trench was excavated perpendicular to the axis of the check dam, above and below the rock wall. The exposed stratigraphic sequence was documented, and a column pollen and flotation samples taken from above and below the rock wall.

Athabaskan Sites

Two possible Athabaskan sites were excavated in Rendija Canyon (LA 85864 and LA 85869). A metal detector survey was conducted by Charles Haecker to locate all metal artifacts at the site, including those immediately below the surface. Test pits were excavated within the rock rings at both of these sites (Peterson and Nightengale 1993). At LA 85864, a possible hearth consisting of a burned area was identified at a depth of 16 cm below the current surface. A radiocarbon date obtained from charcoal in this feature yielded a date of AD 130±60 BP, reflecting a 19th century occupation. A pit excavated within the rock ring at LA 85869 also exposed a burned area 5 to 15 cm below the surface that may have been the remains of an unprepared hearth. As a result, excavations focused on the areas in and around the rock rings, which included relocating and expanding the previous excavations. In addition, the area immediately surrounding the rings was excavated to identify any exterior features or activity areas.

Homestead Era Sites

A single Homestead era site (LA 85407) with a cabin and multiple features was excavated in Rendija Canyon. The site consisted of several features, including the remnants of a log cabin, an

horno, remnants of a small log structure, a corral, and two trash areas. Most of the wooden structures were burned during the Cerro Grande fire, and only a few pieces of the cabin, structure, and corral remained at the time of excavation. Several wood fence posts also remained along the periphery of the site. Test excavations were conducted by Peterson and Nightengale (1993) in the area of the horno and a rock alignment. Burned portions of the horno were exposed, but no cultural materials were identified around the rock alignment. As a result, excavations at the site focused on the area of the cabin, the small structure, the corral, and the horno, and both trash areas were collected. Tree-ring samples were also taken from the remaining sections of the cabin and corral, and samples had previously been collected during the post-Cerro Grande fire assessment of the site (Nisengard et al. 2002; also Towner, Volume 1).

An historic log corral (LA 70026) had been recorded in Cabra Canyon, which drains into Rendija Canyon. This area was severely burned during the Cerro Grande fire and the wooden portions of the corral were totally destroyed. The site, therefore, could not be relocated and no further work was conducted.

A small section of a Homestead era wagon road (LA 86553) runs across the floor of Rendija Canyon, west of the Serna Homestead. The road segment could not be relocated during the post-Cerro Grande fire assessment. The area was severely burned and the fire appears to have obliterated any obvious surface evidence of the road. As a result, no further work was conducted at the site.

LABORATORY METHODS

After excavation, artifacts were washed, sorted, and rebagged following the Laboratory of Anthropology curation guidelines. These guidelines included providing provenience information on curation quality paper within each bag and using ziploc bags that are 4-mil thick. The field specimen (FS) catalog was cross-checked with the bags and entered into a Microsoft Excel database. The catalog included the following fields: site number, FS number, room number, feature number, grid coordinates, starting and ending elevations, stratum, level, date, recorder, and contents. The contents field consisted of lithics, ceramics, ground stone, bone, metal, glass, botanical, flotation, pollen, dendrological sample, or other (described in the field). Each bag was given an individual FS number, and the number of items within each bag was noted in the catalog.

Flotation samples were processed using the standard decant flotation system as described by Hammett and McBride (1993). Each sample was poured into a bucket of water, agitated gently until the botanical material floated to the surface, and then decanted onto a clean piece of chiffon material to dry. This botanical material is referred to as the light flotation (or fraction). The residue at the bottom of the bucket (called the heavy flotation or fraction) was rinsed to eliminate the soil matrix, dried, and examined to recover lithic and bone material. A soil processing form was filled out and included information on site number, FS number(s), total bags in flotation, volume of processed soil, weight of light flotation, weight of heavy flotation, and notes. Pollen washes were done on a few artifacts collected in the field, including ground stone artifacts such as manos and metates.

Table 13.1 presents the labels used on site maps and profiles in this volume. This primarily relates to the distribution of artifacts and samples in floor contexts, but can also be found in other illustrations and in the text. The number following the artifact/sample refers to its specific field specimen number.

Table 13.1. Artifact and sample abbreviations.

Artifact/Sample	Abbreviation
Ceramic sherd	C
Core	Core
Faunal element	Bone
Field specimen number	FS#
Flotation sample	F
Lithic	L
Macrobotanical	M
Mano	MA
Metate	ME
Other ground stone	G
Pollen sample	P
Projectile point	PP
Thermoluminescence sample	TL

LAND TRACTS

White Rock Tract (A-19)

The White Rock Tract (A-19) contains approximately 40 ha (100 ac) that range in elevation from 2133 to 2186 m (6400 to 6560 ft). The eastern tip of Mesita del Buey is located in the west-central portion of the tract. The remaining tract area is situated within the Cañada del Buey floodplain or along the slope that forms the northern edge of the canyon. Approximately 20 percent of the tract has been disturbed by development (roadway, electrical substation, power lines, pump station, and visitor center). The remaining undisturbed areas of the tract are covered with vegetation associated with a piñon-juniper woodland.

Four of the archaeological sites were located in the western section of the White Rock Tract along the eastern tip of Mesita del Buey (Figure 13.1). These sites include LA 12587 (roomblock and scatter), LA 127631 (fieldhouse), LA 128804 (check dam), and LA 128805 (fieldhouse). This area of the tract is characterized by a light to medium background scatter of artifacts. Tables 13.2 and 13.3 present information on ceramic and lithic artifact types for this scatter. A total of 60 ceramic and 353 lithic artifacts were collected from the background scatter between the sites. The ceramics include a range of Coalition and Classic period types, whereas, the lithic artifacts presumably represent Archaic and Ceramic period activities.

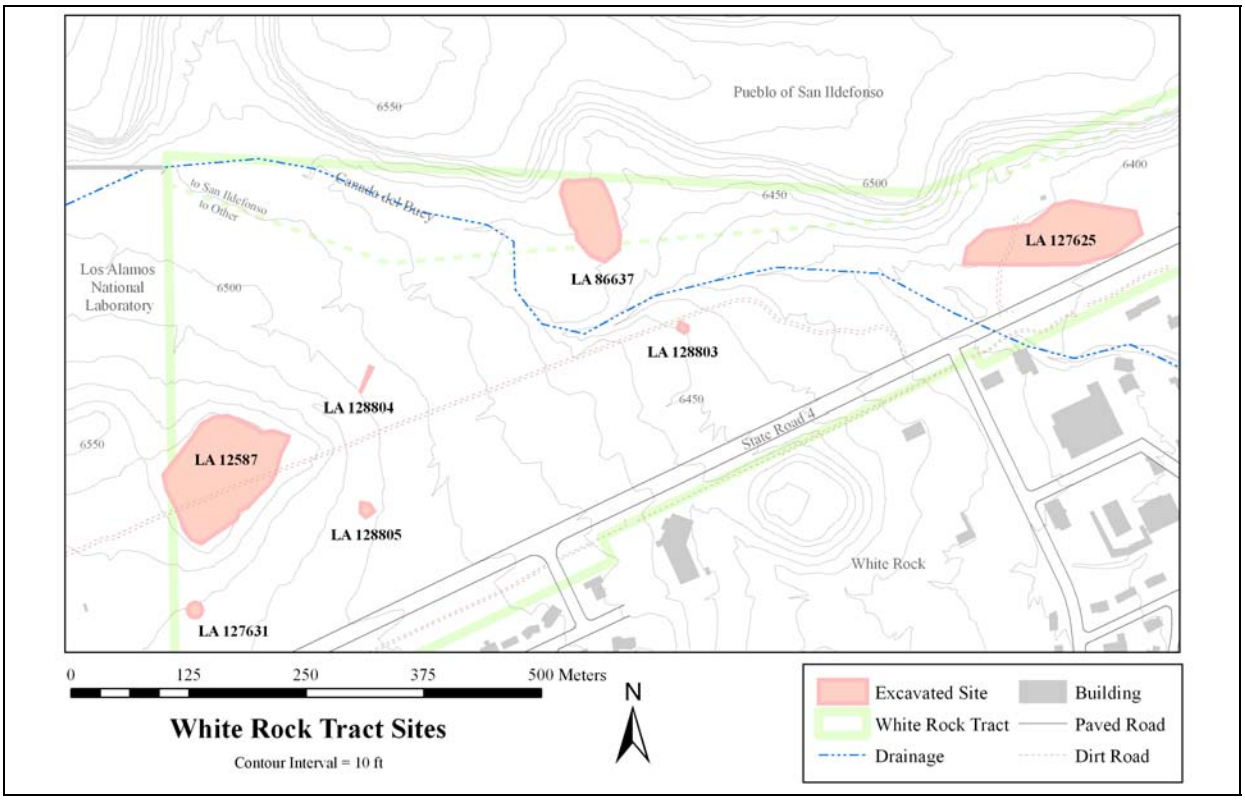


Figure 13.1. Distribution of sites within the White Rock Tract.

LA 128803 (grid garden) is situated on a slight east-trending slope and LA 86637 (artifact scatter) is situated at the southern end of a small ridge located in the central area of the tract. LA 127625 is a very light artifact scatter located in the partially disturbed area of the electrical substation at the eastern end of the tract.

Table 13.2. White Rock Tract ceramic artifact type by vessel form.

Artifact Type	Vessel Form			
	Bowl	Jar	Undetermined	Total
Undetermined	17	3	2	22
Santa Fe Black-on-white	8	0	0	8
Undetermined Biscuitware	4	5	0	9
Biscuit A (Abiquiu Black-on-gray)	7	0	0	7
Biscuit B-C body	18	0	0	18
Sankawi Black-on-cream	0	2	0	2
Plain body	0	4	0	4
Indented corrugated	0	5	4	9
Smeared-indented corrugated	0	99	0	99
Polished gray	0	1	0	1
Potsuwii incised	0	1	0	1
Red glazeware	2	2	0	4

Artifact Type	Vessel Form			
	Bowl	**Jar**	**Undetermined**	**Total**
Yellow glazeware	1	3	0	4
Unslipped glazeware	1	1	0	2
Polychrome glazeware	1	1	0	2
Total	**59**	**127**	**6**	**192**

Table 13.3. White Rock Tract lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	**Vesicular basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Silicified wood**	**Quartz**	**Sandstone**	**Total**
Cores	Core	2	0	0	0	0	0	0	2	1	3	0	1	0	9
	Subtotal	2	0	0	0	0	0	0	2	1	3	0	1	0	9
Debitage	Angular debris	3	0	0	0	0	0	3	17	0	3	0	0	0	26
	Core flake	38	0	1	4	0	0	72	93	2	3	2	0	0	215
	Biface flake	3	0	0	0	0	0	53	5	0	0	0	0	0	61
	Core trimming flake	0	0	0	0	0	0	2	1	0	0	0	0	0	3
	Microdebitage	0	0	0	0	0	0	3	2	0	0	0	0	0	5
	Undetermined flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	44	0	1	4	0	0	134	118	2	6	2	0	0	311
Retouched Tools	Retouched piece	0	0	0	0	0	0	1	8	0	2	0	0	0	11
	Notch	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Biface	0	0	0	0	0	0	3	0	0	0	0	0	0	3
	Endscraper	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Perforator	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	Perforator/notch	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	5	12	0	2	0	0	0	19
Ground Stone	One-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	1	2
	Undetermined mano fragment	0	0	0	0	2	0	0	0	0	0	0	0	6	8
	Basin metate	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Undetermined metate fragment	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Undetermined ground stone	1	0	0	3	2	0	0	0	0	0	0	0	0	6
	Subtotal	1	0	0	3	5	0	0	0	0	0	0	0	9	18
Total		47	0	1	7	5	0	139	132	2	8	2	1	9	353

Airport Tract

The Airport Tract is located near the eastern end of the mesa that is situated between Pueblo and DP Canyons to the immediate east of the Los Alamos town site. The tract ranges in elevation from 2153 to 2196 m (7060 to 7200 ft) and includes about 82 ha (205 ac). The tract includes land along both sides of State Road 502, which serves as the main entrance to the community of Los Alamos. The northeastern portion of the tract has been disturbed by construction of the Los Alamos airport, and the construction of State Road 502, parking lots, a runway, and buildings have disturbed about 40 percent of the tract. The remaining undisturbed areas of the tract are covered with vegetation associated with a piñon-juniper woodland, with lesser amounts of ponderosa pine forest.

All the archaeological sites are situated at the eastern end of the Airport Tract. LA 86534 (roomblock), LA 135290 (roomblock), and LA 141505 (fieldhouse) are located along the north side of State Road 502 (Figure 13.2), while LA 86533 (scatter) and LA 139418 (grid garden) are located along the south side of the road. LA 86534 is in the Airport-East Tract (A-3), LA 135290 and LA 141505 are in the Airport-Central Tract (A-7), and LA 86533 and LA 139418 are in the Airport-South Tract (A-5-1).

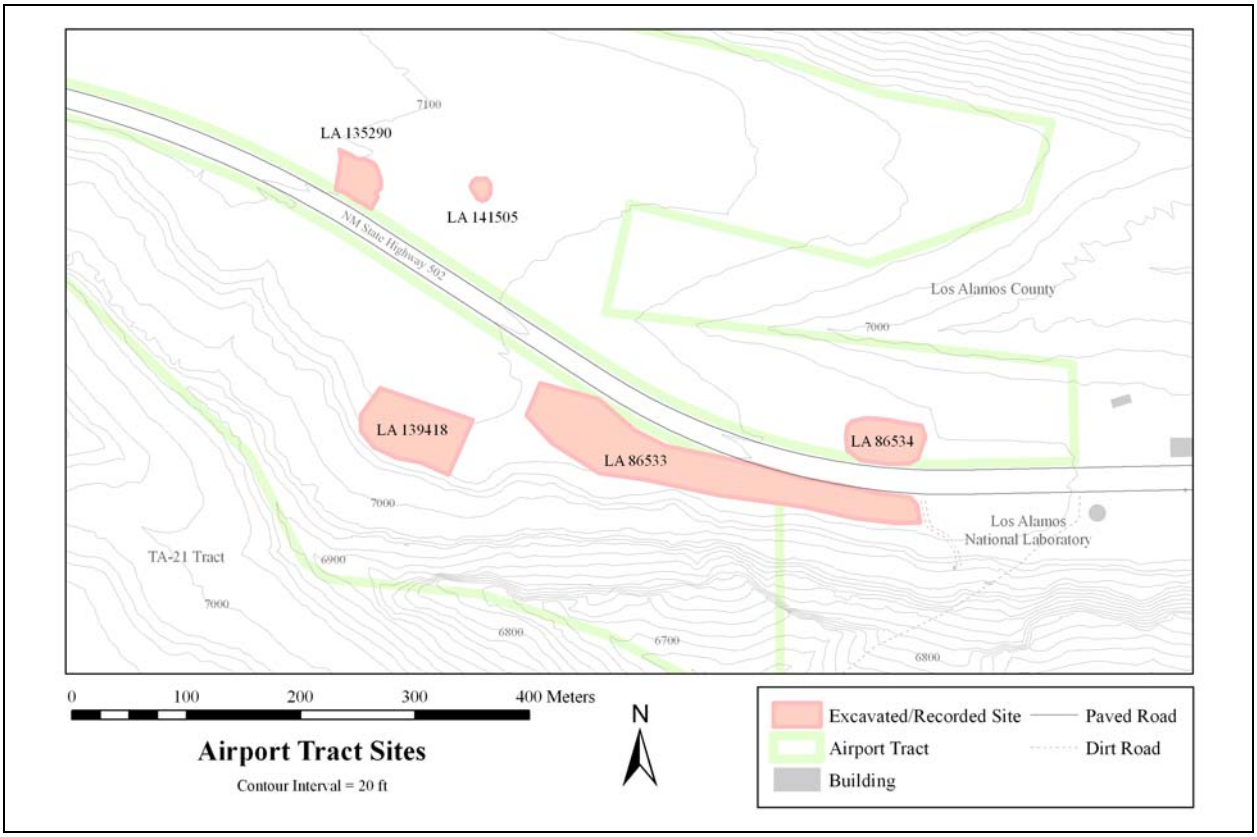


Figure 13.2. Distribution of sites within the Airport Tract.

Rendija Canyon Tract

The Rendija Canyon Tract (A-14) contains portions of Rendija and Cabra Canyons. Barranca Mesa forms the southern boundary and Guaje Mountain forms the northern boundary of Rendija Canyon. The tract is divided into canyon bottom along most of its southern section and mesa top in most of its northeastern section. Cabra Canyon is a tributary to Rendija Canyon at the northwestern end of the tract. The Rendija Canyon creek flows towards the east eventually connecting with Guaje Canyon. The tract contains about 364 ha (910 ac) that range in elevation from 2293 to 2426 m (6880 to 7280 ft). Approximately 8 ha (20 ac) of the tract have been developed by the Los Alamos Sportsman's Club. Off-road vehicle recreational activities have also disturbed a small portion of the tract on the northeastern mesa top. The canyon bottoms are primarily covered with ponderosa pine forest and the mesa top with piñon-juniper woodland.

The archaeological sites in Rendija Canyon are distributed between lowland (canyon bottom) and upland (mesa top) areas. Eleven sites are located within Rendija Canyon and three within nearby Cabra Canyon (Figure 13.3).

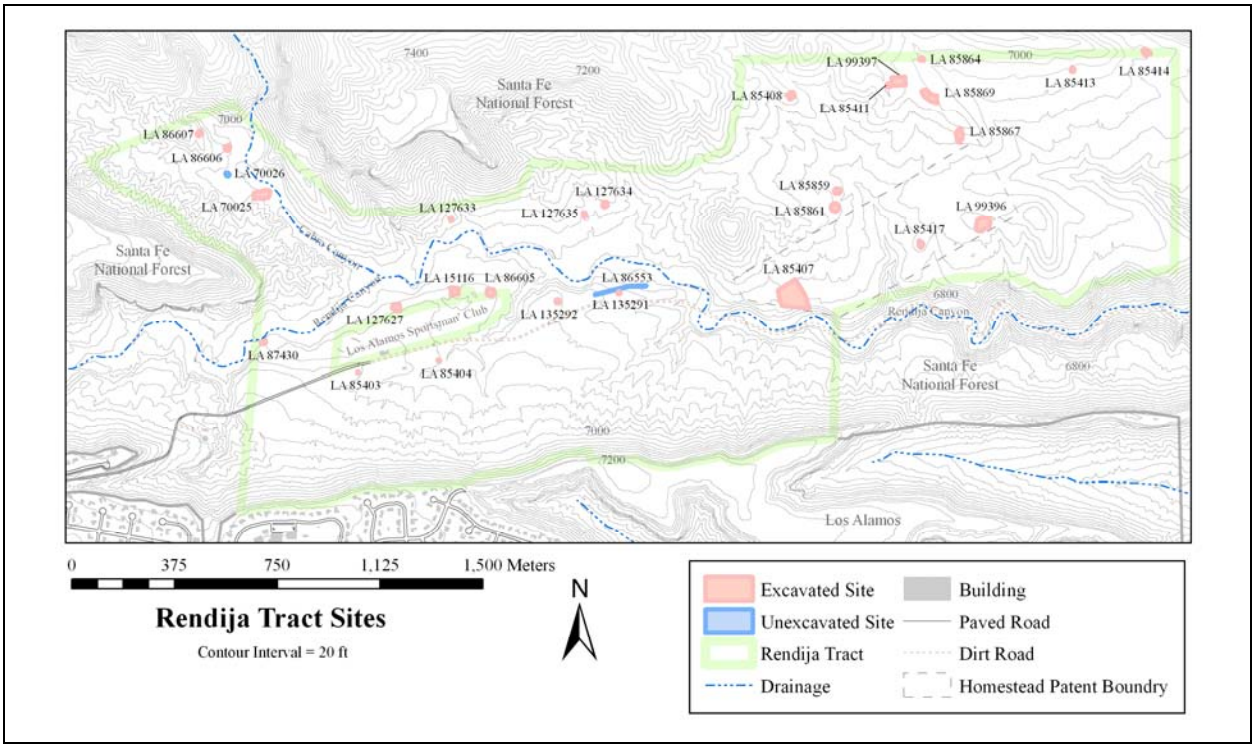


Figure 13.3. Distribution of sites within the Rendija Canyon Tract.

The remaining 13 sites are located on the mesa top in the northeastern section of the tract. The lowland sites consist of fieldhouses and a single isolated storage feature; whereas, the upland sites consist of fieldhouses, lithic scatters, Jicarilla Apache tipi rings, and the Serna Homestead site.

TA-74 and White Rock Y Tracts

The TA-74 (A-18-a) and White Rock Y (C-2) tracts are situated to the east of the Airport Tract. TA-74 contains 1100 ha (2715 ac) and the White Rock Y Tract contains 210 ha (540 ac). Together they bisect cross sections of Bayo and Barrancas Canyon, Pueblo Canyon, and Los Alamos Canyon from north to south. The area is covered with piñon-juniper woodland and contains stands of ponderosa pine. Elevations in the tracts range from 2013 to 2333 m (6040 to 7000 ft). Unlike the other tracts, the TA-74 and White Rock Y Tracts were not proposed for development by Los Alamos County. Instead, portions of the area were transferred to San Ildefonso Pueblo for historic preservation (including Otowi) and to Los Alamos County for open space. A total of 13 sites were tested to determine their eligibility for inclusion to the New Mexico State Register of Cultural Properties (Figure 13.4). More information on the preservation of these sites is provided in Masse et al. (Chapter 73, Volume 3).

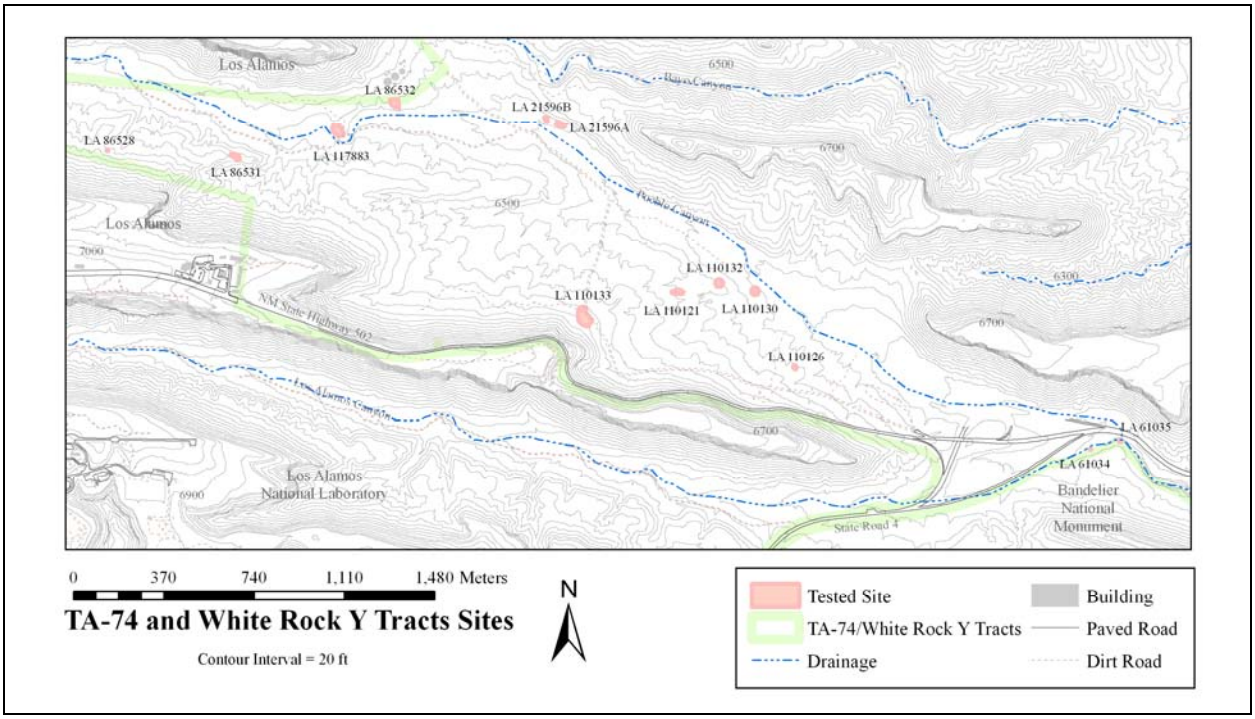


Figure 13.4. Distribution of sites within the TA-74 and White Rock Y Tracts.

PROJECT STAFF

The project would not have been completed without the hard work and commitment of its staff. Fifty individuals worked during the four-year excavation project from 2002 to 2005 (Figure 13.5; 2005 crew) and we want to thank all of them:

Project Director: Bradley Vierra

Crew Chiefs and Laboratory Directors: Sandi Copeland, Michael Dilley, Brian Harmon, Steve Hoagland, Michael Kennedy, Greg Lockard, Janet McVickar, Jennifer Nisengard, and Kari Schmidt.

Crew Members: Joseph (Woody) Aguilar, Bonnie Bagley, David Barsanti, Jennifer Boyd, Maggie Dew, Hannah Dodd (Lockard), Sam Duwe, Amy Fredericks, Truman Futch, Joaquin Gallegos, Kari Garcia, Kevin Hanselka, Mark Hungerford, Mia Jonsson, Bettina Kuru'es, Aaron Lenihan, Alan Madsen, Gerald Martinez, Bruce Masse, Ellen McGehee, Alysia McLain, Jay Nash, Karen Overton, Todd Pitezel, Rhonda Robinson, Sue Ruth, Marwin Shendo, Sherrie Sherwood, Joanne Tactikos, Chris Wenke, Jeannine Wood, Scott Worman, Marjorie Wright, and John Zarht.

San Ildefonso Pueblo Tribal Monitors: Aaron Gonzales and Timothy Martinez.

Santa Clara Pueblo Tribal Monitors: Paul Baca, Michael Chavarria, and Jeremy Yepa.

Figure 13.5. 2005 Cultural Resources Team.

CHAPTER 14
WHITE ROCK TRACT (A-19): LA 12587

Brian C. Harmon and Janet L. McVickar

INTRODUCTION AND SITE SETTING

LA 12587 is a multi-component Puebloan and Archaic site. The earliest occupation is represented by a lithic artifact scatter dating to the Late Archaic period; this component is described by Schmidt in Chapter 15 of this volume. The components discussed in this chapter consist of a seven-room pueblo and associated midden dating to the Late Coalition period, a partially completed 13-room pueblo dating to the Late Coalition or Early Classic period, and multiple surface agricultural features, including a grid garden and a one-room structure that probably date to the Early or Middle Classic period.

LA 12587 is situated on a wide ridge at the east end of Mesita del Buey at an elevation of 1979 m (6500 ft). The ground gently slopes away from the site to the north, south, and east. To the west the mesa ridge slowly rises to the Classic period pueblo of Tsirege (LA 170); which is 760 m from LA 12587. Cañada del Buey and the steep, 70-m-tall cliff face that defines its northern boundary lie 300 m to the north. Four hundred meters to the south is the wide floodplain of Pajarito Canyon. The site is located in piñon-juniper woodland and the overstory is an equal mix of these two species. The understory consists of scattered sagebrush, prickly pear cactus, and grama grasses.

A variety of soil types occur in the vicinity of LA 12587 and include Hackroy sandy loam, Penistaja sandy loam, Prieta silt loam, Servilleta loam, and Totavi gravelly loamy sand. Outcrops of tuff and basalt are also present (Nyhan et al. 1978). Outside of the colluvial mound surrounding the roomblocks the local stratigraphy consists of up to 17 cm of A and Bw horizons. Discontinuous remnants of an eroded Pleistocene soil (a Btk horizon) up to 16 cm thick underlay the Bw horizon. The Btk horizon is underlain by bedrock consisting of the Tshirege Member of the Bandelier Tuff.

A powerline and a dirt access road traverse the southern edge of the Puebloan components, separating them from the Archaic artifact scatter.

SITE DESCRIPTION

LA 12587 consists of two roomblocks, a midden, a one-room structure, and agricultural features (Figure 14.1). The smaller, earlier roomblock (Roomblock 1) consists of seven rooms (1, 2, 4/5, 6, 7, 8, and 9): three habitation rooms in the front (east) of the roomblock, three storage rooms in the back (west), and a fourth, larger back room contiguous to the south of the storage rooms. All the rooms contain plaster floors in variable states of preservation and each front room contains a hearth.

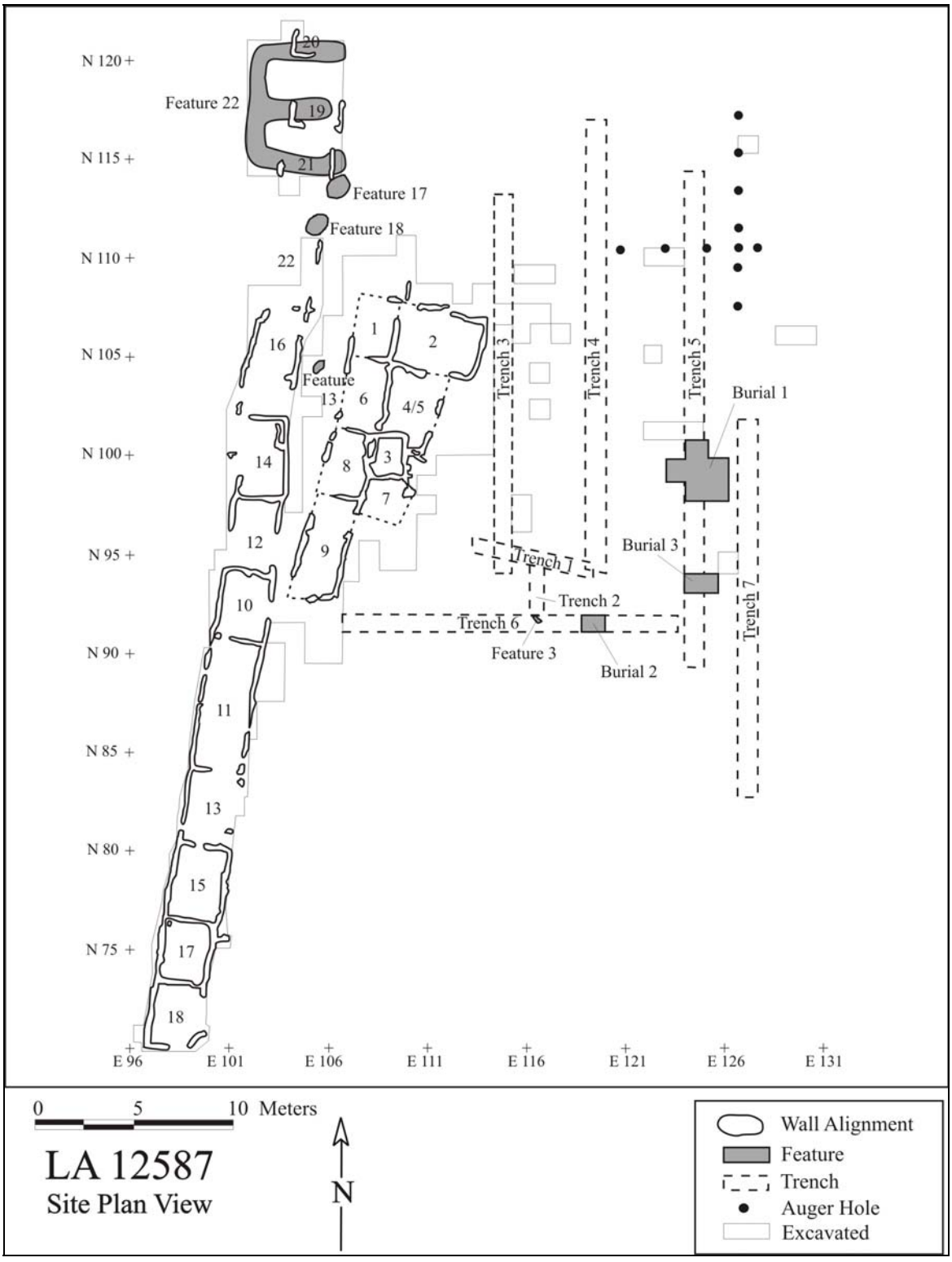


Figure 14.1. Final map of LA 12587, including excavated areas.

The roomblock measures 16 by 7 m and is oriented northeast-southwest. Superimposed over the roomblock is a one-room structure (Room 3, initially recorded as Roomblock 2) oriented north-

south. An extensive midden is present to the east of Roomblock 1. Surface artifacts cover a 45- by 30-m area. Three burials were found in the midden.

Roomblock 3 is a linear, one-room-wide roomblock oriented roughly northeast-southwest and located immediately west of Roomblock 1. Thirteen rooms were identified in the 3- by 50-m roomblock. Most rooms consist only of a basal course of masonry. Very little wallfall was found, although a few rooms contained enough masonry to indicate that at least partial walls were once present. East-west-oriented rock berms overlay the three northernmost rooms of Roomblock 3. The berms are probably agricultural features and may be associated with Room 3. Additional alignments are present to the west and northeast of the roomblock complex but were not excavated.

FIELD METHODS

Work at LA 12587 began on June 5, 2002, and ended on March 6, 2003. Over the span of the field season two crews were employed. The summer crew consisted of Janet McVickar (crew chief), Brian Harmon (assistant crew chief), Joseph Aguilar, Sandi Copeland, Amy Fredericks, John (Kevin) Hanselka, Jennifer Nisengard, and Susan Ruth. Aaron Gonzales was the San Ildefonso tribal monitor. Bonnie Bagley, David Barsanti, Bettina Kuru'es, and F. Scott Worman worked at the site intermittently. The fall/winter crew consisted of Janet McVickar (crew chief), Brian Harmon (assistant crew chief), Sandi Copeland, Truman Futch, Mark Hungerford, Gregory Lockard, Jay Nash, Jennifer Nisengard, Karen Overton, and John Zahrt. Timothy Martinez was the San Ildefonso tribal monitor. Late in the season Michael Dilley, Steven Hoagland, Mia Jonsson, Michael Kennedy, W. Bruce Masse, Kari Schmidt, and Bradley Vierra assisted in the excavations. Leo Martinez operated the bobcat during surface scraping and trenching operations.

Both before, and during the course of excavation, geomorphic and ground-penetrating radar (GPR) evaluations were conducted. The project geomorphologists assessed the site's geomorphic context and integrity by digging shovel test holes around the site and by visits to the site during excavation (Drakos and Reneau, Volume 3). Five GPR surveys were conducted at the site to identify possible buried features and structures (Nisengard et al., Volume 3). These surveys suggested several possible locations for subsurface structures to the east of Roomblock 1. Excavation in these areas did not uncover any structures, and only undulations in the bedrock were found.

The 1- by 1-m grid system that was laid out on true north during the initial GPR survey was also used during excavation to facilitate data corroboration. The main site datum was designated as 100N/100E with an elevation of 10 m. Using the established grid, a 425-m^2 area was established over Roomblock 1 and 100 percent of the surface artifacts were collected by grid. A second surface collection area of 116 m^2 was located 16 m to the south. Collections were made in this area as the artifact screens were to be set up here.

After the surface collection was completed the site was divided into seven areas on the basis of specific surface manifestations (Figure 14.2)

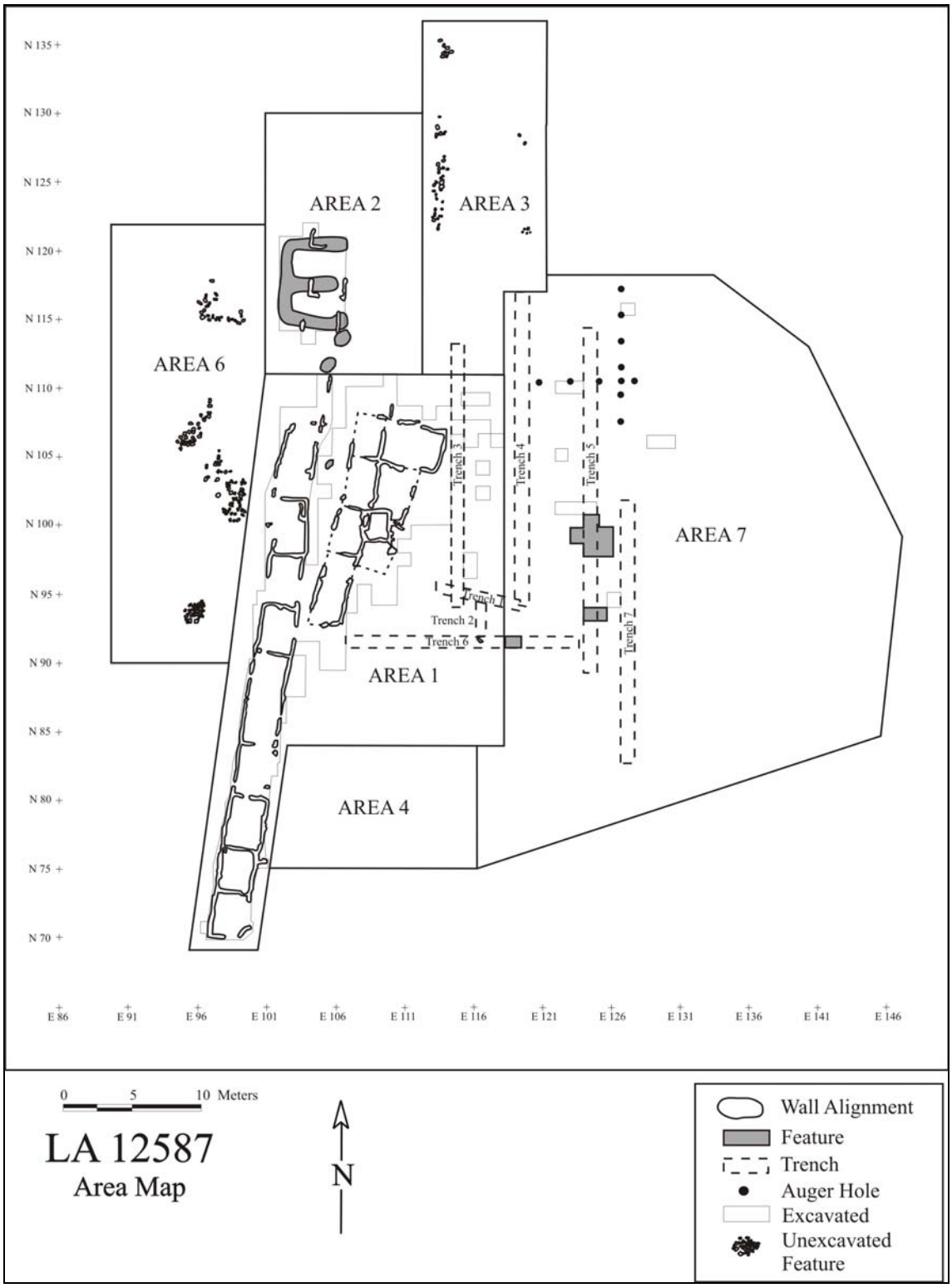


Figure 14.2. Area map of LA 12587, excluding Area 8.

Area 1 was first defined to include only Roomblock 1. It was later expanded to include Area 5 and Roomblock 3. Area 2, which is located immediately north of Area 1, includes several

possible agricultural features. Area 3, which is east of Area 2, includes poorly defined alignments that may be additional structures or features. The southern surface collection area was defined as Area 4. Area 5 was originally established to include the alignments south of Area 1. This area was incorporated into Area 1 when it became evident that the alignments were part of Roomblocks 1 and 3. Area 6 lies west of Area 1 and incorporates alignments west of Roomblocks 1 and 3 thought to be additional structures. Area 7 is the midden. Area 8 is the Late Archaic lithic artifact scatter (see Chapter 15, this volume).

Excavation began by digging 1- by 1-m excavation units along the 109E line to form a north-south trench through Roomblock 1. Units were then excavated east and west of this trench to investigate exposed walls. The poor condition of the north and south walls made it difficult to identify individual rooms. For these reasons room numbers were not assigned until late in the field season.

Mechanical surface scraping south and west of Roomblock 1 resulted in the exposure of Room 9 and verified the suspicion that an additional roomblock (Roomblock 3) was present. In the course of excavation it became apparent that this roomblock was much larger than initially expected. Partial units were dug for the express purpose of exposing wall alignments. Initially this material was screened but subsequently the walls were exposed without screening. Instead of excavating entire room interiors, 1- and 2-m-wide trenches were excavated through the rooms from the east wall to the west wall to provide a representative sample of room fill.

Excavations in the midden (Area 7) were carried out with three goals in mind: to investigate possible alignments detected by the GPR, to determine if/where human burials were present, and to characterize the extent and nature of the midden. Several different excavation techniques were used to achieve these goals: auguring, hand excavation, mechanical surface scrapping, and mechanical trenching.

Possible alignments identified in the midden by the GPR were investigated by two intersecting series of auger holes. Five holes were dug every other meter along the 111N grid line, and six holes were dug every other meter along the 127E gridline. All 11 holes were dug to bedrock. No evidence for room fill or architecture was encountered during this process.

Hand excavation was used to characterize the nature of the midden. This was achieved by placing a series of 1- by 1-m units from north to south. These units are 116N/127E, 110N/122E, 110N/123E, 106N/129E, 106N/130E, 105N/122E, 101N/122E, 101N/124E, and 95N/126E. Units excavated east of Roomblock 1 that may be in the midden, but were not specifically part of the Area 7 investigations are 109N/115, 109N/116E, 107N/115E, 107N/116E, 106N/115E, 106N/117E, 104N/116E, 102N/116E, 98N/115E, and 97N/115E. A profile was drawn in units 101N/122 to 102N/124E.

Possible alignments detected by the GPR immediately southeast of Roomblock 1 were investigated by mechanical surface scraping and trenching (Trenches 1 and 2). The trenches were placed in an area thought to have the highest potential for a kiva. No evidence for room fill or architecture was encountered during this process.

Five additional trenches were excavated to ensure that Area 7 was fully investigated and that any features or burials outside the roomblocks would be encountered. Three north-south trenches (Trenches 3, 4, and 5) were placed 5 m apart. Trench 7, the farthest east and the last to be dug, was placed only 3 m from Trench 5. Trench 6 ran east-west and was placed to the south of Trenches 3 and 4. Fill from the trenches was not screened, although grab samples of cultural materials were collected in 3-m increments (excluding Trenches 1 and 2). Table 14.1 gives the locations and dimensions of the trenches. No structural features were encountered during trenching but three human burials were found. These were subsequently excavated by hand. The trenching process and excavation of the burials completed the work in Area 7.

Table 14.1. Backhoe trenches.

Trench #	Coordinates		Dimensions	
	From	To	Length (m)	Width (m)
1	95.8N/113E	95.1N/119.2E	6.6	0.80
2	92.6N/117.2E	95.4N/117.2E	2.6	0.80
3	117N/114E	97N/114E	20	0.80
4	116N/119E	98N/119E	18	0.80
5	116N/124E	98N/124E	18	0.80
6	92N/106E	92N/124E	18	0.80
7	102N/127E	83N/127E	19	0.80

Time constraints prevented the excavation of all the features present in Area 3 and Area 6, but two circular rock features (Features 17 and 18) in Area 2 were drawn in plan view, photographed, partially excavated, and sampled for pollen. Feature 18 was also drawn in profile.

SITE STRATIGRAPHY

This section is divided into two parts. The first part summarizes the geomorphic stratigraphy of LA 12587. This part is excerpted with minor modifications from Drakos and Reneau (see Volume 3). The second part summarizes the stratigraphic sequence used during excavation. For detailed discussions of the stratigraphy of specific areas or of specific strata, see the relevant parts of the Site Excavation section below.

Stratigraphy Derived from Geomorphological Examination (Paul Drakos and Steve Reneau)

The discontinuous Pleistocene soil underlying LA 12587 consists of an eroded Btk horizon (Bt horizon with Stage I carbonate). Pleistocene soil thickness in the site vicinity ranges from 0 to 16 cm. The remnant Pleistocene soil is inferred to be 100 to 200 ka or older. The Pleistocene soil at LA 12587 is a polygenetic soil in which the Bt horizon formed during the Pleistocene, and the Stage I carbonate formed later, probably during the Holocene. Evidence for the polygenetic nature of Pleistocene soils in the White Rock Tract is shown by several profiles where peds in Btk horizons exhibit translocated clay in ped interiors but are coated with carbonate.

Near the roomblocks, the Bt horizon is overlain by Bw horizons formed in eolian or reworked eolian sediment plus colluvium derived in part from Roomblock 1. In areas where the roomblocks are located close to one another, the Roomblock 3 walls are built on top of a lower Bwk or Bw horizon (typically a Bw2), which is overlain by a Bwk1 or Bw1 horizon. Upper Bw horizons are overlain by A horizons also formed in eolian or reworked eolian sediment plus colluvium derived in part from Roomblock 1. Total thickness of post-occupational soils in the vicinity of the roomblocks ranges from 10 to 54 cm. Greater sediment thickness corresponds in general to the roomblock locations, except for a mound of relatively thick sediment located immediately east and north of Roomblock 1. Outside of the colluvial mound surrounding the roomblocks, post-occupational soil thickness ranges from 0 cm on stripped bedrock surfaces east, north, and west of the roomblocks to 17 cm. The 17-cm A-Bw profile overlies a stripped Btk horizon and likely represents eolian deposition that occurred both during the Late Coalition period and that post-dates the Puebloan occupation (see below).

Roomblock 1 and Midden Deposits

Eolian or reworked eolian sediment is interpreted to largely comprise the upper soil that partially buries blocks of tuff derived from wall collapses. The upper soil also includes clasts of tuff derived from the roomblocks and a variety of ceramic and lithic artifacts, and is inferred to also contain the dissolved remnants of mortar and roofing material. The different soil components are well mixed, which indicates extensive bioturbation of the post-occupational soil by burrowing and other processes. Roomblock 1 is typically buried by 30 to 40 cm of young material that overlies the former floors and the underlying Btk horizon and Bandelier Tuff. The upper soil layers that post-date the occupation are anomalous in that Bw or Bwk horizons typically strongly effervesce, indicating the presence of $CaCO_3$; whereas, other young soils nearby do not effervesce. The reason for this is not certain. One hypothesis is that $CaCO_3$ was present in the mortar used in wall construction and that this material is weathered out of the mortar and concentrated in the post-occupation soil. A soil profile with post-occupational A-Bw horizons described in sheet trash deposits approximately 17 m east of Roomblock 1 also strongly effervesce, indicating that sediments derived from the roomblock contain significant $CaCO_3$. Sediments derived from the roomblock have been reworked east and north of the ruin, forming a colluvial apron at least 30 cm thick extending approximately 21 m east and 16 m north of the center of the roomblock.

Roomblock 3

Roomblock 3 is an Ancestral Puebloan roomblock that, based on stratigraphic relationships, is younger than Roomblock 1. In some areas, wall blocks are set on top of a lower (Bw2 or Bwk2) horizon that contains rubble and artifacts inferred to be derived from Roomblock 1. In other areas, Roomblock 3 walls are built either directly on Bandelier Tuff or on the remnant stripped Pleistocene soil. Roomblock 3 is typically buried by 20 to 30 cm of young soil that overlies the wall foundations, underlying soil horizons, and Bandelier Tuff. Post-occupation soils in Roomblock 3 also contain $CaCO_3$. There is a much smaller colluvial apron emanating from

Roomblock 3 (the 30-cm-thick deposit extends approximately 4 m east of Roomblock 3) than is associated with Roomblock 1, suggesting that Roomblock 3 walls were not built as high as were the walls forming Roomblock 1. These data support the hypothesis that Roomblock 3 was not completed.

Feature 22

A series of five soil descriptions were completed in the vicinity of Feature 22. The rock alignments of Feature 22 were constructed on top of a post-occupational Bw horizon 16 to 23 cm thick, and lie within, or are partly buried, by an A or AC horizon 9 to 15 cm thick. Shaped blocks, inferred to be part of the Roomblock 3 construction, occur within the Bw horizon and below the rock alignments.

Two profiles (12587-1 and 12587-5) were described outside and three profiles (12587-2, 12587-3, and 12587-4) were described inside the rock alignments. No textural differences were observed between profiles described inside versus outside the rock alignments. Soils described inside the rock alignments have a greater thickness (average 30 cm versus average 22 cm) than do the soils described immediately outside the rock alignments, due to generally thicker A horizons inside the rock alignments than outside the alignments. This is observed most clearly in comparing profiles 12587-2 and 12587-1, where the A or AC horizon thins from 15 cm inside to 8 cm outside the northern rock alignment. These observations indicate that the rock alignments are either acting to preferentially trap eolian or slopewash sediment, or that dirt was placed inside the alignments. The placement of dirt inside the rock alignments is suggested by the greater A horizon thickness and the absence of textural differences inside versus outside the rock alignments, and by the orientation of the alignments oblique to a slope with a relatively shallow gradient.

The presence of a 16- to 23-cm-thick Bw horizon formed in sediment composed predominantly of eolian or reworked eolian sediment underlying the agricultural rock alignments is evidence for significant eolian deposition during the Coalition (likely Late Coalition) period. Roomblock 1 was built on a stripped bedrock surface with remnant Pleistocene soils; therefore, deposition of the sediment underlying the possible agricultural rock alignments occurred subsequent to construction of Roomblock 1. Whereas eroding roomblocks provided a source for coarse colluvium, the predominantly fine-grained nature of upper Bw horizons indicates an eolian source for most of the sediment burying Roomblock 3 features. Additionally, thinner (9 to 15 cm) sediment partially buries Feature 22, indicating smaller inputs of eolian sediment or reworked eolian sediment following the last occupation. This sediment deposition could date to the latest Coalition period, the Classic period, or the Historic period.

Stratigraphic Sequence used During Excavation

Table 14.2 summarizes all the excavated strata at LA 12587. During the early stages of excavation a profusion of stratum numbers were assigned. It was subsequently determined that many of these strata represented a single depositional unit. As a result, many strata were

combined and new stratum numbers were assigned. The numbers in the New Stratum Number are used throughout the text. The Old Stratum Number is included solely as a concordance to be used by researchers examining the original field notes, bags, and other provenience information.

Stratum 1 covers the entire site. It is composed of fine-grained, loose, unconsolidated brown sandy loam. The loam contains varying densities of artifacts, sparse vegetation, tuff blocks, fragmented tuff gravels, and, in some locations, tree duff. Below Stratum 1 the stratigraphy of each component varies and so will be described individually.

Roomblock 1

Most of the fill of Roomblock 1 consists of Stratum 10. With very few exceptions, wallfall and rooffall cannot be distinguished. The sediment of Stratum 10 is moderately compact brown sandy loam that is fine-grained with occasional tuff gravel inclusions. Stratum 10 contains wallfall composed of construction blocks, chinking stones, and chunks of adobe mortar. Artifacts, burned maize kernels and cob fragments, and bits of charcoal are also common, as are pieces of naturally derived tuff. Occasional lenses and pockets of charcoal staining are present in some rooms. Disturbance from roots, rodents, and insects is prevalent throughout this stratum.

Below Stratum 10, a shallow stratum was occasionally encountered within the rooms immediately above the floors (Stratum 70). This stratum is a loosely consolidated sandy loam that is 2 to 5 cm in depth and sometimes contains artifacts. Stratum 70 is interpreted as post-occupational fill that was deposited before the walls collapsed.

The uppermost floor surface across each room was given a stratum number (Strata 121, 122, 124, 126, 127, 128, and 129). Individual lower floor surfaces, floor matrices, and feature strata were also given stratum numbers. Because of the number and complexity of these strata they are not described here: full descriptions can be found in the Site Excavation section below.

Where Roomblock 1 was not built directly on bedrock it is underlain by either a Bw horizon (Stratum 170) or a Pleistocene-aged Btk horizon (Stratum 175). Because of extensive bioturbation, artifacts and charcoal are present in Stratum 175. Bedrock is the devitrified tuff unit (Qbt-1vc) of the Tshirege Member of the Bandelier Tuff. Stratum 200 was assigned to the Bw deposits immediately outside of the roomblock and below Stratum 1.

Midden

In the midden area, Stratum 1 is underlain by mixed A and B horizons, a Bw horizon, and a Bwk horizon. All of these horizons were assigned a single stratum (Stratum 60). Below Stratum 60, Stratum 175 was occasionally present. See the description of Area 7 in the Site Excavation section below for more details.

Table 14.2. Stratigraphic sequence used during excavation of LA 12587.

Old Stratum Number	New Stratum Number	Provenience	Thickness (cm)	Color	Texture	Description/ Comment
0	0	All Areas	0	10YR 4/3	sandy loam	Surface
1	1	All Areas	1-18	10YR 4/3	sandy loam	Unconsolidated surface soil
2-14, 17-19, 21-23, 25-26, 28-29, 33, 35-36, 41-42, 44, 47-52, 54, 59, 62, 64-65,68-70, 72-75, 78-81, 86-87, 89, 92-93, 96, 98, 100-101, 104, 105 109-111, 113, 115, 116, 118-119, 121, 127, 200	10	Roomblock 1	16-48	10YR 4.5/3	sandy loam	Roomblock 1, wallfall, and post-occupational fill
14	14	Room 4/5	9	7.5YR 5/3	sandy loam	Sediment from wall alignment in Room 4/5 Part of old Stratum 14 became new Stratum 10; the rest retained its old stratum number
83-84, 91, 99	20	Room 3	14-25	10YR 4/4	sandy loam	Room 3, fill
	21	Room 3	N/A	10YR 4/4	sandy loam	Room 3, wall fill
	60	Area 7	10-44	10YR 4/4	sandy loam	Midden, fill
38	70	Roomblock 1	2-11	10YR 4/3	sandy loam	Roomblock 1, fill below wallfall and above floor
	121	Room 1	0	10YR	silty clay	Room 1, floor surface

Old Stratum Number	New Stratum Number	Provenience	Thickness (cm)	Color	Texture	Description/ Comment
				7/1		
47	122	Room 2	0	10YR 7/1	silty clay	Room 2, floor surface Most material from old Stratum 47 became part of New Stratum 10; however, a few artifacts/samples from the floor became part of new Stratum 122
48	124	Room 4/5	0	Gley 2 7/10B	silty clay	Room 4/5, floor surface Most material from Old Stratum 48 became part of New Stratum 10; however, one artifact from the floor became part of New Stratum 124
	126	Room 6	0	10YR 6.5/1	silty clay	Room 6, floor surface
	127	Room 7	0	10YR 7/1	silty clay	Room 7, floor surface
	128	Room 8	0	10YR 7/1	silty clay	Room 8, floor surface
	129	Room 9	0	10YR 6/3	silty clay	Room 9, floor surface
34, 171	170	Roomblock 1	1-20	10YR 4/3.5	sandy loam	Roomblock 1, sub-floor soil

Old Stratum Number	New Stratum Number	Provenience	Thickness (cm)	Color	Texture	Description/ Comment
						Stratum 171 is not an old Stratum number, but Stratum 171 is the same as Stratum 170
	175	All Areas	2-12	7.5YR 4/5	sandy clay	Btk horizon
	200	Area 1	4-24	10YR 4/4	sandy loam	Roomblock 1, exterior
Sometimes 10	201	Roomblock 3	10-41	8.75YR 4/4	sandy loam	Roomblock 3, fill to base of walls
	202	Area 1	4-24	10YR 4/4	sandy loam	Roomblock 3 exterior
	203	Room 10	0.1-2	5YR 4/3	clay loam	Room 10, possible use surface
	204	Room 11	0.1-1	10YR 3/3	sandy clay loam	Room 11, possible use surface
	205	Room 11	9-12	8.75YR 3/3.5	sandy clay loam	Room 11 fill, ashy lens
Sometimes 10 or 201	208	Roomblock 3	3-35	7.5YR 4/3.5	sandy clay loam	Roomblock 3, soil below base of walls to bedrock
89	210	Room 1	1-3	7.5YR 4/3	silt loam/ash	Room 1, Feature 2, fill
	213	Roomblock 1	10-20	7.5YR 4/4	sandy loam	Feature 5, fill
	250	Room 4/5	15	7.5YR 4/4	silt loam	Room 4/5, Feature 1, upper fill

Old Stratum Number	New Stratum Number	Provenience	Thickness (cm)	Color	Texture	Description/ Comment
	251	Room 4/5	1	7.5 YR 4/2	ash	Room 4/5, Feature 1, lower fill
	252	Room 4/5	4	Gley 2 7/10B	silty clay	Room 4/5, Floor 2, matrix
	253	Room 4/5	3	7.5YR 5/4	clay	Room 4/5, Floor 1, matrix
	254	Room 4/5	N/A	N/A	N/A	Room 4/5, stones below Feature 1
	255	Room 4/5	3	Gley 2 7/10B	silty clay	Room 4/5, Floor 3, matrix
	256	Room 4/5	7-8	10YR 4/4	sandy loam	Room 4/5, Feature 16, fill
	260	Room 2	11-20	7.5YR 4/3	silt loam and ash	Room 2, Feature 4, upper fill
	261	Room 2	1-9	7.5YR 4/2	ash	Room 2, Feature 4, lower fill
	262	Room 2	6-11	7.5YR 4/4	sandy loam	Room 2, Feature 10, fill
	263	Room 2	3-6	7.5YR 4/4	sandy loam	Room 2, Feature 11, fill
	264	Room 2	1-2	7.5YR 7/1	hardened silt/ash	Room 2, Floor 1A, matrix
	265	Room 2	2	7.5YR 5/1	hardened silt/ash	Room 2, Floor 2A, matrix
	266	Room 2	1-2	7.5YR 7/1	hardened silt/ash	Room 2, Floor 3A, matrix

Old Stratum Number	New Stratum Number	Provenience	Thickness (cm)	Color	Texture	Description/ Comment
	267	Room 2	3-7	7.5YR 7/1	hardened silt/ash	Room 2, Floor 1B, matrix
	268	Room 2	2	7.5YR 7/1	hardened silt/ash	Room 2, Floor 1C, matrix
	269	Room 2	1.5	7.5YR 7/1	hardened silt/ash	Room 2, Floor 2C, matrix
	270	Room 7	4-10	10YR 4.5/3	sandy loam	Room 7, Feature 6, upper fill of hearth
	271	Room 7	7-10	10YR 8/1	consolidated ash	Room 7, Feature 6, lower fill of hearth
	272	Room 7	5-7	10YR 5/3	sandy loam	Room 7, Feature 12, fill
	273	Room 7	0.5-4	10YR 5/3	silty clay	Room 7, Floor 2, matrix
	280	Feature 22	7-15	10YR 4/4	sandy clay loam	Feature 22, fill
	290	Room 6	15	10YR 4/4	sandy loam	Room 6, Feature 7, fill
	300	Room 7	N/A	N/A	plaster/adobe	Room 7, Feature 6, later wall of hearth
	301	Room 7	11	10YR 4/4	sandy loam	Room 7, Feature 6, material between earlier and later hearth walls
	305	Room 4/5	1-3	7.5YR 4/6	sandy clay	Room 4/5, soil below Feature 1
	306	Room 4/5	N/A	N/A	clay	Room 4/5, Feature 1, plaster

Old Stratum Number	New Stratum Number	Provenience	Thickness (cm)	Color	Texture	Description/ Comment
	307	Room 7	23	10YR 4/4	sandy loam	Room 7, Feature 6, fill of ash box
	308	Room 7	5	7.5YR 4/6	ashy sandy loam	Room 7, Feature 6, ashy material below hearth base
	309	Room 7	N/A	N/A	plaster/adobe	Room 7, Feature 6, earlier wall of hearth
	310	Room 18	0	7.5YR 5/3	sandy loam	Room 18, possible use surface
	311	Room 2	18	7.5YR 4/3	silt and ash	Room 2, Feature 20, fill

Note: The average or most common color and soil texture for a given stratum is used. For range of variability see specific proveniences.

Roomblock 3

Four general strata are associated with Roomblock 3. Stratum 1 is underlain by Stratum 201. Stratum 201 is post-occupational fill. It is similar to Stratum 10, although it contains less wallfall and considerably less adobe. Near the surface, Stratum 201 is a sandy to silty loam. Near its base the stratum begins to grade into a sandy clay loam. The base of Stratum 201 was arbitrarily determined to be the base of the walls of Roomblock 3. The underlying Stratum 208 is a Bw horizon, composed in part, of Roomblock 1 colluvium. The lower portions of Stratum 208 are probably the same as Stratum 170. In places Stratum 175 is present. Strata associated with localized deposits (e.g., ash lenses and possible living surfaces) are described in the Site Excavation section below.

Stratum 202 was assigned to the Bw deposits immediately outside of the roomblock and below Stratum 1.

Room 3 and Feature 22

The fill of Room 3 (Stratum 20) was indistinguishable from Stratum 10. It was given a separate stratum number for analytical purposes. No floor was found in Room 3.

Below Stratum 1 the A and Bw horizons of Feature 22 were assigned a single stratum (Stratum 280). Where Feature 22 was underlain by Roomblock 3, Strata 201 and 208 were assigned as appropriate.

SURFACE COLLECTION

Figure 14.3 shows the distribution of ceramic artifacts from the surface-collected areas of the site (including Area 8). The distribution of lithic artifacts and total number of artifacts is essentially the same as the distribution of ceramic artifacts. The highest artifact density is located to the north-northeast of Roomblock 1, which is the northwest corner of the midden. The artifacts in Area 4 and at the northeast end of Area 8 define the southern edge of the midden. In contrast there is a relative paucity of artifacts over Roomblock 1 itself. Figure 14.3, coupled with in-field observations, indicates that the surface distribution of midden artifacts at LA 12587 resembles that seen at other Coalition period roomblocks on the Pajarito Plateau. There is a dense C-shaped scatter of artifacts terminating at the north and south end of the pueblo. The greatest density of artifacts is found 15 to 30 m in front of the pueblo, and there are relatively few artifacts on the pueblo mound (see Harmon and Binzen 2002, Figure 5.2; Schmidt, this volume, Figure 24.10; Vierra, this volume, Figure 25.4).

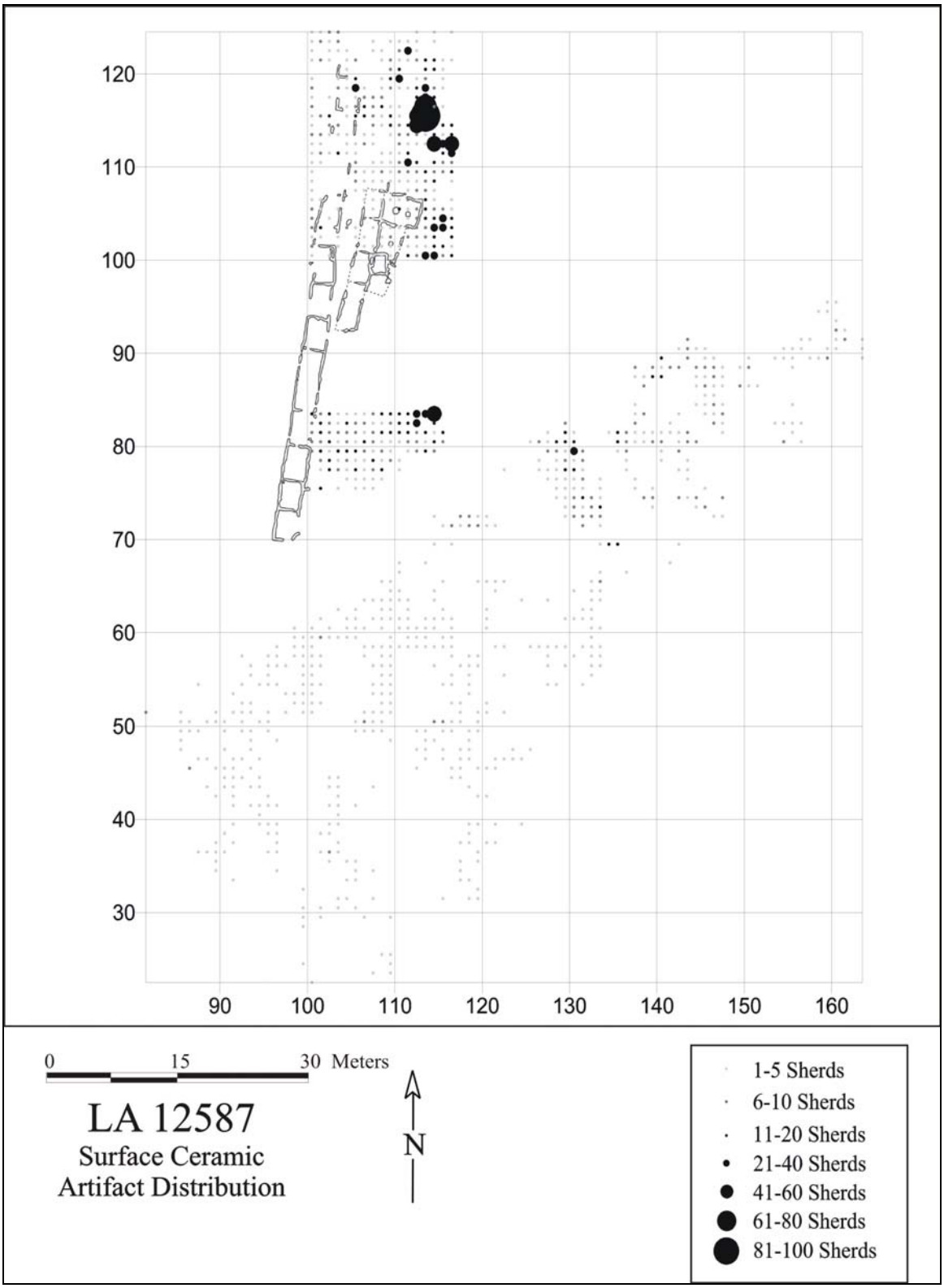


Figure 14.3. Surface distribution of ceramic artifacts (including Area 8).

SITE EXCAVATION

Area 1

Area 1 encompasses Roomblocks 1 and 3 and Room 3.

Roomblock 1

Roomblock 1 consists of two rows of rooms oriented approximately 12° east of true north. The front rooms (Rooms 2, 4/5, and 7) each contain a hearth and postholes and are interpreted as habitation rooms. An ash box and possible deflector in Room 7 may be indicative of ceremonial functions. Three of the back rooms (Rooms 1, 6, and 8) are smaller and each is paired with a front room. They are interpreted as storage rooms. A fourth back room, Room 9, is contiguous to Room 8 on the south side. The function of Room 9 is unclear, although in placement and in its lack of internal features it resembles a storage room. In floor area it resembles the front rooms. Table 14.3 shows the interior dimensions and area for each of the rooms.

Table 14.3. Room dimension summary for Roomblock 1.

Room	*Front*/Back Room	Length (m)	Width (m)	Floor Area (m^2)
1	Back	2.9	2.1	6.1
2	*Front*	*3.1*	*3.6*	*10.4*[1]
4/5	*Front*	*4.0*	*2.8*	*11.2*
6	Back	3.6	2.2	7.9
7	*Front*	*4.0*	*3.0*	*9.9 or 12.0*[2]
8	Back	3.5	2.1	7.4
9	Back	4.9	1.9	9.3

1. Room 2 is slightly L-shaped and thus its area cannot be calculated by simply multiplying length by width.
2. The exact size of Room 7 could not be determined. See the room description below.

Architecture. The rooms were constructed with shaped and unshaped tuff blocks and occasional dacite cobbles, adobe mortar, and chinking stones. One adobe block was encountered during excavation. As noted by earlier researchers (Steen 1977:43; Van Zandt 1999) roomblocks on the Pajarito Plateau often exhibit a variety of wall construction styles. Such is the case with Roomblock 1. Generally, four construction techniques were observed: wet laid coursed masonry, uncoursed upright block masonry, turtleback adobe construction, and a core and veneer construction.

Wet laid coursed masonry is constructed by horizontally laying shaped or unshaped tuff blocks onto a prepared mortar bed. Another layer of mortar is placed on top of the blocks and another course of blocks is laid horizontally onto it. These blocks are secured with additional mortar in the vertical joints. Chinking stones are inserted into both horizontal and vertical joints to prevent the mortar from cracking and to provide stability to the blocks.

The use of uncoursed upright block construction often occurs with the coursed masonry in a wall. It usually is employed for relatively short expanses and is quite variable in appearance. Generally, a thick bed of mortar is laid down and various sizes of masonry blocks and chinking stones are inserted into and on top of it. More adobe mortar is added, and additional blocks and chinking stones are added in a seemingly indiscriminate fashion. The result is a wall segment with abundant adobe interspersed with stones or irregular shapes and sizes. In Roomblock 1, segments of this construction technique terminate at large upright masonry blocks placed across the width of the wall. These cross-blocks help to stabilize the broad applications of mortar.

The third construction technique common in Roomblock 1 is the use of turtleback adobe. In this method, large blocks or slabs are secured in an upright position parallel to the length of the wall and then thick layers of adobe mortar are applied to the tops of these blocks until a relatively flat surface is achieved. This construction technique was used primarily in wall foundations; once the relatively horizontal mortar bed was achieved other techniques were used above it.

The final construction technique used was core and veneer. At LA 12587, the veneer consists of either upright tuff blocks or a thick layer of adobe and chinking stones. The core consists of sediment and rubble.

Many of the room corners of the pueblo were in poor condition, making bond/abut determinations difficult. Nevertheless, it appears that the central wall (the wall between the front and back rooms) was built first and then Rooms 1 to 8 were built off of it. Room 9 may be a later addition.

Floor construction in Roomblock 1 varied. The most common method of construction was initiated with the deposition of small tuff rocks over the irregular Bw or Btk horizon or the bedrock surface. A thick layer of adobe was placed over the rocks to create a level surface and was allowed to dry. One or more layers of plaster were then applied to the surface of the adobe and smoothed, resulting in an even floor surface. A floor surface was found in all nine rooms of Roomblock 1. Up to three floors had been constructed in the front rooms but no more than one floor was found in the back rooms. On some floors several layers of plaster had been applied, indicating the occurrence of (seasonal?) rejuvenation of the floor.

Room 1

Room 1 is located at the northwest corner of the roomblock (Figure 14.4). The interior is 6.1 m^2 (2.9 m long and 2.1 m wide) in size. Only one interior feature (Feature 2), a dacite cobble, and ash concentration were present.

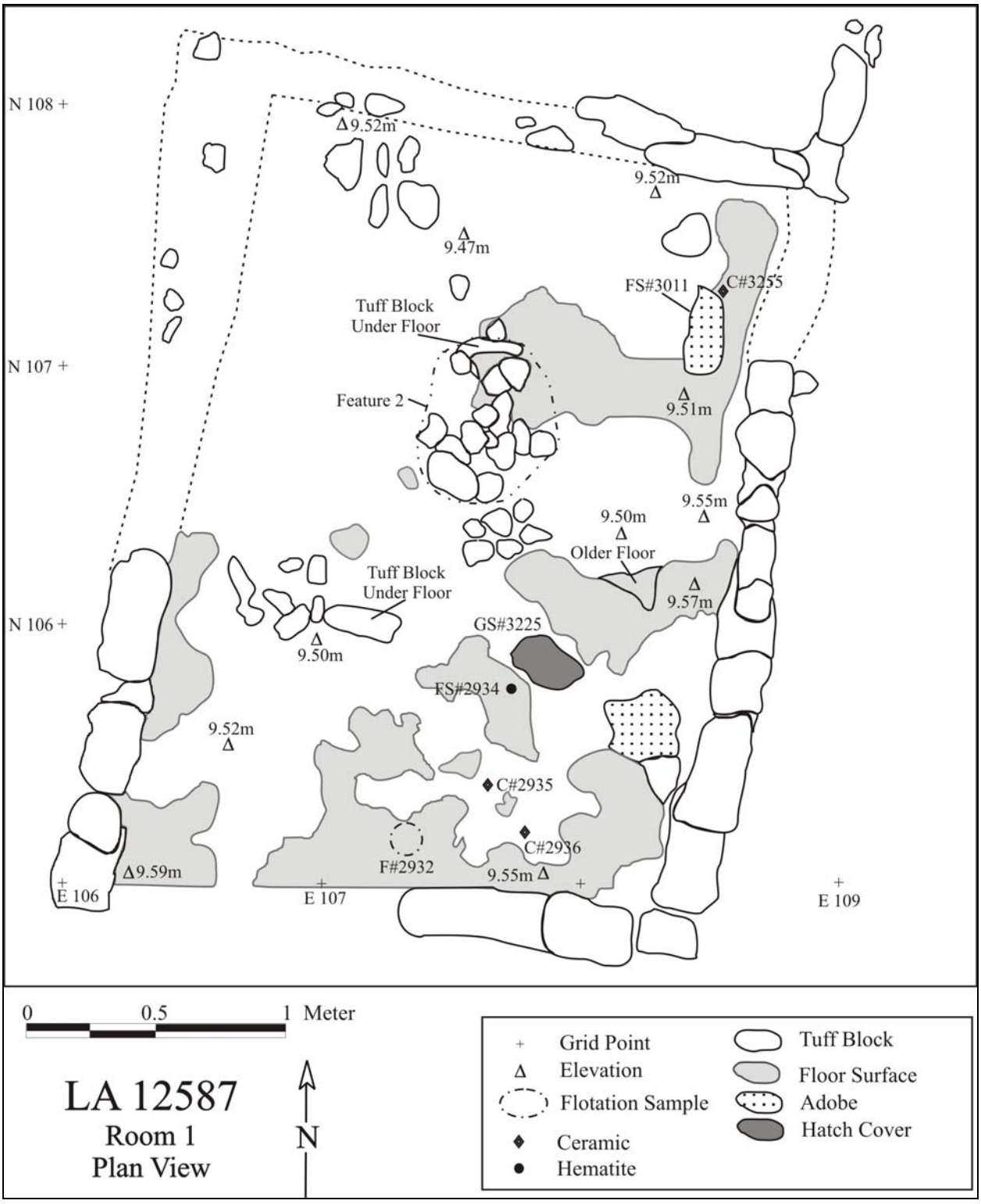


Figure 14.4. Room 1 plan view.

Stratigraphy. Table 14.4 summarizes the strata in Room 1. A large anthill, a small sagebrush, a prickly pear cactus, and pine duff were present on the surface of Room 1. The surface fill

(Stratum 1) consisted of a shallow stratum of loose, unconsolidated brown sandy loam that is present throughout the site. Tuff blocks, tuff cobbles, and artifacts were recovered from this stratum. Stratum 1 was underlain by post-occupational fill (Stratum 10), which ranged from 31 to 38 cm thick. The sediment was moderately consolidated brown sandy loam. Shaped and unshaped tuff blocks (approximately 35), chinking stones (approximately 250), chunks of adobe, and melted adobe were encountered in the room fill. No discernable rooffall or pre-structural collapse fill was observed. The room floor (Stratum 121), the sub-floor sediments (Stratum 170), and the fill of Feature 2 (Stratum 210) are described below.

Table 14.4. Room 1 stratigraphy.

Stratum	Thickness (cm)	Color	Texture	Description
0	0	10YR 4-5/3	sandy loam	Surface
1	2–5	10YR 4-5/3	sandy loam	Unconsolidated surface soil
10	31–38	10YR 4-5/3	sandy loam	Wallfall and post-occupational fill
121	0	10YR 7/1	silty clay	Floor surface
170	3–5	10YR 4/3	silt loam	Sub-floor soil
210	1–3	7.5YR 4/3	silt loam/ash	Feature 2, fill

Table 14.5 shows the artifact counts by stratum for Room 1. The "Other" category includes an adult human right talus (Field Specimen [FS] 1208), a freshwater shell fragment (FS 1012), a piece of gem-quality hematite (FS 2934), an adobe block (FS 3011), and several other miscellaneous samples. Noteworthy artifacts include a ceramic cloud blower pipe fragment (FS 1269), three pieces of turkey eggshell (FS 1175, FS 1371, and FS 1427), and two bone beads (FS 1287 and FS 1417).

Table 14.5. Room 1 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	9	16	0	0	0	25
1	66	285	2	0	1	354
10	387	1803	27	26	6	2249
121	0	3	1	0	1	5
170	0	0	0	0	0	0
210	8	22	16	0	0	46
Total	**470**	**2129**	**46**	**26**	**8**	**2679**

Floor. Intact portions of plastered floor were present in the eastern and southeastern portions of the room. Extensive bioturbation and exposure after abandonment destroyed the remainder of the floor. Due to subsidence and rodent burrowing, the floor surface undulates and varies between elevations of 9.57 and 9.51 m. Floor plaster, which was whitish gray in color (10YR 7/1) and contained charcoal flecks, was applied over a layer of grayish brown adobe that covered soil in some places and bedrock in others. Before the adobe was laid down, irregular tuff rocks were used to fill depressions in Stratum 170 and the bedrock. In a few places the floor plaster still articulates with the interior wall plaster to form a continuous surface curving from floor to

wall. In other areas there was probably never any coping between the floor plaster and the wall plaster. A small patch of floor on the east side of the room is 2 cm lower in elevation than the surrounding plaster. This difference in elevation does not appear to be the result of subsidence or bioturbation; instead, it appears that the floor was resurfaced at least once.

Three sherds were recovered from the floor surface and included a Santa Fe Black-on-white bowl sherd (FS 2935), an unidentified sherd (FS 2936), and a smeared-indented corrugated jar sherd (FS 3255). Other artifacts found on the floor included an andesite hatch cover fragment (FS 3225) and a piece of gem-quality hematite (FS 2934). An adobe brick (FS 3011) from the east wall was found on the floor in the northeast corner of the room. No pollen or macrobotanical samples were collected, but a single flotation sample (FS 2932) was collected from the floor. Taxa identified in this sample included four-wing saltbush (*Atriplex canascens*), cheno-ams (*Chenopodium/Amaranthus*), juniper (*Juniperus*), ponderosa pine (*Pinus ponderosa*), and maize (*Zea mays*).

Wall Construction. It appears that the east and west walls of the room were built first and then the north and south walls were abutted to them. Wall construction styles used in Room 1 include wet laid coursed masonry, uncoursed upright block masonry, and turtleback adobe construction.

None of the walls are complete although remnants of foundation adobe help to confirm the perimeter of the room where the walls are missing (Table 14.6). The preserved southern wall segment consists of one upright tuff block with the long axis situated parallel to the wall, two uprights that are perpendicular to the wall, and one horizontally laid tuff block on top of an adobe and cobble mass. The western wall segment consists of a single course of tuff blocks set into adobe mortar. A small amount of plaster remained on the interior of this wall. Aside from the eroded adobe foundation, the only other remnant of the north wall was a long, horizontally laid tuff block near the east end of the wall.

Table 14.6. Room 1 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	0.80	0.24	0.17
East	2.20	0.44	0.26
South	2.03	0.44	0.22
West	1.19	0.19	0.25

The east wall (Figure 14.5) is one of the best-preserved walls of the roomblock. It was built with shaped and unshaped tuff blocks, adobe, and adobe bricks. The basal course consists of upright unshaped tuff blocks that were secured into the Btk horizon. The uprights were then covered with multiple layers of adobe (turtlebacks) forming a thick platform upon which the overlying course was laid. The second course consists of masonry and chinking stones set in mortar.

The gap in the north end of the east wall may have provided access to Room 2. At this location the floor slopes gradually up and over a slightly raised adobe that may be the remains of a sill. In contrast, the floor south of this section slopes up, then abruptly terminates just before it

encounters the wall. Here, the interior wall plaster extends down the wall surface but, instead of forming a coping with the floor plaster, it extends below the level of the floor.

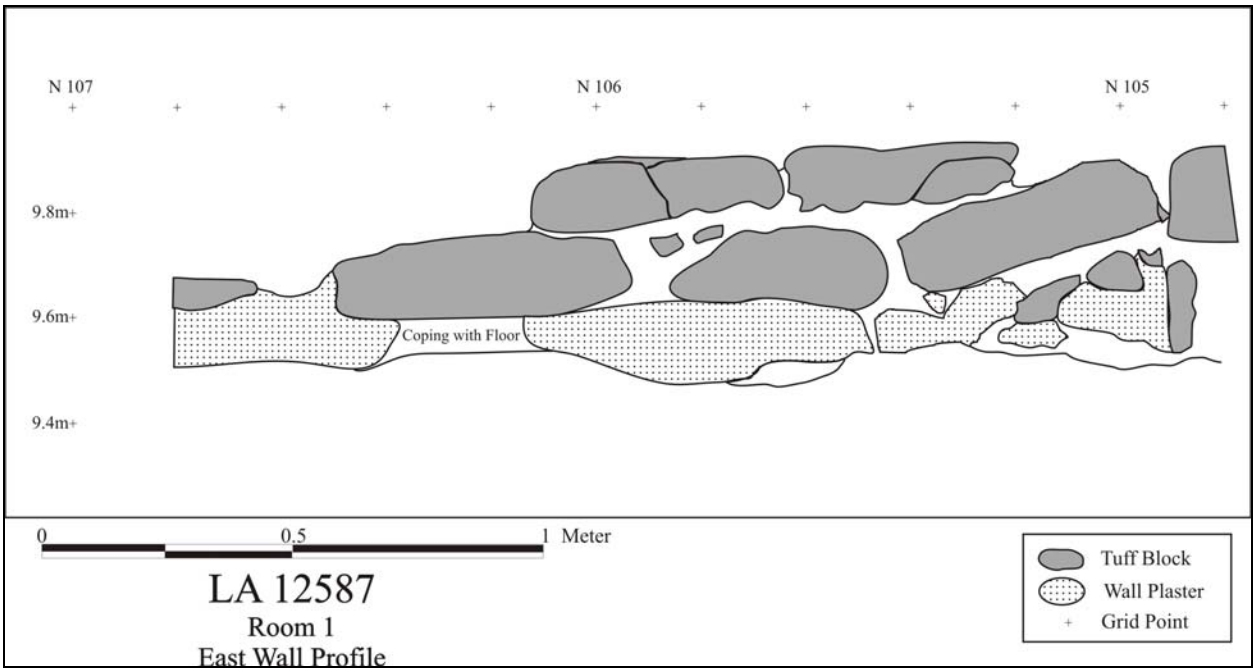


Figure 14.5. Room 1, east wall profile.

Artifacts and Samples. All the artifacts from units 106N/107E and 107N/107E were analyzed. All the macrobotanical material from unit 106N/107E was also analyzed. All the faunal remains were analyzed. All the artifacts found on the floor (except for FS 2936, which is missing) were analyzed and include a quartzite hoe fragment (FS 1396) and a shaped andesite slab fragment (FS 2868). Table 14.7 lists the samples analyzed from Room 1.

Table 14.7. Room 1 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical[1]
1	None	None	1029
10	1280	1251	1350
121	2932	None	None
170	None	None	None
210	1485, 2876	1484, 1486, 2875	None
Adobe Block	3011	None	None

1 In addition to the macrobotanical material from unit 106N/107E

Feature 2

A single feature was identified in Room 1 east of center and oriented north-south (Figure 14.6). Feature 2 is 100 cm long and 80 cm wide and consists of about 20 smooth and flattened cobbles,

most of which are dacite. The cobbles range in size from 12.3 by 10.9 cm to 24.4 by 15.7 cm and are heavily coated with $CaCO_3$. Some of the cobbles overlap each other.

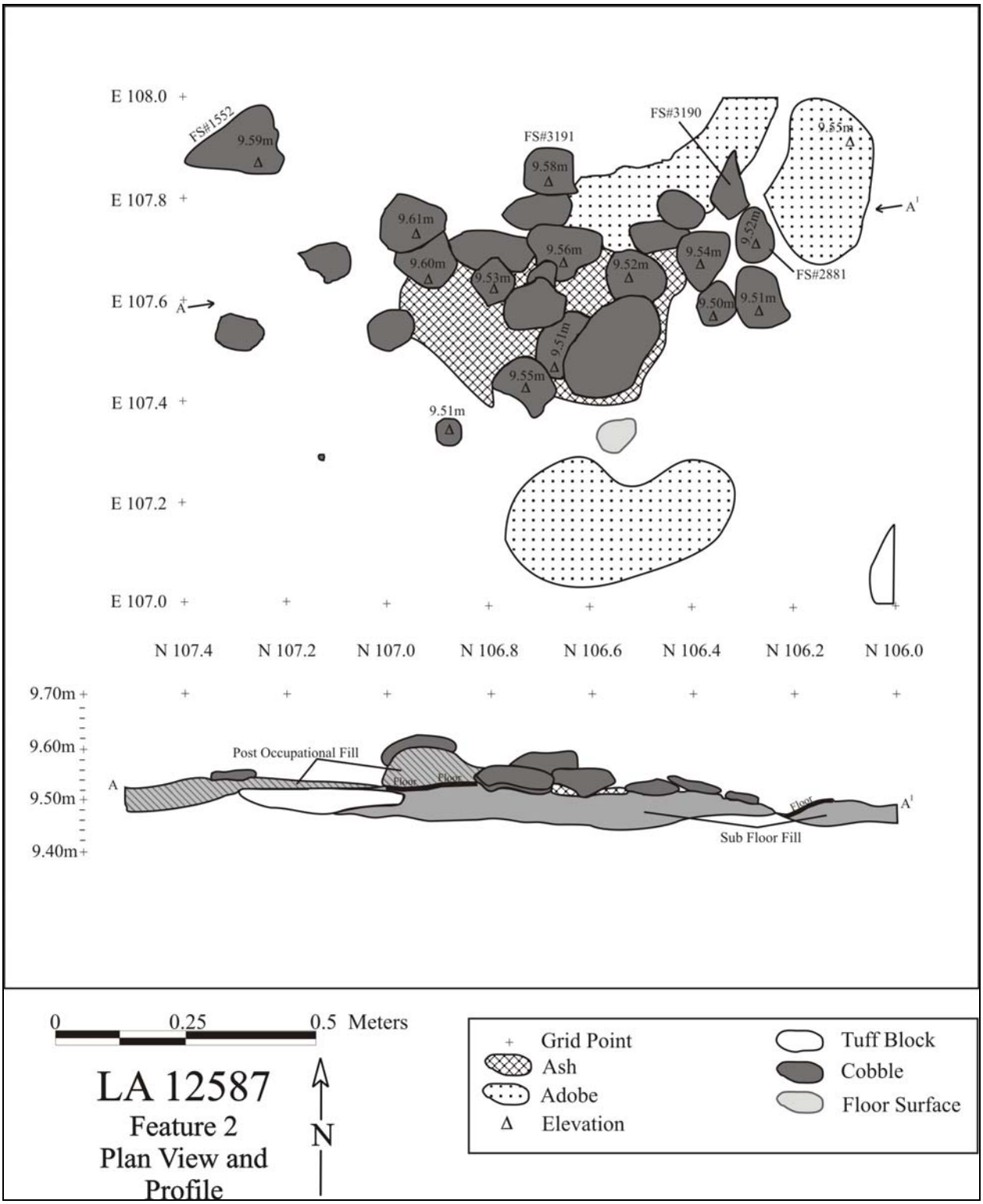


Figure 14.6. Feature 2 plan view and profile.

Three cobbles (FS 2881, FS 3190, and FS 3191) exhibit cultural modification. FS 2881 is a dacite cobble with a small (6.8 by 6.7 cm) circular area of grinding wear on one side. FS 3190 is a discoidal quartzite cobble. One face shows a small area of grinding, while the opposite face is dimpled as if it was used as an anvil. Two edges show battering. FS 3191 is a wedge-shaped dacite cobble that is ground on both faces. The narrow edge is unifacially flaked and may have been used for scraping. The cobbles were situated in a thin ashy matrix.

The floor surface had been destroyed beneath most of Feature 2. However, 5 cm of fill was present between one cobble and the floor surface at the north end of the feature. It is possible that the feature post-dates the abandonment of Room 1 but pre-dates its collapse. Several tabular piece of andesite (FS 1551, FS 1552, and FS 3189) covered the cobbles. These artifacts appear to be fragments of a hatch cover. Additional pieces of tabular andesite, possibly from the same hatch cover, were found in the room (e.g., FS 3225).

Two flotation samples (FS 1485 and FS 2876) and three pollen samples (FS 1484, FS 1486, and FS 2875) were analyzed from Feature 2. Taxa identified in the flotation samples included sagebrush (*Artemisia*), saltbush/greasewood (*Atriplex*/*Sarcobatus)*, cheno-ams, unidentified conifer (Gymnospermae), juniper, ponderosa pine, prickly pear cactus (*Opuntia*), cottonwood/willow (*Populus*/*Salix*), piñon pine, and maize. Taxa identified in the pollen samples include maize, cheno-ams, grass family (Poaceae), parsley family (Apiaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), unidentified pine, piñon pine, juniper, and sagebrush.

The function of Feature 2 is unclear, although it appears to be a warming feature. The cobbles may have been heated elsewhere and brought in along with ash from the incinerated fuel. However, the cobbles do not appear to be thermally altered.

Room 2

Room 2 (Figure 14.7) is located in the northeast end of the roomblock. The interior east-west dimension of the room is 3.6 m and the north-south dimensions are 3.1 m on the west side and 2.4 m on the east side. The interior area is 10.4 m^2. Two hearths (Features 4 and 20) and two groups of postholes (Features 10 and 11) are present. A small exterior storage area (Feature 5) is associated with Room 2. A considerable amount of charred maize was found, indicating that the room was probably burned.

Stratigraphy. Table 14.8 summarizes the strata associated with Room 2. Several sagebrush were growing on top of Room 2 at the time of excavation. Stratum 1 consists of a shallow stratum of loose, unconsolidated sandy loam that is present throughout the site. Tuff blocks, tuff cobbles, and artifacts were recovered from this stratum. Stratum 1 is underlain by post-occupational fill, wallfall, and rooffall (Stratum 10). The stratum consists of moderately compact sandy loam with varying amounts of tuff gravel, fist-sized tuff rocks, and masonry. Wallfall consists of approximately 66 shaped and unshaped tuff blocks, approximately 56 fist-sized tuff rocks, and numerous chunks of adobe.

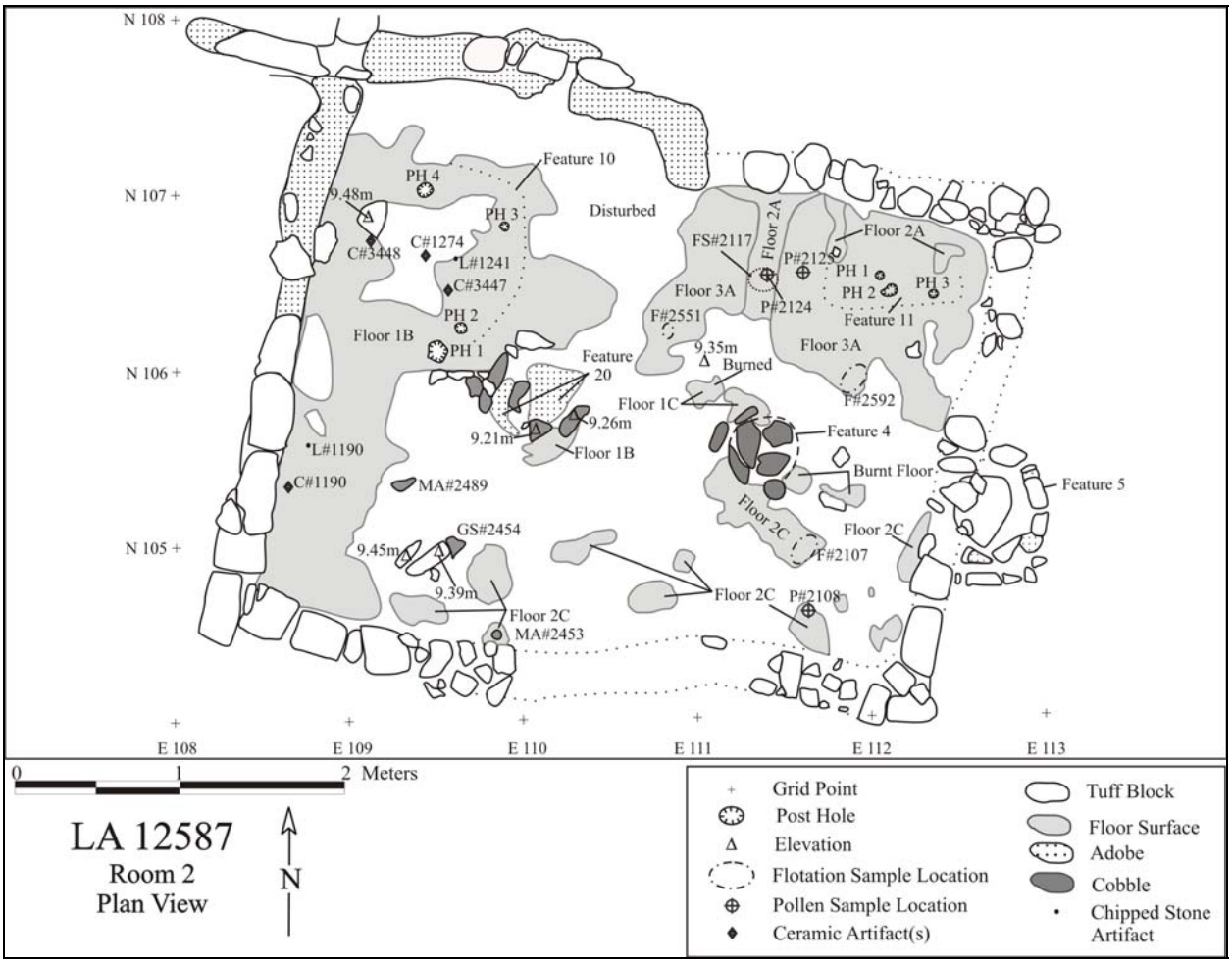


Figure 14.7. Room 2 plan view.

Rooffall was found in several places. In the southwest corner of the room, rooffall consists of reed-impressed adobe chunks, chunks of burned adobe, and a partly charred juniper beam fragment (FS 850). Large pieces of charcoal, chunks of heavily oxidized adobe, and a concentration of adobe chunks with roof material impressions were found in the southeast quadrant of the room. About 4 to 5 cm above the floor in the northeastern corner, a partially charred chunk of juniper wood was recovered (FS 2119) that may be a roof beam fragment. An abundance of charred maize kernels and cob fragments were recovered from Stratum 10. The densest concentration of charred maize was found in the southeast quadrant of the room.

Table 14.8. Room 2 stratigraphy.

Stratum #	Thickness (cm)	Color	Texture	Description
0	0	7.5YR 4/3	sandy loam	Surface
1	2–5	10YR 5/3, 7.5YR 4/3	sandy loam	Unconsolidated surface soil
10	34–48	7.5YR 4/3-4	sandy loam	Wallfall and post-

Stratum #	Thickness (cm)	Color	Texture	Description
				occupational fill
70	2–4	10YR 4/3	sandy loam	Fill below wallfall and above floor
122	0	10YR 7/1	silty clay	General floor surface
170	4–11	10YR 4/4, 7.5YR 4/6	sandy loam, clay loam	Sub-floor soil
213	10–20	7.5YR 4/4	sandy loam	Feature 5, fill
260	11–20	7.5 YR 4/3	silt loam and ash	Feature 4, upper fill
261	1–9	7.5YR 4/2	ash	Feature 4, lower fill
262	6–11	7.5YR 4/4	sandy loam	Feature 10, fill
263	3–6	7.5YR 4/4	sandy loam	Feature 11, fill
264	1–2	7.5YR 7/1	hardened silt/ash	Floor 1A, matrix
265	2	7.5YR 5/1	hardened silt/ash	Floor 2A, matrix
266	1–2	7.5YR 7/1	hardened silt/ash	Floor 3A, matrix
267	3–7	7.5YR 7/1	hardened silt/ash	Floor 1B, matrix
268	2	7.5YR 7/1	hardened silt/ash	Floor 1C, matrix
269	1.5	7.5YR 7/1	hardened silt/ash	Floor 2C, matrix
311	18	7.5YR 4/3	silt and ash	Feature 20, fill

A 2- to- 4-cm stratum of pre-wall collapse (Stratum 70) is present. Stratum 70 is less consolidated, sandier in texture, and contains less architectural material than Stratum 10. However, as in Stratum 10 there is an abundance of carbonized maize kernels and cob fragments. An ash lens was noted in Stratum 70, from which a flotation sample was taken (FS 2080). Taxa identified in this sample included pigweed (*Amaranthus*), sagebrush, saltbush/greasewood, goosefoot, unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, cottonwood/willow, dropseed grass (*Sporobolus*), and maize.

The strata associated with the floors and features of Room 2 are discussed in the Floor and Features sections below. Table 14.9 shows the artifact counts by stratigraphic unit for Room 2. The 'Other' category includes an adult human right intermediate pedal phalanx (FS 787), an adult human right cuneiform (FS 1469), an adult human right intermediate pedal phalanx (FS 1515), an adult human right second metatarsal (FS 1941), an unidentified freshwater shell pendant (FS 895), a cf. *Anodonta* sp. umbo fragment (FS 1238), an unidentified freshwater shell fragment (FS 1522), a possible *Anodonta* sp. shell fragment (FS 2430), a biotite bead blank (FS 1199), a turquoise nugget (FS 1543), a possible pale green clay pigment fragment (FS 2478), a rock with pigment (FS 1569), a fragment of hematite (FS 1197), and a number of floor/roof samples. Other noteworthy artifacts include three bone beads (FS 1521 and FS 2830) and a possible ceremonial bundle (FS 2117). The bundle is described below.

Table 14.9. Room 2 artifact counts by stratum.

Stratum #	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	19	86	0	0	0	105

Stratum #	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
1	191	682	3	2	0	878
10	1013	4385	32	69	30	5529
70	64	206	2	6	4	282
122	3	7	3	5	0	18
170	7	32	1	2	0	42
213	0	0	0	0	0	0
260	1	12	0	6	0	19
261	3	6	7	5	0	21
262	0	0	0	0	0	0
263	0	0	0	0	0	0
264	0	1	0	0	0	1
265	0	0	0	0	1	1
266	0	0	0	0	0	0
267	0	1	0	0	1	2
268	0	0	0	0	0	0
269	0	0	0	0	0	0
311	2	0	5	0	1	8
Total	**1303**	**5418**	**53**	**95**	**37**	**6906**

Floors. At least three flooring episodes occurred in Room 2. Stratum 122 refers to the uppermost floor surface throughout the room, regardless of what flooring episode it is associated with (an association that cannot always be determined, as discussed below). Stratum 122 is patchy and undulating. Typically the floor was encountered at 9.41 or 9.42 m, although a range in elevation from 9.55 m to 9.39 m was recorded. The floor slopes up to the walls (coping) in all places where the floor and walls articulate. The floor surface is relatively well-preserved in the western portion of the room and in the northeast corner, but has deteriorated elsewhere. All the flooring episodes in Room 2 were performed using the same technique: an ashy light gray (7.5 to 10YR 7/1) plaster was applied over a layer of adobe. In places, tuff cobbles were used to create an even surface over bedrock and soil.

Since the floor was not contiguous across the room, it was divided into three areas. In Area A (the northeastern corner) there were three distinct floor layers. The uppermost floor (3A) is approximately 2 cm thick. The middle floor (2A) is of approximately equal thickness. Floors 2A and 3A exhibit a fine layering of plaster indicative of multiple resurfacing episodes. In some places, the undersides of Floors 3A and 2A exhibit grass-like impressions. The lowest floor (1A) is 1 to 2 cm thick.

The western portion of the room is Area B. Floor 1B is a single floor (3 to 7 cm thick) in which no sub-layers were discerned. Because of extensive floor deterioration between Areas A and B, the floor surfaces of these areas could not be correlated. It is possible that the floor in Area B formerly consisted of three layers, which were compressed over time to become one thick floor. The combined thickness of the floors in Area A approximates the thickness of Floor 1B. Underneath Floor 1B there are small and medium-sized tuff cobbles that form a foundation over the uneven bedrock. The tuff cobbles below a portion of the floor (at 106.3N/110.0E) are

mortared together with adobe. Some of this adobe is smeared up against the vertical surface of the remaining floor; finger impressions are visible in this adobe. The purpose of this adobe and cobbles cluster is not clear. It may be the remains of a sub-floor feature.

Area C consists of isolated patches of floor in the southeastern third of the room. Two floors were identified. Floor 2C is the uppermost floor and is 0.5 cm thick. The lower floor (1C) is 1 to 4 cm thick. No resurfacing layers were evident in either floor. Some of the patches of Floor 1C around the younger hearth (Feature 4) were burned. Again, because of deterioration of the floor surfaces, the Area C floors could not be correlated with the floors in Areas A and B.

Six sherds were recovered from the floor surface (Stratum 122). These included five smeared-indented corrugated jar sherds (FS 1190, FS 3447, and FS 3448) and one Santa Fe Black-on-white bowl sherd (FS 1274). Two pieces of chalcedony debitage were recovered and included a core flake (FS 1190) and a piece of microdebitage (FS 1241). Three ground stone artifacts were recovered. These included a quartzite two-hand mano fragment (FS 2453), an andesite hatch cover fragment (FS 2454), and a dacite one-hand mano fragment (FS 2489).

In the northeast corner of the room, a number of burned chunks of adobe and a large piece of burned juniper wood (FS 2119) were found on the floor. A cluster of charred artifacts believed to be the remains of a ceremonial bundle (FS 2117) was found below the juniper fragment. It is possible FS 2119 is part of a roof beam from which the bundle was suspended. FS 2117 consists of four or five bird bone tubes, a basalt flake, a Santa Fe Black-on-white worked sherd, and a burned rock. All of these artifacts were found within a 16- by 16-cm area.

Each bone tube has one fragmented end and one cut/shaped end. The tubes are between 1.5 and 14 cm long. One of the bone tubes (11 cm long) has a medial perforation indicating that it might have been a whistle. All of the bone tubes were heavily burned to white/gray. One of the bone tubes is an ulna; the other tubes could not be identified to a specific skeletal element. The upper three tubes (11 cm, 14 cm, and 6 cm long, from north to south) were parallel to each other and aligned roughly west-northwest to east-southeast. The eastern ends of the tubes were fragmented and the west ends were cut and shaped. The west ends of the tubes were situated about 2.5 cm above the floor and the east ends were about 1 cm above the floor. When these three tubes were removed, a fourth tube was exposed parallel to and below the two northernmost tubes. This tube is also cut and shaped on the west end, fragmented on the east end, and 8.5 cm long. It was situated 0.5 cm above the floor. A fifth tube lay perpendicular to the other four tubes. It was in contact with the floor and lay below the eastern ends of the two northernmost tubes. It is 1.5 cm long and cut and shaped on one end. It is unclear if the short tube is a discrete item or part of one of the other tubes. The basalt flake, the worked sherd, and the burned rock were situated a few cm south of the bone tubes and were 0.5 to 1.0 cm above the floor.

Wall Construction. It appears that the west wall of the room was built first and then the north, south, and east walls were built as one unit. The north and south walls appear to be bonded with the east wall and abutted to the west wall. Table 14.10 gives the dimensions of the extant wall segments.

The remaining portions of the north wall consist of the western 1.86 m and a 0.96-m segment east of center. A thin remnant of adobe at floor level was all that remained of the rest of the wall. The extant segments were constructed by setting upright tuff blocks into a thick bed of adobe mortar (7 to 14 cm thick) that was laid onto Stratum 175. Adobe mortar was applied to the stone surfaces and to the interface of the masonry and the basal mortar. Only a single course of upright stones remained.

The eastern and western portions of the south wall remain. The wall consists of a basal course of core and veneer segments separated by upright tuff blocks and capped by horizontal tuff blocks. Dissection of the west end of the east segment revealed that the veneer consists of a thick layer of adobe and small tuff stones that was thickly plastered and smoothed. The core consists of sediment and rubble and appears to be material from the midden. No additional courses remain. The eastern end of this wall was heavily oxidized near floor level.

The best-preserved portion of the east wall is the southeast corner where it is bonded to the south wall (Figure 14.8). Although this wall was not dismantled to study its construction, it appears to consist of an adobe foundation capped by large tuff blocks. The basal course of the wall consists of segments of adobe mortar from which fist-sized tuff rocks protrude. It is likely that the segments consist of the same core and veneer construction that is found in the south wall. Vertical upright tuff blocks separate the segments. The overlying course consists of horizontally placed tuff blocks set in a mortar bed. No additional courses remain. The west wall is described in Room 1.

Figure 14.8. Room 2 east wall.

Table 14.10. Room 2 wall dimensions (extant walls segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	1.86, 0.96	0.27	0.29
East	3.0	0.35	0.25
South	1.4, 1.5	0.46	0.30
West	2.3	0.46	0.25

Artifacts and Samples. All the artifacts from units 105N/111E and 106N/111E were analyzed. All the macrobotanical material from unit 105N/111E was also analyzed. All the faunal remains were analyzed. All the artifacts found on the floor were analyzed and included an andesite axe fragment (FS 1670), a shaped andesite slab fragment (FS 2454), an El Rechuelos obsidian corner-notched Puebloan projectile point (FS 2340), a Cerro Toledo obsidian drill (FS 1705), one Pedernal chert core flake (FS 2886), and one chalcedony core flake (FS 2886). Table 14.11 lists the samples analyzed from Room 2.

Table 14.11. Room 2 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical[1]
10	758, 1092, 1200, 1579, 2555, 2831, 2832	None	None
70	2080	2123	1220
122	2107, 2551, 2592	2108, 2124, 2125	2169
170	957, 1000	None	965, 1003
213	2989, 2994	2988, 2993	2992
260	2644, 2645, 2646, 2666, 2667, 2668, 2711	2648	2712
261	2697, 2698, 2714	2715	None
262	None	3369, 3370	None
263	None	3394	None
264	None	3517, 3518	None
265	3558	3513, 3514	None
266	3557	3515, 3516	None
267	3560	3519	None
268	None	3520	None
269	None	3521	None
311	4138, 4139, 4197, 4198	4141	4146

1. In addition to the macrobotanical material from 105N/111E

Features

Feature 4 (Hearth). Feature 4 is a circular collared hearth situated 80 cm west of the east wall and 85 cm north of the south wall (Figures 14.9 and 14.10). The exterior diameter of the hearth is 60 cm, the interior diameter is 40 cm, and it is 29 cm deep. Eleven cobbles of assorted materials (andesite, dacite, quartzite, rhyolite, sandstone, and vesicular basalt) were used to line the sides and base of the hearth. Four of these cobbles were identified as manos or mano fragments (FS 4202, FS 4204, FS 4205, and FS 4207), and three were identified as grinding slabs (FS 4200, FS 4203, and FS 4206). Plaster covers the cobbles on the north, west, and south-

southeast sides of the hearth; elsewhere it has deteriorated. The cobbles forming the base of the hearth were mortared into place.

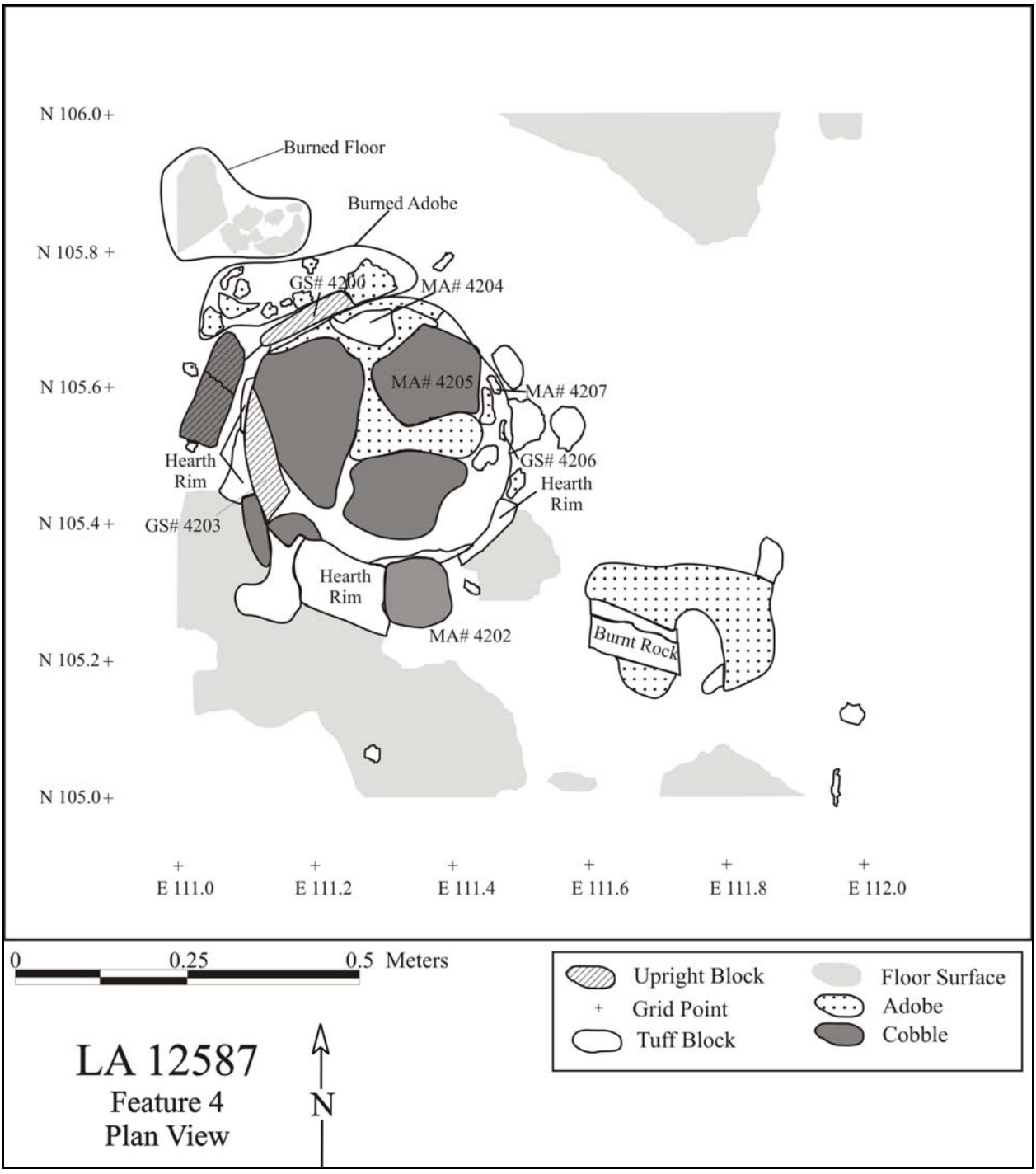


Figure 14.9. Feature 4 plan view.

Figure 14.10. Feature 4 after excavation.

The fill of the hearth consists of a mix of silt loam and ash (Stratum 260) and, in the southeast part of the hearth, a deposit of ash (Stratum 261) (Figure 14.11). The floor surrounding the hearth (Floor 2C to the south and east, Floor 1C to the north) is only partially preserved. Both the plastered floor and the damaged areas without plaster show evidence of burning. An upright dacite block set into adobe is located 14 cm east of the hearth. This block appears to be from the south side of a depression. It is possible that this is the remains of an ash pit; however, the area is so disturbed that a clear determination cannot be made. The hearth, the possible ash pit, and the external feature (Feature 5) are aligned east-northeast to west-southwest.

Ten flotation samples, two pollen samples, and one macrobotanical sample were taken from Feature 4. Taxa identified in the flotation sample included pigweed, sagebrush, goosefoot, saltbush/greasewood, cheno-ams, hedgehog cactus (*Echinocereus*), spurge (*Euphorbia*), Desert olive (*Foresteria*), unknown conifer, juniper, mint family (Labiatae), groundcherry (*Physalis*), unidentified pine, piñon pine, ponderosas pine, prickly pear, cottonwood/willow, purslane, oak (*Quercus*), buffalo burr, dropseed grass, and maize. Given the amount of bioturbation in Room 2 and the amount of maize present in the room, most or all of the maize recovered from Feature 4 is probably not directly associated with the use of the hearth. Taxa identified in the pollen samples taken from the hearth included maize, cholla (*Opuntia*), prickly pear, beeweed (*Cleome*), cheno-ams, grass family, sunflower family, spurge family, evening primrose (Onagraceae), fir (*Abies*), unidentified pine, piñon pine, juniper, and sagebrush. A

macrobotanical sample from the hearth was submitted (FS 2712) and identified taxa included piñon pine, maize, and juniper.

Figure 14.11. Feature 4 profile.

An archaeomagnetic dating sample (set 1210) and a maize fragment (FS 2644) from the hearth were submitted for dating. The archaeomagnetic sample returned a number of possible dates but the preferred date interpretation is AD 1245–1310 (see Blinman and Cox, Volume 3). The maize fragment returned an age of 870±70 BP (Beta-183747) and a date of cal AD 1180 with a two-sigma date range of cal AD 1020–1280.

Feature 5 (Masonry Structure). Feature 5 is affixed to the exterior east wall of Room 2 (Figures 14.12 and 14.13). This feature is a small semicircular masonry structure that measures 64 cm north-south and 38 cm east-west and has a maximum depth of 20 cm. A poorly preserved use surface was evident surrounding the feature. It was constructed with small and medium-sized tuff rocks. Two courses were present on the south side of the feature, only a single course is present on the east and north sides. The west side is formed by the Room 2 wall. Adobe mortar was present in places on top of and between the rocks, but no plaster or adobe was evident inside the feature. The absence of thermal alteration on the interior indicates that Feature 5 was not a hearth or other thermal feature, but may have functioned as an external storage cist.

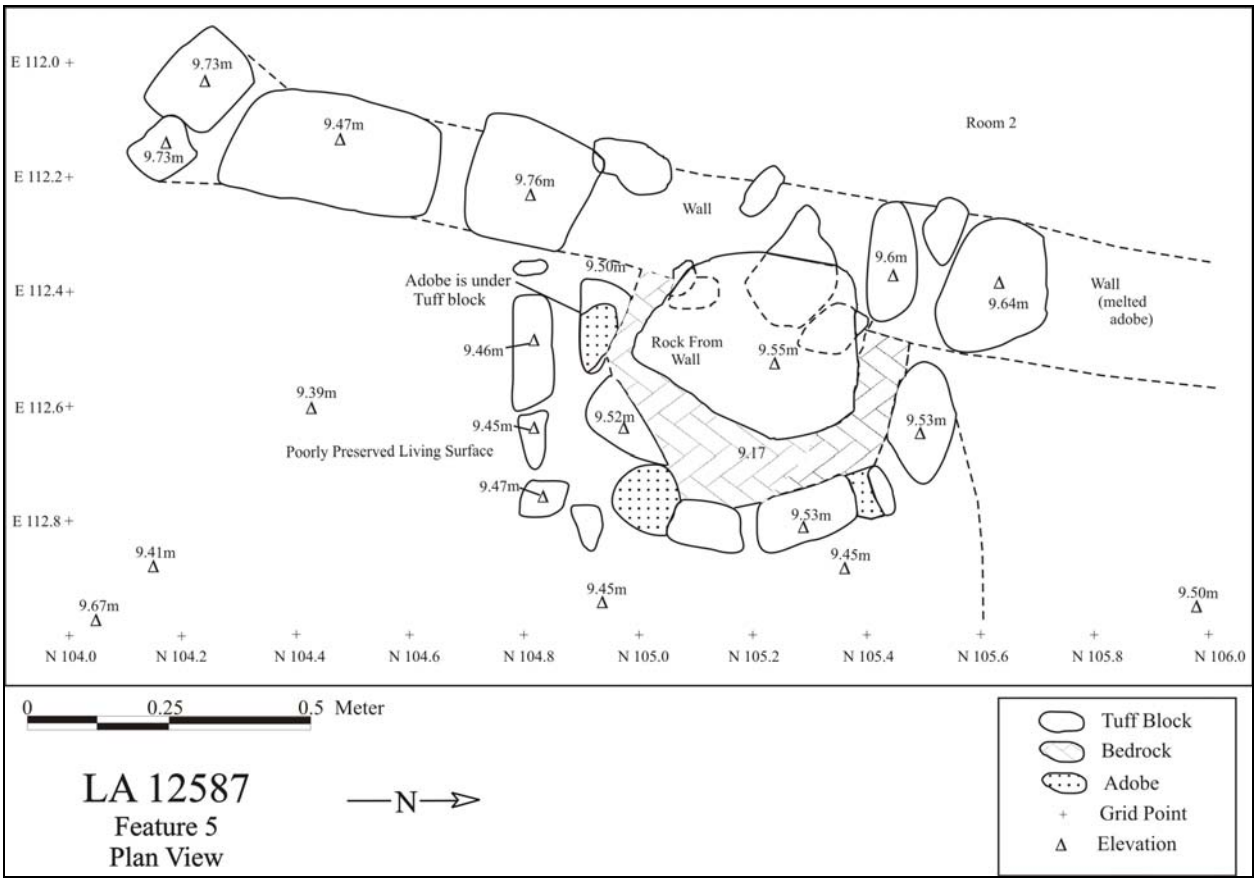


Figure 14.12. Feature 5 plan view.

A large tuff block that was once part of the Room 2 wall was found inside Feature 5. It is unclear if this block was intentionally placed, or if it simply fell into the feature. The fill of Feature 5 (Stratum 213) contained three pieces of lithic debitage (FS 2995), 17 ceramic sherds (FS 2991), and charcoal and charred maize. Below the base of the tuff rocks (the probable floor of the feature), cultural materials became less common. The fill was sterile at contact with bedrock. Charred botanical remains identified from two flotation samples (FS 2989 and FS 2994) consists of the following taxa: pigweed, sagebrush, saltbush/greasewood, goosefoot, cheno-ams, bugseed (*Corispermum*), unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, prickly pear, cottonwood/willow, and maize. Two pollen samples were collected from the feature (FS 2988 and FS 2993) and taxa identified included maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea (*Ephedra*), and sagebrush. A macrobotanical sample was submitted (FS 2992) and maize remains were identified.

Figure 14.13. Feature 5 after excavation.

Feature 20 (Hearth). Feature 20 is a hearth that predates Feature 4; it was found below the tuff cobble foundation of Floor 1B (Figure 14.14). The hearth is located 1.1 m east of the west wall and 1.3 m north of the south wall. The presence of Feature 20 at this location may explain why Feature 4 was positioned so far to the east, rather than nearer the center of the room (as are the hearths in Rooms 4/5 and 7). The interior dimensions of the hearth are 45 cm north-south and 40 cm east-west; and it is 18 cm deep. The hearth is in poor condition, but portions of the adobe collar and plastered hearth wall remain on the southwest side. The rocks that lined the hearth remain on the north, northwest, and southeast sides. These rocks are all mano (FS 4137, FS 4142, and FS 4143) and metate (FS 4144 and FS 4210) fragments. The southern perimeter of the hearth is missing. Some plaster is present at the base of the hearth. Several rodent burrows were dug through Feature 20. Several small areas of floor surface were present on the southeast edge of the hearth and it may have been contemporaneous with Feature 20.

The fill (Stratum 311) consists of mixed silt and ash that became increasingly ashier with depth. Towards the base of the western side of the hearth, a lens of clean sandy fill was encountered during excavation. It is not clear whether this sandy deposit is cultural in origin or if it is a result of rodent burrowing.

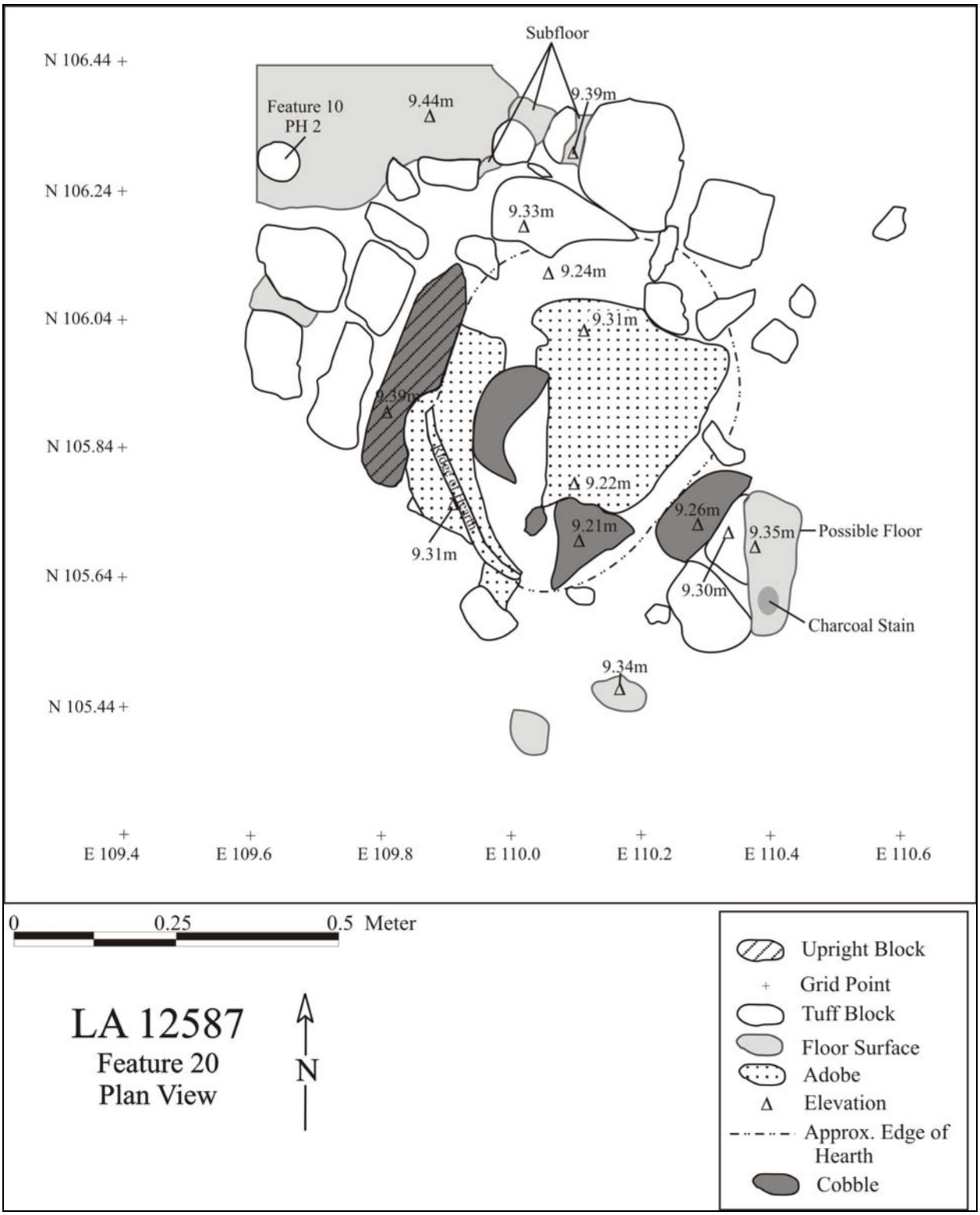


Figure 14.14. Feature 20 plan view.

Four flotation samples (FS 4138, FS 4139, FS 4197, and FS 4198), one pollen sample (FS 4141), and one macrobotanical sample (FS 4146) were taken from Feature 20. Charred wood from the following taxa were identified in the flotation samples: pigweed, saltbush/greasewood, mountain mahogany (*Cercocarpus*), squash/coyote gourd (*Cucurbita*), unknown conifer, juniper, oak, unidentified pine, cottonwood/willow, purslane, and maize. Taxa identified in the pollen sample included maize, beeweed, mint family, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, rose family (Rosaceae), and sagebrush. A macrobotanical sample was submitted and saltbush/greasewood, piñon pine, maize, and juniper remains were identified. Given the rodent disturbance in Feature 20, most or all of this material is probably associated with the Room 2 assemblage at the time of abandonment and not with the use of the hearth.

Two archaeomagnetic sets (1214 and 1215) were submitted for analysis, a fragment of hearth plaster (FS 4209) was submitted for thermoluminescence dating, and a maize fragment (from FS 2644) was submitted for accelerator mass spectroscopy (AMS) radiocarbon analysis. The archaeomagnetic samples returned a highly precise date of circa AD 1200. The thermoluminescence sample returned a date of 1122±160 (two-sigma). The maize fragment returned a date of 650±40 BP (Beta-183748) and a date of cal AD 1300 with a two-sigma date range of cal AD 1280–1400. Since the maize fragment is probably associated with the room abandonment and since thermoluminescence dates tend to be too early (Harmon and Vierra, Volume 3), the archaeomagnetic dates are the best dates for this hearth.

Feature 10 (Postholes). This feature consists of three, possibly four, postholes that are associated with Floor 1B in the northwest quadrant of the room. The southernmost posthole, Posthole 1, is the largest (12 cm north-south by 11 cm east-west) and is pentagonal in shape (Figure 14.15). The posthole was plastered over so that it was only visible as an outline in the floor surface. It was not excavated. Posthole 2 is 10 cm to the northeast of Posthole 1 and measures 6 cm north-south by 7 cm east-west and is 11 cm deep. The fill of Posthole 2 was collected as a pollen sample (FS 3369). Taxa identified in this sample included cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, mustard family (Brassicaceae), unidentified pine, piñon pine, juniper, and sagebrush. Posthole 2 may reflect a repositioning of the Posthole 1 post. Posthole 3 is located 52 cm north and 18 cm east of Posthole 2. It is 4 cm in diameter and 6 cm deep. The fill of Posthole 3 was collected for a pollen sample (FS 3370), and identified taxa included beeweed, cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. Both Postholes 2 and 3 extend through the full thickness of Floor 1B. A possible fourth posthole (Posthole 4) is located 40 cm northwest of Posthole 3. It is not clearly cultural and it was not excavated.

Feature 11 (Postholes). This feature consists of three postholes in the northeast corner of the room. Posthole 1 measures 5.5 cm by 4.5 cm and is 5 cm deep. Posthole 2 is located 5 cm southeast of Posthole 1. It measures 5.5 cm by 5.0 cm and is 6 cm deep. Postholes 1 and 2 have rounded plaster rims. Posthole 3 is approximately 20 cm east of Posthole 2. The edges of this hole are fragmented, making it difficult to determine the exact dimensions; it is probably 5 cm in diameter and 3 cm deep. All three postholes were built into all three floor layers (e.g., Floors 1A, 2A, and 3A).

Figure 14.15. Feature 11, postholes 1 and 2.

Room 4/5

Room 4/5 (Figure 14.16) is the middle room of the front row of rooms. The interior dimensions are 4.0 m north-south and 2.8 m east-west. The interior area is 11.2 m^2. A hearth (Feature 1), an isolated posthole (Feature 8), and a set of four postholes (Feature 16) are present. Room 4/5 was built as a single room but was subsequently divided by an east-west-running wall.

Stratigraphy. Table 14.12 summarizes the strata associated with Room 4/5. Several sagebrush and a small juniper tree were removed before excavation. Stratum 1 consisted of loose unconsolidated sandy loam and pine duff. Tuff blocks, tuff cobbles, and artifacts were recovered from this stratum. Stratum 1 is underlain by post-occupational fill, wallfall, and rooffall (Stratum 10). Stratum 10 consisted of moderately compact sandy loam with varying amounts of tuff gravel, cobbles, and masonry. Wallfall consisted of 60+ shaped and unshaped tuff blocks, 90+ tuff cobbles, and 120+ tuff chinking stones. Rodent disturbance was extensive in the room.

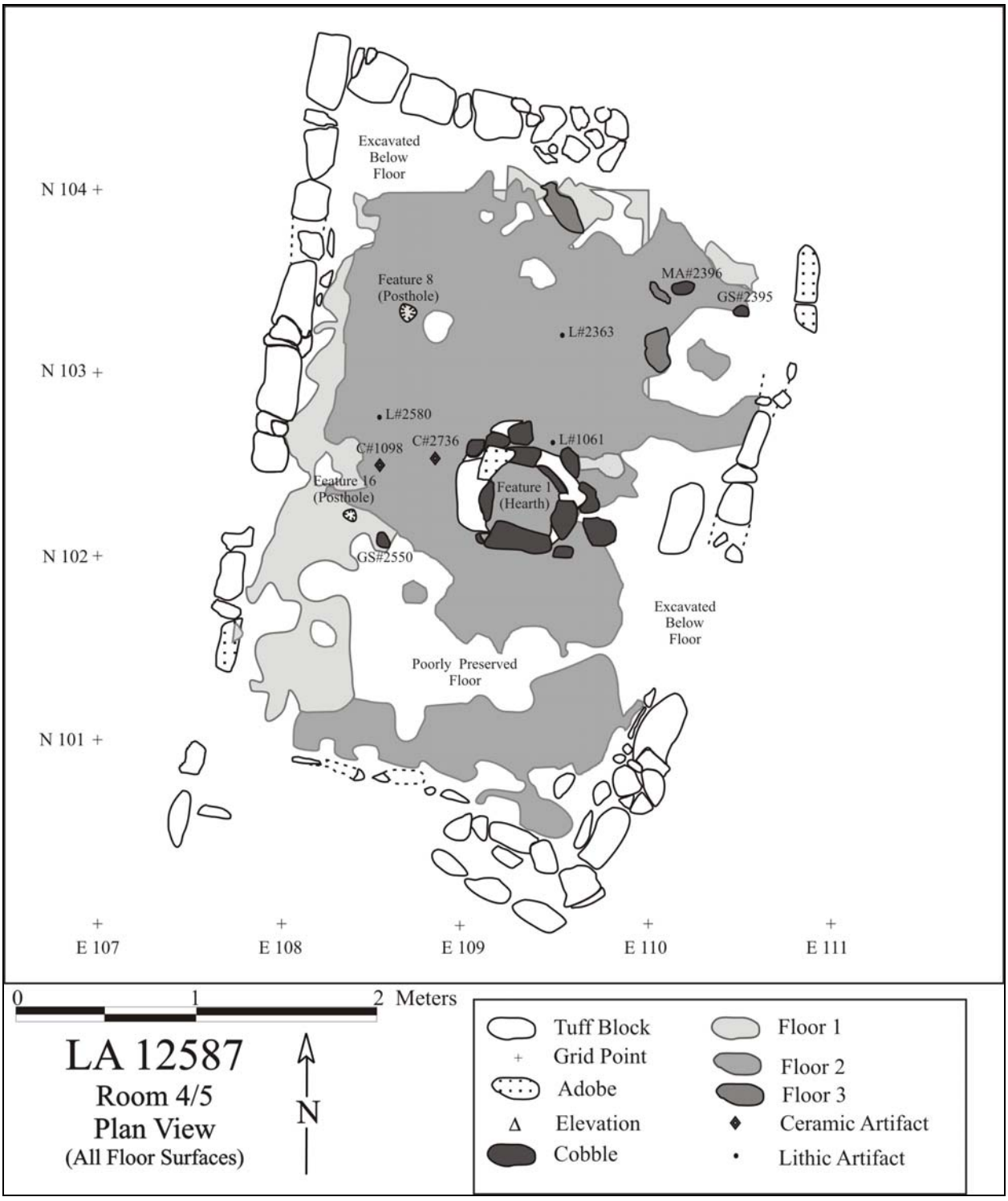


Figure 14.16. Room 4/5 plan view.

Table 14.12. Room 4/5 stratigraphy.

Stratum	Thickness (cm)	Color	Texture	Description
0	0	10YR 4-5/3	sandy loam	Surface
1	2-8	10YR 4-5/3	sandy loam	Unconsolidated surface soil
10	30-41	10YR 5/3	sandy loam	Wallfall and post-occupational fill
14	9	7.5YR 5/3	sandy loam	Sediment from wall alignment across Room 4/5 and top of Feature 1
70	10	10YR 4/3	sandy loam	Fill below wallfall and above floor
124	0	Gley 2 7/10B	silty clay	Floor surface across entire room
170	3-5	10YR 4/4	sandy clay loam	Sub-floor soil
250	15	7.5YR 4/4	silt loam	Feature 1, upper fill
251	1	7.5YR 4/2	ash	Feature 1, lower
252	4	Gley 2 7/10B	silty clay	Floor 2, matrix
253	3	7.5YR 5/4	silty clay	Floor 1, matrix
254	N/A	N/A	N/A	Stones below floor in Feature 1
255	3	Gley 2 7/10B	silty clay	Floor 3, matrix
256	7-8	10YR 4/4	sandy loam	Feature 16, fill
305	1-3	7.5YR 4/6	sandy clay	Soil below Feature 1
306	N/A	N/A	clay	Feature 1, plaster

An intermittently present stratum of sandy loam lying over the floor was designated as Stratum 70. Stratum 70 is similar to Stratum 10 although it is less consolidated and contains a greater amount of sand. Stratum 70 was probably deposited before most of the room collapse occurred. Stratum 14 is the fill and mortar in the east-west-oriented wall that divides the room. Artifacts in the sub-floor fill (Stratum 170) have probably been introduced through bioturbation. The strata associated with the floors and features of Room 4/5 are discussed in the subsequent section.

Table 14.13 shows the artifact counts by stratum for Room 4/5. The 'Other' category includes an adult human right capitate (FS 673), an adult human intermediate hand phalanx (FS 1059), an adult human left humerus fragment (FS 1242), an adult human right first metatarsal (FS 2319), an adult human right rib fragment (FS 2323), two unidentified human rib fragments (FS 2323), a freshwater shell fragment (FS 2686), and obsidian nodule (FS 2580), an unfired ceramic bird (turkey) effigy (FS 1416), and several miscellaneous samples. The bird effigy has a round body with wings and tail formed by pinching out the clay. The wings and tails were incised to suggest feathers, but the head was missing.

Table 14.13. Room 4/5 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	10	31	1	0	0	42
1	174	296	3	0	0	473
10	412	1322	24	24	13	1795
14	2	10	0	0	0	12
70	4	8	0	0	1	13
124	2	2	3	0	1	8
170	1	1	0	0	0	2
250	2	0	0	0	0	2
251	0	0	5	2	0	7
252	64	169	2	2	1	238
253	0	0	0	0	2	2
254	0	0	2	0	0	2
255	0	0	0	0	0	0
256	1	0	0	0	0	1
305	0	0	0	0	0	0
306	0	0	0	0	0	0
Total	**672**	**1839**	**40**	**28**	**18**	**2597**

Floor. Two, possibly three, flooring episodes occurred in Room 4/5. Stratum 124 is the uppermost floor surface throughout the room, regardless of what flooring episode it is associated with. Stratum 124 is well-preserved in most of the room, especially in the north and the southeast corner, however the surface is undulating due to bioturbation and subsidence. In areas where floor and wall contact was preserved, coping was common. Each floor was built by applying plaster over a 1- to 5-cm-thick layer of adobe. There is no evidence of fill between the different floors, which suggests that they represent episodes of remodeling during a continuous occupation. It was sometimes difficult to trace the floor surfaces across the entire room. Different floors were most easily distinguished in the northern portion of the room and most difficult to distinguish in the southern portion. In places, tuff cobbles have been used beneath the floor to create an even surface over bedrock and soil.

In the northeast corner of the room there are three small patches of a final plastering episode (Figure 14.17). Although designated as Floor 3, it is not clear if these patches represent a reflooring episode or are just spot-repairs. The matrix of Floor 3 is Stratum 255. The western patch was collected as a flotation sample (FS 3308). Taxa identified in this matrix included pigweed, saltbush/greasewood, unknown conifer, juniper, unidentified pine, piñon pine, prickly pear, Douglas fir (*Pseudostoga menziesii*), oak, and maize.

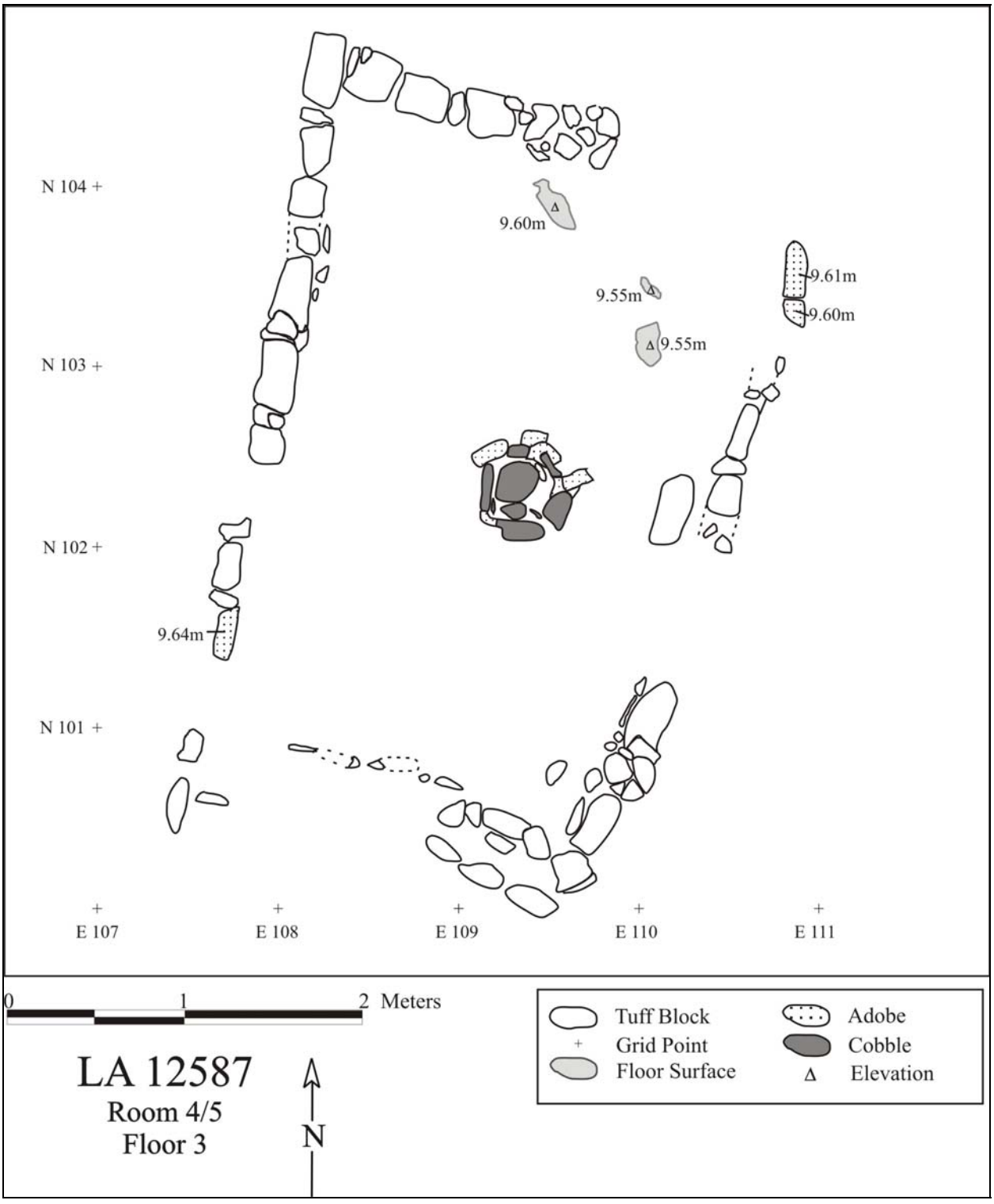


Figure 14.17. Room 4/5, Floor 3.

The youngest full floor is Floor 2 (Figure 14.18). The floor matrix (Stratum 252) is compact, indurated, and slightly ashy in content. It contains a surprisingly high number of artifacts (see

Table 14.13), suggesting that the floor matrix is composed of midden material. A patch of this floor was collected as a flotation sample (FS 3256) and identified taxa included pigweed, sagebrush, saltbush/greasewood, unknown conifer, juniper, unidentified pine, and maize. Floor 2 was removed in a 4-m^2 area to expose the lower floor and sub-floor deposits.

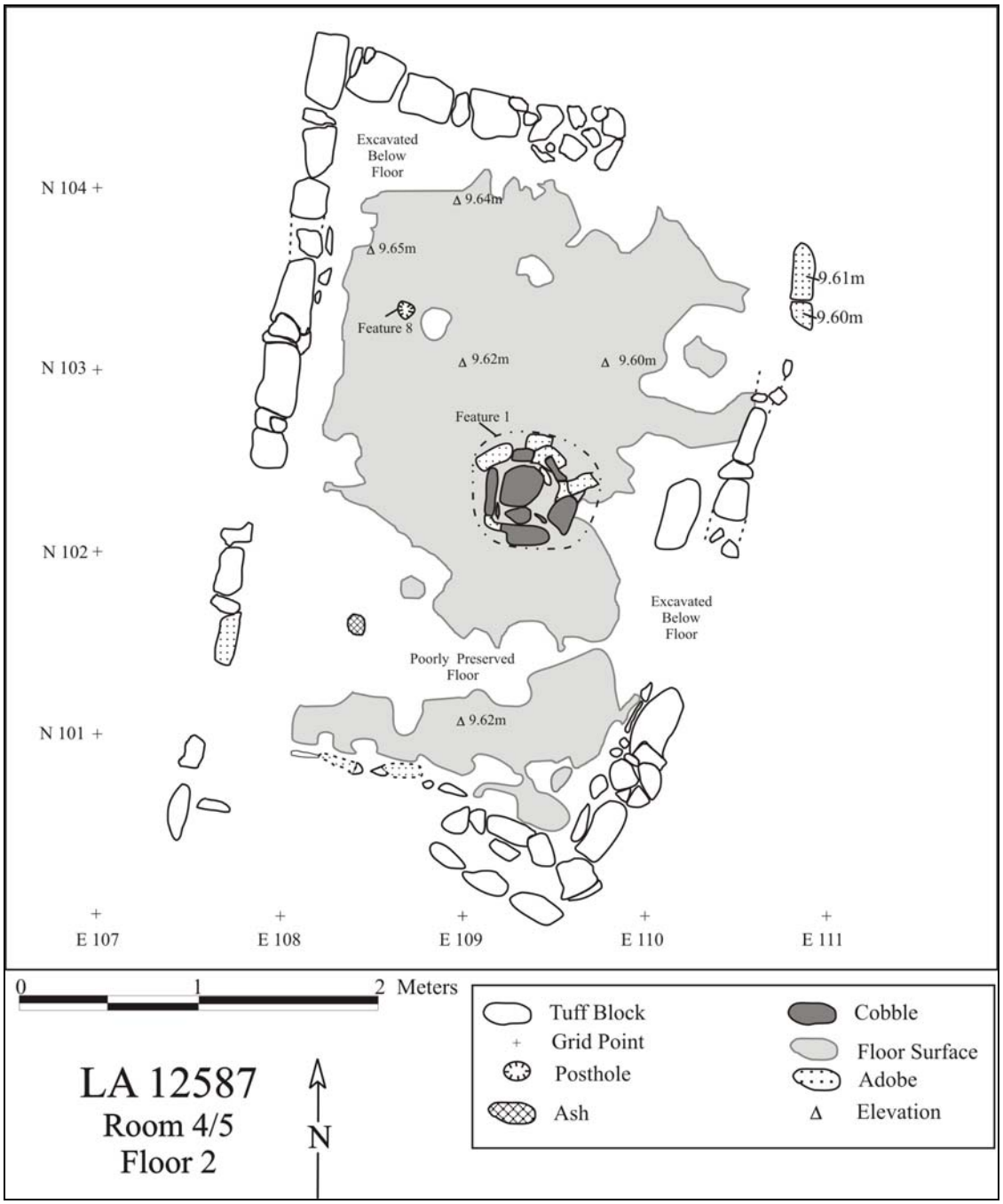


Figure 14.18. Room 4/5, Floor 2.

Floor 1 was immediately below Floor 2 (Figure 14.19). Like Floor 2, Floor 1 is uneven, of variable thickness, and well-preserved. However, screening of the floor matrix (Stratum 253)

resulted in the recovery of no artifacts. Unlike Floor 2, this floor must have been made of sterile sediment rather than midden material. Possibly the floor was made before an accumulation of midden material was available. The base of the Floor 1 matrix exhibited impressions of what appears to be tall grass or thin reeds. A patch of Floor 1 was collected as a flotation sample (FS 3299) and identified taxa included juniper, unidentified pine, and maize.

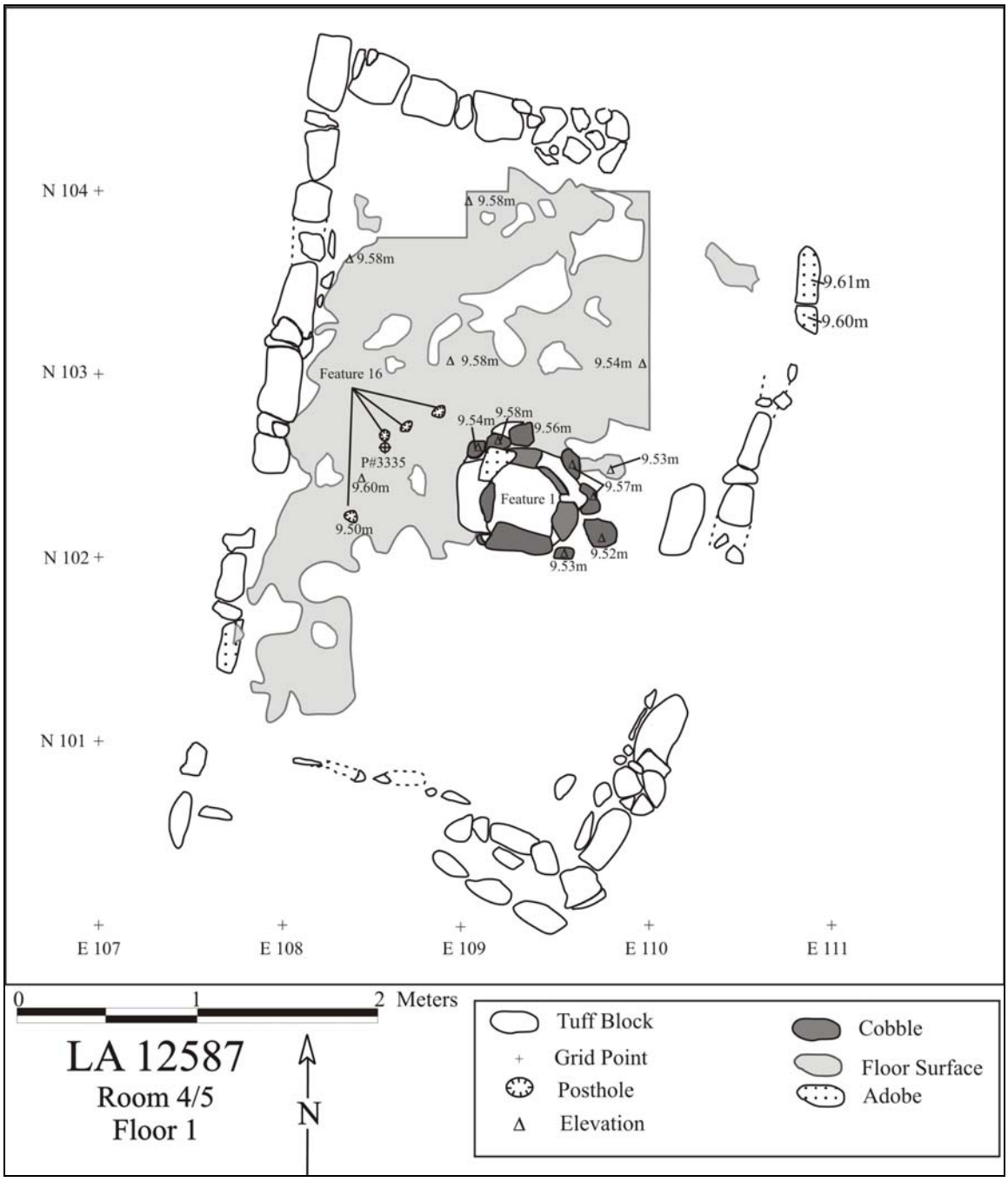


Figure 14.19. Room 4/5, Floor 1.

Eight artifacts were found on the floor surface and included a dacite abrading stone (FS 2395), a dacite two-hand mano fragment (FS 2396), a quartzite polishing stone (FS 2550), a Pedernal chert core fragment (FS 1061), a Pedernal chert flake fragment (FS 2363), two smeared-indented corrugated jar sherds (FS 1098 and 2736), and an obsidian nodule (FS 2580).

Wall Construction. The west wall was built first, followed by the north and south walls. Both of these walls abut the west wall. The east wall abuts the south wall. The relationship between the north wall and the east wall is undetermined, as that corner is missing. Table 14.14 gives the dimensions of the extant segments. The north wall is described in the Room 2 section. The only difference is that no plaster is present on the south face of the wall.

Table 14.14. Room 4/5 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.6	0.30	0.33
East	1.0, 0.90	0.34	0.26
South	0.40	0.35	0.41
West	3.75	0.33	0.21

The extant central fragment of the east wall is constructed of upright and semi-coursed unshaped tuff blocks. The southern fragment is constructed of irregular upright blocks and small stones placed at irregular intervals into a mass of mortar (Figure 14.20). Despite the fragmentary condition of the southeast corner, the south wall clearly abuts the east wall.

The extant portion of the south wall consists of two parallel rows of upright tabular tuff blocks (18 to 20 cm apart). The interior was probably filled with sediment and rubble. Remnants of adobe at the west end of the south wall indicate that the foundation is a bed of adobe into which the uprights were secured. An alignment of small, mostly upright stones was encountered at the base of the walls and set slightly into the room away from the surface of the wall. These small stones were probably placed to provide support for a fairly robust application of wall plaster.

The northern portion of the west wall is built of large upright tuff blocks placed into a bed of adobe. Where a second course is present, it consists of horizontally laid tuff blocks. The southern portion of the wall is built of semi-coursed irregular tuff blocks secured with copious amounts of mortar. A slightly raised remnant of adobe present near the south end of the wall may be an eroded sill indicating a connection between Room 4/5 and Room 6.

The basal course of an east-west-aligned wall was found in the middle of the room. The wall was built on top of the plastered floor surface and one masonry block had been placed in an upright position in the hearth (Feature 1). It could not be determined if this wall was ever built to full height.

Figure 14.20. Room 4/5 southeast corner.

Artifact and Samples. All the artifacts from units 102N/109E and 103N/109E were analyzed. All the macrobotanical material from unit 103N/109E was also analyzed. All the faunal remains and all the artifacts found on the floor were analyzed. Table 14.15 lists the samples analyzed from Room 4/5.

Table 14.15. Room 4/5 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical[1]
1	632	631	821
10	641, 656, 695, 708, 1064	642, 694, 707, 1063	667, 1089, 1193, 1225, 1275, 2685, 3055
14	2564	2563	None
70	956	1038	972
170	3368	None	985
250	2630, 2632	2631	None
251	2635, 4023	2634	None
252	3256	3217, 3258	3261
253	3299	None	None
255	3308	None	None
256	None	3334, 3335	None
305	None	4024	None
306	4049	None	None

1 In addition to the macrobotanical material from 103N/109E

Features

Feature 1 (Hearth). Feature 1 is a circular collared hearth located near the center of Room 4/5 (Figures 14.21 and 14.22). The exterior diameter of the hearth is 54 cm, the interior diameter is 36 cm, and it is 18 cm deep. Cobbles and ground stone artifacts formed the walls and base of the hearth, and these were mortared into place. The Floor 2 surface articulates with the hearth and covers the adobe collar. Parts of the hearth walls and base are also coated with plaster.

When Floor 2 was removed, an arc of cobbles on the north and east side of the hearth was exposed (Figure 14.23). On the north side of the hearth, Floor 1 extends a few centimeters down into a pit that was dug to accommodate this outer arc of cobbles. The removal of Floor 2 also revealed that Floor 1 abuts the south wall of the hearth. This arc of stones may represent the extent of the hearth when Floor 1 was in use. If this is the case, then the earlier hearth had an exterior diameter of approximately 72 cm and interior dimensions of 46 cm north-south by 58 cm east-west. Removal of the exterior arc of rocks revealed a 40-cm-long arc of deteriorated, oxidized, and very friable plaster northwest of the hearth. This plaster may be the remains of an even earlier floor or hearth.

Eight ground stone artifacts were part of the hearth walls, base, and outer arc. These included a vesicular basalt slab metate fragment (FS 4017), a dacite metate fragment (FS 4018), two andesite metate fragments (FS 4019 and FS 4022), a quartzite mano fragment (FS 4020), a dacite two-hand mano fragment (FS 4021), a rhyolite or rhyolitic tuff grinding slab fragment (FS 4045), a welded tuff slab metate fragment (FS 4046), and a dacite grinding slab (FS 4047).

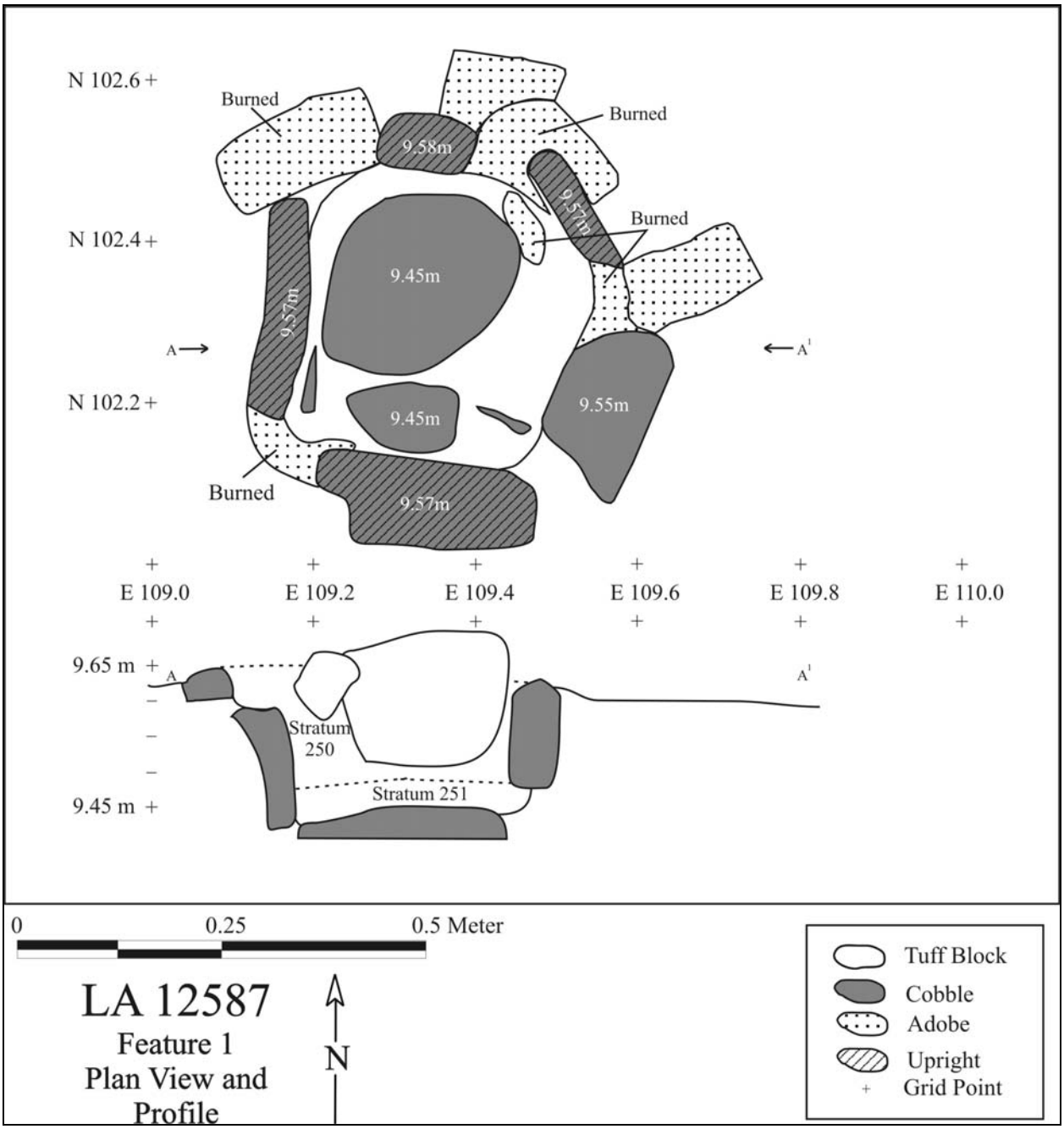


Figure 14.21. Feature 1 plan view and profile.

Figure 14.22. Feature 1.

A large rock that was part of the wall dividing Room 4/5 was placed in the hearth, filling most of its interior. Two strata were found beside and below the masonry block. Stratum 250 is the fill in the upper portion of the hearth and Stratum 251 is a thin ash- and charcoal-rich layer at the base of the hearth. Stratum 250 surrounds the masonry block and so post-dates, or is contemporaneous with it. Stratum 251 is associated with the use of Feature 1 although the thinness of this stratum (3 cm) suggests that the hearth was partially cleaned out before construction of the wall.

Five flotation samples were analyzed from Feature 1. Taxa identified in Stratum 250 (FS 2630 and FS 2632) included sagebrush, four-wing saltbush, saltbush/greasewood, unknown conifer, juniper, tobacco (*Nicotiana*), unidentified pine, piñon pine, ponderosa pine, oak, and maize. Charred wood from the following taxa were identified in the Stratum 251 flotation samples (FS 2635 and FS 4023): saltbush/greasewood, sunflower family, sunflower (*Helianthus*), bugseed, grass family, juniper, mint family, unidentified pine, piñon pine, ponderosa pine, and maize. The following charred material was found in a flotation sample of the plaster of Feature 1 (FS 4049): cheno-ams, beeweed, bugseed, grass family, juniper, unidentified pine, piñon pine, ponderosa pine, and maize. A pollen sample from Stratum 250 (FS 2631) produced the following taxa: maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, juniper, and sagebrush. Taxa identified in the pollen sample taken from Stratum 251 (FS 2634) included maize, prickly pear, beeweed, purslane, cheno-ams, grass family, mustard family, sunflower family, ragweed/bursage, piñon pine, and sagebrush.

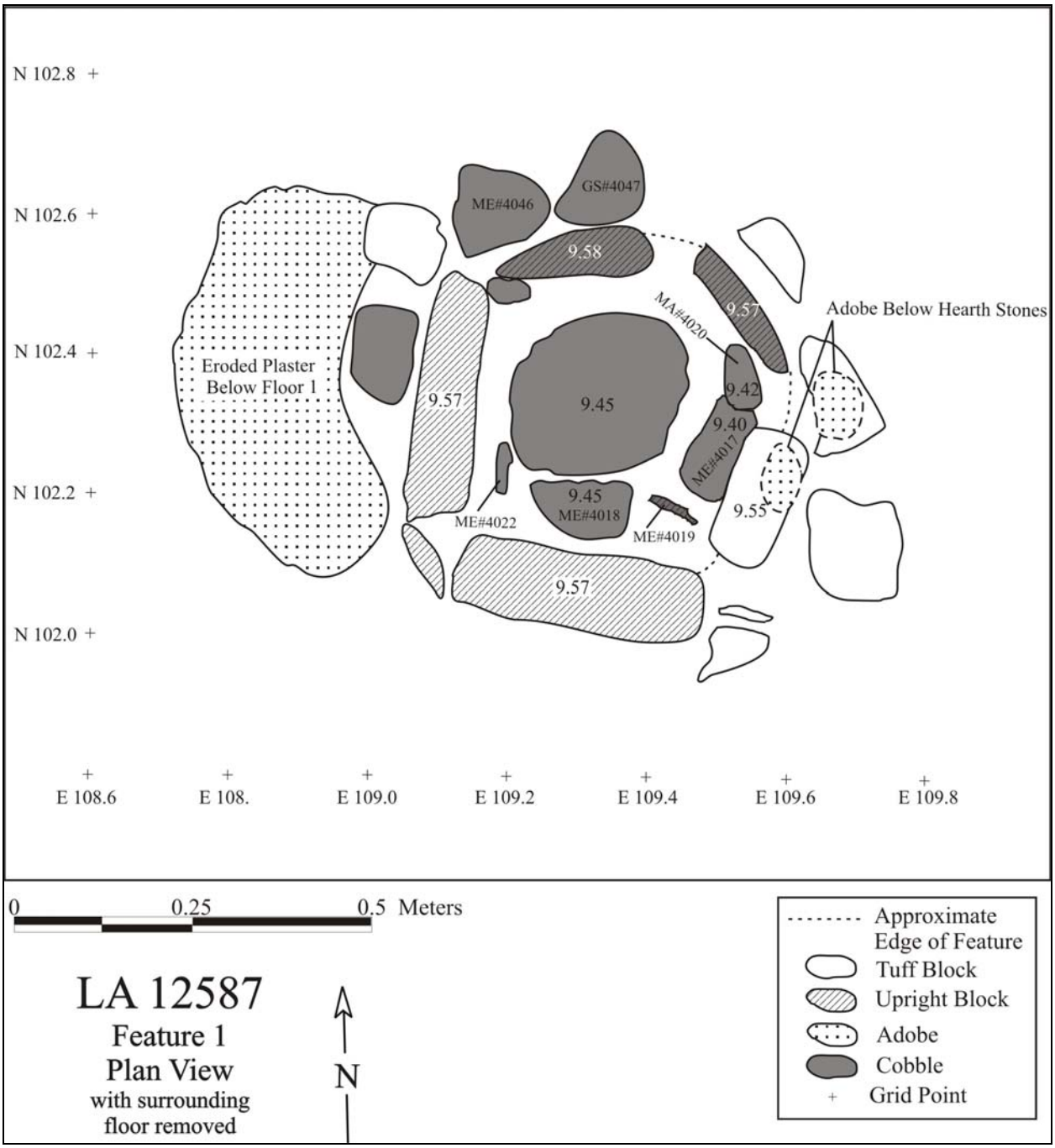


Figure 14.23. Feature 1 with surrounding floor removed.

A maize specimen (from FS 2632) from Feature 1 was subjected to AMS radiocarbon dating. The sample returned an age of 690±40 BP (Beta-183752) and a date of cal AD 1290 with a two-sigma date range of cal AD 1270–1320 and cal AD 1350–1390. An archaeomagnetic sample from the hearth (set 1209B) returned an imprecise date suggesting that the final burning of the hearth occurred sometime in the late 13th or early 14th century.

Feature 8 (Posthole). Feature 8 is an elliptical posthole in Floor 2 situated 1 m northwest of the hearth. Floor 1 forms the base of the posthole. Feature 8 measures 10 by 7.5 cm across and is 3 cm deep. The plaster from the floor does not appear to extend down the lip into the hole.

Feature 16 (Postholes). Feature 16 consists of four postholes in Floor 1. The holes form a rough arc west of the hearth (Feature 1) (Figure 14.24).

Figure 14.24. Feature 16.

Posthole 1 is 20 cm northwest of the hearth and measures 6 cm in diameter. It is 7 cm deep. Posthole 2 is 12 cm southwest of Posthole 1 and 32 cm northwest of the hearth. It is slightly

triangular in shape and measures 6 by 5 cm. It is 8 cm deep. Posthole 3 is 6 cm further to the southwest. This hole is 5 cm in diameter and 7 cm deep. Posthole 4 lies 68 cm west of Feature 1 and it is 44 cm southwest of Posthole 3. It measures 6 cm in diameter and is 8 cm deep.

Room 6

Room 6 (Figure 14.25) is south of Room 1 and west of Room 4/5. The interior dimensions of the room are 2.2 m east-west and 3.6 m north-south. The interior area is 7.9 m^2. A shallow sub-floor pit (Feature 7) is present.

Stratigraphy. Table 14.16 summarizes the strata associated with Room 6. A portion of an anthill was located in the northeast corner of the room. Stratum 1 consists of loose, unconsolidated, fine-grained sandy loam. Stratum 10 contains a heterogeneous mix of sandy loam and adobe melt. In a few areas the adobe melt is up to 16 cm thick. In other areas large chunks of adobe are in a sandy loam matrix. In still other areas there are only isolated fragments of adobe. In spots, a thin layer of adobe melt was found just above the floor. The number of masonry blocks removed from Stratum 10 was not recorded. In the northwest corner of the room an 8- to 11-cm-thick deposit of loose, sandy loam (Stratum 70) is present below a thick deposit of adobe melt. This stratum is pre-room collapse fill. Stratum 175, the Pleistocene Btk horizon, underlies the floor in most places and is only a few centimeters deep. Stratum 175 is underlain by bedrock. Strata 126 and 290 are discussed below.

Table 14.16. Room 6 stratigraphy.

Stratum	Color	Texture	Thickness	Description
0	7.5-10YR 4-5/3	sandy loam	0	Surface
1	7.5YR 5/3, 10YR 4-5/3, 5/4	sandy loam	1–7	Unconsolidated surface soil
10	7.5YR 5/3, 10YR 4-5/3, 5/4	sandy loam and adobe melt	22–42	Wallfall and post-occupational fill
70	10YR 5/4	sandy loam	8–11	Fill below wallfall and above floor
126	10YR 7/1	silty clay	0	Floor, surface
175	7.5YR 4/5	sandy clay	2–7	Btk horizon
290	10YR 4/4	sandy loam	15	Feature 7, fill

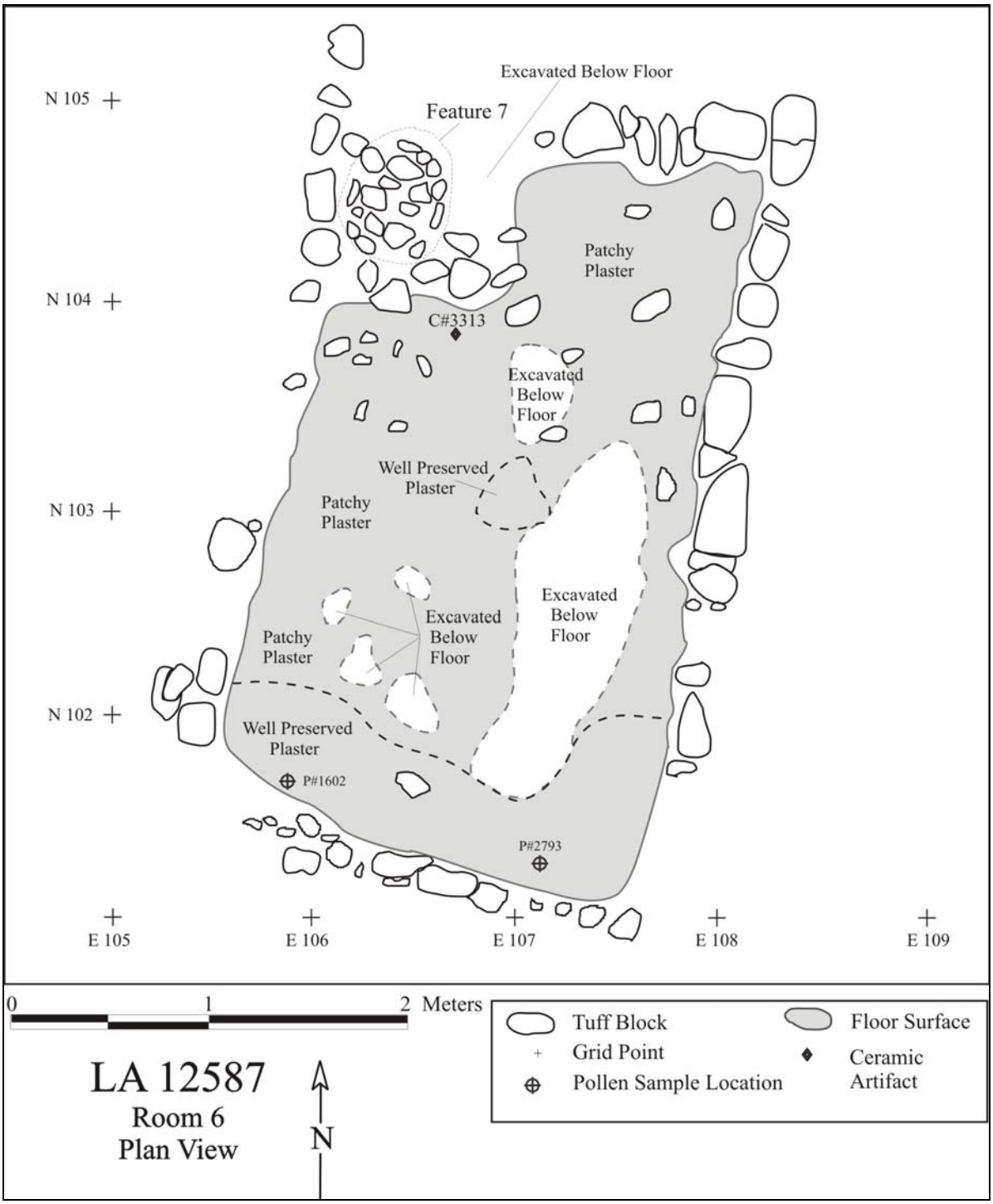


Figure 14.25. Room 6 plan view.

Table 14.17 shows the artifact counts by stratigraphic unit for Room 6. The 'Other' category consists of an adult human left distal humerus fragment (FS 1373), a freshwater shell fragment (FS 1358), an *Anodonta* sp. umbo fragment (FS 1462), two turquoise beads (FS 835 and FS

1375), a hematite fragment (FS 839), three reddish-brown micaceous shale fragments (FS 2223), and several miscellaneous samples.

Table 14.17. Artifact counts by stratum in Room 6.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	13	26	0	0	0	39
1	117	295	1	1	4	418
10	463	1432	37	15	10	1957
70	5	18	0	0	0	23
126	0	1	0	0	0	1
175	1	3	1	0	0	5
290	0	0	0	0	0	0
Total	**599**	**1775**	**39**	**16**	**14**	**2443**

Floor. The plastered floor surface of Room 6 (Stratum 126) is well-preserved along the south wall; elsewhere it is either absent or greatly disturbed by root and rodent activity. In these areas it appears that some of the adobe floor foundation is present, but not the surficial plaster. Coping is present between the floor, the south wall, and the east wall and in the southwest corner. No evidence of multiple plastering episodes was found, although this may be due to the poor preservation of the floor. Tabular tuff cobbles are set into Stratum 175 in the northern third of the room in order to level the ground surface. A smeared-indented corrugated jar sherd (FS 3313) was the only artifact unambiguously associated with the floor surface of Room 6.

Wall Construction. The north wall abuts the east wall but no other corners are intact. This makes it difficult to determine the room construction sequence. However, based on the construction sequence of the other rooms, it seems likely that the east wall was built first and then the other walls were added. While shaped and unshaped tuff blocks were found in the fill of the room, the field notes give the impression that there was less masonry present here than in some other rooms (e.g., Rooms 2 and 7). As a great deal of adobe melt was found in the room, a significant portion of the Room 6 walls may have been made of adobe. Table 14.18 gives the dimensions of the extant wall segments. The north wall is described above as the south wall of Room 1 and the east wall is described above as the west wall of Room 4/5. Occasional upright tuff blocks and cobbles of the basal course are all that remain of the west wall. A small patch of plaster is present on the interior face of the wall near its north end. The south wall is poorly preserved. The remains of the basal course consist only of a tuff upright and several fist-sized tuff cobbles set in adobe. A horizontally laid tuff block is all that remains of the second course.

Table 14.18. Room 6 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	0.90	0.31	0.23
East	2.21	0.35	0.20
South	1.48	0.22	0.20
West	0.50, 1.48	0.32	0.20

Artifact and Samples. All the artifacts from units 104N/106E and 104N/107E were analyzed. All the macrobotanical material from unit 104N/107E was also analyzed. The single sherd from the floor and all the faunal remains were analyzed. Two shaped andesite slab fragments (FS 2203) were also analyzed. Table 14.19 lists the samples analyzed from Room 6.

Table 14.19. Room 6 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical[1]
10	881	880	1447
70	None	None	1007
126	None	1602, 2793	None
175	None	None	None
290	3309	3310	None

1 In addition to the macrobotanical material from 104N/107E

Features

Feature 7 (Pit). Feature 7 is a shallow sub-floor pit (63 cm north-south, 42 cm east-west, and 15 cm deep) that is located adjacent to the west wall in the northwest corner of Room 6 (Figure 14.26). A rough circle of upright tuff cobbles defines the perimeter of the feature; the base consists of fragmented bedrock. The fill of Feature 7 (Stratum 290) was indistinguishable from Stratum 10. The floor around Feature 7 was too disturbed to determine how the former articulated with the latter.

No artifacts were found in the feature and no evidence of burning was observed. One pollen and one flotation sample were recovered from the feature. The following charred taxa were found in the flotation sample (FS 3309): unknown conifer, juniper, and maize. Taxa identified in the pollen sample (FS 3310) included prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, spruce (*Picea*), unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

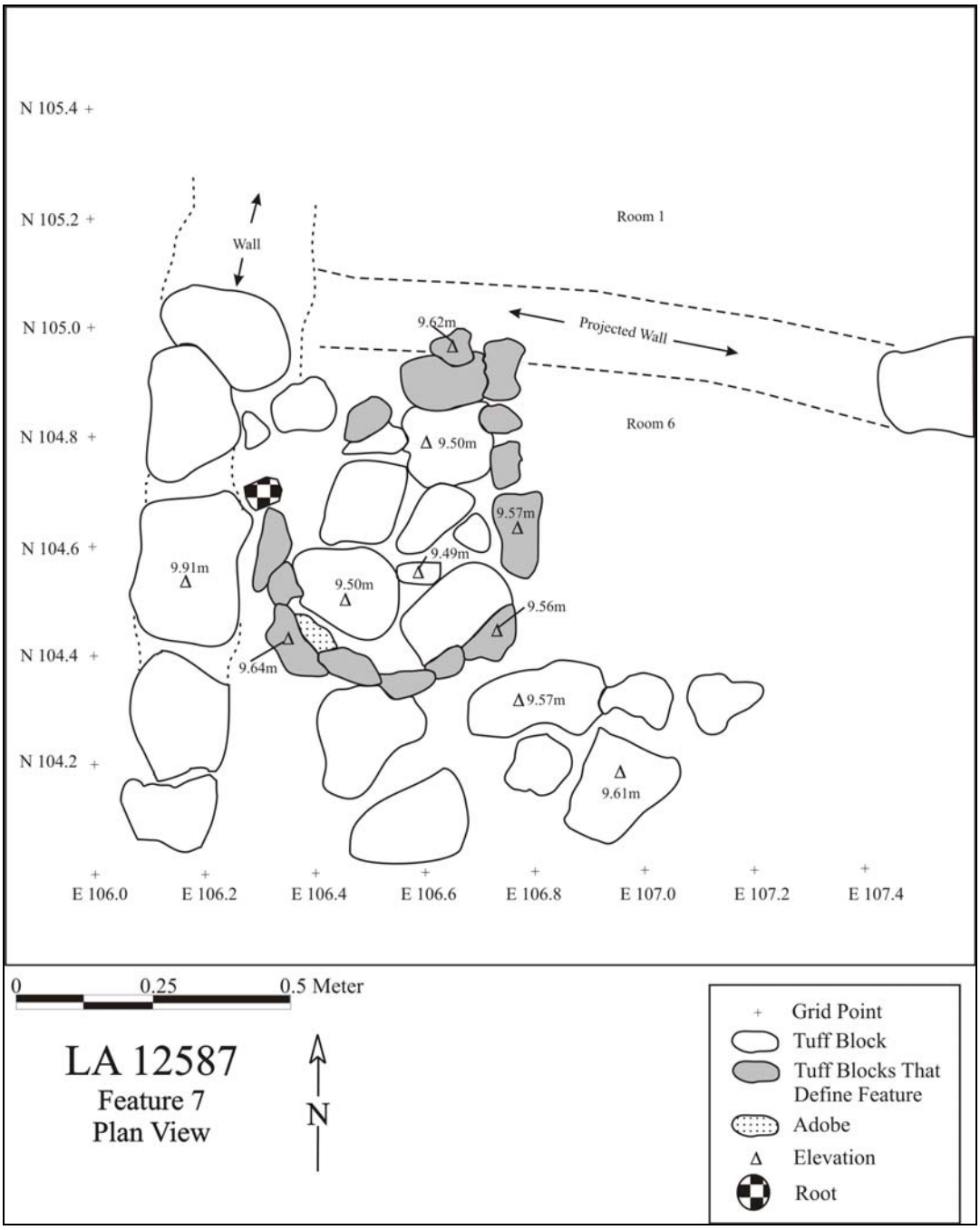


Figure 14.26. Feature 7 plan view.

Room 7

Room 7 is located in the southeast corner of Roomblock 1 (Figures 14.27 and 14.28). It is south of Room 4/5 and east of Room 8. Because the shape and extent of the east and south walls could not be defined, the room size cannot be precisely determined. If it is assumed that the room is rectangular in shape, then the floor area is about 12 m^2. Based on the extant floor, the room is

shaped like a blocky, upside down "L" and has an area of about 9.9 m^2. A hearth and ash box complex (Feature 6) and four postholes (Feature 12) were identified in the room.

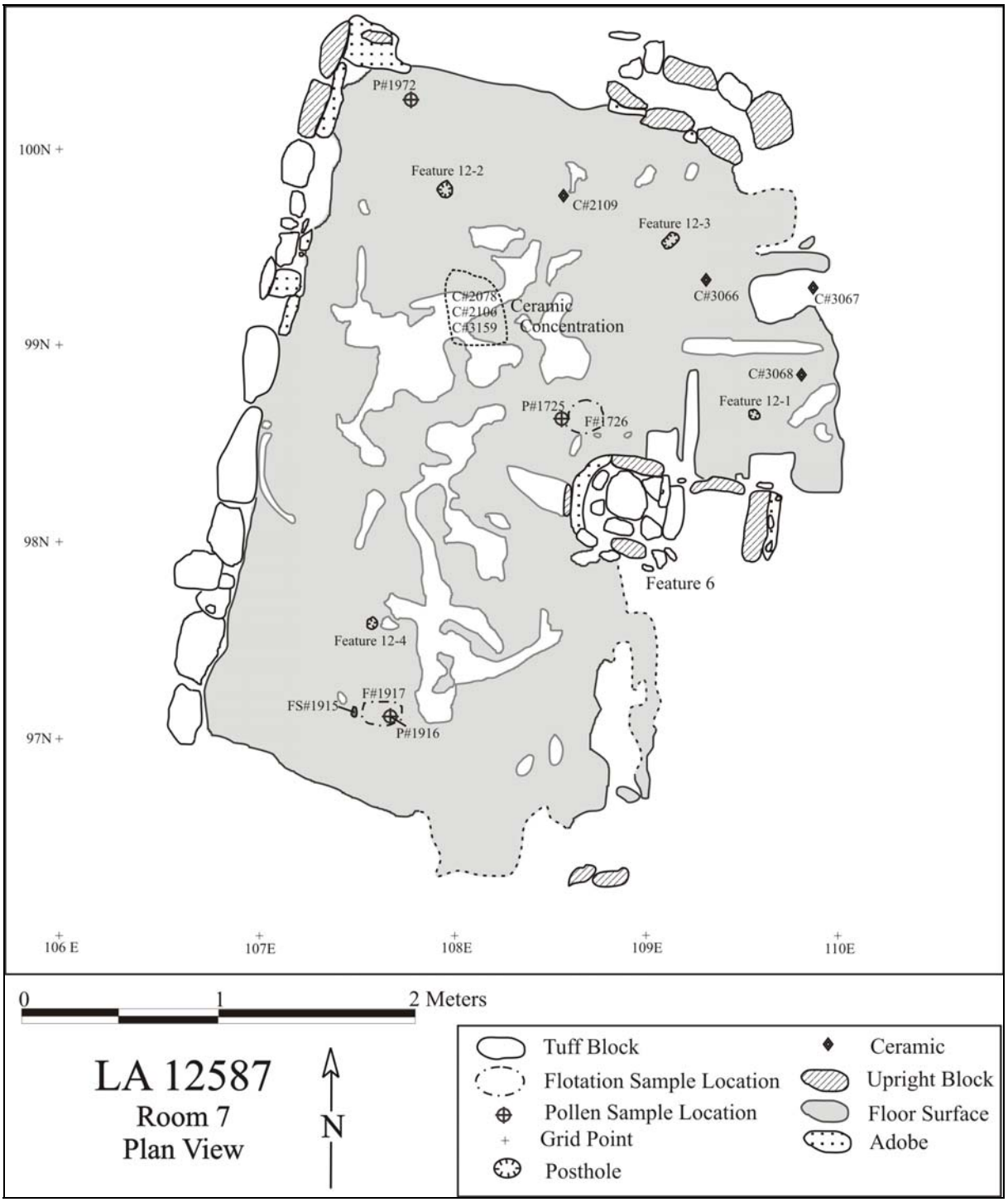


Figure 14.27. Room 7 plan view.

Figure 14.28. Room 7.

Stratigraphy. Table 14.20 summarizes the strata associated with Room 7. Several plants grew in and near Room 7 at the time of excavation, including several prickly pear cacti and one sagebrush. A piñon tree was located just off the southwest corner of the room. The ground surface in this area was covered with pine needles. Stratum 1 consisted of loose, unconsolidated, fine-grained sandy loam. Six tuff masonry blocks were found in this stratum. Stratum 10 consisted of moderately compact sandy loam with varying amounts of tuff gravel, wallfall, and occasional ashy stains. Wallfall includes approximately 160 shaped and unshaped tuff blocks, fist-sized tuff cobbles, adobe chunks, and adobe melt. No rooffall could be identified. The strata associated with the floors and features of Room 7 are discussed subsequently.

Table 14.20. Room 7 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	10YR 4-5/3, 10YR 4.5/4	sandy loam	0	Surface
1	10YR 5/3	sandy loam	1–7	Unconsolidated surface soil
10	10YR 4-5/3, 10YR 3-3.5/4-4.5	sandy loam	18–34	Wall fall and post-occupational fill
127	10YR 6.5/1	silty clay	0	Floor, surface
170	10YR 4/4	sandy loam	2–5	Sub-floor soil

Stratum	Color	Texture	Thickness (cm)	Description
175	7.5YR 4/6	sandy clay	2–5	Btk horizon
270	10YR 4.5/3	sandy loam	4–10	Feature 6, upper hearth fill
271	10YR 8/1	consolidated ash	7–10	Feature 6, lower hearth fill
272	10YR 5/3	sandy loam	5–7	Feature 12, fill
273	10YR 5/3	silty clay	0.5–4	Floor 2, matrix
300	N/A	plaster/adobe	N/A	Feature 6, later wall of hearth
301	10YR 4/4	sandy loam	11	Feature 6, material between earlier and later hearth walls
307	10YR 4/4	sandy loam	23	Feature 6, fill of ash box
308	7.5YR 4/6	ashy sandy loam	5	Ashy deposit below Feature 6 base
309	N/A	plaster/adobe	N/A	Feature 6, earlier wall of hearth

Table 14.21 shows the artifact counts by stratigraphic unit for Room 7. The 'Other' category consists of two freshwater shell fragments (FS 1850) and a plaster sample. The first total row in Table 14.21 includes only artifacts found in Room 7. This total is less than that from other rooms because artifacts found in Room 3 (which overlays Room 7 and covers 3.2 m^2) are not included. When artifacts from Room 3, many of which are probably associated with Room 7, are included, the total number of artifacts is similar to that of other rooms.

Table 14.21. Room 7 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
0	0	2	0	0	0	2
1	33	100	0	0	0	133
10	518	1013	22	12	2	1567
127	0	15	1	0	0	16
170	0	0	0	0	0	0
175	0	0	0	0	0	0
270	3	11	0	22	0	36
271	3	1	0	61	0	65
272	0	0	0	0	0	0
273	0	0	0	0	0	0
300	1	2	5	0	0	8
301	1	1	0	0	0	2
307	1	2	0	0	0	3
308	1	3	0	1	0	5
309	0	0	4	0	1	5
Total	**561**	**1150**	**32**	**96**	**3**	**1842**
Total (incl. Rm 3)	**683**	**1508**	**39**	**98**	**6**	**2334**

Floor. The floor surface (Stratum 127) of Room 7 is fairly even with only slight undulations. In the corners the floor is well-preserved but there is a great deal of rodent and root disturbance in the center of the room. The edges of the floor are well defined along the north wall and in the southwest corner where they cope up to the walls or show evidence of coping where the walls are absent. Coping also occurs in spots along the west wall. More frequently the floor has broken away from the wall leaving a 5- to 10-cm gap between the wall and the floor. In the east and southeast of the room there is no clear edge of the floor. Instead, the floor grades into the sandy loam exterior fill (Stratum 200). Two episodes of floor plastering are evident but in many areas the two surfaces merge into one, making it impossible to determine which surface is being observed.

The floor assemblage consists of a partial ceramic vessel in 12 sherds (FS 2078, FS 2106, FS 2109, and FS 3159; several sherds from FS 2104 may also be part of this vessel), three sherds that are not part of the vessel and include a smeared-indented corrugated jar sherd (FS 3066), an indented corrugated jar sherd (FS 3067), and a Santa Fe Black-on-white bowl sherd (FS 3068), and a dacite ground stone fragment (FS 1915). In addition, two flotation and two pollen samples were collected from the floor. Taxa identified in the flotation samples include sagebrush, cheno-ams, saltbush/greasewood, plantain (*Plantago*), unknown conifer, juniper, groundcherry, piñon pine, ponderosa pine, prickly pear, and maize. Taxa identified in the pollen samples include maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

Wall Construction. No corners of the room were intact, so the construction sequence of the room was undetermined. Table 14.22 gives the dimensions of the extant wall segments. The west wall consists of a single row of coursed tuff blocks and chinking stones set in mortar (Figure 14.29). All of the masonry blocks are horizontally laid except for the two northernmost blocks; these are both uprights. Two courses are present at the center of the wall but only one course survives at the north and south ends. The masonry of the wall ranges in size from 20 by 17 by 5 cm to 45 by 18 by 18 cm. Although a few blocks exhibit some minor shaping, most of the masonry is unshaped. Two small tuff uprights near the southeast corner of the room may have been part of the south wall. Nothing else remains of the south wall. No evidence of an east wall was found, although, presumably, one was present. The north wall is described with Room 4/5.

Table 14.22. Room 7 dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	0.63, 0.97	0.25	0.38
East	n/a	n/a	n/a
South	0.48	0.10	0.15
West	3.66	0.35	0.33

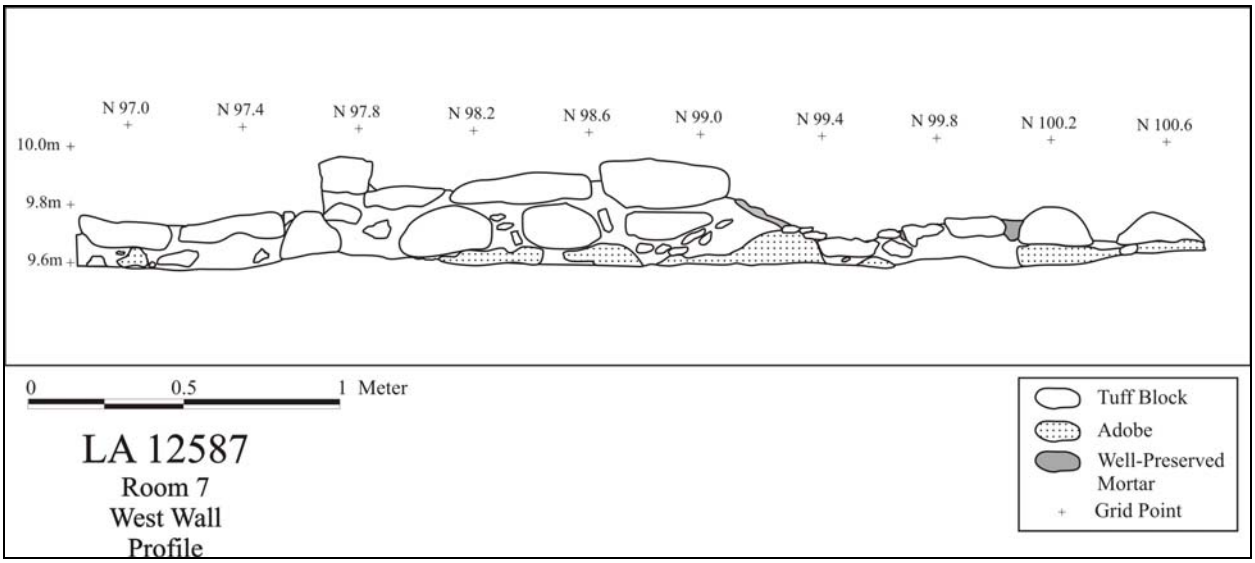


Figure 14.29. Room 7 west wall profile.

Artifacts and Samples. All the artifacts from units 98N/107E and 98N/108E were analyzed as were all the artifacts from below the base of the Room 3 walls in unit 99N/108E. All the macrobotanical material from unit 98N/107E was analyzed. All the artifacts found on the floor and all the faunal remains were analyzed. A Cerro Toledo obsidian side-notched Puebloan point was also analyzed (FS 2284). Table 14.23 lists the samples analyzed from Room 7.

Table 14.23. Room 7 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical[1]
1	None	None	1701
10	1886	1887	2133
127	1726, 1917	1725, 1916, 1972	None
270	3273, 3274, 3275, 3276, 3319, 3320, 3321	3358	None
271	3277, 3278, 3279, 3280, 3281, 3282, 3322, 3323, 3324	3360	None
272	None	3441, 3444	None
273	3471, 3472	3466, 3467	None
300	3983, 3984, 3985	3985	None
301	3990, 3991	None	None
307	4074, 4075	4073	None
308	4102	4100	None
309	4098	4098	None

1 In addition to the macrobotanical material from 98N/107E

Features

Feature 6 (Hearth and Ash Box). Feature 6 is a hearth and ash box complex. The hearth shows evidence of initial construction and a later remodeling. The initial construction of the hearth consisted of arranging a ring of dacite and tuff uprights in a pit in the floor (Figures 14.30 and 14.31). Three of these stones (A, B, and C in Figure 14.30) were clearly set into the earlier floor. The interior of the ring of uprights was plastered over. The interior diameter at the top of the hearth after the initial construction was approximately 50 cm.

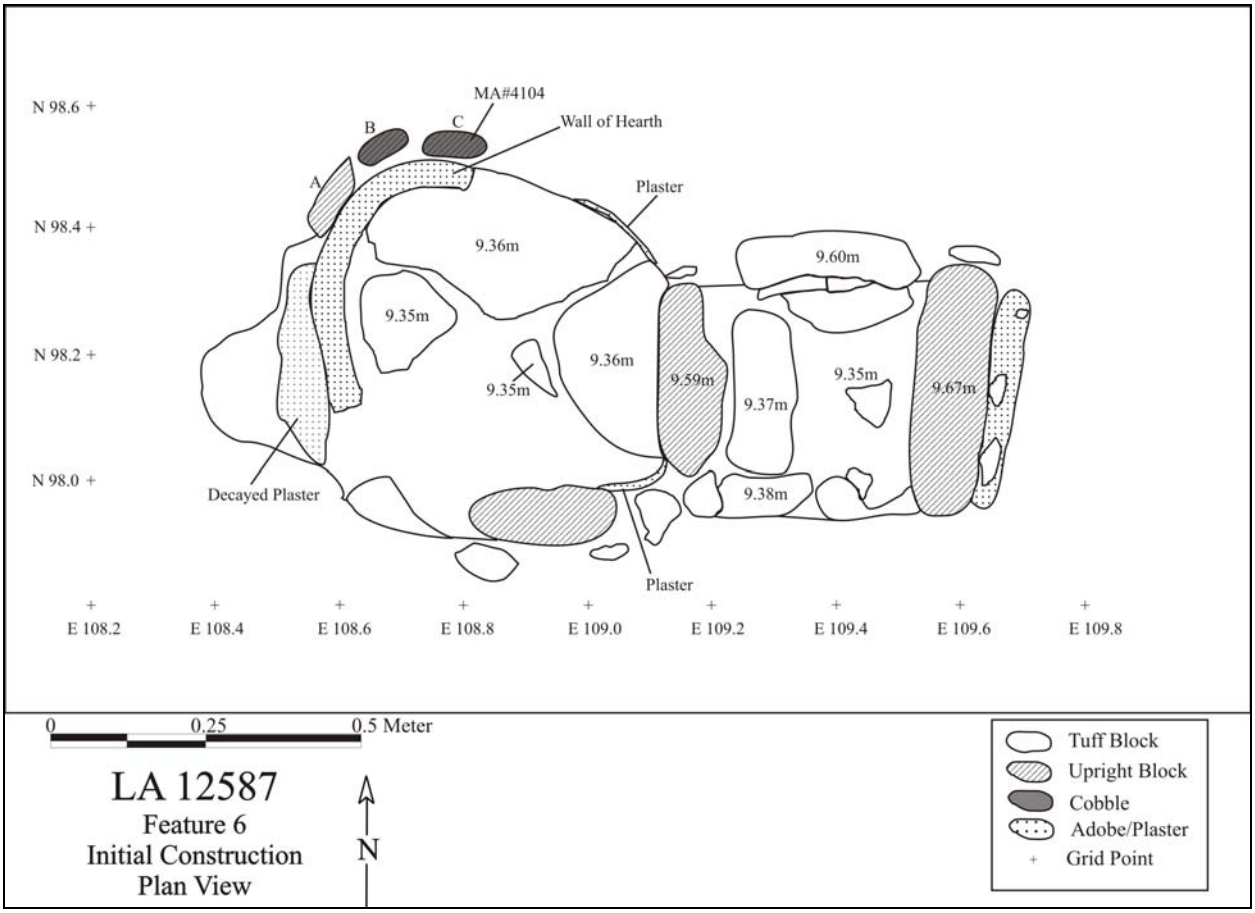


Figure 14.30. Feature 6 initial construction plan view.

Later, the hearth was remodeled (Figures 14.32 and 14.33). Stones A, B, and C were covered by floor plaster and a new layer of plaster was laid in the hearth interior. Dacite and tuff slabs were placed into this plaster to form the walls of the hearth. In some areas, the old interior was merely covered by 1 or 2 cm of plaster. Along the northwest arc of the hearth, several thin slabs were placed between the first and second interiors. The interior diameter at the top of the remodeled hearth is approximately 45 cm and 19 cm deep. In both hearth construction episodes several ground stone fragments were used to form the hearth walls. These include a dacite grinding slab (FS 3982), two vesicular basalt two-hand mano fragments (FS 3986 and FS 4104), an andesite slab metate fragment (FS 3987), a tuff milling stone (FS 3988), a basalt hoe (FS 3989), and a dacite two-hand mano (FS 4105).

Figure 14.31. Feature 6 initial construction.

Figure 14.32. Feature 6 remodeled hearth.

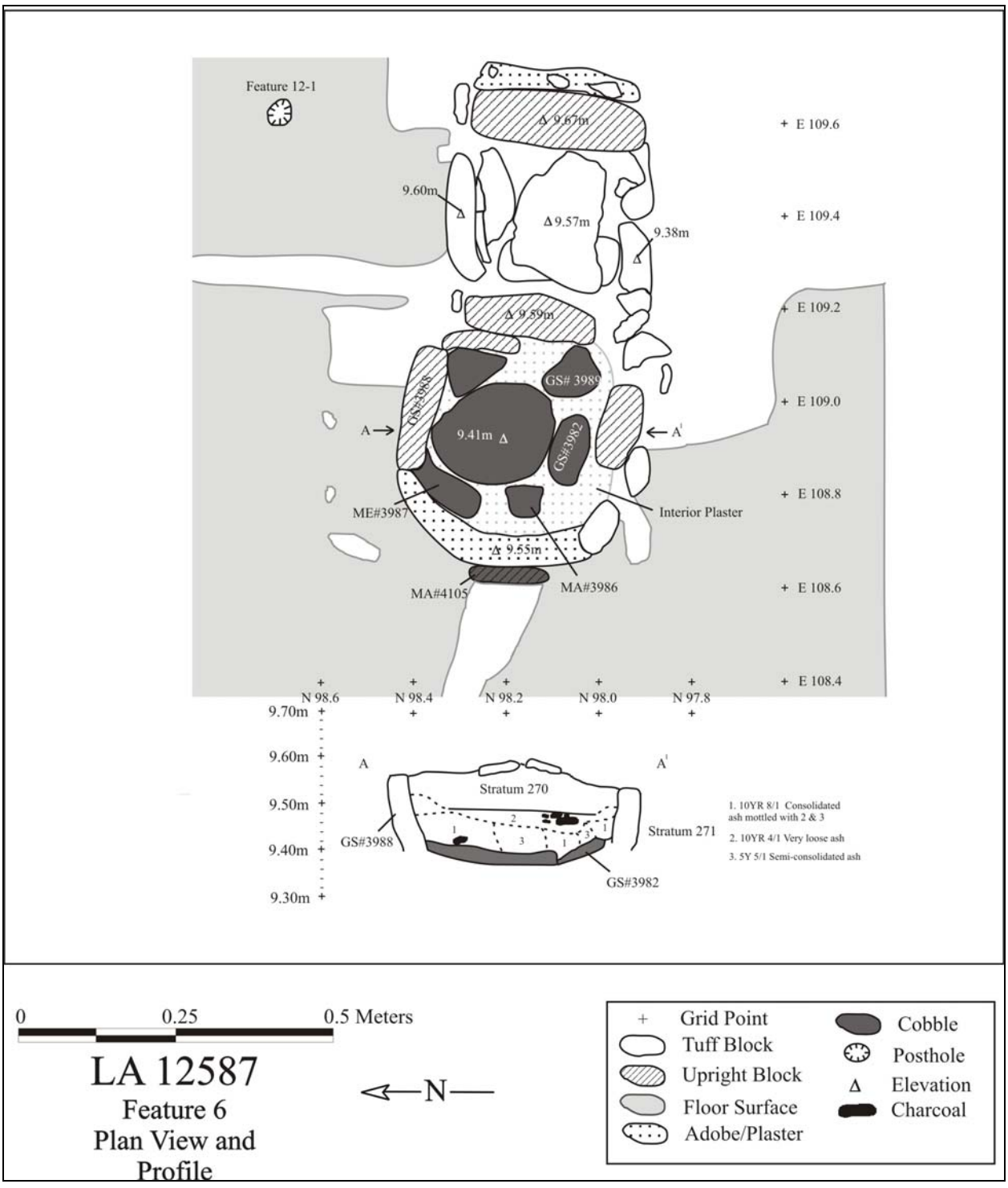


Figure 14.33. Feature 6 remodeled hearth plan view and profile.

The base of the hearth (34 by 24 cm after the remodeling) consists of a large, flat, dacite cobble. This cobble seems to be too small to have served as the base of the original hearth, suggesting

that the hearth base may have been remodeled in addition to the walls. A small amount of ash was found below the dacite cobble.

The fill of the hearth consists of two strata. The upper stratum (Stratum 270) is generally 10 cm thick and consists of sandy loam. It is indistinguishable from Stratum 10. Below Stratum 270 there is a deposit of ash that is approximately 8 cm deep (Stratum 271). Other strata associated with the hearth are Stratum 300 (the interior plaster of the remodeled hearth), Stratum 301 (material between the first and second layers of interior plaster), Stratum 308 (the ashy material below the hearth base), and Stratum 309 (the original hearth plaster). Flotation and pollen samples were taken from each of these strata.

Charred taxa identified in the Stratum 270 flotation samples (FS 3273, FS 3274, FS 3275, FS 3276, FS 3319, FS 3320, and FS 3321) include sagebrush, pigweed, saltbush/greasewood, four-wing saltbush, bugseed, goosefoot, cheno-ams, grass family, unknown conifer, Desert olive, juniper, bean (*Phaseolus*), tobacco, unidentified pine, piñon pine, ponderosa pine, prickly pear, cottonwood/willow, purslane, Douglas fir, oak, and maize. Taxa identified in the Stratum 270 pollen sample (FS 3358) include maize, cholla, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, and sagebrush.

Taxa identified in the Stratum 271 flotation samples (FS 3277, FS 3278, FS 3279, FS 3280, FS 3281, FS 3282, FS 3322, FS 3323, and FS 3324) include saltbush/greasewood, goosefoot, bugseed, unknown conifer, juniper, tobacco, evening primrose, unidentified pine, piñon pine, bean, prickly pear, groundcherry, cottonwood/willow, purslane, ponderosa pine, Douglas fir, and maize. Taxa identified in the Stratum 271 pollen sample (FS 3360) include maize, cholla, prickly pear, beeweed, purslane, cheno-ams, grass family, spurge family, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush.

Taxa identified in the Stratum 300 flotation samples (FS 3983, FS 3984, and FS 3985) include pigweed, sagebrush, saltbush/greasewood, goosefoot, cheno-ams, Desert olive, unknown conifer, juniper, groundcherry, unidentified pine, piñon pine, ponderosa pine, purslane, oak, and maize. Taxa identified in the pollen sample (FS 3985) from this stratum include maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, and sagebrush.

Taxa identified in the Stratum 301 flotation samples (FS 3990 and FS 3991) include sagebrush, saltbush/greasewood, goosefoot, Desert olive, unknown conifer, juniper, piñon pine, ponderosa pine, cottonwood/willow, and maize. No pollen samples were collected from this stratum.

Taxa identified in the Stratum 308 flotation sample (FS 4102) include saltbush/greasewood, goosefoot, unknown conifer, juniper, piñon pine, oak, and maize. A pollen sample (FS 4100) was collected from this stratum but it was not analyzed.

No charred material was recovered from the Stratum 309 flotation sample (FS 4098), although piñon pine needles were identified. Taxa identified in the single pollen sample taken from this stratum (FS 4098) include maize, prickly pear, cheno-ams, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush.

A maize specimen (from FS 3274 and FS 3319) from Feature 6 was submitted for AMS radiocarbon dating. The sample returned an age of 860±40 BP (Beta-183753) and a date of cal AD 1190 with a two-sigma date range of cal AD 1040–1260. A sample (UW 1032) of the earlier hearth plaster (Stratum 309) was submitted for thermoluminescence dating. The sample returned a date of AD 981 with a two-sigma date range of AD 803–1159.

An ash box was identified east of the hearth. An upright tuff block that was part of the eastern hearth wall formed the west wall of the ash box. The north wall was formed by a second tuff upright and two underlying tuff cobbles. The top of the west wall and north wall is 1 to 2 cm above the floor level. The east wall of ash box was formed by a larger, shaped tuff block, the top of which was 7 cm above the floor level. This block may have served as a deflector, or the base of a deflector. There is no obvious south wall. The ash box had no obvious floor but bedrock was encountered at 22 cm below the floor level, and a shaped tuff slab lying diagonally between the bedrock and the west fall formed a partial floor/wall. The interior dimensions of the ash box are 32.5 cm east-west and 35 cm north-south.

A large (24 by 21 by 12 cm), unshaped tuff block was found in the center of the ash box just below floor level. The rest of the fill (Stratum 307) was similar to Stratum 10. No ash and only a few flecks of charcoal were found. Two flotation samples were analyzed from Stratum 307 (FS 4074 and FS 4075) and the identified taxa included pigweed, sagebrush, saltbush/greasewood, goosefoot, squash/coyote gourd, spurge, Desert olive, unknown conifer, juniper, groundcherry, unidentified pine, piñon pine, prickly pear, cottonwood/willow, oak, purslane, buffalo burr, dropseed grass, and maize. One pollen sample (FS 4073) was collected from Stratum 307 and identified taxa included maize, cheno-ams, sunflower family, unidentified pine, piñon pine, and sagebrush.

Feature 12 (Postholes). Feature 12 consists of four postholes. Posthole 12-1, located 50 cm northwest of the hearth, is the smallest of the four postholes (5 cm in diameter) and has a smooth plaster interior but not a plaster bottom. Postholes 12-2, 12-3, and 12-4 may define three corners of a 2.3- by 1.4-m rectangular structure, although a posthole that would form the southeast corner was not found. Postholes 12-2 (7.5-cm diameter) and 12-4 (7.0-cm diameter) are well-preserved and both have smooth plaster interiors. Posthole 12-3 is slightly damaged and lacks a well-defined southwest arc, but was probably 8 cm in diameter. It appears to have had a smooth plaster interior.

Room 8

Room 8 (Figure 14.34) is one of the back rooms in Roomblock 1. Room 8 is south of Room 6, north of Room 9, and west of Room 7. The room interior measures 3.5 m north-south by 2.1 m east-west and has an interior floor area of 7.4 m^2. No interior features were identified during excavations.

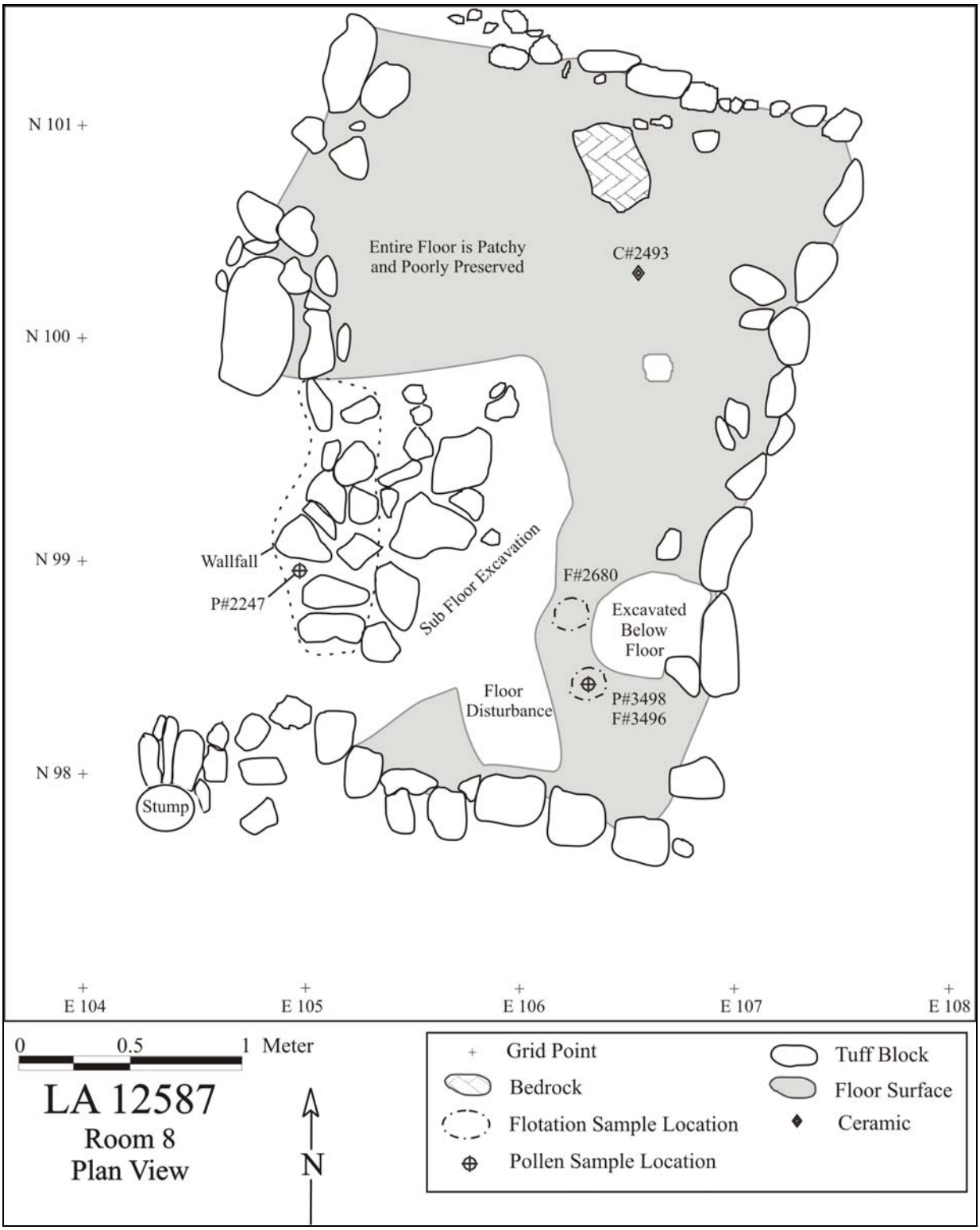


Figure 14.34. Room 8 plan view.

Stratigraphy. Table 14.24 summarizes the strata associated with Room 8. Much of the ground surface was covered by pine duff and twigs from a nearby piñon tree. Stratum 1 consists of

loose, unconsolidated, sandy loam. Stratum 10 consists of compact sandy loam and areas of consolidated adobe melt. Many masonry blocks were found in this stratum. Strata associated with the floor and sub-floor are discussed in the subsequent section.

Table 14.24. Room 8 stratigraphy.

Stratigraphic Unit	Thickness (cm)	Color	Texture	Description
0	0	10YR 4/3	sandy loam	Surface
1	1–5	10YR 4/3	sandy loam	Unconsolidated surface soil
10	24–35	10YR 4/3	sandy loam	Wallfall and post-occupational fill
128	0	10YR 7/1	silty clay	Floor, surface
170	1–2	10 YR 4/3	sandy loam	Sub-floor soil

Table 14.25 shows the artifact counts by stratigraphic unit for Room 8. The 'Other' category consists of a freshwater shell fragment (FS 2426).

Table 14.25. Room 8 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
0	0	0	0	0	0	0
1	40	65	0	0	0	105
10	187	778	6	8	1	980
128	0	1	0	0	0	1
170	0	0	0	0	0	0
Total	**227**	**844**	**6**	**8**	**1**	**1086**

Floors. The floor surface of Room 8 (Stratum 128) is patchy and poorly preserved. It has been greatly disturbed by roots (including the roots of a large piñon in the southwest corner of the room) and rodent activity. The floor foundation is 1 to 4 cm thick. In many areas, shaped and unshaped tuff blocks are set into the loose sandy loam sub-floor deposits (Stratum 170) to provide a level surface for the floor foundation. In other areas, the floor is built directly on bedrock. There is no evidence of multiple plastering events. In some areas there is coping between the floor and the walls. Coping is best preserved in the northeast and southeast corners of the room. A smeared-indented corrugated jar sherd was found on the floor. Two pollen (FS 2247 and FS 3498) and flotation (FS 2680 and FS 3496) samples were taken on the floor. Taxa identified in the pollen samples included maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, chicory tribe (Liguliflorae), spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Taxa identified in the flotation samples included pigweed, goosefoot, cheno-ams, Desert olive, piñon pine, juniper, and maize. A pollen (FS 3499) and flotation (FS 3497) sample were collected from the sub-floor context. Taxa identified in the pollen sample included cholla, prickly pear, beeweed, cheno-ams,

sunflower family, unidentified pine, piñon pine, and sagebrush. Taxa identified in the flotation sample included saltbush/greasewood, goosefoot, unknown conifer, juniper, piñon pine, ponderosa pine, and maize.

Wall Construction. The room corners are poorly preserved so the construction sequence of the room could not be determined. Table 14.26 gives the dimensions of the extant wall segments. The north wall is described above as the south wall of Room 6 and the east wall is described above as the west wall of Room 7. The south and the west wall are poorly preserved; all that could be determined about their construction was that the basal course was made of tuff blocks set into adobe mortar. On all walls, faint remnants of plaster were occasionally found.

Table 14.26. Room 8 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	1.48	0.20	0.20
East	3.66	0.33	0.22
South	1.75	0.22	0.20
West	1.80	0.22	0.40

Artifacts and Samples. All the artifacts from units 100N/105E and 100N/106E were analyzed. All the faunal remains from this room were analyzed. Table 14.27 lists the samples analyzed from Room 8.

Table 14.27. Room 8 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical
10	None	2679	2492
70	1699	1698	None
128	2680, 3496	2247, 3498	None
170	3497	3499	None

Room 9

Room 9 (Figure 14.35) is located at the southwest end of the Roomblock 1. The interior dimensions of the room are 4.9 m north-south and 1.9 m east-west. The interior area is 9.3 m^2. No interior features were identified in the room.

Stratigraphy. Table 14.28 summarizes the strata associated with Room 9. Stratum 1 consists of loose, unconsolidated, sandy loam. Stratum 10 consists of compact sandy to clayey loam, wallfall, adobe, and rooffall. Stratum 70, the fill below the wallfall but above the floor, consists of loose, unconsolidated, and relatively homogeneous sandy to silty loam. The strata associated with the floor and sub-floor are discussed below in the following section.

Table 14.28. Room 9 stratigraphy.

Stratigraphic Unit	Thickness (cm)	Color	Texture	Description
0	0	10YR 4/3	sandy loam	Surface
1	1–6	10YR 4/3	sandy loam	Unconsolidated surface soil
10	16–22	7.5 YR 4/4	sandy loam, clay loam	Wallfall and post-occupational fill
70	8–10	10YR 4/3	sandy to silty loam.	Fill below wallfall and above floor
129	0	10YR 6/3	silty clay	Floor, surface
170	4–20	10YR 4/3	sandy to silty loam	Sub-floor soil

Table 14.29 shows the artifact counts by stratigraphic unit for Room 9. The 'Other' category includes a small piece of turquoise (FS 2389), a fragment of hematite (FS 2955), and several miscellaneous samples.

Table 14.29. Room 9 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
0	0	1	0	0	0	1
1	82	200	2	1	0	285
10	278	1028	9	3	2	1320
129	0	0	0	0	1	1
170	13	49	2	12	3	79
Total	**373**	**1278**	**13**	**16**	**6**	**1686**

Floor. Floor plaster was found only in the northern half of the room. Here the floor surface was patchy and poorly preserved. In the southern half of the room it was not possible to follow the floor and the entire area was excavated to 4 to 20 cm below floor level. Coping is visible between the floor and the walls, but only in the northeast corner of the room. Where the floor is present it appears to have been built directly on top of bedrock. In areas where the bedrock undulates, flattened, shaped tuff blocks were used to create a level surface. There is no evidence for multiple plastering episodes. No artifacts were found on the floor surface. Two pollen (FS 2570 and FS 3502) and two flotation samples (FS 2571 and FS 3500) were collected from the floor surface. Taxa identified in the pollen samples included maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in the flotation samples included saltbush/greasewood, juniper, piñon pine, cottonwood/willow, and maize. A flotation (FS 3501) and pollen (FS 3503) sample were collected from sub-floor contexts. Taxa identified in the pollen sample included maize, cholla, prickly pear, cheno-ams, sunflower family, ragweed/bursage, unidentified pine, piñon pine, and sagebrush. Taxa identified in the flotation sample included saltbush/greasewood, juniper, unidentified pine, piñon pine, rose family, cottonwood/willow, dropseed grass, and maize.

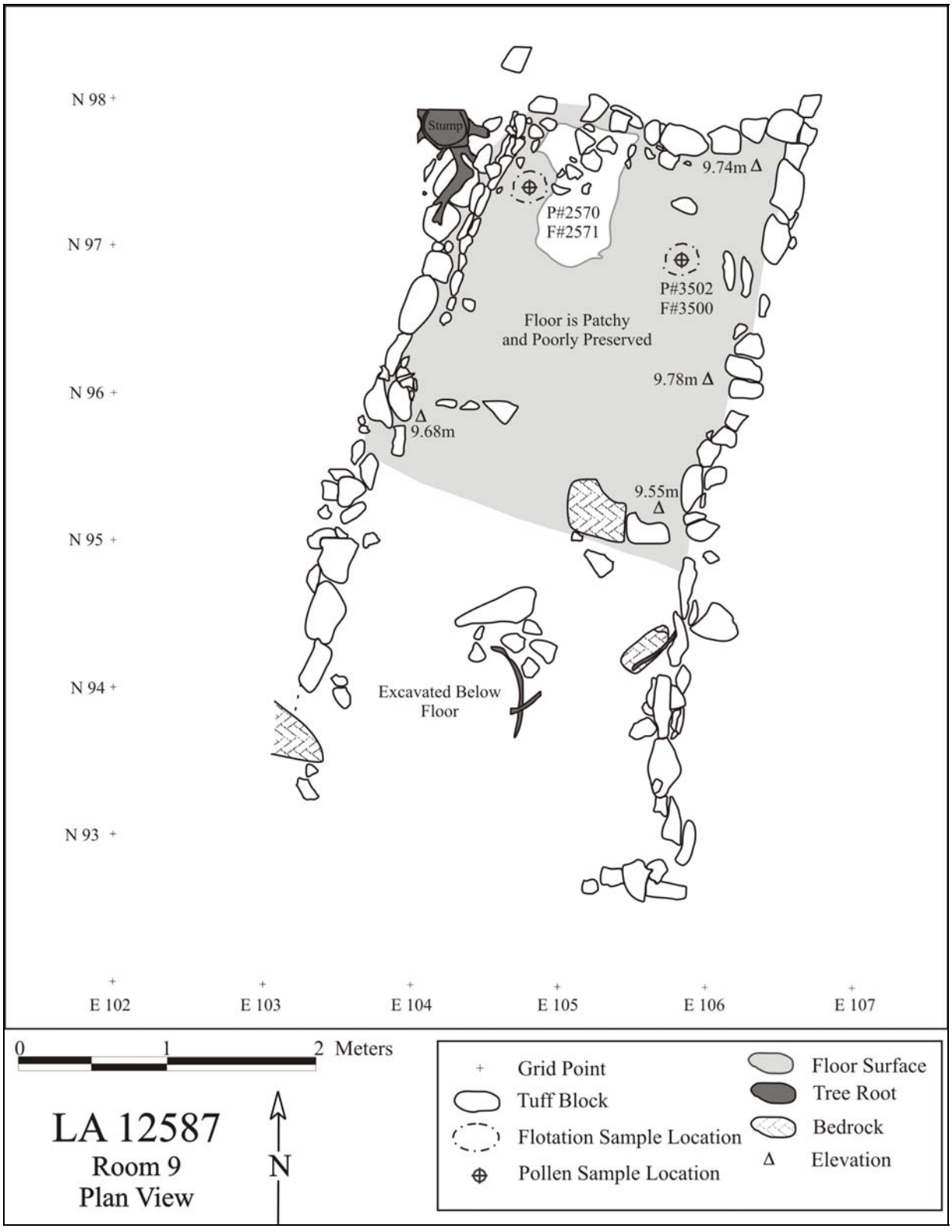


Figure 14.35. Room 9 plan view.

Wall Construction. The sequence of wall construction in this room is difficult to determine because all of the remaining corners are in poor condition. It is possible that the north and south walls are bonded with the east wall. Table 14.30 gives the dimensions of the extant wall segments.

Table 14.30. Room 9 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	1.75	0.30	0.20
East	4.80	0.18	0.20
South	0.70	0.35	0.29
West	4.33	0.23	0.38

The north wall of Room 9 is described in Room 8. Five tuff blocks in the southeast corner of the room are all that remain of the south wall. The basal course of the east and west walls consists of tuff uprights set into an adobe bed. Additional adobe mortar was applied to the sides and tops of the uprights. In places, the west wall is two uprights thick. A few segments of the second course of the west wall were preserved. These segments consist of horizontally laid flat tuff blocks.

Artifacts and Samples. All the artifacts from units 96N/104E and 97N/105E were analyzed. All the faunal remains from the room were analyzed. Table 14.31 lists the samples analyzed from Room 9.

Table 14.31. Room 9 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical
1	None	None	2567
10	2397	2229	2233
129	2571, 3500	2570, 3502	3404
170	3501	3503	3624

Roomblock 2 (Room 3)

During excavation it became apparent that a later structure overlay Roomblock 1 and this structure was originally designated Roomblock 2. Subsequently, Roomblock 2 was discovered to consist of only a single room (Room 3).

Room 3

Room 3 is situated over the northwest corner of Room 7 of Roomblock 1 and small portions of Rooms 8 and 4/5 (Figures 14.36 and 14.37). The room has an interior area of 3.2 m^2 (1.9 by 1.7 m). No internal features were identified during excavation. Room 3 is interpreted as a fieldhouse and may be contemporaneous with one or more agricultural features at the site (e.g., Features 17, 18, and 22).

Stratigraphy. Table 14.32 summarizes the strata associated with Room 3. Stratum 1 is loose, unconsolidated, fine-grained sandy loam. Ten tuff masonry blocks were recovered from this stratum. Stratum 20 consists of moderately compact sandy loam and a mix of approximately 40 shaped and unshaped tuff blocks, chinking stones, chunks of adobe, and adobe melt. Stratum 20 was generally less compact than Stratum 10; otherwise the two strata were indistinguishable. Fill above the base of the Room 3 walls was assigned to Stratum 20; fill below was assigned to Stratum 10. The fill in, and immediately below, the walls of Room 3 was designated as Stratum 21.

Table 14.32. Room 3 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	10YR 5/3	sandy loam	0	Surface
1	10YR 5/3	sandy loam	2–5	Unconsolidated surface soil
20	7.5YR 4/2, 10YR 4-5/3, 4/4	sandy loam	14–25	Wallfall and post-occupational fill
21	10YR 4/4	sandy loam	N/A	Wall fill

Figure 14.36. Room 3 after excavation.

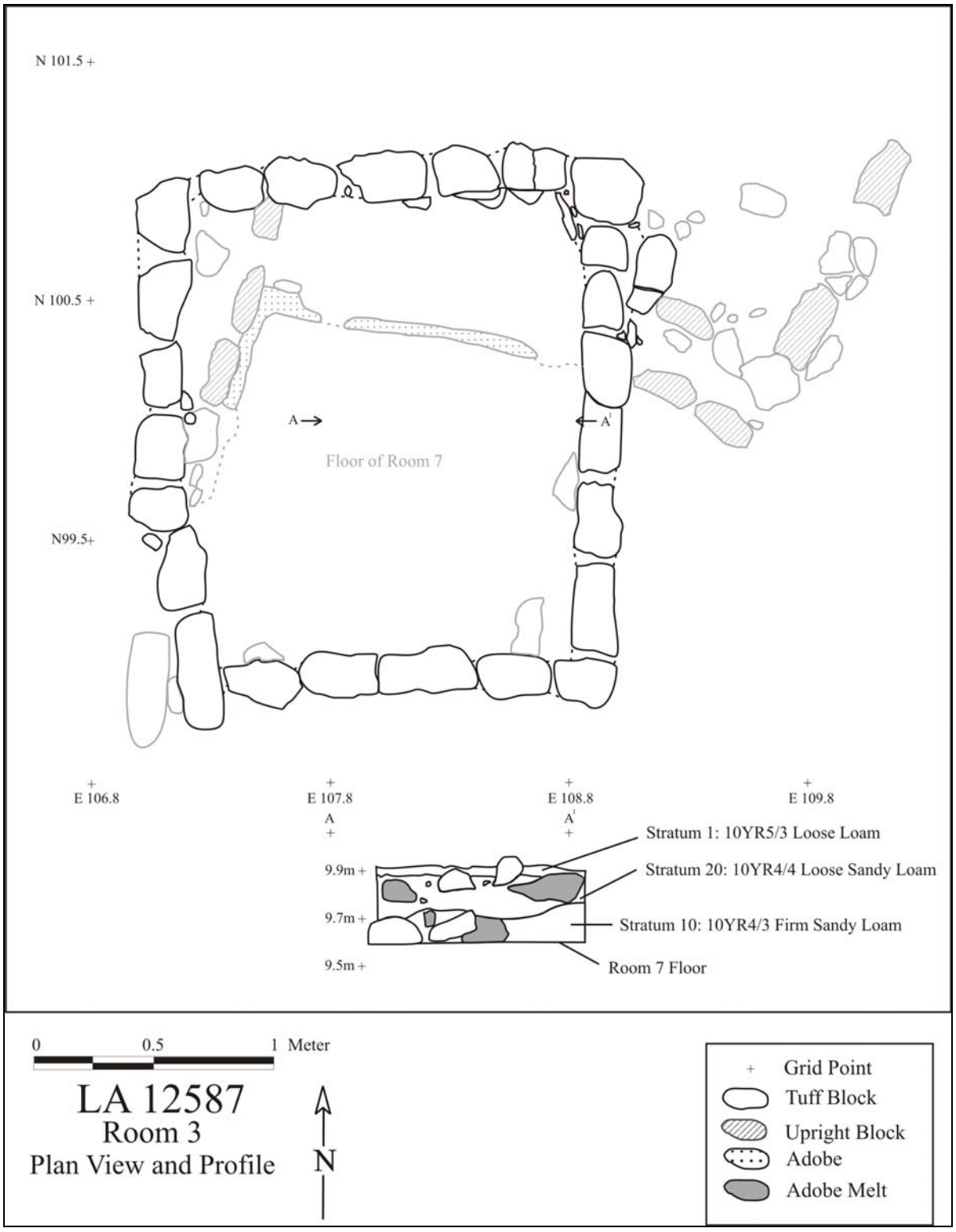


Figure 14.37. Room 3 plan view and profile.

Table 14.33 shows the artifact counts by stratigraphic unit for Room 3. The 'Other' category consists of a freshwater shell fragment (FS 1499) and several miscellaneous samples. Given the amount of bioturbation at the site and the difficulty distinguishing between Stratum 20 and Stratum 10, many of the artifacts in Table 14.33 are probably associated with Roomblock 1 not Room 3 (Roomblock 2).

Table 14.33. Room 3 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Bone	Other	Total
0	1	3	0	0	0	4
1	30	91	1	0	0	122
20	67	219	6	1	1	294
21	24	45	0	1	2	72
Total	**122**	**358**	**7**	**2**	**3**	**492**

Floor. No floor or use surface was found in Room 3.

Wall Construction. The walls of Room 3 (Table 14.34) were constructed of a single row of horizontally laid coursed tuff blocks held together by mortar. At the eastern end of the north wall, two courses are present; elsewhere only one course survives (Figure 14.38).

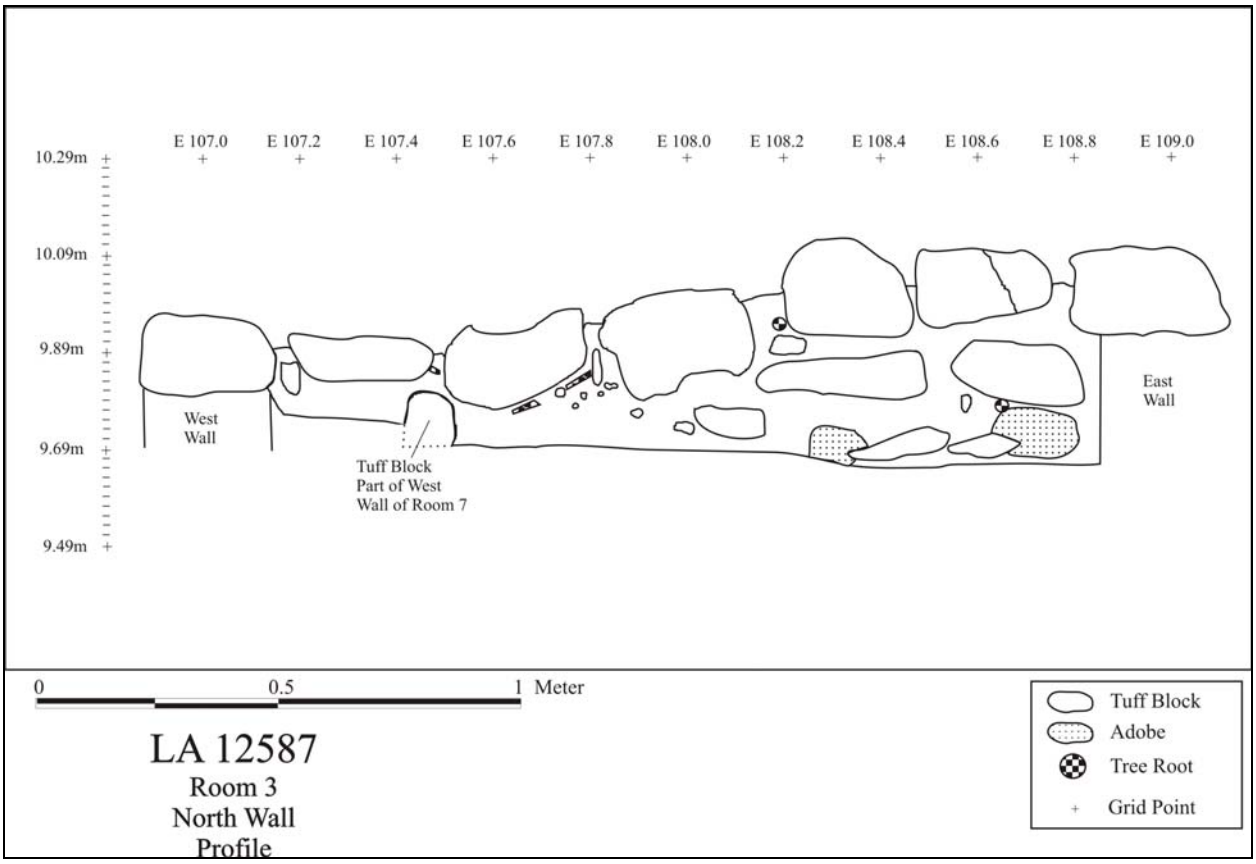


Figure 14.38. Room 3 north wall profile.

Most of the masonry measures approximately 30 by 20 by 12 cm. While three or four blocks show minor shaping, most of the blocks are unshaped. Two chinking stones are present in the north wall. The mortar between the masonry is decayed and nearly indistinguishable from the surrounding matrix, although a few less decayed patches are present. A thin (1 to 5 cm thick) layer of mortar is present below the basal course of the walls in some locations. Room 3 was built after Room 7 had collapsed and it is possible that the tops of some of the Roomblock 1 walls were incorporated into the Room 3 wall foundations. For example, the north wall of Room 3 was built almost directly on top of masonry from the west wall of Room 7.

Table 14.34. Room 3 wall dimensions.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	1.73	0.33	0.24
East	1.90	0.14	0.21
South	1.50	0.17	0.20
West	1.94	0.20	0.24

Artifacts and Samples. All the artifacts recovered in Room 3 were analyzed. Table 14.35 lists the samples analyzed from Room 3.

Table 14.35. Room 3 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical
20	1593	1591	1491, 1500, 1592, 2044
20 (from base of stratum)	1493, 2040	1492, 1590	None
21	3000	3003, 3158	None

Roomblock 3

Roomblock 3 is a one-room-wide linear roomblock that is oriented about 8.5° east of north and is situated immediately west of Roomblock 1. Thirteen rooms (Rooms 10 through 22; Table 14.36) were identified in the 52-m-long roomblock. Ten of the rooms are contiguous (Rooms 10 through 18 and 22), while portions of the remaining three rooms (Room 19, 20, and 21) were exposed during excavation of the agricultural berms (Feature 22) in Area 2. The northern three rooms are aligned with the lower group of rooms and are assumed to be continuous with them even though the intervening three meters was not excavated.

It appears that Roomblock 3 was never completed. In Rooms 13, 17, and 18 and the southern portion of Room 11, the fill was nearly devoid of wallfall and only one to two standing courses were found. However, enough wallfall was present in the northern portion of Room 11 and in Rooms 10, 12, 14, and 16 to indicate that the walls of these rooms were at least several courses high. Too little of Rooms 15 and 19 through 22 was excavated to determine the amount of wallfall present. None of the rooms in Roomblock 3 had prepared or plastered floors and possible use surfaces were only found in Rooms 11 and 18.

Due to time constraints, the Roomblock 3 rooms were only partially excavated. The plan view maps for each room differentiate between excavated and unexcavated areas.

Table 14.36. Room dimension summary for Roomblock 3.

Room Number	Length (m)	Width (m)	Floor Area (m^2)
10	3.4	2.3	7.8
11	6.5	2.4	15.6
12	3.6	2.2	7.9
13	3.7	2.4	8.9
14	3.9	2.3	9.0
15	3.7	2.4	8.9
16	5.4	2.3	12.4
17	3.4	2.5	8.5
18	3.0	2.3	6.9
19	*3.3*	*2.2*	*7.3*
20	?	?	?
21	?	*2.4*	?
22	?	?	?

Numbers in italics are estimates for incomplete rooms. A "?" indicates that no estimate of that dimension could be made.

Architecture and Stratigraphy. All the rooms in Roomblock 3 were constructed with shaped tuff blocks of fairly uniform size. It appears that the only construction style employed was that of coursed masonry. No upright blocks or turtleback construction was evident. Facing stones are present on the interior and exterior of several walls. This architectural feature consists of a single row of closely spaced tabular tuff cobbles running parallel to the base of the walls. The facing stones may have functioned as an anchor for the wall plaster to adhere to the floor surface. Similar facing stones were infrequently used in Roomblock 1.

Wall foundations were simple. No prepared trenches were noted and many of the walls were constructed directly on top of the underlying bedrock. Others were built upon varying depths of cultural fill (presumably from Roomblock 1) or on the Btk horizon (Stratum 175).

It appears that the north-south-oriented walls were built first and then the cross walls were added. At several locations along the north-south walls, masonry blocks were placed such that their long axes were perpendicular to the walls. These tie-stones projected into the space between the walls. Where cross walls incorporate tie-stones, a bonded relationship is created between the north-south wall and the east-west wall.

Stratigraphic Relationship Between Roomblocks 1 and 3. The stratigraphic relationship between the two roomblocks is seen in the profile between Rooms 9 and 12 (Figure 14.39). Because of the importance of this profile, its stratigraphy was studied in detail by the project geomorphologists. As a result, the stratigraphy in Figure 14.39 is specific to the profile and is more fine-grained than the general excavation stratigraphy. Table 14.37 summarizes the Figure 14.39 stratigraphy and correlates it with the excavation strata.

Table 14.37. LA 12587 stratigraphic summary.

Profile Stratum	Excavation Stratum	Color	Texture	Description
I	1	N/A	N/A	Compact pine duff. Modern.
II	1/200/202	10YR 4/4	coarse sandy loam	Abrupt upper boundary, clear and wavy to irregular lower boundary. Massive structure, slightly hard. Abundant gravel inclusions. Covers Roomblock 1 wall remnant. Post-occupational natural deposit containing structural debris.
III	200/202	10YR 5/3	sandy clay loam	Sharp boundary with Strata V to VII, clear boundary with Strata IV and VIII, generally irregular. Massive and single-grained structure, slightly hard to soft. Contains charcoal and sparse gravel. Probably post-dates Roomblock 1.
IV	200/202	7.5YR 4/3	sandy clay loam	Clear horizontal boundary with Strata III, VII, VIII, and X, abrupt boundary with Stratum IX. Massive and single-grained structure (due to root disturbance), slightly hard. Contains charcoal. Probable root/rodent disturbance.
V	200/202	10YR 6/3	sandy clay	Sharp boundaries but very irregular from disturbances. Hard angular structure. Possible adobe melt from Roomblock 1.
VI	200/202	10YR 5/3	sandy clay loam	Slightly lighter brown than Stratum III. Clear boundaries. Massive structure, soft. May be part of Stratum III.
VII	200/202	10YR 6/2	sandy loam	Sharp boundaries. Massive coherent single grained structure, loose to soft. Appears to contain ash, and charcoal on margin may be associated. Possibly burned structural debris or Roomblock 1 trash.
VIII	170	10YR 5/3	coarse sandy loam	Abrupt boundary with Strata V and IX, clear boundary on all other contacts. Massive structure, soft. Very disturbed from abundant roots. Contains charcoal and tuff gravel inclusions. May represent native preoccupation topsoil.
IX	175	7.5YR 4/4	sandy clay	Abrupt boundaries. Contains degraded spalls of bedrock.
X	175?	7.5YR 4/5	coarse sandy clay	Sharp boundaries. Massive single-grain structure, very soft. Contains tuff gravel and a chert flake. May represent a deposit of Stratum IX material that was redeposited during

Profile Stratum	Excavation Stratum	Color	Texture	Description
				excavation of Room 9 foot trench.

Sub-floor and sub-wall observations of Roomblock 1 indicated that it was built on preoccupation topsoil (Stratum 170), remnant Pleistocene soil (Stratum 175), or occasionally on bedrock. Roomblock 3 was sometimes built on these deposits, but in some areas strata containing cultural debris were found to underlie the walls of this pueblo. Figure 14.39 depicts cultural deposits (Strata V and VII) that were probably derived from Roomblock 1 at depths that are below the east wall of Room 12. The east wall of Room 12 was built in Stratum III, a stratum that appears to post-date Roomblock 1. Based on these observations, it is inferred that the construction of Roomblock 3 post-dates the abandonment of Roomblock 1.

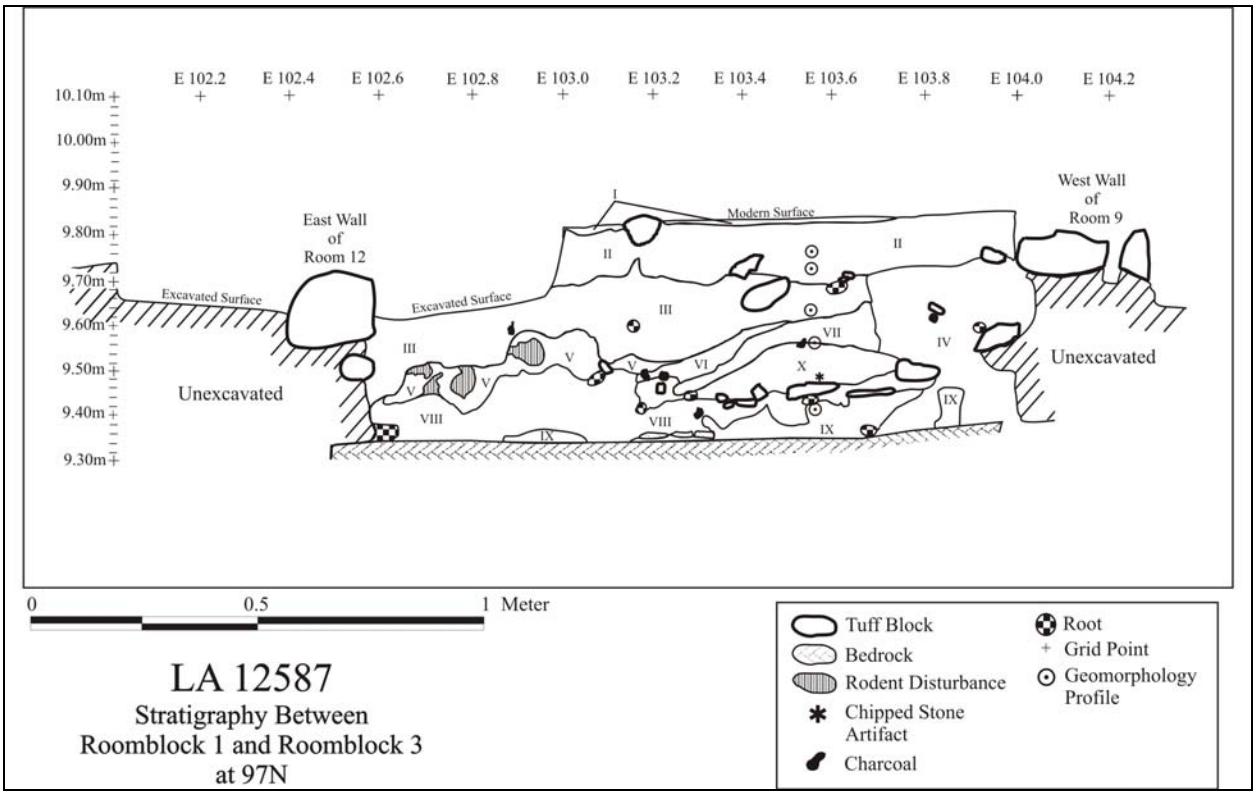


Figure 14.39. Stratigraphic relationship between Roomblocks 1 and 3.

Room 10

Room 10 (Figure 14.40) is located near the center of Roomblock 3 between Rooms 11 and 12. The interior dimensions of the room are 3.4 m north-south by 2.3 m east west, and it has an interior area of 7.8 m^2.

Stratigraphy. Five strata are associated with Room 10 and are summarized in Table 14.38. At the time of excavation a juniper tree was growing inside the room near the southwest corner. Stratum 1 consists of loose, unconsolidated, and fine-grained sandy loam.

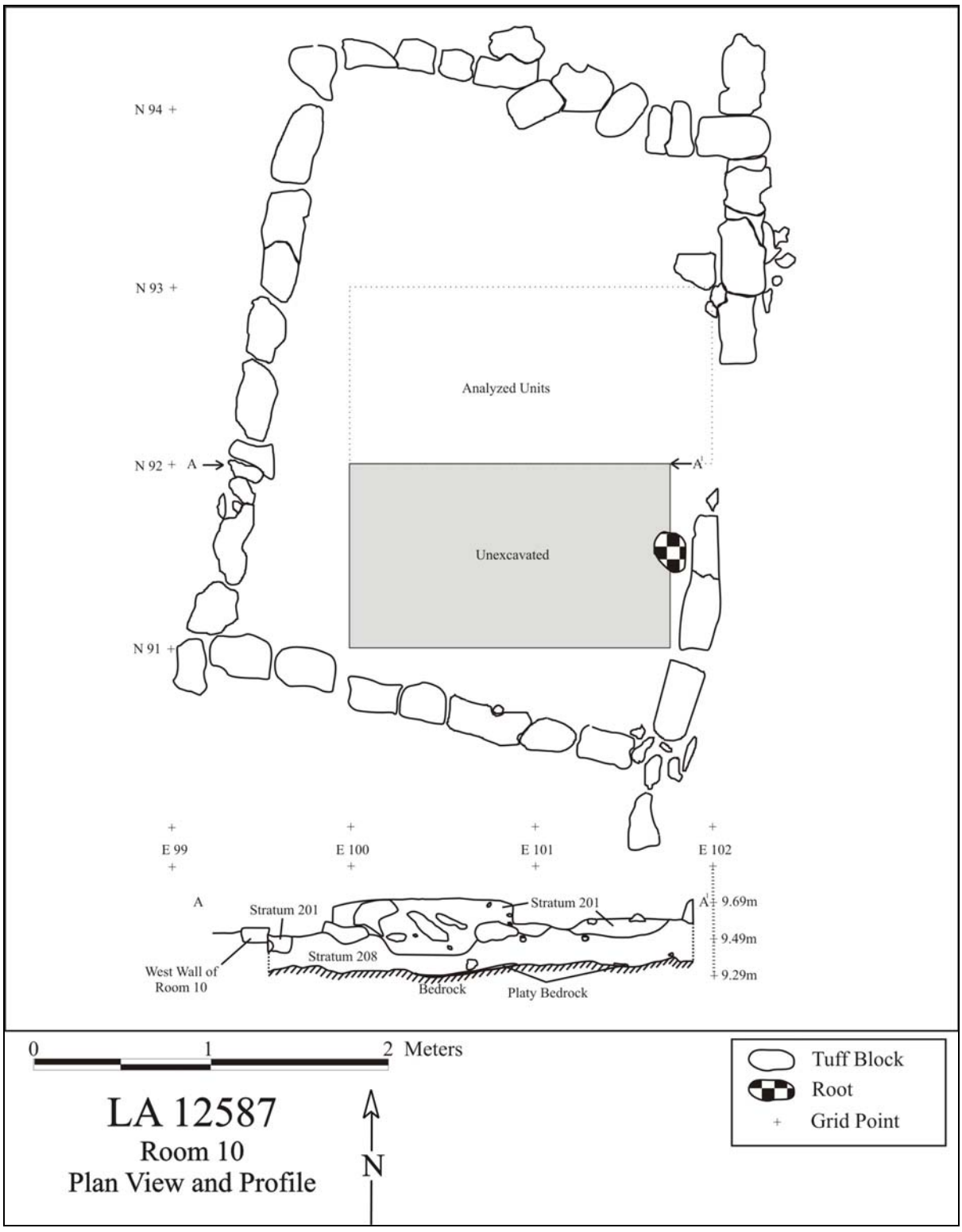


Figure 14.40. Room 10 plan view and profile.

Stratum 201 is composed of two sub-strata. The uppermost sub-stratum consists of sandy loam that grades into sandy clay loam as depth increases. A good deal of wallfall was found in this sub-stratum. The upper sub-stratum is 20 to 30 cm thick and ends 4 to 12 cm above the base of the walls. The lower sub-stratum is a layer of sandy clay loam that is largely free of masonry blocks and tuff cobbles, but contains many artifacts. This sub-stratum extends to, and in some areas to slightly below, the base of the walls.

Stratum 208 consists of sandy clay loam and an intermittently occurring layer of tuff cobbles. Where the cobbles are present there are about 20 per square meter. Some cobbles are in contact with the bedrock, although most are 0.5 cm or more above it. These cobbles may have been placed as a foundation for the living surface/intended floor of Room 10.

In the southwest corner of the room (in unit 91N/99E), a possible use surface (Stratum 203) of clay loam was found below Stratum 208 and just above bedrock. Given its depth beneath the wallfall (approximately 25 cm) and its depth below the base of the walls (5 cm below the west wall, 16 cm below the south wall), it is unlikely that this surface is associated with the habitation of Room 10. It may be associated with the occupation of Roomblock 1, or an even earlier component. No artifacts were found in association with this surface.

The bedrock below this room was smooth, compact, and lightly undulating with a few deep (circa 10 cm) crevices that had been cut by roots or water. A light layer of carbonate covered the bedrock, giving it a white color. Three- to five-centimeter-thick patches of thinly layered and easily separated decaying tuff bedrock overlay the more compact material below.

Table 14.38. Room 10 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	10YR 3/3	sandy loam	0	Surface
1	10YR 3/3	sandy loam	2–18	Unconsolidated surface soil
201	10YR 3/3	sandy loam to sandy clay loam	18–35	Fill to base of walls
208	10YR 3/3	sandy clay loam	4–16	Soil below base of walls to bedrock
203	5YR 4/3	clay loam	0.1–2	Possible use surface

Table 14.39 shows the artifact counts by stratum for Room 10. Since the walls of the room were not visible on the surface, Strata 1 and 201 from units that straddle the walls incorporate some artifacts that came from outside the room. Additionally, portions of Room 10 were excavated to bedrock before Stratum 208 was introduced to designate fill below the level of the base of the walls. Therefore, the artifact tallies for Strata 1 and 201 are somewhat inflated, while those for Stratum 208 are somewhat deflated. The 'Other' category consists of a fragment of malachite (FS 2577), a quartzite manuport (FS 3713), and several other miscellaneous samples.

Table 14.39. Room 10 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Bone	Other	Total
0	0	0	0	0	0	0
1	12	51	0	0	0	63
201	193	1008	11	2	5	1219
203	0	0	0	0	0	0
208	30	256	1	0	0	287
Total	**235**	**1315**	**12**	**2**	**5**	**1569**

Floors. No floors or living surfaces were associated with Room 10 except for Stratum 203, which predates the room. A pollen (FS 2746) and flotation (FS 2745) sample were collected from this stratum. Taxa identified in the pollen sample include maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in the flotation sample include sagebrush, saltbush/greasewood, juniper, and maize.

Some tuff cobbles in Stratum 208 may have been placed as a floor foundation. A pollen (FS 3541), flotation (FS 3544), and two macrobotanical (FS 3612 and FS 3721) samples were collected from Stratum 208. Taxa identified in the pollen sample include maize, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in the flotation sample from Stratum 208 include Desert olive, juniper, and oak. Taxa identified in the macrobotanical samples include saltbush/greasewood, cottonwood/willow, piñon pine, ponderosa pine, unknown conifer, and unidentified pine.

Wall Construction. The north wall is bonded with the east wall; all other walls abut. Table 14.40 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed and mortared horizontally laid masonry of shaped and unshaped tuff blocks. Near the west end of the south wall, an adobe mass with embedded tuff cobbles takes the place of one or two tuff blocks. A few chinking stones are present between masonry blocks. Along the interior base of the east, west, and south walls, a row of facing stones are intermittently present.

Two courses of masonry are present on the east half of the north wall, the northern half of the east wall, and the entire south wall. Elsewhere the walls are one course high except for a 1.25-m gap at the center of the east wall. There are several facing stones in the gap, indicating a missing masonry block.

Table 14.40. Room 10 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.69	0.32	0.24
East	1.38, 1.31	0.32	0.24
South	2.69	0.35	0.23
West	3.38	0.14	0.22

Artifacts and Samples. All the artifacts from units 92N/100E and 92N/101E were analyzed. All the macrobotanical material from unit 92N/100E was also analyzed. Table 14.41 lists the samples analyzed from Room 10.

Table 14.41. Room 10 analyzed samples by stratum.

Stratum	Pollen	Flotation	Macrobotanical[1]
1	2674	2673	None
201	3710	3709	3720
203	2746	2745	None
208	3541	3544	3612, 3721

1 In addition to the macrobotanical material from 92N/100E

Room 11

Room 11 (Figure 14.41) is located in the southern half of Roomblock 3 between Rooms 10 and 13. It is the largest room in the roomblock with internal dimensions of 6.5 m north-south by 2.4 m east-west and an internal area of 15.6 m^2.

Stratigraphy. Seven strata are associated with Room 11 (Table 14.42). At the time of excavation, three piñon trees were growing inside the room. Stratum 1 consists of loose, unconsolidated, and fine-grained sandy loam. It contains a few tuff blocks and chinking stones.

The stratigraphy in the northern half of the room is more complex than in the southern half of the room. Here, the upper part of Stratum 201 consists of 10 to 20 cm of silty to sandy loam. A considerable amount of wallfall is present, including a four- to five-course-tall section of the east wall that fell into the room intact. The lower part of Stratum 201 is a 10-cm-thick sub-stratum of masonry-free sandy clay loam that contains many artifacts. Below the wallfall in unit 90N/100E, there is a 9- to 12-cm-thick stratum (Stratum 205) of sandy clay loam and clay loam mixed with charcoal and ash. Stratum 205 is also present in 90N/99E; however, this unit was excavated before the deposit was recognized as a distinct stratum. Just above the bedrock in units 90N/99E and 90N/100E there is a thin, patchy layer of sandy clay loam that may have been a use surface (Stratum 204). In unit 89N/100E, there is a thin layer of adobe melt covering the bedrock. In other areas a thin deposit of Stratum 175 is present. There is no Stratum 208 in the northern part of the room as the base of the walls is only 1 to 3 cm above bedrock.

Table 14.42. Room 11 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	10YR 3/3	sandy loam	0	Surface
1	10YR 3/3	sandy loam	1–13	Unconsolidated surface soil
175	10YR 4/4	sandy clay	1–3	Btk horizon
201	10YR 3/3	sandy/silt loam to sandy clay loam	13–27	Fill to base of walls
204	10YR 3/3	sandy clay loam	0.1–1	Possible use surface

Stratum	Color	Texture	Thickness (cm)	Description
205	8.75 YR 3/3.5	sandy clay loam and clay loam	9–12	Ashy lenses
208	10YR 3/3	sandy clay loam	10–27	Soil below base of walls to bedrock

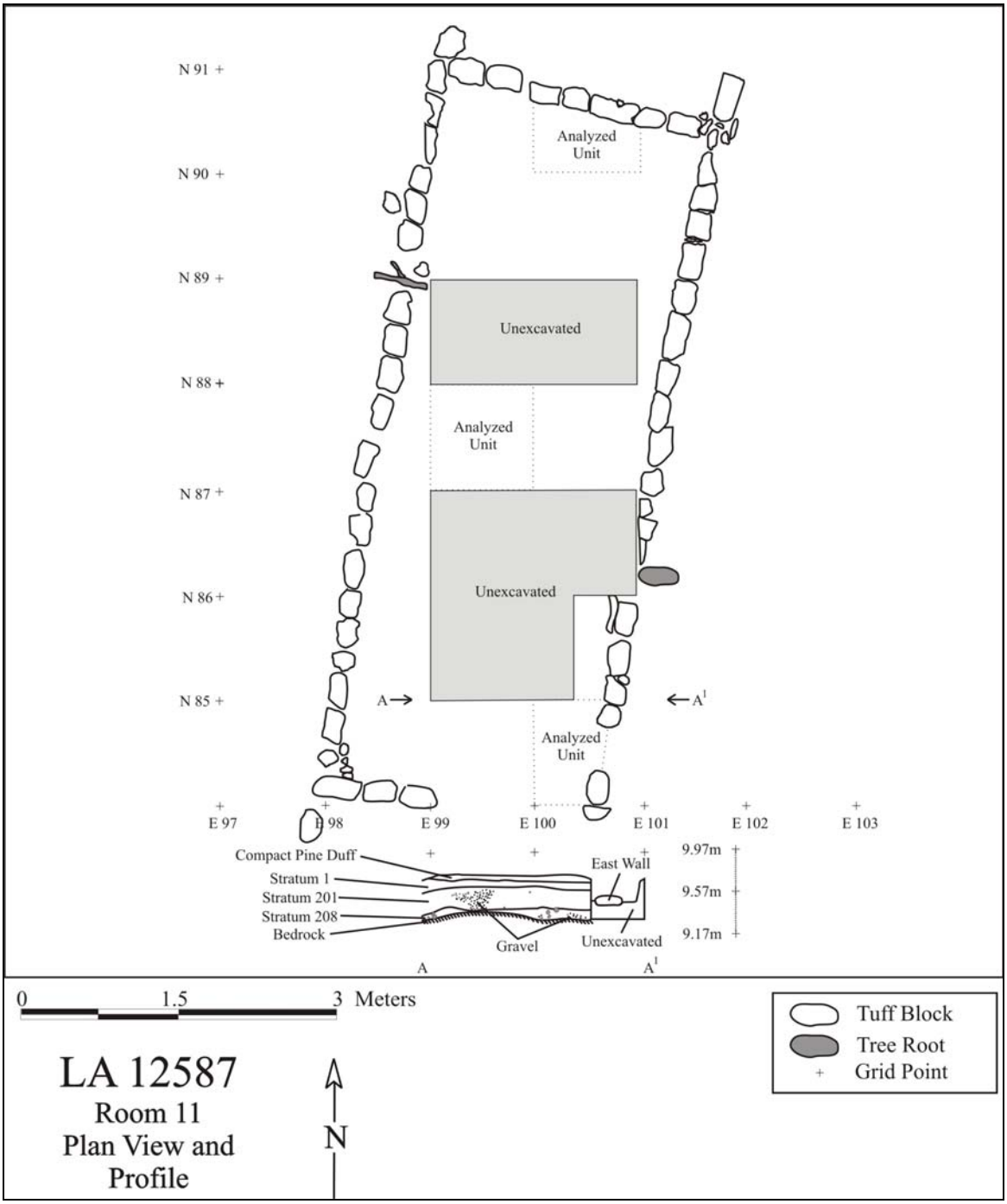


Figure 14.41. Room 11 plan view and profile.

The stratigraphy is less complex in the central and southern portions of the room. There is very little wallfall in Stratum 201 and most of what is present is in the central part of the room. Stratum 201 is fairly uniform throughout and overlays Stratum 208 (a sandy clay loam), except in the southwest corner. Here, the walls are built directly on an elevated section of bedrock. Stratum 175 is present in the central portion of the room, but not in the southern portion. Strata 204 and 205 are both absent.

Table 14.43 shows the artifact counts by stratum for Room 11. Since the walls of the room were not visible on the surface, Strata 1 and 201 from units that straddle the walls incorporate some artifacts that came from outside the room. Stratum 208 was not always excavated separately from Stratum 201. In most cases, the lowest "stratum" of a unit can only be identified as Stratum 201/208. As noted above, in unit 90N/99E, Stratum 205 was excavated as Stratum 201 before it was recognized as a distinct stratum.

Table 14.43. Room 11 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Bone	Other	Total
0	0	0	0	0	0	0
1	9	33	0	0	1	43
175	0	0	0	0	0	0
201	313	1358	4	3	0	1678
201/208	30	195	0	2	0	227
204	0	3	0	0	0	3
205	10	43	0	0	0	53
Total	**362**	**1632**	**4**	**5**	**1**	**2004**

Floors. A possible living surface (Stratum 204), which was identified as a clear, flat break between Stratum 201 and a thin, sterile sandy clay loam deposit, was encountered in the northern part of the room. Three smeared-indented corrugated jar sherds (FS 2907 and FS 2964) were found in contact with the possible living surface. Two pollen samples (FS 2906 and FS 2963) were analyzed. Identified taxa included maize, prickly pear, cholla, beeweed, cheno-ams, grass family, mustard family, sunflower family, spurge family, evening primrose, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush. Two flotation samples (FS 2905 and FS 2962) were collected from the floor and the charred identified taxa included saltbush/greasewood, goosefoot, cheno-ams, grass family, juniper, groundcherry, unidentified pine, piñon pine, and maize.

Wall Construction. The north wall abuts the east and west walls, the west wall and the south wall are bonded, and the southeast corner does not exist. Table 14.44 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed, horizontally laid masonry of shaped and unshaped tuff blocks held together with mortar. Chinking stones are often present in horizontal rows between masonry courses. A section of the east wall fell into the room but otherwise remained intact. This section shows that for four courses above the base course, the wall was built with the same coursed masonry style that the basal courses display. Facing stones are only present along the interior and exterior of the east wall. The base of the

north wall, the northern portions of the east and west walls, and the southwest corner were all built on or within 1 to 3 cm of bedrock. Elsewhere the walls were built on Strata 175 and 208.

All the extant walls are one course high except for the west end of the north wall, which is two courses high (Figure 14.42). A single masonry block from the second course of the west wall is also present. Occasionally there are gaps in the walls where masonry was displaced by roots.

Table 14.44. Room 11 wall dimensions (extant wall segments).

Wall	Length (m)	Height (m)	Thickness (m)
North	2.69	0.33	0.20
East	1.21, 4.02	0.14	0.20
South	1.19	0.10	0.21
West	1.81, 4.50	0.21	0.22

Figure 14.42. Room 11 north wall.

Artifacts and Samples. All the artifacts from units 84N/100E, 87N/99E, and 90N/100E were analyzed. All the faunal remains were analyzed. A Cerro Toledo obsidian biface fragment (FS 3701) was also analyzed. Table 14.45 lists the samples analyzed from Room 11.

Table 14.45. Room 11 analyzed samples by stratum.

Stratum	Pollen	Flotation	Macrobotanical
1	4122	None	None

Stratum	Pollen	Flotation	Macrobotanical
201	4123	4245	2904
208	None	3761	3759
204	2906, 2963	2905, 2962	None

Room 12

Room 12 is located near the center of Roomblock 3 between Rooms 10 and 14 (Figure 14.43). The interior dimensions of the room are 3.6 m north-south by 2.2 m east-west, and the interior area is 7.9 m^2.

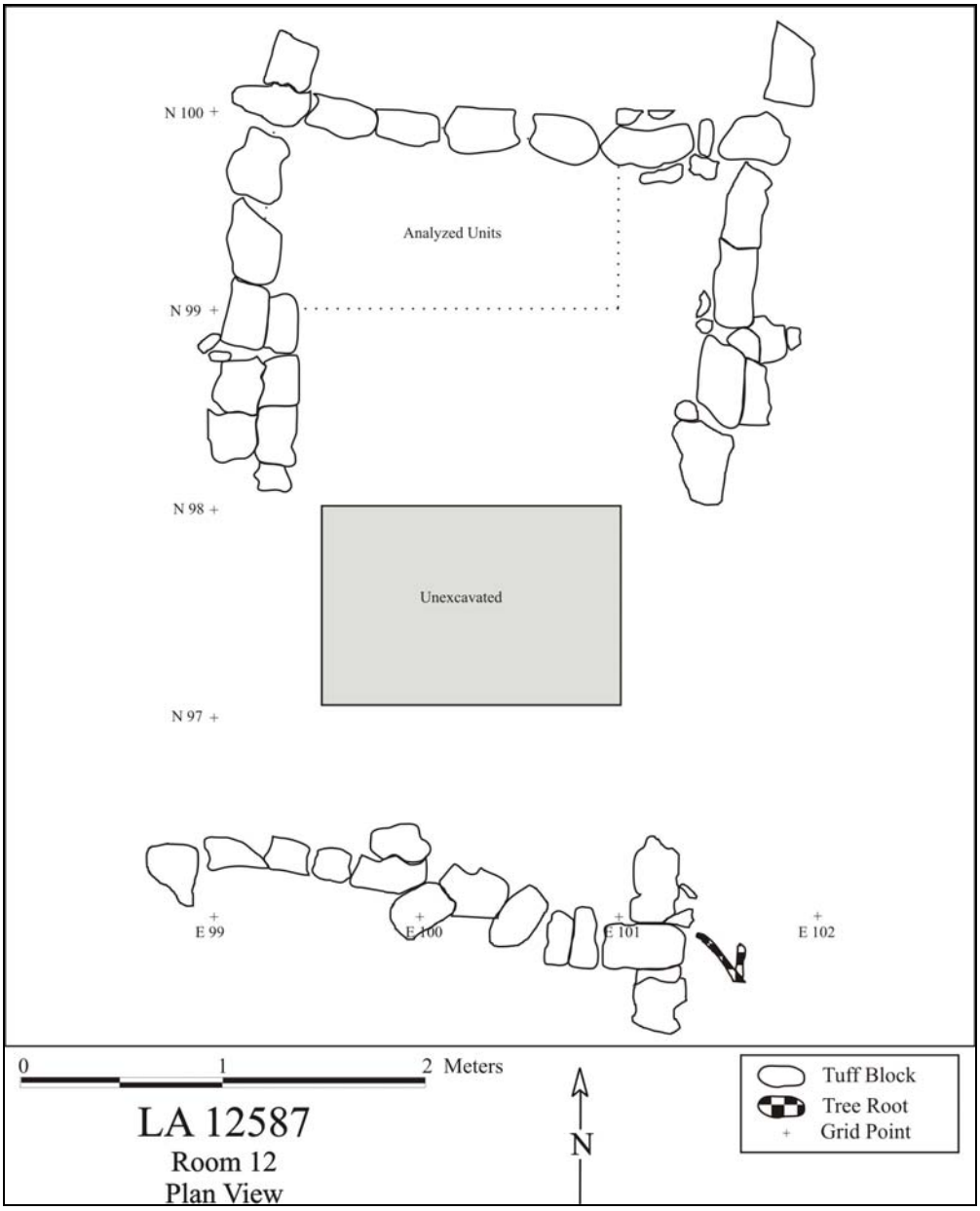


Figure 14.43. Room 12 plan view.

Stratigraphy. The four strata associated with Room 12 are summarized in Table 14.46. Stratum 1 consists of loose sandy loam. It contains a few masonry blocks and melted adobe. Stratum 201 consists of moderately compact sandy loam. In the northern half of the room, approximately 20 masonry blocks were found in Stratum 201. Stratum 208 was similar to Stratum 201 although it graded to sandy clay loam near bedrock. The only masonry in Stratum 208 consisted of a few tuff blocks along and under the east wall. This material is probably wallfall from Roomblock 1. Small patches of Stratum 175 are present just above the bedrock.

Table 14.46. Room 12 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	10YR 4/3	sandy loam	0	Surface
1	10YR 4/3	sandy loam	2–10	Unconsolidated surface soil
201	7.5YR 4/3	sandy loam	27–38	Fill to base of walls
208	7.5YR 4/3-4/4	sandy loam to sandy clay loam	3-18 (up to 25 cm deep along east wall)	Soil below base of walls to Stratum 175
175	7.5YR 4/4	sandy clay	1–3	Btk horizon

Table 14.47 shows the artifact counts by stratum for Room 12. Since the walls of the room were not visible on the surface—and in some areas are non-existent—Strata 1, 201, and 208 from units that straddle the walls incorporate artifacts that came from outside the room.

Table 14.47. Room 12 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Bone	Other	Total
0	1	3	0	0	0	4
1	48	249	0	0	0	297
201	223	1444	8	2	1	1678
208	88	383	1	9	1	482
175	3	15	0	0	0	18
Total	**363**	**2094**	**9**	**11**	**2**	**2479**

Floors. No floors or living surfaces were found in Room 12.

Wall Construction. The north wall of the room is bonded with the east and west walls, and the south wall is bonded with the east wall. Not enough masonry is left in the southwest corner to tell if the corner is bonded or abutted. Table 14.48 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed, horizontally laid masonry of shaped and unshaped tuff blocks held together with mortar. A few chinking stones are present in each wall. Facing stones are present in the northeast corner of the room and at the west end of the south wall. Most of the walls are only one course high, although two courses are present in the northwest corner at the east end of the south wall and near the north end of the west wall. The southern half of both the east and west walls is absent.

Table 14.48. Room 12 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.75	0.15	0.25
East	1.98	0.15	0.20
South	2.69	0.32	0.26
West	1.82	0.17	0.25

Artifacts and Samples. All the artifacts from units 97N/100E and 97N/101E were analyzed, as were all the macrobotanical material from 96N/101E. All the faunal remains were analyzed. A Valle Grande obsidian projectile point (FS 2584) was also analyzed. One pollen sample (FS 3650) from Stratum 208 was analyzed. No flotation samples were analyzed.

Room 13

Room 13 (Figure 14.44) is located in the southern half of Roomblock 3 between Rooms 11 and 15. The interior dimensions of the room are 3.7 m north-south by 2.4 m east west, and it has an interior area of 8.9 m^2.

Stratigraphy. The three strata associated with Room 13 are summarized in Table 14.49. A backhoe scraped away several centimeters of Stratum 1 along the western and southern edges of this room. This accounts for the shallowness of the stratum. Stratum 201 consists of moderately compact sandy loam and contained almost no wallfall. Excavation ended when the sterile Stratum 175 was reached, which was several centimeters below the base of the walls.

Table 14.49. Room 13 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	7.5YR 4/4	sandy loam	0	Surface
1	7.5YR 4/4	sandy loam	1–3+	Unconsolidated surface soil
201	7.5YR 4/4, 10YR 3/3	sandy loam	10–31	Fill to base of walls

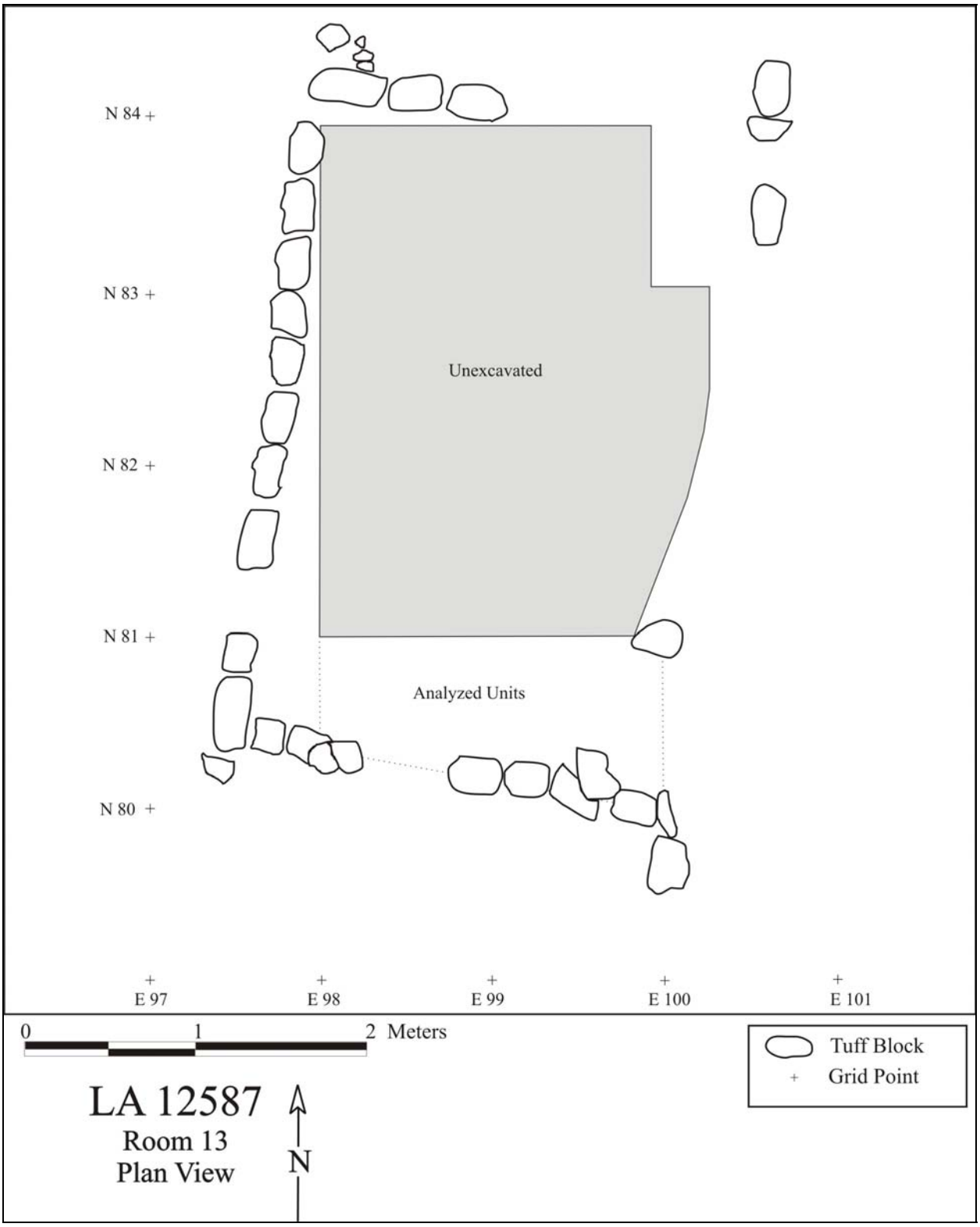


Figure 14.44. Room 13 plan view.

As most of the excavated units of Room 13 straddled the walls, the artifact counts (Table 14.50) for this room are somewhat inflated. It is not clear if artifacts from the exterior and interior of Room 13 were always kept separate. Additionally, small areas of 80N/97E and 80N/98E lie in Room 15, but were not excavated separately. Artifacts from these units have been designated as being from Room 13, as the largest areas of these units are in that room.

Table 14.50. Room 13 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	0	0	0	0	0	0
1	3	9	0	0	0	12
201	60	274	4	0	0	338
Total	**63**	**283**	**4**	**0**	**0**	**350**

Floors. No floors or living surfaces were found in Room 13.

Wall Construction. The north wall is bonded with the west wall, and the south wall abuts the east and west walls. Not enough masonry remains in the northeast corner of the room to determine the relationship between the north and east walls. Table 14.51 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed, horizontally laid masonry of shaped and unshaped tuff blocks held together with mortar. Facing stones were not observed. All the walls are one course high except for the south wall, where two separate masonry blocks of the second course are still in place. The east wall of Room 13 is almost non-existent. About half a dozen scattered masonry blocks were found where the wall should have been. It is unclear if this wall ever existed. There is a 50-cm-wide gap in the south wall. It is not clear if this gap was intentionally left in the wall or if there was masonry here that was subsequently lost. A similar 40-cm-wide gap is present in the west wall.

Table 14.51. Room 13 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	1.19	0.12	0.21
East	n/a	0.10	0.18
South	0.88, 1.28	0.20	0.21
West	0.63, 2.81	0.12	0.20

Artifacts and Samples. All the artifacts from 80N/98E and 80N/99E were analyzed. Ceramics from FS 3550 were also analyzed. One flotation sample (FS 3730) from Stratum 201 was analyzed. Taxa identified included juniper and piñon pine. No pollen samples were analyzed.

Room 14

Room 14 is located in the central portion of the roomblock between Rooms 12 and 16 (Figure 14.45). The interior dimensions of the room are 3.9 m north-south by 2.3 m east west, and it has an interior area of 9.0 m^2. A small internal rock feature (Feature 19) is present.

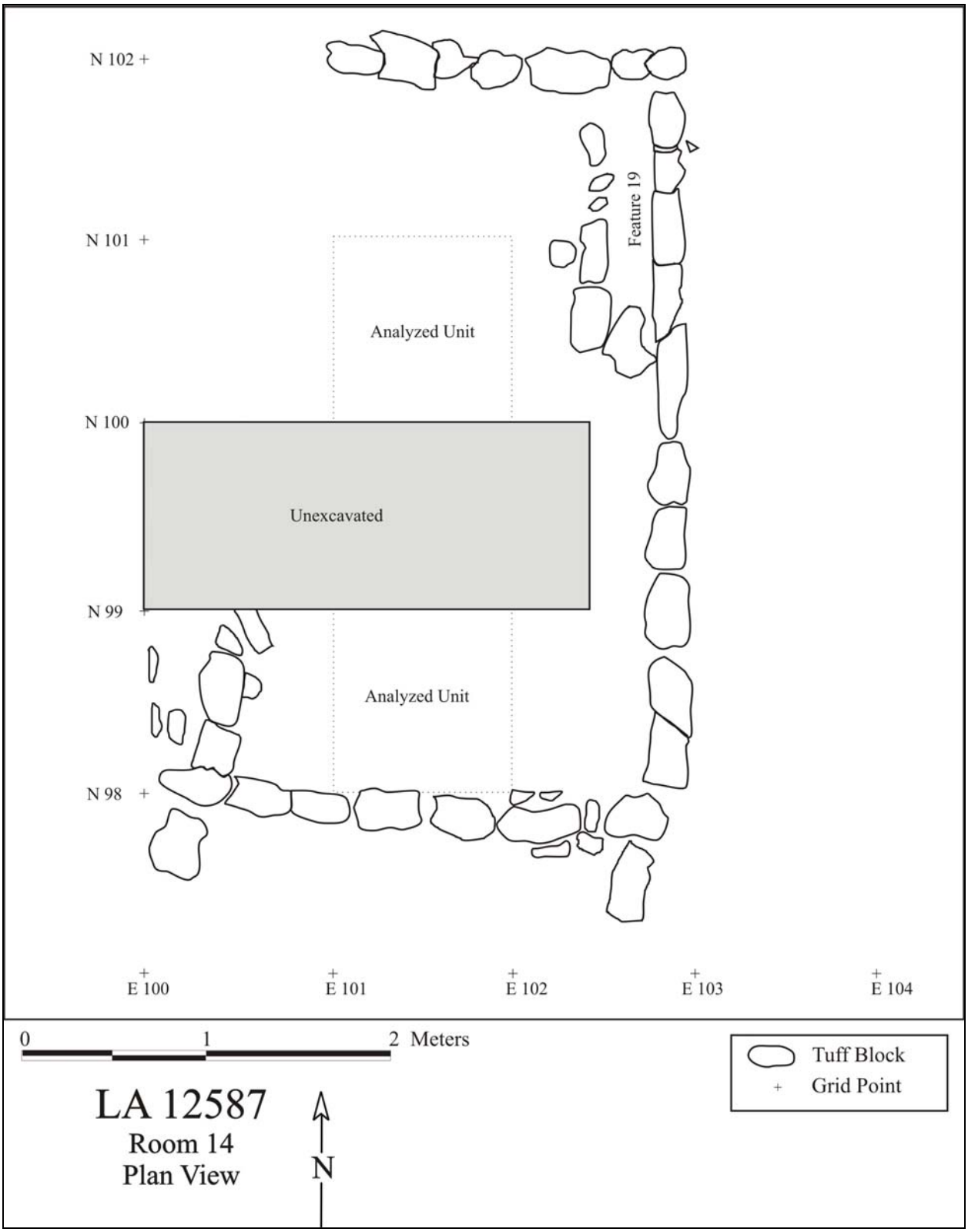


Figure 14.45. Room 14 plan view.

Stratigraphy. The four strata associated with Room 14 are summarized in Table 14.52. Stratum 1 consists of loose unconsolidated fill. A backhoe scraped away several centimeters of this stratum. Stratum 201 consists of moderately compact sandy loam. It contains burned daub, a few pieces of fire-cracked rock, many shaped and unshaped tuff blocks, and chinking stones. Stratum 208 is indistinguishable from Stratum 201 (save that no burned daub or fire-cracked rock was present). Near the base of Stratum 208, shallow patches of the reddish brown clay were observed (probably Stratum 175), but were not given a separate stratum number.

Table 14.52. Room 14 stratigraphy.

Stratum	Thickness (cm)	Color	Texture	Description
0	0	7.5YR 4/3	sandy loam	Surface
1	1	7.5YR 4/3	sandy loam	Unconsolidated surface soil
201	19–29	7.5YR 4/3-4	sandy loam	Fill to base of walls
208	13–24	7.5YR 4/3-4	sandy loam	Soil below walls to bedrock

Table 14.53 shows the artifact counts by stratigraphic unit for Room 14. The 'Other' category includes a freshwater shell fragment (FS 3620), a possible *Anodonta* sp. fragment (FS 3839), a land gastropod shell (FS 3839), a manuport of unidentified material (FS 3906), and a miscellaneous sample.

Table 14.53. Room 14 artifact counts by stratum.

Stratum #	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	7	18	0	0	0	25
1	1	8	0	0	0	9
201	226	1341	11	4	4	1586
208	123	607	6	2	1	739
Total	**357**	**1974**	**17**	**6**	**5**	**2359**

Floors. No floors or living surfaces were found in Room 14.

Wall Construction. The south wall is bonded with the east and west walls, the north wall was bonded with the east wall, and the northwest corner is missing. Table 14.54 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed and mortared horizontally laid masonry of shaped tuff blocks. All the extant walls are a single course high.

Table 14.54. Room 14 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness
North	2.0	0.14	0.23
East	3.8	0.10	0.22
South	2.75	0.15	0.25
West	0.78	0.15	0.27

Artifacts and Samples. All the artifacts from units 98N 101E and 100N 101E were analyzed, as were the macrobotanical materials from unit 98N 100E. All the faunal remains were analyzed. Other analyzed artifacts include a tuff vent plug (FS 3693), a tested cobble of quartzite (FS 3694), an andesite polishing stone (FS 3694), and a basalt hoe (FS 3735). Table 14.55 lists the samples analyzed from Room 14.

Table 14.55. Room 14 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical[1]
201	3769	3692	3691
208	3873	3872	3738

1 In addition to the macrobotanical material from 98N/100E

Features

Feature 19 (Rock Alignment). Feature 19 is located in the northeast corner of Room 14. It consists of a north-south alignment of four rocks; a fifth rock at the southern end of the feature lies between the alignment and the east wall of the room. The north end is open. The interior of Feature 19 is 32 cm wide by 88 cm long. The exterior dimensions are 46 cm wide and 97 cm long. The feature is 16 cm tall. The function of Feature 19 is unknown.

Room 15

Room 15 (Figure 14.46) is located in the southern half of Roomblock 3 between Rooms 13 and 17. The interior dimensions of the room are 3.7 m north-south and 2.3 m east-west and it has an interior area of 8.9 m^2.

Stratigraphy. The three strata associated with Room 15 are summarized in Table 14.56. This room was excavated almost entirely as Stratum 201: 79N/97E was the only unit in which Stratum 1 was dug separately, and in no unit was Stratum 208 distinguished from Stratum 201. Six masonry blocks were found in Stratum 201.

Table 14.56. Room 15 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	7.5YR 4/4	sandy loam	0	Surface
1	7.5YR 4/4	sandy loam	2–4	Unconsolidated surface soil
201	7.5YR 4/4, 10YR 3/3	sandy loam	31–41	Fill to base of walls

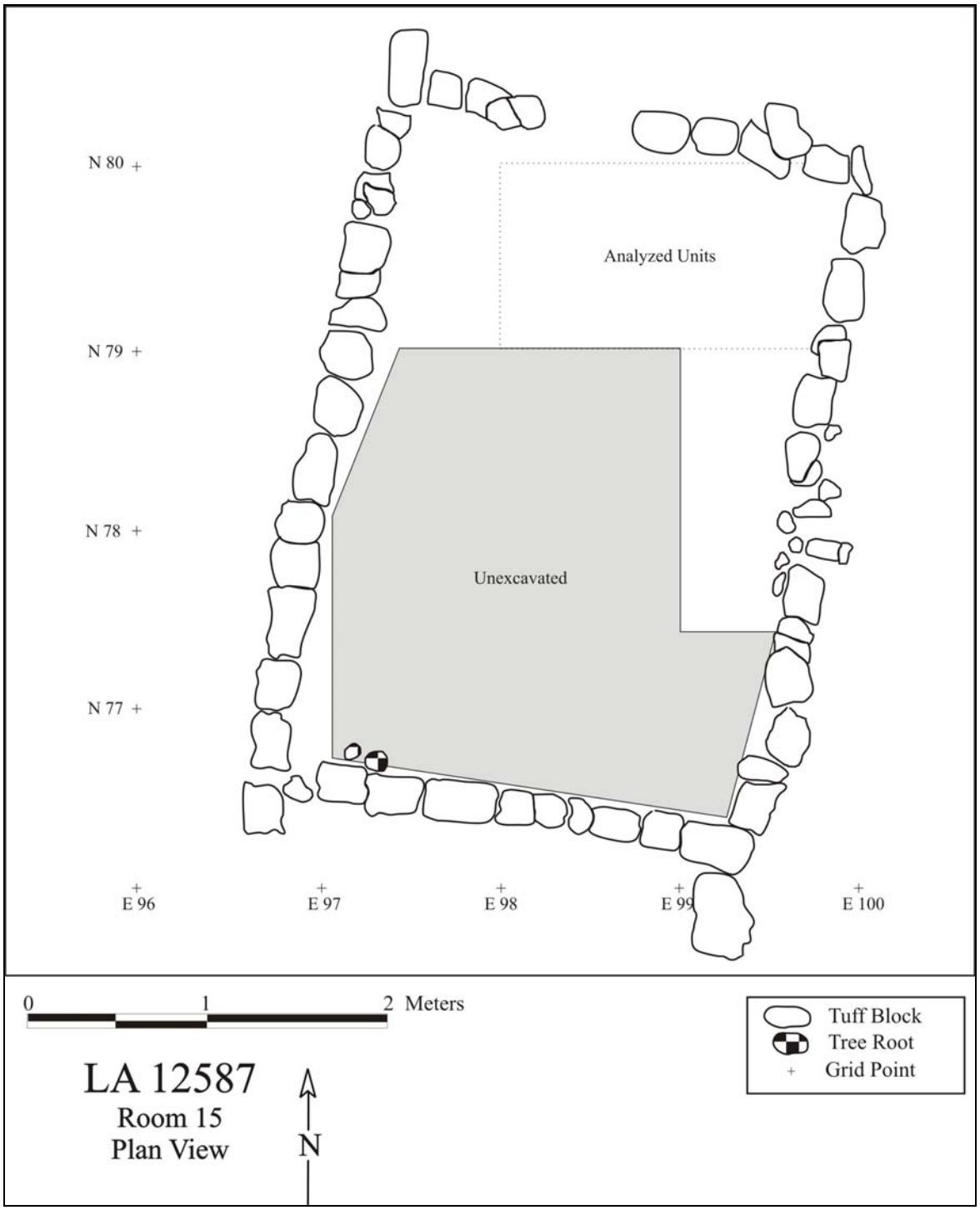


Figure 14.46. Room 15 plan view.

The artifact counts for Room 15 (Table 14.57) are low, since material from units 80N/97E and 80N/98E were designated as belonging to Room 13 (see the Room 13 discussion). Conversely, some material from 79N/97E may have come from outside the room walls.

Table 14.57. Room 15 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	0	0	0	0	0	0
1	3	6	0	0	0	9
201	46	237	4	0	0	287
Total	**49**	**243**	**4**	**0**	**0**	**296**

Floors. No floors or living surfaces were found in Room 15.

Wall Construction. All the corners of this room are abutted except for the southeast corner. In the southeast corner, the south wall is bonded with the east wall. Table 14.58 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed, horizontally laid masonry of shaped and unshaped tuff blocks held together with mortar. In a few places on the north, east, and west walls, isolated masonry blocks of the second course are present. A single masonry block of the third course is present on the east wall. Several of these multiple courses were placed to compensate for the uneven terrain the walls are built on (i.e., even though the number of courses varies along the length of a wall, the top of the wall is level along its length). A 40-cm-long row of facing stones is present on the interior of the east wall; another 40-cm-long row of facing stones is present on the exterior of the west wall. There is a 50-cm-long gap in the north wall. It is not clear if this gap was intentionally left in the wall, or if there was masonry here that was subsequently lost. A smaller (20 cm long) gap is present at the west end of the wall. This gap was probably not part of the original wall construction.

Table 14.58. Room 15 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	0.88, 1.28	0.20	0.21
East	3.96	0.30	0.24
South	2.81	0.10	0.19
West	4.03	0.20	0.25

Artifacts and Samples. All the artifacts from units 79N/98E and 79N/99E were analyzed. One flotation sample (FS 4000) from Stratum 201 was analyzed. Identified charred taxa included unknown conifer, juniper, and maize. No pollen samples were analyzed.

Room 16

Room 16 (Figure 14.47) is located in the central portion of Roomblock 3 between Rooms 14 and 22. The interior dimensions of the room are 5.4 m north-south by 2.3 m east-west, and it has an interior area of 12.4 m^2.

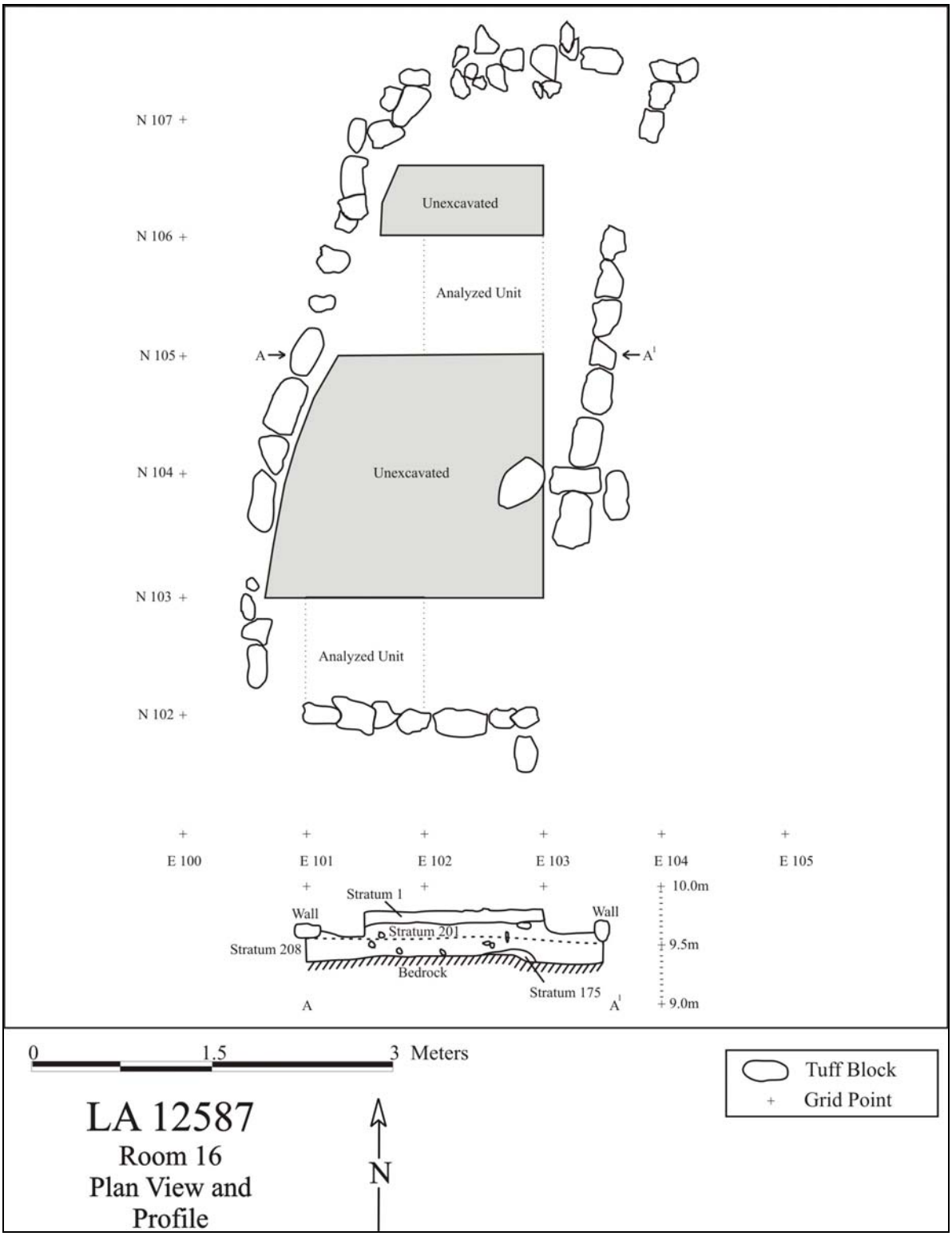


Figure 14.47. Room 16 plan view and profile.

Stratigraphy. The four strata associated with Room 16 are summarized in Table 14.59. At the time of excavation a piñon tree was growing in the northwest corner of the room. Stratum 1

consists of loose, unconsolidated, and fine-grained sandy loam. Stratum 201 consists of sandy loam. Many masonry blocks and chinking stones were recovered from this stratum. Stratum 208 is similar to Stratum 201, although it is slightly less consolidated and contains less wallfall. Bedrock and infrequent patches of Stratum 175 underlay Stratum 208. Table 14.60 gives the artifact counts by stratum for Room 16.

Table 14.59. Room 16 stratigraphy.

Stratum	Thickness (cm)	Color	Texture	Description
0	0	7.5YR 4/3	sandy loam	Surface
1	3–6	7.5YR 4/4	sandy loam	Unconsolidated surface soil
201	11–29	7.5-10YR 4/4	sandy loam	Fill to base of walls
208	13–35	7.5-10YR 4/4	sandy loam	Soil below walls to bedrock

Table 14.60. Room 16 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	8	15	1	0	0	24
1	34	43	0	0	0	77
201	271	1323	13	2	0	1609
208	158	630	7	20	1	816
Total	**471**	**2011**	**21**	**22**	**1**	**2526**

Floors. No floors or living surfaces were found in Room 16.

Wall Construction. The northeast and southeast corners of the room are in poor condition, although it appears that the south walls are bonded to the east wall. The other corners are not intact. Table 14.61 gives the dimensions of the extant walls segments. The walls are constructed of a single row of coursed, horizontally laid masonry of shaped and unshaped tuff blocks. The north wall was in poor condition due to considerable disturbance from tree roots. The rest of the walls are a single course high, although rubble found inside the room suggests that they were several courses higher at some point. The southern end of the east wall is missing as are several stones from the north end. The basal course of the west wall is mostly intact, although occasional gaps are present. The north end of this wall is distorted by tree roots.

A possible tie stone is present at 103.9N/103.2E in the east wall. It is possible that this is the remains of a south wall or of some other internal division. However, lacking other evidence for a wall at this location, the north wall of Room 14 is assumed to be the south wall of Room 16.

Table 14.61. Room 16 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness
North	--	--	--
East	0.56, 2.56	0.27	0.24
South	2.0	0.17	0.24

Wall Orientation	Length (m)	Height (m)	Thickness
West	5.54	0.25	0.25

Artifacts and Samples. All the artifacts from units 102N/101E and 105N/102E were analyzed, as were all the macrobotanical materials from unit 102N/102E. All the faunal remains were analyzed. Other analyzed artifacts include a dacite palette (FS 3683) and a welded tuff maul (FS 3706). Table 14.62 lists the samples analyzed from Room 16.

Table 14.62. Room 16 analyzed samples by stratum.

Stratum	Flotation	Pollen	Macrobotanical
201	3888	3820	3874
208	4010	4009	4011

Room 17

Room 17 (Figure 14.48) is located near the south end of Roomblock 3 between Rooms 15 and 18. The interior dimensions of the room are 3.4 m north-south by 2.5 m east-west and it has an interior area of 8.5 m^2.

Stratigraphy. The four strata associated with Room 17 are summarized in Table 14.63. At the time of excavation, a large piñon tree and two small juniper trees were present in the center of the room. Stratum 1 consists of loose, unconsolidated, and fine-grained sandy loam. Stratum 201 consists of sandy loam grading to clay loam and contains very little wallfall. Stratum 208 is similar to Stratum 201 although it is mostly clay loam. Infrequent patches of Stratum 175 were found just above bedrock. Table 14.64 summarizes the artifacts from Room 17 by stratum.

Table 14.63. Room 17 stratigraphy.

Stratum	Thickness (cm)	Color	Texture	Description
0	0	10YR 4/3	sandy loam	Surface
1	1–5	10YR 4/3	sandy loam	Unconsolidated surface soil
201	5–45	10YR 4/4	sandy/clay loam	Fill to base of walls
208	6–30	10YR 4/4	clay loam	Soil below walls to bedrock

Table 14.64. Room 17 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
0	1	0	1	0	0	2
1	3	0	0	0	0	3
201	4	16	1	0	0	21
208	4	18	0	0	0	22
Total	**12**	**34**	**2**	**0**	**0**	**48**

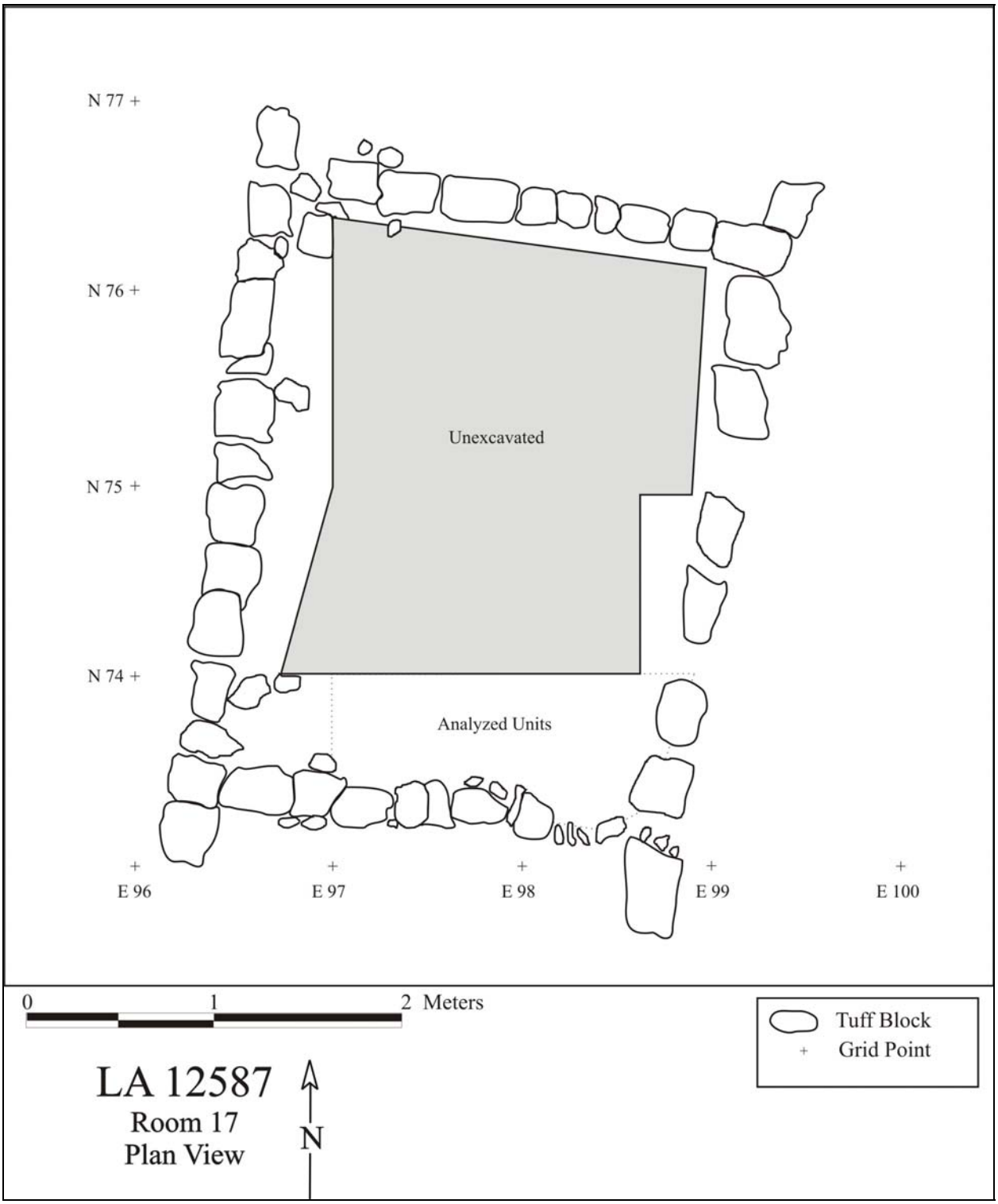


Figure 14.48. Room 17 plan view.

Floors. No floors or living surfaces were found in Room 17.

Wall Construction. The north wall is bonded with the east wall. All other corners abut. Table 14.65 gives the dimensions of the extant wall segments. The walls are constructed of a single row of coursed, horizontally laid masonry of shaped and unshaped tuff blocks held together with mortar. The basal courses of all the walls are intact except for the east wall, which has a few gaps. The west wall is two courses tall near the northwest corner of the room; otherwise the walls are only one course high.

Table 14.65. Room 17 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.70	0.11	0.22
East	2.30	0.23	0.28
South	3.38	0.23	0.26
West	3.45	0.10	0.25

Artifacts and Samples. All the artifacts from units 73N/97E and 73N/98E were analyzed. Table 14.66 lists the samples analyzed from Room 17.

Table 14.66. Room 17 analyzed samples by stratum.

Stratum	Pollen	Flotation	Macrobotanical
1	4128	None	None
201	3860, 4129, 4130	4036, 4037, 4131, 4132	3853, 3857

Room 18

Room 18 (Figure 14.49) is the southernmost room of Roomblock 3. It is south of Room 17. The interior dimensions are 3.0 m north-south by 2.3 m east west, and it has an interior area of 6.9 m^2. Excavation ended at a possible living surface that was level with, to a few centimeters below, the top of the walls. The dirt access road for the power line lies about 1 m south of Room 18.

Stratigraphy. The four strata associated with Room 18 are summarized in Table 14.67. Stratum 1 consists of loose, unconsolidated, and fine-grained sandy loam. The stratum is 1 to 2 cm thick in the south portion of the room. It is deeper in the north where it averaged 5 to 7 cm in thickness, although the maximum thickness was 14 cm. Stratum 201 consists of loose, medium-grained sandy loam. The stratum is not present in the southern portion of Room 18 and it is shallow in the center of the room (1 to 5 cm). At the north end of the room, Stratum 201 is up to 17 cm deep. Both Stratum 1 and Stratum 201 contained very little wallfall. Stratum 310 is discussed below in the 'Floor' section. Table 14.68 gives the artifact counts by stratum for Room 18.

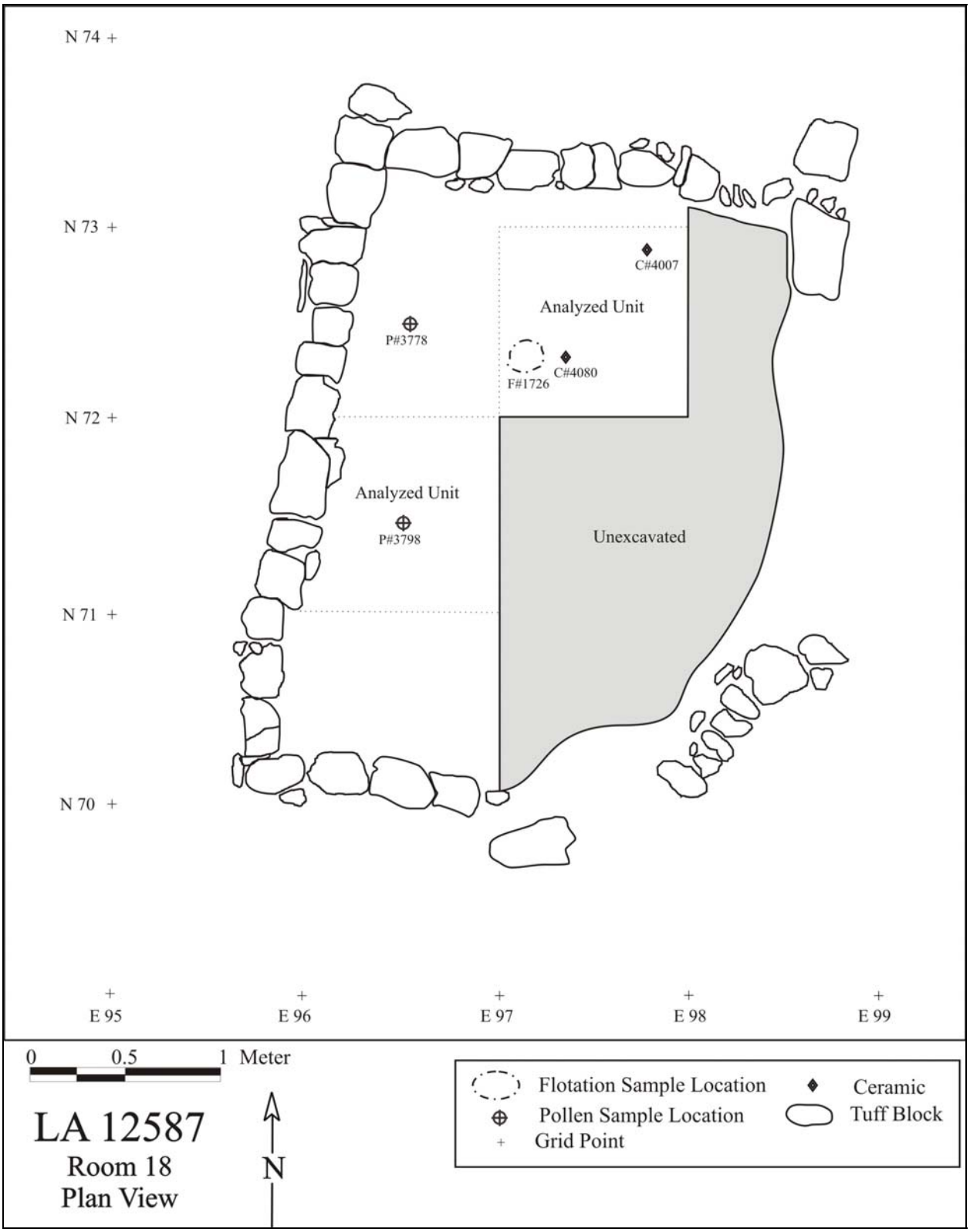


Figure 14.49. Room 18 plan view.

Table 14.67. Room 18 stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	7.5YR 4/4	sandy loam	0	Surface
1	7.5-10YR 4/4	sandy loam	1–14	Unconsolidated surface soil
201	7.5-10YR 4/4	sandy loam	1–17	Fill to Stratum 310
310	7.5YR 5/3	sandy loam	0	Possible use surface

Table 14.68. Room 18 artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	0	0	0	0	0	0
1	17	27	5	0	0	49
201	27	32	0	1	0	60
310	0	2	0	0	0	2
wall trenches grab sample	1	11	0	0	0	12
Total	**45**	**72**	**5**	**1**	**0**	**123**

Floors. Stratum 310, a possible use surface (Figure 14.50), underlies Stratum 1 in the south half of the room, and Stratum 201 in the north half of the room. It is underlain by an unexcavated Bw2 horizon. Stratum 310 consists of a compact and even surface that was level with, and articulated with, the top of the west and south walls. The top of Stratum 310 is a few centimeters below the top of the north wall. Several tuff cobbles were embedded in Stratum 310 and rise above its surface, indicating the Stratum 310 may not actually be a use surface. Two smeared-indented corrugated jar sherds (FS 4007 and FS 4080) were found on the surface of Stratum 310.

Wall Construction. The north wall abuts the west wall and probably abutted the east wall, but the relationship between the west wall and the south wall is unclear. The southeast corner does not exist. Table 14.69 gives the dimensions of the extant wall segments. The walls are constructed of a single row of horizontally laid masonry of shaped and unshaped tuff blocks held together with mortar. Facing stones are occasionally present on both the interior and exterior of the walls. All the walls are one course tall. The lack of wallfall in the fill suggests that the walls were never built up beyond their present height. The basal courses of the north and west wall are both intact, save for a 30-cm-long gap at the east end of the north wall. Only the west half of the south wall is present and the east wall is non-existent except for one masonry block in the northeast corner.

Table 14.69. Room 18 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.14	0.15	0.25
East	0.44	0.11	0.27
South	1.43	0.12	0.21
West	3.56	0.10	0.25

Figure 14.50. Room 18, Stratum 310.

Artifacts and Samples. All the artifacts from units 71N/96E and 72N/97E were analyzed. Analyzed samples consist of one flotation sample (FS 4079) and two pollen samples (FS 3778 and FS 3798) taken from just above Stratum 310. Only juniper remains were identified in the flotation sample. Taxa identified in the pollen samples include maize, beeweed, buckwheat, cheno-ams, grass family, mustard family, sunflower family, ragweed/bursage, globemallow (*Sphaeralcea*), spurge family, Douglas fir, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

Features. At the southeast corner of the room there is a detached, meter long, southwest-northeast-oriented alignment of unshaped and unmortared tuff blocks. It seems unlikely that this alignment is associated with the Room 18 walls. The tuff blocks are smaller than the masonry blocks of the room walls, the alignment of the blocks is different from that of the wall (their long axes are perpendicular, not parallel, to the alignment of the feature), and the top of the alignment is about 15 cm below the top of the walls. The function/origin of this alignment is unknown.

Room 19

Room 19 (Figure 14.51) is located near the north end of Roomblock 3 between Rooms 20 and 21. Room 19 is stratigraphically below Feature 22 (Figure 14.52).

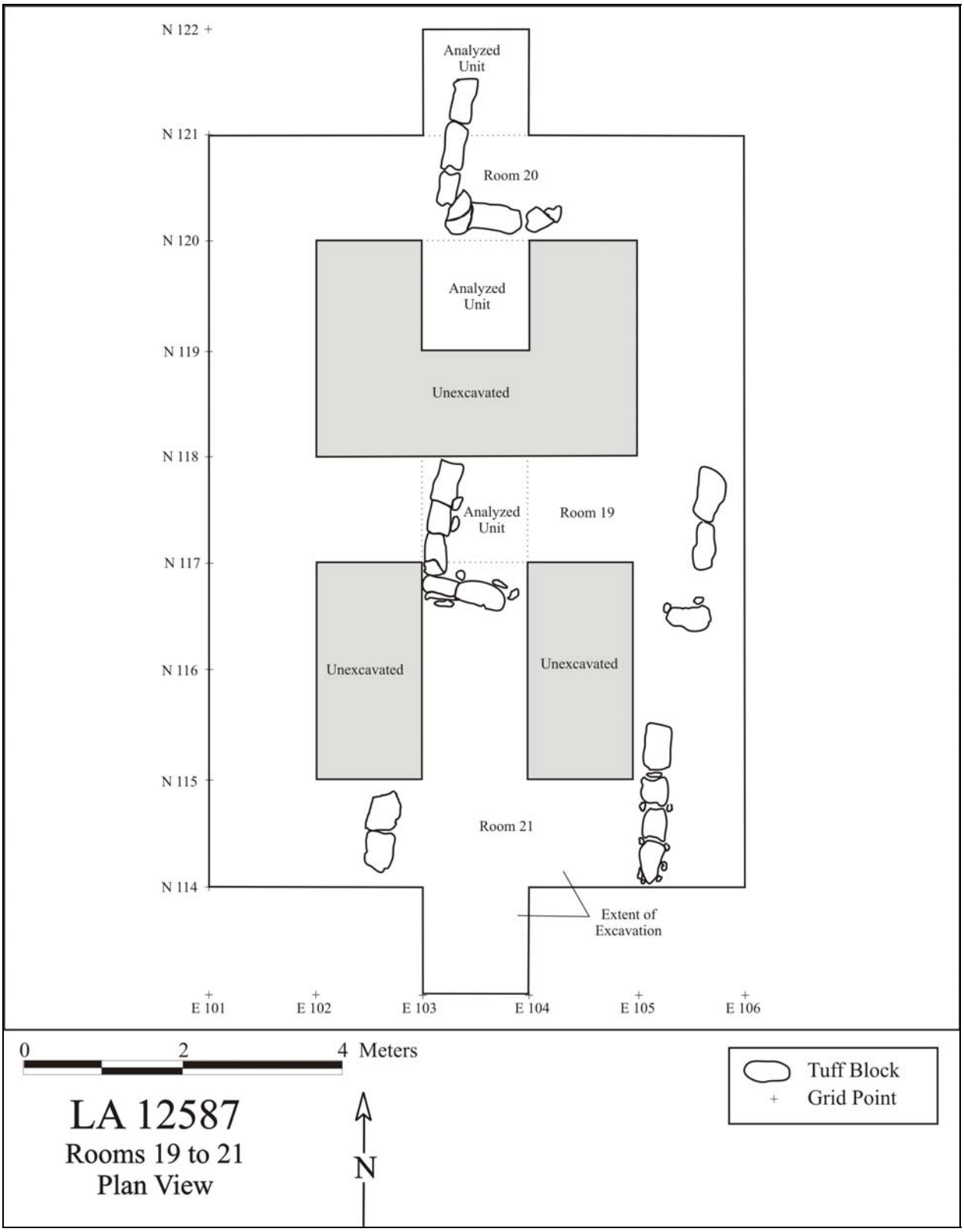


Figure 14.51. Rooms 19 to 21 plan view.

Figure 14.52. Room 19 underlies Feature 22.

Only one course of the southwest corner, fragments of the southeast corner, and a small part of the north wall were exposed. The room probably had internal dimensions of 3.3 m north-south by 2.2 m east-west and an area of 7.3 m^2. Only the basal course of the wall fragments survived and it is not clear if this was the extent of the Room 19 construction or if much of the room was destroyed by the construction of Feature 22.

Stratigraphy. The fill above the room walls is described in the discussion of Feature 22 below. Only the lower levels of Stratum 280 in three units (117N/103E, Level 4; 119N/103E, Levels 3 and 4; and 120N/103E, Level 4) were assigned to Room 19. Stratum 280 consists of 7.5YR 3/3 sandy loam and is 6 to 20 cm deep. It begins at the top of the Room 19 walls and ends slightly below the walls at the sandy clay of Stratum 175. Table 14.70 gives a count of the artifacts found in this stratum.

Table 14.70. Room 19 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
280	25	80	3	0	1	109

Floors. No floors or living surfaces were found in Room 19.

Wall Construction. Very little of the Room 19 walls remain (Table 14.71). The southwest corner is defined by three masonry blocks of the west wall and by two masonry blocks of the south wall. The southeast corner is defined by two masonry blocks of the east wall and by one masonry block of the south wall. The three westernmost blocks of the north wall are also present. Facing stones are present on both the interior and exterior of the southwest corner and on the interior of the southeast corner. The base of the walls is approximately 12 cm above bedrock. All the masonry blocks are shaped.

Table 14.71. Room 19 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	1.06	0.10	0.27
East	0.94	nd	nd
South	0.78	0.10	0.20
West	1.28	0.17	0.22

nd = no data recorded

Artifacts and Samples. All the artifacts from units 117N/103E and 119N/103E were analyzed. Three pollen samples (FS 4059, FS 4061, and FS 4063) were also analyzed. Taxa identified in the pollen samples included maize, cholla, beeweed, buckwheat, cheno-ams, grass family, sunflower family, spurge family, Douglas fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Room 20

Room 20 (see Figures 14.51 and 14.52) is the northernmost room of Roomblock 3. Feature 22 overlies Room 20. Because only the southwest corner of the room was exposed, the room dimensions could not be determined. The only excavated units associated with Room 20 are 120N/103E and 121N/103E.

Stratigraphy. The fill above the room walls is described in the discussion of Feature 22 below. Only the lower levels of Stratum 280 in units 120N/103E and 121N/103E were assigned to Room 20. Stratum 280 begins at the top of the walls and ends below the base of the walls at Stratum 175. It consists of 10 to 19 cm of 7.5YR 3/3 to 10YR 4/4 medium-grained sandy loam. Two masonry blocks were found in Stratum 280. Table 14.72 gives a count of the artifacts found in this stratum.

Table 14.72. Room 20 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
280	4	41	1	0	0	46

Floors. No floors or living surfaces were found in Room 20.

Wall Construction. A single course of three shaped tuff blocks makes up the west wall, and a single course of three shaped tuff blocks makes up the south wall (Table 14.73). The masonry ranges in size from 26 by 20 by 8 cm to 40 by 28 by 11 cm. It is possible that the foundation of the southwest corner was all that was built of Room 20 as there is no evidence for additional segments of the south and west walls.

Table 14.73. Room 20 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	n/a	n/a	n/a
East	n/a	n/a	n/a
South	1.06	0.10	0.27
West	1.10	0.10	0.18

Artifacts and Samples. All the artifacts from unit 121N/103E were analyzed. Three pollen samples (FS 4065, FS 4066, and FS 4067) were also analyzed. Taxa identified in these samples included maize, cholla, prickly pear, beeweed, purslane, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, evening primrose, Douglas fir, unidentified pine, piñon pine, juniper, rose family, and sagebrush.

Room 21

Room 21 (see Figure 14.51) is located near the north end of Roomblock 3 between Rooms 19 and 22. Feature 22 overlays Room 21. Only portions of the basal courses of the north, east, and west walls were found. It is not clear if this was the extent of the Room 22 construction or if much of the room was destroyed by the construction of Feature 22. The east-west width of the room is 2.4 m, and since no south wall was found, the north-south dimension is unknown.

Stratigraphy. Due to the minimal remains of Room 21, all the strata and artifacts encountered in this area were assigned to Feature 22.

Floors. No floors or living surfaces were found in Room 21.

Wall Construction. Very little of the walls remain (Table 14.74). The easternmost block and the two westernmost blocks of the north wall are present. Four contiguous blocks of the east wall survive, as do two contiguous blocks of the west wall. All the masonry blocks are shaped and range in size from 33 by 23 by 10 cm to 40 by 20 by 10 cm. Facing stones are present on both the interior and exterior of the north and east walls. Along the east wall most of the facing stones are placed at the joints between the masonry blocks. The base of the walls is a few centimeters above bedrock.

Table 14.74. Room 21 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	0.78	0.10	0.20
East	1.50	0.10	0.21

Wall Orientation	Length (m)	Height (m)	Thickness (m)
South	n/a	n/a	n/a
West	0.67	0.1	0.25

Artifacts and Samples. Two pollen (FS 4056 and FS 4057) samples from Room 21 were analyzed. Taxa identified in the pollen samples included maize, cholla, prickly pear, beeweed, purslane, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Room 22

Room 22 is located in the northern portion of Roomblock 3 between Rooms 21 and 16. Only the area around the south wall and the south half of the east wall was excavated. The north and west walls could not be located. Because so little of the room was unexcavated, no dimensional data are available.

Stratigraphy. Because only a small area of the room was excavated, a stratigraphic description is also unavailable. Since most of the fill excavated from Room 22 was not screened, only four chipped stone artifacts are associated with the room.

Floors. No floors or living surfaces were found in Room 22.

Wall Construction. Two segments of the east wall remain (Table 14.75, Figure 14.53). The southern segment consists of three shaped tuff blocks that extend north for 60 cm from the north wall of Room 16. The northern segment lies 1.75 m further north and consists of two parallel rows of small upright tuff cobbles and four masonry blocks. The south wall is described above as the north wall of Room 16.

Table 14.75. Room 22 wall dimensions (extant wall segments).

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	n/a	n/a	n/a
East	0.60, 1.05	0.12	0.19
South	n/a	n/a	n/a
West	n/a	n/a	n/a

Artifacts and Samples. No artifacts or samples were analyzed from Room 22.

Figure 14.53. Room 22 east wall.

Area 1 Exterior Features

Four external features were identified in Area 1. Feature 3 is an ash stain located about 5 m east of Room 7. Feature 5, a possible storage cist, was constructed against the exterior of the east wall of Room 2. It was included in the Room 2 description. Feature 13 is a set of bedrock grinding slicks located 1 m west of Room 6. A northern extension of the center wall of Roomblock 1 and an associated floor surface and charcoal stain were identified as Feature 21.

Feature 3 (Ash Stain). During mechanical scraping to the east and southeast of Roomblock 1, a 3.3- by 1.9-m scatter of tuff blocks was encountered. An ashy stain was located near the center of the scatter. The stain measures 64 by 38 cm and is 5 to 8 cm deep (Figure 14.54).

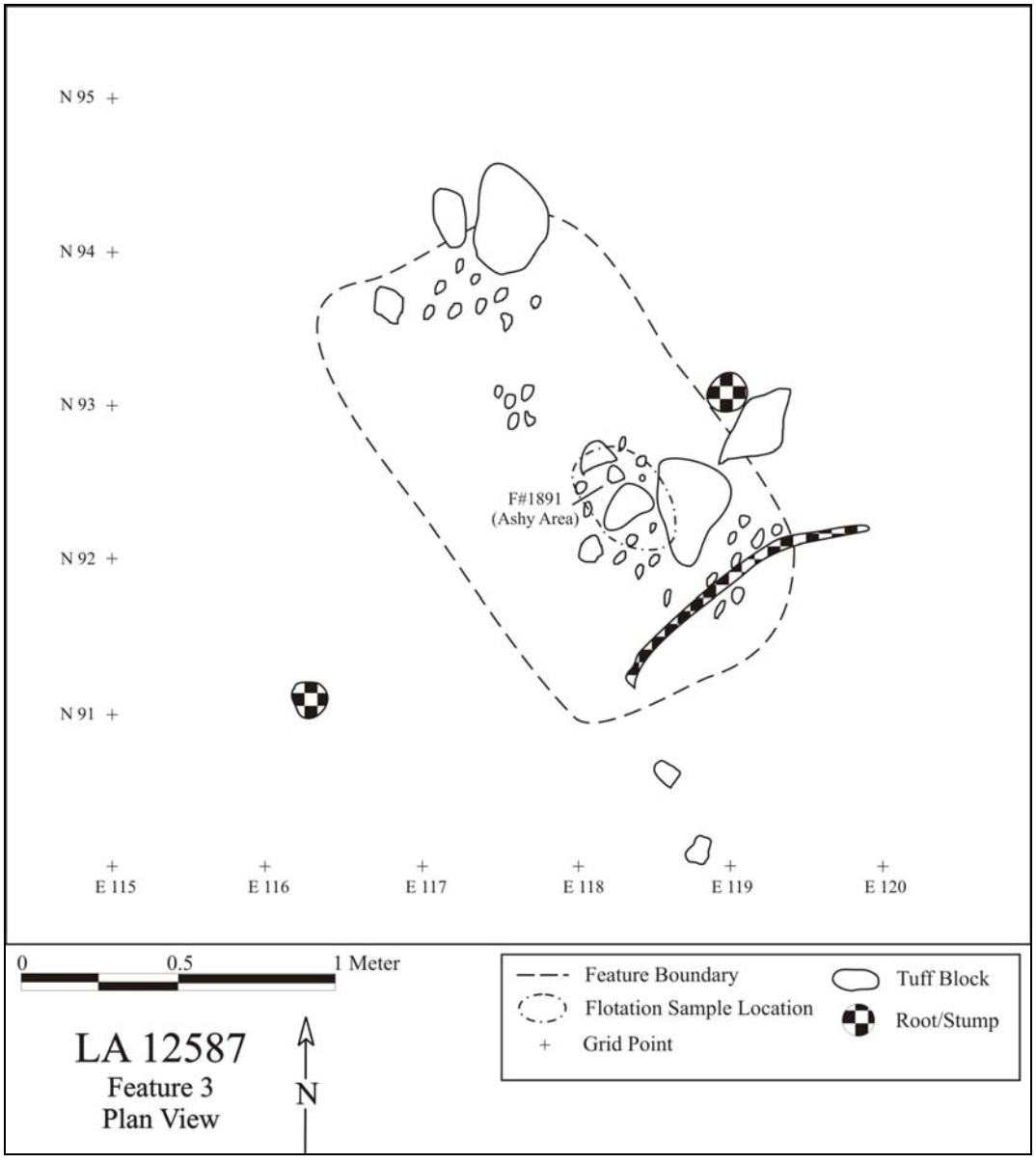


Figure 14.54. Feature 3 plan view.

The ashy deposit was collected as a flotation sample (FS 1891) and the charred taxa included unknown conifer, juniper, piñon pine, unidentified pine, saltbush/greasewood, and maize. Seven smeared-indented corrugated jar sherds (FS 1888), one plain body jar sherd (FS 1888), and one basalt core flake (FS 1889) were recovered from the feature. Feature 3 may be the remains of an informal hearth.

Feature 13 (Grinding Slicks). Feature 13 consists of six grinding slicks in the tuff bedrock, which were identified approximately 35 cm below surface. The slicks varied in depth from 2 to 6 cm and were 15 to 28 cm long and 10 to 14.5 cm wide. Five were oriented northwest-southeast (Slicks 1 through 5), and the sixth was oriented north-south (Figures 14.55 and 14.56).

Figure 14.55. Feature 13.

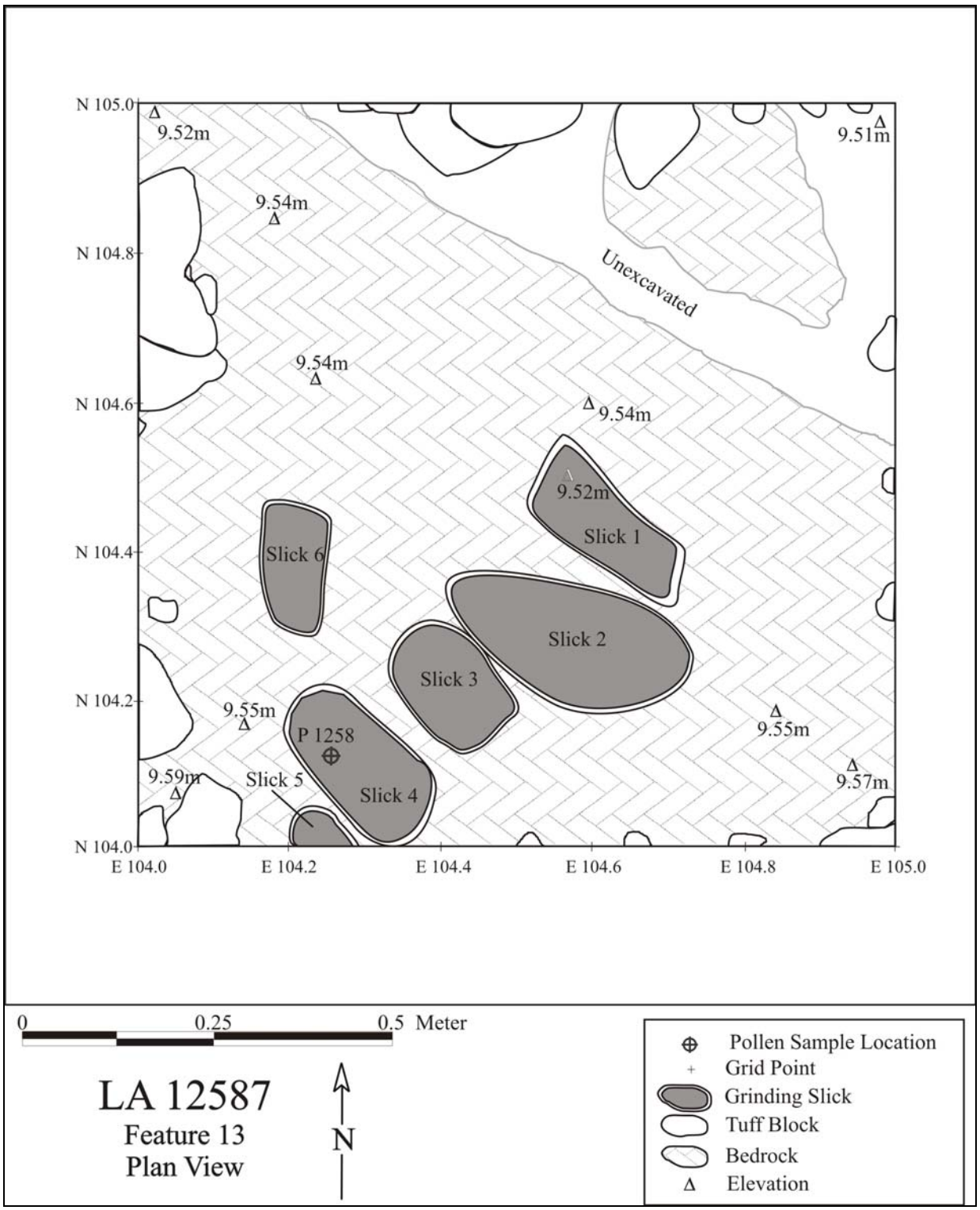


Figure 14.56. Feature 13 plan view.

Slick 1 is 25 cm long, 10 cm wide, and 2.5 cm deep. The width is uniform. The north side is nearly vertical, angling out slightly at the top. In contrast, the south side slopes evenly up to the bedrock surface. Both ends slope up evenly to the bedrock surface. Striations are present at the base of the slick and are parallel with the long axis.

Slick 2 varies in width from 11 cm at the ends to 16 cm in the center. It is 28 cm long and up to 6 cm deep. The ends and sides slope uniformly up to the bedrock surface. Striations are present at the base of the slick and are parallel with the long axis.

Slick 3 shares a common edge with Slick 2. This slick is 22 cm long, 12.5 cm wide at the northwest end, 10 cm wide at the southeast end, and 11 cm wide at the center. It is 3 cm deep. A hole, 3 cm in diameter and 2.5 cm deep was pecked into the northwest end of the slick. Striations are present at the base of the slick and are parallel with the long axis. The grinding surface of Slick 3 overlaps the south edge of Slick 2 suggesting that Slick 3 is younger.

Slick 4 is 22 cm long, 10 to 10.5 cm wide, and 5.5 cm deep. Its sides are relatively vertical, angling out slightly at the top. Both ends feather out. A small hole at the southeast end, which was 1 cm in diameter, may have been produced by pecking. A pollen sample (FS 1258) collected from just above this slick was analyzed. Taxa identified in the sample included prickly pear, cheno-ams, grass family, sunflower family, spurge family, fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Slick 5 is shallow and less distinct than the others. It is 15 cm long, 10 cm wide, and not more than 1 cm deep. Striations are not evident. A conical hole that is 3 cm in diameter and 1 cm deep is located immediately southwest of the slick. It may have been produced by pecking.

Slick 6 is 16.5 cm long, 11.5 cm wide at the center, and 2 cm deep. Its sides are relatively vertical. Striations are present at the base of the slick and are parallel with the long axis.

Feature 13 is either associated with the Archaic component (Area 8) of the site or with Roomblock 1. The stratigraphic relationship between Roomblock 1 and later components indicates that Feature 13 was buried after the abandonment of Roomblock 1.

Feature 21 (Alignment). Feature 21 consists of an 80-cm-long extension of the middle wall of Roomblock 1 north of Rooms 1 and 2. Remnants of wall mortar were noted on the east side of the wall extension. Directly east of the wall extension there was a fragment of plastered floor surface. The north wall of Room 2 forms the south side of the feature. No northern and eastern boundaries were found. An ash and charcoal stain was exposed in the southwest corner of the feature. A flotation sample (FS 4211) was collected from the stain and the taxa identified included squash/coyote gourd, unknown conifer, juniper, unidentified pine, purslane, oak, and maize. The function/origin of this feature is unknown.

Area 2

Area 2 was defined by the presence of three parallel tuff rock alignments (Feature 22) and scattered rubble. Two other features (Feature 17 and Feature 18) were excavated in Area 2.

Feature 17 is a surficial rock cluster situated immediately southeast of Feature 22. Feature 18 is a similar rock cluster situated about 1 m south of Feature 17. Additional rubble and alignments lie north of Feature 22. These were not investigated, but likely represent additional agricultural features. Features 17, 18, and 22 are all situated in the A horizon at a shallow depth, indicating that they are at least roughly contemporaneous.

Feature 17 (Rock Cluster). Feature 17 is located immediately southeast of Feature 22. It is a circular rock cluster of unshaped tuff rocks. The feature is approximately 1 m in diameter and 15 cm high. In profile it is clear that Feature 17 is situated in the A horizon. The function of the feature is not evident. It may be an agricultural feature, possibly where seeds were planted to take advantage of the moisture and heat-retention qualities of the rock. Or it may be the result of rock clearing and stockpiling that possibly occurred during the preparation of Feature 22. A pollen sample was taken from beneath a large tuff block in the cluster (FS 4097). Taxa identified in this sample included maize, cholla, prickly pear, cheno-ams, grass family, spurge family, sunflower family, ragweed/bursage, Douglas fir, unidentified pine, piñon pine, juniper, oak, cottonwood/willow, and sagebrush.

Feature 18 (Rock Cluster). Feature 18 is situated approximately 1 m south of Feature 17. It is a circular rock cluster that consists of 24 unshaped tuff blocks in a 1.72- by 1.70-m area (Figures 14.57 and 14.58).

Figure 14.57. Feature 18.

The feature is slightly mounded with a maximum height of 8 cm. The rocks are irregular in shape and range in size from 23 by 18 cm to 8 by 6 cm. Many of the cobbles are lichen-covered. In profile it is clear that Feature 18 is situated in the A horizon (Figure 14.58). The function of the feature is not evident. It may be an agricultural feature, possibly where seeds were planted to take advantage of the moisture and heat-retention qualities of the rock. Or it may be the result of rock clearing and stockpiling, possibly during preparation of Feature 22. A pollen sample (FS 4154) was collected from within the feature and a second pollen sample (FS 4155) was collected from below it. Taxa identified in FS 4154 include maize, prickly pear, cheno-ams, grass family, sunflower family, spurge family, evening primrose, Douglas fir, piñon pine, unidentified pine, juniper, and sagebrush. Taxa identified in FS 4155 include maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

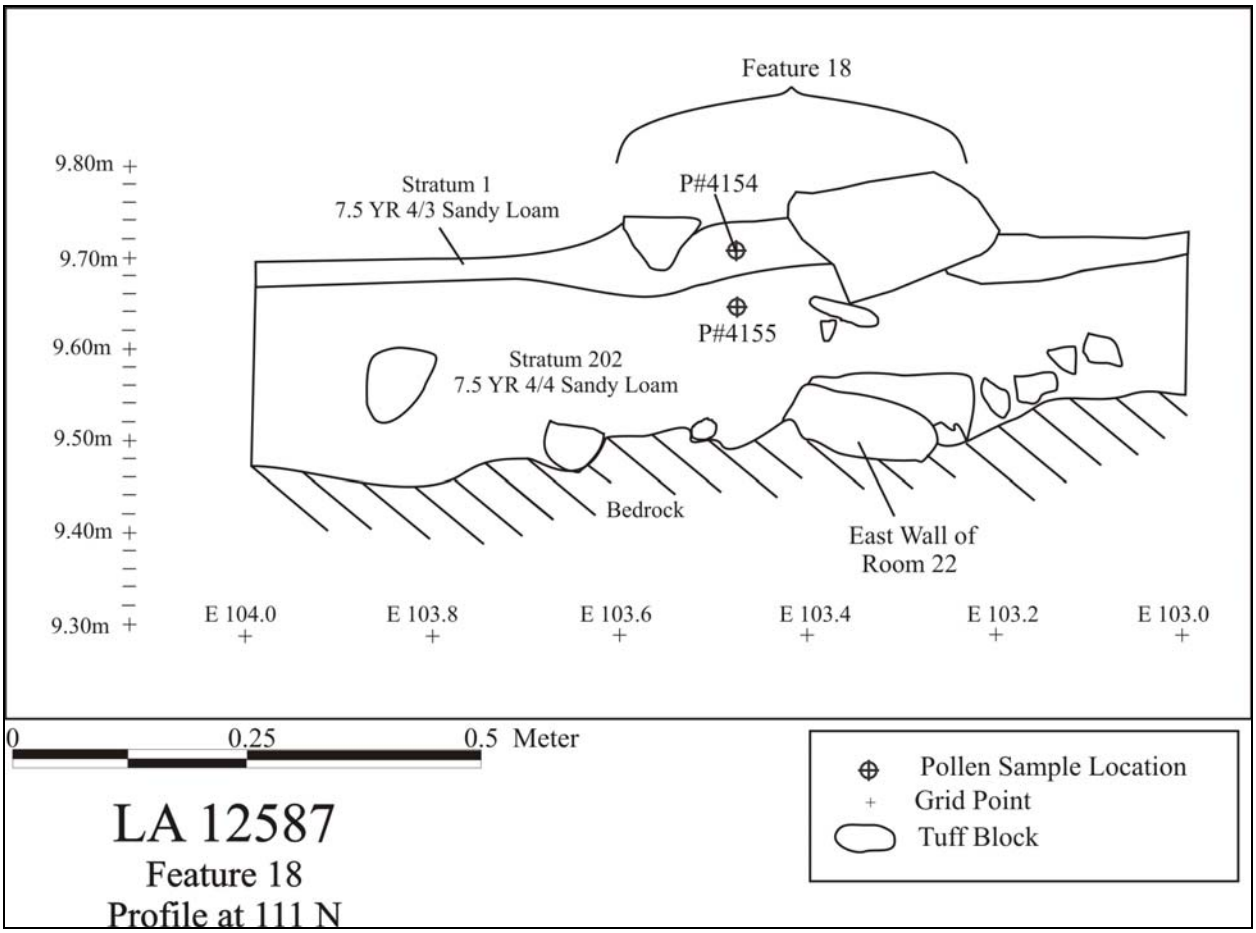


Figure 14.58. Feature 18 profile.

Feature 22 (Berms). Feature 22 is located near the north end of the site and consists of three east-west-running berms of unshaped tuff cobbles. The berms are 4 to 5 m long, 0.5 to 1.0 m wide, and 0.15 to 0.20 m high (Figures 14.59, 14.60, and 14.61). A few rocks on the west side of the feature create a rough boundary. The cobbles making up the feature are loosely placed together and stacked no more than three high. They are partially buried by A horizon soil

(Stratum 1) and rest on or just in the Bw horizon (Stratum 280). The A horizon is somewhat deeper inside the feature than outside, suggesting that dirt was intentionally placed inside the berms (see Drakos and Reneau, Volume 3). Isolated wall segments of Rooms 19 to 21 immediately underlie Feature 22. Feature 22 is interpreted as an agricultural feature.

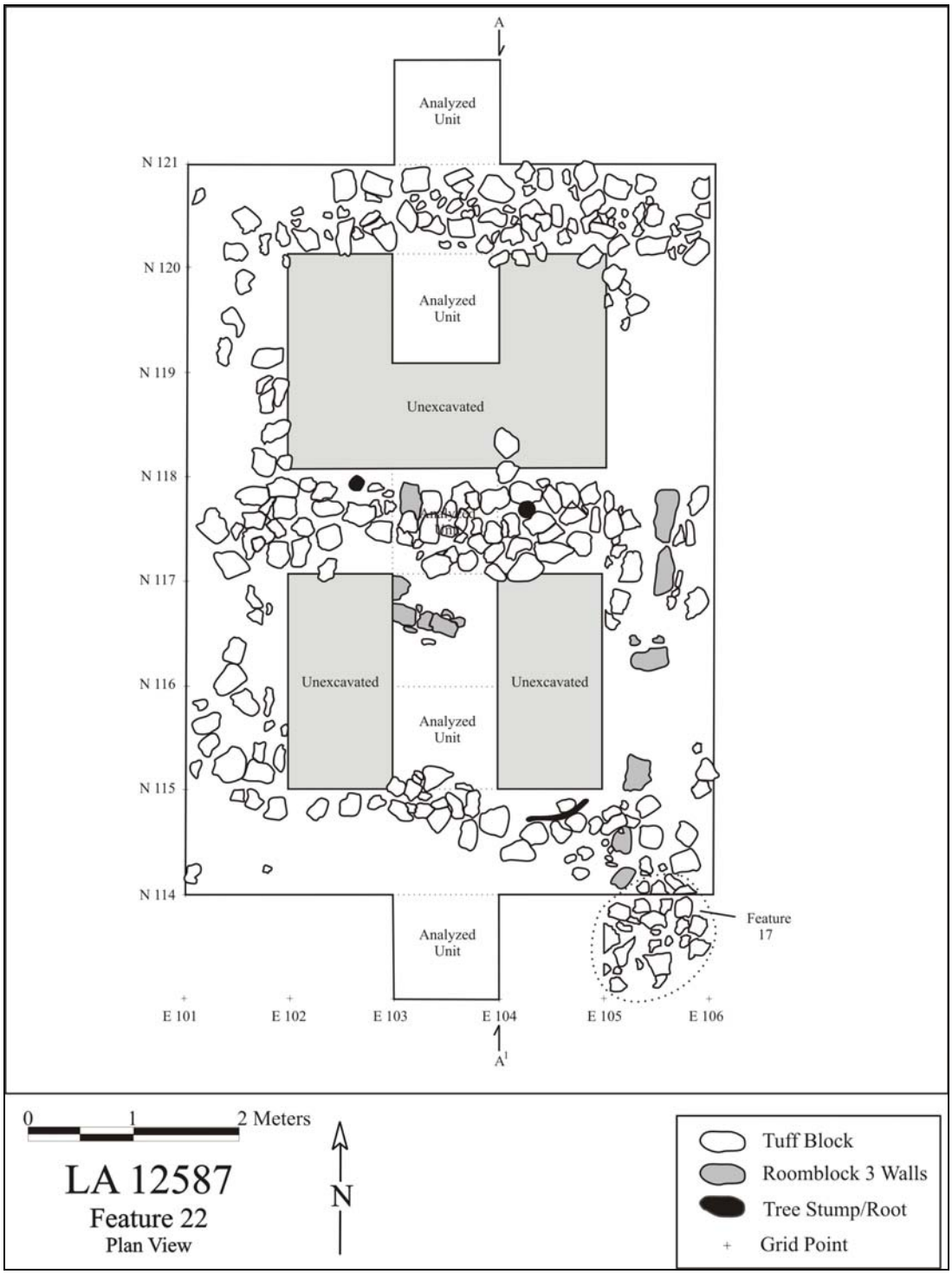


Figure 14.59. Feature 22 plan view.

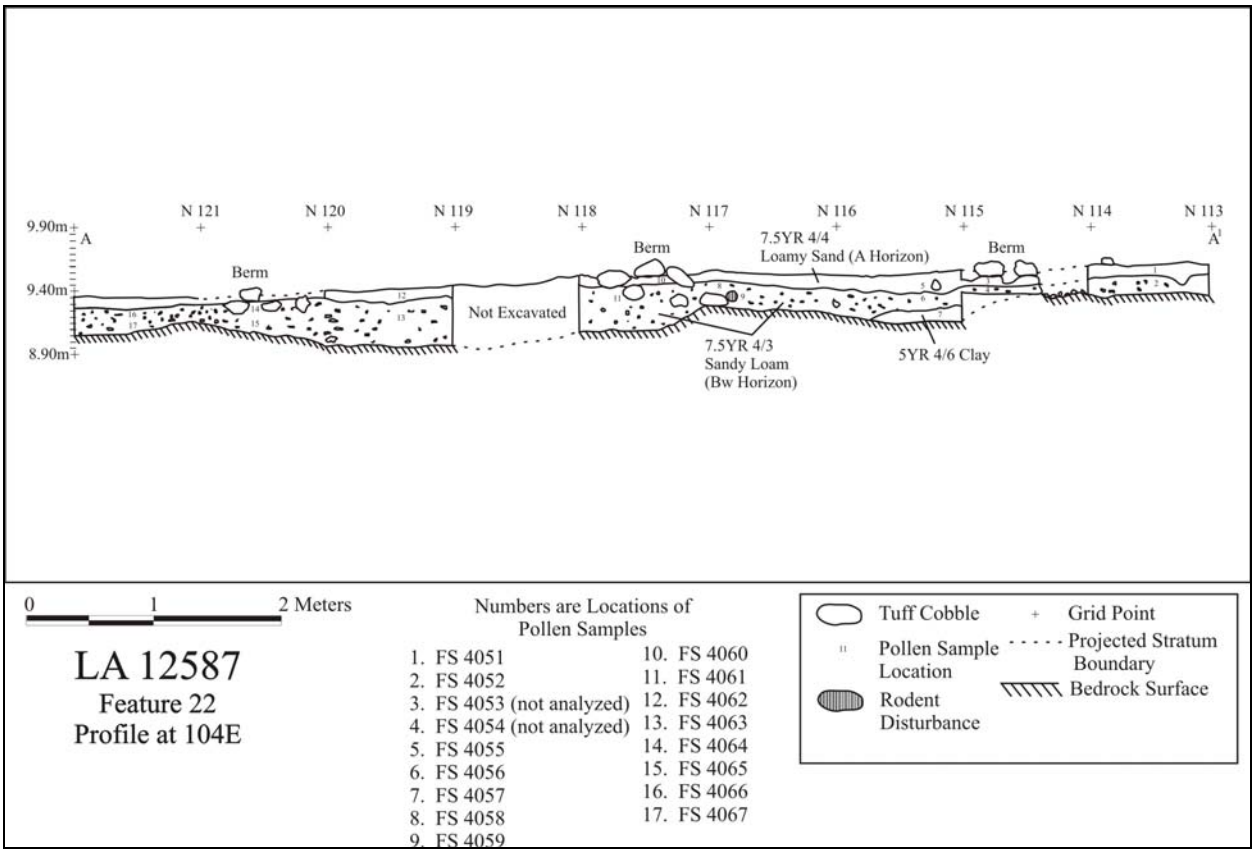


Figure 14.60. Feature 22 profile.

Artifacts from every other grid along the 103E line (starting at 113N and ending at 121N, inclusive) were analyzed. Fifteen pollen samples were analyzed from Feature 22 (FS 4051, FS 4052, FS 4055, FS 4056, FS 4057, FS 4058, FS 4059, FS 4060, FS 4061, FS 4062, FS 4063, FS 4064, FS 4065, FS 4066, and FS 4067). Taxa identified in these pollen samples included cotton (*Gossypium*), maize, prickly pear, cholla, beeweed, mint family, purslane, buckwheat, chenoams, grass family, mustard family, sunflower family, ragweed/bursage, spurge family, evening primrose, Douglas fir, unidentified fir, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Table 14.76 gives a count of the number of artifacts per stratum from Feature 22. The 'Other' category consists of a turquoise fragment (FS 3340) and several miscellaneous samples.

Table 14.76. Feature 22 artifact counts by stratum.

Stratum	Chipped Stone	Ceramic	Ground Stone	Nonhuman Bone	Other	Total
0	59	189	3	0	0	251
1	152	318	2	0	1	473
280	436	1449	10	3	5	1903
Total	**647**	**1956**	**15**	**3**	**6**	**2627**

Figure 14.61. Feature 22.

Area 3

Area 3 is east of Area 2 (see Figure 14.2). It includes rock alignments and concentrations that are likely the remains of agricultural features. Due to time constraints, data recovery efforts were not conducted in this area.

Area 4

Area 4 is south of Area 1 (see Figure 14.2). It is the designation given to the southern surface collection area. Surface collection was conducted here before setting up tripod screens for screening fill from excavation. No surface features were identified, and no excavation was conducted. The artifacts collected from the surface are part of the Roomblock 1 midden and may include some material associated with the Archaic period artifact scatter (Area 8).

Area 6

Area 6 is west of Areas 1 and 2 (see Figure 14.2). This area includes various rock concentrations and alignments. The end of an isolated room or grid garden was identified at 116N/97E and a rock concentration resembling Features 17 and 18 was identified at 93.5N/95.0E. Between these two features additional rock alignments and concentrations were identified. These are probably

the remains of structures and/or agricultural features. Data recovery efforts were not conducted in this area.

Area 7

Area 7 includes most of the midden associated with Roomblock 1 (see Figure 14.2). Investigations in Area 7 focused on areas with the highest artifact density. In-field inspection indicated that in areas east of 130E and south of 90N artifact densities declined significantly.

Stratigraphy. The midden strata are summarized in Table 14.77. Stratum 1 consists of soft, medium-grained, sandy loam. Stratum 60 incorporates the A, Bw, and Btk horizons. This stratum contains most of the midden deposits. The considerable variation in the depth of Stratum 60 is attributed to the undulating surface of the bedrock (Figure 14.62).

Table 14.77. Midden stratigraphy.

Stratum	Color	Texture	Thickness (cm)	Description
0	10YR 4/4	sandy loam	0	Surface
1	10YR 4/4	sandy loam	2–10	Unconsolidated surface soil
60	10YR 4/4	sandy loam	10–44	Midden fill
175[1]	7.5YR 4/6	sandy clay	1–15	Btk horizon

1. Stratum 175 was not differentiated from Stratum 60 during excavation.

Table 14.78 gives the artifact counts by stratum for the midden. These counts are complied from excavation units 116N/127E, 110N/122E, 110N/123E, 106N/129E, 106N/130E, 105N/122E, 101N/122E, 101N/123E, 101N/124E, and 95N/126E). The 'Other' category consists of a human adult right first pedal phalanx (FS 2523), a small fragment of turquoise (FS 2414), and eight pieces of fire-cracked rock (FS 3224, FS 3232, FS 3238, and FS 3242).

Table 14.78. Midden artifact counts by stratum.

Stratum	Chipped Stone	Ceramics	Ground Stone	Nonhuman Bone	Other	Total
0	14	49	0	0	0	63
1	101	469	0	1	1	572
60	598	2922	39	21	9	3589
Total	**713**	**3440**	**39**	**22**	**10**	**4224**

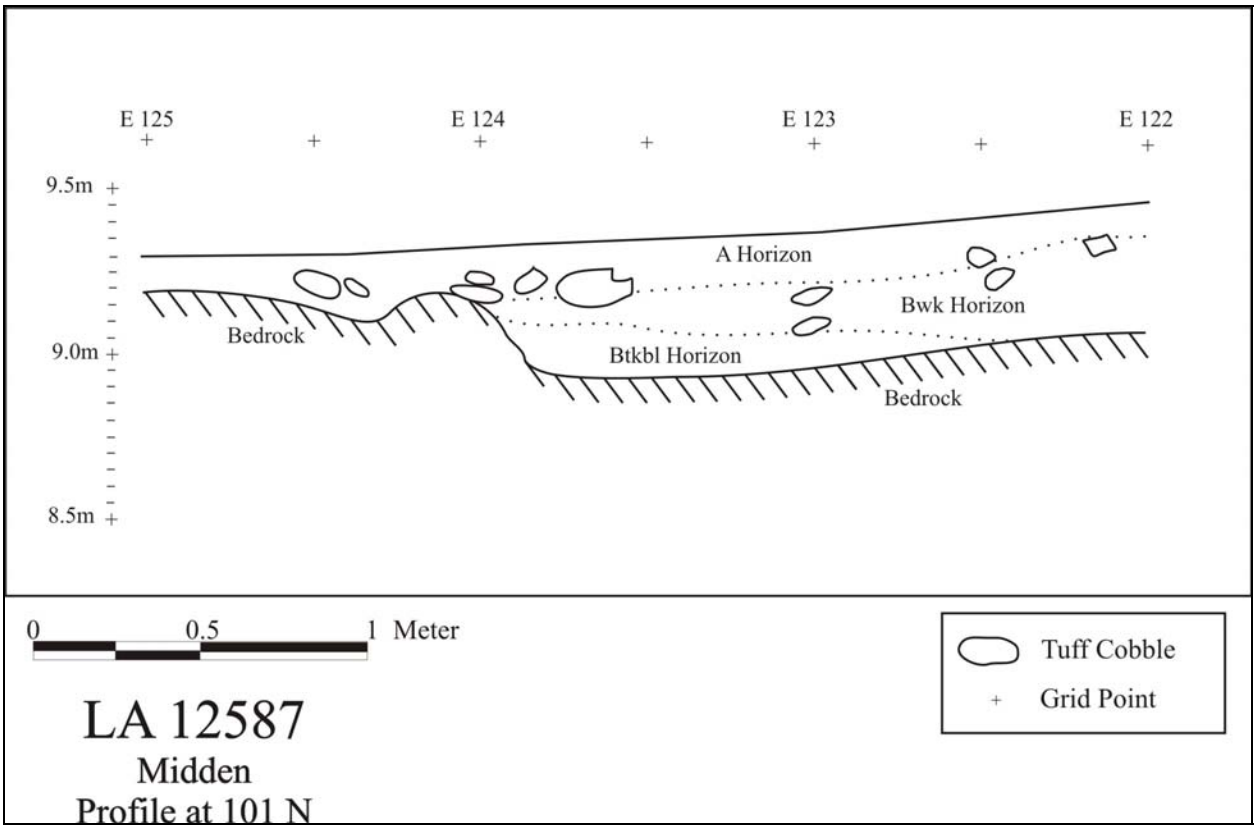


Figure 14.62. Midden profile at 101N/122 to 125E.

Artifacts and Samples. All the artifacts are from units 116N/127E, 110N/122E, 106N/129E, 106N/130E, 105N/122E, 101N/122E, 101N/123E, and 95N/126E. Artifacts from unit 92N/118E were also analyzed. All the faunal remains were analyzed. Other analyzed artifacts include a Cerro Toledo obsidian biface fragment (FS 3227), a Valle Grande obsidian biface fragment (FS 3234), and a tuff mortar (FS 3907). Table 14.79 lists the samples analyzed from the midden.

Table 14.79. Midden analyzed samples by excavation unit.

Grid Unit	Pollen FS	Flotation FS	Macrobotanical FS
95N/126E	3080 and 3083	3081	3079 and 3087
101N/123E	2923	2924	None
116N/127E	3050	3049	None

Taxa identified in the pollen samples from 95N/126E included maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in the flotation sample from this unit included pigweed, sagebrush, saltbush/greasewood, goosefoot, cheno-ams, unknown conifer, juniper, groundcherry, piñon pine, purslane, and maize. Taxa identified in the macrobotanical samples included juniper, mountain mahogany, unidentified pine, and piñon pine.

Taxa identified in the pollen sample from 101N/123E included maize, prickly pear, beeweed, cheno-ams, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, and rose family. Taxa identified in the flotation sample included saltbush/greasewood, unknown conifer, juniper, and maize.

Taxa identified in the pollen sample from 116N/127E included cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. Taxa identified in the flotation sample from this unit included goosefoot, juniper, piñon pine, and maize.

Human Burials. Three human burials were found during trenching activities in the midden. The excavation, provenience, and associated artifacts of the burials are discussed below (see Schillaci, Volume 3 for details). Since all three burials were found in the midden, many artifacts were recovered during their excavation. Only artifacts identified as funerary objects, sacred objects, and/or objects of cultural patrimony (Native American Graves Protection and Repatriation Act [NAGPRA] artifacts) by the Tribal Monitor are included in the burial descriptions.

Burial 1 (Feature 9)

Burial 1 was disturbed by backhoe operations. Skeletal remains of a 30+ year old Native American female were found in units 100N/124E, 99N/123E, 99N/124E, 99N/125E, 98N/124E, and 98N/125E. The skeleton was disarticulated and many elements were missing, including the head, pelvis, and lower limbs. Most of the remains were found between 8.95 and 8.88 m (38 to 45 cm below ground surface). Due to the disturbed nature of the burial, no skeletal orientation or internment data were gathered. Tables 14.80 to 14.82 summarize the artifacts associated with Burial 1.

Table 14.80. Burial 1 NAGPRA ceramic artifacts.

Type	Bowl	Jar	Olla	Indeterminate	Total
Santa Fe Black-on-white	64	2	0	0	66
Wiyo Black-on-white	2	0	0	0	2
Galisteo Black-on-white	3	0	0	0	3
Smeared-indented corrugated	0	1	0	0	1
Plain body	0	1	0	1	2
Mud ware	0	1	0	0	1
Unpainted undifferentiated	9	0	1	0	10
Total	**78**	**5**	**1**	**1**	**85**

Table 14.81. Burial 1 NAGPRA lithic artifacts.

Artifact Type	Basalt	Chalcedony	Obsidian	Silicified Wood	Andesite	Dacite	Quartzite	Tuff	Total
Core	0	2	0	0	0	0	0	0	2
Hammerstone	0	0	0	0	0	1	0	0	1
Core flake	1	1	0	0	0	0	0	0	2
Retouched piece	0	0	1	0	1	0	0	0	2
Biface	0	3	7	1	0	0	0	0	11
Projectile point	0	1	6	0	0	0	0	0	7
Uniface	0	0	1	0	0	0	0	0	1
Drill	0	0	2	0	0	0	0	0	2
One-hand mano	0	0	0	0	0	0	1	0	1
Grinding slab	0	0	0	0	0	1	0	0	1
Polishing stone	0	0	0	0	0	1	0	0	1
Abrading stone	0	0	0	0	0	0	0	1	1
Unidentified ground stone fragment	0	0	0	0	0	1	0	0	1
Shaped slab	0	0	0	0	0	1	0	0	1
Manuport	0	0	0	0	0	1	0	0	1
Total	**1**	**7**	**17**	**1**	**1**	**6**	**1**	**1**	**35**

Table 14.82. Burial 1 NAGPRA other artifacts.

Artifact	Total
Siltstone ornament	1
Hematite fragment	2
Turquoise fragment	1
Quartzite pebble	1
Freshwater shell fragment	9
Worked shell fragment	1
Shell bead	1
Total	**16**

Burial 2 (Feature 14)

Burial 2 was located in unit 92N/118E. Initial identification of the burial occurred when bones were unearthed during the excavation of Trench 6. Most of the skeletal remains were disturbed by the backhoe although the skull, upper torso, and upper right arm remained in situ. These elements were semi-articulated and were the remains of a 45- to 59-year-old Native American female.

The in situ remains were found between 9.13 and 8.88 m (10 to 35 cm below ground surface). The individual was placed in a natural niche in the bedrock on her back (with her upper back and head slightly elevated), with her head oriented to the southwest and facing northeast. This burial may have been covered with a tuff slab. Tables 14.83 and 14.84 summarize the artifacts associated with Burial 2.

Table 14.83. Burial 2 NAGPRA ceramic artifacts.

Type	Bowl	Jar	Total
Santa Fe Black-on-white	34	0	34
Smeared-indented corrugated	0	1	1
Unpainted undifferentiated	2	0	2
Total	**36**	**1**	**37**

Table 14.84. Burial 2 NAGPRA lithic artifacts.

Artifact Type	Chalcedony	Obsidian	Dacite	Quartzite	Total
Projectile point	1	0	0	0	1
Drill	0	1	0	0	1
Graver	0	1	0	0	1
Unidentified ground stone fragment	0	0	2	2	4
Total	**1**	**2**	**2**	**2**	**7**

One pollen sample (FS 5123), one flotation sample (FS 5127), and two macrobotanical samples (FS 5129 and FS 5141) from this burial were analyzed. Taxa identified in the pollen sample included maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, ragweed/bursage, unidentified pine, piñon pine, and sagebrush. Taxa identified in the flotation sample included saltbush/greasewood, goosefoot, cheno-ams, hedgehog cactus, unknown conifer, juniper, piñon pine, purslane, and maize. Taxa identified in the macrobotanical samples included saltbush/greasewood, Desert olive, sagebrush, maize, unknown conifer, piñon pine, and juniper.

Burial 3 (Feature 15)

Burial 3 was situated in units 94N/124E and 94N/125E. Initial identification of the burial occurred when two arm bones were unearthed during trenching activities. The burial was in poor condition and many elements were missing, including the vertebrae and lower limbs. The remaining elements were quite fragmented and articulation was poor. The skeleton was identified as a 20- to 30-year-old Native American female.

Most of the skeletal remains were found between 8.88 and 8.79 m (30 to 40 cm below ground surface). The lower end of this elevation range was only a few centimeters above bedrock. About one dozen unshaped tuff cobbles (8 by 8 cm to 28 by 18 cm) were found immediately above the remains and were probably deliberately placed to cover the burial. The individual was

interred laying on her right side with her head oriented to the east and facing north. Her right arm was fully extended. Tables 14.85 and 14.86 list the artifacts associated with Burial 3.

Table 14.85. Burial 3 NAGPRA ceramic artifacts.

Artifact Type	Bowl	Jar	Dipper	Total
Santa Fe Black-on-white	36	5	2	43
Plain body	0	2	0	2
Unpainted undifferentiated	8	1	0	9
Total	**44**	**8**	**2**	**54**

Table 14.86. Burial 3 NAGPRA lithic artifacts.

Artifact Type	Chalcedony	Obsidian	Andesite	Dacite	Sand-stone	Total
Projectile point	0	1	0	0	0	1
One-hand mano	0	0	0	1	0	1
Polishing stone	0	0	1	1	0	2
Pestle	0	0	0	1	0	1
Abrading stone	0	0	0	1	0	1
Unidentified ground stone fragment	0	0	0	1	1	2
Manuport	1	1	0	0	0	2
Fire-cracked rock	0	0	0	2	0	2
Total	**1**	**2**	**1**	**7**	**1**	**12**

SITE CHRONOLOGY AND ASSEMBLAGE

Sampling Strategy

Approximately 88,500 artifacts and samples were recovered from LA 12587. Since all of these artifacts and samples could not be analyzed, an analysis sample was selected as described below. All the artifacts in at least two 1- by 1-m units from Rooms 1 through 18 were analyzed. In general, units that contained the most artifacts were selected. When rooms contained many macrobotanical samples, a 1- by 1-m unit was selected and all macrobotanical samples from the unit were analyzed (Table 14.87). When available, at least one pollen sample, flotation sample, and macrobotanical sample was analyzed from each stratum in each room. Several samples of each type (when available) from each interior feature were analyzed. Additionally, all artifacts found on a floor surface were analyzed.

Outside of the roomblocks, artifacts from Feature 22 in every other 1- by 1-m unit along the 103E line were analyzed. Some artifacts from these units were assigned to Rooms 19 and 20 based on stratigraphy. Artifacts from nine 1- by 1-m units in the midden were analyzed (Table 14.87). Fifteen pollen samples were analyzed from Feature 22 and several samples of various types were analyzed from the other exterior features and midden contexts.

Because of their relatively small numbers, all the human remains, NAGPRA artifacts, faunal remains, and shell artifacts recovered from the site were analyzed. Several noteworthy artifacts not falling into any of the 1- by 1-m units or the categories already mentioned were also analyzed. In all, approximately 14,150 artifacts and samples were analyzed.

Table 14.87. Systematic sample of ceramic and lithic artifacts and macrobotanical samples.

Provenience	Artifact Columns	Macrobotanical Column
Room1	106N/107E, 107N/107E	106N/107E
Room 2	105N/111E, 106N/111E	105N/111E
Room 3	99N/107E, 99N/108E, 100N/107E, 100N/108E	99N/107E, 99N/108E, 100N/107E, 100N/108E
Room 4/5	102N/109E, 103N/109E	103N/109E
Room 6	104N/106E, 104N/107E	104N/107E
Room 7	98N/107E, 98N/108E, 99N/108E	98N/107E
Room 8	100N/105E, 100N/106E	None
Room 9	96N/104E, 97N/105E	None
Room 10	92N/100E, 92N/101E	92N/100E
Room 11	84N/100E, 87N/99E, 90N/100E	None
Room 12	97N/100E, 97N/101E	96N/101E
Room 13	80N/98E, 80N/99E	None
Room 14	98N/101E, 100N/101E	98N/100E
Room 15	79N/98E, 79N/99E	None
Room 16	102N/101E, 105N/102E	102N/102E
Room 17	73N/97E, 73N/98E	None
Room 18	71N/96E, 72N/97E	None
Room 19	117N/103E, 119N/103E	None
Room 20	121N/103E	None
Feat. 22	113N/103E, 115N/103E, 117N/103E, 119N/103E, 121N/103E	None
Area 7 (Midden)	92N/118E, 95N/126E, 101N/122E, 101N/123E, 105N/122E, 106E/129N, 106E/130N, 110N/122E, 116N/127E	None

Chronology

Radiocarbon Dating

Seven radiocarbon samples (all *Zea mays*) were submitted for analysis (Table 14.88) and the returned results are all consistent with a Late Coalition period occupation. The relatively late radiocarbon date from maize (FS 4138) found in Feature 20 (archaeomagnetically dated to circa AD 1200) is not surprising given the amount of disturbance in and around the feature. FS 4138 is probably intrusive from the fill of Room 2.

Table 14.88. LA 12587 radiocarbon dating results.

FS	Context	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
2644	Room 2, Feature 4	183747	870±70 BP	AD 1180	AD 1020–1280
4138	Room 2, Feature 20	183748	650±40 BP	AD 1300	AD 1280–1400
2725	Room 2, Stratum 10	183749	680±60 BP	AD 1290	AD 1250–1410
2888C	Room 2, Stratum 10	183750	760±40 BP	AD 1270	AD 1210–1290
2888K	Room 2, Stratum 10	183751	690±40 BP	AD 1290	AD 1270–1320 AD 1350–1390
2632	Room 4/5, Feature 1	183752	690±40 BP	AD 1290	AD 1270–1320 AD 1350–1390
3274, 3319	Room 7, Feature 6	183753	860±40 BP	AD 1190	AD 1040–1260

Archaeomagnetic Dating

Burned sediments were collected from the hearths in Rooms 2, 4/5, and 7 (Table 14.89). Feature 20 from Room 2 appears to be the earliest in the sequence, separated from Room 2, Feature 4 by a significant remodeling event that relocated the hearth. Feature 6 in Room 7 was significantly remodeled through its use-life through the addition of linings that reduced the interior capacity of the hearth. Only one (from the earliest hearth plaster) of the three lining samples taken produced a sufficiently precise result for date estimation. Feature 1 in Room 4/5 represents a single, apparently late, hearth in the sequence of site occupation. In sum, the final burning of Feature 20 probably occurred circa AD 1200; the final burning of the other features probably occurred in the late 13th or early 14th century AD (see Blinman and Cox, Volume 3).

Table 14.89. LA 12587 archaeomagnetic dating results.

Sample Number	Feature	VGP Curves and Date Estimates (AD)		
		Wolfman	SWCV2000	DuBois
1209a	Room 4/5, Feature 1 Lining and tuff block	Dates disregarded		
1209b	Room 4/5, Feature 1 Lining only	1015–1130 1160–1275 1335–1410	1005–1375	
1209c	Room 4/5, Feature 1 Tuff block only	Not culturally relevant		
1210	Room 2, Feature 4	925–1015 1245–1310 1315–1355	925–1015 1370–1510 1550–1700	1200–1320 1265–

Sample Number	Feature	VGP Curves and Date Estimates (AD)		
		Wolfman	SWCV2000	DuBois
				1325
1211	Room 7, Feature 6 Upper west inner lining	Too imprecise for date range estimation		
1212	Room 7, Feature 6 Upper north inner lining	930–1025 1235–1305 1315–1360	925–1015 1260–1465	
1213	Room 7, Feature 6 Lower west inner lining	Too imprecise for date range estimation		
1214	Room 2, Feature 20 west wall	1185–1205	1145–1170	
1215	Room 2, Feature 20 Base lining	1175–1220	1125–1185	

Note: When date ranges are expressed in parentheses, the closest points on the curve segment was outside of the error ellipse when the result was originally plotted. VGP is virtual geomagnetic pole.

Thermoluminescence Dating

Two burned plaster samples and two sherds were submitted for thermoluminescence dating (Table 14.90). Except for FS 1274, all the dates were earlier than expected. The thermoluminescence results are discussed further in Volume 3 (see Feathers, Chapter 67).

Table 14.90. LA 12587 thermoluminescence dating results.

FS#	Lab #	Context	Burial depth (cm)	Years BP	Percent error	Years AD
1274	UW1030	Sherd from Room 2 floor	43	777±68	8.7	1226±68
2078	UW1031	Sherd from Room 7 floor	32	916±77	8.5	1087±78
4098	UW1032	Room 7, Feature 6	35	1022±89	8.7	981±89
4209	UW1033	Room 2, Feature 20	63	881±80	9.1	1122±80

Obsidian Hydration

Sixteen artifacts were submitted for obsidian hydration dating. Due to analytical problems, four of the artifacts (FS 2284, FS 3655, FS 3780-1, and FS 5094) could not be dated. Table 14.91 summarizes the results for the 12 dateable artifacts. Most of the obsidian hydration dates are much younger than expected. For additional discussion of the obsidian hydration dates see Stevenson (Volume 3).

Table 14.91. LA 12587 obsidian hydration dating results.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
1183	2003-15	Cerro Toledo	3.92	-4597	338
1498	2003-16	Cerro Toledo	3.55	1428	30
2010-1	2003-17	Cerro Toledo	4.06	-1009	148

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
2094	2003-18	Cerro Toledo	5.77	-4903	240
2584	2003-20	Valle Grande	3.78	567	74
2628	2003-21	Valle Grande	3.65	823	63
3229	2003-22	Cerro Toledo	4.21	-406	113
3234-1	2003-23	Valle Grande	3.34	1146	49
3701	2003-25	Cerro Toledo	3.98	808	58
3780-3	2003-27	Cerro Toledo	2.64	351	123
3844	2003-28	not XRF'ed	2.91	914	72
4172	2003-29	El Rechuelos	2.21	967	91

Summary of Dating Results

Figure 14.63 shows a summary of the dating results (only one obsidian hydration date, FS 3234, is included). The figure shows that radiocarbon and archaeomagnetic dates are generally in agreement and indicate the use of Roomblock 1 in the late 13th and/or early 14th century AD (ca. AD 1275-1325). The two archaeomagnetic dates from Feature 20 indicate use of the site as early as circa AD 1200. The radiocarbon dates from Feature 4 and Feature 6 appear to correspond well to the AD 1200 date. However, the context from which these samples were derived suggests that they are associated with the final occupation of Roomblock 1. Similarly, the thermoluminescence dates are derived from contexts most likely associated with the final occupation of Roomblock 1 (save for the thermoluminescence date from Feature 20).

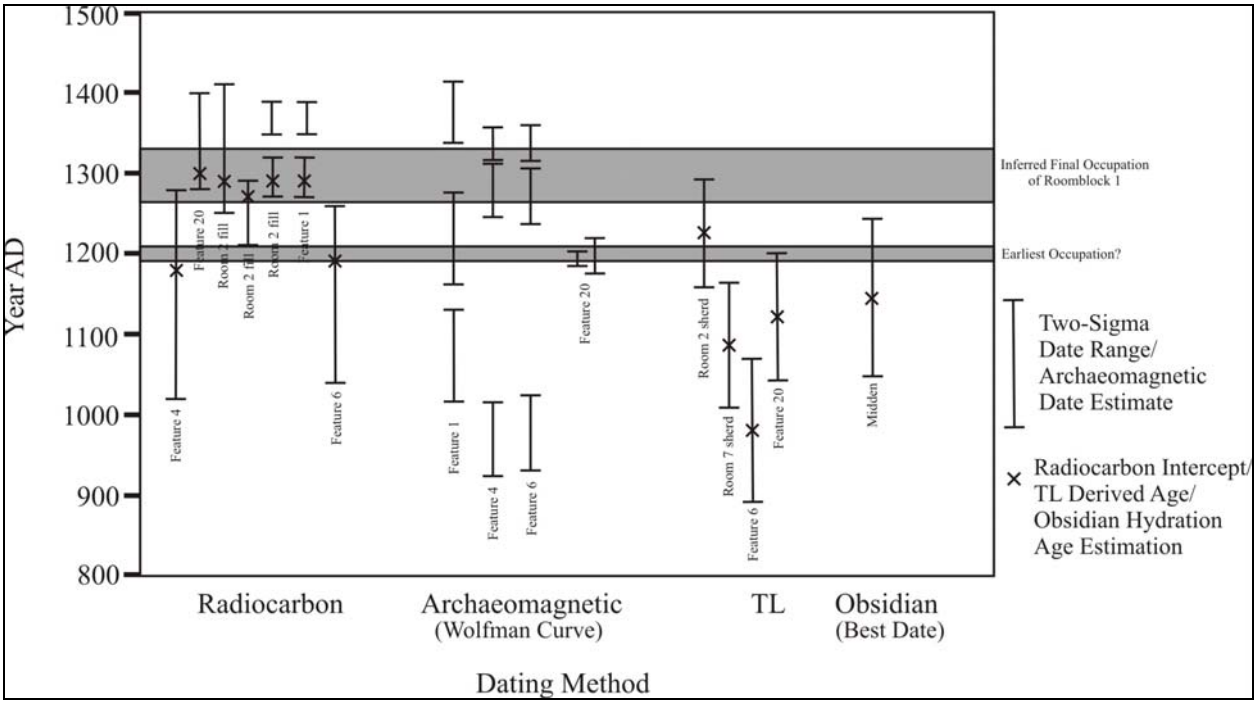


Figure 14.63. Summary of dating results.

The ceramic data (see Wilson, Volume 3) indicate that most of the Coalition period occupation at LA 12587 occurred during the early and middle 13th century and probably continued into the late 13th or early 14th century. Some samples of dated materials exhibit date ranges in the early to middle 13th century. Dated material indicates that there definitely was occupation in the late 13th or early 14th century. See Harmon and Vierra (Volume 3) for an evaluation of the different dating techniques

Ceramic Artifacts (Dean Wilson)

A total of 10,363 sherds were examined from the Late Coalition period contexts at LA 12587 (Tables 14.92 and 14.93). Ceramics from the Late Archaic component (Area 8) were also analyzed and are discussed in Chapter 15 of this volume. The LA 12587 assemblage indicates an occupation dating primarily to the Coalition period (Table 14.92). The majority (just more than 80%) of pottery is represented by gray utilityware types (Table 14.93). The majority of whiteware pottery was derived from Santa Fe Black-on-white vessels, and the majority of utilitywares are represented by corrugated and smeared-indented corrugated types tempered with anthill sand. Kwahe'e Black-on-white, Wiyo Black-on-white, and White Mountain Redwares are present in extremely low frequencies. A small number of sherds from LA 12587 reflect a probable Classic period contamination. Identified types are biscuitwares and Sankawi Black-on-cream. Low frequencies of glazewares include Glaze-on-red, Glaze-on-yellow, and Agua Fria Red-on-glaze. Santa Fe Black-on-white is the dominant decorated type at the site with just over 12 percent. The majority of pottery is represented by gray utilitywares (Table 14.93) exhibiting a combination of plain, corrugated, and smeared-indented corrugated textures (Table 14.93).

Table 14.92. Distribution of ceramic types at LA 12587.

Northern Rio Grande Whiteware	Count	Percent
Unpainted undifferentiated whiteware	1	0.0
Unpainted undifferentiated	426	4.1
Mineral paint undifferentiated	1	0.0
Kwahe'e Black-on-white solid designs	1	0.0
Indeterminate organic paint	42	0.4
Indeterminate organic Coalition	3	0.0
Santa Fe Black-on-white	1267	12.2
Wiyo Black-on-white	40	0.4
Galisteo Black-on-white	22	0.2
Unpainted Galisteo paste	1	0.0
Jemez/Santa Fe/Vallecitos	1	0.0
Gallina Black-on-white	1	0.0
Biscuitware painted unspecified	1	0.0
Unpainted Biscuitware slipped one side	2	0.0
Biscuit A (Abiquiu Black-on-white)	10	0.1
Biscuit B (Bandelier Black-on-white)	7	0.1

Sankawi Black-on-cream	1	0.0
Northern Rio Grande Utilityware		
Plain gray rim	31	0.3
Unknown gray rim	202	1.9
Plain body	525	5.1
Basket impressed gray	2	0.0
Indented corrugated	481	4.6
Incised corrugated	2	0.0
Plain corrugated	37	0.4
Smeared plain corrugated	1032	10.0
Alternating corrugated	1	0.0
Smeared-indented corrugated	6174	59.6
Polished gray	4	0.0
Plain incised	1	0.0
Mudware	5	0.0
Unpolished mica slip	1	0.0
Local brownware	8	0.1
Polished gray	1	0.0
Cibola Whiteware		
Tularosa Black-on-white	2	0.0
White Mountain Redware		
White Mountain Red painted undifferentiated	2	0.0
St. Johns Black-on-red	1	0.0
White Mountain Red unpainted undifferentiated	5	0.0
Middle Rio Grande Glazeware		
Glaze Yellow body unpainted	3	0.0
Glaze Red body undifferentiated	1	0.0
Agua Fria Glaze-on-red	1	0.0
San Juan Whiteware		
Unpainted whiteware undifferentiated	2	0.0
Mesa Verde Black-on-white	3	0.0
Indeterminate organic San Juan whiteware	1	0.0
Northern Mogollon Whiteware		
Chupadero Black-on-white indeterminate design	1	0.0
Mogollon Brownware		
Reserve smudged	3	0.0
Total	**10,363**	**100.0**

Table 14.93. Distribution of ceramic wares at LA 12587.

Ware	Count	Percent
Gray	8500	82.0

Ware	Count	Percent
White	1839	17.7
Red	8	0.1
Brown	11	0.1
Glaze	5	0.0
Total	**10,363**	**100.0**

Stylistic analysis of a sample of Santa Fe black-on-white rim sherds indicated a similar range of decorations and manipulations from LA 12587 (Tables 14.94 through 14.98). The majority of rim sherds are unpainted and tapered, and most of the bowl sherds were decorated only on the interior side. The majority of the rim sherds exhibit a single framing line close to the top of the rim.

Table 14.94. Distribution of Santa Fe Black-on-white rim orientation.

Rim Orientation	Count	Percent
Single thin framing line	14	29.2
Single thick framing line	10	20.8
Multiple thin framing lines	--	--
Multiple size framing lines lg top	--	--
Incorporated framing line	16	33.3
Thin top, incorporated lower	4	8.3
Solid	3	6.3
No framing lines	1	2.1
Total	**48**	**100.0**

Table 14.95. Distribution of Santa Fe Black-on-white rim shape.

Rim Shape	Count	Percent
Rounded	5	10.2
Flat	2	4.1
Tapered	36	73.5
Angled	4	8.2
Flared	2	4.1
Total	**49**	**100.0**

Table 14.96. Distribution of Santa Fe Black-on-white rim decoration.

Rim Decoration	Count	Percent
None	43	87.8
Solid	2	4.1
Ticked w/ dots & squares	4	8.2
Total	**49**	**100.0**

Table 14.97. Distribution of Santa Fe Black-on-white primary rim designs.

Primary Designs	Count	Percent
Solid indeterminate	7	14.3
Solid triangle	4	8.1
Solid and lined	--	--
Thin parallel lines	--	--
Thick parallel lines	3	6.1
Hachure	20	40.8
Hachured ribbon	2	4.1
Ticked lines	1	2.0
Chevron parallel lines	1	2.0
Checkerboard	1	2.0
Solid triangle	4	8.2
Hachured triangle	1	2.0
Checkerboard triangle	1	2.0
Thick and thin parallel lines	--	--
Intersecting lines	--	--
Dotted lines	2	4.1
Straight line hachure	2	4.1
Total	**49**	**100.0**

Table 14.98. Distribution of Santa Fe Black-on-white number of design motifs.

Number of Motifs	Count	Percent
0	1	2.0
1	35	71.4
2	12	24.5
3	1	2.0
Total	**49**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 2,493 artifacts were analyzed from LA 12587. The assemblage consists of 20 cores, 2,296 pieces of debitage, 61 retouched tools, 110 ground stone artifacts, one hammerstone, and five pieces of fire-cracked rock, which represents a 16 percent sample of the 15,430 total lithic artifacts recovered during the site excavations. Table 14.99 presents the data on lithic artifact type by material type. The majority of the cores, debitage, and retouched tools are made of chalcedony, with lesser amounts of obsidian, Pedernal chert, and basalt. The presence of cortex on 12.1 percent of the debitage indicates that these materials were collected from waterworn

(87.0%) and nodular (12.9%) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources, the basalt from gravels and bedrock outcrops, and the obsidian from primary sources in the Jemez Mountains. The ground stone artifacts are primarily made from igneous materials, which are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau. Quartzite is, however, only available from the nearby Rio Grande Valley gravels. The source of the sandstone is difficult to determine, but it could be derived from gravel formations near Totavi or from more distant sources in the Santa Fe or Abiquiu areas.

Fourteen pieces of debitage and 18 retouched tools were submitted for X-ray fluorescence analysis. Most of these projectile points were not included in the sample analysis from the site. Nonetheless, the majority of the artifacts were from the Cerro Toledo source, with less from the Valle Grande and El Rechuelos sources (Table 14.100). The Cerro Toledo (Rabbit Mountain/Obsidian Ridge) and Valle Grande (Cerro del Medio) source areas are located about 17 km (11 miles) and 22 km (14 miles) as the "crow flies" to the southwest and west of the site, whereas, the El Rechuelos (Polvadera Peak) source area is situated about 30 km (19 miles) to the northwest. Most of the debitage is made of Cerro Toledo obsidian, while the retouched tools were manufactured on a variety of materials. All but one of the El Rechuelos artifacts are retouched tools.

Table 14.99. Lithic artifact type by material type.

Artifact Type		Basalt	Vesicular basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified wood	Quartzite	Other	Total
Cores	Core	1	0	0	0	0	0	1	12	0	5	0	0	0	19
	Tested cobble	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	1	13	0	5	0	0	0	20
Debitage	Angular debris	6	0	0	1	0	0	14	237	2	28	1	5	0	294
	Core flake	84	0	3	9	3	0	130	854	17	88	15	22	9	1224
	Blade	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Biface flake	11	0	0	0	0	0	68	0	2	2	0	0	0	125
	Piece esquilleé	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Core trimming flake	0	0	0	0	0	0	0	3	0	2	0	0	0	5
	Opposing core flake	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Outrepasse	2	0	0	0	0	0	4	1	0	0	0	0	0	7
	Pot lid	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Microdebitage	33	0	0	0	0	0	163	341	5	22	1	5	0	570
	Undetermined flake	5	0	0	0	0	0	16	29	2	6	0	0	0	58
	Hammerstone flake	0	0	0	1	0	0	0	0	0	0	0	2	0	3
	Ground stone flake	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	Subtotal	143	0	3	11	7	0	389	1505	28	150	17	34	9	2296
Retouched Tools	Retouched piece	5	0	1	0	0	0	2	17	0	0	0	0	0	25
	Notch	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Biface	1	0	0	0	0	0	5	5	1	0	0	0	0	12
	Projectile point	0	0	0	0	0	0	3	1	1	0	0	0	0	5
	Uniface	0	0	0	0	0	0	2	3	0	1	0	0	0	6
	Endscraper	0	0	0	0	0	0	0	1	0	0	0	0	0	1

Artifact Type		Basalt	Vesicular basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified wood	Quartzite	Other	Total
	Drill	0	0	0	0	0	0	2	4	0	0	0	0	0	6
	Perforator	0	0	0	0	0	0	0	3	0	0	0	0	0	3
	Graver	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Perforator/notch	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	Subtotal	6	0	0	0	0	0	14	38	2	1	0	0	0	61
Ground Stone	One-hand mano	0	1	0	2	5	1	0	0	0	0	0	3	1	13
	Two-hand mano	1	5	0	2	3	0	0	0	0	0	0	1	0	12
	Undetermined mano fragment	0	0	0	2	3	1	0	0	0	0	0	6	1	13
	Millingstone	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Slab metate	0	1	0	1	1	1	0	0	0	0	0	0	0	4
	Grinding slab	0	0	1	3	6	2	0	0	0	0	0	0	0	12
	Undetermined metate fragment	0	0	0	3	5	2	0	0	0	0	0	0	1	11
	Polishing stone	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Abrading stone	0	0	0	1	3	0	0	0	0	0	0	0	0	4
	Axe	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Maul	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Hoe	1	0	0	1	0	0	0	0	0	0	0	0	0	2
	Ornament	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Stone ceramic lid	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Shaped slab	0	0	0	5	2	0	0	0	0	0	0	0	0	7
	Undetermined ground stone	2	0	2	11	8	1	0	0	0	0	0	3	0	27
	Subtotal	5	7	3	31	36	9	0	0	0	0	0	14	4	110

Artifact Type		Basalt	Vesicular basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified wood	Quartzite	Other	Total
Other	Hammerstone	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Fire-cracked rock	0	0	0	0	4	0	0	0	0	0	0	1	0	5
	Subtotal	0	0	0	0	4	0	0	0	0	1	0	1	0	6
Total		**155**	**7**	**6**	**42**	**47**	**9**	**404**	**1556**	**30**	**157**	**17**	**49**	**14**	**2493**

Table 14.100. Obsidian source samples.

FS #	Artifact	Color	Source
1148	Tool	Translucent	Cerro Toledo rhyolite
1183	Tool	Black opaque	Cerro Toledo rhyolite
1430-1	Debitage	Green	Cerro Toledo rhyolite
1430-2	Debitage	Green	Valle Grande rhyolite
1437-1	Debitage	Black opaque	Cerro Toledo rhyolite
1437-2	Debitage	Black opaque	Cerro Toledo rhyolite
1437-3	Debitage	Black dusty	El Rechuelos
1437-3	Debitage	Black opaque	Cerro Toledo rhyolite
1498	Tool	Translucent	Cerro Toledo rhyolite
1705	Tool	Black opaque	Cerro Toledo rhyolite
2010-1	Debitage	Black opaque	Cerro Toledo rhyolite
2010-2	Tool	Translucent	Cerro Toledo rhyolite
2094	Projectile point	Gray	Cerro Toledo rhyolite
2140	Projectile point	Black dusty	El Rechuelos
2264	Projectile point	Black opaque	Cerro Toledo rhyolite
2284	Projectile point	Black opaque	Cerro Toledo rhyolite
2340	Projectile point	Black dusty	El Rechuelos
2584	Projectile point	Translucent	Valle Grande rhyolite
2628	Projectile point	Translucent	Valle Grande rhyolite
3227	Tool	Black opaque	Cerro Toledo rhyolite
3229	Debitage	Translucent	Cerro Toledo rhyolite
3234-1	Tool	Translucent	Valle Grande rhyolite
3234-2	Debitage	Translucent	Valle Grande rhyolite
3701	Tool	Black opaque	Cerro Toledo rhyolite
3712	Tool	Translucent	Cerro Toledo rhyolite
3780-1	Debitage	Translucent	Cerro Toledo rhyolite
3780-2	Debitage	Translucent	Cerro Toledo rhyolite
3780-3	Debitage	Translucent	Cerro Toledo rhyolite
3780-4	Debitage	Translucent	Cerro Toledo rhyolite
3830	Debitage	Black opaque	Cerro Toledo rhyolite
4172	Projectile point	Black dusty	El Rechuelos
4199	Projectile point	Black dusty	El Rechuelos
5094	Projectile point	Translucent	Valle Grande rhyolite

Lithic Reduction

The cores consist of five single-directional, eight bi-directional, five multi-directional, and one flake core. The single-directional cores are single (n = 3) and multi-faces (n = 2), while the bidirectional cores are change-of-orientation (n = 2), bifacial (n = 1), opposed-different-face (n = 4) and ninety-degrees (n = 1). Lastly, the multi-directional cores are all globular-shaped and the flake core is a change-of-orientation. None of the cores exhibit any obvious evidence of platform preparation. Most of the cores were discarded due to material flaw fractures (n = 7) and

exhaustion (*n* = 7), with fewer due to a culturally induced fracture (*n* = 2) or extensive hinging/stepping (*n* = 1). Otherwise, only three cores were classified as still useable. One of the single-directional cores was burned. Table 14.101 presents the metric information on the whole cores. A single tested chalcedony cobble was identified. It weighs 172.1 g and exhibits numerous fracture planes and flaws.

Table 14.101. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Single-directional	27	30	18	16.1
Single-directional	57	73	45	207.7
Single-directional	31	46	41	64.4
Single-directional	46	25	18	26.5
Bi-directional	47	45	18	40.9
Bi-directional	49	37	25	50.1
Bi-directional	41	27	18	27.6
Bi-directional	39	34	24	38.0
Bi-directional	52	38	27	56.6
Bi-directional	41	36	28	46.8
Bi-directional	27	17	14	6.0
Bi-directional	31	28	23	14.2
Multi-directional	31	30	22	17.7
Multi-directional	33	24	21	18.9
Multi-directional	49	37	32	57.7
Multi-directional	34	25	22	26.3
Multi-directional	31	26	24	21.5
Flake	38.0	27.0	14.0	16.2

The debitage assemblage consists mainly of core flakes (53.3%) with lesser amounts of microdebitage (24.8%), angular debris (12.8%), and biface flakes (5.4%). Table 14.102 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The debitage assemblage is composed primarily of secondary non-cortical, with lesser amounts of secondary cortical, tertiary, and primary flakes. The overall cortical:non-cortical ratio of 0.42 reflects this emphasis on the later stages of core reduction.

Table 14.102. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	4	9	0	0.44
Obsidian	0	4	10	5	0.26
Chalcedony	3	55	126	7	0.43
Pedernal Chert	0	5	11	0	0.45
Silicified Wood	0	0	6	0	---
Quartzite	1	2	0	0	---

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Total	4	70	162	12	0.42
Percentage	1.6	28.2	65.3	4.8	

The majority of the flakes exhibit single-faceted platforms (51.7%; *n* = 269), with lesser amounts of cortical (*n* = 92), crushed (*n* = 75), collapsed (*n* = 63), multifaceted (*n* = 11), and dihedral (*n* = 10) platforms. Sixty-seven (12.8%) of the flake platforms exhibit evidence of preparation; most of these were abraded/crushed (*n* = 56), with fewer retouched (*n* = 8), and abraded/ground (*n* = 3) platforms. The paucity of retouched platforms is in part due to the large number of crushed and collapsed platforms on obsidian biface flakes. The majority of the core flakes consist of distal fragments (*n* = 563; 45.9%), with fewer whole (*n* = 262), proximal (*n* = 200), midsection (*n* = 174), lateral (*n* = 12), and undetermined fragments (*n* = 13). Most of the biface flakes are also distal fragments (*n* = 48; 38.4%), with fewer whole (*n* = 12), proximal (*n* = 37), and midsection fragments (*n* = 28). The whole core flakes have a mean length of 21.0 mm (*std* = 9.3), whereas the whole biface flakes exhibit a mean length of 18.5 mm (*std* = 7.8). Lastly, angular debris have a mean weight of 2.4 g (*std* = 4.8).

The retouched tools consist of a mix of expedient flakes tools such as retouched pieces, perforators, a notch, a graver, and perforator/notches. The formal tools consist of bifaces, projectile points, and drills. The retouched pieces exhibit marginal retouch along a single edge (*n* = 16), with lesser amounts of retouch along two edges (*n* = 9). Table 14.103 presents the information on retouch type by edge outline.

Table 14.103. Retouched pieces.

Retouch Type	Edge Outline						
	Straight	Concave	Convex	Straight/ concave	Straight/ convex	Concave/ convex	Projection
Unidentified ventral	4	1	0	0	0	0	0
Unidentified dorsal	7	3	3	1	2	0	3
Bidirectional	4	0	0	0	0	0	1
Alternating	0	0	0	1	0	0	0
Alternate	0	0	0	0	0	0	1
Total	**15**	**4**	**3**	**2**	**2**	**0**	**5**

Most of the edges are characterized by a straight outline with retouch along the dorsal surface. The edge angles range from 40 to 75 degrees with a mean of 59.5 degrees (*std* = 10.2); indeed, as Figure 14.64 illustrates, there is a modal distribution with a peak at 55 degrees. This presumably reflects an emphasis on cutting activities at the site. The perforators exhibit unidirectional dorsal and alternate retouch that was used to accentuate the pointed end of a flake with edge angles of about 75 degrees. The notch is a core flake with a single notch retouched onto the ventral surface of the flake along its distal and lateral edges. The graver is a core flake with a

unidirectional dorsal retouched projection with a blunt end. The drills consist of four distal and two midsection fragments that exhibit bidirectional retouch with edge angles ranging from 40 to 70 degrees. The unifaces are roughly worked flakes with unidirectional dorsal retouch and edge angles ranging from 60 to 70 degrees. In contrast, a single formal endscraper fragment was also identified, consisting of a distal fragment with an edge angle of 70 degrees. Figure 14.65 illustrates some of the retouched tools.

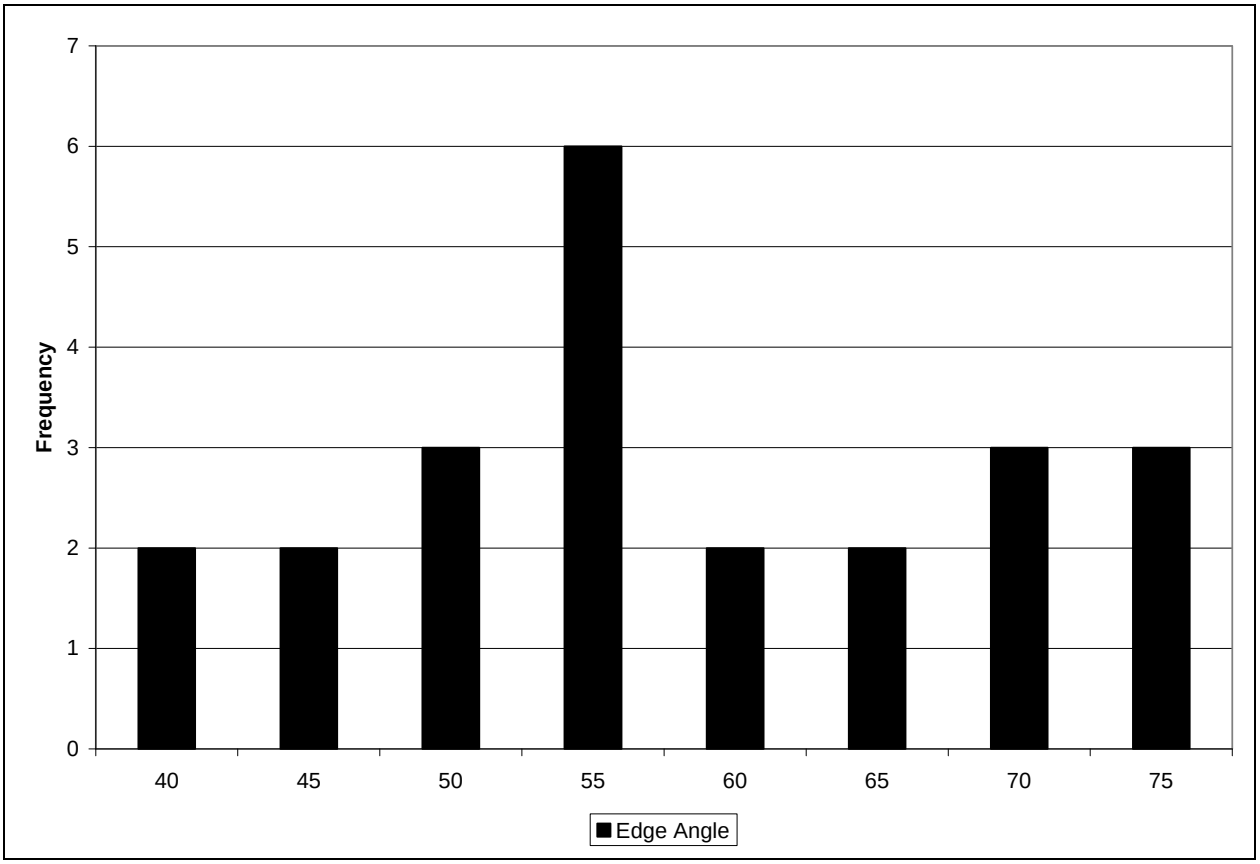


Figure 14.64. Edge angle distribution for retouched pieces.

Only two stages of biface production were identified during the analysis. No early-stage bifaces are present. The middle-stage bifaces (n = 4) are 8 to 12 mm thick and exhibit edge angles ranging from 50 to 60 degrees, while the late-stage bifaces (n = 7) are 2 to 4 mm thick and exhibit edge angles ranging from 25 to 35 degrees (preforms). One of the middle-stage bifaces was manufactured on a flake blank and the platform was present at the proximal end. It is made of chert and appears to have been heat-treated. Most of the bifaces are ovoid-shaped, with a single lanceolate-shaped late-stage biface (Figure 14.66).

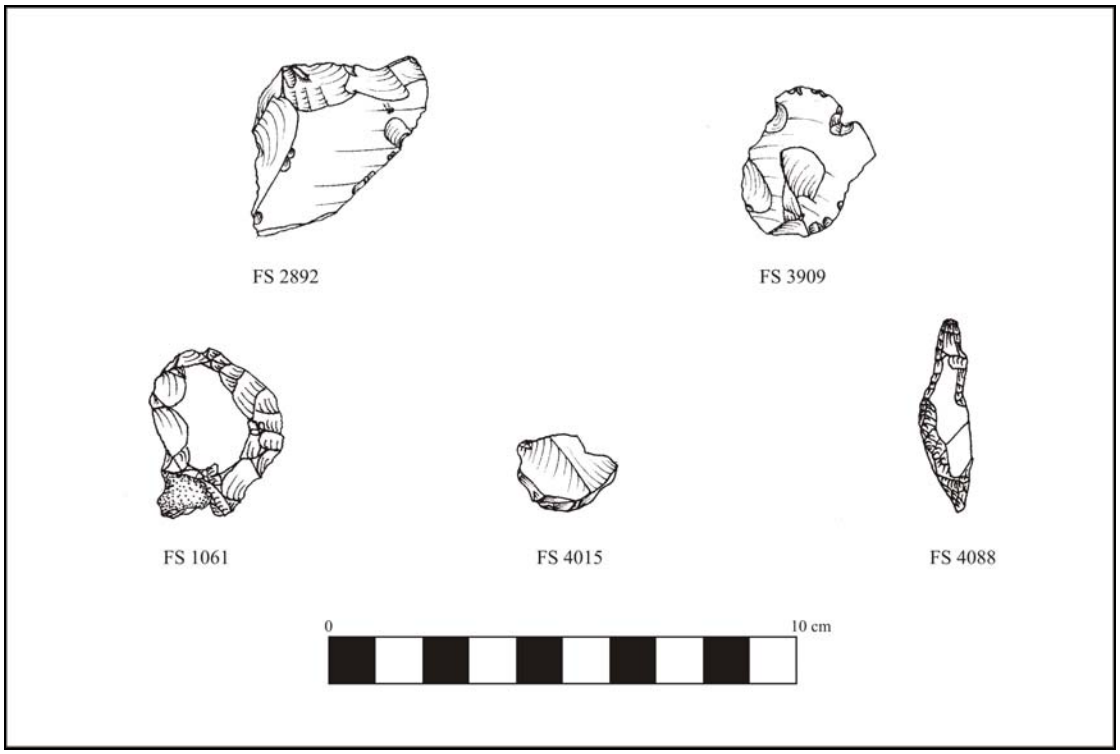


Figure 14.65. Retouched flake, notch, uniface, endscraper, and drill.

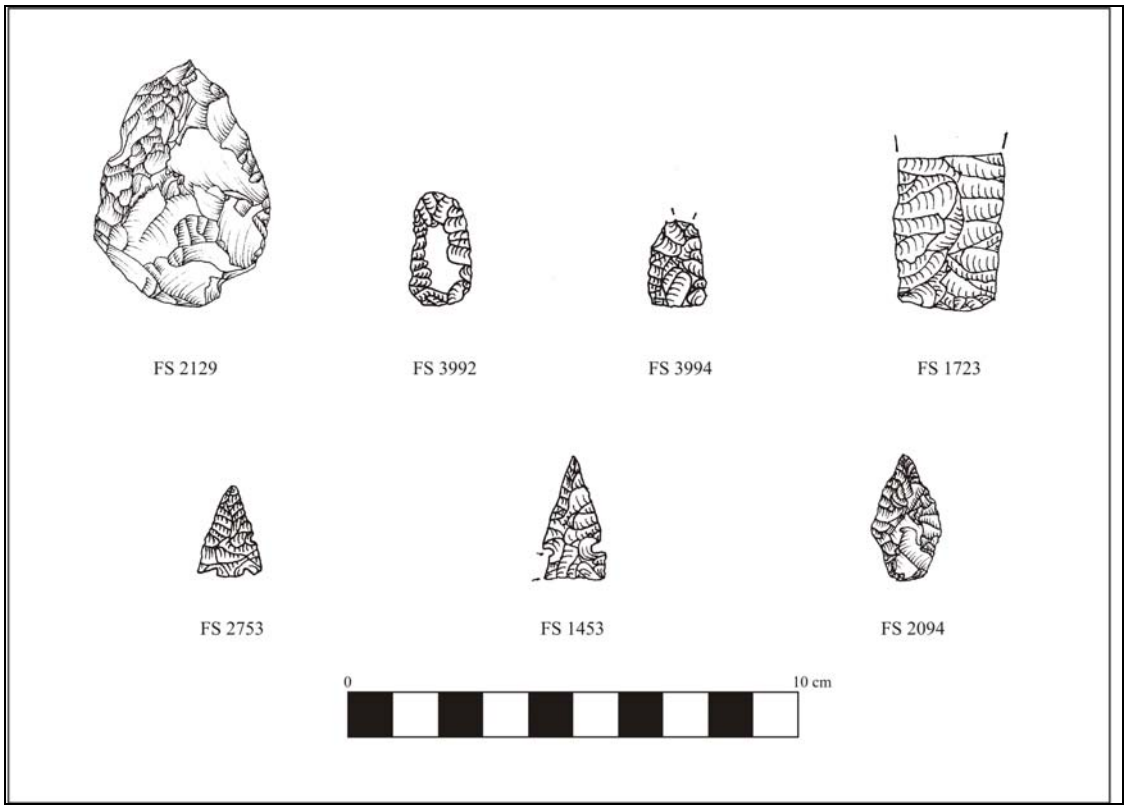


Figure 14.66. Bifaces and projectile points.

Metrical and descriptive information on the projectile points is presented in Table 14.104. The five projectile points exhibit some variation, with two corner-notched, a side-notched, a contracting stem, and an undetermined fragment (see Figure 14.66). Three of these represent arrow points with neck widths ranging from 5 to 8 mm, and one a lance/dart point with a neck width of 13 mm. Only two of the points are whole, with the other three being midsection or distal fragments.

Table 14.104. Projectile point metrical (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (gm)	Haft Type	Blade Shape	Base Shape
1146	Obsidian	Mid-section	--	--	8	--	--	1	0.2	Corner-notched	Straight	Und.
1453	Chert	Whole	26	19	8	7	--	4	1.1	Side-notched	Straight	Und.
2094	Obsidian	Whole	28	20	13	8	8	4	1.8	Contracting	Straight	Strt.
2753	Chalce-dony	Distal	--	18	5	--	--	5	0.8	Corner-notched	Straight	Und.
3971	Obsidian	Mid-section	--	--	--	--	--	3	1.2	Und.	Und.	Und.

Tool Use

Only 15 flakes (0.1%) exhibit evidence of damage that could be attributed to use-wear. The edge damage is evenly distributed between the lateral edge of the flake (n = 8) and the end of the flake (n = 7). Most of the edge outlines are straight (n = 13), with a single concave-shaped outline for both the lateral and end of two flakes. Edge angles range from 35 to 70 degrees, with a mean of 53 degrees (std = 10.8). This is similar to the pattern exhibited by the retouched flakes.

In contrast to the debitage, 32 of the retouched tools (52.4%) exhibit evidence of use-wear. This consists of 16 retouched pieces, a notch, a biface, a projectile point, three unifaces, four drills, three perforators, the graver, and one perforator/notch. The biface is a middle stage biface that exhibits polishing and rounding along a lateral edge. The projectile point is a midsection fragment with impact fracture.

One hundred and ten ground stone artifacts were identified during the analysis. Identified artifacts included manos, metates, polishing stones, abrading stones, and other ground stone items (Figure 14.67). The manos are nearly evenly distributed between one- and two-hand varieties. Most of the one-hand manos exhibit one (n = 9) or two (n = 4) grinding surfaces. In contrast, most of the two-hand manos have two (n = 10) grinding surfaces. Only two of the two-hand manos have two grinding surfaces. This divergent pattern is also reflected in mano cross-

section. The one-hand manos exhibit mostly plano/flat cross-sections (n = 7) as compared to wedge-shaped cross-sections for the two-hand manos (n = 7). Undetermined mano fragments appear to reflect both one- and two-hand varieties with one and two grinding surfaces, but mostly have plano/flat cross-sections.

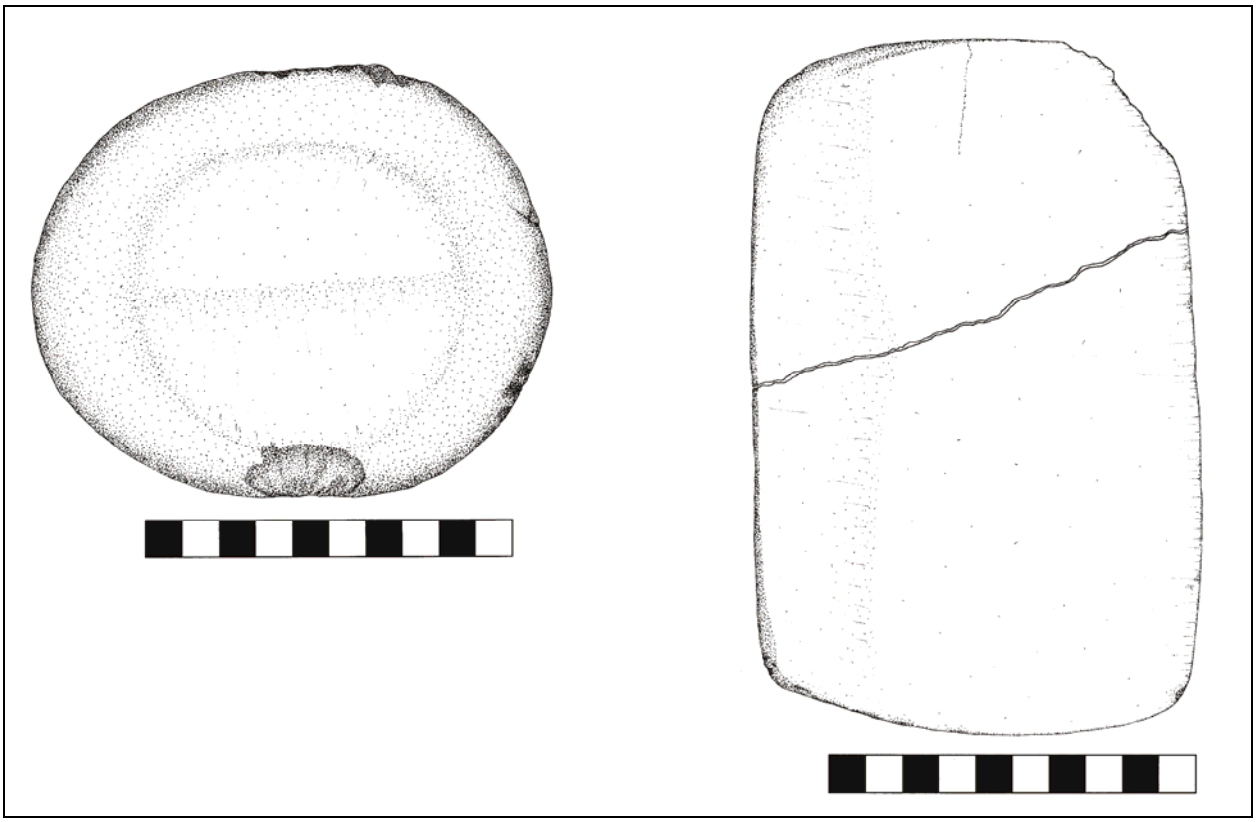


Figure 14.67. One- and two-hand manos.

A single generalized millingstone and four formal slab metates were identified. The formal slab metates are all broken fragments, with shaped perimeters and large, mostly flat, well-worn grinding surfaces. The formal slab metates are made of a variety of materials, including tuff, dacite, andesite, and vesicular basalt. About half of the two-hand manos are also made of vesicular basalt, reflecting the importance of milling maize at the site. The polishing stone is a chalcedony pebble with a finely ground surface, whereas the abrading stones are dacite and andesite pebbles with irregularly ground surfaces.

The axe is a quartzite cobble with flaked and heavily crushed edges. The artifact broke in half along the hafting area. The maul is a vesicular basalt cobble that is heavily battered on both ends and has a ground full-groove. The hoes were made on a thin piece of tabular basalt and a thick piece of tabular andesite; both had several flakes removed from their bit that also exhibited rounding. The andesite hoe also exhibits hafting notches and some polish along the middle portion of the artifact. The ornament is a shale bead that may have been part of a tube that was broken into individual beads.

Faunal Remains (Kari Schmidt)

In general, the overall preservation of the bones from LA 12587 is good. For the most part, bones tended to be in large fragments, and a number of complete elements were identified. Weathering on the faunal remains was present, although the frequency and severity was generally low (n = 18), suggesting the remains may not have been exposed to the elements for a long period of time before burial. The bones show minimal evidence of root-etching, and no evidence of rodent gnawing, carnivore gnawing, or carnivore digestion. Modifications resulting from burning were present on 183 pieces of bone, constituting some 28 percent of the total assemblage. Pathologies were identified on two specimens: a pocket gopher femur and pubis. Thirty-two specimens recovered from LA 12587 were worked.

Of the 649 faunal remains recovered from the excavations at LA 12587, 33 percent (n = 217) were identified to at least the level of class. The 217 identified remains were recovered from a variety of contexts. Table 14.105 shows all the identified taxa that were recovered from the site. Because the most abundant taxa represented in the assemblage were intrusive pocket gopher remains (*Thomomys* sp.), Table 14.106 presents the same data with this taxon removed. Pocket gopher burrows were extensive in the immediate site area, and the visual appearance of their bones was quite distinct from the majority of the other bones recovered from the site.

Table 14.105. Identified faunal remains from all contexts at LA 12587.

TAXON	TOTAL			BURNED		
	NISP*	MNI	Percent	NISP	Percent	Percent of Taxon
Freshwater catfishes (Ictaluridae)	1	1	0.5	0	0	0
Bullfrog (*Rana catesbeiana*)	1	1	0.5	0	0	0
cf. Woodhouse's Toad (*Bufo woodhousii*)	1	1	0.5	0	0	0
Piñon jay (*Gymnorhinus cyanocephalus*)	1	1	0.5	0	0	0
Turkey (*Meleagris gallopavo*)	32	2	14.0	4	16.0	12.5
Golden eagle (*Aquila chrysaetos*)	2	1	1.0	0	0	0
Large bird	11	1	5.0	3	12.0	27.2
Pocket mice (*Perognathus* sp.)	9	3	4.0	0	0	0
Kangaroo rats (*Dipodomys* sp.)	4	3	2.0	0	0	0
Pocket gophers (*Thomomys* sp.)	81	8	37.0	1	4.0	0.1
Rock squirrels (*Spermophilus variegatus*)	7	2	3.0	0	0	0
Black-tailed jackrabbit (*Lepus californicus*)	10	1	5.0	4	16.0	40.0
cf. Desert cottontail (*Sylvilagus audubonii*)	19	2	9.0	3	12.0	16.0
Coyote (*Canis latrans*)	2	1	1.0	0	0	0
Domestic dog (*Canis familiaris*)	1	1	0.5	0	0	0

TAXON	TOTAL			BURNED		
	NISP*	MNI	Percent	NISP	Percent	Percent of Taxon
Coyote/dog (*Canis latrans/familiaris*)	1	1	0.5	0	0	0
Gray fox (*Urocyon cinereoargenteus*)	1	1	0.5	0	0	0
Artiodactyls (Artiodactyla)	1	1	0.5	0	0	0
Mule deer (*Odocoileus hemionus*)	16	1	7.0	4	16.0	29.0
Sm/med mammals	5	1	2.5	1	4.0	20.0
Medium mammals	1	1	0.5	1	4.0	100.0
Med/lg mammals	10	1	5.0	4	16.0	44.0
IDENTIFIED TOTAL	217	--	100.0	25	100.0	--
UNIDENTIFIED TOTAL	432	--	--	154	--	--
SITE TOTAL	**649**	**--**	**--**	**179**	**--**	**--**

NISP is number of identified specimens; MNI is minimum number of individuals

Table 14.106. Identified faunal remains, minus probable intrusive rodents, from LA 12587.

TAXON	TOTAL			BURNED		
	NISP	MNI	Percent	NISP	Percent	Percent of Taxon
Freshwater catfishes (Ictaluridae)	1	1	1.0	0	0	0
Bullfrog (*Rana catesbeiana*)	1	1	1.0	0	0	0
cf. Woodhouse's Toad (*Bufo woodhousii*)	1	1	1.0	0	0	0
Piñon jay (*Gymnorhinus cyanocephalus*)	1	1	1.0	0	0	0
Turkey (*Meleagris gallopavo*)	32	2	25.0	4	17.0	12.5
Golden eagle (*Aquila chrysaetos*)	2	1	1.5	0	0	0
Large bird	11	1	9.0	3	12.5	27.0
Kangaroo rats (*Dipodomys* sp.)	4	3	3.0	0	0	0
Rock squirrels (*Spermophilus variegatus*)	7	2	5.5	0	0	0
Black-tailed jackrabbit (*Lepus californicus*)	10	1	7.5	4	17.0	40.0
cf. Desert cottontail (*Sylvilagus audubonii*)	19	2	15.0	3	12.5	16.0
Coyote (*Canis latrans*)	2	1	1.5	0	0	0
Domestic dog (*Canis familiaris*)	1	1	1.0	0	0	0
Coyote/dog (*Canis latrans/familiaris*)	1	1	1.0	0	0	0
Gray fox (*Urocyon cinereoargenteus*)	1	1	1.0	0	0	0
Artiodactyls (Artiodactyla)	1	1	1.0	0	0	0
Mule deer (*Odocoileus hemionus*)	16	1	12.0	4	17.0	28.0

TAXON	TOTAL			BURNED		
	NISP	MNI	Percent	NISP	Percent	Percent of Taxon
Sm/med mammals	5	1	4.0	1	3.5	20.0
Medium mammals	1	1	1.0	1	3.5	100.0
Med/lg mammals	10	1	7.5	4	17.0	44.0
IDENTIFIED TOTAL	127	--	100.0	24	100.0	--
UNIDENTIFIED TOTAL	432	--	--	153	--	--
SITE TOTAL	**559**	**--**	**--**	**177**	**--**	**--**

Table 14.106 shows that the majority of the identified fauna (25%) at LA 12587 is turkey (*Meleagris gallopavo*), followed by cottontail (*Sylvilagus* sp.), mule deer (*Odocoileus hemionus*), indeterminate large bird, jackrabbit (*Lepus californicus*), and indeterminate medium/large mammal remains. The remainder of the assemblage consists of a wide variety of taxa, including fish, amphibians, small and large birds, rodents, and carnivores. The variation present in the assemblage attests to its location near a number of distinct biomes.

Archaeobotanical Remains (Pamela J. McBride)

Flotation Remains

The Coalition period at LA 12587 is characterized by the predominance of maize, with a few instances of possible squash and beans to round out the traditional triad of domesticated plants (Table 14.107). Annual seeds were the next most common plant remains, easily procured in cultivated fields and other disturbed areas. Annual taxa included bugseed, goosefoot (the most common annual taxon, which was found in 24% of samples), pigweed, and purslane. Pitseed goosefoot, sunflower, and tobacco were less common annual taxa, found in less than 5 percent of samples. Perennial taxa were primarily those associated with firewood use like conifer needles, bark, and twigs, but cactus seeds and piñon nutshell indicate cactus fruits and piñon nuts were gathered and eaten. Four-wing saltbush fruits could be firewood debris or evidence for their use as food or for their salty flavor. Grass taxa diversity and abundance is low with grass family and dropseed grass occurring in less than 4 percent of samples and ricegrass occurring in 12 percent of samples.

Table 14.107. Ubiquity of flotation sample carbonized plant remains from LA 12587.

Common Name/Plant Part	Count*	%**
Bean cotyledon	2	2
Bugseed seed	6	5
Cheno-am seed	20	18
Dropseed grass caryopsis	13	12
Four-wing saltbush fruit	4	4
Goosefoot seed	27	24
Grass family caryopsis	5	4
Grass family culm	2	2

Common Name/Plant Part	Count*	%**
Groundcherry seed	11	10
Hedgehog cactus seed	3	3
Juniper seed	1	1
Juniper twig	2	2
Maize cob	3	3
Maize cupule	106	95
Maize cupule segment	11	10
Maize embryo	16	14
Maize glume	4	4
Maize kernel	58	52
Mint family seed	2	2
Monocot stem	1	1
Pigweed seed	16	14
Pine bark scale	3	3
Pine cone scale	1	1
Piñon needle	15	13
Piñon nutshell	3	3
Ponderosa pine needle	3	3
Prickly pear cactus embryo	1	1
Prickly pear cactus seed	1	1
Purslane seed	18	16
Ricegrass caryopsis	2	2
Squash/coyote gourd rind	4	4
Sunflower achene	1	1
Tobacco seed	4	4
Unidentifiable embryo	1	1
Unidentifiable seed	3	3
Unidentifiable plant part	8	7
Unknown # 1 embryo	1	1
Unknown # 1 plant part	1	1
Unknown # 3 plant part	1	1

*Number of samples with common name/plant part present; **Number of samples with common name/plant part divided by total number of flotation samples with charred remains (112) × 100.

Wood from flotation and vegetal samples was dominated by juniper and unknown conifer (Table 14.108). Other conifers included Douglas fir, piñon, and ponderosa pine. Although non-conifers were diverse, saltbush/greasewood was the only one that was present in significant quantities. New Mexico locust, cottonwood/willow, desert olive, mountain mahogany, oak, rabbitbrush, rose family, sagebrush, and sumac complete the list of non-conifer taxa identified at the site. There were no remarkable differences in wood taxa from back rooms versus front rooms and wood from both thermal and non-thermal contexts was primarily juniper and unknown conifer.

Table 14.108. Ubiquity of flotation sample wood charcoal taxa from LA 12587.

Common Name	Count*	%**
Cottonwood/willow	20	18
Desert olive	9	8
Douglas fir	12	11
Juniper	92	82
Mountain mahogany	3	3
Oak	23	21
Pine	44	39
Piñon	41	37
Ponderosa pine	26	23
Rabbitbrush	1	1
Rose family	7	6
Sagebrush	30	27
Saltbush/greasewood	64	57
Sumac	1	1
Unknown conifer	75	67
Unknown non-conifer	18	16

*Number of samples with wood taxon present; **Number of samples with wood taxon present divided by total number of flotation samples with wood charcoal (112) × 100.

Roomblock 1

The majority of samples were collected from Roomblock 1 (Rooms 1 to 9; only 15% were from Roomblock 3) and focused on the hearths in the front Rooms 2, 4/5, and 7. Based on the macrobotanical remains recovered, it appears as though Rooms 4/5 and 7 may have been primarily used for food preparation, while Room 2 served as a location for both food preparation and storage. Fused masses of kernels that were found in Room 2 indicate that stacks of cobs were stored on the floor or on top of the roof. Most of the cobs holding the kernels were burned to ash, leaving kernels still fused in alignment. Several thousand loose kernels were also recovered in Room 2, primarily from post-occupational fill and rooffall (1,563 kernel fragments, 2,771 whole), but from floor, fill above the floor, and hearth contexts as well.

There were two hearths in Room 2; Feature 4 was a plastered, collared hearth associated with the Late Coalition occupation of the site, and Feature 20 was the oldest feature at the site and dating to the Early Coalition (AD 1200). Maize is the most common taxon in both hearths; weedy annual seeds and dropseed grass were recovered from both features. Possible squash/coyote gourd rind was identified in the older hearth, while groundcherry, mint family, and hedgehog seeds were restricted to Feature 4. This indicates that the diets of earlier and later site occupants were probably not considerably different, especially when sample bias is taken into account (4 samples were analyzed from Feature 20 versus 10 from Feature 4). The possible extramural storage cist constructed on the east wall of Room 2 contained annual seeds, maize, and piñon needles along with at least five wood taxa, indicating a trashy fill signature, and thus obfuscating any clues about the contents of the cist.

The recovery of three of four tobacco seeds from the site in the lower and general hearth fill of Room 7, as well as the presence of a deflector and ash box that do not occur in other rooms, indicates the room might have had a ceremonial function. A bean cotyledon and three cotyledon fragments were also recovered from the Room 7 hearth.

Diversity of taxa from back Rooms 1, 6, and 8 is very low, and evidence of their use as storage rooms is not apparent in the macrobotanical assemblage. Taxonomic diversity was also low in Room 9, the largest of the back rooms. The back rooms could have been cleaned out before abandonment or the macrobotanical assemblage may be biased by sample size differences, as 15 flotation samples were analyzed from back rooms compared to 76 from front rooms. The heavy focus on front room sampling is a function of the paucity of features in backrooms, extensive rodent disturbance, and a lack of the concentrated deposits of plant material (i.e., piles of maize) found in the front rooms.

Room 3

The probable fieldhouse (Room 3) flotation and vegetal samples were taken from post-occupational fill and wallfall. Macrobotanical remains consisted of maize embryo and kernel fragments, as well as cupules, and piñon needles. Cottonwood/willow, juniper, mountain mahogany, oak, piñon, ponderosa, sagebrush, saltbush/greasewood, unknown conifer, unknown non-conifer, and wolfberry wood were also identified. Piñon needles may be part of firewood debris and maize parts probably represent a combination of cooking accidents and the use of cobs for fuel.

Roomblock 3

Roomblock 3 was only partially excavated and in most cases only a basal course of masonry existed to define room outlines. A lack of wallfall in many of the 13 rooms indicates that construction of rooms may never have been completed. Carbonized plant material consisted of cheno-am, goosefoot, groundcherry, and grass seeds, grass stems, maize cupules and kernels, conifer cone scales, twigs, and needles, four coniferous woods, and nine non-conifers. Uncharred plant material was abundant and included Russian olive seeds, an obvious intrusive species. Occupants of this roomblock utilized disturbance-loving plants and grasses, grew maize, and collected local wood species for fuel and construction material.

Extramural Features

Flotation samples from a midden to the east of Roomblock 1 contained annual seeds, maize cupules, cupule segments, and kernels, groundcherry seeds, piñon nutshell and needles, along with juniper, piñon, sagebrush, saltbush/greasewood, and unknown conifer wood. The fill around Burial 2 that was found in the midden contained similar plant material, indicating that although the individual was placed in a natural niche in the bedrock and may have been covered with a tuff slab, plant material from the sample derives from midden deposits.

Maize and juniper, piñon, and saltbush/greasewood wood were recovered from an ashy area east and southeast of Roomblock 1 (Feature 3). This feature may be a deflated hearth, representing

an extramural area where maize may have been prepared. Another ash/charcoal stain (Feature 21) in an extension of the middle wall of Roomblock 1 with an associated floor surface produced maize, possible squash, and purslane seeds along with juniper, pine, and oak wood and could represent cooking accidents from additional extramural activities.

Vegetal Samples

Ubiquity of wood from the vegetal samples is close to that of flotation charcoal with the exception of ponderosa and cottonwood/willow (Table 14.109). In the flotation samples, ubiquity of cottonwood/willow was 18 percent and ponderosa pine was 23 percent. In the vegetal samples, the percent presence of cottonwood/willow (43%) and ponderosa pine (46%) is double that found in the flotation samples. This appears to be an example of a bias toward larger diameter specimens when collecting vegetal samples in the field. Box elder, New Mexico locust, and wolfberry wood were identified in the vegetal samples but not in the flotation samples. Two beam fragments from Room 2 were identified as juniper.

Table 14.109. Ubiquity of vegetal sample wood charcoal from LA 12587.

Common Name/Plant Part	Count*	%**
Box elder wood	2	2
Cottonwood/willow wood	42	43
Desert olive wood	15	15
Douglas fir wood	9	9
Juniper wood	78	80
Mountain mahogany wood	11	11
New Mexico locust wood	2	2
Oak wood	25	26
Pine wood	47	48
Piñon wood	52	53
Ponderosa pine wood	45	46
Rabbitbrush wood	1	1
Rose family wood	3	3
Sagebrush wood	28	29
Saltbush/greasewood wood	40	41
Unknown conifer wood	60	61
Unknown non-conifer wood	23	23
Wolfberry wood	5	5

*Number of samples with common name/wood present; **Number of samples with common name/wood divided by total number of vegetal samples with wood charcoal (98) × 100.

Six percent (330) of the incredibly large number of whole kernels (n = 5264) recovered in flotation and vegetal samples was measured (Appendix V). The average height of the sub-sampled kernels was 7.3 mm, the average width was 6.6 mm, and the average thickness was 4.0 mm. Four kernels from LA 4624, an Early Coalition period pueblo also on Mesita del Buey (McBride and Smith 2002) and 122 kernels from LA 135290, a Middle Coalition roomblock on

the Los Alamos Town Site Mesa (Chapter 25, this volume), will be compared with those from LA 12587 later in the discussion section.

The average row number of 20 maize cobs from LA 12587 was 10 and rows were straight in appearance (Table 14.110). The average rachis segment length was 3.4 mm, the average cob diameter was 10.3 mm, and the average cupule width was 5.2 mm. Environmental stress such as high temperatures and water or nutrient deficiencies during various early developmental stages of a maize plant can lead to ears that are partially or completely barren (Muenchrath and Salvador 1995:316). Only one cob with an undeveloped row may have been a product of this kind of environmental stress. Five cobs from LA 86534 (Chapter 24, this volume), two from LA 4624 (McBride and Smith 2002), and 17 from LA 135290 (Chapter 25, this volume) will also be compared to cobs from LA 12587 in the discussion section later.

Table 14.110. *Zea mays* cob morphometrics (in mm) from LA 12587.

FS No.	Row #	Type	Length	Rachis Segment Length	Cob Diameter	Cupule Width
965	12	ST	27.7	2.9	14.2	6.4
1094	12	ST, U	18.4	3.4	11.6	5.8
1306	8	ST	12.8	2.9	5.6	4.1
1401	8	ST	12.9	2.6	6.9	4.4
1567	12	ST	26.0	3.9	13.5	5.3
1939	10	ST	18.9	2.5	7.5	3.7
2555	10	ST	19.7	3.8	14.3	7.0
2555	12	ST, T	22.9	3.1	10.5	4.0
2639	8	ST	14.5	4.0	12.1	7.0
2639	8	ST	17.7	3.4	9.1	6.9
2831	8*	ST	19.5	4.0	8.6	7.5
2831	12	ST	13.8	3.4	9.1	4.1
2831	12	ST	10.8	3.5	8.7	3.7
2831	10	ST	21.1	3.8	10.7	5.8
2831	12	ST	22.5	4.2	12.6	5.2
2832	12	ST	16.6	3.1	10.2	3.9
2832	10	ST	41.9	3.6	14.7	6.6
2888	12	ST	13.1	3.1	9.5	4.0
2888	8	ST	14.5	3.4	7.3	3.8
5141	10	ST	20.2	2.8	10.0	5.5
Averages	10	All straight	19.3	3.4	10.3	5.2

*2 rows of cob have kernels; T = tip, U = undeveloped row present.

Other charred non-wood plant parts were limited to pine bark scales and cone umbos. These are probably part of the record as a result of firewood use. An uncharred grape seed was recovered in FS 1029 from Room 1 (Stratum 1) that is described as a loose surface deposit with some artifacts and vegetal material. The context and the uncharred state of the seed suggest it is non-cultural or modern in origin.

Pollen Remains (Susan J. Smith)

A total of 122 pollen samples were analyzed from LA 12587. Table 14.111 lists the frequency of identified pollen types. Cultigens identified in the assemblage included cotton and squash in low numbers, with higher amounts of maize, maize aggregate pollen, and cholla. Economic resources identified in the pollen assemblage included prickly pear and prickly pear aggregates, cactus family and cactus family aggregates, beeweed, sunflower type, lily family (which includes yucca, wild onion, and sego lily), nightshade family, parsley family, cattail, sedge, mint family, and purslane. A number of other potential economic resources were identified in the assemblage (Table 14.111), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 14.111. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 12587 (*n* = 122)
Cultigens	*Gossypium*	Cotton	2
	Cucurbita	Squash	1
	Zea mays	Maize	65
	Zea Aggregates	Maize Aggregates	16
	Opuntia (Cylindro)	Cholla	34
Economic Resources	*Opuntia* (Platy)	Prickly Pear	60
		Prickly Pear Aggregates	4
	Cactaceae	Cactus Family	1
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	57
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	1
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	2
	Portulaca	Purslane	4
Other Potential Economic Resources	Rosaceae	Rose Family	7
	Eriogonum	Buckwheat	4
	Brassicaceae	Mustard Family	9
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 12587 (*n* = 122)
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	2
	Polygala type	Milkwort	0
	Poaceae	Grass Family	72
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	2
Riparian Types	*Populus*	Cottonwood, Aspen	1
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	99
		Cheno-Am Aggregates	39
	Fabaceae	Pea Family	2
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	98
		Sunflower Family Aggregates	2
	Ambrosia	Ragweed, Bursage	35
		Ragweed/Bursage Aggregates	1
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	2
	Sphaeralcea	Globemallow	2
		Globemallow Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 12587 (*n* = 122)
	Euphorbiaceae	Spurge Family	70
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	12
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	1
	Convolvulaceae	Morning Glory Family	2
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	7
	Picea	Spruce	5
	Abies	Fir	18
	Pinus	Pine	95
		Pine Aggregates	2
	Pinus edulis type	Piñon	95
	Juniperus	Juniper	79
		Juniper Aggregates	0
	Quercus	Oak	16
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	22
	Artemisia	Sagebrush	92
		Sagebrush Aggregates	2
	Unknown Small *Artemisia*	Unknown Small Sagebrush	20
		Small Sagebrush Aggregates	1
	Sarcobatus	Greasewood	1
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SITE OCCUPATIONAL HISTORY

The earliest component at LA 12587 is an Archaic lithic scatter (Chapter 15, this volume). The first evidence for post-Archaic period use of the site comes from two early archaeomagnetic dates from one of the Room 2 hearths (Feature 20) and the presence of a small amount of early 13th century ceramics. These indicate that there was a Puebloan occupation of LA 12587 at circa

AD 1200. However, no other features or architectural elements can be linked with this occupation. Given the buried context of Feature 20 and the lack of early dates associated with other Roomblock 1 features, it is possible that the present pueblo was built over (or incorporated into) an earlier structure, perhaps one that had been uninhabited for some time. Based on his analysis of the ceramic artifacts, Wilson (Volume 3) argues that most of the Coalition period occupation at LA 12587 occurred during the early and middle 13th century. Some samples of dated materials exhibit date ranges in the early to middle 13th century. A cluster of radiocarbon and archaeomagnetic dates indicates that the final occupation of Roomblock 1 occurred in the late 13th or early 14th century. Unfortunately, it is unclear if Roomblock 1 was continually inhabited from circa AD 1200 to the late 13th/early 14th century of if there were multiple episodes of habitation.

After Roomblock 1 was abandoned, construction of Roomblock 3 began. This roomblock was never finished and was probably never inhabited. No firm dates can be assigned to Roomblock 3, but based on its stratigraphic relationship to other components, it dates to the Late Coalition or Early Classic period.

The last component at LA 12587 consists of an isolated room (Room 3) and several rock features (Features 17, 18, and 22). Room 3 was built on top of Roomblock 1 wallfall and so post-dates the pueblo. The temporal relationship between Room 3 and Roomblock 3 is less clear. One line of tenuous evidence indicating a younger age for Room 3 is that, before excavation, some wall tops of Room 3 were visible on the surface whereas most of Roomblock 3 was buried. While unlikely, it is *possible* that Room 3 pre-dates, or is contemporaneous with, Roomblock 3. Features 17, 18, and 22 overlay parts of Roomblock 3. All three features are situated in the A horizon indicating that they are at least roughly contemporaneous. It is possible that some or all of the rock features in Areas 3 and 6 are also part of this final component. While it cannot be demonstrated that Room 3 and Features 17, 18, and 22 are all contemporaneous, all four of these elements do appear to represent an agricultural use of the site. The presence of several biscuitware and glazeware sherds may indicate an Early to Middle Classic period date for these features.

SUMMARY OF SITE EXCAVATIONS

LA 12587 is a multi-component Puebloan and Archaic site. The earliest occupation is represented by a lithic artifact scatter dating to the Late Archaic period (Chapter 15, this volume). The components discussed in this chapter consist of a seven-room pueblo and associated midden dating to the Late Coalition period (an early hearth in this roomblock indicates there may also have been an Early and/or Middle Coalition period occupation), a partially completed 13-room pueblo dating to the Late Coalition or Early Classic period, and multiple agricultural features including a grid garden and a one-room structure that probably date to the Early or Middle Classic period.

LA 12587 does resemble other excavated Coalition period sites on the Pajarito Plateau, containing front habitation rooms with hearths and smaller rear storage rooms. A range of botanical remains were identified from flotation samples recovered from the hearths, including

maize, beans, cheno-ams, dropseed grass, and tobacco. In addition, squash rind, piñon nuts, groundcherry and sunflower were also represented at the site. The faunal remains also include a variety of species like jackrabbit, cottontail, rock squirrel, mule deer, turkey, and red-tailed hawk.

The ceramic assemblage primarily consists of Santa Fe Black-on-white and smeared-indented corrugated ceramics. The dominance of these ceramics types, coupled with the paucity of Kwahe'e and the presence of Wiyo, Galisteo, and Mesa Verde Black-on-white, reflects a Late Coalition period of occupation. The AMS and archaeomagnetic dates overlap and cover a similar two-sigma range from AD 1275 to 1325.

The stone tool technology reflects an emphasis on core reduction of materials like chalcedony, Pedernal chert, and obsidian. Most of the obsidian appears to have been obtained from nearby sources in the Valles Caldera. The retouched tool assemblage includes a mix of expedient flake tools like retouched pieces and perforators and formal tools like bifaces, projectile points, and unifaces. The manos are represented by both one- and two-hand varieties. The metates consist of undetermined fragments, which could represent millingstones or slab types. In addition, the presence of polishing stones, abrading stones, and an axe indicates that a variety of domestic activities were occurring at the site.

CHAPTER 15
WHITE ROCK TRACT (A-19): LA 12587 (AREA 8)

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

LA 12587 is a multi-component site that includes the remains of a Late Coalition period roomblock (see Chapter 14, this volume) and a Late Archaic period lithic scatter (Area 8). Area 8 is situated on a knoll at the southern end of Mesita del Buey and lies at the confluence of Cañada del Buey and Pajarito Canyon. The area is covered with piñon and juniper trees and sits at an elevation of 1979 m (6500 ft). The roomblock portion of the site is located on a small knoll and is located slightly upslope and to the north of the lithic scatter. To demarcate the lithic scatter from the roomblock portion of the site, the scatter was given a separate area number (Area 8) during excavation activities at the site. Area 8 consists of a Late Archaic period lithic scatter at the southern end of LA 12587, as well as the continuation of the midden associated with the roomblock at LA 12587.

Area 8 is located south of a two-track road that runs northeast to southwest along the ridge on which LA 12587 sits (see Figure 14.3). The two-track road is used by Los Alamos County to aid in the servicing of an existing Los Alamos County power line. From the two-track, the artifact scatter extends southeast to the edge of the hilltop where a distinct line of outcropping bedrock marks the hilltop edge. From this point southward and eastward, the land slopes steadily downward until the valley bottom flattens out some 50 m distant. There is a fairly heavy cover of piñon and juniper across the surface of the scatter with small but contiguous patches of outcropping bedrock.

SITE DESCRIPTION

Area 8 consisted of two concentrations of artifacts: a Late Archaic occupation in the southern portion of the area and the continuation of the midden associated with the roomblock at LA 12587 in the northern portion. In-field analyses conducted during the original assessment of the site sampled two dogleashes and a linear transect. The dogleash samples were 1 and 2 m samples, respectively, and the transect was 5 by 27 m. Both of the dogleash samples were located within the boundaries of the Coalition period roomblock, while the sample transect was located in Area 8, the Late Archaic period lithic scatter.

Obsidian comprised over 96 percent of the chipped stone debitage identified within the sample transect; other identified materials included Pedernal chert, other chert, and basalt. Excluding over 100 pieces of obsidian microdebitage located on an anthill in the transect, the chipped stone in this area was fairly evenly split between core flakes (32%), biface flakes (29%), and microdebitage (26%). The remaining pieces of debitage were either unidentified flakes (12%) or angular debris (1%). The base of a Late Archaic obsidian projectile point and a one-handed rhyolite mano were identified in this area of the site. Based on the high percentage of obsidian

debitage and the Late Archaic projectile point in the area south of the roomblock, it was determined that there were multiple components at LA 12587, including both Archaic and Coalition periods.

FIELD METHODS

Fieldwork began with the initial assessment of the Area 8 site area. The crew walked over the site, delineated the boundaries, and identified the presence of artifact concentrations and features. A 1- by 1-m grid system that was laid out during the initial ground-penetrating radar survey of the roomblock at LA 12587 was also used during the excavations of Area 8. The central site datum (100N/100E) was established near the center of the roomblock, with controlled surface collections being made across the entire site area.

After the grid was laid out and before the collection of any artifacts, the crew walked around the site area and pin-flagged surface artifacts. Based on the visual demarcation of artifact density displayed by the distribution of pin-flags, surface artifacts were collected in a 5200-m^2 area. This area included both the Late Archaic lithic scatter and the midden associated with the roomblock.

During the surface collection, all artifacts were collected according to their unit designation. Artifacts were bagged separately according to material type (except when the total number of artifacts from the grid was less than five), and each bag was given a separate field specimen (FS) number. While chipped stone debitage and ceramics were collected within the general 1- by 1-m grid they were located in, the location of formal chipped stone tools and ground stone items were point-provenienced. A total of 1842 pieces of chipped stone, 1802 ceramics, and 96 pieces of ground stone were collected from the surface in Area 8. Figure 15.1 shows personnel conducting the surface collection in Area 8.

Figure 15.1. Surface collection of Area 8.

Subsequent to the field season, all artifacts collected from the individual grids were entered into Surfer, version 7. From these data, maps of surface artifact distribution were generated. Figures 15.2 through 15.4 show the distribution of ceramics, chipped stone, and ground stone and fire-cracked rock (FCR), respectively. These maps show a distributional pattern commensurate with the multi-component nature of the site: ceramics dominate to the north and follow a general arc curving around the southern portion of the roomblock while the chipped stone materials dominate in the southern portion of the area where the Late Archaic use of the site occurred.

Many of the artifacts collected during the surface collection were submitted for analysis. Utilitywares formed the bulk of the ceramic assemblage comprising almost 80 percent. Decorated wares were dominated by Santa Fe Black-on-white (13%), with smaller percentages of Wiyo Black-on-white, Biscuit A (Abiquiu Black-on-gray), and San Juan whiteware (all less than 1%).

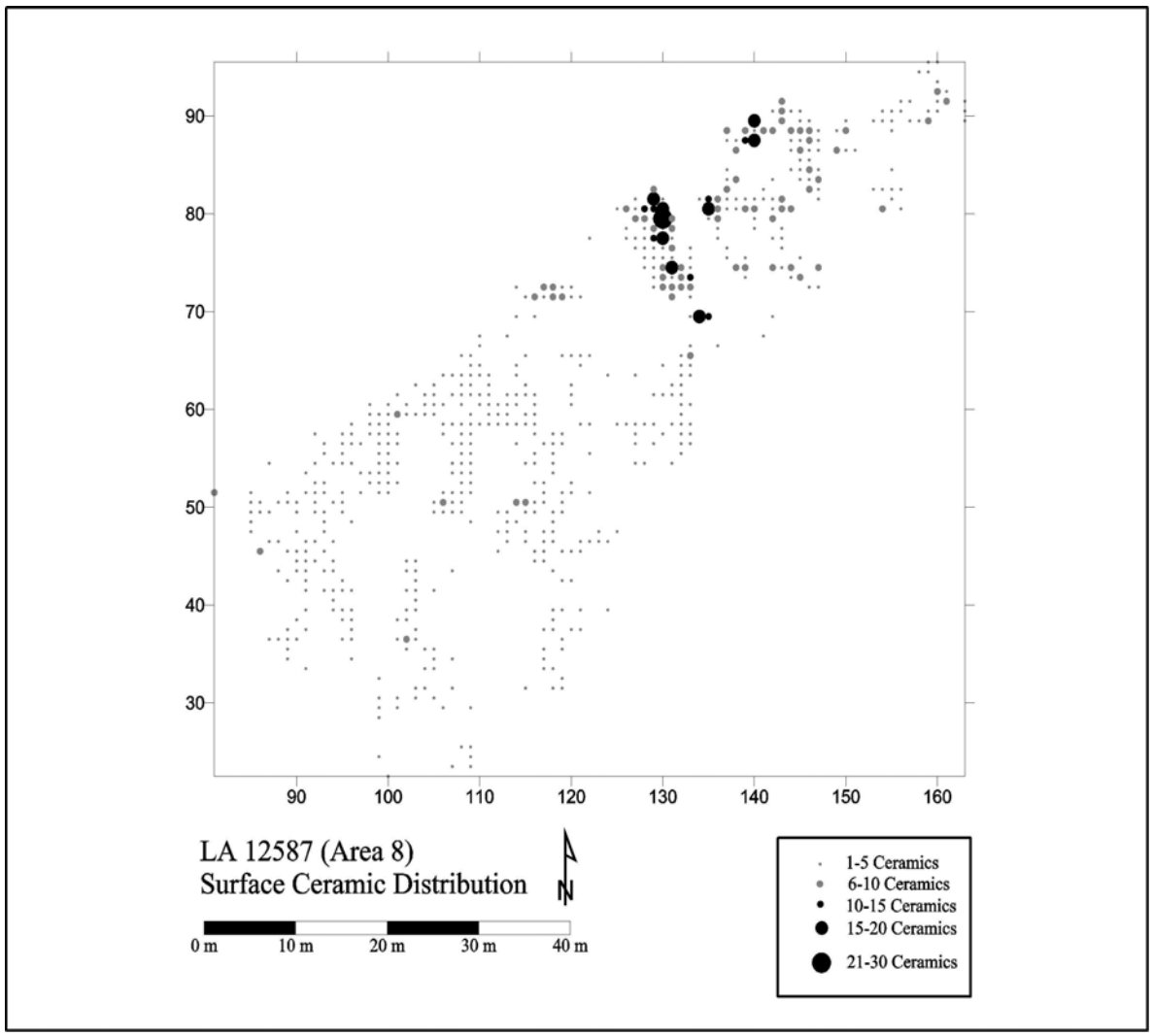


Figure 15.2. Distribution of ceramics on the surface of the site.

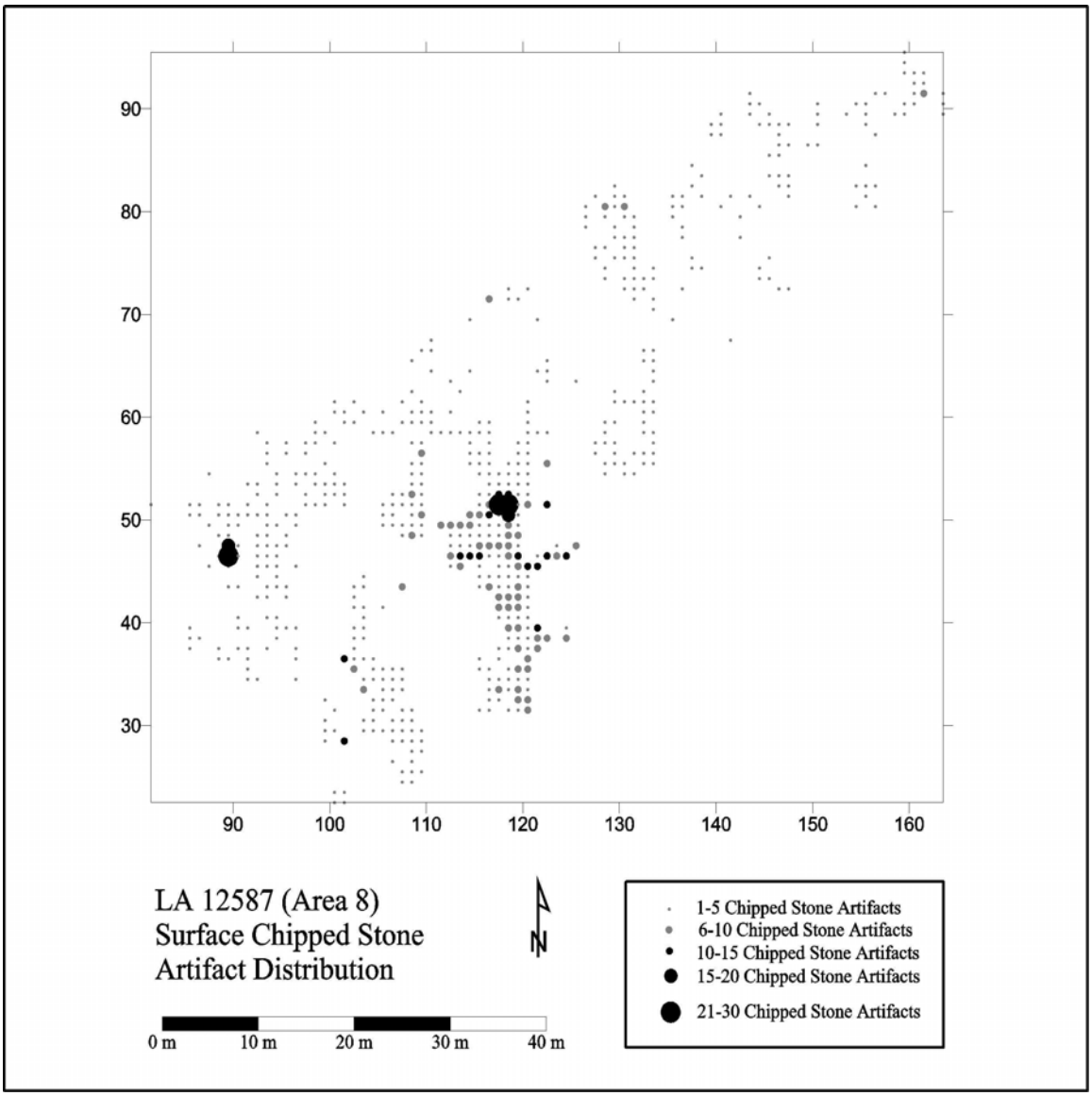


Figure 15.3. Distribution of chipped stone materials on the surface of the site.

Chipped stone material was also collected from the surface of Area 8. The most abundant type of material recovered from the analyzed surface sample was obsidian (*n* = 440, 91%), followed by chalcedony (*n* = 17, 4%), Pedernal chert (*n* = 6, 1%), and negligible amounts of rhyolite, basalt, and quartzite. Microdebitage comprised the majority of the debitage assemblage at nearly 53 percent. Biface and core flakes were the second most abundant type of debitage, making up 26 percent and 15 percent of the assemblage, respectively. Angular debris and unidentified flake fragments each comprised about 3 percent of the debitage assemblage. One chalcedony core was recovered. An obsidian biface and projectile point were each recovered from the surface of Area 8. No other retouched tools were identified.

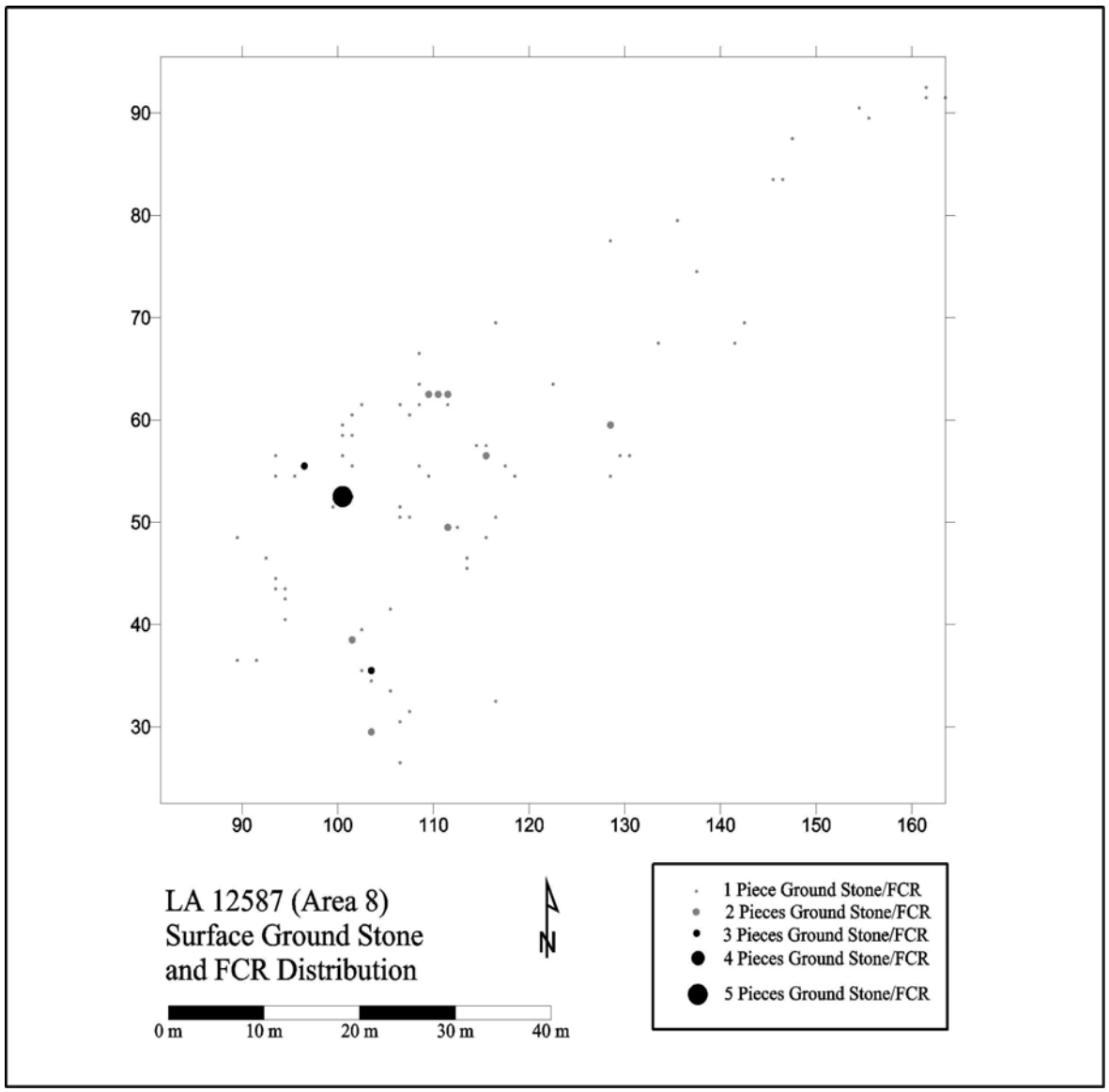


Figure 15.4. Distribution of ground stone and FCR across the surface of the site.

Eleven pieces of ground stone were analyzed from selected areas of Area 8. Just over half of these were made from dacite cobbles (n = 6), followed by andesite (n = 3) and quartzite and vesicular basalt (n = 1). Three of the dacite cobbles were mano fragments, while the other three were unidentified ground stone fragments. Andesite materials consisted of an unidentified metate fragment, an abrading stone, and an unidentified ground stone fragment. One quartzite polishing stone was identified, as was an unidentified vesicular basalt ground stone fragment.

Areas selected for excavation were placed in areas of high artifact density and/or in areas where it was suspected that greater soil depth might increase the chances of locating any subsurface features. Four 1- by 1-m units were selected for excavation. In all four of the excavation units, digging continued until bedrock was reached (see section on site excavation for more details).

STRATIGRAPHY (Paul Drakos and Steve Reneau)

The Late Archaic period lithic scatter is located in an area of thin soils over tuff bedrock that appears to have experienced significant erosion, and the lithic scatter may in part represent a lag left following erosion of an unknown thickness of mesatop soils (Drakos and Reneau, Volume 3). Excavations into relatively thick pockets of soil (up to 28 cm thick) inside the main artifact scatter revealed the presence of both ceramics and obsidian flakes to the base of a weakly developed soil (Table 15.1; see Appendix K for key). An excavation completed outside the main artifact scatter revealed a young colluvial deposit of similar thickness (20 cm) and a weakly developed soil (Table 15.2). Soils in the vicinity of the lithic scatter lack the Bw horizons typically observed in older post-Puebloan soils, and instead exhibit A-BC or A-C horizons. This weak soil development is consistent with a post-Puebloan age, possibly less than 500 years old. This observation is consistent with the interpretation that this is an actively eroding surface with minimal potential for preserving an intact archaeological record. Four 1- by 1-m units were excavated in Area 8, but soil profiles were only conducted in two units. Excavation units were placed in areas of greater soil development in an attempt to locate subsurface features. Stratigraphic sequences are described in the following pages and in Table 15.3.

Table 15.1. Geomorphologic analysis of test pits in Area 8, Test Pit Number 4, 51N/118E; inside main artifact scatter.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	Lower Horizon Boundary	Profile #	Preliminary Age Estimate	Notes
A	0-9	20-30	10YR4/4	10YR4/3	sl	1 msbk-m	so-lo	so, po	n.o.	e-	cs		Post-Puebloan; possibly < several 100 yrs.	gravel nodules, angular, basalt
BC	9-28	10-20	10YR4/4	10YR4/3	scl	1 msbk	so	ss, ps	n.o.	es	ai			young colluvium w/ ceramics + lithics to base
R	28+												-	tuff

Table 15.2. LA 12587 (Area 8), White Rock Land Transfer Parcel, Test Pit # 2, 36N/103E; outside main artifact scatter.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	Lower Horizon Boundary	Profile #	Preliminary Age Estimate	Notes
A	0-2	30	10YR4/3	10YR3/3	scl	1-2 mpl	so	ss, ps	n.o.	es	cs		Post-Puebloan; possibly < several 100 yrs.	young colluvium
C	2-20	30	10YR4/3	10YR3/3	sl	m	lo	so, po	n.o.	es	aw			young colluvium
R	20+													tuff

Table 15.3. Stratigraphic sequence used during excavation at Area 8.

LA 12587 (Area 8) Stratigraphic Summary							
Strat #	Provenience	Max. Thickness	Min. Thickness	Elevation	Color	Texture	Comments
1	35N/90E 36N/103E 47N/118E	0.02	0.01	0 – 2 cm bgs	10YR5/4	Silty sand	Very thin stratum of silty sand. Also a lot of duff and other vegetal matter.
2	35N/90E 36N/103E 47N/118E	0.28	0.20	2 – 30 cm bgs*	10YR5/4	Sandy loam	Sandy loam with slightly more inclusions than Stratum 1, including pebbles and artifacts. No mottles. Lower boundary is bedrock.

* = centimeters below ground surface

51N/118E

Unit 51N/118E, which is located inside the Late Archaic lithic scatter, had several discrete stratigraphic units. The A horizon in this unit extended from the surface to 9 cm below the surface and contained 20 percent to 30 percent gravels. It was dark yellowish-brown in color and was identified as a sandy loam. This horizon had a weak subangular blocky to massive structure, was soft to loose in consistency, contained no observed argillans, and was slightly effervescent. The lower bounder of this horizon was identified as clear and smooth. Soils in this horizon were associated with the post-Puebloan period.

The BC horizon in this unit extended from 9 to 28 cm below surface and contained 10 percent to 20 percent gravels. The sediments were dark yellowish-brown in color, sandy clay loam in composition, and medium subangular blocky in structure. The horizon had a soft consistency with no observed argillans and was strongly effervescent. The lower boundary was abrupt and irregular and was thought to be post-Puebloan in age. The R (bedrock) horizon began at 28 cm below surface. Figure 15.5 shows this unit at the completion of excavation.

Figure 15.5. Unit 51N/118E at the end of excavation.

36N/103E

Unit 36N/103E, which was located outside the Late Archaic lithic scatter, also contained several stratigraphic units. The A horizon in this unit extended from 0 to 2 cm below the surface and

contained 30 percent gravels. It was a brown, sandy clay loam with a weak to moderate medium platy structure. This horizon had a soft consistency, with no observed argillans, and was strongly effervescent. Its lower boundary was clear and smooth, and was likely post-Puebloan in age.

The C horizon extended between 2 and 20 cm below the surface and also contained approximately 30 percent gravels. Like the overlying A horizon, the C horizon was also brown in color, but had a sandy loam composition and a medium structure. It had a loose consistency with no observed argillans, was strongly effervescent, and had a clear, smooth lower boundary. Similar to the A horizon, this horizon is only several hundred years old and is likely post-Puebloan in age. The R horizon (bedrock) in this unit began about 20 cm below the surface. Figure 15.6 shows this unit after it was excavated.

Figure 15.6. Unit 36N/103E at the end of excavation.

SITE EXCAVATION

Excavations at LA 12587 (Area 8) were conducted in November and December of 2002. The crew consisted of Kari Schmidt (crew chief), Mia Jonsson, Mike Kennedy, Timothy Martinez, Bruce Masse, and Marjorie Wright. These personnel excavated four 1- by 1-m units in Area 8. Two were located in the western half of the scatter and two were located in the eastern half.

These units were excavated in arbitrary stratigraphic levels, until natural strata became clear enough to be used for excavation.

35N/90E (Test Pit 1)

The fill in this unit was a brown sandy loam soil down to bedrock, which was shallow in this unit and was encountered at about 12 to 15 cm below the surface. The majority of the unit was excavated to this depth, although a deep fissure ran through the center of the grid extending to 30 cm in depth. Lying atop the bedrock was a layer of matted roots that covered virtually the whole bedrock surface in the grid. The only cultural remains that were recovered in this unit were four small obsidian flakes, four smeared-indented corrugated ceramics, and a piece of piñon pine (*Pinus edulis*). A single flotation sample taken from excavations in this unit produced the following taxa: goosefoot (*Chenopodium*), unknown conifer (Gymnospermae), juniper (*Juniperus*), unidentified pine (*Pinus* sp.), and piñon pine.

36N/103E (Test Pit 2)

The soil in this unit was also brown and a sandy loam down to the top of bedrock. The bedrock was encountered about 12 cm below the surface in the northwest corner of the unit and sloped down generally toward the southeast to a depth of 30 cm. The upper 10 cm of fill contained large, fragmented chunks of unconsolidated bedrock, while closer to bedrock the soil was more consolidated. In the upper 10 cm of fill, 15 pieces of chipped stone (obsidian and Pedernal chert) and three plainware body and a smeared-indented corrugated sherd were recovered. In the sediments deeper than 10 cm below the surface, eight pieces of chipped stone (obsidian and chert) were found.

47N/118E (Test Pit 3)

In the upper 10 cm of this unit the soil was sandy loam, and between 10 and 25 cm below the surface it became a sandy clay loam. In the lower part of this level, just above the bedrock, there were fragmented pieces of bedrock mixed with the soil. From 0 to 10 cm there were 47 obsidian flakes, one chert flake, and two smeared-indented corrugated ceramics recovered from the fill. Between 10 and 25 cm below surface, 43 obsidian flakes, a Santa Fe Black-on-white sherd, a smeared-indented corrugated sherd, and a ground stone fragment were found. Additionally, a piece of piñon pine was identified in a macrobotanical sample and juniper remains were identified in a flotation sample.

51N/118E (Test Pit 4)

The soil in this unit was a brown, sandy loam from the surface down to bedrock, which presented itself as a somewhat discontinuous layer at approximately 30 cm below the surface. In the upper 10 cm there were 107 pieces of obsidian and a whiteware, plainware body and smeared-indented

corrugated sherds. From 10 to 20 cm below the surface, 30 more obsidian flakes were found, and a flotation sample was collected from the fill. Identified taxa from this sample include unknown conifer and juniper. In the 20- to 30-cm level, seven pieces of obsidian and a single smeared-indented corrugated sherd were recovered.

SITE CHRONOLOGY AND ASSEMBLAGE

Some 4100 total artifacts were recovered from excavations in Area 8 at LA 12587. Analyses of the ceramics, lithics (chipped and ground stone), and archaeobotanical materials were conducted. Ceramic samples were taken from two transects in the northern portion (southern portion of the LA 12587 midden) of Area 8, while chipped stone materials were collected from two transects in the western section (Late Archaic focus) of Area 8. No faunal remains were recovered in the deposits, and taxa were identified in the single pollen sample from the site. No materials were submitted for radiocarbon analyses due to a lack of suitable material in the excavation units. However, obsidian artifacts were submitted for hydration dating. Results of the analyses that were conducted are presented in the following sections.

Obsidian Hydration

Ten obsidian artifacts from Area 8 at LA 12587 were submitted for age determination using the obsidian hydration method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rind, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 15.4).

Table 15.4. Obsidian hydration dates for Area 8 at LA 12587.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
8363-1	2003-31	Cerro Toledo	2.14	1355	57
8373	2003-32	Cerro Toledo	3.44	-3049	295
8376	2003-33	Cerro Toledo	2.55	1041	73
8414	2003-34	Cerro Toledo	2.60	1668	22
8489	2003-35	Cerro Toledo	2.34	1537	36
8492-1	2003-36	Cerro Toledo	3.27	1456	31
8874-1	2003-37	Cerro Toledo	2.55	-176	170
8875	2003-38	El Rechuelos	3.85	-646	137
8883	2003-39	Cerro Toledo	4.24	-1607	170
S#2	2003-40	Cerro Toledo	2.73	482	110

The obsidian hydration dates provide a wide range from 3049 BC to AD 1668. On the other hand, a Late Archaic point was dated to AD 482, which seems to be in the appropriate range.

Later dates could reflect the reuse of the site, although the AD 1668 date seems quite late, and the three earliest dates seem too early.

Ceramics (Dean Wilson)

The majority of the ceramics analyzed from Area 8 are Santa Fe Black-on-white, smeared-indented corrugated wares, and plainwares suggesting a Coalition period occupation of the northern portion of the area. The percentages of pottery types, as well as the types of wares are very similar to the roomblock at LA 12587, suggesting the northern portion of Area 8 is likely a continuation of the arc-shaped midden forming the eastern and southeastern boundary of the site. Very few biscuitwares were identified, and no glazewares were identified. Tables 15.5 and 15.6 show the distribution of pottery types and temper types identified in ceramic samples collected and analyzed from Area 8.

Table 15.5. Distribution of ceramic types from Area 8 of LA 12587.

Ceramic Type	Frequency	Percent
Unpainted undifferentiated	2	1.4
Indeterminate organic paint	1	0.7
Santa Fe Black-on-white	17	12.0
Wiyo Black-on-white	1	0.7
Biscuit A (Abiquiu Black-on-gray)	1	0.7
Unpainted Santa Fe paste	7	4.9
Jemez/Santa Fe/Vallecitos	1	0.7
Plain rim	4	2.8
Plain body	27	19.0
Smeared-indented corrugated	79	55.6
Unpainted whiteware undifferentiated	1	0.7
Indented San Juan whiteware	1	0.7
Total	**140**	**100.0**

Table 15.6. Temper by ware for ceramics from Area 8 of LA 12587.

Ware	Temper				
	Granitic schist mica, quartz & feldspar	Fine tuff or ash	Fine tuff & sand	Andesite or Diorite & sherd	Ant-hill
Unpainted undifferentiated	--	1	1	--	--
Indeterminate organic paint	--	1	--	--	--
Santa Fe Black-on-white	--	6	11	--	--
Unpainted Santa Fe paste	--	4	3	--	--
Jemez/SF/Vallecitos	--	1	--	--	--
Plain rim	--	--	--	--	4

Ware	Temper				
	Granitic schist mica, quartz & feldspar	Fine tuff or ash	Fine tuff & sand	Andesite or Diorite & sherd	Ant-hill
Plain body	1	--	--	--	26
Smeared-indented corrugated	--	--	--	--	79
Unpainted whiteware undifferentiated	--	--	--	1	--
Indented San Juan whiteware	--	--	--	1	--
Total	**1**	**13**	**15**	**2**	**109**

Chipped and Ground Stone (Bradley Vierra and Michael Dilley)

Material Selection

A total of 485 artifacts were analyzed from two transects in the western portion (Late Archaic focus) of Area 8 at LA 12587, consisting of one core, 465 pieces of debitage, two retouched tools, and 11 ground stone items. This total represents a 22 percent sample of the 2196 total lithic artifacts recovered during the site excavations. Table 15.7 presents the data on lithic artifact type by material type. The majority of the debitage consists of obsidian, with a few items made from other materials. The presence of cortex on 4.0 percent of the debitage indicates that the materials were collected from both primary nodular (63.1%) and secondary waterworn sources. The obsidian and rhyolite are present at nearby sources in the Jemez Mountains, but obsidian flakes also exhibit waterworn cortex. In contrast, chalcedony, Pedernal chert, and quartzite are available from local Rio Grande Valley gravel sources.

Table 15.7. Lithic artifact type by material type from Area 8 at LA 12587.

Artifact Type		Material Type										
		Basalt	**Vesicular Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Quartzite**	**Total**
Cores	Core	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	1	0	0	0	1
Debitage	Angular Debris	0	0	0	0	0	12	1	0	2	0	15
	Core flake	1	0	1	0	0	55	9	1	4	0	71
	Biface flake	0	0	0	0	0	121	1	0	0	0	122
	Microdebitage	1	0	0	0	0	239	5	0	0	1	246

Artifact Type		Material Type										
		Basalt	**Vesicular Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Quartzite**	**Total**
	Undetermined flake	0	0	0	0	0	11	0	0	0	0	11
	Subtotal	2	0	1	0	0	438	16	1	6	1	**465**
Retouched Tools	Biface	0	0	0	0	0	1	0	0	0	0	**1**
	Projectile point	0	0	0	0	0	1	0	0	0	0	**2**
	Subtotal	0	0	0	0	0	2	0	0	0	0	**2**
Ground Stone	Undetermined mano fragment	0	0	0	0	3	0	0	0	0	0	**3**
	Undetermined metate fragment	0	0	0	1	0	0	0	0	0	0	**1**
	Polishing stone	0	0	0	0	0	0	0	0	0	1	**1**
	Abrading stone	0	0	0	1	0	0	0	0	0	0	**1**
	Undetermined ground stone	0	1	0	1	3	0	0	0	0	0	**5**
	Subtotal	0	1	0	3	6	0	0	0	0	1	**11**
Other	Fire-cracked rock	0	0	0	0	6	0	0	0	0	0	**6**
	Subtotal	0	0	0	0	6	0	0	0	0	0	**6**
Total		**2**	**1**	**1**	**3**	**12**	**440**	**17**	**1**	**6**	**2**	**485**

Twenty-three pieces of debitage and two retouched tools were submitted for X-ray fluorescence analysis (Shackley, Volume 3). The majority of the artifacts were obtained from the Cerro Toledo source, with a single piece from the Valle Grande and El Rechuelos source areas (Table 15.8). The Cerro Toledo (Rabbit Mountain/Obsidian Ridge) and Valle Grande (Cerro del Medio) source areas are located about 15 km (10 miles) as the "crow flies" to the southwest and west of the site, while the El Rechuelos (Polvadera Peak) source area is situated about 30 km (19 miles) to the northwest.

Table 15.8. Obsidian source samples.

FS #	Artifact	Color	Source
S#2	Projectile point	Black opaque	Cerro Toledo rhyolite
8363-1	Debitage	Translucent	Cerro Toledo rhyolite
8363-2	Debitage	Translucent	Cerro Toledo rhyolite
8370-1	Debitage	Gray	Cerro Toledo rhyolite
8370-2	Debitage	Black 0paque	Cerro Toledo rhyolite
8373	Debitage	Brown	Cerro Toledo rhyolite
8376	Debitage	Translucent	Cerro Toledo rhyolite

FS #	Artifact	Color	Source
8414	Debitage	Gray	Cerro Toledo rhyolite
8489	Debitage	Black opaque	Cerro Toledo rhyolite
8492-1	Debitage	Black dusty	Cerro Toledo rhyolite
8492-2	Debitage	Black opaque	Cerro Toledo rhyolite
8492-3	Tool	Translucent	Cerro Toledo rhyolite
8496-1	Debitage	Green	Cerro Toledo rhyolite
8496-2	Debitage	Translucent	Cerro Toledo rhyolite
8499	Debitage	Green	Cerro Toledo rhyolite
8500-1	Debitage	Green	Cerro Toledo rhyolite
8500-2	Debitage	Translucent	Cerro Toledo rhyolite
8504	Debitage	Translucent	Valle Grande rhyolite
8510	Debitage	Green	Cerro Toledo rhyolite
8874-1	Debitage	Black opaque	Cerro Toledo rhyolite
8874-2	Debitage	Black opaque	Cerro Toledo rhyolite
8874-3	Debitage	Translucent	Cerro Toledo rhyolite
8875	Debitage	Black dusty	El Rechuelos
8883	Debitage	Green	Cerro Toledo rhyolite

Lithic Reduction

The single core was reduced using a bidirectional, opposed-different-face technique and was classified as being exhausted when discarded. Table 15.9 presents the metric information on this core.

Table 15.9. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Bi-directional	35	25	17	13.3

The debitage consists primarily of microdebitage (52.9%) and biface flakes (26.2%), with some core flakes (15.2%), and other items. The majority of the flakes exhibit single platforms (45.4%; n = 1 5), with dihedral (n = 1), multi-faceted (n = 4), collapsed (n = 3), and crushed (n = 10) platforms. Nineteen (57.5%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed and only four retouched/abraded platforms.

The majority of the core flakes consist of distal fragments (n = 37; 52.1%), with fewer whole (n = 1), proximal (n = 4), midsection (n = 27), lateral flake (n = 1), and undetermined flake (n = 1) fragments. Most of the biface flakes are also midsection fragments (n = 53; 43.4%), with fewer whole (n = 1), proximal (n = 25), and distal (n = 42) fragments. The single whole core flake has a length of 21.0 mm and the two whole biface flakes exhibit a mean length of 22.5 mm (std = 16.2). Lastly, angular debris have a mean weight of 0.7 g (std = 0.6).

The retouched tools consist solely of formal tools such as bifaces and projectile points. No retouched pieces were identified.

The biface is a distal fragment that was probably broken during manufacturing. It does exhibit an edge angle of 45 degrees, indicating that it could have been broken during the middle- to late-stage reduction process. Both projectile points are base fragments that are quite similar in form. The points contract towards the neck and contain a straight base that could reflect Late Archaic corner-notched base fragments.

Tool Use

Only three flakes (0.06%) exhibit evidence of damage that could be attributed to use-wear**.** Two have straight lateral edges with angles of 35 and 60 degrees, while the third was utilized on an edge with a straight outline and angle of 45 degrees. Three undetermined mano fragments, an undetermined metate fragment, a polishing stone, and five pieces of undetermined ground stone were identified during the analysis. The mano fragments probably represent broken one-hand cobble manos. The metate fragment is a burned piece of andesite with a single ground surface. The polishing stone is a quartzite pebble with some polish on one surface. Lastly, the undetermined ground stone consists of small fragments that exhibit a ground surface. Some of these fragments are burned.

Archaeobotanical Remains (Pamela McBride)

Goosefoot and pitseed goosefoot seeds comprised the only carbonized floral remains from excavations in Area 8 (Table 15.10). Non-cultural material consisted primarily of conifer duff along with goosefoot, spurge, and prickly pear cactus seeds. Fragments of juniper and unknown conifer charcoal were recovered in flotation samples. Vegetal samples from Units 1 and 3 yielded five specimens of piñon wood. The meager botanical information indicates that some weedy annual seeds may have been used for food, whereas, locally available conifers could have provided a source for firewood.

Table 15.10. Flotation sample plant remains from Area 8 at LA 12587.

FS No.	**8876**	**8877**	**8888**
Feature	**Test Pit 3**	**Test Pit 4**	**Test Pit 1**
Cultural Annuals			
Goosefoot	3(3)	3(3)	
Pitseed goosefoot	1(1)	1(1)	
Non-Cultural Annuals			
Goosefoot	+		
Spurge		+	+
Perennials			
Juniper		twig +	+, twig +
Pine			umbo +
Piñon			needle +
Prickly pear cactus		+	

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter.

SUMMARY

Area 8 at LA 12587 contains a large, fairly dense scatter of artifacts. While there was a general scatter of debitage over the entire area, there were distinct concentrations identified during mitigation. Of the total assemblage, 52 percent was chipped stone, 45 percent was ceramics, and less than 1 percent was ground stone. Most of the ceramics were located in the northeastern third of the site and were associated with the midden at the roomblock portion of LA 12587. Ceramic analyses confirm a Coalition period occupation. In contrast, the majority of chipped and ground stone artifacts were found in the southwestern half of the site, in the area thought to represent an Archaic occupation.

The chipped stone assemblage consisted primarily of small obsidian biface-thinning flakes, with a biface and possible Late Archaic dart points; whereas, the ground stone artifacts included possible one-hand cobble mano fragments and metate fragments. The different artifact classes and wide range of obsidian hydration dates recovered within Area 8 support multiple uses of the area, corroborating the initial assertion that LA 12587 was a multi-component site. A Late Archaic point was dated to AD 482±110, which lies within the defined temporal range of the point style. The few botanical items recovered from the test pits indicate that weedy annuals could have been used as food items at the site, although the context is poorly defined.

CHAPTER 16
WHITE ROCK TRACT (A-19): LA 86637

Kari M. Schmidt and Michael D. Kennedy

INTRODUCTION AND SITE SETTING

LA 86637 was identified during the initial pedestrian survey of the White Rock Tract as a fieldhouse surrounded by a dispersed ceramic and lithic artifact scatter. The fieldhouse is located on a small rise above an ephemeral drainage at the mouth of Cañada del Buey, and dominant vegetation in the area includes piñon and juniper trees, with an understory comprised of saltweed, snakeweed, yucca, and various other native grasses, shrubs, and forbs. The site is situated at an elevation of 1973 m (6475 ft). The fieldhouse is located on property owned by San Ildefonso and was not excavated as part of this project. A small portion of the artifact scatter was located just across the San Ildefonso/Los Alamos National Laboratory (LANL) boundary and several test pits were placed on properties that were being transferred from LANL to Los Alamos County. A fairly prominent arroyo that runs east-west is located approximately 5 m south of the artifact scatter. This arroyo joins the larger one that is just north of LA 128803, the grid garden (see Chapter 19, this volume). Large basalt outcrops are located immediately south of the artifact scatter.

SITE DESCRIPTION

The site is comprised of a small one- to two-room fieldhouse situated within a much larger lithic and ceramic artifact scatter. The fieldhouse was not excavated because it was on property owned by San Ildefonso Pueblo. A large percentage of the artifact scatter was also on San Ildefonso property and, as a result, artifacts from only a small portion of the site were collected and test excavations were limited to the most southern portion of the site. Much of the material associated with the fieldhouse appeared to be part of a background scatter that reflected a long period of use over a 45- by 90-m area. The fieldhouse is a small rubble mound measuring 2.5 by 3.7 m in size that was constructed from shaped tuff blocks. The largest of these blocks measures about 80 by 45 cm. The structure itself appears to be in good condition, but has been impacted on the east and west sides by active erosion associated with two small arroyos.

During the initial survey, an in-field analysis was conducted in a 10-m catchment area around the structure. This sample produced a total of 46 artifacts, including a Biscuit B (Bandelier Black-on-gray) sherd, a single obliterated corrugated sherd, and several pieces of Pedernal debitage. Additionally, artifacts were collected from a 10- by 20-m transect. Artifacts in this transect included a few Santa Fe Black-on-white sherds, Wiyo Black-on-white sherds, biscuitwares, a Sankawi Black-on-cream sherd, several Tewa Polychrome sherds, and utilitywares (n = 15). Most of the chipped stone artifacts in the artifact cluster were Pedernal chert and obsidian core flakes, with a few other debitage types. Other materials included two cores, a retouched flake, two projectile points, a one-hand mano, two unmodified quartzite river cobbles, and three

quartzite one-hand manos. The projectile points were both made of obsidian and appeared to be Late Archaic in age.

Only the portion of the site containing the lithic and ceramic scatter was transferred to Los Alamos County, the remainder of this chapter deals only with that area. The portion of the lithic and ceramic scatter of concern to this project is located about 50 m downslope of the fieldhouse. Figure 16.1 shows the plan view of the site and shows which portions were subject to collection.

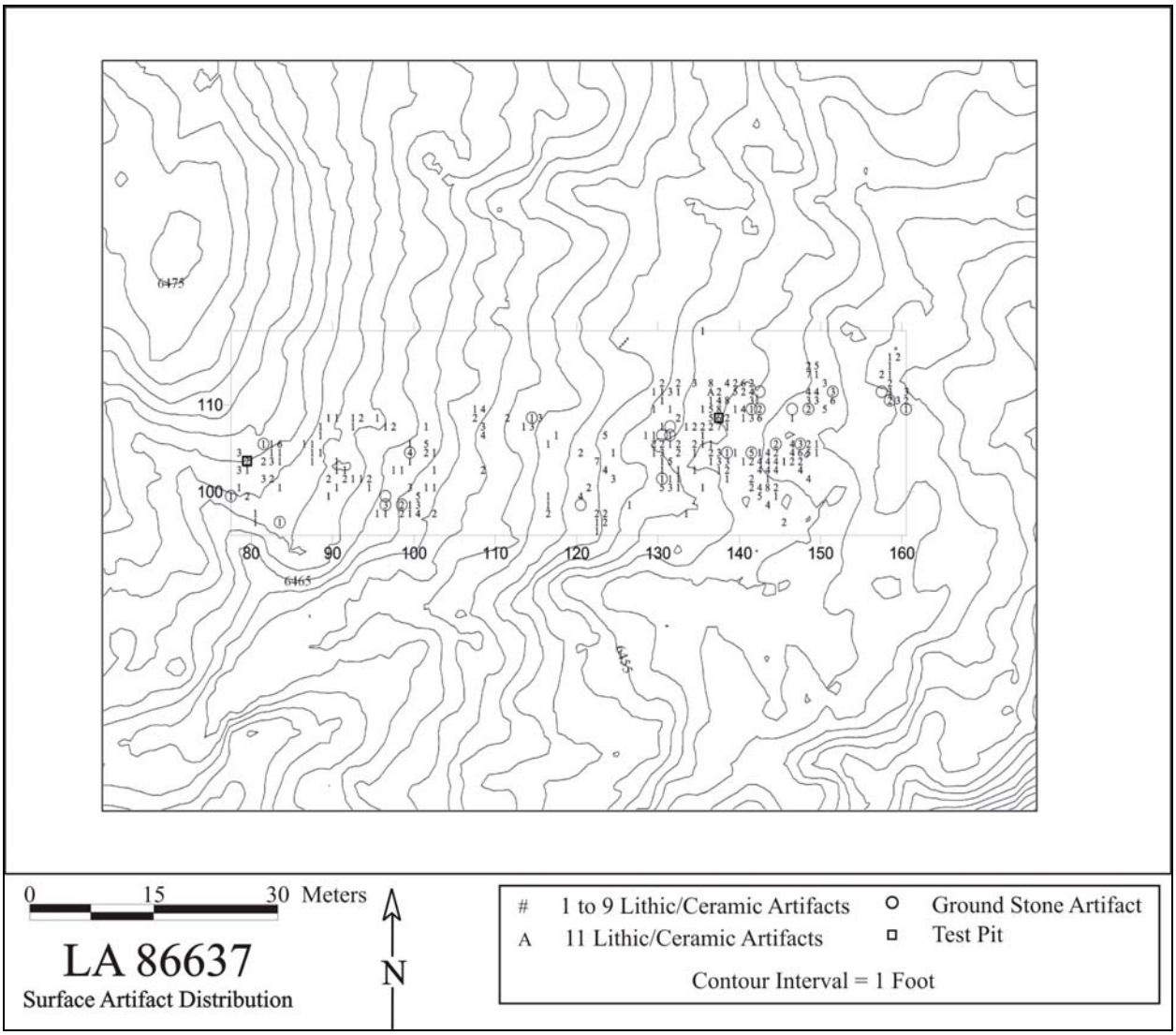


Figure 16.1. Surface artifact distribution at LA 86637.

FIELD METHODS

Fieldwork began at LA 86637 in December of 2002 and continued for just over two weeks. Work began with an initial assessment of the site. The crew walked over the site area, delineating the site boundaries and identifying the presence of artifact concentrations and

features (Figure 16.2). Additionally, with the aid of a GPS unit, the San Ildefonso boundary was delineated and demarcated and no collections were made on the San Ildefonso side of the line. Mitigation of LA 86637 was limited to that portion of the site that lay south of the boundary between San Ildefonso and Los Alamos County. This included an area that was roughly 80 m east-west by 10 to 15 m north-south. The artifacts were located during a pedestrian survey and their locations were marked with pin flags. Once the extent of surface debitage and site limits were delineated, the site was gridded out in 1- by 1-m units. Individual grid units were designated by the horizontal coordinates at their southwest corner. The site datum was established near the center of the artifact scatter at 100N/100E for horizontal control.

Figure 16.2. North-south view of LA 86637.

Surface artifacts from Los Alamos County land were collected, bagged, and provenienced by the square meter. Figure 16.1 shows the distribution of surface artifacts that were collected. A total of 468 lithics, 118 ceramics, and 28 ground stone artifacts were collected. No bone or charcoal samples were recovered. The lithic assemblage included a reworked Late Archaic projectile point, but interestingly, the ceramics included historic Tewa polychrome sherds. In the ground stone assemblage there were several mano and metate fragments that also appeared to be Archaic in form.

Two 1- by 1-m test units were excavated. These units were located in different areas of the scatter with one in the southern portion of the site, where surface rock indicated the possibility of buried deposits, and one near the northern end of the site in an area where an Archaic point was

noted during the original survey. All artifacts from the excavations were collected and recorded and the soils were sampled for flotation and/or pollen from appropriate stratigraphic levels. All fill was screened through 1/8-in. mesh.

STRATIGRAPHY (Paul Drakos and Steve Reneau)

The portion of LA 86637 of concern here contains a lithic and ceramic scatter that probably represents material transported down a colluvial slope from a Classic period fieldhouse. As already mentioned, the fieldhouse lies on San Ildefonso property and is therefore outside the scope of the current undertaking. Because of the extensive erosion in this area, and because the site lies between two channels incised into the colluvial slope, in situ deposits are unlikely. This is confirmed by stratigraphic assessments presented and discussed in the following pages (Table 16.1).

Table 16.1. Stratigraphic sequence used in the field at LA 86637.

LA 86637 STRATIGRAPHIC SUMMARY							
Stratum #	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
1	Test pits 1 and 2	0.10	0.04	0 to 10 cm bgs*	10YR5/3	Loamy sand	Ac Horizon. Loose and massive. Five percent to 10% gravels, no argillans.
2	Test pits 1 and 2	0.21	0.10	10 to 31 cm bgs	7.5YR5/3	Sandy loam	Soft to slightly hard, lots of carbonates, 10% to 20% gravels, BkB horizon, no argillans, discontinuous, effervescent.
3	Test pits 1 and 2	0.15	0.07	31 to 46	7.5YR4/3	Sandy loam	Soft to slightly hard, cicada burrows, 10% to 20% gravels, plastic, effervescent, Bk-B_2 horizon. Boundary is clear and irregular.
4	Test pits 1 and 2	--	0.05	46+	7.5YR6/4	Sandy loam	Small nodules, slightly hard, Bk-B_2 horizon, slightly plastic, less than 10% gravels. Found to bottom of test pit, but stratum may have gone deeper.

*centimeters below ground surface

103N/79E

The soil profile from this unit shows that the test unit has an AC-Bw1b1-Bw2b1-Btkb2 horizon sequence that represents very young colluvium from 0 to 6 cm that overlies post-Coalition period

colluvium that was observed to a depth of 43 cm (Table 16.2; see Appendix K for key). The young colluvium overlies a Pleistocene colluvial soil. Artifacts (lithics and ceramics) scattered throughout the AC, Bw1b1, and Bw2b1 horizons are interpreted to be part of the young colluvial package and therefore are not in archaeological context.

The AC horizon falls between 0 and 10 cm and contained 5 percent to 10 percent gravels. The sediments were a brown loamy sand with a loose consistency. They were strongly effervescent with a clear, but smooth, lower horizon boundary. The Bk1b1 horizon was located between 10 and 31 cm and contained 10 to 20 percent gravels. It was a brown sandy loam, had soft to slightly hard consistency, was strongly to violently effervescent, and had a gradual, smooth lower horizon boundary. The Bk2b1 horizon was located between 31 and 46 cm. It had 10 percent to 20 percent gravels, was a brown sandy loam, had soft to slightly hard consistency, was strongly to violently effervescent, and had a clear, irregular lower horizon boundary. The Bkb2 horizon fell between 46 and 50 cm below the surface. It contained less than 10 percent gravels, was a light brown sandy loam, had a slightly hard consistency, and was violently effervescent.

108N/137E

The soil profile of 108N/137E had an AC-Bwk1b1-Bwk2b1-Bkb2 horizon sequence interpreted to represent deposition of young colluvium from 0 to 10 cm. This layer overlaid 2 to 4 ka colluvium with Stage I carbonate from 10 to 46 cm (Table 16.3; see Appendix K for key). The age estimate for the Bwk horizons with Stage I carbonate was based on comparison with the Fence Canyon borrow pit description, which exhibited a Stage I carbonate with a surface age of approximately 4 ka and an 8 ka age at depth (Reneau and McDonald 1996). The Holocene colluvium overlies a Pleistocene colluvial soil. Ceramics and lithics observed in the upper 10 cm are part of the young colluvial package and are not in archaeological context. Lithics were only observed in the Bwk1b1 horizon and were interpreted to be part of an older (mid- to late-Holocene) colluvial package. The lithics in the Bwk1b1 horizon were apparently reworked from an Archaic site upslope and are therefore likely not in archaeological context at this location.

The AC horizon is between 0 and 6 cm. It contains about 10 percent gravels, is a pale brown loamy sand, has a soft consistency, is strongly to violently effervescent, and has a clear, smooth lower horizon boundary. This stratum is less than 100 years old. The Bw1b1 horizon is between 6 and 15 cm and contains 10 percent gravels. This stratum is a brown sandy loam, has a loose to soft consistency, is strongly to violently effervescent, and has a gradual smooth lower horizon boundary. This stratum is said to be less than 800 years old. The Bw2b1 horizon is found between 15 and 43 cm and has 20 percent gravels. It is a light brown sandy loam, has a soft and slightly plastic consistency, and is strongly effervescent. This stratum has an abrupt, irregular lower horizon boundary and is also thought to be less than 800 years old. The Btkb2 horizon falls between 43 and 50 cm and has 10 percent gravels. It is light reddish brown and is a sandy clay loam. It has a soft to slightly hard consistency, and is strongly effervescent.

Table 16.2. Stratigraphy in unit 103N/79E.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Preliminary Age Estimate	Notes
AC	0-10	5-10	10YR5/3	10YR4/3	ls	m	lo	so,po	n.o.	es-ev	-	cs	<100 yrs	
Bk1b1 (Bwklb1)	10-31	10-20	7.5YR5/3	7.5YR4/3	sl	1msbk	so-sh	ss,ps	n.o.	es-ev	I-	gs	<4 ka (2-4 ka?)	cicada burrows, sh-h w/ discontinuous $CaCO_3$ coatings
Bk2b1 (Bwk2b1)	31-46	10-20	7.5YR5/3	7.5YR4/3	sl	1-2msbk	so-sh	so,po	n.o.	es-ev	I-	ci		cicada burrows, discontinuous $CaCO_3$ coatings on burrows & gravel
Bkb2	46-50	<10	7.5YR6/4	7.5YR6/4	sl	2msbk	sh	so,po	n.o.	ev	II	-	late Pleistocene	$CaCO_3$ filaments, small nodules

Table 16.3. Stratigraphy of 108N/137E.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Preliminary Age Estimate	Notes
AC	0-6	10	10YR6/3	10YR4/3	ls	1m pl	so	so,po	n.o.	es-ev	-	cs	<100 yrs	young colluvium, post-lab?
Bw1b1	6-15	10	8.5YR5/3	10YR4/3	sl	1msbk	so-lo	so,po	n.o.	es-ev	-	gs	<800 yrs	ceramics and lithics scattered throughout AC, Bw1b1, and Bw2b1 horizons
Bw2b1	15-43	20	7.5YR6/3	7.5YR4/3	sl	1msbk	so-lo	so,ps	n.o.	es	-	ai		contains small chunks of older soil
Btkb2	43-50+	10	5YR6/4	5YR4/4	scl	2-3msbk	so-sh	ss,ps	1-2nbrpo	es	I+	-	middle to late Pleistocene	abundant filaments; 100-200k soil

SITE EXCAVATION

Excavations at LA 86637 were conducted in December of 2002. The crew consisted of Kari Schmidt (crew chief), Mia Jonsson, Mike Kennedy, Timothy Martinez, and Marjorie Wright. In addition to surface collection, personnel excavated two 1- by 1-m units, one each located in the eastern and western portions of the site. These units were excavated in arbitrary stratigraphic levels. The excavation units were placed about 50 m apart in areas with the highest density of surface artifacts. Therefore, no central site datum was used, rather vertical measurements were taken as centimeters below ground surface at each of the two test units.

103N/79E

103N/79E was located in the western portion of the artifact scatter in an area where an Archaic projectile point was identified during the original survey of the site. The unit was located above a shallow arroyo running through the site, about 5 m south of the San Ildefonso property boundary. From the surface down to about 30 cm below ground surface, the soil was silty sand, with gravels being at about 5 percent to 10 percent in the top 10 cm of fill and increasing to about 10 percent to 20 percent, with a few specks of $CaCO_3$ appearing by 30 cmbgs. From 30 to 40 cm below ground surface the amount of silt and $CaCO_3$ increased. In the top 10 cm of fill, there were six pieces of debitage and two ceramics recovered, mostly from the upper half of the level. Five pieces of debitage were found from 10 to 20 cm below ground surface, six pieces of debitage from 20 to 30 cm below ground surface, and three pieces of debitage from 30 to 40 cm below ground surface. The debitage were mostly obsidian, with some chalcedony or Pedernal chert, and the ceramics were dominated by biscuitwares and utilitywares (see Table 16.4).

Two pollen samples (Field Specimen [FS] 274 and FS 275) and flotation samples (FS 272 and FS 273) were collected. Taxa identified in the pollen samples include prickly pear (*Opuntia*), buckwheat (*Eriogonum*), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), unidentified pine (*Pinus*), piñon pine (*Pinus edulis*), juniper (*Juniperus*), rose family (Rosaceae), sagebrush (*Artemisia*), cheno-ams, and unidentified grasses (Poaceae). Taxa identified in the flotation samples were all uncharred and included juniper, unidentified pine, and piñon pine. No macrobotanical samples were identified during the excavations. Figure 16.3 shows 103N/79E looking north along the boundary of Los Alamos County and San Ildefonso properties.

Figure 16.3. 103N/79E, looking north.

108N/137E

This unit was located in the southeastern portion of the site where it was thought a possible buried feature was located. The top few centimeters of this unit were covered by pine duff and loose sand. The tuff rocks originally thought to be of possible cultural origin turned out to be merely sitting atop the surface, with no underlying structure. The top 20 to 25 cm of fill was a clayey-sandy loam with about 20 percent pea gravels. Below this and down to about 50 cm the silt was more of a silty, sandy loam with about 10 percent pea gravels and some broken tuff that appeared to be from bedrock. Artifacts recovered from this test unit included four pieces of debitage from the top 4 cm of fill and 23 pieces of debitage from 4 to 50 cm. The debitage were mostly obsidian, with some chalcedony, Pedernal chert, and basalt.

Two pollen samples (FS 276 and FS 277) and flotation samples (FS 270 and FS 271) were collected. Taxa identified in the pollen samples include the following: maize (*Zea mays*), beeweed (*Cleome*), sunflower family, ragweed/bursage, spurge family, evening primrose (Onagraceae), unidentified pine, juniper, oak (*Quercus*), rose family, sagebrush, cheno-ams, and unidentified grasses. Identified taxa in the flotation samples were all uncharred and included juniper, unidentified pine, piñon pine, and ponderosa pine (*Pinus ponderosa*). Figure 16.4 shows both of the excavated units in profile. The stratigraphy depicted in this figure is based on what excavators described during excavation; it does not depict the more complicated nature of the sediments described by Drakos and Reneau in the previous section.

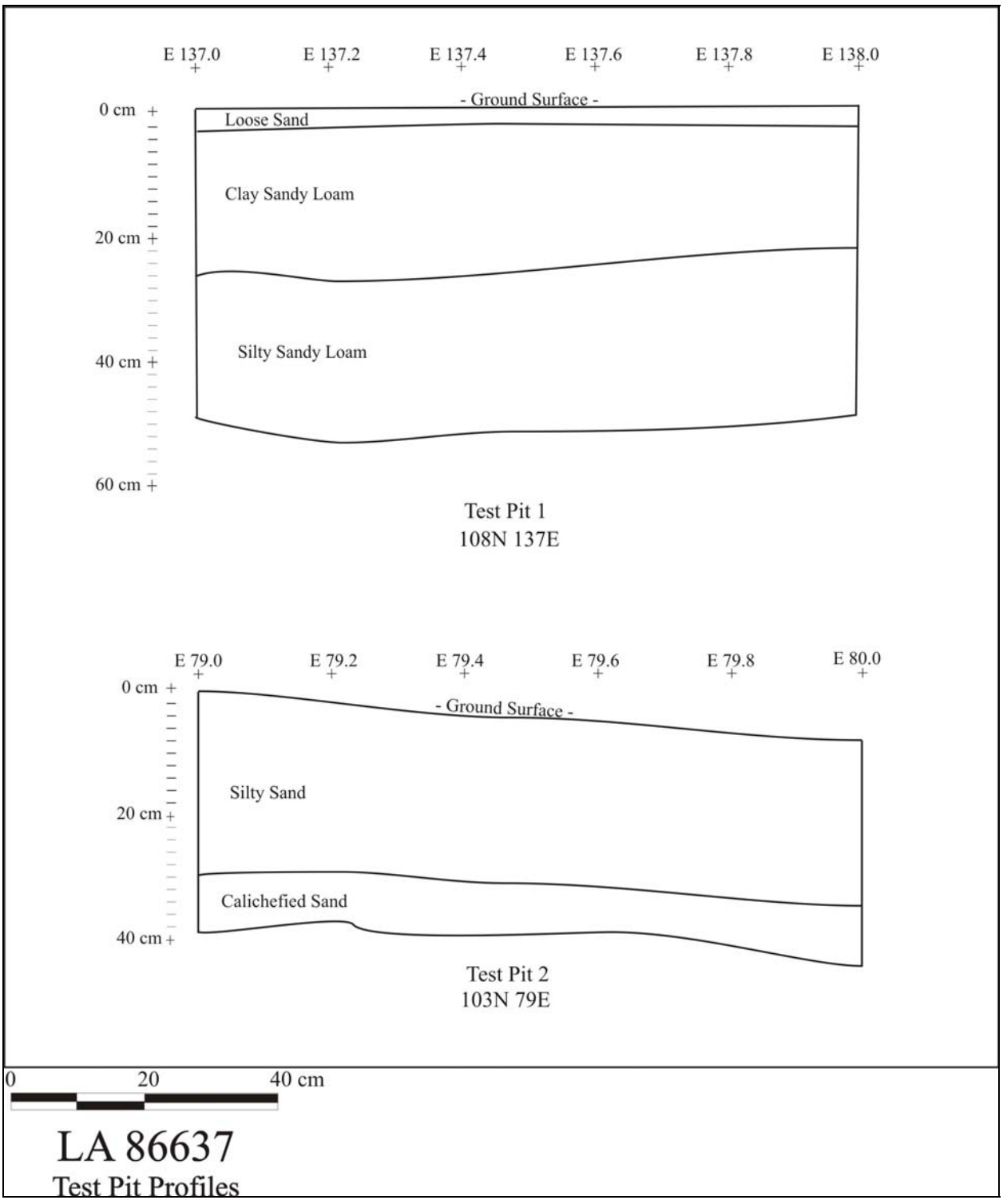


Figure 16.4. Soil profiles from LA 86637.

SITE CHRONOLOGY AND ASSEMBLAGE

Some 650 total artifacts were recovered from excavations at LA 86637 and all recovered artifacts were analyzed. Analyses of the ceramics, lithics (chipped and ground stone), archaeobotanical, and palynological materials were conducted. No faunal remains or vegetal remains were recovered during excavations, and no radiocarbon dates were submitted due to a lack of organic materials; however, obsidian artifacts were submitted for hydration dating. Results of analyses are presented in the following sections.

Obsidian Hydration

Ten obsidian artifacts from LA 86637 were submitted to Diffusion Laboratory for age determination using the obsidian hydration method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rind, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 16.4).

Table 16.4. Obsidian hydration dates for LA 86637.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
2	2003-100	Cerro Toledo	3.91	-2215	216
11-2	2003-101	Valle Grande	3.79	-2015	212
11-1	2003-102	Cerro Toledo	4.74	-3996	254
18	2003-103	Valle Grande	3.63	-1710	205
86-1	2003-104	Cerro Toledo	3.24	-880	177
86-2	2003-105	Valle Grande	4.07	-2726	233
181	2003-106	Cerro Toledo	N/A		
230	2003-107	El Rechuelos	3.05	-699	177
245	2003-108	Cerro Toledo	4.68	-3991	257
S#3	2003-109	Cerro Toledo	3.67	-1567	194

The obsidian hydration dates provide a wide range from 3996 to 699 BC. On the other hand, a possible Late Archaic point was dated to 1567 BC. It is heavily reworked with a concave base and could reflect an Armijo (or San Jose) style point. Nonetheless, the dates appear to reflect both Middle and Late Archaic occupations.

Ceramics (Dean Wilson)

The distributions of ceramic types documented during the analysis of 110 sherds from the fieldhouse and artifact scatter at LA 86637 indicate a Late Coalition and Early Classic period assemblage (Table 16.5).

Table 16.5. Ceramic types from LA 86637.

Ceramic Type	Frequency	Percent
Unpainted undifferentiated	17	18.5
Indeterminate organic paint	1	1.1
Santa Fe Black-on-white	5	6.4
Biscuitware painted unspecified	22	23.9
Unpainted Biscuitware (slipped one side)	2	2.2
Biscuit A (Abiquiu Black-on-gray)	3	3.3
Biscuit B (Bandelier Black-on-gray)	2	2.2
Biscuit B/C	2	2.2
Unknown gray rim	2	2.2
Plain gray body	11	12.0
Indented corrugated	5	5.4
Plain corrugated	1	1.1
Smeared plain corrugated	3	3.3
Smeared-indented corrugated	7	7.6
Glaze red body unpainted	2	2.2
Los Padillas glaze polychrome	1	1.1
Total	**110**	**100.0**

A fairly late date is reflected by distributions of decorated whiteware types that make up 70.9 percent of the pottery from this site. All the whitewares exhibit tuff temper, pastes, and styles indicative of Rio Grande (or Tewa) tradition types (Tables 16.6 and 16.7). The majority of whitewares consist of jar forms (Table 16.8), and this dominance of whiteware jars may partly reflect the influence of only a few vessels. Decorated whiteware assemblages from all major contexts are dominated by Biscuitware types with Biscuit B (Bandelier Black-on-gray), Biscuit A (Abiquiu Black-on-gray), and some Santa Fe Black-on-white sherds.

Table 16.6. Tradition by ware for ceramics from all contexts.

Tradition	Ware			Total
	Gray	White	Glaze	
Northern Rio Grande (Prehistoric)	29	78	--	107
Middle Rio Grande	--	--	3	3
Total	**29**	**78**	**3**	**110**

Table 16.7. Temper by ware for all contexts.

Temper	Ware						Total	
	Gray		White		Glaze			
Indeterminate	1	3.4	--	--	--	--	1	0.9
Granitic (mica, quartz, and feldspar)	12	41.4	1	1.3	--	--	13	11.8
Fine tuff or ash	--	--	68	87.2	--	--	68	61.8
Gray crystalline basalt	--	--	--	--	3	100.0	3	2.7
"Anthill" sand	16	55.2	--	--	--	--	16	14.5
Mica and tuff	--	--	2	2.6	--	--	2	1.8
Tuff and phenocrysts ("anthill" sand)	--	--	7	9.0	--	--	7	6.4
Total	**29**	**100.0**	**78**	**100.0**	**3**	**100.0**	**110**	**100.0**

An Early Classic period association is also supported by the presence of glazewares, which represent 2.7 percent of the pottery from this site. Glazeware types noted include red slipped body and Los Padillos Polychrome that dates to the 14th century. All of these sherds are tempered with basalt (Table 16.7) commonly found in pottery produced in areas of the Middle Rio Grande to the south.

Gray utilityware types consist of 26.4 percent of the pottery from this site and indicate similar trends. The graywares show a fairly even mix of anthill sand and micaceous granite temper (Table 16.7). Surface manipulations are about equally divided between plain and smeared corrugated forms.

Table 16.8. Form by ware for LA 86637 ceramics.

Vessel Form	Ware						Total	
	Gray		White		Glaze			
Indeterminate	2	6.9	6	7.7	--	--	8	7.3
Bowl rim	--	--	4	5.1	--	--	4	3.6
Bowl body	--	--	15	19.2	1	33.3	16	14.5
Jar neck	3	10.3	19	24.4	--	--	22	20.0
Jar rim	2	6.9	2	2.6	--	--	4	3.6
Jar body	22	75.9	32	41.0	--	--	54	49.1
Body sherd polished int-ext	--	--	--	--	2	66.7	2	1.8
Total	**29**	**100.0**	**78**	**100.0**	**3**	**100.0**	**110**	**100.0**

The combination of decorated and utilityware pottery from LA 86637 is consistent with a component dating to the Early Classic period, spanning from circa AD 1300 to 1400. The five Santa Fe Black-on-white sherds are consistent with a Late Coalition period component.

Chipped and Ground Stone (Bradley Vierra and Michael Dilley)

Material Selection

A total of 533 lithic artifacts were analyzed from LA 86637, consisting of five cores, 244 pieces of debitage, five retouched tools, and 26 ground stone items. This represents a 100 percent sample of the lithic artifacts recovered during the site excavations. Table 16.9 presents the data on lithic artifact type by material type. The majority of the debitage is made of obsidian, with some chalcedony, basalt, and Pedernal chert materials. The presence of cortex on 10.9 percent of the debitage indicates that the materials were collected from both secondary waterworn (52.8%) and primary nodule sources. The obsidian is present at nearby sources in the Jemez Mountains, whereas, the chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources and the basalt from local bedrock outcrops. Otherwise, the ground stone artifacts are made of local igneous materials, with quartzite and sandstone. The source of the sandstone is difficult to determine, but it could have been derived from gravel formations near Totavi or more distant sources in the Santa Fe or Abiquiu areas.

Table 16.9. LA 86637 lithic artifact type by material type.

Artifact Type		Material Type												
		Basalt	Vesicular Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Pedernal	Quartzite	Sandstone	Other	Total
Cores	Core	0	0	0	0	0	0	2	5	0	0	0	0	7
	Subtotal	0	0	0	0	0	0	2	5	0	0	0	0	7
Debitage	Angular debris	2	0	1	0	0	0	18	32	3	0	0	0	56
	Core flake	27	0	0	2	0	0	104	78	14	0	0	1	226
	Biface flake	6	0	1	0	0	0	111	10	1	0	0	0	129
	Core trimming flake	0	0	0	0	0	0	0	3	0	0	0	0	3
	Op. core flake	0	0	0	0	0	0	1	0	0	0	0	0	1
	Outrepasse	0	0	0	0	0	0	3	0	0	0	0	0	3
	Hammerstone flake	0	0	0	0	0	0	0	0	0	1	0	0	1
	Microdebitage	1	0	0	0	0	0	39	5	1	0	0	0	45
	Undetermined flake	1	0	0	0	0	0	14	2	1	0	0	1	19
	Subtotal	37	0	2	2	0	0	290	130	20	1	0	1	483
Re-touched Tools	Retouched piece	0	0	0	0	0	0	1	3	0	0	0	0	4
	Biface	0	0	0	0	0	0	1	0	0	0	0	0	1
	Projectile point	0	0	0	0	0	0	3	0	0	0	0	0	3
	Uniface	0	0	0	0	0	0	0	0	1	0	0	1	2
	Composite Tool	0	0	0	0	0	0	1	1	0	0	0	0	2
	Subtotal	0	0	0	0	0	0	6	4	1	0	0	1	12

Artifact Type		Material Type												
		Basalt	Vesicular Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Pedernal	Quartzite	Sandstone	Other	Total
Ground Stone	One-hand mano	0	1	0	0	1	1	0	0	0	4	1	0	8
	Undetermined mano fragment	0	1	0	0	0	0	0	0	0	0	0	0	1
	Grinding slab	0	0	0	0	0	0	0	0	0	0	1	0	1
	Undetermined metate fragment	1	2	0	0	0	2	0	0	0	0	1	0	6
	Undetermined ground stone	1	0	0	1	3	0	0	0	0	4	1	0	10
	Subtotal	2	4	0	1	4	3	0	0	0	8	4	0	26
Other	Manuport	0	0	0	0	0	0	1	0	0	0	0	1	2
	Fire-cracked rock	0	0	0	0	0	0	0	0	0	2	0	0	2
	Subtotal	0	0	0	0	0	0	1	0	0	2	0	1	4
Total		**39**	**4**	**2**	**3**	**4**	**3**	**299**	**139**	**21**	**11**	**4**	**3**	**533**

Seventeen pieces of debitage, one core, and two projectile points were submitted for X-ray fluorescence analysis (Table 16.10). Analyses show that the majority of the artifacts were obtained from the Cerro Toledo source, with three from the Valle Grande and four from the El Rechuelos source areas (see Shackley, Volume 3). The Cerro Toledo (Rabbit Mountain/Obsidian Ridge) and Valle Grande (Cerro del Medio) source areas are located about 15 km (10 miles) as the "crow flies" to the southwest and west of the site, while the El Rechuelos (Polvadera Peak) source area is situated about 30 km (19 miles) to the northwest.

Table 16.10. Obsidian source samples from LA 86637.

FS #	Artifact	Color	Source
S#3	Projectile point	Translucent	Cerro Toledo rhyolite
2	Projectile point	Translucent	Cerro Toledo rhyolite
7	Debitage	Black dusty	El Rechuelos
8-1	Debitage	Translucent	Cerro Toledo rhyolite
8-2	Debitage	Translucent	Cerro Toledo rhyolite
9	Debitage	Black dusty	El Rechuelos
11-1	Debitage	Gray	Cerro Toledo rhyolite
11-2	Core	Translucent	Cerro Toledo rhyolite
17	Debitage	Translucent	Cerro Toledo rhyolite
18	Debitage	Gray	Cerro Toledo rhyolite
73	Debitage	Black opaque	Cerro Toledo rhyolite
82	Debitage	Black dusty	El Rechuelos
84-1	Debitage	Gray	Cerro Toledo rhyolite

FS #	Artifact	Color	Source
84-2	Debitage	Translucent	Cerro Toledo rhyolite
86-1	Debitage	Black opaque	Cerro Toledo rhyolite
86-2	Projectile Point	Translucent	Valle Grande rhyolite
88	Debitage	Black dusty	El Rechuelos
97-1	Debitage	Black opaque	Cerro Toledo rhyolite
97-2	Debitage	Translucent	Cerro Toledo rhyolite
138	Debitage	Black opaque	Cerro Toledo rhyolite
181	Debitage	Translucent	Valle Grande rhyolite
230	Debitage	Black dusty	El Rechuelos
245	Debitage	Black opaque	Cerro Toledo rhyolite
248	Debitage	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The cores were reduced using single-directional/single-face, bidirectional/opposed-different-face, and multi-directional/globular technique. Figure 16.5 illustrates the multi-directional core. Two cores were produced on large flake blanks and another was identified as a core fragment. Three of the cores were broken due to material flaws, two were exhausted, one was considered still useable and reason for discard was undetermined for the core fragment. Table 16.11 presents the metric information on these cores.

Table 16.11. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Single-directional	28	37	38	38.8
Bi-directional	52	90	45	227.6
Multi-directional	67	55	50	201.5
Multi-directional	27	26	17	8.3
Flake core	35	45	18	24.6
Flake core	23	63	47	73.2

The debitage mainly consists of core flakes (46.7%) and biface flakes (26.7%), with some angular debris, microdebitage, and other items. Table 16.12 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. An overall cortical:noncortical ratio of 0.22 reflects an emphasis on the later stages of core reduction.

Table 16.12. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	0	7	1	---
Obsidian	0	1	2	5	0.14
Chalcedony	0	4	9	2	0.36
Pedernal chert	0	1	1	0	0.50

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Total	0	6	19	8	0.22
Percentage	0	18.1	0.50	21.0	---

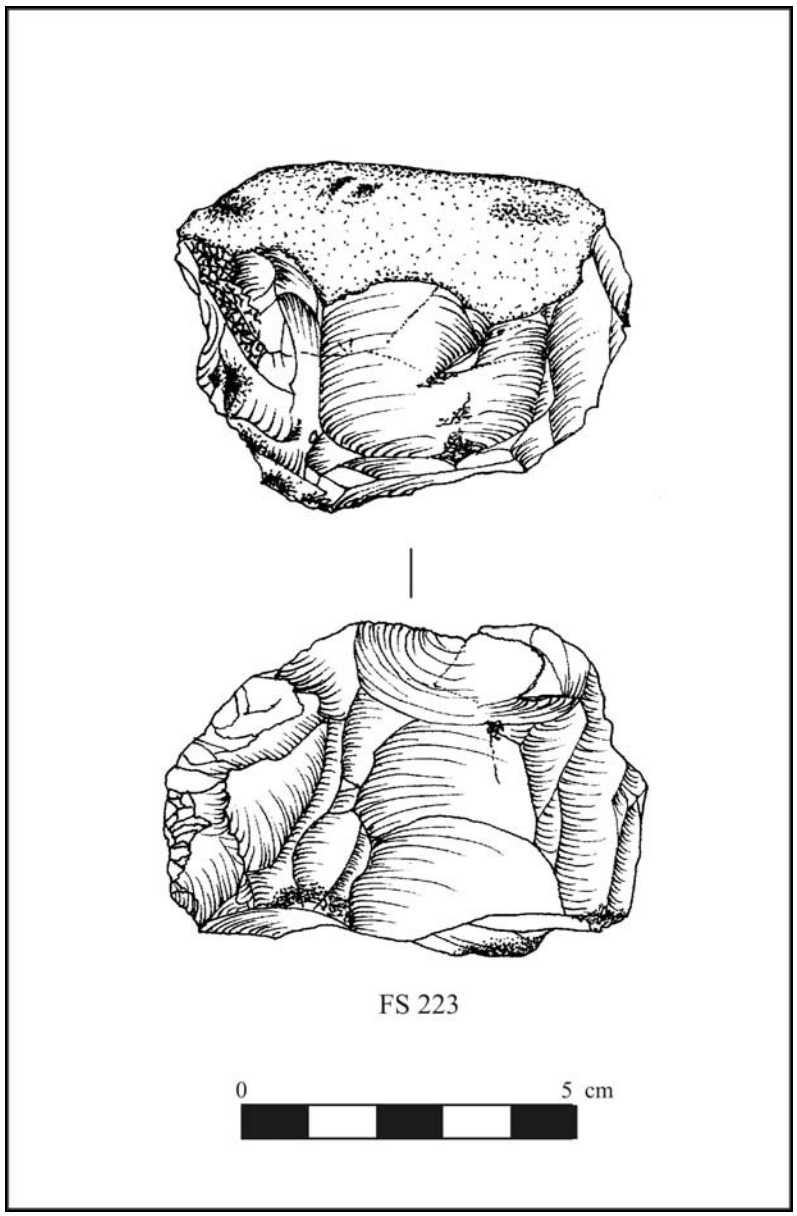


Figure 16.5. Multi-directional core (top and side).

The majority of the flakes exhibit single platforms (48.4%; *n* = 38), with cortical (*n* = 9), dihedral (*n* = 3), multi-faceted (*n* = 6), collapsed (*n* = 15), and crushed (*n* = 18) platforms as well. Thirty six (36.6%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed, retouched/abraded (*n* = 7), and ground (*n* = 1).

The majority of the core flakes consist of distal fragments (*n* = 125; 55.3%), with fewer whole (*n* = 30), proximal (*n* = 27), midsection (*n* = 42), lateral (*n* = 1), and undetermined flake (*n* = 1) fragments. Most of the biface flakes are also midsection fragments (*n* = 43; 41.0%), with fewer whole (*n* = 9), proximal (*n* = 33), and distal (*n* = 44) fragments. The whole core flakes have a mean length of 27.0 mm (*std* = 8.9), whereas, the whole biface flakes exhibit a mean length of 21.7 mm (*std* = 8.5). Lastly, angular debris have a mean weight of 6.2 g (*std* = 8.8).

The retouched tools mostly consist of formal tools like bifaces, projectile points, and unifaces, with some expedient tools like retouched pieces. The retouched pieces primarily exhibit marginal retouch along a single edge, with one having two retouched edges. Table 16.13 presents the information on retouch type by edge outline. Two other expedient tools were also identified. One is a retouched piece/perforator and the other is a notch or denticulate.

Table 16.13. Retouched pieces from LA 86637.

Retouch Type	Edge Outline						
	Straight	Concave	Convex	Straight/ concave	Straight/ convex	Concave/ convex	Projection
Unidentified ventral	1	0	0	0	0	0	0
Unidentified dorsal	0	0	1	2	0	0	0
Bidirectional	1	0	0	0	0	0	0
Total	**2**	**0**	**1**	**2**	**0**	**0**	**0**

The biface is whole and irregularly shaped. It has a thickness of 7 mm and edge angle of 55 degrees, indicating that it was discarded at the early to middle stage of the reduction process. The projectile points appear to be Late Archaic dart points with neck widths of 9 to 17 mm. Two are corner-notched and one is a stemmed point. One of the corner-notched points has a broken tip and the other two points have heavily resharpened blades. Metrical and descriptive information on the projectile points is presented in Table 16.14 and illustrated in Table 16.13 and Figure 16.6.

Table 16.14. Projectile point metrical (mm) and descriptive data.

FS	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (gm)	Haft Type	Blade Shape	Base Shape
S3	Obsidian	Whole	20	13	17	7	22	5	2.1	Stemmed	Straight	Concave
2	Obsidian	Whole	18	13	9	5	14	3	0.9	Corner-notched	Straight	Straight

FS	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (gm)	Haft Type	Blade Shape	Base Shape
86	Obsidian	Proximal	--	--	13	8	17	4	2.7	Corner-notched	Straight	Straight

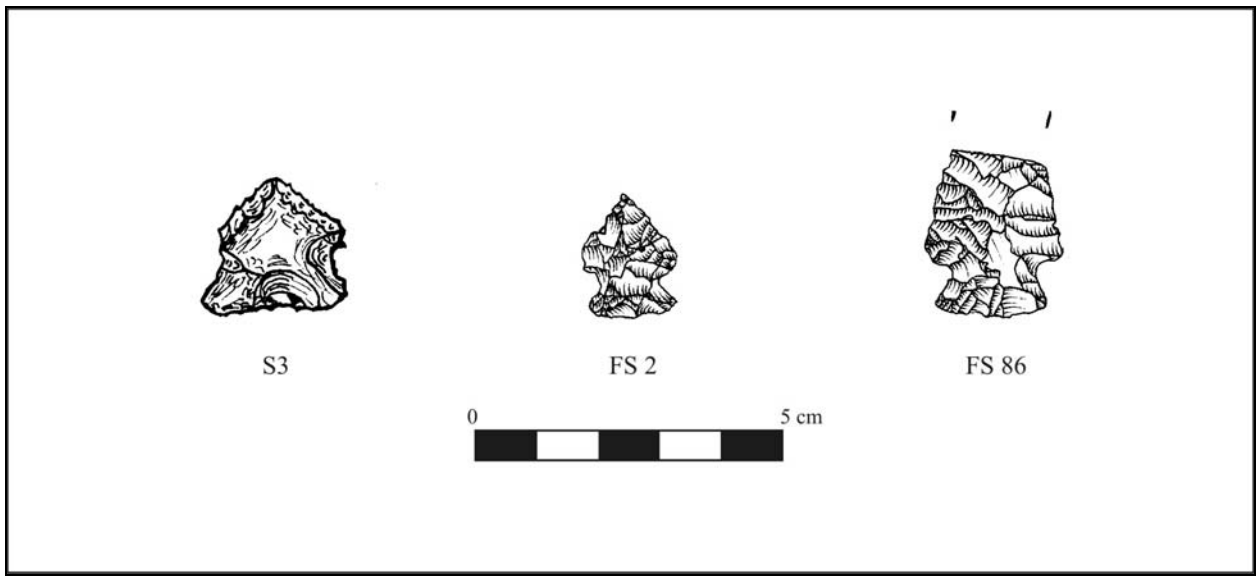


Figure 16.6. Projectile points.

Tool Use

Only six flakes (1.2%) exhibit evidence of damage that could be attributed to use-wear**.** Three have straight and one has a convex lateral edge with angles ranging from 20 and 70 degrees, whereas, the fifth was utilized on an end with a straight outline and angle of 25 degrees. The sixth flake exhibits a utilized projection.

Three of the retouched pieces exhibit rounding/scarring use-wear and the proximal projectile point fragment may have an impact fracture.

A large number of ground stone items were present in this assemblage. The one-hand manos are all cobbles with one or two grinding surfaces. The grinding slab is a tabular piece of sandstone that is ground on both surfaces, which may actually represent a millingstone fragment. The undetermined metate fragments mostly consist of burned tabular pieces of possible millingstones, whereas, the undetermined ground stone fragments are small pieces of tabular or cobble materials. Many of these also exhibit evidence of burning.

Archaeobotanical Remains (Pamela McBride)

One unidentifiable plant part fragment was the sole cultural plant remains recovered from LA 86637 (Table 16.15). The balance of the floral assemblage was unburned conifer duff, including twigs, needles, cones, and bark. This artifact scatter appeared to contain components dating from the Late Archaic, Coalition, and Classic periods and was also associated with a Classic period fieldhouse. The paucity of cultural plant remains is not surprising given the secondary nature of the deposits.

Table 16.15. Flotation sample plant remains from Test Pits 1 and 2.

Feature	Test Pit 1 108N/137E		Test Pit 2 103N/79E	
	stratum 2, level 2	stratum 3, level 2	stratum 1, level 1	stratum 2, level 4
Cultural Other				
Unidentifiable		pp 1(0)		
Non-Cultural Perennials				
Juniper	twig +	twig +	♀ cone +, twig +	twig +
Pine	♂ cone +	bs +	♂ cone +	
Piñon	needle +	needle +	needle +	needle +
Ponderosa pine	needle +			

Cultural plant remains are charred, non-cultural plant remains are uncharred.
+ 1-10/liter, bs barkscale, cf. compares favorably.

Pollen Remains (Susan J. Smith)

Three pollen samples were analyzed from LA 86637. Table 16.16 lists the frequency of identified pollen types. No cultigens were identified in the assemblage. Economic resources identified in the pollen assemblage included only prickly pear. A number of other potential economic resources were identified in the assemblage (Table 16.16), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 16.16. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86637 (*n* = 3)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86637 (*n* = 3)
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	2
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds,	Cheno-Am	Cheno-Am	3

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86637 (*n* = 3)
Herbs, Shrubs		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	2
		Sunflower Family Aggregates	1
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	1
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	1
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	0
	Pinus	Pine	1
		Pine Aggregates	0
	Pinus edulis type	Piñon	2
	Juniperus	Juniper	3
		Juniper Aggregates	0
	Quercus	Oak	0
	Rhus type	Squawbush type	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86637 (*n* = 3)
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	0
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	2
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

The artifact assemblage at LA 86637 appears to represent a multi-component site. The projectile points and obsidian hydration dates indicate a possible Middle to Late Archaic component. In contrast, the ceramic assemblage may in part be associated with a nearby Early Classic period fieldhouse (Biscuitwares), with some sherds dating to the Late Coalition period. However, since both the surface as well as the subsurface artifacts appear to be located in a secondary context, it is probable that the majority of the assemblage originated from upslope and was subsequently deposited across the colluvial fan.

CHAPTER 17
WHITE ROCK TRACT (A-19): LA 127625

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

LA 127625 (K-170) is a dispersed artifact scatter situated in a low-lying, flat area just east of the mouth of Cañada del Buey. Some 40 m west of the scatter, the flat lowland gives way to the talus slope of the adjacent mesa. The local vegetation includes juniper, ponderosa pine, prickly pear, sage, and various grasses. The site is situated at an elevation of 1951 m (6400 ft) and is immediately below an electrical substation. Figure 17.1 shows the general site layout.

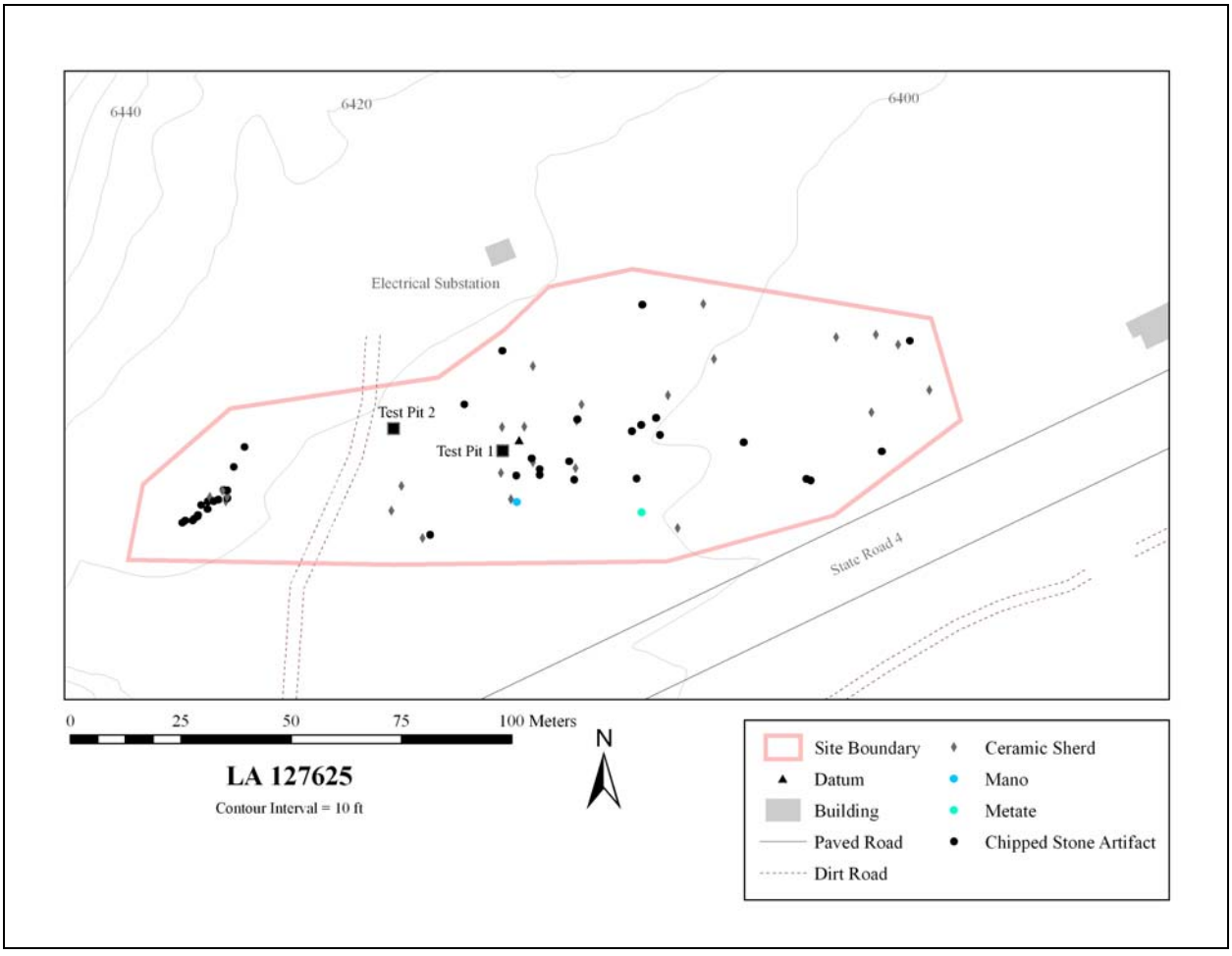


Figure 17.1. General overview of LA 127625.

SITE DESCRIPTION

The artifact scatter is distributed over a 190-m east-west by 65-m north-south area. An in-field analysis was conducted during the initial recording of the site. During this analysis, information was collected on approximately 50 percent of all flagged artifacts (n = 140), which are shown in Figure 17.1. Santa Fe Black-on-white ceramics comprised 34 percent of the total ceramic assemblage and smeared-indented and indented corrugated sherds accounted for another 36 percent. Lesser amounts of undefined redwares and Sankawi Black-on-cream were also present, along with a very small number of miscellaneous sherds. Lithic materials were mostly Pedernal chert with lesser amounts of black translucent and opaque brown Jemez obsidian and Polvadera Peak obsidian. A few pieces of basalt and rhyolite debitage were also present. Most of the chipped stone artifacts at LA 127625 were core flakes or pieces of angular debris. One small projectile point fragment was located but was too fragmentary to be identified. A rhyolite milling stone was also recorded during the analysis. Based on the artifact assemblage recorded during the initial phase of this project, the site was thought to date to the Coalition period.

FIELD METHODS

Due to the sparseness of the artifacts at LA 127625 and to their secondary depositional context in colluvium, a site grid was not established. Rather, the site was mapped by acquiring a Global Positioning System (GPS) location for each of the collected artifacts. First, all surface artifacts were located during an intensive pedestrian survey and all identified artifacts were marked with pin flags. Subsequent to this activity, each artifact in the surface assemblage was collected, bagged, and recorded with the GPS unit. Figure 17.2 shows the crew locating and recording the artifacts.

The location of the original site datum, two excavated pits (see below), and a geomorphological pit were also recorded with the GPS unit. A total of 56 lithics, 28 ceramics, and two pieces of ground stone were identified and collected. The lithics found at the site were a mixture of obsidian, chert, and basalt (see results of analysis later in this chapter). The ceramics were a mix of biscuitwares and utilitywares. The ground stone remains included a cobble metate fragment and a one-handed mano fragment.

The artifacts recovered during the surface collection were submitted for analysis. Utilitywares formed the bulk of the ceramic assemblage comprising some 55 percent (Table 17.1). These consist of indented corrugated (3.6%), smeared plain corrugated (21.4%), and plainwares (28.6 %). The majority of decorated ceramics from the surface assemblage were biscuitwares, with lesser amounts of glazewares.

Figure 17.2. Collection of surface artifacts at LA 127625.

Table 17.1. Ceramic types from LA 127625.

Ceramic Types	Frequency	Percent
Northern Rio Grande Whitewares		
Unpainted undifferentiated	3	10.7
Indeterminate organic paint	2	7.1
Biscuitware, slipped both sides	2	7.1
Biscuitware, painted unspecified	2	7.1
Biscuitware, slipped one side	1	3.6
Biscuit B (Bandelier Black-on-gray)	1	3.6
Biscuit B/C body	1	3.6
Northern Rio Grande Utilitywares		
Plain gray body	8	28.6
Indented corrugated	1	3.6
Smeared plain corrugated	6	21.4
Middle Rio Grande Glazeware		
Glaze red body unpainted	1	3.6
Total	**28**	**100.0**

Based on the collection of surface artifacts, two concentrated artifact areas were identified. One was near the site datum in the center of the scatter, and the other was near the geomorphological pit used during the pre-project soil assessment. Two test units were excavated at the site, one in each concentration. These units were designated as Test Pit 1 (near the site datum) and Test Pit 2 (near the geomorphologic test pit). Units were dug in 10-cm levels to a depth of 50 cm. No artifacts were recovered in the subsurface testing.

STRATIGRAPHY (Paul Drakos and Steve Reneau)

The artifacts recovered at LA 127625 are scattered in an area of thick, late-Holocene colluvium with little soil development (Table 17.2). The colluvium at the site post-dates the Ancestral Puebloan occupation in the area, and the cultural material was likely transported to the site in runoff episodes from nearby slopes and mesa top sites. The cultural material recovered at the site is therefore not in its original archaeological context.

Table 17.2. Stratigraphic sequence used during excavation at LA 127625.

LA 127625 Stratigraphic Summary							
Stratum	**Prov.**	**Maximum Thickness**	**Minimum Thickness**	**Elev.**	**Color**	**Texture**	**Comments**
1	Test pits 1 and 2	0.10	0.04	0–10 cm bgs	10YR5/4	Silty sand	Very thin stratum of silty sand. Also a lot of duff and other vegetal matter. Very recent colluvium.
2	Test pits 1 and 2	0.40	0.20	4–50 cm bgs	10YR4/4	Sandy loam	Sandy loam with slightly more inclusions than Stratum 1 including pebbles and artifacts. No mottles. Lower boundary not identified. Thick layer of colluvium.

SITE EXCAVATION

Excavations at LA 127625 were undertaken by Kari Schmidt (crew chief), Mia Jonsson, Mike Kennedy, Timothy Martinez, and Marjorie Wright. As already mentioned, two test pits were dug at this site. The first, Test Pit 1, was located near the center of the site. The surface of this unit consisted of sparse vegetation and pine duff, which continued down only a couple of centimeters or so. Below this the soil was a sandy loam down to at least 45 cm, where excavations ceased because no artifacts were recovered. Test Pit 2 was located in an area that was free of pine duff, so the soil was a sandy loam from start to finish. The only variation in this soil was the presence of some $CaCO_3$ from 35 to 40 cm below the ground surface. As with the other test pit, no subsurface artifacts were found. Figure 17.3 shows both excavated pits in profile.

SITE CHRONOLOGY AND ASSEMBLAGE

Only 86 artifacts were recovered during excavation and recording activities at LA 127625, and all artifacts were analyzed. Analyses of the ceramics, lithics (chipped and ground stone), and archaeobotanical materials were all conducted. Pollen samples were not taken because the artifacts were all recovered from the surface, which was redeposited late-Holocene soil. No faunal remains were recovered at the site. Three pieces of obsidian were submitted for hydration dating. The results of these analyses are presented in the following pages.

Chronology

Obsidian Hydration Dating

Three obsidian artifacts from LA 127635 were submitted to Diffusion Laboratory for age determination using the obsidian hydration method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rind, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 17.3).

Table 17.3. Obsidian hydration dates for LA 127625.

FS* No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
7	2003-61	Cerro Toledo	3.18	-740	172
10	2003-62	Cerro Toledo	4.46	-3665	254
12	2003-63	Valle Grande	4.44	-3291	239

* Field Specimen

The obsidian hydration dates provide a wide range from 3665 to 740 BC, reflecting Middle to Late Archaic occupations.

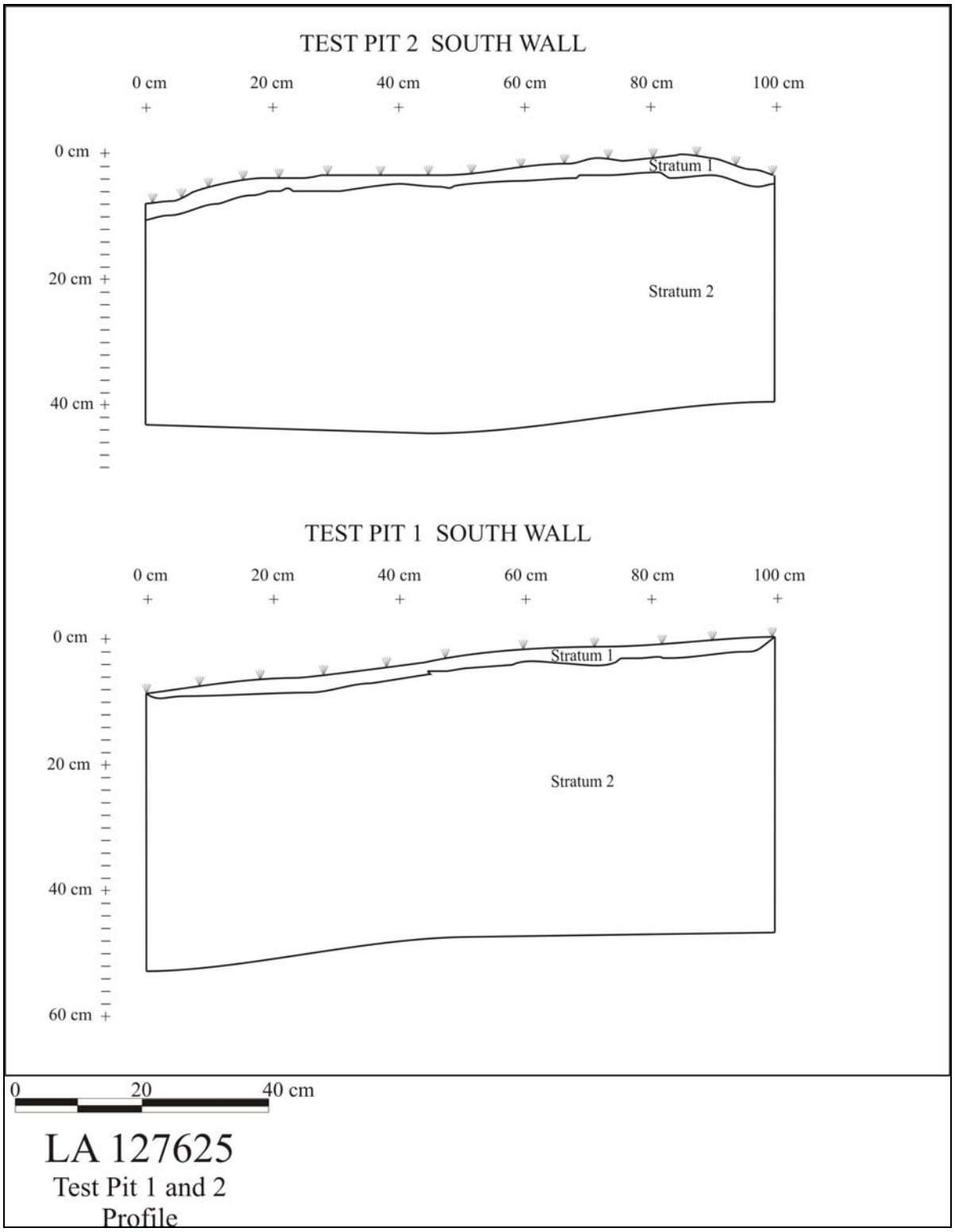


Figure 17.3. Post-excavation profiles of Test Pits 1 and 2.

Ceramic Artifacts (Dean Wilson)

Tables 17.1 and 17.4 through 17.6 show summary ceramic data for LA 127625, including general type, types by tradition, temper material by ware type, and ware by vessel form. Based on the presence of Biscuit B and B/C (Biscuit B?), it appears that the ceramic assemblage primarily reflects a Middle Classic (15th century) occupation.

Table 17.4. Tradition by ware for the LA 127625 ceramic assemblage.

Tradition	Ware						Total	
	Gray		White		Glaze			
Northern Rio Grande (Prehistoric)	15	100.0	11	100.0	--	--	27	96.4
Middle Rio Grande	--	--	--	--	1	100.0	1	3.6
Total	**15**	**100.0**	**12**	**100.0**	**1**	**100.0**	**28**	**100.0**

Table 17.5. Temper by ware for the LA 127625 ceramic assemblage.

Temper	Ware						Total	
	Gray		White		Glaze			
Granitic (mica, quartz, and feldspar)	2	13.3	--	--	--	--	2	7.1
Fine tuff or ash	1	6.6	10	83.3	--	--	11	39.2
Gray crystalline basalt	--	--	--	--	1	100.0	1	3.5
"Anthill" sand	12	80.0	1	8.3	--	--	13	46.4
Tuff and phenocrysts ("anthill")	--	--	1	8.3	--	--	1	3.5
Total	**15**	**100.0**	**12**	**100.0**	**1**	**100.0**	**28**	**100.0**

Table 17.6. Ware by vessel form for the LA 127625 ceramic assemblage.

Vessel Form	Ware						Total	
	Gray		White		Glaze			
Bowl body	--	--	8	66.6	--	--	8	28.5
Jar neck	2	13.3	1	8.3	--	--	3	10.7
Jar body	13	86.7	2	16.6	--	--	15	53.5
Body sherd polished int-ext	--	--	1	8.3	1	100.0	2	7.1
Total	**15**	**100.0**	**12**	**100.0**	**1**	**100.0**	**28**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 56 artifacts were analyzed from LA 127625, consisting of one core, 53 pieces of debitage, and two ground stone items. These artifacts represent a 100 percent sample of the

lithic artifacts recovered during the site excavations. Table 17.7 presents the data on lithic artifact type by material type. The majority of the debitage is made of obsidian, with less chalcedony and other materials. The presence of cortex on 7.5 percent of the debitage indicates that the materials were collected from both primary nodular (n = 1) and secondary waterworn sources (n = 3). The obsidian is present at nearby sources in the Jemez Mountains, but two obsidian flakes also exhibit waterworn cortex. In contrast, chalcedony, Pedernal chert, and quartzite are available from local Rio Grande Valley gravel sources and the basalt and andesite from bedrock or stream gravels.

Table 17.7. Lithic artifact type by material type at LA 127625.

Artifact Type		Material Type						
		Basalt	Andesite	Obsidian	Chalcedony	Pedernal	Quartzite	Total
Cores	Core	1	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	1
Debitage	Angular debris	0	0	3	0	0	0	3
	Core flake	2	1	15	12	3	0	33
	Biface flake	0	0	8	2	1	0	11
	Microdebitage	0	0	3	0	0	0	3
	Undetermined flake	0	0	2	1	0	0	3
	Subtotal	2	1	31	15	4	0	53
Ground Stone	One-hand mano	0	0	0	0	0	1	1
	Basin metate	1	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	1	2
Total		**4**	**1**	**31**	**15**	**4**	**1**	**56**

Eight pieces of debitage from LA 127625 were submitted for X-ray fluorescence analysis (Table 17.8). Most of the artifacts were identified from the Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source, with only two artifacts coming from the Valle Grande (Cerro del Medio) source (see Shackley, Volume 3). Both of these areas are situated about 15 km (10 miles) as the "crow flies" to the southwest and west of the site.

Table 17.8. Obsidian source samples.

FS #	Artifact	Color	Source
7	Debitage	Translucent	Cerro Toledo rhyolite
10	Debitage	Black opaque	Cerro Toledo rhyolite
12	Debitage	Translucent	Valle Grande rhyolite
21	Debitage	Black opaque	Cerro Toledo rhyolite
55	Debitage	Black opaque	Valle Grande rhyolite

60-1	Debitage	Translucent	Cerro Toledo rhyolite
60-2	Debitage	Translucent	Cerro Toledo rhyolite
62	Debitage	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The single core recovered from this site was reduced using a single-directional, multi-face technique and was classified as still useable when discarded (Figure 17.4). Table 17.9 presents the metric information on this core.

Figure 17.4. Core (FS 37) from LA 127625.

Table 17.9. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Single-directional	58	71	54	295.6

The debitage from LA 127625 mainly consists of core flakes (62.6%), with some biface flakes, microdebitage, angular debris, and undetermined flake fragments. The majority of the flakes exhibit single platforms (n = 5), with cortical (n = 2), crushed (n = 3), and collapsed (n = 2) platforms. Only two of the flakes exhibit abraded/crushed platforms.

The majority of the core flakes consist of distal fragments (n = 17), with fewer whole (n = 4), proximal (n = 5), and midsection (n = 3) fragments. Most of the biface flakes are distal fragments (n = 6), with fewer whole (n = 1), proximal (n = 2), and midsections (n = 2). The whole core flakes have a mean length of 20.7 mm (*std* = 5.7), whereas, the single whole biface flake has a length of 33.0 mm. Lastly, the angular debris have a mean weight of 1.0 g (*std* = 0.9).

Tool Use

Only a single flake exhibits evidence of damage that could be attributed to use-wear**.** It was utilized on the end of the flake with a convex edge outline and angle of 40 degrees.

The ground stone consists of a single one-hand cobble mano with slight grinding on both surfaces and a basin metate fragment.

Archaeobotanical Remains (Pamela McBride)

A single charred goosefoot seed was recovered from Test Pit 1 and a fragment of unknown conifer charcoal was recovered from Test Pit 2 (Tables 17.10 and 17.11). Other floral material consisted of unburned goosefoot (*Chenopodium*), purslane (*Portulaca*), and spurge (*Euphorbia*) seeds and conifer (Gymnospermae) duff. The presence of unburned plant material is not surprising considering that samples were taken from Stratum 1, which was a thin layer of silty sand along with a lot of duff and other detritus. The recovery of the charred floral material is somewhat unexpected and problematic. With no thermal feature present, it is unknown how a carbonized goosefoot seed and conifer charcoal became part of the archaeobotanical record at this lithic scatter.

Table 17.10. LA 127625 flotation sample plant remains.

Context	**Test Pit 1, Stratum 1, level 1**	**Test Pit 2, Stratum 1, level 1**
FS Number	67	68
Cultural Annuals		
Goosefoot	1(1)	
Non-Cultural Annuals		
Goosefoot		+
Purslane	+	
Spurge		+
Perennials		
Juniper		+, twig +
Pine	♂ cone	
Piñon	needle +	needle +

All plant remains are seeds unless indicated otherwise; Cultural plant remains are charred, non-cultural plant remains are uncharred; + 1-10/liter.

Table 17.11. LA 127625 flotation sample wood charcoal taxa by count and weight in grams.

FS No.	68
Context	Test Pit 2, Stratum 1, level 1
Unknown conifer	1/<0.1g

SUMMARY

In general, LA 127625 appears to be an area of redeposited colluvium, which probably resulted in the secondary deposition of artifacts from sites located upslope of LA 127625. No subsurface cultural deposits were found during excavations in two 1- by 1-m test pits, and with the site situated just below the eastern edge of a mesa where several large pueblo sites are located, it is likely that this factor resulted in the scatter of artifacts found at the site. Based on the presence of Biscuit B and Biscuit B/C (Biscuit B?), it appears that the site primarily dates to the Middle Classic period (15th century); however, the obsidian hydration dates indicate the possible presence of a Middle to Late Archaic component or reuse of these older materials.

CHAPTER 18
WHITE ROCK TRACT (A-19): LA 127631

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

This chapter presents the results of excavations conducted at LA 127631, an Early Classic period fieldhouse and associated artifact scatter located in the White Rock Tract. LA 127631 (Q-247) is a fieldhouse located on the floodplain at the mouth of Pajarito Canyon. Vegetation in the area of the site is dominated by piñon and juniper woodland, with an understory of saltweed, snakeweed, yucca, and various other native grasses, shrubs, and forbs. LA 127631 is situated at an elevation of 1977 m (6494 ft) and is located approximately 75 m downslope to the south of Area 8 at LA 12587 (Chapter 15, this volume). It is also about 75 m north of New Mexico State Road 4.

SITE DESCRIPTION

The site consists of an eroded one-room fieldhouse and a small artifact scatter. The rock alignments consist of approximately 25 shaped and unshaped tuff blocks situated within a 3.0- by 2.2-m area. The tuff blocks average 25 by 18 by 10 cm in size. Active erosion from a small arroyo leading into the canyon floodplain was visible in the western portion of the site area. Figure 18.1 shows the fieldhouse as it looked before excavation. Pin flags show the location of surface artifacts.

During the survey portion of this project (Vierra et al. 2002a), one Santa Fe Black-on-white sherd was observed in a drainage located 2 m from the feature. No other artifacts were identified in the site area. Based on the presumed association of the sherd to the structure, this site was thought to date to the Coalition period. Excavations in the one-room fieldhouse support this assignation, and the paucity of artifacts and the small size suggests the structure may have been used more for on-site storage rather than shelter. Artifacts recovered from the site suggest either (or both) a Late Coalition or Early Classic period use of the fieldhouse.

FIELD METHODS

Fieldwork was conducted at LA 127631 in October 2002, beginning with an initial assessment of the site. The crew walked over the site area, delineating the site boundaries and identifying the presence of artifact concentrations and features. A 1- by 1-m grid system that was laid out during the initial ground-penetrating radar survey (see Chapter 70, Volume 3) was also used during the excavations to facilitate data corroboration. The central site datum (100N/100E for horizontal control, 10.0 m for vertical control) was established in the area to the southwest of the roomblock and a 1- by 1-m grid was laid out. The intersection of the southwest corner of each grid determined its grid coordinates. Using the established grid, controlled surface collections

were made across the entire site, with all the materials being bagged separately by individual grid unit. A 225-m^2 area was surface collected.

Figure 18.1. LA 127631 before excavation.

Hand excavations were conducted in 1- by 1-m grid units around the fieldhouse. Excavations were carried out using natural stratigraphic units, or in cases where the natural stratum was greater than 10 cm thick, in arbitrary 10-cm levels. Strata were defined as distinct depositional units and descriptions for each included soil kind, texture, compactness, and color, which were determined by using a Munsell soil chart (see the following section for an in-depth discussion of the stratigraphic sequence). With the exception of materials removed for pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh.

Stratigraphic profiles were drawn for several of the individual units. Once the fill in the room was removed in stratigraphic layers, the interior room floor was mapped. Locations of floor features, samples, and artifacts were all included on the maps. Pollen samples were taken from underneath artifacts lying on the floor and in features and other locations (corner of the room) where the context might better preserve these remains. Once excavation of the structure was completed, an additional grid unit (108N/104E) was excavated approximately 4 m to the north of the structure to examine the natural stratigraphy of sediments surrounding the fieldhouse. The test unit was excavated to a depth of 50 cm below the ground surface, with an auger test going down to a depth of 1 m.

STRATIGRAPHY (Paul Drakos and Steve Reneau)

LA 127631 is located at the base of a low gradient colluvial hill slope, with an area of fan deposition to the southwest. Excavations at the site show the hillslope is mantled by a thin (<25 cm) layer of young colluvium overlying a Pleistocene soil (Table 18.1; see Drakos and Reneau, Volume 3 for key). Colluvium is fine to very fine sand and may be composed primarily of reworked aeolian sediment. The fieldhouse is buried by 10 to 19 cm of colluvium, with roomblocks set within a Bw horizon at the boundary between a Bw1 and Bw2 horizon (Table 18.2). The site stratigraphy is consistent with the fieldhouse construction corresponding to the time of construction of Roomblock 3 at LA 12587, which is located about 100 m upslope from the site. Scattered lithics and potsherds occur on the surface in this area and may largely represent a lag or may consist of material transported by surface runoff.

SITE EXCAVATION

The excavations at LA 127631 were undertaken by Kari Schmidt (crew chief), Mia Jonsson, Mike Kennedy, and Timothy Martinez. The fieldhouse was excavated in 1- by 1-m units. Natural stratigraphic levels were used. The top centimeter of fill was a combination of duff and loose sand. Below this, the fill consisted of sandy loam, which had several immature pines growing in it. Below the sandy loam was a reddish clay loam. The clay loam stratum was utilized as a floor by the occupants of the fieldhouse. Figure 18.2 shows the excavated structure and the prepared floor. The floor was not plastered, but was compacted from use.

The uppermost stratum (Stratum 1), which contained the majority of the duff, contained only a single flake. More artifacts were found in the room fill (Stratum 2), which was a sandy loam (Table 18.3). This stratum yielded 15 flakes, 12 sherds, nine fragments of ground stone, and six macrobotanical samples.

The six macrobotanical samples submitted for analysis from Stratum 2 produced the following charred and uncharred taxa: rabbitbrush (*Chrysothammus*), unidentified pine (*Pinus* sp.), juniper (*Juniperus*), unknown conifer (Gymnospermae), unknown non-conifer, and saltbush/greasewood (*Atriplex/Sarcobatus*). The chipped stone artifacts recovered from the fieldhouse consist of obsidian and chalcedony debitage and a mix of ceramics, including Santa Fe Black-on-white, Biscuit A (Bandelier Black-on-gray), Glaze red, plain gray, smeared-indented corrugated, and Sapawe Micaceous. A single bifacial core was found on the floor (Stratum 4) and is shown in situ in Figure 18.3 (noted as a scraper). The total size of the structure was approximately 2 by 1.5 m, and no features were identified (Figure 18.4).

Table 18.1. Stratigraphy of 108N/104E located 4 m north of the fieldhouse.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Profile Number	Preliminary Age Estimate	Notes
A	0-7	<5	7.5YR5/3	7.5YR4/3	ls	1msbk	so	so,po	n.o.	none	-	cs		<700-800 yrs	fs-vfs
Bw	7-24	<5	7.5YR6/3	7.5YR4/3	ls	1msbk	so	so,po	n.o.	none	-	cs			fs
ABtb1	24-35	<2	7.5YR5/2	7.5YR4/2	sicl	1-2msbk	so	s,p	2nbr	none	-	as		middle to late Pleistocene	
Bt1b1	35-47+		5YR6/3	5YR4/3	sicl	3msbk	sh-h	s,p	3npfpobr	none	-				

Table 18.2. Geomorphological profile of LA 127631.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Profile #	Preliminary Age Estimate	Notes
A	0-12	~5	7.5YR5/3	7.5YR4/3	sl	1msbk	so	so,po	n.o.	none	-	gs	127631-2	<700 yrs	fs-vfs
Bw1	12-19	<5	7.5YR5/4	7.5YR4/3	scl	1-2msbk	so	ss,ps	n.o.	none	-				may include chunks of reworked Bt horizon

Figure 18.2. LA 127631 after excavation.

Table 18.3. Stratigraphic sequence used during excavation at LA 127631.

Provenience	Maximum Thickness	Minimum Thickness	Elevation	Color	Texture	Comments
Stratum 1 (Room 1)	0.04 (m)	0.03 (m)	10.49–10.02	10YR5/4	Duff	Very few inclusions, no artifacts. Some fire-cracked rock on surface and small pebbles in duff. Post-occupational fill.
Stratum 2 (Room 1)	0.35	0.04	10.48–9.98	5YR3/3	Sandy loam	Room fill. Few inclusions, some mottles, and few artifacts. Bottom is Stratum 4, a compact use surface.
Stratum 3 (108N 104E)	0.10	0.02	10.20–10.12	5YR2.5/1	Clay loam	Outside of fieldhouse. Lots of mottles, few artifacts, few to no pebbles. Dark reddish brown.
Stratum 4 (Room 1)	0.01	0.01	10.12–10.00	7.5YR5/3	Clay	Compact use surface of Room 1. Prepared floor. Few artifacts on 'floor', but artifacts and charcoal present. No mottles, some rootlets on surface.
Stratum 5 (108N 104E)	0.07	0.07	10.12–9.99	7.5YR5/4	Silty clay	Outside of fieldhouse. Blocky peds, sub-angular, caliche. Less clay than Strata 3 and 4, but still some present. No artifacts—sterile. Platy.

Eleven flotation samples were processed from materials recovered from the fieldhouse. Charred and uncharred taxa identified in the samples include the following: pigweed (*Amaranthus*), goosefoot (*Chenopodium*), pitseed goosefoot (*Chenopodium berlandieri*), purslane (*Portulaca*), cholla (*Opuntia*), Russian olive (*Elaeagnus angustifolia*), spurge (*Euphorbia*), raspberry/thimbleberry (*Rubus*), grass family (Gramineae), unknown conifer, sunflower (*Helianthus*), juniper, tarweed (*Madia glomerata*), unidentified pine, piñon pine (*Pinus edulis*), prickly pear cactus (*Opuntia*), squash/coyote gourd (*Cucurbita*), maize (*Zea mays*), and sumac (*Rhus*).

Six pollen samples were analyzed from sediments taken from the fieldhouse. Taxa identified in the Stratum 1 (post-occupational fill) pollen samples include the following: sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), unidentified pine, piñon pine, juniper, rose family (Rosaceae), sagebrush (*Artemisia*), cheno-ams, and unidentified

grasses (Poaceae). Taxa identified in the pollen samples (n = 2) from Stratum 2 (room fill) include the following taxa: maize, lily family (Liliaceae), nightshade family (Solanaceae), mustard family (Brassicaceae), sunflower family, rose family, penstemon family (Scrophulariaceae), evening primrose (Onagraceae), unidentified pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses. Taxa identified in Stratum 4 (the floor/surface, n = 2) include the following taxa: maize, prickly pear, beeweed (*Cleome*), long spine sunflower, sunflower family, parsely family (Apiaceae), spurge family, rose family, unidentified pine, piñon pine, juniper, cheno-ams, and unidentified grasses. A 1- by 1-m geomorphological test pit was excavated just north of the structure. A single pollen sample was taken from this pit and the following taxa were identified: sunflower family, piñon pine, juniper, cheno-ams, and unidentified grasses.

Figure 18.3. Bifacial core on fieldhouse floor.

SITE CHRONOLOGY AND ASSEMBLAGE

Approximately 40 artifacts were recovered from excavations at LA 127631; all artifacts were analyzed. Analyses of the ceramics, lithics (chipped and ground stone), fauna, pollen, and archaeobotanical materials were all conducted. Juniper wood was submitted for radiocarbon dating and two obsidian artifacts for hydration dating. The results of these analyses, as well as associated tables, are presented in the following pages.

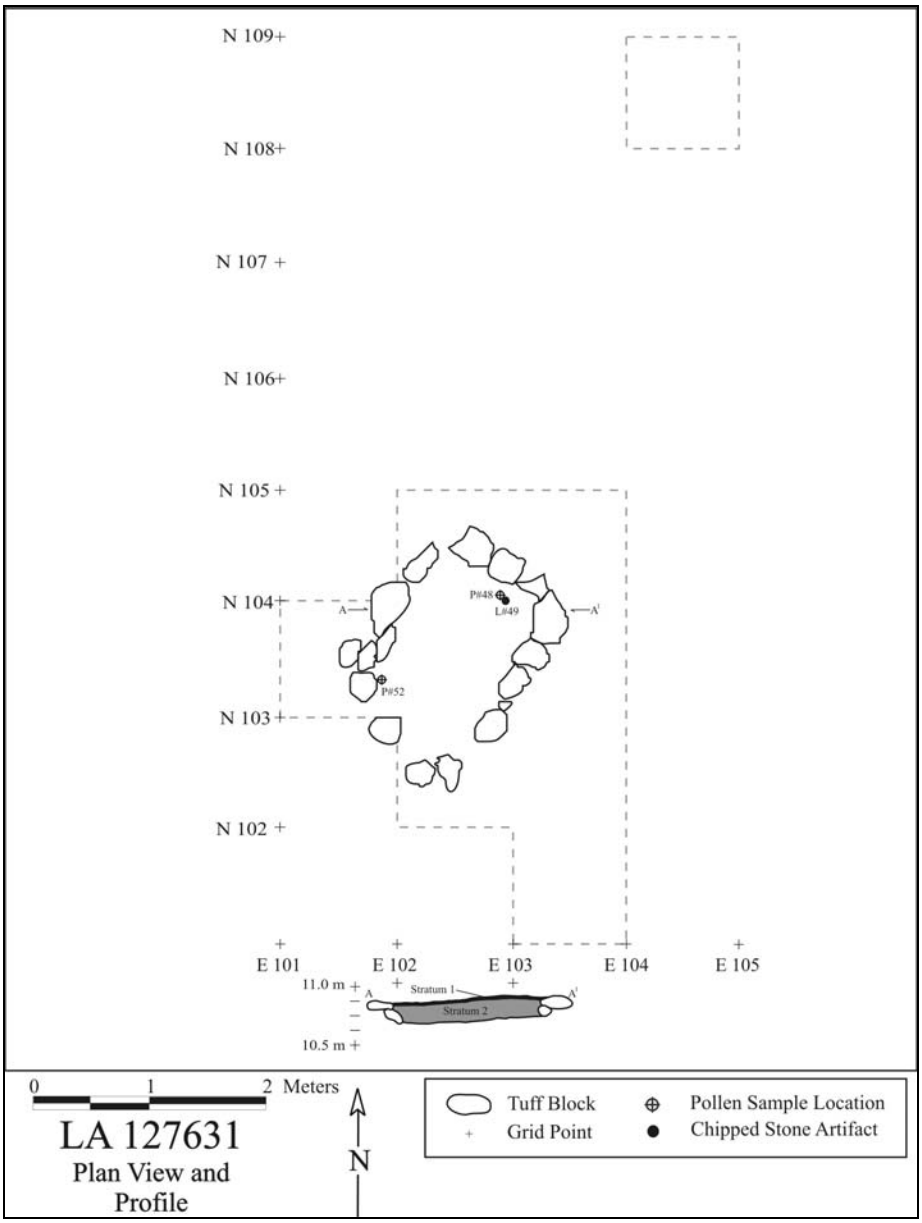


Figure 18.4. Plan view of excavated fieldhouse.

Chronology

Radiocarbon Dating

A single radiocarbon sample was submitted for analysis from this site. A small piece of juniper was collected from a flotation sample (Field Specimen [FS] 32) and dated to the Early Classic period. Table 18.4 presents the information generated from this analysis.

Table 18.4. Radiocarbon dates from LA 127631.

FS#	Material	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
32	juniper	183754	570±40 BP	AD 1400	AD 1300–1430

Obsidian Hydration Dating

Two obsidian artifacts from LA 127631 were submitted to Diffusion Laboratory for age determination using the obsidian hydration method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rind, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 18.5).

Table 18.5. Obsidian hydration dates for LA 127631.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
43	2003-59	El Rechuelos	n/a		
58	2003-60	Cerro Toledo	2.41	395	131

The single obsidian hydration date of AD 395 does not correspond with the radiocarbon date of circa AD 1400 and appears to be much too early. It could therefore reflect the reuse of material dating to the Late Archaic.

Ceramic Artifacts (Dean Wilson)

While only 12 sherds were recovered from the fieldhouse at LA 127631, a wide range of types including Santa Fe Black-white, Biscuit A (Abiquiu Black-on-gray), Glaze red, plain gray, smeared corrugated, and Sapawe Micaceous were noted (Table 18.6). This combination of pottery could indicate either, 1) components dating to both the Coalition and Classic periods, or 2) a period sometime intermediate between these periods. Radiocarbon dates recovered from the fieldhouse (see above) support the latter. Tables 18.7 through 18.9 show the summary ceramic data for this site, including general type, types by tradition, temper material by ware type, and ware by vessel form.

Table 18.6. Distribution of ceramic types from LA 127631.

Ceramic Types	Frequency	Percent
Northern Rio Grande Whiteware		
Indeterminate organic paint	1	8.3

Ceramic Types	Frequency	Percent
Santa Fe Black-on-white	2	16.7
Biscuit A (Abiquiu Black-on-gray)	1	8.3
Northern Rio Grande Utilityware		
Plain body	1	8.3
Plain corrugated	1	8.3
Smeared plain corrugated	4	33.3
Sapawe Micaceous	1	8.3
Middle Rio Grande Glazeware		
Glaze red body unpainted	1	8.3
TOTAL	**12**	**100.0**

Table 18.7. Tradition by ware for LA 127631 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	6	100.0	4	100.0	--	--	--	--	10	83.3
Rio Grande (Tewa Micaceous)	--	--	--	--	--	--	1	100.0	1	8.3
Middle Rio Grande	--	--	--	--	1	100.0	--	--	1	8.3
Total	**6**	**100.0**	**4**	**100.0**	**1**	**100.0**	**1**	**100.0**	**12**	**100.0**

Table 18.8. Temper by ware for LA 127631 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Highly micaceous paste	--	--	--	--	--	--	1	100.0	1	8.3
Fine tuff and sand	--	--	4	100.0	--	--	--	--	4	33.3
Gray crystalline basalt	--	--	--	--	1	100.0	--	--	1	8.3
“Anthill” sand	6	100.0	--	--	--	--	--	--	6	50.0
Total	**6**	**100.0**	**4**	**100.0**	**1**	**100.0**	**1**	**100.0**	**12**	**100.0**

Table 18.9. Form by ware for LA 127631 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl rim	--	--	1	25.0	--	--	--	--	1	8.3
Bowl body	--	--	3	75.0	--	--	--	--	3	25.0
Jar neck	2	33.3	--	--	--	--	--	--	2	16.7
Jar body	4	66.7	--	--	1	100.0	1	100.0	6	50.0
Total	**6**	**100.0**	**4**	**100.0**	**1**	**100.0**	**1**	**100.0**	**12**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 17 artifacts were analyzed from LA 127631, consisting of a core, 14 pieces of debitage, and two ground stone items. This represents a 100 percent sample of the lithic artifacts recovered during the site excavations. Table 18.10 presents the data on lithic artifact type by material type. The debitage mostly consist of chalcedony and obsidian, with some other materials. Only a single Pedernal chert flake exhibited waterworn cortex, reflecting 7.1 percent of the total debitage assemblage. The obsidian is present at nearby sources in the Jemez Mountains, chalcedony and Pedernal chert from local Rio Grande Valley gravel sources, and the basalt and andesite from bedrock or stream gravels.

Table 18.10. Lithic artifact type by material type from LA 127631.

Artifact Type		Material Type					
		Basalt	Andesite	Obsidian	Chalcedony	Ped-ernal	Total
Cores	Core	0	0	0	1	0	1
	Subtotal	0	0	0	1	0	1
Debitage	Angular debris	1	0	0	0	0	1
	Core flake	0	0	5	4	1	9
	Biface flake	0	0	0	1	0	1
	Microdebitage	0	0	0	2	0	2
	Subtotal	1	0	5	7	1	14
Ground Stone	Undetermined mano fragment	0	1	0	0	0	1
	Abrading stone	0	1	0	0	0	1
	Subtotal	0	2	0	0	0	2
Total		**1**	**2**	**5**	**8**	**1**	**17**

Five pieces of debitage from LA 127631 were submitted for X-ray fluorescence analysis (Table 18.11). The artifacts were from the Cerro Toledo (Rabbit Mountain/Obsidian Ridge) and Valle Grande (Cerro del Medio) source areas, which are located about 15 km (10 miles) as the "crow flies" to the southwest and west of the site (see Shackley, Volume 3). The El Rechuelos (Polvadera Peak) source area is located about 24 km (15 miles) northwest.

Table 18.11. Obsidian source samples.

FS #	Artifact	Color	Source
18	Debitage	Translucent	Valle Grande rhyolite
23	Debitage	Translucent	Cerro Toledo rhyolite
43-1	Debitage	Translucent	Valle Grande rhyolite
43-2	Debitage	Translucent	El Rechuelos
58	Debitage	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The single core identified at LA 127631 was reduced using a bi-directional, bifacial technique and was classified as still useable when discarded. However, given its roughly ovoid shape, the artifact could also be classified as an early stage biface. Table 18.12 presents the metric information on this core. The debitage mainly consists of core flakes (64.2%), with a biface flake, a piece of angular debris, and two pieces of microdebitage.

Table 18.12. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Bi-directional	70	57	32	128.5

Only three flake platforms are present and all of these are single-faceted; however, two of the three flakes do exhibit abraded/crushed platforms. The majority of the core flakes consist of distal fragments (n = 6), with fewer whole (n = 1), proximal (n = 1), and midsection (n = 1) fragments. The single biface flake is whole. The single whole core flake has a mean length of 27.0 mm, whereas, the single whole biface flake has a length of 12.0 mm. Lastly, the single piece of angular debris has a weight of 33.3 gm.

Tool Use

None of the flakes exhibits evidence of damage that could be attributed to use-wear**.**

The ground stone consisted of the fire-cracked midsection of a mano that could represent a two-hand variety. The abrading stone is characterized by a small ground surface on an odd-shaped cobble.

Faunal Remains (Kari Schmidt)

A single animal bone was recovered during the excavations at LA 127631. The bone was identified as a proximal cottontail (*Sylvilagus* sp.) femur, was from the right side, and was burned. Because the bone was recovered from the surface, it is not clear whether it was associated with the occupation of the site or not.

Archaeobotanical Remains (Pamela McBride)

One sample (from room fill) of the nine flotation samples from LA 127631 yielded cultural plant remains. These consisted of maize cupules, a maize embryo fragment, and possible squash/coyote gourd (*Cucurbita*) rind (Table 18.13).

Table 18.13. Flotation sample plant remains from LA 127631.

Feature	Post-occupational fill (FS 15)	Room fill, stratum 2, level 1 (FS 29, 32)		Room fill, stratum 2, level 2 (FS 17, 28, 53)			Outside fieldhouse, stratum 3 (FS 42)	Outside fieldhouse, stratum 5 (FS 51, 55)	
Grid	104N/103E	103N/102E		102N/ 103E	104N/ 102E	103N/ 101E	108N/ 104E	108N/ 104E	102N/ 103E
Cultural Cultivars									
Maize			cupule 6(0), e 1(0) pc						
Other: possible Squash/coyote gourd			rind +						
Non-Cultural Annuals									
Goosefoot			+	+	+	+			+
Pigweed	+		+						
Pitseed goosefoot						+			+
Purslane				+	+	+			
Spurge	fruit +		fruit +	+, fruit +		+, fruit +			+
Sunflower	+					+			
cf. Tarweed	+			+					
Grasses									
Grass family	wp +								
Perennials									
Cholla	+								
Juniper	+, ♂ cone, twig +	twig +	twig +	+, ♂ cone, twig +	+, twig +	+, twig +	twig +	twig +	+, twig +
Pine	bs +, nsg +, umbo +	bs +	bs +	bs +, umbo +	bs +, nsg +	bs +	twig +	♂ cone	
Piñon	needle +, nutshell +	needle +	needle +	needle +	needle +	needle +	needle +	needle +	needle +
Ponderosa pine		needle +							
Prickly pear cactus	+, embryo +		embryo +	+	embryo +				embryo +
Raspberry/ Thimbleberry						+			
Russian olive	+								
cf. Sumac									+

All plant remains are seeds unless indicated otherwise; Cultural plant remains are charred, non-cultural plant remains are uncharred; + 1-10/liter, bs barkscale, e embryo, nsg needle spindle gall, pc partially charred, wp whole plant.

Non-cultural plant remains consisted of conifer duff, cactus seeds, weedy annual seeds, grass, a raspberry or thimbleberry seed, a possible sumac seed, and a Russian olive seed. The uncharred seeds from perennial plants are all from fruits and may represent the remains of a meal enjoyed by a rodent or bird. Nine pieces of juniper and two of unknown conifer charcoal were also recovered in flotation samples. Vegetal samples yielded a fragment of unburned, unknown wood and small pieces of juniper, pine, possible rabbitbrush, and saltbush/greasewood charcoal (Table 18.14). The carbonized maize and possible squash rind suggest the occupants may have been enjoying the fruits of their labor and using local conifer and shrub wood for fuel.

Table 18.14. Vegetal sample wood charcoal taxa, by count and weight in grams, from LA 127631.

Feature	102N/103E, stratum 2, level 2 (FS 19)	104N/103E, stratum 2, level 2 (FS 22)	103N/103E, stratum 2, level 3 (FS 27)	103N/102E, stratum 2, level 1 (FS 38)	104N/102E, stratum 2, level 2 (FS 44)	101N/103E, stratum 2, level 1 (FS 56)
Conifers						
Juniper				3/0.8g	1/<0.1g	
Pine			2/0.2g			
Unknown conifer						1/<0.1g
Non-Conifers						
cf. Rabbitbrush		1/0.4g				
Saltbush/ greasewood					2/0.2g	
Unknown Non-Conifer					1/<0.1g	
Unknown	1/<0.1g u					

cf. compares favorably, u uncharred.

Pollen Remains (Susan J. Smith)

Six pollen samples were analyzed from sediments taken from the fieldhouse. Taxa identified in the Stratum 1 (post-occupational fill) pollen samples include the following: sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), unidentified pine (*Pinus*), piñon pine, juniper, rose family (Rosaceae), sagebrush, cheno-ams, and unidentified grasses (Poaceae). Taxa identified in the pollen samples (n = 2) from Stratum 2 (room fill) include the following taxa: maize, lily family (Liliaceae), nightshade family (Solanaceae), mustard family (Brassicaceae), sunflower family, rose family, penstemon family (Scrophulariaceae), evening primrose (Onagraceae), unidentified pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses. Taxa identified in Stratum 4 (the floor/surface, n = 2) include the following taxa: maize, prickly pear (*Opuntia/Platy*), beeweed (*Cleome*), long spine sunflower, sunflower family, parsely family (Apiaceae), spurge family, rose family, unidentified pine, piñon pine, juniper, cheno-ams, and unidentified grasses. A 1- by 1-m pit was excavated just north of the structure for geomorphological analyses. A single pollen sample was taken from this pit and the following taxa were identified: sunflower family, piñon pine, juniper, cheno-ams, and unidentified grasses. Maize was the only cultigen identified in the pollen

assemblage. Other economic resources in the assemblage included sunflower family, lily family, nightshade family, beeweed, and parsley family.

SUMMARY

LA 127631 is a one-room fieldhouse that may have been used for the in-field storage of crops and/or agricultural equipment. The very small size of the structure indicates that it is unlikely to have been used for even short-term habitation, as it would have been too small to offer much comfort. However, its location near areas suitable for farming and the presence of maize indicate that the site did play a role in agricultural activities. At the time of excavation, the west wall had two stone courses, but the other walls had only a single course. The south wall appeared somewhat disarticulated and was probably where the entryway was located. The ceramic and radiocarbon dates indicate that the structure was probably occupied during the Early Classic period (14th century).

CHAPTER 19
WHITE ROCK TRACT (A-19): LA 128803

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

This chapter presents the results of excavations conducted at LA 128803, an Early Classic period grid garden located in an area of the White Rock Tract slated for economic development. LA 128803 (previous numbers LA 12587A and H-2) is a grid garden located at the mouth of Cañada del Buey, about 140 m north-northwest of State Road 4. Dominant vegetation in the area includes primarily piñon and juniper trees, with an understory comprised of saltweed, snakeweed, yucca, and various other native grasses, shrubs, and forbs. The site is situated at an elevation of 1967 m (6462 ft) and is located on a gentle northeast-facing slope. A fairly deep arroyo that runs east-west is located approximately 35 m north of the grid garden. A two-track powerline road forms the northern boundary of the site perimeter. Large basalt outcrops are located immediately south of the site and were likely the source of construction materials for the grid garden.

SITE DESCRIPTION

The portion of the grid garden that was excavated is composed of several basalt rock alignments located within an area measuring 6 by 3 m. Other subsurface grids were located in a ground-penetrating radar (GPR) survey of the site (see Nisengard et al., Volume 3), but only two were excavated. The site is somewhat eroded, although the integrity of the rock alignments appear to be intact. Figure 19.1 shows the plan view of the site. Only a few artifacts were identified on the surface in the initial visit to the site. These include one chert flake and a quartzite hoe. No ceramics were observed. Based primarily on the construction style of the grid garden and secondarily by the few associated artifacts, the site was given a Classic period assignation. Figure 19.2 shows the relocated hoe on the surface near the southeastern corner of the grid garden. In January of 2003, the quartzite hoe was in the same location as when it was originally identified in 1999, suggesting little disturbance to the area in the four intervening years. The basalt cobbles visible in the photo form the northeastern corner of the eastern grid (see Figure 19.1).

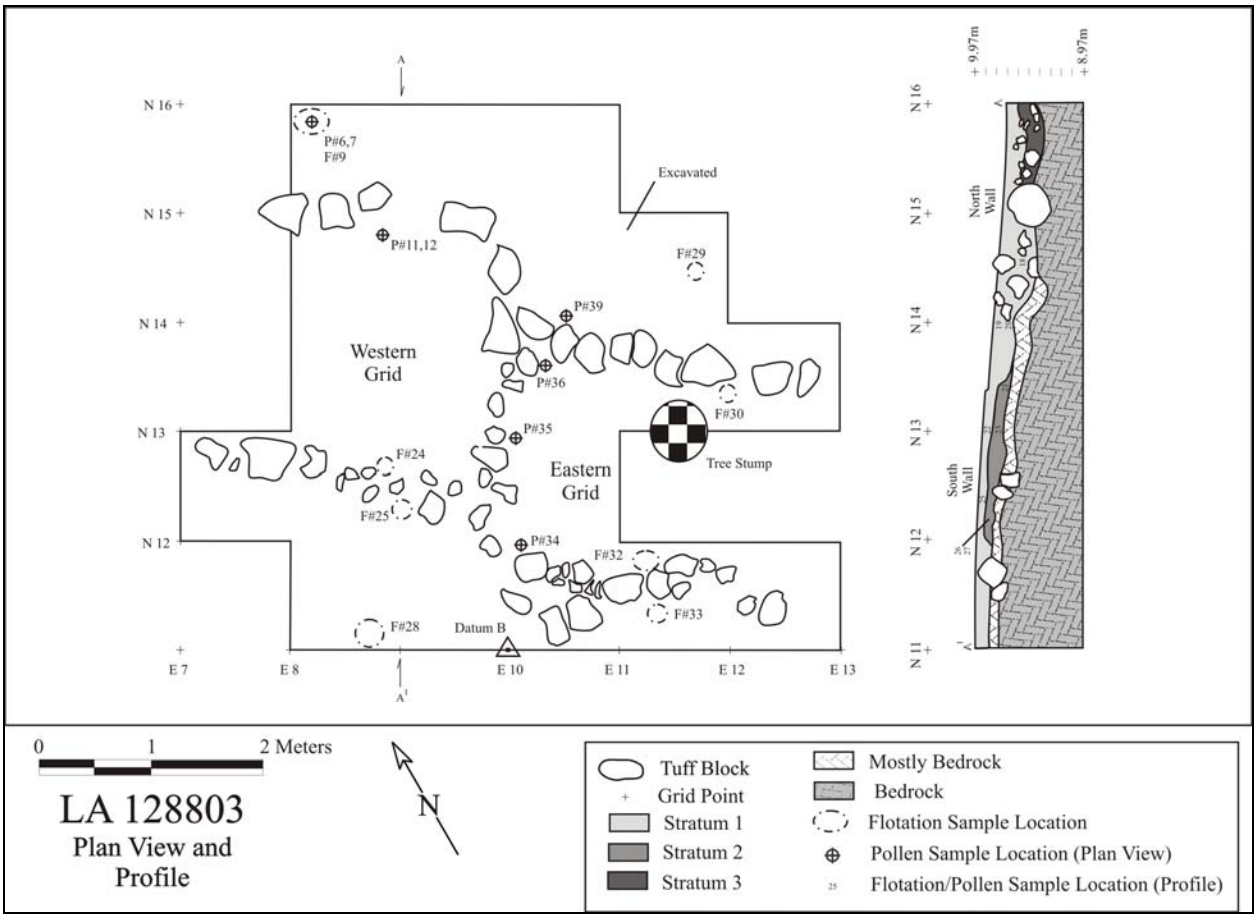


Figure 19.1. Plan view and profile of the grid garden.

FIELD METHODS

Fieldwork began at LA 128803 in early January 2003, with the initial assessment of the site. The crew walked over the site area, delineating the site boundaries and identifying the presence of artifact concentrations and features. Only two surface artifacts were located although a 450-m^2 area was collected. The site grid was set up on the pre-established GPR grid (100N/100E for horizontal control, 10.0 m for vertical control), which was oriented to true north. However, since the excavation strategy for the grid garden was to bisect it as uniformly as possible, a second grid for excavation was laid over the grid garden, matching its orientation. This grid was located at 30 degrees east of north and started at 10N/10E. The 10N/10E point of the superimposed grid corresponded with 100N/106E in the original GPR grid. By doing this, it enabled the trench to be excavated matching the original orientation of the grid garden. In both grids, the intersection of the southwest corner of each grid determined its grid coordinates.

Figure 19.2. Hoe recovered from surface of grid garden.

After the brief surface collection, and starting at the 10N/10E grid point, a meter-wide trench was excavated from outside the upper (or southern) garden wall, through the interior of the grid garden, and on through the lower (or northern) garden wall. This produced a profile that ran parallel to the slope that the grid garden was built to accommodate, thereby offering a look at how effective the garden may have been. Additional excavation was limited to shovel-wide trenches along the inside and outside of the other rock alignments that formed the garden walls. These trenches were dug for two purposes: to increase the number of pollen and flotation samples and to assess the depth and integrity of the grid garden walls. The trenches that paralleled the garden walls averaged approximately 20 to 25 cm deep.

In the meter-wide trench, pollen and flotation samples were collected in distinct stratigraphic units that were determined during site visits by project geomorphologists. Samples of both types were collected upslope and outside of the garden, at several places within the grid garden especially along the middle garden wall and downslope of the garden. Figure 19.1 shows the locations where pollen and flotation samples were collected. The profile can be identified on the plan view by the A-A^{1} line. Figures 19.3 and 19.4 show the grid garden as it looked before excavation and after the completion of the meter-wide trench.

Figure 19.3. LA 128803 before excavation with southwest grid visible (north).

Figure 19.4. Trench through LA 128803; upper wall at bottom, middle wall in center, and lower wall at top of photo (south).

STRATIGRAPHY (Paul Drakos and Steve Reneau)

The grid garden is located in an area of discontinuous thin colluvial soils over basalt bedrock. There is a long colluvial slope west of the site that provides surface runoff to the site. The grid gardens may be partially buried by slope wash colluvium. East of the site, the soils thin and the slope becomes steeper above an incised channel of Cañada del Buey.

Four soil profiles were described upslope, within, and downslope of the rock alignments forming the grid garden (Table 19.1; see Drakos and Reneau, Volume 3 for key). Soils were moist when described, and therefore weakly developed soil structure, if present, was difficult to discern. However, two trends are apparent in the soils described in the immediate vicinity of the grid garden. One trend is that the thickness of post-Puebloan soil is greater upslope and within the grid garden, ranging from 16 to 21 cm, than was observed downslope of the grid garden, where the post-Puebloan soil thickness was 10 cm. A second trend is that upper-horizon post-Puebloan soils are finer-grained (a silt loam) within and immediately downslope of the grid garden than was observed upslope of the grid garden (a sandy loam). Both trends are consistent with the rock alignments acting to retain surface runoff and fine-grained slope wash, and are consistent with the rock alignments functioning as a grid garden.

An additional observation was the absence of remnant Pleistocene soils in relatively deep pockets in the basalt within the rock alignments, although such soils were present outside the rock alignments and in a test pit south of the alignments. This observation suggests that first excavating the relatively dense, clay-rich Pleistocene soils, and replacing this material with looser soil may have prepared the area inside the alignments. In general, the soils at LA 128803 are very weakly developed and apparently lack development of Bw horizons observed in Coalition period soils at other White Rock Tract sites. It is therefore inferred that LA 128803 is likely a Classic period feature.

SITE EXCAVATION

The excavations at LA 128803 were undertaken by a combination of graduate and post-baccalaureate students and LANL contractors. The crew consisted of the following people: Aaron Gonzales, Mia Jonsson, Mike Kennedy, Kari Schmidt, and Marjorie Wright.

Table 19.1. Geomorphological characteristics of the LA 128803 deposits.

Profile	Horizon	Depth (cm)	Gravel (%)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Preliminary Age Estimate	Notes
128803-1	AC	0-14	<2	7.5YR4/3	sl	m	(lo)	so,ps	n.o.	none	-	cs	<500 yrs?	Profile moist when described; slopewash upslope of rock alignment
	C	14-19	<2	7.5YR4/3	l	m	(lo)	ss,ps	n.o.	none	-	ai		pockets between boulders
	R	19+												basalt boulder
128803-2	AC	0-13	<2	7.5YR4/3	sil	m	(lo)	ss,ps	n.o.	none	-	cs	<500 yrs?	slopewash
	C	13-21	<2	7.5YR4/3	sl	m	(lo)	ss,ps	n.o.	none	-	ai		layer above basalt (boulder or bed rock)
	R	21+												basalt (boulders?)
128803-3	AC	0-16	<2	7.5YR4/3	sil	m	(lo)	ss,ps	n.o.	none	-	ai	<500 yrs?	slopewash
	R	16+												basalt (boulders?)
128803-4	AC	0-10	10-20	7.5YR4/3	sil	m	(lo)	ss.ps	n.o.	none	-	as	<500 yrs?	
	Btb1	10-20	20-40	5YR4/3	sicl	2msbk		s,p	1-2nbrco	none	-	ai	middle to late Pleistocene	older soil, between boulders
	R	20+												basalt

Initial excavation at LA 128803 concentrated on units just outside the grid garden walls, at the upslope and downslope extents. Beginning with these first two external excavation units, a trench was completed, connecting them through the grid garden to provide a continuous trench. Due to the fact that the excavation was being done in the winter, much of the soil was frozen, which made for slow going. This being the case, and with time constraints on the project, excavations other than the trench were limited to shovel-wide trenches along either side of grid garden walls to be able to collect pollen and flotation samples from as many parts of the garden as possible for comparison. For this purpose, 15 flotation and 21 pollen samples were collected both inside and outside the grid walls for comparative analysis. The grid garden consisted of two U-shaped rock alignments (eastern and western grids) facing in opposite directions and sharing a common baseline, which were slightly offset from one another (see Figure 19.1). The rocks outlining the sides of the "U" were larger, particularly the ones furthest downslope.

Approximately 5 m to the east of the grid garden, another 1- by 1-m unit was excavated as a geomorphologic control unit to compare the soils associated with the grid garden to that of the surrounding natural stratigraphy (Table 19.2; see stratigraphy section for information on how these two areas differed).

Table 19.2. Stratigraphic sequence used during excavations at LA 128803.

LA 128803 Stratigraphic Summary							
Stratum	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
1	11-14N/9E and 94N/107E	0.37 (m)	0.13 (m)	10.02–9.50	7.5YR4/3	Silty loam	Recent colluvium, upper level. In and out of grid garden.
2	11-14N/9E and 94N/107E	0.15	0.05	9.77–9.40	7.5YR4/3	Silty loam	Recent colluvium, lower level. In and out of grid garden.
3	15N/9E	0.10	0.03	9.95–9.30	5YR4/3	Sandy clay loam	Early Holocene/Late Pleistocene soil. Outside and south of grid garden.
4	94N/107E	0.10	0.10	9.85–9.75	5YR3/3	Clay	Middle Pleistocene clay. Outside grid garden only.

SITE CHRONOLOGY AND ASSEMBLAGE

Only four artifacts were recovered from excavations at LA 128803 and included three pieces of chipped stone and a quartzite hoe. Analyses of the lithics (chipped and ground stone), pollen, and archaeobotanical materials were all conducted, but no faunal materials were recovered. Results of these analyses are presented in subsequent sections.

Chronology

Only a single radiocarbon sample was submitted for analysis from this site. Several maize (*Zea mays*) cupules were collected from a flotation sample (Field Specimen [FS] 21) taken from inside the western grid and dated to the Early Classic period. Table 19.3 presents this information.

Table 19.3. Radiocarbon dates from LA 128803.

FS#	Context of sample	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
21	Stratum 2	183755	530±40 BP	AD 1420	AD 1390-1440

Chipped and Ground Stone (Bradley Vierra and Michael Dilley)

A total of four artifacts were analyzed, consisting of two pieces of debitage and a hoe. This represents a 100 percent sample of the lithic artifacts recovered during the site excavations. The debitage consists of a chalcedony core flake and piece of rhyolite angular debris. The hoe consists of a tabular quartzite cobble that is notched on both sides, but with no obvious use-wear (Figure 19.5).

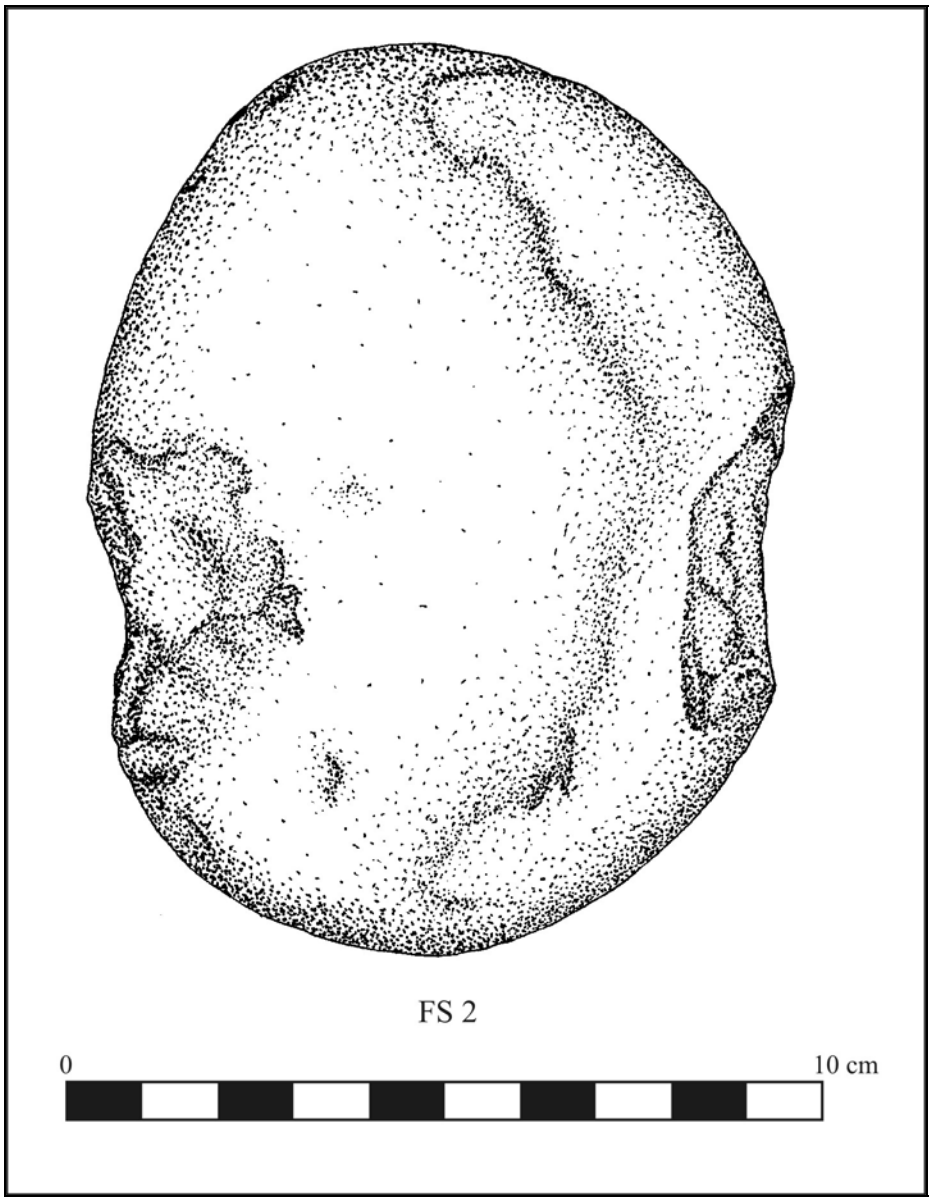


Figure 19.5. Hoe from LA 128803.

Archaeobotanical Remains (Pamela McBride)

Situated at the mouth of Cañada del Buey, farmers who used these grid gardens were taking advantage of run-off from the uplands and the rock borders of the gardens served to capture nutrient-rich sediment. Carbonized corn cupules and goosefoot (*Chenopodium*) and cheno-am (*Chenopodium/Amaranthus*) seeds were identified from three of 10 samples collected from within the grid garden borders (Table 19.4).

Table 19.4. LA 128803 flotation sample plant remains.

FS No.	9	14	16	18	21	24
Feature	15.99N/8.1E	94N/107E stratum 3	94N/107E stratum 4	14.5N/8.99E	13.5N/9E	12.7N/ 8.85E
Cultural Annuals						
Goosefoot						1(0)
Cultivars						
Maize		cupule 1(0)			cupule 2(0)	cupule 4(0)
Non-Cultural Annuals						
Goosefoot					+	
Purslane				+		+
Spurge	fruit +					
Grasses						
Grass family				floret +, leaf +		
Other						
Composite family						+
Unknown				+		
Perennials						
Juniper	twig +	twig +		twig +	twig +	+, ♀ cone, twig +
Pine	bs +, twig +				umbo +	
Piñon	needle +, nut +	needle +	needle +	needle +	needle +	needle +

Table 19.4. LA 128803, flotation sample plant remains (continued).

FS No.	25	28	29	30	32	33
Feature	12.2N/8.9 9E	11N/8. 7E	14.5N/11. 65E	13.33N/11.95 E	11.85N/ 11.2E	11.3N/ 11.3E
Cultural Annuals						
Cheno-Am	1(1)					
Cultivars						
Maize	cupule 1(0)					
Non-Cultural Annuals						
Goosefoot	+					
Purslane	+	+				+
Spurge	fruit +	+				
Sunflower	+					
Grasses						
Grass family	leaf +		leaf +			

FS No.	25	28	29	30	32	33
Other						
Groundcherry			+			
Perennials						
Juniper	+, twig +	+, twig +	+, twig +	+, ♀ cone, ♂ cone +, twig +	+, ♀ cone, twig +	+, ♀ cone, twig +
Pine	♂ cone +, nsg +, umbo +	twig +, umbo +	bs +, cs +, ♂ cone +, nsg +, umbo +	♂ cone +, twig +, umbo +	nsg +, twig +	
Piñon	needle +	needle +	needle +, nut +	needle +	needle +	needle +, twig +
Ponderosa pine	needle +					needle +
Prickly pear cactus			+	+		

All plant remains are seeds unless indicated otherwise; cultural plant remains are charred, non-cultural plant remains are uncharred; + 1-10/liter, bs barkscale, cs conescale, nsg needle spindle gall.

Curiously, a corn cupule fragment was also recovered from Stratum 3 of the test pit that was to the south of the grid gardens. Unknown conifer (Gymnospermae), oak (*Quercus*), rose family (Rosaceae), and saltbush/greasewood (*Atriplex/Sarcobatus*) charcoal were also present. Nearby thermal features were not recorded so it is curious how charred plant remains came to be deposited. Cushing (1974) describes in detail the process of creating a run-off field at the mouth of an arroyo at Zuni. The first year the farmer piles soil up to make an outline of the field boundary and marks the corners with columnar stones. Vegetation is cut away and placed in the center of the field where it is burned. A brush fence is also constructed and strategically placed to catch eolian sediment that results in a fine loam deposit over the field.

Brandt (1995) states that burning brush and the collection of nutrient-laden sediment are the only references to fertilizing fields found in the ethnographic literature. Along with the collection of sediment behind garden borders, it is possible that shelled corncobs and brush were burned to clear or fertilize grid gardens in a similar manner described by Cushing.

Pollen Remains (Susan J. Smith)

Sixteen pollen samples were analyzed in intensive analyses from sediments taken from the grid gardens at LA 128803. Table 19.5 lists the frequency of identified pollen types. Maize and cotton were the only cultigens identified in the pollen assemblage. Economic resources identified in the pollen assemblage included only prickly pear and parsley family. A number of other potential economic resources were identified in the assemblage (Table 19.5), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 19.5. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 128803 (*n* = 16)
Cultigens	*Gossypium*	Cotton	1
	Cucurbita	Squash	0
	Zea mays	Maize	7
	Zea Aggregates	Maize Aggregates	1
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	3
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	1
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	4
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	3
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	15
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 128803 (*n* = 16)
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	16
		Cheno-Am Aggregates	6
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	16
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	6
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	1
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	14
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	3
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	3
	Pinus	Pine	15

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 128803 (*n* = 16)
Subsistence?		Pine Aggregates	1
	Pinus edulis type	Piñon	16
	Juniperus	Juniper	15
		Juniper Aggregates	0
	Quercus	Oak	9
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	7
	Artemisia	Sagebrush	13
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

Pollen Samples from Grids

Samples were taken from both inside and outside of the grid and from both upslope and downslope contexts (Table 19.6).

Table 19.6. Pollen and flotation samples selected for analysis.

FS No.	Context	Strat	Level	Comments	Grid	Depth (bgs)	Soil Horizon
6	Grid garden	1	1	Out of grids (north end)	Western	43	R
7	Grid garden	3	2	Out of grids (north end)	Western	47	R
11	Grid garden	1	1	In grids (north end)	Western	47	R
12	Grid garden	1	1	In grids (north end)	Western	37	R
15	Test pit	3	1	Control unit	--	10	R
17	Test pit	4	1	Control unit	--	20	R
19	Grid garden	1	1	In grids (center)	Western	27	R
20	Grid garden	1	1	In grids (center)	Western	32	R
22	Grid garden	1	1	In grids (south end)	Western	21	C
23	Grid garden	2	2	In grids (south end)	Western	27	R

FS No.	Context	Strat	Level	Comments	Grid	Depth (bgs)	Soil Horizon
26	Grid garden	1	1	Just out of grid (south)	Western	12	A
27	Grid garden	2	2	Just out of grid (south)	Western	20	C
34	Grid garden	1	1	In grids (south end)	Eastern	13	A
35	Grid garden	1	1	In grids (center)	Eastern	13	A
36	Grid garden	1	1	In grids (north end)	Eastern	21	C
39	Grid garden	1	1	Out of grids (north end)	Eastern	31	R

Eastern Grid

A trench was excavated through the center of the eastern grid. Taxa identified outside of the grid garden to the north (downslope; FS 6 and FS 7, see Figure 19.1) included the following: cheno-ams, unidentified grasses (Poaceae), mustard family (Brassicaceae), sunflower family (Asteraceae), spurge family (Euphorbiaceae), evening primrose (Onagraceae), unidentified pine (*Pinus*), piñon pine (*Pinus edulis*), juniper (*Juniperus*), oak, rose family, Mormon tea (*Ephedra*), and sagebrush (*Artemisia*). Taxa identified inside the eastern grid just inside the northern wall (FS 11 and FS 12) include the following taxa: maize, ragweed/bursage (*Ambrosia*), cheno-ams, unidentified grasses, sunflower family, globemallow (Sphaeralcea), spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Taxa identified from the center of the eastern grid (FS 19 and FS 20) include the following: maize, cheno-ams, unidentified grasses, mustard family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Taxa identified inside the eastern grid just inside the southern (upslope; FS 22 and FS 23) wall include the following taxa: maize, cheno-ams, unidentified grasses, sunflower family, spurge family, evening primrose, fir (*Abies*), unidentified pine, piñon, juniper, oak, rose family, Mormon tea, and sagebrush. Taxa identified outside of the grid garden to the south (upslope; FS 26 and FS27) include the following: maize, prickly pear (*Opuntia*), cheno-ams, unidentified grasses, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush.

Western Grid

Excavations in the western grid were conducted along the grid walls, where shallow trenches were dug. Four pollen samples were analyzed from this grid and were taken from outside the northern (downslope) grid, as well as along the central grid wall (shared with the eastern grid) and in the center. The pollen sample analyzed from just inside the southern (upslope: FS 34) grid wall includes the following taxa: maize, cheno-ams, unidentified grasses, sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Taxa identified along the central wall in the western grid (FS 35) include the following: cheno-ams, unidentified grasses, sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Identified taxa from just inside the northern (downslope) wall of the western grid (FS 36) include the following: cheno-ams, sunflower family, spurge family, piñon pine, and sagebrush. And, taxa identified outside the western grid to the north (downslope; FS 39) include the following: parsley family (Apiaceae), cheno-ams, unidentified grasses, mustard family, sunflower family, ragweed/bursage, spurge family, fir, unidentified pine, piñon pine, juniper, and sagebrush.

Control Unit

Approximately 5 m to the east of the grid garden, another 1- by 1-m unit was excavated as a geomorphologic pit to compare the soils associated with the grid garden to that of the surrounding natural stratigraphy (Table 19.2; see stratigraphy section for information on how these two areas differed). Two pollen samples (FS 15 and FS 17) were collected from this unit to compare the taxa identified inside the grid garden to those identified outside the walls of the garden. Interestingly, the only cotton (*Gossypium*) samples were identified in the area outside the immediate vicinity of the grid garden walls. Taxa identified in this control unit include the following: cotton, prickly pear, cheno-ams, unidentified grasses, sunflower family, ragweed/bursage, evening primrose, spruce (*Picea*), fir, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush.

Textiles

Two small pieces of fiber and textile were identified in the flotation samples analyzed from this site, and these items were analyzed by Laurie Webster. The first item was a small tuft of rabbit fur that may have been associated with a rabbit fur blanket. The second item was a small (1.0 cm wide by 1.5 cm long) piece of textile that was identified as a small scrap of silk ribbon (or other textile) woven in satin weave. The selvages on this piece of textile were missing. Webster (personal communication) deemed that this piece of textile was not a pre-contact fabric and that its earliest possible date was Spanish-Colonial. She also concluded that the fabric could have been more recent.

SUMMARY

LA 128803 is a basalt rock grid garden that was constructed using the abundant outcrops located near the site. The grid garden was built by placing U-shaped alignments back to back but slightly offsetting them and sharing the same interior wall. The opening of each grid is perpendicular to the slope of the hill on which the grid garden is located. These openings could have allowed the water to drain after being slowed by the rocks, preventing over-saturation of the ground. Although only two grids were excavated, additional grids were identified during the GPR survey conducted at the site (see Nisengard et al., Volume 3). It appears that the Middle Classic period farmers who used the grid gardens had dug out the native fill from inside the grids of the garden and then refilled them with a more arable mixture of soil. This soil contained the burned remains of maize, as well as maize pollen. In addition, cotton pollen was identified in a separate test pit. However, it is presumed that this pollen was derived from other unexcavated grid garden features in the area. The results of the geomorphological study indicate that these grid gardens were indeed effective in collecting and retaining soil for growing crops.

CHAPTER 20
WHITE ROCK TRACT (A-19): LA 128804

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

This chapter presents the results of the excavations conducted at LA 128804, a Historic period check dam and Late Coalition/Early Classic artifact scatter. LA 128804 (previous numbers LA 12587-B and H-3) includes an isolated check dam situated on a shallow slope at the mouth of Cañada del Buey. The vegetation in the area is dominated by piñon and juniper trees with an understory of saltbush, snakeweed, yucca, and various other native grasses, shrubs, and forbs. The site sits at an elevation of 1980 m (6495 ft), is located approximately 200 m north-northwest of State Road 4, and lies downslope and approximately 140 m east of LA 12587 (Chapter 14, this volume).

SITE DESCRIPTION

The check dam is an alignment of 12 large basalt blocks ranging in size from 0.60 to 1.25 m in length. The 7-m-long alignment bisects a small northeast-to-south-trending drainage. The site area, including artifacts associated with LA 12587, lies primarily in a 10- by 10-m area. Although a few artifacts were present in the immediate area of the feature when it was originally recorded for this project, it is unclear, and probably unlikely, that they are associated with the feature. Artifacts identified in the site area include smeared-indented utilitywares, Santa Fe Black-on-white, and Wiyo Black-on-white sherds, and numerous pieces of chipped and ground stone, which arre commensurate with the occupation of LA 12587. The date and cultural affiliation of the site during the original recording were undetermined. Figure 20.1 shows the check dam before excavation. Pin flags in the vicinity represent uncollected artifacts identified during the surface collection.

FIELD METHODS

Fieldwork began with an initial assessment of the site. The crew walked over the site area, delineating the site boundaries and identifying the presence of artifact concentrations and features to ascertain if and how they related to the check dam. The area was then gridded into 1- by 1-m units, with the site datum (100N/100E for horizontal control, 10.0 m for vertical control) located next to the check dam. These artifacts were collected and bagged for analysis and provenienced to the nearest meter, using the southwest grid corner for the grid designation. Once the surface collection was finished, a 1- by 2-m grid was excavated perpendicular to the angle of the check dam. This feature was actually offset from the site grid by approximately 28 degrees east of north, and the excavation units were likewise offset so as to orient them to the check dam. A 625-m^2 area was collected around the check dam.

Figure 20.1. LA 128804 before excavation; pin flags represent artifacts.

STRATIGRAPHY (Paul Drakos and Steve Reneau)

LA 128804 is a check dam that is approximately 6 m long and consists of tuff clasts up to 60 cm long. The check dam is aligned across a shallow drainage on a colluvial slope downslope from a large Coalition period roomblock (LA 12587). The dam has been partially breached by an incised channel, and some of the tuff has been transported downslope. Additional tuff blocks are scattered down the gradient along this same channel to the east and may represent the eroded remnants of similar structures.

Soil descriptions for Test Pit 1 show that the check dam was constructed on top of young stratified alluvium, possibly less than 100 years old and deposited in an aggrading stream channel (Table 20.1; see Drakos and Reneau, Volume 3 for key). Deposition of approximately 16 cm of young alluvium has occurred at Test Pit 1 and behind the west part of the dam, with minimal deposition apparent elsewhere. Soils and geomorphic data indicate that the check dam at LA 128804 is a recent structure that is likely post-Puebloan in age and less than 100 years old.

Table 20.1. Geomorphological characteristics of soils in Test Pit 1.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Preliminary Age Estimate	Notes
C1	0-16	<2	10YR5/4	10YR4/3	s	sg	lo	so,po	n.o.	none	-	cs	<100 yrs?	slightly moist bits of reworked $CaCO_3$, ms-cs
C2	16-32	<2	-	10YR4/4	ls	m	lo	so,po	n.o.	none	-	aw		stratified fs, moist; blocks set on top of C2
Bwb1	32-42+	<2	10YR5/4	10YR4/3	sl	1msbk	so-lo	so,po	n.o.	none	-	-	<1000 yrs	fine-grained alluvium

The C_1-C_2 horizon was found between 0 and 16 cm below the surface and contained less than 2 percent gravels. The sediments in the horizon are a massive, single-grain, brown sand with a loose consistency. Sediments are non-effervescent except for bits of reworked $CaCO_3$, with a clear, smooth lower horizon boundary. The C_2 horizon is located between 16 and 32 cm below the surface and also contains less than 2 percent gravel. Like the stratum above it, it is massive, loose, and single grain, but is dark yellowish brown and loamy sand. Sediments in this stratum are non-effervescent and form an abrupt boundary. The Bwb1 horizon is located between 32 and 42+ cm below the surface and also contains less than 2 percent gravel. Sediments are massive, sub-angular, blocky, brown and have a sandy loam consistency. They are also non-effervescent.

SITE EXCAVATION

The excavations at LA 128804 were undertaken by Kari Schmidt (crew chief), Aaron Gonzales, Mia Jonsson, Mike Kennedy, Bettina Kuru'es, and Timothy Martinez.

Two units were excavated perpendicular to the check dam (Figure 20.2). Test Pit 1 included the area downslope of the dam, as well as the stones of the dam itself and a small portion of the upslope side of the dam. Test Pit 2 was immediately adjacent to Test Pit 1 and on the upslope side of the dam.

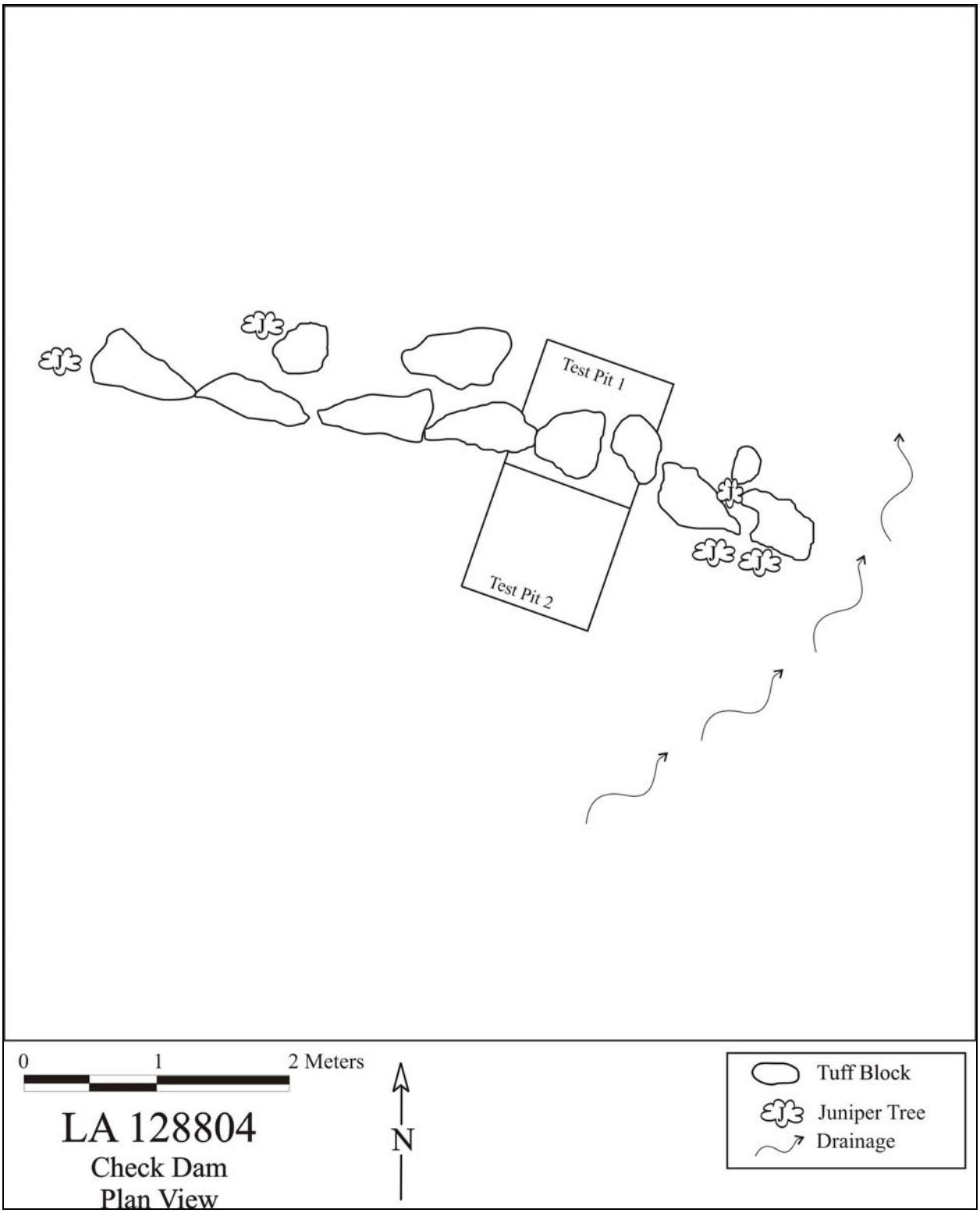


Figure 20.2. Overview of the check dam site.

Test Pit 1

The fill in this 1- by 1-m unit was very loose and sandy (Table 20.2 for strata defined during excavation). Two pieces of obsidian debitage and a smeared-indented corrugated sherd were recovered from the 0- to 10-cm level, and flotation and pollen samples were collected. In the next 10 cm of fill, which were loose and fine, a total of five pieces of obsidian debitage were recovered. From 20 to 30 cm, the sediment was still very loose and sandy, with two pieces of obsidian debitage being recovered. The test pit was excavated down another 10 cm to 40 cm below the ground surface, but no additional artifacts were recovered. The fill in all levels was a sandy loam.

Test Pit 2

The soil of this unit duplicated that of the adjacent Test Pit 1. Artifacts recovered from this unit consist of two pieces of obsidian and chalcedony debitage and a smeared-indented corrugated sherd from the 0- to 10-cm level and eight pieces of obsidian and chalcedony debitage from the 10- to 20-cm level.

Table 20.2. Stratigraphic sequence used during excavation at LA 128804.

LA 128804 Stratigraphic Summary							
Stratum #	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
1	Test pits 1 and 2	0.40	0.40	0–40 cm below ground surface	10YR5/3	Sandy loam	Very loose sediments. No peds and only inclusions are a few sherds and lithics. Very recent soil, on the order of less than 100 years of development. Bottom of strat not reached, but only identified to bottom of excavated test pits.

SITE CHRONOLOGY AND ASSEMBLAGE

Approximately 510 artifacts were recovered during excavations at LA 128804. All of the ceramics that were identified at the site were analyzed, and just under 50 percent of the chipped stone materials were analyzed. Analyses of the ceramics, lithics (chipped and ground stone), pollen, and archaeobotanical materials were all conducted. No faunal remains were recovered, and no radiocarbon samples were submitted for analysis due to the lack of suitable material. However, nine obsidian artifacts were submitted for hydration dating.

Chronology

Obsidian Hydration Dating

Nine obsidian artifacts from LA 128804 were submitted to Diffusion Laboratory for age determination using the obsidian hydration method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rind, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 20.3).

Table 20.3. Obsidian hydration dates for LA 128804.

FS* No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
14	2003-68	Cerro Toledo	3.40	1610	20
47	2003-69	Cerro Toledo	4.55	-3839	257
85	2003-70	Valle Grande	2.84	709	89
127	2003-71	Cerro Toledo	7.48	-2429	118
131	2003-72	Cerro Toledo	3.36	-239	132
134	2003-73	Valle Grande	3.40	-1098	182
181	2003-74	Valle Grande	4.08	-2614	227
224	2003-75	Valle Grande	3.47	-1203	184
230	2003-76	Cerro Toledo	3.56	-1479	195

* Field Specimen

The obsidian hydration dates provide a wide range from 3839 BC to AD 1610. It is possible that the surface scatter surrounding the feature is associated with multiple use episodes ranging from Archaic through Ceramic period. Most of the hydration dates seem to reflect a Middle to Late Archaic component.

Ceramic Artifacts (Dean Wilson)

The distribution of ceramic types documented during the analysis of 262 sherds from the artifact scatter surrounding the check dam indicates a Classic period date (Table 20.4). This assignation is reflected by distributions of decorated whiteware types that make up 77.5 percent of the pottery from this site. All the whitewares exhibit tuff temper, pastes, and styles indicative of Rio Grande (or Tewa) tradition types (Tables 20.5 and 20.6). Most of the whiteware sherds at the site represent bowl forms (Table 20.7). Decorated whiteware assemblages from all major contexts are dominated by Biscuitware types, with Biscuit B/C outnumbering Biscuit A (Abiquiu Black-on-gray) by over four to one. On the other hand, the presence of Santa Fe Black-on-white and Wiyo Black-on-white also reflects an earlier Late Coalition period component.

Table 20.4. Distribution of ceramic types from LA 128804.

Pottery Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	5	1.9
Indeterminate organic paint	2	0.8
Santa Fe Black-on-white	4	1.5
Wiyo Black-on-white	1	0.4
Biscuitware (slipped both sides)	3	1.1
Biscuitware painted unspecified	9	3.4
Biscuitware (slipped one side)	2	0.8
Biscuit A (Abiquiu Black-on-gray)	2	0.8
Biscuit B/C body	8	3.1
Northern Rio Grande Utilityware		
Plain gray rim	2	0.8
Plain gray body	21	8.0
Indented corrugated	18	6.9
Plain corrugated	3	1.1
Smeared plain corrugated	22	8.4
Smeared-indented corrugated	133	50.8
Tewa Micaceous Ware		
Sapawe Micaceous	4	1.5
Middle Rio Grande Glazeware		
Glaze red body unpainted	6	2.3
Glaze unslipped body	10	3.8
Glaze red body undifferentiated	4	1.5
Glaze yellow body undifferentiated	2	0.8
Total	**262**	**100.0**

Table 20.5. Tradition by ware for LA 128804 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	199	100.0	37	100.0	--	--	4	100.0	240	91.6
Middle Rio Grande	--	--	--	--	22	100.0	--	--	22	8.3
Total	**199**	**100.0**	**37**	**100.0**	**22**	**100.0**	**4**	**100.0**	**262**	**100.0**

A Classic period association is also supported by the presence of glazewares, which represent 1.5 percent of the pottery from this site. This includes sherds derived from glaze-on-red and glaze-on-yellow vessels. These sherds are tempered with basalt and latite commonly found in pottery produced in areas of the Middle Rio Grande to the south. Gray utilityware types consist of 75.9 percent of the pottery from this site and indicate similar trends. The majority of this pottery is

tempered with "anthill sand" (Table 20.6). While a wide range of exterior surface manipulations were noted, most exhibit smeared corrugated exteriors.

Table 20.6. Temper by ware for ceramics from LA 128804.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sand	--	--	--	--	--	--	2	50.0	2	0.7
Granitic (mica, quartz, and feldspar)	14	7.0	--	--	--	--	2	50.0	16	6.1
Fine tuff or ash	1	0.5	23	62.1	--	--	--	--	24	9.1
Fine tuff and sand	--	--	6	16.2	--	--	--	--	6	2.2
Gray crystalline basalt	--	--	--	--	8	37.4	--	--	8	3.0
San Marcos latite	2	1.0	--	--	14	63.6	--	--	16	6.1
Dark igneous and sand	1	0.5	--	--	--	--	--	--	1	0.3
"Anthill"	181	90.5	3	8.1	--	--	--	--	184	70.2
Tuff with some phenocrysts (anthill)	--	--	5	13.5	--	--	--	--	5	1.9
Total	**199**	**100.0**	**37**	**100.0**	**22**	**100.0**	**4**	**100.0**	**262**	**100.0**

Table 20.7. Form by ware for LA 128804 ceramics.

Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	--	--	1	2.7	8	36.3	--	--	9	3.4
Bowl rim	--	--	1	2.7	--	--	--	--	1	0.3
Bowl body	--	--	21	56.7	--	--	--	--	21	8.0
Seed jar	--	--	--	--	2	9.0	--	--	2	0.6
Jar neck	45	22.6	--	--	4	18.0	--	--	49	18.7
Jar rim	4	1.0	--	--	1	4.5	--	--	5	1.9
Jar body	150	75.3	14	37.8	5	22.7	4	100.0	173	66.0
Body sherd polished int-ext	--	--	--	--	2	9.0	--	--	2	0.6
Total	**199**	**100.0**	**37**	**100.0**	**22**	**100.0**	**4**	**100.0**	**262**	**100.0**

The combination of decorated and utility pottery outlined in Tables 20.4 through 20.7 is consistent with a component dating to the Middle Classic period (15th century). That is, assuming that the Biscuit B/C body sherds represent the Biscuit B type, which seems likely given the presence of Biscuit A. However, the presence of Santa Fe and Wiyo Black-on-white also represents a Late Coalition period component.

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 113 chipped stone artifacts were analyzed from LA 128804, consisting of 108 pieces of debitage, three retouched tools, and two ground stone items. This represents a 44.4 percent sample of the 254 lithic artifacts recovered during the site excavations. Table 20.8 presents the data on lithic artifact type by material type. The majority of the debitage is made of obsidian, with less chalcedony, Pedernal chert, basalt, and other materials. The presence of cortex on 9.4 percent of the debitage indicates that the materials were collected from both secondary waterworn (65.2%) and primary nodule sources. The obsidian is present at nearby sources in the Jemez Mountains. In contrast, chalcedony, Pedernal chert, and chert are available from local Rio Grande Valley gravel sources. The basalt is present in outcrops and stream gravels.

Table 20.8. Lithic artifact type by material type from LA 128804.

Artifact Type		Material Type							
		Undetermined Igneous	Basalt	Andesite	Obsidian	Chalcedony	Chert	Pedernal	Total
Debitage	Angular debris	0	0	0	2	4	0	3	9
	Core flake	0	8	0	15	11	1	5	39
	Biface flake	0	0	0	35	2	0	0	37
	Microdebitage	0	0	0	18	0	0	0	18
	Undetermined flake	0	1	0	3	0	0	0	4
	Subtotal	0	9	0	73	17	1	8	108
Retouched Tools	Retouched piece	1	0	0	1	0	0	0	1
	Biface	0	0	0	1	1	0	0	2
	Subtotal	1	0	0	1	1	0	0	3
Ground Stone	Undetermined metate fragment	1	0	1	0	0	0	0	2
	Subtotal	1	0	1	0	0	0	0	2
Total		**2**	**9**	**1**	**74**	**18**	**1**	**8**	**113**

Twelve pieces of debitage and a biface from LA 128804 were submitted for X-ray fluorescence analysis (Table 20.9). Most of the artifacts were from the Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source area, with fewer from the Valle Grande (Cerro del Medio) source, which are located about 15 km (10 miles) as the "crow flies" to the southwest and west (Shackley, Volume 3).

Table 20.9. Obsidian source samples.

FS #	Artifact	Color	Source
14	Debitage	Translucent	Cerro Toledo rhyolite
44	Debitage	Black opaque	Cerro Toledo rhyolite
47	Debitage	Black opaque	Cerro Toledo rhyolite
66-1	Debitage	Green	Cerro Toledo rhyolite
66-2	Debitage	Black opaque	Cerro Toledo rhyolite
85	Debitage	Translucent	Valle Grande rhyolite
127	Debitage	Translucent	Cerro Toledo rhyolite
131	Debitage	Translucent	Cerro Toledo rhyolite
134	Tool	Translucent	Valle Grande rhyolite
181	Debitage	Translucent	Cerro Toledo rhyolite
224	Debitage	Translucent	Valle Grande rhyolite
230	Debitage	Black opaque	Cerro Toledo rhyolite

Lithic Reduction

The debitage consists of a mixture of core flakes and biface flakes, with fewer pieces of angular debris, microdebitage, and undetermined flake fragments. The majority of the flakes exhibit single platforms (n = 25), with cortical (n = 3), dihedral (n = 1), multi-faceted (n = 5), collapsed (n = 5), and crushed (n = 11) platforms. Sixteen (32.0%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed and five being retouched/abraded platforms.

The majority of the core flakes consist of distal fragments (n = 53; 51.9%), with fewer whole (n = 16), proximal (n = 14), midsection (n = 17), lateral flake (n = 1), and undetermined flake (n = 1) fragments. Most of the biface flakes are midsection fragments (n = 30) and distal (n = 28) fragments, with fewer whole (n = 2), proximal (n = 16), and lateral (n = 1) fragments. The whole core flakes have a mean length of 24.8 mm (*std* = 10.2), whereas, the whole biface flakes have a mean length of 15.0 mm (*std* = 1.4). Lastly, the angular debris have a mean weight of 11.2 g (*std* = 11.5).

The retouched tools consist of a retouched piece and two bifaces. The retouched piece consists of the proximal fragment of a large dacite flake with a bidirectionally retouched lateral edge. The bifaces are both distal fragments that exhibit edge angles from 35 to 45 degrees, indicating that they may have been broken during the middle to late stages of tool manufacturing. One of the bifaces is heavily burned with pot lids.

Tool Use

Only four flakes (3.7%) exhibit evidence of damage that could be attributed to use-wear**.** All four flakes have straight edge outlines, with one on the end and three along the lateral sides of the artifact. The edge angles range from 35 to 45 degrees. The retouched piece exhibits rounding and polish along the marginally retouched edge and the opposite unretouched edge.

The ground stone assemblage consists of two undetermined metate fragments. One is probably a fragment of a large formal metate with a heavily ground and polished concavity. The other is a small burned fragment that also exhibits a highly ground and polished concave surface.

Archaeobotanical Remains (Pamela McBride)

Non-cultural debris in flotation samples from upslope and downslope of the check dam included spurge seeds, juniper twigs, and piñon needles (Table 20.10). Cultural plant remains were absent from samples, which is not remarkable considering the context and relatively isolated location of the feature.

Table 20.10. Flotation sample plant remains from LA 128804.

FS No.	213	215	219	222
Feature	Test Pit 1			
	Stratum 1, level 1		Stratum 1, level 2	
Non-Cultural Annuals				
Spurge	+			
Perennials				
Juniper	twig +	+, twig +	twig +	twig +
Piñon	needle +	needle +	needle +	

All plant remains are seeds unless indicated otherwise.
Non-cultural plant remains are uncharred.
+ 1-10/liter.

Pollen Remains (Susan Smith)

Four pollen samples were analyzed from around the vicinity of the check dam. Two samples were taken from sediments located upslope of the check dam (FS 214 and FS 223) and downslope from the check dam (FS 216 and FS 220). Taxa identified in the sediments located upslope from the check dam include the following: prickly pear (*Opuntia*), cheno-ams, unidentified grasses (Poaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), unidentified pine (*Pinus*), piñon pine (*Pinus edulis*), juniper (*Juniperus*), oak (*Quercus*), Mormon tea (*Ephedra*), and sagebrush (*Artemisia*).

Taxa identified in the sediments located downslope from the check dam include the following: prickly pear, cattail (*Typha*), cheno-ams, unidentified grasses, sunflower family, ragweed/bursage, chicory tribe (Liguliflorae), spurge family, spruce (*Picea*), fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

SUMMARY

Based on appearance and geomorphological assessments conducted at LA 128804, it is probable that the check dam is a relatively recent construction that dates to the Historic period. This supposition was initially based on the relatively pristine condition in which the check dam was found, and indeed, the geomorphologic information also indicated that it is less than 100 years in age. The Puebloan artifacts found in association with the check dam appear both upslope and downslope of the feature in the stream channel within which it is located. The site is also situated immediately downslope of LA 12587 (Chapter 14, this volume), a Late Coalition period roomblock. Nonetheless, the ceramic assemblage indicates a mixture of Late Coalition and Classic period components, with the obsidian hydration dates possibly reflecting a Middle to Late Archaic component.

CHAPTER 21
WHITE ROCK TRACT (A-19): LA 128805

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

This chapter presents the results of excavations conducted at LA 128805, a Middle Classic period fieldhouse and associated artifact scatter. LA 128805 (temporary numbers LA 12587D and H-1) is a large, one-room fieldhouse located on the floodplain between the mouth of Cañada del Buey and Pajarito Canyon. Vegetation in the site area is dominated by piñon and juniper woodland and has an understory dominated by saltbush, snakeweed, yucca, and various other native grasses, shrubs, and forbs. LA 128805 is situated at an elevation of 1978 m (6490 ft) and is located approximately 200 m east of LA 127631 (Chapter 18, this volume), a one-room Late Coalition period fieldhouse. LA 128805 is located about 75 m north of State Road 4 in White Rock.

SITE DESCRIPTION

LA 128805 consists of a one-room fieldhouse with visible wall alignments on a small mound. The room measures 3.3 by 2.5 m in size, and the masonry blocks used in construction range from 0.45 to 1.35 m in length and average 0.35 m in width. The site area has been impacted by heavy erosion and a small drainage runs along the southern edge of the mound. In-field artifact analyses conducted during the initial recording of the site show that Santa Fe Black-on-white and smeared-indented corrugated utilityware sherds dominated the artifact scatter located to the west of the fieldhouse. The lithic artifacts in this area included mostly basalt (60%), with less obsidian, and chert flakes. Artifacts were sparse and scattered in a 15- by 15-m area around the feature, but were heaviest to the southwest along the aforementioned drainage. Figure 21.1 shows the fieldhouse before excavation.

FIELD METHODS

Fieldwork at the site occurred in October and November of 2002. Work began with an initial assessment of the site. The crew walked over the site area, delineating the site boundaries and identifying the presence of artifact concentrations and features to ascertain if and how they related to the fieldhouse. The site was divided into two areas for mitigation: the mounded area of the fieldhouse and the area immediately surrounding the mound were designated as Area 1, and the surface artifact scatter located to the west of the fieldhouse was designated as Area 2. Both areas were then gridded into 1- by 1-m units, with the site datum (100N/100E for horizontal control, 10.0 m for vertical control) located southwest of the fieldhouse. Artifacts were collected and bagged for analysis and provenienced to the nearest meter, using the southwest corner of the grid for its coordinates. Surface collections produced a total of 216 lithics, 113 ceramics, one

metate fragment, and one piece of animal bone. In all, a 600-m^2 area around the fieldhouse was surface collected. The distribution of these artifacts is depicted in Figure 21.2.

Figure 21.1. LA 128805 before excavation.

Excavations at LA 128805 occurred only in Area 1. The rubble mound from the fieldhouse covered an area of approximately 23 m^2 but, when excavations were completed, the structure occupied part or all of 10 m^2. Excavation was done in individual meter grids and in natural stratigraphic levels. All fill removed from excavated units was screened through 1/8-in. mesh. Artifacts were collected and bagged by type from each level, and pollen, flotation, and other samples were collected from appropriate locations in the structure.

STRATIGRAPHY (Paul Drakos and Steve Reneau)

LA 128805 is situated on a broad colluvial slope that displays abundant evidence for active erosion. The fieldhouse is at the upslope end of eroding channels that extend to the east, with about 0.5 m of recent erosion estimated on the southeast side. Eroded channels also wrap around the northwest side of the structure. The tuff blocks in the fieldhouse appear to be acting as a local armor, protecting the area occupied by the fieldhouse from erosion while surrounding slopes are stripped. There is potential for some deposition of slope wash colluvium on the upslope (west) side of the fieldhouse, whereas other adjacent areas are experiencing erosion.

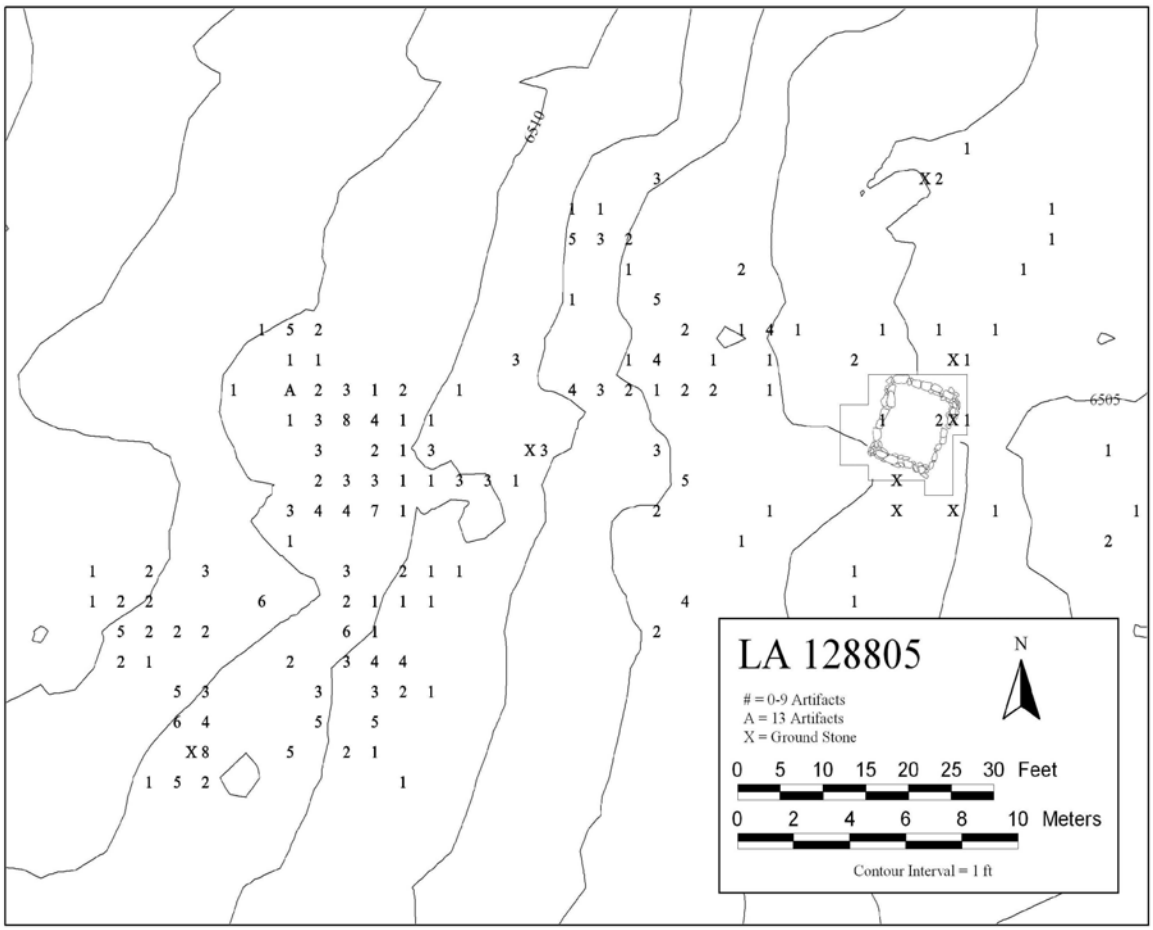


Figure 21.2. Surface distribution of artifacts collected at LA 128805.

An examination of soils in a test pit, which was located 1 m southeast of the southeast corner of the structure, suggests that LA 128805 was constructed on an aggrading colluvial slope that experienced post-occupation deposition before the recent erosion that has occurred at the site (Table 21.1; see Drakos and Reneau, Volume 3 for key). A thin (10 cm thick) A horizon is inferred to post-date occupation of the site (i.e., is less than 500 yrs old). The A horizon overlies a buried (Bwb1) horizon, with soil structure development similar to that observed for older post-Coalition period soils, and is inferred to be 500 to 800 years old. The Bwb1 horizon overlies a buried Pleistocene soil formed in colluvium. The sequence of buried soils at this site suggests rapid deposition of colluvium, possibly during the Coalition period, with continued aggradation after abandonment of this Late Classic period fieldhouse, followed by recent erosion (Drakos and Reneau, Volume 3). Stratigraphic designations used in the field during excavation are shown in Table 21.2.

Table 21.1. Geomorphological characteristics of test pit at LA 128805; pit located 1 m southeast of southeast corner of fieldhouse.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	Lower Horizon Boundary	Preliminary Age Estimate	Notes
A	0-10	5	10YR 4/4	10YR 3/4	scl	1m sbk	so-lo	ss, ps	n.o.	n	cs	<500 yrs?	post-occupation slopewash
Bw b1	10-40	< 2	10YR 4/4	10YR 3/4	scl	2m sbk	sh	ss, ps	n.o.	n	cs	<700-800 yrs	pre-occupation slopewash ?
Btk b2	40-47 +	< 2	7.5Y R4/3	7.5Y R3/3	scl	2-3m sbk	h	ss, ps	2nbrc opo	y		late Pleistocene	slopewash; CaCO3 filaments

Table 21.2. Stratigraphic sequence used during excavations at LA 128805.

Stratum #	Provenience	Maximum Thickness	Minimum Thickness	Elevation	Color	Texture	Comments
1	Room 1	0.10 (m)	0.01	9.86–9.37	10YR3/4	Loamy sand	Very loose. Lots of duff with a high vegetal content. Not a thick strat in most places. Few artifacts.
2	Room 1	0.31	0.10	9.9–9.29	10YR3/4	Sandy loam	Room fill. Artifacts are abundant, some mottles present. Bottom is abrupt contact with an increase in clay.
3	Room 1	0.13	0.02	9.62–9.40	10YR4/4	Sandy loam with clay	Clay content higher than previous strat, but sand is still present. Room fill with wall fall.

Stratum #	Provenience	Maximum Thickness	Minimum Thickness	Elevation	Color	Texture	Comments
							Bottom is abrupt contact with prepared clay floor.
4	Room 1	0.01	0.01	9.52–9.40	10YR4/4	Clay	Prepared floor (not plastered).

*Thickness in meters

SITE EXCAVATION

The excavations at LA 128805 were undertaken by Kari Schmidt (crew chief), Aaron Gonzales, Mia Jonsson, Mike Kennedy, and Marjorie Wright.

The fieldhouse at LA 128805 was excavated in 1- by 1-m units and natural stratigraphic levels were used. Three natural strata were encountered. The top centimeter or so was a grayish-brown duff and loose sandy loam that was clearly post-occupational fill. The subsequent stratum was a sandy clay loam and varied from 5 to 20 cm in thickness. Stratum 3 was also a sandy clay loam, but with a higher clay content and varied from 5 to 13 cm thick. The fourth stratum was a prepared floor and its boundary was abrupt. Clay content in this stratum was high, and artifacts were in contact with the surface. Figures 21.3 and 21.4 show the fieldhouse after it was excavated and at the level of the prepared surface. Pink flagging tape in the photo denotes grid coordinates.

During excavations, the boundary between the second and third strata was originally thought to be the floor of the structure, as there were stretches along the west wall where there was good articulation between the wall and floor. This was supported by a mano that was recovered at about the same level. However, upon further excavation, more artifacts were found below the "floor," and excavations down another 10 cm or so revealed an obvious surface. The surface was not plastered, but was clearly prepared. Several artifacts were encountered on the floor and it also contained small patches of charcoal-stained areas that were not present on the upper "floor." The lower surface was clearly the one associated with the use of the fieldhouse.

Figure 21.3. LA 128805 after excavation.

The walls of the fieldhouse were at least two courses high, and in some cases along the eastern wall were three courses high (see Figure 21.4). For the most part, the tuff blocks used in construction were shaped, but several small and unshaped blocks were present in the interstitial spaces along the walls. The corners of the room were all buttressed with smaller cobbles, probably for extra support in the uneven ground. Figure 21.4 shows the site in profile.

Excavations at the fieldhouse produced a total of 131 lithics, 93 ceramics, and eight pieces of ground stone. Of this total, 122 lithics, 89 ceramics, and all of the ground stone artifacts were found in the sandy clay loam fill (Strata 2 and 3).

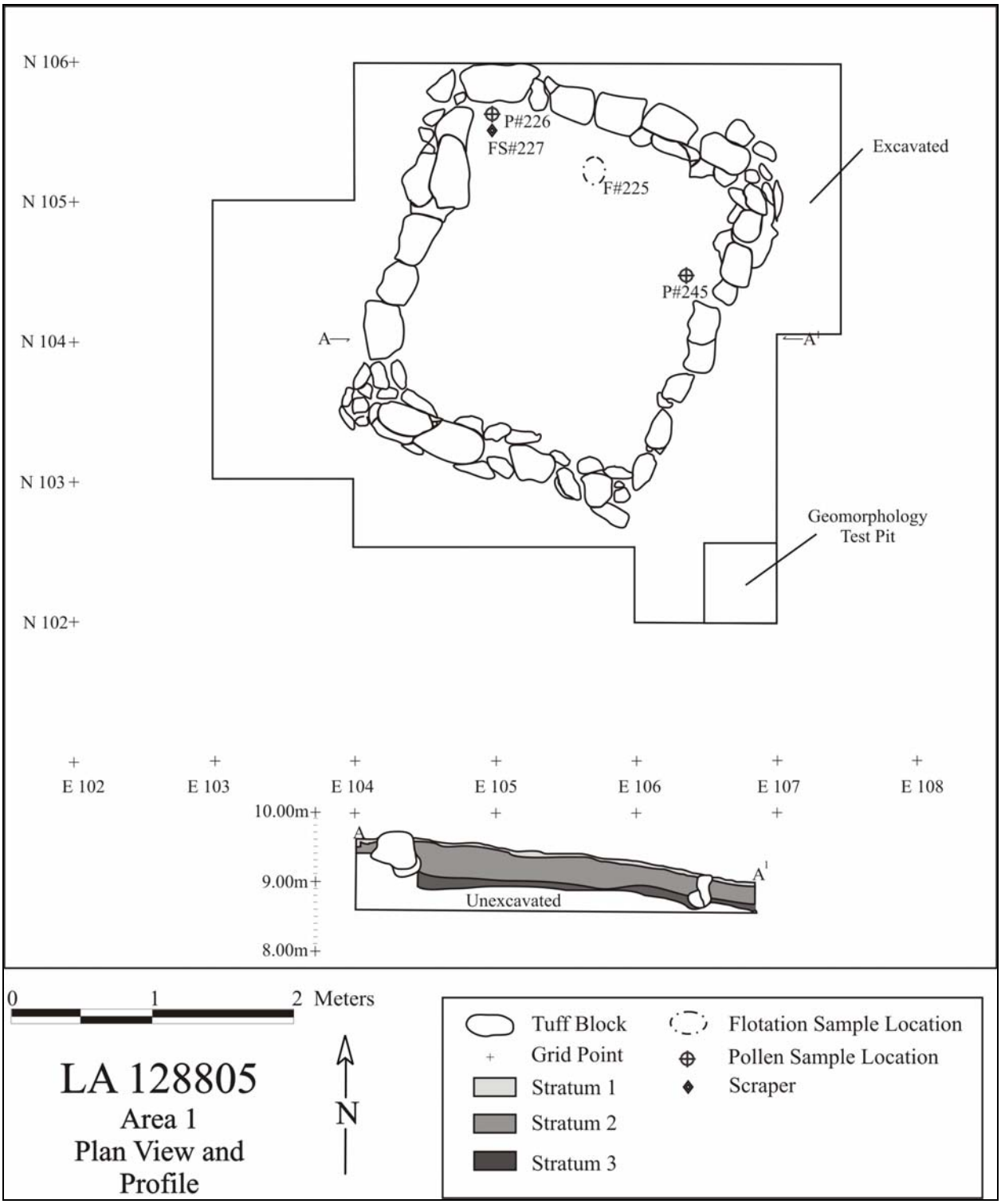


Figure 21.4. Plan view and profile drawing of LA 128805.

SITE CHRONOLOGY AND ASSEMBLAGE

Approximately 550 artifacts and samples were recovered during excavations at LA 128805 and all were submitted for analysis. Analyses of the ceramics, lithics (chipped and ground stone), pollen, and archaeobotanical materials were all conducted. No faunal remains were recovered. A maize sample was submitted for radiocarbon dating and 10 pieces of obsidian for hydration dating. Results of these analyses are presented in subsequent sections.

Chronology

Radiocarbon Dating

A single radiocarbon sample was submitted for analysis from this site. Several maize (*Zea mays*) cupules were collected from a flotation sample (Field Specimen [FS] 225) taken from inside Room 1 just above the floor and dated to the Middle Classic period (AD 1420–1500). Table 21.3 presents the chronometric information.

Table 21.3. Radiocarbon dates from LA 128805.

FS#	Material	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
225	maize	183756	440±40 BP	AD 1440	AD 1420–1500

Obsidian Hydration Dating

Ten obsidian artifacts from LA 128805 were submitted to Diffusion Laboratory for age determination using the obsidian hydration method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rind, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 21.4).

Table 21.4. Obsidian hydration dates for LA 128805.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
6	2003-44	Cerro Toledo	4.69	-3866	251
62	2003-45	Cerro Toledo	5.85	1360	20
71	2003-46	Cerro Toledo	4.13	1338	30
114	2003-47	Cerro Toledo	4.35	-3163	238
157	2003-48	Cerro Toledo	4.68	564	60
163	2003-49	Cerro Toledo	3.91	-2224	216

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
186	2003-50	Cerro Toledo	4.32	-3140	238
247	2003-51	Cerro Toledo	4.94	-177	87
253	2003-52	Cerro Toledo	2.68	31	146
254	2003-53	Cerro Toledo	2.17	689	119

The obsidian hydration dates provide a wide range from 3866 BC to AD 1360. The two 14th century dates are closest to the radiocarbon date of circa AD 1440. However, the remainder of the dates are much older than the site occupation and may represent reuse of Middle to Late Archaic materials.

Ceramic Artifacts (Dean Wilson)

The distribution of ceramic types documented during the analysis of 199 sherds from the fieldhouse indicates that the assemblage dates to the Middle Classic period (15th century) (Table 21.5). The Middle Classic period date is reflected by distributions of decorated whiteware types that make up 24.6 percent of the pottery from the site, including Biscuit A, Biscuit B, and Biscuit B/C (Biscuit B?). All the whitewares exhibit tuff temper, pastes, and styles indicative of Rio Grande (or Tewa) tradition types (Tables 21.6 and 21.7). In contrast to assemblages from most other sites examined during this project, a slight majority of the whitewares consist of jar forms (Table 21.8). Decorated whiteware assemblages from all major contexts are dominated by Biscuitware types, with Biscuit A (Abiquiu Black-on-gray), Biscuit B (Bandelier Black-on-gray), and Biscuit B/C. Other Classic period pottery includes Sankawi Black-on-cream. Earlier types are limited to a single Santa Fe Black-on-white sherd.

Table 21.5. Ceramic types from LA 128805.

Pottery Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	3	1.5
Indeterminate organic paint	7	3.5
Santa Fe Black-on-white	1	0.5
Unpainted Biscuit (slipped one side)	14	7.0
Biscuitware (slipped both sides)	2	1.0
Biscuitware painted unspecified	6	3.0
Biscuit A (Abiquiu Black-on-gray)	3	1.5
Biscuit B (Bandelier Black-on-gray)	3	1.5
Biscuit C (Cuyamunge Black-on-tan)	1	0.5
Biscuit B/C body	7	3.5
Sankawi Black-on-cream	2	1.0
Northern Rio Grande Utilityware		
Plain gray rim	10	5.0
Plain gray body	52	26.1

Pottery Type	Frequency	Percent
Unknown gray rim	1	0.5
Indented corrugated	6	3.0
Plain corrugated	6	3.0
Smeared plain corrugated	19	9.5
Smeared-indented corrugated	32	16.1
Sapawe Micaceous	5	2.5
Middle Rio Grande Glazeware		
Glaze red body unpainted	4	2.0
Glaze yellow body unpainted	2	1.0
Glaze unslipped body	7	3.5
Glaze polychrome body	2	1.0
Glaze-on-red body	2	1.0
Glaze-on-yellow body	1	0.5
White Mountain Redware (Cibola)		
Wingate Black-on-red	1	0.5
Total	**199**	**100**

A Classic period association at the fieldhouse is also supported by the presence of glazewares that represent 9 percent of the pottery from the site. While no rim sherds were present, a combination of glaze-on-red, glaze-on-yellow, and glaze polychrome sherds are represented. Most of these sherds are tempered with basalt and latite commonly found in pottery produced in areas of the Middle Rio Grande to the south.

Table 21.6. Tradition by ware for LA 128805 ceramics.

Tradition	Ware										Total	
	Gray		White		Red		Glaze		Micaceous			
Rio Grande (Prehistoric)	126	100.0	49	100.0	--	--	--	--	5	100.0	180	90.4
Middle Rio Grande	--	--	--	--	--	--	18	100.0	--	--	18	9.0
Cibola	--	--	--	--	1	100.0	--	--	--	--	1	0.0.5
Total	**126**	**100.0**	**49**	**100.0**	**1**	**100.0**	**18**	**100.0**	**5**	**100.0**	**199**	**100.0**

Gray utilityware types consist of 63.3 percent of the pottery from this site and indicate similar trends. The majority of the corrugated pottery is tempered with “anthill” sand, in contrast to the plain gray and Sapawe Micaceous shreds which are tempered with micaceous granite (Table 21.7). While a wide range of exterior surface manipulations was noted, it is about equally divided between plain and smeared corrugated forms.

Table 21.7. Temper by ware for LA 128805 ceramics.

Temper	Ware										Total	
	Gray		White		Red		Glaze		Micaceous			
Sand	3	2.3	--	--	--	--	--	--	3	60.0	6	3.0
Granitic (mica, quartz, and feldspar)	21	16.6	--	--	--	--	--	--	--	--	21	10.5
Highly micaceous paste	--	--	--	--	--	--	--	--	2	40.0	2	1.0
Sherd and sand	1	0.7	--	--	1	100.0	--	--	--	--	2	1.0
Fine tuff or ash	--	--	47	95.9	--	--	1	5.5	--	--	48	24.1
Gray crystalline basalt	--	--	--	--	--	--	8	44.4	--	--	8	4.0
San Marcos latite	--	--	--	--	--	--	9	50.0	--	--	9	4.5
"Anthill" sand	101	80.1	--	--	--	--	--	--	--	--	101	50.7
Tuff with some phenocrysts (anthill)	--	--	2	4.1	--	--	--	--	--	--	2	1.0
Total	**126**	**100.0**	**49**	**100.0**	**1**	**100.0**	**18**	**100.0**	**5**	**100.0**	**199**	**100.0**

Table 21.8. Form by ware for LA 128805 ceramics.

Vessel Form	Ware										Total	
	Gray		White		Red		Glaze		Micaceous			
Indeterminate	--	--	1	2.0	--	--	1	5.5	--	--	2	1.0
Bowl rim	--	--	5	10.2	--	--	--	--	--	--	5	2.5
Bowl body	--	--	19	38.7	1	100.0	3	16.6	--	--	23	11.5
Jar neck	19	15.0	3	6.1	--	--	3	16.6	--	--	25	12.5
Jar rim	4	3.1	3	6.1	--	--	1	5.5	--	--	8	4.0
Jar body	99	78.5	18	36.7	--	--	3	16.6	5	100.0	125	62.8
Miniature pinch pot body	4	3.1	--	--	--	--	--	--	--	--	4	2.0
Body sherd polished int-ext	--	--	--	--	--	--	6	30.0	--	--	6	3.0
Indeterminate lug handle	--	--	--	--	--	--	1	5.5	--	--	1	0.5
Total	**126**	**100.0**	**49**	**100.0**	**1**	**100.0**	**18**	**100.0**	**5**	**100.0**	**199**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 353 artifacts were analyzed from LA 128805, consisting of two cores, 331 pieces of debitage, four retouched tools, and 16 ground stone items. This represents a 100 percent sample of the lithic artifacts recovered during the site excavations. Table 21.9 presents the data on lithic artifact type by material type. The majority of the debitage is made of obsidian, with less chalcedony, basalt, and other materials. The presence of cortex on 10.2 percent of the debitage indicates that the materials were collected from both primary nodular (58.8%) and secondary waterworn sources. The obsidian is present at nearby sources in the Jemez Mountains, but four obsidian flakes also exhibit waterworn cortex. In contrast, chalcedony, Pedernal chert, and quartzite are available from local Rio Grande Valley gravel sources.

Table 21.9. Lithic artifact type by material type at LA 128805.

Artifact Type		Material Type												
		Basalt	Vesicular Basalt	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified wood	Orthoquartzite	Quartzite	Total
Cores	Core	0	0	0	0	0	0	1	0	1	0	0	0	2
	Subtotal	0	0	0	0	0	0	1	0	1	0	0	0	2
Debitage	Angular debris	2	0	1	0	0	7	16	0	3	1	0	0	30
	Core flake	22	0	0	0	0	57	48	3	13	0	1	1	145
	Biface flake	11	0	0	0	0	53	3	0	1	0	0	0	68
	Core trimming flake	0	0	0	0	0	1	0	0	0	0	0	0	1
	Microdebitage	14	0	0	0	0	44	11	1	0	0	0	0	70
	Undetermined flake	5	0	1	0	0	11	0	0	0	0	0	0	17
	Subtotal	54	0	2	0	0	173	78	4	17	1	1	1	331
Retouched Tools	Retouched piece	0	0	0	0	0	1	0	0	0	0	0	0	1
	Biface	0	0	0	0	0	2	0	0	0	0	0	0	2
	Uniface	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	3	0	0	1	0	0	0	4
Ground Stone	One-hand mano	0	0	0	1	0	0	0	0	0	0	0	0	1
	Basin metate	0	0	1	0	0	0	0	0	0	0	0	0	1
	Undetermined metate fragment	1	1	2	3	2	0	0	0	0	0	0	0	9
	Abrading stone	0	0	0	0	1	0	0	0	0	0	0	0	1
	Undetermined ground stone	0	0	1	3	0	0	0	0	0	0	0	0	4
	Subtotal	1	1	4	7	3	0	0	0	0	0	0	0	16
Total		55	1	6	7	3	176	79	4	19	1	1	1	353

Eleven pieces of debitage and a retouched tool were submitted for X-ray fluorescence analysis from LA 128805 (Table 21.10). All of the artifacts were obtained from the Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source area, which is located about 15 km (10 miles) as the "crow flies" to the southwest (Shackley, Volume 3).

Table 21.10. Obsidian source samples.

FS #	Artifact	Color	Source
6	Debitage	Translucent	Cerro Toledo rhyolite
62	Debitage	Translucent	Cerro Toledo rhyolite
71	Debitage	Green	Cerro Toledo rhyolite
114	Tool	Translucent	Cerro Toledo rhyolite
157-1	Debitage	Black opaque	Cerro Toledo rhyolite
157-2	Debitage	Translucent	Cerro Toledo rhyolite
163	Debitage	Translucent	Cerro Toledo rhyolite
186	Debitage	Black opaque	Cerro Toledo rhyolite
215	Debitage	Black opaque	Cerro Toledo rhyolite
247	Debitage	Green	Cerro Toledo rhyolite
253	Debitage	Translucent	Cerro Toledo rhyolite
254	Debitage	Green	Cerro Toledo rhyolite

Lithic Reduction

The platform core was reduced using a bidirectional, change-of-orientation technique; whereas, the flake core was reduced using a single-directional, single-face technique. The platform core was discarded due to material flaw and the flake core was classified as still useable. Table 21.11 presents the metric information on these cores.

Table 21.11. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Flake core	41	49	18	46.8
Bi-directional	59	39	26	57.6

The debitage mainly consists of core flakes (36.3%) and microdebitage (30.1%) with some biface flakes, angular debris, and undetermined flake fragments. Table 21.12 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The overall cortical:non-cortical ratio of 0.63 reflects an emphasis on later stages of core reduction and tool production.

Table 21.12. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	0	2	0	---

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Obsidian	0	3	1	1	1.5
Chalcedony	0	4	7	0	0.57
Pedernal Chert	0	0	0	0	---
Total	0	7	10	1	0.63
Percentage	0	38.8	55.5	5.5	---

The majority of the flakes exhibit single platforms (42.4%; *n* = 31), with cortical (*n* = 10), dihedral (*n* = 2), multi-faceted (*n* = 7), collapsed (*n* = 9), and crushed (*n* = 14) platforms. Twenty-four (28.9%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed and only seven retouched/abraded platforms.

The majority of the core flakes consist of distal fragments (*n* = 60; 41.3%), with fewer whole (*n* = 20), proximal (*n* = 28), midsection (*n* = 34), lateral flake (*n* = 2), and undetermined flake (*n* = 1) fragments. Most of the biface flakes are also midsection fragments (*n* = 23; 33.8%), with fewer whole (*n* = 1), proximal (*n* = 22), and distal (*n* = 22) flakes. The whole core flakes have a mean length of 21.6 mm (*std* = 8.9), whereas, the single whole biface flake has a length of 14.0 mm. Lastly, the angular debris have a mean weight of 4.0 g (*std* = 7.2).

The retouched tools consist of a retouched piece, two bifaces, and one uniface. The retouched piece consists of the distal end of flake with unidirectional dorsal retouch along a lateral edge with an angle of 35 degrees. One of the bifaces is a lateral fragment with an edge angle of 40 degrees, whereas, the other biface is a proximal fragment that may have been broken while attempting to notch the artifact. This break occurred along a material flaw. The uniface is a large flake with unidirectional dorsal retouch along the lateral end and ends with a steep edge angle of 70 degrees (Figure 21.5).

Tool Use

Only six flakes (1.8%) exhibit evidence of damage that could be attributed to use-wear**.** Three have straight lateral edges with angles ranging from 35 to 45 degrees, whereas, two are utilized ends with straight and convex edge outlines and angles of 50 degrees. The last item is a utilized projection.

The uniface is the only retouched tool with evidence of use-wear consisting of some polish and scarring.

The ground stone consists of a one-hand mano, basin metate, and some metate fragments. The one-hand mano is a dacite cobble with a single grinding surface. The basin metate is a fragment that was made on a large piece of andesite. It has grinding surfaces on both sides that consist of deep concavities. The abrading stone is a tuff cobble that exhibits some grinding along high spots on one surface. The undetermined metate and ground stone fragments are tabular pieces of material that exhibit a grinding surface(s). The metate fragments are larger and may represent

pieces of millingstones with slightly concave grinding surfaces. Several of the fragments are burned.

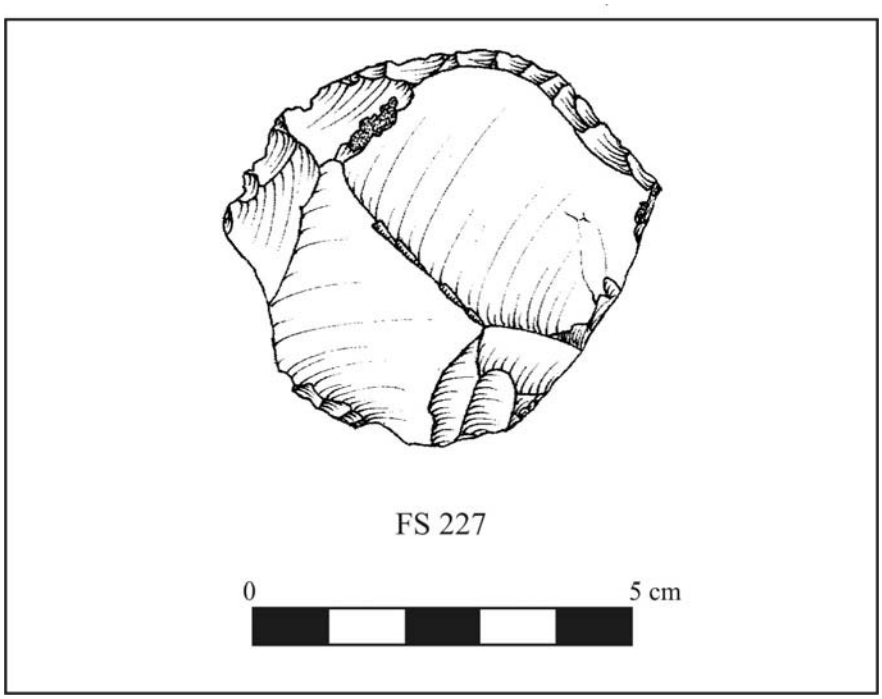


Figure 21.5. Uniface recovered at LA 128805.

Archaeobotanical Remains (Pamela McBride)

Cultural floral remains consisted of an unidentifiable plant part, a maize glume, cupule, and kernel fragments. Unburned intrusive plant parts included weedy annual seeds, grass stems, dropseed grass seeds, prickly pear cactus seeds, and conifer duff (Table 21.13).

Table 21.13. Flotation sample plant remains from LA 128805.

FS No.	161	162	176	185	199	210
Feature	105.2N/104.8E	103N/104E	103N/106E	104.9N/104.3E	104N/104E	102N/106E
Cultural Other						
Unidentifiable		pp 1(0)				
Non-Cultural Annuals						
Goosefoot		+	+	+	+	
Spurge			+	+	+	+
Grasses						
Grass family	culm +					
Other						
Dicot		leaf +				
Perennials						

FS No.	161	162	176	185	199	210
Feature	105.2N/104.8E	103N/104E	103N/106E	104.9N/104.3E	104N/104E	102N/106E
Juniper	twig +	♀ cone +, twig +	♀ cone +, twig +	+, ♀ cone +, twig +	+, ♀ cone +, twig +	twig +
Pine	twig +	twig +	nsg +, twig +		twig +	twig +
Piñon	needle +	needle +	needle +, nutshell +	needle +	needle +	needle +, nutshell +
Ponderosa pine					needle +	
Prickly pear cactus			+	+, embryo +		

Table 21.13 (continued). Flotation sample plant remains from LA 128805.

FS No.	211	225	246	248
Feature	105N/106E	105.2N/105.7E	104.3N/106.4E	103N/104E
Cultural Cultivars				
Maize	cf. glume 1(1)	cupule 2(0), cf. kernel 1(0)		
Non-Cultural Annuals				
Goosefoot	+	+	+	+
Pitseed goosefoot	+			
Spurge			+	+
Grasses				
Dropseed grass		+		
Perennials				
Juniper	♀ cone +, twig +	twig +	+, twig +	twig +
Pine	bs +	bs +	bs +	twig +
Piñon	needle +		needle +	needle +
Ponderosa pine	needle +		needle +	
Prickly pear cactus	+			

All plant remains are seeds unless indicated otherwise; Cultural plant remains are charred, non-cultural plant remains are uncharred; + 1-10/liter, bs barkscale, cf. compares favorably.

Flotation wood charcoal included unidentified pine, piñon, and saltbush/greasewood (Table 21.14). Vegetal samples from room fill yielded a maize kernel and kernel fragments and cupules (Table 21.15). Piñon was the most common wood by weight in vegetal samples, followed by ponderosa and cf. rabbitbrush. Two fragments of cf. wolfberry were also identified, along with several pieces of oak, pine, unknown conifer, saltbush/greasewood, and unknown non-conifer. Since maize was the only identifiable non-wood plant recovered, it might be safe to say that tending maize fields was the primary focus of fieldhouse occupants. Despite the absence of a formal thermal feature, the presence of maize and wood charcoal indicates maize was processed inside the structure and that a variety of locally available conifers and shrubs were used for fuel or construction material.

Table 21.14. Flotation sample wood charcoal taxa by count and weight in grams from LA 128805.

FS No.	199	211	246	248
Conifers				
Pine	1/<0.1g			
Piñon		3/<0.1g		
Unknown conifer		3/<0.1g	2/<0.1g	
Non-Conifers				
Saltbush/greasewood		1/<0.1g		2/<0.1g
Unknown non-conifer				1/<0.1g

Table 21.15. LA 128805 room fill, vegetal sample carbonized plant remains, by count and weight in grams.

FS No.	152	153	155	160	164	173	178	189
Non-Wood Cultivars								
Maize	kernel 1(1)/0.1 g		cf. kernel 8(0)/<0.1g		cupule 1(0)/<0.1g		poss. kernel 7(0)/<0.1g	
Wood Conifers								
Pine								1/<0.1g
Piñon		3/0.3g		4/0.1g	4/0.1g			
Ponderosa pine			1/<0.1g	1/<0.1g	1/<0.1g	3/0.2g		
Unknown conifer		1/<0.1g						
Non-Conifers								
Oak					1/<0.1g			1/<0.1g
cf. Rabbitbrush				2/0.1g			1/<0.1g	6/0.7 g
Saltbush/ greasewood				2/<0.1g	3/0.1g			
cf. Wolfberry				2/0.4g				
Totals	-	4/0.3g	1/<0.1g	11/0.6g	9/0.2g	3/0.2g	1/<0.1g	8/0.7 g

Table 21.15 (continued). LA 128805 room fill, vegetal sample carbonized plant remains, by count and weight in grams.

FS No.	192	195	198	216	220	230	233	234
Stratum	2, level 2					3, level 3	2, level 2	3, level 3
Non-Wood Cultivars								
Maize		cupule 1(1)/<0.1g				kernel 1(1)/<0.1g		
Wood Conifers								
Pine			2/0.1g		1/<0.1g	1/<0.1g		
Piñon						6/1.0g		1/0.1g
Ponderosa pine			2/<0.1g	2/0.8g		3/0.1g		
Unknown conifer	1/<0.1g							
Non-Conifers								
Oak			1/<0.1g			1/<0.1g		
cf. Rabbitbrush			5/0.2g					
Saltbush/ greasewood			1/<0.1g				1/0.1g	
Unknown Non-Conifer						1/<0.1g		
Totals	1/<0.1g	-	11/0.3g	2/0.8g	1/<0.1g	12/1.1g	1/0.1g	1/0.1g

Table 21.15 (continued). LA 128805 room fill, vegetal sample carbonized plant remains, by count and weight in grams.

FS No.	238	241	249	Total Wood	
Stratum	3, level 3				
Wood Conifers					
Pine	4/0.2g	1/0.2g	1/0.1g	0.6g	12%
Piñon				1.6g	33%
Ponderosa pine	1/<0.1g			1.1g	22%
Unknown conifer				<0.1g	<1%
Non-Conifers					
Oak				<0.1g	<1%
cf. Rabbitbrush				1.0g	20%
Saltbush/greasewood				0.2g	4%
Unknown Non-				<0.1g	<1%

Conifer					
cf. Wolfberry				0.4g	8%
Totals	5/0.2g	1/0.2g	1/0.1g	4.9g	100%

Pollen Remains (Susan Smith)

Eight pollen samples were analyzed from the fieldhouse. Taxa identified in the Stratum 1 (post-occupational fill) pollen sample include the following: prickly pear (*Opuntia/Platy*), cheno-ams, unidentified grasses (Poaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), evening primrose (Onagraceae), fir (*Abies*), unidentified pine (*Pinus*), piñon pine (*Pinus edulis*), juniper (*Juniperus*), Mormon tea (*Ephedra*), and sagebrush (*Artemisia*). Taxa identified in the pollen samples (n = 5) from Stratum 2 (room fill) include the following taxa: prickly pear, beeweed (*Cleome*), buckwheat (*Eriogonum*), sunflower family, ragweed/bursage, globemallow (Sphaeralcea), spurge (Euphorbiaceae), evening primrose, fir, unidentified pine, piñon pine, juniper, oak (*Quercus*), birch (*Betula*), Mormon tea, sagebrush, cheno-ams, and unidentified grasses. Taxa identified in the pollen samples (n = 1) from Stratum 3 (wallfall/room fill) include the following taxa: maize, sunflower family, ragweed/bursage, unknown sunflower family (possibly marshelder), unidentified pine, piñon, oak, rose family (Rosaceae), sagebrush, cheno-ams, and unidentified grasses (Poaceae). Taxa identified in Stratum 4 (the floor/prepared surface, n = 1) include the following taxa: prickly pear, cattail (*Typha*), sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon, juniper, sagebrush, cheno-ams, and unidentified grasses.

SUMMARY

LA 128805 consists of a large single-room fieldhouse, constructed of both shaped and unshaped tuff blocks. The presence of maize and numerous jar sherds reflects the agricultural function of the site, with some core reduction and milling activities. The site is located downslope from LA 12587 (Chapter 14, Volume 2) and some of the Coalition period artifacts may have come from the occupation of this site. Nonetheless, the main occupation of the fieldhouse (Area 1) and the artifact scatter (Area 2) date to the Middle Classic period (15th century), as evidenced by the radiocarbon date and ceramic assemblage. The presence of the artifact scatter reflects an extended period of occupation at the site, presumably during the maize growing season.

CHAPTER 22
AIRPORT-SOUTH TRACT (A-5-1): LA 86533

Jennifer E. Nisengard

INTRODUCTION AND SITE SETTING

This chapter presents the results of the archaeological fieldwork conducted at LA 86533. The site consists of a dispersed artifact scatter that is located east of the Los Alamos town site and south of State Road 502 (see Figure 13.2). The Airport Tract parcel includes a gently sloping mesa between a tributary to Pueblo Canyon on the north and DP Canyon, a tributary to Los Alamos Canyon, on the south. The tract ranges in elevation from 2153 m to 2196 m (7060 to 7200 ft), and the vegetation is primarily piñon-juniper woodland with areas of ponderosa pine forest and an understory of saltweed, snakeweed, yucca, and various other native grasses, shrubs, and forbs. The site is located at an elevation of 2123 m (6965 ft).

LA 86533 is an artifact scatter located south of LA 86534 (see Chapter 24, this volume) and east of LA 139418 (see Chapter 23, this volume) and dates to the Ancestral Pueblo period. The site was identified during a pedestrian survey of the area in 1984 and rerecorded in 1991 by Los Alamos National Laboratory (LANL) archaeologists. An initial surface survey identified a dispersed lithic and ceramic scatter that included a Late Archaic (Armijo) projectile point. In May of 2003, LANL personnel conducted a surface reconnaissance of the site area to identify the overall distribution of artifacts. This work was completed by Jennifer Nisengard (crew chief), Aaron Gonzales, and Bettina Kuru'es.

SITE DESCRIPTION

The site consists of a lithic and ceramic scatter that is dispersed across a 350- by 40-m area. The majority of the artifacts were recovered from an open grassy area south of Highway 502 (Figures 22.1 and 22.2). No features or structures were identified at the site, although a possible rock alignment was noted. Nine of the 11 ceramics at LA 86533 were recovered from the east end of the scatter, which lies directly south of LA 86534. It, therefore, seems likely that these sherds were originally associated with this Coalition period roomblock.

FIELD METHODS

Due to the sparse nature of the artifact distribution, a geographic positioning system (GPS) point location was taken for each artifact at LA 86533. The artifact was collected and bagged and the GPS location was noted. The site area was highly eroded, with shallow colluvial soils or exposed bedrock. Therefore, no subsurface testing was conducted.

SURFACE COLLECTION

Forty-six artifacts were recovered from LA 86533. Most of the artifacts consist of debitage with two retouched tools and 14 sherds (Figure 22.1). The debitage primarily consists of obsidian core flakes, with an obsidian biface and Late Archaic point. On the other hand, most of the ceramics are Santa Fe Black-on-white and smeared-indented corrugated sherds. A single ceramic ladle handle was also recovered. The assemblage appears to include Late Archaic and Coalition period components. As previously noted, the latter is presumably associated with the roomblock at LA 86534.

Figure 22.1. Establishing the grid at LA 86533 with the Nikon DTM.

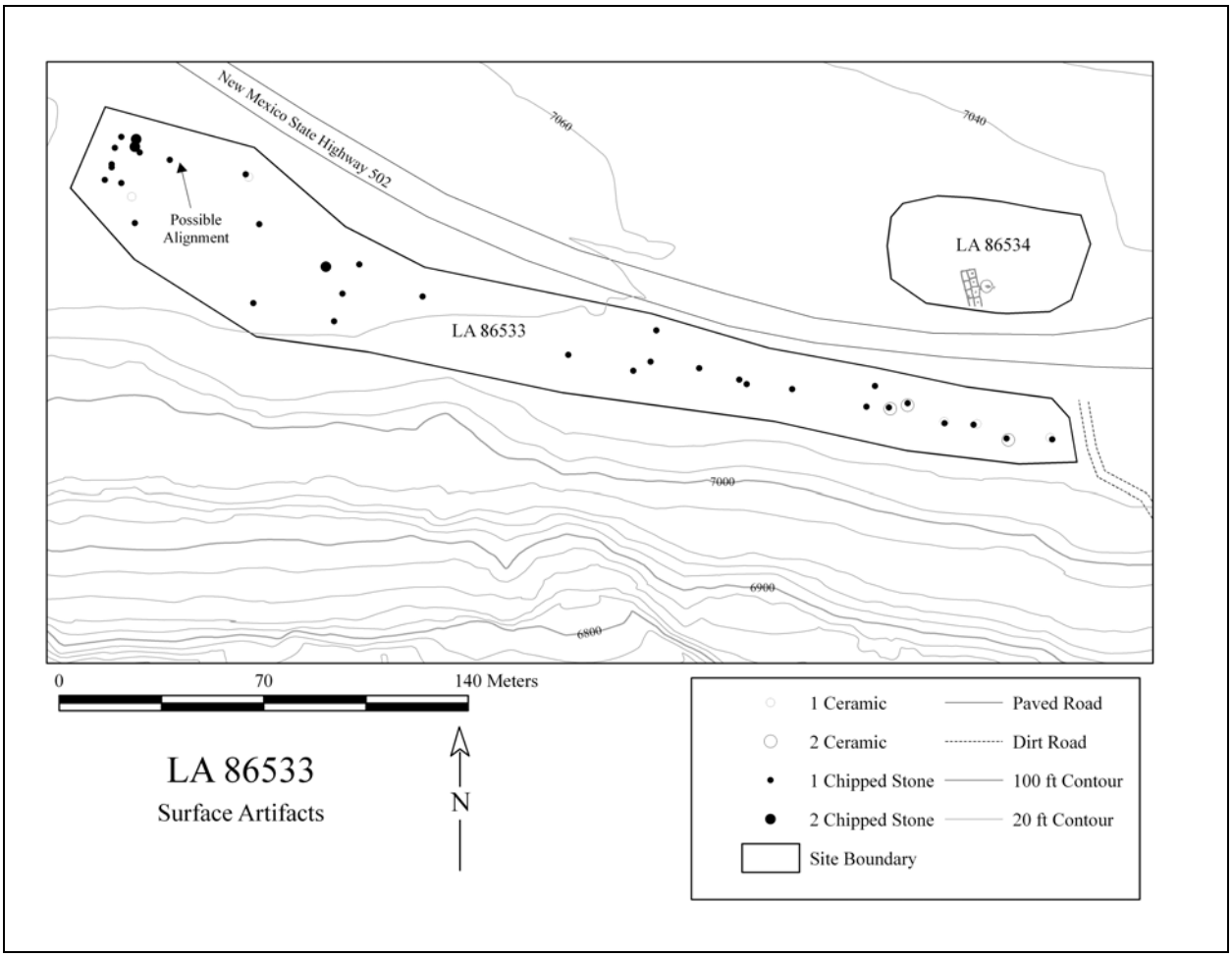


Figure 22.2. Distribution of surface artifacts at LA 86533.

ANALYSES

All 46 artifacts recovered from LA 86533 were analyzed. No archaeobotanical, pollen, or faunal remains were recovered since no subsurface excavations were conducted at the site.

Ceramics (Dean Wilson)

The ceramic assemblage is limited to 14 sherds (Table 22.1). Most of these are either Santa Fe Black-on-white or smeared-indented corrugated ceramics which date to the Coalition period.

Table 22.1. Ceramic types from LA 86533.

Pottery Type	Frequency	Percent
Northern Rio Grande Whiteware		
Undetermined painted ware	4	28.6

Pottery Type	Frequency	Percent
Santa Fe Black-on-white	3	21.4
Jemez, Santa Fe, or Vallecitos Black-on-white	2	14.3
Northern Rio Grande Utilityware		
Smeared-indented corrugated	5	35.7
Total	**14**	**100.0**

Chipped and Ground Stone (Bradley Vierra and Michael Dilley)

Material Selection

A total of 32 artifacts were analyzed from LA 86533, consisting of 30 pieces of debitage, and two retouched tools. This represents a 100 percent sample of the lithic artifacts recovered during the site surface collections. Table 22.2 presents the data on lithic artifact type by material type. The majority of the debitage is obsidian, with lesser amounts of other materials. In addition, both retouched tools are also made of obsidian. Obsidian is present in the nearby Jemez Mountains source areas. The chalcedony, Pedernal chert, and chert are available from local Rio Grande Valley gravel sources. Otherwise, the basalt is available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 22.2. Lithic artifact type by material type from LA 86533.

Artifact Type		Material Type													
		Basalt	**Vesicular Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Silicified wood**	**Quartzite**	**Other**	**Total**
Debitage	Angular debris	0	0	0	0	0	0	0	0	0	2	0	0	0	**2**
	Core flake	1	0	0	0	0	0	11	3	3	4	0	0	0	**22**
	Biface flake	0	0	0	0	0	0	5	0	0	0	0	0	0	**5**
	Microdebitage	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
	Undetermined flake	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Subtotal	1	0	0	0	0	0	17	3	3	6	0	0	0	**30**
Re-touched Tools	Retouched piece	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Biface	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
	Projectile point	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**
	Subtotal	0	0	0	0	0	0	2	0	0	0	0	0	0	**2**

Artifact Type	Material Type													
	Basalt	Vesicular Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified wood	Quartzite	Other	Total
Total	**1**	**0**	**0**	**0**	**0**	**0**	**19**	**3**	**3**	**6**	**0**	**0**	**0**	**32**

Most of the debitage consists of core flakes, with fewer biface flakes, pieces of angular debris, and microdebitage. The biface consists of a broken midsection, and the projectile point is the base of a Late Archaic stemmed dart point (Figure 22.3). The tip was presumably broken during impact, but cracked on an inclusion in the obsidian. Metrical and descriptive information on the projectile point is presented in Table 22.3.

Table 22.3. Projectile point metrical (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (g)	Haft Type	Blade Shape	Base Shape
6	Obsidian	Proximal	--	--	11.2	7.9	11.5	4.4	1.1	Stemmed	---	Strt.

FS is Field Specimen

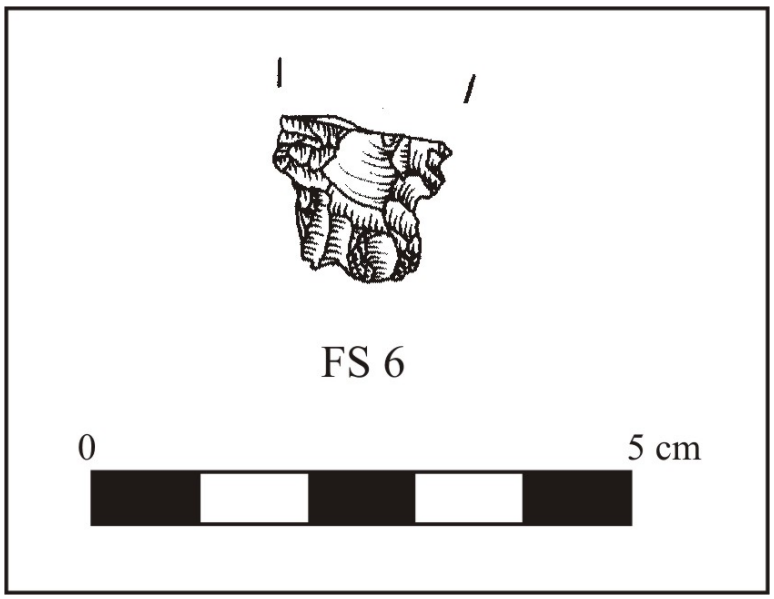


Figure 22.3. Late Archaic projectile point.

SUMMARY AND CONCLUSIONS

LA 86533 consists of a dispersed lithic and ceramic scatter that includes at least two temporal components. One of these components dates to the Late Archaic period and is primarily situated in the western area of the site. On the other hand, the Santa Fe Black-on-white and smeared-indented corrugated sherds located in the eastern section of the site are probably associated with the nearby Coalition period roomblock at LA 86534.

CHAPTER 23
AIRPORT-SOUTH TRACT (A-5-1): LA 139418

Jennifer E. Nisengard, Kari M. Schmidt, and Bradley J. Vierra

INTRODUCTION AND SITE SETTING

This chapter presents the results of surface collections and excavations conducted at LA 139418. The site is located in the Airport-South Tract east of the Los Alamos town site and south of State Road 502. LA 139418 consists of a grid garden and surrounding lithic and ceramic scatter. A Coalition period roomblock (LA 135290) is located to the north of the site and a multi-component artifact scatter to the east (LA 86533) (see Figure 13.2). The site was identified during a pedestrian survey of the area in 2002, with excavations being conducted by Jennifer Nisengard (crew chief), Joseph Aguilar, Jennifer Boyd, and Todd Pitezel in 2003. The site is situated on a piñon and juniper covered mesa top at an elevation of 2123 m (6965 ft).

SITE DESCRIPTION AND FIELD METHODS

LA 139418 consists of an isolated grid garden feature that was surrounded by an extensive lithic and ceramic scatter. Overall, the artifact scatter covers approximately 2000 m^2. It is situated on a gentle southeast-sloping area of the mesa that affords minimal runoff over the site. Unlike LA 86533, which was heavily eroded, there appears to be about 70 cm of soil overlying the bedrock. Nonetheless, small erosional drainages are present in the area that have cut down through these surface soils and partially affected the distribution of surface artifacts.

A pedestrian survey was conducted by the field crew to identify the aerial extent of the scatter. The site was subsequently divided into 1- by 1-m grid units. The initial site grid was established using a transit and a Nikon DT 521 Electronic Mapping Station. Using baseline points, 100-m tapes were laid out and a surface collection was conducted in 1- by 1-m units. This grid system covered a roughly 40- by 50-m area (60-95N/80-125E). The crew encountered hundreds of artifacts, with surface items being collected and bagged by artifact type within the specific grid units. Figure 23.1 illustrates the location of the grid garden relative to the chipped stone artifact scatter. As can be seen, there are several artifact concentrations that are spread across the site area. The artifact scatter and grid gardens were therefore divided into five separate areas or providences (Table 23.1).

Area 1 is 26 by 18 m in size and includes the grid garden feature. Excavations were limited to the grid garden, with few surface artifacts being present in the area. Area 2 is 40 by 12 m in size and is situated to the east and southeast of Area 1. Two dense concentrations of artifacts were identified in Area 2, although no features were present. Area 3 is 25 by 14 m in size and is located to the south of Area 1. Area 3 includes an artifact scatter and a southeast-trending erosional drainage, within which a concentration of chipped stone artifacts was identified. Otherwise, no features were identified within this locale. Area 4 is 17 by 9 m in size and is situated to the west and northwest of Area 1. It contains a concentration of artifacts, but also

includes portions of the southeast-trending erosional drainage that continues into Area 3. Again, no features were identified within this area. Lastly, Area 5 is situated to the south and southeast of Area 1 and was defined by the presence of three isolated artifact clusters located adjacent to the mesa edge and DP Canyon. Artifacts within this area were collected by geographic positioning system (GPS) location and not within the 1- by 1-m site grid system.

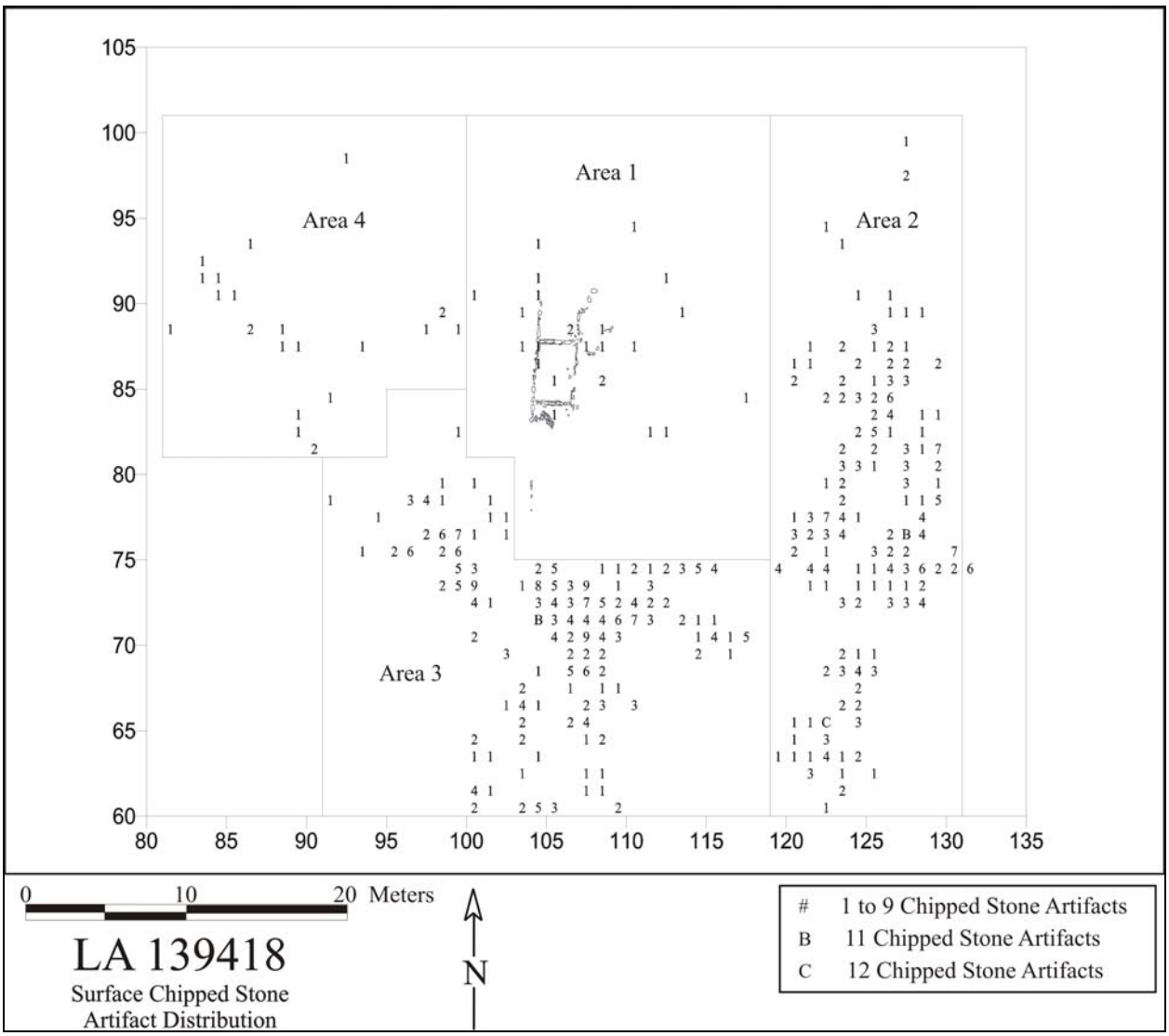


Figure 23.1. Distribution of chipped stone artifacts and features at LA 139418.

Table 23.1. Areas defined during the excavation of LA 139418.

Area Number	Area Location (Grids N/E)	Area Description
1	N 75-100/E 100-118	Grid gardens and the associated artifact scatter.
2	N 60-100/E 119-131	Sample area of artifact scatter to the east of Area 1.

Area Number	Area Location (Grids N/E)	Area Description
3	N 60-85/E 91-118	Artifact concentration south of Area 1.
4	N 81-100/E 81-99	Artifact concentration west of Area 1.
5	3970926N 386014E	Three artifact concentrations near canyon rim.

STRATIGRAPHY

Geomorphologists Steve Reneau and Paul Drakos (Voulme 3, Chapter 57) characterized the stratigraphy at LA 139418 using three profiles from inside the grid gardens and one from the control unit to the east (Table 23.2). Four major soil horizons were defined within the grid garden. These consist of AC (Stratum 1), Bw (Stratum 2), Btb2 (Stratum 3), and Btkb2 (Stratum 5). They correlated the soil profile at LA 139418 with the soil profile at the nearby Classic period fieldhouse at LA 141505 and suggest that the both sites are associated with the top of the Bw soil horizon. This contrasts with the Coalition period roomblock at LA 135290, which is situated at the bottom of the Bw soil and at the Bw and Bwb1 interface. Therefore, the LA 139418 grid garden would appear to date to the Classic period.

Table 23.2. Stratigraphic descriptions for LA 139418.

Stratigraphic Unit	Area	Grid	Thickness (meters)	Color	Texture	Description
0	1	1, 2, 3	0	10YR 4/4	Silty loam	Post-occupational fill. Loose aeolian surface sediments.
1	1	1, 2, 3	0–0.04	10YR 4/4 to 3/4	Silty loam	Post-occupational fill. Loose aeolian surface sediments with some crumbling tuff block and some modern trash.
2	1	1, 2, 3	0.04–0.15	10YR 3/4 to 4/5	Silty loam	Grid garden fill. Loose, unconsolidated silty loam with small rocks and gravels, small roots, and few artifacts.
3	1	1, 2, 3	0.15–0.55	10YR 4/4	Silty clay	Pre-occupational fill. More structured with some mottles, larger roots, very few rocks, gravels, and/or artifacts.
4	1	1	0.15–0.20	10YR 4/4	Silty clay	Pre-occupational fill.
5	1	2, 3	0.55–0.80	7.5YR 4/4	Silty clay	Pre-occupational fill. Compact silty clay with peds and some calcium

Stratigraphic Unit	Area	Grid	Thickness (meters)	Color	Texture	Description
						carbonate. Roots in Grid 3 not in Grid 2.
6	1	3	0.04–0.07	7.5YR 4/6	Silty loam	Pre-occupation fill. Thin layer of reddish-brown compact silty loam with a few volcanic tuff inclusions. Strata not recognized by geomorphologists.
7	2	-	0.79–0.81	10YR 4/3	Silty clay	Thin layer of unconsolidated clay directly atop bedrock (only identified in 86N 121E).
8	1, 2	-	0.07–0.15	10YR5/3 (dry) 10YR 3/3 (wet)	Silty loam	Thin layer of whitish-gray silty loam, between Strata 1 and 3. Only found in units outside the grid gardens, indicative of a strong soil formation.

Table 23.3 presents all of the artifacts recovered during excavation of the grid garden in their stratigraphic context.

Table 23.3. LA 139418 artifact counts by stratum.

Stratum	Ceramics	Chipped Stone	Ground stone	Total Number of Artifacts
1	2	21	0	23
2	10	10	0	20
3	1	13	0	14
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
Total	**13**	**44**	**0**	**57**

SITE EXCAVATION

Area 1

Excavation of the grid garden feature was conducted in June and July, 2003. It consists of three attached grid garden units within a 3 by 8 m area. Figure 23.2 illustrates the plan view and

profile of the north-south excavation trench that cross-cuts the agricultural feature. Root and rodent disturbance was a problem in the uppermost levels of the excavated units, with two juniper trees and one large piñon tree being located south of Grid 3. Rodent disturbances were most common in the excavation units closest to the grid walls, where gaps between wall rocks and soft sediments associated with the grids were plentiful. In addition, a 1- by 1-m control unit (86N/121E) was also excavated to the east of the feature to establish a comparative stratigraphic soil profile.

Grid 1. Grid 1 is the northernmost grid and appears to have sustained some minimal damage that may be associated with nearby road construction. The eastern and westerns walls of Grid 1 are a single course high and extended approximately 2 m from the central wall. Strata 1 to 5 were exposed within this bounded area (Figure 23.3). Three pieces of chalcedony, obsidian, and basalt debitage and a smeared-indented corrugated, Sapawe Micaceous, and undifferentiated whiteware sherd were recovered during excavation of Grid 1 (Table 23.4). Maize pollen was identified in samples taken from Strata 1 and 2.

Grid 2. Grid 2 is the central grid and is the most complete and elaborate of the three grids. The upper sections of the northern and southern walls are relatively narrow, while the bottom course of the wall is almost twice as wide. Relatively thin, wide blocks were used to build the foundation for the northern and southern walls, while larger blocks were used to construct the upper course (Figure 23.4). Interestingly, the eastern and western walls were constructed in a different manner. These walls consist of a single course of tuff blocks, many of which are upright.

Strata 1, 2, 3, and 5 were exposed in Grid 2 (Figure 23.5). However, unlike Grid 1, no maize pollen was identified in any of the strata. Cultural deposits associated with Grid 2 are relatively shallow (4 to 15 cm), although the wall is quite deep (0 to 30 cm). Calcium carbonate was observed within 10 cm of the surface in some of the units within Grid 2. Most of the artifacts recovered from the grid garden were derived from Grid 2 (Table 23.5). These primarily consist of obsidian and chalcedony microdebitage, with Sapawe Micaceous, plain gray body, and undifferentiated whiteware sherds.

Grid 3. The eastern and western walls of Grid 3 were quite similar to those exposed in Grid 1. That is, they consisted of a single course of shaped and unshaped tuff blocks, except in this case, the grid opens to the south. Strata 1, 2, 3, and 5 were also exposed within Grid 3, and like Grid 2, no maize pollen was identified. However, like Grid 1, very few artifacts were recovered during the excavation of Grid 3 (Table 23.6). These consist of chalcedony and Pedernal chert debitage and smeared-indented corrugated and undifferentiated whiteware sherds.

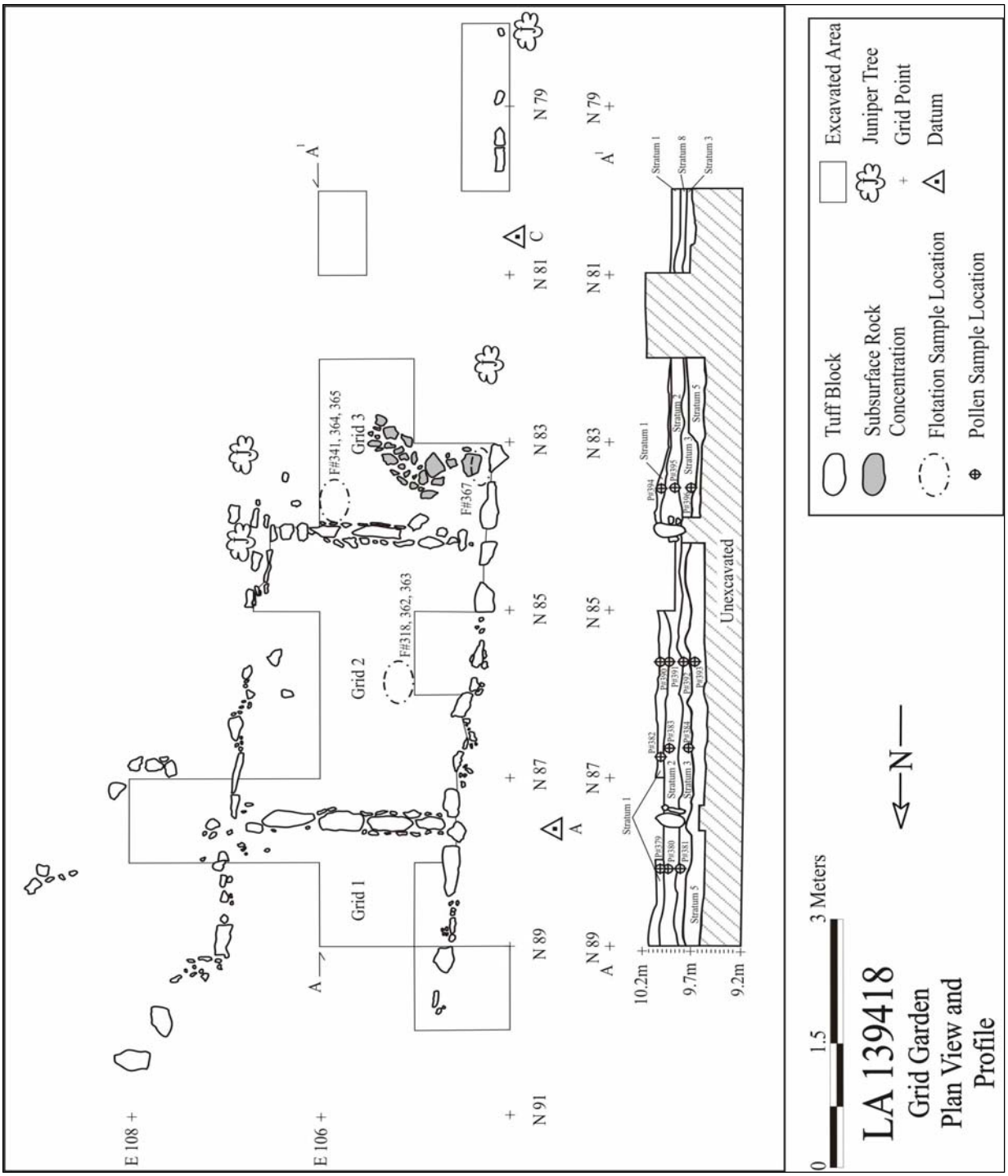


Figure 23.2. Plan view and profile of LA 139418 after excavation.

Figure 23.3. East wall profile of Grid 1.

Figure 23.4. The tuff block wall that separates Grids 2 and 3. Note that the lower course consists of thin and wide blocks versus thick and narrow blocks in the upper course.

Table 23.4. Artifacts recovered from Grid 1.

Stratigraphic Unit	Level	Chipped Stone	Ceramics
1	1	1	0
2	1	0	2
3	2	2	1

Table 23.5. Artifacts recovered from Grid 2.

Stratigraphic Unit	Level	Chipped Stone	Ceramics
1	1	10	0
2	1	4	4
3	1	10	0
3	2	2	0

Figure 23.5. East profile of Grid 2 with geomorphologic strata defined.

Table 23.6. Artifacts recovered from Grid 3.

Stratigraphic Unit	Level	Chipped Stone	Ceramics
1	1	8	0

Stratigraphic Unit	Level	Chipped Stone	Ceramics
2	1	2	3
3	1	1	1

Two 0.50- by 1-m units were also excavated to the south of Grid 3 to determine if any cultural remains were present in this area. Although none were encountered, the stratigraphic sequence is informative. Strata 1, 8, and 3 were exposed. In this case, Stratum 8 replaces Stratum 2 (cultural grid fill) and consists of a well-developed soil horizon; that is, the undisturbed virgin soil present around the grid garden feature.

A concentration of fist-sized rocks was identified in the northwest corner of Grid 3 in units 82N/105E, 83N/105E, and 83N/104E (Figure 23.6). The rock concentration was relatively shallow and did not appear to have been part of any formal construction. Excavators hypothesized that these rocks may have been stacked for use during grid construction or for wall repair.

Figure 23.6. A concentration of small tuff blocks encountered near the wall separating Grids 2 and 3.

Areas 2, 3, 4, and 5

Area 2 is located east and southeast of the grid garden. A total of 313 artifacts were recovered from surface collections in 131 1- by 1-m grid units (Figures 23.1 and 23.7). These consist of 303 pieces of chipped stone, nine ceramics, and one piece of ground stone.

A 1- by 1-m control unit was excavated within Area 2 to provide a geomorphic comparison with the soil profile observed in the grid garden. Excavation of 86N/121E proceeded in arbitrary 10-cm levels down to a depth of 60 cm below the surface. Strata 1, 3, 5, and 7 were exposed in the soil profile. That is, the soil profile is similar to the one exposed within the grid garden, with the exception of the absence of Stratum 2 (cultural fill). This also corresponds with the excavation unit located south of Grid 3, which failed to identify the presence of Stratum 2. Several pollen and flotation samples were collected from the unit, but no artifacts were recovered. Prickly pear, cheno-ams, grass, piñon pine and juniper pollen were the most common species identified.

Area 3 is situated south of Area 1. A total of 338 artifacts were surface collected within this provenience. The majority of these are obsidian, chalcedony, Pedernal chert, and basalt pieces of debitage, with three utilityware sherds.

Figure 23.7. Area 2 artifact scatter.

Area 4 consists of a sparse surface scatter located to the west of Area 1. Forty-nine artifacts were collected from 29 1- by 1-m grids. These consist of 23 chipped stone artifacts, 25 ceramics, and one ground stone fragment.

Area 5 consists of three small obsidian concentrations near the canyon edge. Ninety six chipped stone artifacts and two ceramics were collected in this locale. All the artifacts were found on the exposed bedrock and were point located using a GPS unit. In at least one case, it appears that some of the artifacts were collected from the nearby surface scatter and then placed in a pile on the exposed bedrock.

Figure 23.8 illustrates the distribution of ceramic and ground stone artifacts at the site. These artifacts are primarily distributed across the northern section of the site where the grid gardens are located. This contrasts with the distribution of chipped stone artifacts, which are primarily situated in the eastern (Area 2) and southern (Area 3) portions of the site. This northern ceramic assemblage is dominated by the presence of Classic period glazeware ceramics, which could be associated with the use of the grid garden and/or the fieldhouse located to the north at LA 141505. On the other hand, the remainder of the lithic scatter may represent a separate component that, in part, dates to the Late Archaic. A single Late Archaic projectile point was found in Area 2, and this scatter could represent a continuation of the Late Archaic period occupation located to the east at LA 86533.

SITE CHRONOLOGY AND ASSEMBLAGE

Approximately 400 artifacts were recovered during the excavations and surface collections at LA 139418. All of these artifacts were analyzed, with a set of pollen, flotation, and macrobotanical samples that were analyzed from the excavations conducted within the grid garden. The pollen and flotation samples were selected from each stratigraphic layer within the three individual garden grids. No faunal remains were recovered. A single piece of piñon pine was submitted for radiocarbon dating and eight obsidian artifacts for hydration dating. The results of these artifact and sample analyses are presented in this section.

Chronology

Radiocarbon Dating

A single radiocarbon sample was submitted for analysis from this site. Several piñon pine (*Pinus edulis*) fragments were collected from a macrobotanical sample (Field Specimen [FS] 334) taken from Stratum 2 within Grid 1. Maize pollen was recovered from this grid, so the sample was presumed to be in good association with the use of the grid garden. However, this yielded an intercept date of AD 690, with a two sigma range of AD 650 to 790 (Table 23.7). Based on the surface ceramics and geomorphologic context, it seems probable that the feature dates to the Classic period. If so, this charcoal may represent surface material that simply washed down into the grid from its open northern end.

Table 23.7. Radiocarbon dates from LA 139418.

FS#	Material	Laboratory #	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
334	piñon pine	199390	1310±50 BP	AD 690	AD 650–790

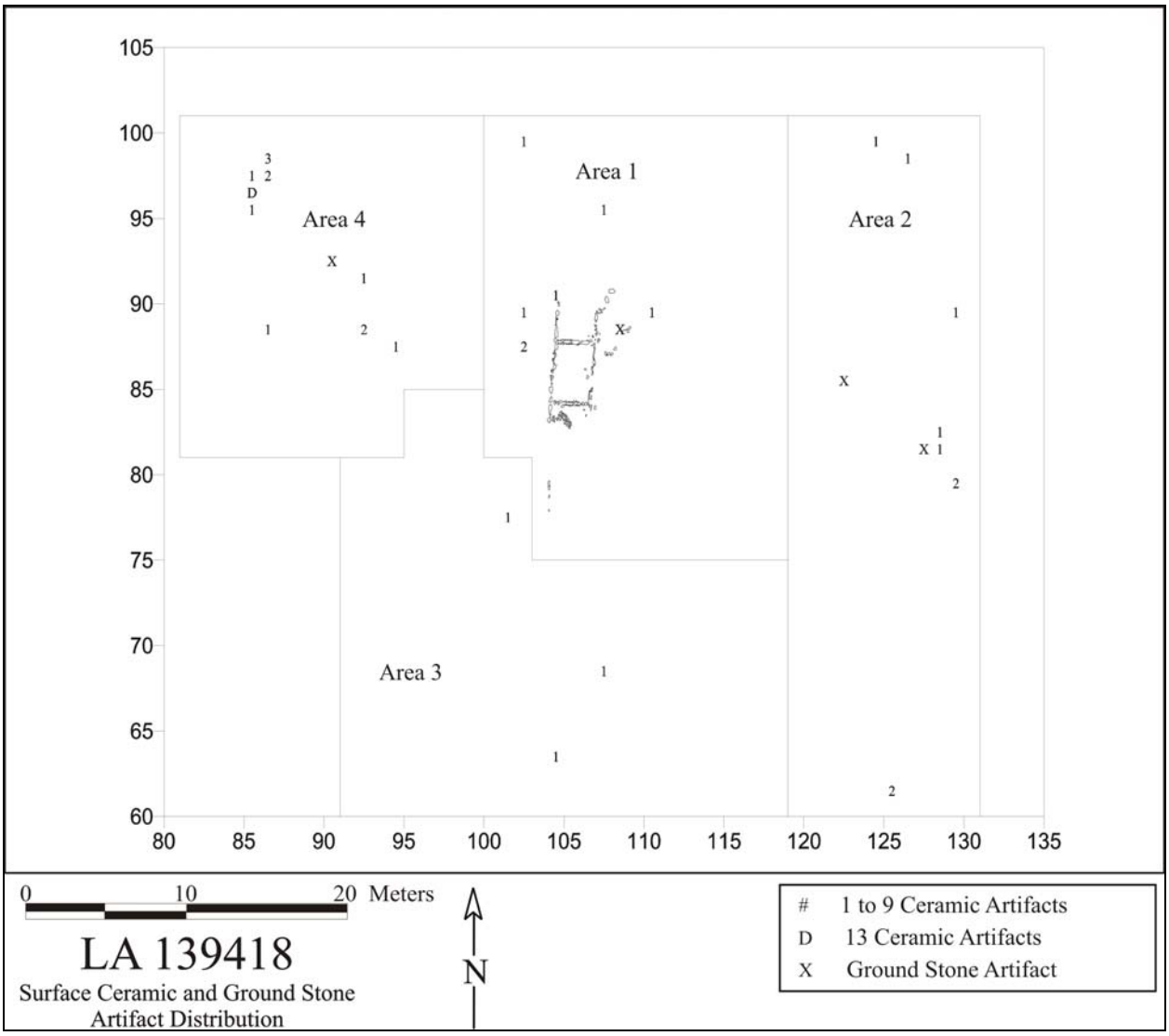


Figure 23.8. Distribution of ceramics, ground stone artifacts, and features at LA 139418.

Obsidian Hydration Dating

Eight obsidian artifacts from LA 139418 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high temperature

hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 23.8).

Table 23.8. Obsidian hydration dates for LA 139418.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
4	2006-48	Valle Grande	3.77	669	69
26	2006-49	Valle Grande	4.99	-7908	399
53	2006-50	Cerro Toledo	3.31	-2379	265
104	2006-51	Valle Grande	4.29	-341	108
109	2006-52	Valle Grande	3.61	-3113	284
111	2006-53	Cerro Toledo	3.38	-2460	265
116	2006-54	Valle Grande	3.17	-1901	247
146	2006-55	Valle Grande	3.22	-2151	259

All of the hydration dates are from artifacts recovered in the Areas 2 and 3 surface scatter. Based on these dates, it would appear that Early, Middle, and Late Archaic components may be represented, as well as the Developmental period. However, only Late Archaic points with Coalition and Classic period ceramics were recovered from these contexts.

Ceramic Artifacts (Dean Wilson)

The ceramic assemblage can be separated into the artifacts recovered during the excavation of the grid garden feature in Area 1 and artifacts recovered from surface contexts across the site.

The ceramics from the grid garden consist of plain gray body, smeared-indented corrugated, Sapawe micaceous, and several undifferentiated whiteware sherds (Table 23.9). These ceramics appear to represent a mix of Coalition and Classic period types that could have been derived from adjacent surface deposits. The small surface assemblage recovered from the site is dominated by Classic period glazeware ceramics, with a few biscuitwares and Coalition period whiteware sherds (Table 23.10). The 21 glazeware sherds are all tempered with crushed basalt and appear to represent both jars and bowls. In contrast, the biscuitware sherds are from jars, but the Coalition period whitewares are from bowls. The latter could have been derived from the nearby Coalition period roomblock at LA 135290, with the remainder being associated with the use of the grid garden feature.

Table 23.9. LA 139418 (Area 1, grid garden) ceramic types.

Pottery Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted Undifferentiated	4	44.4

Pottery Type	Frequency	Percent
Northern Rio Grande Utilityware		
Plain Gray Body	2	22.2
Smeared-indented Corrugated	2	22.2
Sapawe Micaceous	1	11.1
Total	**9**	**100.0**

Table 23.10. LA 139418 (Areas 2, 3, and 4) ceramic types.

Pottery Type	Frequency	Percent
Northern Rio Grande Whiteware		
Santa Fe Black-on-white	1	3.8
Wiyo Black-on-white	2	7.7
Biscuitware painted unspecified	2	7.7
Middle Rio Grande Glazeware		
Glaze Red body unpainted	17	65.4
Glaze unslipped body	1	3.8
Glaze Red body undifferentiated	2	7.7
Glaze unslipped body	1	3.8
Total	**26**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 365 artifacts were analyzed from LA 139418, consisting of 352 pieces of debitage, 10 retouched tools, and three ground stone artifacts. This represents a 44 percent sample of the 831 total lithic artifacts recovered during data recovery activities. The site was separated into two distinctive proveniences. Area 1 includes the excavated grid garden feature and Areas 2 through 5 consist of the surrounding lithic and ceramic scatter. Table 23.11 presents the data on lithic artifact type by material type for Area 1 ($n = 42$). Debitage was the only lithic artifact recovered during the excavations. The majority of these consist of core flakes, angular debris, and microdebitage, with two biface flakes. The artifacts are primarily made of chalcedony with lesser amounts of obsidian and other materials. In contrast, a total of 323 artifacts were collected from surface contexts in Areas 2, 3, and 4. The information on artifact type by material type is presented in Table 23.12. Again, most of the debitage is made of chalcedony with lesser amounts of obsidian, Pedernal chert, and other materials. The retouched tools are also primarily made of chalcedony and obsidian. Lastly, the ground stone items are made of igneous materials.

Table 23.11. Area 1 lithic artifact type by material type.

Artifact Type		Material Type												
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Silicified wood**	**Quartzite**	**Total**
Debitage	Angular debris	1	0	0	0	0	0	0	9	0	1	0	0	11
	Core fake	1	0	0	0	0	0	5	11	0	1	0	1	19
	Biface flake	0	0	0	0	0	0	2	0	0	0	0	0	2
	Microdebitage	0	0	0	0	0	0	6	4	0	0	0	0	10
	Subtotal	2	0	0	0	0	0	13	24	0	2	0	1	42
Total		**2**	**0**	**0**	**0**	**0**	**0**	**13**	**24**	**0**	**2**	**0**	**1**	**42**

Table 23.12. Areas 2, 3, and 4 lithic artifact type by material type.

Artifact Type		Material Type												
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Silicified wood**	**Quartzite**	**Total**
Debitage	Angular debris	2	0	0	0	0	0	7	26	0	6	0	0	41
	Core flake	11	0	3	1	0	0	35	65	1	19	2	4	141
	Biface flake	0	0	0	0	0	0	18	19	0	0	0	1	38
	Microdebitage	0	0	0	0	0	0	10	33	0	0	0	0	43
	Undetermined flake	2	0	0	1	0	0	16	21	0	6	0	1	47
	Subtotal	15	0	3	2	0	0	86	164	1	31	2	6	310
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	3	0	0	0	0	3
	Notch	0	0	0	0	0	0	0	0	0	1	0	0	1
	Biface	0	0	0	0	0	0	3	2	0	0	0	0	5
	Projectile Point	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	4	5	0	1	0	0	10
Ground Stone	Undetermined mano	0	0	1	1	0	0	0	0	0	0	0	0	2
	Polishing stone	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	0	0	1	1	1	0	0	0	0	0	0	0	3
Total		**15**	**0**	**4**	**3**	**1**	**0**	**90**	**169**	**1**	**32**	**2**	**7**	**323**

The presence of cortex on 5.4 percent of the debitage from Areas 2 and 3 indicates that these materials were collected from nodule and waterworn sources. The chalcedony, Pedernal chert, and quartzite are available from local Rio Grande Valley gravel sources and the basalt from

gravels and bedrock outcrops. Obsidian is present at nearby primary sources in the Jemez Mountains. Otherwise, the ground stone artifacts are primarily made from igneous materials, which are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Ten pieces of debitage, three retouched tools, and a projectile point were submitted for XRF analysis. With the exception of the projectile point, all of these artifacts were recovered from Areas 2 and 3. Most of the artifacts were from the Valle Grande source, with three from the Cerro Toledo source and a single retouched tool from the El Rechuelos source (Table 23.13; see Shackley, Volume 3). The Valle Grande (Cerro del Medio) and Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source areas are located about 18 km (11 miles) as the "crow flies" to the west and southwest of the site; whereas, the El Rechuelos (Polvadera Peak) source area is situated about 24 km (15 miles) to the northwest.

Table 23.13. Obsidian source samples.

FS #	Artifact	Color	Source
4	Debitage	Translucent	Valle Grande rhyolite
26	Debitage	Translucent	Valle Grande rhyolite
53	Debitage	Translucent	Cerro Toledo rhyolite
104	Debitage	Translucent	Valle Grande rhyolite
109	Debitage	Translucent	Valle Grande rhyolite
111	Debitage	Translucent	Cerro Toledo rhyolite
116	Debitage	Translucent	Valle Grande rhyolite
146	Debitage	Translucent	Valle Grande rhyolite
149	Projectile point	Gray	Valle Grande rhyolite
155	Debitage	Mahogany	Valle Grande rhyolite
174	Debitage	Green	Valle Grande rhyolite
184	Tool	Translucent	Valle Grande rhyolite
192	Tool	Black dusty	El Rechuelos
259	Tool	Black opaque	Cerro Toledo rhyolite

Lithic Reduction

The majority of the flakes in Areas 2 and 3 exhibit single-faceted platforms (n = 17), with crushed (n = 13), collapsed (n = 7), multi-faceted (n = 5), and cortical (n = 2) platforms. Ten (22.7%) of the flake platforms do exhibit evidence of preparation, with all but one of these being abraded/crushed and the other being abraded/ground.

The majority of the core flakes consist of distal fragments (n = 71; 44.3%), with fewer whole (n = 12), proximal (n = 26), midsection (n = 46), and undetermined fragments (n = 5). Most of the biface flakes are proximal fragments (n = 16; 40.0%), with fewer whole (n = 2), midsection (n = 13), and distal (n = 9) fragments. The whole core flakes have a mean length of 24.2 mm (*std* = 8.3), whereas, the whole biface flakes exhibit a mean length of 19.7 mm (*std* = 0.1). Lastly, angular debris have a mean weight of 2.6 g (*std* = 2.8).

The retouched tools consist of a mix of expedient flakes tools like retouched pieces and a notch, whereas the formal tools consist of bifaces and a projectile point. All of the retouched pieces exhibit a unidirectional dorsal retouched edge, with a straight outline and angles ranging from 55 to 75 degrees. The notched tool consists of a single notch situated at the distal end of a flake with an edge angle of 35 degrees. The bifaces are midsection and distal fragments. They were presumably broken during the middle to late stages of the manufacturing process, having edge angles that range from 35 to 50 degrees. The projectile point is a Late Archaic stemmed point midsection with distinctive tangs (Figure 23.9).

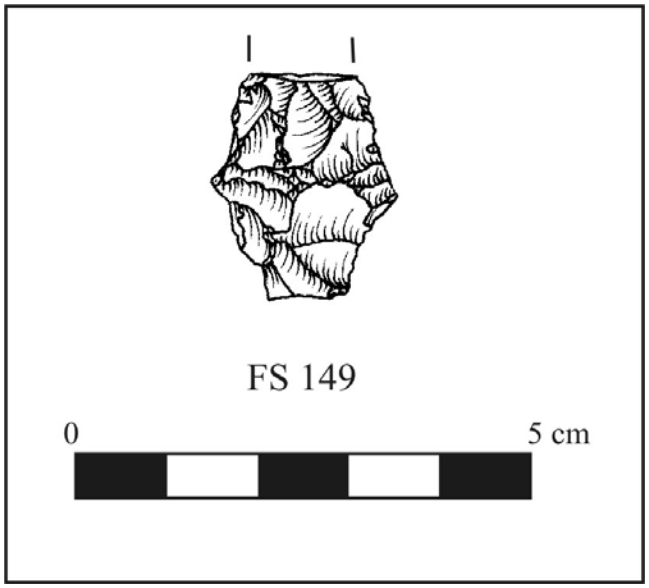


Figure 23.9. Late Archaic stemmed point from LA 139418.

Tool Use

Only two flakes (1%) exhibit evidence of damage that can be attributed to use. One of these was used at the end of the flake with an edge angle of 65 degrees and the other was used along the lateral side of the flake with an edge angle of 45 degrees. The projectile point was presumably broken during the use, having a broken tip and base.

The ground stone artifacts consist of two undetermined mano fragments that are broken cobbles with ground surfaces. The polishing stone is a pebble with a slightly concave polished surface. The polished area exhibits a gray discoloration, as compared to the rest of the pebble, which is a tan/orange color.

Samples

Pollen, flotation, and macrobotanical samples were collected from the grid garden and from the control unit (Table 23.14). Four stratigraphic units were included from the grid garden: Stratum 1 (AC), Stratum 2 (Bw), Stratum 3 (Btb2), and Stratum 5 (Btkb2). An additional soil horizon (Stratum 7; Btkb2/3) was also included from the control unit.

Table 23.14. Pollen and flotation samples selected for analysis from LA 139418.

FS Number	Stratigraphic Unit	Geomorphic Stratum	Grid Number	Sample Type	Comments
318	2	Bw	2	Flotation	Representative sample from inside grid garden
341	2	Bw	3	Flotation	Representative sample from inside grid garden
362	3	Btb2	2	Flotation	Representative sample from inside grid garden
363	5	Btkb2	2	Flotation	Representative sample from inside grid garden
364	3	Btb2	3	Flotation	Representative sample from inside grid garden
365	5	Btkb2	3	Flotation	Representative sample from inside grid garden
367	2	Bw	3	Flotation	From rock concentration
379	1	AC	1	Pollen	From east profile
380	2	Bw	1	Pollen	From east profile
381	3	Btb2	1	Pollen	From east profile
382	1	AC	2	Pollen	From east profile
383	2	Bw	2	Pollen	From east profile
384	3	Btb2	2	Pollen	From east profile
390	1	AC	2	Pollen	From east profile
391	2	Bw	2	Pollen	From east profile
392	3	Btb2	2	Pollen	From east profile
393	5	Btkb2	2	Pollen	From east profile
394	1	AC	3	Pollen	From east profile
395	2	Bw	3	Pollen	From east profile
396	3	Btb2	3	Pollen	From east profile
405	1	AC	CU	Pollen	Control Unit
406	3	Btb2	CU	Pollen	Control Unit
407	5	Btkb2	CU	Pollen	Control Unit
408	7	Btkb2/b3	CU	Pollen	Control Unit
410	3	Btb2	CU	Pollen	Control Unit

Macrobotanical samples were also recovered from all three of the grid garden units (Table 23.15).

Table 23.15. Charcoal samples from LA 139418.

FS Number	Stratigraphic Unit	Grid Number	Sample Type
325	2	2	Charcoal

FS Number	Stratigraphic Unit	Grid Number	Sample Type
332	3	2	Charcoal
333	2	2	Charcoal
334	2	1	Charcoal
344	3	1	Charcoal
347	3	1	Charcoal
354	3	3	Charcoal

Archaeobotanical Remains (Pamela McBride)

Flotation samples from two of the three garden grids at LA 139418 produced unburned non-cultural plant remains, all representative of plants or trees growing in the immediate vicinity of the site today, including goosefoot seeds and conifer duff (Table 23.16). A fragment of pine and another of unknown conifer charcoal were recovered from the rock concentration in the northwest corner of Grid 3. Vegetal sample charcoal was primarily pine (75% by weight), with lesser amounts of cf. piñon, cf. ponderosa pine, unknown conifer, and saltbush/greasewood (Table 23.17). The presence of charcoal in the grid garden could be a product of burning brush to clear or fertilize the fields as described in the discussion of grid gardens at LA 128803. On the other hand, it could also represent natural slope wash into the grids.

Table 23.16. Flotation sample plant remains from LA 139418.

FS No.	318	363	341	367
Feature	Grid 2		Grid 3, Stratum 2, level 1	
	Stratum 2, level 1	Stratum 5, level 1	83.9/105.9	from rock concentration in NW corner
Non-Cultural				
Annuals				
Goosefoot	+		+	+
Perennials				
Juniper	twig +		+, twig +	+, twig +
Pine	umbo +		♂ cone +, umbo +	umbo +
Piñon	needle +, nutshell +	needle +	needle +	needle +
Ponderosa pine	needle +		needle +	needle +

Table 23.17. Vegetal wood charcoal taxa, by count and weight in grams from LA 139418.

FS No.	344	347	325	332	333	334	354	Totals	
Feature	Grid 1		Grid 2				Grid 3	Weight	%
	Stratum 3, level 1	Stratum 3, level 2	Stratum 2, level 1	Stratum 3, level 1	Stratum 2, level 2	Stratum 2, level 2	Stratum 3, level 2		
Conifers									
Pine	5/0.3 g	3 pc/ 9.3 g						9.6 g	75%
cf. Piñon						3/0.3 g		0.3 g	2%
cf. Ponderosa pine			3/0.8 g	3/0.5 g	5/1.1 g		3/0.3 g	2.7 g	21%
Unknown conifer				3/0.2 g				0.2 g	2%
Non-Conifers									
Saltbush/ greasewood	1/ <0.1 g							<0.1 g	<1%
Totals	6/0.3 g	3/9.3 g	3/0.8 g	6/0.7 g	5/1.1 g	3/0.3 g	3/0.3 g	12.8 g	100%

pc = partially charred.

Pollen Remains (Susan Smith)

A total of 18 pollen samples were analyzed from LA 139418. Table 23.18 lists the frequency of identified pollen types. Cultigens identified in the assemblage included maize and cholla. Economic resources identified in the pollen assemblage included prickly pear, cactus family, beeweed, sunflower type, and cattail. A number of other potential economic resources were identified in the assemblage (Table 23.18), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 23.18. Pollen types identified by taxa and common names with sample frequency from LA 139418.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 139418 (*n* = 18)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	2
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	1
Economic Resources	*Opuntia* (Platy)	Prickly Pear	10
		Prickly Pear Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 139418 (*n* = 18)
	Cactaceae	Cactus Family	1
	Cleome	Beeweed	3
	cf. *Helianthus*	Sunflower type	2
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	1
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	6
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Poaceae	Grass Family	18
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	1
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	17
		Cheno-Am Aggregates	1
	Fabaceae	Pea Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 139418 (*n* = 18)
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	16
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	7
		Ragweed/Bursage Aggregates	0
		Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	6
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	4
	Scrophulariaceae	Penstemon Family	2
	Onagraceae	Evening Primrose	1
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	2
	Picea	Spruce	0
	Abies	Fir	7
	Pinus	Pine	14
		Pine Aggregates	1
	Pinus edulis type	Piñon	16
	Juniperus	Juniper	16
		Juniper Aggregates	0
	Quercus	Oak	12

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 139418 (*n* = 18)
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	8
	Artemisia	Sagebrush	13
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	3
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	1
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

Pollen samples were collected from Grids 1, 2, and 3, as well as from a control unit located several meters east of the grid garden. The results of these analyses are presented below.

Grid 1. Three samples were analyzed from Grid 1. Taxa identified in Stratum 1 included maize (*Zea mays*), prickly pear (*Opuntia*), cheno-ams, grass family (Poaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), broad spine sunflower, fir (*Abies*), unidentified pine (*Pinus* sp.), piñon pine (*Pinus edulis*), juniper (*Juniperus*), oak (*Quercus*), Mormon tea (*Ephedra*), and sagebrush (*Artemisia*). Taxa identified in Stratum 2 included maize, beeweed (*Cleome*), cheno-ams, grass family, sunflower family, fir, piñon pine, juniper, oak, and sagebrush. Taxa identified in Stratum 3 included cheno-ams, grass family, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, rose family (Rosaceae), Mormon tea, and sagebrush.

Grid 2. Seven pollen samples were analyzed from Grid 2. The two samples from Stratum 1 included the following taxa: prickly pear, cheno-ams, grass family, broad spine sunflower, sunflower family, ragweed/bursage, spurge family, penstemon family (Scrophulariaceae), fir, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Two samples were collected from Stratum 2, and the identified taxa included cholla (*Opuntia*), prickly pear, cactus family (Cactaceae), buckwheat (*Eriogonum*), cheno-ams, grass family, sunflower family, evening primrose (Onagraceae), spurge family, piñon pine, rose family, sagebrush, and juniper. Two samples were analyzed from Stratum 3. Identified taxa included prickly pear, cheno-ams, grass family, sunflower family, long spine sunflower, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. A single sample was analyzed from Stratum 5. Taxa identified in this stratum included prickly pear, long spine sunflower, cheno-ams, grass family, sunflower family, ragweed/bursage, broad spine sunflower, unidentified pine, piñon pine, juniper, and oak.

Grid 3. Three pollen samples were analyzed from Grid 3, one each from Strata 1, 2, and 3. Taxa identified in Stratum 1 included prickly pear, beeweed, cattail (*Typha*), cheno-ams, sunflower family, broad spine sunflower, ragweed/bursage, penstemon family, fir, unidentified pine, piñon pine, juniper, oak, walnut (*Juglans*), rose family, Mormon tea, and sagebrush. Taxa identified in Stratum 2 included prickly pear, beeweed, cheno-ams, grass family, sunflower family, Douglas fir (*Pseudotsuga*), unidentified pine, piñon pine, juniper, oak, rose family, and Mormon tea. Taxa identified in Stratum 3 included cheno-ams, grass family, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Control Unit. Six pollen samples were collected in a control unit that was excavated south of Grid 3. Taxa identified in two samples from the uppermost stratum included prickly pear, cheno-ams, grass family, sunflower family, Douglas fir, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Two samples were taken in Stratum 3. Identified taxa included prickly pear, cheno-ams, grass family, sunflower family, ragweed, spurge family, unidentified pine, piñon pine, juniper, and oak. One sample was collected in Stratum 5 and identified taxa included: cheno-ams, grass family, spurge family, fir, unidentified pine, piñon pine, and sagebrush. One sample was collected from Stratum 7. Pollen grains in this sample were too deteriorated to be identified.

CONSTRUCTION HISTORY

The central grid garden walls, those dividing Grids 1 and 2 and 2 and 3, appear to have been constructed first (Figure 23.10). The central walls consisted of two courses of shaped and unshaped tuff blocks. As previously mentioned the lower course was wider than the upper course, although the blocks used for construction were thinner. The eastern and western walls, which run uninterrupted from north to south were added to the central walls and consist solely of one course.

SUMMARY AND CONCLUSIONS

LA 139418 represents a relatively small agricultural feature, which consisted of one complete and two partial grids. The central grid garden (Grid 2) was 2 by 3 m and the northern and southern walls were very well constructed, with large shaped tuff blocks in the center and smaller unshaped tuff blocks on either side. The eastern and western walls of Grids 1, 2, and 3 were not as elaborate as the northern and southern walls and were constructed using fewer rocks with several gaps between the rocks. Grid 1 was not enclosed at the northern end and Grid 3 was not enclosed on the southern end. Deposits further than 2 m from the central walls were determined to be natural and not cultural, thereby supporting the contention that Stratum 2 represented the cultural fill of the grid garden. Maize pollen was recovered from Strata 1 and 2 in Grid 1, but not within either Grids 2 or 3. Nonetheless, it indicates that this important food staple was being grown at the site. The ceramic and geomorphological evidence indicate that the agricultural feature probably dates to the Classic period, being situated in a similar context as the Classic period fieldhouse located to the north at LA 141505.

On the other hand, hundreds of artifacts were found distributed across the site in Areas 2 and 3. Although these may include a Ceramic period component, it seems likely that much of this reflects a Late Archaic period occupation. If so, it would represent a continuation of the Late Archaic surface scatter situated to the east at LA 86533. The obsidian hydration dates indicate that a Middle Archaic component may also be represented.

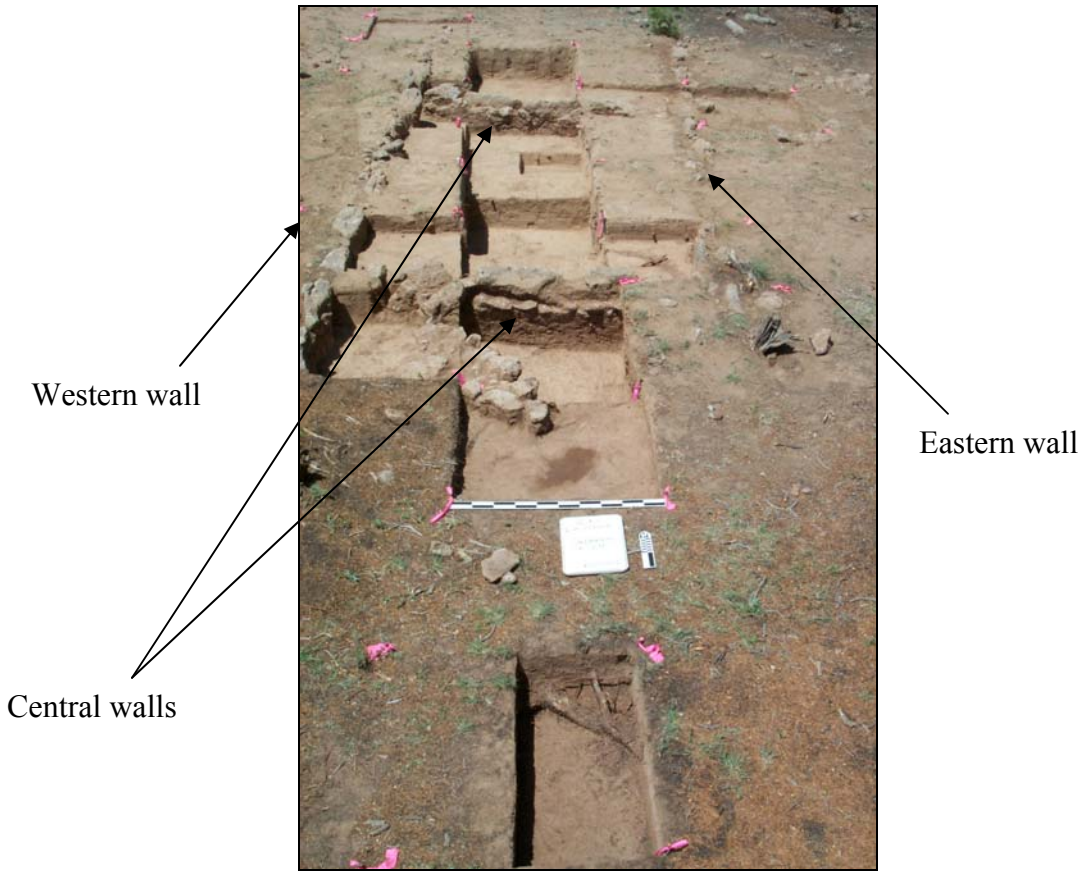


Figure 23.10. LA 139418 post-excavation.

CHAPTER 24
AIRPORT-EAST TRACT (A-3): LA 86534

Kari M. Schmidt

INTRODUCTION AND SITE SETTING

This chapter presents the results of excavations conducted at LA 86534. The site is located in the Airport-North Tract, east of the Los Alamos town site along the north side of State Road 502. The tract is situated near the eastern end of a gently sloping mesa between a tributary to Pueblo Canyon on the north and DP Canyon, a tributary to Los Alamos Canyon, on the south. The parcel ranges in elevation from 2153 m to 2196 m (7060 to 7200 ft) and is covered with a piñon-juniper woodland, isolated ponderosa pines, and an understory of saltweed, snakeweed, yucca, and various other native grasses, shrubs, and forbs.

The site is well-situated between the mountain slopes and the canyon lowlands, with ready access to both environments. The piñon nuts, grass seeds, and other plant foods available in the area were probably attractive to the settled agriculturalists, and the tree cover at the site and extending up the valley toward the mountain likely provided reliable fuel. Game animals on the mountain slopes and in the adjacent canyons could have provided food and hides, and the riparian zone along the drainage would have offered resources not widely available in this arid region.

Geologically, the soil within the tract is a Hackroy sandy loam that generally has a high potential for agriculture (Nyhan et al. 1978). However, with the tract being near the tip of the mesa, the soil deposit is fairly thin and often absent along the mesa edges. The lack of soil and rooting depth severely limits the potential to support agriculture. Bedrock beneath the mesa consists of the Tshirege Member of the Bandelier Tuff (unit Qbt). The mesa is capped by fine-grained soils that likely constitute either eolian sediments or locally reworked eolian sediments. Recent (late Holocene) sediments unconformably overly thin Pleistocene soils.

SITE DESCRIPTION

LA 86534 is located immediately north of Highway 502 at an elevation of 2149 m (7050 ft). The original cultural resource survey identified LA 86534 (temporary number S-11) as a possible roomblock. The roomblock area was characterized by several alignments of shaped and unshaped tuff blocks that measured approximately 18 m north-south by 16 m east-west. The rock alignments were situated amongst several piñon and juniper trees that partially obscured surface visibility. Figure 24.1 shows the site as it looked before excavation but with the 1- by 1-m grid laid out and several cleared piñon and juniper trees. Note the presence of abundant architectural stone on the surface and the mounded appearance.

Figure 24.1. Gridded units before excavation in western area of LA 86534.

In addition to the possible roomblock, a midden area was also identified in the southwest section of the site consisting of a small mound or rise that was located adjacent to New Mexico Highway 502. Although there was a sparse artifact scatter in the area to the east of the possible roomblock, it was unclear at the time of the cultural resource survey whether this rise reflected a buried cultural deposit or was simply disturbed road fill. The associated artifact scatter covered an area measuring approximately 50 m north-south by 44 m east-west. The majority of the identified ceramics consisted of Santa Fe Black-on-white with fewer indented corrugated, smeared-indented corrugated, St. John's Black-on-red, and Wiyo Black-on-white. The lithic artifacts consisted of obsidian and chert debitage, and a single obsidian projectile point tip was observed. One mano fragment was found in the midden area, and one possible polishing stone was also noted. Based on the diagnostic surface ceramics identified during the initial survey, it was thought the site likely dated to the Coalition period.

Initial excavations were undertaken at LA 86534 in the area identified as the possible roomblock. Within a couple of weeks, it became clear that the area associated with the shaped and unshaped tuff blocks on the surface was actually in a heavily disturbed area. Based on the excavations, it was determined that the tuff blocks were secondarily deposited in the area during road construction and that there were no intact alignments.

In addition to the excavations in the area of the possible roomblock and in accord with the data recovery plan (Vierra et al. 2002a), several test pits were placed in areas where 1) there was a high concentration of surface artifacts and 2) where there were areas of stone concentrations. The first test pit was placed over a stone concentration in the area identified as the midden in the

initial survey. Just below the surface, an intact wall was identified. The excavation of the test pit and the exposure of the identified wall are shown in Figure 24.2. Excavation efforts immediately shifted to this area, and eventually, a nine-room pueblo was uncovered in an area where little to no surface rubble was present (Figure 24.3). The area suspected to be a roomblock during the initial survey turned out to be redeposited tuff blocks, while the area identified as the midden was overlying a buried roomblock and kiva.

Figure 24.2. Test pit in midden area where roomblock eventually was uncovered.

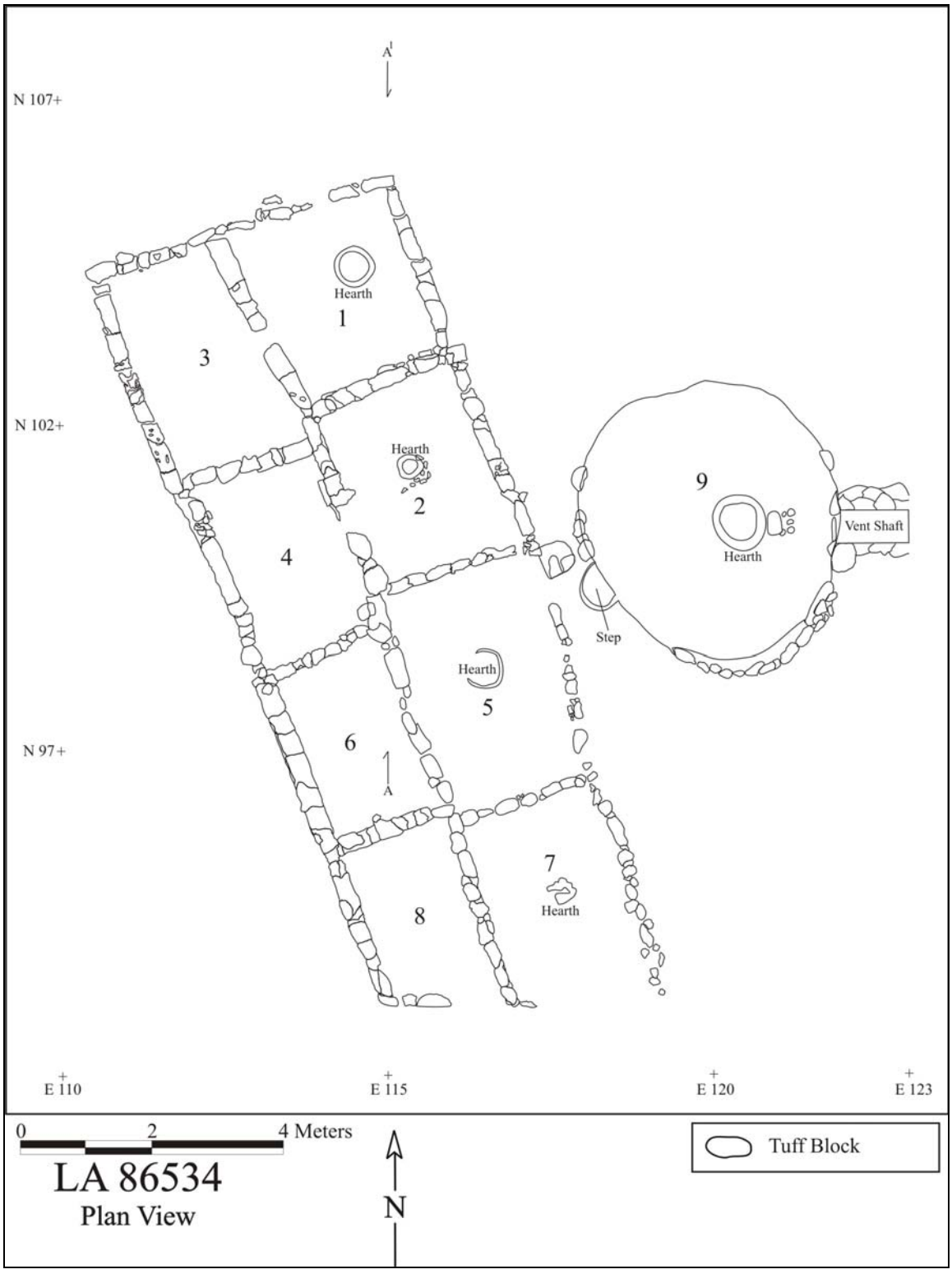


Figure 24.3. Final plan view map of LA 86534.

FIELD METHODS

Prior to any subsurface excavations at the site, both geomorphic and geophysical evaluations were conducted. The project geomorphologists visited the site and assessed its geomorphic context and integrity by digging shovel test holes in the areas around the sites (see Drakos and Reneau, Volume 1). The geophysical evaluation of the site involved a ground-penetrating radar (GPR) survey that was conducted over the surface of the site (see Nisengard et al., Volume 3). The GPR study was conducted in January 2002 to identify possible rock alignments, buried features, and rooms present at the site. The GPR technique was especially important at the outset of excavations at LA 86534 because of the poor condition of the site and the lack of surface visibility resulting from dense vegetative cover.

The site area at LA 86534 was not cleared of trees before the GPR survey and, as a result, portions of the site covered with piñon and juniper trees were not included. In addition to this complication, the area that was GPR'ed was directly correlated with the area where the possible roomblock was thought to be located. As already mentioned, this location turned out to be disturbed, and the actual location of the roomblock was some 8 m to the east. Because of this, the GPR survey picked up only the very western edge of the roomblock and missed the kiva entirely. Rock alignments thought to be walls were noted in the analysis of the data, but were not immediately recognized because of their distance from the supposed location of the roomblock. Post-excavation ground-truthing showed that the location of the possible walls correlated with the southwestern portion of the roomblock.

Fieldwork began at LA 86534 in June, 2002 with an initial assessment of the site. The crew walked over the site area, delineating the site boundaries and identifying the presence of artifact concentrations and features. A 1- by 1-m grid system that was laid out during the initial GPR survey was also used during the excavations to facilitate data corroboration. The central site datum (100N/100E for horizontal control, 10.0 m for vertical control) was established in the area to the southwest of the roomblock and a 1- by 1-m grid was laid out. The intersection of the southwest corner of each grid determined its grid coordinates. Using the established grid, controlled surface collections were made across the entire site, with all the materials being bagged separately by individual grid unit (see section on surface collections later in this chapter). Based on the distribution of surface artifacts and suspected features, three areas were designated at the site. Table 24.1 describes each of these areas and Figure 24.4 shows the relative proximity of these areas to each other.

Table 24.1. Designated areas at LA 86534.

Area Number	Area Location (Grids N/E)	Area Description
1	90 to 130N/125 to 140E	Midden area east of roomblock
2	90 to 130N/90 to 125E	Roomblock (western is original, eastern is actual)
3	130 to 135N/100 to 135E	Disturbed two-track just north of roomblock and midden

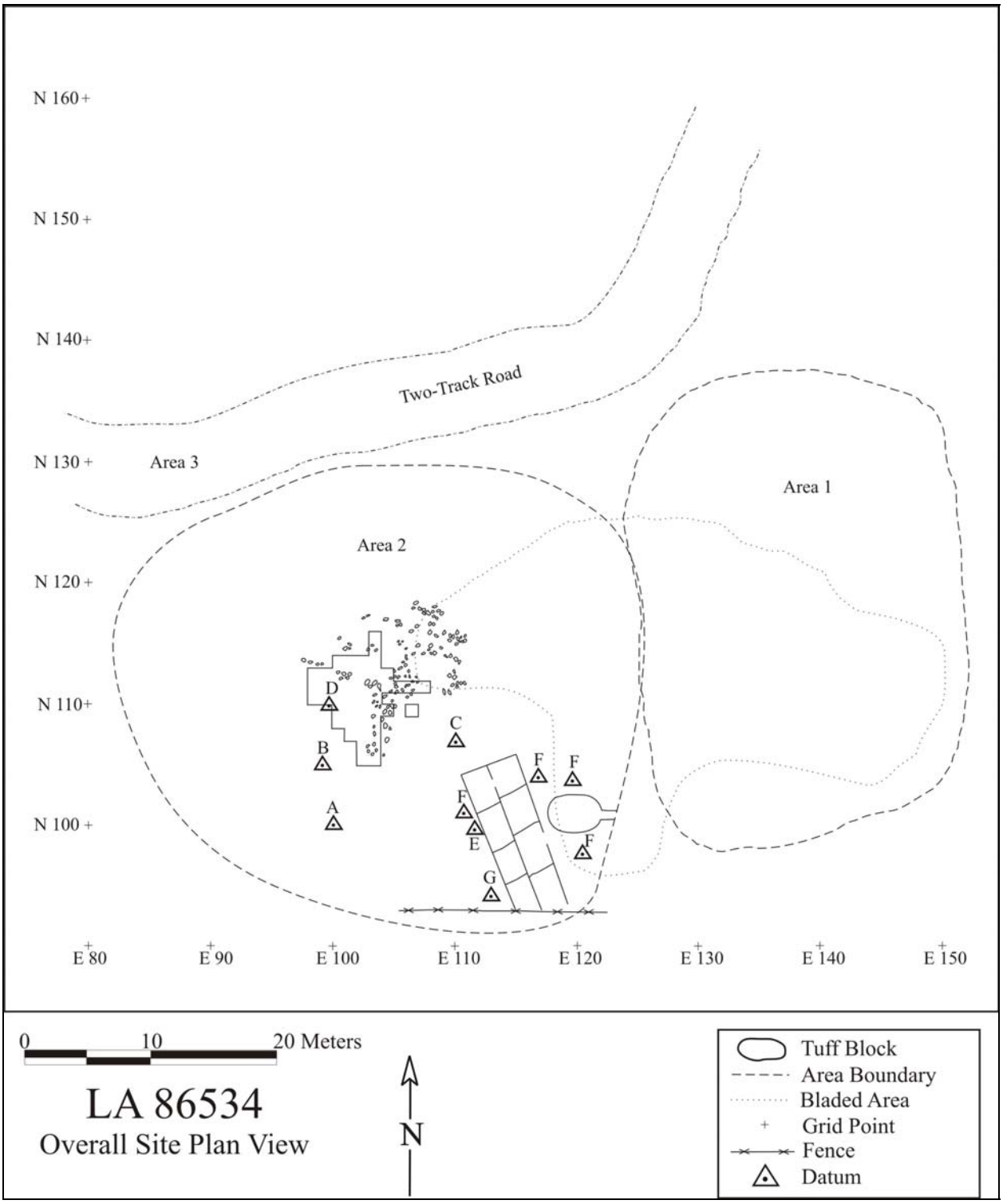


Figure 24.4. Map showing the general areas at LA 86534.

The designation of areas at LA 86534 was based on the presumed location of the possible roomblock at the beginning of excavation. Area 2 was designated as the roomblock and a demarcation point of 125E was selected. Initial observations of the artifact distribution showed a

visible increase of artifacts to the east of this line, possibly suggesting a midden. As a result, the site was divided at this location to demarcate Area 1 (the midden) from Area 2 (the roomblock). Although the location of the actual roomblock was some 8 m east of the original presumed location, the revised location still fell within the confines of Area 2. A new area number was not given to the actual roomblock but was simply designated as the eastern portion of Area 2. Consequently, the western portion of Area 2 contains only the original area of excavation in the possible roomblock.

There was also a dense concentration of artifacts to the north of Areas 1 and 2, but they were clearly in a disturbed area. A fairly large two-track road paralleled the northern boundary of the site. The road had a number of prehistoric and historic artifacts associated with it, but it also had areas of gravel and concrete placed throughout its length. The two-track seemed to drop off into the canyon to the north of the site. Surface artifacts in Area 3 were sampled differently than Areas 1 and 2. In Areas 1 and 2, the artifacts from each 1- by 1-m grid were collected and bagged separately. In Area 3, which was heavily disturbed, two 3-m dogleash samples were collected. The southwest corner of a particular grid was used as the center point and artifacts were collected from 1.5 m in a complete circle around the grid point.

Hand excavation of LA 86534 began in earnest on June 24, 2002. Excavations were carried out by natural stratigraphic units, or in cases where the stratum was greater than 10 cm thick, in arbitrary 10-cm levels. Strata were defined as distinct depositional units and descriptions for each included soil kind, texture, compactness, and color using a Munsell soil chart (see the following section for an in-depth discussion of the stratigraphic sequence). With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh.

As outlined in Vierra et al. 2002a, roomblock excavations began by defining visible wall alignments based on surface indications (also see this volume). Once the outline of rooms was defined and the approximate center of the mound was identified, a north-south cross-section through the roomblock was excavated. The entire grid line was excavated minus the 1- by 1-m unit where the east-west cross-section intersected the north-south line. Although this procedure was implemented at LA 86534, the north-south line was tied in to the original test pit (101N/115E) conducted in the area of the roomblock and was not located directly in the center of the mound as there were no surface indications of the roomblock. As it happened, the 115E line ran through the front set of rooms and was located just east of the center. Once the majority of the 115E line was excavated, a profile was drawn. The intersecting east-west line was not excavated in one block as critical units in the 103N line were removed before a complete profile was drawn.

Stratigraphic profiles were drawn for many of the individual units. Once the fill in each of the rooms was removed in stratigraphic layers, each interior room floor was mapped. Locations of floor features, samples, and artifacts were all included on the maps. Pollen samples were taken from underneath artifacts lying on the floor and in features and other locations (corners of rooms) where the context might preserve these remains. After the floor artifacts were removed, the floor samples were taken, and the features were excavated, a single sub-floor test pit was dug to identify the presence of any earlier floors or features.

In previous excavations conducted at Coalition Period roomblocks at Los Alamos National Laboratory (LANL), kivas have typically been located east of the roomblock. Because there were no surface indications of the roomblock at LA 86534, and based on the pattern mentioned above, the area all around the roomblock was stripped in an attempt to locate potential wall alignments and possible features in the midden area. In late August 2002, a bobcat was brought to the site and an area about 25 m north-south by 45 m east-west to the north and east of the roomblock was surface-stripped (see Figure 24.4, bladed area). On average, 10 to 15 cm of sediment was removed in this 1125-m^2 area. While no dense concentrations of artifacts or obvious extramural features were found in the large area that was surface-stripped, not too surprisingly, a wall alignment was located to the east of the roomblock. A test pit was placed over this small exposure of linear rubble that was located 15 cm below the surface and a wall was identified almost immediately. Figure 24.5 shows this wall as it was initially being exposed.

Figure 24.5. Room 9 wall exposed in test pit; note rubble flush with bladed surface.

A 1- by 2-m test pit was dug on top of this wall alignment and an intact plastered floor was uncovered at 1.75 m below the bladed surface (8.02- to 7.98-m elevation). Due to time constraints, the hand excavation of Room 9 was not possible, and a bobcat was eventually used to remove the post-occupational fill and the wallfall in the kiva. Before the upper fill was removed, however, the entire perimeter of the kiva was exposed by hand excavation (Figure 24.6). To avoid damaging the walls, the perimeter grids were dug in 1- by 1-m units and were excavated to create a visual demarcation of Room 9 before mechanical excavation.

Figure 24.6. Perimeter of Room 9 being exposed before mechanical excavation of the fill.

Using the stratigraphic sequence established in the hand excavation of the 1- by 2-m unit, the bobcat removed the fill in the kiva to the top of rooffall. During the mechanical excavation of Room 9, the room was divided down the center along the 120E line. The bobcat removed the fill in four sections: west half, Stratum 1 (post-occupational fill), west half, Stratum 2 (wallfall), east half, Stratum 1 (post-occupational fill), and east half, Stratum 2 (wallfall). Figure 24.7 shows the removal of the west half of Stratum 1. The fill removed by the bobcat was screened through 1/8-in. mesh, and it was recorded and bagged according to the provenience enumerated above. At approximately the 8.3-m elevation, or the top of rooffall, the use of mechanical excavation ceased and we returned to hand excavation. For the excavation of Stratum 15 (kiva rooffall), 1-by 1-m grids were again used. This stratum was excavated down to the plastered floor of the kiva.

After excavation of the roomblock was completed in November of 2002, three walls were knocked down to assess the construction history of the roomblock. The knocked-down walls include the north wall of Room 2 (an interior wall), the west wall of Room 4 (an exterior wall), and the east wall of Room 5 (adjacent to the kiva entrance). The results of these efforts are discussed in detail later in this chapter.

Figure 24.7. Removal of kiva fill in the west half of Stratum 1.

SITE STRATIGRAPHY

This section is divided into two parts. The first section will document the general stratigraphic sequence used during the hand excavations at LA 86534. It will include an overall table describing the strata encountered during excavation and provides brief descriptions of these strata. It then presents total artifact counts for each individual stratum (i.e., post-occupational fill, room fill, wallfall, rooffall, and floor) in each room. The second part of this section is a post-excavation summary, which was generated by Paul Drakos and Steve Reneau (see Volume 3).

Stratigraphic Sequence used During Excavation

A basic stratigraphic sequence has been identified during previous excavations conducted at Coalition period pueblos at LANL. This sequence includes four major stratigraphic units. From top to bottom they are recent surface soil, a cap of rubble debris, construction debris that may or may not include roofing material, and interior room floor surface. This general stratigraphic sequence was also present at LA 86534 (Figure 24.8). All features were assigned a separate stratum number. Table 24.2 presents the general stratigrahic sequence for the site and gives data on stratum numbers, general provenience, feature numbers, color, texture, and thickness and then gives a general description of each stratum.

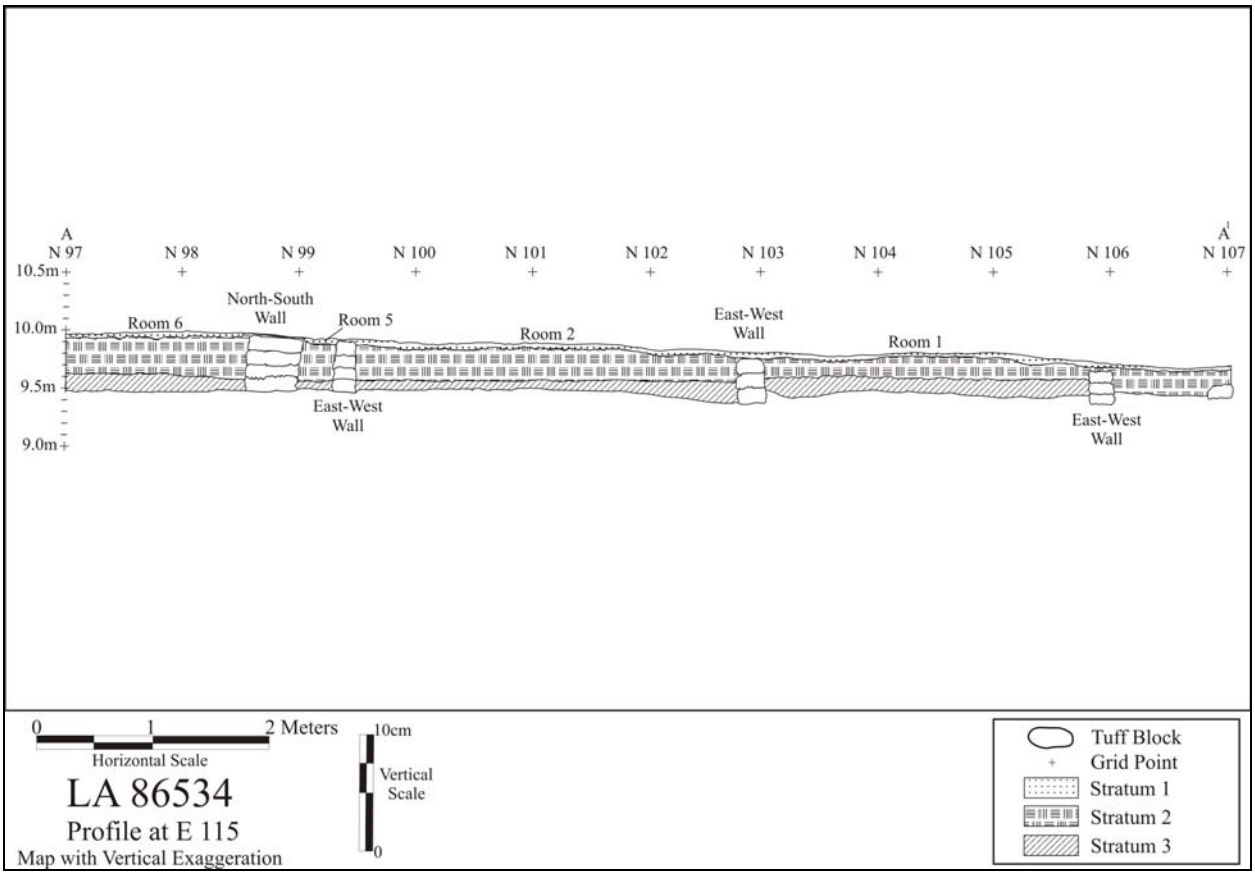


Figure 24.8. Profile of the E115 line through the roomblock.

Table 24.2. General stratigraphic descriptions for LA 86534.

LA 86534 Stratigraphic Summary							
Stratum #	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
1	Area 2 (eastern and western areas)	1.03*	0.12*	10.03–9.00	7.5YR5/3–6/3	Loamy sand	Post-occupational fill. Loose topsoil. Very unconsolidated. Some areas of high organic content from pine duff. A/o Horizon.
2	Area 2 (eastern and western areas)	1.30	0.30	9.70–8.40	7.5YR5/3–6/4	Loamy sand	Room fill and rubble wallfall in eastern area, disturbed tuff blocks in western area. Loose and unconsolidated. Abrupt lower boundary (rooffall) in eastern area. Inclusions include artifacts, charcoal, and pieces of tuff.
3	Area 2 (Disturbed western area)	0.30	0.07	9.60–9.30	7.5YR 6/3.5	Sandy loam	Disturbed colluvium. Hard sub-angular blocky peds. Upper boundary distinct from loose, disturbed soil.
4	Area 2 (Disturbed western area)	0.20	0.05	9.40–9.20	5YR4/3	Clay loam	Late Pleistocene clay. Hard, sub-angular blocky peds. No bioturbation. Red.
5	Area 2 (Disturbed western area)	0.10	0.04	9.76–9.66	5YR4/2	Clay	Middle Pleistocene clay. Mottles are present. Pebble and gravel inclusions. No bioturbation. Red.
6	Area 2 Roomblock (eastern area)	0.11	0.04	9.60–9.49	7.5YR5/3	Clay loam with adobe	Rooffall from roomblock. Consolidated adobe with small pebbles, charcoal, and artifacts. In some areas, small layer of fill beneath (7), in other areas, lower boundary is floor (8).

LA 86534 Stratigraphic Summary							
Stratum #	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
7	Area 2 Roomblock (eastern area)	0.10	0.02	9.55–9.45	7.5YR4/3	Silty loam	Loose fill below rooffall and above floor in some areas of the roomblock. Inclusions include small pieces of tuff and charcoal. Lower boundary is a plastered floor.
8	Area 2 Roomblock (eastern area)	0.07	0.02	9.55–9.48	10YR7/1	Plastered floor	Patchy floor. Plaster in some areas in quite thick, in others, very thin. Very rodent disturbed. Artifacts on top of floor. Some charcoal inclusions.
9	Room 1, Feature 4 Hearth, remodeling	0.19	0.11	9.62–9.42	7.5YR5/4	Ashy sand	Fill from most recent use of the collared hearth in Room 1. Ash and sand with scattered flecks of charcoal. Some small pieces of tuff in the fill. Lower boundary is plastered.
10	Room 2, Feature 2 Hearth	0.16	0.02	9.55–9.47	7.5YR5/4	Ashy sand	Fill from most recent use of the collared hearth in Room 2. Ash and sand with scattered flecks of charcoal, and some small pieces of tuff. Lower boundary is plastered.
11	Room 1, Feature 4 Hearth, primary use	0.08	0.03	9.45–9.36	7.5YR5/4	Ashy sand	Hearth fill, original use. Ashy soil with small bits of charcoal and oxidized soil. Ash comprises about 60% of the fill, with remaining portions being small bits of tuff.
12	Room 5, Feature 5 Hearth	0.12	0.05	9.50–9.38	7.5YR4/3	Ashy sand	Hearth fill. Very loose and granular. Significantly rodent disturbed. Sediments are ashy but mixed with quite a bit of sand from rodents. Some inclusions (artifacts and charcoal). Lower boundary is plastered.

LA 86534 Stratigraphic Summary							
Stratum #	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
13	--	--	--	--	--	--	This stratum was designated, and then duplicated by stratum 19. See stratum 19 for description.
14	Room 6, Feature 12 Amorphous pit	0.28	0.14	9.58–9.30	7.5YR4/4	Silty	Fill from an amorphous pit in back central room. Very loose and unconsolidated. Heavily rodent disturbed. Inclusions include small pebbles and a few artifacts. Bedrock boundary.
15	Room 9, Kiva	0.33	0.07	8.30–7.97	7.5YR5/3	Sandy loam	Kiva rooffall. Consolidated adobe with small pebbles and charcoal inclusions. Lower boundary is plastered kiva floor. Some pieces of tuff and artifacts also. Timber impressions.
16	Room 6, Feature 13, Milling bin	0.22	0.05	9.71–9.49	--	Silty	Mealing bin fill. Very loose and unconsolidated. Rodent disturbed. Inclusions include pebbles, pieces of tuff, artifacts, and charcoal. Lower boundary is bedrock.
17	Room 9, Kiva	0.05	0.02	8.02–7.97	7.5YR5/3	Plastered floor	Kiva floor. Very compact and nicely plastered. In excellent condition. Tuff and clay temper. Lower boundary is bedrock.
18	Room 9, Kiva	0.27	0.02	7.97–7.70	10YR5/2	Silty sand	Sub-floor in kiva. Very sandy. Mostly in fissures between areas of bedrock.

LA 86534 Stratigraphic Summary							
Stratum #	**Provenience**	**Maximum Thickness**	**Minimum Thickness**	**Elevation**	**Color**	**Texture**	**Comments**
19	Room 7, Feature 9 Hearth				7.5YR4/3	Ashy sand	Hearth fill. Loose, ashy, and unconsolidated. Pebbles, artifacts, and charcoal in fill. Lower boundary is plastered but condition of both floor and hearth are poor and heavily deteriorated because of extensive rodent activity.
20	Room 9, Feature 16 Hearth	0.30	0.05	8.05–7.75	10YR8/1	Ashy	Fill from kiva hearth. Loose, but pieces of consolidated ash in the bottom of the hearth. Inclusions are pebbles, some artifacts, and charcoal. Plastered floor and collar.
21	Room 9 Feature 17 Ash pit	0.13	0.03	7.97–7.84	10YR5/2	Ashy sand	Fill from the ash pit in the kiva. Very loose and unconsolidated. Almost all ash with far less sand. Few pebbles, artifacts, or charcoal. Some pieces of tuff. Bottom is bedrock.
22	Room 9 Feature 18, Sipapu	0.22	0.22	8.02–7.80	10YR5/2	Silty sand	Fill from the sipapu in the kiva. Very loose and unconsolidated. Few pebbles, artifacts, or charcoal. Some pieces of tuff. Bottom is bedrock.

*Thickness in meters

At LA 86534, the first stratum was used in both the eastern and western portions of Area 2 and was generally a 10- to 15-cm layer of post-occupational fill, except in the kiva (Room 9), where it was just over 1 m thick. Where trees were present up to, and during, the time of excavation, this layer was typically thicker. Artifacts were most abundant in this stratum, but are likely skewed by the thick layer of post-occupational fill in the kiva. Table 24.3 shows the general artifact counts by strata across the site.

Table 24.3. General artifact counts by stratum.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	TOTAL
1	6775	734	128	24	**7661**
2	3839	486	18	20	**4363**
1,2	4279	536	18	57	**4890**
6	483	44	9	10	**546**
6,7	1163	210	20	20	**1413**
8	72	9	12	5	**98**
11	0	0	1	0	**1**
14	4	2	9	1	**16**
15	1331	145	1	37	**1514**
16	0	0	1	0	**1**
17	1	0	0	0	**1**
19	1	1	0	0	**2**
20	1	2	1	0	**4**
21	0	12	0	0	**12**
TOTAL	**17,949**	**2181**	**218**	**174**	**20,522**

The second stratum is composed primarily of wallfall and contains a large amount of shaped and unshaped tuff blocks along with some chunks of adobe. Artifacts were also abundant in this stratum, again, likely skewed by inclusion of materials from the kiva. The stratigraphic designation "1,2" combines materials from both of these strata. As the end of the season neared and time became an issue, excavations continued in one large level down to rooffall (Stratum 6 in the roomblock and Stratum 15 in the kiva). As a result, Strata 1 and 2 were combined and artifacts from both lumped together. Stratum 1,2 in the kiva also included the large bulk removed by the bobcat.

Rooffall, the third stratigraphic level, consisted primarily of hard-packed adobe fragments and small pieces of charcoal in a soil matrix. However, no evidence of roof beams was encountered. This stratum was abundant at this site and was generally about 5 to 8 cm thick. Rooffall was consistently present in all of the rooms and, often, many artifacts were encountered either in the rooffall layer or at the level of wallfall and rooffall contact. In some areas, particularly the upslope portion of the roomblock at the northern end, there was a thin layer of sediment (Stratum 7) between rooffall and the floor. This suggests the floor may have been exposed for some time before the collapse of the room. It may also suggest more bioturbation, of which there was some evidence, in this portion of the roomblock. The Stratum "6,7" designation was used because Stratum 7 was difficult to detect and excavators were often already to floor before they realized

they had gone through it. Stratum 7 was very thin and was only confidently detected in Room 1, but no artifacts were recovered. As a result, the Stratum 6 and 6,7 designations are from the same context.

The number of artifacts, with the exception of ceramics, associated with the floors (Stratum 8) is generally low. In general, the room floors (Stratum 8) were plastered and in fair condition. For the most part, they were largely patchy and had some smoke staining. The two middle rear rooms (4 and 6) were in the best condition, while the front rooms were in much poorer condition. Significant bioturbation was noted in many of these rooms. The floor of the kiva (Room 9) was in excellent condition. It was nearly 100 percent intact and was slightly smoke-stained in areas near the hearth and ash pit. Aside from these general stratigraphic designations, all features were given their own stratum numbers.

In addition to the strata assigned to the general stratigraphic sequence in the roomblock, the strata in the western portion of Area 2 (or the original area of excavation) were assigned different numbers because of their highly disturbed nature. A small number of artifacts came from this area of the site, but the artifacts were of the same general type as those from the roomblock and the midden. This suggests the disturbed area may be related to the original LA 86534 roomblock and the artifacts could have come from the southern end of the roomblock when it was damaged and disturbed by the construction of New Mexico Highway 502. Geomorphic analyses of these soils suggest they post-date the Puebloan occupation. The presence of tuff blocks overlying a fine-grained, post-Puebloan soil lacking colluvium derived from the roomblock area indicates that the surficial tuff blocks are not in place.

Stratigraphic Sequence Derived from Geomorphological Examination (Paul Drakos and Steve Reneau)

The following section contains a brief summary of the geomorphological deposits identified at LA 86534. Drakos and Reneau describe soil profiles in three locations and derive interpretations regarding the geomorphological history at the site. Their chapter (Drakos and Reneau, Volume 3) should be consulted for additional information of the general geomorphic setting at LA 86534 and in the Airport Tract and on the analytical methods they employed during their analyses.

LA 86534 Geomorphology and Stratigraphy

LA 86534 is underlain by a thin (15 to 20 cm thick) Pleistocene Bt horizon inferred to be 100 to 200 ka or older, based on correlation with soils described by McFadden et al. (1996). The Bt horizon is a reddened (5YR) silty to sandy clay that is a potential clay source. Roomblocks were apparently built on top of the Bt horizon. In proximity to the roomblock, the Bt horizon is overlain by Bw horizons formed in colluvium derived in part from the roomblock. Outside of the rubble mound surrounding the roomblock, the Bt horizon is overlain by a 20- to 25-cm eolian deposit that apparently post-dates the Puebloan occupation. The Bt horizon appears to be the lower part of an originally thicker Pleistocene soil that has been partially stripped by erosion. The presence of only a thin Pleistocene soil underlying young eolian deposits in the vicinity of LA 86534 suggests that erosional processes predominated in this area before the Coalition

period. Near the roomblock (approximately 3 m northeast), two episodes of mixed colluvial and eolian deposition are recorded in soil profile LA 86534b (Table 24.4).

A 5-cm-thick AC horizon, inferred to be less than 200 years old, overlies a 27-cm-thick buried soil (Bw1b1-Bw2b1) formed in sediments derived in part from erosion of the roomblock. The Bw1b1-Bw2b1 soil is therefore less than 750 to 850 years old. The Bw2b1 horizon overlies the Pleistocene Bt horizon. The Bw2-Bw1 horizon sequence is developed in a colluvial deposit derived from erosion of the roomblock, with fines representing likely eolian deposition. The greater abundance of tuff clasts (60% to 70% gravel) in the lower (Bw2b1) horizon is indicative of sediment derived primarily from the roomblock, whereas a decrease in gravel content to 10 percent in the Bw1b2 horizon suggests eolian deposition in the rough surface created by wall remnants and the rubble mound surrounding the ruin.

West and north of the buried roomblock, scattered tuff blocks were observed on the surface. These tuff blocks were originally thought to represent the location of a roomblock. However, the tuff blocks occur within or on top of an A horizon that overlies fine-grained deposit dominated by silt and very fine sand with little soil development (Bw horizon, location LA 86534a, approximately 8 m west and 3 m north of the roomblock). This deposit, extending to a depth of 25 cm, apparently post-dates the Puebloan occupation here. The presence of tuff blocks overlying a fine-grained, post-Puebloan soil lacking colluvium derived from the roomblock indicates that the surficial tuff blocks are not in place. These blocks may have been moved during highway construction. Beneath the post-Puebloan deposit is the reddish, clay-rich Pleistocene Bt soil horizon that directly overlies tuff bedrock. The contact between the two soil horizons is abrupt and probably records stripping of part of the older soil followed by fairly recent burial of the horizon by eolian sediments.

The mesa top soil described outside of the roomblock rubble mound (LA 86534c) comprises a non-gravelly AC horizon overlying an eroded Bt horizon (Table 24.4). The AC horizon consists of well-sorted fine sand and extends to a depth of 21 cm. This horizon likely represents eolian deposition, possibly mixed with fine-grained colluvium. Based on the relative absence of soil structure, the AC horizon is inferred to post-date Puebloan occupation. The 21-cm-thick AC horizon and eolian deposit at LA 86534c is roughly correlative to the 25-cm-thick A-Bw profile and eolian deposit at LA 86534a.

Table 24.4. Summary of soil morphology at LA 86534.

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Preliminary Age Estimate	Comments
LA 86534a, Airport Land Transfer Parcel, east wall, 108N/103E														
A	0-8	<2	7.5YR4/3	7.5YR3/2	ls	1msbk	so	so po	no	none	-	cs	<700–800 yrs	abundant organics, vfs-si, scattered ms-cs, w/ tuff blocks at surface, possible cumulative A horizon
Bw	8-25	<2	7.5YR5/3	7.5YR4/3	sl	2msbk	so-sh	ss ps	no	none	-	as		si +vfs, young
Bt1b1	25-45	c2	5YR4/4	5YR4/3	sicl	2-3fabk	sh	vs vp	3nkbrpopf	non	-	as (?)	middle-late Pleistocene (100–200ka)	si + clay
R	45+													Qbt
LA 86534b, Airport Land Transfer Parcel, 3 m north of NE corner of roomblock														
Oi	0-1	<5	10YR4/2	10YR2/2	l	s.g.	lo	so,po	no	non	-	as	<100–200 yrs	60% organic matter (piñon litter), 40% vfs
AC	1-6	<5	10YR4/3	10YR4/3	ls	1fsbk	so	so,po	no	non	-	as		
Bw1b1	6-21	10	7.5YR4/3	7.5YR3/3	l	2m-csbk	sh	ss,ps	no	non	-	cw	<700–800 yrs	scattered tuff clasts
Bw2b1	21-33	60-70	7.5YR4/3	7.5YR3/3	l	1-2msbk	so	ss,ps	no	non	-	cw		tuff clasts
Btb2	33-48	<2	5YR5/6	5YR4/6	sc	3f-vfabk	h	s,p	3mkpopfbr	non	-	as	middle-late Pleistocene (100–200ka)	good clay source
R	48+													Qbt

Horizon	Depth (cm)	Gravel (%)	Dry Color (Matrix)	Moist Color (Matrix)	Texture	Structure	Dry Consistence	Wet Consistence	Argillans	$CaCO_3$	$CaCO_3$ Stage	Lower Horizon Boundary	Preliminary Age Estimate	Comments
LA 86534c, Airport Land Transfer Parcel, 60 m east of 86534b, at old barrow pit														
AC	0-21	<2	7.5YR4/4	7.5YR4/3	ls	m	lo	so,ps	no	non	-	as	<700–800 yrs	well sorted fs - Qe+Qc surface
Bt1b1	21-36	<2	5YR5/3	5YR4/3	sic	2-3f-msbk	sh	s,p	3n-mkbrpopf	non	-	as	middle-late Pleistocene (100–200ka)	good clay source
R	36+													Qbt

Key in Appendix K.

SURFACE COLLECTION

All surface artifacts within the boundary of the site were collected using a 1- by 1-m grid system. Using the grid initially established during the GPR survey of the site, the site was gridded out in 1- by 1-m units (Figure 24.9). Magnetic north was used in both the GPR and excavation grids.

The 100N/100E site datum was established in the southwestern corner of the site. After the grid was laid out and before the collection of any artifacts, the crew walked around the site area and pin-flagged surface artifacts. The use of pin flags allowed for better visualization of the site boundary. Based on the visual demarcation of artifact density, surface artifacts were collected in a 2400-m^2 area. This area included the original possible roomblock slated for excavation, the associated midden (actual roomblock), and the actual midden area (not originally documented in the cultural resource survey). Figure 24.9 shows the surface collections being undertaken in the area of the eastern portion of the kiva. Note the lack of architectural stones on the surface at the beginning of the field season.

Figure 24.9. Surface collection in Area 1.

During the surface collection, all artifacts were collected according to their unit designation. Artifacts were bagged separately according to material type (except when the total number of artifacts from the grid was less than five), and each bag was given a separate field specimen (FS) number. While chipped stone debitage and ceramics were collected within the general 1- by 1-m grid they were located in, the location of formal chipped stone tools and ground stone items was point provenienced.

At the time of surface collection, trees had only been removed from the area surrounding the possible roomblock in the western portion of Area 2. This left several trees standing in the immediate area of the roomblock. Their presence created a thick accumulation of duff and, as a result, few surface artifacts were visible in the areas under the trees. If artifacts were missed during the original surface collection because of elevated amounts of duff, they were collected during the excavation of the 1- by 1-m grids.

Subsequent to the field season, all artifacts collected from the individual grids were entered into Surfer, version 7. From these data, maps of surface artifact distribution were generated. Figure 24.10 shows the distribution of all surface artifacts from the site. These maps show a general distributional pattern seen at several Coalition period roomblocks at LANL: a low density of surface artifacts on top of the roomblock that is surrounded by an increasingly dense arched area of artifacts from northeast of the roomblock to southeast of the roomblock. In this case, the area to the southeast of the roomblock has been disturbed by the construction of New Mexico Highway 502.

SITE EXCAVATION

Excavations at LA 86534 were conducted from June through October 2002. The field crew consisted of Kari Schmidt (crew chief), Bonnie Bagley, David Barsanti, Sandi Copeland, Mike Dilley, Joaquín Gallegos, Aaron Gonzales, Brian Harmon, Mia Jonsson, Mike Kennedy, Bettina Kuru'es, Timothy Martinez, Janet McVickar, Jennifer Nisengard, Joanne Tactikos, Brad Vierra, and Scott Worman. Leo Martinez operated the bobcat during the surface scraping and the mechanical excavation of the kiva. Timothy Martinez and Aaron Gonzales were tribal monitors for San Ildefonso Pueblo.

As already discussed in the site methods for LA 86534, three areas were designated at the site based on the distribution of surface artifacts and suspected features (see Figure 24.4). Excavations were conducted in Area 2. Except for surface scraping by the bobcat, no earth-moving activities occurred in Areas 1 and 3.

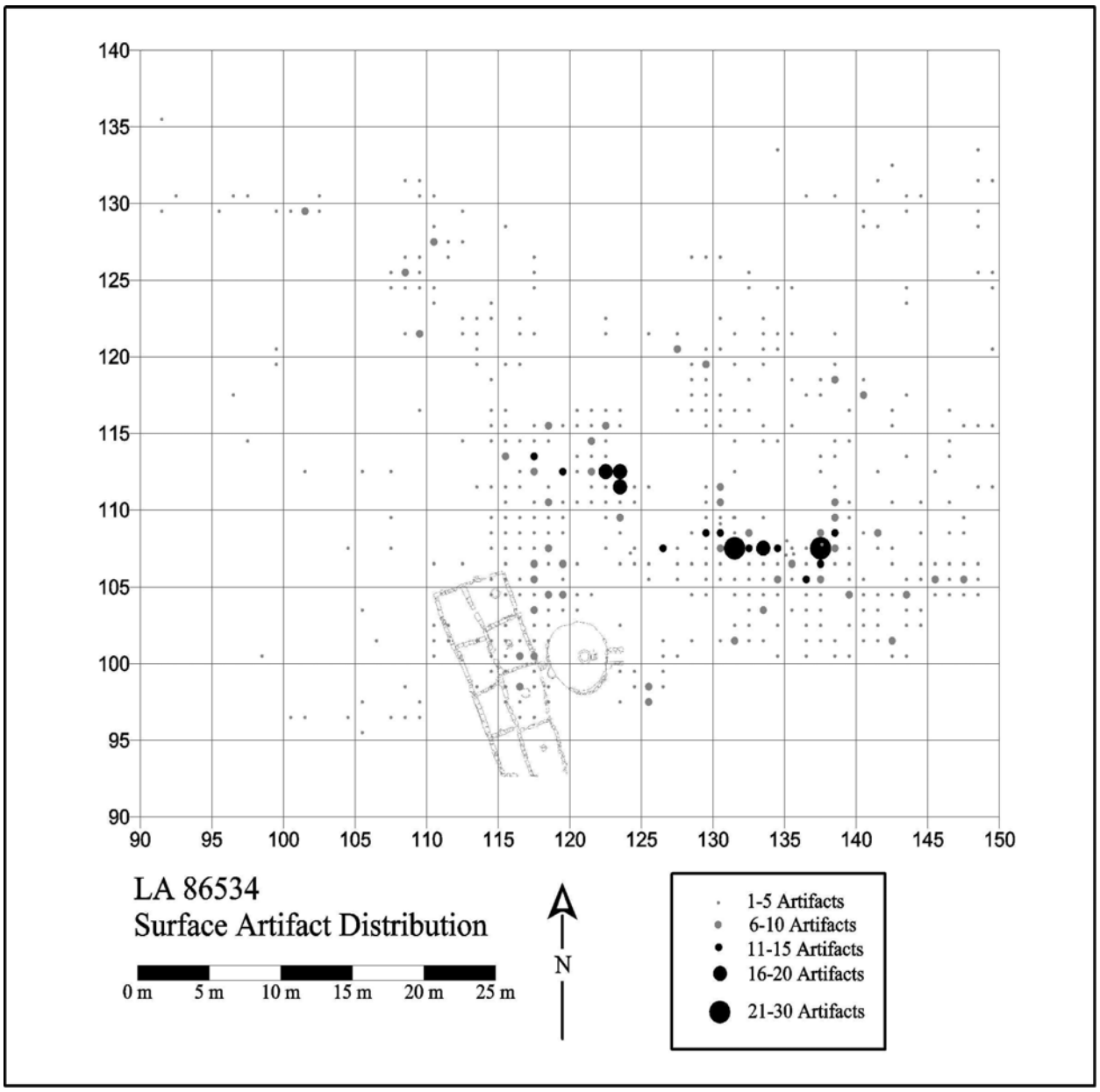


Figure 24.10. Map showing the distribution of surface artifacts.

Area 1

Area 1 was demarcated based on an increased density of surface artifacts immediately to the north and east of the roomblock. Although the area was not a formal midden per se, the higher density suggested a different use and warranted a distinct notation. The area was delineated at the 125E line; all artifacts to the east of this line were associated with Area 1 and all artifacts to the west were associated with Area 2. No features were identified in Area 1 despite extensive surface scraping by the bobcat. Of the 1125 m^2 bladed at the site, some 742 m^2, or just over two-thirds, were in Area 1. The artifacts in Area 1 are similar to those recovered from the

roomblock. Surface artifacts from 106-108N/124-147E were selected for analysis. Based on their demonstrated relatedness, it is probable that Area 1 may have been a midden area used by inhabitants of the roomblock.

Area 2

The designation of areas at LA 86534 was based on the presumed location of the possible roomblock at the beginning of excavation. Area 2 was designated as the roomblock and a demarcation point of 125E was selected. The demarcation was based on two things: 1) the increased density of artifacts to the east of this line and 2) the cessation of architectural stone on the surface. Although the location of the actual roomblock was some 8 m east of the original presumed location, the revised location still fell within the confines of Area 2. A new area number was not given to the actual roomblock but was simply designated as the eastern portion of Area 2. Consequently, the western portion of Area 2 contains only the original area of excavation in the possible roomblock, while the eastern area contains a nine-room pueblo with an associated kiva.

Western Portion of Area 2 (Original location of possible roomblock)

In the original cultural resource survey of the site area, LA 86534 was identified as a possible roomblock. The area of the site designated as the possible roomblock was characterized by several possible alignments of shaped and unshaped tuff blocks that covered an area of approximately 18 m north-south by 16 m east-west and was slightly mounded. Because of the presence of architectural surface stone and a mound, it was presumed that a roomblock was likely present in this locale. Excavation of the area began on the 24th of June and continued until the second week of July. Per provisions in the data recovery plan, a north-south line through the approximate center of the front set of rooms was selected for excavation. Additionally, an east-west line through the approximate center of the mound was also selected for excavation. By the time these units were excavated (105-116N/104E and 111N/98-107E), it was clear that excavations were progressing in a disturbed area. Although the presence of possible alignments of shaped and unshaped blocks associated with artifacts was at first perplexing, it soon became clear that excavators were digging in redeposited sediments that likely resulted from highway construction south of the mound. Figure 24.11 shows the distribution of tuff blocks in the area of the mound at the cessation of excavation. Based on the arrangement of stones at the end of excavations in the area, it is clear that no intact alignments were present.

Artifact density in the western portion of Area 1 was not great, but ceramics, chipped stone, ground stone, and faunal remains were all present. Artifacts were analyzed from the north-south trench through the mound (104E line) as well as from the two adjacent north-south lines (103N and 105N). Identified ceramics included Santa Fe Black-on-white and a number of utilitywares, and the chipped stone remains included Pedernal chert and obsidian. These results show that the artifacts in the disturbed mound were of similar composition to that in the roomblock (the eastern portion of Area 2), thereby supporting the contention that the western portion of Area 2 is likely disturbed fill from the eastern portion of Area 2.

Figure 24.11. Western portion of Area 2 just before the end of excavation.

Table 24.2 shows the stratigraphic units identified in this portion of the site. Strata 1 and 2 (post-occupational fill and rubble fill) are comparable to those located in the eastern portion of Area 2. Strata 3, 4, and 5 were identified in the western portion of Area 2. These strata include disturbed colluvium (Stratum 3), Late Pleistocene clay (Stratum 4), and Middle Pleistocene clay (Stratum 5). Figure 24.12 shows a stratigraphic profile drawn along the eastern wall of 104E. All five strata are clearly visible and the presence of tuff cobbles becomes increasingly sparse with depth. No features were identified in the excavated areas of the western portion.

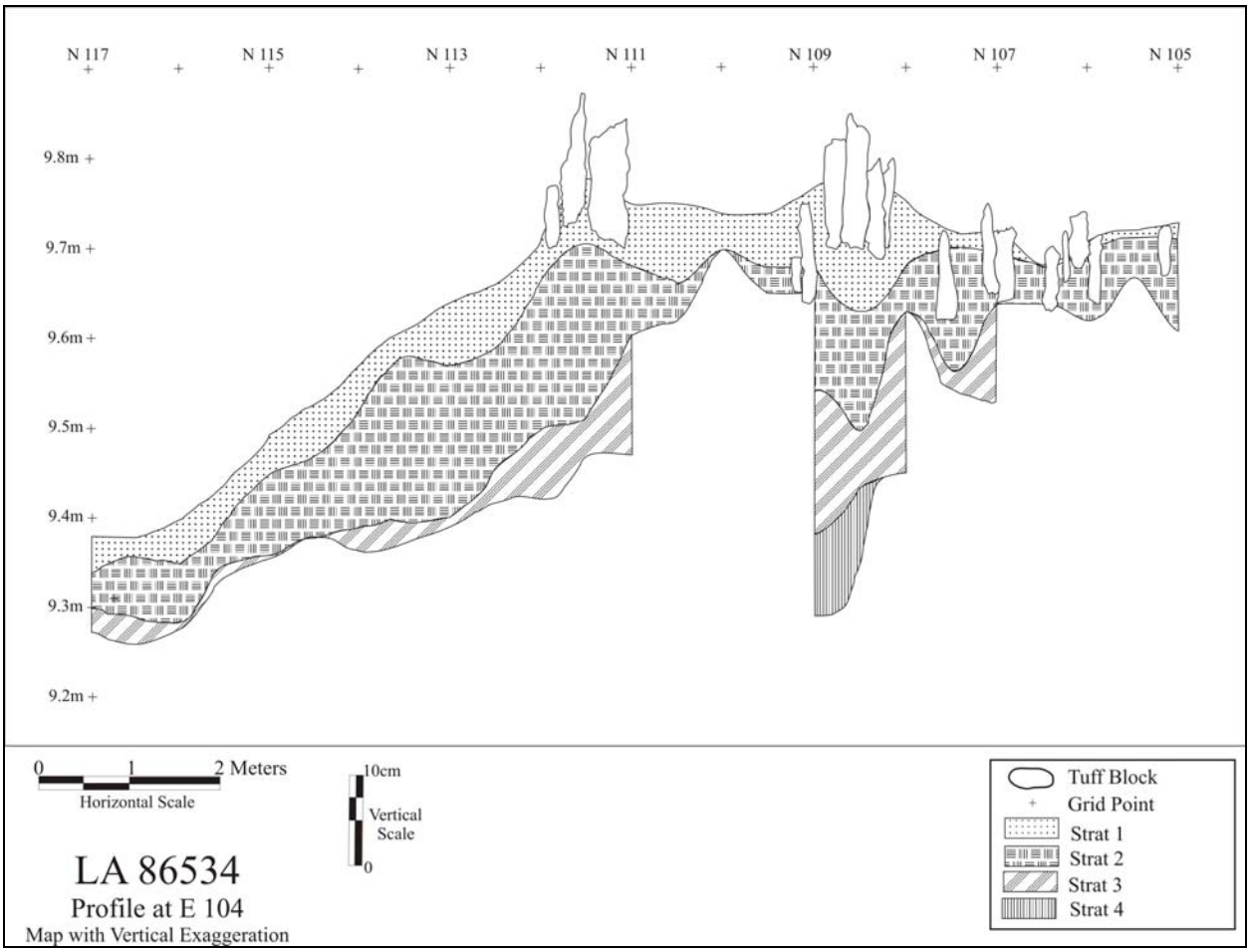


Figure 24.12. Profile of the E104 line in the western portion of Area 2.

Eastern Portion of Area 2 (Actual location of LA 86534 roomblock)

As mentioned above, the initial excavations at LA 86534 were conducted in a disturbed area some 8 m west of the actual roomblock. The lack of surface architectural stones in the area of the roomblock, and their presence in the disturbed area, dictated where the early excavations at the site occurred. When the test pit in 101N/115E was excavated and it was clear that there were intact room deposits in the area, all excavation shifted to this locale. By mid-October, a total of eight habitation rooms (Rooms 1 through 8) had been excavated, as had a circular kiva (Room 9) that was located just east of the roomblock. Room 9 was not attached to the roomblock, but a section of the western wall was less than 1 m away from the northeastern corner of Room 5. These two areas were attached by a small passageway (Feature 15; see Room 9 summary).

Architecture and Stratigraphy

The site consisted of a compact roomblock of nine rooms, a sparse but extensive artifact scatter, and a disturbed two-track road on the northern perimeter of the site. The roomblock consisted of a rectangular block of eight rooms (four front and four back) and a circular kiva located just to the east of the roomblock (Figure 24.13). The roomblock was oriented slightly west-of-north off

the cardinal directions. The roomblock walls were generally in good condition, with one to two courses present on the northern end and up to four courses present in the center of the rooms. The southern walls of Rooms 7 and 8 were destroyed during the construction of NM 502.

Figure 24.13. Roomblock and kiva.

Walls were constructed from unshaped and shaped tuff blocks and had an adobe mortar. The walls also had a foundation of upright tuff blocks. These blocks were roughly shaped and were slightly smaller than the tuff blocks used in wall construction. The general size of the basal upright stones was approximately 25 by 15 by 10 cm, while the general size of wall blocks was approximately 40 by 20 by 10 cm. Figure 24.14 shows the upright stones still in place after the north wall of Room 2 had been knocked down. The horizontal block visible on the left side of the photo is part of the basal course of the north wall of Room 2 and is 42 by 22 by 18 cm. The upright stones had been set in a shallow trench filled with some adobe mortar, and the bases of the stones were resting on the bottom of the trench. Therefore, they probably represent the foundation of the walls.

Construction techniques at LA 86534 were similar to other Coalition period roomblock sites on the Pajarito Plateau (see Figure 24.3). It appears as though the central north-south wall was continuous and presumably built first, with the wall between Rooms 6 and 8 built at the same time. The east-west walls in the back rooms were then built, followed by the back north-south wall. It then appears that the front rooms were built, which denotes a construction configuration of four possible units: 1) center wall and east-west wall between Rooms 6 and 8; 2) Rooms 3, 4, 6, and 8; 3) Rooms 1 and 2; and 4) Rooms 5 and 7. However, there is no evidence to show that any appreciable length of time passed between the construction of the units. It is probable that

all eight rooms in the roomblock were built within a short period of time and possibly in a single building episode. It is not clear when Room 9 was built relative to the rest of the roomblock, but it is likely that it was built at the same time as Rooms 5 and 7 given the connecting feature between Rooms 5 and 9.

Figure 24.14. Wall foundation of upright stones in situ, Room 2.

In several isolated places in each of the rooms, a tan clay plaster covered the tuff blocks on the interior faces of the rooms. No rooms lacked wall plaster suggesting that preservation at the site was good. This is corroborated by the abundance of rooffall in the rooms. The fill of all rooms contained abundant, but usually small, fragments of adobe similar to that observed in the walls. Although these fragments could represent rooffall, wall debris, or both, it is most likely that they represent rooffall given the presence of impressions and fingerprints on several of the chunks, as well as an abundance of artifacts at the top of the rooffall stratum (6). No postholes were identified in the rooms, suggesting that the walls were load-bearing and indicating that the roof was not substantial. This follows the general Ancestral Puebloan pattern of viga and latilla roofs covered with mud and (probably) juniper.

Room floors at LA 86534 were thinly plastered with fine clay mud, identical to and occasionally coping into the surviving wall plaster. Floors in the roomblock were differentially preserved. In the well-preserved sections (Rooms 4 and 6; Figure 24.15), the floor was compact and appears to have been burnished. Little cracking was present in these two rooms, and they were the most level of all the floors. The floor in Room 3 was semi-intact. It was easily discernible in the southern half of the room, but was patchier in the northern half. A large stump was in the northern wall and its roots likely destroyed the floor in this room. Floors in Rooms 1, 2, 5, 7,

and 8 were essentially non-existent. The floor in Room 1 was destroyed by a large piñon stump and its associated roots, as well as by extensive rodent damage. Rooms 2 and 5 were both heavily rodent disturbed. In both of these rooms, the only areas with intact floor were around the hearths, but both of the hearths were significantly destroyed. The floor in Rooms 7 and 8 were heavily damaged by road construction as these rooms were immediately adjacent to the construction berm. Only a single patch was identified in the northwestern corner of Room 7.

Figure 24.15. Room 4 (back, center) floor.

The front rooms of the roomblock were typically slightly larger than those in the back. This fits the general pattern visible on the Pajarito Plateau. Table 24.5 shows the room dimensions and floor area for each of the nine rooms. Due to the destruction of the southern portions of Rooms 7 and 8 by construction activities, their dimensions are incomplete. A histogram was generated based on the surface area of the floors in each of the nine rooms (Figure 24.16). The figure groups the front rooms, the back rooms, and the circular kiva. The two incomplete rooms are the last in each of their respective series.

Table 24.5. Room dimensions and floor area.

Room Number	Length (m)	Width (m)	Floor Area (m^2)
1	2.60	2.48	6.45
2	3.11	2.40	7.46
3	3.20	2.00	6.40
4	3.10	1.80	5.58

Room Number	Length (m)	Width (m)	Floor Area (m^2)
5	3.50	2.30	8.05
6	2.95	1.80	5.31
7	3.10*	2.20	6.82*
8	2.60*	1.80	4.68*
9	4.30	4.10	17.63

*incomplete dimensions due to highway construction

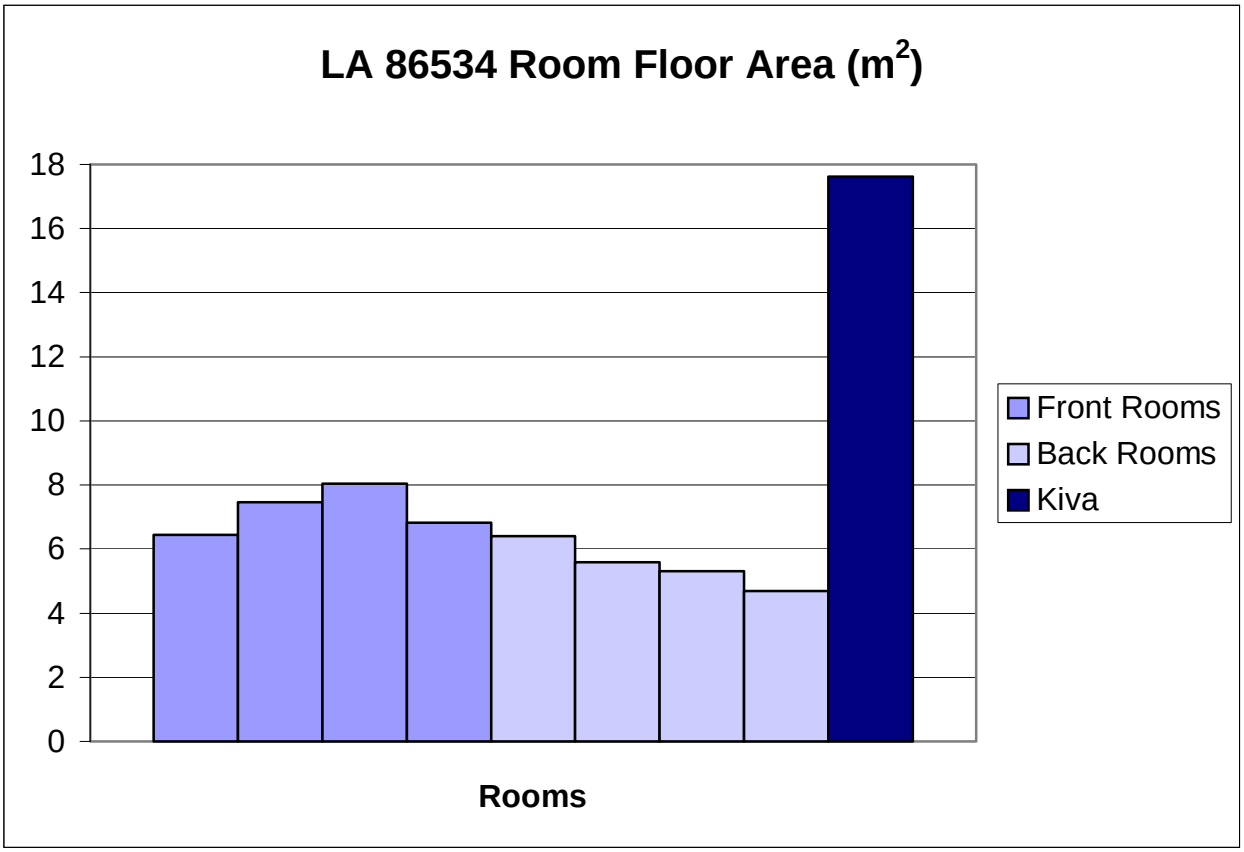


Figure 24.16. Histogram showing room size at LA 86534.

Room 1

Sequence of Excavation. Room 1 is located in the northeastern corner of the roomblock and is the most northerly of the front rooms. The room measures 2.6 m north-south by 2.48 m east-west, giving 6.45 m^2 of interior space. The room was highly disturbed by both rodents and roots. A large juniper stump was located in the center of the room, just over the eventual location of the hearth (Feature 4) and extends to the north wall (Figure 24.17). Its roots incurred a significant amount of damage to the collar, shape, and fill of the upper use of the hearth. Units in the 115E line were excavated first as part of the overall profile trench of the roomblock. These units were excavated in stratigraphic units (and in 10-cm levels within the strata if it was thicker than 10 cm) to the top of rooffall (Stratum 6). At this point, excavations ceased temporarily until all

units in the roomblock were down to the top of the rooffall level. Units in Room 1 that were not in the 115E line were excavated in one large level (Strata 1 and 2) down to the top of the rooffall level. All units in the room were then excavated down to floor (Stratum 8). A doorway (Feature 10) was identified between the west wall of Room 1 and the east wall of Room 3.

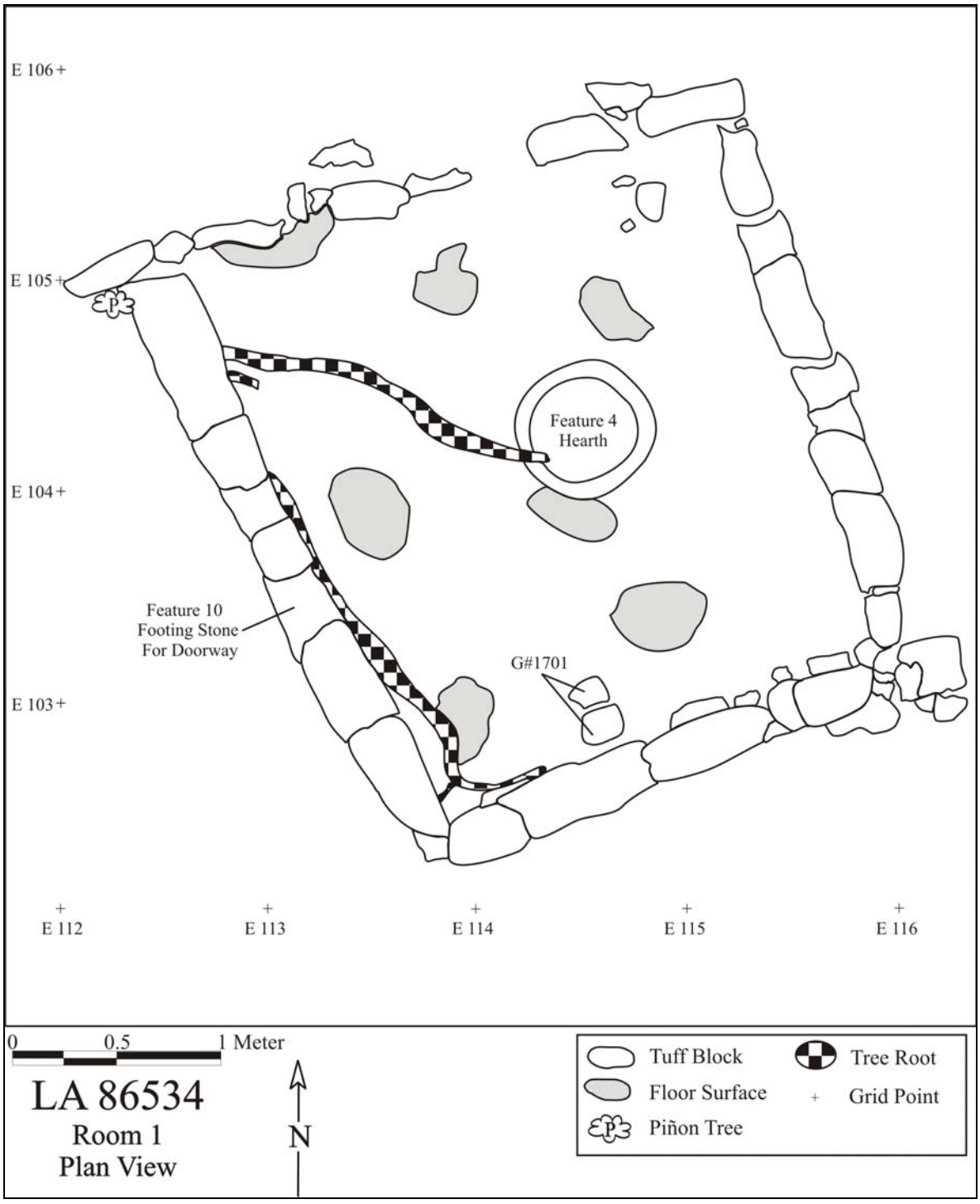


Figure 24.17. Room 1, post-excavation.

Fill. On average, Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill and consisted of very loose and unconsolidated soil. Some areas contained a high organic content from the duff associated with the juniper located just outside the north wall. Artifact density in this level was high. Stratum 2 consisted of the general room fill, which contained an abundant amount of rubble wallfall and was about 25 cm thick. The stratum was also loose and unconsolidated, and artifact density was lower than Stratum 1. The bottom of this stratum contained the abrupt contact with rooffall (Strata 6 and 7). Stratum 6 is the actual rooffall layer, but Stratum 7, only positively identified in Room 1, was a very thin layer of sediment between the rooffall and the floor. This stratum was present throughout the roomblock, but was very difficult to identify due to heavy rodent disturbance. As a result, Stratum 7 is combined with Stratum 6 throughout the roomblock, but no artifacts or samples, except for a flotation sample (FS 1271) from Room 1, were collected from this stratigraphic unit.

Taxa identified in the flotation sample from Stratum 7 included maize (*Zea mays*), unknown conifer (Gymnospermae), and piñon pine (*Pinus edulis*). Counts in Table 24.6, as well as those in the following pages, will combine Stratum 6 and 7 but will essentially only represent Stratum 6. In Room 1, Stratum 6 was about 20 cm thick at its thickest point, but averaged about 7 cm thick. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was about half as much as in Stratum 2. Stratum 8 was associated with the floor in this room, which was only present along the western wall where it articulated with the wall under the doorway (Feature 10). Stratum 11 was the fill from the centrally located collared hearth (Feature 4). Table 24.6 shows the general artifact counts by stratigraphic unit for this room.

Table 24.6. Room 1 artifact counts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	873	82	8	4	**967**
2	479	33	3	1	**516**
6	216	27	1	1	**245**
6,7	19	4	0	0	**23**
8	2	0	4	0	**6**
11	0	0	1	0	**1**
Total	**1589**	**146**	**17**	**6**	**1758**

Floor. The floor in this room was in very poor shape. The only place where intact floor existed was along the western wall just under the doorway (Feature 10). In this area, the plastered floor coped with the wall plaster. Very small patches of floor (smaller than a quarter) were visible in the areas around the collar of the hearth. One tuff grinding slab (FS 1701) was recovered from the floor of this room, but was broken into four pieces (thus, $n = 4$ in Table 24.6). The ceramics associated with the floor were recovered in a general floor sweep, and because their exact provenience was unknown, they were not analyzed. One macrobotanical sample (FS 1700) was collected from the floor and the following taxa were identified: mountain mahogany (*Cercocarpus*), unknown conifer, ponderosa pine (*Pinus ponderosa*), and Douglas fir (*Pseudotsuga menziesii*).

Wall Construction. Shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first, then the eastern wall was built, and finally the northern and southern walls were abutted to the eastern and western walls. One to two courses were present for all walls except the southern wall where up to four courses were present. Table 24.7 shows the general wall measurements for all four walls.

Table 24.7. Room 1 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.42	0.25	0.24
South	2.46	0.44	0.22
East	2.58	0.28	0.22
West	2.62	0.41	0.23

Artifacts and Samples. Artifacts from two 1- by 1-m units were selected for analysis. Grids selected from Room 1 include 103N/114E (FS 1030 through FS 1035, FS 1042, FS 1248 through FS 1251, and FS 1701) and 104N/114E (FS 353, FS 887, FS 1068 through FS 1074, FS 1076 through FS 1078, FS 1271 through FS 1279, and FS 1333 through FS 1338). All artifacts from these two columns were analyzed. Analyzed artifacts from this room that were not recovered in either of these two units included an obsidian projectile point (FS 706) and a tuff grinding slab (FS 1042) that was selected for a pollen wash, but was determined post-excavation to be a less than acceptable sample. Neither of the other two artifacts that were selected for pollen washes (FS 1001 and FS 680) were submitted for the analysis because of post-excavation determinations of sample integrity.

Identified ceramics from these two grids include nine unpainted sherds, one Wiyo Black-on-white sherd, 11 Santa Fe Black-on-white sherds, four plainware sherds, 17 smeared-indented corrugated sherds, one coiled necked sherd, five indented corrugated sherds, one wide neckbanded sherd, two organic-painted sherds, and one plain corrugated sherd. Ground stone artifacts identified in the sampled grids include one siltstone ground stone fragment, two dacite one-handed manos, and two tuff grinding slabs. All of the faunal remains recovered from this room were analyzed and identified remains included one pocket gopher bone, one small/medium-sized mammal long bone fragment, and a fragment of a mule deer (*Odocoileus hemionus*) radius. Table 24.8 lists the chipped stone materials recovered in this room.

Table 24.8. Chipped stone artifacts recovered from sampled units in Room 1.

Type	Material	Number
Core	Chalcedony	1
Unidentified flake fragment	Chalcedony	3
	Black translucent obsidian	1
Ground stone flake	Dacite	1
Core flake	Chalcedony	12
	Basalt	1
	Cerro del Medio obsidian	1

Type	Material	Number
	Black translucent obsidian	1
	Pedernal chert	4
Biface flake	Chalcedony	1
	Black translucent obsidian	1
Hammerstone flake	Quartzite	1
Microdebitage	Chalcedony	4
	Black translucent obsidian	2
	Basalt	1
	Orthoquartize	1
Angular debris	Chalcedony	5
	Pedernal chert	2

Macrobotanical remains from the same grids selected for the artifact samples were identified for analysis. However, due to the paucity of macrobotanical items at the site, a sufficient sample was not attained. Therefore, a 20 percent sample from each stratum within each room was selected. This strategy was employed in each of the rooms except Room 9 (see Room 9 for discussion of sampling strategy for macrobotanical remains in that room). Based on a 20 percent sampling strategy, a sufficient sample was assembled. A total of 9 macrobotanical samples were analyzed from Room 1 and identified taxa include ponderosa pine, piñon pine, unknown conifer, Douglas fir, juniper, mountain mahogany, and cottonwood/willow (*Populus/Salix*). Samples were collected from all strata except 7 and 9, which represent the most recent use of the hearth. Only ponderosa pine wood was identified in the hearth (FS 1333). Table 24.9 lists the samples taken from Room 1. No pollen or flotation samples were taken from the floor because of its extremely patchy nature and the heavy root and rodent disturbance.

Table 24.9. Samples selected for analysis in Room 1.

Stratum	SAMPLE TYPE					
	Pollen	Pollen wash	Flotation	Macrobotanical	TL	Archaeomagnetic
1,2	1000	1042, 1001	1002	999, 1070	--	--
2	727	680	--	794, 828, 961	--	--
6	--	--	--	1393, 1396	--	--
7	--	--	1271	--	--	--
8	--	--	--	1700	--	--
9	1275	--	1272, 1273, 1274	--	1336	Taken
11	1334	--	1335	1333	--	--

Taxa identified in the flotation fill sample from Room 1 (FS 1002) include the following: goosefoot, purslane (*Portulaca*), maize, unknown conifer, juniper, unidentified pine, piñon pine, and oak (*Quercus*). Taxa identified in the two pollen samples from Room 1 fill (FS 727 and FS 1000) include beeweed (*Cleome*), cheno-ams (*Chenopodium/Amaranthus*), grass family, sunflower family, ragweed (*Ambrosia*), spurge family (Euphorbiaceae), unidentified pine, piñon pine, juniper, rose family (Rosaceae), and sagebrush (*Artemisia*).

Room 1 Features

Feature 4 (Hearth). This feature is a plaster-lined collared hearth in Room 1 (104N/114E; Figure 24.18). There were two uses of this hearth: Stratum 9 represents a remodeling of the hearth and a secondary use, while Stratum 11 is from the primary use of the hearth.

Figure 24.18. Hearth (Feature 4) in Room 1.

The hearth is approximately 50 by 50 cm in size and is circular in shape. The depth of the hearth is about 20 cm below the room floor (Figure 24.19; plan and profile). The collar around the hearth is raised approximately 10 cm above the floor. This is distinct from the hearths in Rooms 2 and 5, which were flush with the floor. The hearth was misshapen from a large juniper root running along its western edge, but was not heavily rodent disturbed. No artifacts were recovered from the fill of the hearth. An archaeomagnetic sample was taken from Stratum 9; see subsequent section for results. When sampling was finished, the top of a one-handed dacite mano was visible (FS 1337), suggesting a second use of the hearth.

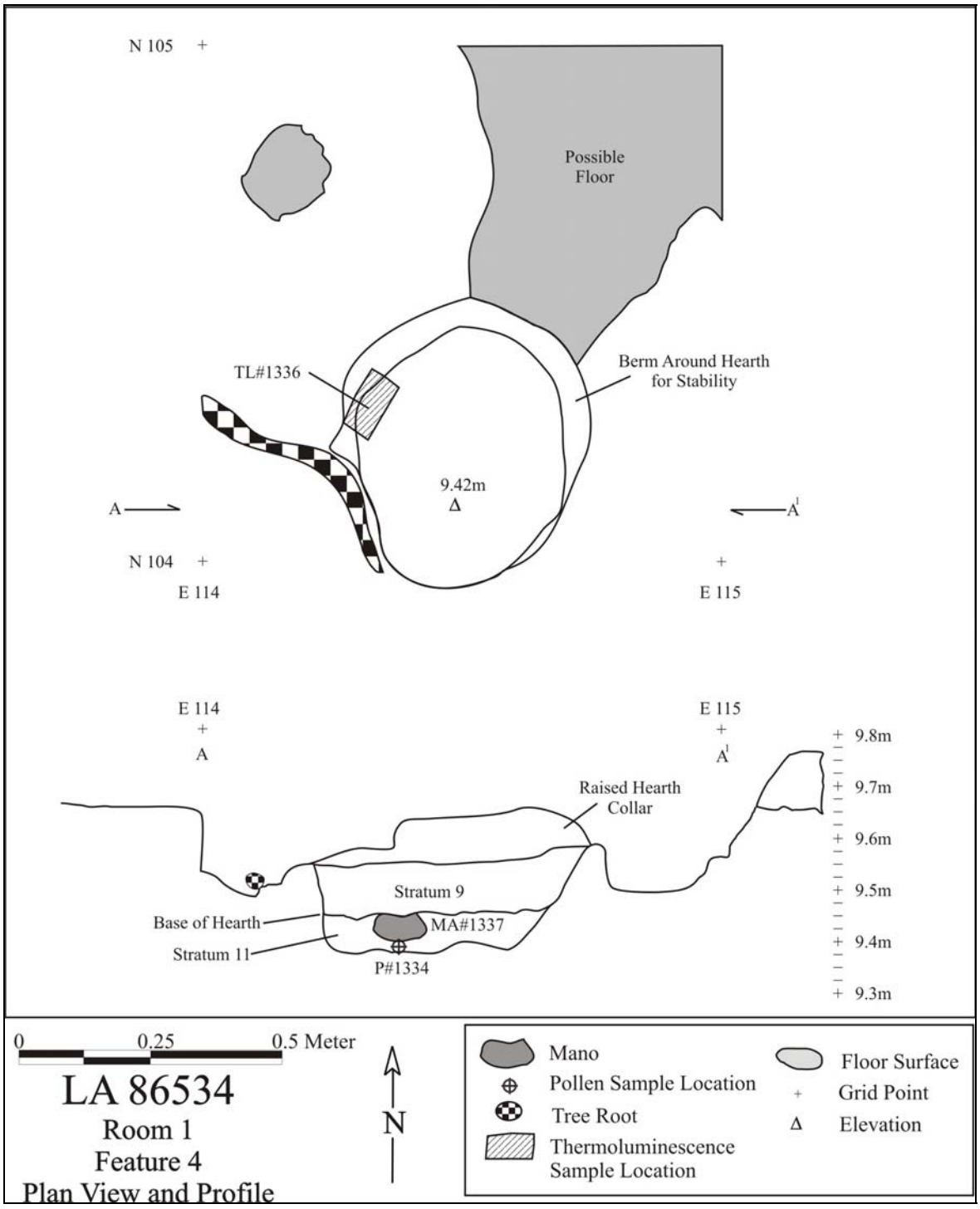


Figure 24.19. Plan view and profile of Feature 4.

Further excavations identified that the hearth contained two separate use episodes. The lower and original use of the hearth includes the Stratum 11 fill. Archaeomagnetic samples taken from the burned adobe associated with Stratum 11 produced a date range of AD 1065 to 1265; whereas,

burned adobe associated with the upper fill (Stratum 9) and the subsequent remodeling event provided a date range from AD 1170 to 1230. A piece of maize (*Zea mays*) identified in FS 1272 from Stratum 9 was submitted for radiocarbon analysis. This sample yielded an age for Feature 4 of 860±40 BP (Beta-183760) and a date of cal AD 1190 with a two-sigma date range of cal AD 1040–1260, which is nearly identical to the archaeomagnetic result. The thermoluminescence analysis, which was conducted on a piece of burned plaster from the collar of the hearth (FS 1336), produced a date of 1230±42. This dated slightly later than both results derived from archaeomagnetic and radiocarbon analyses.

In addition to the dated materials collected from the hearth, two pollen samples and four flotation samples were taken. Taxa identified in the pollen samples (FS 1275 and FS 1334) included beeweed, purslane, sunflower family, prickly pear, ragweed/bursage, spurge family, Douglas fir, unidentified pine, piñon, juniper, sagebrush, rose family, cheno-ams, and unidentified grasses. Taxa identified in the flotation samples (FS 1272, FS 1273, FS 1274, and FS 1335) included goosefoot, goosefoot family (Chenopodiaceae), cheno-ams, grass family, maize, mountain mahogany, snow-on-the-mountain, saltbush/greasewood (*Atriplex/Sarcobatus*), purslane, unknown conifer, unidentified pine, ponderosa pine, juniper, and piñon pine.

Feature 10 (Doorway). Located centrally along the western wall, this doorway goes between Rooms 1 and 3. The dimensions of the doorway are 40 by 21 by 16 cm. A shaped footing stone was present at the base of the doorway. Because much of the western wall of Room 1 was collapsed and this portion of the wall was only one course high, there was no fill remaining when the feature was identified. As a result, no artifacts were recovered from the fill and no samples were taken. No plan map or profile was drawn.

Room 2

Sequence of Excavation. Room 2 is located in the middle of the roomblock in the northern section. Room 2 is 3.40 m north-south by 2.40 m east-west, giving an interior floor space of 7.46 m^2. Room 2 is in the front set of rooms and is located immediately south of Room 1. The initial test pit that identified the roomblock was in the center of this room. The room was highly disturbed by bioturbation and, as a result, the floor was in very poor condition (Figure 24.20). Units in the 115E line were excavated first as part of the overall profile trench of the roomblock (see Figure 24.8). These units were excavated in stratigraphic units (and in 10-cm levels within the stratum if it was thicker than 10 cm) to the top of rooffall (Stratum 6). At this point, excavations ceased temporarily until all units in the roomblock were down to the top of the rooffall level. Units in Room 2 that were not in the 115E line were excavated in one large level (Strata 1 and 2) down to the top of the rooffall level. All units in the room were then excavated down to floor (Stratum 8). Two features were identified in the room: Feature 2 was a collared hearth located near the center of the room, and Feature 3 was the doorway between the western wall of Room 2 and the eastern wall of Room 4 (Figure 24.20).

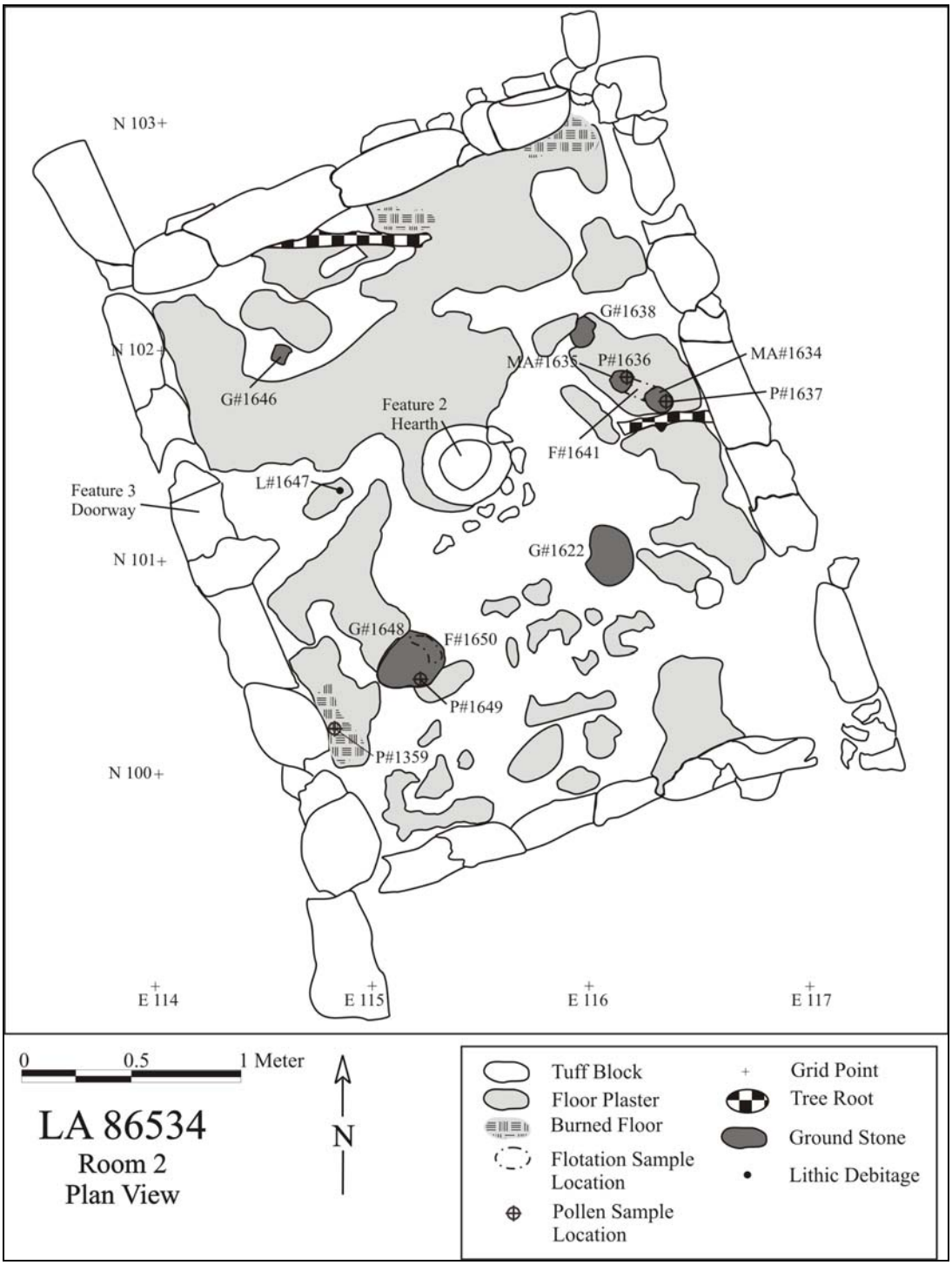


Figure 24.20. Plan view map of Room 2 after excavation.

Fill. Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill that consisted of the very loose and unconsolidated soil. Some areas contained a high organic content from the duff associated with piñon and juniper trees in the area. Artifact density in this level was the highest. Stratum 2 consisted of the general room fill, which contained an abundant amount of

rubble wallfall and was about 25 to 30 cm thick. Stratum 2 was also loose and unconsolidated, and artifact density was lower than Stratum 1, but still considerably high. The bottom of Stratum 2 contained the abrupt contact with rooffall (Strata 6 and 7). Stratum 6 is the actual rooffall layer, but Stratum 7, only identified in Room 1, was a very thin layer of sediment between the rooffall and the floor.

In Room 2, Stratum 6 was anywhere from 5 to 15 cm thick at its thickest point. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was considerably less than in Strata 1 and 2. Stratum 8 was the floor stratum in Room 2. Small patches of floor were present throughout the room, but there were no large contiguous areas of floor at all. Several times, excavators at the floor level punched through and fell into significant rodent burrows, especially in the southern half of the room. Stratum 10 was the fill from the centrally located collared hearth (Feature 2). Table 24.10 shows the general artifact counts by stratigraphic unit for this room.

Table 24.10. Room 2 artifact counts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	689	71	16	0	**776**
2	566	85	4	1	**656**
1,2	135	2	0	0	**137**
6	37	8	0	2	**47**
6,7	206	17	0	2	**225**
8	33	8	6	1	**44**
Total	**1666**	**191**	**26**	**6**	**1889**

Floor. The floor in this room was in poor condition. The best patch of floor was located along the western wall just under the doorway (Feature 3). As in Room 1, the plastered floor in this area coped with the wall plaster. Several other patches of floor along the northern and southern wall articulated with the wall plaster. In the remaining portions of the room, very small patches (less than 10 by 10 cm) of floor were visible. In addition, there were some small areas of floor plaster in the areas around the collar of the hearth. The hearth (Feature 2) was the only feature associated with the floor. A number of artifacts were found on the floor and included the following: a welded tuff millingstone (FS 1622), two quartzite one-handed manos (FS 1634 and FS 1635) and associated pollen samples (FS 1636 and FS 1637, respectively; see below), an andesite axe (FS 1638), an unidentified dacite ground stone fragment (FS 1646), a piece of obsidian debitage (FS 1647), a piece of burned juniper wood in the northeastern corner of the room (FS 1668), and a welded tuff millingstone (FS 1648) and associated pollen and flotation samples (FS 1649 and FS 1650, respectively; see below). Other artifacts, such as the 33 ceramics and seven pieces of chipped stone noted in Table 24.10, were collected from a floor sweep, and as such, were not analyzed because their exact provenience was unknown. A single jackrabbit (*Lepus* sp.) rib fragment was also identified in the floor sweep. In addition to the samples taken in association with artifacts on the floor, several other samples were taken on the floor. Flotation samples include FS 1360, FS 1625, and FS 1641 and pollen samples include FS 1359 and FS 1624.

Pollen samples were taken in association with two artifacts on the floor. Those samples associated with two quartzite manos (FS 1634 and FS 1635, respectively) produced a number of pollen signatures. Taxa identified in FS 1636 (associated with FS 1634) included cholla and prickly pear, beeweed (*Cleome*), lily family (Liliaceae), grass family (Poaceae), cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, and oak. Taxa identified in FS 1637 (associated with FS 1635) included prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed, unidentified pine, piñon pine, and sagebrush.

A pollen (FS 1649) and flotation (FS 1650) sample were also taken in association with a millingstone (FS 1648). Taxa identified in the pollen sample included prickly pear, beeweed, sunflower family, cheno-ams, ragweed, pea family (Fabaceae), unidentified pine, piñon, juniper, rose family, and sagebrush. Taxa identified in the flotation sample included goosefoot, maize, unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, and oak.

One pollen sample (FS 1359) and one flotation sample (FS 1641) from the floor of Room 2 were analyzed. Taxa identified in the pollen sample included cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed, spurge family (Euphorbiaceae), unidentified pine, piñon pine, juniper, rose family, and sagebrush. Taxa identified in the flotation sample included goosefoot, maize, unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, and oak.

Wall Construction. Shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first as part of the central wall for the entire roomblock, that the eastern wall was built either next or at the same time as the western wall, and that the northern and southern walls were then abutted to the western and eastern walls. At least three courses were present in all the walls. Table 24.11 shows the general wall measurements for each of the walls.

Table 24.11. Room 2 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.40	0.46	0.22
East	3.10	0.34	0.23
South	2.37	0.39	0.23
West	3.00	0.40	0.23

Artifacts and Samples. Artifacts and samples from two 1- by 1-m units were selected for analysis. Grids selected from Room 2 include 100N/115E (FS 349, FS 967, FS 968, FS 1310 through FS 1315, FS 1370 through FS 1375, and FS 1648 through FS 1650) and 101N/115E (FS 351, FS 573 through FS 575, FS 584 through FS 587, FS 596 through FS 599, FS 735 through FS 738, FS 857 through FS 861, FS 1319 through FS 1326, FS 1651, and FS 1691 through FS 1693). All artifacts from these two columns were analyzed, as was the bottom of a corrugated vessel (FS 1880). Table 24.12 lists all the samples that were selected for analysis from Room 2. Pollen and flotation samples from Stratum 8 were discussed in the section describing the Room 2 floor.

Table 24.12. Samples selected for analysis in Room 2.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1	--	916	891, 930	--	--
2	769	--	597, 820, 846, 855	--	--
6,7	--	1291	1290, 1381	--	--
8	1359, 1636, 1637, 1649	1641, 1650	1660, 1663, 1668	--	--
10	1325, 1326	1321, 1322, 1323, 1324	--	1651	Taken

As outlined in the description of Room 1, 20 percent of the macrobotanical samples from each stratum in Room 2 were selected for analysis. A total of 11 samples were analyzed from Room 2, and samples were recovered from all strata except Stratum 10, which was the hearth fill. The following taxa were identified in the macrobotanical samples: box elder (*Acer negun*), mountain mahogany (*Cercocarpus*), saltbush/greasewood (*Atriplex/Sarcobatus*), Douglas fir (*Pseudotsuga menziesii*), juniper (*Juniperus* sp.), piñon pine (*Pinus edulis*), oak (*Quercus*), ponderosa pine (*Pinus ponderosa*), unidentified pine (*Pinus* sp.), unknown conifer (Gymnospermae), and rose family (Rosaceae). A pollen sample was taken in Stratum 2 and the following taxa were identified: maize (*Zea mays*), cholla and prickly pear, beeweed (*Cleome*), lily family (Liliaecea), buckwheat (*Eriogonum*), pea family (Fabaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), evening primrose family (Onograceae), unidentified pine, piñon pine, juniper, oak, fir (*Abies*), sagebrush (*Artemisia*), rose family, long spine (Sunflower), unknown sunflower (possibly marshelder), morning glory family (Convolvulaceae), cheno-ams, and unidentified grasses (Poaceae). Two flotation samples were taken in Strata 1 and 3 and only maize, unknown conifer, and unidentified pine remains were identified.

Identified ceramics from these two grids included 29 smeared-indented corrugated sherds, 18 unpainted sherds, 19 plainware sherds (body and rim), 19 Santa Fe Black-on-white sherds, 21 indented corrugated sherds, one polished gray sherd, one coiled necked sherd, one plain incised sherd, and one undifferentiated mineral-painted sherd. One ground stone artifact, a welded tuff millingstone, was identified in the sampled grid units. All of the faunal remains recovered from this room were analyzed; identified remains included a single element from each of the following taxa: wood rat (*Neotoma* sp.), pocket gopher (*Thomomys* sp.), cottontails (*Sylvilagus* sp.), jackrabbit (*Lepus* sp.), and mule deer (*Odocoileus hemionus*). No worked bones were identified in this room. Table 24.13 lists the chipped stone materials recovered in this room.

Table 24.13. Chipped stone artifacts recovered from sampled units in Room 2.

Type	Material	Number
Microdebitage	Unidentified metamorphic	1

Type	Material	Number
	Black translucent obsidian	1
	Chalcedony	1
	Quartzite	1
Core flake	Unidentified metamorphic	1
	Pedernal chert	5
	Chalcedony	12
	Greenstone	1
Angular debris	Chalcedony	2
	Black translucent obsidian	1
	Pedernal chert	1
Flake fragment	Chalcedony	1
Biface flake	Black translucent obsidian	1
	Black opaque obsidian	1

Room 2 Features

Feature 2 (Hearth). Feature 2 is a centrally located plaster-lined collared hearth in Room 2 (101N/115E; Figures 24.21 and 24.22). Stratum 10 represents the fill removed from this hearth. The hearth is approximately 60 by 60 by 15 cm in size and is roughly circular in shape. The collar around the hearth is raised only slightly (less than 2 cm) above the floor. This is distinct from the hearth in Room 1, which is raised some 10 cm above the floor. The hearth was not disturbed significantly by rodent activity like the rest of the room was, but no artifacts were recovered from the fill of the hearth.

A number of samples were taken from Feature 2. These include an archaeomagnetic sample, two pollen samples, four flotation samples, and a thermoluminescence (TL) analysis sample. The following taxa were identified in the pollen samples (FS 1325 and FS 1326): maize, beeweed, sunflower family, ragweed/bursage, spurge family, evening primrose family, fir, unidentified pine, piñon pine, juniper, rose family, sagebrush, long spine sunflower, cheno-ams, and unidentified large grasses. The following taxa were identified in flotation samples from Feature 2 (FS 1321 through FS 1324): goosefoot, cheno-ams, maize, prickly pear, New Mexico locust (*Robinia*), tobacco (*Nicotiana*), mountain mahogany, saltbush/greasewood, oak, juniper, piñon pine, ponderosa pine, unidentified pine, and unknown conifer (Gymnospermae). The TL sample from a piece of the adobe hearth (FS 1651) dated to AD 918±180, while the archaeomagnetic sample dated later, falling between AD 1225 and 1300. A piece of maize (*Zea mays*) identified in a flotation sample (FS 1321) from the hearth was submitted for radiocarbon analysis. The maize yielded an age of 730±40 BP (Beta-183761) and a date of cal AD 1280 with a two-sigma date range of cal AD 1240–1300, which is consistent with the archaeomagnetic result, but quite different than the TL result.

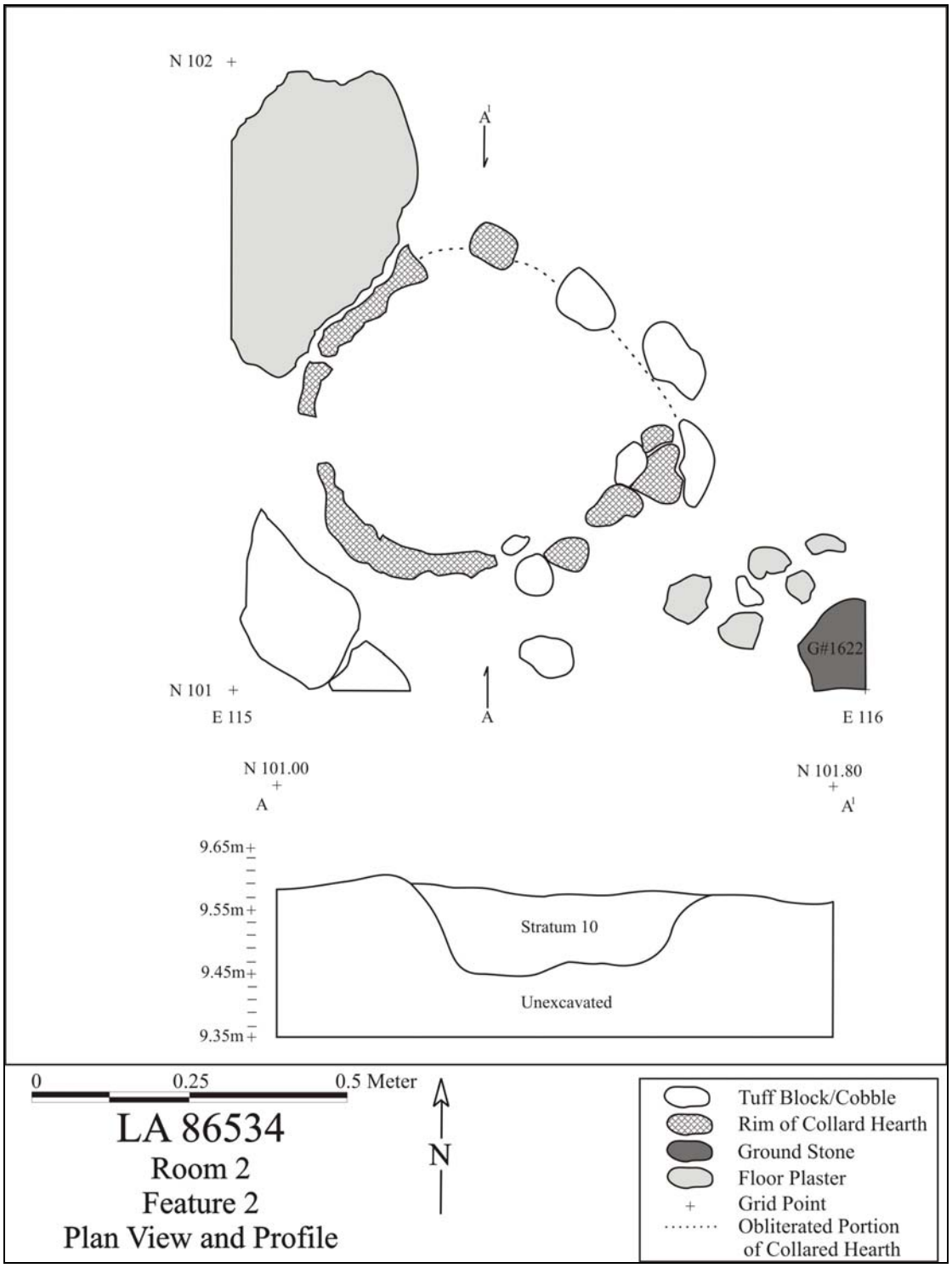


Figure 24.21. Plan view and profile of Feature 2.

Figure 24.22. Hearth (Feature 2) in Room 2.

Feature 3 (Doorway). Located centrally along the west wall, this doorway passes between Rooms 2 and 4. The dimensions of the doorway are 45 by 58 by 20 cm and it lies directly west of Feature 2. There is a considerable amount of plaster that is flush with the bottom of the doorway. As in Room 1, there is a footing stone at the base of the wall that measures 31 by 20 by 20 cm. Three courses of stone were present in the wall to the south, and two were present in the wall to the north of the doorway. Neither a plan map nor a profile was drawn for the doorway feature.

Room 3

Sequence of excavation. Room 3 is located in the northwestern corner of the roomblock. It is the most northerly of the back rooms and is 3.2 m north-south by 2.0 m east-west, giving about 6.4 m^2 of interior space. It is in the back row of rooms and is located immediately to the west of Room 1. In general, the room was uniformly disturbed in the northern two-thirds by roots associated with the juniper tree outside the north wall of Room 3. Units in this room were excavated in stratigraphic units (and in 10-cm levels within the strata if it was thicker than 10 cm) to the top of rooffall (Stratum 6). Once units were excavated to the top of rooffall, the

excavations ceased temporarily until all units were dug to the same level. Then, all units in the room were excavated down to floor (Stratum 8). A single doorway feature (Feature 10) was identified in the eastern wall between Rooms 1 and 3 (Figure 24.23).

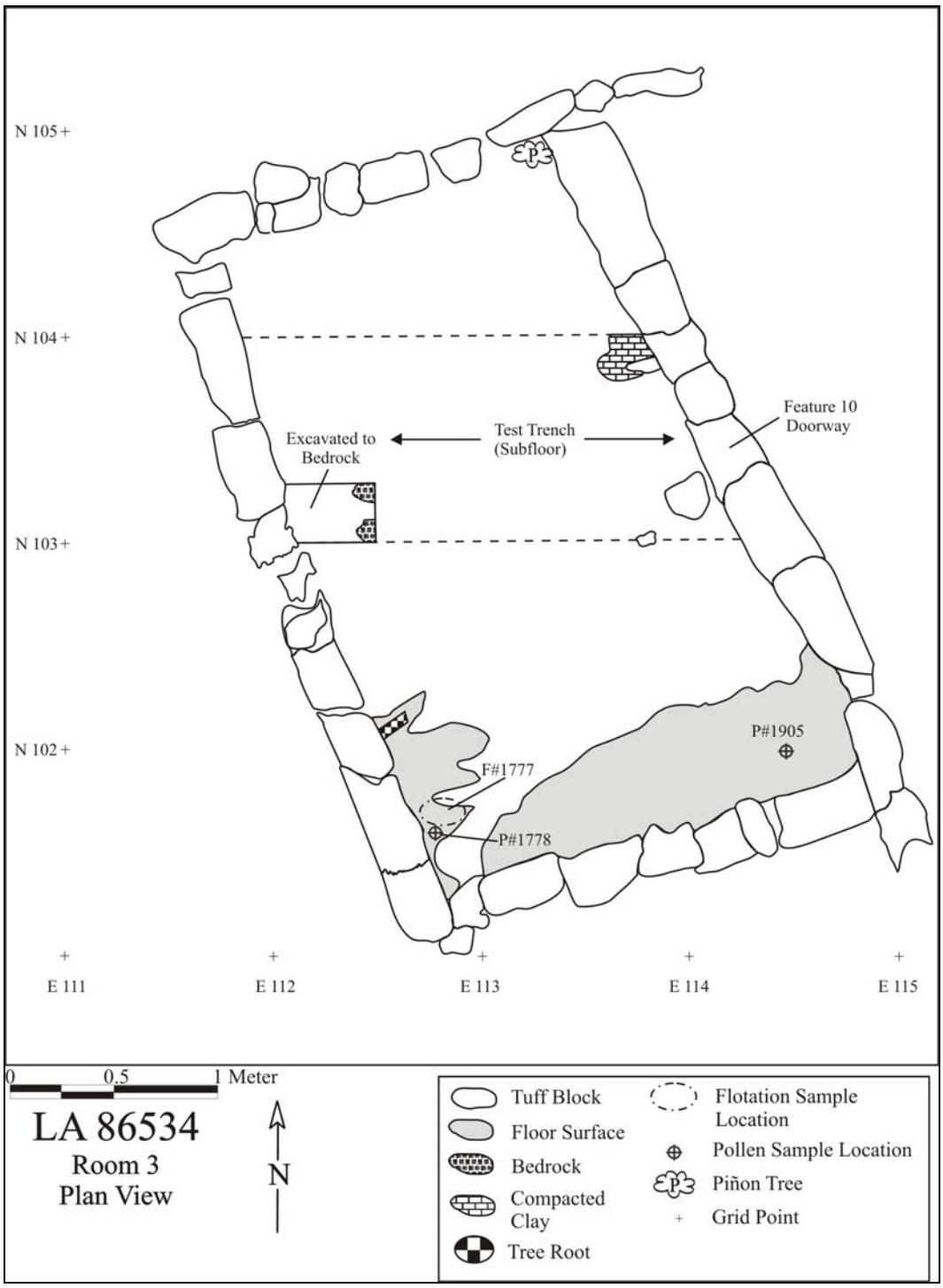


Figure 24.23. Plan view of Room 3 floor after excavation.

Fill. On average, Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill that consisted of the very loose and unconsolidated soil. This stratum was much thinner in a large majority of the room but was thickest in the northeastern corner near a large juniper tree. Some areas contained a high organic content from the duff associated with piñon and juniper trees in the area. Artifact density in this stratum was the highest. Stratum 2 consisted of the general room fill, which contained an abundant amount of rubble wallfall and was about 25 to 30 cm thick. The stratum was also loose and unconsolidated, and artifact density was lower than Stratum 1, but still higher than the other strata in the room. The bottom of Stratum 2 contained the abrupt contact with rooffall (Strata 6 and 7). Stratum 6 is the actual rooffall layer, but Stratum 7, only definitively identified in Room 1, was a very thin layer of sediment between rooffall and floor.

In Room 3, Stratum 6 was anywhere from 5 to 15 cm thick at its thickest point, but averaged about 8 cm. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was considerably less than in Strata 1 and 2. As with all the other rooms in the roomblock, Stratum 8 was the floor stratum in this room. Floor was only present in the southern one-third of the room, with a very small patch present along the northern wall. The middle one-third of the room contained no discernible floor, and, as a result, excavations in this area went too deep. It is likely that the northern two-thirds of the room incurred significant damage from two substantial piñon trees located just north of the roomblock. In general, artifact density in this back room was lower than the density of artifacts in the front rooms. No floor features were identified in this room. Table 24.14 shows the general artifact counts by stratigraphic unit for this room.

Table 24.14. Room 3 artifact counts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	2	0	0	0	**2**
1	673	77	0	1	**751**
2	282	39	3	0	**324**
6,7	204	33	8	0	**245**
8	0	0	0	0	**0**
Total	**1161**	**149**	**11**	**1**	**1322**

Floor. In general, the floor in the northern two-thirds of this room was in poor condition. The best patch of floor was located along the southern wall and in the southwest corner, and the plastered floor in this area coped with the wall plaster. No artifacts were found on the floor of this room, but one flotation sample (FS 1777) and two pollen samples (FS 1778 and FS 1905) were taken directly on the floor. Taxa identified in the flotation sample included pigweed (*Amaranthus*), goosefoot (*Chenopodium*), cheno-ams (*Chenopodium/Amaranthus*), maize (*Zea mays*), unknown conifers (Gymnospermae), juniper (*Juniperus*), unidentified pine (*Pinus* sp.), piñon pine (*Pinus edulis*), and ponderosa pine (*Pinus ponderosa*). Taxa identified in the pollen samples include beeweed (*Cleome*), buckwheat (*Eriogonum*), mustard family (Brassicaceae), sunflower family (Asteraceae), globemallow (Sphaeralcea), spurge family (Euphorbiaceae), Douglas fir (*Pseudotsuga menziesii*), juniper, unidentified pine, piñon pine, Mormon tea (*Ephedra*), sagebrush (*Artemisia*), cheno-ams, and unidentified grasses (Poaceae).

Wall Construction. Shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first as part of the rear wall for the entire roomblock and that the eastern wall (central roomblock wall) was built either next or at the same time as the western wall. After these two walls were constructed, the northern and southern walls were then abutted to the western and eastern walls. One to two courses were present in the northern and eastern walls and three to four courses in the western and southern walls. Table 24.15 shows the general wall measurements for each of the walls.

Table 24.15. Room 3 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
West	3.35	0.29	0.21
East	3.00	0.30	0.22
South	1.85	0.35	0.19
North	2.20	0.25	0.20

Artifacts and Samples. Artifacts and samples from two 1- by 1-m units were selected for analysis. Grids selected from Room 3 include 102N/113E (FS 765, FS 784 through FS 786, FS 816, FS 817, FS 841, FS 952 through FS 956, FS 960 and FS 961, FS 1316 through FS 1318, and FS 1720 through FS 1722) and 103N/112E (FS 1063, FS 1067, FS 1097 through FS 1101, and FS 1541 through FS 1544). All artifacts from these two columns were analyzed. In addition to the artifacts analyzed from these two 1- by 1-m units, several other artifacts were analyzed, including a quartzite hammerstone (FS 955), several large Santa Fe Black-on-white sherds (FS 1086), an andesite axe (FS 1947), and a welded tuff ground stone fragment (FS 1947). Table 24.16 lists the samples selected for analysis from Room 3.

Table 24.16. Samples selected for analysis in Room 3.

Stratum	SAMPLE TYPE					
	Pollen	Pollen wash	Flotation	Macrobotanical	TL	Archaeomagnetic
1	--	1087	--	972, 1083	--	--
2	1063	--	925	905	--	--
6,7	--	--	--	1530, 1532, 1543	--	--
8	1778, 1905	--	1777	--	--	--

As outlined in the description of Room 1, 20 percent of the macrobotanical samples from each stratum in Room 3 were selected for analysis. A total of six samples were submitted for analysis from Room 3. Samples are from all strata except the floor where no macrobotanical remains were encountered, but none of the samples produced identifiable material. Pollen and flotation samples were also taken from this room. The following taxa were identified in the pollen sample (FS 1063): sunflower family (Asteraceae), juniper, unidentified pine, piñon pine, oak (*Quercus*), sagebrush, cheno-ams, and unidentified grasses. Two flotation samples were taken: taxa

identified in FS 1777 are discussed in association with the floor, and taxa identified in FS 925 include rose family (Rosaceae), maize, mountain mahogany (*Cercocarpus*), unknown conifer (Gymnospermae), unidentified pine, and ponderosa pine.

Identified ceramics from these two grids included nine smeared-indented corrugated sherds, one polished gray sherd, 11 unpainted sherds, six plainware sherds, six Santa Fe Black-on-white sherds, four indented corrugated sherds, and one Chupadero Black-on-white sherd. One ground stone artifact, an unidentified piece of welded tuff, was identified in the sampled grid units. All of the faunal remains recovered from this room were analyzed; identified remains include one partially burned proximal femur from a kangaroo rat (*Dipodomys* sp.). No worked bones were identified in this room. Table 24.17 shows the distribution of chipped stone materials recovered in this room.

Table 24.17. Chipped stone artifacts recovered from sampled units in Room 3.

Type	Material	Number
Hammerstone	Quartzite	1
Core flake	Chalcedony	8
	Pedernal chert	1
	Greenish/gray chert	1
Notching flake	Black translucent obsidian	1
Angular debris	Chalcedony	2
Microdebitage	Chalcedony	9
	Black translucent obsidian	2

Room 3 Features

Feature 10 (Doorway). This feature was the only feature identified in Room 3. Located centrally along the western wall, this doorway allowed passage between Rooms 1 and 3. The dimensions of the doorway measured 40 by 21 by 16 cm. A shaped footing stone was present at the base of the doorway. Because much of the eastern wall of Room 1 had collapsed and this portion of the wall was only one course high, there was no fill remaining when the feature was identified. As a result, no artifacts were recovered from the fill and no samples were taken. No plan map or profile was drawn of the feature.

Room 4

Sequence of excavation. Room 4 is located in the north-central portion of the roomblock and is 3.1 m north-south by 1.8 m east-west, giving about 5.58 m^2 of interior space (Figure 24.24). Room 4 is in the back row of rooms and is located immediately to the south of Room 3 and to the west of Room 2. In general, the room was in very good shape, with the least disturbance of any rooms. No roots or stumps were identified, and the floor was the best preserved of any rooms at the site (Figure 24.25).

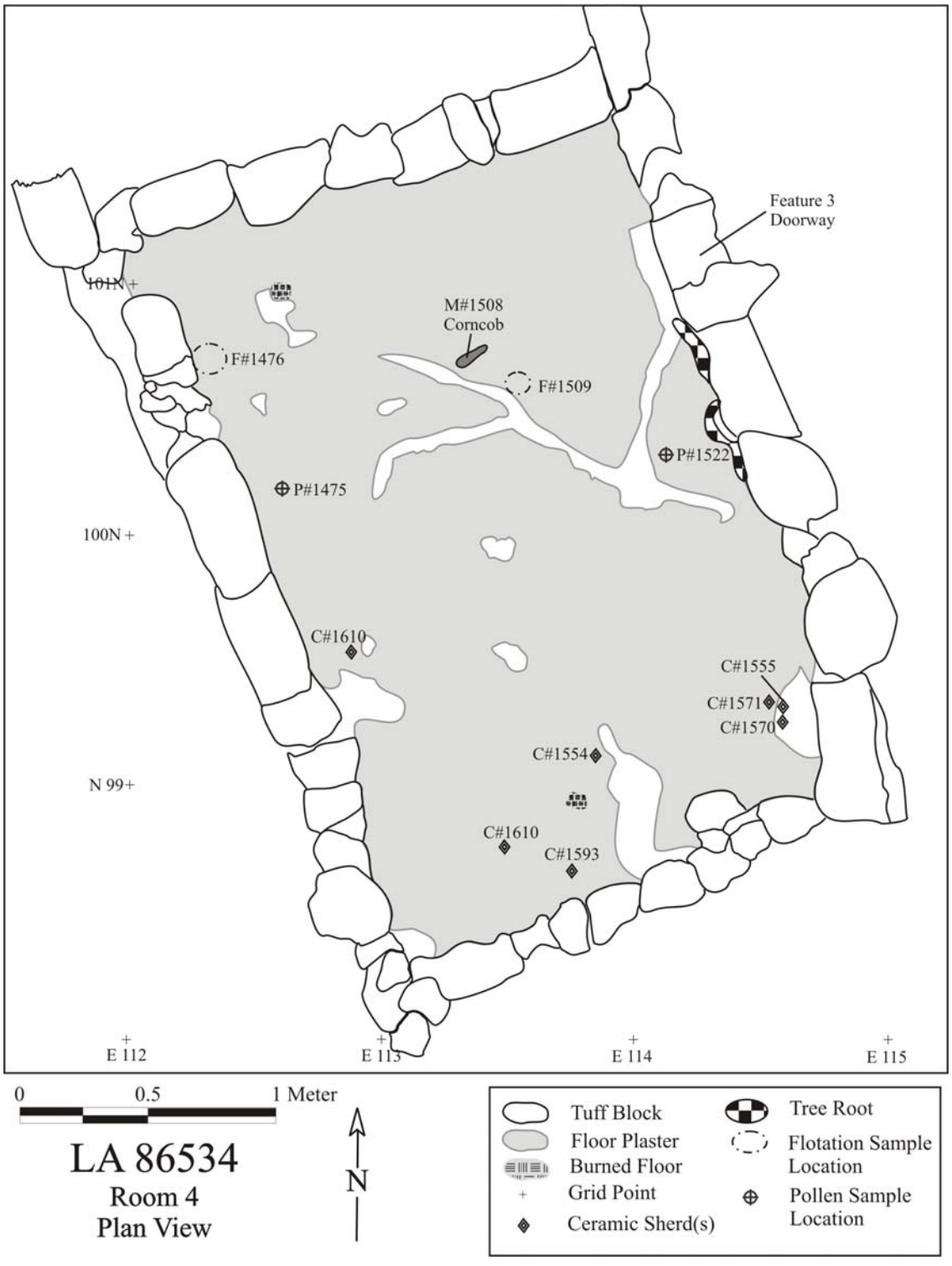


Figure 24.24. Plan view of Room 4 floor after excavation.

Figure 24.25. Floor in Room 4.

As in the other rooms, units in this room were excavated in stratigraphic units to the top of rooffall (Stratum 6). Once units were excavated to the top of rooffall, the excavations ceased temporarily until all units were at the same level. Then, all units in the room were excavated down to floor (Stratum 8). A single doorway feature (Feature 3) was identified in the eastern wall of the room between Rooms 2 and 4.

Fill. On average, Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill and consisted of very loose and unconsolidated soil. Some areas contained a high organic content from the duff associated with piñon and juniper trees in the area. Artifact density in Stratum 1 was the highest. Stratum 2 consisted of general room fill, which contained an abundant amount of rubble wallfall and was about 25 to 30 cm thick. The stratum was also loose and unconsolidated, and artifact density was lower than Stratum 1, but still higher than in the subsequent strata. The bottom of Stratum 2 contained the abrupt contact with rooffall (Stratum 6).

In Room 4, Stratum 6 was anywhere from 5 to 18 cm thick at its thickest point, but averaged about 12 cm. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was considerably less than in Strata 1 and 2. As with all the other rooms in the roomblock, Stratum 8 was the floor stratum. Floor was present throughout the entire room, with only minimal rodent disturbance present in the central and eastern portions along the southern wall and in a small area in the center of the room. In general, artifact density in this back room was lower than the density of artifacts in the front rooms. No floor features were identified in this room, but a number of sherds and a small corn

cob fragment were identified on the floor. Table 24.18 shows the general artifact counts by stratigraphic unit for Room 4.

Table 24.18. Room 4 artifact counts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	1	0	0	0	**1**
1	619	65	6	3	**693**
2	161	12	2	0	**175**
1,2	107	8	0	1	**116**
6,7	124	23	1	3	**151**
8	7	0	0	0	**7**
Total	**1019**	**108**	**9**	**7**	**1143**

Floor. In general, the floor in Room 4 was in excellent condition. It was the most intact of all the floors in the roomblock, with some 80 percent of the floor still remaining. There were two small areas in the room where floor was still present, but in poor condition. These areas occurred along the central and eastern portions of the southern wall and in the center of the room (see Figure 24.25). In nearly all portions of the room along the wall, the plastered floor coped with the wall plaster. In addition, coping was present along the wall underneath the doorway (Feature 3) between Rooms 2 and 4. The base of the footing stone associated with this feature was flush with the floor plaster. A number of artifacts were found on the floor, including seven sherds (FS 1471, FS 1554, FS 1555, FS 1570, FS 1571, FS 1593, and FS 1610) and a corncob (FS 1508), which was submitted for radiocarbon analysis. The maize cob yielded an age of 850±40 BP (Beta-183763) and a date of cal AD 1200 with a two-sigma date range of cal AD 1170–1240. The identified ceramics included three basket impressed sherds, one Wiyo Black-on-white sherd, one unpainted sherd, and two plainware sherds.

In addition, two flotation samples (FS 1476 and FS 1509) and two pollen samples (FS 1475 and FS 1522) were taken directly on the floor. FS 1509 was taken in the area around the corncob and included the following charred taxa: maize (*Zea mays*), goosefoot (*Chenopodium*), cheno-ams (*Chenopodium/Amaranthus*), saltbush/greasewood (*Atriplex/Sarcobatus*), unknown conifer (Gymnospermae), unidentified pine (*Pinus* sp.), and piñon pine (*Pinus edulis*). The other flotation sample (FS 1476) produced the following charred taxa: goosefoot, goosefoot family (Chenopodiaceae), maize, unknown conifer, unidentified pine, ponderosa pine (*Pinus ponderosa*), and piñon pine. Pollen samples included the following taxa: beeweed (*Cleome*), maize, sunflower (Asteraceae), juniper, unidentified pine, piñon pine, spurge family (Euphorbiaceae), Mormon tea (*Ephedra*), rose family (Rosaceae), sagebrush (*Artemisia*), cheno-ams, and unidentified grasses (Poaceae).

Wall Construction. Construction activities in this room involved the use of shaped and unshaped tuff blocks. It appears as though the western wall of the room was constructed first as part of the rear wall for the entire roomblock and that the eastern wall (central roomblock wall) was built either next or at the same time as the western wall. After these two walls were constructed, the northern and southern walls were then abutted to the western and eastern walls. Three to four

courses were present in each of the walls. Table 24.19 shows the general wall measurements for each of the walls.

Table 24.19. Room 4 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
West	3.05	0.46	0.24
North	1.80	0.35	0.19
East	3.00	0.43	0.23
South	1.75	0.48	0.22

Artifacts and Samples. Artifacts and samples from two 1- by 1-m units were selected for analysis in this room. Grids selected from Room 4 include 100N/113E (FS 1017 through FS 1022 and FS 1505 through FS 1509) and 99N/114E (FS 406, FS 799, FS 897, FS 913 and FS 914, FS 957 and FS 958, FS 1510 and FS 1511, FS 1555, FS 1558 through FS 1561, FS 1567 through FS 1571, and FS 2240). All artifacts from these two columns were analyzed. Table 24.20 lists the samples selected for analysis from Room 4.

Table 24.20. Samples selected for analysis in Room 4.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1	921	--	--	--	--
1,2	913	--	836, 957	--	--
6	1510	1511, 1578	1504, 1569	--	--
8	1475, 1522	1476, 1509	1508	--	--

Twenty percent of the macrobotanical samples from each stratum in Room 4 were selected for analysis. A total of five samples were analyzed from Room 4, and samples are from all strata except post-occupational fill. Wood taxa included Douglas fir, juniper, mountain mahogany, oak, unidentified pine, piñon pine, ponderosa pine, saltbush/greasewood, and unknown conifer. Maize cupules were identified in FS 836 and FS 1508. Taxa identified in the samples collected from the floor are referenced above. Flotation samples recovered in the rooffall stratum include goosefoot purslane (*Portulaca*), saltbush/greasewood, maize, unknown conifer, juniper, unidentified pine, piñon pine, and mountain mahogany (*Cercocarpus*). Taxa identified in the pollen samples include maize, prickly pear, beeweed, long spine sunflower, broad spine sunflower, sunflower, plantain (*Plantago*), nightshade family (Solanaceae), cheno-ams, grass family, ragweed/bursage, spurge family (Euphorbiaceae), evening primrose (*Onagraceae*), unidentified pine, piñon pine, juniper, oak (*Quercus*), rose family, and sagebrush.

Identified ceramics from these two grids included 17 smeared-indented corrugated sherds, 17 Santa Fe Black-on-white sherds, 18 unpainted sherds, one Glaze yellow sherd, seven plainware sherds, one plain corrugated sherd, nine indented corrugated sherds, one mineral-painted sherd, two Wiyo Black-on-white sherds, one Gallup Black-on-white sherd, two Galisteo Black-on-white sherds, and three basket impressed sherds. All of the faunal remains recovered from this room were analyzed. Identified remains include a single turkey (*Meleagris gallopavo*)

tarsometatarsus, one red-tailed hawk (*Buteo jamaicensis*) phalanx, one pocket gopher (*Thomomys bottae*) innominate, an indeterminate rodent (Rodentia) bone, a mule deer (*Odocoileus hemionus*) rib and metatarsal fragment, and a single unidentified small/medium-mammal long bone fragment. No worked bones were identified in this room. Table 24.21 lists the chipped stone materials recovered in this room.

Table 24.21. Chipped stone artifacts recovered from sampled units in Room 4.

Type	Material	Number
Core flake	Basalt	2
	Chalcedony	9
	Pedernal chert	7
	Rhyolite	1
Biface flake	Black translucent obsidian	1
	Silicified wood	2
	Opaque obsidian	1
Microdebitage	Chalcedony	3
	Black translucent obsidian	1
	Green obsidian	1
	Pedernal chert	4
Angular debris	Chalcedony	3
	Quartzite	1
	Pedernal chert	2
Cobble uniface	Welded tuff	1
Retouched piece	Pedernal chert	1
Uniface	Pedernal chert	1
Biface	Chalcedony	1

Room 4 Features

Feature 3 (Doorway). This is the only feature identified in the room. Located slightly north of center along the eastern wall, this doorway allows passage between Rooms 2 and 4. The dimensions of the doorway are 45 by 58 by 20 cm and it lies directly west of Feature 2, the collared hearth in Room 2. There is a considerable amount of plaster that is flush with the bottom of the doorway, and there is a footing stone at the base of the wall that measures 31 by 20 by 20 cm. Three courses of stone were present in the wall to the south, and two were present in the wall to the north of the doorway. Three unpainted ceramics (FS 1691) and a sample of wall mortar (FS 1693) were collected from the doorway.

Room 5

Sequence of excavation. Room 5 is located in the south-central portion of the roomblock and is 3.50 m north-south by 2.30 m east-west, giving an interior floor space of 8.05 m^2. Room 5 is in the front set of rooms and is located immediately south of Room 2 and west of Room 9. This room is the largest of the front rooms and has an entry/exitway in the northeast corner to Room

9. The room was highly disturbed by bioturbation and, as a result, the floor was in very poor condition (Figure 24.26).

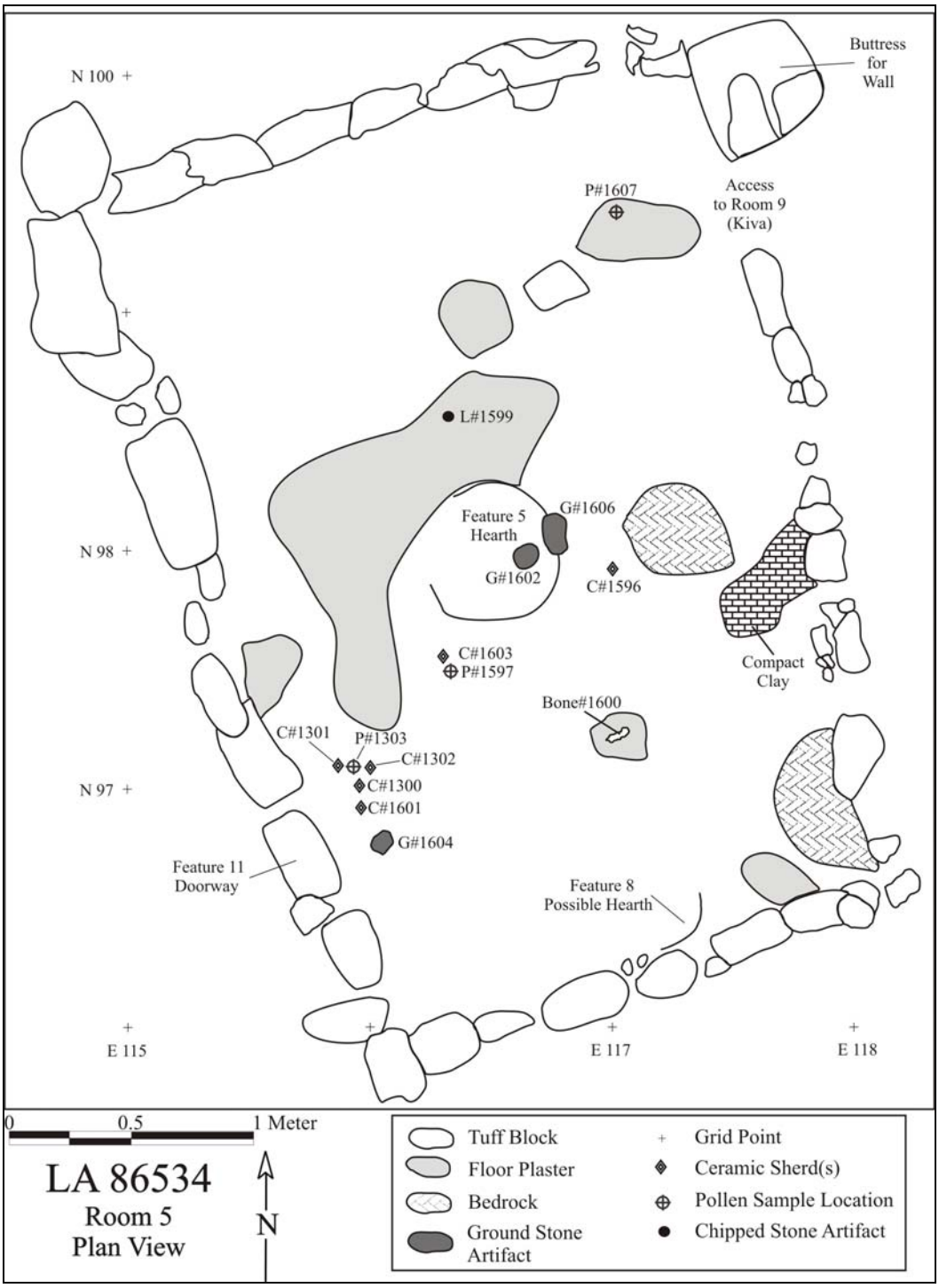


Figure 24.26. Plan view of Room 5 floor after excavation.

Units in the 115E line were excavated first as part of the overall profile trench of the roomblock. These units were excavated in stratigraphic units to the top of rooffall (Stratum 6). At this point, excavations ceased temporarily until all units in the roomblock were down to the top of the rooffall level. Units in Room 5 that were not in the 115E line were excavated in one large level (Strata 1 and 2) down to the top of the rooffall level. All units in the room were then excavated down to floor (Stratum 8).

Three features were identified in the room: Feature 5 was a collared hearth located near the center of the room, Feature 8 was a possible second hearth located along the southern wall, and Feature 11 was the doorway between the western wall of Room 5 and the eastern wall of Room 6. Feature 8 was in extremely poor condition and all that remained was a 10 cm section of probable collar. Both hearths were heavily disturbed and mostly destroyed, which precluded the collection of samples.

Fill. On average, Stratum 1 was an approximately 10- to 15-cm-thick layer of post-occupational fill and consisted of the very loose and unconsolidated soil. Some areas contained a high organic content from the duff associated with piñon and juniper trees in the area. Artifact density in this stratum was the highest. Stratum 2 consisted of the general room fill, which contained an abundant amount of rubble wallfall and was about 25 to 35 cm thick. The stratum was also loose and unconsolidated, and artifact density was lower than Stratum 1, but still considerably high. Strata 1 and 2 were combined throughout this room. The bottom of Stratum 2 contained the abrupt contact with rooffall (Strata 6 and 7).

In Room 5, Stratum 6 was anywhere from 7 to 20 cm thick at its thickest point, but averaged about 10 cm. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was considerably less than in Strata 1 and 2. As with all the other rooms in the roomblock, Stratum 8 was the floor stratum. Floor was present in small patches throughout the room. The northern one-third of the room was particularly disturbed by rodents, and in much of this portion of the room, excavations went sub-floor because floor was never encountered. The middle one-third of the room was in better shape, with patchy floor. In general, artifact density in this front room was comparable to other front rooms and lower than the density of artifacts in the back rooms. Table 24.22 shows the general artifact counts by stratigraphic unit for Room 5.

Table 24.22. Room 5 artifact counts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	1204	160	73	4	**1441**
1,2	59	6	0	0	**65**
6	185	40	8	6	**239**
6,7	359	43	3	8	**413**
8	5	1	3	1	**10**
Total	**1812**	**250**	**87**	**19**	**2168**

Floor. The floor in this room was in poor condition. The best patches of floor were located in the center of the room, and the only area where floor plaster coped with wall plaster was located

in the southeastern corner of the room. Most of the intact floor was close to the central hearth, but was patchy at best (Figure 24.27). Two hearths were identified in this room. The central hearth (Feature 5) was in good condition in terms of its external appearance, but was heavily disturbed in the interior of the hearth. Feature 8, a possible hearth located along the southern edge of the room, was in very poor condition, and all that remained was a 10-cm section of plaster. No collar was identified in association with this hearth.

Figure 24.27. Feature 5 (hearth) in center of Room 5.

A number of artifacts were found on the floor and include the following: five plainware sherds, one Santa Fe Black-on-white sherd, and one indented corrugated sherd (FS 1300, FS 1301, FS 1302, FS 1594, FS 1596, FS 1601, and FS 1603), a basalt cobble biface (FS 1599), a medium- to large-sized mammal long bone shaft fragment (FS 1600), and three pieces of ground stone (FS 1602, FS 1604, and FS 1606). These items included a one-hand basalt mano, a one-hand dacite mano, and a vesicular basalt grinding slab.

Three pollen samples were taken from under artifacts on the floor of Room 5 (FS 1303, FS 1597, and FS 1607). FS 1303 was taken from under one of the plainware sherds (FS 1302) and identified taxa included maize, cholla (*Opuntia*), lily family (Liliaceae), cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, and Mormon tea (*Ephedra* sp.). FS 1597 was taken from under the Santa Fe Black-on-white sherd (FS 1603) and identified taxa included prickly pear (*Opuntia*), cheno-ams, pea family (Fabaceae), sunflower family, ragweed/bursage, chicory Tribe (Liguliflorae), evening primrose (Onagraceae), unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush. FS 1607 was taken from under a plainware sherd (FS 1601) and identified taxa included cholla, prickly pear, parsley family

(Apiaceae), cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, and sagebrush. No flotation samples were collected from the floor because of the extensive rodent disturbance.

Wall Construction. Both shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first as part of the central wall of the roomblock and that the eastern wall (front roomblock wall) was built either next or at the same time as the western wall. After these two walls were constructed, the northern and southern walls were then abutted to the western and eastern walls. The eastern wall is only a single course high and is not contiguous between the northern and southern walls. The northern, western, and southern walls are each three to four courses high and are generally in good condition. Table 24.23 shows the general wall measurements for each of the walls.

Table 24.23. Room 5 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
North	2.33	0.41	0.19
South	2.21	0.32	0.21
East	3.51	0.32	0.22
West	3.63	0.29	0.23

Artifacts and Samples. Artifacts and samples from 98N/117E (FS 405, FS 1036 through FS 1038, FS 1183 through FS 1186, FS 1430 through FS 1434, FS 1605, and FS 2132 through FS 2134) and 96N/116E (FS 409, FS 1092 through FS 1096, FS 1132 and FS 1133, FS 1435 through FS 1439, and FS 1604) were selected for analysis in this room, and all artifacts from these two 1- by 1-m columns were analyzed. In addition to the artifacts analyzed from these two units, several other artifacts were selected for analysis. These include a vesicular basalt grinding slab fragment recovered from the floor (FS 1606), a Pedernal chert hammerstone (FS 1294), a basalt cobble biface (FS 1599), a polished gray ceramic pipe stem (FS 1416), a possible deflector (FS 1605), the proximal end of a black translucent obsidian projectile point (FS 1266), and a one-hand quartzite mano (FS 1390). Table 24.24 lists the samples selected for analysis from Room 5.

Table 24.24. Samples selected for analysis in Room 5.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1	--	1170	1096, 1219	--	--
1,2	--	--	1241	--	--
6	1297	1402, 1512	1262, 1285, 1412	--	--
8	1303, 1597, 1607	--	--	--	--
12	--	1353, 1389	--	--	1205

Twenty percent of the macrobotanical samples from each stratum in Room 5 were selected for analysis. A total of six samples were analyzed from Room 5, but none of the vegetal materials were identifiable. Samples were collected from all strata except the floor and the hearth, as no

macrobotanical remains were identified from either of these contexts. Pollen and flotation samples were also taken from this room. Taxa identified in the flotation samples include the following taxa: pigweed, goosefoot, saltbush/greasewood, maize, unknown conifers, juniper, piñon pine, ponderosa pine, oak, and other unidentified remains. The flotation samples from the rooffall stratum included both maize and bean remains. Taxa identified in the analyzed pollen samples include maize, cholla (*Opuntia*), lily family (Liliaceae), parsley family (Apiaceae), sunflower family, ragweed/bursage, broad spine sunflowers, spurge family (Onagraceae), unidentified pine, piñon pine, juniper, oak, rose family (Rosaceae), sagebrush, Mormon tea (*Ephedra*), Chicory tribe (Liguliflorae), cheno-ams, and unidentified grasses.

Identified ceramics from these two grids included 29 smeared-indented corrugated sherds, 16 unpainted sherds, 14 Santa Fe Black-on-white sherds, two plainwares, seven indented corrugated sherds, one plain corrugated sherd, and one Chupadero Black-on-white sherd. Five pieces of ground stone were identified and included three unidentified quartzite ground stone fragments, one dacite one-hand mano, and one welded tuff formal slab metate fragment. Of the 33 pieces of bone recovered from this room, 17 were identified to at least the level of class. The pocket gopher (*Thomomys bottae*) remains were likely intrusive, and the kangaroo rat (*Dipodomys* sp.) specimen may also have been intrusive, as all were associated with the rooffall level. Several of the bones, including the red-tailed hawk (*Buteo jamaicensis*), the cottontail (*Sylvilagus* sp.), and the coyote (*Canis latrans*) bones were recovered from just above the floor. No worked specimens were recovered from this room. Table 24.25 lists the chipped stone materials recovered in this room.

Table 24.25. Chipped stone artifacts recovered from sampled units in Room 5.

Type	Material	Number
Angular debris	Rhyolite	1
	Pedernal chert	2
	Unidentified metamorphic	1
	Quartzite	4
	Chalcedony	3
Core flake	Chalcedony	9
	Rhyolite	2
	Pedernal chert	2
	Quartzite	1
	Unidentified metamorphic	1
Microdebitage	Chalcedony	10
	Black translucent obsidian	1
Manuport	Quartzite	1
Unidentified flake	Unidentified metamorphic	1
Biface flake	Black translucent obsidian	1
	Chalcedony	1
	Pedernal chert	1
	Rhyolite	1
Biface	Black translucent obsidian	1

Room 5 Features

Feature 5 (Hearth). Feature 5 is a plaster-lined collared hearth located in the center of Room 5 (see Figures 24.26 and 24.27). Stratum 12 represents the fill removed from this hearth. The hearth is approximately 51 by 47 by 15 cm in size and is roughly circular in shape. The collar around the hearth is raised only slightly (less than 2 cm) above the floor, similar to the hearth in Room 2, just to the north. Both of these hearths are distinct from the hearth in Room 1, which is raised some 10 cm above the floor. The hearth was excavated into bedrock and then plastered, and the collar was burned. Feature 5 was significantly rodent disturbed, especially on the western side. Because of the heavy disturbance throughout the hearth fill, no pollen samples were taken. Two flotation samples were taken (FS 1353 and FS 1389) in the least disturbed portions of the hearth, and the following carbonized taxa were identified in the samples: goosefoot seeds, saltbush/greasewood, maize cupule and kernel fragments, unknown conifers, juniper, piñon pine needles, ponderosa pine, and oak. A single ground stone artifact, a quartzite one-hand mano (FS 1390), was recovered from the hearth. During excavation, it was difficult to distinguish the hearth fill from the general fill because of the deteriorated nature of the hearth. As a result, neither a plan map nor a profile was drawn. Archaeomagnetic samples procured from the hearth produced a date range of AD 1235–1270. Maize cupules were identified in FS 1389 and were submitted for radiocarbon analysis. The sample yielded an age of 800±40 BP (Beta-183762) and a date of cal AD 1250 with a two-sigma date range of cal AD 1210–1270, which closely matched the archaeomagnetic date from the feature.

Feature 8 (Partial Hearth). Feature 8 is a possible partial hearth located in the southern portion of Room 5 (see Figure 24.26). The feature is located due south of Feature 5 and is flush with the southern wall of the room. Only a small portion of the feature remained when it was identified during excavation. The plaster lining that remained in the feature was cracked and crumbling and was approximately 2 cm thick. The remaining portion of the hearth measures 30 by 13 cm, and there is no depth to the feature. Because of its significantly disturbed and destroyed nature, there was no fill and no samples were taken.

Feature 11 (Doorway). Feature 11 is a doorway located slightly south of center along the western wall. The doorway allowed passage between Rooms 5 and 6. The dimensions of the doorway are 47 by 20 by 16 cm, and it lies directly east of Feature 5, the collared hearth in Room 5. There is almost no plaster at the bottom of the doorway, which is flush with the floor, and there is a footing stone at the base of the doorway that measures 28 by 19 by 18 cm. Four courses of stone were present in the wall to the south and three were present in the wall to the north of the doorway. No artifacts were collected from the doorway fill. Neither a plan map nor a profile of the feature was drawn.

Room 6

Sequence of excavation. Room 6 is located in the south-central portion of the roomblock and is 2.95 m north-south by 1.8 m east-west, giving about 5.30 m^2 of interior space. It is in the back row of rooms and is located immediately to the south of Room 4 and to the west of Room 5. In general, the room was in good shape, with a minimal amount of disturbance. No roots or stumps

were identified in the room, and the floor was in decent shape with about 50 percent of the floor intact (Figure 24.28).

Figure 24.28. Plan view of Room 6 floor after excavation.

As in the other rooms, 1- by 1-m units in this room were excavated in stratigraphic units (and in 10-cm levels within the strata if it was thicker than 10 cm) to the top of rooffall (Stratum 6). Once units were excavated to the top of rooffall, the excavations ceased temporarily until all units were at the same level. Then, all units in the room were excavated down to floor (Stratum 8). Three features were identified in this room: a doorway (Feature 11), a shallow plaster-lined pit (Feature 12), and a milling bin (Feature 13).

Fill. On average, Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill and consisted of very loose and unconsolidated soil. As in the other rooms, some areas contained a high organic content from the duff associated with piñon and juniper trees in the area. Artifact density in Stratum 1 was the highest. Stratum 2 consisted of the general room fill, which contained an abundant amount of rubble wallfall and was about 25 to 30 cm thick. The stratum was also loose and unconsolidated, and artifact density was lower than Stratum 1, but still considerably high. The bottom of Stratum 2 contained the abrupt contact with rooffall (Stratum 6).

In Room 6, Stratum 6 was anywhere from 7 to 20 cm thick at its thickest point, but averaged about 10 cm. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was considerably less than in Strata 1 and 2. As with all the other rooms in the roomblock, Stratum 8 was the floor stratum in this room. Floor was present in about half of the room, with large patches in the southern half, the center, and along the western wall. In general, artifact density in this back room was lower than the density of artifacts in the adjacent front rooms. A shallow, plaster-lined pit (Feature 12) and a milling bin (Feature 13) were identified in this room. Stratum 14 represents the fill from Feature 12 and Stratum 16 represents the fill from Feature 13. Table 24.26 shows the general artifact counts by stratigraphic unit for Room 6.

Table 24.26. Room 6 artifact counts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	766	103	20	4	**893**
6	38	6	0	1	**45**
6,7	141	21	6	1	**169**
8	6	0	1	3	**10**
14	4	2	9	1	**16**
16	0	0	1	0	**1**
Total	**955**	**132**	**37**	**10**	**1134**

Floor. The floor in this room was in fairly good condition (see Figure 24.28). Several rooms were in much worse shape, and only Room 4 contained better patches of floor. The dominant area of floor was located in the southern half of the room and along the western wall. Small patches also exist near the center of the room and in the southeastern corner. Some of the floor plaster coped with wall plaster in the southeastern corner of the room. A milling bin was identified in the southwestern portion of the room, and a small, shallow, plaster-lined pit was identified near the center of the room. The feature was amorphous but roughly circular in shape

and was heavily rodent disturbed. Its function is unknown. A concentration of ceramics (FS 1771, FS 1787, FS 1789, FS 1853, and FS 1998) and one welded tuff grinding slab (FS 2000) were found on the floor of the room. Two other ground stone fragments (FS 1840 and FS 2001) were found just above the floor. The ceramics included two smeared-indented corrugated sherds, three indented corrugated sherds, and one plainware sherd. In addition, a macrobotanical sample (FS 1997) and a pollen sample (FS 1788) were collected from the floor. Two fragments of ponderosa pine charcoal and one of unknown conifer were identified in the macrobotanical sample. The following taxa were identified in the pollen sample: maize, prickly pear, beeweed, buckwheat (*Eriogonum*), sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses.

Wall Construction. Both shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first as part of the rear wall of the roomblock and that the eastern wall (central roomblock wall) was built either next or at the same time as the western wall. After these two walls were constructed, the northern and southern walls were then abutted to the western and eastern walls. All four walls were at least three courses high. Table 24.27 shows the general wall measurements for each of the walls.

Table 24.27. Room 6 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
West	2.96	0.30	0.21
East	2.94	0.31	0.23
North	1.80	0.47	0.20
South	1.75	0.32	0.25

Artifacts and Samples. All artifacts and samples from 97N/114E (FS 1149 through FS 1153, FS 1765 through FS 1771, FS 1787, FS 1856 through FS 1860, FS 1906 through FS 1910, FS 1915, FS 1929, FS 1961 through FS 1963, FS 1965, and FS 2247) and 96N/114E (FS 1115 through FS 1118, FS 1187 through FS 1192, FS 1652 through FS 1656, FS 1960, FS 1964, FS 1966, FS 1999, and FS 2001) were analyzed. In addition, several other artifacts were selected for analysis and included two Santa Fe Black-on-white sherds (FS 1919 and FS 1969) from Feature 12 and a black translucent obsidian projectile point (FS 1852). Table 24.28 lists the samples selected for analysis from Room 6.

Table 24.28. Samples selected for analysis in Room 6.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1,2	--	--	1064, 1124	--	--
6	--	--	1655, 1959	--	--
8	1788	--	1997	--	--
14	1908, 1915	1860, 1906	1858, 1965	--	--
16	1960	1966	1964	--	--

Twenty percent of the macrobotanical samples from each stratum in Room 6 were selected for analysis, generating a total of eight samples. The following taxa were identified in these samples: unidentified pine, piñon pine, ponderosa pine, oak, and unknown conifer. Pollen and flotation samples were also taken from this room. Taxa identified in the flotation samples from Room 6 include goosefoot, maize, four-wing saltbush (*Atriplex*), saltbush/greasewood, unknown conifer, juniper, piñon pine, ponderosa pine, oak, and uncharred tobacco (*Nicotiana*). Pollen samples included the following taxa: maize, prickly pear, cactus family (Cactaceae), beeweed, buckwheat, purslane (*Portulaca*), sunflower family, ragweed/bursage, broad spine sunflower, long spine sunflower, unidentified pine, piñon pine, juniper, oak, sagebrush, pea family (Fabaceae), spurge family, rose family (Rosaceae), cheno-ams, and unidentified grasses.

Identified ceramics from these two grids included nine unpainted sherds, 12 Santa Fe Black-on-white sherds, one Chupadero Black-on-white sherd, 11 smeared-indented corrugated sherds, five indented corrugated sherds, one plain corrugated sherd, and three plainware sherds. Ten pieces of ground stone were identified and included one andesite mano fragment, one rhyolite mano fragment, two dacite one-hand manos, two dacite abrading stones, one dacite metate fragment, one welded tuff one-handed mano, and two welded tuff metate fragments. Of the eight pieces of bone recovered from this room, only two were identified to the level of class. Identified remains are likely intrusive and include a single pocket gopher (*Thomomys bottae*) and indeterminate rodent (Rodentia) bone. No worked bones were identified in this room. Table 24.29 lists the chipped stone materials recovered in this room.

Table 24.29. Chipped stone artifacts recovered from sampled units in Room 6.

Type	Material	Number
Hammerstone	Quartzite	1
	Chalcedony	1
Core flake	Chalcedony	17
	Pedernal chert	5
	Black translucent obsidian	2
	Quartzite	1
	Unidentified metamorphic	1
	Rhyolite	1
Angular debris	Chalcedony	1
	Quartzite	1
	Pedernal chert	3
Microdebitage	Pedernal chert	2
	Chalcedony	4
	Black translucent obsidian	1
Biface flake	Chalcedony	1

Room 6 Features

Feature 11 (Doorway). Feature 11 is a doorway located slightly south of center along the eastern wall that sits between Rooms 5 and 6. The dimensions of the doorway are 47 by 20 by 16 cm, and it lies directly east of Feature 5, the collared hearth in Room 5. There is almost no

plaster at the bottom of the doorway that is flush with the floor, and there is a footing stone at the base of the doorway that measures 28 by 19 by 18 cm. Four courses of stone were present in the wall to the south, and three were present in the wall to the north of the doorway. No artifacts were collected from the doorway fill. Neither a plan map nor a profile was draw.

Feature 12 (Pit). Feature 12 is a shallow, plaster-lined pit located near the center of Room 6 (see Figure 24.28). Stratum 14 represents the fill removed from the pit. The amorphous pit is approximately 55 by 60 by 25 cm in size and is roughly circular to ovoid in shape. The function of the pit is unknown and its integrity as a feature is doubtful, but the patches of plaster lining the pit would appear to be intentional. The north side and most of the bottom was missing due to extensive rodent disturbance. The remaining portion of the pit was constructed by lining dacite cobbles in a constructed depression, and then plastering over the cobbles. A large piece of charred ponderosa pine (*Pinus ponderosa*; FS 1858) was recovered in the feature fill. One section of the bottom of the pit was well-preserved and contained hard ash and charcoal. A few sections of the plaster lining the pit were burned, but other sections were completely unburned.

The western side of the feature was heavily rodent disturbed. Samples were taken, but are less reliable than those recovered from the intact eastern half. As a result, only one flotation sample (FS 1860) from the western half of the hearth was submitted for analysis. Charred taxa identified in this sample included maize, four-wing saltbush, unknown conifer, juniper, piñon pine, ponderosa pine, and oak. One flotation sample (FS 1906) and one pollen sample (FS 1908) were taken from the eastern half. Taxa identified in the flotation sample included maize, unknown conifer, juniper, unidentified pine, piñon pine, and oak. Taxa identified in the pollen sample included prickly pear, beeweed, purslane, sunflower family, spurge family, unidentified pine, piñon pine, juniper, rose family, sagebrush, cheno-ams, and unidentified grasses. Five pieces of ground stone were identified in the feature. They included a dacite metate fragment, a dacite one-hand mano, a welded tuff metate fragment, and two dacite abrading stones. In addition, a chalcedony hammerstone and core flake (FS 1910 and FS 1961) and four smeared-indented corrugated sherds were recovered from this feature. Figure 24.29 shows a photograph of the amorphous pit in Room 6.

Figure 24.29. Feature 12, an amorphous pit in Room 6.

Feature 13 (Milling Bin). Feature 13 is a shallow milling bin located along the western wall of Room 6 and is approximately 60 cm south of Feature 12 (see Figure 24.28). Stratum 16 represents the fill removed from the milling bin. The feature is approximately 60 by 60 by 25 cm in size and is roughly ovoid in shape. The feature is defined by two upright stones and a probable third and fourth stone that may have enclosed the bin on three sides (Figure 24.30).

The western wall of Room 6 would have formed the back of the bin. The inside of the feature was lined with plaster and had a well-preserved plastered floor. One flotation sample (FS 1966) and one pollen sample (FS 1960) were taken from this feature. The following taxa were identified in the flotation sample: uncharred tobacco (*Nicotiana*), maize, saltbush/greasewood, unknown conifer, juniper, and ponderosa pine. Results from the pollen sample included the following taxa: prickly pear, long spine sunflowers, pea family (Fabaceae), sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak, sagebrush, cheno-ams, and unidentified grasses. A one-hand dacite mano (FS 1999) and a macrobotanical sample (FS 1964) were collected from the feature. The macrobotanical sample contained remnants of unknown conifer, unidentified pine, ponderosa pine, and oak.

Figure 24.30. Feature 13, a milling bin.

Room 7

Sequence of Excavation. Room 7 is located in the southeast corner of the roomblock and is 3.1 m north-south by 2.20 m east-west, giving about 6.82 m^2 of interior space. The north-south measurements and the overall interior floor space measurement are incomplete. This is due to the fact that Room 7 is the most southerly of the front rooms and was heavily impacted by the construction of NM 502. Based on the dimensions of the room, it is likely that construction just clipped the southern wall of the room, but it was not located during excavation. Room 7 is located immediately south of Room 5 and east of Room 8. In general, the remaining portion of the room was in fair shape. The south wall was gone, the floor was only present in about half of the room, and the remaining three walls were still upright (Figure 24.31). As in the other rooms,

units in this room were excavated in stratigraphic units (and in 10-cm levels within the strata if it was thicker than 10 cm) to the top of rooffall (Stratum 6). Once units were excavated to the top of rooffall, excavations ceased temporarily until all units were excavated to the same level. Then, all units in the room were excavated down to floor (Stratum 8). A significantly disturbed hearth (Feature 9) was identified in the center of the room.

Fill. On average, Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill and consisted of the very loose and unconsolidated soil. As in the other rooms, some areas contained a high organic content from the duff associated with piñon and juniper trees in the area. Additionally, Stratum 1 in this room included a dense concentration of road rubble that was deposited in the upper layers of the roomblock during highway construction. This stratum, as well as the top few centimeters of Stratum 2, contained a number of cobbles, gravel, and chunks of tar and concrete. Unlike any of the other rooms in the roomblock, artifact density was not the highest in Stratum 1. Stratum 2 consisted of the general room fill, which contained an abundant amount of rubble wallfall and was about 35 to 40 cm thick. This stratum was thicker in Rooms 7 and 8 because of the deposited construction material. Stratum 2 was also loose and unconsolidated, and artifact density was lower than Stratum 1. Road construction debris was present in this stratum down to the contact with rooffall (Stratum 6).

In Room 7, Stratum 6 was anywhere from 5 to 25 cm thick, but averaged about 12 cm. Rooffall contained abundant, but usually small, fragments of adobe similar to that observed in the walls, and artifact density was higher than in Strata 1 and 2. This is different compared to other rooms, but is likely due to the disturbance that resulted from construction. As in the other rooms, Stratum 8 was the floor stratum. Floor was present in about half of the room, with large patches along the eastern and western walls. A shallow, collared hearth (Feature 9) was identified near the center of the room, and no artifacts were identified on the floor. Stratum 19 represents the fill from Feature 9. Table 24.30 shows the general artifact counts by stratigraphic unit for Room 7.

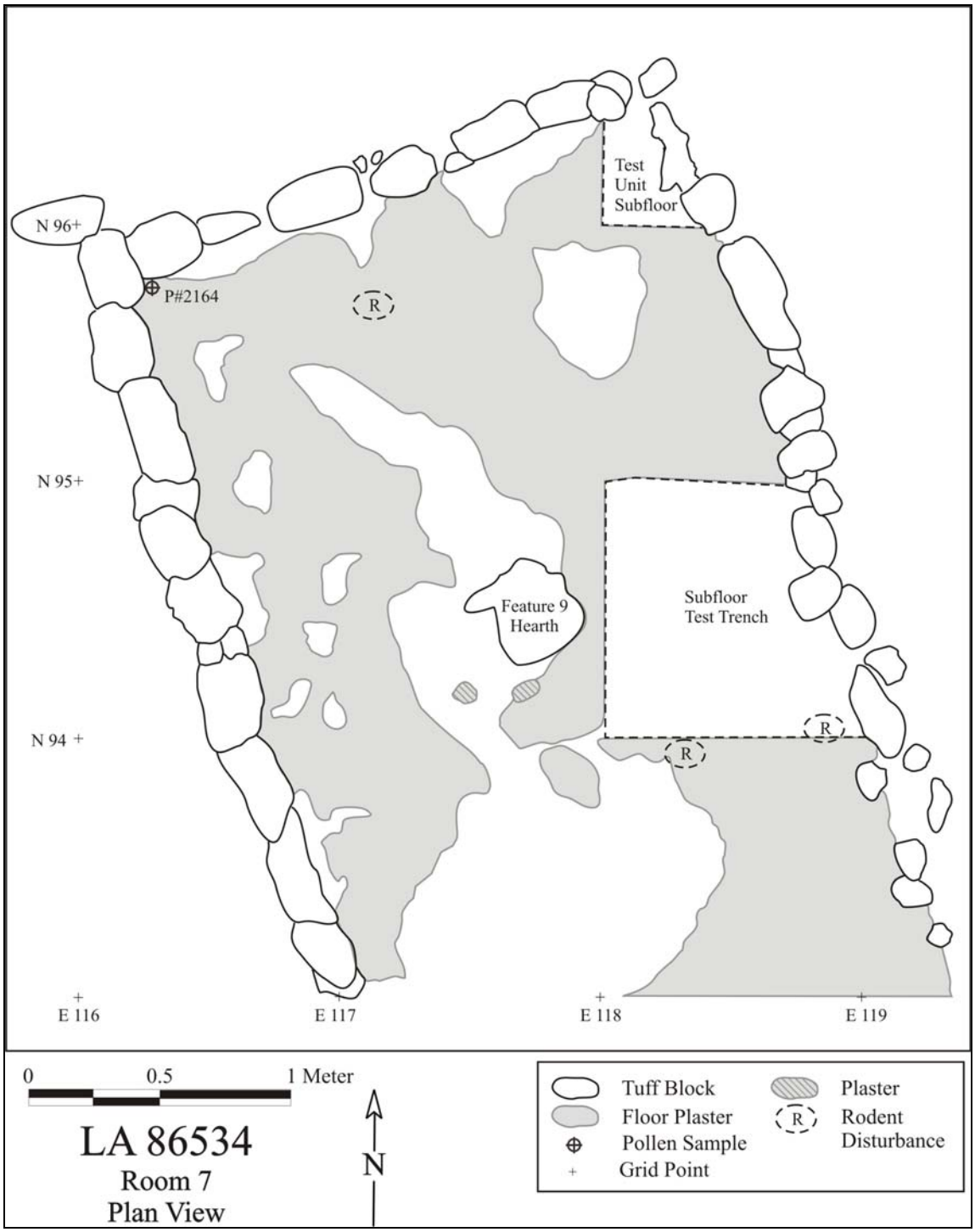


Figure 24.31. Plan view of Room 7 after excavation.

Table 24.30. Room 7 artifacts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	195	8	0	0	**203**
2	107	33	2	0	**142**
1,2	193	20	1	0	**214**
6,7	206	22	2	4	**234**
19	1	1	0	0	**2**
Total	**702**	**84**	**5**	**4**	**795**

Floor. The floor in this room was in fair condition. The dominant area of floor was located along the eastern and western walls where there were some good areas of articulation between the floor and the walls (see Figure 24.31). Small patches were also located near the center of the room, but were very disturbed around the hearth (Feature 9). The hearth is plaster-lined and was identified in the center of the room. Unlike Rooms 1, 2, and 5, the central hearth was not collared. It is possible that it may have been collared originally, but significant rodent disturbance severely damaged the structural integrity of the hearth. No artifacts were found on the floor, but one pollen sample (FS 2164) was collected. Taxa identified on the floor included prickly pear, beeweed, nightshade family, cheno-ams, grass family, sunflower family, ragweed/bursage, broad spine sunflowers, piñon pine, juniper, and sagebrush.

Wall Construction. Shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first as part of the central wall of the roomblock and that the eastern wall (front roomblock wall) was built either next or at the same time as the western wall. After these two walls were constructed, the northern and (probably) southern walls were then abutted to the western and eastern walls, although this is uncertain given the fact that the southern wall was obliterated by the construction of NM 502. The western wall is three courses high, while the eastern and northern walls vary between one and two courses. Table 24.31 shows the general wall measurements for each of the remaining walls.

Table 24.31. Room 7 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
West	3.00	0.25	0.23
North	2.20	0.25	0.17
East	3.55	0.20	0.18
South	--	--	--

Artifacts and Samples. Artifacts and samples from two 1- by 1-m units were selected for analysis in this room. Grids selected from Room 7 include 95N/117E (FS 1134, FS 1135, FS 1206, FS 1976 through FS 1979, and FS 2165 through FS 2167) and 94N/118E (FS 1684 through FS 1686, FS 1726, FS 1758, FS 1760, and FS 1763 through FS 1764), and all artifacts from these two columns were analyzed. In addition to the artifacts analyzed from these two units, a single black translucent obsidian biface (FS 1615) was analyzed. Table 24.32 lists the samples selected for analysis from Room 7.

Table 24.32. Samples selected for analysis in Room 7.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1	--	--	984	--	--
2	--	--	2004, 2143	--	--
6	--	1726	1760, 1978	--	--
8	2164	--	--	--	--
19	1645	2172	2170	--	--

Twenty percent of the macrobotanical samples from each stratum in Room 7 were selected for analysis. A total of six macrobotanical samples were analyzed from Room 7. Samples were collected and analyzed from all strata except the floor. The following taxa were identified in these samples: maize, mountain mahogany (*Cercocarpus*), cottonwood/willow (*Populus/Salix*), oak, unknown conifer, juniper, unidentified pine, piñon pine, and ponderosa pine. Pollen and flotation samples were also taken from this room. Taxa identified in the pollen samples include maize, cholla and prickly pear, beeweed, buckwheat, nightshade family, mustard family, broad spine sunflower, sunflower family, ragweed/bursage, possible marshelder (low spine), spurge family, unidentified pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses. Carbonized remains identified in the flotation samples include the following taxa: cheno-ams, maize, unknown conifer, juniper, pine, piñon pine, and oak.

Identified ceramics from these two grids included 10 Santa Fe Black-on-white sherds, five unpainted sherds, 15 smeared-indented corrugated sherds, five indented corrugated sherds, one Wiyo Black-on-white sherd, one Galisteo Black-on-white sherd, and one plainware sherd. Of the seven pieces of bone recovered from this room, only one was identified to at least the level of class and was a pocket gopher (*Thomomys bottae*) humerus. Based on the appearance of this specimen, the bone is likely intrusive and not related to the original occupation of the site. No worked bones were identified in this room. Table 24.33 lists the chipped stone materials recovered in this room.

Table 24.33. Chipped stone artifacts recovered from sampled units in Room 7.

Type	Material	Number
Core flake	Chalcedony	3
	Black translucent obsidian	1
	Quartzite	1
	Basalt	1
	Chert	1
Angular debris	Chalcedony	2
Microdebitage	Black translucent obsidian	1
Hammerstone flake	Quartzite	1

Room 7 Features

Feature 9 (Hearth). Feature 9 is a centrally located hearth in Room 7. The feature was almost completely destroyed by rodent activity, and the fill was heavily disturbed. The bottom of the hearth is patchy at best, with a few small areas of plaster still intact. There is no collar on this hearth, which makes it distinct from all of the other hearths on the site, with the exception of Feature 8, the partial hearth in Room 5. The hearth measures 55 by 40 by 15 cm. Several artifacts were recovered from the hearth. These include a piece of black translucent obsidian microdebitage (FS 2169) and a single smeared-indented corrugated sherd (FS 2171). A pollen sample (FS 1645), a flotation sample (FS 2172), and a macrobotanical sample (FS 2170) were collected from the hearth. The pollen sample included the following taxa: maize, cholla, beeweed, buckwheat, mustard family, sunflower family, ragweed/bursage, possible marshelder (low spine), spurge family, unidentified pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses.

The flotation sample included the following taxa: cheno-ams, maize, unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, and oak. Juniper, piñon pine, and ponderosa pine were identified in the macrobotanical sample collected from the hearth. Maize cupules were identified in FS 2172 and were submitted for radiocarbon analysis. This sample yielded an age of 850±40 BP (Beta-183764) and a date of cal AD 1200 with a two-sigma date range of cal AD 1170–1240.

Room 8

Sequence of Excavation. Room 8 is located in the southwest corner of the roomblock and is 2.60 m north-south by 1.80 m east-west, giving about 4.68 m^2 of interior space. The north-south measurements and the overall interior floor space measurement are incomplete. This is due to the fact that Room 8 is the most southerly of the back rooms and, like Room 7, was heavily impacted by the construction of NM 502. Based on the dimensions of the room relative to other back rooms, it is likely that construction completely obliterated the southern wall of the room and it would have been an additional meter south of where our excavations ceased.

Room 8 is located immediately south of Room 6 and west of Room 7. The remaining portion of Room 8 was in poor shape. The south wall was gone, the floor was non-existent, and the remaining three walls were semi-stable at best (Figure 24.32). As in the other rooms, 1- by 1-m units were excavated in stratigraphic units (and in 10-cm levels within the strata if it was thicker than 10 cm) to the top of rooffall (Stratum 6). Once units were excavated to the top of rooffall, the excavations ceased temporarily until all units were at the same level. Then, all units in the room were excavated down to floor (Stratum 8). No features were identified in the room.

Fill. On average, Stratum 1 was an approximately 10-cm-thick layer of post-occupational fill and consisted of the very loose and unconsolidated soil. Stratum 1 in this room included a dense concentration of road rubble that was deposited in the upper layers of the roomblock during highway construction. This stratum, as well as the top few centimeters of Stratum 2, contained a number of cobbles, gravel, and chunks of tar and concrete. As in the other rooms, artifact density was not the highest in Stratum 1.

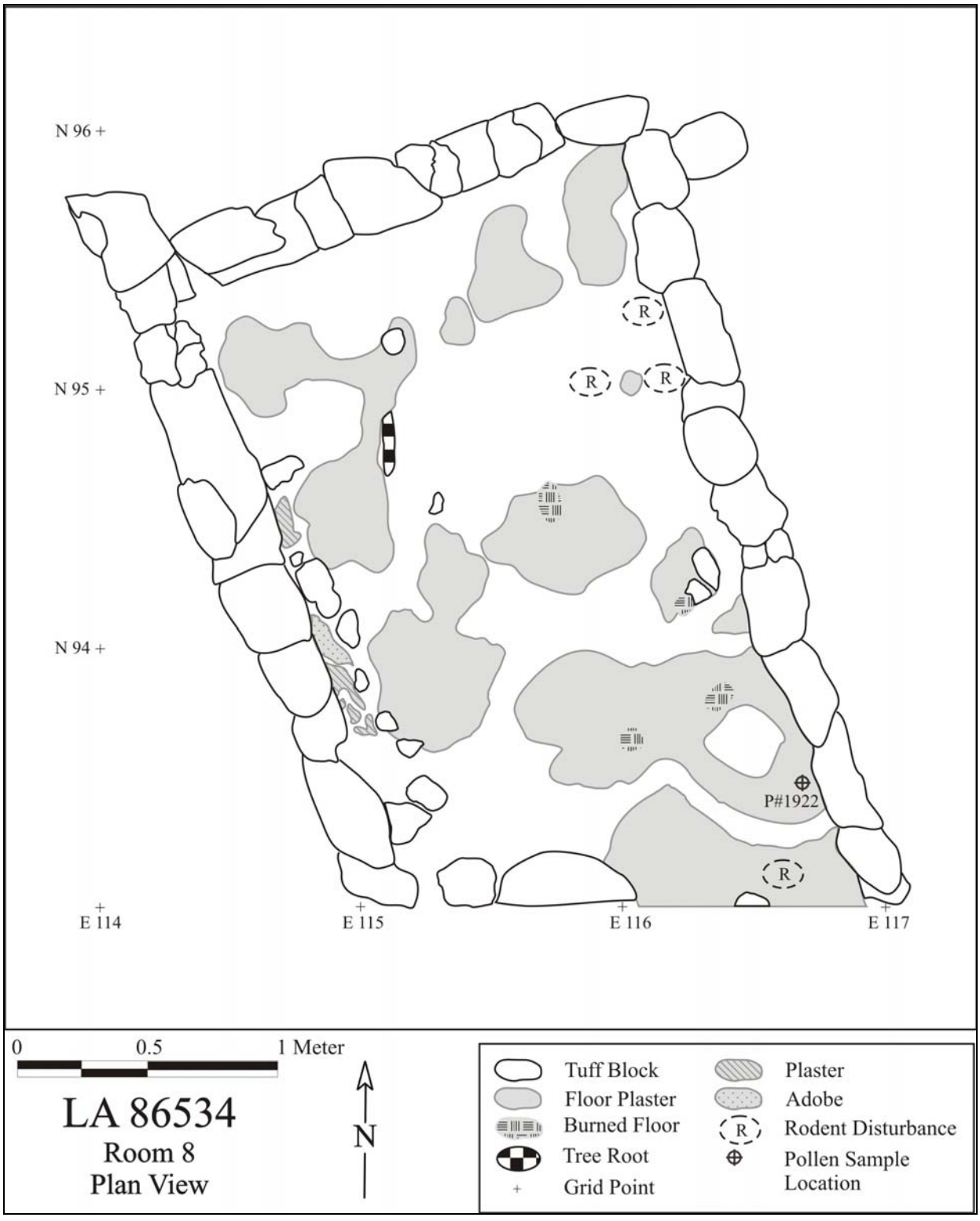


Figure 24.32. Plan view of Room 8 after excavation.

Stratum 2 consisted of the general room fill, which was about 35 to 40 cm thick and contained an abundant amount of rubble wallfall. This stratum was thicker in Rooms 7 and 8 because of the deposited construction material. Stratum 2 was also loose and unconsolidated, and artifact density was lower than in Stratum 1. Road construction debris was present in this stratum down to the contact with rooffall (Stratum 6). In Room 8, Stratum 6 was anywhere from 5 to 23 cm thick at its thickest point, but averaged about 11 cm. Rooffall in this room contained abundant, but usually small, fragments of adobe similar to that observed in the walls.

As with other rooms in the roomblock, Stratum 8 was the floor stratum. Patches of floor were present in some areas of the room and covered about one-third of the interior space. The floor was difficult to identify in this room because of disturbance related to road construction. No features were identified. Table 24.34 shows the general artifact counts by stratigraphic unit for Room 8.

Table 24.34. Room 8 artifacts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	205	28	2	2	**237**
2	14	1	0	0	**15**
1,2	112	22	0	1	**135**
6	7	3	0	1	**11**
6,7	104	47	0	1	**152**
Total	**442**	**101**	**2**	**5**	**550**

Floor. In general, the floor in this room was in poor condition. The best patch of floor was located along the western wall, and the plastered floor in this area coped with the wall plaster (see Figure 24.32). The remainder of the room contained small patches of floor, which were disturbed by rodent activity. No artifacts were found on the floor of this room, but one pollen sample (FS 1922) was taken directly on the floor. Identified taxa from this sample include prickly pear, beeweed, purslane, sunflower family, ragweed/bursage, spurge family, piñon pine, unidentified pine, juniper, sagebrush, cheno-ams, and unidentified grasses.

Wall Construction. Shaped and unshaped tuff blocks were used in the construction of this room. It appears as though the western wall of the room was constructed first as part of the rear wall of the roomblock and that the eastern wall (central roomblock wall) was built either next or at the same time as the western wall. After these two walls were constructed, the northern and (probably) southern walls were then abutted to the western and eastern walls. The southern wall was obliterated by construction of NM 502, and so its construction history is uncertain. All three walls vary between one and two courses high. Table 24.35 shows the general wall measurements for each of the remaining walls.

Table 24.35. Room 8 wall measurements.

Wall Orientation	Length (m)	Height (m)	Thickness (m)
East	2.94	0.35	0.22
North	1.77	0.45	0.20

Wall Orientation	Length (m)	Height (m)	Thickness (m)
West	2.30	0.32	0.19
South	--	--	--

Artifacts and Samples. Artifacts and samples from 95N/115E (FS 1051 through FS 1055, FS 1203 through FS 1205, FS 1579 through FS 1581, FS 1682 and FS 1683, and FS 1835 and FS 1836) and 94N/115E (FS 1193 through FS 1195, FS 1331 and FS 1332, and FS 1805 through FS 1807) were selected for analysis in Room 8. All artifacts from these two columns were analyzed. Table 24.36 lists the samples selected for analysis from Room 8.

Table 24.36. Samples selected for analysis in Room 8.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1	--	--	1235	--	--
1,2	--	--	1258	--	--
6	--	--	1581, 1667	--	--
8	1922	--	--	--	--

As outlined in the description of Room 1, 20 percent of the macrobotanical samples from each stratum in Room 8 were selected for analysis. A total of four macrobotanical samples were analyzed from Room 8. Samples were collected and analyzed from all strata except the floor. The following taxa were identified in these samples: unidentified pine, piñon pine, and ponderosa pine. Due to the heavy disturbance from both road construction and rodent activity in this room, few samples were taken, but a single pollen sample was taken from a small patch of floor. Identified taxa include prickly pear, beeweed, purslane, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses.

Identified ceramics from these two grids included 12 Santa Fe Black-on-white sherds, one Chupadero Black-on-white sherd, nine unpainted sherds, 15 smeared-indented corrugated sherds, four indented corrugated sherds, and one plainware sherd. Two pieces of ground stone, a dacite grinding slab and a welded tuff ground stone fragment, were identified in the room. Of the five pieces of bone recovered from this room, two were identified to at least the level of class. A single wood rat (*Neotoma* sp.) ulna and a mule deer (*Odocoileus hemionus*) naviculocuboid were recovered in this room. No worked bones were identified in this room. Table 24.37 lists the chipped stone materials recovered in this room.

Table 24.37. Chipped stone artifacts recovered from sampled units in Room 8.

Type	Material	Number
Angular debris	Quartzite	2
	Chalcedony	1
Core flake	Quartzite	1
	Opaque obsidian	1
	Chalcedony	9

Type	Material	Number
	Pedernal chert	1
Microdebitage	Chalcedony	1
	Pedernal chert	1
	Black translucent obsidian	2

No features were identified in Room 8.

Room 9

Sequence of Excavation. Room 9 is located east of the roomblock and is immediately adjacent to Rooms 2 and 5. Room 9 is a subterranean, circular kiva that was constructed into bedrock. The room measures 4.3 m north-south by 4.1 m east-west, giving about 17.63 m^2 of interior space, which is by far the largest of any of the rooms. In general, the kiva was in excellent shape. The floor was well preserved and was continuous across the entire surface. The bedrock walls were in good condition, and the stacked masonry walls on top of the kiva were still present in the northeast and southern areas. Figure 24.33 shows Room 9 after it was completely excavated.

Figure 24.33. Room 9 after excavation.

No surface indications of the kiva were present before excavation. Therefore, a bobcat was used to scrape the area east of the roomblock, with a very ephemeral rock alignment being detected (see Figure 24.5). A 1- by 2-m test pit was placed over this alignment and was excavated almost 2 m down to floor. At this point, only one other 1- by 1-m unit was excavated by hand. This unit

was located along the eastern wall of the kiva and was excavated in 20-cm arbitrary levels for stratigraphic control. Once the initial three units were excavated, all grids around the perimeter of the kiva were excavated by hand to expose the wall. This was done because the bobcat was going to remove the interior fill of the kiva and it was important for the operator to be able to see the perimeter. Once the perimeter of the kiva was entirely exposed, the bobcat removed the fill. The removal was done in four units. First, the kiva was bisected along the 120E line to separate the eastern and western halves. Then, the interior fill was separated into post-occupational fill and wallfall. The bobcat removed the fill in the following sequence: west half, post-occupational fill; west half, wallfall; east half, post-occupational fill, and east half, wallfall. Stratum 2 (wallfall) was mechanically removed to the top of the rooffall layer (Stratum 15). All kiva fill removed by the bobcat was screened and the artifacts collected. Once the fill was removed, we returned to hand excavation of 1- by 1-m grids. The rooffall stratum was removed by hand to the floor of the kiva (Stratum 17).

Nine features were identified in Room 9. These features included two wall niches (Features 7 and 20), a floor niche (Feature 6), a ventilator shaft (Feature 14), an entryway between Rooms 5 and 9 (Feature 15), a collared and plaster-lined hearth (Feature 16), an unplastered ash pit (Feature 17), a sipapu (Feature 18), and a series of five holes and a groove between the ventilator shaft and the ash pit (Feature 19). Each of these features will be discussed individually in the following pages.

Fill. On average, Stratum 1 was an approximately 90- to 110-cm-thick layer of post-occupational fill that consisted of very loose and unconsolidated soil. Some surface areas contained a high organic content from the duff associated with piñon and juniper trees in the area. This stratum contained no rubble fill, but artifact density was high. Stratum 2 consisted of the general room fill, which contained an abundant amount of rubble wallfall and was about 60 to 80 cm thick. The stratum was also loose and unconsolidated with tuff blocks in the fill. Strata 1 and 2 were comparable to strata identified in the roomblock and, as in the roomblock, were combined during excavation when necessary. The bottom of Stratum 2 contained the abrupt contact with rooffall (Stratum 15). Artifact density in Strata 1 and 2 was the highest.

In Room 9, Stratum 15 was anywhere from 20 to 44 cm thick at its thickest point, but averaged about 25 cm. Rooffall in this room contained abundant fragments of adobe similar to that observed on the walls, and artifact density was considerably less than in Strata 1 and 2. Several areas of silty concentrations were identified in the rooffall stratum, suggesting that the top of the roof may have been exposed to the elements for a period of time before the kiva was filled in. These areas of silt were distinct in texture and appearance and contained small clay balls.

The floor stratum in the kiva was Stratum 17. The floor in this room was in excellent condition, and there were only very small patches of the interior where floor was not identified. These areas were located primarily in the northwestern section of the kiva where a fissure in the bedrock had developed. Five floor features were identified in this room: Feature 6 was a floor niche, Feature 16 was a collared hearth (Stratum 20), Feature 17 was an ash pit located immediately east of the hearth (Stratum 21), Feature 18 was a sipapu located directly west of the hearth, and Feature 19 was a series of five small holes and grooves located just east of the ash pit. In addition to the floor features, four additional features were identified and included two

wall niches (Features 7 and 20), a ventilator shaft (Feature 14), and an entryway between Rooms 5 and 9 (Feature 15). Table 24.38 shows the general artifact counts by stratigraphic unit for Room 9.

Table 24.38. Room 9 artifacts by stratigraphic units.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	1551	140	3	7	**1701**
2	2230	283	4	9	**2526**
1,2	3673	478	17	55	**4223**
15	1331	145	1	37	**1514**
17	1	0	0	0	**1**
20	1	2	1	0	**4**
21	0	12	0	0	**12**
Total	**8787**	**1060**	**26**	**108**	**9981**

Floor. In general, the floor in Room 9 was in excellent condition and was in better shape than any of the floors in the roomblock. The plastered floor coped well with the plastered portions of the wall, and the best evidence for this occurred in the southern half of the kiva (Figure 24.34). The floor of the kiva was not burned and it was constructed immediately above bedrock. There seemed to be evidence of remodeling in some very small portions of the floor in the northwestern portion of the kiva, but two distinct floors were not observed. Five floor features were identified in this room: Feature 6 (floor niche), Feature 16 (collared hearth), Feature 17 (ash pit located immediately east of the hearth), Feature 18 (a sipapu located directly west of the hearth), and Feature 19 (five small holes and grooves located just east of the ash pit). Only one artifact (FS 1969) was recovered from the floor of the kiva and was a Santa Fe Black-on-white sherd. In addition, a number of pollen and flotation samples were taken directly on the floor.

Pollen samples taken from the floor of the kiva include the following FS numbers: 1967, 1991, 1993, and 2175. Identified taxa include maize, cholla and prickly pear, beeweed, sunflower family, parsley, buckwheat, fir (*Abies*), unidentified pine, piñon pine, juniper, oak, sagebrush, long spine sunflower, broad spine sunflower, evening primrose, spurge, and cheno-ams.

Flotation samples taken from the floor of the kiva include the following FS numbers: 1968, 1990, 1992, and 2176. Identified taxa include pigweed, goosefoot, cheno-ams, uncharred tobacco (*Nicotiana*), sunflower family, maize, saltbush/greasewood, mountain mahogany (*Cercocarpus*), unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, and oak.

Wall Construction. The subterranean, circular kiva was constructed by excavating into the Bandelier Tuff bedrock. Shallow scoring marks were visible along the kiva walls indicating that digging sticks had presumably been used to finish these surfaces. Several courses of masonry were constructed above the level of bedrock. These courses seem to be prominent in the areas where bedrock dips significantly as along the eastern and southern walls. Figure 24.35 shows some of the masonry construction along the eastern wall just north of the ventilator shaft and above one of the wall niches (Feature 7). It is likely that masonry construction was used around

the perimeter of the kiva, but much of it may have fallen into the center. This is suggested by the large amounts of rubble present in Stratum 2.

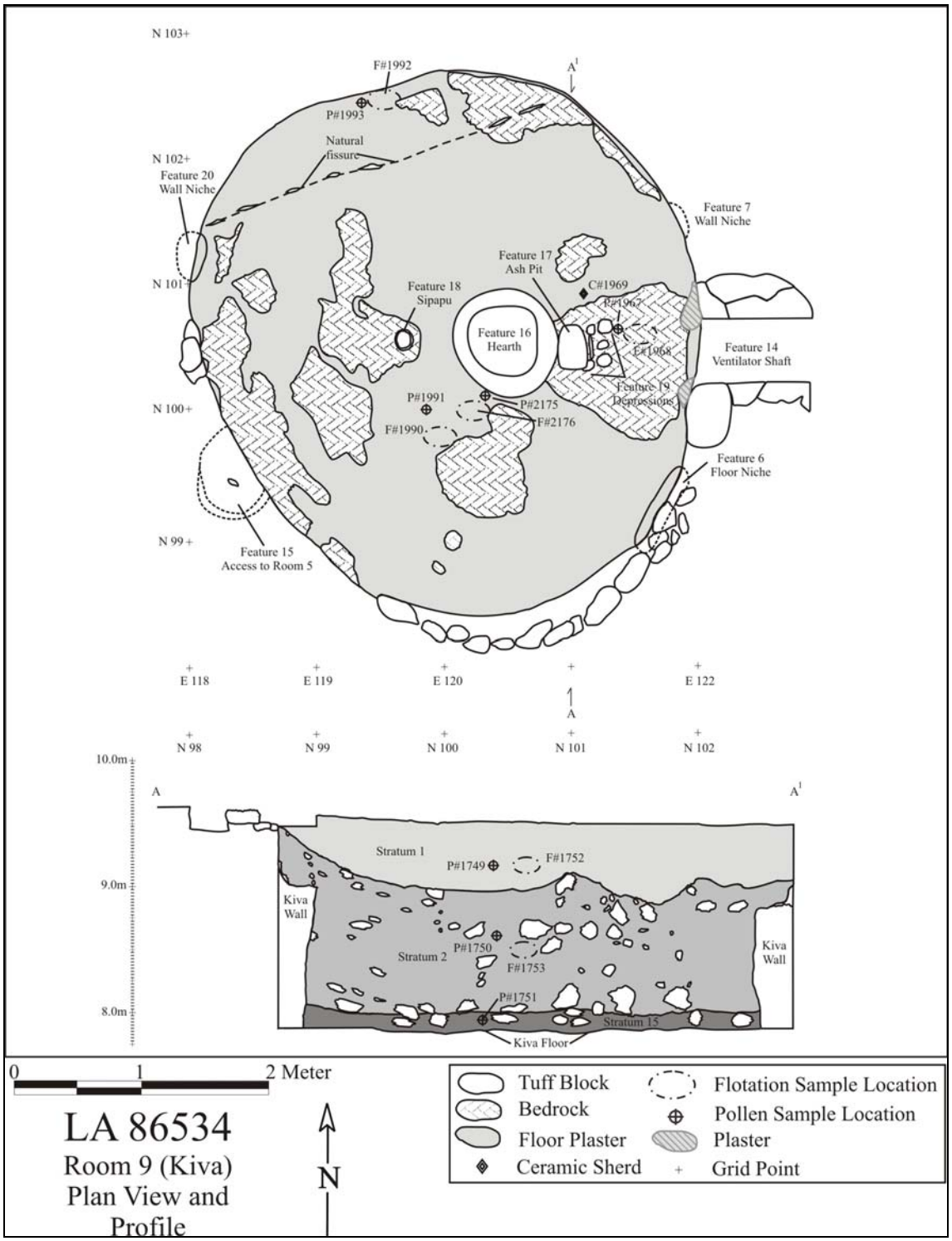


Figure 24.34. Plan view of Room 9 after excavation.

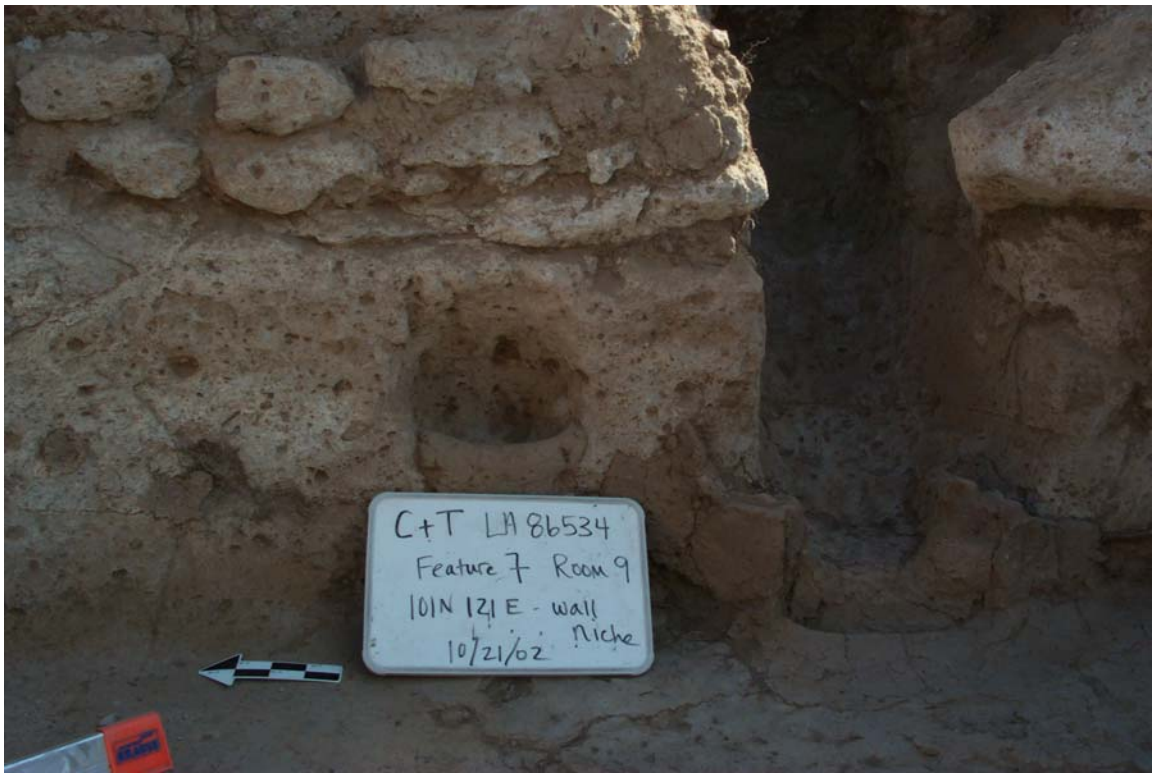


Figure 24.35. Room 9, masonry construction above bedrock.

Four features were present in the kiva walls. These include two wall niches (Features 7 and 20), the ventilator shaft (Feature 14), and an entryway between Rooms 5 and 9 (Feature 15). The entryway contained visible hand and foot holds that lead up to a shallow, ovoid feature. Features 7 and 14 are shown in Figure 24.35. Feature 7 is located on the eastern wall about 25 cm above the floor and 30 cm north of the ventilator shaft, and Feature 20 is located along the western wall about 30 cm above the floor.

Artifacts and Samples. Artifacts and samples from one 1- by 1-m unit were selected for analysis in the kiva. 100N/121E (FS 1687 through FS 1690, FS 1712 through FS 1719, FS 1727 through FS 1729, FS 1745 through FS 1748, FS 1779 through FS 1781, FS 1980 through FS 1985, FS 2175 and FS 2176, FS 2204 and FS 2205, FS 2219, and FS 2229 through FS 2232), the only completely hand-excavated grid in the kiva, was chosen. All artifacts from this column were analyzed. In addition to the artifacts analyzed from this unit, a number of artifacts were analyzed from different contexts, including three ceramic pipe fragments (FS 1459, FS 1460, and FS 1890), a ceramic ladle (FS 1872), and a ceramic pestle (FS 1878).

In addition to the artifacts analyzed from this room, macrobotanical, pollen, and flotation samples from throughout the stratigraphic sequence were analyzed (Table 24.39). Because of the paucity of macrobotanical remains alluded to earlier in this chapter, very few remains were collected in 100N/121E. To augment the sample size, materials selected for analysis were generated from the fill removed by the bobcat. Macrobotanical samples from post-occupational fill and wallfall (Strata 1 and 2) were selected from the eastern half of the kiva. Once all the wallfall was removed, hand excavation to the floor resumed. Macrobotanical samples from the

rooffall stratum were generated by selecting the grids that were located beneath the eastern half of the kiva where samples were selected from Strata 1 and 2. These included 99-100N/100E. All macrobotanical samples from the rooffall context in these grids were analyzed.

Table 24.39. Samples selected for analysis in Room 9.

Stratum	SAMPLE TYPE				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
1	1749, 1772	1752, 1773	1847	--	--
1,2	1974	1975	1677	--	--
2	1750, 1786	1753, 1785	1830, 1866, 1869	--	--
15	1751, 1762	1761, 2142	1988, 2009	--	--
17	1967, 1991, 1993, 2175	1968, 1990, 1992, 2176	--	--	--
20	2204, 2205, 2219	2199, 2200, 2201, 2202, 2203, 2212, 2214, 2215, 2216, 2217, 2223	2213, 2224	2238, 2250	Taken
21	2229, 2232	2234	2233	--	--
22	2225	2226	--	--	--

A total of 10 macrobotanical samples were analyzed from Room 9. Samples were collected and analyzed from all strata except the floor, which did not produce any remains suitable for analysis. The following taxa were identified in these macrobotanical samples: maize, saltbush/greasewood, mountain mahogany, cottonwood/willow, Douglas fir (*Pseudotsuga menziesii*), juniper, wolfberry (*Lycium*), unknown conifer, unidentified pine, piñon pine, ponderosa pine, and oak.

Charred and uncharred taxa identified in flotation samples from Room 9 included pigweed, goosefoot, cheno-am, tobacco, purslane sunflower family, groundcherry, sage (*Salvia*), mountain mahogany, hedgehog cactus (*Echinocereus*), mint family (Labiatae), maize, grass family, four-wing saltbush, saltbush/greasewood, juniper, unknown conifer, unidentified pine, piñon pine, ponderosa pine, prickly pear, squash/coyote gourd (*Cucurbita*), and oak.

Analyzed pollen samples included maize, squash, cholla and prickly pear, beeweed, buckwheat, plantain (*Plantago*), mustard family (Brassicaceae), sunflower family, parsley (Apiaceae), ragweed/bursage, spurge family, penstemon family (Scrophulariaceae), pea family (Fabaceae), spruce (*Picea*), unidentified pine, piñon pine, juniper, oak, rose family, buckthorn family (Rhamnaceae), Mormon tea, sagebrush, long spine sunflower, broad spine sunflower, evening primrose, cheno-ams, and unidentified grasses.

Identified ceramics from this grid included 16 plainwares, 13 unpainted sherds, 29 Santa Fe Black-on-white sherds, 23 smeared-indented corrugated sherds, 11 indented corrugated sherds, three mudware sherds, two organic-painted sherds from the Coalition period, two plain corrugated sherds, two Wiyo Black-on-white sherds, and one Biscuit A (Bandelier Black-on-

gray) sherd. Two quartzite one-hand manos were recovered. Room 9 contained far more faunal remains than any other room at LA 86534. Unidentified remains were the most abundant, followed by the intrusive pocket gopher (*Thomomys bottae*) remains, cottontails (*Sylvilagus* sp.), rock squirrels (*Spermophilus variegatus*), red-tailed hawk (*Buteo jamaicensis*), mule deer (*Odocoileus hemionus*), indeterminate rodents (Rodentia), jackrabbits (*Lepus* sp.), carnivores (Carnivora), and turkey (*Meleagris gallopavo*). Species diversity was also the greatest in this room, which may be related to its use as a kiva. More birds were identified in this room relative to the rest of the site, and other unusual taxa, including toads (Ranidae), skunk (*Mephitis mephitis*), and coyote (*Canis latrans*) remains were also identified. One bone bead was recovered from the wallfall stratum in the kiva. Table 24.40 lists the chipped stone materials recovered in this room.

Table 24.40. Chipped stone artifacts recovered from sampled units in Room 9.

Type	Material	Number
Hammerstone	Quartzite	1
Core	Pedernal chert	1
Biface	Black translucent obsidian	1
Core flake	Chalcedony	22
	Basalt	1
	Pedernal chert	10
	Rhyolite	1
	Black translucent obsidian	1
	Silicified wood	1
Angular debris	Chalcedony	6
	Pedernal chert	3
Microdebitage	Pedernal chert	3
	Unidentified metamorphic	1
	Black translucent obsidian	1
Biface flake	Chalcedony	1
	Basalt	1
	Black translucent obsidian	1

Kiva Features

A total of nine features were identified in the kiva. These include two wall niches (Features 7 and 20), a floor niche (Feature 6), a ventilator shaft (Feature 14), an entryway between Rooms 5 and 9 (Feature 15), a collared and plaster-lined hearth (Feature 16), an ash pit (Feature 17), a sipapu (Feature 18), and a series of five holes and grooves between the ventilator shaft and the ash pit (Feature 19). The majority of these features are visible in Figure 24.34 (plan view of kiva) and each is discussed in the following pages.

Feature 6 (Floor Niche). This feature is a floor niche located on the eastern wall of the kiva. The feature dimensions are 38 by 60 by 26 cm, and it is located 68 cm south of the ventilator shaft. The niche is medium-sized and has a plastered lip on the lower boundary that lies 3 cm above the floor. The niche is in excellent condition, with plaster on most of the base and lipped

area, but only small patches on the ceiling. The fill from this feature was screened separately and produced artifacts, but was not given a different stratum designation because it was filled with the general kiva fill. Figure 24.36 shows a photograph of this niche.

Figure 24.36. Room 9, floor niche (Feature 6).

Feature 7 (Wall Niche). This feature is a wall niche located on the eastern wall 25 cm above the kiva floor. The feature dimensions are 29 by 29 by 18 cm, and it is located 30 cm north of the ventilator shaft. The niche is on the small side and has a plastered lip on the lower boundary. The niche was in good condition, with patches of plaster present throughout. As with Feature 6, the fill from this feature was screened separately and produced artifacts, but was not given a different stratum designation because it was filled with the general kiva fill. Figure 24.37 shows a photograph of this niche.

Figure 24.37. Room 9, wall niche (Feature 7).

Feature 14 (Ventilator Shaft). Feature 14 is the ventilator shaft located on the east side of the kiva. The shaft is oriented due east and is in alignment with several of the floor features. The bottom of the ventilator shaft is flush with the floor, but has a lip at its opening that rises approximately 5 cm above the floor. The shaft slopes gradually upwards to the surface. A plastered groove was identified directly in front of the opening to the ventilator shaft. The groove may represent a footing for some type of cover, although no stone was in place at the time of excavation and nothing of its likeness was identified during excavation of the adjacent areas. Some portions of the ventilator shaft were also plastered although most of it was patchy. The dimensions of the ventilator shaft are 120 by 40 by 75 cm. A number of artifacts were identified in the fill of Feature 14 (FS 1892, FS 1893, FS 1904, and FS 1971) and include one plainware sherd, a quartzite hammerstone, an andesite metate fragment, a basalt mano fragment, two chalcedony projectile points, five Pedernal chert core flakes, 12 chalcedony core flakes, six chalcedony pieces of angular debris, two chalcedony biface flakes, seven pieces of chalcedony microdebitage, one piece of black translucent obsidian microdebitage, one andesite core flake, one unidentified manuport, one piece of salmon pink chert microdebitage, one piece of quartzite microdebitage, and one orthoquartzite core flake. Figure 24.38 shows the ventilator shaft and its location relative to a number of the kiva features.

Figure 24.38. Room 9, ventilator shaft and other kiva features.

Feature 15 (Entry/Exit Way). This feature is an entry/exit way between Rooms 5 and 9. It is semi-circular in shape and contains a ledge at the edge of bedrock. This portion of the feature measures 65 by 63 by 24 cm. There is also a hand-hold at the top of the flattened bedrock and a probable toe-hold on the kiva wall directly below the feature. During initial excavations in this area, the connection between Rooms 5 and 9 was not identified. It was only after we returned to the site several weeks after the completion of excavations to examine the construction techniques used in the walls that the nature of this feature was recognized. During this visit, the eastern wall of Room 5 was knocked over and the connection between the rooms was verified (Figures 24.39 and 24.40). When the wall in Room 5 was removed, it was clear that no tuff blocks were in place. What appeared to be tuff blocks forming the wall of Room 5 were actually concentrations of plaster that resembled blocks. When the fill in this area was subsequently removed, it was

clear that there was a doorway between the two rooms. A palette (FS 1970) was the only artifact recovered from this feature.

Figure 24.39. Room 9, Feature 15 as it appeared in October 2002.

Figure 24.40. Room 9, Feature 15 as it appeared in December 2002.

Feature 16 (Collared Hearth). Features 16 through 20 are all floor features and are all aligned on the same east-west line. Feature 14, the ventilator shaft, is also aligned with these five features. Feature 16 is the kiva hearth. The hearth is located slightly east of center and is immediately adjacent to the sipapu (Feature 18) to the west and the ash pit (Feature 17) on the right. The plaster-lined collared hearth measures 85 by 85 by 30 cm and is larger than the hearths in the individual rooms. It was in excellent condition, with only a small patch missing from the northern wall. The hearth was heavily burned, and the bottom 5 to 10 cm consisted of a hard-packed ash layer. Both ceramics and lithics were recovered from the interior of the feature. Figure 24.41 shows the plan map and profile of the hearth. A photograph of the hearth is shown in Figure 24.42.

A single marcrobotanical sample was collected from the hearth and included the following taxa: unknown conifer, unidentified pine, and ponderosa pine. Flotation samples included the following taxa: pigweed, goosefoot, cheno-am, tobacco, mint family, maize, four-wing saltbush, juniper, unknown conifer, unidentified pine, piñon pine, and ponderosa pine. In addition to those taxa already mentioned, the following taxa were identified in the pollen samples collected from the hearth: sunflower family, ragweed/bursage, and unidentified pine.

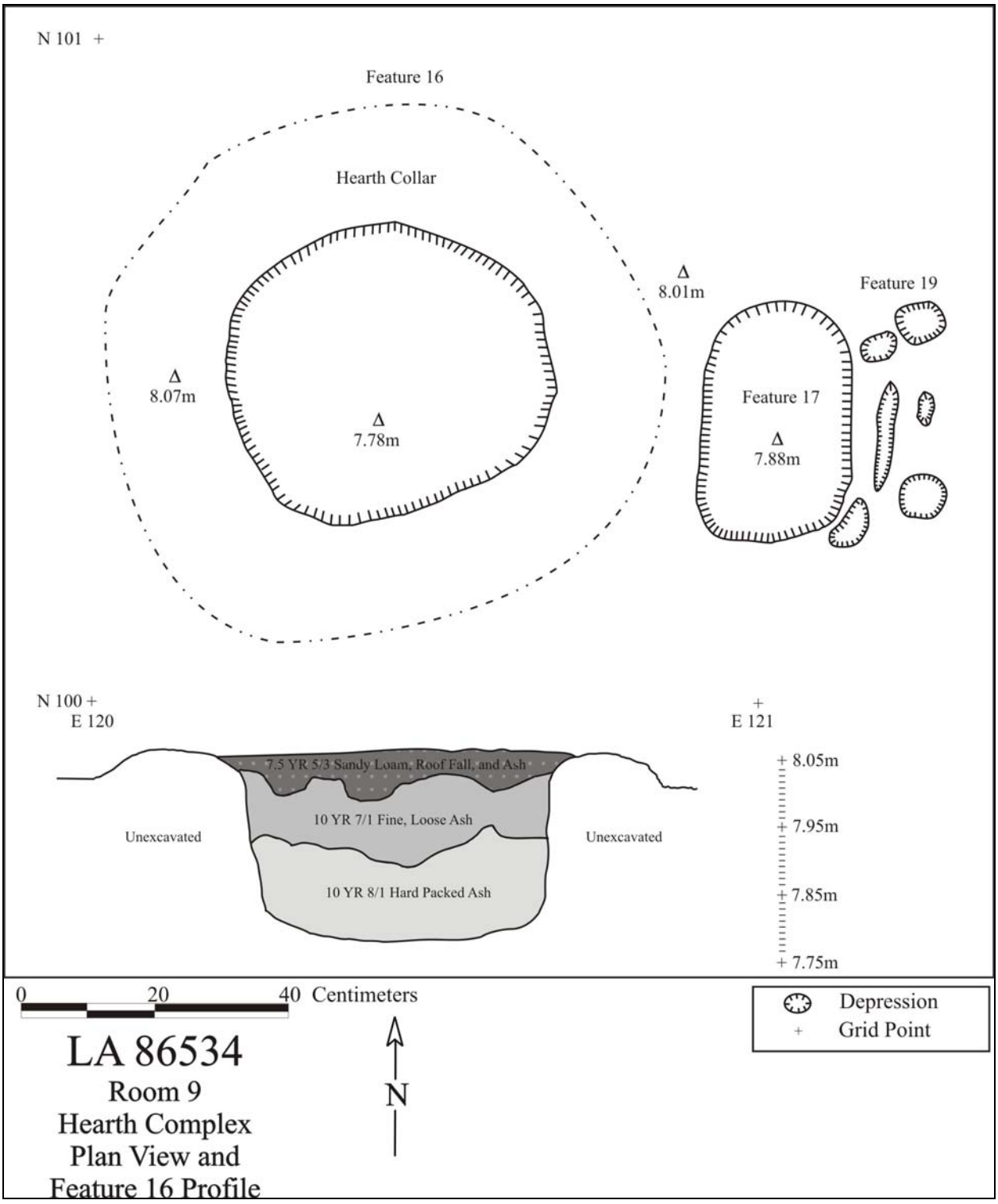


Figure 24.41. Plan view and profile of Feature 16.

Figure 24.42. Room 9, Feature 16.

Additionally, TL (FS 2238 and FS 2250), archaeomagnetic, and radiocarbon samples were all taken from the hearth and submitted for analysis. The TL sample from the adobe in the hearth (FS 2250) dated to AD 1221±52. The archaeomagnetic sample produced two probable date ranges, one at AD 1185–1240 and the other at 1250–1315. Maize cupules were identified in a flotation sample taken from the hearth (FS 2202) and were submitted for radiocarbon analysis. This sample yielded an age of 790±40 BP (Beta-183765) and a date of cal AD 1260 with a two-sigma date range of cal AD 1220–1270. These results strongly suggest a date in the middle to late 13th century, and all span a fairly tight period of time. Several artifacts (FS 2220, FS 2221, and FS 2206) were recovered from the hearth and included a smeared-indented corrugated sherd, a chalcedony core flake, an unidentified chalcedony flake fragment, and a quartzite polishing stone.

Feature 17 (Ash Pit). This feature is the ash pit associated with the hearth. As with Features 16 through 18 and Feature 20, the ash pit is aligned on an east/west coordinate. The ash pit is located just east of the hearth and just west of the holes and groove feature. The feature is an unplastered, ovoid-shaped basin that measures 35 by 25 by 13 cm. Artifacts (FS 2227, FS 2228, FS 2230, and FS 2231) recovered in the ash pit included two retouched black translucent obsidian pieces, two chalcedony core flakes, a Pedernal chert core flake, and a black translucent obsidian core flake. A macrobotanical sample (FS 2233) taken from the ash pit produced the following taxa: mountain mahogany, unknown conifer, unidentified pine, piñon pine, ponderosa pine, oak, and maize. A single flotation sample was taken (FS 2234) and produced the following taxa: goosefoot, uncharred tobacco, maize, four-wing saltbush, mountain mahogany, unknown conifer, unidentified pine, piñon pine, ponderosa pine, and oak. The only pollen sample

collected (FS 2232) produced the following taxa: maize, beeweed, pea family, sunflower family, ragweed/bursage, spurge family, piñon pine, juniper, buckthorn family, sagebrush, cheno-ams, Mormon tea, and unidentified grasses. Figure 24.43 shows Features 16, 18, and 19.

Figure 24.43. Room 9, Features 16, 17, and 19.

Feature 18 (Sipapu). Feature 18 is the circular sipapu in the kiva. It is in the same east-west line as the hearth, the ash pit, the holes and grooves, and the ventilator shaft, but is the furthest west of all the features. The sipapu is located on the kiva floor, and its dimensions are 13 by 11 by 20 cm. One pollen (FS 2225) and one flotation sample (FS 2226) were taken from the sipapu. The following charred taxa were identified in the flotation sample: goosefoot, purslane, maize, unknown conifer, unidentified pine, piñon pine, ponderosa pine, and oak. Taxa identified in the pollen sample included maize, beeweed, sunflower family, spurge family, pine, piñon pine, juniper, sagebrush, cheno-ams, and unidentified grasses.

Feature 19 (Holes and Groove). This feature consists of five round holes and a linear groove. As with Features 16 through 18 and Feature 20, the ash pit is aligned on the same east-west coordinate. Feature 19 is located just east of the ash pit and just west of the ventilator shaft. Three of the round depressions line up perpendicular to the ventilator shaft and are the most easterly of the depressions. The other two depressions are also situated perpendicular to the ventilator shaft, but are immediately adjacent to the ash pit. The two series of grooves are separated by a small groove that is parallel to the opening of the ventilator shaft. The overall size of the feature is 42 by 18 by 3 cm, and the round depressions are about 3 cm deep and 5 to 7 cm in diameter. The linear groove between the series of depressions is 18 by 2 by 2 cm. It is possible that this feature represents the footing for a deflector. Figures 24.34 and 24.38 show

this feature and the ash pit and hearth. The depressions might also represent ladder holes, however, the entrance appears to have been located at the opposite end of the kiva.

Feature 20 (Wall Niche). This feature is a wall niche located on the western wall, 30 cm above the kiva floor. The feature dimensions are 50 by 38 by 28 cm and it is located approximately 50 cm north of Feature 15. The niche is medium-sized and remnants of a plastered lip remain (Figure 24.44). The niche was in decent condition, with patches of plaster present in most areas, especially around the base. It appears as though a natural fissure in the bedrock was exploited to create this niche. As with Feature 6, the fill from this feature was screened separately and produced artifacts, but was not given a different stratum designation because it was filled with the general kiva fill. Four smeared-indented corrugated sherds (FS 2237) were identified in the fill removed from the wall niche.

Figure 24.44. Room 9, Feature 20.

Area 3

Area 3 was distinguished from Areas 1 and 2 based on the fact that it had been disturbed (see Figure 24.4). The area parallels the northern boundary of the site and is located between 130-135N and 100-135E. Because of the disturbed nature of the area, not all the surface artifacts were collected. As already mentioned, two 3-m dogleash samples were placed in the area. The area consists of a linear two-track, which is approximately 10 to 15 m wide and heads off toward the edge of the mesa. It is possible that this two-track may have been a possible trail or road at some point in the past, but the disturbance (visible by lots of gravel and concrete blocks) makes

this difficult to discern. No features were associated with Area 3, and no samples (other than the dogleash samples) were collected.

ARTIFACT AND SAMPLE ANALYSES

Over 26,000 total artifacts were recovered from excavations at LA 86534. Analyses of ceramics, lithics (chipped and ground stone), fauna, archaeobotanical materials, and pollen were all conducted and have been incorporated into the previous sections with regard to particular contexts. Chronometric analyses were also conducted and are summarized in the next section. General analytical results are summarized in the following pages.

Chronology

Radiocarbon Dating

Six radiocarbon samples were submitted to Beta Analytic for analysis. Each sample provided plenty of material for accurate measurements and each was conducted without problem. All analyses were conducted on maize (*Zea mays*) remains. Table 24.41 lists the results of the radiocarbon analyses submitted. Results support an Early-Middle Coalition period occupation at LA 86534 (ca. AD 1190–1280).

Table 24.41. Radiocarbon dates from LA 86534.

FS#	Context of sample	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
1272	Room 1 hearth	183760	860±40 BP	AD 1190	AD 1040–1260
1321	Room 2 hearth	183761	730±40 BP	AD 1280	AD 1240–1300
1389	Room 5 hearth	183762	800±40 BP	AD 1250	AD 1180–1280
1508	Room 4 floor (maize)	183763	850±40 BP	AD 1200	AD 1140–1270
2172	Room 7 hearth	183764	850±40 BP	AD 1200	AD 1140–1270
2202	Room 9 hearth	183765	790±40 BP	AD 1260	AD 1180–1290

Archaeomagnetic Dating

LA 86534 represents a relatively discrete occupation, with evidence of remodeling and structure longevity, but without evidence for distinct multiple components. Five sets of specimens were

collected from burned features in four different structures (Rooms 1, 2, 5, and 9). The hearth in Room 1 showed clear evidence of remodeling, and two sets were collected from its linings. Apart from these two sets, there is no clear indication of stratigraphic sequencing between the samples. The four room hearth samples were subject to some post-burning disturbance from wetting and drying, freeze-thaw, and root invasion. All of the hearths were lined with a plaster composed of volcanic ash-rich soil that appears to have been derived from weathered tuff. The clay content of the plaster was sintered by the cooking and heating fires, consolidating the material to a weak ceramic consistency. However, the fires were not particularly hot, and the linings were fragile. The surface room hearth linings were cracked and subject to displacement, raising the risk of systematic error when multiple specimens were cut from single lining blocks. In addition to eliminating lining blocks from sampling consideration if there was any suggestion of movement, whenever possible, specimens were collected from multiple blocks so that any significant internal bias could be detected. Table 24.42 lists the dates associated with the archaeomagnetic samples taken at LA 86534. These present a range from circa AD 1170 to 1300 which is similar to that provided by the radiocarbon dates.

Table 24.42. LA 86534 archaeomagnetic set results.

Sample Number	Feature	VGP* Curves and Date Estimates (AD)	
		Wolfman	SWCV2000
1202	Room 1, Hearth 4 (Upper lining)	1170–1230	1110–1200
1203	Room 1, Hearth 4 (Lower lining)	1035–1140 (1065–1265)	1010–1315 1000–1390
1204	Room 2, Hearth 2	1280–1300	1175–1230
1205	Room 5, Hearth 5	1005–1035 1235–1270	1265–1325
1206	Room 9, Hearth 16	1020–1050 1220–1255	1185–1240 1250–1315

* VGP is Virtual Geomagnetic Pole

Thermoluminescence Dating

Three burned plaster samples were submitted for TL dating from LA 86534 (Table 24.43). All derived ages are given in years BP, which refers to years before 2003. Two of these are consistent with a 13th century Coalition period occupation, with the exception of UW1035, which is early.

Table 24.43. TL dates from burned plaster samples at LA 86534.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
1336	UW1034	Room 1 hearth	35	773±42	5.5	1230±42
1651	UW1035	Room 2 hearth	45	1085±180	16.6	918±180
2250	UW1036	Room 9 hearth	175	782±52	6.7	1221±52

Obsidian Hydration Dating

Fourteen obsidian artifacts from LA 86534 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 24.44).

Table 24.44. Obsidian hydration dates for LA 86534.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
534	2003-1	Valle Grande	3.32	1716	14
706	2003-2	Valle Grande	3.29	1720	14
1052	2003-3	Cerro Toledo	3.30	1589	22
1237	2003-4	Valle Grande	2.64	-757	209
1238	2003-5	Valle Grande	2.16	161	169
1266	2003-6	Valle Grande	4.80	-44	84
1422	2003-7	Cerro Toledo	3.18	-1874	244
1457	2003-8	Cerro Toledo	5.22	471	57
1676	2003-9	Valle Grande	2.68	479	112
1745	2003-10	Valle Grande	3.48	-2790	276
1873	2003-11	Valle Grande	2.38	446	129
1984	2003-12:1	Valle Grande	n/a		
2183	2003-13	Valle Grande	2.81	-1079	219
2228	2003-14	Valle Grande	2.56	-609	204

Relative to other dating methods conducted at the site, the obsidian hydration dates seem to be the least accurate (Table 24.45; Figure 24.45). Radiocarbon and archaeomagnetic results are comparable and seem to have provided the most plausible results, while the TL dates seem to be slightly less plausible given the known occupation range of the sites, but still well within the acceptable limits. Table 24.45 presents all the dated materials from this site. TL, archaeomagnetic, radiocarbon, and obsidian hydration are presented where similar contexts were sampled. It reflects a mostly 13th century occupation for the site from circa AD 1170 to 1280.

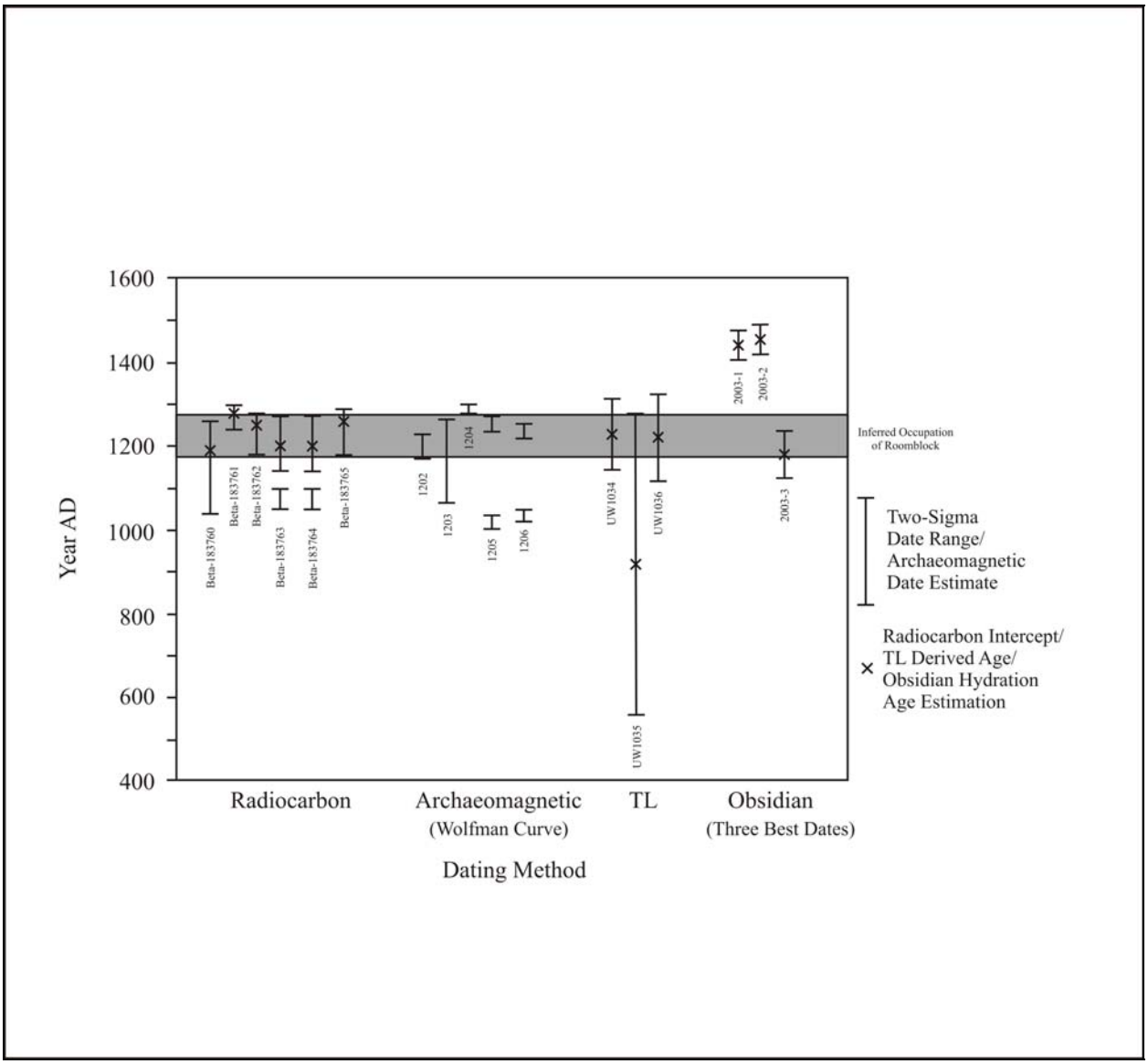


Figure 24.45. Comparison of dated materials from LA 86534.

Table 24.45. Comparison of dated materials from LA 86534.

Context	Radiocarbon Intercept	Archaeomag (Wolfman)	Archaeomag (SWCV2000)	TL	Obsidian Hydration
Room 1, upper hearth	1190*	1170–1230	1110–1200	1230±42**	--
Room 1 lower hearth	1190	1065–1265	1010–13315	1230±42	--
Room 2 hearth	1280	1280–1300	1175–1230	918±180	--
Room 5 hearth	1250	1235–1270	1265–1325	--	3854 BC***

Context	Radiocarbon Intercept	Archaeomag (Wolfman)	Archaeomag (SWCV2000)	TL	Obsidian Hydration
Room 7 hearth	1200	--	--	--	--
Room 9 hearth	1260	1220–1255	1185–1240 1250–1315	1221±52	1543 BC ****

*all dates are AD unless otherwise noted; **sample from wallfall context in Room 1; ***sample taken from floor of Room 5, just above hearth; ****samples taken from ash pit immediately east of hearth

Ceramic Artifacts (Dean Wilson)

All the ceramics from two 1- by 1-m units in each room at LA 86534 were analyzed, generating a complete analysis of stratigraphic columns from 18 units. In addition to these contexts, all the ceramics from room floors were analyzed. A sample of ceramics from the western portion of Area 2 and a sample of surface artifacts from Area 1 (106-108N/125-145E) were also analyzed. Analyses of ceramics from these contexts suggest that LA 86534 dates mainly to the Middle Coalition period, being dominated by Santa Fe Black-on-white and smeared-indented corrugated (Table 24.46). The majority of pottery from this site represents local Rio Grande decorated and utilityware (Wilson, Volume 3). Extremely low frequencies of Cibola, Middle Rio Grande, and White Mountain redwares were also noted.

Table 24.46. Ceramic types from all contexts at LA 86534.

Ceramic Type	Frequency	Percent
Indeterminate Tradition		
Indeterminate blackware	1	0.05
Northern Rio Grande Whiteware		
Unpainted undifferentiated	277	7.1
Unpainted white undifferentiated	3	0.1
Mineral paint undifferentiated	2	0.1
Kwahe'e Black-on-white	1	0.05
Indeterminate organic, Coalition period	4	0.1
Santa Fe Black-on-white	315	8.0
Wiyo Black-on-white	8	0.2
Galisteo Black-on-white	3	0.1
Biscuit A (Abiquiu Black-on-gray)	1	0.05
Red-slipped Black-on-white (organic)	1	0.05
Northern Rio Grande Utilityware		
Plain gray rim	17	9.4
Unknown gray rim	2	0.1
Plain gray body	174	4.4
Basket impression	8	0.2
Indented corrugated	621	15.8
Incised corrugated	30	0.8

Ceramic Type	Frequency	Percent
Plain corrugated	17	0.4
Smeared-indented corrugated	2408	61.4
Polished gray	6	0.2
Neck corrugated	1	0.05
Plain incised	1	0.05
Mudware	4	0.3
Middle Rio Grande		
Chupadero Black-on-white	7	0.2
Glaze yellow, body unpainted	1	0.05
San Juan Basin (Cibola)		
Gallup Black-on-white	1	0.05
White Mountain Redware (Cibola)		
White Mountain Redware unpainted	1	0.05
Total	**3925**	**100.0**

With the exception of the Gallup Black-on-white sherd, all the other whitewares exhibit forms of tuff temper, pastes, and styles indicative of Rio Grande (or Tewa) tradition types (Tables 24.47 and 24.48).

Table 24.47. Tradition by ware for ceramics from all contexts at LA 86534.

Tradition	Ware					Total
	Gray	White	Red	Brown	Glaze	
Indeterminate	--	--	--	1	--	1
Northern Rio Grande (Prehistoric)	3296	619	--	--	--	3914
Middle Rio Grande	--	7	--	--	1	8
Cibola (San Juan Basin)	--	1	--	--	--	1
Cibola (White Mountain Redware)	--	--	1	--	--	1
Total	**3296**	**627**	**1**	**1**	**1**	**3925**

Table 24.48. Temper by ware for ceramics from all contexts at LA 86534.

Temper	Ware					
	Gray	White	Red	Brown Plain	Glaze	Total
Indeterminate	26	0	0	0	0	26
Sand	4	2	0	0	0	6
Granitic (mica, quartz, and feldspar)	3	1	0	0	0	4
Sherd	0	6	1	0	0	7
Sherd and sand	0	3	0	0	0	3
Fine tuff or ash	31	474	0	0	0	505
Fine tuff and sand	0	17	0	1	1	19

Temper	Ware					
	Gray	White	Red	Brown Plain	Glaze	Total
Sand and mica	1	0	0	0	0	1
"Anthill" sand (tuff & phenocyrsts)	3227	2	0	0	0	3229
Mostly tuff with some phenocyrsts	1	112	0	0	0	113
Other	4	10	0	0	0	14
Total	**3295**	**627**	**1**	**1**	**1**	**3925**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 557 artifacts were analyzed from LA 86534, consisting of four cores, 489 pieces of debitage, 15 retouched tools, 40 ground stone artifacts, six hammerstones, two manuports, and a piece of fire-cracked rock. This represents an 18 percent sample of the 3090 total lithic artifacts recovered during the site excavations. Table 24.49 presents the data on lithic artifact type by material type. The majority of the debitage is made of chalcedony with lesser amounts of Pedernal chert, obsidian, and other materials. The presence of cortex on 11.2 percent of the debitage indicates that these materials were collected from waterworn (74.5%) and nodular (25.5%) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources, the basalt from gravels and bedrock outcrops, and the obsidian from primary sources in the Jemez Mountains. Otherwise, the ground stone artifacts are primarily made from igneous materials, which are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau. Quartzite and silicified wood is, however, only available from the nearby Rio Grande Valley gravels. The source of other materials like orthoquartzite, greenstone, and hematite is difficult to determine, but they could be derived from gravel formations near Totavi or from more distant sources in the Santa Fe or Abiquiu areas.

Nine pieces of debitage and fifteen retouched tools were submitted for X-ray fluorescence analysis. Three of the projectile points were not included in the sample analysis from the site. Nonetheless, the majority of the artifacts were identified as being obtained from the Valle Grande source, with less from the Cerro Toledo and El Rechuelos sources (Table 24.50). The Valle Grande (Cerro del Medio) and Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source areas are located about 18 km (11 miles) as the “crow flies” to the west and southwest of the site; whereas, the El Rechuelos (Polvadera Peak) source area is situated about 24 km (15 miles) to the northwest.

Table 24.49. LA 86534 lithic artifact type by material type.

Artifact Type		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified Wood	Quartzite	Other	Total
Cores	Core	0	0	0	0	0	0	0	1	0	2	0	0	0	3
	Cobble biface	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	0	1	0	2	0	0	0	4
Debitage	Angular Debris	0	0	3	0	0	0	4	41	0	29	0	10	3	90
	Core Flake	7	0	5	1	2	0	14	148	4	61	0	13	5	260
	Biface Flake	2	0	0	0	0	0	7	8	0	1	2	0	0	20
	Notching flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Microdebitage	2	0	0	1	2	0	17	60	2	11	0	2	2	99
	Undetermined Flake	0	0	0	0	0	0	2	10	0	1	0	0	1	14
	Hammerstone Flake	0	0	0	0	0	0	0	0	0	0	0	3	0	3
	Ground Stone Flake	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	11	0	8	2	5	0	45	267	6	104	2	28	11	489
Retouched Tools	Retouched Piece	0	0	0	0	0	0	3	0	0	1	0	0	0	4
	Denticulate	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Biface	0	0	0	0	0	0	2	1	0	0	0	0	0	3
	Projectile Point	0	0	0	0	0	0	1	3	0	1	0	0	0	5
	Uniface	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Graver	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	6	4	0	5	0	0	0	15
Ground Stone	One-Hand Mano	1	0	0	0	5	1	0	0	0	0	0	3	0	10
	Undetermined Mano	1	0	1	1	0	1	0	0	0	0	0	0	0	4
	Millingstone	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	Slab Metate	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Grinding Slab	0	1	0	0	1	3	0	0	0	0	0	0	0	5

Artifact Type		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified Wood	Quartzite	Other	Total
	Undetermined Metate Fragment	0	0	0	1	1	3	0	0	0	0	0	0	0	5
	Polishing Stone	1	0	0	0	0	0	0	0	0	0	0	1	0	2
	Abrading Stone	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Axe	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Undetermined Ground Stone	0	0	1	0	1	1	0	0	0	0	0	3	2	8
	Subtotal	3	1	2	3	10	12	0	0	0	0	0	7	2	40
Other	Hammerstone	0	0	0	0	0	0	0	1	0	1	0	3	0	6
	Manuport	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	Fire-cracked Rock	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Subtotal	0	0	0	0	0	2	0	1	0	1	0	5	0	9
Total		**15**	**1**	**10**	**5**	**15**	**14**	**51**	**273**	**6**	**112**	**2**	**40**	**13**	**557**

Table 24.50. Obsidian source samples.

FS #	Artifact	Color	Source
37	Tool	Translucent	Cerro Toledo rhyolite
534	Debitage	Translucent	Valle Grande rhyolite
706	Projectile point	Translucent	Valle Grande rhyolite
709	Debitage	Black dusty	El Rechuelos
897	Debitage	Black opaque	Cerro Toledo rhyolite
967	Debitage	Black opaque	Cerro Toledo rhyolite
1052	Debitage	Black opaque	Cerro Toledo rhyolite
1074	Debitage	Gray	Valle Grande rhyolite
1192	Debitage	Translucent	Valle Grande rhyolite
1204	Projectile point	Translucent	Valle Grande rhyolite
1237	Projectile point	Translucent	Valle Grande rhyolite
1238	Projectile point	Translucent	Valle Grande rhyolite
1266	Projectile point	Translucent	Valle Grande rhyolite
1422	Projectile point	Translucent	Cerro Toledo rhyolite
1431	Tool	Translucent	El Rechuelos
1457	Projectile point	Translucent	Cerro Toledo rhyolite
1676	Tool	Translucent	Valle Grande rhyolite
1745	Debitage	Translucent	Valle Grande rhyolite
1873	Tool	Translucent	Valle Grande rhyolite
1984-1	Tool	Translucent	Valle Grande rhyolite
1984-2	Debitage	Translucent	Valle Grande rhyolite
2183	Projectile point	Translucent	Valle Grande rhyolite
2228-1	Tool	Translucent	Valle Grande rhyolite
2228-2	Tool	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The cores consist of a single-directional, a bidirectional, a bipolar core, and a cobble biface. The single-directional core was reduced using a multi-faces technique, the bidirectional core is a change-of-orientation (i.e., two oblique directions), and a piece of Pedernal chert was reduced using a bipolar technique. None of the cores exhibit any obvious evidence of platform preparation. The single-directional core was discarded due to material flaw fractures and the bi-directional core was exhausted. None of the cores were burned. Table 24.51 presents the metric information on the whole cores.

Table 24.51. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	66	66	32	124
Bi-directional	34	25	13	14
Bipolar	43	45	26	50.8
Cobble biface	88	71	44	334.8

The debitage mainly consists of core flakes (53.1%), with some microdebitage (20.2%), angular debris (18.4%), and biface flakes (4.0%). Table 24.52 summarizes the various stages of reduction represented by the whole flakes. The debitage assemblage is primarily composed of secondary non-cortical (51.6%), with less tertiary and secondary cortical, and no primary flakes. The overall cortical:non-cortical ratio of 0.31 reflects this emphasis on the later stages of core reduction. The sample size is small, but chalcedony materials appear to be more fully reduced than the Pedernal chert.

Table 24.52. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	0	1	1	---
Obsidian	0	0	1	4	---
Chalcedony	0	3	24	1	0.12
Pedernal chert	0	8	5	0	1.6
Quartzite	0	1	1	0	1.0
Total	0	12	32	6	0.31
Percentage	0	24.0	64.0	12.0	---

The majority of the flakes exhibit single-faceted platforms (61.9%; n = 65), with crushed (n = 13), collapsed (n = 12), cortical (n = 11), and multi-faceted (n = 4) platforms. The majority of the collapsed platforms are on chalcedony and Pedernal core flakes and the crushed platforms on chalcedony and obsidian core flakes. Twenty-one (20.0%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed (n = 17), with fewer retouched (n = 3), and ground (n = 1).

The majority of the core flakes consist of distal fragments (n = 117; 45.0%), with fewer whole (n = 63), proximal (n = 33), midsection (n = 39), lateral (n = 5), and undetermined fragments (n = 3). Most of the biface flakes are also distal fragments (n = 8; 40.0%), with fewer whole (n = 6), proximal (n = 3), midsection (n = 2), and lateral (n = 1) fragments. The whole core flakes have a mean length of 21.8 mm (*std* = 10.5) and weight of 2.5 g (*std* = 4.5), whereas the whole biface flakes exhibit a mean length of 15.4 mm (*std* = 5.1) and a mean weight of 0.4 g (*std* = 0.4). Lastly, angular debris have a mean weight of 2.8 g (*std* = 4.7).

The retouched tools consist of a mix of expedient flakes tools like retouched pieces, a denticulate and a graver versus formal tools like bifaces, projectile points, and unifaces (Figure 24.46). The retouched pieces primarily exhibit marginal retouch along a single edge (n = 3), with one piece retouched along two edges. Table 24.53 presents the information on retouch type by edge outline.

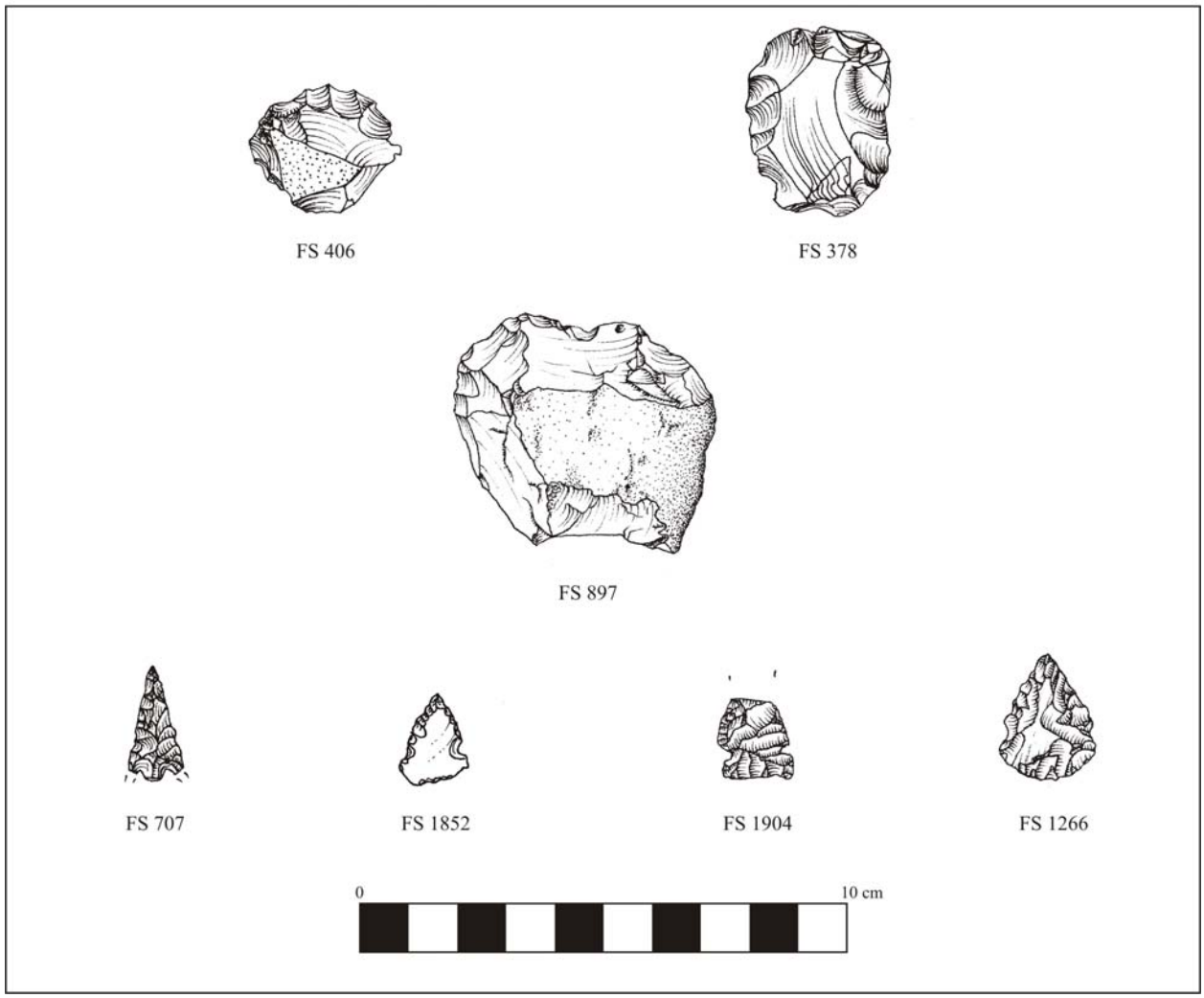


Figure 24.46. Retouched flake, denticulate, uniface, and projectile points.

Table 24.53. Retouched pieces from LA 86534.

Retouch Type	Edge Outline						
	Straight	**Concave**	**Convex**	**Straight/ concave**	**Straight/ convex**	**Concave/ convex**	**Projection**
Unidentified Ventral	1	0	0	0	0	0	0
Unidentified Dorsal	0	1	0	0	0	1	0
Bidirectional	0	0	1	0	0	0	0
Total	**1**	**1**	**1**	**0**	**0**	**1**	**4**

The four retouched edges exhibit a variety of edge outlines. The edge angles range from 30 to 70 degrees, with a mean of 52.5 degrees (*std* = 20.6). This presumably reflects a diversity of

activities. The denticulate consists of a flake with a serrated lateral edge made by unidirectional ventral retouch. The graver is a flake fragment with marginally retouch (unidirectional dorsal) projection. The uniface is a large, roughly worked flake with unidirectional dorsal retouch and an edge angle of 60 degrees.

Only one of the bifaces is whole. It appears to be an ovate-shaped, late-stage biface with a thickness of 2 mm and edge angle of 35 degree. This biface was presumably broken while attempting to notch the preform. One of the other fragments could also be a late-stage biface with a thickness of 4 mm. It too could have been broken during manufacture while attempting to notch the point. The third biface is a small undetermined fragment.

Metrical and descriptive information on the two projectile points is presented in Table 24.54. One of these is a distal fragment of a corner-notched arrow point with a neck width of 4 mm, whereas the other is a whole stemmed lance/dart point with a neck width of 15 mm. The latter point has been resharpened.

Table 24.54. Projectile point metrical (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (g)	Haft Type	Blade Shape	Base Shape
707	Chalce-dony	Distal	--	21	4	--	--	3	0.7	Corner-notched	Straight	Und.
1266	Obsidian	Whole	25	18	15	7	17	4	1.8	Stemmed	Straight	Con-vex

Tool Use

Only 6 flakes (1.2%) exhibit evidence of damage that could be attributed to use-wear. Most of the damage is located along the lateral edge of the flake ($n = 4$), with some at the end of the flake ($n = 2$). The former flakes have straight, concave, and convex outlines, whereas the latter consist of a convex-shaped edge and a utilized projection. Edge angles range from 35 to 65 degrees, with a mean of 49 degrees ($std = 11.9$). This is similar to the pattern exhibited by the retouched flakes. In contrast to the debitage, three of the retouched tools (20.0%) exhibit evidence of use-wear. These consist of two retouched flakes and the uniface.

Forty ground stone artifacts were identified during the analysis, including manos, metates, polishing stones, abrading stones, and other ground stone items. The manos are roughly evenly distributed between one and two-hand varieties. All 10 of the identifiable manos are one-handed. All of these are cobble manos with seven having single convex grinding surfaces, two having plano-convex grinding surfaces, and one that is an undetermined mano fragment.

Two generalized millingstones and a formal slab metate were also identified. The formal slab metate is well-worn, but consists of a broken fragment. The polishing stones are basalt and quartzite pebble with a finely ground surface, whereas the abrading stones are dacite pebbles with irregular ground surfaces.

The axe is an andesite cobble with flaked and worn edges and a battered butt. The artifact is whole and exhibits ground hafting notches (Figure 24.47).

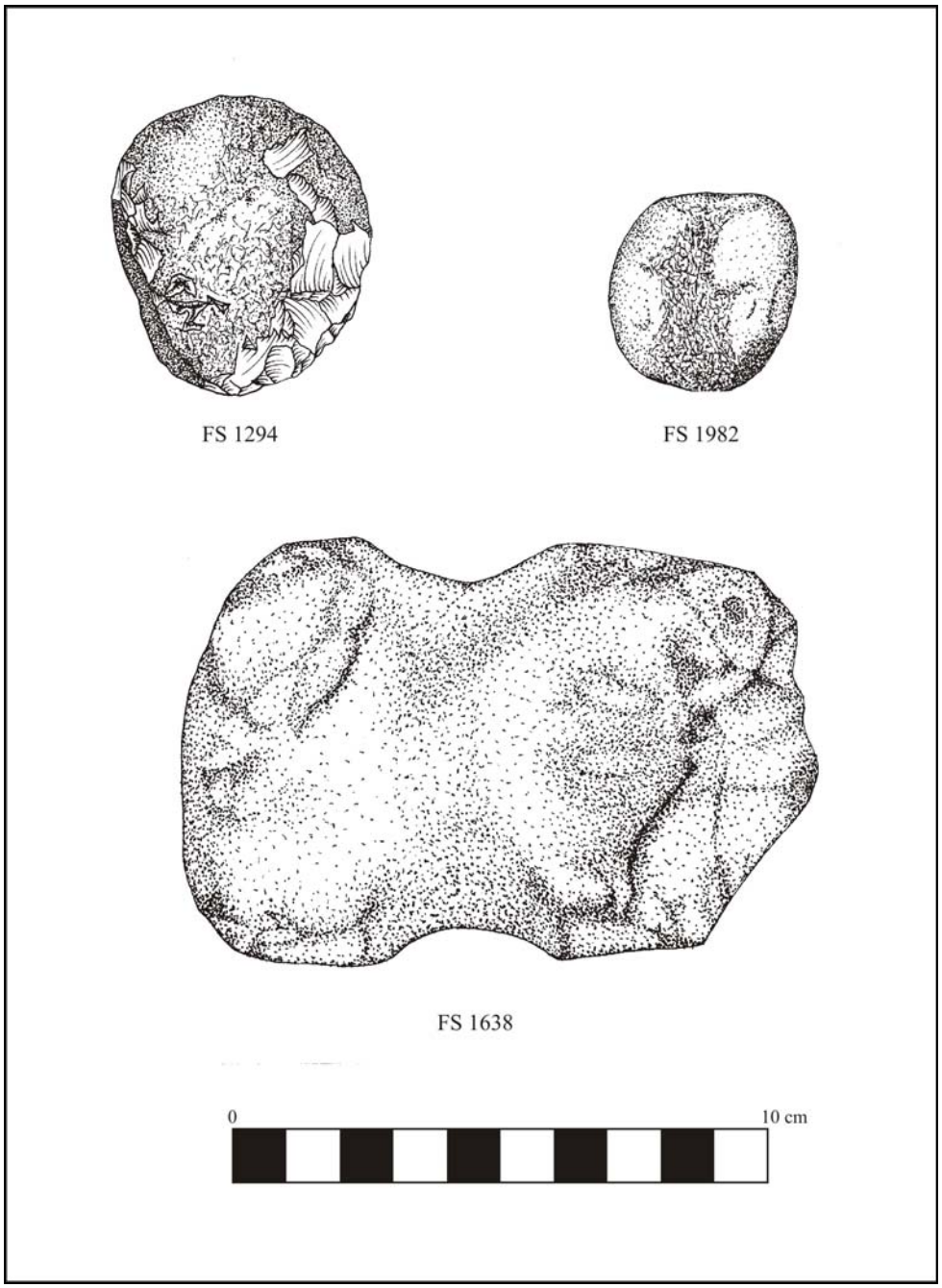


Figure 24.47. Axe and hammerstones.

Faunal Remains

In general, the overall preservation of the bones from LA 86534 was good. For the most part, bones tended to be in large fragments, and a number of complete elements were identified. Weathering on the faunal remains was present, although the frequency and severity was generally low, suggesting the remains may not have been exposed to the elements for a long period of time before deposition. The bones show minimal evidence of root-etching, and no evidence of rodent gnawing, carnivore gnawing, or carnivore-digestion. Modifications resulting from burning were present on 88 pieces of bone, constituting some 23 percent of the total assemblage. Two specimens recovered from LA 86534 were worked. Of the 388 faunal remains recovered from the excavations at LA 86534, 52 percent (n = 202) were identified to at least the level of class. The 202 identified remains were recovered from a variety of contexts. Table 24.55 shows all the taxa that were recovered from the site.

Table 24.55. Identified faunal remains from all contexts at LA 86534.

TAXON	TOTAL		
	NISP*	MNI	Percent
Bufonidae (Toads)	1	1	0.5
Pelobatidae (Spadefoot toads)	1	1	0.5
Perching birds (Passeriformes)	1	1	0.5
Piñon jay (*Gymnorhinus cyanocephalus*)	1	1	0.5
Turkey (*Meleagris gallopavo*)	4	1	2.0
Hawks (Accipitridae)	1	1	0.5
Red-tailed Hawk (*Buteo jamaicensis*)	10	1	5.0
Medium bird	1	1	0.5
Large bird	1	1	0.5
Indeterminate rodent (Rodentia)	8	1	4.0
Harvest mouse** (*Reithrodontomys* sp.)	1	1	0.5
Pocket mouse** (*Perognathus* sp.)	6	2	3.0
Deer mouse** (*Peromyscus* sp.)	1	1	0.5
Kangaroo rats (*Dipodomys* sp.)	8	3	4.0
Woodrats (*Neotoma* cf. *albigula*)	7	3	4.0
Pocket gopher** (*Thomomys* sp.)	58	11	29.0
Squirrels (Sciuridae)	2	1	1.0
Antelope squirrel (*Ammospermophilus* sp.)	1	1	0.5
Rock squirrels (*Spermophilus variegatus*)	11	2	5.0
Striped skunk (*Mephitis mephitis*)	2	1	1.0
Black-tailed jackrabbit (*Lepus californicus*)	6	2	3.0
cf. Desert cottontail (*Sylvilagus audubonii*)	33	4	16.0
Coyote (*Canis latrans*)	3	1	1.0
Artiodactyls (Artiodactyla)	1	1	0.5
Mule deer (*Odocoileus hemionus*)	18	1	9.0

TAXON	TOTAL		
	NISP*	MNI	Percent
Sm/med mammals	5	1	3.0
Medium mammals	1	1	0.5
Med/lg mammals	9	1	4.0
IDENTIFIED TOTAL (52.0%)	202	--	100.0
UNIDENTIFIED TOTAL (48.0%)	186	--	--
SITE TOTAL	388	--	--

* NISP is number of identified specimens; MNI is minimum number of individuals. **intrusive remains

Archaeobotanical Remains

Maize cupules were the most frequently recovered plant remains at LA 86534, followed by goosefoot seeds (Table 24.56). The only other plant parts that occurred with a percent presence over 20 percent were pine bark scales, piñon and ponderosa needles, and purslane seeds. Maize kernels were present in only 15 percent of samples at LA 86534. Relative to this, maize kernels were present in 52 percent of flotation samples at LA 12587, yet the percent presence of maize cupules is virtually equal between the sites. Several possible explanations for this are 1) maize was grown at or near LA 86534, but shelled corn was taken elsewhere for consumption or storage, 2) unlike LA 12587 (see Chapter 14) where maize was probably stored on the roof, maize was stored in a room or pits that were not encountered during excavation, or 3) differential preservation was a factor. However, the latter is probably not a factor because preservation seems to be fairly good at LA 86534 with 14 taxa present and more occurrences of the elusive piñon nutshell than at LA 12587.

Table 24.56. Ubiquity of flotation sample carbonized plant remains at LA 86534.

Common Name/Plant Part	Count*	Percent**
Cheno-am seed	6	11.0
Evening primrose seed	1	2.0
Four-wing saltbush fruit	6	11.0
Four-wing saltbush seed	1	2.0
Goosefoot family seed	2	4.0
Goosefoot seed	34	64.0
Grass family caryopsis	1	2.0
Grass family culm	1	2.0
Groundcherry seed	1	2.0
Juniper female cone	1	2.0
Juniper twig	1	2.0
Maize cupule	50	94.0
Maize cupule segment	1	2.0
Maize embryo	1	2.0
Maize glume	2	4.0
Maize kernel	8	15.0

Common Name/Plant Part	Count*	Percent**
Mint family seed	1	2.0
Monocot stem	1	2.0
Pigweed seed	7	13.0
Pine bark scale	15	28.0
Pine needle	1	2.0
Pine umbo	5	9.0
Piñon needle	23	43.0
Piñon nutshell	8	15.0
Piñon twig	1	2.0
Ponderosa pine needle	21	40.0
Purslane seed	12	23.0
Squash/coyote gourd rind	2	4.0
Sunflower family achene	1	2.0
Unidentifiable seed	2	4.0
Unidentifiable plant part	8	15.0
Unknown # 1 stem	1	2.0
Unknown # 1 plant part	3	6.0

*Count: Number of samples with common name/plant part present; **Percent: Number of samples with common name/plant part divided by total number of flotation samples with charred remains (53) × 100.

In contrast to LA 12587, along with unknown conifer, pine rather than juniper is the most common wood taxon in flotation samples (Table 24.57). In fact, oak and mountain mahogany occur in nearly the same frequency as juniper. Ponderosa pine was much more frequently encountered at LA 86534 (70% of samples) than at LA 12587 (23% of samples). The location of LA 86534 at over 7000 feet in elevation where stands of ponderosa grow along with piñon and juniper accounts for this disparity. Cottonwood/willow is absent from the flotation wood assemblage at LA 86534 along with several shrubby taxa found at LA 12587. Clearly, the inhabitants of both sites were exploiting species that were close at hand, a pattern that is repeated elsewhere on the Pajarito Plateau.

Table 24.57. Ubiquity of flotation sample wood charcoal taxa at LA 86534.

Common Name	Count	Percent
Juniper	14	26.0
Mountain mahogany	13	25.0
New Mexico locust	2	4.0
Oak	15	28.0
Pine	41	77.0
Piñon	31	58.0
Ponderosa pine	37	70.0
Rose family	1	2.0
Saltbush/greasewood	10	19.0
Unknown conifer	52	98.0
Unknown non-conifer	2	4.0

Pollen Remains (Susan J. Smith)

A total of 47 pollen samples were analyzed from LA 86534. Table 24.58 lists the frequency of identified pollen types. Cultigens identified in the assemblage included low numbers of squash with higher amounts of maize, maize aggregate pollen, and cholla. Economic resources identified in the pollen assemblage included prickly pear, cactus family, beeweed, sunflower type, lily family (which includes yucca, wild onion, and sego lily), nightshade family, parsley family, and purslane. A number of other potential economic resources were identified in the assemblage (Table 24.58), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 24.58. Pollen types identified by taxa and common names with sample frequency from LA 86534.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86534 (*n* = 47)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	2
	Zea mays	Maize	32
	Zea Aggregates	Maize Aggregates	11
	Opuntia (Cylindro)	Cholla	17
Economic Resources	*Opuntia* (Platy)	Prickly Pear	53
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	2
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	51
	cf. *Helianthus*	Sunflower type	13
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	4
	Solanaceae	Nightshade Family	4
	Apiaceae	Parsley Family	4
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	6
Other Potential Economic Resources	Rosaceae	Rose Family	21
	Eriogonum	Buckwheat	11
	Brassicaceae	Mustard Family	6
		Mustard Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86534 (*n* = 47)
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	4
	Polygala type	Milkwort	0
	Poaceae	Grass Family	79
		Grass Aggregates	4
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	2
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	89
		Cheno-Am Aggregates	40
	Fabaceae	Pea Family	9
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	91
		Sunflower Family Aggregates	19
	Ambrosia	Ragweed, Bursage	43
		Ragweed/Bursage Aggregates	
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	15
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	4
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	2
	Sphaeralcea	Globemallow	2
		Globemallow Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86534 (*n* = 47)
	Euphorbiaceae	Spurge Family	45
	Scrophulariaceae	Penstemon Family	2
	Onagraceae	Evening Primrose	13
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	2
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	4
	Picea	Spruce	2
	Abies	Fir	6
	Pinus	Pine	79
		Pine Aggregates	4
	Pinus edulis type	Piñon	87
	Juniperus	Juniper	72
		Juniper Aggregates	0
	Quercus	Oak	30
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	2
	Ephedra	Mormon Tea	13
	Artemisia	Sagebrush	83
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	11
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	2
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

Summary of Artifacts and Samples from Hearths

Four well-defined hearths were excavated at LA 86534. Two additional partial hearths were identified, but very few remains were recovered because of their heavily deteriorated nature. Comparisons of the pollen, macrobotanical, and faunal remains that were recovered in each of the four intact hearths are presented in the next four tables. Table 24.59 lists the pollen remains

from each of the hearths, Table 24.60 lists the wood charcoal remains that were identified in the flotation samples, Table 24.61 lists the macrobotanical remains that were recovered in the hearths, and Table 24.62 lists the faunal remains that were identified in each of the hearths. Comparisons of these materials do not demonstrate a significant difference between hearths in the roomblock and the single kiva hearth. In fact, among identified pollen remains, taxonomic diversity was much lower in the kiva hearth than in the roomblock hearths. This difference was not as pronounced among the macrobotanical and faunal remains where taxonomic diversity between the two samples was generally similar.

Table 24.59. Identified pollen remains from the four intact hearths at LA 86534.

Common Name	Scientific Name	Feature 2 (Room 2 hearth)	Feature 4 (Room 1 hearth)	Feature 9 (Room 7 hearth)	Feature 16 (Kiva hearth)
Maize	*Zea mays*	x		x	
Cholla	*Opuntia/Cylindro*			x	
Prickly pear	*Opuntia/Platy*		x		
Beeweed	*Cleome*	x	x	x	
Long spine	Sunflower	x			
Purslane	*Portulaca*		x		
Buckwheat	*Eriogonum*			x	
Mustard family	Brassicaceae			x	
Sunflower family	Asteraceae	x	x	x	x
Ragweed/bursage	*Ambrosia*	x	x	x	x
Unknown low spine	Marshelder?			x	
Spurge family	Euphorbiaceae	x	x	x	
Evening primrose	Onagraceae	x			
Douglas fir	*Pseudotsuga*		x		
Fir	*Abies*	x			
Pine	*Pinus*	x	x	x	x
Piñon pine	*Pinus edulis*	x	x	x	
Juniper	*Juniperus*	x	x	x	
Rose family	Rosaceae	x	x		
Sagebrush	*Artemisia*	x	x	x	
Cheno-am	Cheno-am	x	x	x	
Grass family	Poaceae	x	x	x	
Large grass family	Large Poaceae	x			

x = present. No pollen samples taken from Room 5 hearth because of significant disturbance.

Table 24.60. Identified wood charcoal from flotation remains from hearths at LA 86534.

Common Name	Scientific Name	Feature 2 (Room 2 hearth)	Feature 4 (Room 1 hearth)	Feature 5 (Room 5 hearth)	Feature 9 (Room 7 hearth)	Feature 16 (Kiva hearth)
Goosefoot	*Chenopodium*	x	x	x	x	x
Goosefoot family	Chenopodiaceae		x			
Cheno-ams	*Chenopodium/Amaranthus*	x	x		x	x
Amaranth	*Amaranthus*					x
Dropseed grass	*Sporobolus*	x		x	x	x
Maize	*Zea mays*	x	x	x	x	x
Prickly pear	*Opuntia/Platy*	x			x	
New Mexico locust	*Robinia*	x				
Tobacco	*Nicotiana*	x				x
Mountain mahogany	*Cercocarpus*	x	x			
Four-wing saltbush	*Atriplex canescens*					x
Saltbush/Greasewood	*Atriplex/Sarcobatus*	x		x		
Oak	*Quercus*	x		x	x	
Spurge	*Euphorbia*	x			x	x
Juniper	*Juniperus*	x	x	x	x	x
Piñon pine	*Pinus edulis*	x	x	x	x	x
Pine	*Pinus*	x	x		x	x
Ponderosa pine	*Pinus ponderosa*	x	x	x	x	x
Unknown conifer	Gymnospermae	x	x	x	x	x
Sunflower family	Compositae				x	
Sunflower	*Helianthus*		x			
Grass family	Germaine		x			
Knotwood family	Polygonaceae		x			
Snow-on-the-mountain	*Euphorbia marginata*		x			
Purslane	*Portulaca*		x			x
Evening primrose	*Oenothera*			x	x	
Unidentified bean	Fabacaea			x		
Mint family	Labiatae					x

x = present

Table 24.61. Identified macrobotanical remains from hearths at LA 86534.

Common Name	Scientific Name	Feature 9 (Room 7 hearth)	Feature 16 (Kiva hearth)
Juniper	*Juniperus*	x	
Piñon pine	*Pinus edulis*	x	
Pine	*Pinus*		x
Ponderosa pine	*Pinus ponderosa*	x	x
Unknown conifer	Gymnospermae		x

*No macrobotanical remains were recovered from Feature 2, Feature 4, or Feature 5

Table 24.62. Identified faunal remains in heavy fraction samples from hearths at LA 86534.*

Common Name	Scientific Name	Feature 2 (Room 2 hearth)	Feature 4 (Room 1 hearth)	Feature 5 (Room 5 hearth)	Feature 16 (Kiva hearth)
Spadefoot toads	Pelobatidae				x
Indet. rodent	Rodentia		x	x	x
Deer mouse**	*Peromyscus* sp.			x	
Pocket gopher**	*Thomomys* sp.	x	x		x
Desert cottontail	*Sylvilagus audubonii*		x		x
Sm mammals	Sm mammals	x	x		x
Sm/med mammals	Sm/med mammals		x		x
Unidentified	Unidentified	x	x	x	x

x = present. *No faunal remains were identified during excavation in any of the hearths; all remains were recovered in flotation samples. **intrusive.

SUMMARY OF SITE EXCAVATIONS

Nine rooms were excavated at the LA 86534 Middle Coalition period roomblock. Rooms 1 through 8 are rectangular habitation rooms and Room 9 is a subterranean circular kiva. In addition, limited testing was done in a sparse midden area located immediately east of the roomblock. Figure 24.48 is a reconstruction of the site by artist Dave Brewer. While the depiction is mostly accurate, the kiva (Room 9) shown in the bottom left of the photo was a subterranean room and would not have been flush with the rest of the roomblock. In addition, it is doubtful that access to the kiva and back storage rooms was through the roof. Nonetheless, no outside doorways were identified in the front roomblock (except to the kiva), with connecting

doorways being present between the front and back rooms. There is no evidence of any architectural remodeling events that might reflect multiple occupations; however, the hearth in Room 1 does exhibit two separate use episodes.

LA 86534 does resemble other excavated Coalition period sites on the plateau, containing front habitation rooms with hearths and rear storage rooms with milling bin features. A range of botanical remains were identified from flotation samples recovered from the hearths, including maize, beans, cheno-ams, dropseed grass, and tobacco. In addition, squash rind, piñon nuts, groundcherry, and sunflower were also represented at the site. The faunal remains also include a variety of species like jackrabbit, cottontail, rock squirrel, mule deer, turkey, and red-tailed hawk.

The ceramic assemblage primarily consists of Santa Fe Black-on-white and smeared-indented corrugated ceramics. The dominance of these ceramics types, coupled with the paucity of Kwahe'e and Wiyo Black-on-white, reflects a Middle Coalition period of occupation. The accelerator mass spectrometry and archaeomagnetic dates overlap and cover a similar two-sigma range from AD 1190 to 1280 and 1170 to 1300, respectively.

The stone tool technology reflects an emphasis on core reduction of materials like chalcedony, Pedernal chert, and obsidian. Most of the obsidian appears to have been obtained from nearby sources in the Valles Caldera. The retouched tool assemblage includes a mix of expedient flake tools like retouched pieces and perforators and formal tools like bifaces, projectile points, and unifaces. The manos are represented by both one and two-hand varieties. The metates consist of undetermined fragments, which could represent millingstones or slab types. In addition, the presence of polishing stones, abrading stones, and an axe indicates that a variety of domestic activities were occurring at the site.

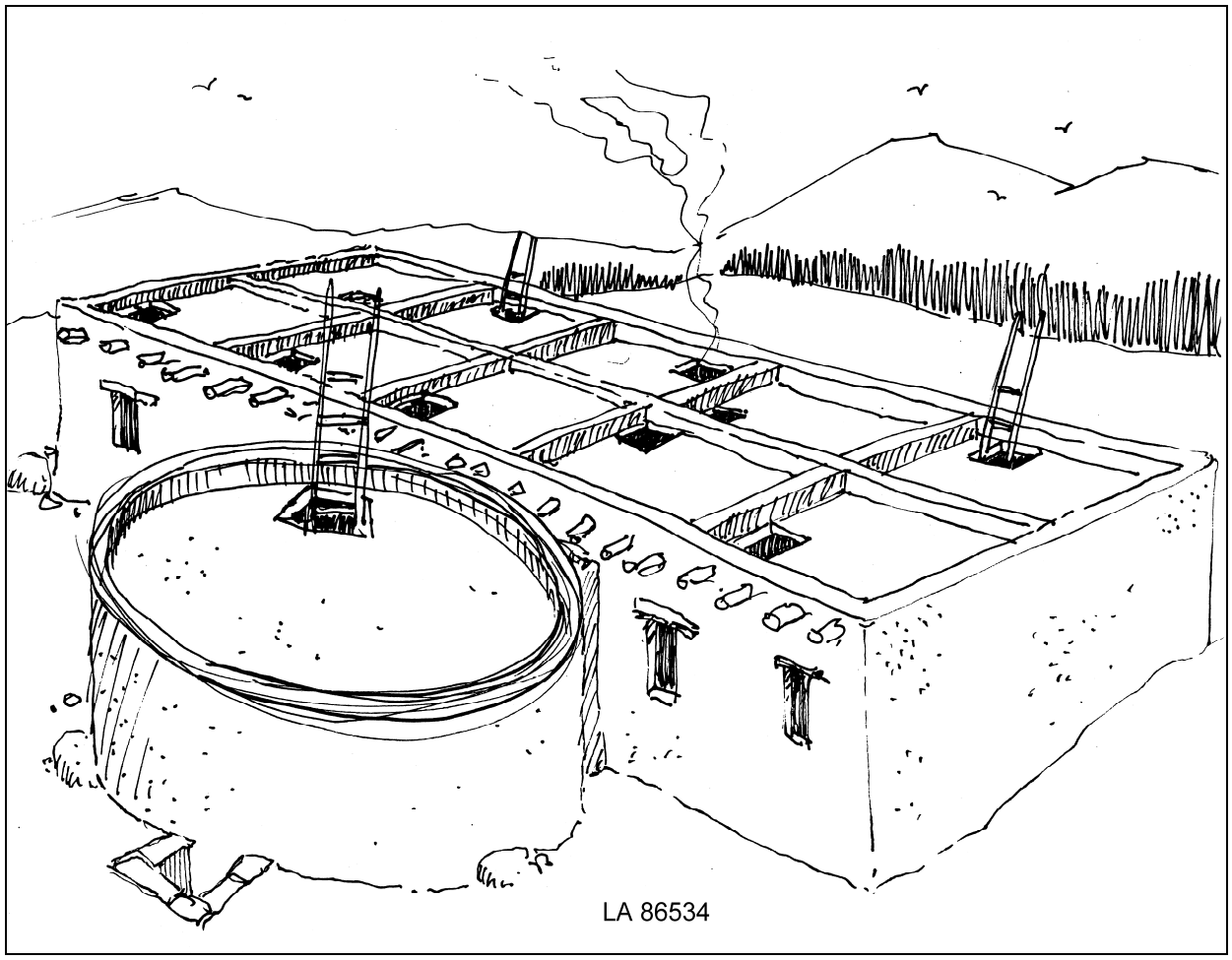


Figure 24.48. Reconstruction of LA 86534 after excavation.

CHAPTER 25
AIRPORT-CENTRAL TRACT (A-7): LA 135290

Bradley J. Vierra

INTRODUCTION AND SITE DESCRIPTION

LA 135290 is a small roomblock located on the Los Alamos town site mesa immediately north of New Mexico State Road 502. The mesa top is sparsely covered by piñon and juniper trees, with an understory including saltbush, snakeweed, yucca, and various grasses. The site is situated at an elevation of 2164 m (7100 ft) and has access to Pueblo Canyon to the north and to DP Canyon to the south.

Soils on the mesa top have been classified as a Hackroy sandy loam that have a good potential for agriculture (Nyhan et al. 1978). The site itself is underlain by a 1.5-m-thick layer of Holocene soils, with some late Pleistocene clay lying directly on the Tshirege member of the Bandelier Tuff. Soil depth is greatest in the central area of the mesa, but thins to exposed bedrock along its edges.

The original survey identified the presence of a roomblock that consisted of a north-south oriented mound that was 15 by 12 m in area and about 30 cm high (Figure 25.1a and b). The size of the mound and several probable tuff block wall alignments indicated that the mound could contain from six to 10 rooms. The associated surface artifact scatter included 300 to 400 sherds and 100 pieces of lithic debitage distributed in a 40- by 60-m area surrounding the mound. Most of these artifacts were distributed to the east of the roomblock, possibly reflecting the presence of a midden. One 2.5-m-diameter dogleash was located west of the pueblo and two 2-m-diameter dogleashes were located east of the pueblo. Analyzed ceramics include 12 decorated sherds and 94 utilityware sherds. The decorated ceramics consist of 11 Santa Fe Black-on-white and a single Wiyo Black-on-white sherd. The utilityware ceramics consist of 19 indented corrugated sherds, 49 smeared-indented corrugated sherds, 22 obliterated sherds, and four non-micaceous plainware sherds. The lithic debitage consists of a piece of angular debris, three core flakes, and three flake fragments made of Pedernal chert and one piece of angular debris and two core flakes made of basalt. Also noted within a dogleash was a basalt metate fragment. Based on the diagnostic ceramics, the site was dated to the Coalition period.

FIELD METHODS

Fieldwork began by delineating the extent of the mound and artifact scatter. A surface collection was made of all artifacts in the area of the mound and possible midden. Two east-west-oriented trenches were initially excavated across the mound. The northern trench was situated through grids 98N/106-114E (Figure 25.2) and the southern trench was located along grids 93N/105-113E. These trenches were excavated to define the walls within the roomblock and the stratigraphic sequence. After sections of the north-south walls were exposed, excavations proceeded to follow and expose the remaining wall segments, thereby identifying the presence of

at least six rooms. Each room was given an individual number, and excavations continued by removing the room fill in natural stratigraphic layers and 1- by 1-m grids (Figure 25.1a and b).

Figure 25.1a. Photograph of the roomblock before it was excavated (looking north).

Figure 25.1b. Photograph of the roomblock after it was excavated (looking north).

Figure 25.2. Test trench profile of room stratigraphy.

After the main section of the roomblock was excavated, work began on the additional two front rooms located along the northeast side of the pueblo and two rock alignments situated to the immediate east of the roomblock. A block area including grids 90-96N/117-120E was excavated in this area to expose the rock alignments and identify any other features that might be present in the plaza. No other features were identified.

A series of test pits were placed in the area defined as the possible midden situated about 10 to 20 m east of the roomblock (Figure 25.3). Eight 1- by 1-m test pits were excavated (82N/121, 125, 129E; 85N/123,127,131E; 88N/129E, and 91N/131E) but no midden was identified. A few artifacts were recovered in the A horizon. Test pits were also placed to the north and west of the roomblock to identify the presence of any subsurface cultural deposits or features in these areas (91N/102E, 104N/112E, and 114N/94E). Again, no cultural deposits were identified, but a surface cluster of tuff blocks was excavated.

Ground-penetrating radar (GPR) was used to identify the presence of a kiva to the east of the roomblock (see Nisengard et al., Volume 3). A single possible buried feature was delineated to the northeast of the roomblock in the areas of grids 100-102N/116E. Seven backhoe trenches were excavated across the eastern area of the site to expose this possible feature and define the plaza area stratigraphy**.** The buried feature was determined to be an ancient channel or swale in the bedrock, and no other features were identified.

Figure 25.3. LA 135290 site excavation map.

The field supervisors at the site were Brad Vierra, Michael Dilley, and Jennifer Nisengard. Field crew members included Joseph Aguilar, Jennifer Boyd, Sandi Copeland, Rick Fitzgerald, Mark Hungerford, Greg Lockard, Todd Pitezel, Kari Schmidt, and Jeannine Wood. Timothy Martinez was the site monitor representing San Ildefonso Pueblo.

SITE GEOMORPHOLOGY (Paul Drakos and Steve Reneau)

Burial of an undulating Bandelier Tuff surface, and alternating periods of erosion and deposition, have resulted in variable thicknesses of the Pleistocene and Holocene sediments underlying LA 135290. The older (b2 and b3) soils of inferred Pleistocene age are present as remnant soils that were eroded and subsequently buried by swale fill and/or eolian deposits. Thickness of these buried Pleistocene deposits ranges from 0 to approximately 35 cm. The inferred mid-Holocene (b1) soil formed in fine-grained silty deposits of likely eolian origin. The 40- to 90-cm-thick mid-Holocene eolian deposit comprising the b1 soil was partially stripped (truncated) before occupation of LA 135290. The top of the mid-Holocene eolian deposit and the upper surface of Holocene swale fill deposits comprise the occupation surface for the site. The roomblock was apparently built on top of the b1 soil (either on top of the Bw1b1 or Btjb1 horizon). Soils formed in and surrounding the roomblock typically exhibit A-Bw1-Bw2 profile, which was developed in silty eolian sediment mixed with roomblock-derived colluvium. The A and Bw horizons include a variety of cultural artifacts.

SITE STRATIGRAPHY

Stratum 1 consists of the loose surface soil that covers the site area and is generally 3 to 5 cm thick (Table 25.1). Stratum 2 is a thin layer of post-occupational fill that overlies the roomblock. Underlying Stratum 2 are Strata 3 and 4. Stratum 3 is room fill with mostly adobe melt and no tuff blocks. Stratum 4 is room fill with pieces of tuff or tuff blocks. The sediment is similar between the strata, although Stratum 3 generally has more adobe, especially in Rooms 4 to 8 that contain adobe walls. For example, as one moves east to west from masonry to adobe walls, there is an increase in the amount of adobe in these sediments. There is adobe melt with a few chunks of adobe in Stratum 4, but it increases to large chunks of adobe with more melt in Stratum 3. The strata range from a silty loam to silty clay loam depending on how much adobe is present, and the colors range from brown to yellow brown.

Table 25.1. LA 135290 site stratigraphy descriptions.

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
Area 1-4	0	--	--	0	Surface
Area 1	1	10 YR 5/3	Silty Loam	1–5	Unconsolidated surface soil
Area 1	2	7.5 YR 4/4	Silty clay loam	2–10	Post-occupational fill
Area 1	3	7.5 YR	Clay loam to	10–50	Room fill with adobe

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
		5/4-6/3 to 10 YR 5/3	silty clay		melt
Area 1	4	7.5 YR 5/3 to 10 YR 5/3-6/3	Silty clay loam	10–40	Room fill with wallfall
Area 1	5	7.5 YR 5/4	Clay loam	0	Room 2, floor 1, surface
Area 1	6	10 YR 5/3	Clay loam	14	Room 3, subfloor soil
Area 1	7	10 YR 5/3	Silty clay loam	0	Room 4, floor 1, surface
Area 1	8	7.5 YR 3/1	Clay	0	Room 6, floor 3, surface
Area 1	9	7.5 YR 5/4	Clay	0	Room 1, floor 1, surface
Area 1	10	7.5 YR 5/3	Clay	4–8	Room 1, subfloor soil
Area 1	11	10 YR 5/4	Silty clay loam	0	Room 3, floor 1, surface
Area 1	12	7.5 YR 3/1	Clay	0	Room 6, floor 1, surface
Areas 2, 3, 4	13	10 YR 5.2-7.5	Silty loam	15–40	A, Bw and Bwb1 soil horizons
Area 1	14	7.5 YR 5/3	Silty clay loam	16	Room 6, feature 2 fill
Area 1	15	7.5 YR 5/3	Clay	1–7	Room 6, floor 1, matrix
	16				Omitted
Area 1	17	7.5 YR 5/4	Clay	0	Room 6, floor 2, surface
Area 1	18	7.5 YR 3/1	Clay	1–3	Room 6, floor 2, matrix
Area 1	19	10 YR 5/3	Silty clay loam	5–10	Room 2, rooffall
Area 1	20	7.5 YR 5/3	Silty clay loam	7–14	Room 6, feature 5 fill
Area 1	21	7.5 YR 5/3	Clay	0	Room 5, floor 1, surface
Area 1	22	7.5 YR 5/3	Silty clay loam	6	Room 5, feature 7
Area 1	23	10 YR 4/2	Silty clay	0	Room 8, floor 1, surface
Area 1	24	10 YR 4/4-5/4	Silty clay loam	10	Room 2, feature 4 fill
Area 1	25	10 YR 4/5-5/4	Silty clay loam	16	Room 2, feature 3 fill
Area 1	26	7.5 YR 4/4 to 10 YR 4/5	Silty clay loam	16	Room 2, feature 1 fill

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
Area 1	27	7.5 YR 5/3	Silty clay loam	5–14	Room 5, feature 8 fill
Area 1	28	7.4 YR 5/3	Clay	6	Room 4, floor 1, matrix
Area 1	29	7.5 YR 3/1-5/3	Clay	0	Room 4, floor 2, surface
Area 1	30	7.5 YR 5/3	Silty clay loam	4–9	Room 4, feature 10 fill
Area 1	31	7.5 YR 4/4	Silty clay loam	4	Room 2, feature 6 fill
Area 1	32	10 YR 2/2, 3/3, 6/3	Clay loam	14	Room 2, feature 11 fill
Area 1	33	7.5 YR 5/3	Clay loam	0	Room 7, living surface
Area 1	34	7.5 YR 4/4	Silty clay loam	9–14	Room 2, feature 12 fill
Area 1	35	7.5 YR 3/1	Clay	2–5	Room 4, floor 2, matrix
Area 1	36	7.5 YR 3/1-5/3	Clay	0	Room 4, floor 3, surface
Area 1	37	10 YR 7/2	Ash with loamy clay	12–14	Room 8, feature 9 fill
Area 1	38	10 YR 5/4	Clay loam	0	Room 9A, living surface
Area 1	39	10 YR 5/4	Clay loam	0	Room 9B, living surface
Area 1	40	7.5 YR 4/3	Silty loam	26	Room 4, disturbed rodent fill
Area 1	41	7.5 YR 5/3	Clay	2–6	Room 5, floor 1, matrix
Area 1	42	7.5 YR 5/3	Clay	0	Room 5, floor 2
Area 1	43	10 YR 3/2	Clay loam	20	Room 2, subfloor
Area 1	44	10 YR 3/1	Silty clay	5	Room 6, floor 1, matrix
Area 1	45	10 YR 5/4	Sandy silt loam	8	Room 2, Feature 16 fill
Area 1	46	7.5 YR 4/4	Silty clay	8–11	Room 5 and 6, subfloor
Area 1	47	7.5 YR 6/4-7/1	Ash and clay	3	Room 8, feature 9, upper hearth base
Area 1	48	7.5 YR 6/3	Clay	6	Room 8, feature 9, lower hearth base
Area 1	49	7.5 YR 5/3	Silty clay	1–5	Room 5, floor 2, matrix
Area 1	50	10 YR 4/4	Silty clay loam	6	Room 2, floor (upper)
Area 1	51	7.5 YR 5/3	Silty clay	--	Room 4, masonry and adobe wall matrix

During the excavation, slight differences could be discerned between the upper and lower sections of Strata 3 and 4. The room fill situated about 20 cm above the room fill contains more charcoal, botanical remains, and artifacts and a few roof casts. Therefore, the upper sections of these strata were defined as Strata 3a/4a and lower sections as 3b/4b. Strata 3b/4b appear to exhibit more water laminations, indicating that these deposits were exposed to the rain. Otherwise, there is more rodent disturbance in Stratum 4 relative to Stratum 3. This probably relates to the paucity of adobe and the presence of tuff blocks that provided overburden that was easier to burrow through. Lastly, a dense layer of adobe melt was identified adjacent to some of the adobe walls. This layer was defined as Stratum 3c (silty clay).

The remaining strata within the roomblock consist of floor surfaces, floor matrix, and feature fill. A distinction was made between artifacts found lying directly on the floor surface and artifacts or samples removed from the matrix of the adobe floor. Subfloor deposits were also exposed within the rooms. These deposits range from a silty clay to clay to a clay loam and appear to be artificial sediments that were used to level the ancient surface upon which the floors were constructed. These sediments were about 10 to 20 cm thick and were situated on the Bwb1 soil horizon. Otherwise, the roomblock is underlain with a 1.40-m-thick series of Holocene soil horizons and a single Pleistocene soil lying directly on the Bandelier Tuff bedrock. A column of pollen samples (Field Specimen [FS] 2275 to FS 2280, top to bottom) were taken from this soil profile to provide some information on paleoenvironmental conditions. Taxa identified in FS 2275 include cheno-ams (*Chenopodium/Amaranthus*), sunflower family (Asteraceae), fir (*Abies*), unidentified pine (*Pinus* sp.), piñon pine (*Pinus edulis*), juniper (*Juniperus*), and oak (*Quercus*). Those identified in FS 2276 include cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, sagebrush (*Artemesia*), and four o'clock family (Nyctaginaceae). Only unidentified pine was identified in FS 2777. Taxa identified in FS 2778 included sunflower family and juniper, while only unidentified pine was identified in FS 2779 and FS 2780.

Excavations in the areas around the roomblock exposed the upper section of this Holocene sequence. This consisted of the A, Bw, and Bwb1 soil horizons. The A horizon is generally about 2 to 10 cm thick and the Bw about 2 to 7 cm thick. Only a few artifacts were recovered in the upper 10 cm of this soil profile. The top of the Bwb1 horizon represented the ancient surface used by site occupants. Indeed, the top of the Bwb1 was much more compact in the area east of the roomblock (i.e., the plaza), indicating that the surface had been consolidated by trampling.

SURFACE COLLECTION

A surface artifact collection was conducted on the mound and in the surrounding area in 1- by 1-m grids (75-121N/93-133E). Figure 25.4 illustrates the surface distribution of artifacts across the site. As can be seen, most of the artifacts are distributed in two clusters to the east of the roomblock**.** A small cluster is present to the immediate northeast and a larger cluster to the southeast. This latter area may represent the remains of a trash midden.

SITE EXCAVATION

The site was divided into four separate proveniences or areas (see Figure 25.3). Area 1 consists of the rubble mound of the roomblock within grids 89-112N/105-116E. Area 2 is located to the immediate east of the roomblock, including the plaza area in grids 87-94N/116-120E and 95-110N/104-128E. Area 3 comprises that portion of the site located to the immediate west of the roomblock within grids 89-120N/93-104E. Lastly, Area 4 is situated in the southeastern section of the site, including the possible midden located in grids 75-93N/121-133E.

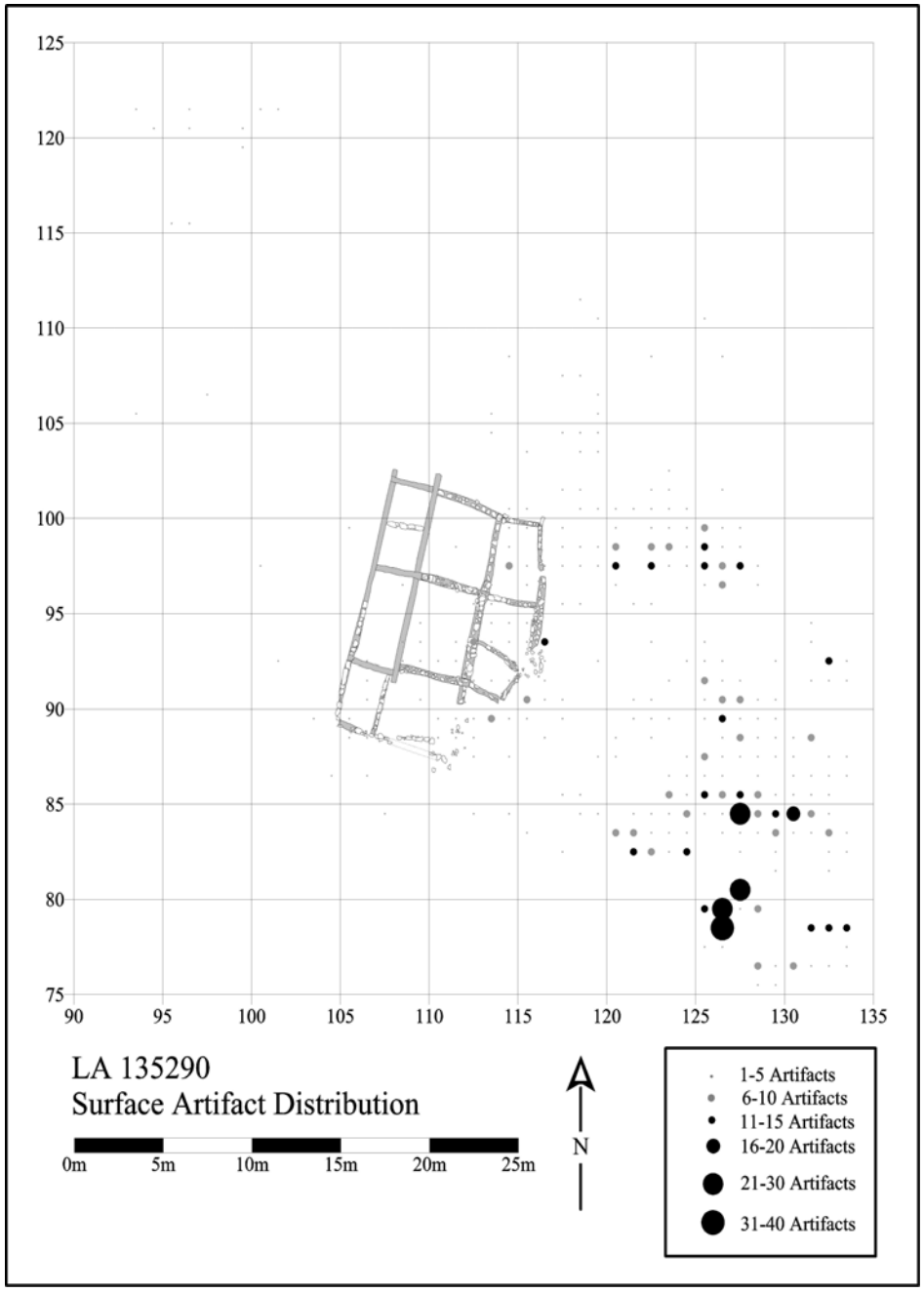


Figure 25.4. Surface artifact distribution.

Area 1 (Roomblock)

Room 1

Sequence of Excavation. Room 1 is located in the north-central part of the roomblock. The room measures 3.8 m north-south by 3.5 m east-west, with 13.30 m^2 of interior space. An east-west test trench (98N/110-113E) was initially excavated through the room to define site stratigraphy and the location of the floor. Excavations proceeded by excavating the room fill to the immediate south of the trench by grid and natural layer. Then, the majority of the room fill was removed to the north of the trench by grid and natural layer. After sections of the floor were exposed, several grids were excavated below this level. This was in part because of the disturbed nature of the floor and the exposure of subfloor deposits due to rodent activity.

Fill. After the removal of about 20 cm of post-occupational fill (Strata 1 and 2), the remainder of the room contained approximately 70 to 80 cm of Stratum 4. Stratum 4 was a silty clay loam soil mixed with wallfall and some adobe melt. Wallfall was generally present within 1 to 2 m of standing masonry walls and adobe melt adjacent to the adobe western wall. This differed from the center of the room, which contained a few small pieces of tuff with little adobe melt. The room fill was disturbed by rodent activity, although this disturbance appears to increase with depth. On the other hand, there were fewer tuff blocks with an increase in small tuff fragments and adobe melt with depth. The lower 20 cm of room fill (Stratum 4b) exhibited an increase in the amount of charcoal, charred maize kernels, and artifacts.

Flotation and pollen samples were taken from Strata 1, 2, 4a, and 4b (Table 25.4). Charred taxa identified in the flotation sample taken from Stratum 1 include piñon pine (*Pinus edulis*), ponderosa pine (*Pinus ponderosa*), cottonwood/willow (*Populus/Salix*), and maize (*Zea mays*). No charred taxa were identified in Stratum 2. Charred taxa identified in Stratum 4a include unknown conifer (Gymnospermae), piñon pine, ponderosa pine, and maize. The sample from Stratum 4b was not analyzed.

Taxa identified in the pollen sample from Stratum 1 include cholla (*Opuntia*), buckwheat (*Eriogonum*), cheno-am (*Chenopodium/Amaranthus*), grass family (Poaceae), sunflower family (Asteraceae), fir (*Abies*), unidentified pine, piñon pine, juniper, oak (*Quercus*), rose family (Rosaceae), and sagebrush (*Artemesia*). Taxa identified in Stratum 2 include maize, cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in Stratum 4a include prickly pear (*Opuntia*), beeweed (*Cleome*), cheno-ams, grass family, mustard family (Brassicaceae), sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in Stratum 4b include cheno-ams, grass family, sunflower family, unidentified pine, juniper, oak, rose family, and sagebrush.

A series of macrobotanical specimens from levels 4 to 9 were also selected from Strata 4a and 4b (see Table 25.4). Taxa identified in the Stratum 4a samples (FS 1047, FS 1201, and FS 1326) include pine, ponderosa pine, cottonwood/willow, oak, bean, and maize. Taxa identified in Stratum 4b (FS 1450, FS 1550, and FS 1767) include mountain mahogany, beeweed, unknown conifer, unidentified pine, ponderosa pine, cottonwood/willow, oak, and maize.

Floor. The floor (Stratum 9) was heavily disturbed by rodent activity, with only about 10 percent of the surface being intact (Figures 25.5 and 25.6). These small intact sections were primarily situated in the northern areas of the room, consisting of a 5- to 7-cm-thick layer of adobe. The floor was defined by the presence of a burned and/or prepared adobe surface. Several pockets of ash were noted on or immediately above the level of the floor. A flotation (FS 1705) and pollen sample (FS 1706) were taken from grid 98N/111E. Taxa identified in the flotation sample include goosefoot, cheno-ams, squash/coyote gourd (*Cucurbita*), unknown conifer, juniper, bean (*Phaseolus*), ponderosa pine, cottonwood/willow, and maize. Taxa identified in the pollen sample include squash, maize, prickly pear, cheno-ams, grass family, sunflower family, ragweed/bursage (*Ambrosia*), evening primrose (Onagraceae), unidentified pine, piñon pine, juniper, oak, and sagebrush.

Flotation samples were also taken on the floor in the center of the room (FS 1896) and in the northwest corner of the room (FS 1837). Charred taxa identified in the center of the room include pigweed (*Amaranthus*), goosefoot, juniper, piñon pine, ponderosa pine, oak, and maize. Charred taxa identified in the sample taken from the northwestern corner of the room include goosefoot, cheno-ams, juniper, ponderosa pine, and maize.

Figure 25.5. Photograph of Room 1 (west).

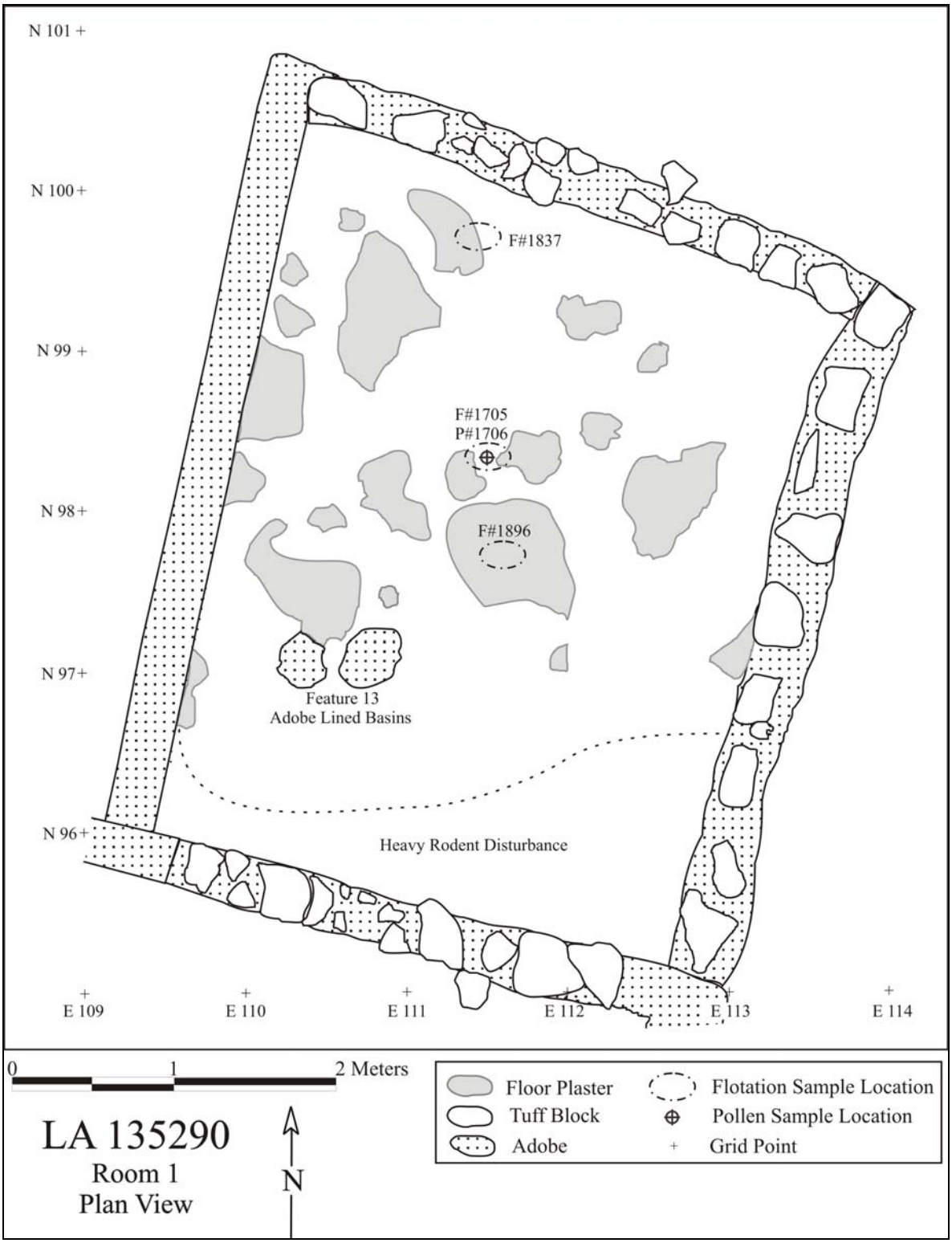


Figure 25.6. Room 1 floor map.

No artifacts were uncovered lying directly on the intact sections of the floor. But a single feature (Feature 13) was identified in the southwestern area of the room. Feature 13 consists of two

heavily disturbed adobe lined basins. The basins are contiguous with each other, but only consist of the bottom portions of the basins. The features are 40 to 42 cm long, 33 to 38 cm wide, and 3 to 5 cm in depth and are situated slightly below the floor level. Although they do not articulate with the existing sections of the floor, the features are presumably associated with the original floor in Room 1.

Several grids were excavated below the level of the floor (96-97N/112E, 98N/110E, and 98-99N/111E). The soil underlying this level consisted of a clay or clay loam (Stratum 10) with a blocky structure. The sediment appears to be artificial fill that is about 15 to 20 cm thick and was situated directly on top of the Bwb1 soil horizon. Seventeen sherds and five pieces of debitage were recovered from these deposits. The artifacts were presumably derived from the upper room deposits.

Wall Construction. The northern, eastern, and southern walls of the room were constructed of masonry, with wallfall situated within about 2 m of each wall. The lower section of the west wall was constructed of adobe and the upper section was composed of masonry. The majority of the north, east, and west (masonry) walls collapsed into the room, while most of the south wall had collapsed into Room 2. Approximately 60 to 90 cm of standing walls remained, with the west wall solely consisting of adobe that was 60 cm high. There were no discernable doorways in any of the walls. Room 1 wall measurements are listed in Table 25.2.

Table 25.2. Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	3.6	0.77	0.30	3
South	3.55	0.90	0.30	4
East	3.8	0.70	0.30	3
West	4.1	0.60	0.25	Adobe

Wall construction is quite different between the north and south walls. The lower section of the north wall is constructed of a series of unshaped upright tuff blocks with adobe mortar, while the upper section consists of horizontally placed blocks (Figure 25.7). The uprights range from 40 to 45 cm high by 15 to 20 cm wide. They are staggered at 20- to 40-cm intervals and are interspersed with adobe mortar and smaller pieces of tuff that are about 10 to 20 cm in size. Overall, the lower wall section is approximately 55 cm high. The upper section is composed of horizontally placed tuff blocks that range from 25 to 50 cm long by 10 to 20 cm wide. Only a single course of stones is still standing. The wall is covered by a 10-cm-thick layer of adobe.

Figure 25.7. Room 1, north wall.

The south wall is constructed quite differently from the north wall. There are no large upright blocks in the lower section of the wall. Instead, the lower section is composed of a single course of large unshaped tuff blocks that are situated contiguous to each other (Figure 25.8). The blocks range from 20 to 30 cm high by 10 to 30 cm wide. The upper section consists of 1 to 2 courses of horizontally placed tuff blocks with adobe mortar. These blocks range from 20 to 40 cm wide by 10 to 15 cm high. About 10 cm of adobe also covers the face of this wall.

Subfloor adobe footings about 15 to 20 cm thick are present under the east, west, and south walls of the room. In contrast, there is no adobe footing under the north wall. The upright tuff blocks (basal stones) were set directly into adobe about 10 cm thick. The bottom of this adobe is located at the level of the floor.

Figure 25.8. Room 1, south wall.

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 97N/111-112E and 98N/111E. In addition, samples were selected from floor contexts. Tables 25.3 and 25.4 provide summary information on artifacts by stratigraphic unit and samples selected for analysis, respectively.

Table 25.3. Room 1 artifact counts by stratigraphic unit.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	26	2	0	0	0	28
2	44	14	3	0	0	61
3	9	1	5	0	1	16
4	309	58	13	4	10	394
9	0	0	0	0	0	0
10	30	7	0	0	0	37
51	3	0	2	0	0	5
Mixed	6	0	0	0	0	6
Total	**427**	**82**	**23**	**4**	**11**	**547**

Table 25.4. Samples selected for analysis in Room 1.

Stratum	Sample Type		
	Pollen	Flotation	Macrobotanical
1	1272	1271	0
2	1301	1302	1303
4a	1330	1329	1326, 1047, 1201
4b	1446	1420	1450, 1767, 1559,
9	1706	1705, 1837, 1896	0

Room 2

Sequence of Excavation. Room 2 is located in the east-central section of the roomblock. The room measures 4.4 m north-south by 3.56 m east-west and has 15.66 m^2 of interior space. An east-west test trench (93N/108-112E) was also excavated through the room to define site stratigraphy and the location of the floor.

Fill. After the removal of the post-occupational fill (Strata 1 and 2), the remainder of the room contained a mix of Strata 3 and 4 that was 50 to 70 cm thick. Stratum 3 was a clay loam soil that was mostly identified in the western area of the room adjacent to the adobe wall. Stratum 4 was a silty clay loam mixed with wall, some adobe melt, and possible roofing material (Stratum 19). The wallfall was primarily located adjacent to the masonry northern and eastern walls, with little near the adobe western and masonry southern walls. There was a notable increase in the density of ceramics in the northeastern area of the room. Flotation, pollen, and macrobotanical samples were taken from Strata 2, 4a, and 4b (see Table 25.7).

Taxa identified in the flotation sample collected from the fill levels (Stratum 2) include unknown conifer, piñon pine, oak, and maize. Taxa identified in Stratum 4a include cheno-ams, ponderosa pine, and maize. Taxa identified in Stratum 4b include goosefoot, cheno-ams, unknown conifer, piñon pine, ponderosa pine, and maize.

Taxa identified in the pollen samples from the fill levels (Stratum 2, post-occupational fill) include cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush. Taxa identified in Stratum 4a include cheno-ams, sunflower family, spurge family (Euphorbiaceae), unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in Stratum 4b include maize, cholla, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, and sagebrush.

Macrobotanical samples (FS 1102, FS 1167, FS 1703, FS 1741, FS 1902, and FS 1938) from the fill levels include the following taxa: mountain mahogany, unknown conifer, ponderosa pine, juniper, unidentified pine, piñon pine, cottonwood/willow, unknown non-conifer, and maize.

Stratum 19 was identified in the central area of the room. The deposit was 5 to 10 cm thick and consisted of burned chunks of adobe mixed with charcoal in grids 93N/110-112E. This material was located on the floor and had burned this section of the floor. It presumably represents

burned roofing material. Three flotation samples (FS 1897, FS 1898, and FS 2034) were taken from this deposit and included the following charred taxa: goosefoot, cheno-ams, unknown conifer, juniper, bean (*Phaseolus*), unidentified pine, piñon pine, ponderosa pine, cottonwood/willow (*Populus/Salix*), plantain (*Plantago*), purslane (*Portulaca*), oak, dropseed grass (*Sporobolus*), and maize. A macrobotanical (FS 2046) sample was also collected from the deposit and includes the following taxa: mountain mahogany, unknown conifer, juniper, unidentified pine, ponderosa pine, and oak. In addition, six smeared-indented, three indented, and four plain corrugated sherds were recovered from this stratum.

Floor. Floor 1 (Stratum 5) was first encountered in the southeastern corner of the room where there was obvious coping to the wall (Figures 25.9 and 25.10).

Figure 25.9. Photograph of Room 2 (north).

The floor was very patchy due to extensive rodent disturbance, but does cover about two-thirds of the room. Most of the floor is not burned, although there is extensive burning in the central area of the room where the floor plaster is ashy and sooted in some spots. Although the floor consists of a relatively thick 3- to 5-cm layer of adobe, it has collapsed in many sections of the room due to rodent burrows. Manganese staining is also present in some parts of the floor adjacent to the walls. Adobe coping can be found in about 90 percent of areas where the walls articulate with the floor.

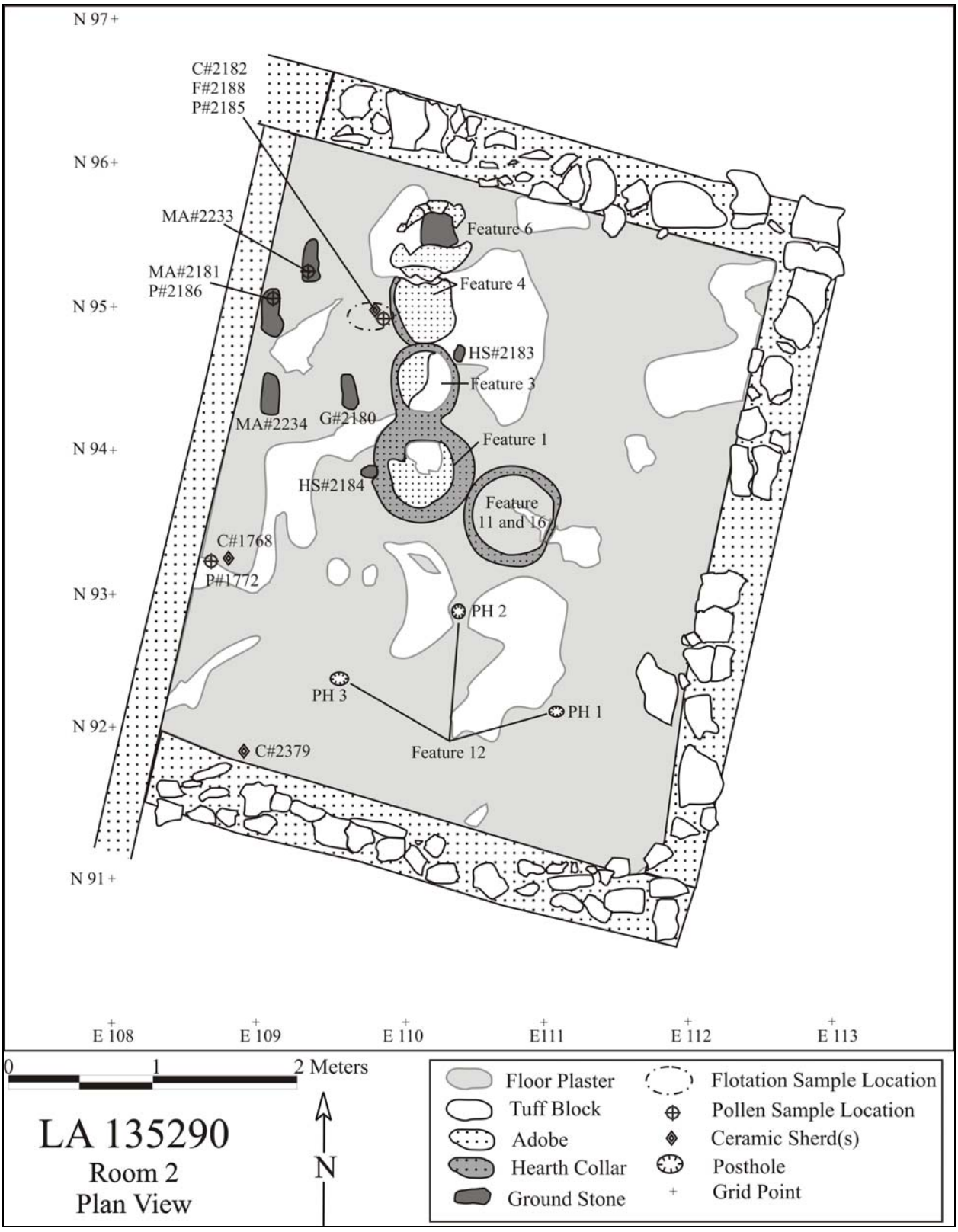


Figure 25.10. Room 2 floor map.

Several artifacts were present on Floor 1 (Stratum 5). Most of these were situated in the northwestern area of the room, to the west of Features 1, 3, 4, and 6. Eight smeared-indented corrugated sherds from the same utility jar vessel (FS 2182) were found immediately to the west of Feature 4. A pollen (FS 2185) and flotation (FS 2188) sample were taken from under the vessel. The pollen sample contained the following taxa: squash (*Cucurbita*), maize, cholla, prickly pear, cheno-ams, grass family, sunflower family, evening primrose (Onagraceae), unidentified pine, piñon pine, juniper, oak, cottonwood (*Populus*), and sagebrush. The flotation sample included the following charred taxa: unknown conifer and ponderosa pine.

A maul (FS 2180), three two-hand manos (FS 2181, FS 2233, and FS 2234), and two hammerstones (FS 2183 and FS 2184) were also found on the floor. A pollen sample was taken from under the maul (FS 2186) near the west wall, and a mano was submitted for pollen wash (FS 2234). The following taxa were identified in the pollen sample: squash, maize, cholla, prickly pear, grass family, sunflower family, evening primrose, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in the pollen wash included squash, maize, and unidentified pine. In addition, hammerstones were present to the northeast of Feature 3 (FS 2183) and immediately west of Feature 1 (FS 2184). A very large sherd from a smeared-indented corrugated vessel (FS 1768) was also present near the west wall in the southwestern section of the room. A pollen sample (FS 1772) was taken from several centimeters of fill under the sherd and on top of the floor. Identified taxa include prickly pear, cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. A smeared-indented corrugated sherd (FS 2379) yielded a thermoluminescence (TL) date of AD 816±133.

Nine features were identified on the floor of Room 2. These consist of a collared hearth, three adobe-lined pits, two adjacent hearths, and three post holes. Features 1, 3, 4, and 6 comprise an interconnected complex with a collared hearth and three adobe-lined pits (Figures 25.11 and 25.12). The feature complex is situated in the northwestern area of the room and is oriented north-south. The collared hearth (Feature 1) is circular in plan view, is basin-shaped in cross-section, and measures 70 cm in diameter and 16 cm in depth. The adobe collar is approximately 10 to 15 cm thick and rises to a height of about 10 cm above the floor. When the collar was removed during excavation, the original floor plaster was exposed, indicating that the feature was a later addition. The other three pits are all directly connected to the original floor. There was no evidence of burning and the pit fill (Stratum 26) was quite similar to the Stratum 4 sediments surrounding the feature.

A chalcedony core (FS 2102), charred maize kernels, and a maize cob (FS 2103) were recovered from the fill. Flotation (FS 2099 and FS 2138) and pollen (FS 2100 and FS 2137) samples were taken. Taxa identified in the flotation samples include pigweed (*Amaranthus*), saltbush/greasewood (*Atriplex/Sarcobatus*), mountain mahogany (*Cercocarpus*), goosefoot, cheno-ams, grass family, unknown conifer, juniper, mint family (Labiatae), unidentified pine, piñon pine, ponderosa pine, cottonwood/willow, purslane, oak, and maize. Taxa identified in the pollen samples include squash, maize, cholla, cheno-ams, grass family, mint family, purslane, mustard family (Brassicaceae), sunflower family, ragweed/bursage, evening primrose (Onagraceae), fir (*Abies*), unidentified pine, piñon pine, juniper, oak, polygala type, rose family, Mormon tea (*Ephedra*), and sagebrush. It may be that Feature 1 was constructed, but never used as a hearth. The maize kernels recovered in FS 2103 were submitted for radiocarbon analysis.

This sample yielded an age of 870±40 BP (Beta-199386) and a date of cal AD 1180 with a two-sigma date range of cal AD 1040–1260.

Figure 25.11. Photograph of Features 1, 3, 4, and 6 (north).

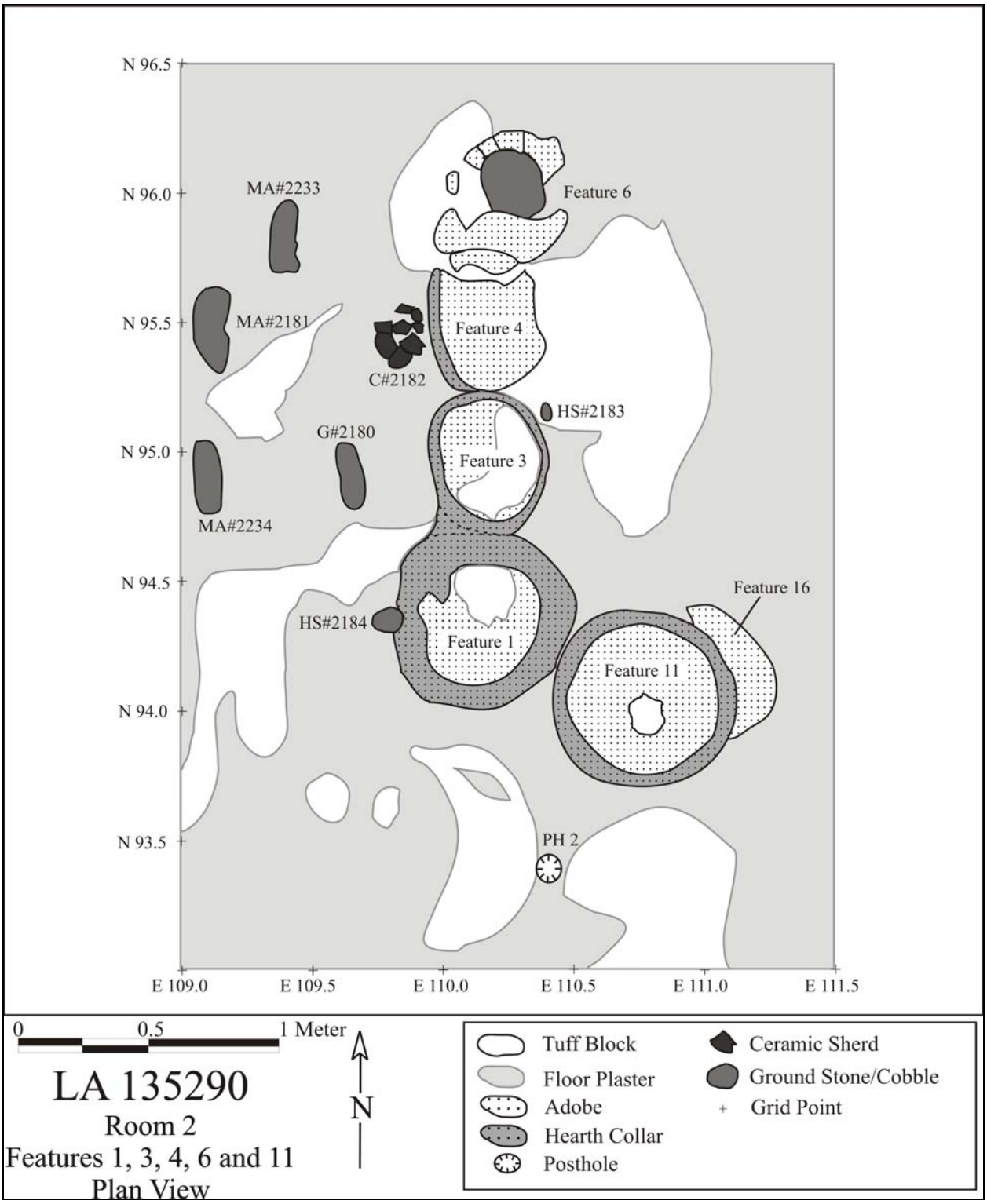


Figure 25.12. Features 1, 3, 4, 6, and 11 plan view.

Features 3, 4, and 6 all consist of adobe-lined pits running south to north, respectively. Although the area has been disturbed by rodent activity, the three features were probably connected by

adobe collars. Feature 3 has been heavily disturbed by rodent burrowing and only the northern and western portions were still intact. The pit is circular-shaped in plan view and is 50 cm in diameter and 16 cm deep. There is no evidence of burning and the fill (Stratum 25) is similar to that encountered in the sediments surrounding the feature (Stratum 4). The collar around Feature 3 appeared to have been remodeled during the construction of Feature 1. When the Feature 3 collar was removed, it was determined that the feature originally had no collar and was directly connected to the floor.

A flotation and pollen sample were both collected from Feature 3. The flotation sample (FS 2083) contained the following charred taxa: pigweed, mountain mahogany, goosefoot, unknown conifer, mint family, piñon pine, ponderosa pine, oak, and maize. The pollen sample (FS 2084) contained the following taxa: squash, maize, cholla, prickly pear, beeweed, plantain, cheno-ams, grass family, sunflower family, evening primrose, fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Feature 4 is a relatively shallow pit. It is oval-shaped in plan view, measuring 34 by 51 cm and is 10 cm deep. This feature has also been heavily disturbed by rodent burrowing, but the western side of the pit is partially intact with a slight collar. Again, the fill (Stratum 24) is similar to the surrounding sediments, with no evidence of burning. One flotation sample (FS 2069) was collected and the following carbonized taxa were identified: pigweed, saltbush/greasewood, goosefoot, cheno-ams, unknown conifer, mint family, bean, unidentified pine, piñon pine, ponderosa pine, purslane, and maize. One pollen sample (FS 2068) was collected from Feature 4 and the following taxa were identified: cotton (*Gossypium*), maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, evening primrose, and sagebrush.

Feature 6 is also a shallow oval-shaped pit. It measures 40 by 47 cm and is 2 to 10 cm deep. The feature has also been disturbed by rodent activity, but most of the bottom of the pit is intact. The bottom has a single flat dacite cobble that was set into the adobe plaster. The cobble is 20 cm wide. No burning was evident inside the pit or on the cobble.

Features 11 and 16 are hearths that were partially superimposed over each other. Both features are located immediately southeast of Feature 1. Feature 11 consists of an adobe-lined collared hearth that was capped with an ash lens (Figures 25.13 and 25.14). It is circular in plan view and somewhat basin-shaped in cross-section and measures 64 cm in diameter by 14 cm deep. The eastern portion of the hearth was destroyed by rodent activity, but the remainder of the feature was intact. The collar of the hearth was about 6 cm thick and raised approximately 5 cm above the floor. The pit fill (Stratum 32) is quite distinct from that encountered in the other pit features. The sides of the pit are burned and the fill is very ashy with lots of adobe and charcoal mixed with soil. The fill was separated into three parts: 1) upper fill with ash, charcoal, and silty loam soil ranging from pale to dark-yellow-brown in color; 2) middle fill with adobe and charcoal bits in a dark-yellow-brown clay loam soil matrix; and 3) lower fill consisting of a dark brown silty clay loam mixed with some of the adobe lining.

Flotation (FS 2253, FS 2254, FS 2255, FS 2256, FS 2257, and FS 2258) and pollen (FS 2252 and FS 2348) samples were taken from the upper fill. The flotation samples from the upper fill include the following taxa: mountain mahogany, goosefoot, cheno-ams, unknown conifers,

juniper, mint family, tobacco (*Nicotiana*), bean, piñon pine, ponderosa pine, prickly pear, purslane, purslane family, cottonwood/willow, oak, and maize. Taxa identified in the pollen samples from the upper fill include maize, prickly pear, beeweed, buckwheat (*Eriogonum*), cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, oak, spurge family, penstemon family (Scrophulariaceae), Mormon tea, and sagebrush. Flotation samples were also taken from the middle-lower fill (FS 2330, FS 2331, FS 2332, and FS 2350) of the pit. Taxa identified in these samples include goosefoot, cheno-ams, grass family (Graminae), winged pigweed (*Cycloloma*), unknown conifer, juniper, uncharred tobacco, unidentified pine, piñon pine, ponderosa pine, purslane, oak, and maize.

Figure 25.13. Photograph of Feature 11.

In addition, maize (FS 2333), piñon pine and ponderosa pine wood charcoal (FS 2346), three smeared-indented corrugated sherds, and two cottontail (*Sylvilagus audobonii*) and ground squirrel (*Spermophilus* sp.) bones were recovered from the pit fill. The maize kernels recovered in FS 2333 were submitted for radiocarbon analysis (Beta-199387), but the sample was too small to yield a reliable result. One of the smeared-indented corrugated sherds (FS 2259) yielded a TL date of AD 1050±90. An archaeomagnetic sample (set 1229) was taken from the burned bottom of the hearth. The error ellipse overlaps two segments of the Wolfman calibration curve in the AD 1000–1300 time period, but a pre-AD 1125 date possibility is unlikely given the Santa Fe Black-on-white pottery associations of the site. The most probable date range based on the result and the Wolfman curve is AD 1200–1270. The large range is due to the imprecise pole location estimate; the centerpoint of the result is closest to the curve at about AD 1235. The relevant date

range based on the SWCV2000 curve is AD 1175–1325, encompassing the Wolfman curve date range.

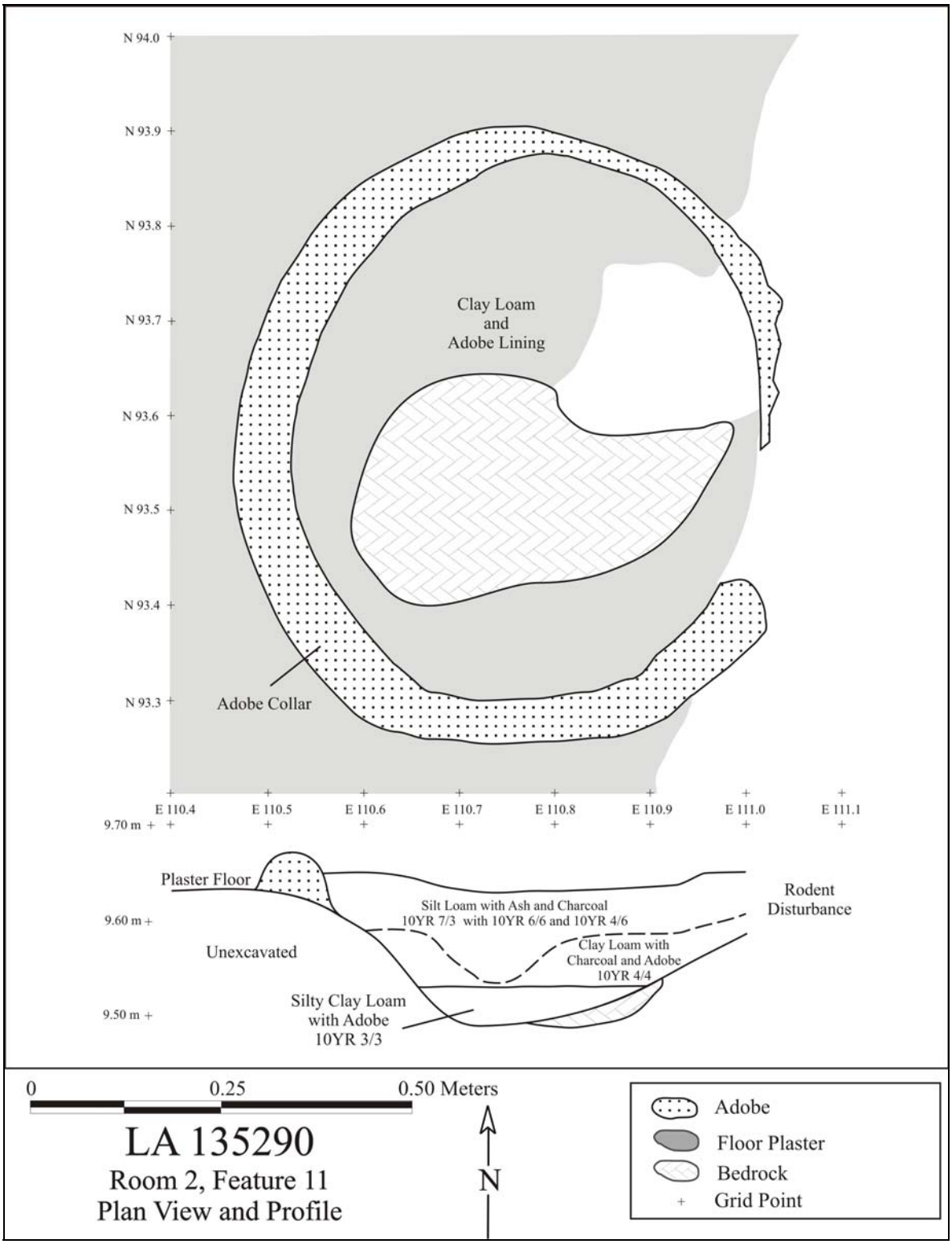


Figure 25.14. Feature 11 plan view and cross section.

Feature 16 is situated underneath the eastern section of Feature 11 and was partially destroyed by the construction of the upper hearth. Feature 16 is also an adobe-lined hearth with only slight evidence of a collar. It was probably circular in shape, but all that remains is a section that is 48 cm in length, 26 cm wide, and 8 cm deep. The sides of the pit and the collar are heavily burned, but the floor is only slightly charred with ash staining. The fill (Stratum 45) contains charcoal and ash. Flotation (FS 2563 and FS 2564) and pollen (FS 2579) samples were taken from Feature 16. Taxa identified in the flotation samples include goosefoot, unknown conifer, juniper, uncharred tobacco, piñon pine, ponderosa pine, oak, and maize. Taxa identified in the pollen sample include squash, maize, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush.

An archaeomagnetic sample was taken from the floor of the hearth (set 1231). Eight specimens were collected from the lower hearth. The error ellipse overlaps two segments of the Wolfman curve within the AD 1100–1300 time span, resulting in two possible date ranges. The earlier and less likely range is AD 1105–1150, while the later range of AD 1155–1210 is a more probable date interpretation for the last burning of the hearth. The date range based on the SWCV2000 curve is AD 1035–1165, but this range is too early given contextual information, and it is believed that the SWCV2000 curve does not accurately reflect virtual geomagnetic pole (VGP) movement at this time period (see Cox and Blinman 1999 for a discussion of sources of systematic distortion in SWCV VGP curves). Maize kernels recovered in FS 2564 were submitted for radiocarbon analysis. This sample yielded an age of 860±40 BP (Beta-199389) and a date of cal AD 1190 with a two-sigma date range of cal AD 1040–1260.

Three postholes (Feature 12; Stratum 34) were identified south of Features 1 and 11. They are 4 to 6 cm in diameter and 9 to 14 cm deep. Flotation samples were taken from posthole 1 (FS 2376) and posthole 3 (FS 2378). Carbonized taxa identified in posthole 1 included unknown conifer and maize, and those identified in posthole 3 included unknown conifer, unidentified pine, and maize.

There appears to be three separate remodeling episodes represented by the construction of the floor features. Feature 16 was constructed first and is overlain by a thin layer of sandy fill between it and Floor 1. Feature 11 was built over Feature 16 and Features 3, 4, and 6 were constructed on Floor 1. Feature 1 was constructed last and was connected to Feature 3.

A subfloor test pit (93N/110E) identified the presence of about 25 cm of artificial fill (Stratum 43) overlying the Bwb1 soil horizon. This material was presumably brought in to create a level and stable surface for the construction of the room. Seven sherds, three pieces of debitage, and six bones were recovered from these deposits. A pollen and flotation sample were taken (FS 2550 and FS 2549, respectively). Taxa identified in the pollen sample include cheno-ams, grass family, sunflower family, ragweed/bursage, spruce (*Picea*), unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. Charred taxa identified in the flotation sample include unknown conifer, piñon pine, ponderosa pine, and maize.

Wall Construction. The walls in Room 2 are in relatively good condition. The three masonry walls are constructed of mostly unshaped tuff blocks with adobe mortar. The northern masonry wall is almost 1 m high and still exhibited some intact wall plaster along the base (Figure 25.15).

Figure 25.15. Rooms 1 and 2 north walls.

The detail of the wall construction was described in Room 1. The east masonry wall is similar to the north wall, and there is intact wall plaster along the base of the wall. The south wall is the most deteriorated of the masonry walls and is two to four courses high. This was likely the original exterior wall to the room until Room 3 was added to the roomblock. The west wall was made of adobe and was in very good condition. None of the walls exhibited any evidence of burning, and there was no evidence for doorways in any of the walls. Room 2 wall measurements are listed in Table 25.5.

Table 25.5. Room 2 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	3.52	0.82	0.34	3-6
South	3.60	0.33	0.35	2-3
East	4.51	0.62	0.41	2-5
West	4.40	0.48	0.38	adobe

Sub-floor adobe footings about 18 to 20 cm thick were present under the north, west, and east walls. However, the large tuff blocks (basal stones) in the south wall were set horizontally into depressions that were lined with adobe below the floor. The depressions were about 20 cm deep. Two of these large blocks measured about 50 by 40 by 20 cm in size. Otherwise, adobe footings were noted under the south wall.

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 93N/110-111E and 94N/111E. In addition, samples were selected from floor contexts in Room 2. Tables 25.6 and 25.7 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 2.

Table 25.6. Room 2 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	105	18	0	0	0	123
2	82	8	1	0	0	91
3	124	12	2	0	2	140
4	1230	141	8	18	16	1413
5	22	0	4	0	0	26
19	13	0	0	0	0	13
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	1	0	0	1
31	0	0	1	0	0	1
32	3	0	1	2	0	6
34	0	0	0	0	0	0
43	7	3	0	6	0	16
45	0	0	0	0	0	0
46	0	0	0	0	0	0
50	0	0	0	0	0	0
Mixed	105	14	2	3	1	125
Total	**1691**	**196**	**22**	**29**	**19**	**1957**

Table 25.7. Samples selected for analysis in Room 2.

Stratum	Sample Type				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
2	1068	1067	0	0	0
3,4	0	0	1786	0	0
4a	1099	1098	1102	0	0
4b	1164	1163	1167, 1703, 1741, 1902, 1938	0	0

Stratum	Sample Type				
	Pollen	Flotation	Macrobotanical	TL	Archaeomagnetic
5	1772, 2185, 2186, 2234	2188	2345	2379	0
19	0	1897, 1898, 2034	2046	0	0
24	2068	2069	0	0	0
25	2084	2083	0	0	0
26	2100, 2137	2099, 2138	2103	0	0
32	2251, 2252, 2348	2253, 2254, 2255, 2256, 2257, 2258; 2330, 2331, 2332, 2350	2346	2259	9904
34	0	2376, 2378	0	0	0
43	2550	2549	2591	0	0
45	2579	2563, 2564	0	0	9906

Room 3

Sequence of Excavation. Room 3 is located at the southeastern corner of the roomblock. It measures 4.0 m north-south by 3.15 m east-west, with 12.60 m^2 of interior space. Excavations proceeded from north to south in the room by grid and natural layer. The floor was exposed and a subfloor test pit (87N/110E) was excavated in the southeastern area of the room.

Fill. After the removal of a 5- to 15-cm layer of post-occupational fill (Strata 1 and 2), most of the room fill consisted of Stratum 4a deposits. This layer consisted primarily of wallfall mixed with a little charcoal. In the northern part of the room it was about 30 to 40 cm thick, whereas, in the southern section of the room it was only 10 to 15 cm thick. Most of the rubble was situated in the south-central part of the room, although a small amount was located along the north and west walls. Stratum 3b was a 5- to 10-cm-thick layer overlying the fill. This deposit exhibited a marked increase in the presence of artifacts and charcoal, but lacked tuff rubble. Pollen, flotation, and macrobotanical samples (FS 1456, FS 1572, and FS 1831) were taken from Strata 2, 4a, and 3b (see Table 25.10).

Taxa identified in the pollen samples taken from Stratum 2 include maize, cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in Stratum 4a include cheno-ams, grass family, sunflower family, fir (*Abies*), unidentified pine, piñon pine, juniper, oak, and sagebrush. Taxa identified in Stratum 3b include maize, beeweed, cheno-ams, grass family, sunflower family, mustard family, unidentified pine, and sagebrush.

Carbonized taxa identified in the flotation samples from Stratum 2 include juniper, ponderosa pine, and maize. Maize was the only carbonized remains identified in Stratum 4a. Taxa identified in Stratum 3b include pigweed, goosefoot, cheno-ams, grass family, piñon pine, ponderosa pine, purslane, and maize.

Taxa identified in the macrobotanical samples include juniper, piñon pine, ponderosa pine, oak, unknown non-conifer, and maize.

Floor. The floor in Room 3 (Stratum 11) is poorly preserved. Indeed, it is not a plastered surface as in Rooms 1 and 2, but rather a compacted living surface (Figures 25.16 and 25.17).

Figure 25.16. Photograph of Room 3 (looking north).

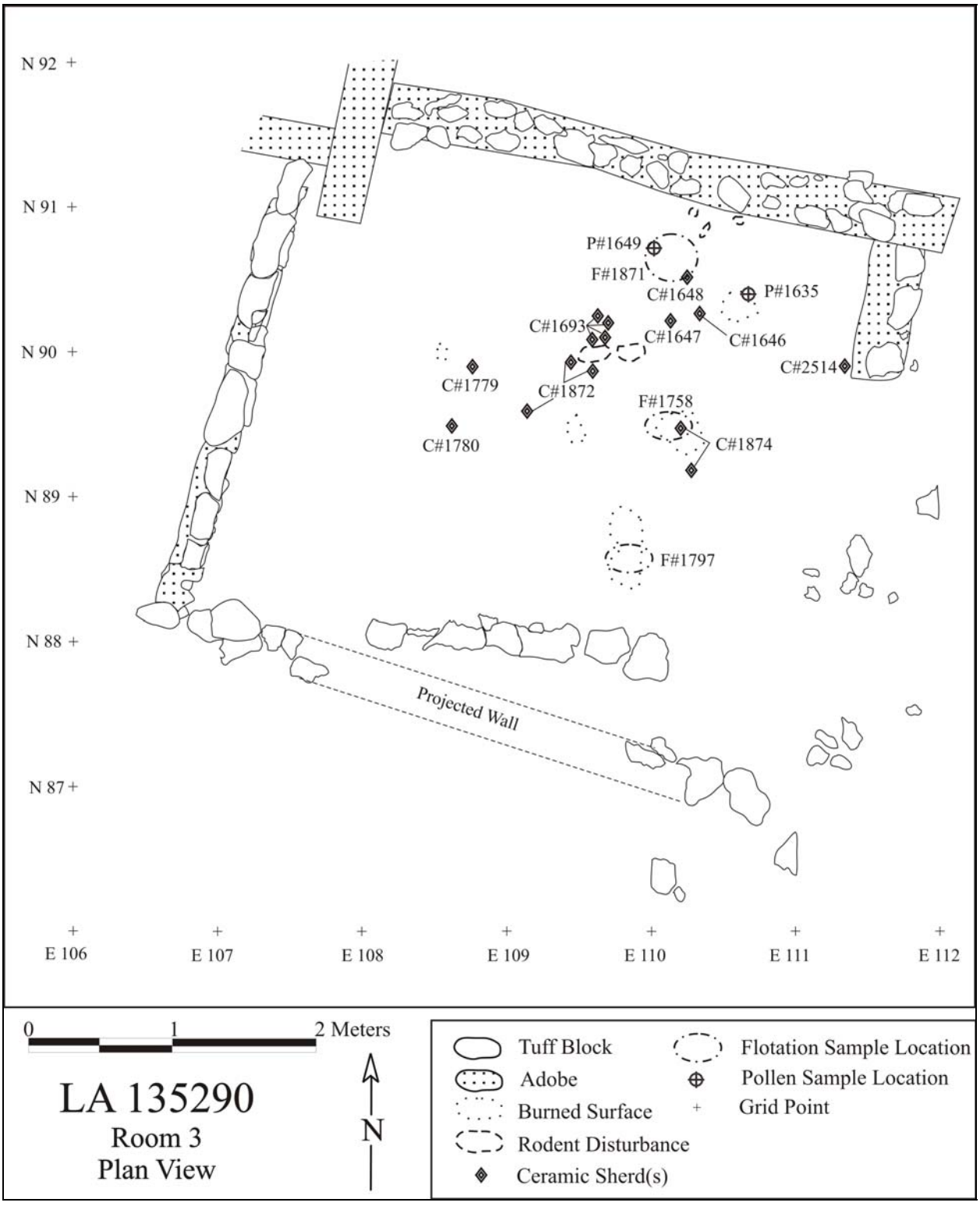


Figure 25.17. Room 3 plan view.

The floor was defined as the surface directly underlying Stratum 4a/3b. In some areas, this stratum had small burned patches. In the northern area of the room there were some sections

where horizontal layers flaked off fairly easily to reveal the surface. However, these layers were continuous in other areas of the room, possibly reflecting multiple fine clay lenses of washed adobe from the nearby walls. There is no evidence of the floor being coped to the walls.

No features were identified in the room, but there were five distinct patches of burned sediment with charcoal found on the floor surface (Stratum 3b). These small patches are roughly oriented along a north-south line in the eastern side of the room and could represent rooffall. A couple of the patches contained burned maize cobs and kernels. Flotation (FS 1758 and FS 1797) and pollen (FS 1635) samples were taken from these patches. Carbonized taxa identified in the flotation samples include cheno-ams, grass family, unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, and maize. Taxa identified in the pollen sample include maize, unidentified pine, and sagebrush.

Twenty sherds were found at or near the level of the floor surface. These consist of 12 smeared-indented corrugated, five indented corrugated, and three unpainted undetermined sherds. A flotation (FS 1871) and pollen sample (FS 1649) were taken in the northeastern area of the room where the floor was well-preserved (Stratum 11). Taxa identified in the flotation sample include juniper, unidentified pine, piñon pine, and maize. Taxa identified in the pollen sample include prickly pear, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, rose family (Rosaceae), and sagebrush.

A subfloor test pit (87N/110E) identified the presence of about 15 cm of artificial fill (Stratum 6) overlying the Bwb1 soil horizon. This clay loam with a blocky structure was presumably brought in to create a level and stable surface for the construction of the room. No artifacts were recovered from this deposit.

Wall Construction. The walls in Room 3 are not as well preserved as those described in Rooms 1 and 2. The north and west wall are masonry with one to two courses of mostly unshaped tuff blocks. The west wall is offset about 35 cm to the west from the main north-south wall along Rooms 1 and 2 (Figure 25.18). It appears to be abutted up against the east-west wall that forms the north wall of the room. Therefore, the west wall represents a later addition. This is also supported by the fact that the north-south wall from Rooms 1 and 2 continues into Room 3 for an additional 60 cm immediately adjacent to the west wall of the room.

The east wall of Room 3 is barely visible, consisting solely of four upright tuff rocks. Two of these are situated at the northeastern intersection with Rooms 2, 3, and 9, while the other two are located in the central section of the wall. The blocks are about 25 cm high and were sunk into the floor about 10 to 15 cm. It is unclear if this was originally a continuous upright wall, since there was little or no wallfall in the area.

The south wall consists of seven upright tuff blocks situated in the south-central section of the room. The tuff blocks are about 20 cm high and are sunk approximately 20 cm below the level of the floor. At least some of the wallfall present in the central area of the room was derived from this wall. However, there is no evidence of the western and eastern sections of the wall, either as uprights or wallfall. On the other hand, there are western and eastern sections of a possible wall that aligns with the southern wall in Room 7. It is unclear how these two possible wall segments relate to each other. Room 3 wall measurements are provided in Table 25.8.

There is no evidence of doorways in the north and west walls. It is unclear as to whether there were doorways in the east and south walls.

Figure 25.18 Northwest corner of Room 3 with offset walls in foreground (north).

Table 25.8. Room 3 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	3.60	0.40	0.40	2
South	4.20	0.20	0.25	1
East	3.20	0.25	0.20	1
West	3.50	0.37	0.23	2

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 89N/109E, 90N/108E, and 90N/109-110E. In addition, samples were selected from floor contexts. Tables 25.9 and 25.10 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 3.

Table 25.9. Room 3 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	131	12	1	0	2	146
2	3	2	0	0	0	5
3	318	27	1	3	1	350
4	249	26	6	3	6	290
11	20	0	0	0	0	21
Total	**721**	**67**	**8**	**6**	**9**	**812**

Table 25.10. Samples selected for analysis in Room 3.

Stratum	Sample Type		
	Pollen	Flotation	Macrobotanical
2	1416	1417	0
4a	1457	1458	1456
3b	1719	1720	1752, 1831
3b (burned)	1635	1758, 1797	0
11	1649	1871	0

Room 4

Sequence of Excavation. Room 4 is located at the northwestern corner of the roomblock. It measures 1.85 m north-south by 2.10 m east-west, with 3.89 m^2 of interior space. Excavations proceeded from south to north in the room by grid and natural layer.

Fill. After the removal of a 10-cm layer of post-occupational fill (Strata 1 and 2), most of the room fill consisted of Stratum 3 with some Stratum 4 adjacent to the west wall. This fill was about 40 to 50 cm thick. Pollen, flotation, and macrobotanical samples were taken from Strata 3b and 4a (see Table 25.13). Taxa identified in the pollen samples taken from the room fill include maize, prickly pear, sunflower family, cheno-ams, grass family, ragweed/bursage, evening primrose (Onagraceae), fir (*Abies*), unidentified pine, piñon pine, juniper, squawbush (*Rhus* type), and sagebrush. Taxa identified in the flotation samples include goosefoot, cheno-ams, unknown conifer, ponderosa pine, and maize. Taxa identified in the macrobotanical samples (FS 1135, FS 1465, and FS 1515) include mountain mahogany, unknown conifer, juniper, unidentified pine, piñon pine, ponderosa pine, and oak.

Floor. Three separate floors were identified in Room 4. Floor 3 (Stratum 35) is the lowest or original floor surface and the most disturbed of the three floors (Figures 25.19 and 25.20)**.** An archaeomagnetic sample (Set 1232) was taken from Floor 3. Floor 3 yielded 7 specimens and two proved to be outliers and were eliminated from the final best result. Intercepts of the result provide an estimated date range of AD 1170–1265. Compared with the SWCV2000 curve, this result produces a date range of 1010–1310, encompassing the more precise interpretation based on the Wolfman curve.

Floor 3 consists of a thin wash of plaster about 1 cm thick. It was burned in the eastern third of the room and is best preserved in this area. The western two-thirds of the room was not burned and was in poor condition. Two pollen samples (FS 2449 and FS 2460) were taken from the east side of the room. Taxa identified in these samples include maize, prickly pear, beeweed, buckwheat (*Eriogonum*), cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, rose family, Mormon tea, and sagebrush. No features or artifacts were identified on the floor. However, Floor 3 in Room 4 appears to underlie the southern wall of the room and is contiguous with Floor 2 in Room 5. Therefore, the wall dividing Rooms 4 and 5 was constructed with Floor 2 in Room 4 and Floor 1 in Room 5. During a period of room abandonment, rodent burrowing (Stratum 40) destroyed sections of the floor. These holes were subsequently repaired before the construction of Floor 2. That is, the rodent burrows were filled in with either adobe and/or small pieces of tuff and then covered with Floor 2.

Figure 25.19. Photograph of Room 4, Floor 3, and Room 5, Floor 2 (south).

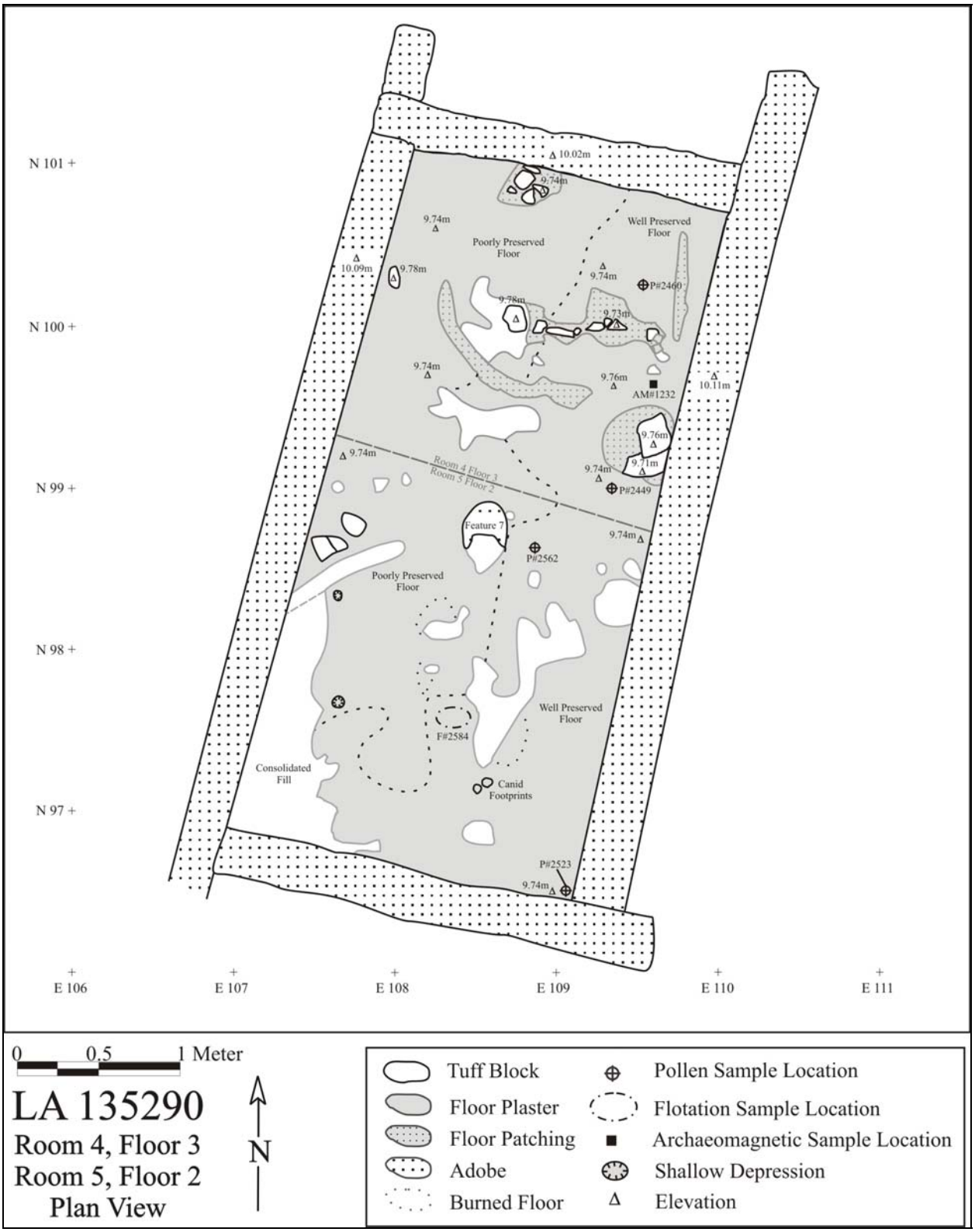


Figure 25.20. Room 4, Floor 3, and Room 5, Floor 2, plan view.

Floor 2 (Stratum 29) is the best-preserved floor in the room (Figures 25.21 and 25.22). It was constructed of clean adobe that was 3 to 4 cm thick. This floor is also partially burned, including the eastern and west-central floor areas. There are numerous small depressions in the well-preserved eastern section of the room. These depressions appear to be partial prints of the front heal of the foot, although most are indistinct. Other depressions are clear footprints, including the one located in grid N100/E109. All five toes and the arch and heel are clearly defined. A plaster caste was taken of the footprint (FS 2431), and pollen (FS 2161 and 2179) and flotation (FS 2219) samples were taken from Floor 2. Taxa identified in the pollen samples include cheno-ams, sunflower family, ragweed/bursage, pine, piñon pine, juniper, Mormon tea, and sagebrush. Carbonized taxa identified in the flotation sample include pigweed, goosefoot, grass family (Gramineae), juniper, mint family (Labiatae), and ponderosa pine.

Although no artifacts were found on the surface of the floor, three smeared-indented corrugated sherds and some charcoal (FS 2466, FS 2481, and FS 2483) were recovered from the floor matrix (Stratum 35). Taxa identified in the macrobotanical samples include juniper, piñon pine, unidentified pine, saltbush/greasewood, ponderosa pine, cottonwood/willow, and maize. Archaeomagnetic (set 1227) and TL (FS 2458) samples were taken from the floor. The burned adobe sample yielded a date of AD 888±62. The archaeomagnetic sample collected from Floor 2 consisted of seven specimens, and all were included in the calculation of the final result. The date range interpretation is AD 1180 to 1205. Comparison with the SWCV2000 curve yields a date range of AD 1125–1165, but it is believed that the SWCV2000 curve is inaccurate for this time period.

Figure 25.21. Photograph of Room 4, Floor 2 (east).

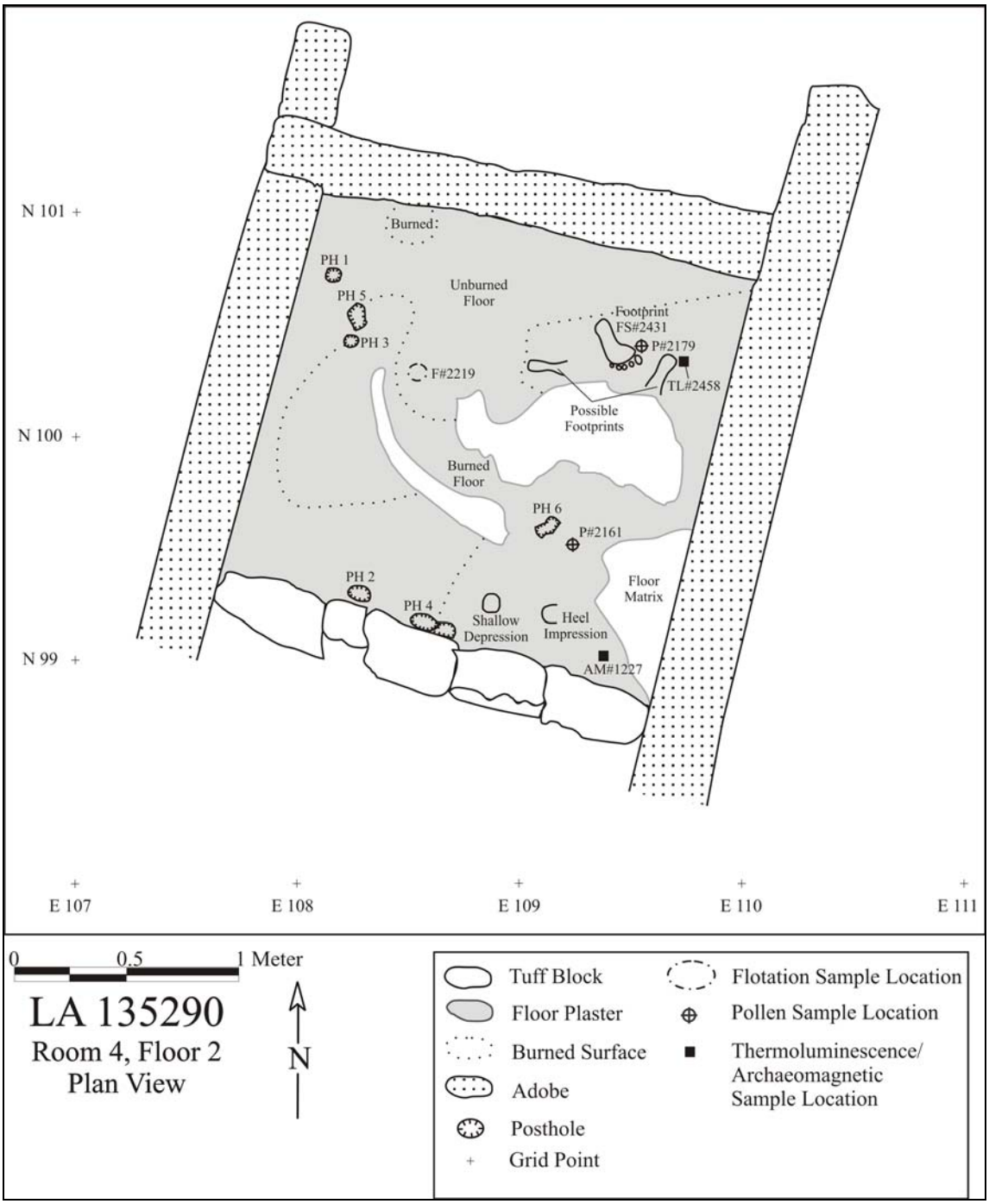


Figure 25.22. Room 4, Floor 2, plan view.

There are also a series of six postholes (Feature 10) present on Floor 2. Postholes 1 to 3 are circular in cross-section, with well-defined walls and vary from 4 to 9 cm in depth. In contrast, Postholes 4 to 6 are more irregular in shape and vary from 4 to 6 cm in depth. The latter holes are more ambiguous and may not be features. Pollen samples were taken from the fill (Stratum 30) of Postholes 1 (FS 2248) and 2 (FS 2249). Taxa identified in Posthole 1 include prickly pear, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, evening

primrose, fir, unidentified pine, piñon pine, juniper, and sagebrush. Taxa identified in Posthole 2 include maize, prickly pear, beeweed, lily family (Liliaceae), cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, evening primrose, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

As previously noted, the southern wall of Room 4 was constructed with Floor 2, thereby dividing Room 4 from Room 5. However, a small doorway was left at the eastern end of the wall, thereby allowing access between the rooms. The floor and adjacent wall where the doorway was located were burned, indicating that this access was open between the rooms. This doorway is visible in the Floor 3 photograph, but had not yet been identified when the Floor 2 photograph was taken. Room 4 was abandoned a second time, with rodent burrows (Stratum 40) removing sections of the floor. These holes were also filled with adobe and/or small pieces of tuff and then covered with Floor 1.

Floor 1 (Stratum 7) is the upper or most recent floor in the room (Figures 25.23 and 25.24). It consists of a two- to 4-cm-thick layer of adobe that covered the entire area of the room.

Figure 25.23. Photograph of Room 4, Floor 1 (looking east).

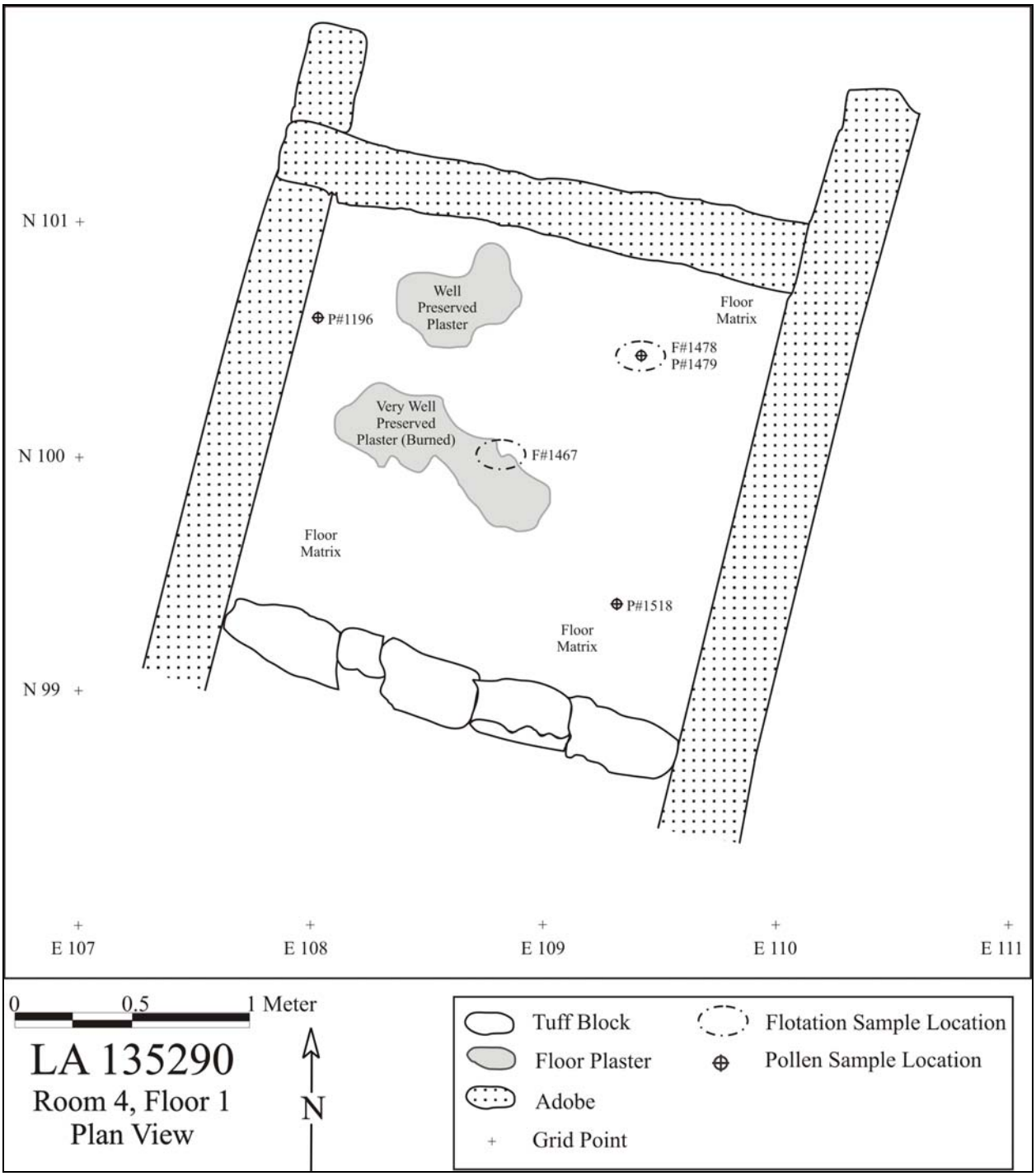


Figure 25.24. Room 4, Floor 1, plan view.

The floor was mostly unburned, except for a small heavily burned section in the middle of the floor. A small concentration of ash (Stratum 3b) was present on the floor and one pollen sample (FS 1479) was collected. Taxa identified in the pollen sample include prickly pear, cheno-ams, grass family, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, squawbush (*Rhus* type), and sagebrush.

The rest of the floor surface is partially eroded, but the floor matrix was clearly distinguishable from the fill and underlying Floor 2 surface. Two pollen samples were taken from the eastern and western section of the floor (FS 1196 and FS 1518). Identified taxa include cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. There are several unidentifiable impressions visible in the Floor 1 surface, including possible finger impressions. Otherwise, no features or floor artifacts were identified on the floor; although three smeared-indented and two indented corrugated sherds**,** a chalcedony core flake, and some charcoal (FS 2165, FS 2178, and FS 2199) were recovered from the matrix of the floor (Stratum 28). Identified macrobotanical taxa include saltbush/greasewood, unknown conifer, ponderosa pine, and maize. The doorway between Rooms 4 and 5 was sealed, separating the two rooms for the first time. Although Floor 1 articulates with most of the surrounding walls, it does not continue into adjacent Room 5 where the highest floor surface is situated several centimeters below Floor 1 in Room 4. This indicates that when Floor 1 was constructed in Room 4, no similar floor was constructed in Room 5. Room 4 was eventually abandoned for the last time.

Wall Construction. The east, west, and north walls of Room 4 are constructed of puddle adobe (Figure 25.25), while the south wall is constructed of masonry. The east wall is part of the central wall of the roomblock and is thicker than the other adobe walls surrounding the room. A TL sample (FS 1424) taken from a burned section of this wall yielded a date of AD 1035±77. As noted above, the south wall is a later addition that subdivided Room 4 from Room 5. There was a small doorway connecting the rooms. Otherwise, there is no evidence of any other doorways.

The east and west walls extend outside the north wall for about 50 to 90 cm. These sections appear to reflect some form of buttress. Subfloor adobe footings about 20 cm thick are present under the north, west, and east walls. Room 4 wall measurements are provided in Table 25.11.

Table 25.11. Room 4 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	2.08	0.28	0.22	Adobe
South	2.15	0.46	0.24	4
East	1.87	0.38	0.30	Adobe
West	1.69	0.35	0.24	Adobe

Figure 25.25. Room 4, north wall.

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 99N/108E and 100N/108-109E. In addition, samples were selected from floor contexts. Tables 25.12 and 25.13 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 4.

Table 25.12. Room 4 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
3	23	13	2	0	1	29
4	5	3	0	0	0	8
7	0	0	0	0	0	0
28	5	1	0	0	0	11
29	0	0	0	0	0	0
30	0	0	0	0	0	0
35	4	0	0	0	0	4
36	0	0	0	0	0	0
40	0	0	0	0	0	0
Total	**37**	**17**	**2**	**0**	**1**	**62**

Table 25.13. Samples selected for analysis in Room 4.

Stratum	Sample Type				
	Pollen	Flotation	Macrobotanical	TL	Archaeomag.
4a	1181	1179	1135	0	0
3b	1479	0	1465, 1515	0	0
7	1196, 1518	0	0	0	0
28	0	0	2178	0	0
29	2161, 2179	2219	0	0	0
30	2248, 2249	0	0	0	0
35	0	0	2481	2458	9902
36	2449, 2460	0	0	0	0
East Wall	0	0	0	1424	0

Room 5

Sequence of Excavation. Room 5 is located in the northwestern area of the roomblock. It measures 2.25 m north-south by 2.15 m east-west, with 4.84 m^2 of interior space. An east-west test trench (98N/107-109E) was excavated through the room to define site stratigraphy and the location of the floor. The excavation proceeded by removing the room fill by grid and natural layer to the south of the trench.

Fill. After the removal of a 10-cm-thick layer of post-occupational fill (Strata 1 and 2), most of the room fill consisted of 40 to 50 cm of Stratum 3, with some Stratum 4. Stratum 4a/4b were situated adjacent to the east wall of the room. In contrast, Stratum 3a was situated in the western area of the room and Stratum 3c was adjacent to the base of the walls. Pollen, flotation, and macrobotanical samples were taken from Strata 2 and 3 (see Table 25.16). Taxa identified in the pollen samples include prickly pear, grass family, cheno-ams, mustard family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Only one taxon (goosefoot) was identified in the flotation sample. Taxa identified in the macrobotanical samples include maize, mountain mahogany, juniper, bean, ponderosa pine, and cottonwood/willow. One of the macrobotanical samples (FS 902) includes a section of a burned juniper branch from Stratum 3.

Floor. Two separate floors were identified in Room 5. Floor 2 (Strata 42 and 49) is the lowest and original floor and is equivalent to Floor 3 in Room 4 (Figures 25.20 and 25.26). Both rooms were connected as a single room during this period, measuring 4.40 by 2.15 m in size and containing 9.46 m^2 in area. This is similar to the adjacent back room (Room 6) that contains 9.78 m^2 of space. Floor 2 was constructed by placing down a layer of adobe that had a thin layer of plaster on top. This contrasts with the upper floor in Room 5 and upper floors in Room 4 (Floors 1 and 2), which were solely constructed of a single thick layer of adobe that was used to fill the rodent holes. Floor 2 is only burned in a few small patches in the center of the room and has been heavily disturbed by rodent activity. However, unlike Room 4, most of this disturbance appears to postdate the site occupation as is evidenced by rodent holes that were filled with loose sediment and modern plant remains (e.g., pine nut shells). The only exception to this is the large

rodent disturbance located in the southwest corner of the room. This disturbance was cleaned out and filled in before the construction of Floor 1. Again, unlike Room 4, it was filled in with normal sediment rather than hardened adobe. It is possible that sediment rather than adobe was used because of the large size of the area to be filled in.

Figure 25.26. Photograph of Room 5, Floor 2 (east).

A single feature was identified on Floor 2. The feature consists of an adobe-lined pit (Feature 7) located in the west-central area of the room. The pit measures 30 by 36 cm in diameter and is 11 cm deep. The plaster lining is still intact in the northern section of the pit and exhibits no evidence of burning or a collar. A set of dog or coyote footprints were present on the south-central section of the floor, but no other artifacts were identified. Pollen samples (FS 2523 and FS 2562) were taken from the southeast and north-central sections of the floor, respectively. FS 2523 included maize, prickly pear, cheno-ams, grass family, pea family (Fabaceae), sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush. FS 2562 included prickly pear, grass family, cheno-ams, sunflower family, spurge family, fir (*Abies*), unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. The single flotation sample (FS 2584), which was taken from the central area of the floor, included goosefoot, sunflower family, unknown conifer, and evening primrose (*Oenothera*).

Floor 1 (Strata 21 and 41) is very well preserved and covers the entire room, although the surface is eroded (Figures 25.27 and 25.28). It is mostly unburned but does exhibit some burning in the central, west-central, and northeast sections of the room. The northern dividing wall was built

during this period, thereby separating Rooms 4 and 5. However, Floor 1 does extend under the eastern end of the wall, thereby connecting with Floor 2 in Room 4. A doorway appears to have existed in this location. Pollen (FS 1991 and FS 2043) and flotation (FS 1999, FS 2023, and FS 2057) samples were taken from the surface of Floor 1 (Stratum 21), and two flotation samples (FS 2526 and FS 2561) were taken from the floor matrix (Stratum 41). Taxa identified in the Floor 1 pollen samples include maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush. Taxa identified in the Floor 1 flotation samples include pigweed, saltbush/greasewood, mountain mahogany, goosefoot, cheno-ams, squash/coyote gourd (*Cucurbita*), juniper, pincushion cactus (*Mammillaria*), unidentified pine, piñon pine, ponderosa pine, cottonwood/willow, purslane, knotweed family (Polygonaceae), oak, dropseed grass, and maize.

Figure 25.27. Photograph of Room 5, Floor 1 (east).

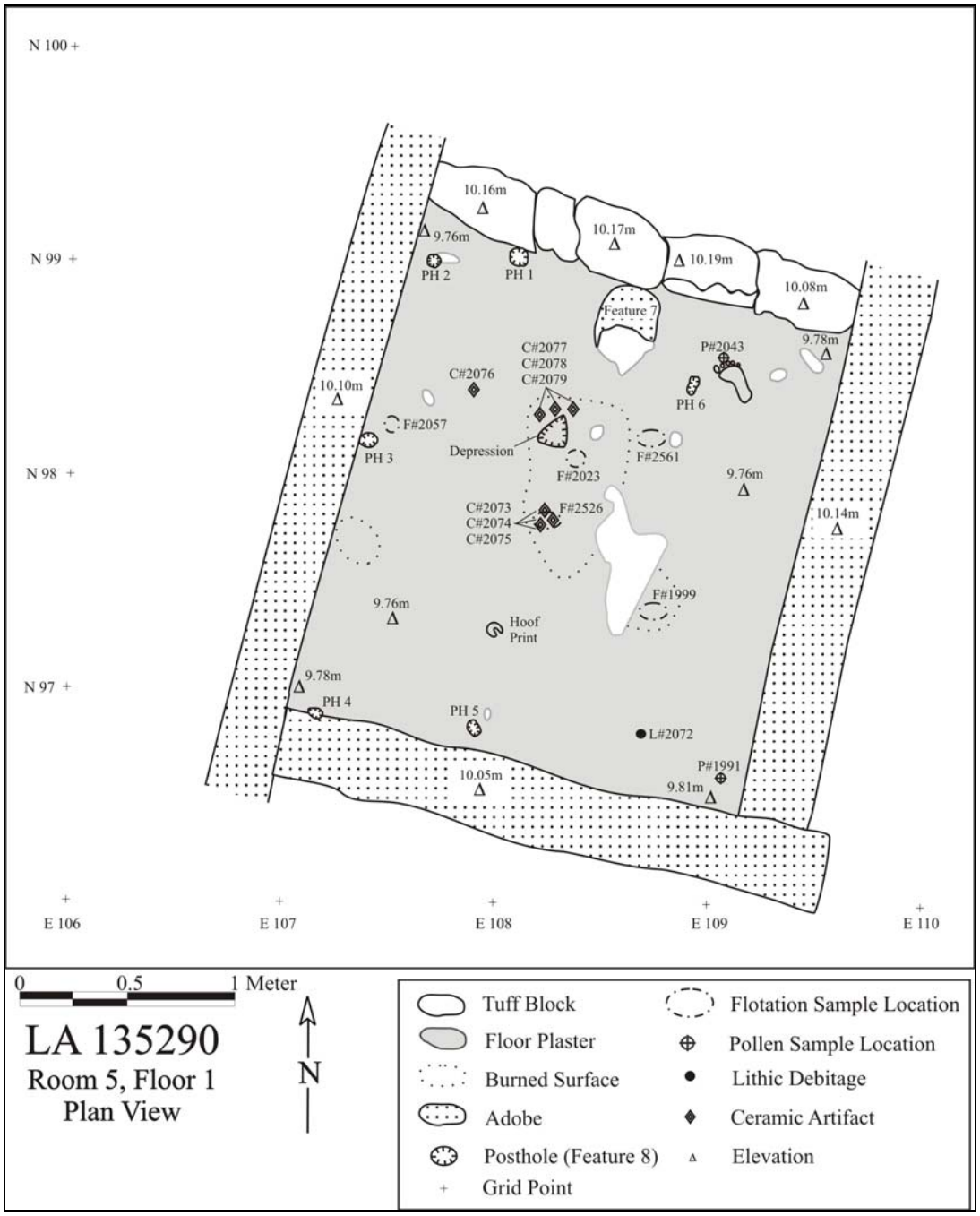


Figure 25.28. Room 5, Floor 1, plan view.

Two features were identified on Floor 1. Feature 7 continued to be used during the occupation of Floor 1, with the sides of the pit being coped to this upper floor. The fill (Stratum 22) consisted of a silty loam mixed with bits of charcoal and burned adobe. A flotation (FS 2027) and pollen (FS 2028) sample were both taken. Carbonized taxa identified in the flotation sample included pigweed, saltbush/greasewood, goosefoot, cheno-ams, sunflower family, unknown conifer, mint family (Labiatae), pincushion cactus, ponderosa pine, purslane, dropseed grass, and maize. Taxa

identified in the pollen sample included prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush.

Feature 8 consists of six possible postholes. The postholes are distributed in a westward-facing arc across the western half of the room. This is similar to the posthole pattern observed in adjacent Room 6. The single exception is Posthole 6, which is located in the northeast corner of the room near Feature 7. The postholes were generally circular in cross-section with well-defined sides and bottoms. The postholes measured about 5 to 7 cm wide and 5 to 14 cm deep. Pollen samples were taken from the fill (Stratum 27) of Posthole 1 (FS 2104) and Posthole 3 (FS 2105). This fill was identical to sediment present immediately above the floor surface. Taxa identified in Posthole 1 included maize, prickly pear, cactus family (Cactaceae), beeweed, cheno-ams, grass family, pea family, sunflower family, ragweed/bursage, penstemon family (Scrophulariaceae), unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Taxa identified in Posthole 3 included maize, cheno-ams, grass family, sunflower family, ragweed/bursage, evening primrose family (Onagraceae), fir, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Three Santa Fe Black-on-white sherds, a smeared-indented corrugated sherd, three plainware body sherds (FS 2073 to FS 2079), and a chalcedony core flake (FS 2072) were found lying directly on the floor. In addition, three Santa Fe Black-on-white sherds, six smeared-indented corrugated sherds, three plainware body sherds, and two clay balls were recovered from the floor matrix. Besides these artifacts, a human footprint was present in the northeast corner of the room and a deer footprint was identified in the south-central section of the floor.

Wall Construction. The south, east, and west walls of Room 5 were constructed of adobe (Figure 25.29). These walls are about 30 to 40 cm high and 25 to 30 cm wide. In contrast, the north wall is constructed of tuff block masonry that is three courses high (40 cm) and about 25 cm wide (Figure 25.30). This wall does not fit the original roomblock design and represents a later addition that divided a single large room into two separate rooms (4 and 5). This event was associated with the construction of Floor 2 in Room 4 and Floor 1 in Room 5. The foundation of the wall consisted of the basal stones that were set into the original floor of the room. A narrow 50 cm wide entryway was left at the eastern end of the north wall, which left access between the two rooms. Both sides of the wall that were adjacent to the doorway were burned, which indicated that the doorway was open during this period. A TL sample (FS 1424) was taken from the burned section of the wall. The sample dated to 977±75. The doorway was subsequently sealed during the construction of Floor 1 in Room 4. No other doorways were identified in the roomblock.

Figure 25.29. Photograph of Room 5, south wall.

Room 5 wall measurements are provided in Table 25.14. Subfloor adobe footings about 20 cm thick are present under the east, west, and south walls.

Table 25.14. Room 5 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	2.15	0.46	0.24	4
South	2.20	0.30	0.30	Adobe
East	2.25	0.40	0.25	Adobe
West	2.40	0.38	0.25	Adobe

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 97N/108-109E. In addition, samples were selected from floor contexts. Tables 25.15 and 25.16 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 5, respectively.

Figure 25.30. Photograph of Room 5, north wall.

Table 25.15. Room 5 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
2	3	0	0	0	0	3
3	86	20	0	6	0	112
4	2	3	0	0	1	6
21	7	1	0	0	0	8
22	0	0	0	0	0	0
27	0	0	0	0	0	0
41	15	0	0	1	2	18
42	0	0	0	0	0	0
46	0	0	0	0	0	0
49	0	0	0	0	0	0
Total	**110**	**24**	**0**	**7**	**3**	**144**

Table 25.16. Samples selected for analysis in Room 5.

Stratum	Sample Type			
	Pollen	Flotation	Macrobotanical	TL
2	983	0	0	0
3	988	985	902, 912	0
4	0	0	1080	0
21	1991, 2043	1999, 2023, 2057	0	0
22	2028	2027	0	0
27	2104, 2105	0	0	0
41	0	2526, 2561	2513	0
42	2523, 2562	0	0	0
49	0	2584	0	0

Room 6

Sequence of Excavation. Room 6 is located in the southwest area of the roomblock. The room measures 1.75 m north-south by 1.75 m east-west, with 3.06 m^2 of interior space. An east-west test trench (93N/106-108E) was also excavated through the room to define site stratigraphy and the location of the floor. The excavation proceeded by first removing the fill to the north of the trench and then to the south by grid and natural layer.

Fill. After 10 cm of post-occupational fill (Strata 1 and 2) was removed, most of the remaining room fill consisted of 30 to 40 cm of Stratum 3. Stratum 4 was only defined in a small area in the south part of the room. Pollen, flotation, and macrobotanical samples were taken from Strata 2, 3a, and 3b (see Table 25.19). Taxa identified in the pollen samples collected from the fill levels include beeweed, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, rose family, and sagebrush. Taxa identified in the fill flotation samples include saltbush/greasewood, goosefoot, juniper, unidentified pine, unknown conifer (Gymnospermae), piñon pine, ponderosa pine, and maize. Taxa identified in the macrobotanical samples include mountain mahogany, unknown conifer, bean, unidentified pine, piñon pine, ponderosa pine, cottonwood/willow, oak, and maize.

Floor. Three distinct floors were identified in Room 6. Floor 3 (Stratum 8) is the lowest and the original floor that covers the entire area of Room 6 (Figures 25.31 and 25.32). It consists of a 3- to 4-cm-thick layer of adobe that has been hardened and blackened by burning in most areas, with a few rodent-disturbed spots. There are, however, some unburned areas situated adjacent to the walls in the southern area of the room. A human handprint is visible in the northwest corner of the room. Pollen (FS 1899) and flotation (FS 1890) samples were taken from the surface of Floor 3. Taxa identified in the pollen sample include prickly pear, cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. Carbonized taxa identified in the flotation sample taken on Floor 3 include cheno-ams and dropseed grass. A pollen (FS 1432) and flotation (FS 1589) sample were also taken from ashy sediment and a charcoal concentration present on the north-central section of the floor. Taxa identified in the pollen sample include maize, cheno-ams, grass family, sunflower family, penstemon family, fir, unidentified pine, piñon pine, juniper, rose family, Mormon tea, and

sagebrush. Charred taxa identified in the flotation sample in the ashy concentration include piñon pine, ponderosa pine, Douglas fir (*Pseudotsuga menziesii*), oak, and maize. Portions of a small, burned ponderosa pine roof beam (FS 1587) were found in the central area of the floor where the area was extremely burned. Taxa identified in the other macrobotanical samples include unknown conifer, bean, unidentified pine, ponderosa pine, oak, cottonwood/willow, and maize.

Figure 25.31. Photograph of Room 6, Floor 3 (east).

Two archaeomagnetic samples were taken from Room 6 (sets 1226 and 1228). Results show that Room 6 experienced multiple burning incidents. Floor 3 was the original floor of the room. After a period of use, the room burned, burning the floor and littering the floor with charcoal and other structural debris (set 1226). Floor 2 was constructed on top of this debris, and it also was burned after a period of use. No archaeomagnetic samples were collected from Floor 2, but a set was collected from the east wall of the room, above the level of Floor 2 (1228). This wall would have been affected by the burning incidents associated with both Floors 3 and 2, but the Floor 2 incident would have erased the magnetic orientation created by the Floor 3 burn if the original burning reached equivalent or higher temperatures. Evidence of a final floor (Floor 1) was preserved as a large unburned adobe patch in the fill above Floor 2. Floor 1 was not visibly burned. The eight specimens collected from Floor 3 (1226 yielded a date range estimate of AD 1170–1210. The date range based on the SWCV2000 curve again appears to be too early (AD 1125–1175). The six specimens collected from the wall of the room (1228) were collected between 16 and 25 cm above Floor 3, and at that elevation they would have been affected by the

fire that is associated with Floor 2 as well as that of Floor 3. Assuming that the Floor 2 fire generated a similar or greater heat than the Floor 3 fire, the magnetic orientation of this set would have been determined by the Floor 2 fire alone. The date range estimate from the Wolfman curve is AD 1185–1230. The corresponding date estimate based on the SWCV2000 curve is AD 1020–1110, which is an unlikely calibration for this time period.

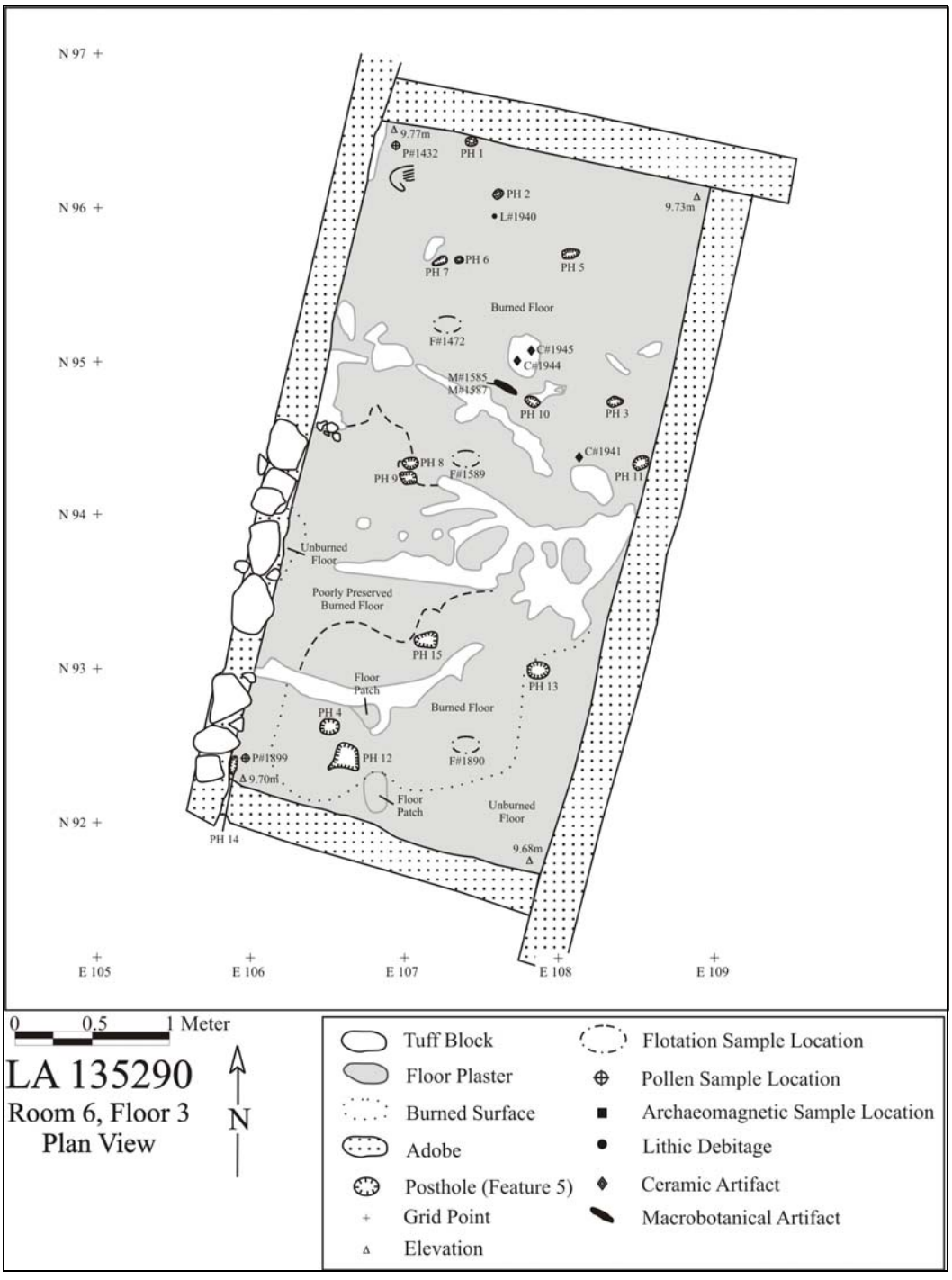


Figure 25.32. Room 6, Floor 3, plan view.

Eleven possible postholes (Feature 5) were identified on Floor 3 (Figure 25.33). The postholes were circular to oval in cross-section and were 5 to 10 cm in diameter and 7 to 14 cm in depth. Most of the posthole fill was similar to the sediments overlying the floor, but Posthole 4 contained a lot of charcoal and ash (Stratum 20).

Figure 25.33. Room 6 postholes (northeast).

A single posthole (15) was patched with adobe. A smeared-indented corrugated sherd was recovered from the fill of Posthole 14 and a chalcedony core flake (FS 1940) and three smeared-indented corrugated sherds (FS 1941, FS 1944, and FS 1945) were recovered from the floor. Pollen samples were taken from Postholes 1 (FS 1920) and 4 (FS 1923). Taxa identified in

Posthole 1 included maize, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Taxa identified in Posthole 4 included maize, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Floor 2 (Strata 17 and 18) is the middle floor of Room 6 (Figure 25.34). Like Floor 3, Floor 2 is also in very good condition, having been heavily burned. However, the floor represents a large adobe patch to Floor 3 situated in the south side of the room.

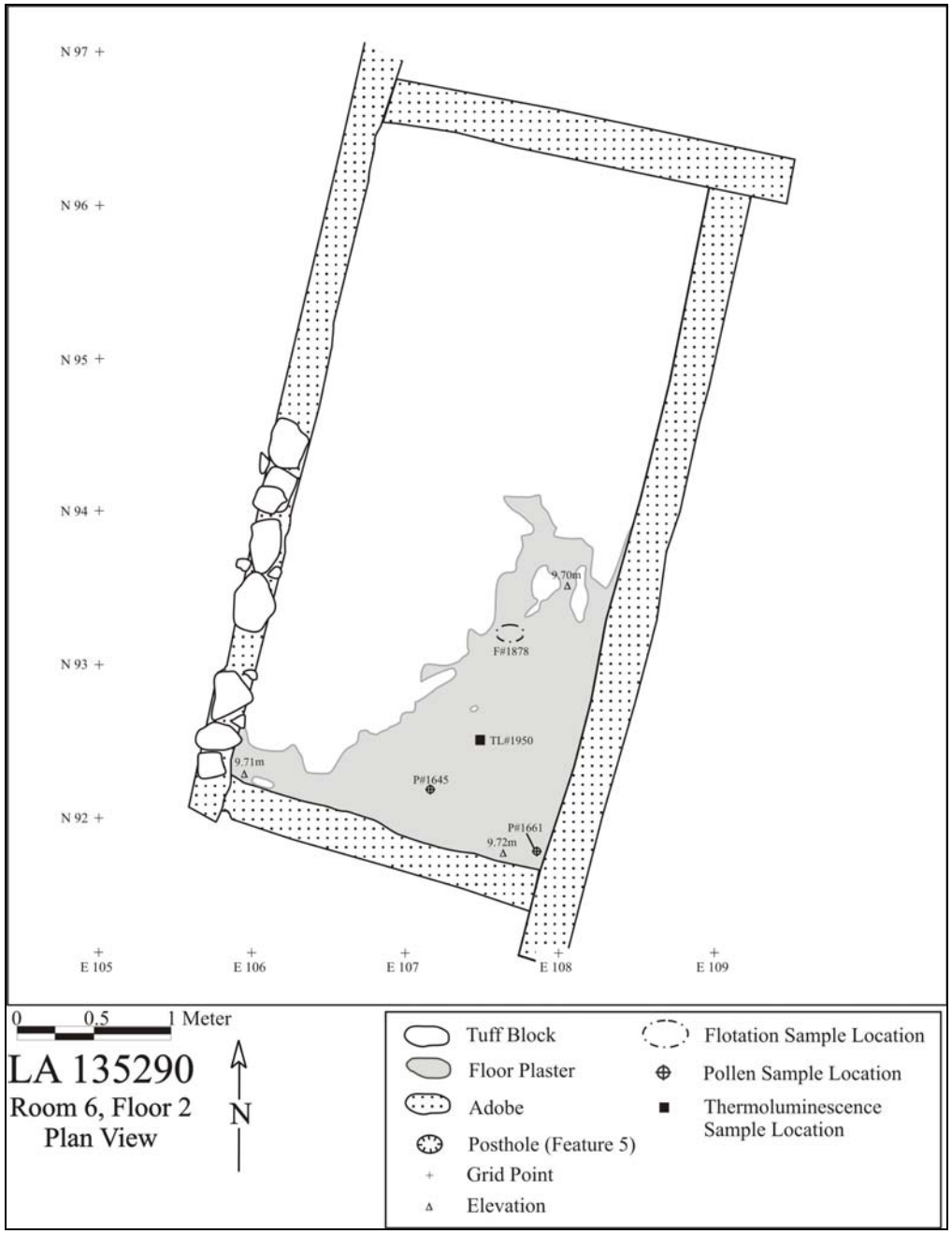


Figure 25.34. Room 6, Floor 2, plan view.

The area was presumably patched due to rodent disturbance or heavy burning. No features or artifacts were associated with this section of the floor. Pollen (FS 1645 and FS 1661) and flotation (FS 1878) samples were taken from the floor. Taxa identified in the pollen samples included maize, prickly pear, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, fir, unidentified pine, piñon pine, juniper, rose family, Mormon tea, and sagebrush. No carbonized taxa were identified in the flotation sample collected from Floor 2. A TL sample (FS 1950) taken from the burned floor yielded a date of AD 1134±79.

Floor 1 (Strata 12 and 15) is the uppermost floor in Room 6 (Figures 25.35 and 25.36). This floor exhibits a large adobe patch in the central part of the room that could have been used to fill some rodent disturbance or burned area, but it is not burned. Pollen (FS 1852) and flotation (FS 1851) samples were taken from the floor. Taxa identified in the pollen sample included squash (*Cucurbita*), maize, cholla (*Opuntia*), prickly pear, parsley family (Apiaceae), cheno-ams, grass family, sunflower family, ragweed/bursage, evening primrose, unidentified pine, piñon pine, juniper, and sagebrush. Carbonized taxa identified in the flotation sample included pigweed, cheno-ams, juniper, and ponderosa pine. Silicified wood and obsidian flakes were present on the floor.

Figure 25.35. Photograph of Floors 1 and 3.

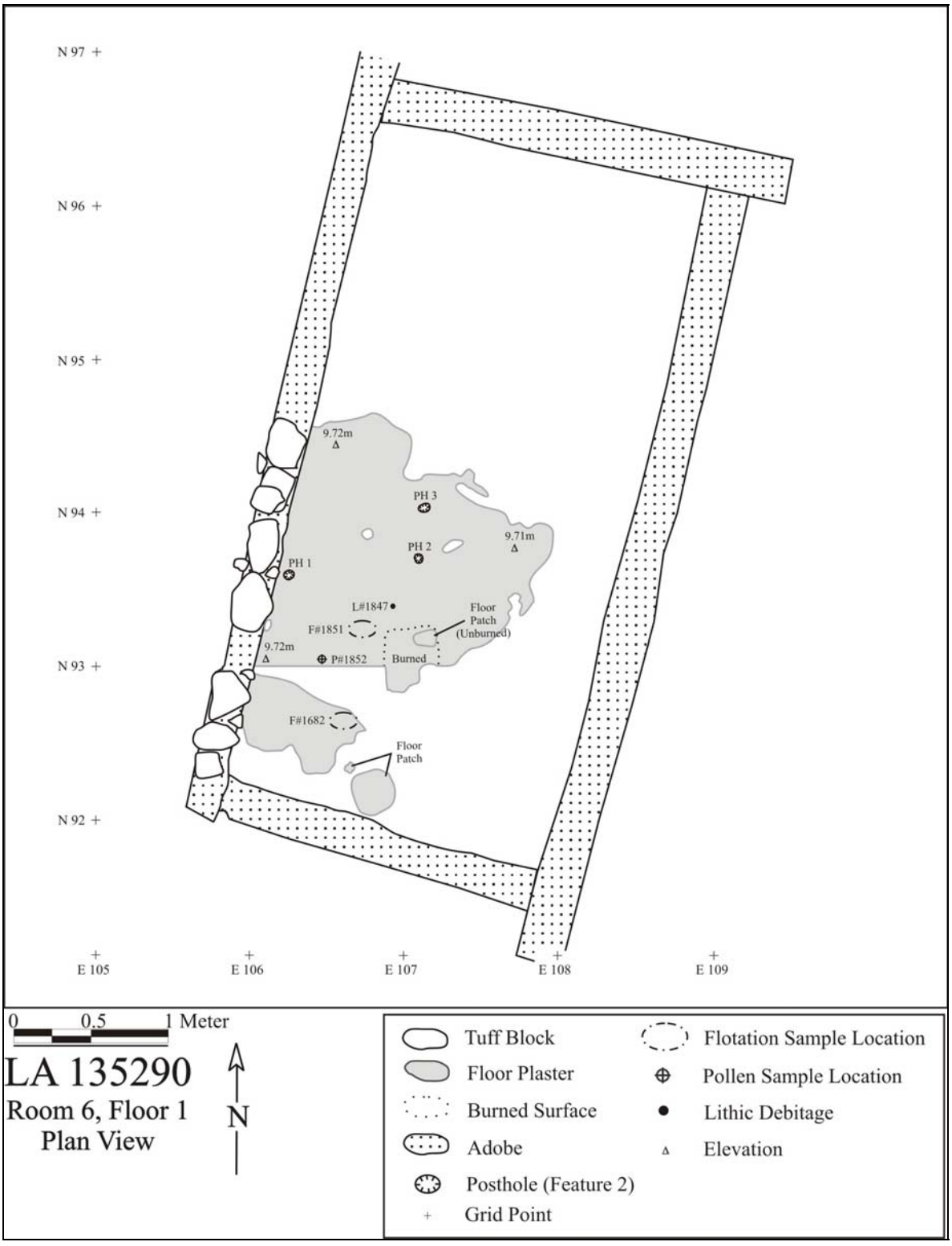


Figure 25.36. Room 6, Floor 1, plan view.

A single feature (Feature 2, three postholes) and a silicified wood core flake (FS 1847) were associated with the floor (Figure 25.37). All three postholes were circular-shaped and were

approximately 5 cm in diameter and 10 cm deep. Pollen samples were taken from the fill (Stratum 14) of two postholes (FS 1820 and FS 1821). Identified taxa included prickly pear, beeweed, cheno-ams, grass family, sunflower family, spurge family, evening primrose (*Oenothera*), fir, unidentified pine, piñon pine, juniper, oak, cottonwood/willow, rose family, Mormon tea, and sagebrush.

Figure 25.37. Room 6, Floor 1, Feature 2 postholes (west).

The sub-floor deposit (Stratum 46) was a silty clay layer that was 15 to 20 cm thick, which was situated on top of the Bwb1 soil horizon. This stratum represents artificial fill that was brought to the site to level the area where the roomblock was constructed.

Wall Construction. All four walls of Room 6 are constructed of adobe and stand to a height of about 30 to 50 cm. The west wall also has two courses of unshaped tuff capping the adobe wall, as well as some wallfall outside of the wall. At least some of the wall was constructed with an adobe lower section and masonry upper section. Much of the surface of these walls was heavily burned, including the northeast corner, the northwest corner, and the southern one-third of the room (especially the east wall, but some on the south and west walls). A TL (FS 1738) and archaeomagnetic (set 1228) sample were taken from the west wall (Figure 25.38). The TL sample yielded a date of AD 1114±85 and the archaeomagnetic sample yielded a date of AD 1185 to 1230.

Figure 25.38. Burned west wall in Room 6.

Room 6 wall measurements are provided in Table 25.17. There is no evidence of doorways in any of the walls. Subfloor adobe footings about 20 cm thick are present under the north, south, east, and west walls.

Table 25.17. Room 6 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	2.15	0.40	0.25	Adobe
South	2.15	0.30	0.25	Adobe
East	4.65	0.48	0.30	Adobe
West	4.50	0.52	0.30	Adobe

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 92-94N/107E. In addition, samples were selected from floor contexts. Tables 25.18 and 25.19 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 6, respectively.

Table 25.18. Room 6 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	23	6	0	0	0	29
2	20	6	0	0	0	26
3	258	88	10	2	8	366
4	24	4	1	0	0	29
8	3	1	0	0	0	4
12	0	1	0	0	0	1
14	0	0	0	0	0	0
15	0	1	0	0	0	1
17	0	0	0	0	0	0
18	0	0	0	0	0	0
20	1	0	0	0	0	1
44	1	0	0	0	0	1
46	1	0	0	0	0	1
Total	331	107	11	2	8	459

Table 25.19. Samples selected for analysis in Room 6.

Stratum	Sample Type				
	Pollen	Flotation	Macrobotanical	TL	Archaeomag.
2	1084	1083	0	0	0
3a	1097	1096	1095	0	0
3b	1132	1131	1130, 1471	0	0
4	0	0	968	0	0
8	1432, 1899	1472, 1589, 1890	1585, 1587	0	1226
12	0	1682	0	0	0
14	1820, 1821	0	0	0	0
17	1645, 1661	0	0	0	0
18	0	1878	0	1950	0
West Wall	0	0	0	1738	1288

Room 7

Sequence of Excavation. Room 7 is located in the southwestern corner of the roomblock. It measures 4.55 m north-south by 2.20 m east-west, with 10.01 m^2 of interior space. The excavation proceeded from north to south by grid and natural layer.

Fill. Deposits in Room 7 were quite shallow, in part reflecting the lack of wallfall in the room fill. Post-occupational deposits (Strata 1 and 2) were only 5 to 10 cm thick, with the room fill primarily consisting of 20 to 30 cm of Stratum 3, with some Stratum 4. The limited amount of

wallfall was situated in the northwest and east-central sections of the room adjacent to masonry walls. Pollen, flotation, and macrobotanical samples were taken from Strata 3 and 4 (see Table 25.22). Taxa identified in the pollen samples included maize, beeweed, cheno-ams, grass family, mustard family, pea family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak, birch (*Betula*), sedge (Cyperaceae), and sagebrush. Charred taxa identified in the flotation samples included saltbush/greasewood, piñon pine, ponderosa pine, oak, and maize. Taxa identified in the macrobotanical samples included mountain mahogany, unidentified pine, piñon pine, ponderosa pine, cottonwood/willow, bean, and maize.

Floor. There is no prepared floor in Room 7 (Figures 25.39 and 25.40). The floor (Stratum 33) simply consists of a compact living surface situated at the same level as Floors 1 and 2 in Room 6. The surface is generally in poor condition, but is best-preserved in the northern part of the room and in a small section in the southeast corner of the room. Otherwise, both erosion and root disturbance have greatly impacted the southern area of Room 7.

Figure 25.39. Photograph of Room 7 (east).

No floor features were identified, however, several artifacts were found lying directly on or embedded into it. These artifacts consist of a red burned shale bead (FS 2317), a grinding slab (FS 2396), dacite and quartzite pebbles with ground surfaces (FS 2397 and FS 2399), and two Wiyo Black-on-white sherds (FS 2400 and FS 2401). One of these sherds was submitted for TL dating and provided a date of AD 1217±56. Pollen samples were taken from underneath the grinding slab (FS 2398**)** and the two sherds. Identified taxa included squash, maize, cholla,

cheno-ams, grass family, mustard family, sunflower family, ragweed/bursage, unidentified pine, juniper, and sagebrush.

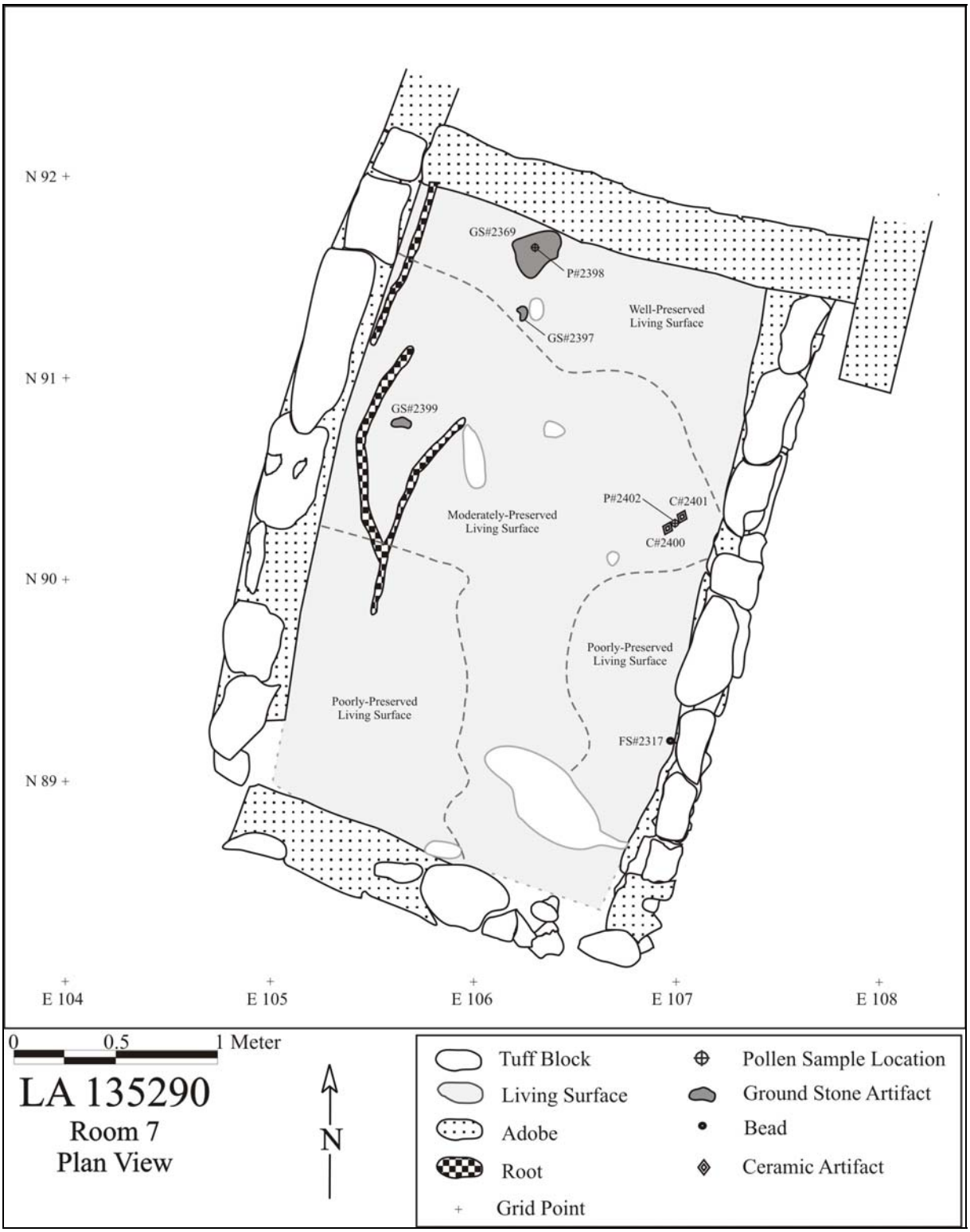


Figure 25.40. Room 7 plan view.

Wall Construction. The north wall of Room 7 is constructed of adobe. This wall is presumably the original southern wall to the roomblock. Both Rooms 3 and 7 appear to be later additions. For example, the eastern wall of Room 7 is offset with the east wall of Rooms 4 to 6, with the former being constructed of tuff blocks and the latter of adobe. The west wall of Room 7 is also constructed of tuff blocks with a shallow adobe foundation in its northern section. This wall does line up with the west wall of Rooms 4 to 6. The southern wall of the Room 7 is constructed of tuff blocks, but is in very poor condition, especially in the southwest corner of the room. The low wall height (10 cm) and paucity of wallfall may indicate that the south wall was not a full standing wall.

Room 6 wall measurements are presented in Table 25.20. There is no evidence of doorways in any of the walls. Subfloor adobe footings that are about 20 to 25 cm thick are present in the north, east, and west walls.

Table 25.20. Room 7 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	1.78	0.25	0.30	Adobe
South	1.85	0.10	0.25	1
East	3.17	0.30	0.25	2
West	3.05	0.35	0.23	1

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 89-91N/106E. In addition, samples were selected from floor contexts. Tables 25.21 and 25.22 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 7, respectively.

Table 25.21. Room 7 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	12	1	0	0	0	13
2	6	0	0	0	0	6
3	24	2	1	0	0	27
4	11	8	0	0	0	19
33	2	0	3	0	1	6
Total	55	11	4	0	1	71

Table 25.22. Samples selected for analysis in Room 7.

Stratum	Sample Type			
	Pollen	Flotation	Macrobotanical	TL
3	1276	1277	2281, 2303	0
4	2316	2315	2314	0
33	2398, 2402	0	0	2400

Room 8

Sequence of Excavation. Room 8 is located in the northeastern corner of the roomblock. It measures 4.10 m north-south by 2.80 m east-west, with 11.48 m^2 of interior space. The excavation proceeded north to south by grid and natural layer.

Fill. Deposits in Room 8 were somewhat shallower, since the room is situated at the eastern edge of the mound. Stratum 1 is only about 5 cm thick, with 20 cm of Stratum 4 mostly situated adjacent to the west wall and a similar thick layer of silty loam (Stratum 13) present in the northern area of the room near a tree stump. These deposits were underlain with approximately 10 cm of Stratum 3. No wallfall was identified adjacent to the east wall. Pollen, flotation, and macrobotanical samples were taken from Strata 3 and 4 (see Table 25.25). Taxa identified in the pollen samples included maize, prickly pear, parsley family, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, rose family, Mormon tea, and sagebrush. Taxa identified in the flotation samples included unknown conifer, juniper, piñon pine, ponderosa pine, maize, and oak. Taxa identified in the macrobotanical samples included unidentified pine, ponderosa pine, and cottonwood/willow.

Floor. The floor (Stratum 23) is poorly preserved in Room 8, having been disturbed by rodent activity and roots (Figures 25.41 and 25.42). However, there are several small intact sections that consist of 6 to 7 cm of adobe with a thin plaster wash. These small patches are preserved in the area of the west and north walls. There were a few tiny burned spots on the floor, but it is unclear as to whether these are related to a burned roof or the presence of a nearby hearth. A cluster of three smeared-indented corrugated sherds was found in the north-central area of the floor, and a flotation sample (FS 2528) was taken nearby. Taxa identified in the flotation sample included goosefoot, cheno-ams, juniper, unidentified pine, piñon pine, ponderosa pine, and maize.

A hearth (Feature 9) is located in the middle of the room. The feature is an adobe-lined pit with heavily oxidized sides, but no collar (Figures 25.43 and 25.44). It is circular in shape, with straight side walls and a mostly flat bottom. The pit is about 65 cm in diameter and 20 cm deep. The fill of the hearth consists of an ashy soil mixed with pockets of charcoal with solid pieces of ash (Stratum 37). All of the hearth fill was taken as flotation samples (FS 2473, FS 2474, FS 2475, FS 2477, FS 2488, FS 2489, FS 2490, FS 2491, and FS 2492). Carbonized taxa identified in **t**hese samples included saltbush/greasewood, mountain mahogany, goosefoot, cheno-ams, unknown conifer, unidentified pine, juniper, piñon pine, ponderosa pine, cottonwood/willow, oak, and maize.

Two pollen samples (FS 2486 and FS 2487) and a macrobotanical sample (FS 2485) were also taken. Taxa identified in the pollen samples included maize, beeweed, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, fir, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Taxa identified in the macrobotanical sample include unidentified pine, piñon pine, ponderosa pine, and cottonwood/willow. Eight smeared-indented corrugated sherds were recovered from the fill. Maize kernels and cupules (FS 2475) recovered from the hearth fill yielded an accelerator mass spectrometer (AMS) date of 830±40

BP (Beta-199388) and a date of cal AD 1220 with a two-sigma date range of cal AD 1160–1270. An archaeomagnetic (set 1230) and TL sample (FS 2595) were taken from the rim of the hearth and another TL sample (FS 2574) was taken from the base of the hearth (Stratum 47). The archaeomagnetic sample yielded a date of AD 1035 to 1070 or AD 1195 to 1240, and the TL samples dated to AD 1073±135 and 851±125, respectively.

Figure 25.41. Photograph of Room 8 (south).

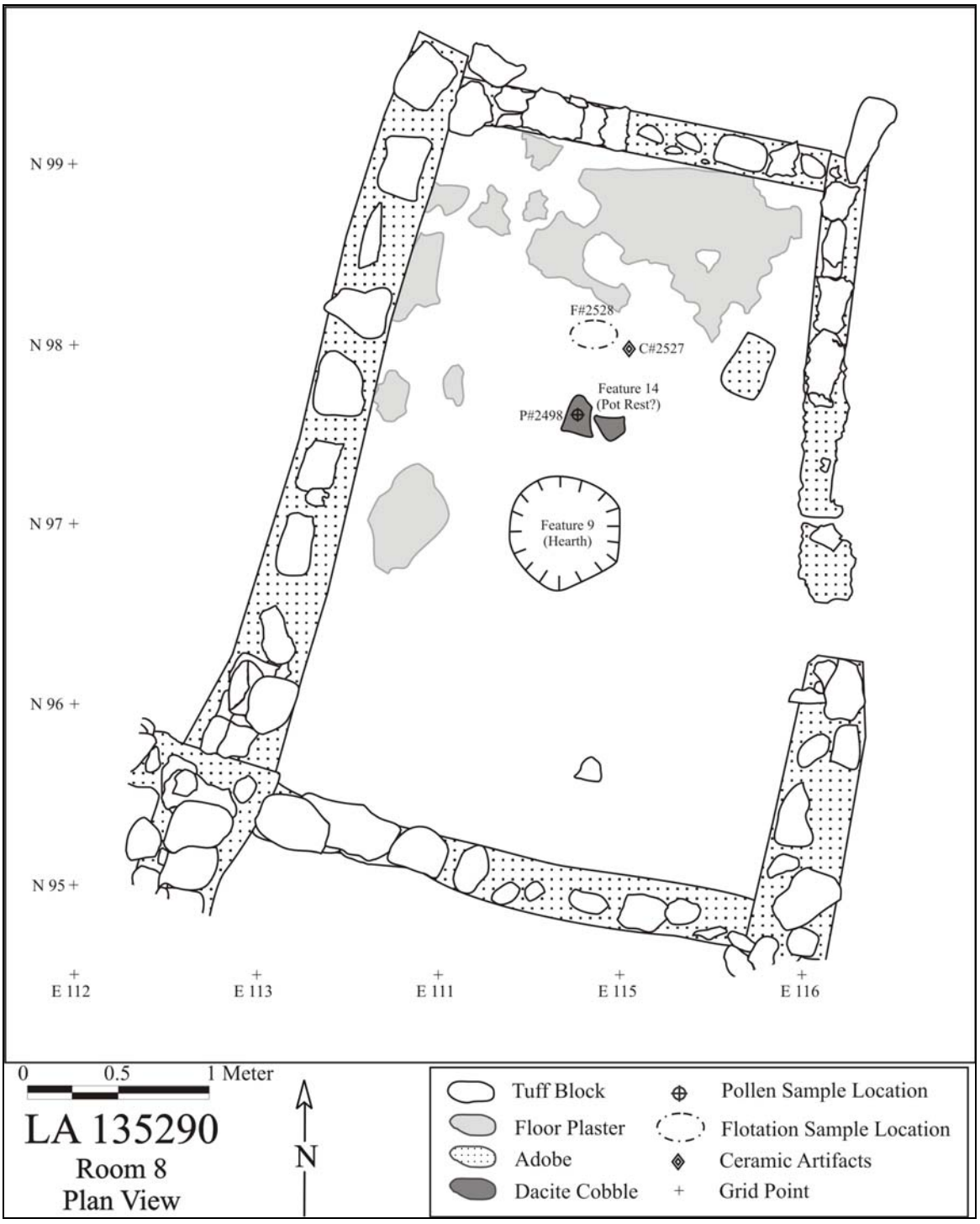


Figure 25.42. Room 8 plan view.

Figure 25.43. Photograph of Feature 9.

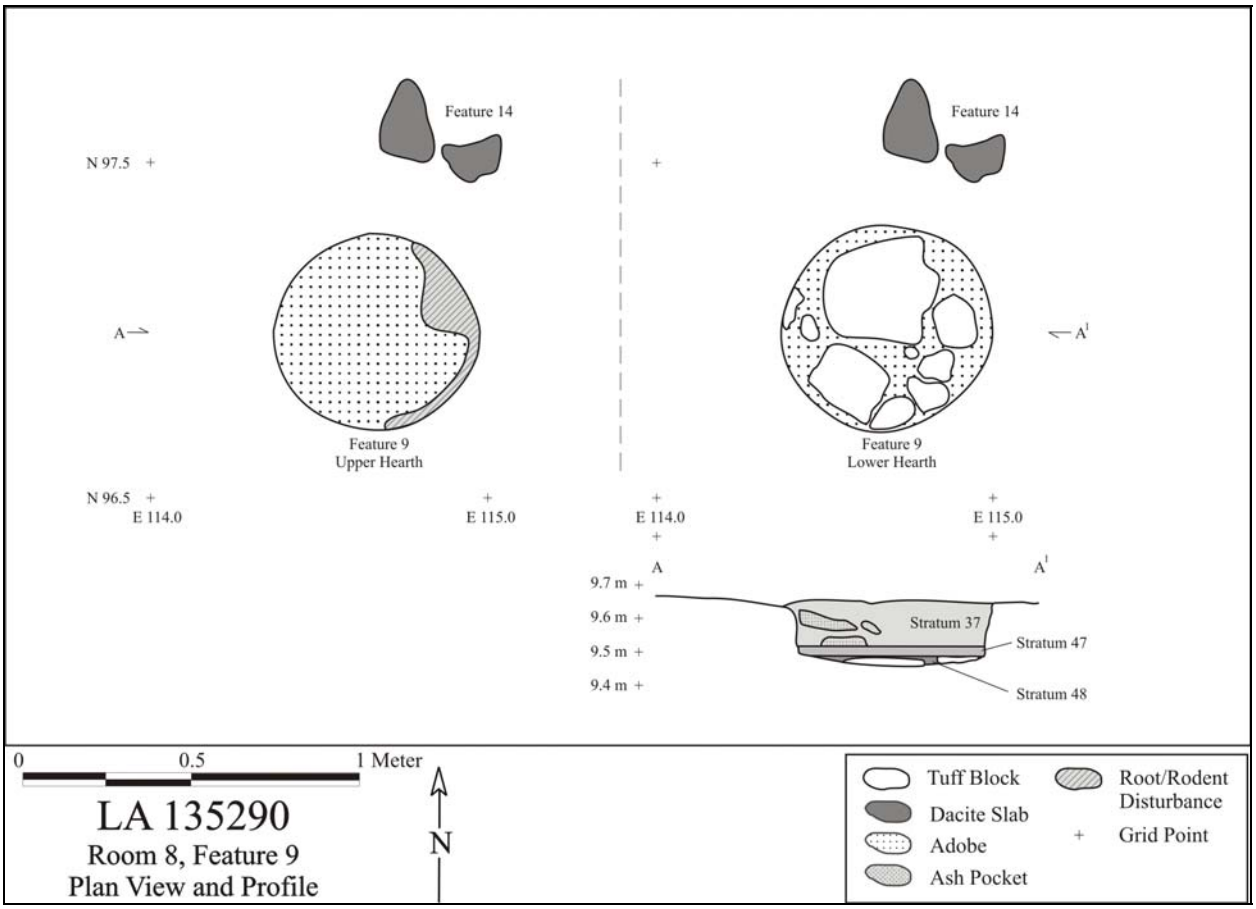


Figure 25.44. Feature 9 plan view and cross section.

After the fill was removed from the hearth, it was determined that the bottom of the hearth had been remodeled. It appears that the upper 3 to 4 cm of adobe lining the bottom of the hearth (Stratum 47) had been directly laid over a lower and older base to the hearth (Stratum 48; Figure 25.45). This lower section consisted of several pieces of tuff set in adobe mortar that was lightly oxidized with some ash staining. A pollen sample (FS 2586) was taken from this lower portion of the hearth. Taxa identified in this sample included maize, prickly pear, cheno-ams, grass family, sunflower family, evening primrose, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

A set of dacite cobbles (Feature 14) had been set into adobe about 20 cm to the north of the hearth. This feature may represent a pot rest. A pollen sample (FS 2498) was taken from underneath one of the cobbles. Taxa identified in this sample included maize, parsley family, cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Figure 25.45. Feature 9, upper and lower hearth.

Wall Construction. The northern and western walls in Room 8 are well preserved compared to the poorly preserved east and south walls (Figures 25.46 and 25.47). All four walls were composed of tuff block masonry and had adobe mortar. The north and south walls are continuations of the east-west-running walls through Rooms 1 and 4/5. Therefore, Room 8 was constructed at the same time and does not reflect a later addition like Rooms 3 and 7. However, the upper section of the southern wall was constructed of tuff blocks, while the lower section is composed of adobe about 10 to 20 cm high. The eastern wall of Room 8 consists solely of a single course of stones. Since no wallfall was present in this area, it is unclear as to whether this was originally a full-standing wall, or whether the stone was scavenged to build the nearby rock alignments in the plaza. At any rate, there is a gap in the wall that could represent a doorway. A single Wiyo Black-on-white sherd was recovered from the east wall.

Figure 25.46. Room 8, west wall.

Figure 25.47. Room 8, south wall.

Room 8 wall measurements are provided in Table 25.23. Subfloor adobe footings about 15 cm thick were present under the north, west, and south walls. No footings were present under the east wall.

Table 25.23. Room 8 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	2.10	0.65	0.30	3
South	2.80	0.50	0.26	3
East	4.10	0.29	0.32	1
West	3.90	0.54	0.30	3

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 96N/115E and 97N/114-115. In addition, samples were selected from floor contexts. Tables 25.24 and 25.25 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Room 7, respectively.

Table 25.24. Room 8 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	41	7	0	0	0	48
2	2	1	0	0	0	3
3	262	17	3	0	1	283
4	105	10	1	0	0	116
13	50	4	0	0	0	54
23	3	0	0	0	0	3
37	8	0	2	0	0	10
Total	**471**	**39**	**6**	**0**	**1**	**517**

Table 25.25. Samples selected for analysis in Room 8.

Stratum	Sample Type				
	Pollen	Flotation	Macrobotanical	TL	Archaeomag.
3	2051, 2498	2496	2108	0	0
4	2231	2232	2213, 2263	0	0
23	2498	2528	0	0	0
37	2486, 2487	2473, 2474, 2475, 2477, 2488, 2489, 2490, 2491, 2492	2485	0	0
47	0	0	0	2574, 2595	9905
48	2586	0	0	0	0

Room 9

Sequence of Excavation. Room 9 is located in the southeastern corner of the roomblock. It is divided into northern (9A) and southern (9B) halves. The entire room measures 4.6 m north-south by 2.8 m east-west, with 12.88 m^2 of interior space. However, a dividing wall separates the room into two small areas with 7.28 m^2 and 3.96 m^2 of floor space, respectively. The excavation proceeded from east to west in Rooms 9A and 9B by removing the room fill by grid and natural layer.

Fill. The fill consists of a thin 5-cm layer of Stratum 1, with 10 to 20 cm of Stratum 4 underlain with 5 to 15 cm of Stratum 3. In Room 9A the lower 10 cm contained a large amount of charcoal. This concentration of charcoal was missing from Room 9B. Pollen, flotation, and macrobotanical samples were taken from Strata 3 and 4 in Rooms 9A and 9B (see Tables 25.29 and 25.31). Taxa identified in the pollen samples from the fill in Room 9A included prickly pear, cheno-ams, grass family, mustard family, sunflower family, globemallow (*Sphaeralcea*), spurge family, unidentified pine, piñon pine, juniper, rose family, and sagebrush. Taxa identified in the pollen samples from the fill in Room 9B included prickly pear, beeweed, cheno-ams, grass family, sunflower family, unidentified pine, juniper, oak, and sagebrush. Taxa identified in the flotation samples from the fill in Room 9A included mountain mahogany, goosefoot, unknown conifer, juniper, piñon pine, ponderosa pine, and maize. Taxa identified in the flotation samples from the fill in Room 9B included pigweed, goosefoot, cheno-ams, unknown conifer, juniper, mint family (Labiatae), unidentified pine, piñon pine, ponderosa pine, and maize. Taxa identified in the macrobotanical samples from the fill in Room 9A included mountain mahogany, unknown conifer, bean, unidentified pine, piñon pine, ponderosa pine, Douglas fir, oak, and maize. Taxa identified in the macrobotanical samples from the fill in Room 9B included unknown conifer, ponderosa pine, and maize.

Floor. There is no prepared adobe floor in Room 9. The floor consists of a compacted living surface in both Rooms 9A (Stratum 38) and 9B (Stratum 39; Figures 25.48 and 25.49). The living surface was identified as a partially preserved layer of hardened adobe/sediment. In some places, like the northwestern corner of 9A and the southwest part of 9B, the surface is thinly laminated, which is similar to Room 3. Room 9A is, however, different from 9B in that 9A contains a dense concentration of charcoal in the 5 to 10 cm layer just above the floor, especially in the western half of 9A. This charcoal lens did not occur in Room 9B.

Figure 25.48. Photograph of Rooms 9A and 9B (north).

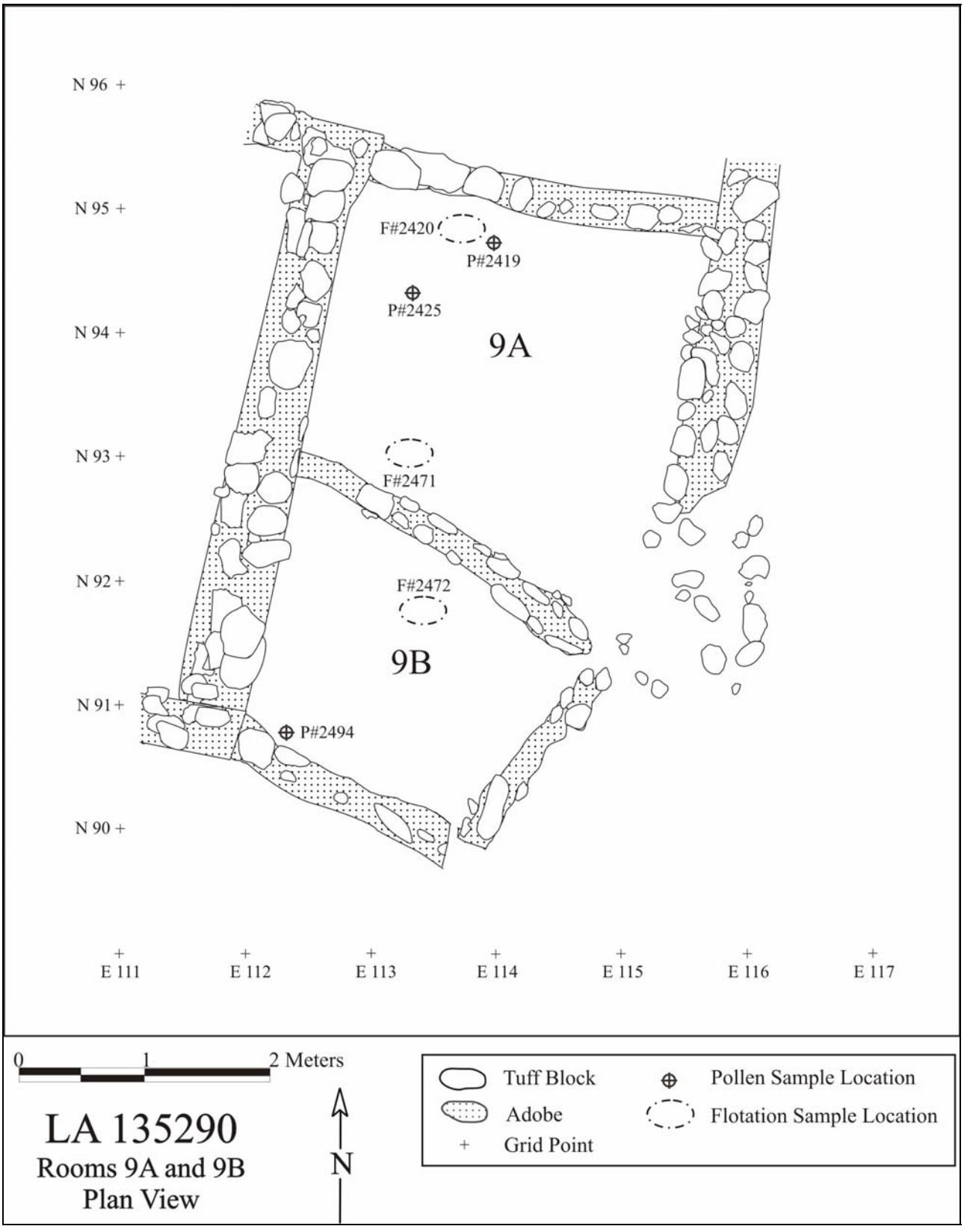


Figure 25.49. Rooms 9A and 9B plan view.

There are at least three areas of burned soil and charcoal on the living surface in Room 9A. Pollen and flotation samples were taken from this deposit (FS 2419 and FS 2420 and FS 2471, respectively). Taxa identified in the pollen sample included cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. Charred taxa identified in the flotation sample included goosefoot, juniper, piñon pine, ponderosa pine, purslane family, and maize. There is also a small concentration of white ash on the floor in the northwestern corner of the room and an ash concentration just below the level of the surface in the southwestern corner of Room 9A. A pollen sample (FS 2425) was taken in the northwestern corner and the identified taxa included lily family (Liliaceae), cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, oak, and sagebrush. The presence of this burned soil, charcoal, and ash clearly distinguishes Room 9A from Room 9B. However, there was a small ashy area present in the northwestern corner of Room 9B. A pollen (FS 2494) and flotation (FS 2472) sample were collected from this area of the floor. Taxa identified in the pollen sample included cheno-ams, grass family, mustard family, sunflower family, spurge family, evening primrose, unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush. Charred taxa identified in the flotation sample included pigweed, cheno-ams, juniper, ponderosa pine, oak, and maize.

No floor features or artifacts were identified in the rooms.

Wall Construction. The west wall of Room 9 is a standing masonry wall that was part of the original roomblock (Figure 25.50). The upper section of the north wall of Room 9A was constructed from tuff blocks, while the lower section was composed of adobe that was 10 to 20 cm high. Although the north wall abuts against the west wall, it appears to be an extension of the east-west-running wall through the roomblock. The eastern wall of Room 9A was never a standing wall and it appears to be more similar to a berm or linear pile of rocks with soil and not adobe. The eastern wall is about 60 cm wide and is constructed of two parallel rows of flat-lying stones with dirt and smaller pieces of tuff in between. There is a gap at the southern end of the east wall that may have represented an entryway into the area of Room 9A. The south wall of Room 9A was constructed somewhat differently as it had a double row of uprights that formed the base to the wall.

The three walls that formed the north, east, and south sides of Room 9B were probably built later and all at the same time as is evidenced by the fact that they are oriented at a slightly southerly angle off the main roomblock. There is very little wallfall in the area so it is not clear as to whether these walls were ever full standing. The east wall simply consists of a single course of blocks with some adobe. The southern wall is also short and does not appear to be well made, consisting of a jumble of adobe with small tuff rocks.

Figure 25.50. West wall of Rooms 9A and B.

Rooms 9A and 9B wall measurements are provided in Tables 25.26 and 25.27.

Table 25.26. Room 9A wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	2.8	0.60	0.30	2
South	2.7	0.31	0.28	1
East	2.5	0.32	0.70	1
West	2.3	0.65	0.38	3

Table 25.27. Room 9B wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	# Courses
North	2.7	0.31	0.28	1
South	2.0	0.17	0.34	1
East	1.6	0.18	0.28	1
West	2.0	0.54	0.38	3

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 92-94N/113E. In addition, samples were selected from floor contexts. Tables 25.28 to 25.31 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Rooms 9A and 9B, respectively.

Table 25.28. Room 9A artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	22	2	0	0	0	24
3	198	25	1	2	6	232
4	62	12	1	0	0	75
38	0	0	0	0	0	0
39	0	0	0	0	0	0
51	7	1	0	0	0	8
Total	**289**	**40**	**2**	**2**	**6**	**339**

Table 25.29. Samples selected for analysis in Room 9A.

Stratum	Sample Type		
	Pollen	Flotation	Macrobotanical
3	2325	2326	2353, 2268
4	2298	2299	2097, 2098
38	2419, 2425	2420, 2471	0

Table 25.30. Room 9B artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
3	0	1	1	0	1	3
4	201	19	4	11	1	236
Total	201	20	5	11	2	239

Table 25.31. Samples selected for analysis in Room 9B.

Stratum	Sample Type		
	Pollen	Flotation	Macrobotanical
3	0	0	2118
4	2134	2133	2132
39	2494	2472	0

Area 2 (Plaza Area)

Area 2 is the area to the east of the roomblock. Two north-south-oriented rock alignments (Feature 15) were visible on the surface to the immediate east of Rooms 9A and 9B (Figures 25.51 and 25.52). The eastern wall of Rooms 9A and 9B creates the western boundary of the feature. This alignment is about 7.50 m long and 0.50 m wide. The northern 5.0 m of the alignment is linear-shaped and is two to three unshaped tuff blocks wide and two blocks high (0.25 m). The blocks range in size from 15 to 35 cm in length. Soil is present in between the

stones, which makes the alignment a linear berm as opposed to a wall. The southern 2.50 m of the alignment, which is located in front of Room 9B, is more of a jumble of tuff stones that connects with an east-west cluster of tuff rocks. This section of the alignment is 1.70 m long and abuts against the east wall of Room 9B. The rocks are smaller (about 10 cm in diameter) in this area.

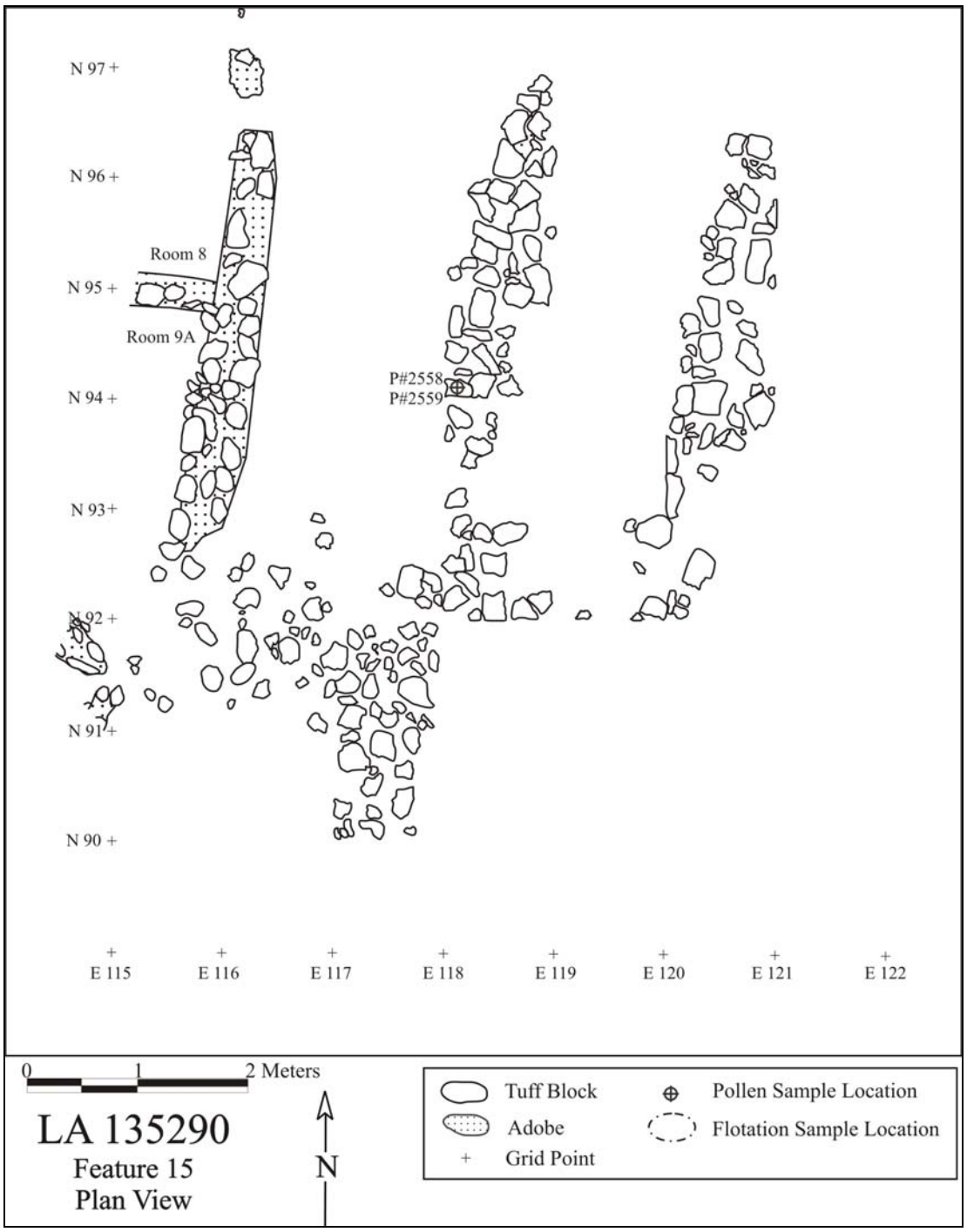


Figure 25.51. Feature 15 plan view.

Figure 25.52. Photograph of Feature 15 (west).

The eastern alignments are situated about 2.00 and 1.50 m apart. They are approximately 4.0 m long and 0.60 m wide. They appear to be a single stone high (10 to 15 cm) and two to three stones wide and have soil in between the stones. All three alignments are situated directly on top of the Bwb1 soil horizon and form two rectangular-shaped grids that open towards the north (upslope). The Bwb1 soil horizon represents the ancient surface that was present during the time the pueblo was occupied. The project geomorphologists noted that the top of the Bwb1 soil horizon is much more compact in the area of the plaza than underneath the roomblock. This presumably is due to trampling and foot traffic within the plaza. Pollen samples (FS 2558 and FS 2559) were taken from underneath an upper and lower block in the northern section of the Feature 15 alignment. Taxa identified in the alignment included prickly pear, cheno-ams, grass family, mustard family, sunflower family, ragweed/bursage, spruce (*Picea*), fir, unidentified pine, piñon pine, juniper, oak, rose family, and sagebrush.

A GPR survey was conducted of Area 2. A single anomaly was identified in the area of grid 101N/116E. As a result, a series of four backhoe trenches was excavated in the northern section of Area 2 to identify the presence of subsurface cultural deposits, features, and a kiva. Backhoe trench #1 was located at 98N/116E-98N/126E, backhoe trench #2 at 100-104N/116E, backhoe trench #3 at 100-102N/122E, and backhoe trench #4 at 100-108N/126E. The trenches were excavated down to bedrock, exposing up to 1.40 m of Holocene deposits (A, Bw, Bwb1, Btb1, Btkb1) situated on top of a late Pleistocene soil (Btkb2) and Bandelier Tuff bedrock. The soils

appear to decrease in depth from south to north (1.0 to 0.50 m), with a shallow swale or gully cut into the bedrock through grids 101N/116E to 100N/122E to 98N/126E. This gully is the anomaly identified by the GPR survey and did not turn out to be a kiva. Otherwise, no cultural deposits or features were identified in the trenches.

Three other backhoe trenches were excavated to the east of the roomblock in the southern section of Area 2: backhoe trench #5 was located at 86N/114-120E, backhoe trench #6 was located at 90N/118-123E, and backhoe trench #7 was located at 94N/121-125E. Bedrock was also exposed about 1 m below the surface and no cultural deposits or features being identified.

Artifacts and Samples. Artifacts and pollen, flotation, and macrobotanical samples were selected from grids 90-96N/117-120E. Tables 25.32 and 25.33 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Area 2, respectively.

Table 25.32. Area 2 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
0	228	22	1	0	0	251
1	59	8	0	0	0	67
13	574	58	3	0	0	635
Total	861	88	4	0	0	953

Table 25.33. Samples selected for analysis in Area 2.

Stratum	Sample Type			
	Pollen	Pollen Wash	Flotation	Macrobotanical
13	2558, 2559	0	0	0

Area 3 (North and East of the Roomblock)

Area 3 is the area located immediately west of the roomblock. Three 1- by 1-m test pits were excavated in this area. Two test pits were located near the southwestern (91N/102E) and northwestern (104N/112E) corners of the roomblock. Both grids were excavated down to a depth of about 40 to 50 cm below the surface and to the top of the Bwb1 soil horizon. One Santa Fe Black-on-white sherd, 16 smeared-indented corrugated sherds, one indented corrugated sherd, two chalcedony core flakes, and one piece of angular debris were recovered from the excavation of the southwestern test pit. Four smeared-indented sherds, two plainware body sherds, one chalcedony core flake, and one piece of microdebitage were recovered in the northwestern test pit. The northwestern test pit was also placed to cross-cut a surface cluster of tuff rocks (Figure 25.53). The cluster included about 10 rocks and was distributed across grids 105N/110-112E. It was determined that the cluster was mostly surficial, with the bottom of some rocks located about 10 cm below the surface. A pollen sample (FS 2482) was taken from under one of the rocks. Taxa identified in the sample include cheno-ams, grass family, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, rose family, and sagebrush.

Figure 25.53. Photograph of tuff rocks surface cluster (north).

One test pit was located in the area of a small sparse artifact scatter situated to the northwest of the roomblock at grid 114N/94E. The pit was excavated 11 cm down to the top of Bwb1 soil horizon. Three plainware body sherds were the only artifacts recovered.

Artifacts and Samples. All the artifacts recovered from the three test pits and a single pollen sample were analyzed from Area 3. Tables 25.34 to 25.35 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Area 3, respectively.

Table 25.34. Area 3 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
0	14	2	0	0	0	16
1	3	0	0	0	0	3
Total	17	2	0	0	0	19

Table 25.35. Samples selected for analysis in Area 3.

Stratum	Sample Type			
	Pollen	Pollen Wash	Flotation	Macrobotanical
13	2482	0	0	0

Area 4 (Midden East of the Roomblock)

Area 4 is a possible midden located to the east of the roomblock and Area 2. A surface collection was made in grids 75-93N/121-133/E. Subsequently, a series of eight 1- by 1-m test pits were placed across the area defined by a surface scatter of artifacts (82N/121E, 82N/125E, 82N/129E, 85N/123E, 85N/127E, 85N/131E, 88N/129E, and 91N/131E). The excavations revealed that there were very few artifacts present in the area. Most of these were limited to the upper 10 cm of the soil profile, including the A and Bw soil horizons. The sherds were often small fragments, indicating that they had probably washed down from the area of the roomblock. This corresponds with the site geomorphic study that shows a fan of colluvium sloping down towards the east from the rubble mound and indicates that this area was not a midden area.

A small (20 by 30 cm) charcoal-stained deposit was, however, exposed about 15 cm below the surface in grid 82N/125E. The deposit was situated at the break between the Bw and Bwb1 soil horizons. Pollen (FS 2149), flotation (FS 2150), and macrobotanical (FS 2145 and FS 2148) samples were taken. Taxa identified in the pollen sample included maize, lily family, cheno-ams, grass family, unidentified pine, piñon pine, juniper, and sagebrush. Charred taxa identified in the flotation sample included saltbush/greasewood, goosefoot, unknown conifer, mint family, unidentified pine, piñon pine, ponderosa pine, and maize. Taxa identified in the macrobotanical samples include piñon pine, ponderosa pine, and maize.

Artifacts and Samples. All the artifacts and pollen, flotation, and two macrobotanical samples were analyzed from Area 4. These samples include materials from surface collected grids (75-93N/121-133E) and excavated test pits. Tables 25.36 and 25.37 provide summary information on artifacts by stratigraphic unit and samples selected for analysis in Area 4, respectively.

Table 25.36. Area 4 artifact counts by stratigraphic unit.

Stratum #	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
0	446	67	0	0	0	513
1	182	26	0	0	0	208
13	326	28	0	0	0	354
Total	954	121	0	0	0	1075

Table 25.37. Samples selected for analysis in Area 4.

Stratum	Sample Type			
	Pollen	Pollen Wash	Flotation	Macrobotanical
13	2149	0	2150	2145, 2148

General Summary of Architecture

The front rooms of the roomblock were typically slightly larger than those in the back, with the exception of Room 4/5. If Room 4/5 was broken into the two smaller rooms instead of being one larger room, then all the back rooms would be smaller, which fits the general pattern visible on the Pajarito Plateau. Table 25.38 shows the room dimensions and floor area for each of the rooms. A histogram was generated based on the surface area of the floors in the rooms (Figure 25.54). The figure groups the front rooms (light blue), the back rooms (blue-gray), and the plaza rooms (dark blue).

Table 25.38. Room dimensions and floor area.

Room Number	Location	Length (m)	Width (m)	Floor Area (m^2)
1	Front room	3.8	3.5	13.30
2	Front room	4.4	3.56	15.66
3	Front room	4.0	3.15	12.60
4/5	Back room	4.1	4.15	17.02
6	Back room	1.75	1.75	3.06
7	Back room	3.1	1.9	5.89
8	Plaza room	4.1	2.8	11.48
9A/B	Plaza room	4.6	2.8	12.88

ARTIFACT AND SAMPLE ANALYSIS

A total of 10,152 pieces of pottery, 1318 chipped stone items, 127 ground stone artifacts, two ornaments, 17 minerals, and 78 faunal remains were recovered during the excavation of LA 135290. In addition, 117 flotation, 458 macrobotanical, and 134 pollen samples were collected. Given the large number of artifacts and samples recovered, the majority of the artifact classes were sampled during analysis.

Ceramic, chipped stone, and ground stone artifacts were sampled by analyzing the artifacts recovered from one, two, or three 1- by 1-m grid units in each room. Those units with the highest artifacts densities in the room fill layers were selected for analysis. In addition, all floor and feature fill artifacts were analyzed, as were all the artifacts recovered from Areas 3 and 4 and all the faunal remains. However, a sample of artifacts was also selected from surface collections in grids 89-112N/105-116E in Area 1, excavated grids 90-96N/117-120E in Area 2, surface collections in grids 75-93N/121-133E in Area 4, and the excavated test pits in Area 4.

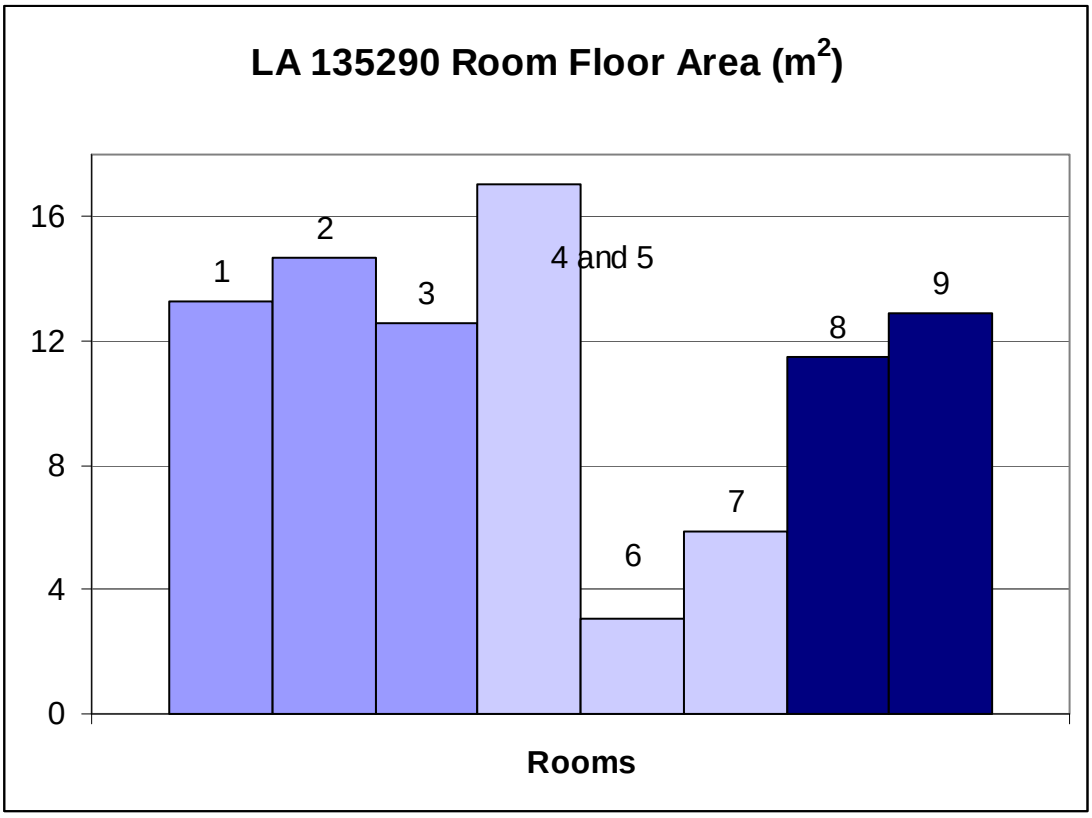


Figure 25.54. Histogram showing room size at LA 135290.

A set of archaeobotanical and pollen samples were selected from a stratigraphic sequence within each of the rooms, including the floors and features. The selected samples were listed in the previous room summaries. Maize recovered from features was also submitted for AMS radiocarbon dating. Archaeomagnetic and TL samples were taken from burned features, floors, and walls, with three sherds submitted for TL dating. Lastly, obsidian hydration dating was conducted on a sample of obsidian artifacts from the site.

Chronology

Radiocarbon Dating

Three radiocarbon samples were submitted to Beta Analytic for analysis, with each providing sufficient carbon for accurate measurements. All analyses were conducted on maize (*Zea mays*) remains. Table 25.39 lists the results of the radiocarbon analyses submitted. The results support the presence of an Early to Middle Coalition period occupation at LA 135290, with intercepts ranging from AD 1180 to 1220 and a two-sigma overlap of AD 1160 to 1260.

Table 25.39. Radiocarbon dates from LA 135290.

FS#	Material	Laboratory (Beta) #	Conventional radiocarbon age	Intercept of radiocarbon age	2-sigma calibrated result
2103	Maize kernels and cupules	199386	870±40 BP	AD 1180	AD 1040–1260
2475	Maize kernels and cupules	199388	830±40 BP	AD 1220	AD 1160–1270
2564	Maize cupules	199389	860±40 BP	AD 1190	AD 1040–1260

Archaeomagnetic Dating (Eric Blinman)

Despite the lack of formal midden accumulations at LA 135290, the rooms revealed a complex remodeling sequence, with multiple floors and hearths. This complexity suggests a long and relatively continuous, if not intense, occupation of the site. In addition to three cooking or heating hearths, at least three burning incidents occurred in the rooms, affecting both floors and walls. Stratigraphic relationships between archaeomagnetic sets are relatively clearly defined, increasing the interpretive potential of the results.

The suite of samples conservatively places the occupation of the roomblock within the AD 1155–1270 time range, but the more precise suite of results narrows that range slightly to AD 1170–1240, which corresponds with the ceramic dates from the site. The archaeomagnetic date ranges are based on the Wolfman calibration curve, and its calibration is relatively robust but not absolute. Calendric implications of the Wolfman VGP curve may be off by a decade or two, but the pole positions of the LA 135290 results are consistent with those of other early Coalition period samples from the northern Rio Grande region. To the south in the Cochiti Pueblo areas, the VGP positions for sets that document the transition between Late Developmental and Coalition pottery assemblages are slightly later along the Wolfman curve than these results from the LA 135290 roomblock. This suggests that the roomblock occupation is part of the initial establishment of Santa Fe Black-on-white as a marker of Coalition occupations in the northern Rio Grande Valley, and that the spread of Santa Fe Black-on-white technology (at least southward) lags by a generation or two. Table 25.40 lists the dates associated with the archaeomagnetic samples taken at LA 135290.

Table 25.40. Archaeomagnetic dates from LA 135290.

Sample	Feature	AM Date ranges (AD)	
		Wolfman or DuBois	SWCV2000
1226	Room 6, Floor 3	1170–1210	1125–1175
1227	Room 4, Floor 2	1180–1205	1125–1165
1228	Room 6, West wall	1185–1230	1020–1110
1229	Room 2, Hearth	1010–1070 1200–1270 1345–1390	1005–1045 1175–1325
1230	Room 8, Hearth 9	1195–1240	1015–1050

Sample	Feature	AM Date ranges (AD)	
		Wolfman or DuBois	SWCV2000
		1035–1070	
1231	Room 2, Hearth 16 (below and to the east of Hearth 11)	1155–1210 1105–1150	1035–1165
1232	Room 4, Floor 3	1170–1270	1010–1310

Thermoluminescence Dating

Three adobe samples (including a hearth rim and hearth base from Room 8), two floor samples, a wall sample, and three sherds were submitted for TL dating. All derived ages are given in years BP, which refers to years before 2003 (Table 25.41). Only the sample from Room 7 yielded a date within the range defined by the AMS and archaeomagnetic dating techniques; however, two other samples can be included within the standard deviation range and six others are much earlier.

Table 25.41. Thermoluminescence dates from LA 135290.

UW Lab #	Type	Room/feature	Burial depth (cm)	% error	Years AD
UW1236	Adobe	4	32	7.4	1035 ± 73
UW1237	Floor	6	35	9.1	1134 ± 79
UW1238	Wall	6	38	9.6	1114± 85
UW1239	Wiyo B/w	7	30	7.0	1217 ± 56
UW1240	Sherd*	2/11	65	9.4	1050 ± 90
UW1241	Sherd*	2	57	11.2	816 ± 133
UW1242	Floor	4	50	5.6	888 ± 62
UW1243	Hearth rim	8/9	44	14.5	1073 ± 135
UW1244	Hearth base	8/9	44	10.8	851 ± 125

* smeared-indented corrugated sherd.

Obsidian Hydration Dating

Seven obsidian artifacts were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high temperature hydration rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site were estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 25.42).

Table 25.42. Obsidian hydration dates for LA 135290.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
1018	2006-41	Valle Grande	2.78	-1036	219
1055	2006-42	Valle Grande	2.69	1015	71
1255	2006-43	Valle Grande	4.72	-6500	362
1385	2006-44	Valle Grande	4.34	-5277	337
2141	2006-45	Valle Grande	2.46	1805	12
2142	2006-46	Valle Grande	2.57	1614	27
2174	2006-47	Valle Grande	2.27	-64	182

Relative to other dating methods conducted at the site, the obsidian hydration dates seem to be the least accurate (Figure 25.55; Table 25.43). Radiocarbon and archaeomagnetic results are comparable and seem to have provided the most plausible results, while the TL dates seem to be slightly less plausible given the known occupation range of the sites, but still well within the acceptable limits. Overall, the dates reflect an Early to Middle Coalition period occupation circa AD 1160 to 1260. Table 25.43 presents all the dated materials from the site. TL, archaeomagnetic, radiocarbon, and obsidian hydration are presented where similar contexts were sampled.

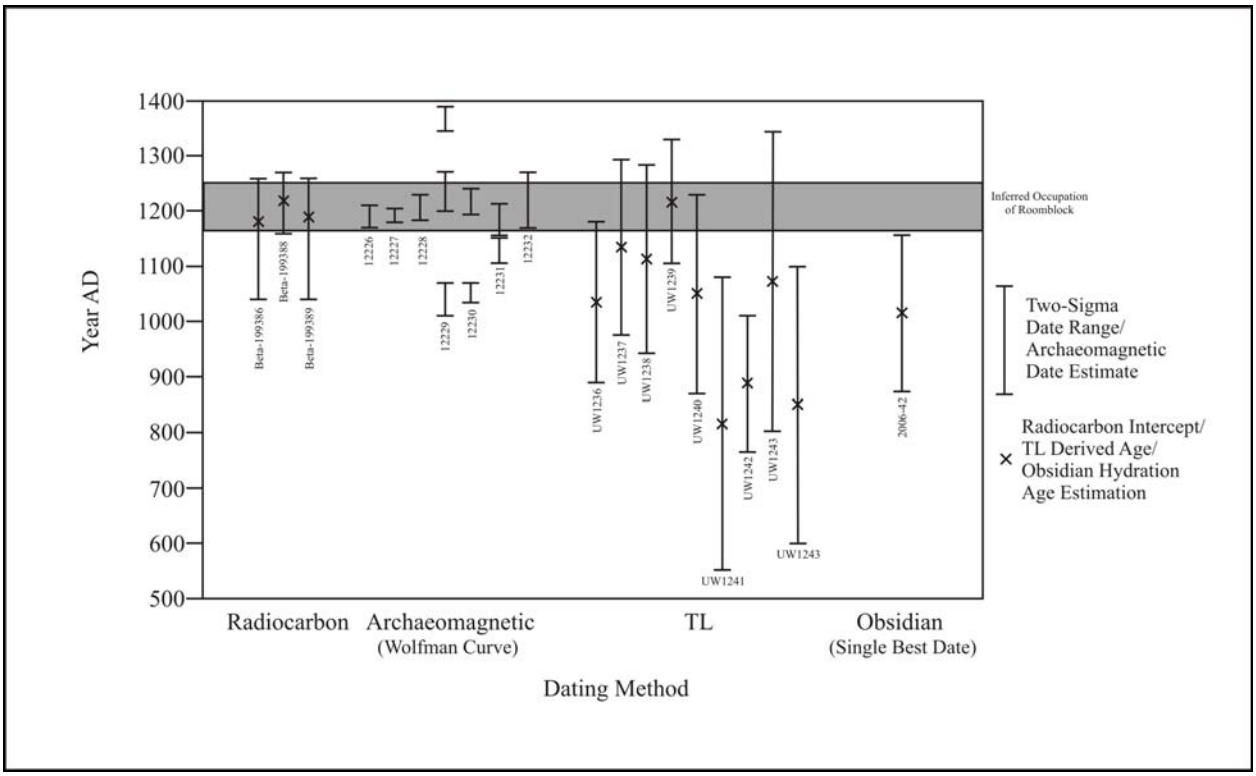


Figure 25.55. Comparison of dated materials from LA 135290.

Table 25.43. Comparison of dated materials from LA 135290.

Context	Radiocarbon Intercept	Archaeomag (Wolfman)	Archaeomag (SWCV2000)	TL	Obsidian Hydration
Room 8, Feature 9	AD 1220	1195–1240 1035–1070	1015–1050	1073 ± 135 (rim) 851 ± 125 (base)	--
Room 2, Feature 16	AD 1190	1155–1210 1105–1150	1035–1165	--	--

*all dates are AD unless otherwise noted

Ceramic Artifacts (Dean Wilson)

A total of 4021 sherds were analyzed from LA 135290. Most of these consist of Santa Fe Black-on-white and smeared-indented corrugated, which indicate a Middle Coalition period (13th century) occupation. The majority (83.7%) of the pottery from the site consists of gray utilityware types, while 16.3 percent consists of whiteware types, and redwares are represented by a single sherd (Table 25.44). The majority (55.2%) of whitewares were classified as Santa Fe Black-on-white. Most of the other whitewares (41.3%) were assigned to the unpainted undifferentiated type, and most of these appear to be represented by the unpainted portions of Santa Fe Black-on-white vessels. Types present in very low frequencies include Wiyo Black-on-white (0.5% of all whitewares), Galisteo Black-on-white (0.3%), Kwahe'e Black-on-white (1.7%), mineral-painted undifferentiated, indeterminate Cibola whiteware (0.4%), and Socorro Black-on-white (0.2%).

In addition to Coalition period whiteware types, Biscuit B (Bandelier Black-on-gray) sherds were present in low frequencies (0.3% of all whitewares) and probably reflect contaminants from a nearby Classic period pueblo. Utilitywares were exclusively represented by Northern Rio Grande grayware types. Graywares were dominated by smeared-indented corrugated sherds, and represent 83.5 percent of all graywares. Other grayware types included plain gray (2.3% of all graywares), unknown gray (trace), wiped scored gray (0.1 %), basket impressed gray (trace), indented corrugated (13.8%), incised corrugated (0.1%), plain corrugated (0.1%), smeared plain corrugated (0.1%), patterned corrugated (trace), plain incised (trace), and mudware (0.1%). The ceramics at LA 135290 were very similar to those identified at LA 86534, and both date to the Middle Coalition period.

Table 25.44. Ceramic types from all contexts at LA 135290.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	271	6.7
Mineral paint undifferentiated	1	0.1
Kwahe'e Black-on-white	11	0.3
Santa Fe Black-on-white	362	9.0
Wiyo Black-on-white	3	0.1

Ceramic Type	Frequency	Percent
Galisteo Black-on-white	2	0.1
Biscuit B (Bandelier Black-on-gray)	2	0.1
Northern Rio Grande Utilityware		
Plain gray rim	14	0.3
Unknown gray rim	1	0.1
Plain gray body	64	1.6
Wiped scored gray	4	0.1
Basket impressed gray	1	0.1
Indented corrugated	465	11.4
Incised corrugated	3	0.1
Plain corrugated	4	0.1
Smeared plain corrugated	2	0.1
Smeared-indented corrugated	2802	69.0
Patterned corrugated	1	0.1
Plain incised	1	0.1
Mudware	3	0.1
Cibola Whiteware		
Unpainted polished whiteware	1	0.1
Mineral paint undifferentiated	1	0.1
White Mountain Redware (Cibola)		
White Mountain Redware unpainted	1	0.1
Eastern Mogollon Whiteware		
Socorro Black-on-white	1	0.1
Total	**4021**	**100.0**

Pottery distributions noted at LA 135290 most closely resemble those noted from LA 86534, which is located approximately 500 m to the east (Volume 2, Chapter 24; Wilson, Volume 3). Similarities in whitewares include the overwhelming dominance of Santa Fe Black-on-white within the whiteware assemblages along with extremely low frequencies of Kwahe'e Black-on-white, Wiyo Black-on-white, and Galisteo Black-on-white. Another characteristic shared by the ceramic assemblages is that the majority (73.4%) of whiteware bowls exhibit unpolished and unslipped exteriors. Similarities in gray utilitywares include the dominance of smeared corrugated sherds along with small but significant amounts of indented corrugated.

Temper found in Santa Fe Black-on-white sherds from LA 135290 was dominated by rounded clay fragments that were recorded as oblate shale with tuff (Table 25.45). The identification of this temper reflects a rare case in which the easy visual recognition of a temper distinct to the whitewares from a specific site was possible. A total of 52 percent of the whiteware sherds contained this temper type, which was very rare in whitewares from LA 86534 (Table 25.46). All six of the Santa Fe Black-on-white sherds from LA 135290 submitted for petrographic analysis were tempered with anthill sand with clay lumps, indicating the use of a distinct paste source in the production of whitewares at LA 135290. This lends support to other studies that suggest that Santa Fe Black-on-white ceramics were produced locally at various sites in Pajarito

Plateau and elsewhere in the Northern Rio Grande region during the Coalition period (Habicht-Mauche 1993; Powell 2002; Vint 1999).

Table 25.45. Distribution of temper by ware at LA 135290.

Temper	Gray		White		Red		Total	
Indeterminate	1	0.0	--	--	--	--	1	0.0
Granite with mica	23	0.7	--	--	--	--	23	0.6
Highly micaceous (residual) paste	1	0.0	--	--	--	--	1	0.0
Sherd	--	--	3	0.5	1	100	4	0.1
Sherd and sand	1	0.0	2	0.3	--	--	3	0.1
Fine tuff or ash	6	0.2	285	43.4	--	--	291	7.2
Large tuff fragments Vitric tuff	--	--	2	0.3	--	--	2	0.0
Fine tuff and sand	2	0.1	12	1.8	--	--	14	0.3
Fine sandstone	1	0.0	--	--	--	--	1	0.0
Tuff and phenocrysts (anthill sand)	1261	37.5	1	0.2	--	--	1262	31.4
Fine Jornada sherd	2	0.1	--	--	--	--	2	0.0
Mica and tuff	--	--	2	0.3	--	--	2	0.0
Mostly tuff with some phenocrysts	2065	61.4	6	1.1	--	--	2071	51.5
Oblate shale and tuff	2	0.1	341	52.0	--	--	343	8.5
Large tuff predominate with anthill sand	--	--	1	0.2	--	--	1	0.0
Total	**3365**	**100.0**	**655**	**100.0**	**1**	**100**	**4021**	**100.0**

The majority of the grayware sherds from LA 135290 were tempered with some form of anthill sand. All of the nine thin-sectioned grayware sherds were tempered with anthill sand, except one that contained sanidine and quartz as the dominant particles. Samples from LA 135290, while also dominated by sanidine and quartz, show much more varied subordinate and minor temper components than utilitywares than LA 86534. In addition to sanidine felsite and minor plagioclase, these include tuff and vitric felsites, intermediate volcanics, and K-feldspar. Quantitatively, the proportion of plagioclase is lower on average and much more variable than in the samples from LA 86534.

Distributions of ware and form categories from LA 135290 are very similar to those noted at other Coalition period sites on the Pajarito Plateau (Table 25.46). Graywares are overwhelmingly represented by jar sherds (Table 25.47), while whitewares are dominated by bowl sherds, which represent over 70 percent of this ware. These distributions closely match patterns noted at other Coalition period site.

Table 25.46. Distribution of wares at LA 135290.

Ware	Count	Percent
Gray	3365	83.7
White	655	16.3
Red	1	0.0

Glaze	--	--
Total	**4021**	**100.0**

Table 25.47. Distribution of vessel form by ware at LA 135290.

Vessel Form	Gray		White		Red		Group Total	
Indeterminate	35	1.0	120	18.29	--	--	155	3.9
Bowl rim	19	0.6	75	11.43	--	--	94	2.3
Bowl body	15	0.4	398	60.67	--	--	413	10.3
Jar neck	350	10.4	2	0.30	--	--	352	8.8
Jar rim	88	2.6	--	--	--	--	88	2.2
Jar body	2848	84.6	4	8.38	1	100	2903	72.2
Jar body with strap or coil handle	--	--	1	0.15	--	--	1	0.0
Jar body with lug handle	2	0.1	1	0.15	--	--	3	0.1
Indeterminate coil, strap handle	8	0.2	--	--	--	--	8	0.2
Canteen rim	--	--	1	0.15	--	--	1	0.0
Miniature jar	--	--	1	0.15	--	--	1	0.0
Seed jar rim	--	--	2	0.30	--	--	2	0.0
Total	**3365**	**100.0**	**655**	**100.00**	**1**	**100**	**4021**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 540 artifacts were analyzed from LA 135290. The sampled assemblage consisted of nine cores, 496 pieces of debitage, 16 retouched tools, 16 ground stone artifacts, three hammerstones, and four pieces of fire-cracked rock, which represented a 35 percent sample of the 1530 total lithic artifacts recovered. Table 25.48 presents the data on lithic artifact type by material type. The majority of the debitage is made of chalcedony with lesser amounts of Pedernal chert, obsidian, and other materials. The presence of cortex on 16.5 percent of the debitage indicates that these materials were collected from waterworn sources. Nodule cortex was not identified on any of the items exhibiting cortex. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources and the basalt from gravels and bedrock outcrops. Although obsidian is present at nearby primary sources in the Jemez Mountains, a single obsidian flake also exhibited waterworn cortex, indicating that it was possibly obtained from gravel sources. Quartzite and silicified wood is, however, only available from the nearby Rio Grande Valley gravels. Otherwise, the ground stone artifacts are primarily made from igneous materials that are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau. The source of the sandstone is difficult to determine, but it could be derived from gravel formations near Totavi or from more distant sources in the Santa Fe or Abiquiu areas.

Table 25.48. LA 135290 lithic artifact type by material type.

Artifact Type		Material Type														
		Basalt	Vesicular Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified Wood	Sandstone	Quartzite	Other	Total
Cores	Core	0	0	1	0	1	0	1	4	0	2	0	0	0	0	9
	Subtotal	1	0	1	0	1	0	1	4	0	2	0	0	0	0	9
Debitage	Angular debris	3	0	1	0	2	0	3	44	0	30	0	0	0	0	83
	Core flake	9	0	9	1	9	0	15	221	1	74	2	1	0	1	343
	Biface flake	1	0	0	0	0	0	7	2	0	1	0	0	0	0	11
	Microdebitage	1	0	1	0	0	0	2	29	0	7	0	0	0	0	43
	Undetermined flake	0	0	0	0	0	0	1	7	0	5	1	0	0	0	14
	Hammerstone flake	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	Ground stone flake	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3
	Subtotal	14	0	11	3	12	0	28	303	1	117	3	1	2	1	496
Retouched Tools	Retouched piece	0	0	0	0	1	0	0	1	0	2	0	0	0	0	4
	Biface	0	0	0	0	0	0	2	0	0	1	0	0	0	0	3
	Projectile point	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
	Uniface	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	Perforator	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
	Perforator/notch	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	Subtotal	0	0	0	0	1	0	9	1	0	5	0	0	0	0	16
Ground Stone	One-hand mano	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Two-hand mano	0	2	0	0	0	0	0	0	0	0	0	1	0	0	3
	Undetermined mano Fragment	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	Grinding slab	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2

Artifact Type		Material Type														
		Basalt	**Vesicular Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Silicified Wood**	**Sandstone**	**Quartzite**	**Other**	**Total**
	Undetermined metate fragment	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
	Polishing stone	0	0	0	1	2	0	0	0	0	0	0	0	1	0	4
	Pestle	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Abrading stone	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Maul	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
	Ornament	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Miscellaneous ground stone	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Undetermined ground stone	0	0	0	0	4	0	0	0	0	0	0	1	1	0	6
	Subtotal	0	2	0	1	14	1	0	0	1	0	0	2	6	1	28
Other	Hammerstone	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
	Fire-cracked rock	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	1	0	0	0	2	0	0	0	0	1	0	4
Total		**15**	**2**	**12**	**4**	**28**	**1**	**38**	**310**	**2**	**124**	**3**	**2**	**8**	**2**	**553**

Six pieces of debitage, a core, a retouched tool, and a projectile were submitted for X-ray fluorescence analysis. All but one of the artifacts were obtained from the Valle Grande source, with a single piece of debitage obtained from the Cerro Toledo source area (Table 25.49). The Valle Grande (Cerro del Medio) and Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source areas are located about 17 km (11 miles) as the "crow flies" to the west and southwest of the site. In addition, four pieces of basalt debitage were also submitted for analysis. Three of these were made from dacite from local sources and the other was basalt.

Table 25.49. Obsidian source samples.

FS #	Artifact	Color	Source
240	Tool	Translucent	Valle Grande rhyolite
704	Projectile point	Translucent	Valle Grande rhyolite
1018	Debitage	Translucent	Valle Grande rhyolite
1055	Debitage	Translucent	Valle Grande rhyolite
1385	Debitage	Translucent	Valle Grande rhyolite
1470	Core	Black opaque	Cerro Toledo rhyolite
2141	Debitage	Translucent	Valle Grande rhyolite
2142	Debitage	Translucent	Valle Grande rhyolite
2174	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The cores consist of three single-directional, five bidirectional, and a core fragment. The single-directional cores were reduced using a multi-faces technique, whereas, the bidirectional cores were reduced using bifacial, opposed-same-face, opposed-different-face, and 90 degrees techniques (Figure 25.56). None of the cores exhibit any obvious evidence of platform preparation. Most of the cores were discarded due to exhaustion (n = 4), with one due to extensive hinging and another due to extensive edge battering. Otherwise, the remaining two cores were considered still useable. None of the cores were burned. Table 25.50 presents the metric information on the whole cores.

Table 25.50. Core type dimensions (mm) and weight (gm).

Core Type	Length	Width	Thickness	Weight
Single-directional	32	42	27	39.0
Single-directional	49	73	44	189.5
Single-directional	59	65	48	172.3
Bi-directional	81	86	68	462.7
Bi-directional	33	31	17	15.4
Bi-directional	20	25	10	5.4
Bi-directional	38	40	17	30.3
Bi-directional	30	20	16	10.3

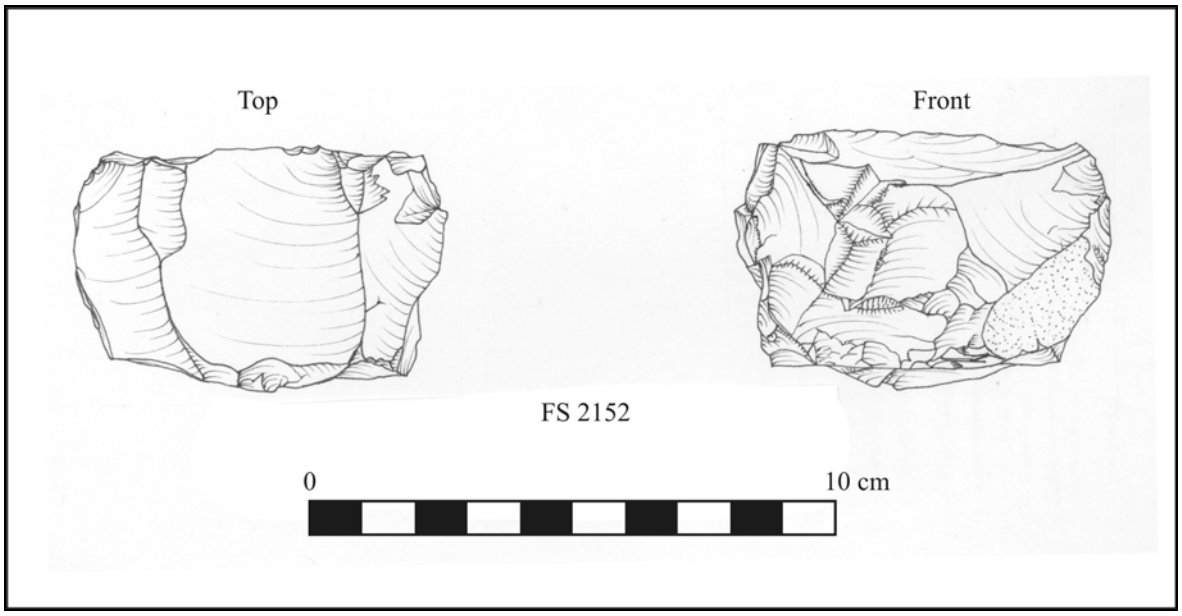


Figure 25.56. Single-directional, multi-face core (top and front).

The debitage consists mainly of core flakes (69.1%), with lesser amounts of angular debris (16.7%), microdebitage (8.6%), biface flakes (2.2%), and undetermined flake fragments (2.8%). Table 25.51 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The debitage assemblage is primarily composed of secondary noncortical flakes, with lesser amounts of secondary cortical, tertiary, and primary flakes. The overall cortical:non-cortical ratio of 0.48 reflects an emphasis on the later stages of core reduction. The sample size is small, but chalcedony materials appear to be more fully reduced than the Pedernal chert.

Table 25.51. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	0	1	0	---
Obsidian	0	0	2	2	---
Chalcedony	1	14	37	1	0.36
Pedernal chert	0	12	13	0	0.92
Total	1	26	53	3	0.48
Percentage	1.2	31.3	63.8	3.6	---

The majority of the flakes exhibit single-faceted platforms (38.5%; n = 57), with cortical (n = 30), collapsed (n = 36), crushed (n = 22), multi-faceted (n = 2), and dihedral (n = 1) platforms. The majority of the collapsed and crushed platforms are on chalcedony and core flakes. Only five (3.3%) of the flake platforms exhibit evidence of preparation and all of these were abraded/crushed.

The majority of the core flakes consist of distal fragments (*n* = 179; 52.2%), with fewer whole (*n* = 96), proximal (*n* = 41), and midsection (*n* = 27) fragments. Most of the biface flakes are also distal fragments (*n* = 4; 36.4%), with fewer whole (*n* =3), proximal (*n* = 3), and midsection (*n* = 1) fragments. The whole core flakes have a mean length of 23.8 mm (*std* = 12.5), whereas the whole biface flakes exhibit a mean length of 30.0 mm (*std* = 10.5). Lastly, angular debris have a mean weight of 3.9 g (*std* = 5.5).

The retouched tools consist of a mix of expedient flakes tools like retouched pieces and perforators, with fewer formal tools such as bifaces, projectile points, and unifaces (Figure 25.57). All of the retouched pieces exhibit a single marginally retouched edge. Table 25.52 presents the information on retouch type by edge outline.

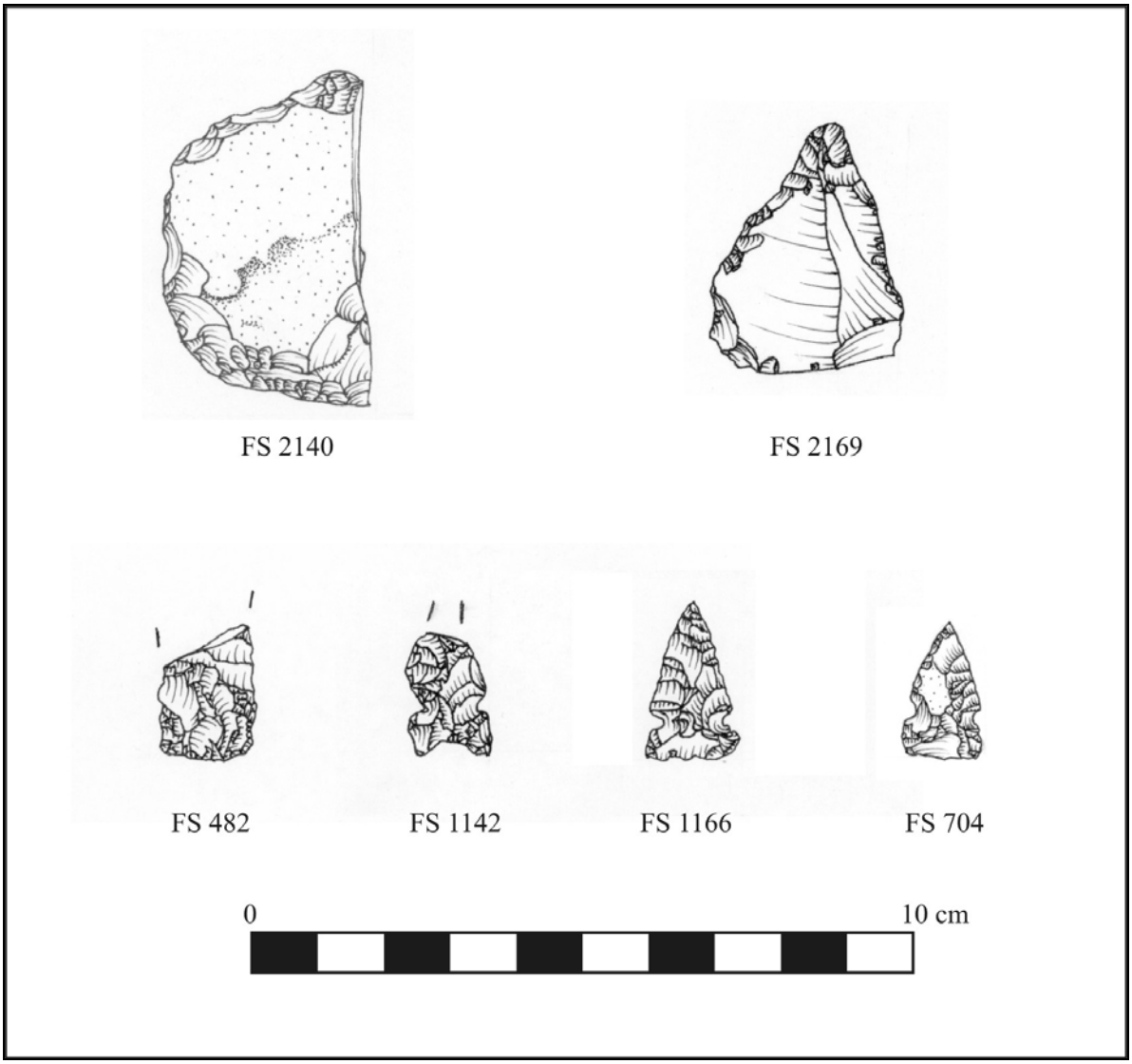


Figure 25.57. Retouched flake, perforator, biface, and projectile points.

Table 25.52. Retouched pieces.

Retouch Type	Edge Outline						
	Straight	Concave	Convex	Straight/ concave	Straight/ convex	Concave/ convex	Projection
Unidentified ventral	1	0	0	0	0	0	0
Unidentified dorsal	2	0	1	0	0	0	0
Total	3	0	1	0	0	0	0

The retouched edges primarily exhibit a straight outline. The edge angles range from 55 to 75 degrees, with a mean of 53.7 degrees (*std* = 8.5**).** This reflects an emphasis on the use of steeper edge angles. Two of the perforators are small triangular-shaped flakes that have been bifacially retouched. The third perforator is a bifacially retouched projection on a large flake. The uniface is a large roughly worked flake with unidirectional dorsal retouch and an edge angle of 75 degrees. It is a proximal fragment that might have been broken during manufacturing.

All three bifaces are fragments. One is a midsection with an edge angle of 45 degrees and the other two are proximal fragments with edge angles of 50 and 60 degrees. They may be middle stage fragments that were broken during manufacturing. Metrical and descriptive information on the four projectile points is presented in Table 25.53. They consist of three corner-notched and one side-notched arrow points with neck widths between 7 and 9 mm.

Table 25.53. Projectile point metrical (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (gm)	Haft Type	Blade Shape	Base Shape
704	Obsidian	Whole	19	13	8	7	11	3	0.7	Side-notched	Straight	Straight
1142	Obsidian	Proximal	--	--	7	6	12	2	0.7	Corner-notched	Straight	Concave
1166	Obsidian	Whole	23	16	9	7	14	3	0.9	Corner-notched	Straight	Straight
1983	Obsidian	Proximal	--	--	--	--	--	--	0.1	Corner-notched	Und.	Und.

Tool Use

Only 13 flakes (2.6%) exhibit evidence of damage that could be attributed to use-wear. Most of the damage is located at the end of the flake (*n* = 6), with some along the lateral edge (*n* = 4), and

the dorsal surface (n = 3). The former flakes have mostly straight outlines, with one convex outline and three utilized projections, while the latter are ground stone flakes. Edge angles range from 50 to 70 degrees, with a mean of 59 degrees (*std* = 8.6). This is similar to the pattern exhibited by the retouched flakes. In contrast to the debitage, eight of the retouched tools (50.0%) exhibit evidence of use-wear. These consist of four retouched flakes, three perforators, and one perforator/notch.

Twenty-eight ground stone artifacts were identified during the analysis. These included manos, metates, a polishing stone, a pestle, an abrading stone, and other unidentified ground stone items. The manos consist of one- and two-hand varieties with several undetermined fragments. The one-hand mano is a cobble with two heavily ground opposing flat surfaces, while the two-hand manos are made of vesicular basalt and sandstone and have a plano-convex and a wedge-shaped cross-section (Figure 25.58). One of these has finger impressions along a single side. The mano fragments are both cobbles with two opposing ground surfaces that are plano-convex and bi-plano in cross-section.

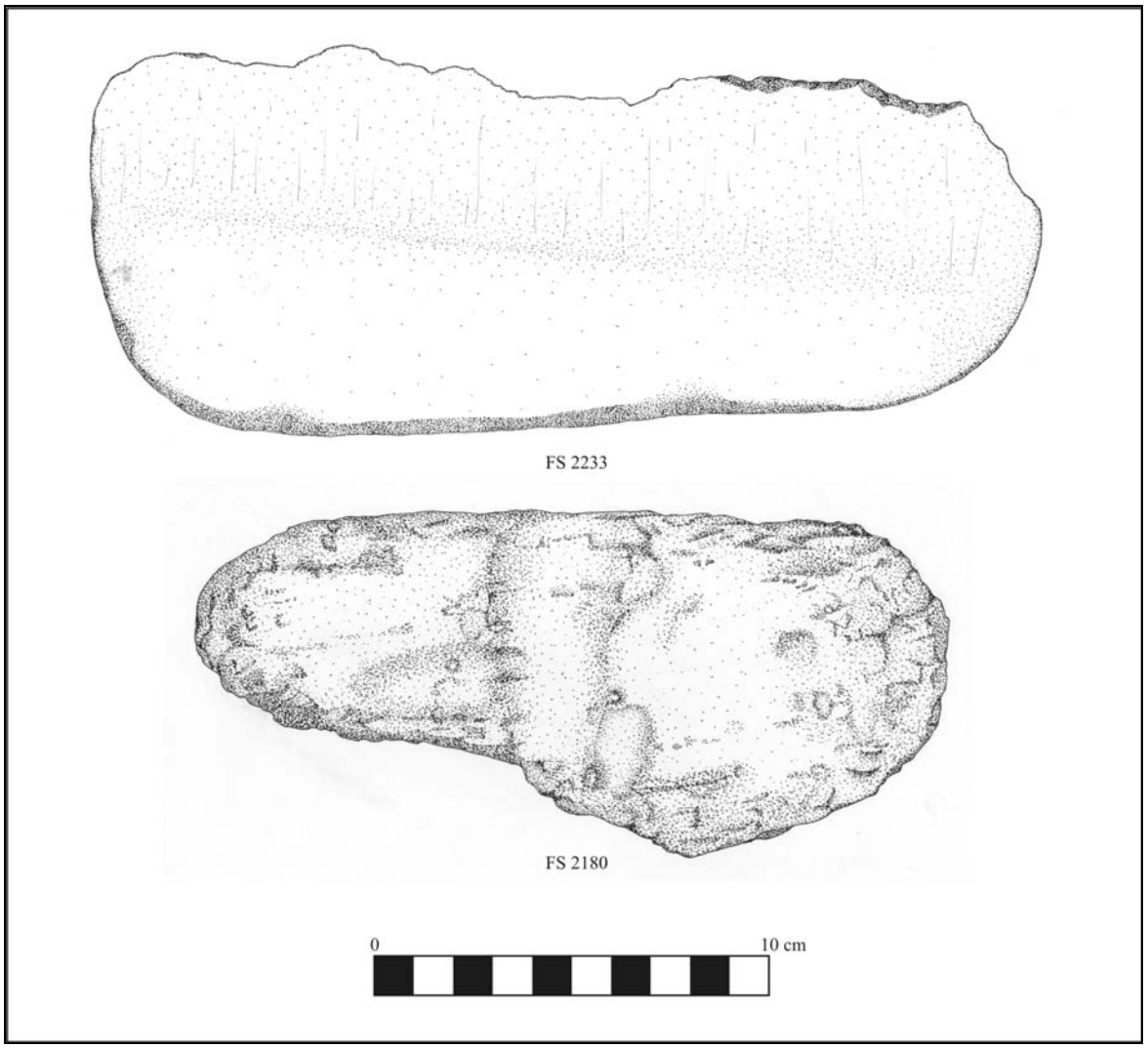


Figure 25.58. Two-hand mano and maul.

Four undetermined metate fragments were identified during the analysis. These were all dacite slab fragments with a single heavily ground flat surface. The grinding slabs are also tabular pieces of dacite with one or two flat ground surfaces. The polishing stones are andesite and dacite pebbles with a finely ground surface. The abrading stone is a quartzite pebble with irregular ground surfaces. The pestle is a dacite cobble with one narrow end that exhibits some crushing and grinding wear. One item classified as miscellaneous ground stone consists of a shaped piece of soft tuff that is circular in cross-section and pointed at one end. There are striations that run the length of the artifact (Figure 25.59).

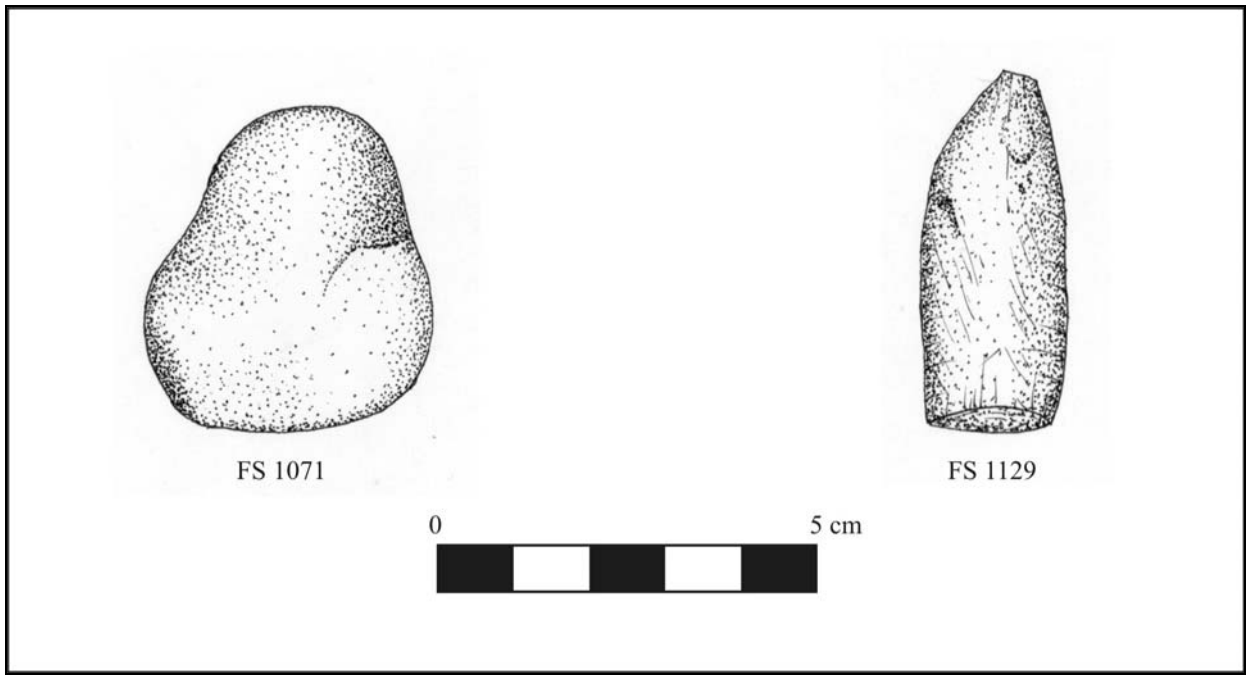


Figure 25.59. Polishing stone and miscellaneous ground stone.

The maul is a chert cobble with flaked and worn edges and a battered butt. The artifact is whole and exhibits abrasion indicative of hafting. The flaking is presumably due to use-wear and not intentional retouch. The other maul is an oblong dacite cobble that is fully grooved and exhibits some battering wear along the end (see Figure 25.58). The ornament is a red baked shale bead.

Faunal Remains (Kari Schmidt)

In general, the overall preservation of the bones from LA 135290 is good. For the most part, bones tended to be in large fragments, and a number of complete elements were identified. Weathering on the faunal remains was present, although the frequency and severity were low (*n* = 2), suggesting the remains may not have been exposed to the elements for a long period of time before deposition. The bones show minimal evidence of root-etching and rodent gnawing, but no evidence of carnivore gnawing or carnivore digestion. Modifications resulting from burning

were present on 23 pieces of bone, constituting some 35 percent of the total assemblage. One piece of bone recovered at LA 135290 was heavily polished.

Of the 65 faunal remains recovered from the excavations at LA 135290, 52 percent (*n* = 34) were identified to at least the level of class. The 34 identified remains were recovered from a variety of contexts. Table 25.54. shows all the taxa that were recovered from the site. Because the most abundant taxa represented in the assemblage were intrusive pocket gophers (*Thomomys* sp.), Table 25.55 presents the same data with this taxon removed. Pocket gopher burrows were extensive in the immediate site area, and the visual appearance of their bones was quite distinct from the vast majority of the other bones recovered from the site.

Table 25.54. Identified faunal remains from all contexts at LA 135290.

Taxon	Total			Burned		
	NISP*	MNI	Percent	NISP	Percent	Percent of Taxon
Bullfrog (*Rana catesbeiana*)	1	1	3.0	0	0	0
Western box turtle (*Terrapene ornata*)	1	1	3.0	1	9.0	100.0
Turkey (*Meleagris gallopavo*)	3	1	9.0	0	0	0
Woodrats (*Neotoma* cf. *albigula*)	1	1	3.0	0	0	0
Pocket gopher** (*Thomomys* sp.)	12	2	36.0	0	0	0
Rock squirrels (*Spermophilus variegatus*)	3	1	9.0	2	18.0	66.0
Raccoon (*Procyon lotor*)	1	1	3.0	0	0	0
Black-tailed jackrabbit (*Lepus californicus*)	3	1	9.0	2	18.0	66.0
Desert cottontail (*Sylvilagus audubonii*)	4	1	11.0	4	36.0	100.0
Canids (Canidae)	1	1	3.0	0	0	0
Mule deer (*Odocoileus hemionus*)	4	1	11.0	2	18.0	50.0
Identified Total (52.0%)	34	--	100.0	11	100.0	--
Unidentified Total (48.0%)	31	--	--	12	--	--
Site Total	**65**	**--**	**--**	**23**	**--**	**--**

*NISP is number of identified specimens; MNI is minimum number of individuals. **intrusive taxon

Table25.55. Identified faunal remains, minus pocket gophers, from LA 135290.

Taxon	Total			Burned		
	NISP	MNI	Percent	NISP	Percent	Percent of Taxon
Bullfrog (*Rana catesbeiana*)	1	1	5.0	0	0	0
Western box turtle (*Terrapene ornata*)	1	1	5.0	1	10.0	100.0
Turkey (*Meleagris gallopavo*)	3	1	13.0	0	0	0
Woodrats (*Neotoma* cf. *albigula*)	1	1	5.0	0	0	0
Rock squirrels (*Spermophilus variegatus*)	3	1	13.0	2	18.0	66.0
Raccoon (*Procyon lotor*)	1	1	5.0	0	0	0

Taxon	Total			Burned		
	NISP	MNI	Percent	NISP	Percent	Percent of Taxon
Black-tailed jackrabbit (*Lepus californicus*)	3	1	13.0	2	18.0	66.0
Desert cottontail (*Sylvilagus audubonii*)	4	1	18.0	4	36.0	100.0
Canids (Canidae)	1	1	5.0	0	0	0
Mule deer (*Odocoileus hemionus*)	4	1	18.0	2	18.0	50.0
Identified Total (52.0%)	22	--	100.0	11	100.0	--
Unidentified Total (48.0%)	31	--	--	31	--	--
Site Total	**53**	**--**	**--**	**42**	**--**	**--**

With the intrusive pocket gopher remains removed from calculations made for Table 25.54, Table 25.55 shows that the highest percentage of the identified fauna (18%) at LA 135290 is from both cottontail (*Sylvilagus* sp.) and mule deer (*Odocoileus hemionus*). After these taxa, turkeys (*Meleagris gallopavo*), rock squirrels (*Spermophilus variegatus*), and black-tailed jackrabbit (*Lepus californicus*) each comprise 13 percent of the identified assemblage. The remainder of the assemblage consists of a wide variety of taxa, including amphibians, reptiles, rodents, and carnivores. The variation present in the assemblage attests to its location near a number of distinct biomes.

Archaeobotanical Remains (Pamela McBride)

Flotation

Evidence for the triad of maize, beans, and possible squash was present in flotation samples from LA 135290. Maize cupules were the most common plant remains recovered, followed by goosefoot and cheno-am seeds and maize kernels (Table 25.56). Beans were found on the floor of Room 1, in Room 2 rooffall, and in the fill of Features 4 and 11 in Room 2. Possible squash rind also occurred on the floor of Room 1 and on the floor surface of the doorway between Rooms 4 and 5. The most interesting phenomenon is the presence of tobacco seeds solely in an adobe-lined collared hearth (Feature 11) in Room 2. An ash lens sealed the feature and seeds were identified in both the upper and lower fill, indicating sequestered use of this important ceremonial plant.

Table 25.56. Ubiquity of flotation sample carbonized plant remains from LA 135290.

Common Name/Plant Part	Count*	Percent**
Bean cotyledon	4	5
Beeweed embryo	1	1
Cheno-am seed	37	49
Dropseed grass caryopsis	8	11
Evening primrose seed	1	1
Goosefoot seed	39	52

Common Name/Plant Part	Count*	Percent**
Grass family caryopsis	4	5
Grass family culm	5	7
Juniper female cone	1	1
Juniper seed	2	3
Juniper twig	3	4
Juniper twigscale	1	1
Knotweed family seed	1	1
Maize cob	2	3
Maize cupule	61	81
Maize cupule segment	8	11
Maize embryo	5	7
Maize glume	13	17
Maize kernel	31	41
Maize shank	1	1
Mint family seed	10	13
Pigweed seed	14	19
Pincushion cactus seed	2	3
Pine bark scale	10	13
Pine umbo	4	5
Piñon pine needle	21	28
Piñon pine nutshell	1	1
Plantain seed	1	1
Ponderosa pine needle	29	39
Purslane family seed	2	3
Purslane seed	21	28
Squash/coyote gourd rind	2	3
Sunflower family achene	5	7
Tobacco seed	5	7
Unidentifiable embryo	1	1
Unidentifiable seed	7	9
Unidentifiable plant part	14	19
Unknown # 1 seed	1	1
Unknown # 2 seed	1	1
Winged pigweed seed	1	1

*Number of samples with common name/plant part present; **Number of samples with common name/plant part divided by total number of flotation samples with charred remains (75) × 100.

Grasses had a low percent presence and the only perennial genera with a percent presence above 10 are those that are most likely an artifact of fuelwood use like piñon and ponderosa pine needles. Piñon nutshell in particular is extremely scarce, limited to one sample only. Ponderosa pine was the most common wood taxon encountered in flotation samples (Table 25.57). Piñon and unknown conifer were the next most prevalent taxa. Riparian resources were represented by cottonwood/willow, and several shrubby species were present, including mountain mahogany, oak, and saltbush/greasewood. Douglas fir, recovered in a single sample, is generally from

slightly higher elevations or canyons and could have been brought from Pueblo Canyon or DP Canyon.

Table 25.57. Ubiquity of flotation sample wood charcoal taxa from LA 135290.

Common Name/Plant Part	Count	Percent
Cottonwood/willow wood	16	23
Douglas fir wood	1	1
Juniper wood	34	48
Mountain mahogany wood	6	8
Oak wood	27	38
Pine wood	23	32
Piñon pine wood	43	61
Ponderosa pine wood	58	82
Saltbush/greasewood wood	9	13
Unknown conifer wood	41	58
Unknown non-conifer wood	5	7

Vegetal Samples

Maize kernels had the highest percent presence of non-wood plant remains in vegetal samples (Table 25.58). Although maize kernels were found in every room except 8 and 9A, the majority of kernels were from the fill of Rooms 1 and 6. Because the kernels are from fill, this pattern is probably related more closely to deposition after abandonment than to delineation of special activity areas. Upon first inspection of the average measurements of 122 kernels from LA 135290 (Appendix V), it would appear that kernels from the site are wider and thicker than those from LA 12587, but 11 percent more of the LA 135290 kernels are missing embryos and 5 percent more are swollen. This probably accounts for the differences in width and thickness.

Table 25.58. Ubiquity of vegetal sample carbonized plant remains from LA 135290.

Common Name	Count*	Percent**
Bean cotyledon	6	9
Bean seed	1	2
Beeweed stem	1	2
Cottonwood/ willow wood	22	34
Douglas fir wood	5	8
Juniper wood	16	25
Maize cob	10	16
Maize cupule	3	5
Maize cupule segment	10	16
Maize fused kernel mass	1	2
Maize kernel	26	41
Maize shank	2	3

Common Name	Count*	Percent**
Mountain mahogany wood	12	19
Oak wood	12	19
Pine bark scale	1	2
Pine wood	25	39
Piñon pine wood	22	34
Ponderosa pine wood	53	83
Saltbush/greasewood wood	2	3
Unknown conifer wood	18	28
Unknown non-conifer wood	2	3

*Number of samples with common name/plant part present; **number of samples with common name/plant part divided by total number of flotation samples with carbonized plant remains (64) × 100.

Maize cobs (17) from Rooms 1, 2, 3, and 5 were measured and had an average rachis diameter of 11.9 mm and an average cupule width of 5.6 mm (Table 25.59). The average row number was 11.4. Comparing these measurements to those from LA 12587 and LA 86534, it appears as if the cobs from LA 135290 are slightly more robust, with wider cupules, more rows, and larger diameters. However, the percentages of 12-row cobs are nearly equal in both cob assemblages (40% and 41%, respectively).

Table 25.59. *Zea mays* cob morphometrics from LA 12587, LA 86534, and LA 135290.

Site	FS No.	Row #	Type	Length	Rachis Segment Length (mm)	Rachis Diameter (mm)	Cupule Width (mm)
12587	965	12	ST	27.7	2.9	14.2	6.4
12587	1094	12	ST, U	18.4	3.4	11.6	5.8
12587	1306	8	ST	12.8	2.9	5.6	4.1
12587	1401	8	ST	12.9	2.6	6.9	4.4
12587	1567	12	ST	26.0	3.9	13.5	5.3
12587	1939	10	ST	18.9	2.5	7.5	3.7
12587	2555	10	ST	19.7	3.8	14.3	7.0
12587	2555	12	ST, T	22.9	3.1	10.5	4.0
12587	2639	8	ST	14.5	4.0	12.1	7.0
12587	2639	8	ST	17.7	3.4	9.1	6.9
12587	2831	8*	ST	19.5	4.0	8.6	7.5
12587	2831	12	ST	13.8	3.4	9.1	4.1
12587	2831	12	ST	10.8	3.5	8.7	3.7
12587	2831	10	ST	21.1	3.8	10.7	5.8
12587	2831	12	ST	22.5	4.2	12.6	5.2
12587	2832	12	ST	16.6	3.1	10.2	3.9
12587	2832	10	ST	41.9	3.6	14.7	6.6
12587	2888	12	ST	13.1	3.1	9.5	4.0
12587	2888	8	ST	14.5	3.4	7.3	3.8
12587	5141	10	ST	20.2	2.8	10.0	5.5

Site	FS No.	Row #	Type	Length	Rachis Segment Length (mm)	Rachis Diameter (mm)	Cupule Width (mm)
86534	1677	12	ST	14.5	3.4	8.3	4.2
86534	1866	10	ST	13.1	3.4	8.7	4.0
86534	1869	10	ST	36.5	3.3	12.8	6.4
86534	1869	10	ST	17.6	2.7	7.8	4.5
86534	1869	10	ST	25.5	3.4	9.7	5.0
Averages	-	10	All straight	19.7	3.3	10.2	5.2
135290	869	10	ST	7.3	3.0	6.8	4.6
135290	874	12	ST	39.0	3.0	15.8	6.3
135290	912	14	ST	24.4	3.4	13.6	4.9
135290	912	10 ?	IR	16.8	3.8	9.1	5.5
135290	970	12	ST	67.1	3.9	15.8	7.3
135290	1047	14	ST	38.3	3.4	13.7	6.0
135290	1065	14	ST	27.9	3.7	17.6	6.2
135290	1324	12	ST	31.0	3.7	10.0	5.5
135290	1559	8 ?**	ST	24.7	3.2	12.2	7.1
135290	1703	12	ST	19.0	3.7	12.2	5.9
135290	1703	12	ST	13.1	3.7	13.0	5.7
135290	1703	12	ST	25.1	3.2	11.7	5.5
135290	1752	12	ST, F	11.6	3.5	11.4	4.5
135290	1752	10	ST	18.5	3.8	12.1	6.6
135290	1752	12	ST, F	37.1	2.9	10.7	5.1
135290	1898	8	ST	7.3	3.0	6.8	4.6
135290	2099	10	ST	7.8	0.6	6.2	2.5
Averages	-	11.4	6% IR 94% ST	25.8	3.3	11.9	5.6

*2 rows of cob have kernels; ** a few kernels present; F = flattened, T = tip, U = undeveloped row present.

Beans were fairly widespread and were found in Rooms 1, 5, 6, 7, and 9A, primarily in room fill. Two beans were measurable from the site. One whole bean from a vegetal sample (FS 1201) was 11.6 mm in height, 6.5 mm in width, and 4.9 mm thick, and a single cotyledon from flotation sample FS 2353 was 10.8 mm in height, 6.2 mm in width, and 2.6 mm thick. Height and width measurements fall around the middle of the range given by Kaplan (1956: Table III) for the common bean (P*haseolus vulgaris)*. These also fit in the range of dimensions given for tepary beans, but the shape of the two species is quite different.

A possible beeweed stem (from vegetal sample FS 1450) and embryo (from FS 1897 flotation sample) mark the only archeobotanical evidence for the potential use of this resource for the project.

As in flotation samples, ponderosa pine was the most common wood taxon in vegetal samples. A partially burned roof beam fragment is probably ponderosa pine. Cottonwood/willow, pine, and piñon occur in nearly equal percentages of samples (34% to 39%), while juniper was found in 25

percent of samples. Douglas fir is slightly more abundant than in flotation samples, present in 5 of the 64 samples analyzed. The same shrubby species encountered in flotation samples (mountain mahogany, saltbush/greasewood, and oak) were also identified in vegetal samples.

Corn, beans, and squash were probably grown nearby, and weedy annuals that either volunteered in agricultural fields or thrived in the disturbed ground around the site were harvested for their seeds and edible greens. At least two grass taxa, beeweed, pincushion cactus, knotweed family, evening primrose, and piñon could have been used for food, dye, or medicine. The recovery of tobacco suggests this plant was part of the ceremonial life of the people who inhabited LA 135290 during the Middle Coalition period. Wood for construction and fuel was harvested from local sources.

Pollen Samples (Susan J. Smith)

A total of 83 pollen samples were analyzed from LA 135290. Table 25.60 lists the frequency of identified pollen types. Cultigens identified in the assemblage included low numbers of cotton and squash with higher amounts of maize, maize aggregate pollen, and cholla. Economic resources identified in the pollen assemblage included prickly pear, cactus family, beeweed, sunflower type, lily family (which includes yucca, wild onion, and sego lily), parsley family, sedge, mint family, and purslane. A number of other potential economic resources were identified in the assemblage (Table 25.60), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 25.60. Pollen types identified by taxa and common names with sample frequency from LA 135290.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135290 (*n* = 83)
Cultigens	*Gossypium*	Cotton	1
	Cucurbita	Squash	13
	Zea mays	Maize	46
	Zea Aggregates	Maize Aggregates	11
	Opuntia (Cylindro)	Cholla	11
Economic Resources	*Opuntia* (Platy)	Prickly Pear	41
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	1
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	24
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	4

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135290 (*n* = 83)
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	2
	Typha	Cattail	0
	Cyperaceae	Sedge	2
	Lamiaceae	Mint Family	1
	Portulaca	Purslane	1
Other Potential Economic Resources	Rosaceae	Rose Family	31
	Eriogonum	Buckwheat	5
	Brassicaceae	Mustard Family	13
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	1
	Polygala type	Milkwort	1
	Poaceae	Grass Family	80
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	5
Riparian Types	*Populus*	Cottonwood, Aspen	4
	Juglans	Walnut	0
	Betula	Birch	1
	Alnus	Alder	0
	Salix	Willow	1
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	92
		Cheno-Am Aggregates	13
	Fabaceae	Pea Family	4
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	92
		Sunflower Family Aggregates	1
	Ambrosia	Ragweed, Bursage	34
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135290 (*n* = 83)
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	5
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	1
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	33
	Scrophulariaceae	Penstemon Family	4
	Onagraceae	Evening Primrose	18
	Unknown cf. Brassicaceae (prolate, semitectate)	Unknown Mustard type	1
	Nyctaginaceae	Four O'Clock Family	1
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	2
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	2
	Abies	Fir	20
	Pinus	Pine	90
		Pine Aggregates	0
	Pinus edulis type	Piñon	82
	Juniperus	Juniper	83
		Juniper Aggregates	1
	Quercus	Oak	35
	Rhus type	Squawbush type	1
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	30
	Artemisia	Sagebrush	93
		Sagebrush Aggregates	4
	Unknown Small *Artemisia*	Unknown Small Sagebrush	33
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135290 (*n* = 83)
	Erodium	Crane's Bill (exotic)	1
	Carya	Pecan (exotic)	0

SITE OCCUPATIONAL HISTORY

As was discussed in the previous room summary sections, there appears to be at least two major construction episodes and three remodeling events that occurred at the roomblock. A detailed review of the bonding and abutment pattern of the walls within the roomblock reveals the overall construction history of the roomblock (Figures 25.60 and 25.61). The first construction phase at the site is represented by three separate events. Rooms 4/5 and 6 were built first. The west wall of these rooms is contiguous, with the north-south walls being abutted to the west wall and the east walls abutting to the north-south walls. There are small adobe buttresses in the northwest and northeast corners of Room 4 and the southeast corner of Room 6. These buttresses extended out about 50 cm outside of the cross-walls. Rooms 1 and 2 were added next. The north wall of Room 6 partially extends into Rooms 1 and 2. The north wall of Room 2 abuts to this wall extension and then forms a bonded corner at the intersection of the north and east walls of the room. The remainder of the corners in Rooms 1 and 2 are abutted. Room 8 appears to be the last room constructed during the initial construction phase of the roomblock. The west wall of Room 8 was constructed and then the north walls of Rooms 1 and 8 abutted to this wall. Otherwise, the remaining wall corners are all abutted. There is a single upright tuff block in the northeast corner of the room that extends north from the eastern wall, acting as a small buttress.

The second construction phase is represented by the addition of Rooms 3, 7, and 9B. The east-west walls of Rooms 3 and 7 abut with the south walls of Rooms 2 and 6. The adobe buttress in the northwest corner of Room 3 forced the west wall of the room to be offset further to the west. The southern walls of Rooms 3 and 7 and the eastern wall of Room 3 are not clearly defined and it is unclear as to whether they ever represented full standing walls. The east-west walls of Room 9B abut with the east wall of Room 2. In addition, the walls are set at a northwest-southeast orientation while the other walls in the roomblock are oriented east-west. Again, the east walls of Rooms 9A and 9B are not clearly defined and it is unclear as to whether these walls were ever full standing. It is also unclear as to whether Feature 15 was constructed during this later phase; however, it is situated on the same ancient surface and therefore may be associated with this occupation.

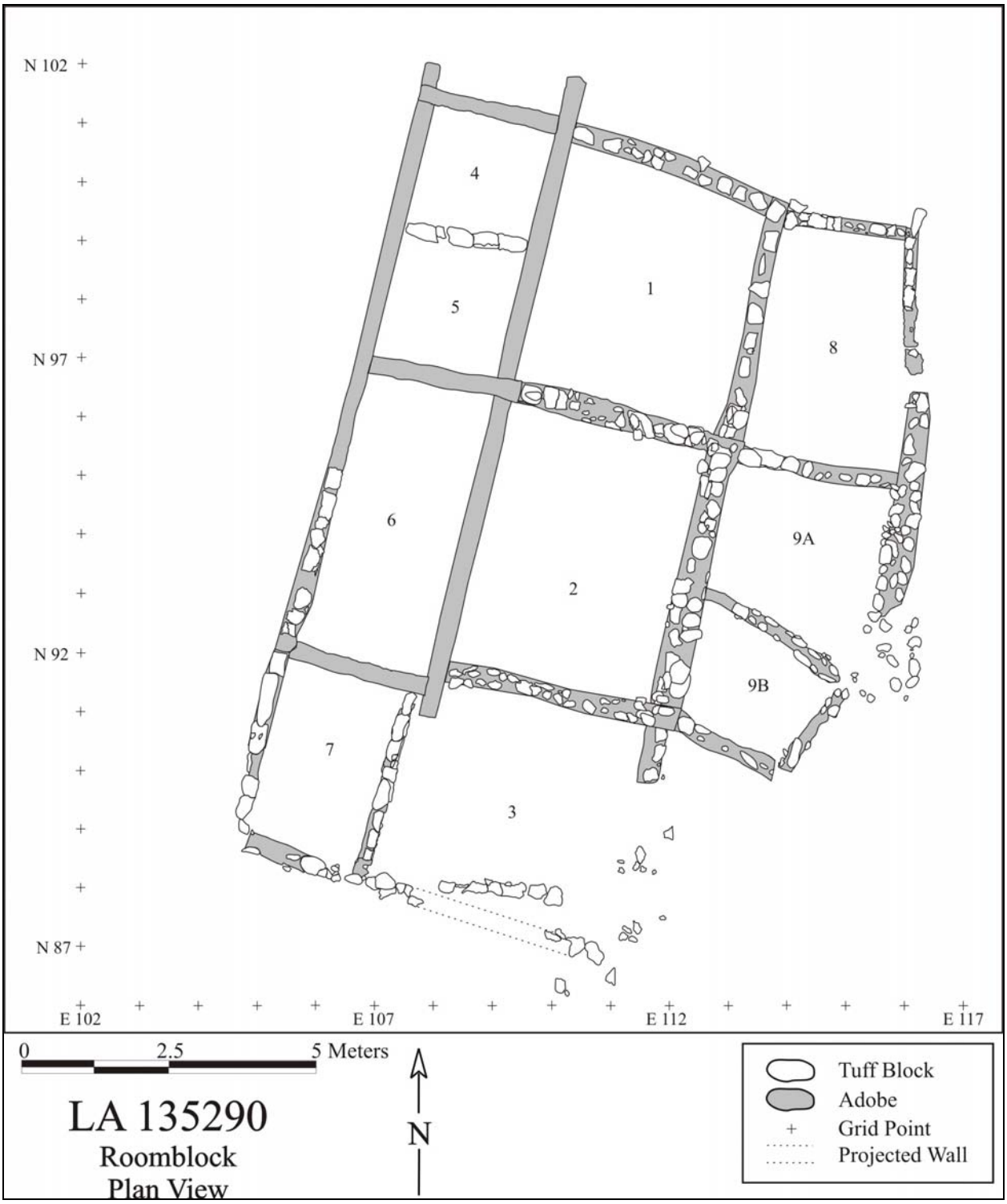


Figure 25.60. Plan view of roomblock.

Figure 25.61. Photograph of roomblock (south).

There appears to be at least three remodeling events associated with the occupation of the first construction phase of the roomblock. This is best represented in the three floors present in Rooms 4 and 6. These back rooms were presumably used for storage, and the successive burning and remodeling of these floors would seem to reflect the abandonment and later reuse of the roomblock. In contrast to the front rooms, the rear rooms are constructed of adobe and were burned on several occasions. Floors 2 and 3 in Rooms 4 and 6 are burned and Floor 1 is unburned in Room 6 and mostly unburned in Room 4. Since this burning is primarily limited to the rear rooms and the initial two floors, it may represent an intentional decision to fire-harden the rooms, making it difficult for rodents to burrow into the rooms. Nonetheless, the rooms were abandoned on several occasions with the floors being disturbed by rodent activity. These holes were subsequently repaired and a new floor was laid down over the repairs.

These three remodeling events are also represented in Room 2. Feature 16 (hearth) was constructed first and is overlain by a thin layer of sandy fill between it and Floor 1. Feature 11 (hearth) was built over Feature 16 and Features 3, 4, and 6 were constructed on Floor 1. Feature 1 (unused hearth?) was constructed last, being connected to Feature 3. The hearth (Feature 9) in Room 8 reflects only two remodeling events in this room. Additionally, the paucity of midden artifacts in the area would appear to indicate that the site was not occupied for an extended period of time, even though its construction history reflects two construction episodes and three remodeling events.

SUMMARY

LA 135290 consists of a Coalition period roomblock with a series of three front rooms, four back rooms, and three partial rooms (covered space or ramadas) that front the plaza. There is no evidence for the presence of a kiva at the site, and the midden is limited to a light surface scatter situated to the east of the roomblock. The initial occupation involved the construction of Rooms 1, 2, 4, 5, 6, 8, and 9A. The four front rooms were mostly constructed of masonry blocks, whereas the backrooms were constructed of adobe. This presumably reflects the functional differences between the use of the front rooms as domestic space and the back rooms as storage space. Three separate remodeling episodes are evident by the presence of multiple floors in Rooms 4/5 and 6, multiple features in Room 2, and a remodeled hearth in Room 8. The rear room floors were repaired during each subsequent occupation due to rodent disturbance. In addition, these floors were also fire hardened, probably as an attempt to protect food stores. It appears that the roof may have been removed during these periods of abandonment, since several of the preserved adobe floors in Rooms 4/5 and 6 exhibit both animal and human footprints. These prints were presumably made in the moist adobe that had been exposed to rainfall. Lastly, Rooms 3, 7, and 9B were added on to the existing roomblock with mostly unprepared floors. All remaining roof beams were removed from the site once the roomblock was finally abandoned.

The ceramic assemblage primarily consists of Santa Fe Black-on-white and smeared-indented corrugated, with some indented corrugated and other ceramics. The paucity of Kwahe'e and Wiyo Black-on-white reflects a Middle Coalition period of occupation. The AMS and archaeomagnetic dates overlap and cover a similar two-sigma range from AD 1160 to 1260 and 1170 to 1240, respectively.

A range of botanical remains were identified from flotation samples recovered from the hearths, including maize, beans, cheno-ams, dropseed grass, and tobacco. In addition, squash rind, piñon nuts, groundcherry, and sunflower were also represented at the site. The faunal remains also include a variety of species like jackrabbit, cottontail, rock squirrel, mule deer, turkey, and red-tailed hawk.

The stone tool technology reflects an emphasis on core reduction of materials like chalcedony, Pedernal chert, and obsidian. Most of the obsidian appears to have been obtained from nearby sources in the Valles Caldera. The retouched tool assemblage includes a mix of expedient flake tools like retouched pieces and perforators with lesser amounts of formal tools like bifaces, projectile points, and unifaces. Three of the four projectile points are corner-notched, indicating that this point type was still the dominant form being used. The manos are represented by both one- and two-hand varieties, with at least one example of the latter reflecting intensive use due to its wedge-shaped cross-section. The metates consist of undetermined fragments, which could represent millingstones or slab types. Polishing stones, abrading stones, a pestle, and mauls were also recovered, which indicates that a variety of domestic activities occurred at the site.

CHAPTER 26
AIRPORT-CENTRAL TRACT (A-7): LA 141505

Bradley J. Vierra

INTRODUCTION AND SITE SETTING

LA 141505 is a Classic period fieldhouse located on the Los Alamos town site mesa just north of New Mexico State Road 502 (Figure 26.1). The mesa top is sparsely covered by piñon and juniper trees and has an understory that is comprised primarily of saltbush, snakeweed, yucca, and various grasses. The site is situated at an elevation of 2164 m (7100 ft), but is accessible by Pueblo Canyon to the north and DP Canyon to the south.

Soils on the mesa top have been classified as a Hackroy sandy loam that have a good potential for agriculture (Nyhan et al. 1978). The site itself is underlain with about 1.50 m thick layer of Holocene soils, with some late Pleistocene clay lying directly on the Tshirege member of the Bandelier Tuff. Soil depth is greatest in the central area of the mesa, but thins to exposed bedrock along its edges.

The original survey identified the presence of several small tuff rock alignments within a 10 by 10 m area. The alignments were situated underneath a cluster of trees, so the duff obscured the nature and extent of the site. No artifacts were observed.

FIELD METHODS

Fieldwork at LA 141505 began by delineating the extent of the rock feature. The trees were cut down and the surface duff was removed. These activities exposed a small mound within the area defined by the rock alignments. Otherwise, no artifacts were observed on the surface. An east-west-oriented trench was initially excavated across the area through grids 107N/104E to 109E. This trench was excavated to define the walls within the structure and the stratigraphic sequence. After sections of the north-south walls were exposed, excavations proceeded to follow and expose the remaining wall segments thereby identifying the presence of at least two rooms. Each room was given an individual number, and excavations continued by removing the room fill in natural stratigraphic layers and 1- by 1-m grids. A block excavation including grids 104 to 110N/102E to 109E was excavated around the rooms. This area mostly contained the rock alignments situated to the east of the two rooms. The field supervisors at the site were Brad Vierra and Michael Dilley. Field crew members included Woody Aguilar, Sandi Copeland, and Greg Lockard. Timothy Martinez was the site monitor representing San Ildefonso Pueblo.

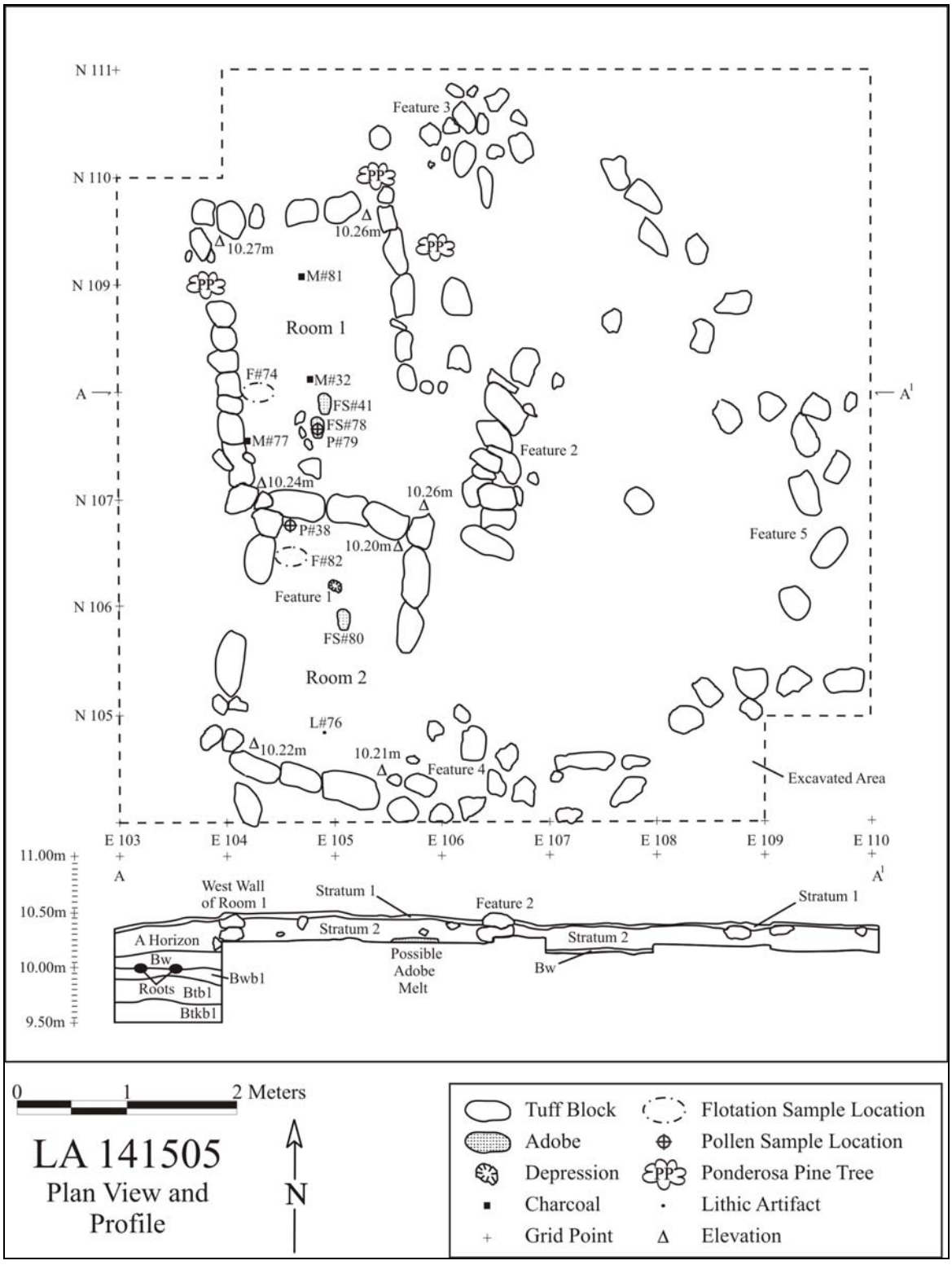


Figure 26.1. Plan view and profile maps of LA 141505.

STRATIGRAPHY

Stratum 1 consists of the loose surface soil that covers the site area and is generally 3 to 5 cm thick (Table 26.1). Stratum 2 is a thin layer of post-occupational fill that is about 5 to 10 cm thick and consists of the A and Bw soil horizons. Stratum 3 underlies Stratum 2, which is a compact silty loam that represents the Bwb1 soil horizon. This stratum was only exposed in grids 107N/103E and 107N/106E, which were excavated to lower depths. Otherwise, Stratum 2 was consistently removed across the excavation area. Strata 4 and 6 are the floors from Room 1 and 2, respectively. Stratum 5 is the fill from a rodent hole in grid 107N/103E that consisted of modern organic material. Lastly, Stratum 7 is the sediment from a single posthole (Feature 1) associated with the floor in Room 2. Table 26.2 shows the artifact counts by stratigraphic unit.

Table 26.1. Stratigraphy descriptions for LA 141505.

Stratum	Color	Texture	Thickness (cm)	Description
0	--	--	0	Surface
1	10YR 5/4	Silty loam	3–5	Unconsolidated surface soil
2	7.5 YR 4/4	Silty loam	5–10	Post-occupational fill
3	7.5 YR	Silty loam	30	Compact Bwb1 and Btb1 soil horizons
4	7.5 YR 5/4	Silty loam	0	Room 1, Floor
5	7.5 YR 2.5/2	Organic material		Rodent hole fill
6	7.5 YR 5/4	Silty loam	0	Room 2, floor
7	7.7 YR 4/4	Silty loam	17	Feature 1, posthole fill

Table 26.2. Artifact counts by stratigraphic unit from LA 141505.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Other	Total
1	6	3	0	0	0	9
2	27	20	1	1	2	51
3	0	0	0	0	0	0
4	0	0	0	0	2	2
5	0	0	0	0	0	0
6	0	1	0	0	0	1
7	0	0	0	0	0	0
Total	**33**	**24**	**1**	**1**	**4**	**63**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is the northern room in the two-room structure (Figure 26.2). The room measures 2.5 m north-south by1.5 m east-west, with 3.75 m^2 of interior space. An east-west test trench (107N/103-106E) was initially excavated through the room to define site stratigraphy and the location of the floor. Excavations proceeded by removing the room fill to the immediate north of the trench by grid and natural layer.

Figure 26.2. Room 1 after excavation.

Fill. The room contained about 20 cm of post-occupational fill (Strata 1 and 2). This sediment consisted of a silty loam mixed with some fist-sized pieces of tuff, a few tuff blocks (wallfall), some bits of charcoal, and a few artifacts. The northern half of the room was extremely disturbed by both rodent activity and the intrusion of roots from two pine trees located just outside the northeastern corner of the room. A pollen (Field Specimen [FS] 21) and flotation (FS 22) sample were taken from the southeastern corner of the room. Taxa identified in the pollen sample include prickly pear (*Opuntia*), cheno-ams (*Chenopodium/Amaranthus*), grass family (Poaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), unidentified pine (*Pinus* sp.), piñon pine (*Pinus edulis*), juniper (*Juniperus*), Mormon tea (*Ephedra*), and sagebrush (*Artemesia*). No charred remains were identified in the flotation sample. Only a single

macrobotanical sample (FS 73) was collected. Identified taxa included mountain mahogany (*Cercocarpus*) and unknown conifer (Gymnospermae).

Floor. The floor (Stratum 4) consists of an unprepared living surface. It is somewhat compacted, but was defined by a horizontal level situated at the base of the walls with bits of charcoal and roots situated on its surface. The northern area of the floor is heavily disturbed by roots and rodent activity. There is no coping between the walls and the floor.

No features or artifacts were associated with the floor. However, three large pieces of charcoal were collected from the floor in the north, south, and west parts of the room (FS 32, FS 77, and FS 81). No taxa were identified in FS 32, but Douglas fir (*Pseudotsuga menziesii*), mountain mahogany, and unknown conifer fragments were identified in the other two samples. Two large pieces of adobe were also present in the southern part of the room. A pollen sample (FS 79) was taken from underneath one of these pieces and taxa identified in the sample included maize (*Zea mays*), prickly pear, beeweed (*Cleome*), cheno-ams, grass family, sunflower family, spurge family (Euphorbiaceae), unidentified pine, piñon pine, juniper, walnut (*Juglans*), and sagebrush. These are two of only three chunks of adobe found in Rooms 1 and 2. A flotation sample (FS 74) was taken from grid 107N/105E in an area where the living surface was best preserved. Charred taxa included mountain mahogany and Douglas fir. The location where this sample was collected is also located near a possible entryway in the east wall.

Wall Construction. Table 26.3 shows the general wall measurements for Room 1. The four walls of the room are made of shaped tuff blocks that are horizontally laid with chinking stones. The blocks were about 35 by 25 by 15 cm in size and the chinking stones are fist-sized. The latter presumably reflect the isolated pieces of tuff found in the room fill. The north, west, and east walls are two courses high, whereas the southern wall is only one course high. The south wall is oriented with the walls constructing Room 2. In addition, the west wall of Room 1 abuts the northeastern corner of Room 2. Therefore, it appears that Room 1 was added after the construction of Room 2. The eastern wall of Room 1 does not connect to the south wall, leaving a 1-m-wide gap in the wall. This gap presumably reflects an entryway into the room. Given the lack of wallfall in the area, it would appear that all four walls were never full-standing walls. There was no evidence of any wall foundations or adobe footings under the walls. The base of the walls was situated near the top of the Bw soil horizon.

Table 26.3. Wall measurements for Room 1.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.45	0.10	0.25	2
South	1.66	0.30	0.27	1
East	1.75	0.35	0.22	2
West	2.45	0.35	0.30	2

Room 2

Sequence of Excavation. Room 2 is the southern room in the two-room structure (Figure 26.3). The room measures 2.34 m north-south by 1.35 m east-west, with 3.16 m^2 of interior space.

Excavations proceeded by removing the room fill in a north to south direction by grid and natural layer from the edge of the test trench that originally exposed the north wall of the room.

Fill. The room contained about 20 cm of post-occupational fill (Strata 1 and 2). This sediment was the same as in Room 1 with some fist-sized pieces of tuff, a few tuff blocks (wallfall), some bits of charcoal, and a few artifacts. However, most of the loose tuff blocks were situated adjacent to the west wall.

Figure 26.3. Room 2 after excavation.

Floor. The floor (Stratum 6) is also an unprepared living surface that represents the compacted top of the Bw soil horizon. A pollen sample (FS 38) and a flotation sample (FS 82) were taken from the surface in the northwestern corner of the room. Taxa identified in the pollen sample included beeweed, cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, oak (*Quercus*), and sagebrush. Taxa identified in the flotation sample included maize, unknown conifer, and unidentified pine.

A single feature (Feature 1) and a chalcedony core flake were associated with the floor. The feature consists of a small circular hole situated in the center of the room. It is 9 cm wide and 17 cm deep. The fill (Stratum 7) is composed of an unconsolidated silty loam with no charcoal or artifacts. Although there was no prepared floor in the room, there appeared to be an adobe cap over the feature. However, the presence of a few tuff blocks with adobe in the area may actually indicate that the adobe is simply melt derived from these items rather than being a formal "cap." A large chunk of adobe was also present to the immediate south of the feature. A pollen sample (FS 75) was taken from the pit fill and identified taxa included beeweed, cheno-ams, grass family, sunflower family, fir (*Abies*), unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

Wall Construction. Table 26.4 shows the general wall measurements for Room 2. The walls consist of a single course of shaped tuff blocks with some chinking stones. The east wall only consists of two blocks in the northeastern corner of the room, leaving a 1.30-m gap on this side of the room. The west wall also has a small (35 cm) opening in the middle; however, there is evidence that this gap may be due to a block falling outside of the room. Although some wall was present along the west wall, the amount of material was insufficient within the room to account for full-standing walls. No foundations or adobe footings were present under the walls. The base of the walls was, however, set into the Bw soil horizon.

Table 26.4. Wall measurements for Room 2.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.40	0.14	0.24	1
South	1.37	0.11	0.25	1
East	1.25	0.17	0.22	1
West	2.38	0.09	0.24	1

Rock Piles and Rock Alignments

Two rock piles and two rock alignments are situated to the immediate east of the structure. Feature 2 consists of a small linear rock alignment located 50 cm east of the entryway into Room 1. The alignment is 1.90 m long and is constructed from approximately 10 shaped and unshaped tuff blocks that are two courses high. It is dry-laid with no adobe mortar. Although the alignment is oriented roughly north-south, the blocks are stacked perpendicular to the long-axis of the alignment. The blocks are about 25 to 30 cm long and 20 cm wide. The base of the rock alignment is located just above the break between the A and Bw soil horizons. A pollen sample

(FS 83) was taken at the base near the center of the feature (Stratum 2). Taxa identified included sunflower family, cheno-ams, mustard family (Brassicaceae), ragweed/bursage, unidentified pine, piñon pine, juniper, oak, and sagebrush. It is unclear what the function of the alignment might have been, but it could have acted as a wind break for the entryway into Room 1 if other construction material was piled above the rock base.

Features 3 and 4 are rock piles located outside of the northeastern and southeastern corners of Rooms 1 and 2, respectively. Feature 3 is composed of a circular pile of tuff blocks about 1 m in diameter and 0.20 m high (Figure 26.4).

Figure 26.4. Feature 3 after excavation.

Feature 3 is 1 to 2 courses high and constructed of about 15 blocks. Four of the blocks are 30 to 40 cm long and 20 cm wide and the rest are 20 to 30 cm long and 10 to 15 cm wide. A pollen sample (FS 84) was taken from under a rock near the center of the pile (Stratum 2). Taxa identified in this sample included lily family (Liliaceae), cheno-ams, grass family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, alder (*Alnus*), rose family (Rosaceae), and sagebrush. Feature 4 is similar to Feature 3, consisting of about 12 shaped and unshaped tuff blocks in a 1-m-diameter area. However, it is only one course high (Figure 26.5).

Figure 26.5. Feature 4 after excavation.

Feature 5 is a semi-circular arc of tuff blocks that opens towards the structure. The arc encloses about 15 m^2 of space to the immediate east of Rooms 1 and 2. The feature is composed of unshaped and shaped tuff blocks situated in a general alignment that is one course high. It measures about 6 m north-south and 3 m east-west. Feature 3 is located at the northwest end of the alignment and Feature 4 at the southwest end of the alignment. Otherwise, no features were observed within the enclosed space.

Features 3, 4, and 5 are all situated about 5 to 10 cm above the top of the Bw soil horizon and within the A horizon. This is the same stratigraphic context as Room 1. Therefore, it appears Room 2 was built first, with Room 1 and Features 3 to 5 being subsequently added on to the structure.

Test Pit

A single test pit (108N/103E) was excavated to a depth of 9.50 m (Figure 26.6), which was about 1 m below the ground surface. The profile exposed a soil sequence consisting, from top to bottom, of the A, Bw, Bwb1, Btb1, and Btkb1 soil horizons. A geomorphologic study of the site indicates that the blocks for Room 2 are set into the Bw horizon, whereas the blocks for Room 1 are set on top of the Bw horizon (see Drakos and Reneau, Volume 3). Tuff clasts that are inferred to be derived from Room 2 also lie underneath Room 1. The soil stratigraphic sequence,

therefore, indicates that Room 2 is older than Room 1. The sequence also indicates that Features 2, 3, 4, and 5 are associated with the more recent occupation. Since the walls of the nearby Coalition period pueblos are associated with the top of the underlying Bwb1 soil horizon, it is assumed that the LA 141505 occupations date to the succeeding Classic period.

Figure 26.6. Photo of LA 141505 after excavation with test pit in foreground.

SITE CHRONOLOGY AND ASSEMBLAGE

Approximately 55 artifacts were recovered from excavations at LA 141505. All the artifacts were analyzed and a sample of pollen, flotation, and macrobotanical samples were selected for analysis (Table 26.5). Analysis results of the ceramics, lithics (chipped and ground stone), archaeobotanical, and pollen materials are presented in the following pages. No faunal remains were recovered from the site.

Table 26.5. Samples from LA 141505 selected for analysis.

Stratum	Sample Type		
	Pollen	Flotation	Macrobotanical
2	21, 83, 84	22	73
4	79	74	33, 77, 81
5		44	

Stratum	Sample Type		
	Pollen	Flotation	Macrobotanical
6	38	82	
7	75		

Ceramics (Dean Wilson)

While only 29 sherds were recovered from the fieldhouse at LA 141505, they included a range of types including Kwahe'e Black-on-white, Santa Fe Black-on-white, smeared-indented corrugated, Sapawe Micaceous, and glazewares (Table 26.6). This combination of pottery could reflect a Coalition or Classic period occupation; however, all these artifacts were recovered from post-occupational fill and none were recovered from the floor. Therefore, the earlier ceramics may be derived from the nearby roomblock at LA 135290. If so, the Classic period ceramics would support the geomorphic interpretation that the site dates to the later time period. Tables 26.7 through 2.9 show the summary ceramic data for the site, including general type, types by tradition, temper material by ware type, and ware by vessel form.

Table 26.6. Distribution of ceramic types from LA 141505.

Ceramic Types	Frequency	Percent
Northern Rio Grande Whitewares		
Unpainted undifferentiated	5	17.2
Mineral paint undifferentiated	2	6.9
Kwahe'e Black-on-white	1	3.4
Santa Fe Black-on-white	4	13.8
Northern Rio Grande Utilitywares		
Plain gray body	2	6.9
Smeared-indented corrugated	12	41.4
Sapawe Micaceous	2	6.9
Middle Rio Grande Glazewares		
Glaze unslipped body	1	3.4
Total	**29**	**100.0**

Table 26.7. Tradition by ware for LA 141505 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	12	100.0	12	100.0	0	0.0	0	0.0	24	82.7
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	4	100.0	4	13.7
Middle Rio Grande	0	0.0	0	0.0	1	100.0	0	0.0	1	3.4
Total	**12**	**100.0**	**12**	**100.0**	**1**	**100.0**	**4**	**100.0**	**29**	**100.0**

Table 26.8. Temper by ware for LA 141505 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Granite with mica	0	0.0	0	0.0	0	0.0	1	25.0	1	3.4
Granite with abundant mica	0	0.0	0	0.0	0	0.0	3	75.0	3	10.3
Fine tuff or ash	0	0.0	3	25.0	0	0.0	0	0.0	3	10.3
Fine tuff and sand	0	0.0	9	75.0	0	0.0	0	0.0	9	31.0
Gray crystalline basalt	0	0.0	0	0.0	1	100.0	0	0.0	1	3.4
“Anthill” sand	12	100.0	0	0.0	0	0.0	0	0.0	12	41.3
Total	**12**	**100.0**	**12**	**100.0**	**1**	**100.0**	**4**	**100.0**	**29**	**100.0**

Table 26.9. Form by ware for LA 141505 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	2	16.6	1	100.0	1	25.0	4	13.7
Bowl body	0	0.0	8	66.6	0	0.0	0	0.0	8	27.5
Jar neck	2	16.6	0	0.0	0	0.0	0	0.0	2	6.8
Jar body	10	83.3	2	16.6	0	0.0	3	75.0	15	51.7
Total	**12**	**100.0**	**12**	**100.0**	**1**	**100.0**	**4**	**100.0**	**29**	**100.0**

Lithic Analysis (Bradley Vierra and Michael Dilley)

Material Selection

A total of 26 chipped stone artifacts were analyzed from LA 141505. The assemblage consisted of a core, 19 pieces of debitage, three retouched tools, and three pieces of undetermined ground stone. This represents a 100 percent sample of the lithic artifacts recovered during the site excavations. Table 26.10 presents the data on lithic artifact type by material type from LA 141505. The majority of the debitage is made of chalcedony with lesser amounts of other materials. The presence of cortex on 42.1 percent of the debitage indicates that these materials were collected from waterworn (100.0%) sources. The chalcedony, Pedernal chert. and chert are available from local Rio Grande Valley gravel sources. Otherwise, the single ground stone artifact is made of dacite, which is available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 26.10. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesicular Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Silicified wood	Quartzite	Other	Total
Cores	Core	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Debitage	Angular debris	0	0	0	0	1	0	0	1	0	0	0	0	0	2
	Core flake	0	0	0	0	1	0	0	10	1	4	0	0	0	16
	Biface flake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Microdebitage	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Undetermined flake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hammerstone flake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ground stone flake	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	2	1	0	11	1	4	0	0	0	19
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	1	0	2	0	0	0	3
	Biface	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Projectile point	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Uniface	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0	1	0	2	0	0	0	3
Ground Stone	Undetermined ground stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	3	0	0	0	0	0	0	0	0	3
	Fire-cracked rock	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**5**	**1**	**0**	**13**	**1**	**6**	**0**	**0**	**0**	**26**

Lithic Reduction

The single core recovered from the site was reduced using a single-directional, single-face technique. It was discarded as a result of a break along a material flaw. Table 26.11 presents the metric information on the core.

Table 26.11. Core type dimensions (mm) and weight (g).

Core Type	*n*	Length (*std*)	Width (*std*)	Thickness (*std*)	Weight (*std*)
Single-directional	1	28	47	39	59.4

The debitage mainly consists of core flakes (84.2%), with some angular debris and a single flake that was removed from a ground stone artifact. The majority of the flakes exhibit collapsed platforms (n = 4), with a cortical, a single-faceted, and a crushed platform. None of the platforms exhibit any evidence of preparation.

The majority of the core flakes consist of distal fragments (n = 7), with fewer whole (n = 5), proximal (n = 2), and midsection (n = 2) fragments. The whole core flakes have a mean length of 36.0 mm (*std* = 6.8) and the angular debris a mean weight of 34.7 g (*std* = 48.5).

The retouched tools consist solely of three retouched pieces. Each has a bi-directionally retouched edge, with straight, concave, and convex edges and edge angles of 70, 45, and 65 degrees, respectively.

Tool Use

Four flakes (21.0%) exhibit evidence of damage that could be attributed to use-wear. Most of the damage is located along the lateral edge of the flake (n = 3), with one on the dorsal surface (i.e., ground stone flake). The lateral edges are all straight with edge angles ranging from 45 to 60 degrees.

The three pieces of undetermined ground stone consist of dacite cobble fragments with ground surfaces. All three of these artifacts are burned.

Archaeobotanical Remains (Pamela McBride)

A possible corn cupule fragment from the northwestern corner of the Room 2 floor was the only cultural plant part recovered from flotation samples besides wood charcoal (Table 26.12). Modern intrusive material comprised the balance of the flotation plant record. These included uncarbonized weedy annual seeds, juniper twigs, pine umbos, and piñon needles.

Table 26.12. Flotation sample plant remains from LA 141505.

FS No.	22	74	82
Feature	Room 1 fill, SE corner	Room 1 floor	Room 2 floor, NW corner

FS No.	22	74	82
Cultural Cultigens			
Maize			Possible 1(0) c
Non-Cultural Annuals			
Goosefoot	+		+
Other			
Purslane family			+
Perennials			
Juniper		+, twig +	twig +
Pine		umbo +	
Piñon		needle +	needle +

+1-10/liter.

Mountain mahogany and possible Douglas fir charcoal were found on the floor of Room 1 while pine and unknown conifer were identified from the Room 2 floor (Table 26.13).

Table 26.13. Flotation sample wood charcoal taxa by count and weight in grams from LA 141505.

FS No.	74	82
Context	**Room 1 floor**	**Room 2 floor, NW corner**
Conifers		
cf. Douglas fir	6/<0.1 g	
Pine		1/<0.1 g
Unknown conifer		6/<0.1 g
Non-Conifers		
Mountain mahogany	14/0.4 g	
Totals	**20/0.4 g**	**7/<0.1 g**

A sample from the fill of a rodent hole was taken as a control sample and, indeed, this sample was quite different from others, resembling a cache of rodent edibles that included large numbers of unburned juniper seeds and twigs, pine umbos, piñon seeds, and prickly pear cactus seeds (absent in all other samples; Table 26.14). Vegetal sample wood was similar to flotation with possible Douglas fir, mountain mahogany, and unknown conifer identified in the fill and floor of Room 1.

Table 26.14. Vegetal sample plant remains by count and weight in grams from LA 141505.

FS No.	44	73	77	81
Feature	Rodent hole fill control sample	Room 1 fill	Room 1 floor, south	Room 1 floor, west
Cultural Remains				
Wood conifers				
cf. Douglas fir			12/1.2 g	6/0.6 g
Unknown conifer		9/0.2 g	9/1.1 g	

FS No.	44	73	77	81
Non-Conifers				
Mountain mahogany		3/0.2 g	7/1.2 g	
Non-Cultural Remains				
Perennials				
Juniper	99(93)/2.3 g, 2(0) t/<0.1 g			
Pine	8(8) u/0.2 g			
Piñon	17(12)/2.5 g			
Prickly pear cactus	9(8)/<0.1 g			
Total Wood	-	12/0.4 g	28/3.5 g	6/0.6 g

+1–10/liter, t twig, u umbo.

The possible corn cupule fragment on the Room 2 floor could indicate that corn was processed or burned for fuel in the room. Pine and mountain mahogany are readily available today at LA 141505, but Douglas fir may have come from Pueblo Canyon to the north or DP Canyon to the south of the site. It is also possible that during the time the site was occupied Douglas fir grew closer, as this species has a range of 6500 feet to nearly tree line and the site is at an elevation of 7100 feet.

Pollen (Susan J. Smith)

A total of six pollen samples were analyzed from various contexts at LA 141505. Table 26.15 lists the frequency of identified pollen types from the site. Maize was the only cultigen identified in the assemblage. Economic resources identified in the pollen assemblage included prickly pear, beeweed, sunflower type, and lily family (which includes yucca, wild onion, and sego lily). A number of other potential economic resources were identified in the assemblage and are listed in Table 26.15. Pollen types and resources are described further in Volume 3 (Chapter 63).

Table 26.15. Pollen types identified by taxa and common names with sample frequency from LA 141505.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 141505 (*n* = 6)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	2
		Prickly Pear Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 141505 (*n* = 6)
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	3
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	1
		Mustard Aggregates	1
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	5
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	1
	Juglans	Walnut	1
	Betula	Birch	0
	Alnus	Alder	1
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence	Cheno-Am	Cheno-Am	6
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 141505 (*n* = 6)
Resources	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	6
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	6
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	3
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	1
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	1
	Pinus	Pine	6
		Pine Aggregates	2
	Pinus edulis type	Piñon	6
	Juniperus	Juniper	6
		Juniper Aggregates	0
	Quercus	Oak	3

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 141505 (*n* = 6)
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	2
	Artemisia	Sagebrush	5
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	1
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 141505 is a two-room Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is located near LA 135290, a Middle Coalition period roomblock, which is located several hundred meters to the west. The small size of the structure indicates that it was unlikely to have been used for even short-term habitation, as it would have been too small to offer much comfort. However, its location near areas suitable for farming and the presence of maize indicate that the site did play a role in agricultural activities.

CHAPTER 27
AIRPORT TRACT: AIRPORT SITES 1 AND 2

Charlie Steen and Bradley J. Vierra

INTRODUCTION

Excavations were conducted at two archaeological sites situated in the area of the Los Alamos airport in 1951. The exact location of these sites is undetermined, but they are presumed to be situated where the current standing buildings of the airport are located. The airport is also situated on the Los Alamos town site mesa, with the site area being over 1000 m west of LA 135290 (Chapter 25, this volume). The airport sites were denoted as Airport 1 and 2 and were excavated by Frederick Worman of Los Alamos Scientific Laboratory. The only information available on these excavations is presented in simple summary form by Steen (1977:65–66). This information is presented here, with additional data collected from the analysis of collections curated at the Laboratory of Anthropology and photographs curated at the Los Alamos Historical Society.

SITE DESCRIPTIONS

Airport 1 probably had five rooms with walls of unshaped tuff blocks. There is no ground plan available for the site. The ceramics were described as including Santa Fe Black-on-white, with a flaked axe and a broken mano also being identified.

Airport 2 contained nine rooms with walls of large unshaped tuff blocks (Figures 27.1 and 27.2). It is unclear as to whether there was no kiva present at the site, or whether Worman simply failed to excavate in the area to the east (in front) of the roomblock to determine if one was present. Although no features were noted, many charred maize cobs and kernels were recovered from Room 3. Santa Fe Black-on-white is also identified as the main pottery type being present, with no lithic artifacts being noted. Figure 27.3 shows Worman during the excavation of one of the sites. As can be seen, a large formal slab metate, two two-hand manos, and a vent plug are visible in the photograph. In addition, the excavation method is clearly evident. That is, the fill was removed by shovel and discarded directly into a truck.

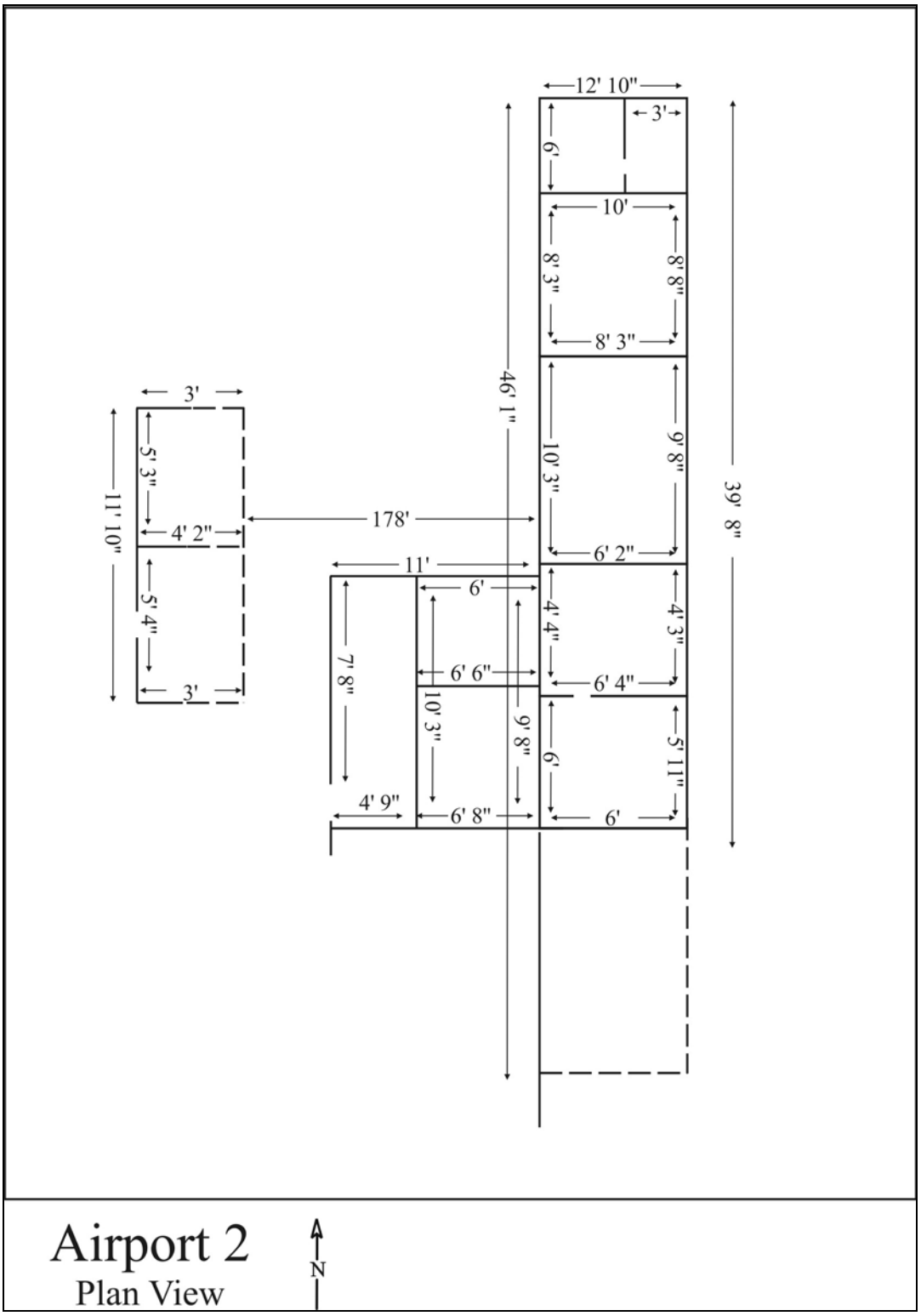


Figure 27.1. Plan map of Airport Site 2 (after Steen 1977, Figure A-46).

Figure 27.2. Airport Site 2 excavations (looking northeast?).
Photo provided courtesy of Los Alamos Historical Museum Photo Archives.

Figure 27.3. Frederick Worman at airport site excavations. Photo provided courtesy of Los Alamos Historical Museum Photo Archives.

A total of 148 sherds were analyzed by Dean Wilson (see Volume 3, Chapter 58) from the collections curated at the Laboratory of Anthropology. Most of these sherds, however, were recovered from the Airport 2 site (Tables 27.1, 27.2, and 27.3). The analyzed sherds likely represent a biased collection from the excavations, but they do indicate that both the Airport 1 and Airport 2 sites date to the Late Coalition period and include Santa Fe, Wiyo, and Galisteo Black-on-white ceramics.

Table 27.1. Ceramic types from Airport 1 site.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Undetermined organic paint	3	15.8
Santa Fe Black-on-white	6	31.6
Wiyo Black-on-white	5	26.3
Northern Rio Grande Utilityware		
Smeared plain corrugated	2	0.1

Ceramic Type	Frequency	Percent
Smeared-indented corrugated	4	21.1
Alternating corrugated	1	5.3
Total	**19**	**100.0**

Table 27.2. Ceramic types from Airport 2 site.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Mineral paint undifferentiated	2	1.6
Santa Fe Black-on-white	45	34.9
Wiyo Black-on-white	15	11.6
Galisteo Black-on-white	1	0.8
Northern Rio Grande Utilityware		
Wide neckbanded	1	0.8
Smeared-indented corrugated	56	43.4
Patterned corrugated	1	0.8
Middle Rio Grande Glazeware		
Glaze red body	3	2.3
Total	**129**	**100.0**

Table 27.3. Distribution of temper by ware at the Airport 2 site.

Temper	Gray		White		Glaze		Total	
Fine tuff or ash	0	0.0	47	74.6	0	0.0	47	36.4
Large tuff fragments Vitric tuff	0	0.0	1	1.5	0	0.0	1	0.7
Fine tuff and sand	0	0.0	7	11.1	0	0.0	7	5.4
Anthill sand	62	98.4	0	0.0	0	0.0	62	48.0
Oblate shale and tuff	0	0.0	4	6.3	0	0.0	4	3.1
Shale	0	0.0	1	1.5	0	0.0	1	0.7
Mostly tuff with some phenocrysts	1	5.6	3	4.7	0	0.0	4	3.1
Scoria	0	0.0	0	0.0	3	100.0	3	2.3
Total	**63**	**100.0**	**63**	**100.0**	**3**	**100**	**129**	**100.0**

McBride's (see Volume 3, Chapter 62) analysis of the burned maize from Room 3 at Airport Site 2 indicated that several masses of kernels were present and that the regular arrangement of the kernels for many of these indicates that maize was being stored on the cob and stacked in very orderly rows that were multiple layers high. The cob rachis was burned away and ears were probably husked before storage (kernels were fused "head to head" with no husk remnants between and no space where a husk might have been). A similar pattern was identified at the Late Coalition period roomblock at LA 12587. Table 27.4 provides information on maize kernel size measurements for the Airport 2 site, LA 12587 (see Chapter 14), and LA 135290 (see Chapter 25). The kernels from LA 135290 are slightly thicker and wider than those from Airport 2 and LA 12587, and may, therefore, have been treated with lime or had a higher moisture

content when burned, causing slightly more swelling and loss of embryos (King 1987; Stewart and Robertson 1971).

Table 27.4. Comparison of average *Zea mays* kernel measurements (mm) at Airport 2, LA 12587, and LA 135290.

Site	*n*	Height	Width	Thickness
Airport 2	50	7.4	6.6	4.1
LA 12587	330	7.3	6.6	4.0
LA 135290	122	7.6	7.2	4.4

Two pieces of bone were identified in the collections from the Airport 2 site that are curated at the Laboratory of Anthropology in Santa Fe. Both pieces of bone were in Catalog number 20116 and both pieces were recovered from Trench 1. The fragments were identified as being unidentified medium/large-sized mammal long bones. Neither of the bones showed evidence for burning and no other identifying marks were present.

CHAPTER 28
RENDIJA TRACT (A-14): LA 15116

Gregory D. Lockard

INTRODUCTION AND SITE SETTING

LA 15116 is a small structure located on the north-facing slope on the south side of Rendija Canyon that dates to the Middle Classic period. The site is located a few hundred m to the northeast of the entrance to the Los Alamos Sportsmen's Club in the western half of the Rendija Tract. Vegetation on the site consists of ponderosa pine trees, which were severely burned during the Cerro Grande fire, as well as some piñon and juniper trees and a predominantly grass understory. The site is situated at an elevation of 2116 m (6944 ft).

The site was first surveyed on November 1, 1976, by Charlie Steen and given the temporary site number T233. Steen believed the site was a one-room fieldhouse. The site was re-recorded on April 23, 1999, by Los Alamos National Laboratory cultural resources personnel and given the temporary site number K138. It was noted by personnel on this visit that "the fieldhouse was constructed primarily of unshaped tuff cobbles stacked against large boulders which [sic] form part of the southern section of the structure." No surface artifacts were detected during the site visit because of a thick layer of pine duff that covered the site and likely obscured any artifacts that were on the surface.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a ring of rubble with interior dimensions of 3 by 3.5 m. An arbitrary site datum (designated 100N/100E, 10.0 elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid system that extended 6 m north and 8 m east of the site datum. Two subdata (A and B) were set up for taking elevations. The site was then photographed and surface collected. Two ceramic sherds were the only artifacts encountered in the surface collection.

A 6- by 1-m east-west trench was initially excavated across the middle of the ring of rubble (103N/101E to 106E). The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the structure's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. Within the structure, the trench units were excavated down to a compact surface thought to be the room's living surface. Outside of the structure, the trench units were excavated down to the top of the sterile Btb1 horizon. The westernmost unit in the trench (103N/101E) was chosen to serve as a test pit for geological analysis. Excavation in this unit therefore continued through the Btb1 horizon down to the Otowi Member of Bandelier Tuff (bedrock). The southern profile of the trench was then drawn and photographed. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata.

In all, 28 units were excavated. Within the structure, excavation proceeded down to the living surface encountered while excavating the trench. Outside of the structure, excavation proceeded down to the top of the sterile Btb1 horizon. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended approximately 1 m beyond the structure in all directions to locate any associated external features and/or outdoor activity areas. The area to the east of the structure contained the highest concentration of artifacts, as well as a short, external wall. The excavation area was therefore extended 2 m to the east of the structure to fully define the external wall and to sample more of this area of concentrated artifacts. The site was then photographed (Figure 28.1) and mapped (Figure 28.2).

Figure 28.1. Post-excavation photograph of Room 1 at LA 15116.

The excavation of the site was supervised by Greg Lockard. The field crew included Joseph Aguilar, Brandon Gabler, and Kari Schmidt. Aaron Gonzalez and Michael Chavarria served as site monitors, representing San Ildefonso and Santa Clara pueblos, respectively.

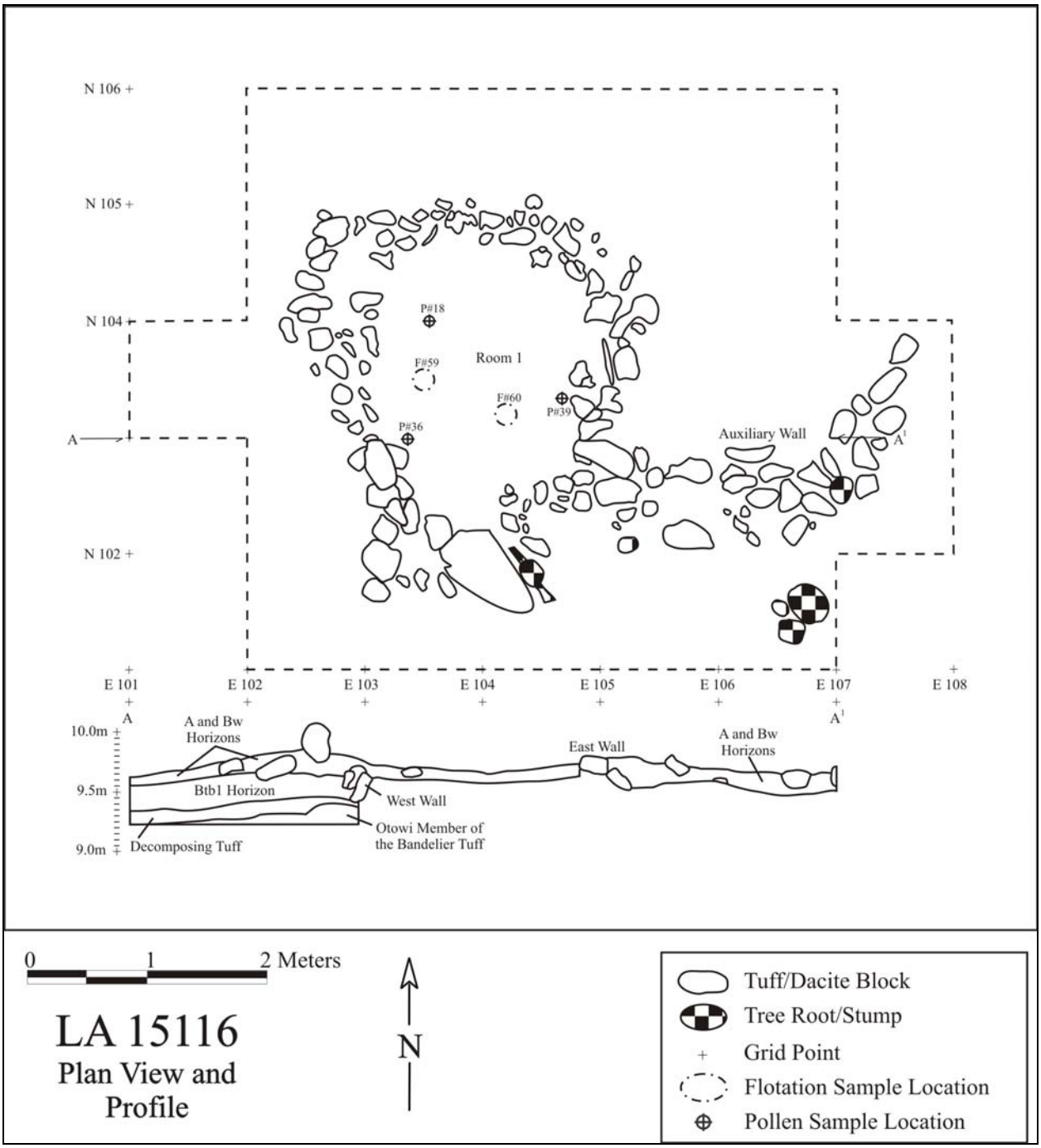


Figure 28.2. Plan view and profile drawings of Room 1 at LA 15116.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment (Tables 28.1 and 28.2). It is uniformly 2 to 5 cm thick across the site and is roughly equivalent to the top half of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 2 to 20 cm thick in the area excavated. The

fill was thickest in and around the collapsed walls of the structure and thinned away from the walls and towards the center of the room. Stratum 2 includes the lower half of the A horizon and the Bw horizon. Stratum 3 is the Room 1 living surface, and Stratum 4 is the sterile Btb1 horizon. Artifact counts from each stratum are shown in Table 28.3. The Btb1 horizon rests on top of the Otowi Member of Bandelier Tuff (bedrock).

Table 28.1. LA 15116 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/3	Loamy sand	2–5	Surface sediment
2	10YR 6/3	Loamy sand	2–20	Post-occupational fill
3	10YR 6/3	Loamy sand	-	Room 1 living surface
4	7.5YR 5/4	Loamy sand	35	Early-middle Holocene soil

Table 28.2. LA 15116 soil horizon descriptions from the north profile of the geological test pit (grid unit 103N/101E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/3	Loamy sand	0–10	Topsoil
Bw	10YR 6/3	Loamy sand	10–20	Late-Holocene soil
Btb1	7.5YR 5/4	Loamy sand	20–40	Early/middle-Holocene soil
R	-	-	40+	Otowi Member of Bandelier Tuff (bedrock)

Table 28.3. LA 15116 artifact counts (ceramics, chipped stone, ground stone, and faunal remains) by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	3	0	0	0	**3**
1	12	15	0	0	**27**
2	68	25	0	0	**93**
3	0	0	0	0	**0**
4	0	0	0	0	**0**
Total	**83**	**40**	**0**	**0**	**123**

SITE EXCAVATION

Room 1

Sequence of Excavation. LA 15116 is a one-room (Room 1) structure that probably functioned as a fieldhouse. Due to the fact that the walls were poorly constructed and poorly preserved, the exact shape of the room could not be determined. Some of the walls defined through excavation were quite straight, while others curved significantly outwards. The room does not appear to be D-shaped, however, and can be best described as elliptical. The room measures 2.50 m north-

south by 1.90 m east-west, with approximately 4.75 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the site (103N/101-106E). The excavation of this trench served to define the stratigraphy and locate the east and west walls and living surface of the room. After the excavation of the trench, the rest of the room was excavated down to the presumed living surface encountered in the trench. After the entire room was excavated and its living surface photographed, a small test pit was excavated below the living surface in grid 103N/103E. The purpose of this test pit was to determine whether or not there were any floors or additional living surfaces below, as well as to ascertain how deep the foundation of the west wall extends in that location. No additional living surfaces were encountered, and the wall foundation was found to extend approximately 20 cm into the Btb1 horizon.

Fill. The room was filled with 2 to 5 cm of surface sediment on top of 4 to 15 cm of post-occupational fill. The fill was thickest in and around the collapsed walls, and thinned away from the walls and towards the center of the room. Flotation (Field Specimen [FS] 31) and pollen (FS 32) samples were taken from the Room 1 fill. Charred taxa identified in the flotation sample included sunflower family (Compositae), piñon pine (*Pinus edulis*), and ponderosa pine (*Pinus ponderosa*). Taxa identified in the pollen sample included cheno-ams (*Chenopodium/Amaranthus*), grass family, sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), chicory tribe (Liguliflorae), unidentified pine (*Pinus* sp.), piñon pine, juniper (*Juniperus*), oak (*Quercus*), and sagebrush (*Artemesia*).

Floor. No formal, prepared floor was encountered during the excavation of Room 1. Nevertheless, an informal living surface was identified. This surface was distinguishable from the post-occupational fill above (Stratum 2) and the sterile Btb1 horizon below (Stratum 4) in a number of ways. First, it was more compact than the fill above and relatively devoid of rocks. The few rocks that were embedded in the surface were generally large. These rocks appear to be wallfall that fell onto the living surface when it was wet, and thus became embedded in the surface. The living surface is also slightly darker in some locations than both the fill above and sterile Btb1 horizon below. These darker areas appear to be ash stains. The living surface also differs from the sterile Btb1 horizon in that the former lacks the ped structure of the latter. The location of the living surface directly on top of the Btb1 horizon suggests that the surface was constructed by clearing the loose sediment from on top of this harder, subsurface soil. This harder surface then appears to have been leveled, as indicated by the fact that although the site was constructed on a slope, the living surface is almost completely level. The living surface was therefore purposefully constructed. There is no evidence, however, that the surface was ever covered with a formal, prepared floor composed of adobe and/or plaster.

No artifacts were encountered in direct association with the living surface. Pollen samples were taken from beneath rocks lying directly on top of the living surface in the northwest (FS 18) and southwest (FS 36) quadrants of the room. Taxa identified in FS 18 included maize (*Zea mays*), cheno-ams, grass family, mustard family (Brassicaceae), sunflower family, ragweed/bursage, spruce (*Picea*), fir (*Abies*), unidentified pine, piñon pine, juniper, oak, Mormon tea (*Ephedra*), and sagebrush. Taxa identified in FS 36 included cholla (*Opuntia*), cheno-ams, grass family, sunflower family, spruce, fir, unidentified pine, piñon pine, juniper, oak, knotweed (*Polygonum* frilly type), rose family (Rosaceae), Mormon tea, and sagebrush. A third pollen sample (FS 39) was taken from directly on top of the living surface in the east-central portion of the room. Taxa

identified in this sample included cheno-ams, grass family, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, oak, rose family, Mormon tea, and sagebrush. Two flotation samples (FS 59 and FS 60) were taken of the living surface matrix in the center of the room. Taxa identified in these samples included ponderosa pine, unknown conifer (Gymnospermae), and mountain mahogany (*Cercocarpus*).

Wall Construction. As mentioned above, Room 1 appears to have been more elliptical than rectangular. As a result, it is impossible to clearly differentiate between the north, south, east, and west walls. In addition, the wall was poorly constructed and poorly preserved. Consequently, it was often difficult when excavating the room to differentiate between *in situ* portions of the wall and wallfall. The wall does appear, however, to have been composed of a single row of unshaped dacite and tuff cobbles. A large number of rocks were encountered directly outside of this wall, many of which are firmly embedded in the Btb1 horizon. These rocks may have formed a second, exterior ring of rocks that functioned to give the wall added support. It is more likely, however, that they were wallfall.

In some locations, the wall foundation was composed of two long, thin, parallel upright slabs. This type of wall foundation has been encountered at several Coalition period (AD 1200–1325) roomblocks on the Pajarito Plateau, including LA 12587 in the White Rock Tract. In most places, however, either a single row of large rocks or several small, unaligned rocks formed the wall foundation. Much of the southern portion of the wall was formed by a very large rock that is too large to have been brought to the site. This indicates that the people who constructed Room 1 incorporated a naturally occurring rock into the wall. The presence of this large rock may in fact have been the reason that the structure was built in that location. In general, dacite cobbles were utilized in the wall foundation, and tuff blocks were reserved for upper courses of the walls. These rocks range in size from very large, immovable boulders to small, fist-sized cobbles. None of the rocks were shaped, although rectangular rocks and rocks with flat surfaces appear to have been selected when readily available.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portion of the room's walls were originally considerably higher than they were at the time of excavation. In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in one stack, which was then measured. The stack measured 3.70 by 0.60 by 0.60 m, for a total of approximately 1.33 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the wall, the masonry portion of the room's walls were originally approximately 0.69 m in height. The upper portion of the wall and ceiling, if it ever had them, were most likely composed of vegetal material and adobe. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, only two small pieces of burned adobe were recovered from the site (FS 35 and FS 37).

Auxiliary Wall

During the excavation of the area to the east of Room 1, an alignment of rocks was encountered. The alignment, which is most likely the remains of a short wall, extends eastward from the

southeast portion of Room 1 and then curves to the north. This wall probably served to define the southern and eastern boundaries of a small, outdoor work area or patio. In fact, the area to the east of Room 1 and north of the wall contained the highest concentration of artifacts at the site. This "auxiliary" wall is about 2.90 m long and appears to have been constructed of either a double row of rocks that was one course high or, more likely, a single row of rocks that was two courses high. The general wall measurements for Room 1 and the auxiliary wall are provided in Table 28.4. Because Room 1 was more elliptical than rectangular and the auxiliary wall was curved, the lengths provided below are approximations.

Table 28.4. LA 15116 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	2.00	0.04–0.16	0.14–0.45	1
South	1.70	0.08–0.60	0.15–0.90	1 to 2
East	1.75	0.05–0.30	0.15–0.58	1 to 2
West	2.35	0.05–0.44	0.16–0.34	1 to 2
Auxiliary	2.90	0.07–0.24	0.22–0.55	1

Geological Test Pit

A single unit (103N/101E) was excavated below the top surface of the Btb1 horizon to serve as a geological test pit. The north profile of this unit, which was analyzed by geologists Paul Drakos and Steven Reneau, contained a soil sequence consisting of an A horizon (topsoil), and Bw horizon (a late-Holocene soil), and a Btb1 horizon (an early/middle-Holocene soil). Below the Btb1 horizon was a thin layer of decomposing tuff on top of the Otowi Member of Bandelier Tuff (bedrock). After the site was completely excavated and photographed, the southernmost portion of the test pit was extended eastward to the west wall of Room 1 in order to determine the depth of the wall's foundation. The excavation revealed that the foundation of this section of the wall extended about 20 cm into the Btb1 horizon, just a few cm above bedrock.

Artifact Distribution

As Table 28.5 demonstrates, the majority of artifacts recovered from LA 15116 are from the area just east of Room 1 and just north of the auxiliary wall (103-105N/105-106E). In addition, more artifacts were encountered in the northern half than in the southern half of the excavated area. No entryway was encountered during the excavation of Room 1. A number of factors, however, suggest that it was located to the east. First, the auxiliary wall is located to the east and would have served to funnel anyone approaching the room from this direction to the east-central portion of the room's wall. Secondly, the increased artifact density to the east of the structure most likely represents an activity area or patio to the east of the structure. Activity areas associated with Rendija Canyon fieldhouses excavated during the Conveyance and Transfer Project tend to be located just outside the entryway. An alternative explanation for the increased artifact density to the east of the room is that the artifacts were swept from inside the room through the entryway and into this area. This again would indicate that the room's entryway was located to the east.

The increased artifact density to the east of the structure is therefore the result of cultural formation processes (i.e., an activity area or the result of cleaning the interior of the room). The increased artifact density in the northern, downhill half as opposed to the southern, uphill half of the excavated area, on the other hand, is most likely due to natural formation processes (i.e., erosion).

Table 28.5. LA 15116 artifact counts by grid unit.

	101E	102E	103E	104E	105E	106E	107E
105N	--	1	4	3	5	16	--
104N	--	**1**	**1**	**2**	11	7	--
103N	2	**1**	**2**	**0**	8	25	6
102N	--	0	**2**	**0**	0	14	7
101N	--	0	0	0	3	0	--

Note: counts do not include two artifacts found outside of the excavated area during surface collection; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 124 artifacts were analyzed from excavations at LA 15116. Analyses of the ceramics, lithics, pollen, and archaeobotanical materials were conducted (Table 28.6). No faunal remains or ground stone items were recovered from the excavations. The results of these analyses are presented in the following pages.

Table 28.6. Samples selected for analysis from LA 15116.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**TL***
1	0	0	--	
2	31	32	--	----
3	59, 60	18, 36, 39	--	--
4	0	0	--	--

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

Eighty-five sherds were recovered from LA 15116. Most of these are Biscuit B/C body sherds, with Biscuit B and Sapawe Micaceous. Assuming that the Biscuit B/C sherds actually represent Biscuit B, then the site would date to the Middle Classic period (15th century). This corresponds with the presence of glazeware ceramics, which also indicate a Classic period occupation. Tables 28.7 through 28.10 show the summary ceramic data for the site, including general type, types by tradition, temper material by ware type, and ware by vessel form. Most of the grayware and whiteware ceramics are made from local anthill sand or tuff temper; however, a single plain gray body and the Sapawe Micaceous sherds are tempered with non-local granite with mica, and the three glazeware sherds with non-local basalt. All of the utilitywares, glazewares, and

micaceous wares are broken fragments from jars. In contrast, most of the whitewares are bowls, with some jar vessel forms.

Table 28.7. Distribution of ceramics types from LA 15116.

Ceramic Types	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	2	2.4
Biscuitware slipped both sides	1	1.2
Biscuitware painted unspecified	21	24.7
Biscuitware slipped one side	4	4.7
Biscuitware slip and paint absent	3	3.5
Biscuit B rim	1	1.2
Biscuit B/C body	31	36.5
Northern Rio Grande Utilityware		
Plain gray body	2	2.4
Smeared-indented corrugated	4	4.7
Sapawe Micaceous	13	15.3
Middle Rio Grande Glazeware		
Glaze red body unpainted	2	2.4
Glaze yellow body unpainted	1	1.2
TOTAL	**85**	**100.0**

Table 28.8. Tradition by ware for LA 15116 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	4	100.0	63	0.0	0	0.0	0	0.0	67	78.8
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	15	100.0	15	17.6
Middle Rio Grande	0	0.0	0	0.0	3	100.0	0	0.0	3	3.5
Total	**4**	**0.0**	**63**	**0.0**	**3**	**100.0**	**15**	**100.0**	**85**	**100.0**

Table 28.9. Temper by ware for LA 15116 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Granite with mica	1	25.0	0	0.0	0	0.0	0	0.0	1	1.1
Fine tuff and sand	0	0.0	62	98.4	0	0.0	0	0.0	62	72.9
“Anthill” sand	3	75.0	1	1.6	0	0.0	0	0.0	4	4.7
Basalt	0	0.0	0	0.0	3	100.0	0	0.0	3	3.5
Sapawe Micaceous	0	0.0	0	0.0	0	0.0	15	100.0	15	17.6
Total	**4**	**100.0**	**63**	**100.0**	**3**	**100.0**	**15**	**100.0**	**85**	**100.0**

Table 28.10. Vessel form by ware for LA 15116 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	22	34.9	0	0.0	0	0.0	22	25.8
Bowl body	0	0.0	14	22.2	0	0.0	0	0.0	14	16.4
Jar neck	0	0.0	2	3.1	1	33.3	0	0.0	3	3.5
Jar body	4	100.0	8	12.6	2	66.6	15	100.0	29	34.1
Miniature jar	0	0.0	16	25.3	0	0.0	0	0.0	16	18.8
Flared bowl rim	0	0.0	1	1.5	0	0.0	0	0.0	1	1.1
Total	**4**	**100.0**	**63**	**100.0**	**3**	**100.0**	**15**	**100.0**	**85**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 39 artifacts were analyzed from LA 15116, consisting of a core and 38 pieces of debitage. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 28.11 presents the data on lithic artifact type by material type. The majority of the debitage is made of chalcedony and Pedernal chert with lesser amounts of other materials. The presence of cortex on 18.4 percent of the debitage indicates that these materials were collected from waterworn (n = 7) sources. The chalcedony, Pedernal chert, and general chert are available from local Rio Grande Valley gravel sources. Otherwise, the rhyolite is available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 28.11. LA 15116 lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal chert	Sil.icified wood	Quartzite	Sandstone	Total
Cores	Core	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Debitage	Angular debris	0	0	0	0	0	0	0	3	0	0	0	0	0	3
	Core flake	0	0	5	0	0	0	0	15	0	12	0	0	0	32
	Microdebi-tage	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Undeter-mined flake	0	0	0	0	0	0	0	2	0	0	0	0	0	2

Artifact Type		Material Type													
		Basalt	Vesic. basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal chert	Sil.icified wood	Quartzite	Sandstone	Total
	Subtotal	0	0	5	0	0	0	0	20	1	13	0	0	0	38
Total		**0**	**0**	**5**	**0**	**0**	**0**	**0**	**20**	**2**	**13**	**0**	**0**	**0**	**39**

Lithic Reduction

The single core was reduced using a single-directional, multi-face technique (Figure 28.3). It was classified as still useable when discarded. Table 28.12 presents the metric information on this core.

Table 28.12. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	41	61	83	298.7

The debitage mainly consists of core flakes with a few pieces of angular debris and a microdebitage. The overall cortical:non-cortical ratio of 0.20 reflects an emphasis on the later stages of core reduction.

The majority of the flakes exhibit single-faceted platforms (n = 10), with cortical (n = 1), collapsed (n = 3), and crushed (n = 4) platforms. None of the flake platforms exhibit evidence of preparation. Most of the core flakes consist of whole flakes (n = 18), with fewer proximal (n = 3), midsection (n = 2), and distal (n = 9) fragments. The whole core flakes have a mean length of 25.8 mm (*std* = 8.9) and the angular debris have a mean weight of 1.2 g (*std* = 1.2).

Tool Use

None of the flakes exhibit any obvious evidence of edge damage that could be attributed to use.

Archaeobotanical Remains (Pamela McBride)

The majority of plant remains from this Middle Classic period one-room circular fieldhouse consisted of burned and unburned conifer needles (Table 28.13). Aside from the piñon and ponderosa pine needles, cultural material was limited to single occurrences of burned seeds that compared favorably to dock, as well as grass family seeds and unidentifiable plant parts. The conifer needles are probably part of conifer fuel wood residue. Although young dock leaves can be eaten like spinach (Harrington 1967:90), basing use of the plant on the recovery of a single

seed is dubious. Unburned seeds of this taxon were recovered from all three samples as well, making it even more difficult to say with any certainty that the seed represents economic use.

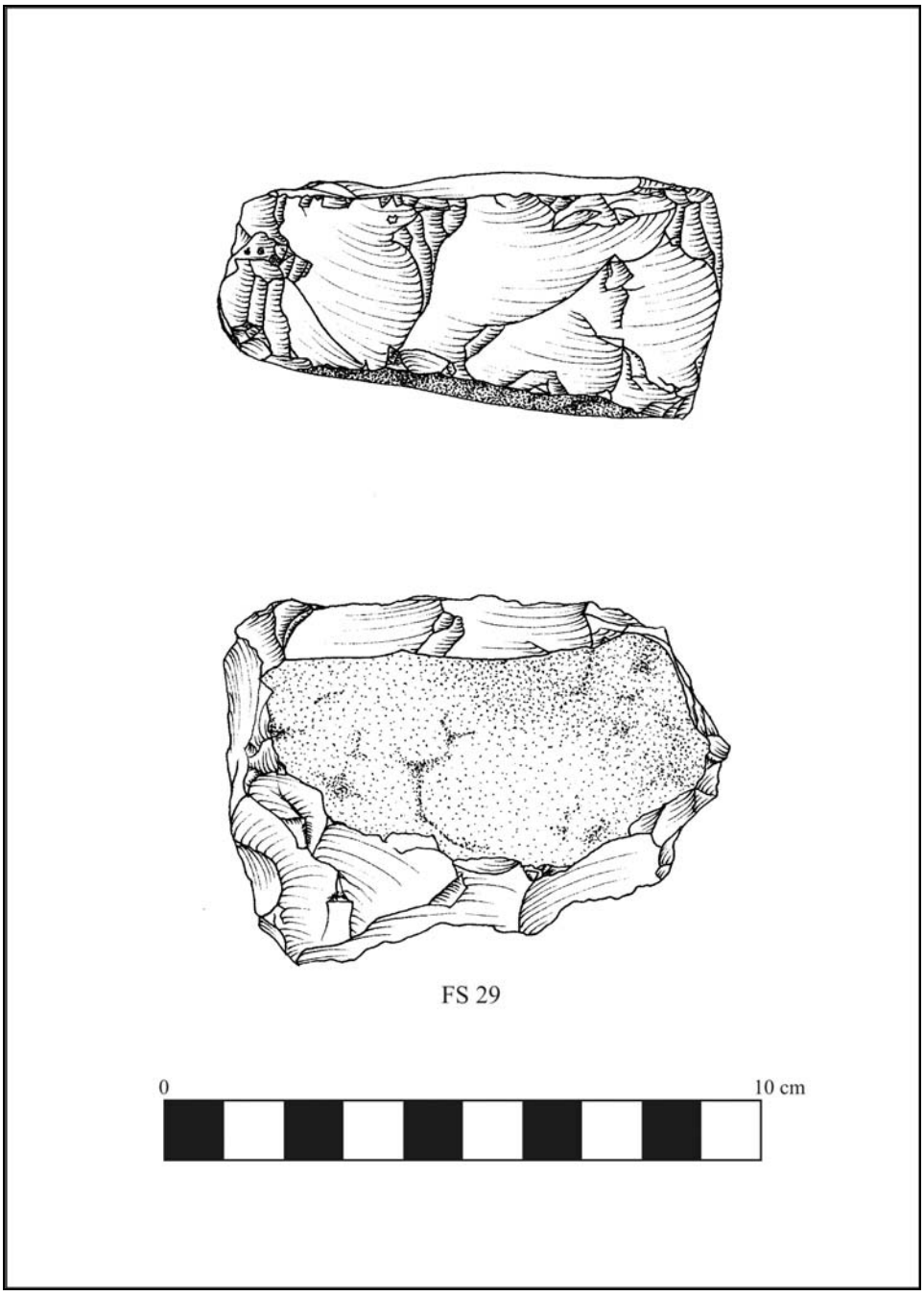


Figure 28.3. Single-face core.

Table 28.13. Flotation sample plant remains, count, and abundance per liter from LA 15116.

FS No.	31	59	60
Feature	Fill on top of Living surface	Living surface	Living surface
Cultural			
Grasses			
cf. Grass family	1(1)		
Other			
Unidentifiable	1(0) pp		1(0) pp
Perennials			
cf. Dock	1(1)		
Piñon	+ needle		
Ponderosa pine	+ needle	+ needle	+ needle
Non-Cultural			
Annuals			
Goosefoot		+	
Grasses			
Grass family	+ floret		
Other			
Composite family	+		
Perennials			
cf. Dock	+	+	+
Piñon	+ needle		+ needle
Ponderosa pine	+ needle		

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, cf. compares favorably, pp plant part.

Ponderosa pine dominated the wood assemblage, but oak, piñon, sagebrush, and unknown conifer were also present (Table 28.14). The most that can be said about subsistence at LA 15116 is that local wood resources were used for fuel or construction.

Table 28.14. Flotation sample wood charcoal by count and weight in grams.

FS No.	31	59	60
Feature	Fill on top of living surface	Living surface	Living surface
Conifers			
Piñon	3/0.1 g		
Ponderosa pine	4/0.1 g	2/<0.1 g	3/<0.1 g
Unknown conifer		3/<0.1 g	
Non-Conifers			
Mountain mahogany			2/<0.1 g
Totals	**7/0.2 g**	**5/<0.1 g**	**5/<0.1 g**

Pollen Remains (Susan J. Smith)

A total of four pollen samples were analyzed from LA 15116. Table 28.15 lists the frequency of identified pollen types. Cultigens identified in the assemblage included maize and cholla. A number of potential economic resources were identified in the assemblage (Table 28.15), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 28.15. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 15116 (*n* = 4)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	1
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	2
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	1
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	1
	Plantago	Plantain	0
	Polygala type	Milkwort	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 15116 (*n* = 4)
	Poaceae	Grass Family	4
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	3
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	1
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	0
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 15116 (*n* = 4)
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	2
	Abies	Fir	2
	Pinus	Pine	4
		Pine Aggregates	1
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	4
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	4
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 15116 is a one-room Middle Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is located in Rendija Canyon on a terrace overlooking the creek. Maize pollen was recovered from the site excavation, therefore, the one-room structure was presumably occupied during the growing season.

CHAPTER 29
RENDIJA TRACT (A-14): LA 70025

Michael J. Dilley and Bradley J. Vierra

INTRODUCTION

LA 70025 is a small structure located on an eroding east-west-trending finger ridge that extends into Cabra Canyon and that dates to the Early/Middle Classic period. The site is located approximately 40 m to the west of the canyon bottom. Vegetation on the site consists of a few scattered junipers and various wild grasses and low shrubs. Vegetation in the surrounding area consists of ponderosa pine trees, many of which were severely burned during the Cerro Grande fire, as well as piñon pine and juniper trees. The site is situated at an elevation of 2122 m (6960 ft).

The site was first surveyed on June 23, 1988, and given a temporary site number of L-53. It was revisited by Los Alamos National Laboratory cultural resources personnel on March 16, 1992, and given a temporary site number of B-18. The site was initially recorded as two one-room structures, both of which were probable fieldhouses and that were constructed of roughly coursed tuff blocks. Two surface artifacts were recorded: a Wiyo/Biscuit A (Abiquiu Black-on-gray) sherd, which was worked on one edge, and one Pedernal chert flake.

FIELD METHODS

Before excavation proceeded, the area was cleared of fallen trees and undergrowth to ensure safe working conditions and to expose the extent of the structure (Area 1). An arbitrary site datum (designated 100N/100E) was established in the southwest corner of the site. A 1- by 1-m grid system was then established, covering the site and extending 2 m north, 2 m south, and 6 m east of the site datum. Two subdata (A and B) were set up for taking elevations. Pre-excavation photographs were taken and the site was surveyed for surface artifacts (Figure 29.1).

A 5- by 1-m trench was initially excavated across the middle of the site (grids 100N/102-106E) to determine extent of the structure and stratigraphy and to locate the east and west walls of the structure. Units were excavated by strata and thicker strata were excavated in arbitrary 10-cm levels. Within the structure, the trench units were excavated to a compact surface thought to be the living surface. Outside the structure, the trench units were excavated to the top of the sterile soil horizon. The westernmost unit of the trench (100N/101E) was selected for a test pit for geomorphologic analysis. This unit was excavated through the Btjb 1 (sandy clay loam) horizon to the sterile BC horizon (silty loam). The southern profile of the trench was then drawn and photographed.

Figure 29.1. Pre-excavation photo of LA 70025.

The rest of the site was then excavated by grid and strata, with arbitrary levels for thicker strata. A total of 17 units were excavated in and around the structure. Inside the structure, units were excavated to the living surface determined during the excavation of the trench. Outside the structure, units were excavated to the sterile Btjb 1 horizon. Excavation of the structure focused on defining walls, removing wallfall, and locating any features. Soil and pollen samples were taken from selected locations and all other soil was screened through 1/8-in. mesh to recover any artifacts. The excavation extended approximately 1 m around the perimeter of the structure in all directions to locate any associated external features and/or outside activity areas. No artifact concentrations were noted, but the remains of a nearly complete Sapawe Micaceous jar were recovered from the living surface in the southwest corner of the structure. Pollen samples and a flotation sample were taken from inside the vessel and underneath it.

Additionally, a small rubble mound (Area 2) was located approximately 7 m to the west of the structure. The grid system was extended to include this area and a subdatum (C) was established to take elevations. Two units were excavated and it was determined that this area was either non-cultural in nature or so badly eroded that it contained no useful data.

The excavation of the site was supervised by Michael Dilley. The field crew included Sandi Copeland, Hannah Lockard, and Alan Madsen. Timothy Martinez and Michael Chavarria served as site monitors, representing San Ildefonso and Santa Clara pueblos, respectively.

STRATIGRAPHY

The strata excavated at LA 70025 are described in Tables 29.1 and 29.2. Stratum 1 is composed of loose, surface sediment that was 1 to 5 cm in thickness across the site. It is roughly equivalent to the top half of the A horizon (topsoil). Stratum 2 consists of post-occupational fill and ranges from 1 to 18 cm in thickness throughout the excavated area. Stratum 2 includes the lower half of the A horizon and the Bw1 and the top of the Bw2 horizon. Artifact counts by strata are presented in Table 29.3.

Table 29.1. Stratigraphic descriptions from sediments at LA 70025.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10yr 5/3	Loamy sand	1–4	Surface sediment
2	10yr 5/3	Sandy loam	4–10	Post-occupational fill
3	10yr 6/3	Sandy clay loam	-	Room 1 Living surface

Table 29.2. Soil horizon descriptions from geomorphic test pit profile at LA 70025.

Horizon	Color	Texture	Depth (cm)	Description
A	10yr 5/3	Loamy sand	0–5	Late Holocene
Bw1	10yr 4/3	Sandy loam	5–14	Late Holocene
Bw2	10yr 4/3	Sandy clay loam	14–29	Late Holocene
Btjb1	10yr 5/4	Sandy clay loam	29–40	Middle-late Holocene
BC	10yr 4/4	Silty loam	40–50	Middle-late Holocene

Table 29.3. Artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	15	0	6	0	**21**
1	33	1	0	0	**35**
2	133*	15	2	0	**148**
3	0	0	0	0	**0**
Total	**181**	**16**	**7**	**0**	**204**

*This total includes 72 sherds recovered in the southwest corner of Room 1, representing the remains of a utilityware bowl.

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a one-room structure that probably functioned as a fieldhouse. Due to its location on an eroding finger ridge, the structure was poorly preserved. Construction of the room consisted of one to two courses of either unshaped tuff block or

unshaped dacite block. Only portions of two walls remained, and a few blocks that suggested a third wall (Figures 29.2 and 29.3). As best as could be determined, the room would have been roughly rectangular in shape. The room measures 2.72 m east-west by 1.65 m north-south, with approximately 4.50 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the site (100N/102-106E). The excavation of this trench served to define the stratigraphy within the room and to locate the east and west walls and the living surface. After the trench was excavated, the rest of the room was excavated by grid down to the presumed living surface (the top of the Btjb1 soil horizon). Subsequent to the excavation of the room, photographs were taken of extant walls and the living surface.

Figure 29.2. Post-excavation photo of LA 70025.

Fill. The interior of the room was filled with 1 to 4 cm of loose surface sediment overlying 4 to 10 cm of semi-consolidated post-occupational fill. Flotation (Field Specimen [FS] 21) and pollen samples (FS 22) were taken from the room fill. Only ponderosa pine (*Pinus ponderosa*) culms were identified in the flotation sample. Taxa identified in the pollen sample included maize (*Zea mays*), cheno-ams (*Chenopodium/Amaranthus*), grass family (Poaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spruce (*Picea*), fir (*Abies*), unidentified pine (*Pinus* sp.), piñon pine (*Pinus edulis*), juniper (*Juniperus*), oak (*Quercus*), Mormon tea (*Ephedra*), and sagebrush (*Artemisia*).

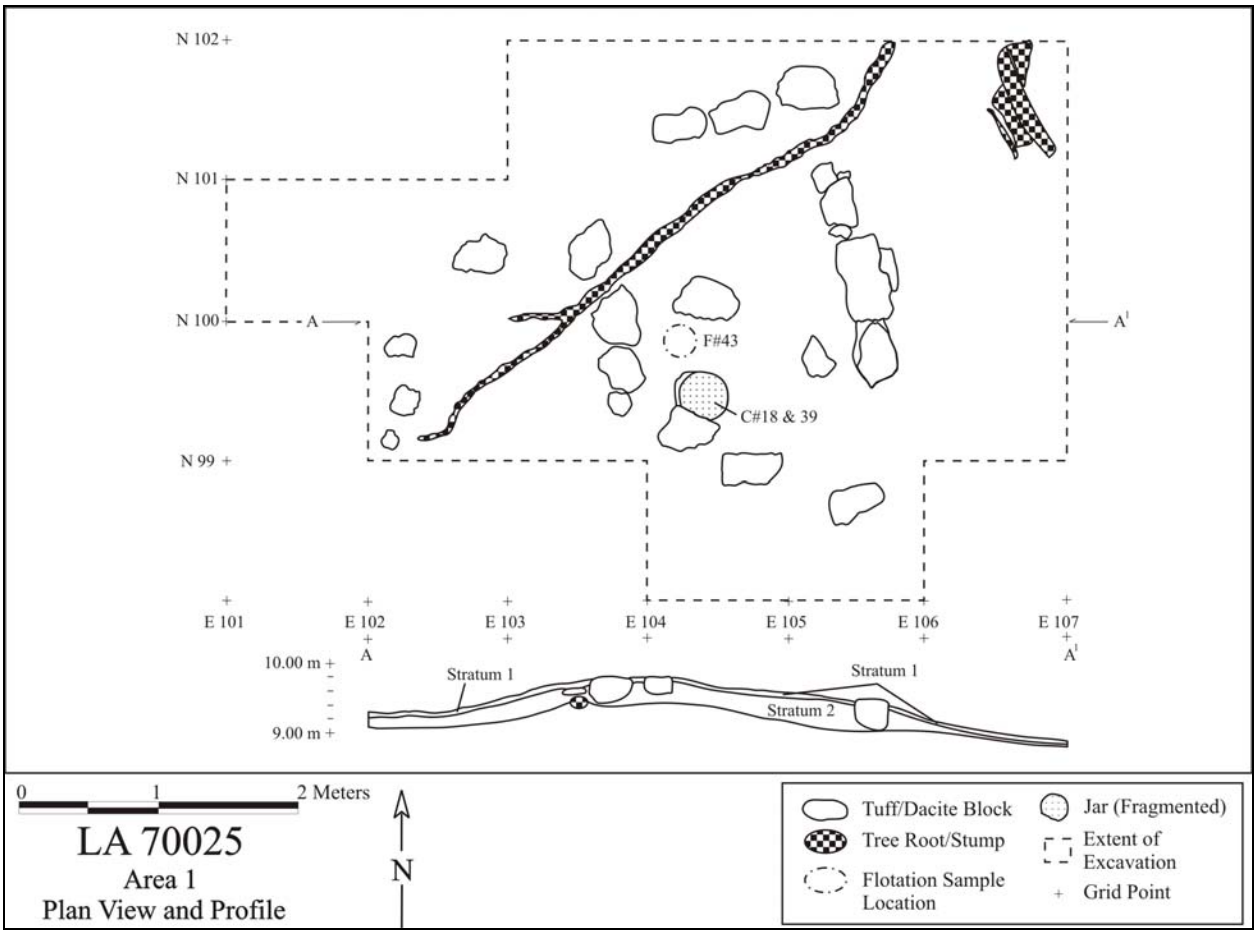


Figure 29.3. Plan view and profile of LA 70025.

Floor. There was no prepared or formal floor encountered during excavation of the room. Due to the poorly preserved nature of the structure from erosion and root disturbance, determination of a prepared floor would have been difficult if any had remained. However, an informal living surface was determined at the break between the loamy sand post-occupational fill, the Bw1 and Bw2 horizons (Stratum 2), and the top of the more consolidated, sterile sandy-clay-loam surface, the Btjb 1 horizon (Stratum 3). This surface was more compact than the general fill, and an increase in rootlets was noted between the fill and the contact zone of the more compact surface. There was also a slight color change in the soil to a lighter shade of brown with orange-hued patches of clayey soil.

A few dacite or tuff blocks were either resting on top of this surface or slightly imbedded into it and were determined to be wallfall. Several ceramic sherds were recovered from this surface, including the remains of a Sapawe Micaceous jar (FS 18 and FS 39) that was resting on a flat piece of tuff in 99N/104E. The tuff fragment and bowl were directly on top of the more compact surface, further indicating that this was likely the prehistoric living surface. This surface was also fairly level compared to the surrounding area outside of the room. A flotation sample was taken from the living surface (FS 43). Charred taxa identified in the flotation sample included ponderosa pine and unknown conifer (Gymnospermae). One pollen sample (FS 28) was taken

from underneath the jar fragment; identified taxa included beeweed (*Cleome*), buckwheat (*Eriogonum*), cheno-ams, grass family, sunflower family, spurge family (Euphorbiaceae), fir, unidentified pine, piñon pine, juniper, oak, and sagebrush. Pollen and flotation samples were also collected from inside the jar (FS 23 and FS 24, respectively). Taxa identified in the pollen sample included maize, sunflower, cheno-ams, grass family, sunflower family, spurge family, fir, unidentified pine, piñon pine, juniper, rose family (Rosaceae), and sagebrush. Taxa identified in the flotation sample included grass family, unknown conifer, mountain mahogany (*Cercocarpus*), and ponderosa pine. No interior features were encountered during the excavation/exposure of the living surface.

Wall Construction. Due to the poor preservation of the site there were just two wall alignments (east and west) determined for Room 1 and their positioning suggested a rectangular shape (Figure 29.4). These were not complete wall alignments. Three additional tuff blocks were noted at the north end of the room and may represent the remains of another wall alignment. However, these blocks did not form a corner with the other alignments. The south end of the room was open, with scattered blocks forming no alignments.

The alignments, for the most part, appear to be a single row and single course of unshaped tuff and dacite blocks (Table 29.4). The majority of the blocks were tuff. Wallfall blocks within the room and in the area immediately outside of the room suggest that originally the walls were two or three courses higher, with a superstructure. The superstructure would likely have been constructed of stick and adobe. Two pieces of burned adobe (FS 12) were recovered just outside of the room, in unit 100N/103E (Stratum 2, Level 3), and several small adobe fragments were recovered inside the room in unit 99N/104E (Stratum 2, Level 3), suggesting the presence of a superstructure. Several tuff and dacite fragments/cobbles associated with the alignments were recovered during excavation of the room and may have served as chinking stones. No plaster or mortar was encountered.

An additional small rubble mound (Area 2), which was located 7 m to the west of Room 1, was also investigated. Two grid units were excavated producing no wall alignments or discernible structural elements. The material in the mound consisted of tuff blocks and fragments. This area was subject to severe erosion, root disturbance, and rodent activity.

Table 29.4. Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.20	0.16	0.26	1
South	Und	Und	Und	Und
East	1.60	0.22	0.32	1
West	0.85	0.21	0.31	1

Figure 29.4. Interior of the east wall of Room 1.

Geomorphic Analysis

A single grid unit (100N/102E) was excavated below the Bw2 horizon to serve as a geomorphic test pit. The profile of this unit was analyzed by geomorghologists Paul Drakos and Steve Reneau. A soil sequence was determined consisting of an A horizon topsoil (late Holocene), a Bw 1 and Bw 2 horizon (late Holocene), a Btjb 1 horizon (middle-late Holocene), and a BC horizon (middle-late Holocene). The A, Bwb1, and Bw2 horizons were all listed as post-occupation soils and the Btjb 1 and BC horizons were listed as pre-occupation soils.

Artifact Distribution

A total of 204 artifacts were recovered from the excavation of LA 70025. The majority of artifacts were recovered from excavation in and around Room 1 (Area 1). There were no artifact concentrations of note (other than the Sapawe Micaceous jar sherds recovered from Room 1) and no activity areas described. The highest density of artifacts outside of Room 1 was in unit 101N/106E and consisted of 26 ceramic sherds and eight chipped stone artifacts (most of which were recovered from Stratum 2, Level 2). The next highest density was recovered from unit 101N/105E and consisted of five ceramic sherds and four chipped stone artifacts (all of which were recovered from Stratum 2, Level 2). Both of these units were located on the northeast side

of the site, just outside of the room. Across the remainder of the site artifacts were fairly evenly distributed. However, no chipped stone artifacts were recovered from inside Room 1. The higher density of artifacts recovered from the east side of the site is consistent with other fieldhouses excavated in Rendija Canyon, where activity areas may be located just outside the entryway of the structure.

This may be the result of a specific activity or the result of sweeping out the room. However, no entryway was determined for this structure and the density of artifacts, specifically chipped stone, does not seem to warrant calling this area an activity area. In the southwest corner of Room 1 (99N/104E; Stratum 2, Level 2), 72 ceramic sherds were recovered in a concentration that represented the remains of a Sapawe Micaceous jar. These sherds were resting on top of a tuff slab fragment that was situated directly above the living surface and may represent an *in situ* deposit.

Few artifacts were recovered from Area 2. Two ground stone fragments were surface collected from units 96N/96E and 99N/98E, which were not excavated. One ground stone fragment was recovered from unit 96N/95E (Stratum2, Level 2). Three ceramic sherds were recovered from unit 96N/95E; one from Stratum 1, Level 1 and two from Stratum 2, Level 2. One chipped stone artifact was recovered from this area in grid 96N/94E, Stratum 2, Level 2. Table 29.5 lists the artifacts recovered from each of the excavated grid units.

Table 29.5. Artifact counts by grid unit.

	94E	95E	96E	98E	101E	102E	103E	104E	105E	106E
96N	2	5	3	0	0	0	0	0	0	0
99N	0	0	1	1	0	4	6	104 (cer)	0	0
100N	0	0	0	0	3	0	6	9	7	6
101N	0	0	0	0	0	0	0	4	9	34

As was stated previously, this site is located on a narrow, eroding finger ridge. Artifacts recovered from Room 1 and the immediate surrounding area likely represent the bulk of the site assemblage, but it is also possible that some artifacts eroded downslope and into the drainages that bound the site on the north and south side. The relatively low artifact density and the poorly preserved nature of the site do not provide any reliable evidence of activity areas associated with the structure (Room 1).

SITE CHRONOLOGY AND SAMPLE ANALYSIS

A total of 204 artifacts were analyzed from the excavations conducted at LA 70025. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and the living surface (Stratum 3) (Table 29.6).

Table 29.6. Soil samples selected for analysis from LA 70025.

Stratum	Flotation	Pollen	Radiocarbon	TL*
1	--	--	--	--
2	21, 24 (from pot base)	22, 23 & 28 (pot base)	--	--
3	43	--	--	--

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 185 ceramics were analyzed from LA 70025. The majority of the pottery consists of Biscuit A, Biscuit B/C, and Sapawe Micaceous types, which reflect an Early to Middle Classic period occupation (Table 29.7). Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 29.8 to 29.10. The graywares and whitewares appear to have been locally made from smeared-indented sand or tuff, in contrast to Sapawe Micaceous, which contained a non-local micaceous temper. All of the grayware and micaceous ceramics consist of jars, although the whitewares include a mix of bowl and jar vessel forms.

Table 29.7. Ceramic types from LA 70025.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	2	1.1
Santa Fe Black-on-white	2	1.1
Unpainted Biscuit one side slipped	5	2.7
Unpainted Biscuit both sides slipped	9	4.9
Biscuit paint and slip absent	7	3.8
Biscuit A	8	4.3
Biscuit B/C body	5	2.7
Northern Rio Grande Utilityware		
Plain gray body	3	1.6
Indented corrugated	4	2.2
Smeared-indented corrugated	15	8.1
Sapawe Micaceous	125	67.6
Total	**185**	**100.0**

Table 29.8. Tradition by ware for LA 70025 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	22	100.0	38	100.0	0	0.0	0	100.0	60	32.4
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	125	100.0	125	67.6
Middle Rio Grande	0	0.0	0	0.0	0	0.0	0	100.0	0	0.0
Total	**22**	**100.0**	**38**	**100.0**	**0**	**0.0**	**125**	**0.0**	**185**	**100.0**

Table 29.9. Temper by ware for LA 70025 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff or ash	0	0.0	34	89.4	0	0.0	0	0.0	34	18.3
Large tuff fragments	0	0.0	2	5.2	0	0.0	0	0.0	2	1.0
Fine tuff and sand	0	0.0	1	2.6	0	0.0	0	0.0	1	0.5
Anthill sand	22	100.0	0	0.0	0	0.0	0	0.0	22	11.8
Oblate shale and tuff	0	0.0	1	2.6	0	0.0	0	0.0	1	0.5
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	125	100.0	125	67.5
Total	**22**	**100.0**	**38**	**100.0**	**0**	**0.0**	**125**	**100.0**	**185**	**100.0**

Table 29.10. Vessel form by ware for LA 70025 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	9	10.5	0	0.0	0	0.0	9	4.8
Bowl rim	0	0.0	3	3.5	0	0.0	0	0.0	3	1.6
Bowl body	0	0.0	11	12.9	0	0.0	0	0.0	11	5.9
Jar neck	0	0.0	3	3.5	0	0.0	10	8.0	13	6.4
Jar rim	1	4.5	1	1.1	0	0.0	3	2.4	5	2.7
Jar body	21	96.5	11	12.9	0	0.0	111	88.8	143	77.2
Jar rim with strap handle	0	0.0	0	0.0	0	0.0	1	0.9	1	0.5
Total	**22**	**100.0**	**85**	**100.0**	**0**	**0.0**	**125**	**100.0**	**185**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 19 artifacts were analyzed from LA 70025. The assemblage consisted of a core, 14 pieces of debitage, and four ground stone artifacts and represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 29.11 presents the data on lithic artifact type by material type. The majority of the debitage is made of chalcedony, with lesser amounts of Pedernal chert and obsidian. The presence of cortex on 14.2 percent of the debitage indicates that these materials were collected from waterworn (n = 2) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravels and the obsidian from the nearby sources in the Jemez Mountains. Otherwise, the dacite is available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 29.11. Lithic artifact type by material type at LA 70025.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal chert	Sil. wood	Quartzite	Sandstone	Total
Cores	Core	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Debitage	Angular debris	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Core flake	0	0	0	0	0	0	1	10	0	3	0	0	0	14
	Micro-debitage	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	1	10	0	3	0	0	0	14
	Two-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Und. mano	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Und. metate	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	4	0	0	0	0	0	0	0	0	4
Total		**0**	**0**	**0**	**0**	**4**	**0**	**1**	**11**	**0**	**3**	**0**	**0**	**0**	**19**

Lithic Reduction

The single core was reduced using a single-directional, multi-face technique. It was classified as still useable when discarded. Table 29.12 presents the metric information on this core.

Table 29.12. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	62	105	91	697.3

The debitage assemblage consists of core flakes. The overall cortical:non-cortical ratio of 0.17 reflects an emphasis on the later stages of core reduction. The flakes exhibit both single-faceted (n = 6) and collapsed (n = 2) platforms. None of the flake platforms exhibit evidence of preparation. Most of the core flakes consist of whole flakes (n = 8), with fewer proximal (n = 2), midsection (n = 1), and distal (n = 3) fragments. The whole core flakes have a mean length of 24.2 mm (std = 18.4).

Tool Use

None of the flakes exhibit any obvious evidence of edge damage that could be attributed to use.

Four ground stone artifacts were identified during the analysis. The two-hand mano is a fragment that is plano-convex in cross-section. The flat surface is heavily ground, whereas the convex surface is only slightly ground on high spots. The undetermined mano fragments consist of cobble fragments that are heavily ground on both opposing surfaces. One of the manos was burned and broken into three parts, which fit back together. The other was battered on the end indicating that it was also used as a hammerstone.

Archaeobotanical Remains (Pamela McBride)

LA 70025, which is a Early/Middle Classic period fieldhouse, is located on a ridge near the mouth of Cabra Canyon. The site yielded very little in the way of non-wood cultural plant remains (Table 29.13). Charred grass stems from inside a pot base were the only possible materials associated with the occupation of the site. Unburned grass stems, sunflower seeds, and ponderosa pine needles were recovered as well, but have no cultural affiliation.

Table 29.13. Flotation sample plant remains showing count and abundance per liter.

FS No.	**24**	**43**
Feature	Inside pot base	Floor surface
Cultural		
Grasses		
Grass family	+ stem	
Non-Cultural		
Annuals		
Sunflower		+
Grasses		
Grass family		+ stem
Perennials		
Ponderosa pine		+ needle

+ 1-10/liter.

Ponderosa pine was the primary wood charcoal taxon identified; mountain mahogany and unknown conifer were also present (Table 29.14). The grass stems could have been used as a cushion for the pot or as tinder and local wood resources were used for fuel or construction.

Table 29.14. Flotation sample wood charcoal by count and weight in grams.

FS No.	**21**	**24**	**43**
Feature	Post-occupational fill	Inside pot base	Floor surface
Conifers			
Ponderosa pine	8/0.1 g	8/0.5 g	1/<0.1 g

FS No.	21	24	43
Unknown conifer		2/<0.1 g	3/0.1 g
Non-Conifers			
Mountain mahogany		4/0.1 g	
Totals	**8/0.1 g**	**14/0.6 g**	**4/0.1 g**

Pollen Remains (Susan J. Smith)

Two pollen samples were analyzed from LA 70025. Table 29.15 lists the frequency of identified pollen types. Maize was the only cultigen identified in the assemblage. Sunflower type was the only economic resource identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 29.15), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 29.15. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 70025 (*n* = 2)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	1
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 70025 (*n* = 2)
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	2
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	2
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	2
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	o
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 70025 (*n* = 2)
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	2
	Pinus	Pine	2
		Pine Aggregates	2
	Pinus edulis type	Piñon	2
	Juniperus	Juniper	2
		Juniper Aggregates	0
	Quercus	Oak	1
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	2
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 70025 is a one-room Early/Middle Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is located on a ridge at the mouth of Cabra Canyon. Maize pollen was recovered during the site excavation, therefore, the one-room structure was presumably occupied during the growing season.

CHAPTER 30
RENDIJA TRACT (A-14): LA 85403

Gregory D. Lockard

INTRODUCTION

LA 85403 is a one-room Classic period structure located on a south terrace in Rendija Canyon. The site is located approximately 75 m west of the Los Alamos Sportsmen's Club archery range and approximately 30 m south of Rendija Canyon Road. Vegetation in the site area consists of ponderosa pine and piñon-juniper woodland with an understory composed primarily of grasses. The site is situated at an elevation of 2131 m (6990 ft).

LA 85403 was first recorded on August 14, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. Hill believed the site was a one- or two-room fieldhouse. Two obsidian flakes and a chalcedony flake were the only artifacts observed on the surface. As Hill noted, the paucity of surface artifacts may be a result of surface collection by users of the archery range. The site was re-recorded and given the temporary site number of Q193 by Bradley Vierra on April 6, 1999. Vierra identified the site as a one-room fieldhouse and noted that several rocks had recently been removed from the surface of the mound. He observed no artifacts. He also documented the presence of two nearby outhouses, and noted that the paucity of artifacts could have been the result of surface collection by the people who built and utilized the outhouses.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a small rubble mound approximately 5 by 4.8 m in area (Figure 30.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 5 m north and 5 m east of the site datum. Three subdata (A-C) were set up for taking elevations. The site was then photographed. A surface collection was attempted, however no artifacts were observed on the surface. A 5- by 1-m east-west trench (units 102N/100-104E) was initially excavated across the remains of the structure. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. The room's west wall was encountered in grid unit 102N/101E, and the interior face of the south wall was encountered along the southern border of grid units 102N/101-103E. An east wall was not encountered during the excavation of the trench. It was later determined that the reason for this is that an entryway in the east wall was located within the trench (grid unit 102N/102E). No obvious living surface was encountered within the room during the excavation of the trench.

Figure 30.1. LA 85403 before excavation.

Excavation proceeded down to the level of the base of the room's walls. After the excavation of the trench units, the north profile of the trench was drawn and photographed. The rest of the area was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 20 units were excavated. No obvious living surface was encountered anywhere within the room. As a result, excavation within the room proceeded down to the base of the room's walls. Outside the structure, excavation proceeded down to the top of a sterile Btb1 horizon. Excavation focused on defining the room's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The structure was then mapped (Figure 30.2) and photographed (Figure 30.3). Finally, the southern half of that portion of grid unit 102N/101E that is within Room 1 was excavated an additional 12 cm. This excavation served as a test pit for geological analysis.

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Joseph (Woody) Aguilar, Alan Madsen, Brian Harmon, Jennifer Nisengard, Sandi Copeland, Bettina Kuru'es, and Hannah Lockard. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Michael Chavarria was the site monitor representing Santa Clara Pueblo, as well as an additional screener.

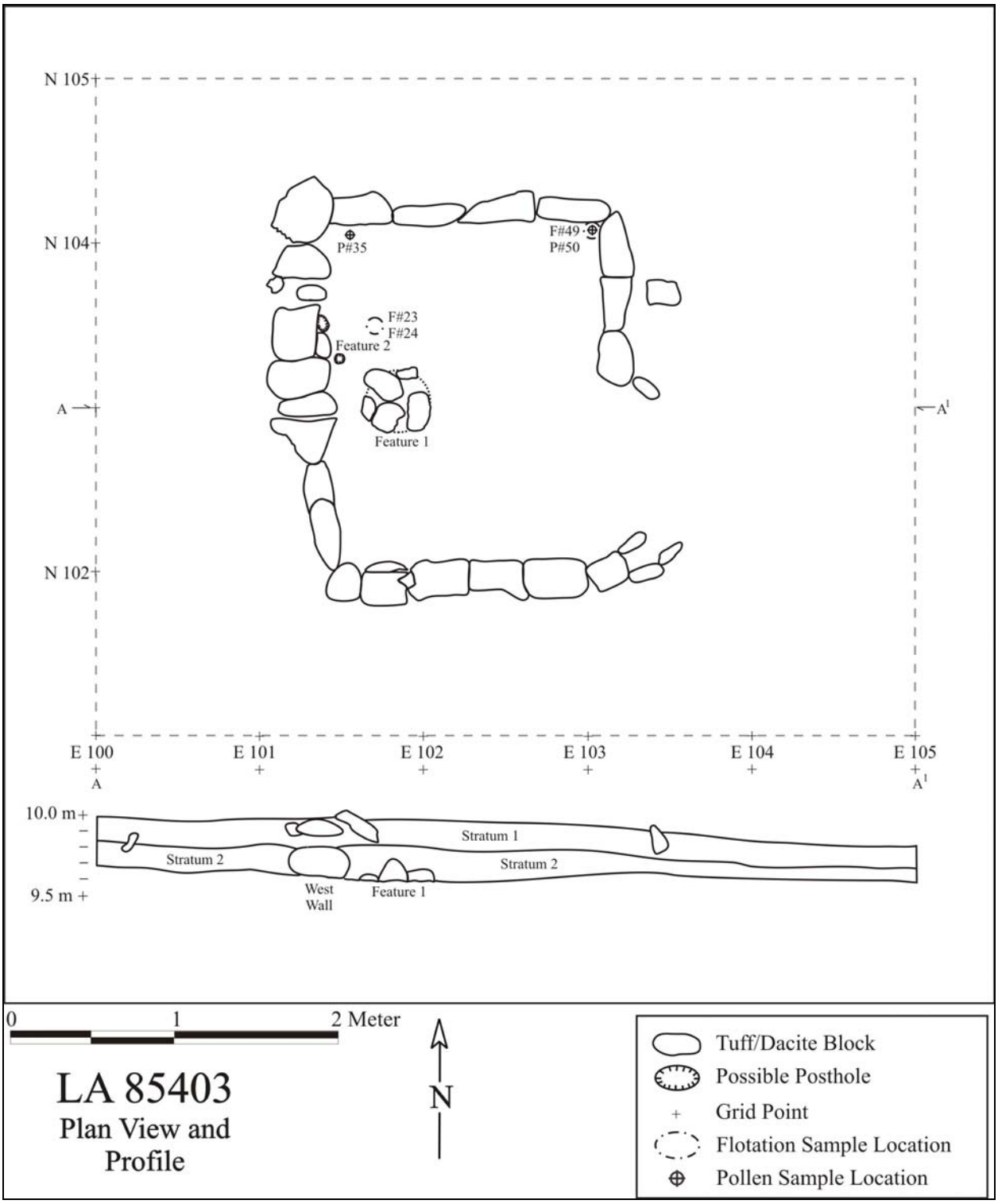


Figure 30.2. Plan view and profile of fieldhouse at LA 85403.

Figure 30.3. Post-excavation photograph of the fieldhouse at LA 85403.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly 1 to 7 cm thick across the site and is more or less equivalent to the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 15 to 35 cm in thickness. The post-occupational fill was thickest within Room 1 and thinned away from the room. Stratum 2 is more or less equivalent to the Bw and Bwb1 horizons. Stratum 3 is the fill removed from Feature 2, which was identified as a posthole. Stratum 4 is the sterile soil removed from the geological test pit and is part of the Btb1 horizon. LA 85403 strata are summarized in Tables 30.1, 30.2., and 30.3, and artifact tallies are reported in Table 30.4.

Table 30.1. LA 85403 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 3/4	Sandy loam	1–7	Surface sediment
2	8.75YR 3/4	Silt	15–35	Post-occupational fill
3	8.75YR 3/4	Silt	6	Feature 2 (posthole) fill
4	7.5YR 4/5	Silty clay	12	Early/middle-Holocene soil

Table 30.2. LA 85403 soil horizon descriptions from the west profile of 102N/100E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 3/4	Sandy loam	0–9	Topsoil
Bw	8.75YR 3/4	Silt	9–22	Late-Holocene soil
Bwb1	7.5YR 4/5	Silt	22–30+	Early/middle-Holocene soil

Table 30.3. LA 85403 soil horizon descriptions from the west profile of the geological test pit (the southern half of that portion of 102N/101E that is within Room 1).

Horizon	Color	Texture	Depth (cm)	Description
Bwb1	7.5YR 4/5	Silt	30–35	Early/middle-Holocene soil
Btb1	7.5YR 4/5	Silty clay	35–50+	Early/middle-Holocene soil

Table 30.4. LA 85403 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	0	0	0	**0**
1	0	0	0	0	**0**
2	7	23	4	0	**34**
3	0	0	0	0	**0**
4	0	0	0	0	**0**
Total	**7**	**23**	**4**	**0**	**34**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small, rectangular structure that probably functioned as a fieldhouse. The room measures 2.06 m in length (north-south) by 1.82 m in width (east-west), with approximately 3.75 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the room (102N/100-104E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's west and south walls. The room's entryway was also encountered in 102N/103E, although it was not recognized as such until the grid units to the north were excavated. No living surface was encountered in the trench. As a result, the excavation proceeded down to the base of the room's walls. After the excavation of the trench, the rest of the room was excavated to the base of the room's walls. After all of the grid units within Room 1 were excavated to this level, Feature 1 (a prehistoric pit) and Feature 2 (a posthole) were excavated, sampled, and mapped. After the features were excavated, the southern half of that portion of 102N/101E that is within Room 1 (i.e., the far southwest corner of Room 1) was excavated an additional 12 cm. The purpose of this excavation was to determine whether or not there were any living surfaces below and to document the depth of the wall's foundations. This excavation also served as a test pit for geological analysis (see Table 30.3).

Fill. The interior of Room 1 was filled with 1 to 6 cm of surface sediment on top of 30 to 35 cm of post-occupational fill. Two flotation samples (Field Specimen [FS] 18 and FS 27) and one pollen sample (FS 28) were analyzed from the Room 1 fill. Carbonized taxa identified in the flotation samples included unidentified pine (*Pinus*), ponderosa pine (*Pinus ponderosa*), and oak (*Quercus*). Taxa identified in the pollen sample included lily family (Liliaceae), sunflower family (Asteraceae), cheno-ams (*Chenopodium/Amaranthus*), grass family (Poaceae), penstemon family (Scrophulariaceae), unidentified pine, piñon pine (*Pinus edulis*), juniper (*Juniperus*), and sagebrush (*Artemisia*).

Floor. No floor or obvious living surface was encountered during the excavation of Room 1. The living surface was estimated to be a few cm above the base of the room's walls. At this level, the soil was fairly indurated and contained small tuff inclusions. This surface was a few cm above the Btb1 horizon. Two features were associated with the Room 1 living surface. The first, Feature 1, was identified as a prehistoric pit that was filled with rocks. This pit was mostly likely an animal burrow. The rocks and fill within the pit appear to have been placed there by the people who constructed and/or utilized the fieldhouse. In all likelihood, the animal burrow postdates the initial construction of the fieldhouse, as it is unlikely that a structure would have been built around a large hole. Instead, the burrow was probably dug while the fieldhouse was temporarily abandoned. When the fieldhouse was reoccupied, the burrow was filled in with rocks and sediment in order to repair the room's living surface.

Feature 2 consists of two small holes located in the northwest quadrant of the room. One of these, located just inside the room's west wall, is most likely a posthole. The other, located 14 cm to the southeast, may or may not have been a second posthole. Flotation samples were taken from two elevations in the northwest quadrant of Room 1 (FS 23 and FS 24). Carbonized taxa identified in these samples included unknown conifer (Gymnospermae), goosefoot (*Chenopodium*), purslane (*Portulaca*), oak (*Quercus*), and maize (*Zea mays*). At least one of these samples is probably at or very near the level of the living surface. Another flotation sample was taken from the approximate elevation of the living surface in the far northeast corner of the room (FS 49). Charred taxa identified in this sample included ponderosa pine wood charcoal. Pollen samples were taken from the approximate elevation of the living surface in the far northwest (FS 35) and far northeast (FS 50) corners of the room. Taxa identified in FS 35 included beeweed (*Cleome*), buckwheat (*Eriogonum*), grass family, cheno-ams, sunflower family, ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), penstemon family, unidentified pine, piñon pine, juniper, Mormon tea (*Ephedra*), and sagebrush. Only sunflower family remains were identified in FS 50.

Wall Construction. The rocks that formed the Room 1 walls are mostly dacite, with a few tuff blocks. The foundation rocks are all dacite, most of which are thin upright slabs (Table 30.5). The foundation slabs are all that remain of the north and east walls. A number of rocks that formed a second course of the south and west walls, and a single rock that formed a third course in the south wall, were encountered *in situ* (Figure 30.4). These rocks are unshaped dacite cobbles. The walls are formed by a single row of rocks in all but the southeast corner of the room. The north, south, and west walls extend for the entire length of the room. In the east wall, there is a gap in the wall that is 95 cm wide. This was most likely the room's entryway. To the north of the entryway, the east wall is composed of three upright slabs. There is also a small,

thin, upright rock that extends outward at about a 45 degree angle from the south end of this portion of the east wall. This rock may have functioned as a door jamb, or to mitigate the amount of dust blowing into the room from outside. The southeast corner of the room, unlike the other corners, is not a right angle. Instead, two upright slabs extend outward at about a 45 degree angle from the east end of the south wall. These rocks, which were considered to be part of the east wall, probably had the same function as the similarly angled rock on the north side of the entryway.

Table 30.5. Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.63	0.25–0.31	0.10–0.21	1
South	1.65	0.23–0.39	0.16–0.22	2 to 3
East	1.12 (2.07)	0.18–0.23	0.09–0.17	1
West	2.04	0.22–0.44	0.08–0.34	2

Note: the length of the east wall including the entryway is given in parentheses.

Figure 30.4. South wall of LA 85403.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation. In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in three stacks, which were

then measured. The stacks measured 0.56 by 0.90 by 0.42 m, 0.50 by 0.50 by 0.45 m, and 3.43 by 0.53 by 0.46 m, for a total of approximately 1.16 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 1.33 m high. This is slightly higher than the average wall height calculated for fieldhouses excavated in the Rendija Tract during the Conveyance and Transfer (C&T) Project, excluding those in areas that are naturally rocky. LA 85403, however, is not located in an area with a lot of naturally occurring rocks. This number is therefore probably a fairly accurate reflection of the original height of the masonry portions of the room's walls. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, no adobe was recovered during the excavation of the site.

Room 1 Features

Feature 1 (Prehistoric Pit)

Feature 1 was a prehistoric pit filled with rocks and sediment. The feature first appeared as a cluster of five dacite rocks at or just below the estimated level of the Room 1 living surface (Figures 30.5 and 30.6).

Figure 30.5. Features 1 and 2 in Room 1.

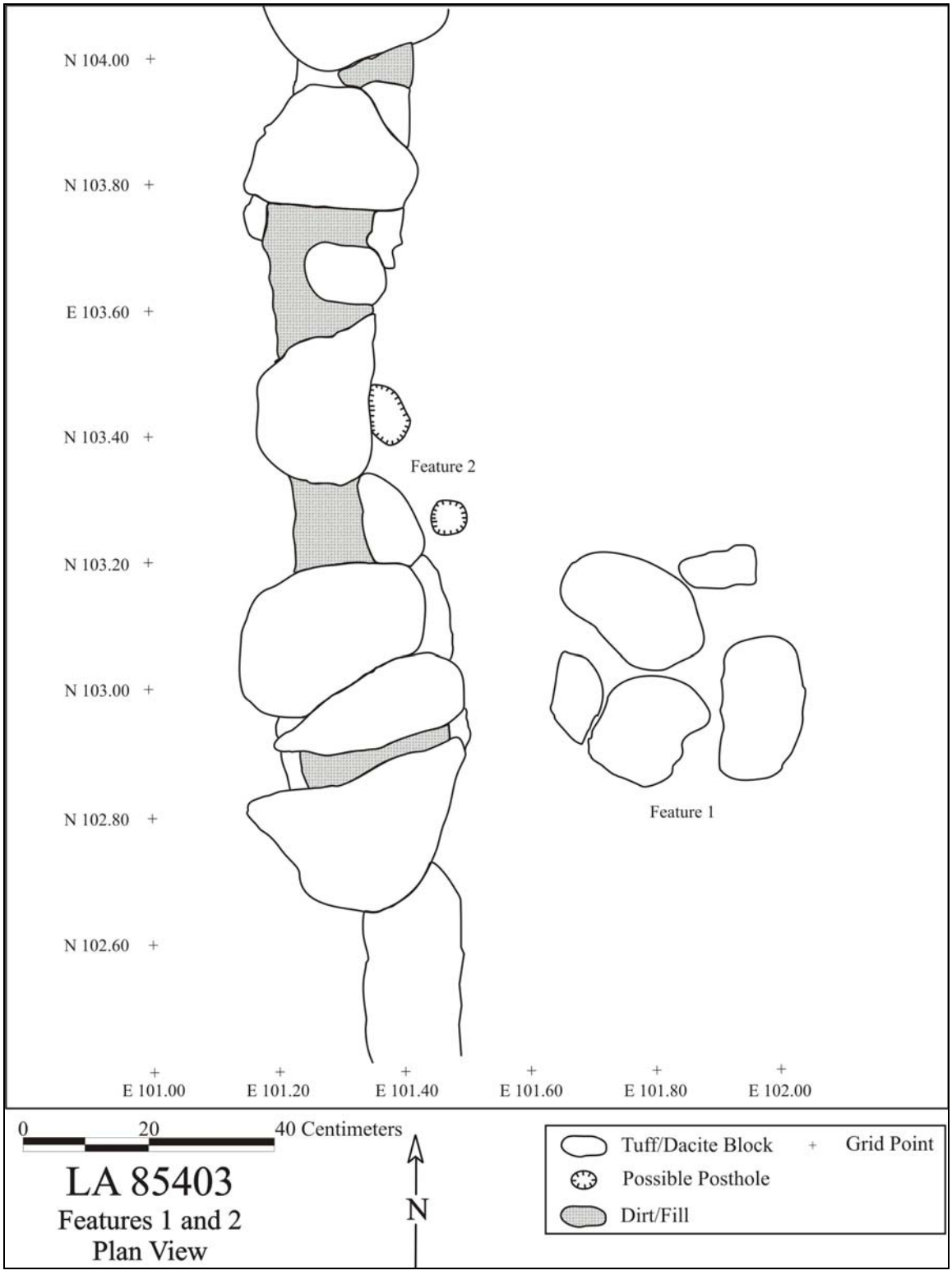


Figure 30.6. Plan view drawings of Features 1 and 2.

The dacite rocks were located in the west-central portion of the room, directly inside the room's west wall. No ash or charcoal was visible in the vicinity of the feature, and the rocks did not appear to have been burned. As a result, the feature did not appear to have been a hearth. The rocks were removed to determine their function. During the excavation of the feature, a sixth rock was encountered below the rocks visible at the presumed living surface. Compact sediment similar to the Room 1 post-occupational fill was encountered between the rocks. Beneath the rocks, a large animal burrow was encountered (Figure 30.7). The burrow was filled with soil that was considerably softer and looser than the sediment between the rocks. The rocks and fill within the pit appear to have been placed there by the people who constructed and/or utilized the fieldhouse. In all likelihood, the animal burrow postdates the initial construction of the fieldhouse, as it is unlikely that the structure would have been built around a large hole. Instead, the burrow was probably dug while the fieldhouse was temporarily abandoned. When the fieldhouse was reoccupied, the burrow was filled in with rocks and sediment in order to repair the room's living surface

Figure 30.7. Feature 1 after excavation.

Much of the sediment removed during the excavation of Feature 1 was retained as a flotation sample (FS 53). Charred taxa identified in this sample included unknown conifer, ponderosa pine, and maize. In addition, a pollen sample (FS 54) was taken from directly beneath one of the rocks in the feature. Taxa identified in this sample included beeweed, grass family, cheno-ams, sunflower family, penstemon family, unidentified pine, piñon pine, oak, Mormon tea, and sagebrush.

Feature 2 (Posthole)

Feature 2 consists of two small holes located in the northwest quadrant of Room 1 (see Figures 30.2 and 30.5). The first hole is located just inside the room's west wall, 26 cm northwest of Feature 1. The interior walls of the hole were vertical and highly compact, indicating that it was most likely a posthole. It measured 9 cm north-south by 7 cm east-west and was approximately 15 cm deep. A pollen sample (FS 51) was taken of the fill removed from the posthole. Taxa identified in this sample included knotweed (*Polygonum*), grass family, cheno-ams, spurge family, fir (*Abies*), unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Pine aggregates were also identified. The second small hole was located 14 cm to the southeast of the first. The interior walls of this hole were irregular and unconsolidated. It was therefore most likely a rodent burrow or root disturbance rather than a second posthole.

Geological Analysis

Geologists Paul Drakos and Steven Reneau utilized two profiles to reconstruct the natural soil horizons at the site (see Tables 30.2 and 30.3). The upper strata were described from the west profile of 102N/100E. This profile contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), and a Bwb1 horizon (an early/middle-Holocene soil). The lower strata were described from the west profile of the geological test pit. The geological test pit was located in the southern half of that portion of 102N/101E that is within Room 1. It consists of the interior face of the west wall of Room 1 and below. The profile contained a soil sequence consisting of the Bwb1 horizon encountered in the first profile on top of a Btb1 horizon (another early/middle-Holocene soil).

Artifact Distribution

Few artifacts were recovered from LA 85403. Nevertheless, there is a noticeable pattern in the artifact distribution at the site (Table 30.6).

Table 30.6. Artifact counts by grid unit.

	E100	E101	E102	E103	E104
N104	1	**4**	**1**	**1**	1
N103	0	**2**	**1**	**2**	5
N102	0	**3**	**4**	**1**	2
N101	0	0	1	3	2

Note: bold numbers indicate grid units that are located completely or partially within Room 1.

Most of the artifacts were recovered from within Room 1 or to the east of the room. A significant number of artifacts were also recovered from the grid units to the north of the room. Most of these, however, came from a single grid unit (104N/101E). Only a single artifact was

recovered from the grid units to the west of the room. The three westernmost grid units to the south of the room also contained only a single artifact. The concentration of artifacts to the east of the fieldhouse most likely reflects an outdoor activity area, the sweeping of artifacts through the entryway in the east wall by the site's occupants, or both. Within the sample of fieldhouses in the Rendija Tract excavated during the C&T Project, there is a strong tendency for activity areas, reflected in a higher concentration of artifacts, to be located to the east.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 33 artifacts were analyzed from excavations at LA 85403. Analyses of the ceramics, lithics (chipped and ground stone), archaeobotanical, and pollen materials were conducted (Table 30.7). The results of these analyses, as well as associated tables, are presented in the following pages.

Table 30.7. Samples selected for analysis from LA 85403.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	23, 24, 27, 49, 53	28, 35, 50, 54	53	
3		51		
4				

*thermoluminescence

Chronology

Radiocarbon Dating

A single maize sample was submitted for accelerator mass spectroscopy dating. The sample provided a date of 310±40 BP (Beta-215549), with a calibrated intercept of AD 1530 and a two-sigma range of AD 1470 to 1660. The sample was recovered from a flotation sample taken from Stratum 2.

Ceramic Artifacts (Dean Wilson)

Seven sherds were recovered from the fieldhouse. These consist primarily of utilitywares, with a single undifferentiated whiteware. Tables 30.8 through 30.11 show the summary ceramic data for the site, including general type, types by tradition, temper material by ware type, and ware by vessel form. All of the graywares and the whiteware sherd are made from local anthill sand or tuff temper, whereas, the micaceous ware sherd is made from non-local granite with mica. All of the graywares and the micaceous sherd represent jar vessel form, in contrast to the whiteware sherd, which is from a bowl.

Table 30.8. Distribution of ceramics types from LA 85403.

Ceramic Types	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	1	14.3
Northern Rio Grande Utilityware		
Plain gray body	1	14.3
Indented Corrugated	1	14.3
Smeared-indented corrugated	4	57.1
Total	**7**	**100.0**

Table 30.9. Tradition by ware for LA 85403 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	5	100.0	1	100.0	0	0.0	0	100.0	6	85.8
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	1	0.0	1	14.2
Middle Rio Grande	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	**5**	**100.0**	**1**	**100.0**	**0**	**0.0**	**0**	**0.0**	**7**	**100.0**

Table 30.10. Temper by ware for LA 85403 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	1	100.0	0	0.0	0	0.0	1	14.2
Granite with mica	0	0.0	0	0.0	0	0.0	1	100.0	1	14.2
Smeared-indented sand	5	100.0	0	0.0	0	0.0	0	0.0	5	71.4
Total	**5**	**100.0**	**1**	**100.0**	**0**	**0.0**	**0**	**100.0**	**7**	**100.0**

Table 30.11. Vessel form by ware for LA 85403 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl body	0	0.0	1	100.0	0	0.0	0	0.0	1	14.2
Jar body	5	100.0	0	0.0	0	0.0	1	100.0	6	85.8
Total	**5**	**100.0**	**1**	**100.0**	**0**	**0.0**	**1**	**100.0**	**7**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

Twenty-six lithic artifacts were analyzed from LA 85403. This assemblage consisted of four cores, 17 pieces of debitage, two retouched tools, and three ground stone artifacts. This

represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 30.12 presents the data on lithic artifact type by material type. The debitage is made of chalcedony, Pedernal chert, obsidian, and andesite. The presence of cortex on 11.7 percent of the debitage indicates that these materials were collected from waterworn (n = 2) sources. The chalcedony, Pedernal chert, and possibly the greenstone are all available from local Rio Grande Valley gravels and the obsidian from the nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau. Three pieces of basalt debitage were submitted for X-ray fluorescence analysis. Two of these were identified as basalt and the other as dacite.

Table 30.12. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. wood	Quartzite	Greenstone	Total
Cores	Core	1	0	0	0	0	0	0	1	0	2	0	0	0	4
	Subtotal	1	0	0	0	0	0	0	1	0	2	0	0	0	4
Debitage	Angular debris	0	0	1	0	0	0	0	1	0	3	0	0	0	5
	Core flake	3	0	0	2	0	0	0	4	0	0	0	0	0	10
	Biface flake	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Microdebitage	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	3	0	1	2	0	0	1	5	0	5	0	0	0	17
Retouched Tools	Retouched piece	0	0	0	1	0	0	0	1	0	0	0	0	0	2
	Subtotal	0	0	0	1	0	0	1	1	0	0	0	0	0	2
Ground Stone	Undetermined mano	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Miscellaneous ground stone	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Subtotal	0	0	0	0	2	0	0	0	0	0	0	0	1	3
Total		**4**	**0**	**1**	**3**	**2**	**0**	**1**	**7**	**0**	**7**	**0**	**0**	**1**	**26**

Lithic Reduction

The four cores were reduced using a bi-directional/bifacial, bi-directional/opposed-same-face, and multi-directional/opposed-same-and-different-face technique. Two of the cores were fragments that were discarded due to material flaws, whereas the other two cores were classified as still useable. Table 30.13 presents the metric information on these cores.

Table 30.13. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bi-directional	61	59	29	93.0
Bi-directional	68	55	29	135.2

Core Type	Length	Width	Thickness	Weight
Bi-directional	46	85	62	237.9
Multi-directional	83	54	50	257.2

The debitage primarily consists of core flakes and angular debris, with a biface flake and a piece of microdebitage. The overall cortical:non-cortical ratio of 0.10 reflects an emphasis on the later stages of core reduction. The flakes exhibit single-faceted (*n* = 3), collapsed (*n* = 1), and crushed (*n* = 2) platforms. Two of the flake platforms exhibit evidence of preparation as they are both ground. Most of the core flakes consist of distal fragments (*n* = 5), with fewer whole (*n* = 1), proximal (*n* = 3), and midsection (*n* = 1) fragments. The single whole core flake has a mean length of 27.0 mm and the angular debris a mean weight of 8.78 g (*std* = 5.6).

The retouched tools consist of two retouched flakes. One of these is a large flake with unidirectional dorsal retouch along the distal end with an angle of 85 degrees. The other also exhibits unidirectional retouch, but along two lateral edges with angles of 70 degrees. These edges are slightly serrated in outline.

Tool Use

None of the flakes and only one of the retouched tools exhibit any obvious evidence of edge damage that could be attributed to use. The retouched tool exhibits a slightly serrated edge with rounding and scarring.

Three ground stone artifacts were identified during the analysis. The undetermined mano fragment consists of a piece of greenstone with two opposing surfaces that are slightly ground. The undetermined ground stone items consist of two tabular pieces of dacite that refit together. The edges have been shaped and the artifacts could represent a ceramic jar lid.

Archaeobotanical Remains (Pamela McBride)

Maize cupules, a possible goosefoot seed fragment, a purslane seed, pine bark, and an unidentifiable plant part comprised the cultural plant material recovered from this one-room masonry fieldhouse (Table 30.14). Maize could have been grown near the fieldhouse that was located on a relatively flat, open area along the south side of Rendija Canyon. Pine bark is most likely part of the firewood residue. The goosefoot seed fragment and purslane seed may indicate use of these weedy annual plants that proliferate in agricultural fields. Local woods were used as fuel and included oak, ponderosa pine, and unknown conifer (Table 30.15).

Table 30.14. Flotation plant remains, count, and abundance per liter from LA 85403.

FS No.	18	23	24	27	53
Feature	Ash/charcoal area in fill	Room 1 westernmost portion, floor		Ash/charcoal area	Fea. 1, Pit fill
Cultural					
Annuals					

FS No.	18	23	24	27	53
cf. Goosefoot		1(0)			
Purslane		1(1)			
Cultivars					
Maize			1(0) cf. c		5(0) c
Other					
Unidentifiable					1(0) pp
Perennials					
Pine				+ barkscale	
Non-Cultural					
Annuals					
Goosefoot	+			+	+
Purslane	+				
Grasses					
Dropseed grass				+	
Grass family				+	
Other					
Composite family				+	
Groundcherry					+
Spurge				+	
Perennials					
cf. Dock	+			+	
Hedgehog cactus					+
Pine				+	
Ponderosa pine	+ needle			+ fascicle, + needle	

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + = 1-10/liter, c = cupule, cf. = compares favorably, pp = plant part.

Table 30.15. Flotation sample wood charcoal by count and weight in grams.

FS No.	23	24	27	49	53
Feature	Room 1 westernmost portion, floor		Ash/ charcoal area	Far NE corner, Room 1, floor	Fea. 1, Pit fill
Conifers					
Ponderosa pine			1/<0.1 g	3/0.1 g	6/0.1 g
Unknown conifer	1/<0.1 g	1/<0.1 g			4/0.1 g
Non-Conifers					
Oak		1/<0.1 g	3/0.1 g		
Totals	**1/<0.1 g**	**2/<0.1 g**	**4/0.1 g**	**3/0.1 g**	**10/0.2 g**

Pollen Remains (Susan Smith)

Five pollen samples were analyzed from LA 85403. Table 30.16 lists the frequency of identified pollen types. No cultigens were identified in the assemblage. Economic resources identified in the assemblage included only beeweed and lily family, which includes yucca, wild onion, sego lily, and others. A number of potential economic resources were also identified in the assemblage (Table 30.16), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 30.16. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85403 (*n* = 5)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	2
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	0
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	1
	Plantago	Plantain	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85403 (*n* = 5)
	Polygala type	Milkwort	0
	Poaceae	Grass Family	4
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	5
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	3
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85403 (*n* = 5)
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	1
	Pinus	Pine	4
		Pine Aggregates	1
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	1
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	3
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85403 is a one-room Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is located on a south terrace in Rendija Canyon, about 75 m west of the Los Alamos Sportsmen's Club archery range. Burned maize cupules were recovered during the site excavation, therefore, the one-room structure was presumably occupied during the growing season. Dated maize remains indicate the site was occupied circa AD 1530, during the Late Classic.

CHAPTER 31
RENDIJA TRACT (A-14): LA 85404

Gregory D. Lockard

INTRODUCTION

LA 85404 consists of one-room Classic period fieldhouse located to the northwest of an intermittent drainage. The site is located on the Los Alamos Sportsmen's Club archery range, approximately 20 m south of Rendija Road. Vegetation around the site consists of ponderosa pine and juniper woodland with a grass understory. The site is situated at an elevation of 2120 m (6954 ft).

LA 85404 was first recorded on August 15, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. According to Hill, the site consisted of three rock features. Feature 1 is a rectangular outline of unshaped tuff blocks that is 4.3 by 5 m in area. Hill believed it was a fieldhouse. Feature 2 was identified as a linear arrangement of unshaped tuff cobbles that measured 2.5 by 13 m in area. Due to the fact that the feature was oriented parallel rather than perpendicular to the surrounding slope, Hill believed it was a structure rather than an agricultural terrace. Feature 3 measured 4 by 3.5 m in area and was believed to be a fieldhouse. Surface artifacts recorded by Hill included obsidian and a heat-treated chalcedony flake. Three sherds (an unpainted Biscuitware sherd, a Wiyo Black-on-white sherd, and a Santa Fe Black-on-white sherd) were also recorded.

In April of 1999, the site was re-recorded and given the temporary site number of Q194. Only Hill's Feature 3 was recorded at this time. Due to the fact that the site was covered with a thick layer of pine duff, no artifacts were observed on the surface. The other features at the site may not have been visible for the same reason. Los Alamos National Laboratory personnel believed that the feature that they did record was a one-room fieldhouse. During the Conveyance and Transfer Project, this was the only feature excavated at LA 85404.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a small rubble mound approximately 4 by 3.5 m in area. An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 6 m north and 5 m east of the site datum. Three subdata (A-C) were set up for taking elevations. The site was then photographed before excavation (Figure 31.1). A surface collection was attempted, however no artifacts were observed on the surface. A 5- by 1-m east-west trench (103N/100-104E) was initially excavated across the remains of the structure. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary

10-cm levels. The room's west wall was encountered in 103N/101E, and the east wall in 103N/103E. No living surface was encountered in the trench.

Figure 31.1. LA 85404 before excavation.

Excavation of the trench units continued until a sterile Pleistocene soil (i.e., the Btb1 horizon) was reached. After the excavation of the trench units, the north profile of the trench was drawn and photographed. The north profile of 103N/102E was also examined by geologists Paul Drakos and Steven Reneau at this time. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 23 units were excavated. A patch of burned floor was encountered in the northeast corner of the room (within units 104N/102-103E). The patch of floor measured approximately 45 by 50 cm and was located directly on top of the Btb1 horizon. No floor was encountered in any other portion of the room. As a result, excavation of these areas terminated at the top of the Btb1 horizon. The excavation of areas outside the structure also terminated at the top of this soil horizon. Excavation focused on defining the room's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The structure was then mapped (Figure 31.2) and photographed (Figure 31.3).

The excavation of the site was supervised by Greg Lockard. The field crew included Brad Vierra, Joseph (Woody) Aguilar, Jennifer Nisengard, and Bettina Kuru'es. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners.

Michael Chavarria was the site monitor representing Santa Clara Pueblo, as well as an additional screener.

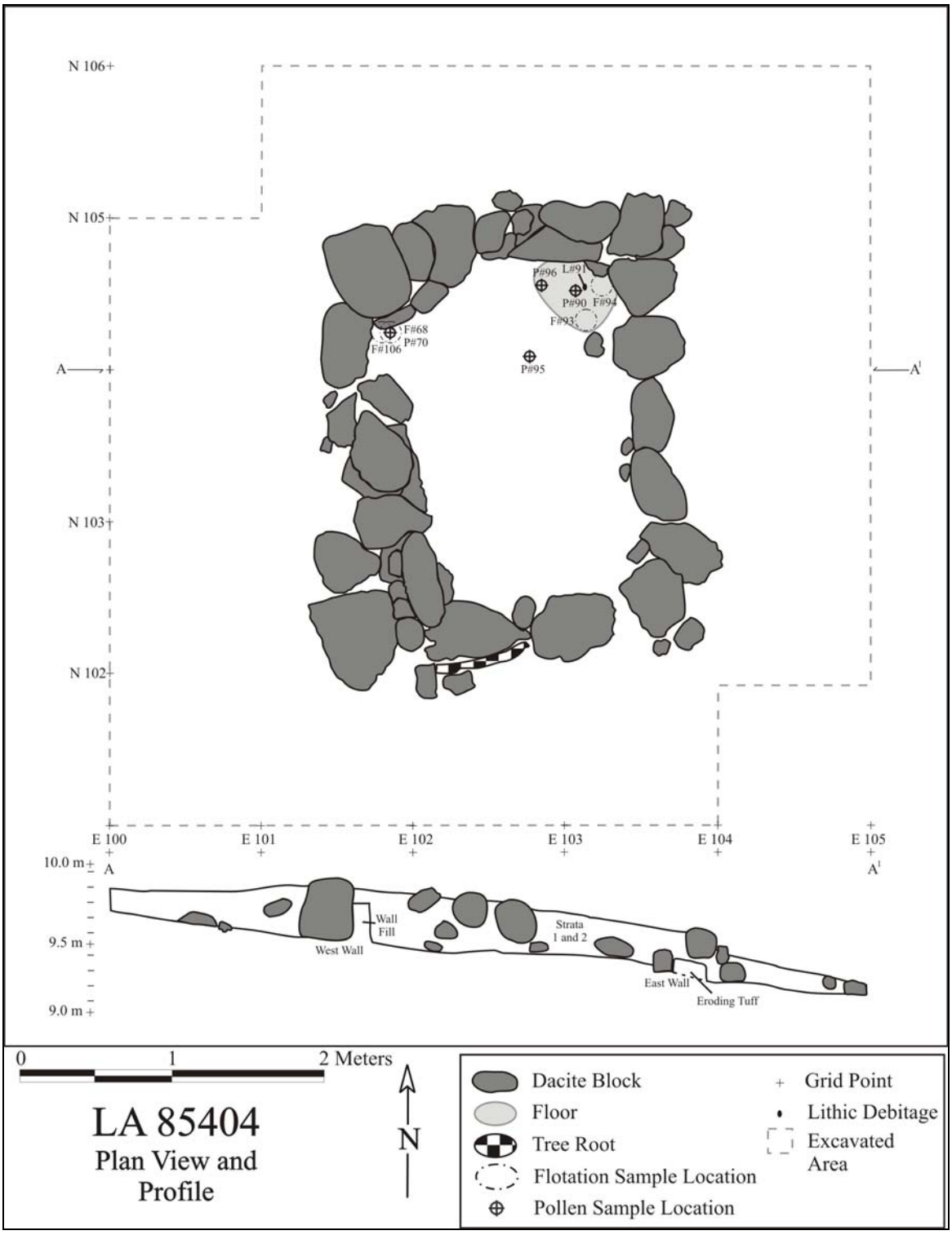


Figure 31.2. Plan view and profile views of LA 85404.

Figure 31.3. Post-excavation photograph of LA 85404.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly 1 to 7 cm thick across the site, and is more or less equivalent to the A horizon (topsoil). Stratum 2 is post-occupational fill, and ranges from 10 to 35 cm in thickness. The post-occupational fill was thickest on either side of the west wall of Room 1, and thinned to the southeast (i.e., downhill). Stratum 2 is more or less equivalent to the Bw horizon. Stratum 3 is the patch of burned floor encountered in the northeast corner of Room 1. Tables 31.1, 31.2, 31.3, and 31.4 describe the stratigraphy and summarize artifact counts from LA 85404.

Table 31.1. LA 85404 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4/3	Sandy loam	1–7	Surface sediment
2	10YR 5/3	Sandy loam	10–35	Post-occupational fill
3	10YR 6/4	Clay	-	Room 1 floor

Table 31.2. LA 85404 soil horizon descriptions from the north profile of 103N/102E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/3	Sandy loam	0–9	Topsoil
Bw1	10YR 5/3	Sandy loam	9–21	Late-Holocene soil
Bw2	10YR 5/3	Sandy clay loam	21–30+	Late-Holocene/reworked Pleistocene soil

Table 31.3. LA 85404 soil horizon descriptions from the west profile of 102N/100E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/3	Sandy loam	0–6	Topsoil
Bw	10YR 4/3	Sandy loam	6–12	Late-Holocene soil
Btb1	7.5YR 3/4	Sandy clay loam	12–40+	Pleistocene soil

Table 31.4. LA 85404 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	0	0	0	**0**
1	13	3	1	0	**17**
2	189	64	0	1	**254**
3	0	1	0	0	**1**
Total	**202**	**68**	**1**	**1**	**272**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small, rectangular structure that probably functioned as a fieldhouse. The room measures 2.25 m in length (north-south) by 1.70 m in width (east-west), with approximately 3.83 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the room (103N/100-104E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's west and south walls. The west wall was encountered in 103N/101E, and the east wall in 103N/103E. No living surface was encountered in the trench. As a result, the excavation of the trench units continued until a sterile Pleistocene soil (the Btb1 horizon) was reached. After the excavation of the trench, the rest of the room was excavated. A patch of burned floor was encountered in the northeast corner of the room (104N/102-103E). The floor is located directly on top of the Btb1 horizon. No floor was encountered anywhere else within the room. Excavation in these areas therefore terminated at the top of the Btb1 horizon.

Fill. The interior of Room 1 was filled with 3 to 6 cm of surface sediment on top of 30 to 35 cm of post-occupational fill. One flotation sample (Field Specimen [FS] 72) and one pollen sample (FS 73) were analyzed from the Room 1 fill. Carbonized taxa identified in the flotation sample included unidentified pine (*Pinus*), piñon pine (*Pinus edulis*), ponderosa pine (*Pinus ponderosa*), sagebrush (*Artemisia*), and unknown conifer (Gymnospermae). Taxa identified in the pollen sample included squash (*Cucurbita*), cheno-ams (*Chenopodium/Amaranthus*), grass family (Poaceae), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), penstemon family (Scrophulariaceae), unidentified pine, piñon pine, juniper (*Juniperus*), Mormon tea (*Ephedra*), and sagebrush. Grass aggregates were also identified.

Floor. A patch of burned floor was encountered in the northeast corner of the room (in units 104N/102-103E) (Figure 31.4). The patch of floor measures approximately 45 cm north-south by 50 cm east-west. The floor is located directly on top of the Btb1 horizon, indicating that the people who constructed the room first cleared the area of loose surface soil to expose the considerably more compact Btb1 horizon. This compact surface was then used as a foundation for the room's floor. The floor itself was composed of a thin (1 to 2 cm) layer of highly compacted clay-rich mud. The floor appears to have been smoothed but not plastered. No floor was encountered in the rest of the room. In these areas, excavation terminated at the top of the Btb1 horizon. The surface was slightly burned in much of the northern half of the room.

Figure 31.4. A patch of burned floor in Room 1.

A single flake (FS 91) was the only artifact encountered on the patch of floor. A pollen sample was scraped from the surface of this floor (FS 90), and identified taxa included maize (*Zea mays*), buckwheat (Eriogonum), grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, penstemon family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. Grass aggregates were also identified. Another pollen sample (FS 96) was taken from directly beneath a rock lying on the floor, and identified taxa included grass family, cheno-ams, sunflower family, piñon pine, juniper, and sagebrush. The majority of the floor was removed and kept as two flotation samples (FS 93 and FS 94). Carbonized taxa identified in these samples included piñon pine, ponderosa pine, oak, unknown conifer, Douglas fir (*Pseudotsuga mensiezii*), sagebrush, groundcherry (*Physalis*), and goosefoot (*Chenopodium*). Uncharred tobacco (*Nicotiana*) was also identified in both samples. Two flotation samples (FS 68 and FS 106) and a pollen sample (FS 70) were taken from around floor level in the northwest corner of the room. Charred taxa identified in the flotation samples included unidentified pine, piñon pine, ponderosa pine, maize, and unknown conifer. Taxa identified in the pollen sample from the northwest corner of the room included squash, grass family, cheno-ams, sunflower family, ragweed/bursage, penstemon family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. A pollen sample (FS 95) was also taken from on top of the burned surface of the Btb1 horizon in the north-central portion of the room. Taxa identified in this sample included maize, cheno-ams, grass family, sunflower family, penstemon family, unidentified pine, piñon pine, and sagebrush.

Wall Construction. The Room 1 walls were constructed of dacite rocks. Most of the rocks were irregular in shape. Some of the rocks, however, had flat surfaces that were used to form the interior faces of the room's walls. The cobbles varied considerably in size, ranging from fist-sized cobbles to very large rocks. Some of the rocks were in fact so large that they would have been difficult to transport long distances by hand. There are abundant naturally-occurring dacite cobbles, however, in the drainage located a few m to the south and east of the site. In all likelihood, the drainage was mined for the rocks used to construct the room. Most of the foundation rocks were placed in shallow trenches dug into the Btb1 horizon. The larger rocks, however, appear to have been placed directly on top of or even a few cm above the Btb1 horizon. Presumably, these rocks were deemed heavy enough to be stable without being placed in a trench.

In some locations, small dacite cobbles were encountered just inside the interior wall faces. These rocks probably functioned as a foundation for floor coping. No entryway into the room was discovered. All four walls extended the entire length of the room and had a minimum height of 10 cm or greater (Table 31.5). Assuming the entryway was in one of the room's walls rather than its ceiling, it likely had a door sill of considerable height. Three tuff blocks were recovered during the excavation of the site. All three were found just above floor level within the room. These rocks were probably part of one of the higher courses of masonry in the room's walls. A flat dacite cobble was also encountered just above floor level within the room. There was no use wear visible on any of its surfaces, so it does not appear to have been a metate. This rock probably also represents wallfall. If not, it is of unknown function.

Table 31.5. LA 85404 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.76	0.19–0.53	0.33–0.57	1 to 2
South	1.40	0.10–0.24	0.16–0.43	1
East	1.99	0.13–0.28	0.12–0.40	1
West	2.00	0.30–0.50	0.23–0.50	1 to 2

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation. In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in two stacks, which were then measured. The stacks measured 1.50 by 1.60 by 0.65 m and 0.90 by 1.00 by 0.65 m, for a total of approximately 2.15 m^3 of wallfall. Based on this volume and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 1.16 m high. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, no adobe was recovered during the excavation of the site.

Geological Analysis

Geologists Paul Drakos and Steven Reneau utilized two profiles to reconstruct the natural soil horizons at the site (see Tables 30.2 and 30.3). The first, the north profile of 103N/102E, was examined after the excavation of the east-west trench and before the excavation of the rest of the site. This profile contained a soil sequence consisting of an A horizon (topsoil) on top of two Bw horizons. The upper Bw1 horizon is a late-Holocene soil. The lower Bw2 horizon is a mixture of the late-Holocene soil in the Bw1 horizon and a reworked Pleistocene soil. This horizon probably represents the disturbed remains of the Room 1 floor mixed with post-occupational fill. The second profile examined was the west profile of 102N/100E. This profile contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), and a Btb1 horizon (a Pleistocene soil).

Artifact Distribution

Most of the artifacts at LA 85404 were recovered from within, to the north, and to the west of Room 1 (Table 31.6). The grid unit with the highest number of artifacts is 103N/102E, located in the center of the room. The grid unit with the second highest number of artifacts is 105N/102E, located directly north of the room. Few artifacts were recovered from the grid units to the east and south of the room, with the exception of grid unit 101N/102E, which contained 14 artifacts. This pattern of artifact distribution is probably largely the result of natural site formation processes. The site's natural surface slopes downward to the southeast. Normally, artifact density is higher in the downhill portion of a site. The fieldhouse, however, is located near the edge of a small, eroding ridge. The ridge is bounded to the south and east by an incised

drainage. Many of the artifacts to the south and east of Room 1 may therefore have eroded downhill into the drainage. For this reason, it is impossible to determine whether the higher concentration of artifacts to the north and west of the room is culturally significant. The artifact distribution at the site therefore does not provide any reliable evidence concerning the location of outdoor activity areas and/or the room's entryway.

Table 31.6. LA 85404 artifact counts by grid unit.

	E100	E101	E102	E103	E104
N105		9	38	7	5
N104	8	**12**	**27**	**11**	7
N103	25	**7**	**44**	**14**	5
N102	20	6	**6**	**5**	1
N101	0	1	14	0	

Note: bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 265 artifacts were analyzed from the excavations conducted at LA 85404. In addition, flotation and pollen samples (Table 31.7) were selected for analysis from the post-occupation fill (Stratum 2) and the floor (Stratum 3). The results of the artifact and sample analyses are presented in the following sections. A maize sample was submitted for radiocarbon dating.

Table 31.7. Samples selected for analysis from LA 85404.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	68, 72, 93, 94, 106	73, 95, 96	68	
3		90		

*thermoluminescence

Chronology

Radiocarbon Dating

A single maize sample was submitted for accelerator mass spectroscopy dating. The sample provided a date of 400±40 BP (Beta-215550), with a calibrated intercept of AD 1460 and a two-sigma range of AD 1440 to 1500. The sample was recovered from a flotation sample taken from Stratum 2.

Thermoluminescence Dating

A sample of burned floor (UW 1586, FS 92) was dated from this site. It yielded an age of AD 1388±49.

Ceramic Artifacts (Dean Wilson)

A total of 199 ceramics were analyzed from LA 85404. The majority of the pottery consists of smeared-indented corrugated, glazewares, and Biscuit A (Abiquiu Black-on-gray), which presumably reflects an Early Classic period occupation (Table 31.8). These dates indicate a 14th century occupation for the site, which contradicts the 15th century radiocarbon date. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 31.8 through 31.11. The graywares and whitewares appear to have been locally made from smeared-indented sand or tuff, in contrast to Sapawe Micaceous wares, which contained a non-local micaceous temper and the glazewares with basalt. All of the grayware and micaceous ceramics consist of jar vessel forms; however, the whitewares include mostly bowls, with some jars, while the glazewares contain mostly jars and some bowls.

Table 31.8. Ceramic types from LA 85404.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	13	6.5
Santa Fe Black-on-white	17	8.5
Biscuit paint and slip absent	4	2.0
Biscuit A	8	4.0
Biscuit B/C body	1	0.5
Northern Rio Grande Utilityware		
Plain gray body	6	3.0
Indented corrugated	1	0.5
Smeared-indented corrugated	106	53.3
Sapawe Micaceous	9	4.5
Middle Rio Grande Glazeware		
Glaze red body unpainted	30	15.1
Glaze yellow body unpainted	2	1.0
Glaze unslipped body	1	0.5
Glaze yellow body undifferentiated	1	0.5
Total	**199**	**100.0**

Table 31.9. Tradition by ware for LA 85404 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	113	100.0	42	100.0	0	0.0	0	100.0	155	77.8

Rio Grande (Tewa Micaceous)	0	0.0	1	0.0	0	0.0	9	100.0	10	5.0
Middle Rio Grande	0	0.0	0	0.0	34	0.0	0	100.0	34	17.0
Total	**113**	**100.0**	**43**	**100.0**	**34**	**0.0**	**9**	**0.0**	**199**	**100.0**

Table 31.10. Temper by ware for LA 85404 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff or ash	0	0.0	39	90.6	0	0.0	0	0.0	39	19.5
Fine tuff and sand	0	0.0	2	4.6	0	0.0	0	0.0	2	1.0
Smeared-indented sand	113	100.0	0	0.0	0	0.0	0	0.0	113	66.8
Mica and tuff	0	0.0	1	2.3	0	0.0	0	0.0	1	0.5
Basalt	0	0.0	0	0.0	34	100.0	0	0.0	34	17.0
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	9	100.0	9	4.5
Total	**113**	**100.0**	**43**	**100.0**	**34**	**0.0**	**9**	**100.0**	**199**	**100.0**

Table 31.11. Vessel form by ware for LA 85404 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	1	0.8	3	6.9	2	5.8	0	0.0	6	3.0
Bowl rim	0	0.0	7	16.2	0	0.0	0	0.0	7	3.5
Bowl body	0	0.0	27	23.8	1	2.9	0	0.0	28	14.0
Jar neck	6	5.3	0	0.0	2	5.8	1	11.1	9	4.5
Jar rim	3	2.6	1	2.3	1	2.9	0	0.0	5	2.5
Jar body	103	91.1	3	6.9	21	61.7	8	88.8	135	67.8
Seed jar	0	0.0	0	0.0	7	20.5	0	0.0	7	3.5
Gourd dipper	0	0.0	1	2.3	0	0.0	0	0.0	1	0.5
Miniature jar	0	0.0	1	2.3	0	0.0	0	0.0	1	0.5
Total	**113**	**100.0**	**43**	**100.0**	**34**	**0.0**	**9**	**100.0**	**199**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 66 artifacts were analyzed from LA 85404. The lithic assemblage consisted of one core, 59 pieces of debitage, five retouched tools, and one hammerstone, which represents a 100 percent sample of the recovered lithic artifacts. Table 31.12 presents the data on lithic artifact type by material type. The debitage assemblage is comprised of chalcedony, Pedernal chert, obsidian, and rhyolite. The presence of cortex on 15.2 percent of the debitage indicates that these materials were collected from waterworn (n = 9) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravels and the obsidian from nearby sources in

the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 31.12. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	**Vesic. basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. wood**	**Quartzite**	**Sandstone**	**Total**
Cores	Core	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Debitage	Angular debris	0	0	1	0	0	0	3	13	0	4	0	0	0	21
	Core flake	1	0	6	1	0	0	2	14	1	9	0	0	0	34
	Biface flake	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Microdebitage	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	Und. flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	1	0	7	1	0	0	8	28	1	13	0	0	0	59
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Projectile point	0	0	0	0	0	0	1	0	0	1	0	0	0	2
	Scraper	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Uniface	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	1	1	0	3	0	0	0	5
Other	Hammerstone	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total		**1**	**0**	**7**	**1**	**0**	**0**	**9**	**29**	**1**	**17**	**0**	**1**	**0**	**66**

Three pieces of obsidian and one piece of basalt debitage were submitted for X-ray fluorescence analysis. All of these artifacts were obtained from the Valle Grande source (Table 31.13). The Valle Grande (Cerro del Medio) source area is located about 17 km (11 mi) as the "crow flies" to the west of the site. In addition, the single basalt flake is actually dacite.

Table 31.13. Obsidian source samples.

FS #	Artifact	Color	Source
6	Point	Translucent	Valle Grande rhyolite
30	Debitage	Translucent	Valle Grande rhyolite
79	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The single core was reduced using a multi-directional/opposed-same-and-different-face technique. The core was classified as still useable when discarded. Table 31.14 presents the metric information on this core.

Table 31.14. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Multi-directional	59	53	31	115.5

The debitage consisted primarily of core flakes and angular debris, a biface flake, microdebitage, and an undetermined flake fragment also present. The overall cortical:non-cortical ratio of 0.33 reflects an emphasis on the later stages of core reduction. The flakes mostly have single-faceted (*n* = 13) platforms with fewer cortical (*n* = 3) platforms. None of the platforms exhibit any evidence of preparation. The majority of the core flakes are whole (*n* = 14) or distal (*n* = 13) with fewer proximal (*n* = 4) and midsection (*n* = 3) fragments. The whole core flakes have a mean length of 26.4 mm (*std* = 12.7) and the angular debris a mean weight of 4.8 g (*std* = 5.6).

The retouched tools consist of two projectile points, a retouched piece, a uniface, and a scraper (Figure 31.5). The retouched piece is the distal end of a flake that is slightly serrated in outline. This fragment could represent a piece off of a scraper with unidirectional dorsal retouched edge and an angle of 60 degrees. One of the projectile points appears to be a Late Archaic stemmed point with the tip, tangs, and corner of the base broken. A neck width of 13 mm indicates that it represents a dart or lance point. The other point is a tip fragment that could also be from a well-made biface. The scraper consists of a core flake with unidirectional retouch along the perimeter that forms a circular-shaped artifact with a 65 degree edge angle. On the other hand, the uniface was made on a large cortical flake with rough retouch along the lateral and distal ends. The retouched edges exhibit a steep angle of 80 degrees.

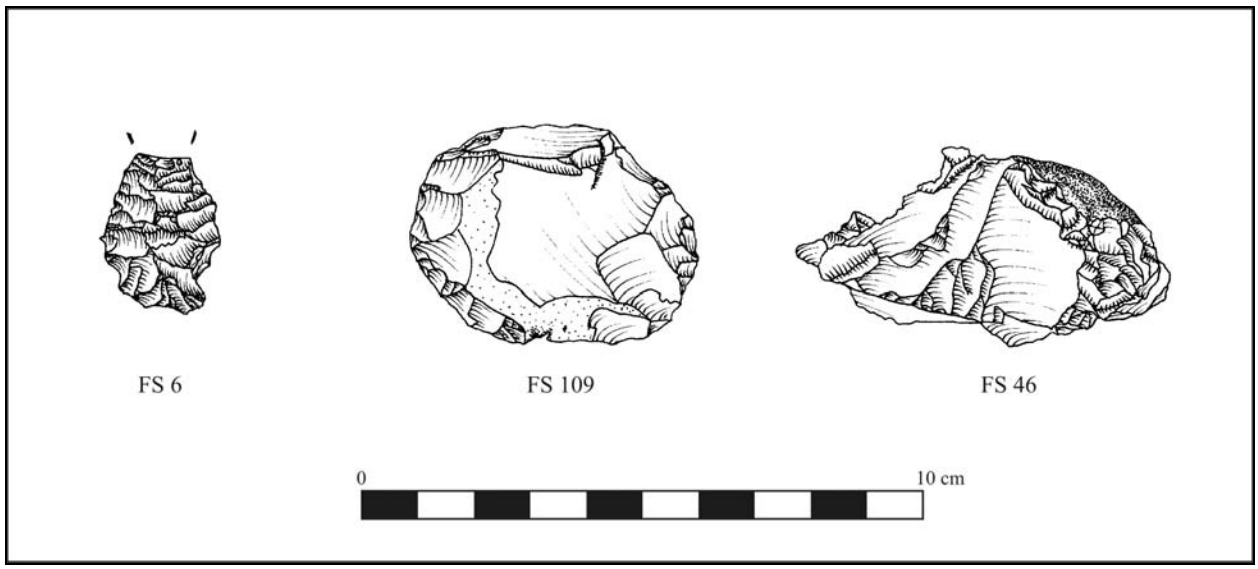


Figure 31.5. Projectile point and unifaces from LA 85404.

Tool Use

None of the flakes and two of the retouched tools exhibit any obvious evidence of edge damage that could be attributed to use. The uniface and scraper have rounding/polish or micro-scarring along their edges.

Faunal Remains (Kari Schmidt)

One piece of bone was recovered from Room 1 (Stratum 2, Level 3) of this fieldhouse. The bone was a mule deer (*Odocoileus hemionus*) distal metatarsal fragment (right), and was also manufactured into a partial fragment of a bone awl. The bone was unburned, but contained a possible cut-mark just above the epiphyseal fusion. The mark did not appear to be recent and was probably not incurred during excavation activities.

Archaeobotanical Remains (Pamela McBride)

Charred goosefoot and groundcherry seeds, found on the floor of the structure, and two corn cupule fragments from the northwest corner were the only cultural plant remains aside from conifer duff that were recovered from LA 85404 (Table 31.15). A possible pine seed and ponderosa pine needles comprised the unburned, probably non-cultural material from flotation samples. Uncharred tobacco seeds were recovered from both burned floor samples. These could be residue from plants brought into the structure for ceremonial use, although because the seeds are unburned this is uncertain. Goosefoot seeds could have been ground into meal, groundcherry fruits may have been boiled or eaten raw, and corncobs were probably used for fuel along with piñon, ponderosa pine, oak, sagebrush, and possible Douglas fir wood (Table 31.16).

Table 31.15. Flotation plant remains, count, and abundance per liter from LA 85404.

FS No.	68	72	93	94	106
Feature	NW corner	Post-occupational fill, Strat 2, Level 3	Burned floor 104.33N/ 102.14E	Burned floor 104.56N/ 103.25E	NW corner, charcoal concen-tration
Cultural					
Annuals					
Goosefoot				3(3)	
Cultivars					
Maize	2(0) c				
Other					
Groundcherry				1(0)	
Perennials					
Pine		+ barkscale, + umbo			
Piñon	+ needle	+ needle	+ needle	+ needle	+ needle

FS No.	68	72	93	94	106
Ponderosa pine	+ fascicle, + needle	+ fascicle, + needle	+ needle	+ needle	+ needle
Possibly Cultural					
Annuals					
Tobacco			+	+	
Non-Cultural					
Perennials					
Pine		cf. +			
Ponderosa pine		+ needle		+ needle	+ needle

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, c cupule, cf. compares favorably.

Table 31.16. Flotation sample wood charcoal by count and weight in grams from LA 85404.

FS No.	68	72	93	94	106
Feature	NW corner	Post-occupational fill, Strat 2, Level 3	Burned floor 104.33N/ 102.14E	Burned floor 104.56N/ 103.25E	NW corner, charcoal concen-tration
Conifers					
poss. Douglas fir			8/0.6 g		
Pine	2/0.3 g	2/0.1 g		3/0.2 g	
Piñon	6/0.3 g	1/<0.1 g		8/0.2 g	
Ponderosa pine	9/0.3 g	11/0.6 g	5/0.7 g	4/0.1 g	3/0.3 g
Unknown conifer	3/0.1 g	5/<0.1 g	5/0.1 g	4/<0.1 g	17/1.2 g
Non-Conifers					
Oak			2/0.2 g		
cf. Sagebrush		1/<0.1 g		1/<0.1 g	
Totals	**20/1.0 g**	**20/0.7 g**	**20/1.6 g**	**20/0.5 g**	**20/1.5 g**

Pollen Remains (Susan Smith)

Five pollen samples were analyzed from LA 85404. Table 31.17 lists the frequency of identified pollen types. Squash and maize were the only cultigens identified in the assemblage. No other economic resources were identified. A number of potential economic resources were also identified in the assemblage (Table 31.17), and these are described in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 31.17. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85404 (*n* = 5)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	1
	Zea mays	Maize	2
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	0
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	5
		Grass Aggregates	3
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85404 (*n* = 5)
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Possible Subsistence Resources	Cheno-Am	Cheno-Am	5
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	5
		Sunflower Family Aggregates	1
	Ambrosia	Ragweed, Bursage	3
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	3
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	1
	Pinus	Pine	4
		Pine Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85404 (*n* = 5)
	Pinus edulis type	Piñon	5
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	0
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	3
	Artemisia	Sagebrush	5
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	2
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85404 consists of three rock features. The site is located on the south side of Rendija Canyon adjacent to an intermittent drainage. Only one rock feature, a one-room Early-Middle Classic period fieldhouse, was excavated as part of the Conveyance and Transfer Project. Burned maize cupules with maize and squash pollen were recovered during the sire excavation; therefore, the one-room structure was presumably occupied during the growing season. Maize remains provided a radiocarbon date of circa AD 1460. The diagnostic ceramics corroborate an Early-Middle Classic period occupation.

CHAPTER 32
RENDIJA TRACT (A-14): LA 85407 (SERNA HOMESTEAD)

Gregory D. Lockard

INTRODUCTION

LA 85407 is the historic Serna Homestead located on a gently sloping bench immediately north of Rendija Canyon. The site is located in a cleared, grassy area surrounded by a mixed piñon-juniper and ponderosa pine woodland. The site is situated at an elevation of 2097 m (6880 ft).

LA 85407 was first recorded on August 16, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. According to Hill, architecture on the site at the time of his visit consisted of a habitation structure with an iron and asphalt roof, a circular rock feature (possibly a hearth or horno), an amorphous pile of cut logs, and an animal pen. A trash scatter located along the canyon edge on the southeastern side of the site contained lard, coffee, sardine, kerosene, and condensed milk cans. Other artifacts at the site that were noted by Hill included an enamelware wash basin, galvanized metal, a stove pipe, the base of a kerosene lamp of purple glass, and a Kapo Black sherd. Four obsidian flakes found near the trash scatter indicated a prehistoric presence in the site area.

On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992. Peterson and Nightengale recorded seven architectural features at LA 85407 (1993:99–103). These features included a rectangular alignment/concentration of logs and dimension lumber (Feature 1), the remains of an horno (Feature 2), an L-shaped alignment of cobbles and boulders (Feature 3), a log structure (Feature 4), a large corral (Feature 5), another L-shaped rock alignment (Feature 6), and a small pile of cobbles (Feature 7).

Peterson and Nightengale also recorded two trash concentrations (designated Trash Areas 1 and 2) near the southeastern edge of the site. Two 1- by 1-m test pits (Units A and B) were excavated at the site (Peterson and Nightengale 1993:103–104). Unit A was located within the horno. The unit was excavated to a sterile Pleistocene soil at a maximum depth of 43 cm below ground surface. Historic artifacts were recovered from all four excavation levels. Two courses of rock that formed the feature's northwest edge were encountered below the surface. A layer of burned clay was uncovered beneath these rocks. The burned clay formed a low cone at the bottom of the feature. The clay consisted of a layer of reddish (i.e., oxidized) clay on top of a layer of bluish (i.e., reduced) clay. Unit B was placed adjacent to one of the L-shaped rock alignments (Feature 6). The unit was excavated to sterile Pleistocene soil at a maximum depth of 20 cm below ground surface. The excavations revealed no clearly defined walls and no cultural materials were recovered. As a result, Peterson and Nightengale argued that the feature probably represented a concentration of large rocks removed from a field.

In order to learn more about the homestead, Archaeological Research, Inc., also conducted historical research on the site. This research included a review of historical documents and two interviews conducted by Ada González-Peterson (Peterson and Nightengale 1993:46–82). The most important document was the Homestead Entry Survey No. 394, Santa Fe National Forest, State of New Mexico (1916). The first interview was of Annie Lujan and her husband Bernardo Lujan. Annie Lujan was the daughter of José María Serna, who was the owner of the homestead when it was seized by the U.S. government in 1943. She had visited her father's homestead on numerous occasions as a child. The second interview was of Severo and Aurora González, who provided first-hand accounts of life in Los Alamos before the Manhattan Project.

According to the historical documents, Andres Martinez applied for homestead certification in 1913, and the Homestead Entry Survey No. 394 was performed in October of 1916. The homestead was patented in 1922 and subsequently sold to José and Fidel Serna (of unknown relations), who had probably occupied the homestead since 1913. According to the survey, 40 acres of beans, corn, and vegetables were under cultivation on the homestead in 1916. Improvements included a 12- by 30-ft log house, a 12- by 20-ft pole shed, and one mile of brush fence. According to Annie Lujan, the cabin included three rooms and a sun porch. The Serna family made seasonal use of the homestead. They traveled by wagon to the site three times a year and stayed for about two weeks during each visit. In the spring, they traveled to the homestead to plant their crops. They returned to tend the fields once during the summer and to harvest the crops in the fall. Crops grown on the homestead by the Serna family included pinto beans, corn, wheat, pumpkins, and other "soft vegetables."

FIELD METHODS

Before excavation, the site was cleared of trees and large undergrowth, and an arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the northern portion of the site (Figure 32.1). The area was then covered with a 5- by 5-m grid that extended 15 m north, 65 m south, 45 m east, and 80 m west of the site datum. The site was then divided into excavation areas. These areas included the cabin (Area 1), the horno (Area 3), a small concentration of rocks (Area 4), the shed (Area 5), the corral (Area 6), and the reservoir (Area 7) (Figure 32.2). All other areas of the site were designated Area 2. Surface collection of the site began during the 2003 field season, and was completed during the 2005 field season. Surface artifacts were collected by 1- by 1-m grid unit. The grid unit of the collected artifacts was determined by tape measures extended from the 5- by 5-m grid stakes.

The 5- by 5-m grids were divided into 1- by 1-m grid units and subdata were set up for taking elevations in the areas to be excavated. The entire cabin (Area 1) was covered with a 1- by 1-m grid that measured 6 m north-south (60N-65N) by 11 m east-west (90E-100E). Three subdata (A-C) were set up for taking elevations. The horno (Area 3) was covered with a grid that measured 3 m north-south (69N-71N) by 3 m east-west (94E-96E), and a single subdatum (D) was set up for taking elevations. The small concentration of rocks (Area 4) was covered with a grid that measured 2 m north-south (45N-46N) by 2 m east-west (91E-92E), and a subdatum (E) was set up for taking elevations.

Figure 32.1. View of the cabin area before excavation.

The shed (Area 5) was covered with a grid that measured 5 m north-south (61N-65N) by 5 m east-west (90E-94E), and a subdatum (F) was set up for taking elevations. Two non-contiguous 1- by 1-m grid units (105N/130E and 108N/126E) were set up and excavated in the corral (Area 6), and a subdatum (G) was set up for taking elevations. The entire corral was mapped, however, and surface artifacts recovered from anywhere within the corral were designated Area 6. Two auger holes were the only excavations in the reservoir (Area 7). These auger holes were excavated for the sole purpose of recovering pollen samples from the reservoir. Before excavation, Areas 1 and 3 were mapped and Areas 1, 3, and 4 were photographed. Excavations proceeded by strata and did not terminate until a cultural feature (e.g., a floor or wall) or sterile soil was encountered. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. After excavation, Areas 1, 3, 4, 5, 6, and 7 were mapped and photographed.

The 2003 surface collection at LA 85407 was performed by Hannah Lockard and Mia Jonsson. During the 2005 field season, work at the site was supervised by Greg Lockard. Excavators on the 2005 field crew included Michael Dilley, Alan Madsen, Kari Schmidt, Jennifer Nisengard, Brian Harmon, Joseph (Woody) Aguilar, Sandi Copeland, and Bettina Kuru'es. Surface collectors and screeners included Ellen McGehee, Kari Garcia, Timothy Martinez, Aaron Gonzalez, Jeremy Yepa, Rhonda Robinson, Sherrie Sherwood, and Marwin Shendo.

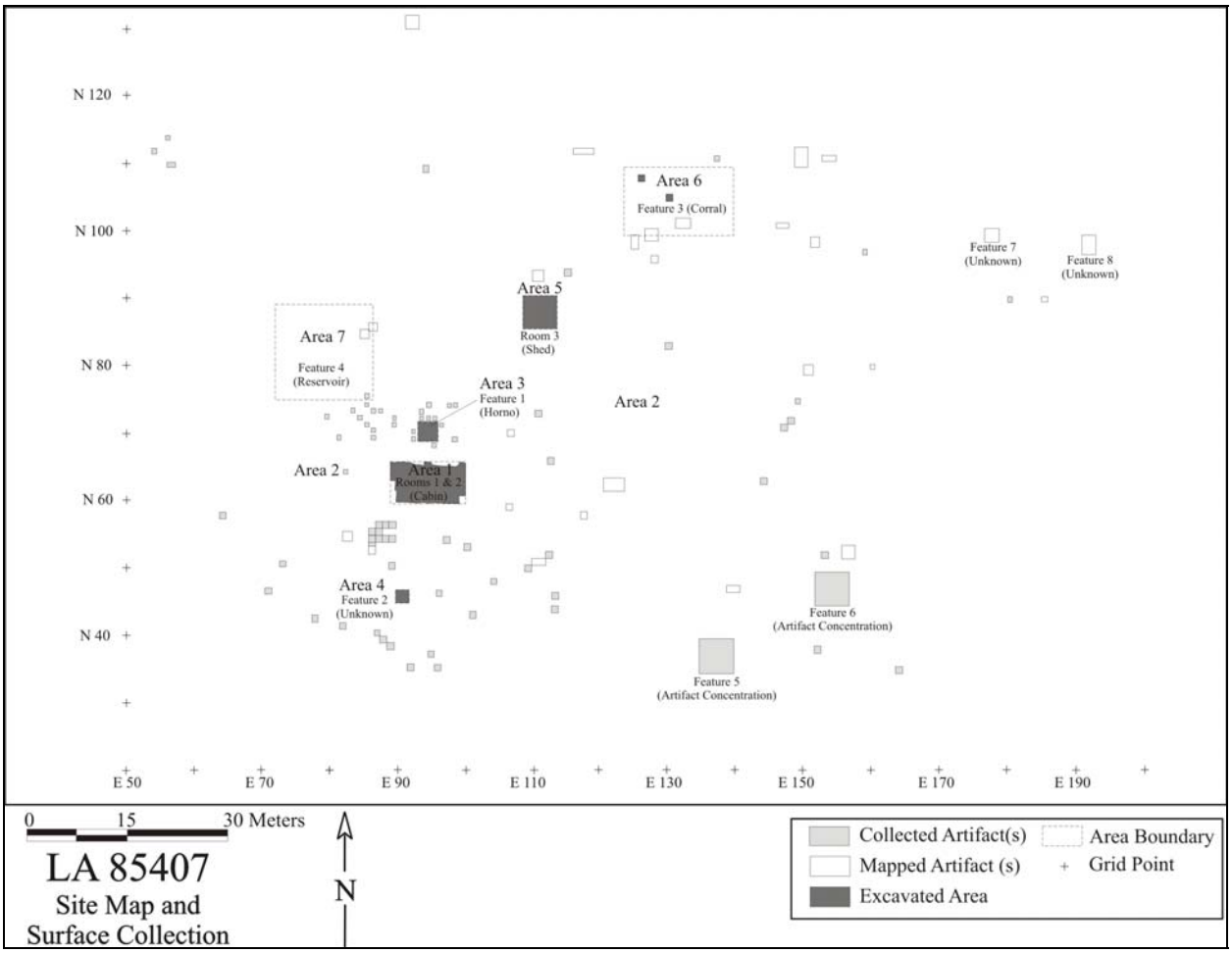


Figure 32.2. Site map and surface collection at LA 85407.

STRATIGRAPHY

Three strata were identified at LA 85407 (Figure 32.3). Stratum 1 is composed of loose, surface sediment. It is uniformly 2 to 7 cm thick across the site. Stratum 2 is post-occupational fill and ranges from 5 to 40 cm in thickness in the areas excavated. The fill was thickest (i.e., >25 cm) in Areas 3 and 5. The backfill from Peterson and Nightengale's Unit A, located in Area 3, was excavated separately. No artifacts, however, were recovered from this backfill. As a result, the backfill was not designated as a separate stratum. Due to the fact that the site's occupation has been well established by historical documents and interviews, the site's stratigraphy was not analyzed by geologists. Strata from LA 85407 are summarized in Table 32.1. Artifact counts from strata and areas at the site are listed in Tables 32.2 and 32.3. Table 32.4 lists the average artifact count per grid unit by area from LA 85407.

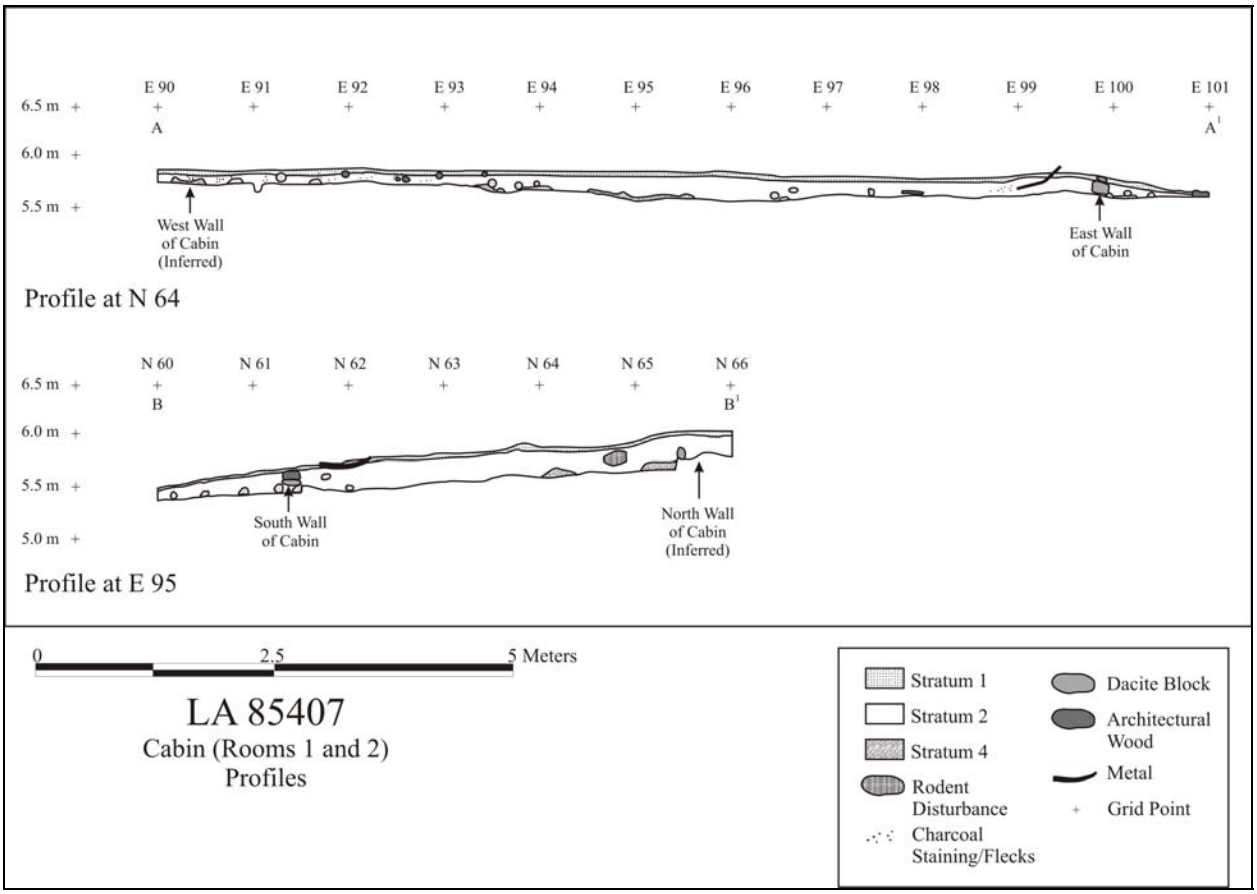


Figure 32.3. Profiles of the cabin (Rooms 1 and 2) where excavations were concentrated.

Table 32.1. Strata descriptions from LA 85407.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/3	Sandy loam	2–7	Surface sediment
2	10YR 4/3	Sandy loam	5–40	Post-occupational fill

Table 32.2. Artifact counts by strata at LA 85407.

Stratum	Metal	Glass	Leather	Porcelain	Ceramics	Chipped Stone	Ground Stone	Faunal Bone	Human Bone	Shell	Total
0	412	146	5	11	3	4	0	0	0	0	**581**
1	646	495	21	21	49	18	0	1	0	0	**1251**
2	2429	850	32	61	144	49	6	22	1	1	**3595**
Total	**3487**	**1491**	**58**	**93**	**196**	**71**	**6**	**23**	**1**	**1**	**5427**

Table 32.3. Artifact counts by area at LA 85407.

Area	Metal	Glass	Leather	Porcelain	Ceramics	Chipped Stone	Ground Stone	Faunal Bone	Human Bone	Shell	Total
1	2790	1184	34	76	186	44	4	14	1	1	**4334**
2	385	135	5	8	2	4	0	0	0	0	**539**
3	95	42	2	4	1	2	2	0	0	0	**148**
4	51	43	2	2	6	0	0	1	0	0	**105**
5	146	87	15	3	0	16	0	6	0	0	**273**
6	20	0	0	0	1	5	0	2	0	0	**28**
Total	**3487**	**1491**	**58**	**93**	**196**	**71**	**6**	**23**	**1**	**1**	**5427**

Table 32.4. Average artifact count per grid unit by area at LA 85407.

Area	Metal	Glass	Leather	Porcelain	Ceramics	Chipped Stone	Ground Stone	Faunal Bone	Human Bone	Shell	Total
1	46.50	19.73	0.57	1.27	3.10	0.73	0.07	0.23	0.02	0.02	**72.23**
3	10.56	4.67	0.22	0.44	0.11	0.22	0.22	0.00	0.00	0.00	**16.44**
4	12.75	10.75	0.50	0.50	1.50	0.00	0.00	0.25	0.00	0.00	**26.25**
5	5.84	3.48	0.60	0.12	0.00	0.64	0.00	0.24	0.00	0.00	**10.92**
6	10.00	0.00	0.00	0.00	0.50	2.50	0.00	1.00	0.00	0.00	**14.00**

SITE EXCAVATION

Area 1 (Rooms 1 and 2 – Cabin)

Sequence of Excavation. Area 1 consists of the remains of a historic log cabin and the area immediately adjacent to the cabin (Figures 32.4 and 32.5). According to Homestead Entry Survey No. 394, the cabin measured 12 by 30 ft in 1916 (Peterson and Nightengale 1993:51). According to Annie Lujan, who frequented the homestead as a child, the cabin contained three interior rooms and included an exterior sun porch (Peterson and Nightengale 1993:62, 71). Excavation of the room began with an east-west trench (63N/90-100E) followed by a north-south trench (60-65N/95E), both of which extended across the entire cabin (see Figure 32.3). The trenches were excavated in 1- by 1-m grid units, and intersected in the approximate center of the cabin. The excavation of the trenches served to define the room's stratigraphy, as well as to locate the room's perimeter walls. The rock foundation of the cabin's east wall was encountered in 63N/99E of the east-west trench. Unit 63N/100E is therefore completely outside of the cabin. No evidence of the cabin's west wall was encountered in the east-west trench.

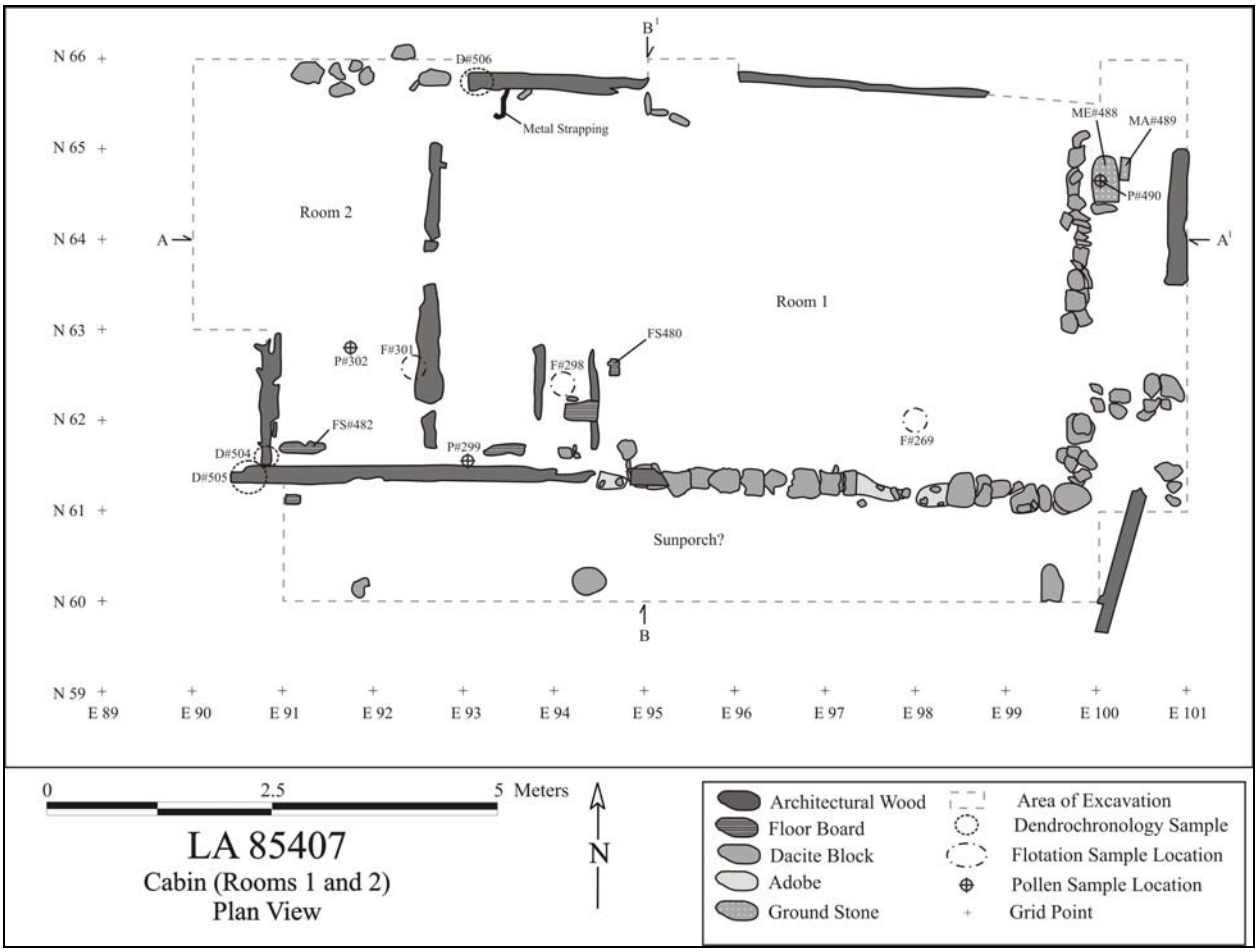


Figure 32.4. Plan view of cabin (Rooms 1 and 2).

Surface wood beams to the south of the trench, however, indicated that the wall passed through the easternmost portion of unit 63N/90E. Most of this unit is therefore also outside of the cabin. The rock foundation of the cabin's south wall was encountered in unit 61N/95E of the north-south trench. Unit 60N/95E is therefore located outside of the cabin. The only evidence encountered in the north-south trench of the cabin's north wall was a few displaced rocks in unit 65N/95E. Coping of the sterile soil beneath the cabin's post-occupational fill and surface wood beams to the east and west of the trench, however, indicated that the north wall passed through the northern half of this grid unit.

The excavation of the trenches also served to divide the cabin into four quadrants of roughly the same size. The initial excavation strategy for the cabin was for each of these quadrants to serve as a large excavation unit. During the excavation of the east-west trench, however, a wood beam was encountered in unit 63N/92E. This beam extended from north to south across the unit and was roughly parallel to the structure's east and west walls. It was originally thought that this beam was the remains of a wall that divided the cabin's interior into separate rooms. As a result, the cabin's western quadrants were each divided by the wood beam into two excavation units.

Figure 32.5. Post-excavation photo of Area 1, the cabin.

The area to the east of the wood beam (including the cabin's two eastern quadrants) was designated Room 1, and the area to the west of the wood beam was designated Room 2. The cabin's interior, excluding the trench units, was therefore excavated in six large units. During the excavation of these units, other wood beams were encountered that were parallel to the beam that divided the areas designated Rooms 1 and 2. A small piece of floorboard was still nailed to the top of one of these beams. As a result, the wood beam that divided the areas that were designated Room 1 and Room 2 most likely was not part of an interior wall. Instead, it appears to have been the best preserved of many support beams for the cabin's floorboards. The room designation of the various areas within the cabin, and consequently the room designation of the artifacts recovered from the cabin, is therefore almost certainly inaccurate. The cabin probably was divided into two or three rooms, as suggested by the informant Annie Lujan. The location and extent of these rooms, however, could not be determined through excavation.

After the excavation of the cabin's interior, units were excavated to the east and south of the cabin. The purpose of these excavations was to locate the sun porch noted by the informant Annie Lujan, as well as to determine the prevalence and distribution pattern of artifacts in the area immediately surrounding the cabin. The area to the east of the cabin was excavated in two 1- by 2-m units (61-63N/100-101E and 64-66N/100-101E). These units were located on either side of the easternmost 1- by 1-m unit in the east-west trench (63N/100E). A mano and a single-footed metate were discovered side by side just outside the cabin's east wall (Figure 32.6). The mano is located completely within unit 64N/100E, while the metate extends slightly into unit

64N/99E. A pollen sample (Field Specimen [FS] 490) was taken from directly beneath the metate, which was upside down. Taxa identified in the sample included prickly pear (*Opuntia*), beeweed (*Cleome*), grass family (Poaceae), cheno-ams (*Chenopodium/Amaranthus*), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), fir (*Abies*), unidentified pine (*Pinus*), piñon pine (*Pinus edulis*), juniper (*Juniperus*), Mormon tea (*Ephedra*), and sagebrush (*Artemisia*).

The area to the south of the cabin was also excavated in two units, which were located on either side of the southernmost 1- by 1-m unit in the north-south trench (60N/95E). The unit to the east measured 1 by 4 m (60-61N/96-100E), and the unit to the west measured 1.3 by 4 m (60-61.3N/91-95E). A small portion of the area to the west of the cabin was also excavated. This includes most of the westernmost 1- by 1-m unit in the east-west trench (63N/90E) and the westernmost portion of the Room 2 section (i.e., western half) of the cabin's northwest quadrant (64-66N/90-92.6E). No evidence of the cabin's west wall was found in either of these excavation units. For this reason, the fill from inside the cabin could not be distinguished from the fill just outside of the cabin. Because most of the smaller excavation unit (63N/90E) was located outside of the cabin, the artifacts recovered from it were not given a room designation. Since most of the larger excavation unit (64-66N/90-92.6E) was located inside the cabin, however, the artifacts from this unit were designated from Room 2.

Figure 32.6. *In situ* mano and metate recovered just outside the cabin.

The cabin's floor was composed of wooden boards (see below). As a result, no sedimentary living surface of any kind was encountered in Area 1. The vertical distribution of cultural

materials was fairly uniform throughout the area. This cultural debris terminated rather suddenly at the top of a layer of sterile, clay-rich soil that predates the site's occupation. The excavation of all of the units in Area 1 terminated at the top of this soil horizon.

Fill. The interior of the cabin was filled with 2 to 7 cm of surface sediment on top of 5 to 25 cm of fill. The fill probably began to accumulate during the site's occupation in the form of sediment, and artifacts fell through the cracks between the boards that formed the cabin's floor. Most of the fill, however, is probably post-occupational. The fact that the fill is uniform down to the sterile, clay-rich soil probably indicates significant mixing of pre-occupational and post-occupational Holocene sediments as a result of rodent bioturbation. A number of rodents were in fact still living and constructing tunnels within the cabin during its excavation.

The cabin fill was extremely rich in charcoal. Most if not all of this charcoal is probably the burned remains of the beams and boards that formed the cabin's walls and floor. According to Peterson and Nightengale (1993), little remained of the cabin's walls when they performed their testing at the site in 1992. An inspection of the site shortly after the Cerro Grande fire on October 4, 2000, however, indicates that at least some of the cabin's remains burned during this fire. At least some of the charcoal may therefore date to this time. Flotation (FS 269 and FS 298) and pollen (FS 299) samples were analyzed from the post-occupational fill from the southeast (FS 269) and southwest (FS 298 and FS 299) corners of Room 1.

Carbonized taxa identified in the flotation samples include pigweed (*Amaranthus*), goosefoot (*Chenopodium*), beeweed, maize (*Zea mays*), grass family (Graminae), sage (*Salvia*), vervain (*Verbena*), grape (*Vitis*), sedge family (Cyperaceae), unidentified pine, ponderosa pine, and unknown conifer (Gymnospermae). Taxa identified in the single analyzed pollen sample include sunflower type (*Helianthus*), rose family (Rosaceae), grass family, cheno-ams, sunflower family (Asteraceae), fir, unidentified pine, piñon pine, juniper, oak (*Quercus*), and sagebrush. A flotation sample (FS 301) and a pollen sample (FS 302) were also taken from the post-occupational fill from the southern half of Room 2. Charred taxa identified in the flotation sample include goosefoot, stickseed (*Lappula*), groundcherry (*Physalis*), grass family, juniper, unidentified pine, and ponderosa pine. Taxa identified in the pollen sample include grass family, cheno-ams, sunflower family, evening primrose (Onagraceae), unidentified pine, piñon pine, juniper, oak, and sagebrush.

Floor. Excavation revealed that the cabin's floor was formed by wooden boards oriented east to west placed on top of and nailed to wooden beams oriented north to south. The floorboards also presumably rested on top of the foundations of the cabin's south, east, and west walls. To the north, the floorboards probably extended to the sterile, clay-rich soil that functioned as the foundation for the cabin's north wall (see below). Floor board fragments were preserved in four locations. All of these fragments were oriented from east to west. The largest fragment was located in the southwest quadrant of unit 62N/94E (Figure 32.7). This unit is located in the southwest corner of Room 1. The floorboard fragment, which was 1 in. thick and 6 in. wide, was still nailed to a wood beam below that was oriented north to south. The board was very poorly preserved and fragmented. As a result, it was not kept as a sample.

Figure 32.7. *In situ* remnants of the cabin floor.

A smaller floorboard fragment was encountered in the northeast quadrant of the same grid unit (see Figure 32.7). The board was also one inch thick, but was four inches wide. Due to its poor state of preservation, however, it fractured into two pieces during removal. The last floorboard fragment encountered within the cabin was located in the far southwest corner of Room 2, in the northwest quadrant of unit 61N/91E. Due to its poor state of preservation, however, it fractured into three pieces during removal. No artifacts were encountered in direct association with any of the floorboard fragments within the cabin.

The fourth floorboard fragment encountered in Area 1 was located just outside the cabin. It was located just south of the cabin's southwest corner, in the southwest corner of grid unit 61N/91E (Figure 32.8). This floorboard fragment may be the remains of the sun porch described by the informant Annie Lujan (Peterson and Nightengale 1993:71). This interpretation is supported by the presence of three large dacite cobbles to the south of the cabin. These rocks may have functioned as the porch's foundation. All three rocks were located approximately 1 m from the cabin's south wall. The central rock was located approximately twice as far from the east rock as the west rock. This suggests that there was a fourth rock located between the central and east rocks. If this is the case, the four rocks would have been roughly equidistant from one another in addition to being approximately the same distance from the south wall. The location of the rocks, in addition to the fact that large dacite cobbles do not occur naturally in the area, therefore indicates that even if the rocks did not function as the porch's foundation, they were at least intentionally placed in the area to the south of the cabin.

Figure 32.8. *In situ* floorboard located just outside the cabin.

Wall and Roof Construction. The cabin utilized three types of wall foundations. The foundation of the entire east wall, the eastern two-thirds of the south wall, and the western quarter of the north wall were composed of irregularly shaped dacite cobbles. In most locations, the wall is only a single course high. In a few locations, the wall foundation is composed of two courses of shorter rocks. An almost complete lack of rock wallfall in the excavated area indicates that the masonry was probably never higher than the extant remains. Wall dimensions are provided in Table 32.5.

Table 32.5. Room 1/2 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	8.80	0.09–0.18 (rock) 0.05–0.25 (wood)	0.14–0.35 (rock) 0.06–0.12 (wood)	1 (rock) 1 to 2 (wood)
South	8.80	0.05–0.17 (rock) 0.01–0.15 (wood)	0.05–0.33 (rock) 0.08–0.18 (wood)	1 (rock) 1 (wood)
East	4.20	0.07–0.25 (rock)	0.08–0.38 (rock)	1 to 2 (rock)
West	4.20	0.05–0.17 (wood)	0.07–0.20 (wood)	2 (wood)

The sediment between the rocks was slightly more compact than the surrounding sedimentary matrix, especially in the south wall. This suggests that simple mud was utilized as mortar for the

rocks. The rock foundation of the south wall appears to be almost completely intact. Most of the rock foundation in the east wall is also intact. The most notable exception is within unit 62N/99E. None of the rocks that formed this section of the wall's foundation were found *in situ*. A number of loose rocks, however, were found in the area to the east. These rocks most likely formed the wall foundation's missing section. The northernmost portion of the east wall also appears to be disturbed. It is impossible to determine to what extent, however, as the north wall is poorly defined in this area of the cabin. The rock foundation of the north wall is very poorly preserved. All of the rocks appear to be present, but slightly displaced.

The foundation of the western third of the south wall and the southern third of the west wall was composed of wooden beams. Presumably, the foundation of the northern two-thirds of the west wall was also composed of wooden beams, as no rocks were found in this location. If this is the case, however, the wooden beams were no longer preserved in this location. The foundation of the eastern three-quarters of the north wall was composed of compact sediment. The sediment is a sterile, clay-rich soil. This soil slopes upward to the north, forming a near vertical surface below the lowest wood beams in the north wall. Presumably, some of the compact, clay-rich soil was excavated in the northern, uphill portion of the cabin's interior during its construction to create a level surface. The sloped surface to the north thereby represents the northern extent of these excavations. The cabin's floorboards probably rested on top of this highly compact surface, as the base of the north wall is considerably higher than the floorboard fragments found within the cabin. The sloped surface of the compact soil probably formed coping between the floorboards and the base of the north wall. Most of the base of the north wall is composed of two wood beams. These wood beams are located approximately 1 m apart. No wood beams were encountered in the area of the north wall within grid unit 65N/95E. Three small dacite cobbles, however, were encountered to the south of this area. These rocks may be the displaced remains of the base of the central section of the north wall.

The upper portions of all four walls were most likely composed of large wood beams. Unfortunately, very little of the cabin's superstructure was preserved at the time of excavation. The cabin's roof was probably composed of sheet metal and asphalt, as argued by Hill (1991). Several small pieces of asphalt were in fact recovered during the excavation of the cabin, and several large pieces of sheet metal were found within and around the cabin. The sheet metal was concentrated in the area to the south of the cabin. These materials are most likely the remains of the cabin's roof.

Three dendrochronology samples were taken from *in situ* wood beams in Area 1. The first sample (FS 504) was taken from the south end of the southernmost log in the cabin's west wall. The second sample (FS 505) was taken from the west end of the westernmost log in the cabin's south wall. The last sample (FS 506) was taken from the end of a log in the western half of the north wall. In addition, three dendrochronology samples (FS 291, FS 303, and FS 406) were taken from logs that were not *in situ* but were almost certainly part of the cabin's walls. All three wood beams were located just south of the cabin. All of the samples were identified as ponderosa pine and are discussed in the chronology section near the end of the chapter.

Artifact Distribution. Due to the fact that several excavation units contained multiple grid units, as well as portions of grid units in some cases, the exact distribution of artifacts in Area 1 could

not be calculated. Artifact counts for each grid unit were mathematically calculated, however, using the following technique. First, the average number of artifacts per 1 m^2 was calculated for each excavation unit. If an entire grid unit was within a single excavation unit, the artifact count of the former is the average number of artifacts per 1 m^2 of the latter. If only part of the grid unit was excavated, but all of the excavated portion was within a single excavation unit, the artifact count of the grid unit is the area of that grid unit multiplied by the average number of artifacts per 1 m^2 of the excavation unit. If the grid unit contained portions of more than one excavation unit, the artifact count for the grid unit is the sum of the area of that portion of the grid unit that is within each excavation unit multiplied by the average artifacts per 1 m^2 of the respective excavation units. As Table 32.6 demonstrates, the distribution of artifacts was fairly uniform throughout the excavated portion of Area 1. The grid unit with the highest density of artifacts was 63N/95E, which was located in the center of the cabin. There was also a slightly higher density of artifacts in the southwest corner of Room 1. Interestingly, this is also the area in which the cabin's floor was best preserved. The reason for this artifact distribution pattern is unclear.

Table 32.6. Artifact counts from Area 1 by grid unit.

	E90	E91	E92	E93	E94	E95	E96	E97	E98	E99	E100
N65	**53.46**	**53.46**	**49.33**	**43.12**	**43.12**	**74**	**39.63**	**39.63**	**39.63**	**39.63**	38.00
N64	**53.46**	**53.46**	**49.33**	**43.12**	**43.12**	**69**	**56.62**	**56.62**	**56.62**	**56.62**	38.00
N63	**100**	**83**	**174**	**58**	**106**	**209**	**57**	**154**	**162**	**44**	5
N62	**8.64**	**43.20**	**69.37**	**147.88**	**147.88**	**129**	**52.00**	**52.00**	**52.00**	**52.00**	16.50
N61	**5.62**	**51.67**	**68.68**	**119.71**	**119.71**	**125**	**52.00**	**52.00**	**52.00**	**52.00**	16.50
N60		67.41	67.41	67.41	67.41	50	72.00	72.00	72.00	72.00	

Note: All but the trench units (63N/90-100E and 60-65N/95E) are mathematical calculations based on the averages from the excavation unit(s) in which each grid unit is located; lightly shaded grid units were partially excavated; bold numbers indicate grid units that are located completely or partially within the cabin (Rooms 1 and 2).

Area 2

Area 2 consists of the entire site except for Area 1 (the cabin), Area 3 (the horno), Area 4 (a circular rock alignment), Area 5 (the shed), Area 6 (the corral), and Area 7 (the reservoir). No excavations were conducted in Area 2. Artifacts from the surface of the area, however, were collected during two surface collections. The first surface collection was performed by Hannah Lockard and Mia Jonsson during the 2003 field season. During this collection, all artifacts visible on the surface of grid units 69-74N/80-100E were collected. This area includes Area 3 (69-71N/94-96E).

The second surface collection was performed during the 2005 field season. There were two stages in this collection. The first stage was performed by Ellen McGehee and Kari Garcia and involved a survey of the entire site and the flagging of diagnostic artifacts. The survey extended from 35-113N and from 54-180E, although the survey area was not completely rectangular. During the survey, diagnostic artifacts were marked for collection or mapping by labeled pin flags. Artifacts marked for mapping were mostly large pieces of sheet metal.

The second stage of the surface collection was performed by Gregory Lockard, Kari Schmidt, and Jennifer Nisengard. Artifacts marked for collection were collected by 1- by 1-m unit. The grid unit of the artifacts was determined by tape measures extended from the 5- by 5-m grid stakes. A single piece of metal (FS 222) was collected from a grid unit (74N/99E) within the area of the first surface collection. Artifacts marked for mapping were photographed with a board labeled with the artifact's grid unit(s). The labels were later utilized to mark the location of the artifacts on a map of the site (see Figure 32.1). The locations of the collected artifacts (from both surface collections) were marked on the same map. Area 2 includes two dense artifact scatters located along the southeast margin of the site. These scatters were comprised almost entirely of metal cans. Due to their association and artifact density, the scatters were collected in 5- by 5-m units rather then 1- by 1-m units. The first scatter, designated Feature 5 (Peterson and Nightengale's Trash Area 1), extended from 35-40N and 135-140E. The second scatter, designated Feature 6 (Peterson and Nightengale's Trash Area 2), extended from 45-50N and 152-157E.

Area 3 (Feature 1 – Horno)

Feature 1 is the remains of a rock feature (Figures 32.9 and 32.10) located approximately 3 m north of the cabin.

Figure 32.9. Rock feature (Feature 1) located north of the cabin.

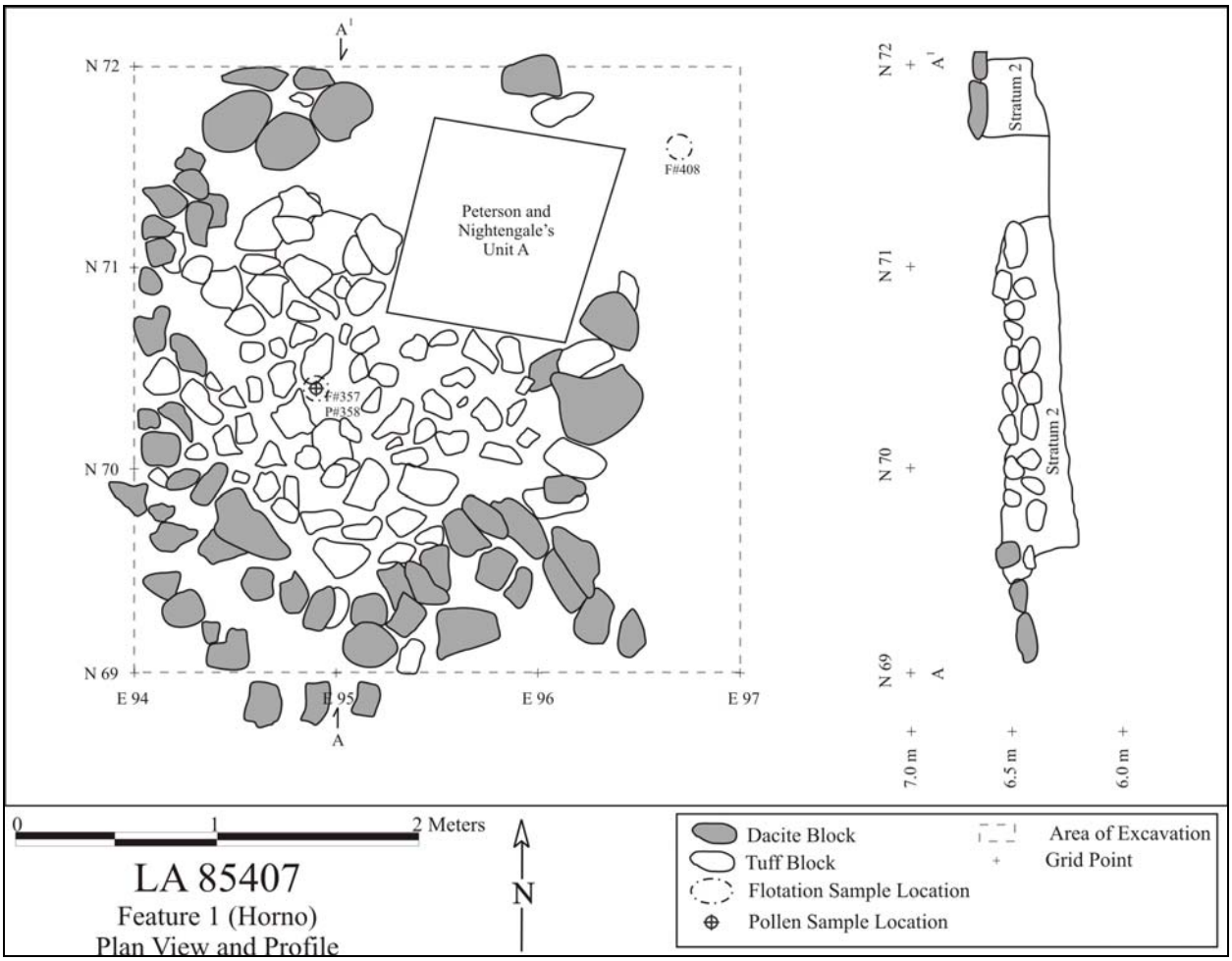


Figure 32.10. Plan view and profile of Feature 1 (horno).

According to Peterson and Nightengale (1993:103), the excavation of their Unit A and informant interviews confirmed that the feature was a horno. The entire feature (excluding the portion removed by Peterson and Nightengale during the excavation of their Unit A) was excavated during the Conveyance and Transfer (C&T) Project. The excavations confirmed that the feature was C-shaped, with the open end facing northeast. The feature was approximately 3 m in diameter. The feature's outer perimeter was composed of a single course of large dacite cobbles. A dense concentration of tuff rocks was found within the feature's perimeter. These rocks appeared to be the collapsed remains of the feature's superstructure. The rocks appeared to be oxidized, most likely as a result of thermal activity. During the excavation of their Unit A, Peterson and Nightengale encountered a layer of burned adobe at the base of the feature. During the C&T Project excavations, only a small patch of this burned surface was encountered. It is a patch of oxidized soil located in the northeast corner of grid unit 69N/95E (Figure 32.11). Beneath the oxidized soil was a dark layer that appeared to be a charcoal lens. Alternatively, it could have been the layer of bluish (i.e., reduced) clay described by Peterson and Nightengale (1993:103). A fairly high concentration of charcoal was encountered throughout the area near the base of the feature. The charcoal was especially dense near the open end of the feature to the northeast. This charcoal concentration probably represents a dump zone.

Figure 32.11. Patch of oxidized soil associated with a burned adobe surface in Feature 1.

A flotation sample (FS 357) and a pollen sample (FS 358) were taken from near the base of the west-central portion of Feature 1. Charred taxa identified in the flotation sample included unknown conifer and ponderosa pine. Taxa identified in the pollen sample included buckwheat, grass family, cheno-ams, sunflower family, fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. A flotation sample (FS 408) was taken from the charcoal concentration in the northeast portion of the feature. Carbonized taxa identified in the flotation sample included goosefoot, juniper, unidentified pine, piñon pine, and ponderosa pine.

The grid unit in Area 3 with the highest number of artifacts was 70N/95E, located in the center of the feature (Table 32.7). The next highest concentration of artifacts was in the grid unit to the

southwest (69N/96E), followed by the grid units to the northeast (71N/96E) and north (71N/95E). The higher concentration of artifacts to the north and especially northeast is probably a result of the fact that the open end of the horno was located in this area. The higher concentration of artifacts in this area therefore most likely represents a dump zone. The reason for the higher concentration of artifacts to the southeast is unknown.

Table 32.7. Area 3 (horno) artifact counts by grid unit.

	E94	E95	E96
N71	7	14	27
N70	8	45	5
N69	4	1	37

Area 4 (Feature 2 – Circular Rock Alignment)

Feature 2 was a small rock feature (Figures 32.12 and 32.13) located approximately 14 m south of the western end of the cabin.

Figure 32.12. Post-excavation photo of Feature 2 (possible privy).

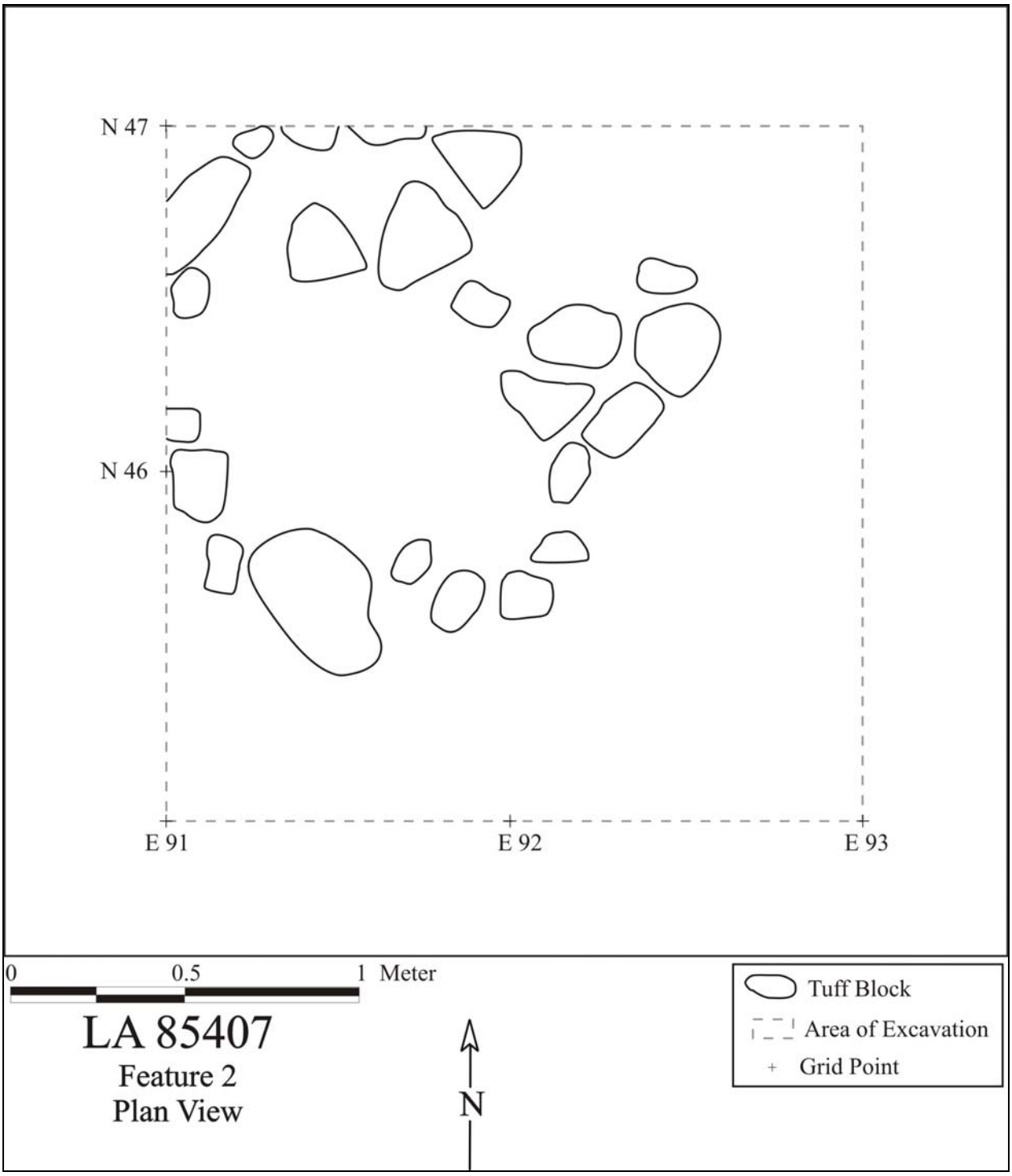


Figure 32.13. Plan view of Feature 2, a circular rock feature identified as a possible privy.

Before excavation, the feature appeared to be a small, circular concentration of rocks. The feature was excavated because it was believed to be the remains of a privy. The entire extant portion of the feature was excavated in four 1- by 1-m units (45-46N/91-E92E). The excavations revealed that the feature was a circular rock alignment. The eastern and westernmost portions of

the feature were not encountered *in situ*. There were a number of disturbed rocks, however, that were encountered in the eastern half of the feature. These are probably the disturbed remains of the eastern portion of the circular alignment. The westernmost portion of the feature may have been open. A layer of sterile, clay-rich soil was encountered 15 to 20 cm below the surface. The feature was therefore superficial and could not have been a privy. The feature's function is unknown.

The grid unit in Area 4 with the highest number of artifacts was 45N/92E, followed by 46N/92E (Table 32.8). Much fewer artifacts were recovered from the two grid units to the west (45N/91E and 46N/91E). This indicates that there was a higher concentration of artifacts outside of the feature than within it.

Table 32.8. Area 4 artifact counts by grid unit.

	E91	**E92**
N46	7	27
N45	9	62

Area 5 (Room 3 – Shed)

Sequence of Excavation. Room 3 is the remains of a wood structure (Figures 32.14 and 32.15) located approximately 21.5 m north-northeast of the cabin.

Figure 32.14. Post-excavation photo of Room 3, the shed.

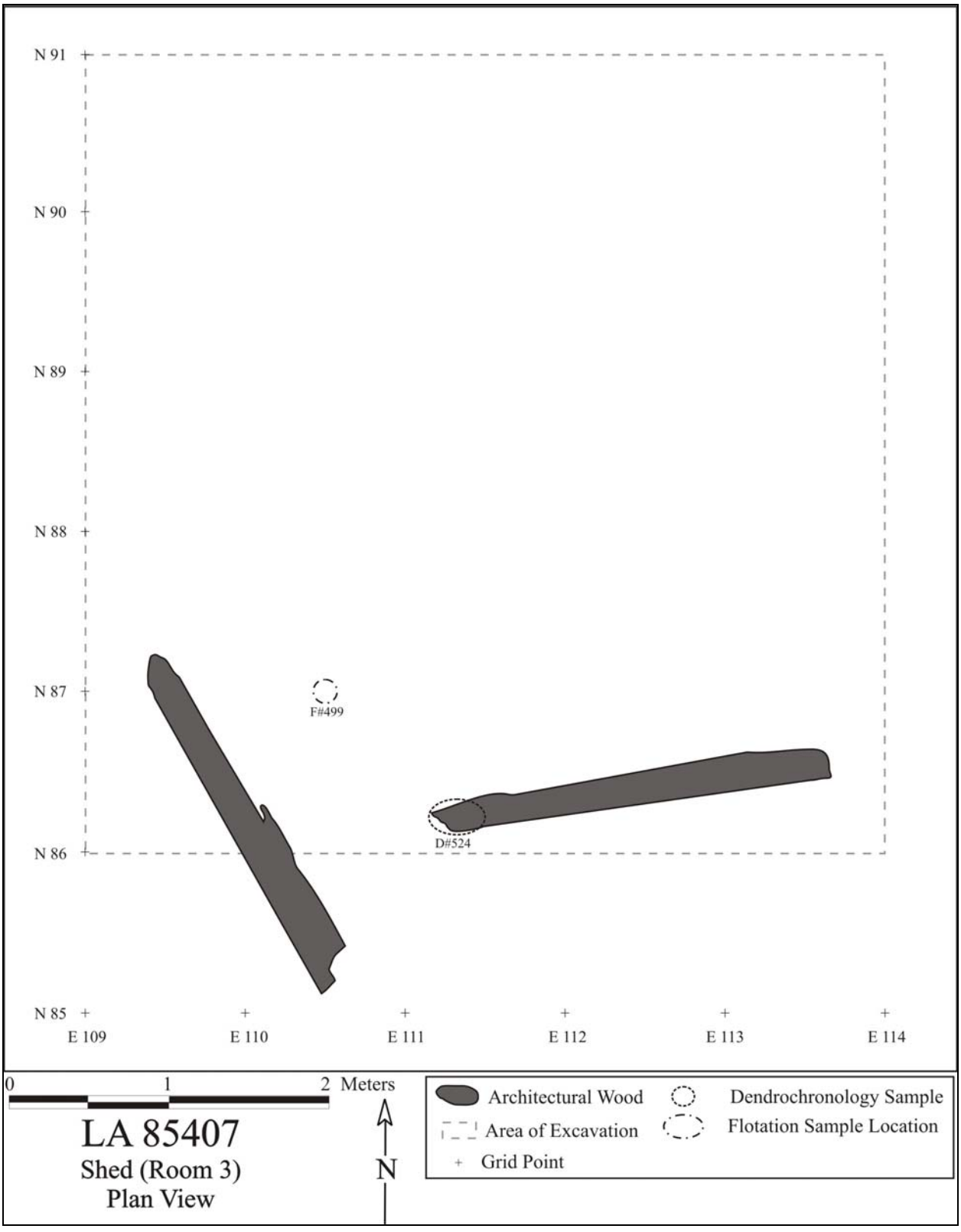


Figure 32.15. Plan view of Room 3, the shed.

Two large wood beams were the only remains of this structure visible on the surface before excavation. These wood beams appeared to have been part of the structure's south wall. Room 3 is most likely the pole shed described in Homestead Entry Survey No. 394. According to this document, the shed measured 12 by 20 ft (Peterson and Nightengale 1993:51). A 5- by 1-m east-west trench was initially excavated to the north of the wood beams. The trench was excavated in 1- by 1-m units. The trench was excavated to expose a profile of the area's stratigraphy, as well as to determine the location of the room's east and west walls. Unfortunately, no wall remains were encountered in the trench units, suggesting that the shed lacked a firm foundation. In addition, no living surfaces were encountered, nor were there any obvious changes in the structure's fill. As a result, the trench's profile was not drawn or photographed. The excavation of the trench units terminated at a sterile, clay-rich soil.

After the excavation of the trench, the structure's extent was estimated based on the dimensions provided in Homestead Entry Survey No. 394. According to this document, the shed was 12 by 20 ft, with the long side oriented east to west (Peterson and Nightengale 1993:51). Based on these dimensions, it was decided that the excavations should extend 2 m north and 2 m south of the east-west trench. The southern extension included the entire eastern wood beam and the northern half of the western wood beam of the shed's south wall. The excavations therefore extended to the approximate location of the shed's southern boundary. By extending the excavations 2 m north and south of the east-west trench, the excavations in Area 5 measured 5 by 5 m. Provided that the center of the excavations was located more or less in the center of the shed, the excavations therefore included the shed's entire width (12 ft, or approximately 3.66 m) and most of its length (20 ft, or approximately 6.10 m). The excavations to the north and south of the east-west trench were each divided into two large excavation units. The eastern excavation units (86-88N/112-114E and 89-91N/112-114E) measured 2 by 2 m, and the western excavation units (86-88N/109-112E and 89-91N/109-112E) measured 2 by 3 m. No additional wall remains or living surfaces were encountered in any of the excavations. The excavations terminated at the top of the layer of sterile, clay-rich soil encountered in the east-west trench.

Fill. Room 2 contained 2 to 7 cm of surface sediment (Stratum 1) on top of 25 to 40 cm of relatively undifferentiated post-occupational fill (Stratum 2). Only one flotation sample (FS 499) was taken of the shed's post-occupational fill. This sample was taken from a concentration of burned soil and charcoal in the southwest quadrant of the room. Charred taxa identified in the sample included goosefoot, cheno-ams, beeweed, doveweed (*Croton*), groundcherry (*Physalis*), sedge family (Cyperaceae), juniper, piñon pine, and ponderosa pine.

Floor. No living surface of any kind was encountered during the excavation of Room 3. The shed probably had an unprepared dirt floor.

Wall and Roof Construction. All that remained of the shed's walls at the time of excavation was two wood beams lying on the surface. These wood beams are believed to have been part of the shed's south wall. The quantity and nature of the artifacts recovered from the excavations to the north of the wood beams suggest that this area was in fact the shed's interior. The shed's walls were probably composed of wood beams and/or boards and the roof of sheet metal, although no evidence was found to support these suppositions. A dendrochronology sample (FS 524) was

taken from the west end of the east wood beam in the south wall of the shed. It was identified as ponderosa pine and results are presented in the chronology section later in this chapter.

Artifact Distribution. Due to the fact that several excavation units contained multiple grid units, the exact distribution of artifacts in Area 5 could not be calculated. Artifact counts for each grid unit in the four large excavation units, however, were mathematically calculated. The artifact counts for the grid units are the average number of artifacts per 1 m^2 of the excavation unit in which they were located. As Table 32.9 demonstrates, the distribution of artifacts was surprisingly uniform throughout the excavated portion of Area 5. The number of artifacts recovered from the trench units ranges from 5 to 14. The artifact density was slightly higher in the room's northwest quadrant (16.67), but nearly identical in the room's other three quadrants (8.17 to 9.50).

Table 32.9. Artifact counts by grid unit in Area 5.

	E109	E110	E111	E112	E113
N90	16.67	16.67	16.67	9.50	9.50
N89	16.67	16.67	16.67	9.50	9.50
N88	11	14	5	6	14
N87	8.17	8.17	8.17	9.00	9.00
N86	8.17	8.17	8.17	9.00	9.00

Note: All but the trench units (N88 E109-113) are averages from the excavation units in which the grid units are located.

Area 6 (Feature 3 - Corral)

Feature 3 is the remains of a corral (Figure 32.16) located approximately 14 m northeast of the shed. Judging from Peterson and Nightengale's map and description of the corral, it was in a much better state of preservation when they worked at the site in 1992 than it was during the C&T Project. Some of the structural remains appear to have burned in the Cerro Grande fire, which is probably the most important contributing factor to the corral's recent degradation (Nisengard et al. 2002). According to Peterson and Nightengale, the remains of the corral in 1992 measured approximately 11 by 12 m in area (1993:103). The feature's walls formed an irregular polygon and consisted of stacked logs that were wired together for support. No upright posts were evident. A partially intact, covered area that measured 3 by 4 m was located in the southwest corner of the corral.

During the C&T Project, the corral measured approximately 15 m east-west by 9.5 m north-south. The discrepancy between these measurements and those of Peterson and Nightengale are most likely the result of the feature's recent degradation. The C&T Project measurements are approximations, as the feature's structural remains are sparse and quite possibly partially scattered. Therefore, the Peterson and Nightengale measurements probably more accurately reflect the original size of the feature. The partially intact, covered area in the southwest corner of the corral no longer existed during the C&T Project, and was presumably destroyed by the Cerro Grande fire. In fact, the best-preserved portion of the corral during the C&T Project was the northwest corner. In this location, the remaining logs were mostly unburned.

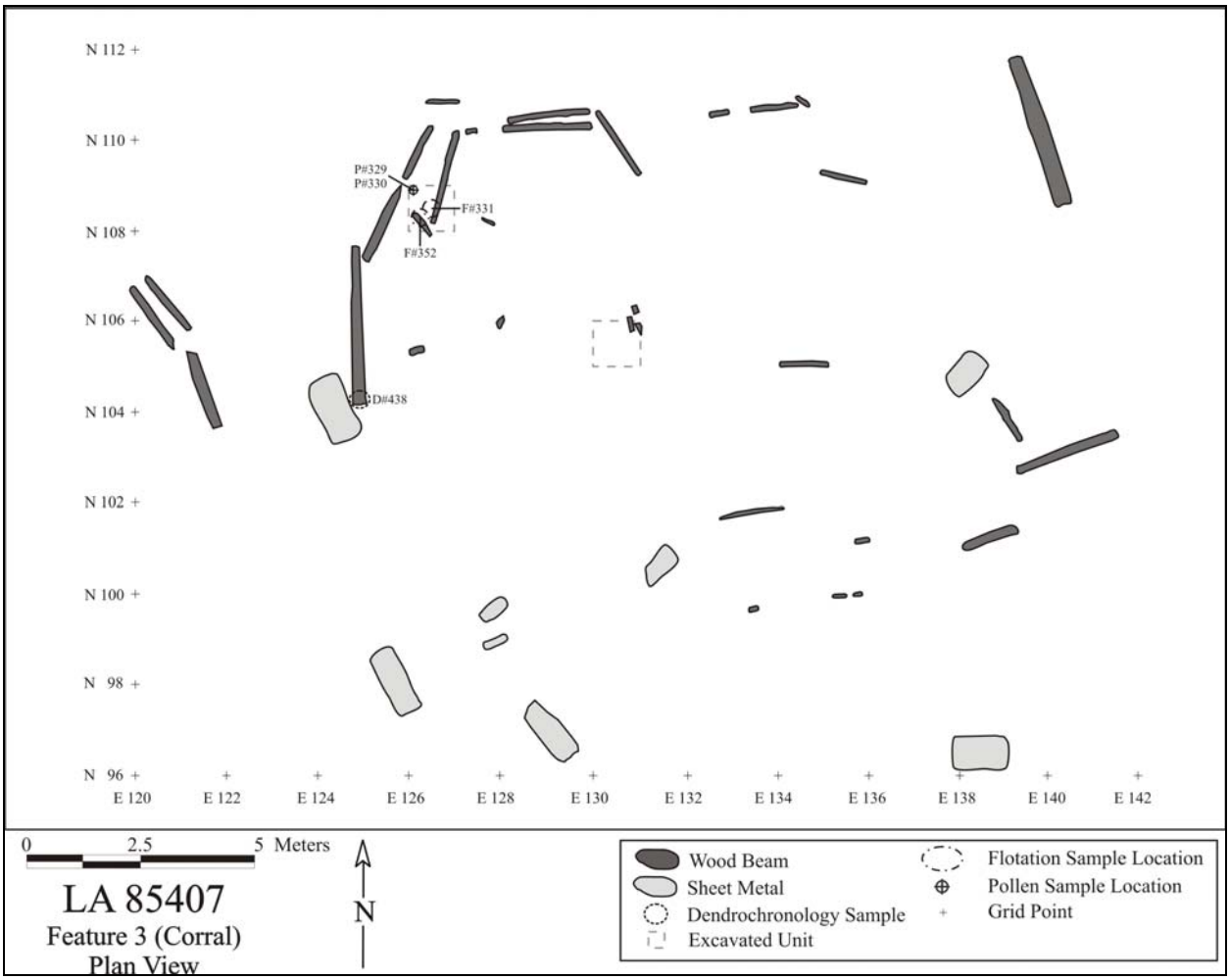


Figure 32.16. Plan view of Feature 3, the corral.

Most of the feature's logs that were extant during the C&T Project varied from 10 to 20 cm in thickness and 1 to 3.5 m in length. The logs are in such poor condition, however, that it is impossible to tell if any of them are still of their original length. The best preserved log was located in the northeast corner of the corral. This log was 40 cm wide and 3.6 m long. Both ends of the log appeared to have been cut, indicating that it probably retained its original length. All of the logs appear to be juniper, and no notches were observed. A dendrochronology sample (FS 438) was taken from the end of one of the logs, which was located in the corral's west wall. It was identified as ponderosa pine and dendro results are presented later in this chapter. Although no logs remained wired together, lengths and loops of wire were present in and around the corral. Large fragments of corrugated sheet metal were also found in and around the feature. The highest concentration of sheet metal was in the southwest corner of the feature. This metal probably functioned as the roof for the covered area in the southwest corner of the corral described by Peterson and Nightengale (1993:103). The extent of the corral was also marked by the presence of tumbleweed, which was not present in any other location of the site. Presumably, the tumbleweed reflects the fact that the soil within the corral was different from

that of the rest of the site as a result of being fertilized by the manure of the animals that it housed.

Two 1- by 1-m test pits were excavated in Feature 3 to recover the remains of manure for analysis to determine what types of animals were housed in the corral. For this reason, numerous soil samples were taken from the test pits. The first test pit was grid unit 108N/126E, which was located in the northwest corner of the corral. Four flotation samples (FS 331, FS 332, FS 333, and FS 352) and five pollen samples (FS 329, FS 330, FS 354, FS 355, and FS 356) were collected from the fill in several different locations and at different elevations within the unit. FS 331 was the only flotation sample analyzed from this unit. Carbonized taxa identified included goosefoot, summer cypress (*Kochia scoparia*), dropseed grass (*Sporobolus*), piñon pine, and ponderosa pine. FS 329 and FS 330 were the only pollen samples analyzed, and the taxa identified in these samples included maize grass family, cheno-ams, sunflower type (Asteraceae), globemallow (Sphaeralcea), spurge family (Euphorbiaceae), spruce (*Picea*), fir (*Abies*), penstemon family (Scrophulariaceae), unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

The second test pit was unit 105N/130E, which was located just west of the center of the corral. Three flotation samples (FS 398, FS 399, and FS 400) and three pollen samples (FS 395, FS 396, and FS 397) were taken of fill from different locations and at different elevations within the unit, but none of these samples were analyzed. The excavation of the test pits terminated at a layer of sterile, clay-rich soil approximately 20 to 25 cm below the surface. The fill above was fairly uniform, and no living surface of any kind was encountered. The soil in the test pits, however, was highly disturbed by rodent bioturbation. Extensive rodent activity was also evident on the surface throughout much of the rest of the corral.

Area 7 (Feature 4 – Reservoir)

Feature 4 is a small reservoir located approximately 9.5 m north-northwest and uphill from the cabin and 22 m west of the shed (Figure 32.17). The reservoir is also located directly east of a small arroyo. The reservoir is roughly circular, with a diameter of approximately 14 m. The reservoir presumably functioned as a catchment basin for rainwater. A human-made berm formed the south and west borders of the reservoir. This berm reaches a height of between 1.5 and 2 m as measured from the basin. The northern edge of the reservoir is formed by the natural ground surface, which slopes up to the north. The eastern edge of the reservoir is formed by only a slight mound, as the natural ground surface also slopes upward (although not as steeply) to the east. The depth of the basin is approximately 1 m as measured from the slight mound to the east.

Two auger holes were excavated in Feature 4. The purpose of these excavations was to recover pollen samples from different elevations in two separate locations of the feature. Auger Hole 1 was located on the slope between the basin and the berm to the south, at 82.70N/82.50E. Auger Hole 2 was located within the basin, at 81.00N/82.00E. The sediment removed from Auger Hole 2 (within the basin) was rich in silt, while the sediment removed from Auger Hole 1 was rockier and had a higher clay content. The former presumably reflects the accumulation of alluvial

sediments within the reservoir, while the latter represents the cultural fill used to construct the berms. No artifacts were observed in either auger hole.

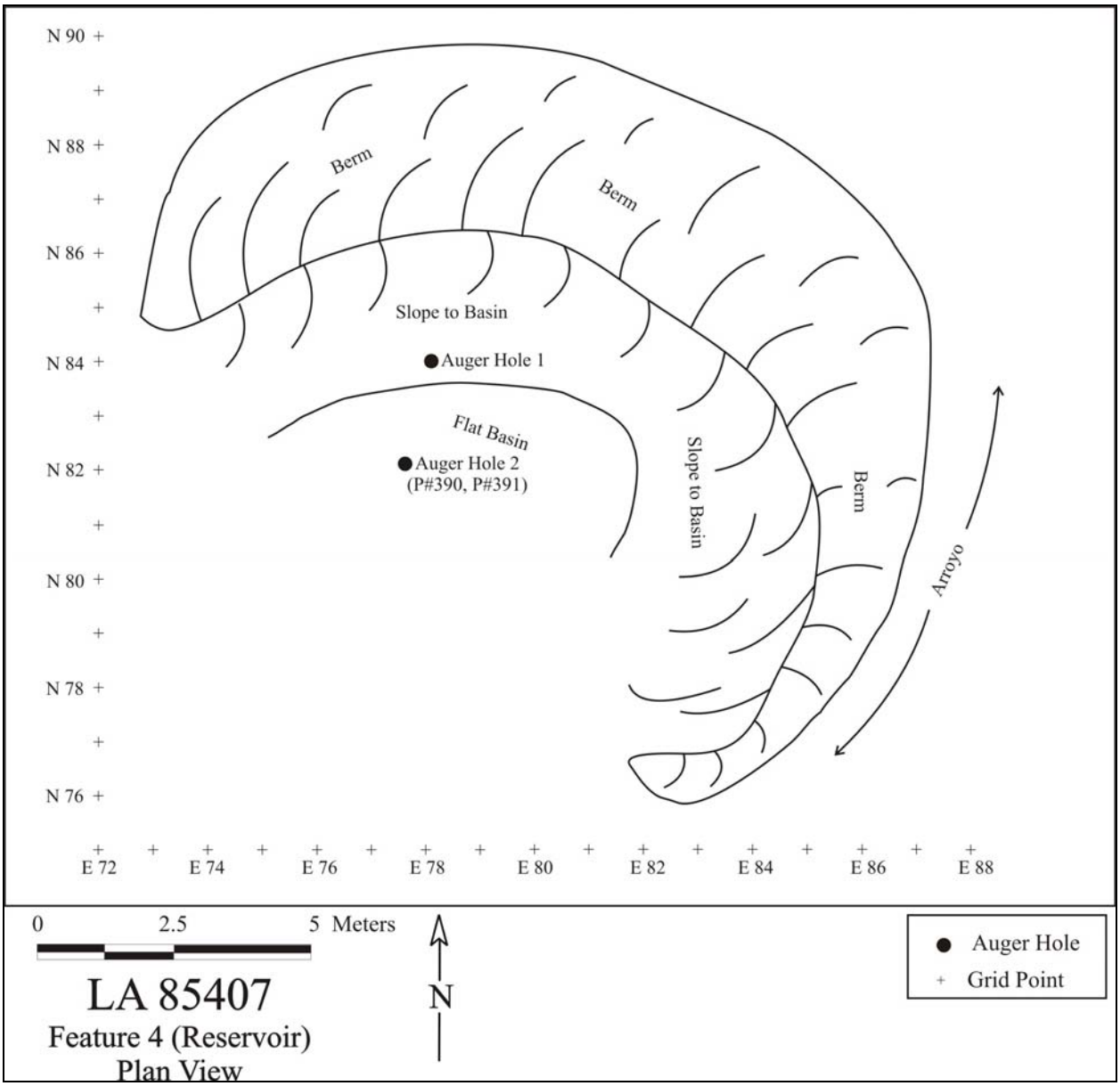


Figure 32.17. Plan view of Feature 4, the reservoir.

Pollen samples were taken from 5 (FS 385), 10 (FS 386), 15 (FS 387), and 20 (FS 388) cm below ground surface in Auger Hole 1, and from 5 (FS 389), 10 (FS 390), 20 (FS 391), and 30 (FS 392) cm below ground surface in Auger Hole 2. Only FS 390 and FS 391 were analyzed and identified taxa included prickly pear, cheno-ams, sunflower family, ragweed/bursage, spurge family, spruce, fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 5591 artifacts were analyzed from the excavations conducted at LA 85407. Flotation and pollen samples were selected for analysis from the post-occupation fill (Stratum 2). Architectural wood was also submitted for tree-ring dating. The results of the artifact and sample analyses are presented in the following sections. Table 32.10 lists the samples that were selected for analysis.

Table 32.10. Samples selected for analysis from LA 85407.

Stratum	Sample Type			
	Flotation	Pollen	Macrobot.	Tree-ring
0				291, 303, 406, 438, 504, 505, 506, 524
1				
2	269, 298, 301, 331, 352, 357, 408, 499	299, 302, 329, 330, 358, 390, 391, 490	41, 64, 95	

Chronology

Tree-Ring Dating

Eight wood construction elements from LA 85407 were submitted to the Dendrochronology Laboratory at the University of Arizona (Table 32.11). Ron Towner reported that all the samples were ponderosa pine, with five of the eight yielding dates. However, none provided cutting dates due to the poor preservation of the outside rings, leading to a couple of interpretations. The simplest is that the entire structure was built sometime after 1900, based on the 1900+vv date from NM-27 (Room 2). Alternatively, the mini-cluster of noncutting dates in the late 1860s to 1870 (NMI-29, 31, 33) might indicate construction of Rooms 1 and 3 and the corral in the late 1800s. Given that the cabin was built as a single unit, it appears that the former interpretation is probably more accurate.

Table 32.11. Tree-ring dated samples from the Serna Homestead.

FS No.	Sample No.	Species*	Provenience	Inside Date	Outside Date	Outside Symbol
504	NMI-27	PP	Rm 2	no date		
505	NMI-28	PP	Rm 2	1778	1900	+vv
524	NMI-29	PP	Rm 3	1793	1868	vv
291	NMI-30	PP	South of Rm 1	no date		
438	NMI-31	PP	Corral	1779	1866	vv
506	NMI-32	PP	Rm 1	no date		
303	NMI-33	PP	South of Rm 1	1681	1870	vv

FS No.	Sample No.	Species*	Provenience	Inside Date	Outside Date	Outside Symbol
406	NMI-34	PP	South of Rm 1	1753	1818	+vv

*****ponderosa pine

Ceramic Artifacts (Dean Wilson)

A total of 193 ceramics were analyzed from LA 85407. The majority of the pottery consists of Athabaskan plainware, with fewer biscuitwares, micaceous utilitywares, and historic utilitywares (Table 32.12). A more detailed analysis of the Athabaskan plainware sherds was conducted by Sunday Eiselt (see Chapter 75, Volume 4; Appendix O). Eiselt's analysis also identified the presence of two Tewa blackware sherds, four Tewa micaceous slipped sherds, and four Hispanic/Tewa Buff sherds. Two of the Tewa micaceous sherds could have been derived from a vessel produced at nearby San Ildefonso or Santa Clara pueblos, while the other two sherds could have been derived from a vessel produced at Nambe, Tesuque, or Pojoaque. Eiselt suggests a post-1913 date for the historic ceramic assemblage at the Serna Homestead. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 32.13 to 32.15 and in Chapter 75.

Table 32.12. Ceramic types from LA 85407.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	1	0.5
Biscuit unpainted one side slipped	2	1.0
Biscuit B/C body	5	2.6
Northern Rio Grande Utilityware		
Tewa Buff	2	1.0
Tewa polished gray	2	1.0
Unpolished mica slip	2	1.0
Sapawe micaceous	3	1.6
Athabaskan plain unpolished	176	91.2
Total	**193**	**100.0**

Table 32.13. Tradition by ware for LA 85407 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	0	0.0	8	97.1	0	0.0	0	0.0	8	47.0
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	3	100.0	3	17.6
Rio Grande (Historic)	6	100.0	0	0.0	0	0.0	0	0.0	6	35.2
Total	**6**	**100.0**	**8**	**100.0**	**0**	**0.0**	**3**	**100.0**	**17**	**100.0**

Table 32.14. Temper by ware for LA 85407 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff and sand	4	66.6	8	100.0	0	0.0	2	66.6	14	82.3
Mostly tuff with phenocrysts	2	33.4	0	0.0	0	0.0	0	0.0	2	11.7
Granite with mica	0	0.0	0	0.0	0	0.0	1	33.3	1	5.8
Total	**6**	**100.0**	**8**	**100.0**	**0**	**0.0**	**3**	**100.0**	**17**	**100.0**

Table 32.15. Vessel form by ware for LA 85407 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl body	1	16.6	8	100.0	0	0.0	0	0.0	9	52.9
Jar body	2	33.4	0	0.0	0	0.0	3	100.0	5	29.4
Body polished int-ext	3	50.0	0	0.0	0	0.0	0	0.0	3	17.6
Total	**6**	**100.0**	**8**	**100.0**	**0**	**0.0**	**3**	**100.0**	**17**	**100.0**

The Analysis of the Historic Artifacts from the Serna Homestead (Charles M. Haecker and Louanna L. Haecker)

A total of 5325 historic artifacts were collected from the LA 85407. All of these artifacts were coded using a material type classification and functional typology. In this system, each artifact is analyzed both in terms of its material type and method of manufacture. Determination of the probable function of each artifact was the goal of the analysis. An artifact was assigned to 1 of 10 functional categories based on expected domestic household activities. These categories derive from classificatory schemes used in other studies of 20th century rural habitation sites in New Mexico (Haecker 1999, 2006; Maxwell 1983; McKeown 1983; Seaman n.d.; Ward et al. 1977; Wilson 1979). The basic assumption is that the activities that took place in the historic household are basically similar to those in a present-day household.

The 10 categories represent generalized domestic activities and permit quantification of those artifacts assigned within each category. It is important to note that simple quantification of artifacts within a category does not necessarily reflect a direct correlation with its relative importance within a household. For example, a high percentage of beverage bottle fragments are often represented within collections of artifacts derived from 19th and 20th century homesteads. These glass fragments, however, may be the result of the breakage of only a relatively few bottles over the lifetime of the homestead. Conversely, complete tools within the same collection typically are a rare occurrence; it would be a mistake to interpret their sparse numeric count in an archaeological collection as reflecting unimportance in the day-to-day activities that once took place at the homestead. Several other factors prevent an artifact assemblage from unambiguously reflecting the period(s) of occupation of a site, or from replicating the inventory of items used or consumed on the site. Non-cultural processes include decay and weathering.

Cultural processes include dumping of trash off-site, scavenging, relic collecting, and archaeological excavation.

The function of an artifact and its date of manufacture and use can infer changes in production and subsistence. To obtain this information, artifacts recovered from the Serna Homestead assemblage are classified in terms of *functional categories* and *material types.* Other than a few fragments of adobe, the Serna assemblage consists of mass-produced items; therefore, the functions of most items, as intended by the manufacturers, can be identified. We assume that the site occupants used most of the manufactured items for the purpose intended by the manufacturers. Items used otherwise will show evidence of modification or re-use.

As with prehistoric artifacts, functional artifact identification can be divided into three categories: descriptive, chronological, and functional. Descriptive variables provide information about the physical properties of the artifact (e.g., maker's mark and brand contents). Chronological variables place the artifact in a temporal framework. Maker's techniques (e.g., wire nails and sanitary seal cans) are useful in this regard. Functional categories provide information about the use(s) of the artifact. The relevant variables are artifact type, primary function, reuse function, and contents. The artifacts from the Serna Homestead were initially classified into the general material categories of glass, metal, ceramic, and miscellaneous. The majority of artifacts fall into the first three categories. The miscellaneous group contains an assortment of artifacts of different materials, no one of which is sufficiently common to warrant placing the artifact into a separate group. Examples of materials in the miscellaneous category are leather, rubber, wood, and adobe. The artifacts were then described in terms of more specific physical properties. Each artifact was also classified in the general and specific functional categories. Dates were recorded for each artifact when possible, and any evidence for reuse modification/function was also noted.

Definitions

Primary Function: This variable describes the use or function of an artifact in broad terms. For example, a can that is known to have once contained food has a primary function of household in that it provided subsistence; a nail has a primary function of construction.

Secondary Function: This variable indicates the presence or absence of modification of the artifact. If modified, there is a determination as to the function other than that intended by the manufacturer.

Manufactured Technique: This variable indicates how the artifact was made by the manufacturer, and what specific material type(s) was used. For example, a can is made of rolled steel; a wood stove part is made of cast iron.

Artifact Identification: This variable indicates the artifact type (e.g., wire nail, window glass, whiteware, or shoe leather).

Condition: This variable identifies the overall physical state of the artifact at the time of its analysis. For example, from a list of coded identifiers, the artifact could be described as bent, crushed, melted, or a combination of any coded identifier.

Color: A determination of artifact color is provided only for glass, since glass color is an essential attribute that can provide information regarding chronology and function.

Measurements: Measurements were taken, where appropriate, and expressed in the standard United States system, that is, inches for linear measurements and ounces for volume (if known).

Comments: Specific information not identified by the above-stated coded identifiers are provided in written format. A sketch of the artifact is also done if such illustration would assist in better describing the artifact.

Results of the Analysis

The functional assemblages monitored for analysis are described below:

Construction

This assemblage is composed of hardware and building materials used in the fabrication and upkeep of site structures. Artifact types include nails, barbed wire, window glass, caulking, mortar, milled lumber, adobe, and bricks. As discussed by Maxwell (1983) and Seaman (n.d.), the diversity of articles in construction is indicative of varied building techniques as well as loss probabilities. Small easily carried items such as nails can be expected to have a higher loss probability, but that probability decreases as relative size and weight increases. Loss probability is also affected by the relative monetary value and availability of the item in the market. Through destruction, deterioration, scavenging, or even a subsequent occupation, all the materials that comprise a structure could enter the archaeological record. For most situations, these objects are expected to be abundant and concentrated within the location of the structure.

From their number alone, the most significant type of artifacts found in the construction assemblage is nails. Nail form is dictated by technological transitions that occurred during the late 19th century. American wire nail machinery was perfected during the 1860s and 1870s and wire nails replaced cut nails very gradually. The relative cheapness and ease of handling made wire nails more acceptable.

Wire nails were manufactured in standardized pennyweights and performed the same functions as their cut counterparts. All of the nails recovered from the Serna Homestead are the wire variety, which is appropriate given the period of site occupation: 1913–1943. Nail size categories were arranged and ranked according to the most frequent nail sizes recovered. Only whole nails, including both bent and unbent nails, were measured. The most common nail size measures 3.0 in. long (n = 153), followed by 2.5 in. (n = 86), 4.0 in. (n = 42), 3.5 in. (n = 41), 2.0 in. (n = 10), 5.0 in. (n = 10), 4.5 in. (n = 8), 1.5 in. (n = 3), 6.0 in. (n = 2), 5.5 in. (n = 1), 1.2 in. (n = 1), 1.0 in. (n = 1), and 3.25 in. (n = 1). Approximately 88 percent of the nails were

recovered in the immediate vicinity of the cabin, and it is assumed that these nails are representative of what nail sizes were used to construct and maintain the cabin.

The two most commonly found nails sizes, that is, 3.0 in. and 2.5 in. long, are termed "box" nails. These nails are typically used for light framing, such as joining planks to floor and ceiling joists. The 3.5-in. and 4.0-in. nails may have joined together wider-dimensioned lumber such as floor joists to joist board spacers (Jurney 1991). Only one 1.2-in. nail was recovered. The evident paucity of this nail size, intended for roof shingles, reflects the fact that roofing of the Serna cabin consisted of sheet steel.

Approximately 750 fragments of window glass were recovered. Four concentrations of window glass occurred in the immediate vicinity of the cabin. Several window glass fragments are melted or else show crazing and these conditions may be the result of the cabin having been destroyed by burning; however, evidence of burning is minimal as opposed to what was found within the McDougall cabin, a homestead located in Technical Area 55 at Los Alamos National Laboratory (McGehee et al. 2006).

Several large pieces of sheet steel were recovered from testing the site. According to informants regarding the Serna Homestead, the cabin roof was sheathed with sheet steel. In fact, nail holes are positioned either at the corners of sheet steel or along the edges. Some of the sheet steel sheets have been cut or modified to accommodate the placement of, for example, a stove or vent pipe. One segment of stove pipe was recovered in the vicinity of the cabin.

Tools

This assemblage typically is included with construction activities in the analysis of historic artifacts; however, in this present study it is identified as its own assemblage to facilitate comparison between the Serna and McDougall homesteads (Haecker 2006). Tools include hammers, wrenches, and files. Being relatively expensive, large tools are typically curated and usually discarded only when damage is irreparable. Since the loss probability is low, a discard pattern is expected for broken tools, assuming no reuse or recycling. Usable tools found in the interior of a structure or activity area represent what Schiffer (1977:24) terms *de facto* archaeological refuse. This results from rapid destruction of the area or structure, or abandonment under conditions that allow belongings to be taken only as time or subsequent space availability permits.

Testing of the Serna Homestead recovered several undamaged and presumably still serviceable tools, including three sizes of bastard files, two pairs of scissors, a hacksaw blade, a box wrench, and a shovel blade. Fragments of a pocket compass and a gear wheel to what is believed to be a pocket watch were also recovered. All of these items were discovered either within or in the immediate vicinity of the cabin. The presence of these items in the archaeological record suggests that the cabin was destroyed or abandoned before the occupants could remove them along with all their other possessions.

Household

This category consists of common household artifacts used to store, prepare, and serve foods including furniture, lighting, washing, writing, and so on. Major components of the household category are the containers and other closures for commercially prepared foods. Items such as egg shells and peach pits are assigned to this group. Archaeological finds recovered from homesteads rarely indicate the inhabitants' dependence on bulk staples such as flour and dried beans. These types of important food items are typically packaged in perishable materials, which leave little or no trace of their former presence. In contrast, empty food cans deposited in an arid environment may remain largely intact for decades. It is usually the case that cans lack labels and are deteriorated in varying degrees, thereby preventing identification of the original can contents. Fortunately, some can shapes and dimensions are representative of the contents, such as sardine cans, lard buckets, tapered cans intended for meat, and condensed milk cans. Slide-off lid containers held products such as baking powder, coffee, and lard. All of the key strip-opened cans recovered from the Serna Homestead once contained coffee.

Of the 1561 can remains that were recovered, only 9 percent (n = 165) could provide accurate dimension measurements. The measurable cans indicate that the homestead inhabitants depended on canned fruits, juices, vegetables, and baked beans. Sardine cans also were present but represented less than 3 percent of the total number of food cans. It is presumed, then, that sardines were consumed on an occasional basis and likely eaten as a serving for one individual, as indicated by the small sizes of the entire sardine cans. Canned sardines, a possible luxury purchase, may have been consumed only on a non-meat fast day such as Friday. The excavations recovered only one meat can, which would have contained approximately one pound of commercially prepared meat such as corned beef.

Seventeen lard pails were identified in the assemblage. These pails typically contained lard, but the same type of container may have also held peanut butter, fruit jam, honey, or axle grease. A number of the pails have non-manufactured baling wire handles and presumably were attached to these pails by an occupant of the homestead. Pail opening diameters are 10 in., 9 in., 7.5 in., 6 in., and 5 in. Once empty of its packaged food content, lard-type pails sometimes were recycled for a variety of other purposes including use as lunch pails, water buckets, and collection receptacles for rendered fat. The collection includes a 4-in. diameter pail, which may have once contained hard candy. This unusually small-sized pail also has a non-commercial bailing wire handle. Its opening has been pinched shut and the base of the pail has eight small nail holes. Perhaps this object had been recycled by a child to hold a "pet" animal or insect.

Coffee was definitely the beverage of choice at the homestead, as indicated by the numbers of coffee cans and coffee can strip keys in the collection. Only two condensed milk cans and one cocoa can were identified in the artifact collection. The seeming paucity of condensed milk cans may reflect the fact that the Sernas brought a milk cow with them when on their seasonal visits to the homestead (Peterson and Nightengale 1993:61).

Glass containers that once contained food and condiments were also identified in the collection; however, the small-fragment conditions of the glass shards recovered from the homestead prevents diagnostic identification for virtually all of these types of artifacts. It was possible to

identify one glass container that once contained a pickle-type relish. This jar is similar in shape and size to commercially packed glass jars of pickle relish recovered at a World War II Japanese-American internment camp (J. Burton 1996:746, Figure B.12b). A fragment of a catsup bottle, three glass stoppers of a type used on various types of bottled pickles and other preserves, a fragment of a bottle that once contained chili pepper sauce comparable to Tabasco Sauce, and a fragment of a bottle that once contained Karo-brand syrup were also identified.

A few fragments of canning jars were also identified in the collection. Canning jars are intended to be used over and over again, thus representing multiple years of usage. Also, since the Sernas only seasonally occupied the homestead, it is possible that home canning at that location was not a worthwhile task. One informant recalled that his mother canned a great amount of home-grown vegetables and fruits, but it was not noted if this task was performed at both the Serna primary residence in Nambe and at the homestead (Peterson and Nightengale 1993:66). According to Jansen (1982:362 in Akins 1995:36), Hispanic women in New Mexico relied mostly on drying rather than canning as their principal method of food preservation into the 1930s. Drying is inexpensive and efficient while jars and caps are expensive, and cold-pack canning required considerable time and effort. Corn, chile, onions, beans, squash, and meat were traditionally dried. Agricultural extension agents made little effort to teach Spanish-speaking women the art of canning before 1929 (Jansen 1982:365).

A total of 84 ceramic fragments were recovered, representing a minimum of 24 vessels, including plates, saucers, bowls, cups/mugs, and a decorative vase. Vessel forms were recognized by rims, bases, or distinctive curvature. Other fragments were labeled as indeterminate in form. Paste type is the primary criterion by which historic, commercially manufactured ceramics are categorized; however, it can be difficult in distinguishing white earthenware paste types from harder, fired ironstone or graniteware paste types. Since the separation of these types on the basis of hardness may be invalid, Majewski and O'Brien's approach of combining these types into one 'refined whiteware' was used (1987).

Refined whitewares were favored by the occupants of the Serna Homestead. Vessels of this durable, inexpensive type were used to serve meals and represent over 90 percent of the recovered ceramic fragments. A number of the whiteware sherds are decorated using the decal method. One pattern design consists of sprigs of small flowers, which was a ceramic motif popular during the early 20th century and prior ceramic designs inspired by the Art Deco period of design (circa 1920–1940). There is not an overall ceramic design pattern in the collection of decorated whiteware sherds. It may be the case, therefore, that vessels were bought one at a time at local stores, rather than buying complete matching sets. Only one fragment of a porcelain bowl was recovered. This vessel, which would have been significantly more expensive than domestic whitewares, was made in either Japan or China during the late 19th or early 20th century. The presence of a few fragments of stoneware crockery is indicative of food storage and/or food preparation. One fragment of a whiteware vase was also recovered, as well as a Kapo Black sherd.

Indulgences

This category is represented by objects that are not essential for human survival but instead provide pleasure or satisfy a superfluous desire. These items include glass fragments of alcoholic and non-alcoholic beverages and toys. Several clay and glass marbles were found, as were one fragment of a bisque-fired doll's head and several plastic beads. All of these objects are indicants that children lived at the homestead. A fragment of a harmonica reed plate was also identified in the assemblage. A harmonica can be in the possession of a child or an adult.

Only a few diagnostic glass fragments of wine and beer bottles are in the collection, and none of these fragments appear to date to 1913–1943. Likewise, there is only one identifiable fragment of a soda pop bottle (probably Coca-Cola) and three crown bottle caps in the collection. FS 431 consists of a concentration of fragments of wine and beer bottles, located approximately 50 m (152 ft) to the northwest of the Serna cabin. The few identifiable closures for the wine bottles are screw-tops, which would date these bottles to post-1970. Also, the few diagnostic beer bottle fragments are dated to post-1960, suggesting that the site area has recently been used by hunters, hikers, or others using the area for various forms of recreation. The collection also does not contain tobacco cans; however, there is one cigarette holder made of plastic.

Personal Possessions

This category includes individually owned items such as shoes, clothing, coins, jewelry, or those related to personal hygiene. These items would have variable use-lives such as shoes and clothing that were eventually discarded when worn out, and jewelry that was carefully safeguarded and entered the archaeological record only when lost. Smaller items, such as buttons and clothing rivets may be either discarded or lost. The artifact collection contains several buttons that are made of milk glass, bone, and shell. Most of these buttons are typically found on work shirts and work jackets. There are two mother-of-pearl buttons that may have been attached to a woman's dress blouse, and one button for a woman's dress coat. Several pieces of jewelry are present in the collection, including a possible broach made of carved mother-of-pearl with a cupreous decorative inset and several glass beads from a probable necklace. Fragments of shoe leather and fragments of a rubberized cloth Wellington-type boot are present. The remains of a man's shoe heel made of rubber and a woman's or child's rubber shoe heel were also found.

Firearms and ammunition were also included in the personal possessions category. A concentration of nine .22-caliber cartridge cases was found in the area between the cabin and horno. This suggests that occasional target practice and/or shooting of varmints took place at this location. Also discovered in the vicinity of the cabin are one .38-caliber rifle cartridge case and one .50-caliber rifle cartridge case.

Other personal items include the remains of a clasp knife, the needle of a pocket compass, a brass gear wheel that probably came from a pocket watch, a plastic comb, the above-mentioned cigarette holder, a five-cent coin that dates to 1902, and a fragment of a cold cream jar. Two pennies that date to post-1958 are also in the collection and reflect casual visitation to the Serna Homestead long after it was abandoned in 1943.

Animal Husbandry

Four horseshoes and one horseshoe nail were also identified in the collection, as were fragments of what is believed to be a leather harness. The presence of several fence staples in the collection suggests that the homestead included a wire fence compound, presumably for penning livestock.

Transportation

An informant described how he, as a child, rode a horse on the Serna Homestead during their seasonal visits. He also recalled how the Serna family made the trips in a covered wagon (Peterson and Nightengale 1993:63). In fact, four horseshoes, a horseshoe nail, and possible metal brace fittings for a wagon were also identified in the collection. A leaf spring that could have been part of a wagon or automobile, a cam shaft that presumably derived from an automobile, truck, or tractor, and fragments of a worn-out automobile tire were also identified. It should be kept in mind that, during the early to mid-20th century, it was common for rural inhabitants to collect metal scrap both for their recycling possibilities and/or for selling to dealers in scrap metal (Buckles et al. 1986:354). It should not be assumed, therefore, that the discovery of automobile or truck parts is an indication that the site inhabitants actually owned such vehicles. The hubcap of a circa-1948 Plymouth automobile is in the collection; therefore its deposition post-dates abandonment of the Serna Homestead. We suspect that the Sernas did not own an internal combustion conveyance because motor oil cans are notably absent from the collection. Such cans are usually present on a 20th century rural habitation site where various types of internal combustion engines were maintained.

Health and Hygiene

Fragments of a paneled bottle(s) were identified in the collection. These bottles are of a type that were typically used for non-prescription patent medicines during the late 19th and early 20th centuries. There is little else to suggest that the Serna Homestead depended on commercially manufactured medicines.

Summary of Findings

Oral interviews and documents research indicate that, beginning in 1913 and up to 1942, the Serna family occupied the homestead on a seasonal basis. They traveled by wagon to the homestead, lived in a log cabin that had sheet metal roofing, and cultivated 40 acres of beans, corn, wheat, pumpkins, and various vegetables. Artifacts collected from this site are supportive of these findings. They occupied the homestead approximately six weeks a year, which would have generated significantly less refuse when compared to the refuse generated by those families who lived year-round on the Pajarito Plateau. Non-staple foods consumed at the homestead include commercially canned vegetables and baked beans and, perhaps, canned fruits and/or juices. Canned meats likely were not regular items on the menu, and neither were home-canned foods. An informant recalled that his family regularly ate fresh beef (Peterson and Nightengale 1993:66), which would explain the virtual absence of meat cans. It is likely that, at least during the harvest season, the Sernas were consuming at least some of what they were harvesting (e.g.,

onions, beans, squash, chili, and corn). There is little to suggest that the inhabitants treated themselves to even the occasional culinary luxury.

Ceramic plates, saucers, cups, and mugs are of types that are utilitarian and inexpensive. Cooking and lighting is appropriate for the time and place, that is, dependence on kerosene lamps and wood used for heating. Indulgences are minimally represented in the collection, and what few indulgences that are represented are mostly children's toys. The Sernas apparently were not imbibers of alcoholic beverages or tobacco, at least not during their seasonal visits to the homestead.

Comparison of the Serna and McDougall homesteads (see McGehee et al. 2006) indicate not-surprising idiosyncratic differences between the daily routines of the two households (Table 32.16). As examples, the McDougall household indulged in alcoholic beverages and tobacco, whereas these indulgences were virtually absent at the Serna Homestead. Extensive food can refuse is present at the McDougall homestead, but significantly fewer cans are present at the Serna Homestead. This difference, however, may be misleading since the Sernas occupied their homestead on a seasonal basis. In contrast, the McDougalls lived on their homestead year-round, thus generating significantly more domestic refuse.

Table 32.16. Comparison of artifacts from the McDougall and Serna homesteads by primary functions.

Primary Functions	McDougall Homestead	Serna Homestead
Construction		
Nails	3621 nails, mostly within the cabin; light framing nail is the most common type	354 nails, mostly within or near the cabin; light framing nail is the most common type
Sheet steel	Present but sparse	Present; used for roofing
Window glass	Present in cabin area; many fragments are melted, crazed	Present in cabin area; few fragments are melted, crazed
Tools	One hammer head	Files, scissors, wrench, hacksaw blade, shovel blade
Domestic Routine		
Food cans	Two extensive can dumps; most of cans once contained fruits, vegetables, juices; single-serving potted meats and sardine cans present; condensed milk cans are common	Can dump absent; most cans once contained fruits, vegetables, juices; only one meat can; only two condensed milk cans; single-serving sardine cans present
Commercial food jars	Condiments, sauces, pickles	Condiments, sauces, pickles
Canning jars	Present	Present, but scarce

Primary Functions	McDougall Homestead	Serna Homestead
Ceramics	Inexpensive whitewares are common; one Limoges porcelain sherd; stoneware storage vessels; local Native American ceramics present	Inexpensive whitewares are common; one Asian porcelain sherd, one vase sherd; stoneware storage vessels; local Native American ceramics present
Kerosene lamp chimney glass	Present	Present but scarce
Lard pails	Present; two sizes. Recycling not evident	Present, five sizes; possible recycling for other use(s)
Indulgences		
Alcohol bottles	Present	Absent from the period of homestead occupation
Soda bottles	Present but scarce	Possibly absent from the period of homestead occupation
Tobacco cans	Present	Absent
Toys	One marble	Marbles, doll fragment, plastic beads
Personal possessions	Shirt and blouse buttons, glass beads	Glass beads, brooch fragment, harmonica fragment, clasp knife fragment, pocket compass fragment, shirt, blouse, jacket buttons, shoe and boot fragments, comb, cold cream jar
Transportation		
Auto/truck	Oil-can, post-1947 spark plug	Cam shaft, leaf spring; circa 1948 car hub cap
Horse/wagon	One horseshoe	Four horseshoes, possible hardware for a wagon
Health		
Medicine	Patent medicine bottle fragments	Patent medicine bottle fragments

There is some physical evidence of different ethnic backgrounds at the two homesteads. The Sernas utilized an horno, used adobe as a building material, and employed a Mexican-style metate. There are no indications of comparable Hispanic architecture or ethnic-identity artifacts recovered at the McDougall homestead. What are more notable are the strong similarities. Both homesteads utilized building materials such as logs and stones to a large extent. Recycling of commercially manufactured building materials occurred. Food items were limited in variety and simple to prepare, and the plates and bowls that contained the food were as basic as the food itself. It is clear that both families operated on minimal cash income, which restricted discretionary spending on indulgences. It is possible that the McDougall's possessed a bit more discretionary income, judging by their evident consumption of alcoholic beverages, tobacco, and (perhaps) owning an automobile. These differences, however, are marginal.

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 75 artifacts were analyzed from LA 85407, consisting of 54 pieces of debitage, 12 retouched tools, six ground stone items, two hammerstones, and a manuport. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 32.17 presents the data on lithic artifact type by material type. The debitage is primarily made of obsidian, with less chalcedony, Pedernal chert, and general chert. The presence of cortex on 14.8 percent of the debitage indicates that these materials were collected from waterworn (n = 6) and nodule (n = 2) sources. The chalcedony, Pedernal chert, and chert are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. The manuport is an unmodified piece of schist that could also have been obtained from local gravel sources. The ground stone igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 32.17. Lithic artifact type by material type.

Artifact Type		Material												
		Basalt	Vesic. Basalt	Rhyolite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Quartzite	Sandstone	Other	Total
Debitage	Angular debris	0	0	0	0	0	2	8	0	3	0	0	0	13
	Core flake	0	0	0	0	0	8	8	1	9	0	0	0	26
	Biface flake	0	0	0	0	0	12	0	0	0	0	0	0	12
	Microdebitage	0	0	0	0	0	1	0	0	0	0	0	0	1
	Und. flake	0	0	0	0	0	2	0	0	0	0	0	0	2
	Subtotal	0	0	0	0	0	25	16	1	12	0	0	0	54
Retouched Tools	Retouched piece	0	0	1	0	0	0	5	0	2	0	0	1	9
	Biface	0	0	0	0	0	1	0	0	1	0	0	0	2
	Projectile point	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	0	0	1	0	0	2	5	0	3	0	0	1	12
Ground Stone	One-hand mano	0	0	0	1	0	0	0	0	0	0	0	0	1
	Two-hand mano	0	1	0	0	0	0	0	0	0	0	0	0	1
	Und. mano frag.	0	0	0	0	1	0	0	0	0	0	0	0	1
	Slab metate	0	1	0	0	0	0	0	0	0	0	0	0	1
	Grinding slab	0	0	0	0	1	0	0	0	0	0	0	0	1
	Whet stone	0	0	0	0	0	0	0	0	0	0	1	0	1
	Subtotal	0	2	0	1	1	0	0	0	0	0	1	0	6
Other	Hammerstone	0	0	0	0	0	0	0	0	1	1	0	0	2
	Manuport	0	0	0	0	0	0	0	0	0	0	0	1	1

Artifact Type	Material												
	Basalt	Vesic. Basalt	Rhyolite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Quartzite	Sandstone	Other	Total
Subtotal	0	0	0	0	0	0	0	0	1	0	0	1	3
Total	**0**	**2**	**1**	**1**	**1**	**27**	**21**	**1**	**16**	**1**	**1**	**2**	**75**

Nine pieces of obsidian and one biface were submitted for X-ray fluorescence analysis. Most of the artifacts are made from the Cerro Toledo source, but fewer from the Valle Grande and El Rechuelos sources (Table 32.18). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) and the Valle Grande (Cerro del Medio) source areas are located about 19 km (12 mi) and 17 km (11 mi) as the "crow flies" to the southwest and west of the site. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present in the area of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval and are scattered along the mesa top. Lastly, the El Rechuelos (Polvadera Peak) source area is located approximately 27 km (17 miles) to the northwest.

Table 32.18. Obsidian source samples.

FS #	Artifact	Color	Source
96	Debitage	Black dusty	El Rechuelos
215	Debitage	Translucent	Valle Grande rhyolite
380	Debitage	Black dusty	El Rechuelos
401	Debitage	Translucent	Cerro Toledo rhyolite
445	Debitage	Translucent	Cerro Toledo rhyolite
451	Biface	Black opaque	Cerro Toledo rhyolite
477	Debitage	Translucent	Cerro Toledo rhyolite
493	Debitage	Translucent	Cerro Toledo rhyolite
501	Debitage	Translucent	Valle Grande rhyolite
516	Debitage	Black opaque	Cerro Toledo rhyolite

Lithic Reduction

The debitage consists primarily of core flakes, with fewer angular debris, biface flakes, microdebitage, and an undetermined flake fragment. The overall cortical:non-cortical ratio of 0.28 reflects an emphasis on the later stages of core reduction and tool production/maintenance. The flakes mostly have single-faceted (n = 10), with fewer cortical (n = 2), and crushed (n = 4) platforms. Four of the platforms exhibit evidence of preparation and were abraded/crushed. The majority of the core flakes are whole (n = 9) or distal (n = 8) fragments, with fewer proximal (n = 4), midsection (n = 3), and undetermined (n = 2) fragments. The whole core flakes have a mean length of 26.3 mm (*std* = 10.8), the single whole biface flake a length of 13.0 mm, and the angular debris a mean weight of 3.9 g (*std* = 6.2).

The retouched tools primarily consist of retouched pieces with two bifaces and a projectile point (Figure 32.18). Four of the retouched pieces exhibit bidirectionally retouched lateral edges that include a projection. In contrast, the other five flakes have unidirectionally retouched lateral edges with angles of 65 degrees. The bifaces are fragments with edge angles of 60 to 65 degrees that presumably reflects that they were broken during the middle reduction stage. The projectile point is the midsection of a possible stemmed Late Archaic dart point.

Tool Use

None of the flakes and all of the retouched pieces exhibit evidence of edge damage that could be attributed to use. The retouched pieces that include projections have rounding/polish on their points, whereas the other retouched pieces exhibit some rounding and/or micro-scarring along their lateral edges. The projectile point has a broken tip and base that presumably occurred during use.

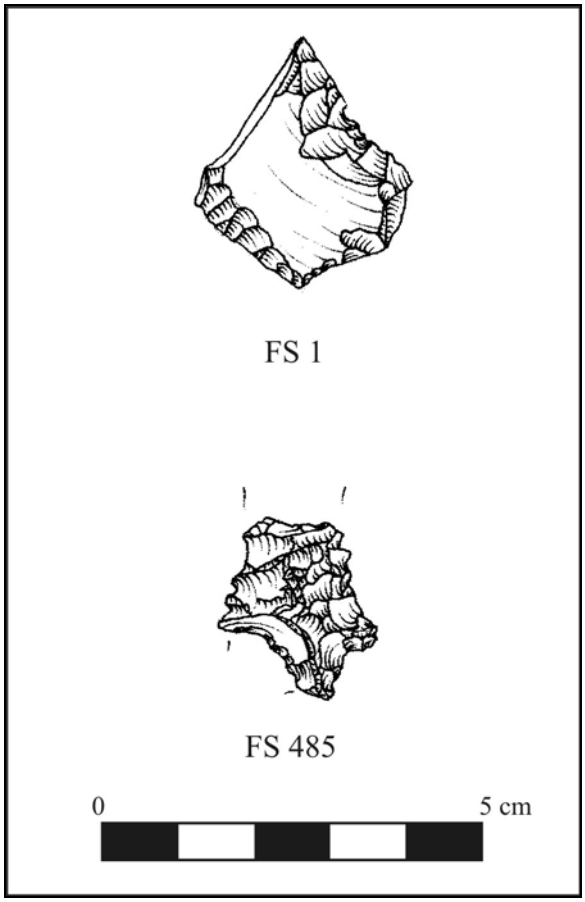


Figure 32.18. Retouched flake and projectile point.

The ground stone artifacts include manos, a metate, a grinding slab, and a whet stone. The one-hand mano is a flat dacite cobble that exhibits some grinding on both opposing surfaces. In contrast, the two-hand mano is a formal basalt, wedge-shaped mano that is heavily ground on all

three sides. This mano was found in association with a formal basalt slab metate. It is a Mexican-style metate with one rear leg (see Figure 32.6). The grinding slab consists of a rectangular-shaped tuff slab with rounded corners and an oval grinding surface. Lastly, the whet stone is a small tabular piece of sandstone with a very smooth and striated surface. This artifact was presumably used to sharpen metal knives.

Faunal Remains (Kari Schmidt)

Twenty-seven pieces of bone were recovered during excavations at LA 85407. The site consists of the remains of a historic log cabin and various features in the surrounding area.

Cabin (Area 1)

The cabin was divided into Rooms 1 and 2. Ten bones were recovered in Room 1 and included one unfused kangaroo rat (*Dipodomys* sp.) femur, a fragment of a mule deer (*Odocoileus hemionus*) rib, a horn fragment from a domestic cow (*Bos taurus*), a fragment of an elk (*Cervus elaphus*) thoracic vertebra, two medium/large-sized mammal bones (one burned), two large-sized mammal rib fragments that both contained butcher saw marks, one large-sized mammal unidentified burned bone, and one unidentified piece of unburned bone. One bone, an unidentified medium/small-sized mammal long bone fragment, was identified in the Room 2 deposits.

Four bones were identified in the fill around the cabin and included a complete human premolar, a burned unidentified medium/large-sized mammal bone, an unidentified large-sized mammal bone, and a large-sized mammal rib fragment that contained evidence of butchery from a large saw.

Horno (Area 3)

Three bones were identified in the area around the horno, but no bones were recovered directly from the feature fill. Analyzed bones included one medium/large-sized mammal bone fragment and two domestic cow vertebral body fragments. None of the bones were burned, and all contained evidence of old breaks.

Area 4 (Feature 2, Circular Rock Alignment)

Feature 2 was a small rock feature located approximately 14 m south of the western end of the cabin (see Figure 32.13). The excavations revealed that the feature was a circular rock alignment. One bone was recovered from the circular alignment and it was identified as a fragment of a domestic cow axis vertebra. It was not burned, but did contain evidence of some butchering activities.

Shed (Area 5, Room 3)

Room 3 is the remains of a wood structure located approximately 21.5 m north-northeast of the cabin. Two large wood beams were the only remains of this structure visible on the surface prior to excavation. These wood beams appeared to have been part of the structure's south wall. Room 3 is most likely the pole shed described in Homestead Entry Survey No. 394. Six bones were recovered from this feature and included one unidentified bone, one blue grouse axis vertebra (*Dendragapus obscurus*), a domestic goat (*Capra hircus*) cervical vertebra and rib fragment, and a domestic cow distal metatarsal fragment. None of these bones were burned or otherwise altered.

Corral (Area 6, Feature 3)

Feature 3 is the remains of a corral located approximately 14 m northeast of the shed. Two bones were identified in the feature: one was an unidentified small/medium-sized mammal bone and one was a medium/large-sized mammal bone fragment.

Archaeobotanical Remains (Pamela McBride)

The contents of samples from post-occupational fill in the log cabin, a test pit in the corral, and an area of burned soil and charcoal in the shed produced a similar assemblage of burned conifer duff, native annual seeds, grass seeds, grass stems, and other disturbance-loving plants like groundcherry and vervain (Table 32.19). Burned sedge family seeds from the cabin and the shed together with unburned bulrush seeds from the corral attest to the proximity of the homestead to the creek just below in Rendija Canyon. Burned seeds that resembled summer cypress were recovered from the corral. Summer cypress is a weed introduced from Eurasia that is widespread in New Mexico and flourishes in waste places and open fields. The corral and some of the cabin burned during the Cerro Grande fire. Because of this and the similarity of the wild plant assemblages, the majority of wild floral remains probably represent weeds burned in the conflagration rather than debris from food preparation or animal feed.

Evidence for domesticates was restricted to the inside of the cabin and included maize cupules and one burned and one unburned grape seed. Interviews with Annie Lujan, the daughter of José María Serna, owner of the homestead, reported that crops grown included pinto beans, corn, wheat, pumpkins, and other "soft vegetables" (see site excavation section in this chapter). There is no mention of grapes or vineyards, but two peach pit fragments were identified in the vegetal sample from Room 1 post-occupational fill, and Mrs. Lujan did not mention that they grew at the homestead either. Wild grapes grow on canyon walls, in canyon bottoms, and piñon-juniper woodland (Foxx et al. 1998:40). While there are no gnaw marks on the specimens, the possibility that rodents deposited them cannot be ruled out. The grape seeds and peach pits could also be remnants of fruit "brought up from the valley (valley here refers to the Pojoaque-Española valley) orchards and vineyards" (Foxx and Tierney 1999:22) or orchards were present on the homestead, but were either not mentioned by Ms. Lujan.

A broken bean cotyledon from the same context and a piece of ponderosa pine wood were also identified in vegetal samples (Table 32.20). Interviews with residents or descendants of residents of the area document beans as the primary cash crop that was grown on the Pajarito Plateau (Tierney 1999c:15–23). With only one fragment recovered, it seems difficult to fathom the huge volume of beans grown on the Pajarito Plateau by homesteaders. One informant said that in 1915, he harvested about 2100 pounds of beans (Tierney and Foxx 1999:10) and this was not unusual before the drought of the late 1930s. The paucity of physical evidence is related to the fragility of beans and threshing and preparation methods. Beans may be removed from the pods elsewhere than the house interior and preparation does not usually involve parching or frying. Beans have no protective seed coat, as the pod acts as a container before harvest, leaving them vulnerable to consumption by animals or insects.

Table 32.19. Flotation sample plant remains, count, and abundance per liter.

FS No.	**269**	**298**	**301**	**331**	**352**
Context	Post-occup. fill in SE corner, Room 1	Post-occup. fill in SW corner, Room 1	Post-occup. fill, S ½, Room 2	Test pit NW corner, corral	
Cultural					
Annuals					
Beeweed	1(1)	4(4)			
Goosefoot		68(67)	31(31)	143(143)	1(1)
Pigweed		2(2)			
Stickseed			1(1)		
cf. Summer cypress				19(19)	
Cultivars					
Grape		1(1), 1(0) u			
Maize	2(1) c	3(0) c			
Grasses					
Dropseed grass				1(1)	
Grass family	1(1) pc	1(1), culm +	2(2)		
Other					
Groundcherry			1(1)		
Sage		4(4), 3(2) pc			
Unidentifiable		1(0)			
Vervain		3(3)			
Perennials					
Juniper			twig + pc		
Pine	bark +	bark +, needle +	bark +		cf. umbo+
Piñon				needle +	needle +
Ponderosa pine				needle +	needle +

FS No.	269	298	301	331	352
Sedge family		1(1)			
Non-Cultural					
Annuals					
Beeweed	+	+	+	+	+
Goosefoot	+++	+++	+++	++++	+++
Pigweed	++	+	+	+++	++
Purslane	+++	+++	+	++++	+++
Stickseed	+		+	+	
Sunflower	+	+	+		+
Grasses					
Dropseed grass	+	+	+	+	+
Grass family	+	+	+	+	+
Other					
Doveweed	+	+			+
Groundcherry	+	+	+	+	+
Knotweed family					+
Purslane family				+	
Sage	+	+	+		
Stickleaf		+	+		+
Sunflower family	+	+	+	++++	+
Unknown				+	
Other					
Vervain	+	+			
Perennials					
Bulrush				+	+
Globemallow		+	+		
Hedgehog cactus			+		
Juniper				+	+
Pine			♂ cone +		
Piñon	nutshell+			needle+, nutshell+	needle+, nutshell +
Ponderosa pine	needle+			needle+	needle+

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, ++ 11-25/liter, +++ 25-10/liter, ++++ >100/liter, c cupule, pc partially charred, u uncharred.

Table 32.19 (continued). Flotation sample plant remains, count, and abundance per liter.

FS No.	**357**	**408**	**499**
Context	Near base of horno	Charcoal concentration, NE corner, horno	Burned soil/charcoal in shed
Cultural			
Annuals			
Beeweed			2(2), 1(0) pc
Cheno-am			3(3)
Croton			1(1)
Goosefoot		1(1)	56(56)
Other			
Groundcherry			2(2)
Unidentifiable		1(0)	11(11) e, 1(0) pp
Perennials			
Pine		bark +	
Sedge family			3(3)
Non-Cultural			
Annuals			
Beeweed			+
Goosefoot	+	+++	+++
Pigweed		+	+
Purslane	+	+++	+++
cf. Russian thistle			+
Stickseed			+
Sunflower		+	
Grasses			
Dropseed grass	+	+	+
Grass family			+
Other			
Doveweed			+
Groundcherry	+	+	+
Purslane family			+
Sage		+	+
Sunflower family		+	
Perennials			
Bulrush			+
Hedgehog cactus			+
Juniper			♀ cone +
Piñon			needle +, nutshell +

Table 32.20. Room 1, post-occupational fill vegetal sample plant remains.

FS No.	FS 41	64	95
Cultivars			
Bean	1(0)/<0.1 g		
Peach			2(0) u/2.1 g
Wood			
Ponderosa pine		1/<0.1 g	

Wood charcoal from the majority of contexts is overwhelmingly ponderosa pine (Table 32.21). Exceptions are the samples from inside the horno and the burned soil/charcoal concentration in the shed. Fuel used for cooking seems to have been primarily juniper, although piñon and ponderosa were also present. Wood from the shed context is a mixture of juniper, piñon, and ponderosa, but here ponderosa was the most common wood identified. This could reflect the use of ponderosa for construction and juniper for fuel in the horno.

Table 32.21. Flotation sample wood charcoal by count and weight in grams.

FS No.	269	298	301	331	352	357
Context	Post-occup. fill in SE corner, Room 1	Post-occup. fill in SW corner, Room 1	Post-occup. fill, S ½, Room 2	Test pit NW corner, corral		Near base of horno
Conifers						
Ponderosa pine	19/1.7 g	20/1.3 g	20/2.9 g	8/0.5 g	1/0.1 g	1/<0.1 g
Unknown conifer						1/<0.1 g
Non-Conifers						
Unknown non-conifer	1/0.1 g					
Totals	**20/1.8 g**	**20/1.3 g**	**20/2.9 g**	**8/0.5 g**	**1/0.1 g**	**2/<0.1 g**

Table 32.21 (continued). Flotation wood charcoal by count and weight in grams.

FS No.	408	499	Totals	
Context	Charcoal concentration, NE corner, horno	Burned soil/charcoal in shed	Weight	%
Conifers				
Juniper	12/1.8 g	4/0.1 g	1.9 g	19%
Piñon	3/0.8 g	1/<0.1 g	0.8 g	8%
Ponderosa pine	2/0.3 g	15/0.2 g	7.0 g	72%
Unknown conifer			<0.1 g	<1%
Non-Conifers				

FS No.	408	499	Totals	
Unknown non-conifer			0.1 g	1%
Totals	**17/2.9 g**	**20/0.3 g**	**9.8 g**	**100%**

The Serna family grew corn and beans among other crops documented in interviews and the Homestead Entry Survey. The family traveled to the homestead three times a year by wagon and stayed for about two weeks during each visit. The burned beeweed, goosefoot, pigweed, and groundcherry seeds could be evidence that the family ate the fruits of groundcherry and encouraged and collected annual greens from the fields, a practice documented in several interviews of Spanish residents of the region (Tierney 1999c:15-23). Local wood resources were used for fuel and construction.

Pollen Remains (Susan Smith)

Eight pollen samples were analyzed from LA 85407. Table 32.22 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage. Prickly pear was the only other economic resource that was identified. A number of potential economic resources were also identified in the assemblage (Table 32.22).

Table 32.22. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85407 (*n* = 8)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	2
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	1
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85407 (*n* = 8)
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	2
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	7
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	1
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	7
		Cheno-Am Aggregates	2
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	7
		Sunflower Family Aggregates	1
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85407 (*n* = 8)
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	2
		Globemallow Aggregates	1
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	1
	Onagraceae	Evening Primrose	1
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	3
	Abies	Fir	6
	Pinus	Pine	8
		Pine Aggregates	1
	Pinus edulis type	Piñon	8
	Juniperus	Juniper	8
		Juniper Aggregates	0
	Quercus	Oak	2
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	5
	Artemisia	Sagebrush	7
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85407 is the historic Serna Homestead that is located on a gently sloping mesa immediately north of Rendija Canyon. The site is composed of several different areas including the main cabin (Area 1), the horno (Area 3), a small concentration of rocks (Area 4), the shed (Area 5), the corral (Area 6), and the reservoir (Area 7) (see Figure 32.2). Samples of wood submitted for tree-ring analysis returned a construction date for the cabin of around 1900. According to the historical documents, Andres Martinez applied for homestead certification in 1913, and the Homestead Entry Survey No. 394 was performed in October of 1916. The homestead was patented in 1922, and subsequently sold to José and Fidel Serna (of unknown relations), who had probably occupied the homestead since 1913. According to the survey, 40 acres of beans, corn, and vegetables were under cultivation on the homestead in 1916. Improvements included a 12- by 30-ft log house, a 12- by 20-ft pole shed, and one mile of brush fence. According to Annie Lujan, the cabin included three rooms and a sun porch, but the archaeological evidence neither supported nor refuted this information. Portions of the wood cabin floor were, however, identified. The Serna family made seasonal use of the homestead, as supported by the historic artifacts. In addition, the remains of maize, beans, peach and grapes were recovered during the site excavation.

CHAPTER 33
RENDIJA TRACT (A-14): LA 85408

Gregory D. Lockard

INTRODUCTION

LA 85408 is the remains of a small Middle Classic period fieldhouse located on the east-facing slope of a narrow ridge on the mesa between Rendija and Guaje canyons. The site is located near the northern boundary of the eastern portion of the Rendija Tract, a few m north of a two-track dirt road. Vegetation on the site consists of piñon-juniper woodland with some oak and ponderosa pine trees and a grass understory. The site is situated at an elevation of 2124 m (6970 ft).

LA 85408 was first recorded on August 16, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. Hill believed the site to be a fieldhouse with at least two rooms. Surface Biscuit A (Abiquiu Black-on-gray) sherds indicated that the site was most likely occupied during the Classic period (AD 1325–1600). On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992. A single 1- by 1-m test pit (Unit A) was excavated at LA 85408. The unit was excavated to bedrock at a maximum depth of 42 cm below the ground surface. No convincing floor surface was encountered during the excavation of the unit. Artifacts recovered during the excavation of Unit A and a surface collection of the site include 16 pieces of chipped stone, two fragments of a single slab metate, and 19 ceramic sherds (11 Biscuit A, two Biscuit B, two undifferentiated Biscuitware, one White Mountain Redware, and two utilityware sherds). Most of the surface artifacts were collected from the areas to the northeast and southeast of the structural remains.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a rubble mound approximately 5 by 6 m in area (Figure 33.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 8 m north and 8 m east of the site datum. Two subdata (A and B) were set up for taking elevations. The site was then photographed. No artifacts were visible on the surface, most likely due to the fact that it had been previously surface collected by Peterson and Nightengale (1993). A 7- by 1-m east-west trench (104N/101-107E) was initially excavated across the middle of the rubble mound. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the structure's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels.

Figure 33.1. Photo of the mound at LA 85408 before excavation.

Within the structure, the trench units were excavated to a compact surface that may have been the room's living surface. Outside of the structure, the trench units were excavated to the top of a sterile layer of weathered Cerro Toledo bedrock. The westernmost unit in the trench (unit 104N/101E) was chosen to serve as a test pit for geological analysis. Excavation in this grid unit therefore continued until intact bedrock was encountered. The northern profile of the trench was then drawn and photographed. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 40 units were excavated. Within the structure, excavation proceeded to the compact surface encountered while excavating the trench. Outside of the structure, excavation terminated at the sterile layer of weathered bedrock. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The site was mapped (Figure 33.2) and photographed (Figure 33.3).

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Alan Madsen, Joseph (Woody) Aguilar, Kevin Hanselka, Brandon Gabler, Margaret Dew, and Samuel Duwe. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa served as site monitor from Santa Clara Pueblo and as an additional excavator.

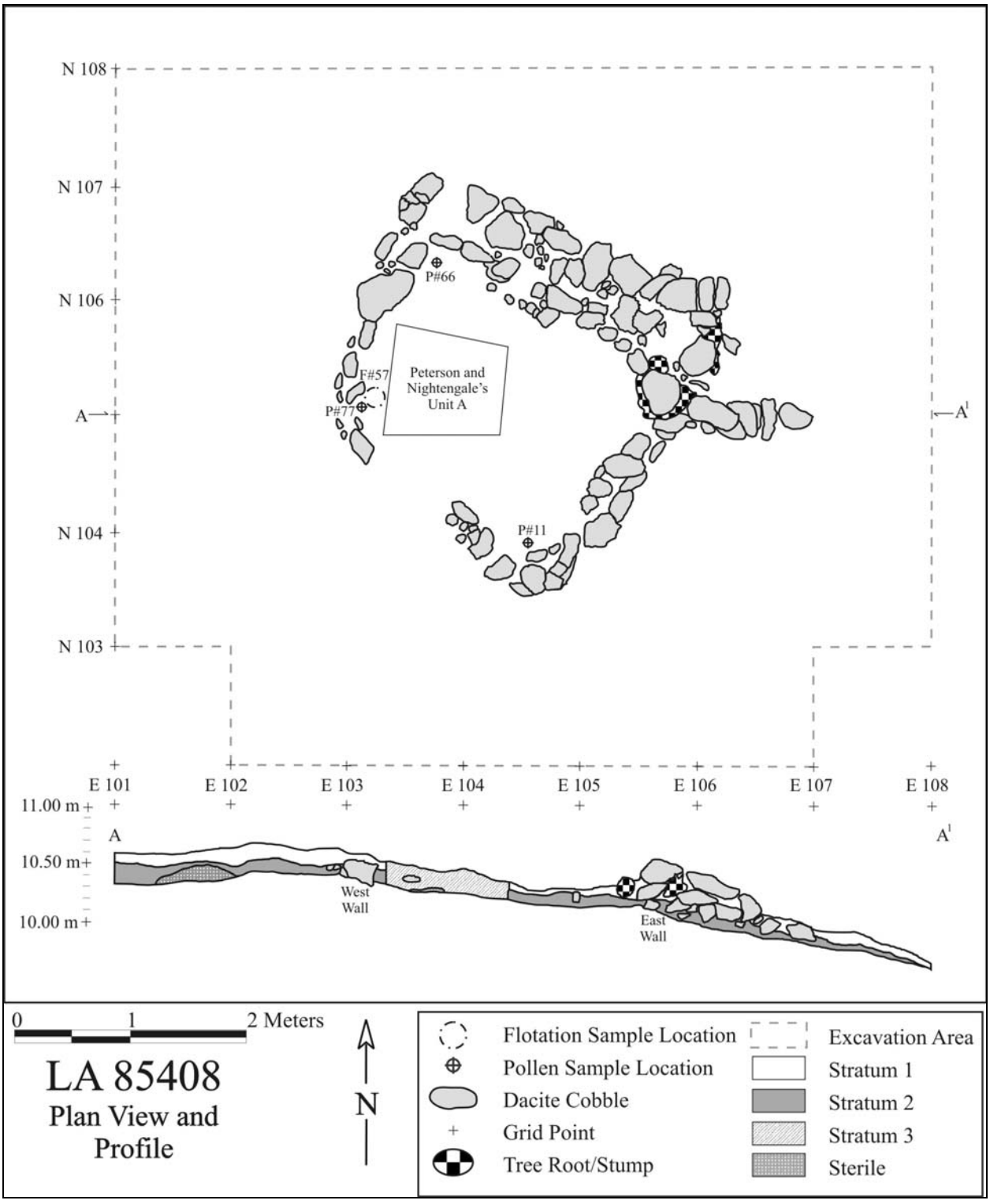


Figure 33.2. Plan view and profile of the fieldhouse at LA 85408.

Figure 33.3. Post-excavation of the fieldhouse at LA 85408.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly 1 to 8 cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 5 to 30 cm in thickness in the area excavated. This fill was thickest in and around the collapsed walls of the structure and thinned away from the walls and towards the center of the room. In the west profile of the geological test pit (unit 104N/101E), Stratum 2 is part of the A horizon. In other locations, however, the lower portion of Stratum 2 may have been part of a thin Bw horizon. Stratum 3 is the backfill removed from Peterson and Nightengale's Unit A. Stratum 3 is therefore a disturbed context. Tables 33.1 through 33.3 describe the strata at the site.

Table 33.1. LA 85408 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4.5/3	Sandy loam	1–8	Surface sediment
2	10YR 4.5/3	Sandy loam	5–30	Post-occupational fill
3	10YR 4.5/3	Sandy loam	20	Back fill from P & N test pit

Table 33.2. LA 85408 soil horizon descriptions from the west profile of the geological test pit (104N/101E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4.5/3	Sandy loam	0–9	Topsoil
Rk	-	-	9–20	Weathered Cerro Toledo bedrock
R	-	-	20+	Cerro Toledo bedrock

Table 33.3. LA 85408 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	0	0	0	**0**
1	10	14	0	0	**24**
2	74	56	3	1	**134**
3	1	0	0	0	**1**
Total	**85**	**70**	**3**	**1**	**159**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small structure that probably functioned as a fieldhouse. The fieldhouse is slightly trapezoidal in shape, with the northeast wall being approximately 20 cm longer than the southwest wall. The northeast wall is also significantly thicker than the other walls. The room measures 2.25 m in length (northwest to southeast) by 1.80 m in width (northeast to southwest), with approximately 4.05 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the site (104N/101-107E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the structure's southeast wall and an entryway in the southwest wall. A compact surface was encountered just above the base of the rocks that formed the foundation of the room's southeast and southwest walls. This surface was most likely the room's living surface. After the excavation of the trench, the rest of the room was excavated to the compact surface encountered in the trench. The backfill within Peterson and Nightengale's Unit A was removed as a separate stratum (Stratum 3). This test pit, which is located entirely within the western half of the room, was excavated to intact bedrock. An examination of the pit's profile indicated that there were no discernible living surfaces below the compact surface noted above. After the excavation of the site was complete, the room was mapped, photographed, and documented (see Figures 33.2 and 33.3).

Fill. The interior of Room 1 was filled with 2 to 8 cm of surface sediment on top of 10 to 30 cm of post-occupational fill. The fill was thickest in and around the room's collapsed walls, and thinned away from the walls and towards the center of the room. Flotation (Field Specimen [FS] 57) and pollen (FS 58) samples were taken of the Room 1 fill. The pollen sample was not analyzed, but charred taxa identified in the flotation sample included unknown conifer (Gymnospermae), piñon pine (*Pinus edulis*), and ponderosa pine (*Pinus ponderosa*).

Floor. No prepared floor was encountered during the excavation of Room 1. A compact surface was encountered, however, that was most likely the room's living surface. This surface was distinguishable from the post-occupational fill above in that it was slightly more compact, relatively devoid of rocks, and had a slightly higher clay content. The Room 1 living surface was most likely formed by excavating the loose sediment within the room to expose the compact layer of weathered bedrock below. A thin layer of clay was then most likely placed on top of this naturally compact surface. The relative flatness of the surface compared to the same surface outside of Room 1 (which slopes down from east to west as well as to the north and to the south) indicates that the layer of weathered bedrock was probably leveled to create a flat living surface.

Pollen samples were taken from directly on top of the presumed living surface in the southeast (FS 11), northwest (FS 66), and southwest (FS 77) corners of the room. Identified taxa included maize (*Zea mays*), sedge (Cyperaceae), rose family (Rosaceae), grass family (Poaceae), cottonwood/aspen (*Populus*), cheno-ams (*Chenopodium/Amaranthus*), sunflower family (Asteraceae), ragweed/bursage (*Ambrosia*), spurge family (Euphorbiaceae), spruce (*Picea*), fir (*Abies*), unidentified pine (*Pinus*), piñon pine, juniper (*Juniperus*), oak (*Quercus*), Mormon tea (*Ephedra*), and sagebrush (*Artemisia*). A flotation sample (FS 56) was taken from directly on top of the presumed living surface in the northeast corner of the room, but was not analyzed (see below). The flotation sample was taken from a concentration of fine, light gray sediment. At first, this sediment was believed to be organic ash, possibly from a hearth. Further examination of the site's stratigraphy, however, indicated that it was more likely naturally occurring, pulverized pumice. No artifacts were encountered in direct association with the presumed living surface.

Wall Construction. The extant portions of the Room 1 walls indicate that the wall foundations were composed of dacite cobbles and upright dacite slabs. These rocks were placed into a shallow trench dug into the compact layer of weathered bedrock that most likely served as the room's living surface. What little remains of a second course of rocks indicates that it was composed of oblong dacite cobbles. The rocks that formed the Room 1 walls varied in size from fist-sized cobbles to small boulders. The northeast wall is composed of two rows of rocks separated by a thin space filled in with loose sediment and a few rocks, and is considerably thicker than the other walls. The southwest, southeast, and northwest walls are composed of a single row of large rocks in some places, and two rows of small rocks or thin upright slabs in other places. The southwest wall is divided into southeast and northwest sections by a wide (80 cm) entryway. The southeast section is considerably longer than the northwest section, which is just long enough to form the room's west corner.

Judging from the amount of wallfall removed during the excavation of LA 85408, the room's masonry was originally considerably higher than it was at the time of excavation. In order to estimate the original height of the masonry, all of the rocks removed as wallfall during the site's excavation were placed in five stacks, which were then measured. The stacks measured 0.85 by 1.10 by 0.62 m, 0.86 by 1.85 by 0.78 m, 0.82 by 1.29 by 0.74 m, 1.10 by 1.56 by 0.43 m, and 1.04 by 1.63 by 0.52 m, for a total of approximately 4.22 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant masonry, the room's masonry was originally approximately 2.01 m in height. This figure is probably too high, however, due to the fact that dacite cobbles occur naturally, albeit sporadically, in the area where

the fieldhouse was built. In other words, some of the rocks removed during the site's excavation were probably never part of the room's walls. Nevertheless, the volume of rocks removed during the excavation of the site indicates that the room's masonry was originally quite high (Table 33.4). The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, no adobe was recovered from the site.

Table 33.4. Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
Northeast	2.00	0.04–0.46	0.61–0.70	1 to 2
Southwest	1.00 (1.80)	0.15–0.36	0.15–0.38	1
Southeast	1.70	0.19–0.50	0.24–0.48	1 to 2
Northwest	1.64	0.15–0.47	0.20–0.34	1 to 2

Note: The length of the southwest wall including the possible entryway is given in parentheses.

Geological Test Pit

Geologists Paul Drakos and Steven Reneau utilized the west profile of the geological test pit (unit 104N/101E) to reconstruct the natural soil horizons at the site (see Table 33.2). This profile contained a soil sequence consisting of an A horizon (topsoil), a Rk horizon (weathered Cerro Toledo bedrock), and a R horizon (intact Cerro Toledo bedrock) (Figure 33.4).

Artifact Distribution

As Table 33.5 demonstrates, the distribution of artifacts recovered during the excavation of LA 85408 is fairly uniform. There is a slight increase in the artifact distribution within and to the northeast of the room. The former most likely represents artifacts found in their primary context. The increased artifact distribution to the northeast of the room, on the other hand, is most likely the result of post-depositional processes. The natural surface slopes down to the northeast. Many of the artifacts to the northeast of the room have therefore probably washed down into this area. The most dramatic deviation from this pattern of artifact distribution is unit 102N/104E. Twenty-one artifacts were recovered from this unit. Of these, however, 20 are biscuitware sherds recovered from a single excavation level (Stratum 2, Level 2). These sherds most likely represent a pot drop or a large sherd or sherds that were further fragmented after the site was abandoned.

Table 33.5. LA 85408 artifact counts by grid unit.

	E101	E102	E103	E104	E105	E106	E107
N107	1	0	5	13	2	13	4
N106	1	3	**0**	**4**	3	16	3
N105	2	3	**6**	**3**	**3**	4	2
N104	0	1	**6**	**8**	**4**	0	1

	E101	E102	E103	E104	E105	E106	E107
N103	0	4	4	**1**	1	3	2
N102		0	3	21	5	4	

Note: Bold numbers indicate grid units that are located completely or partially within Room 1.

Figure 33.4. West profile of the geological test pit (unit 104N/101E).

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 151 artifacts were analyzed from the excavations conducted at LA 85408. In addition, flotation and pollen samples were selected for analysis from the post-occupation fill (Stratum 2). The results of the artifact and sample analyzes are presented in the following sections. Samples taken from the site are listed in Table 33.6.

Table 33.6. Samples selected for analysis from LA 85408.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	41, 42, 57	11, 66, 77		
3				

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 80 ceramics were analyzed from LA 85408. The majority of the pottery consists of Biscuit B/C (Biscuit B?), Biscuit A, and Biscuit B (Table 33.7). These types, in addition to the two glazeware sherds, would seem to indicate a Middle Classic period (15th century) occupation. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 33.8 to 33.10. The graywares and whitewares appear to have been locally made from tuff temper; however, a single grayware sherd does exhibit granite with mica temper. This latter sherd is presumably associated with the Classic period occupation. The redware sherd also differs by exhibiting non-local sherd and sand temper. All of the grayware ceramics consist of jar vessel forms whereas the whiteware and redware sherds derived from bowls.

Table 33.7. Ceramic types from LA 85408.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	11	13.8
Mineral paint undifferentiated	1	1.3
Organic paint undifferentiated	9	11.3
Jemez/Santa Fe/Vallecitos Black-on-white	1	1.3
Biscuit unpainted slipped both sides	2	2.5
Biscuit A	6	7.5
Biscuit B	4	5.0
Biscuit B/C body	25	31.3
Sankawi Black-on-cream	4	5.0
Northern Rio Grande Utilityware		
Plain gray body	7	8.8
Sapawe Micaceous	6	7.5
Middle Rio Grande Glazeware		

Ceramic Type	Frequency	Percent
Glaze red body	2	2.5
Agua Fria Glaze-on-red	1	1.3
Largo Glaze yellow	1	1.3
Total	**80**	**100.0**

Table 33.8. Tradition by ware for LA 85408 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	8	100.0	63	100.0	0	0.0	0	0.0	71	87.7
Rio Grande (Tewa Micaceous)	0	0.0	0.0	0.0	0	0.0	5	100.0	5	6.3
Middle Rio Grande	0	0.0	0.0	0.0	4	100.0	0	0.0	4	6.0
Total	**8**	**100.0**	**63**	**100.0**	**4**	**100.0**	**5**	**100.0**	**80**	**100.0**

Table 33.9. Temper by ware for LA 85408 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sand	7	87.5	0	0.0	0	0.0	0	0.0	7	8.7
Fine tuff or ash	0	0.0	2	3.1	0	0.0	0	0.0	1	1.2
Large tuff fragments	1	12.5	0	0.0	0	0.0	0	0.0	1	1.2
Fine tuff and sand	0	0.0	57	90.4	0	0.0	0	0.0	57	71.2
Anthill sand	0	0.0	1	1.5	0	0.0	0	0.0	1	1.2
Vitrified	0	0.0	3	4.7	0	0.0	0	0.0	3	3.7
Scoria	0	0.0	0	0.0	3	75.0	0	0.0	3	3.7
Latite Keres area	0	0.0	0	0.0	1	25.0	0	0.0	1	1.2
Sapawe Micaceous	0	0.0	0	0.0	0	0.0	5	100.0	5	6.2
Total	**8**	**100.0**	**63**	**100.0**	**4**	**0.0**	**5**	**100.0**	**80**	**100.0**

Table 33.10. Vessel form by ware for LA 85408 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	6	9.5	0	0.0	0	0.0	6	7.5
Bowl rim	0	0.0	7	11.1	3	75.0	0	0.0	10	12.5
Bowl body	0	0.0	49	77.7	1	25.0	0	100.0	50	62.5
Jar body	8	100.0	0	0.0	0	0.0	5	0.0	13	16.2
Flared bowl rim	0	0.0	1	1.5	0	0.0	0	0.0	1	1.2
Total	**8**	**100.0**	**63**	**100.0**	**4**	**0.0**	**5**	**100.0**	**80**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 71 artifacts were analyzed and consisted of three cores, 62 pieces of debitage, four retouched tools, and two ground stone artifacts, which represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 33.11 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony, with less Pedernal chert, obsidian, silicified wood, and other materials. The presence of cortex on 19.3 percent of the debitage indicates that these materials were collected from waterworn (n = 11) and nodule (n = 1) sources. The chalcedony, Pedernal chert, and silicified wood are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. A piece of obsidian was the only artifact with nodule cortex. The igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 33.11. Lithic artifact type by material type from LA 85408.

Artifact Type		Material Type													
		Basalt	Vesic. basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Schist	Total
Cores	Core	0	0	0	0	0	0	0	1	0	1	0	0	0	2
	Cobble uniface	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	1	0	0	0	1	0	1	0	0	0	3
Debitage	Angular debris	0	0	0	0	0	0	3	5	0	3	0	0	0	11
	Core flake	3	0	0	1	0	0	2	26	0	9	8	0	0	49
	Biface flake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Microdeb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Und. flake	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	Subtotal	3	0	0	1	0	0	5	33	0	12	8	0	0	62
Retouched Tools	Retouched piece	1	0	1	0	0	0	0	1	0	0	0	0	0	3
	Biface	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Projectile point	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	1	0	1	0	0	0	1	1	0	0	0	0	0	4
Ground Stone	Grinding slab	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Polishing stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Total		**4**	**0**	**1**	**2**	**1**	**1**	**6**	**35**	**0**	**13**	**8**	**0**	**0**	**71**

Three pieces of obsidian and two pieces of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifacts were made from Cerro Toledo and Valle Grande materials (Table 33.12). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) and the Valle Grande (Cerro del Medio) source areas are located about 19 km (12 mi) and 17 km (11 mi) to the southwest and west of the site. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present in the site area as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval and are scattered across the mesa top. The X-ray fluorescence analysis also indicates that the two basalt pieces of debitage are probably basalt and not dacite.

Table 33.12. Obsidian source samples.

FS #	Artifact	Color	Source
45	Debitage	Translucent	Cerro Toledo rhyolite
63	Debitage	Translucent	Cerro Toledo rhyolite
78	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The two cores were reduced using a single-directional, single, and multi-face technique. Flakes were removed from an unprepared cortical platform on a cobble uniface (Figure 33.5). The two cores were discarded due to material flaws and extensive hinging/stepping, whereas the cobble uniface was considered still useable. Table 33.13 presents the metric information on the cores.

Table 33.13. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	54	46	59	154.5
Single-directional	53	79	64	274.6
Cobble Uniface	48	86	102	553.9

The debitage consists primarily of core flakes, with fewer angular debris and undetermined flake fragments. The overall cortical:non-cortical ratio of 0.41 reflects an emphasis on the later stages of core reduction. The flakes mostly have single-faceted platforms (n = 19), with fewer cortical (n = 5) and collapsed (n = 8) platforms. None of the platforms exhibit any obvious evidence of preparation. The majority of the core flakes are whole (n = 24), with fewer proximal (n = 8), midsection (n = 4), distal (n = 12), and lateral (n = 1) fragments. The whole core flakes have a mean length of 27.4 mm (*std* = 9.7) and the angular debris a mean weight of 2.2 g (*std* = 4.5).

The retouched tools consist of retouched pieces and a biface. The retouched pieces consist of two small flakes with retouch along a distal end and a lateral side. This is unidirectional retouch with edge angles of 65 degrees. The other retouched piece was made on a large flake with unidirectional dorsal retouch along two lateral sides and edge angles of 60 degrees. The biface is a small base fragment that could have been broken during the late-stage reduction process (i.e., a projectile point preform).

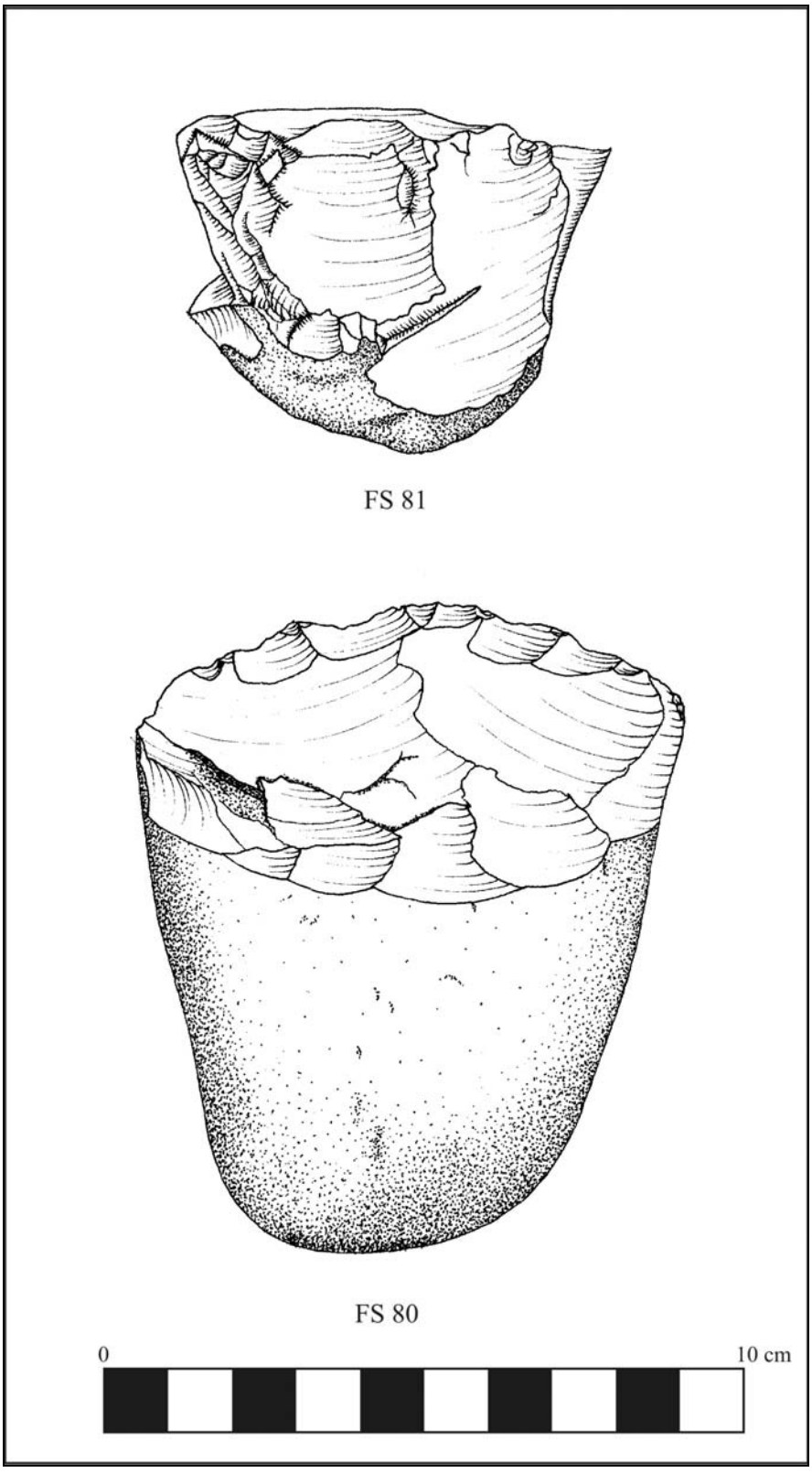


Figure 33.5. Cobble uniface and single-directional core.

Tool Use

Two of the retouched pieces exhibit evidence of edge damage that could be attributed to use. One of the small retouched flakes has a slight projection with rounding/polish, whereas, the large retouched flake exhibits rounding/polish wear along both retouched edges. None of the flakes exhibited similar use damage.

The ground stone consists of a grinding slab and polishing stone. The grinding slab is a large tuff rock with a concave surface that appears to be natural with little or no obvious grinding or striations. Therefore, it might actually represent site furniture rather than a grinding slab. The polishing stone is a small dacite pebble with a flat polished surface.

Faunal Remains (Kari Schmidt)

One piece of bone was recovered from 107N/105E (Stratum 2, Level 2). The bone was an unidentified piece of medium/large-sized mammal bone. The bone was unburned and contained an old break.

Archaeobotanical Remains (Pamela McBride)

Possible piñon nutshell was the only cultural plant material not directly related with firewood use that was found in the fieldhouse (Table 33.14). A total of five pieces of unknown conifer wood, four from the middle fill of the pit and one from post-occupational fill were also recovered. Modern debris included unburned goosefoot, prickly pear, and sedge seeds, grass florets, piñon nutshell, and conifer twigs and needles.

Table 33.14. Flotation plant remains, count, and abundance per liter from LA 85408.

FS No.	**41**	**42**	**57**
Context	Middle fill, round pit	Lower fill, round pit	Post-occup. fill, Room 1
Cultural			
Perennials			
Piñon			needle +, cf. nutshell +
Ponderosa pine	needle +	needle +	needle +
Non-Cultural			
Annuals			
Goosefoot			+
Grasses			
Grass family			floret +
Perennials			
Juniper	twig +		twig +
Piñon			needle +, nutshell +
Ponderosa pine			needle +

FS No.	41	42	57
Context	Middle fill, round pit	Lower fill, round pit	Post-occup. fill, Room 1
Prickly pear cactus			+
cf. Sedge			+

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, cf. compares favorably.

Pollen Remains (Susan Smith)

Three pollen samples were analyzed from LA 85408. Table 33.15 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage. Sedge was the only other economic resource that was identified. A number of potential economic resources were also identified in the assemblage (Table 33.15).

Table 33.15. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85408 (*n* = 3)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	1
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85408 (*n* = 3)
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	1
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	3
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	2
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85408 (*n* = 3)
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Potential Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	1
	Pinus	Pine	3
		Pine Aggregates	0
	Pinus edulis type	Piñon	3
	Juniperus	Juniper	2
		Juniper Aggregates	0
	Quercus	Oak	3
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	1
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85408 is a one-room Middle Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is situated on a ridge to the north of Rendija Canyon. Maize pollen was recovered during the site excavation, therefore, the one-room structure was presumably occupied during the growing season.

CHAPTER 34
RENDIJA TRACT (A-14): LA 85411

Gregory D. Lockard

INTRODUCTION

LA 85411 consists of the remains of a small Early/Middle Classic period structure and a possible feature. The site is located on a south-facing ridge on the mesa between Rendija and Guaje canyons. The structure is located a few m south of a two-track dirt road. The possible feature is located approximately 30 m to the south of the structure, at the southern edge of the ridge. Vegetation on the site consists of piñon-juniper woodland with a grass understory. The site is situated at an elevation of 2134 m (7000 ft).

The LA 85411 structure was first recorded on August 16, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. Hill believed the structure was a one-room fieldhouse. Surface Biscuit A sherds indicated that the structure was most likely occupied during the Classic Period (AD 1325–1600). On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992. A single 1- by 1-m test pit (Unit A) was excavated within the LA 85411 structure. In addition, Peterson and Nightengale recorded and excavated a single 1- by 1-m test pit (Unit B) within the possible feature. Unit A was excavated to a sterile Pleistocene soil at a maximum depth of 36 cm below the ground surface. Artifacts recovered during the excavation of Unit A included one obsidian flake and eight sherds (one Biscuit A, one brown utilityware, and seven smeared-indented corrugated sherds).

Unit B was excavated to a maximum depth of 35 cm below the ground surface. No distinct rock alignments or living surfaces were encountered during the excavation. However, two pieces of chipped stone and two ceramic sherds (an unidentified Biscuitware sherd and a micaceous utilityware sherd) were recovered from the excavation. In addition, seven pieces of chipped stone, a small piece of ground stone (a mano fragment), and 21 ceramic sherds (one smeared-indented, four Biscuit B, and 16 Biscuit A sherds) were recovered during a surface collection of the site. Peterson and Nightengale (1993) concluded that the area in and around Unit B was either not a cultural feature or was an ephemeral construction that was no longer intact. As a result, they argued that the research potential of this area of the site was exhausted by the excavation of Unit B. This area of the site was therefore not excavated during the Conveyance and Transfer (C&T) Project.

FIELD METHODS

The excavation of LA 85411 began during the 2004 field season and was completed during the 2005 field season of the C&T Project. In 2004, the LA 85411 structure and surrounding area

(Area 1) were cleared of trees and large undergrowth. The structure was then visible as a rubble mound approximately 5 m across (Figure 34.1).

Figure 34.1. Pre-excavation photo of the mound at LA 85411.

An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 7 m north and 9 m east of the site datum. Two subdata (A and B) were set up for taking elevations. The site was then photographed. A single piece of ground stone (Field Specimen [FS] 1) was the only artifact visible on the surface, most likely due to the fact that the site had been previously surface collected by Peterson and Nightengale (1993). An 8- by 1-m east-west trench (units 103N/100-107E) was initially excavated across the center of the rubble mound. The excavation of the trench was begun in 2004 and completed in 2005. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the structure's east and west walls.

Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. The trench passed through a single room, designated Room 1. The east and west walls of Room 1 were encountered just below the surface. Within the structure, the trench units were excavated to the room's living surface, which was well-preserved in several patches in the eastern half of the room. Outside of the structure, the trench units were excavated to the top of a sterile Bwb1 horizon. The easternmost unit in the trench (103N/107E) was chosen to serve as a test pit (Test Pit 1) for geological analysis. This unit was excavated to intact Cerro Toledo bedrock. The

northern profile of the trench was then drawn and photographed. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 48 units were excavated. Within Room 1, excavation proceeded down to the living surface encountered while excavating the trench. During the excavation of units to the east of Room 1, a second, adjacent room was encountered. This smaller room was designated Room 2. Within Room 2, excavation proceeded down to a similar, although lower and less-well-preserved, living surface.

Outside of the structure, excavation terminated at the top of the sterile Bwb1 horizon. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The site was then photographed (Figure 34.2) and mapped (Figure 34.3).

Figure 34.2. Post-excavation photo of the fieldhouse at LA 85411.

A second, smaller test pit (Test Pit 2) was excavated beneath the living surface in Room 1. Test Pit 2 comprises the northernmost 35 cm of that portion of unit 103N/101E that is within Room 1. The purpose of excavating this test pit was to determine the nature of the subfloor stratigraphy in Room 1, as well as to determine the depth of the room's wall foundations.

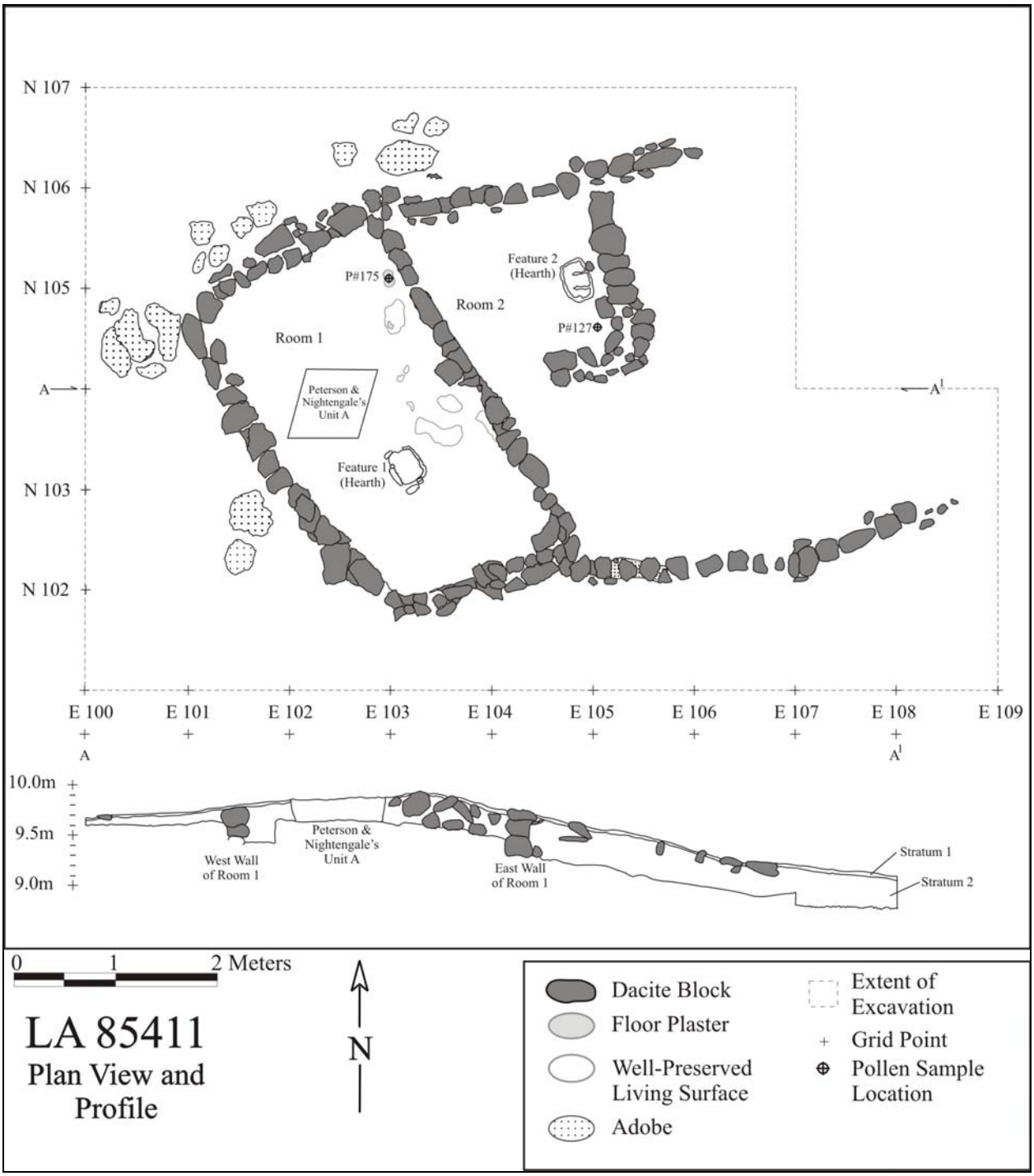


Figure 34.3. Plan view and profile of LA 85411.

During the 2004 field season, the excavation of the site was supervised by Michael Dilley. The field crew included Alan Madsen, Sandi Copeland, and Hannah Lockard. During the 2005 field season, the excavation of the site was supervised by Gregory Lockard. The field crew included Michael Dilley, Joseph (Woody) Aguilar, Kevin Hanselka, Brandon Gabler, Margaret Dew, and Samuel Duwe. Timothy Martinez and Aaron Gonzalez served as site monitors from San

Ildefonso Pueblo and as screeners. Jeremy Yepa served as site monitor from Santa Clara Pueblo and as an additional excavator.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly 1 to 5 cm thick across Area 1 and is roughly equivalent to the A horizon (i.e., topsoil) documented in Test Pit 1. Stratum 2 is post-occupational fill and ranges from 5 to 45 cm in thickness in Area 1. This fill was thickest in and around the collapsed walls of the structure, and thinned away from the walls and towards the center of the rooms. Stratum 2 is roughly equivalent to the Bw horizon documented in Test Pit 1. Stratum 3 is the fill from the hearth in Room 1 (Feature 1), Stratum 4 is the Room 2 living surface, Stratum 5 is the fill from the hearth in Room 2 (Feature 2), and Stratum 6 is the Room 1 living surface. Stratum 7 is the subfloor sediment excavated in Test Pit 2 (i.e., the Btjb1 horizon). This horizon is slightly more developed but otherwise similar to the Bwb1 horizon in documented in Test Pit 1. Tables 34.1 through 34.4 describe and summarize the strata at the site.

Table 34.1. LA 85411 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4/3	Loamy sand	1–5	Surface sediment
2	10YR 4/3	Sandy loam	5–45	Post-occupational fill
3	10YR 4/2	Sandy loam	10	Feature 1 (hearth) fill
4	10YR 4/3	Clay loam	-	Room 2 living surface
5	10YR 4/2	Sandy loam	10	Feature 2 (hearth) fill
6	10YR 4/3	Clay loam	10	Room 1 living surface
7	-	-	20	Middle/late-Holocene soil

Table 34.2. LA 85411 soil horizon descriptions from the north profile of Geological Test Pit 1 (103N/107E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/3	Loamy sand	0–4	Topsoil
Bw	10YR 4/3	Sandy loam	4–14	Late-Holocene soil
Bwb1	7.5YR 5/3	Sandy loam	14–30	Middle/late-Holocene soil
R	-	-	30+	Cerro Toledo bedrock

Table 34.3. LA 85411 soil horizon descriptions from the west profile of Test Pit 2.

Horizon	Color	Texture	Elevation (cm)	Description
Bw2	-	-	~20–30	Room 1 floor matrix
Btjb1	-	-	~30–44+	Slightly more developed than but otherwise similar to the Bwb1 horizon in Test Pit 1

Table 34.4. LA 85411 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	2	1	1	0	**4**
1	23	10	0	0	**33**
2	294	92	4	4	**394**
3	3	1	0	0	**4**
4	0	0	0	0	**0**
5	0	0	0	0	**0**
6	0	0	0	0	**0**
7	0	0	0	0	**0**
Total	**322**	**104**	**5**	**4**	**435**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a fairly large, rectangular room in a two-room structure that probably functioned as a fieldhouse or small hamlet. The room measures 3.60 m in length (northwest to southeast) by 1.95 m in width (northeast to southwest), with approximately 7.02 m^2 of interior space (Figure 34.4).

Figure 34.4. Room 1 after excavation.

Excavation of the room began with an east-west trench that extended across the site (103N/100-107E). The excavation of this trench served to define the room's stratigraphy as well as to locate the room's east and west walls. A compact living surface was encountered between the east and west walls. The living surface was well-preserved in several patches within units 103N/103-104E (i.e., the eastern half of the room). In addition, a slab-lined hearth (Feature 1) was discovered in unit 103N/103E. After the excavation of the trench, the rest of the room was excavated to the living surface. Additional patches of well-preserved living surface, as well as two patches of floor plaster, were encountered in the northeast corner of the room.

Excavation of the Room 1 fill included the backfill from Peterson and Nightengale's Unit A. No artifacts were recovered from the backfill, which was excavated separately from the surrounding post-occupational fill. After the entire Room 1 living surface was exposed, Feature 1 was excavated. Room 1 was thereafter mapped, photographed, and documented. Test Pit 2 (the northernmost 35 cm of that portion of unit 103N/101E that is within Room 1 was then excavated below the room's living surface. The purpose of excavating this test pit was to determine if there were additional floors or living surfaces below, as well as to ascertain the depth of the room's wall foundations. The test pit reached a maximum depth of 23 cm below the living surface. No additional living surfaces were encountered.

Fill. The interior of Room 1 was filled with 1 to 5 cm of surface sediment (Stratum 1) on top of 15 to 35 cm of post-occupational fill (Stratum 2). The fill was thinnest in the easternmost portion of the room and thickened to the west (i.e., downhill). Flotation (FS 66) and pollen (FS 67) samples were taken of the Room 1 fill, but these samples were not analyzed.

Floor. A fairly well-preserved living surface was encountered throughout most of Room 1. The only location where the living surface was not well-preserved was in the southeast corner of the room. In this area, the living surface was badly disturbed by roots. The living surface was best preserved in several patches in the northeast corner and east-central portion of the room. Two patches of floor plaster were in fact encountered in the northeast corner of the room (Figure 34.5). Excavation of Test Pit 2 revealed a 10-cm-thick layer of clay-rich mud that functioned as the floor's foundation. The reason for the considerable thickness of the floor foundation is unclear. It may have at least partially functioned to level the Room 1 living surface. The floor foundation was then capped by a thin layer of plaster, which was only preserved in two small patches at the time the room was excavated.

Pollen samples were taken from directly on top of the living surface in the southwest corner (FS 81, not analyzed), northeast corner (FS 63 [not analyzed] and 175), and along the eastern edge (FS 31) of the room. One of these samples (FS 175) was scraped from directly on top of a patch of floor plaster. Taxa identified in this sample included rose family, grass family, cheno-ams, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Taxa identified in FS 31 included maize, cheno-ams, pea family, sunflower family, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush. In addition, flotation (FS 33) and pollen (FS 34) samples were taken from a clump of adobe located directly on top of the living surface in the northwest corner of the room, but were not analyzed. This adobe was most

likely the partially dissolved remains of a piece of wall or rooffall. Similar clumps of adobe were found just outside of the room to the north and west.

Figure 34.5. Living surface identified in Room 1.

Wall Construction. The extant portions of the Room 1 walls indicate that the wall foundations were composed of dacite cobbles. These rocks were placed into a shallow trench dug into the compact Btjb1 or Bwb1 horizons that predate the site's occupation. What remains of the second and third courses of the walls indicate that they were composed mostly of oblong dacite cobbles. In most places, the walls were composed of a single row of rocks. Most of the south wall and part of the north wall, however, were composed of two rows of smaller rocks. There was no break in any of the walls to indicate the location of the room's entryway. The room's entryway therefore had a substantial doorsill. The living surface in Room 2 sloped up to the level of the Room 1 living surface in the northwest corner of Room 2. This suggests that there may have been an entryway that led from the northwest corner of Room 2 into the northeast corner of Room 1. If this is the case, the doorsill was up to 20 cm tall on the Room 1 side of the entryway.

A substantial auxiliary wall extended approximately 2 m due east from the southeast corner of Room 1. The wall then gently curved northwards. The wall measured 3.30 m in total length and had similar width and height dimensions to the extant portions of the Room 1 perimeter walls. The wall most likely functioned to define the southern border of an outdoor activity area (see below). If this is the case, the wall was most likely only a single course high. This interpretation

is supported by the fact that increasingly smaller amounts of wallfall were encountered away from Room 1 (i.e., to the east) on either side of the auxiliary wall.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the room's masonry was originally considerably higher than it was at the time of excavation. In order to estimate the original height of the masonry, all of the rocks removed as wallfall during the site's excavation were placed in seven stacks, which were then measured. The stacks measured 2.05 by 0.33 by 0.43 m, 2.35 by 0.37 by 0.43 m, 1.40 by 0.40 by 0.47 m, 3.25 by 0.42 by 0.45 m, 2.30 by 0.67 by 0.40 m, 1.60 by 0.60 by 0.58 m, and 2.30 by 0.40 by 0.67 m, for a total of approximately 3.33 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the Room 1 wall masonry was originally approximately 1.03 m in height (Table 34.5). This figure assumes that the Room 1 auxiliary wall and the eastward extension of the north wall of Room 2 were only one course high. It also assumes that the Room 1 and Room 2 masonry were the same height. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. Several large clumps of adobe, which were most likely the partially dissolved remains of wallfall from this section of the walls and/or rooffall, were discovered both within and just outside to the north and west of Room 1. These clumps of adobe were sampled. They were not collected, however, due to the fact that they were partially dissolved, which made it difficult to clearly distinguish them from the surrounding sedimentary matrix.

Table 34.5. LA 85411 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.87	0.08–0.22	0.12–0.44	1 to 2
South	1.75	0.10–0.27	0.20–0.40	1 to 2
East	3.65	0.10–0.25	0.14–0.33	2 to 3
West	3.32	0.04–0.32	0.15–0.34	2 to 3
Auxiliary	3.30	0.20–0.38	0.15–0.32	1

Feature 1

Feature 1 is a small, elliptical pit hearth located in the south-central portion of Room 1 (Figures 34.6 and 34.7). Most of the north, south, and west walls of the hearth were formed by upright dacite slabs or small dacite cobbles. There was only a single small dacite cobble along the hearth's eastern margin. The remainder of the hearth's perimeter may have been formed by an adobe collar. If this is the case, however, nothing remained of the collar. The interior of the hearth was lined with a fairly thick layer of adobe plaster that was hardened by the heat associated with the hearth's use. The entire hearth measured 60 cm north to south by 44 cm east to west. The interior of the hearth was 41 cm north to south by 34 cm east to west. The hearth was 22 cm deep as measured from the top of the highest perimeter rock to the base of the hearth, and contained approximately 10 cm of ashy fill. Three flotation samples were taken of the ashy fill from the northern (FS 76, FS 77, and FS 78) and southern (FS 111, FS 112, and FS 118) halves of the hearth. Charred taxa identified in the northern half included mountain mahogany, piñon pine, ponderosa pine, oak, goosefoot, maize, unknown conifer, and unidentified pine. Charred taxa identified in the southern half included mountain mahogany, unknown conifer,

piñon pine, ponderosa pine, unidentified pine, and maize. In addition, a pollen sample was taken from the base of the hearth's northern (FS 180) and southern (FS 174) halves. Taxa identified in the sample from the northern half included grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, and sagebrush, while those identified in the southern half included rose family, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

Figure 34.6. Pit hearth (Feature 1) in Room 1 at LA 85411.

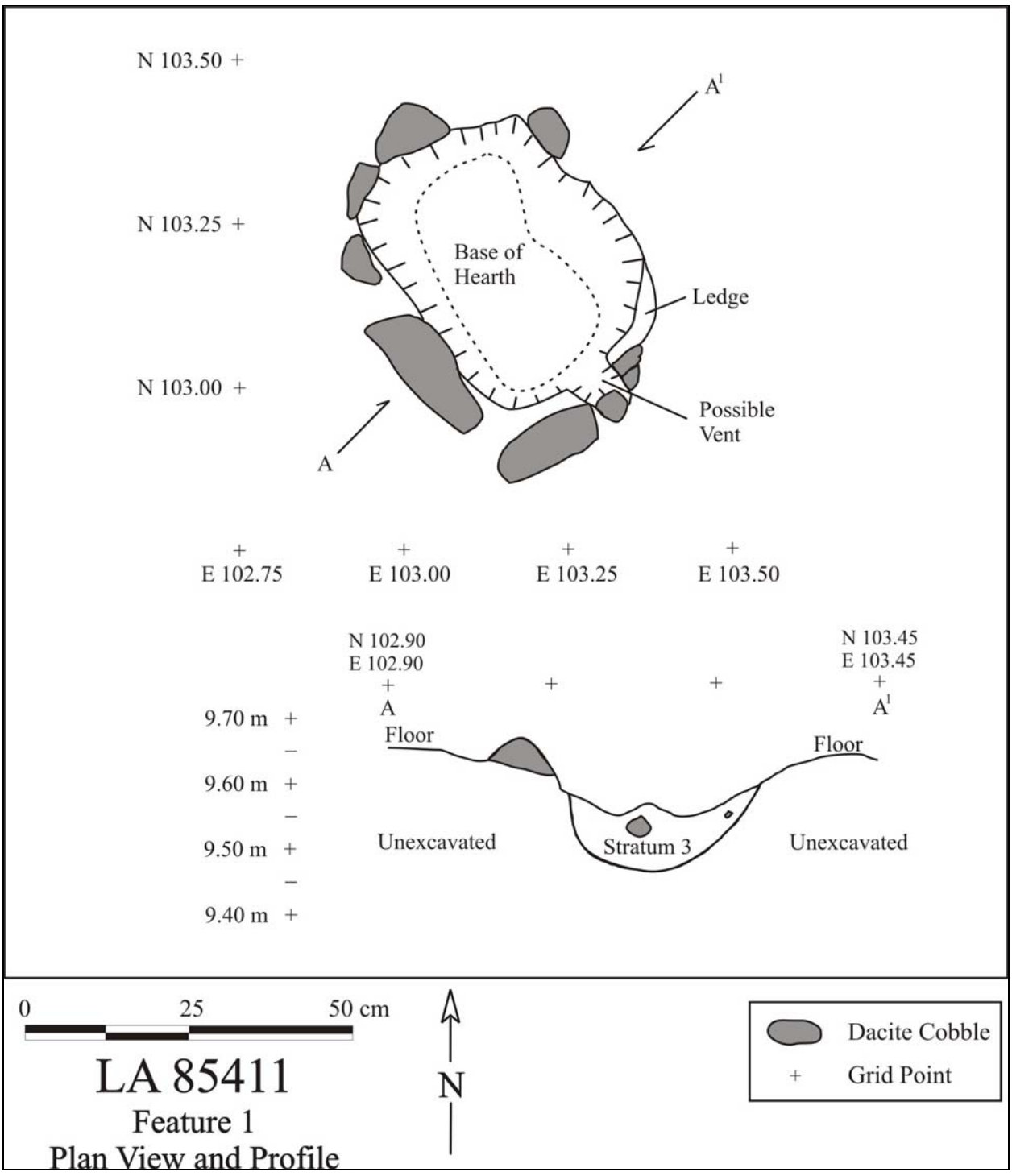


Figure 34.7. Plan view and profile of Feature 1.

Room 2

Sequence of Excavation. Room 2 is a small room that shares a wall with Room 1 (Figure 34.8). The room's north, east, and south walls have a slightly different orientation than the Room 1 walls, including the wall that the two rooms share (i.e., the west wall of Room 2). This strongly suggests that Room 2 was constructed at a later time than Room 1, and was therefore an addition. The room measured 1.58 m north to south by 1.55 m east to west, with approximately 2.45 m^2 of interior space. Room 2 was not visible as a separate room before the excavation of the site. In addition, the east-west trench excavated across the site did not pass through any portion of the room. As a result, Room 2 was only discovered while excavating the exterior of Room 1. During the excavation of the units surrounding Room 1, several walls were encountered to the east of the room. These walls were eventually identified as the walls of a separate room. Once the extent of the room was defined, excavation within proceeded to a compact surface similar, although less well preserved, to the Room 1 living surface. During the excavation of the interior of Room 2, a small hearth was encountered. This hearth was designated Feature 2, and excavated only after the excavation of the rest of the room was complete.

Figure 34.8. Post-excavation photograph of Room 2 at LA 85411.

Fill. The interior of Room 2 was filled with 1 to 3 cm of surface sediment (Stratum 1) on top of 20 to 40 cm of post-occupational fill (Stratum 2). The fill was thickest in and around the room's collapsed walls, and thinned away from the walls and towards the center of the room. No

samples were taken of Room 2 fill. This is because much of the room's interior had already been excavated by the time it was identified as a separate room.

Floor. The Room 2 living surface was a compact surface composed of rocks, sand, and clay from a Pleistocene soil. There was a thin layer of blackened, ash-stained sediment in much of the eastern half, and especially the southeast corner, of the room. This thin layer of ashy sediment was the best evidence of a floor, and was designated Stratum 4. Much of the living surface in Room 2 appears to have been leveled. The eastern half and west-central portion of the room are relatively flat compared to the surrounding surface, which slopes down to the east and south. In the northwest corner of the room, the surface slopes up to the wall that divides Rooms 1 and 2. The living surface in this area forms a slight ramp that leads to a possible entryway between Rooms 1 and 2. If this is an entryway between the rooms, it had a doorsill that was up to 27 cm tall on the Room 2 side. The living surface is also sloped in the southwest corner of the room. In this location, the living surface slopes downward to the south through an entryway into the room from outside. This entryway is located in the western half of the room's south wall.

A pollen sample (FS 127) and a charcoal sample (FS 128) were taken from the ashy surface in the room's southeast corner. Taxa identified in the pollen sample included rose family, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, oak, and sagebrush, while the charcoal sample was not analyzed. Pollen samples were also taken from the northwest (FS 176) and northeast (FS 177) corners of the room. These samples were designated Stratum 2, however, because there was no clearly definable living surface in this area. Only FS 177 was analyzed and identified taxa included squash, grass family, cheno-ams, sunflower family, ragweed/bursage, unidentified pine, piñon pine, oak, and sagebrush. No artifacts were recovered from directly on top of the Room 2 living surface.

Wall Construction. The north, south, and east walls of Room 2 do not share the same orientation as the wall that divides Rooms 1 and 2 and the other walls in Room 1. The former are more closely oriented with the cardinal directions. The fact that the common wall shares the orientation of the other walls of Room 1 and not those of Room 2 indicates that the latter is a later addition to the former. The north wall of Room 2 extends approximately 1 m beyond the room's east wall. The function of this eastward extension is unknown. The south wall of Room 2 is essentially a short, right-angle continuation of the east wall. The room's north, east, and west walls were constructed of a single row of upright dacite slabs and dacite cobbles. The south wall, on the other hand, was composed of two rows of smaller dacite cobbles (Table 34.6).

The entryway into Room 2 from outside is located in the western half of the south wall. There does not appear to have been any doorsill. The living surface slopes down to the south as it passes through the entryway. There may have been an entryway between Rooms 1 and 2 in the northernmost portion of the rooms' common wall. This possible entryway is indicated by the fact that the living surface in the northwest corner of Room 2 slopes up towards the common wall. If there was an entryway in this location, it had a doorsill that was up to 27 cm tall on its Room 2 side. Small rocks line both the interior and exterior faces of the Room 2 walls, especially the north wall (including the eastward extension). The small rocks along the room's interior wall faces probably served as foundations for floor coping.

Based on the volume of wallfall removed during the excavation of LA 85411 and the overall length, average thickness, and average height of the extant portions of the walls, the Room 2 masonry was originally approximately 1.03 m in height (see above). The uppermost portion of the walls and ceiling were most likely composed of wattle and daub. Several large but amorphous clumps of adobe were in fact encountered in the area directly north of Room 2. These clumps of clay are most likely the partially dissolved remains of wall or roof fall from Room 1 and/or Room 2.

Table 34.6. LA 85411 Room 2 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.80 (3.00)	0.08–0.22	0.16–0.28	1
South	0.83 (1.35)	0.08–0.16	0.20–0.34	1
East	1.50	0.09–0.18	0.16–0.35	2
West	~1.75	0.15–0.45	0.12–0.34	1 to 2

Note: The length of the north wall including its eastward extension and the length of the south wall including the entryway are given in parentheses.

Feature 2

Feature 2 is a small pit hearth located just inside the east wall of Room 2 (Figures 34.9 and 34.10). The remains of an adobe collar were encountered in the northwest corner of the hearth. Presumably, this collar originally encircled the entire hearth. Two small dacite cobbles were encountered between the eastern border of the hearth and the east wall of Room 2. These rocks most likely functioned to further define the hearth's eastern border. No rocks, however, were found along the hearth's northern, southern, or western boundaries. The hearth's interior was originally lined with a thin layer of adobe plaster that was burned during the hearth's use. This plaster has been significantly disturbed, however, most recently by a number of roots. What remains of this plaster lining is extremely thin and friable. As a result, it was not possible to take archaeomagnetic samples from the hearth.

Geological Test Pits

Geologists Paul Drakos and Steven Reneau utilized two profiles to reconstruct the natural soil horizons at the site. The first was the north profile of Test Pit 1 (unit 103N/107E). This profile contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), a Bwb1 horizon (a middle/late-Holocene soil), and an R horizon (Cerro Toledo bedrock) (see Table 34.2 and Figure 34.11). The second profile examined was the west profile of Test Pit 2. Test Pit 2 is the subfloor excavation of the northernmost 35 cm of that portion of grid unit 103N/101E that is within Room 1. The purpose of excavating this test pit was to determine whether or not there were additional living surfaces below, as well as to determine the depth of the Room 1 wall foundations. The west profile of Test Pit 2 contained a soil sequence consisting of a Bw2 horizon on top of a Btjb1 horizon (see Table 34.3 and Figure 34.12). The Bw2 horizon is a culturally constructed layer of clay-rich sediment that is approximately 10 cm thick. This layer functioned as the foundation of the Room 1 floor. It is unknown why the floor foundation

was made so thick. The Btjb1 horizon is slightly more developed than, but otherwise similar to, the Bwb1 horizon encountered in Test Pit 1.

Figure 34.9. Post-excavation photo of Feature 2 at LA 85411.

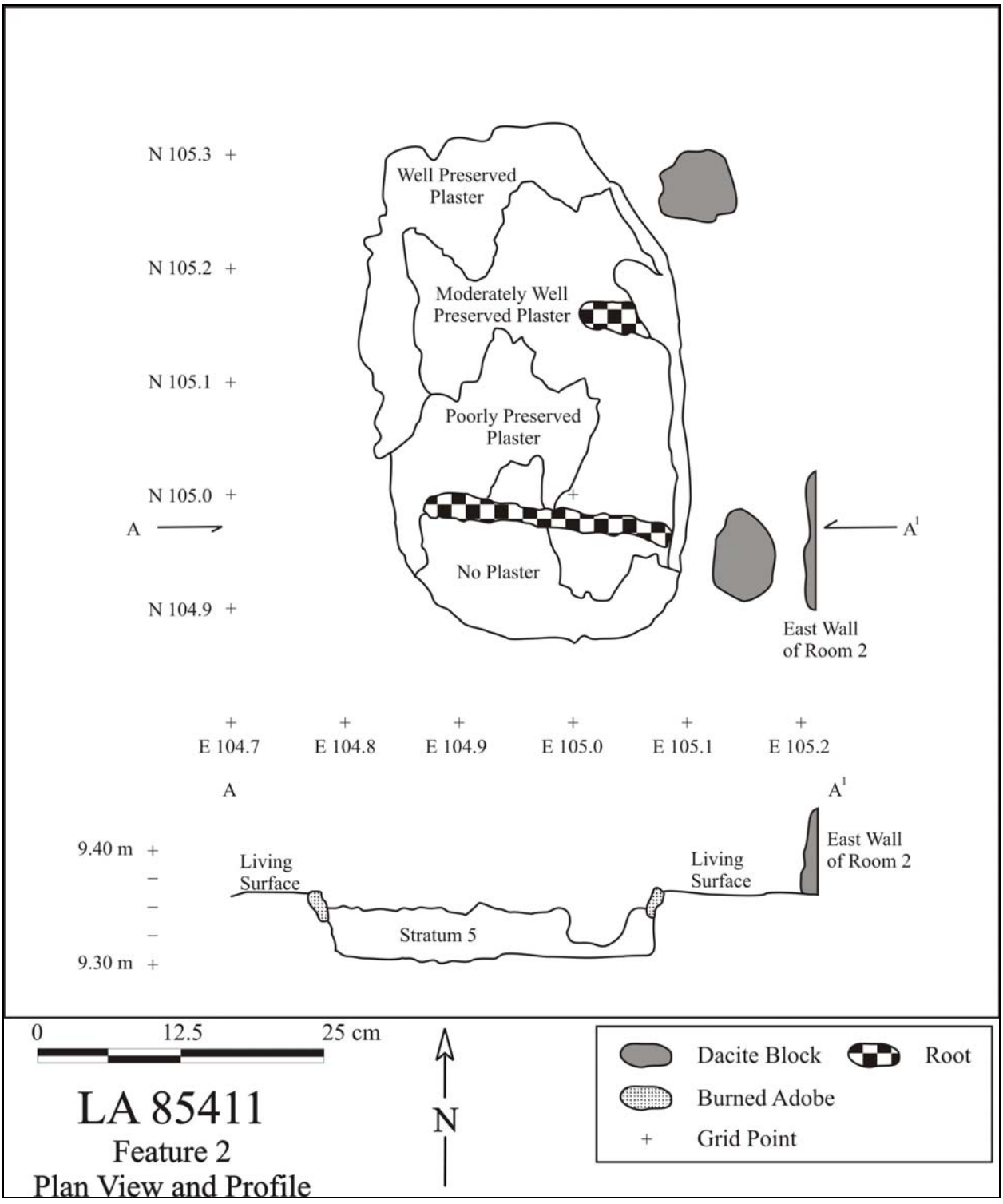


Figure 34.10. Plan view and profile drawings of Feature 2 (hearth) in Room 2 at LA 85411.

Figure 34.11. Photograph of the north profile of Test Pit 1 (103N/107E).

Figure 34.12. Photograph of the west profile of Test Pit 2 (subfloor excavation of the northernmost 35 cm of that portion of 103N/101E that is within Room 1).

Artifact Distribution

As Table 34.7 demonstrates, the highest concentration of artifacts at LA 85411 was in the area to the east of Rooms 1 and 2, to the south of the eastward extension of the north wall of Room 2, and to the north of the Room 1 auxiliary wall. This area, which is circumscribed on all but its eastern border, most likely functioned as an outdoor activity area for the site's residents. A higher concentration of artifacts was also encountered in the units to the south of the easternmost section of the Room 1 auxiliary wall (101N/107-108E). This is most likely the result of site formation processes (i.e., the artifacts are washed down from the area to the west). There is also a slightly higher concentration of artifacts in the northern half of Room 2 (105N/103-104E), and a significantly higher concentration in the unit directly north of the eastern half of Room 2 (106N/104E). The reason for the increased concentration of artifacts in these areas is unknown.

Table 34.7. LA 85411 artifact counts by grid unit.

	E100	E101	E102	E103	E104	E105	E106	E107	E108
N106	0	3	0	0	40	13	2	--	--
N105	0	**0**	**1**	***12***	*14*	*9*	29	--	--
N104	1	**3**	**4**	***3***	*4*	*50*	47	--	--
N103	1	**11**	**5**	**9**	**4**	16	13	3	9
N102	4	4	**6**	**7**	**6**	30	8	2	4
N101	0	2	1	**2**	1	7	0	25	19

Note: One artifact was collected from the surface of a grid unit that was not excavated (107N/95E); bold numbers indicate grid units that are located completely or partially within Room 1, and italic numbers indicate grid units that are located completely or partially within Room 2.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 429 artifacts were analyzed from the excavations conducted at LA 85411. In addition, flotation and pollen samples were selected for analysis from the post-occupation fill (Stratum 2), Feature 1 hearth fill (Stratum 3), Room 2 living surface (Stratum 4), and Feature 2 hearth fill (Stratum 5) (Table 34.8). Maize was submitted for radiocarbon dating, two Biscuit A sherds were selected for thermoluminescence (TL) dating, pieces of the floor plaster of the hearth in Room 1 were submitted for archaeomagnetic dating, and five pieces of obsidian were submitted for hydration dating. The results of the artifact and sample analyzes are presented in the following sections.

Table 34.8. Samples selected for analysis from LA 85411.

	Sample Type				
Stratum	**Flotation**	**Pollen**	**Archaeomag**	**Radiocarbon**	**TL**
1					
2		31, 177			30, 68
3	76, 77, 78, 111, 112, 118	174, 180	Set 1282	78	

Stratum	Sample Type				
	Flotation	Pollen	Archaeomag	Radiocarbon	TL
4		127			
5	136, 137, 138, 178	173			
6		175			
7					

Chronology

Radiocarbon Dating

One maize sample was submitted for accelerator mass spectroscopy dating. This specimen was derived from a flotation sample taken of the Feature 1 hearth fill (FS 78). The sample provided a date of 630±40 BP (Beta-221840), with calibrated intercepts of AD 1310, AD 1370, and AD 1380 and a two-sigma range of AD 1290 to 1410.

Archaeomagnetic Dating

Nine specimens were collected as a set (ADL 1282) from a hearth (Feature 1) in Room 1. No specimens could be collected from the hearth walls or rim, and all were collected from the plaster lining of the hearth floor. Table 34.9 shows the single archaeomagnetic result. Blinman and Cox's chapter (Volume 3, Chapter 66) should be consulted for additional information.

Table 34.9. Archaeomagnetic (AM) results from LA 85411.

Sample	Site	Feature	Inc.	Dec.	VGP* Lat.	VGP Long.	$\forall_{95}$	$*_p$	$*_m$	N	De-mag level	AM Date ranges (AD)	
												Wolfman or *DuBois*	SWCV2000
1282	LA85411	Room 1, Feature 1	-9.724	317.3	32.882	127.31	13.623	6.696	13.772	9/8	NRM	N/A	N/A

*VGP is virtual geomagnetic pole

Thermoluminescence Dating

Two Biscuit A sherds were submitted for TL dating from LA 85411 (Table 34.10). All derived ages are given in years BP, which refers to years before 2003. The 14th century date appears to correspond with the radiocarbon dates and the 13th century date does have a large sigma that includes the early 14th century. The ages did not differ at two sigma, and the weighted average is AD 1371±40.

Table 34.10. TL dates from Biscuit A ceramics at LA 85411.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
30	UW1502	Sherd, Room 1, Stratum 3	20	611	7.1	1395±43
68	UW1503	Sherd, Room 1, Stratum 2	25	801	14.2	1205±114

Obsidian Hydration Dating

Five obsidian artifacts from LA 85411 were submitted for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 34.11).

Table 34.11. Obsidian hydration dates for LA 85411.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
24	2006-59	Valle Grande	3.55	488	84
44	2006-60	Valle Grande	5.80	221	60
91	2006-61	Valle Grande	2.07	325	161
145	2006-62	Cerro Toledo	5.26	1018	36
148	2006-63	Cerro Toledo	5.82	1154	28

Relative to other dating methods conducted at the site, the obsidian hydration dates seem to be the least accurate. Radiocarbon and TL dates indicate a 14th century date, while the obsidian samples indicate Late Archaic and Developmental period dates.

Ceramic Artifacts (Dean Wilson)

A total of 320 ceramics were analyzed from LA 85411. The majority of the pottery consists of Sapawe Micaceous, with Biscuit A, Biscuit B, and Biscuit B/C (Biscuit B?) sherds (Table 34.12). This assemblage indicates a late 14th century or early 15th century occupation for the site, which is commensurate with the radiocarbon date. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 34.13 to 34.15. The graywares and whitewares appear to have been locally made from local tuff temper. This contrasts with the Sapawe Micaceous pottery, which appears to have been derived from a non-local and local source. The former is represented by a micaceous temper and the latter by a tuff temper with a

micaceous slip. All of the grayware and micaceous ceramics consist of jar vessel forms while the whiteware sherds were solely derived from bowls.

Table 34.12. Ceramic types from LA 85411.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	8	2.5
Indeterminate organic	9	2.8
Santa Fe Black-on-white	2	0.6
Biscuit unpainted one side slipped	3	0.9
Biscuit unpainted both sides slipped	2	0.6
Biscuit painted unspecified	2	0.6
Biscuit paint and slip absent	1	0.3
Biscuit A	43	13.4
Biscuit B	7	2.2
Biscuit B/C body	11	3.4
Northern Rio Grande Utilityware		
Plain gray body	14	4.4
Smeared-indented corrugated	14	4.4
Smeared plain corrugated	2	0.6
Sapawe Micaceous	202	63.1
Total	**320**	**100.0**

Table 34.13. Tradition by ware for LA 85411 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	30	100.0	88	100.0	0	0.0	0	0.0	118	76.2
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	202	100.0	202	23.8
Middle Rio Grande	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	**30**	**100.0**	**88**	**100.0**	**0**	**0.0**	**202**	**0.0**	**320**	**100.0**

Table 34.14. Temper by ware for LA 85411 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sand	16	53.3	0	0.0	0	0.0	0	0.0	16	5.0
Fine tuff or ash	0	0.00	2	22.7	0	0.0	0	0.0	2	0.6
Fine tuff and sand	0	0.0	84	95.4	0	0.0	0	0.0	84	26.2
Large tuff fragments	12	40.0	0	0.0	0	0.0	97	48.0	109	34.0
Mostly tuff with phenocrysts	0	0.0	0	0.0	0	0.0	5	2.4	5	1.5
Smeared-indented sand	2	6.6	0	0.0	0	0.0	0	0.0	2	0.6
Large tuff with smeared-indented sand	0	0.0	0	0.0	0	0.0	28	13.8	28	8.7

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Oblate shale and tuff	0	0.0	2	22.7	0	0.0	0	0.0	2	0.6
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	72	35.6	72	22.5
Total	**30**	**100.0**	**88**	**100.0**	**0**	**0.0**	**202**	**100.0**	**320**	**100.0**

Table 34.15. Vessel form by ware for LA 85411 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	1	1.1	0	0.0	0	0.0	1	0.3
Bowl rim	0	0.0	13	14.7	0	0.0	0	0.0	13	4.0
Bowl body	0	0.0	72	81.8	0	0.0	0	0.0	72	22.5
Jar rim	0	0.0	0	0.0	0	0.0	4	1.9	4	1.2
Jar body	29	96.6	0	0.0	0	0.0	198	98.1	227	70.9
Body sherd unpolished	0	0.0	2	2.2	0	0.0	0	0.0	2	0.6
Indeterminate rim	1	3.4	0	0.0	0	0.0	0	0.0	1	0.3
Total	**30**	**100.0**	**88**	**100.0**	**0**	**0.0**	**202**	**100.0**	**320**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 109 artifacts were analyzed from LA 85411, consisting of four cores, 95 pieces of debitage, four retouched tools, and six ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 34.16 presents the data on lithic artifact type by material type. The debitage is primarily made of obsidian, with less Pedernal chert, chalcedony, and other materials. The presence of cortex on 38.9 percent of the debitage indicates that these materials were collected from waterworn (n = 18) and nodule (n = 19) sources. The chalcedony, Pedernal chert, quartzite, and greenstone are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Nodule cortex is solely present on obsidian artifacts. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 34.16. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Greenstone	Total
Cores	Core	1	0	0	0	0	0	0	0	0	1	0	0	0	2

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Greenstone**	**Total**
	Tested material	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Cobble uniface	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	1	0	1	0	0	0	1	0	0	1	0	0	0	4
Debitage	Angular debris	0	0	0	0	0	0	6	1	0	4	0	0	0	11
	Core flake	0	0	1	3	6	0	25	15	0	18	0	0	0	68
	Biface flake	0	0	0	0	0	0	5	2	0	1	0	0	0	8
	Core trimming flake	0	0	0	0	0	0	1	0	0	1	0	0	0	2
	Hammer stone flake	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Microdeb.	0	0	0	0	0	0	2	1	0	0	0	0	0	3
	Und. flake	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	Subtotal	0	0	1	3	6	0	41	19	0	25	0	0	0	95
Retouched Tools	Endscraper	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Biface	0	0	0	0	0	0	1	1	0	0	0	0	0	2
	Projectile point	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	1	1	0	1	0	0	0	4
Ground Stone	Und. mano fragment	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	Millingstone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Axe	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Misc. ground stone	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Subtotal	0	0	0	0	3	0	0	0	0	0	0	2	1	6
Total		**2**	**0**	**2**	**3**	**9**	**0**	**43**	**20**	**0**	**27**	**0**	**2**	**1**	**109**

Eight pieces of obsidian and one piece of basalt debitage, an obsidian tested pebble, an obsidian biface, and a basalt projectile point were submitted for X-ray fluorescence analysis. The obsidian artifacts are made from the Cerro Toledo and Valle Grande materials (Table 34.17). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) and the Valle Grande (Cerro del Medio) source areas are located about 19 km (12 mi) and 17 km (11 mi) as the "crow flies" to the southwest and west of the site. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present in the area of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval and are scattered across the mesa top. Indeed, the test pebble is probably derived from this local source. The X-ray

fluorescence analysis also indicates that the basalt flake is actually made of dacite from a local source and the projectile point from a non-local dacite source at San Antonio Mountain. San Antonio Mountain is located about 115 km (70 mi) north of Rendija Canyon.

Table 34.17. Obsidian source samples.

FS #	Artifact	Color	Source
6	Debitage	Translucent	Cerro Toledo rhyolite
24	Debitage	Translucent	Valle Grande rhyolite
84	Debitage	Translucent	Cerro Toledo rhyolite
91	Debitage	Translucent	Valle Grande rhyolite
93	Debitage	Translucent	Valle Grande rhyolite
106	Tested pebble	Translucent	Cerro Toledo rhyolite
145	Debitage	Translucent	Cerro Toledo rhyolite
148	Biface	Translucent	Cerro Toledo rhyolite
163	Debitage	Translucent	Valles Grande rhyolite

Lithic Reduction

Two cores were reduced using a bi-directional, bifacial technique. Flakes were also removed from an unprepared cortical platform on a cobble uniface (Figure 34.13) and a local obsidian pebble had a single flake removed. One of the cores was broken and thought to be discarded due to a culturally induced fracture, whereas, the other core and cobble uniface were considered still useable. Table 34.18 presents the metric information on the cores.

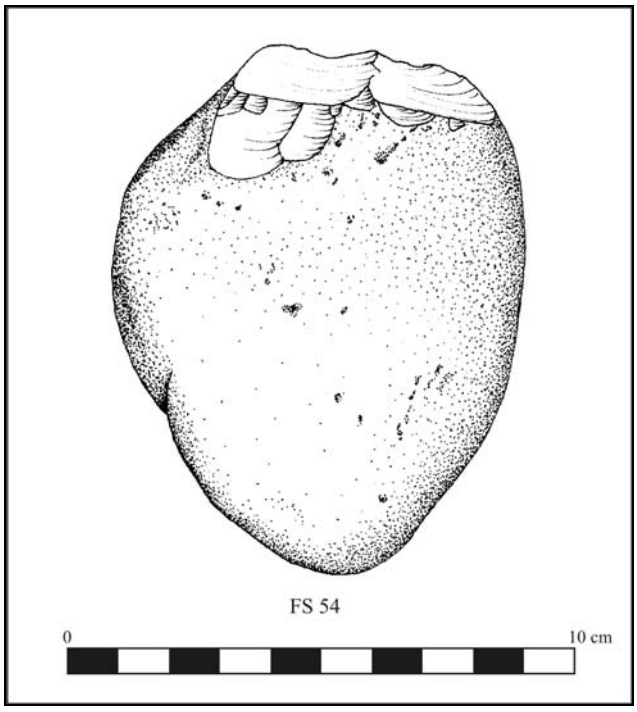


Figure 34.13. Cobble uniface.

Table 34.18. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bi-directional	77	70	44	291.9
Cobble Uniface	37	83	104	458.8

The debitage primarily consists of core flakes, with fewer angular debris, biface flakes, and other items. The overall cortical:non-cortical ratio of 1.0 reflects an even distribution between early stage core reduction and late stage core reduction and tool production/maintenance. The flakes mostly have single-faceted platforms (*n* = 27), with fewer cortical (*n* = 8), multi-faceted (*n* = 1), collapsed (*n* = 13), and crushed (*n* = 4) platforms. Only two of the platforms exhibit any obvious evidence of preparation and are abraded/crushed. The majority of the core flakes are whole (*n* = 31), with fewer proximal (*n* = 15), midsection (*n* = 3), and distal (*n* = 19) fragments. The biface flakes consist of whole (*n* = 2), proximal (*n* = 3), midsection (*n* = 1), and distal (*n* = 2) fragments. The whole core flakes have a mean length of 25.3 mm (*std* = 7.9), the whole biface flakes a mean length of 44.0 (*std* = 5.6), and the angular debris a mean weight of 3.4 g (*std* = 2.5).

The retouched tools consist of an endscraper, two biface fragments, and a projectile point. The endscraper and the projectile point are depicted in Figure 34.14.

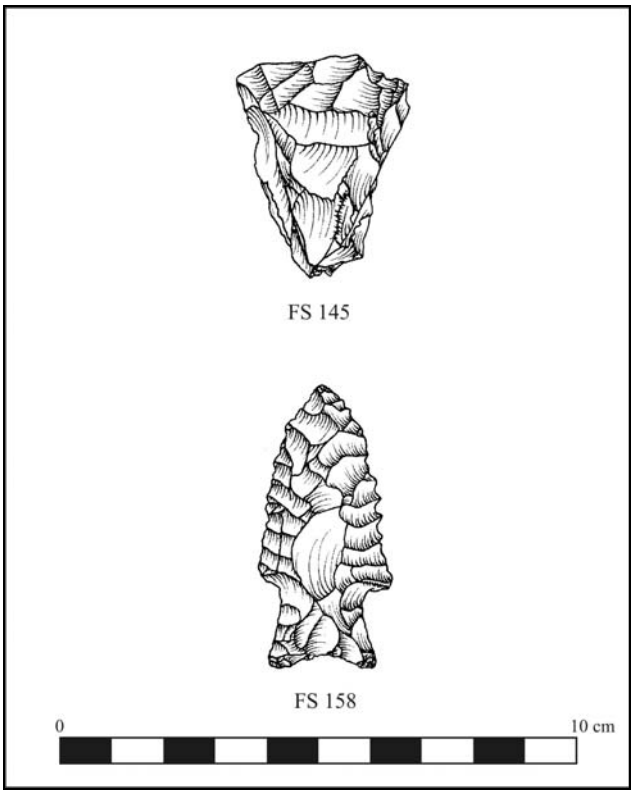


Figure 34.14. Endscraper (top) and San Jose dart point (bottom).

The endscraper is a flake that has been retouched along three edges, creating a steep-angled (80 degrees), triangular-shaped tool with a convex working edge. The two biface fragments consist of a midsection and an undetermined fragment that broke during the early-middle stage of the reduction process. The projectile point is a whole San Jose style dart point. Metrical and descriptive information on the projectile point is presented in Table 34.19.

Table 34.19. Projectile point metrical (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (g)	Haft Type	Blade Shape	Base Shape
158	Basalt (Dacite)	Whole	54	38	15	16	20	6	8.9	Stemmed	Serrated	Con-cave

Tool Use

None of the flakes or retouched pieces exhibit evidence of edge damage that could be attributed to use. The ground stone includes manos, a millingstone, and an axe. The manos are both fire-cracked quartzite cobbles with a single flat surface that is heavily ground. The millingstone is a tabular piece of dacite with some grinding on one surface. The axe appears to have a refurbished bit that had originally broken off and was subsequently resharpened along one face (Figure 34.15).

The area around the bit also exhibits evidence of rounding, scarring, and use-striations. The surface of the axe has been well ground and polished with numerous striations along the long axis of the tool. It is notched with a shallow-pecked central groove. The butt also exhibits heavy use with battering wear.

Faunal Remains (Kari Schmidt)

Four pieces of bone were recovered during excavations of this Early/Middle Classic period fieldhouse. One bone was recovered in 104N/106E and was identified as a fragment of a mule deer (*Odocoileus hemionus*) atlas vertebra. Three bones were identified in 105N/106E and were all identified as part of a mule deer sacrum. None of the bones were burned and the pieces of the sacrum all contained recent breaks suggesting these bones may have come from a single animal.

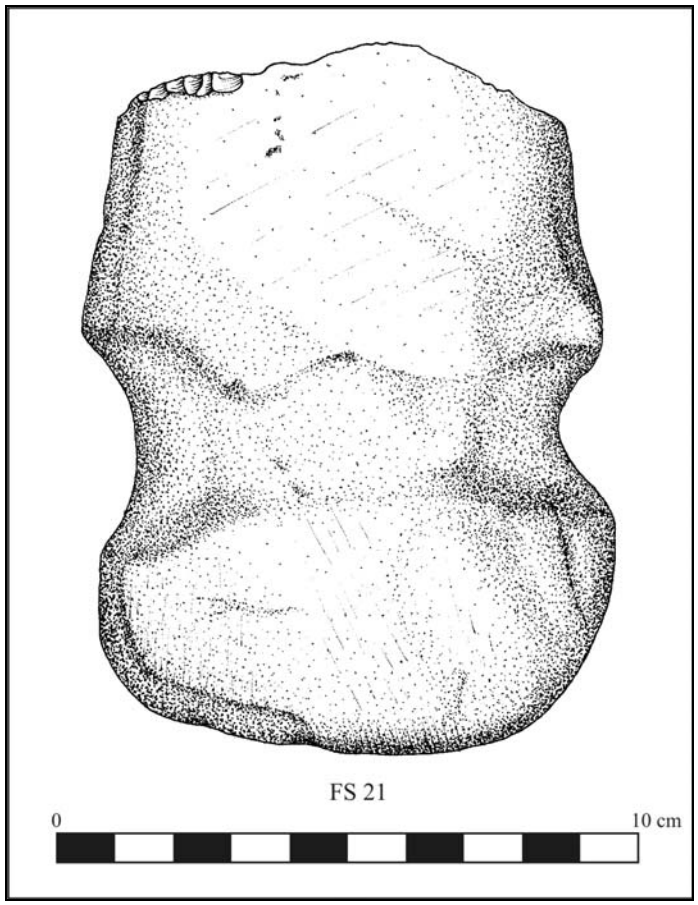


Figure 34.15. Axe from LA 85411.

Archaeobotanical Remains (Pamela McBride)

Tobacco was found in the small pit hearth (Feature 2) in Room 2 along with pigweed and purslane seeds (in upper and middle fill) and the ever present conifer needles and cone fragments (Table 34.20). Unlike the hearth in Room 2, it was only the lower fill of the Feature 1 hearth in Room 1 that yielded floral remains unrelated to wood use (maize and one goosefoot seed). Ponderosa pine and mountain mahogany were the two most frequently encountered wood taxa (Table 34.21). Unknown conifer, pine, and oak were also present. A single vegetal sample from post-occupational fill just outside Room 1 contained a pine umbo and six pieces of ponderosa pine weighing a tenth of a gram.

Table 34.20. Flotation plant remains, count, and abundance per liter from LA 85411.

FS No.	**76**	**77**	**78**	**111**	**112**	**118**
Context	F. 1 Hearth, N ½			F. 1 Hearth, S ½		
	Upper fill	Middle fill	Lower fill	Upper fill	Middle fill	Lower fill
Cultural						

FS No.	76	77	78	111	112	118
Context	F. 1 Hearth, N ½			F. 1 Hearth, S ½		
	Upper fill	Middle fill	Lower fill	Upper fill	Middle fill	Lower fill
Annuals						
Goosefoot			1(1)			
Cultivars						
Maize			poss. 2(0) c			cf. 1(0) k
Other						
Unidentifiable	1(0) pp			1(0) pp		
Perennials						
Pine			needle +			
Piñon	needle +			needle +		needle +
Ponderosa pine	needle +	needle +		needle +	needle +	
Non-Cultural						
Annuals						
Goosefoot	+			+		+
Spurge				+		
Grasses						
Grass family						floret +
Sunflower family				+		
Perennials						
Piñon				needle +		needle +

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, c cupule, cf. compares favorably, k kernel, pp plant part.

Table 34.20 (continued). Flotation plant remains, count and abundance per liter from LA 85411.

FS No.	136	137	138	178
Context	F. 2 Hearth, N ½			F. 2 Hearth
	Upper fill	Middle fill	Lower fill	S ½
Cultural				
Annuals				
Pigweed	1(1)			
Purslane	1(1)	1(1)		
Tobacco		1(1)		
Other				
Unidentifiable	1(0) pp	1(0) pp		1(0) pp
Perennials				
Pine		umbo +		umbo +
Piñon				needle +
Ponderosa pine	needle +	needle +	needle +	needle +
Non-Cultural				

FS No.	136	137	138	178
Annuals				
Purslane		+		
Grasses				
Grass family				floret +
Perennials				
Piñon			needle +	
Ponderosa pine				needle +

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, pp plant part.

Table 34.21. Flotation wood charcoal by count and weight in grams from LA 85411.

FS No.	76	77	78	111	112	118	136
Context	F. 1 Hearth, N ½			F. 1 Hearth, S ½			F. 2 Hearth, N ½
	Upper fill	Middle fill	Lower fill	Upper fill	Middle fill	Lower fill	Upper fill
Conifers							
Pine						10/0.3 g	
Ponderosa pine	3/0.1 g		1/<0.1 g	2/<0.1 g	1/<0.1 g		1/<0.1 g
Unknown conifer				2/0.3 g	2/<0.1 g	4/0.2 g	
Non-Conifers							
Mountain mahogany	1/<0.1 g			1/<0.1 g	12/0.3 g	2/0.1 g	1/<0.1 g
Oak	1/<0.1 g	1/<0.1 g	1/<0.1 g				
Totals	**5/0.1 g**	**1/<0.1 g**	**2/<0.1 g**	**5/0.3 g**	**15/0.3 g**	**16/0.6 g**	**2/<0.1g**

Table 34.21 (continued). Flotation wood charcoal by count and weight in grams from LA 85411.

FS No.	137	138	178	Totals	
Context	F. 2 Hearth, N ½, middle fill	F. 2 Hearth, N ½. lower fill	F. 2 Hearth, S ½	Weigh t	%
Conifers					
Pine				0.3 g	15%
Ponderosa pine	2/0.1 g	8/0.1 g	7/0.3 g	0.6 g	30%
Unknown conifer	3/0.1 g			0.6 g	30%
Non-Conifers					
Mountain mahogany		1/<0.1 g	4/<0.1 g	0.4 g	20%
Oak		4/0.1 g	1/<0.1 g	0.1 g	5%

Totals	**5/0.2 g**	**13/0.2 g**	**12/0.3 g**	**2.0 g**	**100 %**

Pollen Remains (Susan Smith)

Seven pollen samples were analyzed from LA 85411. Table 34.22 lists the frequency of identified pollen types. Squash and maize were the only cultigens identified in the botanical assemblage, and each were found in only one sample. Sedge and lily family were the only other economic resources that were identified. A number of potential economic resources were also identified in the assemblage (Table 34.22), and these are discussed in detail in Smith's chapter in Volume 3.

Table 34.22. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85411 (*n* = 7)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	1
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	1
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	3
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85411 (*n* = 7)
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	6
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	7
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	1
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	7
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	5
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	4
	Scrophulariaceae	Penstemon Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85411 (*n* = 7)
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	1
	Picea	Spruce	1
	Abies	Fir	4
	Pinus	Pine	7
		Pine Aggregates	1
	Pinus edulis type	Piñon	7
	Juniperus	Juniper	5
		Juniper Aggregates	0
	Quercus	Oak	7
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	2
	Artemisia	Sagebrush	6
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85411 is a two-room Early/Middle Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. Two internal hearths were identified at the site, and the ceramic assemblage and chronometric dates indicate a probable 14th century occupation. The site is located on a ridge north of Rendija Canyon. The presence of two rooms with internal hearths indicates that the site was occupied for extended period(s) of time, possibly during the winter. The presence of maize kernels, with maize and squash pollen indicates that the site was also occupied during the growing season.

CHAPTER 35
RENDIJA TRACT (A-14): LA 85413

Gregory D. Lockard

INTRODUCTION

LA 85413 is the remains of a small Early Classic period structure located on a south-facing slope on the mesa between Rendija and Guaje canyons. The site is located in the northeast corner of the Rendija Tract, a few tens of m north of a two-track dirt road. Vegetation on the site consists of piñon-juniper woodland with a grass understory. The site is situated at an elevation of 2109 m (6920 ft).

LA 85413 was first recorded on August 16, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. Hill believed the site was a two-room fieldhouse. Surface Biscuit A, Glaze-on-Red, and Glaze Polychrome sherds indicated that the site was most likely occupied during the Early Classic period (AD 1325–1600). On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992. Two 1- by 1-m test pits (Units A and B) were excavated at LA 85413. Units A and B were both excavated to a maximum depth of 60 cm below the ground surface. No floor or other features were encountered during the excavation of the units.

Artifacts recovered during the excavation of the units and a surface collection of the site include 37 pieces of chipped stone and 57 ceramic sherds (29 Biscuit A sherds, 11 smeared-indented sherds, five small Black-on-red sherds that could be Glaze A, three sherds tentatively identified as Wiyo Black-on-white, four decorated sherds too badly eroded to identify, and five utilityware sherds). In addition to the excavations and surface collection, Peterson and Nightengale documented two small rock alignments (designated Features 2 and 3) at the site that they interpreted as check dams. The check dams are located approximately 16 m northeast of the structure. Feature 2 measures 1.5 m and Feature 3 measures 2 m in length.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a mound of rubble measuring approximately 5 by 7 m in area. The northern half of the rubble mound contained clearly definable rock alignments that appeared to be the remains of a small, rectangular room (Figure 35.1). Immediately to the south, there was a wider, less clearly defined rock alignment that extended southward and terminated at an amorphous concentration of rocks that extended a few m to the east. Hill (1991) and Peterson and Nightengale (1993) believed that the rocks in this southern area were the remains of a second room. An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 9 m

north and 8 m east of the site datum. Three subdata (A-C) were set up for taking elevations. The site was then photographed. Artifacts visible on the surface were collected by grid unit.

Figure 35.1. Pre-excavation photograph of the mound at LA 85413.

An 8- by 1-m east-west trench was initially excavated across the room (designated Room 1) in the northern half of the rubble mound (grids 106N/100-107E). The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. A fairly large patch of burned floor was encountered in the east corner of the room in unit 106N/105E. In the grid units to the west, the room's living surface took the form of a compact surface relatively devoid of rocks. Within the structure, the trench units were excavated to the floor or compact living surface.

Outside of the structure, the trench units were excavated to the top of a sterile layer of weathered Cerro Toledo bedrock. The easternmost unit in the trench (unit 106N/107E) was chosen to serve as a test pit for geological analysis and was therefore excavated to intact bedrock. Ultimately, however, the profiles of other areas were chosen for geological analysis (see below). The northern profile of the trench was then drawn and photographed. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 44 units were excavated. Within the structure, excavation proceeded to the floor or compact living surface encountered while excavating the trench. Outside of the structure, excavation terminated

at the top of the sterile layer of weathered bedrock in the northern portion and the top of a Btk1b1 horizon in the southern portion of the excavated area.

Excavation focused on defining the structure's walls, removing wallfall, and locating features. During the excavation of the area to the south of Room 1, no convincing walls or other features were defined. The rock alignment and concentration visible on the surface appear to have been natural, or at the very least non-structural and of unknown function. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The site was then photographed (Figure 35.2) and mapped (Figure 35.3).

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Alan Madsen, Brian Harmon, Joseph (Woody) Aguilar, Bettina Kuru'es, Kevin Hanselka, Brandon Gabler, Margaret Dew, and Samuel Duwe. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa was the site monitor representing Santa Clara Pueblo, as well as an additional excavator.

Figure 35.2. Post-excavation photograph of LA 85413.

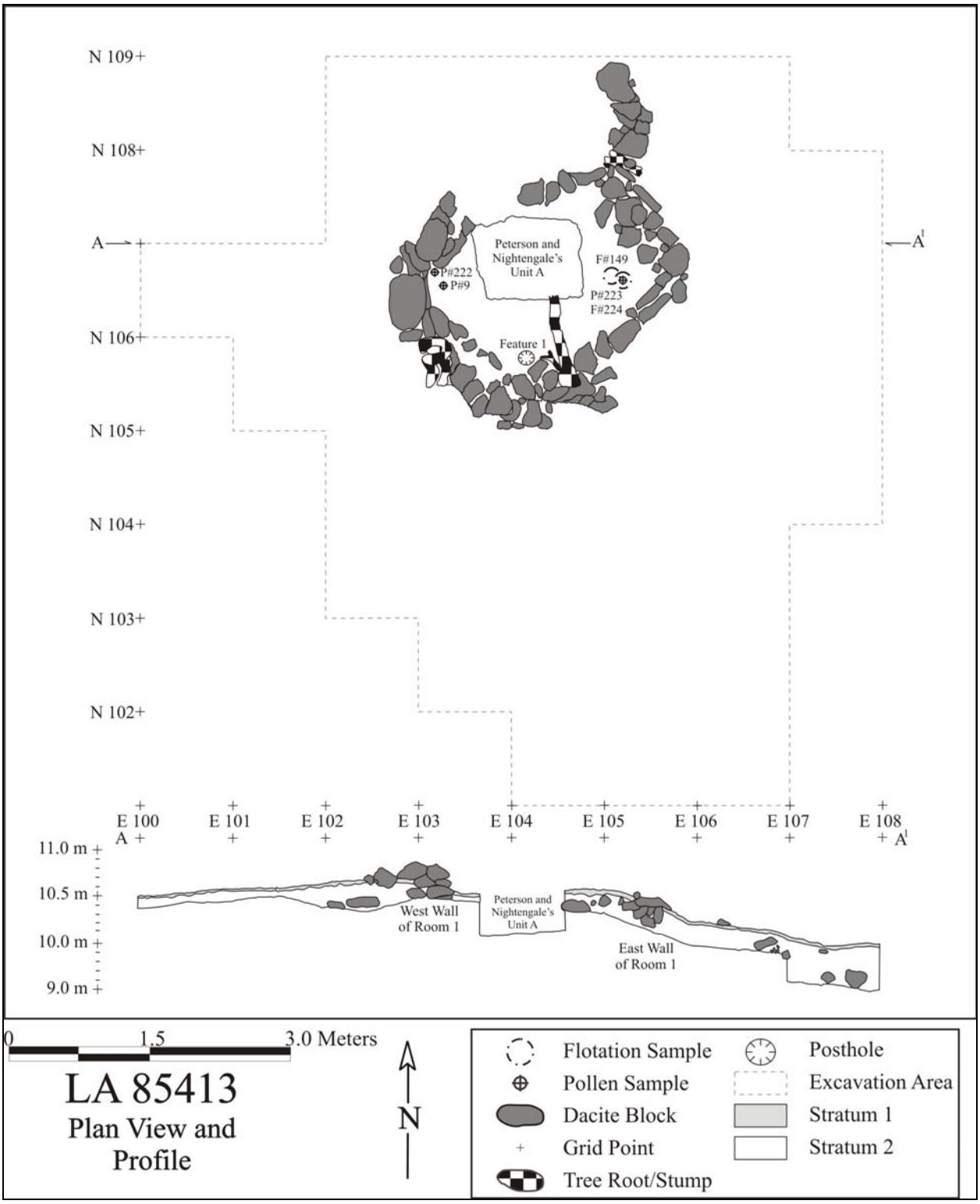


Figure 35.3. Plan view and profile of LA 85413.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly two to six cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 10 to 40 cm in thickness in the area excavated. This fill was thickest in and around the collapsed walls of the structure and thinned away from the walls and towards the center of the room. It was also considerably thicker in the downhill (i.e., southern) half of the site. Stratum 2 is more or less equivalent to the Bw horizon. Stratum 3 is weathered Cerro Toledo bedrock excavated in the grid unit originally chosen for geological analysis (106N/107E). Stratum 4 is the backfill removed from the test pits excavated by Peterson and Nightengale. Stratum 4 is therefore a disturbed context. Stratum 5 is the Room 1 floor/living surface, and Stratum 6 is the fill removed from Feature 1 (posthole). Tables 35.1 through 35.4 summarize and describe the strata excavated at the site.

Table 35.1. LA 85413 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 3/3	Loamy sand	2–6	Surface sediment
2	10YR 4/4	Sandy loam	10–40	Post-occupational fill
3	-	-	5	Weathered Cerro Toledo bedrock
4	10YR 4/4	Sandy loam	45	Backfill from P & N test pit
5	7/5YR 4/3	Clay loam	1–4	Room 1 living surface
6	10YR 4/4	Sandy loam	10	Feature 1 (posthole) fill

Table 35.2. LA 85413 soil horizon descriptions from the east profile of unit 101N/106E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 3/3	Loamy sand	0–7	Topsoil
Bw	10YR 4/4	Sandy loam	7–31	Late-Holocene soil
Btk1b1	7.5YR 4/4	Sandy clay	31–42	Late-Pleistocene soil
Btk2b1	7.5YR 5/5	Sandy clay loam	42–56+	Late-Pleistocene soil

Table 35.3. LA 85413 soil horizon descriptions from below the exterior face of the northeast wall of Room 1 (in unit 107N/105E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/3	Sandy loam	0–18	Topsoil
Bw	10YR 5/4	Sandy loam	18–46	Late-Holocene soil
Rk	-	-	46–55+	Weathered Cerro Toledo bedrock

Table 35.4. LA 85413 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	8	3	1	0	**12**

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
1	54	38	2	0	**94**
2	433	193	11	10	**647**
3	0	0	0	0	**0**
4	7	7	0	0	**14**
5	0	0	0	1	**1**
6	0	0	0	0	**0**
Total	**241**	**502**	**14**	**11**	**768**

Note: Does not include unprovenienced artifacts (two ceramic sherds and two pieces of chipped stone) recovered while cleaning the site for photographs.

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small structure that probably functioned as a fieldhouse. The fieldhouse is roughly rectangular in shape. The room measures 2.30 m in length (northeast to southwest) by 1.83 m in width (northwest to southeast), with approximately 4.21 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the site (units 106N/100-107E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the walls that formed the east and west corners of the room. A large patch of burned floor was encountered in the east corner of the room. To the west, the room's living surface took the form of a compact surface relatively devoid of rocks. After the excavation of the trench, the rest of the room was excavated to the floor or compact living surface encountered in the trench. One of the test pits excavated by Peterson and Nightengale (Unit A) is located completely within the northern half of the room. The backfill within this test pit was removed as a separate stratum (Stratum 4). Unit A was excavated to intact Cerro Toledo bedrock. An examination of the pit's profile indicated that there were no floors or living surfaces below the floor discussed above. After the excavation of the site was complete, the room was mapped, photographed, and documented.

Fill. The interior of Room 1 was filled with 2 to 6 cm of surface sediment on top of 20 to 35 cm of post-occupational fill. The fill was thickest in and around the room's collapsed walls and thinned away from the walls and towards the center of the room. Flotation (Field Specimen [FS] 119) and pollen (FS 120) samples were taken of the Room 1 fill, but were not analyzed.

Floor. A large patch of burned floor was encountered in the east corner of the room. The floor was composed of a thin layer of clay. In the rest of the room, the living surface took the form of a compact surface relatively devoid of rocks. This surface was presumably the foundation upon which the clay floor was constructed. Throughout the room, the living surface (including the patch of floor) had been disturbed by tree roots. The source of these roots included two trees that were growing within the Room 1 walls before being cut done shortly before the excavation of the site. The living surface was particularly disturbed in the northernmost portion of the room. In fact, no compact surface at all was encountered in this area. The Room 1 living surface was

associated with a single feature. This feature, designated Feature 1, was a probable posthole (see below).

A pollen sample (FS 9) and a flotation sample (FS 10) were taken from beneath a rock near the level of the floor. The flotation sample was not analyzed, but taxa identified in the pollen sample included maize, cheno-ams, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, and sagebrush. A flotation sample (FS 149) was also taken of a concentration of ash and charcoal on top of the burned floor in the east corner of the room. Carbonized taxa identified in this sample included maize, mountain mahogany, unidentified pine, piñon pine, and ponderosa pine. In addition, a pollen sample (FS 223) was taken of sediment that was scraped from the burned floor surface, and a flotation sample (FS 224) was taken of the burned floor matrix. Taxa identified in the pollen sample included beeweed, prickly pear, buckwheat, grass family, walnut, cheno-ams, sunflower family, ragweed/bursage, spurge family, spruce, unidentified pine, piñon pine, juniper, oak, and sagebrush. Charred taxa identified in the flotation sample included goosefoot, mountain mahogany, unknown conifer, piñon pine, oak, and ponderosa pine. Finally, a pollen sample (FS 222) was taken from directly on top of a fairly well-conserved patch of living surface in the west corner of the room. Taxa identified in this sample include beeweed, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Wall Construction. The extant portions of the Room 1 walls indicate that the wall foundations were composed of unshaped dacite cobbles and a few upright slabs. These rocks appear to have been placed directly on top of the Bw horizon. Unlike at most of the other Rendija Canyon fieldhouses excavated during the Conveyance and Transfer Project, the wall foundations do not appear to have been placed in a trench. In some places, the wall was composed of a single row of large rocks. In other places, the wall was composed of two rows of upright slabs or two to three rows of small cobbles (Table 35.5). There is a short rock alignment that extends north from the room's north corner. This alignment may have been a short auxiliary wall. If this is the case, the function of the wall is unknown. There is a break of approximately 56 cm in the northwest wall. This may have been the room's entryway. This area of the site, however, has been significantly disturbed by several large roots. Two trees growing within the room's walls were cut down just before the site was excavated. One of these is located in the room's southwest wall, and the other is located in the southwestern half of the southeast wall (see Figure 35.2). The stumps and roots of these trees have contributed to the overall poor state of preservation of the Room 1 walls.

An alignment of rocks extending southward from the room's south corner was visible on the surface before the site was excavated. This alignment terminated to the south at an amorphous concentration of rocks that extended to the east. Originally, the alignment and concentration of rocks were believed to be the remains of a second room. Excavation of this area of the site, however, failed to reveal any clearly definable walls. If the rock alignment is cultural, it most likely took the form of a linear mound of rocks. The rock concentration to the south is most likely natural. Excavation revealed that the rock concentration is located within a prehistoric gully. The gully, which originally ran from the northwest to the southeast, has been filled in with small to medium-sized rocks and colluvial sediment.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the room's masonry was originally considerably higher than it was at the time of excavation. Due to the substantial number of rocks removed from the alignment and concentration to the south of the room, which could not be distinguished from wallfall, the original height of the room's masonry could not be estimated with any degree of certainty. For this reason, the volume of wallfall removed during the excavation of LA 85413 was not calculated. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, no adobe was recovered from the site.

Table 35.5. LA 85413 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
Northwest	1.50 (2.06)	0.04–0.07	0.08–0.32	1
Southeast	1.80	0.11–0.33	0.14–0.65	1 to 3
Northeast	1.30	0.26–0.42	0.21–0.53	1 to 2
Southwest	1.30	0.23–0.43	0.23–0.46	1 to 3

Note: The length of the northwest wall including the possible entryway is given in parentheses.

Feature 1

Feature 1 is a small posthole located just inside the southeast wall in the southernmost portion of the room. The compactness of the base and interior walls of the hole, as well as its verticality and circular shape, preclude the possibility of it being caused by a root and make it unlikely that it was created by an animal. The posthole measured 9 by 8 cm in area and was 10 cm deep. A pollen sample (FS 158) was taken of the fill removed from the posthole, but it was not analyzed.

Geological Analysis

The grid unit originally chosen for geological analysis (106N/107E) was excavated below the surface of the layer of weathered Cerro Toledo bedrock encountered in the northern portion of the site. The excavation proceeded only a few cm before intact Cerro Toledo bedrock was encountered. No artifacts were encountered in this level of the unit. Ultimately, the exposed profiles in this unit were not chosen for geological analysis. Instead, geologists Paul Drakos and Steven Reneau analyzed two different profiles. The first was the east profile of grid unit 101N/106E (see Table 35.2). This profile contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), and two Btkb1 horizons (late-Pleistocene soils). The second profile that was examined was below the exterior face of the northeast wall of Room 1 (within unit 107N/105E) (see Table 35.3). This profile contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), and a Rk horizon (weathered Cerro Toledo bedrock).

Artifact Distribution

As Table 35.6 demonstrates, an increasingly higher number of artifacts were recovered from grid units to the south and east within the excavated area. This pattern is almost certainly due to site formation processes, as the natural hillside slopes downward in this direction. The only deviation from this pattern is the 109 artifacts recovered from unit 105N/106E. This is by far the highest number of artifacts recovered from any unit. Of the 109 artifacts, however, 104 are sherds recovered from Stratum 2. Most of these sherds are of the same type and were concentrated in a single location. They therefore most likely represent a pot drop or the fragmentation of a very large sherd.

Table 35.6. LA 85413 artifact counts by grid unit.

	E100	E101	E102	E103	E104	E105	E106	E107
N108	--	--	1	11	4	14	11	--
N107	--	--	3	3	**6**	**11**	23	23
N106	1	1	4	**5**	**8**	**19**	8	30
N105	--	2	3	**7**	**4**	15	109	27
N104	--	--	4	11	21	20	38	18
N103	--	--	2	18	28	28	43	--
N102	--	--	--	9	27	29	31	--
N101	--	--	--	--	17	25	38	--

Note: Does not include eight artifacts recovered from the surface of unexcavated grid units and four unprovenienced artifacts recovered while cleaning the site for photographs; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 740 artifacts were analyzed from the excavations conducted at LA 85413. In addition, flotation and pollen samples were selected for analysis from the post-occupation fill (Stratum 2) and the Room 1 living surface (Stratum 5) (Table 35.7). The results of the artifact and sample analyzes are presented in the following sections.

Table 35.7. Samples selected for analysis from LA 85413.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**TL***
1				
2	149	9, 61		
3				
4				
5	224	222, 223		
6				

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 494 ceramics were analyzed from LA 85413. The majority of the pottery consists of Sapawe Micaceous and Biscuit A (Table 35.8) types. These types, in addition to the Cieneguilla Glaze-on-yellow sherd, would seem to indicate an Early Classic period (14th century) occupation. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 35.9 to 35.11. The graywares and whitewares appear to have been locally made from tuff temper; however, the glazeware and micaceous pottery are made from non-local tempers. All of the grayware and micaceous ceramics consist of jar vessel forms while the whiteware and glazeware sherds were derived solely from bowls.

Table 35.8. Ceramic types from LA 85413.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Santa Fe Black-on-white	3	0.6
Biscuit painted unspecified	1	0.2
Biscuit unpainted slipped one side	1	0.2
Biscuit A	50	10.1
Northern Rio Grande Utilityware		
Smeared plain corrugated	2	0.4
Smeared-indented corrugated	1	0.2
Mica utility undifferentiated	26	5.3
Sapawe Micaceous	395	80.0
Middle Rio Grande Glazeware		
Glaze red body	13	2.6
Glaze yellow body	1	0.2
Cieneguilla Glaze-on-yellow	1	0.2
Total	**494**	**100.0**

Table 35.9. Tradition by ware for LA 85413 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	3	100.0	55	100.0	0	0.0	0	0.0	231	46.7
Rio Grande (Tewa Micaceous)	0	0.0	0.0	0.0	0	0.0	421	100.0	248	50.2
Middle Rio Grande	0	0.0	0.0	0.0	15	100.0	0	0.0	15	3.0
Total	**3**	**100.0**	**55**	**100.0**	**15**	**100.0**	**421**	**100.0**	**494**	**100.0**

Table 35.10. Temper by ware for LA 85413 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff or ash	0	0.0	6	10.9	0	0.0	0	0.0	6	1.2
Fine tuff and sand	0	0.0	49	89.1	0	0.0	0	0.0	49	9.9

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Mostly tuff with phenocrysts	0	0.0	0	0.0	0	0.0	173	41.0	173	35.0
Anthill sand	3	100.0	0	0.0	0	0.0	0	0.0	3	0.6
Granite with mica	0	0.0	0	0.0	0	0.0	1	0.2	1	0.2
Highly micaceous paste	0	0.0	0	0.0	0	0.0	1	0.2	1	0.2
Sapawe Micaceous	0	0.0	0	0.0	0	0.0	246	58.4	246	49.7
Galisteo igneous latite	0	0.0	0	0.0	3	20.0	0	0.0	3	0.6
Latite Keres area	0	0.0	0	0.0	12	80.0	0	0.0	12	2.4
Total	**3**	**100.0**	**55**	**100.0**	**15**	**100.0**	**421**	**100.0**	**494**	**100.0**

Table 35.11. Vessel form by ware for LA 85413 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl rim	0	0.0	8	14.5	1	6.6	0	0.0	9	1.8
Bowl body	0	0.0	44	80.0	4	26.6	0	0.0	48	9.7
Jar neck	0	0.0	0	0.0	3	20.0	28	6.6	31	6.2
Jar rim	0	0.0	0	0.0	0	0.0	29	6.8	29	5.8
Jar body	3	100.0	0	0.0	7	46.6	364	86.4	374	75.7
Flared bowl rim	0	0.0	3	5.4	0	0.0	0	0.0	3	0.6
Total	**3**	**100.0**	**55**	**100.0**	**15**	**100.0**	**421**	**100.0**	**494**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 246 artifacts were analyzed from LA 85413. The assemblage consists of nine cores, 224 pieces of debitage, one retouched tool, 11 ground stone artifacts, and a hammerstone. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 35.12 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony, with less Pedernal chert, obsidian, and other materials. The presence of cortex on 36.6 percent of the debitage indicates that these materials were collected from waterworn (n = 62) and nodule (n = 20) sources. The chalcedony, Pedernal chert, quartzite, and silicified wood are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Nodule cortex is solely present on obsidian artifacts. The igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Seven pieces of debitage, a core, and two tested pebbles were submitted for X-ray fluorescence analysis. The obsidian artifacts are made solely from Cerro Toledo obsidian (Table 35.13). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source area is located about 19 km (12 mi). Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present in

the area of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval and are scattered across the mesa top. Indeed, two tested pebbles and an obsidian pebble core are probably derived from this local source.

Table 35.12. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Other**	**Total**
Cores	Core	0	0	1	0	0	0	1	0	0	2	0	0	0	4
	Tested material	0	0	0	0	0	0	3	0	0	0	0	0	0	3
	Cobble uniface	0	0	0	1	0	0	0	0	0	1	0	0	0	2
	Subtotal	0	0	1	1	0	0	4	0	0	3	0	0	0	9
Debitage	Angular debris	0	0	0	1	0	0	3	17	0	18	0	0	0	37
	Core flake	0	0	1	1	2	0	23	84	0	45	5	12	0	173
	Uniface flake	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Outrepasse	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Microdeb.	0	0	0	0	0	0	0	6	0	0	0	0	0	6
	Und. flake	0	0	0	0	0	0	0	5	0	0	0	0	0	5
	Subtotal	0	0	2	1	2	0	26	112	0	64	5	12	0	224
Retouched Tools	Drill	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Ground Stone	One-hand mano	0	0	0	0	3	0	0	0	0	0	0	1	0	4
	Millingstone	0	0	0	1	1	0	0	0	0	0	0	0	0	2
	Und. metate fragment	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Polishing stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Abrading stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Axe	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Und. ground stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	1	8	0	0	0	0	0	0	2	0	11
Other	Hammerstone	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total		**0**	**0**	**3**	**4**	**10**	**0**	**30**	**113**	**0**	**67**	**5**	**14**	**0**	**246**

Table 35.13. Obsidian source samples.

FS #	Artifact	Color	Source
39	Tested pebble	Translucent	Cerro Toledo rhyolite
49	Debitage	Translucent	Cerro Toledo rhyolite
55	Debitage	Translucent	Cerro Toledo rhyolite
59	Tested pebble	Translucent	Cerro Toledo rhyolite
74	Debitage	Translucent	Cerro Toledo rhyolite
91	Debitage	Translucent	Cerro Toledo rhyolite
147	Debitage	Translucent	Cerro Toledo rhyolite
151	Debitage	Translucent	Cerro Toledo rhyolite
155	Debitage	Translucent	Cerro Toledo rhyolite
157	Core	Translucent	Cerro Toledo rhyolite

Lithic Reduction

Five cores, one cobble uniface, and three tested pebbles were identified during the analysis. The cores were reduced using a single-directional, single face, a bidirectional, change-of-orientation, and a multi-directional opposed/90 degrees and opposed-same-and-different-face technique. Flakes were removed from an unprepared cortical platform on the cobble unifaces and tested pebbles (Figure 35.4). Two of the cores were discarded because they were broken along a material flaw and due to extensive stepping/hinging, while the other two were exhausted. Table 35.14 presents the metric information on the cores.

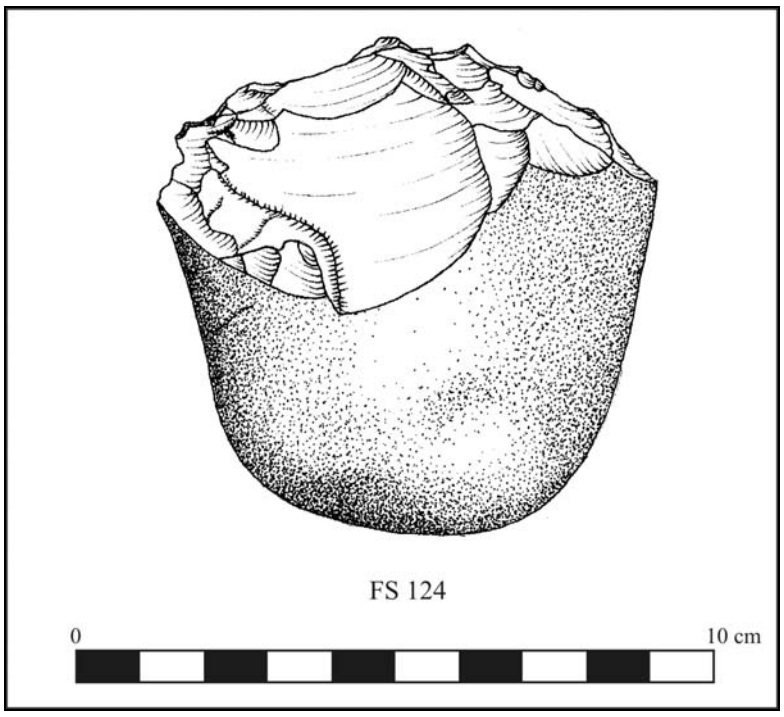


Figure 35.4. Cobble uniface from LA 85413.

Table 35.14. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	21	26	24	15.3
Single-directional	37	71	65	198.9
Bi-directional	32	46	33	59.9
Multi-directional	68	50	43	140.3
Multi-directional	74	73	57	237.2
Cobble Uniface	60	82	80	464.2

The debitage consists primarily of core flakes with fewer angular debris, microdebitage, and other items. Table 35.15 summarizes the various stages of reduction represented by the whole core flakes. The debitage assemblage is composed primarily of secondary non-cortical, with less secondary cortical and a few primary flakes. The overall cortical:non-cortical ratio of 0.77 reflects this slight emphasis on the later stages of core reduction. However, this varies by material type. Obsidian is primarily represented in the early stages of core reduction, presumably due to the use of locally available pebbles. In contrast, Pedernal chert is a mix of early- and late-stage reduction and chalcedony emphasizes the late stage of core reduction.

Table 35.15. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	0	1	0	---
Obsidian	3	6	2	0	4.5
Chalcedony	0	12	25	0	0.48
Pedernal chert	0	10	12	0	0.83
Total	**3**	**28**	**40**	**0**	**0.77**
Percentage	4.2	39.4	56.3	0	---

The flakes mostly have single-faceted platforms (n = 56), with fewer cortical (n = 24), multi-faceted (n = 1), collapsed (n = 17), and crushed (n = 11) platforms. None of the platforms exhibit any obvious evidence of preparation. The majority of the core flakes are whole (n = 80), with fewer proximal (n = 29), midsection (n = 9), distal (n = 54), and undetermined (n = 1) fragments. The whole core flakes have a mean length of 29.3 mm (*std* = 11.9) and the angular debris a mean weight of 7.5 g (*std* = 8.5).

The retouched tools consist solely of a drill. The tool is a midsection fragment, bifacially retouched and with a diamond-shaped cross-section.

Tool Use

A single flake exhibits evidence of edge damage that could be attributed to use. This flake has a ground and polished area along the dorsal cortical surface of the artifact. It was presumably removed from a ground stone tool.

The ground stone includes manos, metates, polishing stones, abrading stones, and an axe. The manos are all the one-hand variety and consist of dacite and quartzite cobbles with one to two ground surfaces. One of these artifacts was also used as a hammerstone. The millingstone is a large piece of andesite with a single concave grinding surface, whereas, the undetermined metate consists of a broken tabular piece of dacite with a flat, heavily ground surface. The polishing stone is a dacite pebble that is polished over most of its surface. It also appears to exhibit some staining. In contrast, the abrading stone is an irregular-shaped dacite cobble with a single heavily polished edge and ground surface with unidirectional striations. The axe is a thin quartzite cobble fragment that was unifacially flaked along one lateral side and the ends. The other lateral side consists of a clean broken face (Figure 35.5). Each of the four edges of the artifact are notched so that it could be hafted. There is some rounding/scarring on the bit, but the item was probably resharpened. Several quartzite flakes were observed in the site assemblage that could have been removed from the artifact during shaping and/or resharpening. Lastly, the undetermined ground stone item is a small fragment of dacite with a ground surface that might represent a broken mano.

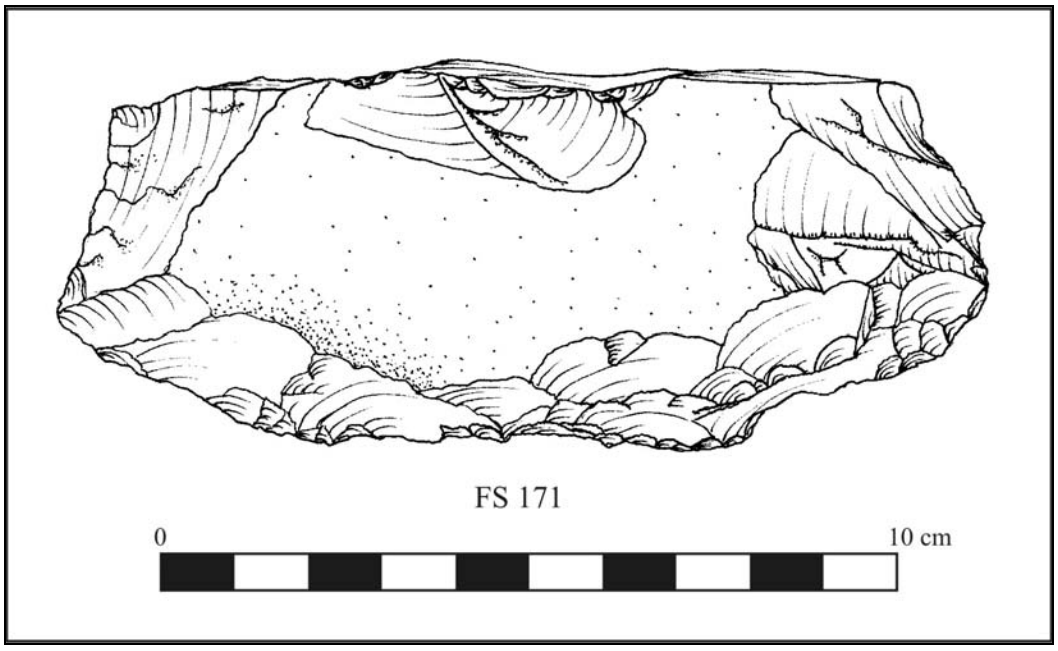


Figure 35.5. Axe from LA 85413.

Faunal Remains (Kari Schmidt)

Twelve pieces of bone were recovered during excavations of this Classic period fieldhouse. The majority of the bones were recovered in Stratum 2 (post-occupational fill), but two bones were identified in Stratum 5, which was the living surface identified in the fieldhouse. The bones identified on the living surface were unidentified to the level of class and were both heavily calcined. The bones identified in Stratum 2 included two pocket gopher (*Thomomys* sp.) elements (right humerus, left mandible), five mule deer (*Odocoileus hemionus*) bones, one small/medium-sized mammal remain, one medium/large-sized mammal remain, and one

unidentified remain. The mule deer elements included three rib fragments, one right calcaneus, and one right astragalus. None of the bones were burned.

Archaeobotanical Remains (Pamela McBride)

Cultural plant remains consisted of one goosefoot seed and one possible maize cupule fragment (Table 35.16). Charred and partially charred plant part fragments were not identified and conifer needles are probably a product of firewood use. Wood charcoal was primarily mountain mahogany and pine with piñon, ponderosa pine, oak, and unknown conifer occurring in smaller numbers (Table 35.17).

Table 35.16. Flotation plant remains, count, and abundance at LA 85413.

FS No.	**149**	**224**
Context	Ash/charcoal deposit on floor	Room 1, burned floor, east corner
Cultural		
Annuals		
Goosefoot		1(1)
Cultivars		
Maize	cf. 1(0) c	
Other		
Unidentifiable	1(0) pp	1(0) pp, 1 (0) pp pc
Perennials		
Piñon	needle +	
Ponderosa pine	needle +	needle +
Non-Cultural		
Annuals		
Goosefoot	+	+
Perennials		
Juniper	+, twig +	twig +
Piñon	needle +, nutshell +	

+ 1-10/liter, c cupule, cf. compares favorably, pc partially charred, pp plant part

Table 35.17. Wood charcoal taxa by count and weight in grams from LA 85413.

FS No.	**149**	**224**
Context	Ash/charcoal deposit on floor	Room 1, burned floor, east corner
Conifers		
Pine	11/0.4 g	
Piñon		4/0.1 g
Ponderosa pine	1/<0.1 g	
Unknown conifer		3/<0.1 g
Non-Conifers		
Mountain mahogany	8/0.2 g	1/<0.1 g
Oak		4/0.2 g

FS No.	149	224
Totals	20/0.6 g	12/0.3 g

Pollen Remains (Susan Smith)

Four pollen samples were analyzed from LA 85413. Table 35.18 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage and was found in only one sample. Prickly pear and beeweed were the only economic resources that were identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 35.18), and these are discussed in detail in Smith's chapter in Volume 3.

Table 35.18. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85413 (*n* = 4)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	2
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	3
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85413 (*n* = 4)
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	6
		Grass Aggregates	2
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	1
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	1
	Fabaceae	Pea Family	1
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	4
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	1
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	3
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85413 (*n* = 4)
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	1
	Pinus	Pine	4
		Pine Aggregates	0
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	1
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	1
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85413 is a one-room Early Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. A single feature (a posthole) was identified at the site. The site is situated on the mesa north of Rendija Canyon and just south of Guaje Canyon. The presence of maize cupules and pollen indicates that the one-room structure was presumably occupied during the growing season.

CHAPTER 36
RENDIJA TRACT (A-14): LA 85414

Gregory D. Lockard

INTRODUCTION

LA 85414 is the remains of a small Middle Classic period structure located on a southeast-facing ridge slope on the mesa between Rendija and Guaje canyons. The site is located in the far northeast corner of the Rendija Tract, approximately 30 m north of a two-track dirt road. Vegetation on the site consists of piñon-juniper woodland with a grass understory. The site is situated at an elevation of 2109 m (6920 ft).

LA 85414 was first recorded on August 16, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. Hill believed that the site was a one-room fieldhouse. Two chalcedony flakes were the only artifacts noted on the surface. On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992. Two 1- by 1-m test pits (Units A and B) were excavated at LA 85414. Unit A was located in the center of the rubble mound, and Unit B was located just west of the mound. Units A and B were excavated to a maximum depth of 62 and 20 cm below the ground surface, respectively. No clear rock alignments or living surfaces were encountered in either unit. Artifacts recovered during the excavation of the units and a surface collection of the site include 16 pieces of chipped stone and 11 ceramic sherds (nine smeared-indented sherds, one plain brownware body sherd, and two other utilityware sherds).

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a mound of rubble measuring approximately 5 by 4 m in area (Figure 36.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended five m north and eight m east of the site datum. Two subdata (A and B) were set up for taking elevations. The site was then photographed. Artifacts visible on the surface were collected by grid unit. A 6- by 1-m east-west trench (102N/102-107E) was initially excavated across the remains of the one-room structure, which was designated Room 1. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels.

Much of Peterson and Nightengale's Unit A was located within unit 102N/105E. The eastern edge of three aligned rocks that were most likely part of the room's west wall (see below) formed the western border of Unit A. The unit extends eastward across much of the narrow room. Unit A was excavated to bedrock. The room's living surface was therefore only

encountered in thin strips just north of Unit A (the northernmost portion of grid unit 102N/105E) and just inside the room's east wall (the westernmost portion of unit 102N/106E) during the excavation of the east-west trench. Outside of the room, the trench units were excavated to the top of a sterile Btb1 horizon. Peterson and Nightengale's Unit A was chosen to serve as a sub-floor test pit for geological analysis. The northern profile of the trench was then drawn and photographed. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 29 units were excavated. Within the structure, excavation terminated at the compact living surface encountered while excavating the trench.

Figure 36.1. Pre-excavation photograph of LA 85414.

Outside of the structure, excavation terminated at the top of the Btb1 horizon. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The site was then mapped (Figure 36.2) and photographed (Figure 36.3).

During the excavation of Area 1, an obsidian projectile point fragment was discovered in association with a small concentration of rocks. The rock concentration, which is located approximately 35 m southwest of Room 1, was designated Area 2. The Area 1 grid was extended to Area 2, and a 2- by 2-m grid was placed over the rock concentration. All four grid units (73-75N/82-84E) were then excavated. Excavation revealed that the rocks were superficial

and did not form any clear pattern (Figure 36.4). In addition, very few artifacts were recovered from the excavations. As a result, it is highly unlikely that the rock concentration was a cultural feature.

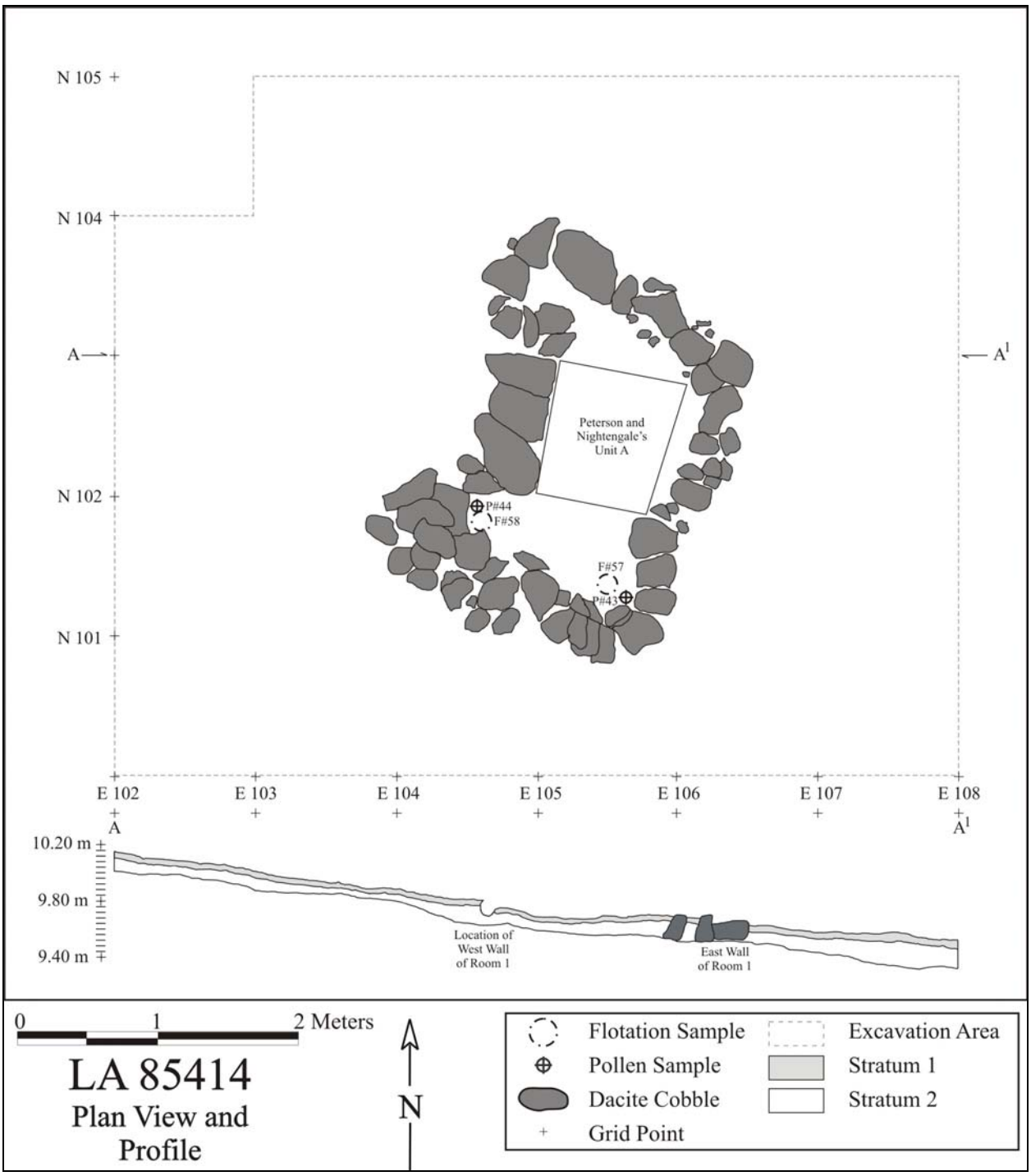


Figure 36.2. Plan view and profile of LA 85414.

Figure 36.3. Post-excavation photograph of the fieldhouse at LA 85414.

Figure 36.4. Area 2, a rock concentration located southwest of Room 1.

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Alan Madsen, Brian Harmon, Bettina Kuru'es, and Margaret Dew. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa was the site monitor representing Santa Clara Pueblo, as well as an additional excavator.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly 2 to 6 cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 5 to 20 cm in thickness in Area 1 and 7 to 8 cm in Area 2. In Area 1, the post-occupational fill was thickest in and around the collapsed walls of the structure and thinned away from the walls and towards the center of the room. It was also considerably thicker in the downhill (i.e., eastern) half of the site. Stratum 2 is more or less equivalent to the Bw horizon. Stratum 3 is the backfill removed from Peterson and Nightengale's Unit A. Stratum 3 is therefore a disturbed context. Peterson and Nightengale's Unit B could not be located. Judging from their map of the site, however, it was most likely located within the excavated area. The back fill in this shallow (20 cm) excavation was therefore indistinguishable from the surrounding post-occupational fill, and therefore could not be excavated as a separate stratum. Stratum 4 is the Room 1 living surface. Tables 36.1 through 36.4 summarize and describe the strata excavated at the site.

Table 36.1. LA 85414 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/3	Loamy sand	2–6	Surface sediment
2	10YR 5/3	Sandy loam	5–20	Post-occupational fill
3	10YR 5/3	Sandy loam	60	Backfill from P & N test pit
4	10YR 5/2	Clay loam	-	Room 1 living surface

Table 36.2. LA 85414 soil horizon descriptions from the east profile of unit 103N/107E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/3	Loamy sand	0–8	Topsoil
Bw	10YR 5/3	Sandy loam	8–5	Late-Holocene soil
Btb1	7.5YR 4/3.5	Sandy clay loam	15–23	Late-Pleistocene soil
R	-	-	23+	Weathered Cerro Toledo bedrock

Table 36.3. LA 85414 soil horizon descriptions from the east profile of Peterson and Nightengale's Unit A (within grid unit 102N/105E).

Horizon	Color	Texture	Depth (cm)	Description
Bw	10YR 5/3	Sandy loam	~10–20	Late-Holocene soil
Btb1	7.5YR 4/3	Sandy clay loam	20–32	Late-Pleistocene soil
Rk	-	-	32+	Cerro Toledo bedrock

Table 36.4. LA 85414 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	1	2	0	0	**3**
1	8	6	0	0	**14**
2	25	19	5	0	**49**
3	3	3	0	1	**7**
4	0	0	0	0	**0**
Total	**37**	**30**	**5**	**1**	**73**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small structure that probably functioned as a fieldhouse. The fieldhouse is roughly rectangular in shape, although the west wall does appear to curve significantly inward (see below). Room 1 measures 2.05 m in length (north to south) by 1.40 m in width (east to west), with approximately 2.87 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the rubble mound in Area 1 (102N/102-107E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's east and west walls. Peterson and Nightengale's Unit A, which was excavated to bedrock, covers much of that portion of the trench that is within Room 1. As a result, the room's living surface was only encountered in thin strips to the north and east of Unit A during the excavation of the trench. An excavation of the test pit's profiles indicated that there were no additional floors or living surfaces below. After the excavation of the trench, the rest of the room was excavated down to the compact living surface encountered in the trench.

Fill. The interior of Room 1 was filled with 2 to 6 cm of surface sediment on top of 7 to 11 cm of post-occupational fill. The fill was thickest in and around the room's collapsed walls and thinned away from the walls and towards the center of the room. Flotation (Field Specimen [FS] 39) and pollen (FS 40) samples were taken of the Room 1 fill, but were not analyzed.

Floor. No prepared floor was encountered in Room 1. There is a compact surface just above the Btb1 horizon, however, that was most likely the room's living surface. This surface is relatively flat, devoid of rocks, and slightly stained in the area south of Peterson and Nightengale's Unit A. To the north of Unit A, there were several large rocks embedded in the presumed living surface. These rocks may be wallfall. The fact that they are deeply embedded in the presumed living surface and Btb1 horizon below, however, indicates that this may not be the case. The rocks do not present a discernible pattern. If they are not wallfall, their function is therefore unknown. The tops of the rocks may have been at floor level, in which case the floor was slightly higher than the excavated surface in this area of the room. A thin strip of living surface was encountered to the east of Unit A, which was poorly preserved.

Pollen samples were taken at the level of the presumed living surface in the northeast (FS 47), northwest (FS 42), southeast (FS 43), and southwest (FS 44) corners of the room. FS 43 and FS 44 were analyzed and identified taxa included grass family, sunflower family, ragweed/bursage, cheno-ams, spurge family, spruce, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Flotation samples were taken of the fairly well-preserved living surface matrix in the southeast (FS 57) and southwest (FS 58) corners of the room. Carbonized taxa identified in these samples included unidentified pine and piñon pine.

Wall Construction. In general, the Room 1 walls were constructed of dacite cobbles of various sizes (Table 36.5). The people who constructed the walls do not appear to have selected for any particular size or shape of rock. The foundation of the walls was formed by placing dacite cobbles in a shallow trench dug into the Btb1 horizon, which is a late-Pleistocene soil. The north wall was composed of a single row of irregularly shaped dacite cobbles. One rock remained of the wall's second course. It was located in the westernmost portion of the wall. Small dacite cobbles were placed in the crevices between the wall's larger rocks. The south wall was a double wall of irregularly shaped dacite cobbles. The cobbles were also irregularly placed, which may indicate that the wall was partially disturbed. A few rocks of the second course remained in the westernmost portion of the wall. The east wall was only one course high and was largely composed of a single row of irregularly shaped dacite cobbles. These rocks tend to be rounder, however, than those of the other walls. The west wall was quite unusual. The northernmost 55 cm of the wall extended southward from the west end of the north wall.

Table 36.5. LA 85414 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.45	0.10–0.30	0.25–0.35	1 to 2
South	1.40	0.08–0.42	0.26–0.53	1 to 2
East	1.72	0.08–0.15	0.20–0.35	1
West	1.65	0.14–0.22	0.20–0.50	1

Note: The west wall measurements include the large rocks in the central portion of the wall that are lower and offset to the east.

There was also a short section of the wall that extended northward from the west end of the south wall. In between were three very large rocks that extended down into the Btb1 horizon. The central of the three rocks was especially large and extended at least 10 cm into the Btb1 horizon. All three of the rocks extended eastward into the room. If the rocks were part of the east wall, the wall curved significantly inward, making the central portion of the room extremely narrow. For this reason, the rocks may instead have been a slightly raised platform or stair just inside the room's entryway. A small upright cobble extended from the southernmost of the three large rocks diagonally to the northern end of the west wall's south section. There were several cobbles that similarly extended from the northernmost of the three large rocks diagonally to the southern end of the west wall's north section. The location of these rocks suggests that the three large rocks were indeed *in situ*. If this is the case, the room was rectangular only if the three large rocks were part of an internal feature (i.e., a platform or stair just inside the room's entryway).

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the room's masonry was originally considerably higher than it was at the time of

excavation. In order to estimate the original height of the masonry, all of the rocks removed as wallfall during the site's excavation were placed in three stacks, which were then measured. The stacks measured 0.35 by 4.00 by 0.58 m, 0.65 by 1.20 by 0.70 m, and 0.35 by 2.7 by 0.50 m, for a total of approximately 1.83 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the room's masonry was originally approximately 1.08 m in height. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the plateau. In fact, no adobe was recovered from the site.

Geological Analysis

Geologists Paul Drakos and Steven Reneau utilized two profiles to reconstruct the natural soil horizons at the site. The upper strata were described from the east profile of unit 103N/107E, and the lower strata were described from the east profile of Peterson and Nightengale's Unit A (within unit 102N/105E). The east profile of unit 103N/107E contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), a Btb1 horizon (a late-Pleistocene soil), and a R horizon (weathered Cerro Toledo bedrock). The east profile of Peterson and Nightengale's Unit A contained a soil sequence consisting of a Bw horizon, a Btb1 horizon, and a Rk horizon (Cerro Toledo bedrock).

Artifact Distribution

The number of artifacts encountered during the excavation of LA 85414 (n = 73) is small compared to other Rendija Canyon fieldhouses excavated during the Conveyance and Transfer Project. This may indicate that the site was occupied for only a short period of time. As Table 36.7 demonstrates, the number of artifacts in Area 1 increases slightly in grid units to the south and east. This artifact distribution is most likely the result of site formation processes, as the natural hillside surface slopes downward in this direction. No other patterns are discernible in the artifact distribution at the site. Only three artifacts were recovered from Area 2 (Table 36.8). This supports the conclusion that the concentration of rocks in the area was not a cultural feature.

Table 36.6. LA 85414, Area 1 artifact counts by grid unit.

	E102	E103	E104	E105	E106	E107
N104	--	2	2	0	0	2
N103	0	0	**0**	**1**	**0**	1
N102	0	0	**0**	**9**	**6**	8
N101	0	0	**1**	**0**	8	9
N100	2	3	1	0	8	6

Note: Does not include one artifact found outside of the excavated area within Area 1 during surface collection; bold numbers indicate grid units that are located completely or partially within Room 1.

Table 36.7. LA 85414, Area 2 artifact counts by grid unit.

	E82	E83
N74	0	0
N73	1	2

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 70 artifacts were analyzed from the excavations conducted at LA 85414. In addition, flotation and pollen samples were selected for analysis from the Room 1 living surface (Stratum 4) (Table 36.8). The results of the artifact and sample analyzes are presented in the following sections.

Table 36.8. Samples selected for analysis from LA 85414.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2				
3				
4	57, 58	43, 44		

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 35 ceramics were analyzed from LA 85414. The majority of the pottery consists of Sapawe Micaceous, with Biscuit A, and glazeware sherds (Table 36.9). This would indicate a Middle Classic (14th century) occupation for the site. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 36.10 to 36.12. The graywares and whitewares appear to have been locally made from local tuff temper. This contrasts with the Sapawe Micaceous pottery that appears to have been derived from a non-local and local source. The former is represented by a micaceous temper and the latter by a tuff temper with a micaceous slip. All of the grayware, micaceous, and glazeware ceramics consist of jar vessel forms while the whiteware sherds were derived solely from bowls.

Table 36.9. Ceramic types from LA 85414.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	3	8.6
Biscuit unpainted one side slipped	1	2.9
Biscuit A	1	2.9
Northern Rio Grande Utilityware		
Smeared plain corrugated	3	8.6

Ceramic Type	Frequency	Percent
Sapawe Micaceous	24	68.6
Middle Rio Grande Glazeware		
Glaze red body	1	2.9
Glaze yellow body	2	5.8
Total	**35**	**100.0**

Table 36.10. Tradition by ware for LA 85414 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	3	100.0	5	100.0	0	0.0	0	0.0	8	23.0
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	24	100.0	24	68.5
Middle Rio Grande	0	0.0	0	0.0	3	100.0	0	0.0	3	8.5
Total	**3**	**100.0**	**5**	**100.0**	**3**	**0.0**	**24**	**0.0**	**35**	**100.0**

Table 36.11. Temper by ware for LA 85414 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff or ash	0	0.0	1	20.0	0	0.0	0	0.0	1	2.8
Fine tuff and sand	0	0.0	3	60.0	0	0.0	0	0.0	3	8.5
Self tempered	0	0.0	1	20.0	0	0.0	0	0.0	1	2.8
Mostly tuff with phenocrysts	3	100.0	0	0.0	0	0.0	8	33.3	11	31.4
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	16	66.6	2	5.7
Latite Keres area	0	0.0	0	0.0	3	100.0	0	0.0	3	8.5
Total	**3**	**100.0**	**5**	**100.0**	**3**	**100.0**	**24**	**100.0**	**35**	**100.0**

Table 36.12. Vessel form by ware for LA 85414 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl body	0	0.0	3	60.0	0	0.0	0	0.0	3	8.5
Jar neck	1	33.3	0		2	66.6	4	16.6	7	20.0
Jar body	2	66.6	1	20.0	1	33.3	20	83.3	24	68.5
Indeterminate coil, strap handle	0	0.0	1	20.0	0	0.0	0	0.0	1	2.8
Total	**3**	**100.0**	**5**	**100.0**	**3**	**0.0**	**24**	**100.0**	**35**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 35 artifacts were analyzed from LA 85414. The assemblage consists of 28 pieces of debitage, two retouched tools, four ground stone artifacts, and a hammerstone. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 36.13 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony and Pedernal chert with less obsidian, silicified wood, and basalt materials. The presence of cortex on 14.2 percent of the debitage indicates that these materials were collected from waterworn (n = 4) sources. The chalcedony, Pedernal chert, and silicified wood are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. The igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 36.13. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. wood	Quartzite	Other	Total
Debitage	Angular debris	0	0	0	0	0	0	1	1	0	3	0	0	0	5
	Core flake	1	0	0	0	0	0	3	11	0	6	2	0	0	23
	Subtotal	1	0	0	0	0	0	4	12	0	9	2	0	0	28
Retouched Tools	Biface	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Projectile point	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Ground Stone	One-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Millingstone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Grinding slab	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Grooved abrader	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Und. ground stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	1	3	0	0	0	0	0	0	0	0	4
Other	Hammerstone	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total		**2**	**0**	**0**	**1**	**3**	**0**	**6**	**12**	**0**	**9**	**2**	**0**	**0**	**35**

Three pieces of obsidian debitage, a biface, and a projectile point, and a single basalt flake were submitted for X-ray fluorescence analysis. The obsidian artifacts are mostly made from Cerro

Toledo obsidian; however, the projectile point is made from the El Rechuelos source (Table 36.14). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source area is located about 19 km (12 mi) as the "crow flies" to the west of the site. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present in the area of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval and are scattered across the mesa top. The El Rechuelos (Polvadera Peak) source area is situated about 27 km (17 mi) northwest of the site. The single basalt flake is actually dacite, which is derived from the San Antonio Mountain area located approximately 115 km (70 mi) north of Rendija Canyon.

Table 36.14. Obsidian source samples.

FS #	Artifact	Color	Source
23	Debitage	Translucent	Cerro Toledo rhyolite
34	Projectile point	Black dusty	El Rechuelos
35	Debitage	Translucent	Cerro Toledo rhyolite
36	Biface	Translucent	Cerro Toledo rhyolite
55	Debitage	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The debitage consists solely of core flakes and angular debris. The overall cortical:non-cortical ratio of 0.28 reflects a slight emphasis on the later stages of core reduction. The flakes mostly have single-faceted platforms (n = 5), with fewer collapsed (n = 4) and crushed (n = 11) platforms. None of the platforms exhibit any obvious evidence of preparation. The majority of the core flakes are distal fragments (n = 11), with fewer whole (n = 9), proximal (n = 1), midsection (n = 1), and undetermined (n = 1) fragments. The whole core flakes have a mean length of 34.5 mm (*std* = 10.3) and the angular debris a mean weight of 1.7 g (*std* = 1.2).

The retouched tools consist of a biface and projectile point. The biface is a proximal fragment with an edge angle of 60 degrees indicating that it was broken during the middle stage of the reduction process. The projectile point is a midsection fragment with a broken tip and base. It was manufactured on a flake and was only partially bifacially retouched. It could represent the broken remains of a corner-notched arrow point.

Tool Use

A single flake exhibits evidence of edge damage that could be attributed to use. This damage consists of some rounding and polish on a distal end with an edge angle of 70 degrees. The ground stone includes a mano, a millingstone, a grinding slab, and a grooved abrader. The mano is a one-hand variety made on a small dacite slab that exhibits a single well-used grinding surface. The millingstone is a large piece of dacite with a single concave-shaped grinding surface. In contrast, the grinding slab is a flat piece of andesite with a single, flat, heavily ground surface that also exhibits slight polish. The polished area includes striations that are oriented along a single direction. Lastly, the grooved abrader is a small dacite cobble with a natural indentation that appears to exhibit some wear along the groove.

Faunal Remains (Kari Schmidt)

One piece of bone was recovered during excavations of this Middle Classic period fieldhouse. The bone was recovered in 102N/105E and was identified as a fragment of the proximal metacarpal of a mule deer (*Odocoileus hemionus*). The bone was identified as a possible awl in the field, but closer inspection suggested that it was not an awl, but was simply shaped and polished. The bone was not burned.

Archaeobotanical Remains (Pamela McBride)

Piñon needles were the only non-wood plant material recovered from the fieldhouse and most likely relate to fuelwood use (Table 36.15). Wood charcoal was limited to five pieces of pine recovered from the southeast corner of the living surface.

Table 36.15. Flotation plant remains, count, and abundance from LA 85414.

FS No.	**57**	**58**
Context	Room 1, living surface, SE corner	Room 1, living surface, SW corner
Cultural		
Perennials		
Piñon		needle +
Non-Cultural		
Grasses		
Grass family	floret +	floret +
Perennials		
Juniper	twig +	
Piñon	needle +	
Ponderosa pine	needle +	

+ 1-10/liter.

Pollen Remains (Susan Smith)

Only two pollen samples were analyzed from LA 85414. Table 36.16 lists the frequency of identified pollen types. No cultigens or other economic resources were identified in the assemblage. Other potential economic resources were identified in the assemblage (Table 36.16), and these are discussed in detail in Smith's chapter in Volume 3.

Table 36.16. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85414 (*n* = 2)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	0
	Eriogonum	Buckwheat	o
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	2
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85414 (*n* = 2)
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	2
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	2
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85414 (*n* = 2)
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	1
	Pinus	Pine	2
		Pine Aggregates	0
	Pinus edulis type	Piñon	2
	Juniperus	Juniper	2
		Juniper Aggregates	0
	Quercus	Oak	2
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	2
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85414 is a one-room Middle Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is situated on a southeast-facing ridge slope on the mesa between Rendija and Guaje canyons. Although no evidence of cultigens was identified, the one-room structure was presumably occupied during the growing season when maize was being cultivated.

CHAPTER 37
RENDIJA TRACT (A-14): LA 85417

Gregory D. Lockard

INTRODUCTION

LA 85417 is a small Classic period site located on a south-facing ridge slope of the mesa between Rendija and Guaje canyons. The site is located near the southern boundary of the Rendija Tract. Vegetation on the site consists of piñon-juniper woodland with a grass understory. The site is situated at an elevation of 2091 m (6860 ft).

LA 85417 was first recorded on August 17, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. According to Hill, the site consisted of a burned jacal structure with a rock foundation, two isolated sub-rectangular rooms, a hearth or burned rock midden, and two agricultural terraces. The jacal structure was associated with a few obsidian and chalcedony flakes, a few plain smooth brown sherds, and two indented corrugated sherds. A single black micaceous sherd was found between the two features interpreted as isolated sub-rectangular rooms. On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992.

Seven 1- by 1-m test pits (Units A-G) and one test pit extension (Unit E-Ex) were excavated at LA 85417. Unit A is located in the center and Unit B is located just west of the burned jacal structure, which they designated Feature 1. Unit A was excavated to a maximum depth of 41 cm. Several pieces of burned daub, many of which had wattle impressions, were recovered from the unit, as well as a chalcedony flake and a utilityware sherd. An elevated layer of clay was encountered in the unit's northeast quadrant, which was interpreted as a possible living surface. Unit B was excavated to a maximum depth of 30 cm. A high concentration of burned adobe fragments was encountered just below the surface. No additional artifacts were recovered.

Unit C is located in the concentration of rocks that Hill (1991) interpreted as a hearth or burned rock midden. This rock concentration was designated Feature 3. Unit C was excavated to a maximum depth of 30 cm. After the removal of surface rocks, a semi-circular rock alignment was exposed. Several pieces of partially burned wood were recovered during the excavation of the unit, and a charcoal-stained surface was encountered within the semi-circular rock alignment. Peterson and Nightengale (1993) argue that the feature was a hearth that post-dates the occupation of the burned jacal structure (i.e., Feature 1).

Unit D is located in one of the features that Hill (1991) interpreted as an isolated sub-rectangular room. The unit was excavated to a maximum depth of 40 cm. No artifacts were recovered from the excavation, and no rock alignments or cultural surfaces were encountered. Peterson and Nightengale (1993) argue that the feature may have been utilized for soil control.

Unit E is located in the other feature that Hill (1991) interpreted as an isolated sub-rectangular room. The unit was excavated to a maximum depth of 40 cm. Excavation revealed the feature to be the remains of a historic hearth, which was designated Feature 2. The hearth consisted of a firepit lined with small cobbles bounded by upright slabs and surrounded by an outer ring of rocks. Most of the hearth's interior was exposed during the excavation of Unit E. A 0.5- by 0.5-m extension (Unit E-Ex) was excavated to the east of the northern half of Unit E to investigate the extent and function of the outer ring of rocks around the firepit. Unit E-Ex was excavated to a maximum depth of 30 cm. The excavation revealed that the rocks did not continue to the east. Artifacts recovered from within the hearth include three plain gray utilityware sherds (possibly prehistoric), one glazed earthenware sherd, and numerous pieces of rusted metal (possibly the remains of food cans). No artifacts were found outside of the hearth.

Units F and G are located in the rock concentrations that Hill (1991) interpreted as agricultural terraces. These rock concentrations were designated Features 5 and 6. Unit F is located in Feature 5 and was excavated to a maximum depth of 40 cm. Unit G is located in Feature 6 and was excavated to a maximum depth of 35 cm. No cultural materials of any kind were found in either unit. Peterson and Nightengale (1993) argue that both features are probably check dams. In addition to the artifacts described above, five pieces of chalcedony debitage and 57 ceramics were recovered during a surface collection of the site. One of these was identified as a Wiyo Black-on-white sherd. The rest are utilityware sherds. Peterson and Nightengale (1993) argue that the research potential of Features 2 to 6 was exhausted by their excavations. For this reason, only Feature 1, which was re-designated Area 1, was excavated during the Conveyance and Transfer (C&T) Project.

FIELD METHODS

Before excavation, Area 1 was cleared of trees and large undergrowth (Figure 37.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the area. The area was then covered with a 1- by 1-m grid that extended 7 m north and 8 m east of the site datum, and three subdata (A-C) were set up for taking elevations. The area was then photographed. Artifacts visible on the surface were then collect by grid unit. A 7- by 1-m east-west trench (units 103N/101-107E) was initially excavated across the remains of the structure, which was designated Room 1. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels.

A high quantity of wallfall was removed from the central grid units in the trench (103N/103-106E). This wallfall included rocks of various sizes, as well as countless pieces of burned adobe, many of which contained wattle impressions. All adobe fragments that were the size of a golf ball or larger were kept for analysis. The location of the room's east and west walls could not be determined with certainty until the foundation rocks were exposed. Above the foundation rocks were poorly defined rock alignments. These alignments were the partially disturbed remains of the room's walls. Part of the room's west wall and most of its entryway were encountered in unit 103N/104E. Part of the room's east wall and the entire south wall, excluding the entryway, were encountered in unit 103N/105E.

Figure 37.1. Pre-excavation photograph of LA 85417.

Several patches of a burned plaster floor were encountered in those portions of units 103N/104E and 103N/105E that were within Room 1. In those areas where the plaster floor was not preserved, the floor's foundation (a compact layer of clay-rich sediment) was encountered. Outside of the room, the trench units were excavated down to the top of a sterile Btb1 horizon. Peterson and Nightengale's Unit B occupies much of unit 103N/102E, as well as the east-central portion of unit 103N/101E. The backfill within this test pit was excavated as a separate stratum (Stratum 4). The northern profile of the trench was then drawn and photographed. The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 32 units were excavated. Within the structure, excavation proceeded down to the plaster floor or floor foundation encountered while excavating the trench.

Outside of the structure, excavation proceeded down to the top of the Btb1 horizon. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The structure was then mapped (Figure 37.2) and photographed (Figure 37.3).

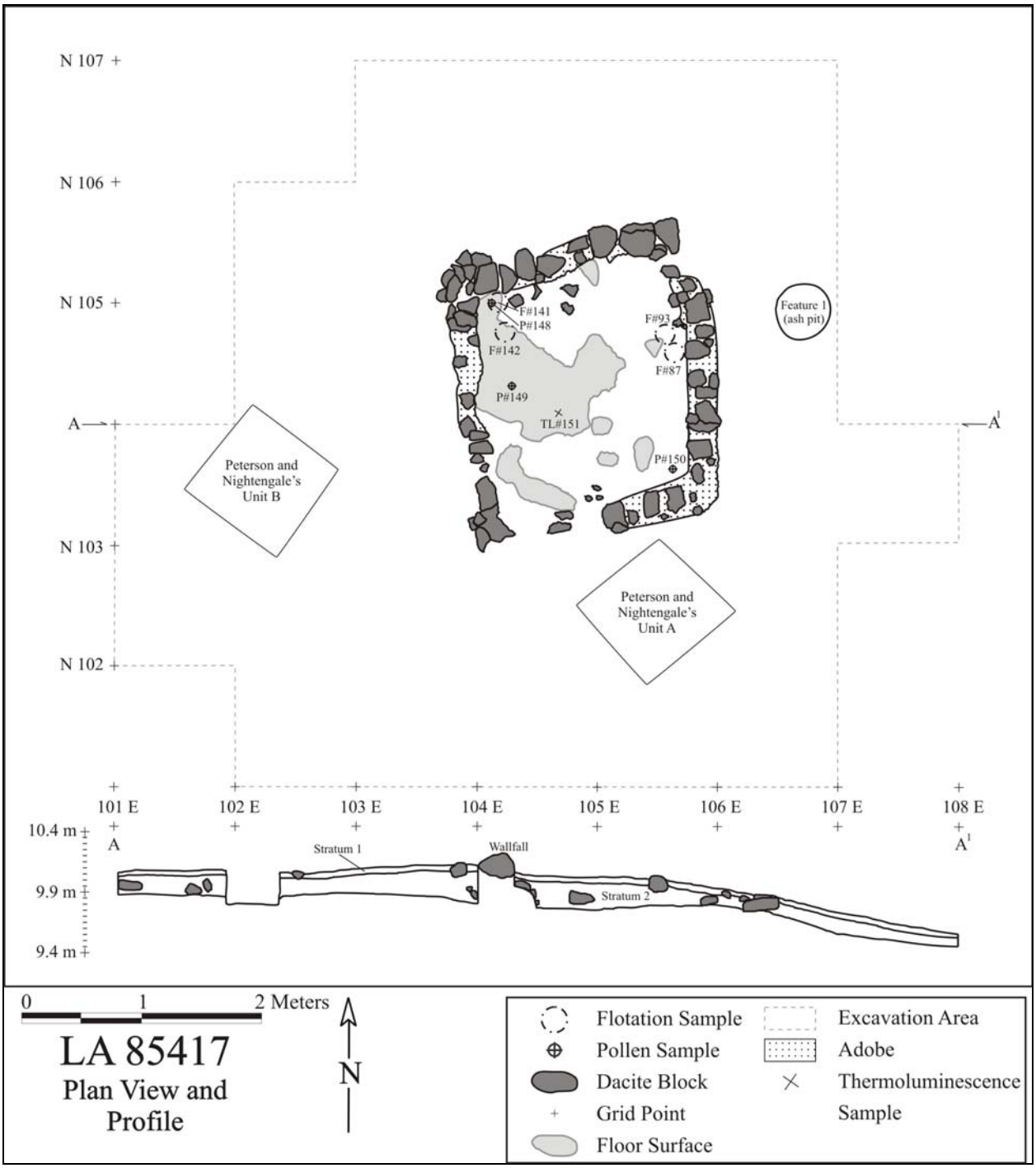


Figure 37.2. Plan view and profile of LA 85417.

Figure 37.3. Post-excavation photograph of the fieldhouse at LA 85417.

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Alan Madsen, Brian Harmon, Jennifer Nisengard, Bettina Kuru'es, and Rhonda Robinson. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa was the site monitor representing Santa Clara Pueblo, as well as an additional excavator.

STRATIGRAPHY

Stratum 1 is composed of loose, surface sediment. It is uniformly 2 to 6 cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 5 to 30 cm in thickness in the area excavated. Stratum 3, which is wallfall, is located between Strata 1 and 2. A separate stratum for wallfall was only utilized in those units in which a high concentration of burned daub was encountered below the surface sediment. This amounted to nine units, all of which are located to the south and west of Room 1. Stratum 3 ranges from 5 to 20 cm in depth. The combined post-occupational fill and wallfall (i.e., Strata 2 and 3) was thickest in and around the structure and thinned away from the room. Strata 2 and 3 are more or less equivalent to the Bw horizon. Stratum 4 is the backfill removed from Peterson and Nightengale's Units A and B. Stratum 4 is therefore a disturbed context. Stratum 5 is the Room 1 floor, and Stratum 6 is the fill removed from Feature 1 (a small, circular firepit). Tables 37.1 through 37.4 summarize and describe the strata excavated at LA 85417.

Table 37.1. LA 85417 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/3	Sandy loam	2–6	Surface sediment
2	10YR 5/3	Sandy loam	5–30	Post-occupational fill
3	10YR 5/3	Sandy loam	5–20	Wallfall
4	10YR 5/3	Sandy loam	20–25	Backfill from P & N test pits
5	7.5YR 4/1	Clay	-	Room 1 floor
6	10YR 4/2	Sandy loam	8	Feature 1 (fire pit) fill

Table 37.2. LA 85417 soil horizon descriptions from the west profile of unit 104N/102E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/3	Loam	0–6	Topsoil
Bw	10YR 5/3	Loamy sand	6–15	Late-Holocene soil
Btb1	7.5YR 4/6	Sandy clay	15–25+	Pleistocene soil

Table 37.3. LA 85417 soil horizon descriptions from the interior face of the west wall of Room 1 (within unit 104N/104E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/3	Sandy loam	0–7	Topsoil
Bw	10YR 5/3	Sandy loam	7–15	Late-Holocene soil
Btb1	7.5YR 4/6	Sandy clay loam	15–24+	Pleistocene soil

Table 37.4. LA 85417 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	0	0	0	**0**
1	30	2	2	0	**34**
2	95	10	2	0	**107**
3	9	1	0	0	**10**
4	0	0	0	0	**0**
5	0	0	0	0	**0**
6	0	0	0	0	**0**
Total	**134**	**13**	**4**	**0**	**151**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small, rectangular shaped structure that probably functioned as a fieldhouse. It measures 1.95 m in length (north to south) by 1.65 m in width (east to west), with approximately 3.22 m^2 of interior space. Excavation of the room began with an east-west trench that extended across Area 1 (103N/101-107E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's east and west walls. The room's entryway and south wall were also encountered while excavating the trench. Within the room, the trench units were excavated down to the room's living surface. After the excavation of the trench, the rest of the room was excavated down to the living surface. In much of the room, this living surface took the form of a plaster floor (see below).

Fill. The interior of Room 1 was filled with 2 to 6 cm of surface sediment on top of 25 to 30 cm of post-occupational fill. The fill was fairly uniform in thickness throughout the room. Flotation (Field Specimen [FS] 80) and pollen (FS 81) samples were taken of post-occupational fill from the center of the room, but the samples were not analyzed.

Floor. A burned plaster floor was encountered throughout much of Room 1 (Figure 37.4). In those areas where the plaster floor was not preserved, an extremely compact layer of clay-rich sediment was encountered.

Figure 37.4. Burned floor in Room 1 at LA 85417.

This layer of sediment is most likely the floor's foundation (i.e., matrix). Only small patches of burned plaster floor were encountered at other fieldhouses in the Rendija Tract that were excavated as part of the C&T Project. Most of these patches of plaster floor were located in the area immediately surrounding a hearth. The fact that the floor in Room 1 at LA 85417 was baked and thus preserved throughout the room indicates that the structure burned down either while the site was occupied or shortly thereafter. This interpretation is supported by the unusually high number of pieces of burned daub that were recovered during the excavation of the site (see below).

As is the case for other fieldhouses in the Rendija Tract in which evidence was available, the plaster floor appears to have been formed by a thin (1 to 2 cm) layer of clay mud spread evenly throughout the room. The floor's foundation is composed of a thicker layer of compact, clay-rich sediment. The best preserved portions of the plaster floor are in the westernmost and central portions of the room. There are also patches of the plaster floor in the eastern half of the room. In those areas where the plaster floor is not preserved, the floor's foundation is well-preserved in all but the north-central portion of the room.

Two flotation samples were taken from post-occupational fill directly on top of the floor in the east-central portion of the room (FS 87 and FS 93). These samples were not analyzed. Additional flotation samples were taken from a concentration of ash and charcoal directly on top of the floor in the far northwest corner (FS 141) and west-central portion (FS 142) of the room. Carbonized taxa identified in these samples included pine, ponderosa pine, cheno-ams, unknown conifer, and juniper. Pollen samples of sediment scraped from the floor were also taken in the far northwest corner (FS 148) and west-central portion (FS 149) of the room. Taxa identified in these samples included maize, buckwheat, grass family, cheno-ams, sunflower family, spurge family, ragweed/bursage, evening primrose, unidentified pine, juniper, and sagebrush. An additional pollen sample was taken of floor matrix from the southeast corner of the room (FS 150), but it was not analyzed. Finally, a large piece of the burned plaster floor was taken from the center of the room as a sample for thermoluminescence (TL) dating (FS 151). The sample dated to 1415±39.

Wall Construction. During the excavation of Room 1, several rock alignments were encountered that were presumed to be the room's walls. Further excavation confirmed that the rock alignments were indeed the remains of the room's walls. The walls were highly disturbed, however, and were no longer in their original position. In other words, the upper courses of the walls were no longer directly on top of the wall foundations. As a result, these rocks were removed, and the wall foundations thus exposed. The wall foundations were constructed of small to medium-sized dacite cobble of irregular shape and adobe mortar. In some locations, the adobe mortar fills in significant space between the rocks. The room's entryway is located in the western half of the south wall. Two small, narrow rocks are located within the entryway. These rocks are most likely the remains of a short doorsill. A fairly large patch of plaster floor is in fact located just inside and terminates at the inner of these two rocks.

During the excavation of the area in and around Room 1, hundreds of pieces of burned daub were recovered. Many of the larger of these contain impressions of branches of varying sizes

and/or reed-like vegetal material. The fragments of burned daub are the remains of the upper portion of the room's walls and the roof. No more than a few pieces of burned daub were recovered from any other site in the Rendija Tract. The unusually high number of pieces of burned daub recovered from the site indicates that the structure burned down either while it was occupied or shortly after it was abandoned. This interpretation is supported by the fact that much of the room's plaster floor was burned and thus preserved. Large pieces of burned daub were removed from FS 104 and FS 136 to serve as samples from TL dating. These samples dated to 992±59 and 1277±58, respectively.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation. In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in three stacks, which were then measured. The stacks measured 1.50 by 1.20 by 0.40 m, 1.40 by 0.70 by 0.30 m, and 9.70 by 0.53 by 0.45 m, for a total of approximately 3.33 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 2.44 m in height (Table 37.5). This number is highly inflated, however, due to the fact that there was a consistent and dense layer of small, naturally occurring rocks just above the Bt horizon across much of the site. This layer of rocks was especially dense in the area to the south of Room 1. There were also quite a few rocks on the surface that appeared to be naturally occurring. The naturally occurring rocks could not be differentiated from the Room 1 wallfall. At least half of the rocks removed during the excavation of the site were therefore probably never part of the Room 1 walls. Based on the analysis of wallfall from other fieldhouses excavated in the Rendija Tract that are located in areas with little or no naturally occurring rocks, the masonry portions of the walls were probably around 1 m tall. As indicated by the numerous fragments of burned adobe with wattle impressions recovered from the site, the upper portions of the walls and roof were composed of wattle and daub.

Table 37.5. LA 85417 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.55	0.10–0.25	0.17–0.30	1 to 2
South	0.85 (1.60)	0.07–0.21	0.20–0.27	1
East	1.90	0.07–0.32	0.22–0.30	1 to 2
West	1.85	0.07–0.31	0.15–0.30	1 to 3

Note: The length of the south wall including the entryway is given in parentheses.

Feature 1

Feature 1 is a small circular depression that was filled with ashy and charcoal-rich sediment (Figures 37.5 and 37.6). It does not appear to have been a formal hearth. Instead, it was most likely an unprepared, limited-use firepit. The pit extends down into the compact, clay-rich Btb1 horizon. The interior of the firepit is fairly well preserved. Only the northeast corner is disturbed. The sides and base of the rest of the pit appear to have been hardened and oxidized by heat. The fill in the southern portion of the pit was removed as two flotation samples (FS 71 and

FS 72) and charred taxa included cheno-ams, juniper, unidentified pine, piñon pine, and ponderosa pine. The fill in the northern portion was removed as a single flotation sample (FS 114) and carbonized taxa included unknown conifer and ponderosa pine. A pollen sample (FS 123) was taken of sediment scraped from the bottom of the hearth and identified taxa included cheno-ams, grass family, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush.

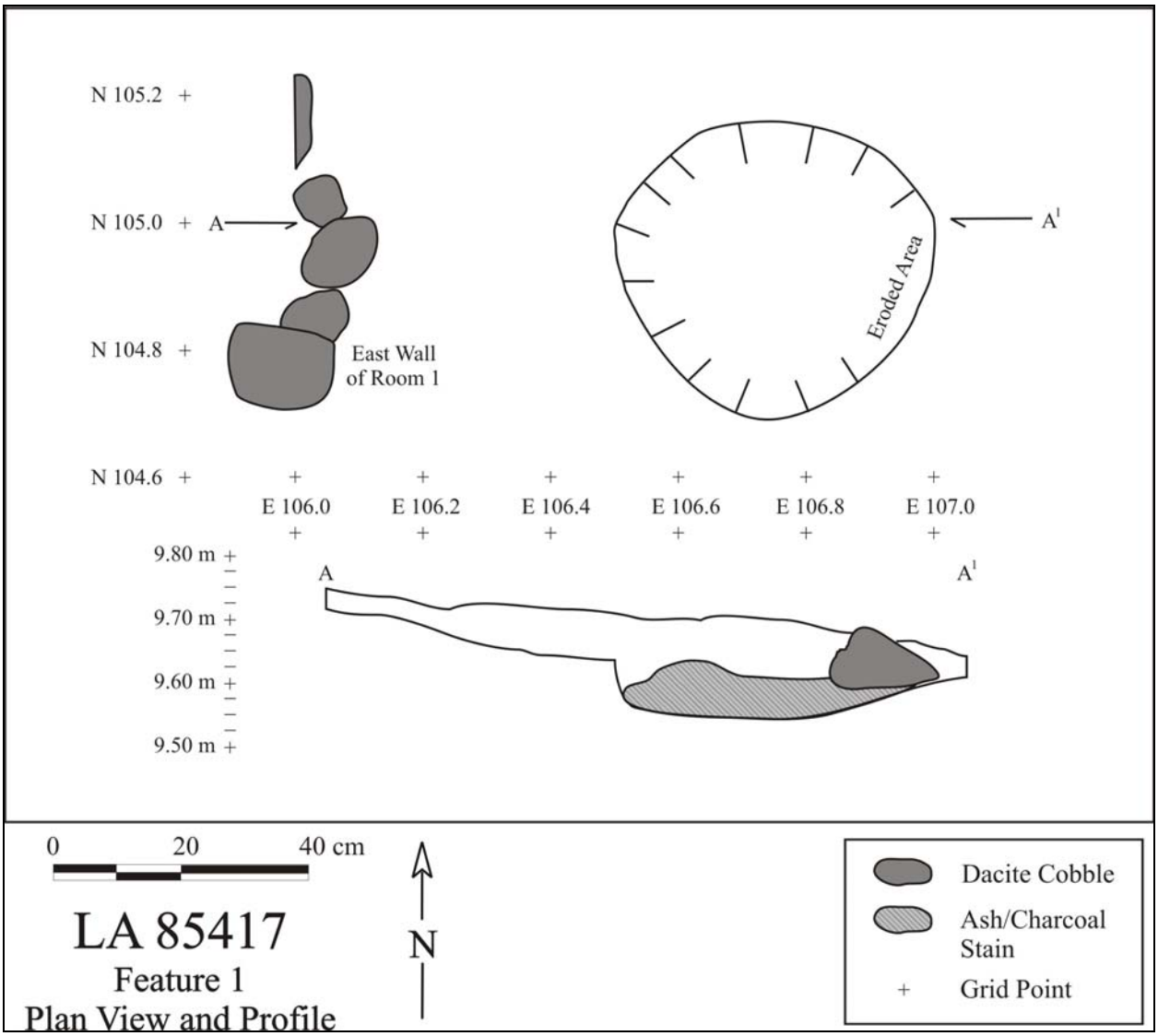


Figure 37.5. Plan view and profile of Feature 1, a small ashpit or hearth.

Geological Analysis

Geologists Paul Drakos and Steven Reneau utilized two profiles to reconstruct the natural soil horizons at the site. In order to reconstruct the soil stratigraphy in the area surrounding the site, they analyzed the west profile of unit 104N/102E. In order to reconstruct the soil stratigraphy in the area of the structure, they analyzed the interior face of the room's west wall (within unit

104N/104E). Both profiles contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late-Holocene soil), and a Btb1 horizon (a Pleistocene soil).

Figure 37.6. Post-excavation of Feature 1, a possible hearth.

Artifact Distribution

Interestingly, the grid units with the highest number of artifacts at LA 85417 are those that are located completely or partially within Room 1 (103-105N/104-105E; Table 37.6). This contrasts with most of the other fieldhouses excavated in the Rendija Tract. At these other sites, the highest concentration of artifacts is located just outside one side of the structure. In those fieldhouses in which the entryway is discernible, the highest concentration of artifacts is usually in the area just outside of the entryway. At LA 85417, the highest concentration of artifacts outside the structure is in the grid units immediately to the east (103-105N/106E). The unit immediately south of the entryway (102N/104E) does also have an elevated number of artifacts (n = 10). Little or no artifacts, however, were encountered in the other units to the south of the room. It should be noted that the entryways and activity areas of many of the Rendija Tract fieldhouses are located to the east. One explanation for this pattern is that this was the best location to take advantage of the heat and light from the early morning sun. At LA 85417, the entryway is located to the south. Feature 1, however, which was most likely an informal firepit, is located to the east. The presence of the firepit, along with the higher concentration of artifacts, indicates that the area immediately to the east of the fieldhouse was an activity area. LA 85417

therefore only deviates from the pattern at other Rendija Tract fieldhouses in that the entryway is located to the south.

Table 37.6. LA 85417 artifact counts by grid unit.

	E101	E102	E103	E104	E105	E106	E107
N106	--	--	2	4	0	0	--
N105	--	1	2	**7**	**10**	8	--
N104	--	0	1	**16**	**8**	10	--
N103	0	0	3	**28**	**13**	11	4
N102	2	0	1	10	0	2	--
N101	--	0	0	0	2	6	--

Note: Bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 146 artifacts were analyzed from LA 85417. Flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2), the floor in Room 1 (Stratum 5), and Feature 1 (hearth) fill (Stratum 6) (Table 37.7). A sherd and several burned pieces of adobe from the walls and floor of the structure were also submitted for TL dating. The results of the artifact and sample analyzes are presented in the following sections.

Table 37.7. Samples selected for analysis from LA 85417.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**TL**
1				
2	141, 142			47, 136
3				104
4				
5		148, 149		151
6	71, 72, 114	123		

Chronology

Thermoluminescence Dating

Three pieces of burned adobe and a Santa Fe Black-on-white sherd were submitted for TL dating from LA 85417 (Table 37.8). All derived ages are given in years BP, which refers to years before 2003. The 13th century date from the Santa Fe Black-on-white and a piece of burned adobe from the fill appear to be in agreement with the ceramics present on the site; however, the 10th century date seems too early and the 15th century date seems too late.

Table 37.8. TL dates from ceramics at LA 85417.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
47	UW1504	Sherd from fill	23	722	6.5	1284±47
104	UW1505	Adobe from wall	11	1014	5.8	992±59
136	UW1506	Adobe from fill	30	729	8.0	1277±58
151	UW1507	Adobe from floor	40	591	6.6	1415±39

Archaeomagnetic Dating

Ten specimens were collected as a set (ADL 1281) from a portion of burned floor in the northwest corner of Room 1 at the site. The estimated date range based on the Wolfman curve is AD 1100–1235, whereas the date range based on SWCV2000 is AD 1010–1310. The date range is much bigger for the SWCV2000 curve because of the tightness of the AD 1125 loop represented in that curve and because of the size of the sample error ellipse. The dating implications of the archaeomagnetic pole position are that the structure burned in the early Coalition period, probably before AD 1250 (based on the Wolfman curve) or in the Late Developmental through Early Classic period (based on SWCV2000).

Ceramic Artifacts (Dean Wilson)

A total of 129 ceramics were analyzed from LA 85417. The majority of the pottery consists of smeared plain corrugated, with a single Santa Fe Black-on-white sherd. These types presumably date to the Coalition period, with the dominance of smeared plain corrugated ceramics possibly indicating late 13th century (Table 37.9). On the other hand, the buffware sherds with mica slip appear to be historic in age. These sherds are primarily situated in the upper levels of the excavation, so they may be associated with the historic features present in the area of the site. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 37.10 to 37.12. The grayware and whiteware pottery appear to have been locally made from smeared-indented sand and tuff temper; however, the micaceous pottery is actually an historic buffware with a mica slip that would have been produced at a nearby pueblo in the Rio Grande Valley. All of the grayware ceramics consist of jar vessel forms. The single whiteware sherd is from a bowl and the micaceous pottery is represented by both jar and bowl forms.

Table 37.9. Ceramic types from LA 85417.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Santa Fe Black-on-white	1	0.8
Northern Rio Grande Utilityware		
Indeterminate utilityware	4	3.1
Plain gray body	2	1.5
Smeared plain corrugated	90	69.7
Smeared-indented corrugated	8	6.2

Ceramic Type	Frequency	Percent
Buff ware with mica slip	24	18.6
Total	**129**	**100.0**

Table 37.10. Tradition by ware for LA 85417 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	104	100.0	1	100.0	0	0.0	0	0.0	105	81.3
Rio Grande (Historic Tewa)	0	0.0	0.0	0.0	0	0.0	24	100.0	24	18.6
Middle Rio Grande	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0
Total	**104**	**100.0**	**1**	**100.0**	**0**	**0.0**	**24**	**100.0**	**129**	**100.0**

Table 37.11. Temper by ware for LA 85417 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sand	6	5.7	0	0.0	0	0.0	24	100.0	30	23.2
Fine tuff or ash	0	0.0	1	100.0	0	0.0	0	0.0	1	0.7
Anthill sand	98	94.3	0	0.0	0	0.0	0	0.0	98	75.9
Total	**104**	**100.0**	**1**	**100.0**	**0**	**0.0**	**24**	**100.0**	**129**	**100.0**

Table 37.12. Vessel form by ware for LA 85417 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl body	0	0.0	1	100.0	0	0.0	0	0.0	1	0.7
Jar neck	8	7.6	0	0.0	0	0.0	3	12.5	11	8.5
Jar rim	9	8.6	0	0.0	0	0.0	1	5.0	10	7.7
Jar body	87	100.0	0	0.0	0	0.0	0	0.0	87	67.4
Body sherd polished int & unpolished ext.	0	0.0	0	0.0	0	0.0	20	83.3	20	15.5
Total	**104**	**100.0**	**1**	**100.0**	**0**	**0.0**	**24**	**100.0**	**129**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 17 artifacts were analyzed from LA 85417. The assemblage consists of a core, 13 pieces of debitage, two ground stone artifacts, and a hammerstone, which represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 37.13 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony and Pedernal chert with a single piece of andesite. Cortex was not identified on any

of the debitage artifacts. Nonetheless, the chalcedony and Pedernal chert are available from local Rio Grande Valley gravels. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 37.13. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Other	Total
Cores	Core	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Debitage	Angular debris	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Core flake	0	0	0	0	0	0	0	7	0	2	0	0	0	9
	Biface flake	0	0	0	0	0	0	0	0	0	2	0	0	0	2
	Microdebitage	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	1	0	0	0	8	0	4	0	0	0	13
Ground Stone	Two-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Grinding slab	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Other	Hammerstone	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total		**0**	**0**	**0**	**1**	**2**	**0**	**0**	**8**	**0**	**5**	**0**	**0**	**1**	**17**

Lithic Reduction

The core was reduced using a single-directional, single-face technique. It was classified as still useable when discarded. Table 34.14 presents the metric information on the core.

Table 37.14. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	34	30	35	57.2

The debitage consists of core flakes, biface flakes, a piece of angular debris, and microdebitage. The total absence of cortex indicates an emphasis on the later stages of core reduction and tool production/maintenance. The flakes mostly have single-faceted platforms (n = 5), with fewer collapsed (n = 1) and crushed (n = 3) platforms. None of the platforms exhibit any obvious evidence of preparation. The majority of the core flakes are whole (n = 6), with fewer proximal (n = 1) and distal (n = 4) fragments. The whole core flakes have a mean length of 23.6 mm (*std* = 5.7), the biface flakes have a mean length of 22.0 mm (*std* = 4.2), and the single piece of angular debris a weight of 8.8 g.

Tool Use

None of the debitage exhibit evidence of edge damage that could be attributed to use.

The ground stone includes a mano and a grinding slab. The mano is a two-hand variety made on a piece of dacite (Figure 37.7). It is heavily worn and has a wedge-shaped cross-section. The grinding slab is a tabular dacite fragment with a single heavily ground surface.

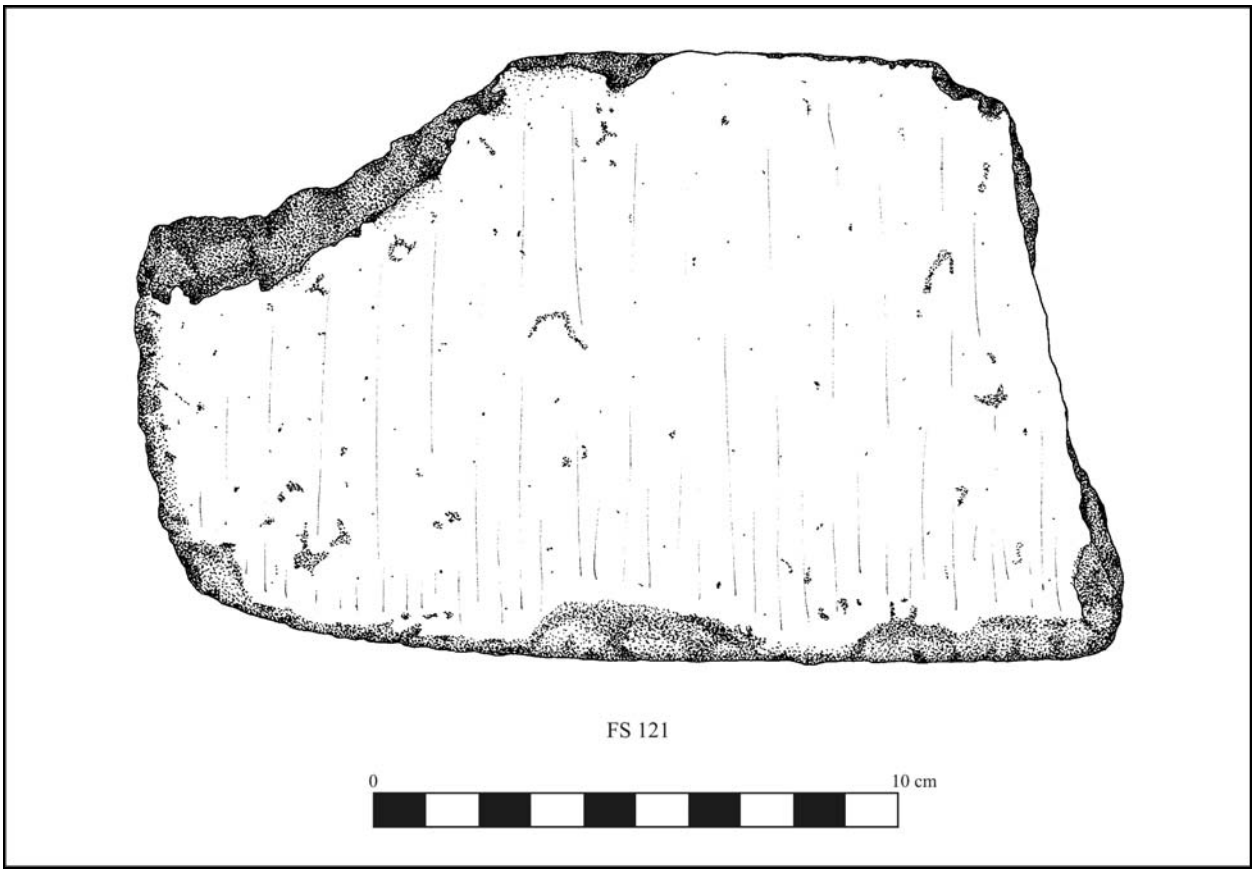


Figure 37.7. Two-hand mano from LA 85417.

Archaeobotanical Remains (Pamela McBride)

Cheno-am seeds were identified in the south half of the ashpit fill and in the ash/charcoal deposit on the floor of the structure (Table 37.15). Piñon seeds (immature, so identification is tentative), juniper cone fragment, and unidentifiable plant parts were also recovered in the south half of the ashpit. Non-cultural material included annual seeds, cactus seeds, and conifer needles. Wood charcoal was entirely coniferous, with ponderosa pine and unknown conifer the most common taxa, followed by pine and juniper (Table 37.16).

Table 37.15. Flotation plant remains, count, and abundance at LA 85417.

FS No.	71	72	114	142
Context	F. 1 Ash pit fill, S ½		F. 1 Ash pit fill, N ½	Room 1 floor, ash/charcoal south of NW corner
Cultural				
Annuals				
Cheno-Am	1(1)			1(1)
Other				
Unidentifiable	3(0) pp			
Perennials				
Juniper	cf. 1 (0) ♀ cone			
Piñon	cf. 2(2)			
Non-Cultural				
Annuals				
Goosefoot	+		+	
Purslane	+	+	+	
Perennials				
Hedgehog cactus	+			
Piñon				needle +
Ponderosa pine	needle +			

+ 1-10/liter, cf. compares favorably, pp plant part.

Table 37.16. Wood charcoal taxa by count and weight in grams from LA 85417.

FS No.	71	72	114	141	142
Context	F. 1 Ash pit fill, S ½		F. 1 Ash pit fill, N ½	Room 1 floor, Ash/charcoal, NW corner	Room 1 floor, ash/charcoal south of NW corner
Conifers					
Juniper					2/0.2 g
Pine		2/<0.1 g		3/0.3 g	
Ponderosa pine		2/<0.1 g	1/<0.1 g	15/1.8 g	12/1.3 g
Unknown conifer	1/<0.1 g		3/0.1 g	2/<0.1 g	6/0.1 g
Totals	**1/<0.1 g**	**4/<0.1 g**	**4/0.1 g**	**20/2.1 g**	**20/1.6 g**

Pollen Remains (Susan Smith)

Three pollen samples were analyzed from LA 85417. Table 37.17 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage, and

was found in only one sample. No other economic resources were identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 37.17), and these are discussed in detail in Smith's chapter in Volume 3.

Table 37.17. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85417 (*n* = 3)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	0
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85417 (*n* = 3)
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	3
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	3
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	1
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85417 (*n* = 3)
Regional to Extralocal Native Trees and Shrubs	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	0
	Pinus	Pine	3
		Pine Aggregates	0
	Pinus edulis type	Piñon	3
	Juniperus	Juniper	3
		Juniper Aggregates	0
	Quercus	Oak	0
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	0
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85417 is a small one-room Coalition period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is situated on the mesa top overlooking Rendija Canyon to the south, near LA 85861 (another Coalition period fieldhouse). One feature, a small ashpit or possible hearth, was identified at the site. However, the site is unique since it appears to have burned and therefore provides evidence of a wattle and daub structure. The presence of maize pollen indicates that the one-room structure may have been occupied during the growing season.

CHAPTER 38
RENDIJA TRACT (A-14): LA 85859

Steven R. Hoagland

INTRODUCTION

LA 85859 is a lithic scatter located on the northeast slope of a knoll situated along the north side of Rendija Canyon (Figure 38.1). The site is situated at an elevation of 2108 m (6910 ft) in an area vegetated by piñon, juniper, and ponderosa pine trees. The artifact scatter covers an area of approximately 368 m^2.

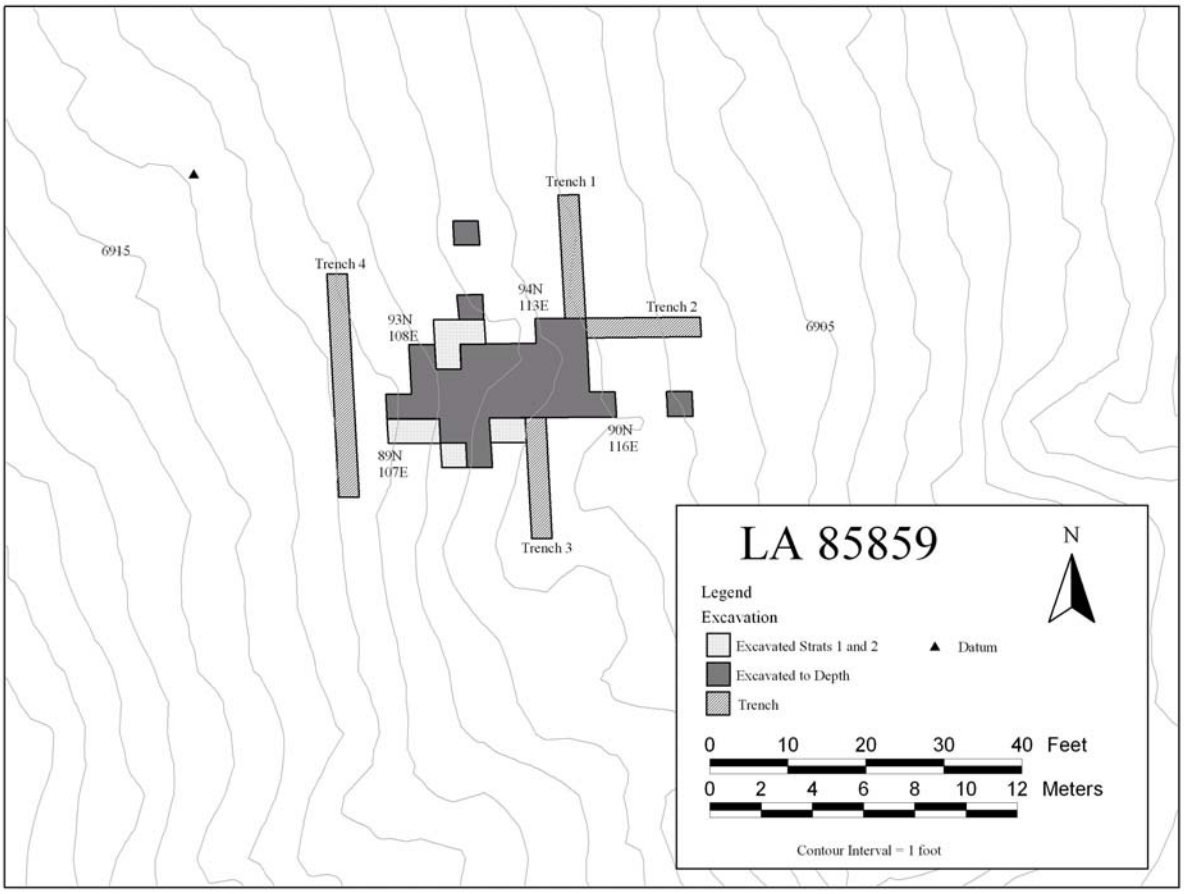


Figure 38.1. Schematic of the excavations at LA 85859.

Soils in the vicinity of LA 85859 are associated with the Sanjue-Arriba Complex. These are deep, well-drained soils that weathered in materials derived from pumice (Sanjue series) or dacites of the Puye Conglomerate (Arriba series) (Nyhan et al. 1978:61). The local stratigraphy consists of a 4- to 23-cm-thick layer of late-Holocene colluvium overlying late-Pleistocene colluvium. Pumice gravels or carbonate cemented pumice underlie the colluvium at depths ranging from 30 to 95 cm from south to north across the site. The pumice gravels are associated

with Cerro Toledo Rhyolite deposits, which is "a series of post-collapse rhyolite domes, obsidian, tuffs, and tuff breccias associated with the 1.4-Myr-old Toledo caldera" (Burton 1982).

PREVIOUS INVESTIGATIONS AT LA 85859

LA 85859 was originally documented in September of 1991 by TFA, Inc., during the Basin Land Exchange survey (Hill 1991). It was described as a campsite of unknown cultural affiliation. The campsite was indicated by less than 100 lithics situated within a 225-m² area. The obsidian or chalcedony lithics were either biface thinning flakes or resharpening flakes.

Archeological Research, Inc., subsequently tested LA 85859 for National Register eligibility in August of 1992. The site was described as a small concentration of lithic tools and debitage situated within a 225-m² area. In addition to the lithics, two plain utilityware sherds were observed.

Archeological Research, Inc., excavated two 1- by 1-m test units at the site. Unit A was placed at the edge of the artifact scatter and Unit B was placed upslope. Unit A was excavated to a depth of 60 cm, with obsidian debitage being recovered from all but the first level. Unit B was excavated to a depth of 30 cm and no cultural materials were recovered. In support of the testing, surface artifacts were collected from a 1-m-wide by 15-m-long transect that was laid out across the center of the site. Two San Jose style projectile point bases were also collected as in a grab sample.

A total of 224 pieces of obsidian debitage were recovered from the Unit A excavations and 15 pieces were recovered from the surface collection transect. All of the recovered debitage was the result of secondary or tertiary reduction. This suggested that partially shaped lithic materials (e.g., core or preforms/bifaces) were transported to the site and were further reduced in the course of tool manufacture. Twenty of the flakes found on the site exhibit use wear or retouch. The presence of utilized flakes suggested that some type of processing activity occurred at the site, however, no materials were located that would identify what type, or types, of processing might have been conducted. Based on the diagnostic projectile points, the site dated to the Early Archaic period. Based on this testing, Archeological Research, Inc., recommended that LA 85859 be included as a Register-eligible property.

FIELD METHODS

Fieldwork began with an assessment of the site. The assessment consisted of the crew systematically walking the site at 2 to 3 m intervals. All observed artifacts were pin-flagged to delineate the site boundary and to establish artifact concentrations.

Upon completion of the assessment, the main site datum (Datum A) and baselines for a 1- by 1-m grid system were established. The datum that was placed in the southwest corner of the site was designated as grid point 100N/100E and assigned an elevation of 10.0 m. Several 100-m tapes were used to set up the grid system and to collect all the site surface artifacts. The

observed lithics and sherds were collected and provenienced by 1- by 1-m grid units. All collected materials were documented within a Field Specimen (FS) Catalog form. The southwest corner intersection of each grid unit determined its coordinate.

The site excavation involved the hand excavation of 1-m grid units. This technique was used to define the extent, depth, and character of subsurface deposits. Grid level excavation designations started with 0 at the surface, then from 1 to n from the top to bottom of each grid unit (regardless of whether the level is natural or arbitrary). The excavation was conducted by hand using shovels, trowels, and picks when the clay content was high, thus the soil was compact. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were passed through 1/8-in. mesh screens.

A Grid Level Excavation Form was completed for each excavation level. Documented information included the depth of the excavation level, description of the sediment matrix, recovered cultural materials, and the nature and reason for samples collected. A minimum of one pollen sample and one flotation sample was collected from each separate stratum. Macrobotanical samples were also collected from the site.

As the natural stratigraphy had not yet been established, the first excavation units were excavated in arbitrary 10-cm levels. Once established, the remaining grids were excavated by natural stratigraphic units with those being thicker than 10 cm excavated in arbitrary 10-cm levels. Toward the end of the excavation, grids were excavated by natural stratigraphic units regardless of thickness. A stratum is defined as a distinct depositional unit. To facilitate vertical control, subdata containing the same 10-m elevation as Datum A were established close to excavation units and/or blocks. Grid levels were measured from the subdata using string and line levels.

Upon completion of the grid system, a systematic series of auger probe locations were established across the site. The probes were placed at 4-m intervals east to west across the site and every 2 m north to south with each subsequent east to west row offset by 2 m. The 3-in.-diameter auger probes were generally excavated down to the Cerro Toledo pumice horizon or were terminated by rock. The soils extracted from each auger cylinder were described in the Auger Form as were any cultural materials recovered from screening the extracted soil through a 1/8-in. mesh screen. After excavation of a half dozen auger holes, a decision was made to halt further augering until the local stratigraphy could be established from the grid excavation units. The site-wide augering program was continued to completion after the first four grid excavation units were completed.

Geomorphic evaluations were conducted throughout the excavation process with the first assessment conducted after completion of the first four grid units. The assessment for geomorphic context and integrity was conducted by Steve Reneau and Paul Drakos (see Chapter 57, Volume 3).

An overall site map was assembled during the course of excavation. It depicted the site boundary, site datum, subdata, surface collection grids, excavation units, and test trenches. The site map was created with locational information generated by a total station that was backed up with geographic positioning system unit locational points. The final contour map of the site was

generated from the geographic information system locational information. The site and its components were photographed with a color digital camera and a 35-mm camera with black-and-white film (ASA 100).

STRATIGRAPHY

The stratigraphy at LA 85859 includes cultural materials bearing pockets of preserved late-Pleistocene to early-Holocene colluvium that has been removed by erosion throughout much of the surrounding area. The site is situated on the northeast-facing slope of a knoll with runoff draining down to the northeast. The site stratigraphy infers that the upper knoll slope contains a thin (less than 25 cm thick) late-Holocene colluvium overlying Cerro Toledo pumice deposits and the lower knoll slope has a thin Holocene colluvium overlying up to 81 cm of late-Pleistocene to early-Holocene colluvium and Cerro Toledo pumice. The upper and lower knoll slopes are separated by an area with bedrock at or near the surface. It is inferred from the stratigraphy that the upper knoll slope was eroded during the late Pleistocene to early Holocene and that colluvium derived from the Cerro Toledo was deposited on the concave portion of the knoll slope situated at and below LA 85859. At the base of this colluvium is a series of dacite clasts, up to small boulder size, that represents a lag left after almost complete erosion of an older alluvial unit. A second period of erosion likely occurred sometime during the middle or late Holocene, during which the upper knoll slope was stripped to bedrock and the late-Pleistocene to early-Holocene soils on the lower slope were truncated. The stripped Cerro Toledo on the upper knoll slope and truncated late-Pleistocene to early-Holocene soils on the lower slope were subsequently buried by a thin late-Holocene colluvium deposit (Drakos and Reneau 2004).

Upper Knoll Stratigraphy. Four stratigraphic units characterize the upper knoll slope. The surface A horizon (AC in places) (Stratum 1) is a loose, light brown, sandy loam that often contains charcoal and ash from vegetation that burned during the May 2000 Cerro Grande fire. Pumice gravels form about 20 percent to 40 percent of the fill matrix. This late-Holocene colluvium ranges from 1 to 12 cm in thickness. The BW (Stratum 2) stratum situated directly below is a soft to slightly hard, grayish-brown to brown, sandy loam with pumice gravels forming about 20 percent to 30 percent of the matrix. This late-Holocene colluvium likely has an age of less than 1000 years. This stratum also contains Cerro Grande fire-derived ash and charcoal flecks and ranges from 1 to 16 cm in thickness.

Underlying the BW stratum is an excessively bioturbated 2Btb1 stratum (Stratum 9). It is a soft to slightly hard, brown, sandy loam to sandy clay loam containing a high percentage of pumice gravels and pebbles (40% to 70%). Colloidal stains are common on the pumice clasts. The gravel and pebbles have weathered out of the upper portion of a pumice bed associated with the Cerro Toledo Rhyolite formation. This stratum ranges from 5 to 30 cm in thickness. The abrupt upper stratum boundary likely records the erosional stripping of overlying younger soils. Situated directly below is a 2Coxb1 stratum (Stratum 6) that is a light brown Cerro Toledo pumice deposit. It is 80 percent to 90 percent oxidized pumice gravels and pebbles loosely intermixed with sand. This upper knoll stratigraphy is present directly above and adjacent to LA 85859.

LA 85859 and Lower Knoll Stratigraphy. The stratigraphy for the site and the lower knoll is different from the upper knoll slope in that there is a deposit of late-Pleistocene to early-Holocene clays situated between the BW soil horizon and the weathered Cerro Toledo pumice bed (2Btb1/2Coxb1). Cultural materials bearing pockets of the late-Pleistocene to early-Holocene clays are situated at the edge of the upper knoll zone. Although truncated, this approximate 65-cm-deep pocket of fill appears to have been protected from additional erosion by an arch-shaped alignment of dacite cobbles and boulders that are part of the lag that accumulated along the lower margin of the upper knoll slope.

As revealed by the block excavation, a small Pleistocene-era drainage had traversed southwest to northeast across the eastern site area, cutting into the Cerro Toledo pumice bed. It is likely that water within this drainage also eroded some of the upslope fill, cutting the depression that subsequently retained the cultural material bearing late-Pleistocene to early-Holocene soil. More recently, erosion protection for the site area has been provided by an approximately 6-ft-deep drainage that trends southwest to northeast about 20 m to the southeast of the site and a shallow southwest-to-northeast-trending drainage located about 4 m to the east of the site.

Situated directly beneath the BW horizon within the site was a Bt1b1 horizon that was composed of silty to sandy reddish clay that contained a low amount of pumice gravel. The hard, well-formed, subangular blocky clay peds tended to be stratified by size with the larger peds (at 3 to 7 cm, Stratum 3A) situated above smaller peds (1 to 3 cm, Stratum 3B). Stratum 3A appeared to have slightly less pumice gravel (5% to 10%) than Stratum 3B (10% to 20%).

Situated beneath strata 3A/B was a Bt2b1 horizon (Stratum 3C). It was a slightly hard to hard, yellowish-brown to brown, silty clay loam that formed into small (<1 cm) subangular blocky peds. Pumice gravel formed about 20 to 30 percent of the horizon matrix. The pumice that tended to occur in small pockets, increased slightly with depth.

Stratum 4 was a Bt3b1 horizon soil. It was a slightly hard to hard, brown to strong brown, silty loam to silty clay loam. The pumice gravel content ranged from about 20 percent to 30 percent. A few dacite and pumice cobbles were present, especially toward the bottom of the horizon. Some of the clasts and peds contained a thin, discontinuous $CaCO_3$ coating, especially along the margins of the site. Rodent borrows were frequent throughout the stratum.

Stratum 5 was classified as a BKb1 or a BCb1 horizon. It was a soft to slightly hard, light to pale brown, sandy loam to sandy clay loam. The pumice gravel content ranges from about 30 percent to 50 percent. Discontinuous CaCo3 coatings were present on clasts and peds. Dacite cobbles were more abundant throughout this stratum. Rodent burrows were frequent. Table 38.1 lists and describes the strata excavated at LA 85859. Table 38.2 lists the artifact counts from each of the strata at the site.

Table 38.1. LA 85859 strata descriptions.

Strat	Horizon	Texture	Munsell Color	Thickness	Description
1	A	Sandy loam	10YR5/3	1 to 12 cm	Young colluvium (<1000 yrs). Loose, single grain with varying amounts of pea sized pumice gravels (20% to 40%); ash and charcoal present from Cerro Grande fire.
2	BW	Sandy loam	10YR6/3 to 10YR4/3; 10YR5/2	1 to 16 cm	Late-Holocene fill (<1000 yrs?). Soft to slightly hard with pea-sized pumice gravels (20% to 30%); some ash and charcoal present from Cerro Grande fire.
3A	Bt1b1	Silty to sandy clay	7.5YR4/4; 7.5YR5/3 to 7.5 YR 4/3	1 to 11 cm	Late-Pleistocene or early-Holocene fill. Hard, well-formed, large subangular blocky peds (3 to 7 cm) with a small amount of pea-sized pumice gravel (5% to 10%).
3B	Bt1b1	Silty to sandy clay	7.5YR4/4	1 to 22 cm	Late-Pleistocene or early-Holocene fill. Hard, well-formed smaller subangular blocky peds (1 to 3 cm) with about 10% to 20% pea-sized pumice gravel.
3C	Bt2b1	Silty clay loam	10YR5/4; 7.5YR5/4 to 7.5YR4/4; 7.5YR5/3	1 to 59 cm	Late-Pleistocene or early-Holocene fill. Slightly hard to hard with small subangular blocky peds (<1 cm) or, less frequently, platy peds. Pea-sized and larger pumice gravels (20% to 30%). Pumice increases with depth and is at times clustered in pockets.
4	Bt3b1	Silty loam to silty clay loam	7.5YR5/4 to 7.5YR4/4 7.5YR5/6 to 7.5YR4/6;	4 to 53 cm	Late-Pleistocene or early-Holocene fill. Slightly hard to soft with depth. Few dacite cobbles and gravel, pebbles, and cobbles of pumice especially toward bottom of stratum. Gravel content ranging from about 20% to 30%. Few thin discontinuous CaCO3 coatings on clasts and peds, especially along margins of site. Rodent burrows abundant.

Strat	Horizon	Texture	Munsell Color	Thickness	Description
5	Bkb1 or BCb1	Sandy loam to sandy clay loam	7.5YR5/4; 7.5YR6/3 to 10YR6/3	1 to 41 cm	Late-Pleistocene fill. Soft to slightly hard with abundant gravels and pebbles of pumice (30% to 50%). Dacite cobbles more abundant. Discontinuous CaCO3 coatings on clasts and peds. Rodent burrows are frequent.
6	2Coxb1 or 2CBkb2	Sand and gravel	7.5YR8/2; 7.5YR5/3; White	6+ cm	1.2 to 1.6 Ma (million years). Toledo Pumice bed. 80 plus percent pumice. Discontinuous to continuous CaCO3 coatings on clasts.
7		Silty clay loam	7.5YR7/4 to 7.5YR5/4; 7.5YR6/3	3 to 28 cm	Late-Pleistocene fill. Lenses of carbonate cemented silt and pumice. 40% to 60% pumice gravels. Generally, a cemented Stratum 5 located along the north side of the excavation block.
8		Silty clay loam	10YR5/3	62 cm	Disturbed soil from previous test pit (Strata 1, 2, and 3A-C).
9	2Btb1	Sandy loam to sandy clay loam	7.5YR5/3 to 7.5Yr4/3; 7.5YR4/4	5 to 17 cm	1.2 to 1.6 Ma. Soft to slightly hard colluvium with abundant pumice gravels and pebbles (40% to 70%). Colloidal stains common on pumice clasts.
10		Sand	7.5YR8/2	2 to 8 cm	Fine-grained sand predominantly formed from pumice. Associated with a SW-to-NE-trending drainage that cuts into the Toledo Pumice within the lower east side of the excavation block.

Table 38.2. LA 85859 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	27	0	0	27
1	2	457	0	0	459
2	0	944	3	0	947
3	0	95	0	0	95
3A	0	749	0	0	749
3B	0	1402	0	0	1402
3C	0	1004	0	0	1004
4	0	671	1	16	688
5	1	115	0	12	128

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
6	0	13	0	0	13
7	1	52	0	0	53
8	0	27	0	0	27
9	0	35	0	0	35
Total	**4**	**5591**	**4**	**28**	**5627**

SITE EXCAVATION

Based on the surface artifact collection where the majority of surface artifacts were located between grids 87 to 95N and 110 to 119E and the results of the testing phase excavation units, it was determined to begin excavations in unit 90N/110E. This grid was located directly east of Test Excavation Unit A that contained 224 pieces of obsidian debitage. Using 90N as an intersite baseline, excavation units were also initiated a few m above and below 90N/110E (90N/101 and 118E) to establish the eastern and western site boundary (Figure 38.2). Unit 90N/110E contained numerous subsurface flakes of obsidian (584) of which 95 percent were recovered from within the upper five soil strata (upper four soil horizons). As the first grid unit was excavated, the fill was removed in arbitrary 10-cm levels. Upon excavation, the soil profile was used to establish the primary soil strata used to stratigraphically excavate all other grid units. Unfortunately, the arbitrary levels did not correspond well with the observed stratigraphy sequence, especially within the upper four strata. A summary of the excavation levels as they correspond to soil strata and artifact content is presented in Table 38.3.

Table 38.3. Excavation levels in 90N/110E.

Level	Stratum	Soil Horizon	No. Lithics	Faunal Remains
1	1/2	A/Bw	123	
2	2/3A	Bw/Bt1B1	205	
3	3A/3B	Bt1b1	81	
4	3B/3C	Bt1b1/Bt2b1	114	
5	3C	Bt2b1	28	
6	4	Bt3b1	4	
7	5	Bkb1	1	
8	5	BkB1	17	10 (rodent)
9	5	Bkb1	11	

The late-Holocene soils (A and Bw) contained at least 123 lithics (21%), while the Bt1b1 and Bt2b1 Bt soils contained up to 428 lithics (73.3%). The lithic totals dropped off drastically within the lower two soil horizons with four lithics recovered from the Bt3b1 horizon (0.7%) and 29 lithics from the BKb1 horizon (5%). All of the lithics were chipped stone debris.

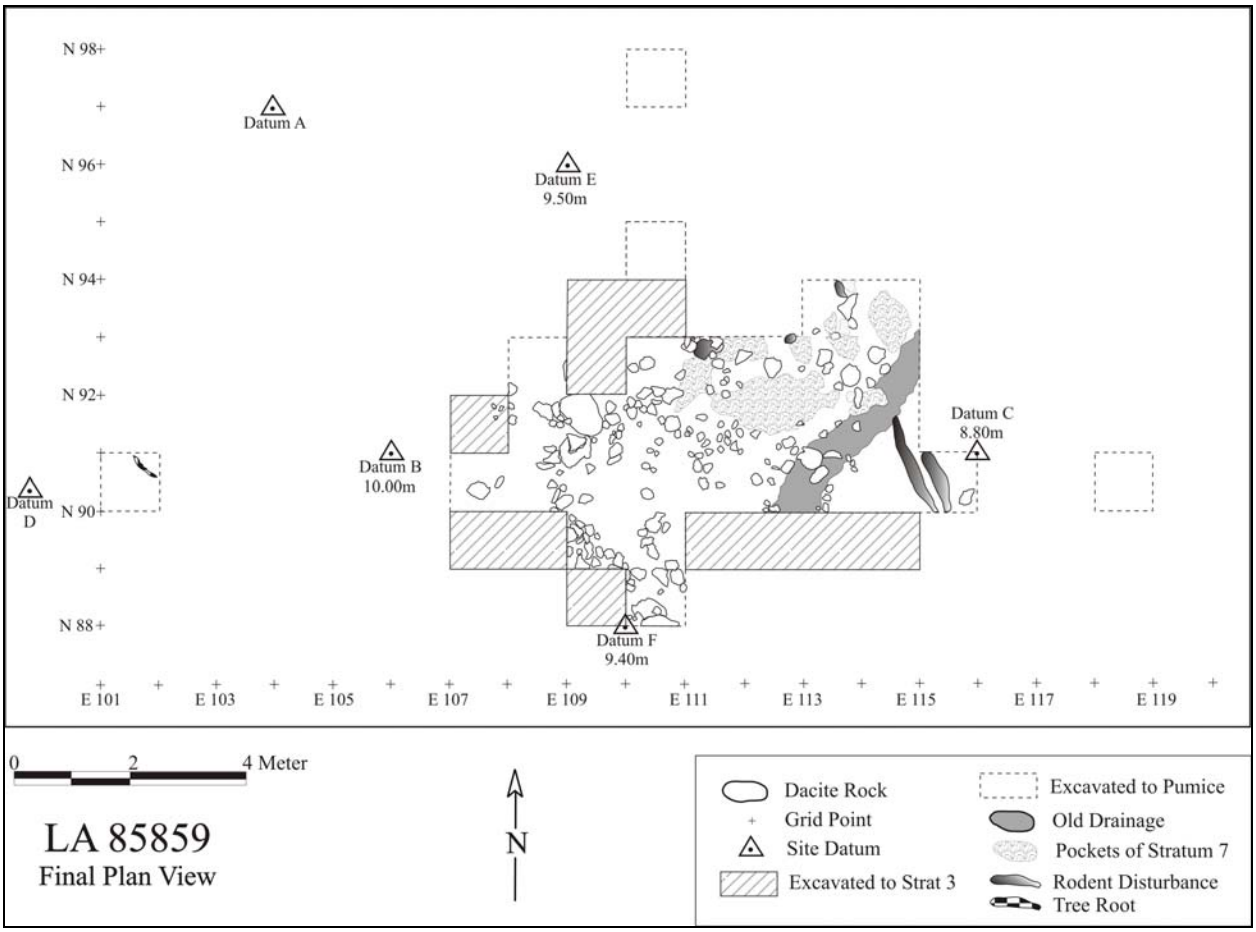


Figure 38.2. Schematic of grid unit excavations at LA 85859.

Conversely, unit 90N/101E contained neither cultural materials nor any of the late-Pleistocene to early-Holocene clays within which approximately 75 percent of the 90N/110E artifacts were located. Cerro Toledo pumice deposits were encountered at a depth of between 4 and 7 cm below the surface. Unit 90N/118E contained a total of 28 lithics with 22 of these (79%) recovered from the late-Holocene soil horizon and six (21%) from the late-Pleistocene or early-Holocene Bt1b1 horizon. The assumption based on these first three grid unit excavations was that 90N/101E was located above the site, 90N/110E was within the heart of the site, and 90N/118E was situated at the lower (eastern) edge of the site.

Based on the above excavations units, 90N/107E and 90N/114E were excavated to provide additional information concerning the eastern and western extent of the site. Although the late-Pleistocene to early-Holocene clays were encountered within 90N/107E (a mixed Strata 3 and Stratum 4), only one lithic was recovered and that was from Stratum 4. Unit 90N/107E was assessed to be located just above or along the upper western margin of the site.

The upper portion of the Bt1b1 horizon (Stratum 3A) was missing from 90N/114E. This grid unit contained a total of 73 lithics and one sherd that was recovered from the A soil horizon. Forty-nine percent of the lithics were recovered from the late-Holocene horizon. Most of the

remaining lithics were recovered from the Bt horizons (35, 48%) with about half of these recovered from the Bt1b1 horizon (Stratum 3b). Although the artifact density dropped significantly from upslope (90N/110E), this unit was within the southern site boundary.

Much of the late-Holocene strata (Strata 1 and 2) within the site boundary contained charcoal and ash from the 2000 Cerro Grande fire. As a precautionary measure, the decision was made to excavate these strata in areas surrounding locations proposed for excavation. This measure was intended to prevent Cerro Grande charcoal from contaminating excavations that extended down into the late-Pleistocene or early-Holocene horizons. Most of this soil stripping was conducted in grids located in the vicinity of 90N/110E. Also at this time the disturbed fill from previously excavated Test Unit A was removed.

With the eastern and western site limits becoming clearer, a decision was made to excavate three units out to the north in an attempt to define the site boundary. The excavations were conducted at 92N/108E, 94N/110E, and 97N/110E. At this point, the small drainage located about 4 m to the south of the 90N gridline was assumed to form a natural site boundary. The excavation of 92N/108E ended up being fairly shallow with few lithics present. The 15- to 28-cm-thick late-Holocene horizon overlaid a shallow Bt horizon (7 to 12 cm) that appeared to be a truncated Bt3b1 soil (Stratum 4). Erosion apparently removed any Bt1b1 and Bt2b1 soils before the late-Holocene depositional period. Two lithics were recovered from the late-Holocene soils, one flake from the Bt soil and two lithics from weathered Cerro Toledo Pumice gravels (Stratum 5). The lack of Bt1b1 and Bt2b1 soils that were present only 1 to 2 m to the east infers that the northwestern edge of the site is located in this vicinity.

A truncated lens (3 to 7 cm thick) of late-Pleistocene to early-Holocene soil (Stratum 3B?) was encountered beneath the late-Holocene soil horizons (Strata 1 and 2) in 94N/110E. This horizon rapidly graded into a weathered pumice gravel deposit (2Btb1, Stratum 9). Three flakes were recovered from the early-Holocene deposits and 35 flakes were recovered from the combined 3/9 Stratum. Unit 97N/110E was excavated to an approximate depth of 50 cm below surface. The late-Holocene soils that increased in pumice gravels with depth occupied the upper 20 to 25 cm. Situated below was an approximate 20-cm-thick Bt horizon that appeared to be a highly mixed Bt1b1 through Bt3b1 deposit. This horizon graded into a 2- to 10-cm-thick 2btb1 deposit that in turn overlaid Cerro Toledo pumice deposit (Stratum 6). This grid unit was assessed to be situated beyond the northern site boundary as only six flakes were recovered from the late-Holocene horizons and one flake recovered from the Bt horizon.

The next phase involved excavating the units situated directly east and west of 90N/110E and the unit located directly west of 90N/114E. These grid units were excavated to further establish the cultural context in the eastern and western site areas. All three grids contained the complete soil horizon series as established in 90N/110E (Figure 38.3). Unit 90N/109E contained 330 lithics of which 117 (35.5%) were within the late-Holocene horizon, 203 (61.5%) within the Bt soils (Strata 3A-C and 4), and 10 lithics (3%) within the weathered Toledo pumice deposit (Stratum 5). Within the Bt horizon, 65.5% of the lithics (133) were located within the Bt1b1 horizon (83 in 3A and 50 in 3B). The artifact content within unit 90N/111E was fairly similar with a total of 333 lithics being recovered. The late-Holocene horizon contained 134 lithics (40%) and the Bt horizon contained 199 lithics (60%). Within the Bt horizon, 79 percent of the lithics (158) were

in the Bt1b1 horizon (79 in 3A and 79 in 3B). Downslope, unit 90N/113E contained 179 lithics. Nearly 29 percent (51) of these lithics were recovered from the late-Holocene horizon and 66 percent (118) from the Bt horizons. Within the Bt horizons, 96 of the lithics (81%) were recovered from the Bt1b1 horizon (54 in 3A and 42 in 3B) and 8 from within the Bt2b1 horizon (7%).

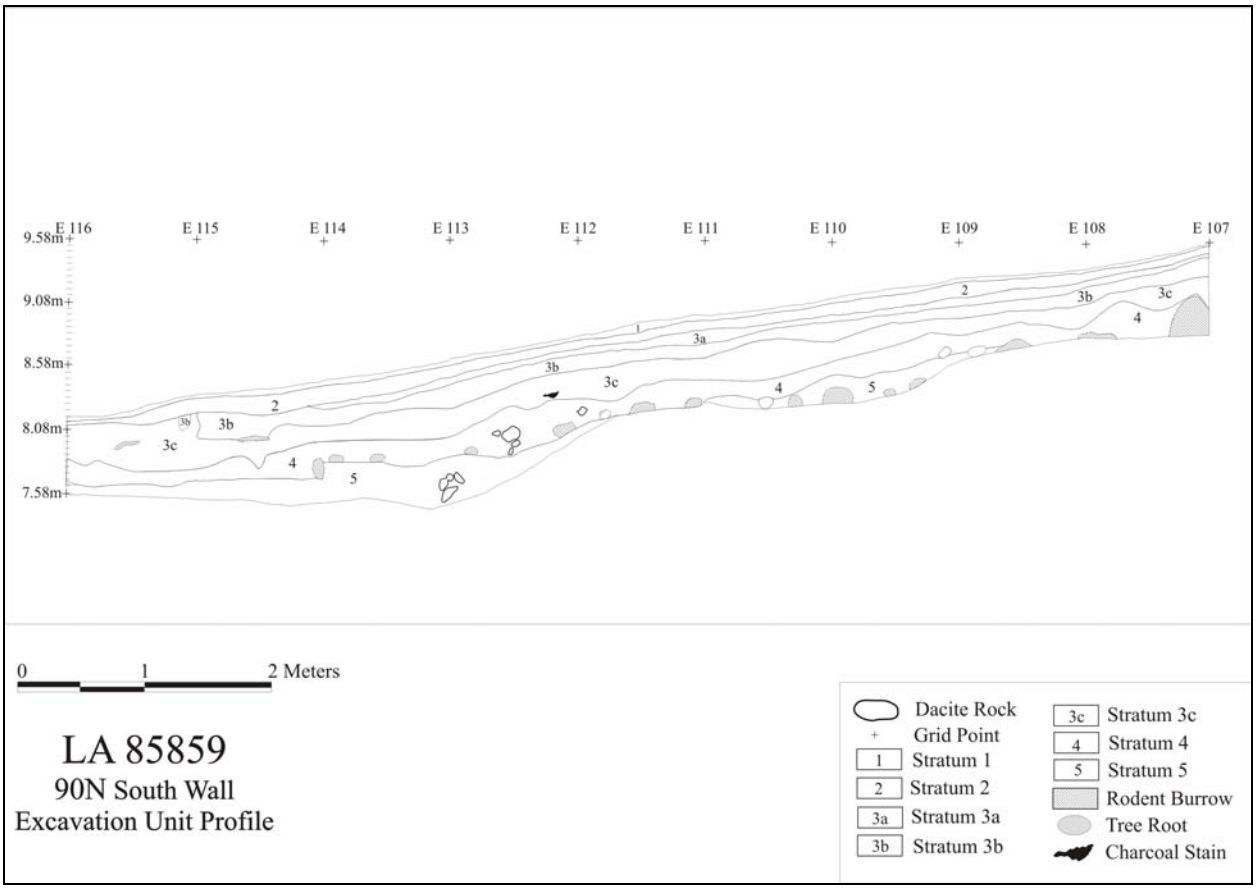


Figure 38.3. Profile of the 90N grid line.

Although the grid units located directly to the east and west of 90N/110E exhibit a 40 percent drop in total lithics, their relatively high artifact count infers that this location is a major activity area associated with the site. The 60 percent increase in total artifacts moving up 1 m from 90N/114E to 90N/113E suggests that this location may be the eastern edge of the same activity area.

Based on the limited number of cultural materials recovered from the two westernmost excavation units (90N/107E and 92N/108) and abundant lithic materials located 1 m to the east and southeast, respectively (90N/109E), a decision was made to excavate the units situated between these two areas in an attempt to understand this discrepancy. As a result, units 90N108E and 91N/108E were subsequently excavated.

Unit 91N/108E contained two distinct stratigraphic sequences. Within the northern half of the unit, a 10-cm-thick late-Holocene deposit directly overlaid a weathered Cerro Toledo pumice

gravel deposit (Bkb1). The southern half of the unit contained a 10-cm-thick, undifferentiated Bt horizon that was situated between the Holocene and weathered pumice deposit. All six lithics were recovered from the pumice deposit. About 15 dacite cobbles or small boulders that were set slightly into the Bkb1 soil deposit were scattered across the unit, especially along the eastern edge. Directly south in unit 90N/108E, the Bt horizon was much more intact, ranging in depth from about 8 to 50 cm below surface. All three Bt soil horizons were present. Recovered artifacts included five lithics from the late-Holocene horizon and 14 lithics from the late-Pleistocene to early-Holocene Bt soil horizons. Within the Bt horizon, eight lithics were recovered from the Bt1b1 soil (six in 3A and two in 3B), one lithic from the Bt2b1 soil, and five from the Bt3b1 soil. The cluster of dacite cobbles observed in 91N/108E continued along the eastern edge of this unit. The surface of the Bkb1 soil deposit slopes down 30 to 40 cm between the eastern edge of 91N/108E where the dacite cobbles are concentrated and the eastern edge of 90N/109E and drops 1.2 m between the eastern edge of 90N/108E and 90N/114E.

To gain a better understanding of the site formation process and to explore the potential that the recently encountered dacite cobbles and small boulders were the remains of a cultural feature, unit 91N/109E was excavated. As two shallow boulders that were left in place along the western half of the unit (0 to 25 cm), most of the excavation occurred in the eastern portion. The eastern half of the unit contained the complete range of Bt soils. The Bt soils that were situated between 10 and 50 cm below surface dropped in depth and thickened toward the southeast corner of the unit. Dacite cobbles were also encountered within the eastern half of this unit at depths ranging from 30 to 70 cm. In all, 85 lithics were recovered from 91N/109E. Eighteen of the lithics (21%) were recovered from the late-Holocene horizon, 60 (71%) from the Bt soils, and seven (8%) from the weathered pumice gravels. Within the Bt horizon, 44 lithics (73%) were recovered from the Bt1b1 soil, 11 (18%) from the Bt2b1 soil, and five from the Bt3b1 soil horizon.

A discernable difference exists between the soil stratigraphy located west (upslope) of the dacite cobble and boulder cluster located along the 108E to 109E grid boundary and that located to the east. The excavations conducted upslope from the dacite cluster revealed shallow soils with no or thin, truncated Bt soils. When Bt soils were encountered within this area, they were highly mixed and contained few associated cultural materials. Conversely, directly east of the cobble and small boulder concentration the Bt soils became thicker, well-defined, and contain a relatively high lithic artifact count. The dacite cobble and boulder cluster appears to form a functional western boundary for an activity area located directly to the east (Figure 38.4). The cultural material bearing soils sit on a weathered Toledo pumice deposit that drops in depth and slopes significantly downslope from west to east.

Based on the change in stratigraphy and artifact content observed along the 108E gridline, the decision was made to excavate the undisturbed soils situated below Test Unit A (91N/110E), and to excavate adjacent unit 92N/110E. Test Unit A corresponded well with unit 91N/110E with only a 10-cm-wide soil lens located along the western edge of the grid that was not previously excavated. The undisturbed soils beneath Test Unit A (60 cm below surface) included an approximate 15-cm-thick Bt3b1 (Stratum 4) deposit overlaying a weathered, 10-cm-thick Cerro Toledo pumice deposit (Bkb1). Approximately 10 dacite cobbles were situated within the northwest portion of the unit. The previously noted 224 lithics that were recovered during site

testing would have been situated within the late-Holocene A and BW soil horizons and the late-Pleistocene to early-Holocene Bt1b1 and Bt2b1 horizons. An additional 27 lithics were recovered from the back dirt used to refill the test unit and nine lithics were recovered from the unexcavated 10-cm-wide west-side soil lens (Stratum 3). The previously undisturbed Stratum 4 (Bt3b1) deposit contained 19 lithics, and the Bkb1 weathered pumice deposit contained four lithics.

Figure 38.4. Dacite cobble and boulder outcrop forming western site occupation boundary.

Adjacent to the west, unit 92N/110E was excavated down to the Toledo pumice deposit (2CBkb2), which was encountered at depths ranging from 33 cm in the northwest corner to 76 cm in the southeast corner. As the depths indicate, the Cerro Toledo pumice bed, as well as the overlying weathered pumice gravel deposit (Bkb1), slope significantly from northwest to southeast. The upper portion of the Bt1b1 soil horizon is missing, otherwise, the Bt soil formations are similar to the horizon sequence located directly east in the assumed activity area. A total of 312 lithics were recovered from this unit. Of these, 55 (18%) lithics were within the late-Holocene deposit, 251 (80%) within the Bt horizon, and six (2%) in the weathered Cerro Toledo pumice stratum. Within the Bt horizon, 149 lithics (59%) were within the Bt1b1 soil, 91 (36%) within the Bt2b1 soil, and 11 (5%) within the Bt3b1 soil.

These two units provide more information concerning the stratigraphy situated within the northwestern portion of the site. The slope of the Cerro Toledo pumice deposits indicate that there is a low area situated directly east and south of an arching, fairly linear, cluster of dacite

cobbles and small boulders (Figure 38.5). This low area or possible hollow has retained late-Pleistocene to early-Holocene soil deposits that appear to have eroded out on the hillslope to the west and north. The hollow soils were likely sheltered from erosional activities by the upslope dacite rock deposit. The vast majority of artifacts associated with this site appear to be situated within Bt1b1 and/or Bt2b1 located within the hollow.

Figure 38.5. Dacite cobble and boulder barrier (upper center) with a hollow situated directly downslope to the east.

The next series of grid units to be excavated were within the southeastern portion of the site. Grids 90N/112E and 90N/115E were excavated to continue defining the soil stratigraphy and associated artifact distribution from west to east, down through the site. Grids 91N/114E and 92N/114E were also excavated to further establish the nature of the cultural remains within the eastern portion of the site. Grid 90N/112E had the same well-developed upper Bt soil horizon as found directly upslope to the west, although the upper portion of the Bt1b1 (Stratum 3A) was fairly thin (2 to 8 cm). The lower portion of this horizon appeared to have much greater disturbance due to bioturbation, as there was no clear boundary between Bt2b1 (Stratum 3C) and Bt3b1 (Stratum 4). A total of 202 lithics were recovered from 90N/112E. Sixty-four of the lithics (32%) were recovered from the late-Holocene horizon, 136 (67%) from the Bt soils, and two from the weathered pumice gravels. Within the Bt horizon, 87 lithics (64%) were recovered from the Bt1b1 soil (42 from 3A and 45 from 3B), 14 (10%) were within the Bt2b1 soil, nine (7%) from a Bt2b1/Bt3b1 mix, and 26 (19%) from Bt3b1.

The Bt horizon appears to have been impacted by erosion in unit 90N/115E as the Bt1b1 soil is not present. This erosion was also apparent in the adjacent upslope unit (90N/114E) where the upper portion of the Bt1b1 soil was missing (Stratum 3A). Ten lithics were recovered from the late-Holocene horizon, 15 from the Bt horizon (Strata 3C and 4), and one from the Cerro Toledo pumice gravels. Thirteen (87%) of the Bt horizon lithics were recovered from the Bt2b1 soil. The Bt horizon in units 91N/114E and 92N/114E had also been impacted by erosion as indicated by the upper Bt1b1 soil being absent and by bioturbation as a fairly thick, mottled, Bt1b1/Bt2b1 (Stratum 3B/3C) deposit overlaid by a pocket of Bt2b1 soil in 92N/114E and the Bt3b1 (Stratum 4) soil deposit throughout the rest of the two units. Lithic debitage was fairly abundant in both units with 220 flakes recovered from 91N/114E and 307 recovered from 92N/114E. Forty-five of the 91N/114E lithics (20%) were recovered from the late-Holocene horizon and 139 (80%) from the Bt soils. Within the Bt horizon, 175 lithics (63%) were recovered from the Bt1b1/Bt2b1 soil stratum and 36 (16%) were within the Bt3b1 soil. Forty-eight of the 92N/114E lithics (16%) were recovered from the late-Holocene horizon, 236 (77%) from the Bt soils, and 23 (7%) from the weathered pumice gravels. Within the Bt horizon, 43 lithics (14%) were recovered from the Bt1b1/Bt2b1 soil stratum, 95 (31%) from the Bt2b1 horizon, and 98 (32%) were within the Bt3b1 soil. Based on the upslope soil stratum artifact densities, it was assumed that the cultural occupation occurred in the Bt1b1 soil horizon and that artifacts within underlying Bt horizons were mixed into these soils by bioturbation. As the Bt1b1 soil has been eroded and/or highly mixed into underlying strata, the potential for encountering undisturbed remains was thought to be poor.

To establish the southern boundary of the site, unit excavations were initiated in 89N/109E and 89N/110E. A small drainage that parallels these grids was located about 3 m to the south. The encountered stratigraphic sequence was similar to the grids located directly to the north with Strata 3A, 3B, and 3C represented. Both units were terminated directly above a dacite rock and Toledo pumice deposit (Stratum 6), which was situated directly below Stratum 3C in Grid 89N/109E and below Stratum 4 in 89N/110E. The associated artifact densities were significantly less than that observed in the units directly to the north. Thirty-eight lithics were recovered from 89N/109E and 95 from 89N/110E. Only one flake was recovered from the late-Holocene horizon, and the rest from the Bt soils in 89N/109E. The Bt horizon artifacts included 14 lithics (37%) from the Bt1b1 horizon and 23 (60.5%) from the Bt2b1 soil horizon. Within 89N/110E, 14 (15%) of the lithics were recovered from the late-Holocene horizon, 73 (77%) from the Bt soils, and eight (8%) from the weathered pumice gravels (Bkb1). Bt horizon artifacts included 65 lithics (89%) from the Bt1b1 horizon, three from the Bt2b1 horizon, and five from the Bt3b1 horizon.

As a good stratigraphic sequence with a fairly large number of associated artifacts was encountered in 89N/110E, the excavation was extended into 88N/110E. Stratum 3A only extended across the northern two-thirds of the unit and Stratum 3B tapered out in the southeast corner. It appears that erosion associated with the small south-side drainage removed portions of the Bt1b1 soil horizon from this unit and is assumed to have also removed it from units further to the south. Although Stratum 3C still extended across the unit, its interface with Stratum 4 was extremely mottled. Rodent disturbance was extensive throughout the lower stratigraphic horizons. Stratum 4 overlaid a culturally sterile, plated clay deposit that appeared to be a water deposited lens of Stratum 3C. This deposit suggests that subsurface water movement has been a

factor in forming the south-side site stratigraphy. The reduction in soil-horizon-associated artifacts observed in adjacent north-side units continued into 88N/110E as only 31 lithics were recovered. Nine of the lithics (29%) were recovered from the late-Holocene horizon and 22 (71%) from the Bt soils. The Bt1b1 horizon contained 10 lithics, all from the 3B Stratum. Three flakes were recovered from the Bt2b1 horizon and nine from the Bt3b1 horizon of which all but one were associated with rodent disturbances.

The drainage associated with the removal of Bt1b1 soils and the likely removal of Bt2b1 horizon soils a short distance further to the south, along with the decrease in associated artifacts, led to the conclusion that the potential for intact cultural remains was extremely limited to the south of the 90N grid line.

To continue exploration of the eastern and northeastern site area, units 91N/111E, 91N/112E, and 91N/113E were excavated. Units 92N/111E, 92N/112E, 92N/113E, 93N/113E, and 93N/114E were subsequently excavated. Stratum 3A was present in only two of the eight units (91N/111E and 91N/112E), and lower strata mixing was noted along the 91N grid line with Strata 3B and 3C mottling observed in all three units. Within grids 91N/112E and 91N/113E, the mixing was so severe that Strata 3B and 3C were mottled into one combined stratum (3B/3C). Strata 3B and 3C were present as distinct units within the 92N and 93N grid line units, although they were becoming mottled along the northern half and coexisted as one mottled stratum along the northern edge of the 93N units. The artifact density remained fairly high within the eight grids, primarily ranging from 200 to 300 per unit (Table 38.4). The artifacts were spread throughout the Holocene and late-Pleistocene soil horizons. Increased soil horizon vertical mixing was indicated by the continued high number of artifacts associated with the late-Holocene deposits and a sharp increase in the number of lithics recovered from the Bt3b1 soil horizon (Stratum 4). Rodent burrows were abundant throughout the Bt3b1 and Bkb1 soil horizons (Figure 38.6). Along with the absence of the upper Bt1b1 soil horizon, the lower portion of the horizon (Stratum 3B) exhibited a significant drop in artifact content in the locations where it was still discernable from the Bt2b1 horizon. In three units situated in the northeast corner of the block excavation, artifacts associated with the Bt1b1 soil horizon only numbered in the teens. Conversely, Stratum 3C as well as the Stratum 4 lithics increased in the northeast corner of the excavation. Overall, Stratum 4 lithics increased in number from southwest to northeast across the excavation block.

Table 38.4. East and northeast unit artifact tallies.

Grid	Total No. of Lithics	Strata	Soil Horizon	No. of Lithics	Percent of Lithics
91N/111E	361	1/2	A and Bw	44	12
		3A	Bt1b1	119	33
		3B	Bt1b1	84	23
		3B/3C	Bt1b1/Bt2b1	57	16
		3C	Bt2b1	30	8.5
		4	Bt3b1	27	7.5
91N/112E	318	1/2	A and Bw	66	21
		3A	Bt1b1	106	33

Grid	Total No. of Lithics	Strata	Soil Horizon	No. of Lithics	Percent of Lithics
		3B/3C	Bt1b1/Bt2b1	79	25
		3C/4	Bt2b1/Bt3b1	34	11
		4	Bt3b1	33	10
91N/113E	281	1/2	A and Bw	50	18
		3B/3C	Bt1b1/Bt2b1	168	60
		4	Bt3b1	63	22
92N/111E	320	1/2	A and Bw	83	26
		3B	Bt1b1	162	50.5
		3C	Bt2b1	38	12
		4	Bt3b1	25	8
		7	Cemented Bkb1 or BCb1	12	3.5
92N/112E	252	1/2	A and Bw	66	26
		3B	Bt1b1	55	22
		3C	Bt2b1	20	8
		4	Bt3b1	72	28.5
		4/7	Bt3b1/Cemented Bkb1 or BCb1	32	12.5
		7	Cemented Bkb1 or BCb1	7	3
92N/113E	259	1/2	A and Bw	43	16.5
		3B	Bt1b1	13	5
		3C	Bt2b1	127	49
		4	Bt3b1	69	26.5
		5	Bkb1 or BCb1	7	3
93N/113E	152	1/2	A and Bw	36	24
		3B	Bt1b1	18	12
		3C	Bt2b1	57	37.5
		4	Bt3b1	40	26
		7	Cemented Bkb1 or BCb1	1	0.5
93N/114E	217	1/2	A and Bw	36	17
		3B	Bt1b1	19	9
		3C	Bt2b1	79	36
		4	Bt3b1	83	38

With the removal of fill overlying the Toledo pumice deposit, it became apparent that a southwest-to-northeast-trending drainage had traversed the hillslope in the site area (Figure 38.7). The drainage is evidenced by a shallow trough that cut into the pumice deposit and by small pockets of almost pure pumice sand (Stratum 10) that occurred within the overlying fill along and slightly above the trough. This drainage cuts across the southeastern corner of the block excavation, entering in units 90N/112E and 90N/113E and exiting in units 92N/114E and 93N/114E. The upslope hollow containing the site focus was likely formed as a channel funneling runoff into this larger southeast-to-northeast-trending drainage. The increase in Strata 3 and 4 lithics that generally increase from southwest to northeast across the block excavation appear to reflect some subsurface soil movement along these old drainages. With the absence of

Stratum 3A, significant reduction of artifacts associated with Stratum 3B, the mottling of Strata 3B and 3C, and the increase in artifact movement down into Stratum 4, the assessed potential for encountering intact cultural remains within additional area units was assessed to be extremely low, thus the excavation was ended.

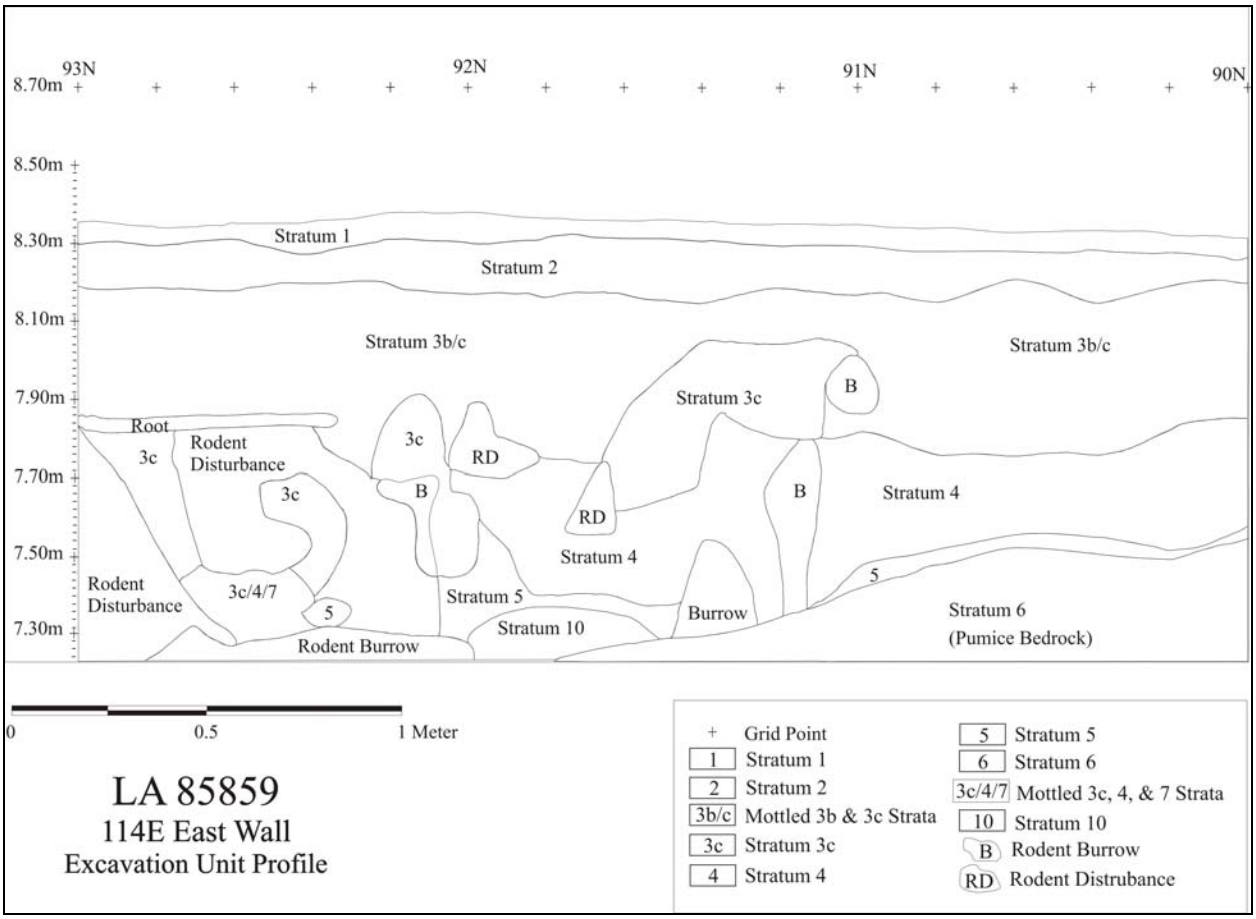


Figure 38.6. Profile of the 114E grid line.

To verify the assumptions concerning the site stratigraphy, four backhoe trenches were excavated. Trenches 1 through 3 were excavated out from the east end of the block excavation and Trench 4 was located above the block excavation. Trench 1 was 5 m long running north from 94N/114.2E through 98N/114.2E, Trench 2 was 4.5 m long running east from 93.16N/115E through 93.16N/119.5E, Trench 3 was 5 m long running south from 89N112.4E through 85N/112.4E, and Trench 4 was a 9-m-long north-to-south-trending trench that ran from 87N/104.9E through 95N/104.9E. The southern 1.7 m of Trench 1 was similar to that observed in the northern edge of 93N/114E where a mottled Bt1b1/Bt2b1 (3B/3C) deposit underlay the late-Holocene horizon soils (see Figure 38.1). The approximate 50-cm-thick Bt1b1/Bt2b1 mix overlaid a Stratum 7 deposit that appeared to be a sandy, water-deposited sediment, likely representing an old drainage channel. From units 94.7N through 95N the trench deposit contained the Bt1b1 through Bt3b1 horizon sequence (Stratum 3B through 4), which transitioned into a Bt1b1/Bt2b1 mix that directly overlaid a Toledo pumice deposit. The upper part of the

Bt1b1 soil horizon was not present within the trench and. other than a 1.3-m-long segment within the central portion of the trench, the Bt soils were highly mixed when present.

Figure 38.7. Grid unit excavation with dacite barrier (center) and southwest-to-northeast-trending drainage channel slightly above.

The first meter heading east out of the block excavation in Trench 2 (93N/114E) also displayed a mottled Bt1b1/Bt2b1 horizon, which overlaid a thick, sandy drainage channel deposit. From 93.16N/116E through to the end of the trench, intact Bt1b1 through Bt3b1 soil horizons (Strata 3B and 3C) were again present. Directly south of 90N/112E, Trench 3 contains a mixed Bt1b1/Bt2b1 stratum that overlays a weathered Toledo pumice deposit (Bkb1). Approximately 1.5 m east of the block excavation, a Bt3b1 horizon soil appears beneath the Bt1b1/Bt2b1 horizon. The Bt3b1 soil continued eastward through the trench, whereas the Bt1b1/Bt2b1 soil pinched out about 2.5 m east of the block excavation. The trench appears to verify that the small drainage situated just south of the block excavation has removed the upper Bt soils from the area. Trench 4 revealed the presence of a pocket of Bt horizon soil between 91.5N and 88N. This pocket included a 3-m-long wedge of Bt1b1 (Stratum 3) overlying a 4-m-long wedge of Bt2b1/Bt3b1 that tapers and likely terminates just beyond the trench in 87N/105.7E.

The large deposit of Stratum 7 colluvial sand in Trenches 1 and 2 supports the assessment that a drainage traversed down through the northeast corner of the block excavation. These trenches also support the assessment that the Bt soils within the northeast corner of the block excavation have been significantly mixed through bioturbation. Trench 3 and the southern end of Trench 4

support the assessment that the small south-side drainage has removed the Bt soils within its vicinity. The lack of the Bt soil series along the north side of Trench 4 also supports the assessment that much of these soils along the upper hillslope above LA 85859 have been removed through erosion. Table 38.5 shows the distribution of artifacts recovered from grid units at LA 85859.

Table 38.5. LA 85859 artifact counts by grid unit.

	E101	E107	E108	E109	E110	E111	E112	E113	E114	E115	E118
N97					7						
N94					39						
N93				10	33			158	217		
N92			6	36	312	320	252	259	308		
N91		4	6	85	61*	363	319	281	229		
N90	0	1	19	330	584	333	201	181	74	26	28
N89		0	1	38	95	49	38	44	17		
N88				4	31						

*224 lithics recovered from previously excavated test unit.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 2059 artifacts were analyzed from LA 85859. In addition, flotation and pollen samples were selected for analysis from Strata 1 to 7 (Table 38.6). Charcoal was submitted for radiocarbon dating from Strata 3A, 3B, and 3B/C, and 15 pieces of obsidian for hydration dating from Strata 1 to 5. The results of the artifact and sample analyses are presented in the following sections.

Table 38.6. Samples selected for analysis from LA 85859.

	Sample Type			
Stratum	**Flotation**	**Pollen**	**Radiocarbon**	**Hydration**
1	310	333		40
2	311	334		
3A	108, 348, 353	107, 339, 356	360	109, 118
3B	349, 354	122, 339, 357	225, 359	148, 169, 172
3C	312, 350, 355	135, 142, 180, 340, 358		144, 147
3B/C	313	335	363	
4	123, 314, 351	309, 336, 341		166
5	136, 352	342		285
6	143, 308			
7	346	329		
10	315	337		

Chronology

Radiocarbon Dating

Four charcoal samples were submitted for accelerator mass spectroscopy dating. Sample FS 360 from Stratum 3A provided a date of 570±40 BP (Beta-183759), with a calibrated intercept of AD 1410 and a two-sigma range of AD 1300 to 1430. FS 225 from Stratum 3B yielded a date of 6010±40 BP (Beta-183757), with calibrated intercepts of 4900 BC, 4890 BC, and 4860 BC, and a two-sigma range of 4990 to 4790 BC. FS 359 was also taken from Stratum 3B and provided a date of 6310±40 BP (Beta-183758), with a calibrated intercept of 5300 BC and a two-sigma range of 5370 to 5220 BC. Lastly, FS 363 was derived from Stratum 3B/C and yielded a date of 6140±40 BP (Beta-221840), with a calibrated intercept of 5050 BC and a two-sigma range of 5220 to 4940 BC. Therefore, the three samples from the lower contexts all provided Early Archaic dates ranging from about 5300 to 4860 BC.

Obsidian Hydration

Ten obsidian artifacts from LA 85859 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site was estimated in order that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 38.7).

Table 38.7. Obsidian hydration dates for LA 85859.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
40	2006-1	Valle Grande	n/a		
109	2006-2	Valle Grande	3.61	1673	16
118	2006-3	Valle Grande	4.04	1410	27
144-2	2006-4	Valle Grande	3.52	-2880	278
147	2006-5	Valle Grande	3.83	-3673	297
148	2006-6	Valle Grande	4.83	-71	85
166	2006-7	Valle Grande	4.44	-5510	340
169-2	2006-8	Valle Grande	5.29	426	58
172	2006-9	Valle Grande	4.48	-2171	186
285	2006-10	Valle Grande	4.07	-4542	323

The obsidian hydration dates appear to span a 7000-year time span, ranging from AD 1673 to 5510 BC. The earlier part of this range corresponds with the Early Archaic radiocarbon date of 5050 BC; however, the dates continue for several more millennia. The two youngest dates are from a similar context in Stratum 3A, and indeed correspond with the radiocarbon date of circa AD 1410 from the same stratum. Therefore, these upper levels appear to exhibit some recent

mixing of materials. On the other hand, the three oldest dates are derived from the lower Strata 3C, 4, and 5, which also correspond with the Early Archaic radiocarbon dates obtained from Strata 3B and 3B/C. Otherwise, the remaining dates are primarily Late Archaic and are situated in the upper levels of the site in Strata 1, 2, 3A, and 3B.

Ceramic Artifacts (Dean Wilson)

Two smeared-indented corrugated sherds were analyzed from the excavations. Both were recovered from the upper levels of the site.

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 2057 artifacts were analyzed from LA 85859, consisting of one core, 2046 pieces of debitage, 10 retouched tools, and one mano. This represents a 37 percent sample of the 5595 total lithic artifacts recovered during the site excavations. Table 38.8 presents the data on lithic artifact type by material type. The majority of the debitage is made of obsidian, with a few items of other materials. The presence of cortex on 6.5 percent of the debitage indicates that most of these materials were collected from primary nodular sources (96.9%), with some from secondary waterworn sources. The obsidian and rhyolite is present at nearby sources in the Jemez Mountains, but two obsidian flakes did exhibit waterworn cortex. In contrast, chalcedony, Pedernal chert, and quartzite are available from local Rio Grande Valley gravel sources.

Table 38.8. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Other	Total
Cores	Core	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Debitage	Angular debris	0	0	0	0	0	0	43	1	0	2	0	0	0	46
	Core flake	0	0	1	0	0	0	406	2	0	0	0	0	0	409
	Biface flake	0	0	0	0	0	0	679	2	0	0	0	0	0	681
	Notching flake	0	0	0	0	0	0	3	0	0	0	0	0	0	3
	Core trim. flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Outrepasse	0	0	0	0	0	0	4	0	0	0	0	0	0	4
	Microdeb.	0	0	1	0	0	0	771	1	0	0	0	0	0	773

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Other**	**Total**
	Und. flake	0	0	0	0	0	0	129	0	0	0	0	0	0	129
	Subtotal	0	0	2	0	0	0	2036	6	0	2	0	0	0	2046
Retouched Tools	Retouched piece	0	0	0	0	0	0	4	0	0	0	0	0	0	4
	Biface	0	0	0	0	0	0	6	0	0	0	0	0	0	6
	Subtotal	0	0	0	0	0	0	10	0	0	0	0	0	0	10
Ground Stone	One-hand mano	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total		**0**	**0**	**2**	**0**	**0**	**0**	**2046**	**6**	**0**	**3**	**0**	**1**	**0**	**2057**

Ten pieces of debitage and eight retouched tools were submitted for X-ray fluorescence analysis. All of these artifacts were from the Valle Grande source (Table 38.9). The Valle Grande (Cerro del Medio) source area is located about 17 km (11 mi) as the "crow flies" to the west of the site.

Table 38.9. Obsidian source samples.

FS #	Artifact	Color	Source
30	Tool	Translucent	Valle Grande rhyolite
38	Tool	Translucent	Valle Grande rhyolite
40	Debitage	Translucent	Valle Grande rhyolite
109	Debitage	Translucent	Valle Grande rhyolite
118	Debitage	Translucent	Valle Grande rhyolite
124	Tool	Translucent	Valle Grande rhyolite
144-1	Tool	Translucent	Valle Grande rhyolite
144-2	Debitage	Gray	Valle Grande rhyolite
147	Debitage	Translucent	Valle Grande rhyolite
148	Debitage	Translucent	Valle Grande rhyolite
166	Debitage	Translucent	Valle Grande rhyolite
169-1	Tool	Translucent	Valle Grande rhyolite
169-2	Debitage	Translucent	Valle Grande rhyolite
172	Debitage	Translucent	Valle Grande rhyolite
222	Tool	Translucent	Valle Grande rhyolite
235	Tool	Translucent	Valle Grande rhyolite
257	Tool	Translucent	Valle Grande rhyolite
285	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The core consists of a bidirectional, bifacial core made on a chalcedony cobble (Figure 38.8). It exhibits waterworn cortex indicating that it was obtained from secondary gravel sources. The core was classified as still useable when discarded. Table 38.10 presents the metric information on this core.

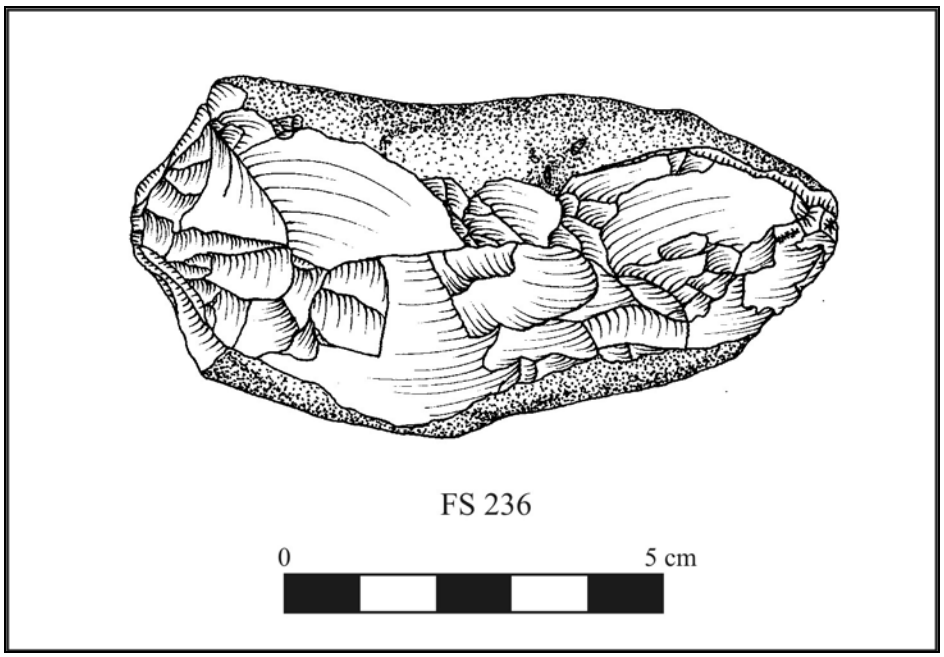


Figure 38.8. Bifacial core from LA 85859.

Table 38.10. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bi-directional	97	74	48	374.0

The debitage mainly consists of microdebitage (37.7%) and biface flakes (33.2%), with some core flakes (19.9%), undetermined flake fragments (6.3%), and other items. Table 38.11 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The overall cortical:non-cortical ratio of 0.13 reflects this emphasis on the tool production. The presence of notching and *outrepasse* flakes also indicate the presence of biface production activities at the site.

Table 38.11. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Rhyolite	0	0	1	0	---
Obsidian	0	16	23	92	0.13
Chalcedony	0	0	1	0	---

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Total	**0**	**16**	**25**	**92**	**0.13**
Percentage	0	12.0	18.7	69.1	---

The majority of the flakes exhibit crushed platforms (*n* = 176; 54.1%), with cortical (*n* = 3), single-faceted (*n* = 58), multi-faceted (*n* = 54), and collapsed (*n* = 34) platforms. Ninety six (29.8%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed and only two ground platforms.

The majority of the core flakes consist of distal fragments (*n* = 242; 59.1%), with fewer whole (*n* = 46), proximal (*n* = 35), midsection (*n* = 84), and lateral flake fragments (*n* = 2). Most of the biface flakes are also distal fragments (*n* = 330; 48.4%), with fewer whole (*n* = 92), proximal (*n* = 152), midsection (*n* = 99), and lateral flake fragments (*n* = 8). The whole core flakes have a mean length of 24.2 mm (*std* = 12.7), whereas the whole biface flakes exhibit a mean length of 25.9 mm (*std* = 11.9). Lastly, angular debris have a mean weight of 0.5 g (*std* = 0.5).

The retouched tools consist of a mix of expedient flakes and retouched pieces, while the formal tools consisted primarily of bifaces (Figure 38.9). The retouched pieces exhibit one (*n* = 1), two (*n* = 2), and three (*n* = 1) marginally retouched edges. Table 38.12 presents the information on retouch type by edge outline.

Table 38.12. Retouched pieces.

Retouch Type	Edge Outline						
	Straight	Concave	Convex	Straight/ concave	Straight/ convex	Concave/ convex	Projection
Unid. Ventral	1	0	0	0	0	0	0
Unid. Dorsal	2	0	0	0	0	0	0
Bidirectional	1	0	0	0	0	0	0
Total	**4**	**0**	**0**	**0**	**0**	**0**	

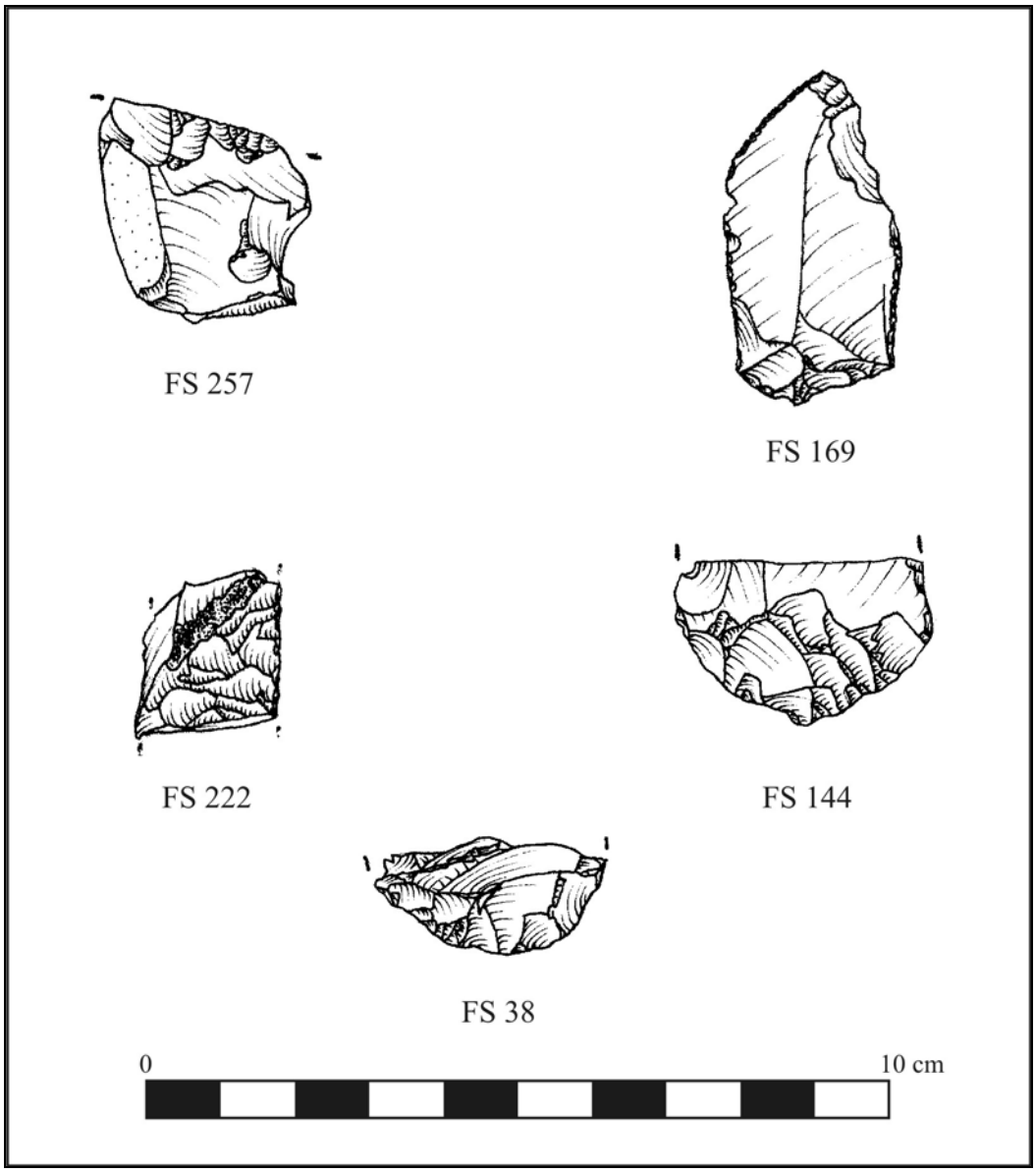


Figure 38.9. Retouched flakes (top) and biface fragments (bottom).

All the retouched edges exhibit straight outlines. The edge angles range from 40 to 50 degrees, with a mean of 42.5 degrees (*std* = 5.0)**.** This reflects an emphasis on the use of more acute edge angles.

All six bifaces are broken, consisting of two distal, one lateral, and three undetermined fragments. Therefore, platform angles were measured on biface flakes (*n* = 82) to provide information on the stages of biface production represented at the site. The angles range from 45 to 85 degrees, with a mean of 65 degrees (*std* = 6.1)**.** However, Figure 38.10 indicates a bimodal distribution with peaks at 75 and 60/65 degrees. This indicates that early-middle stage bifaces, and possibly bifacial cores, were being reduced at the site. This corresponds with the presence of the *outrepasse* flakes.

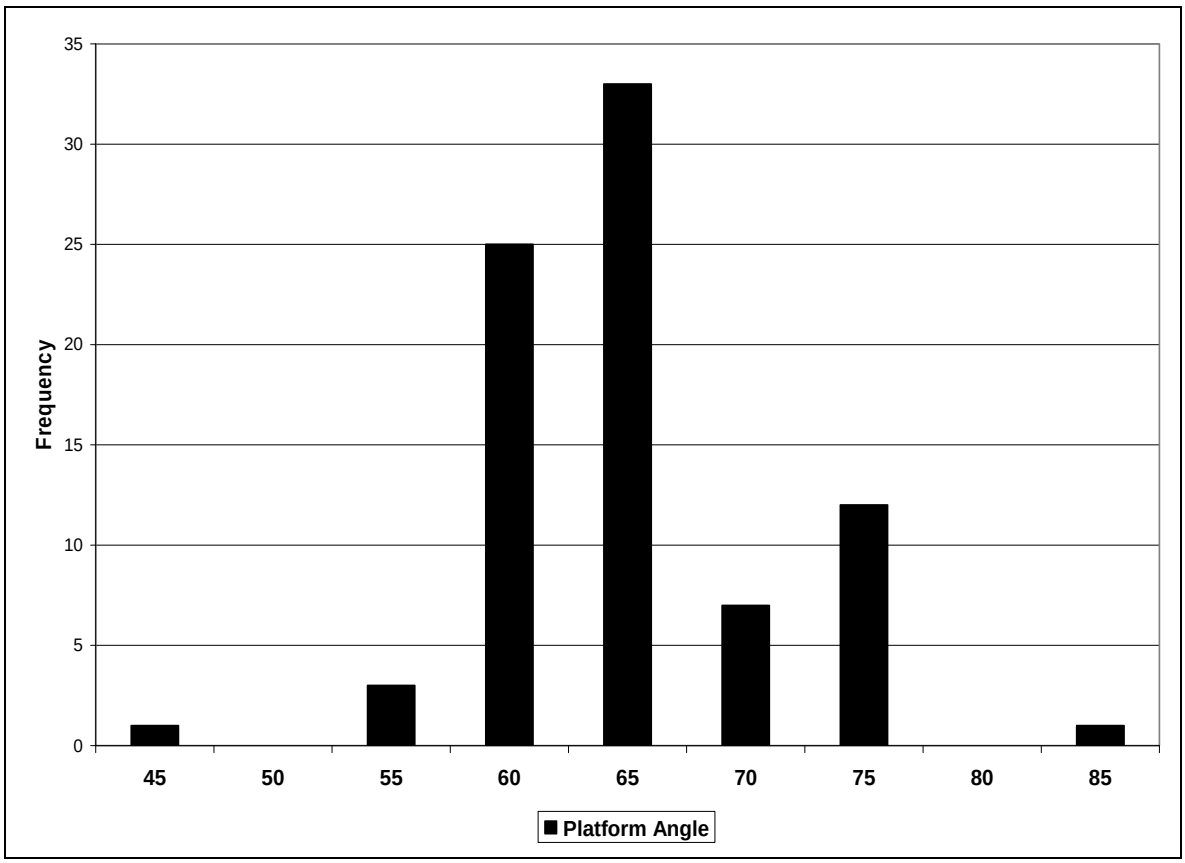


Figure 38.10. Biface flake platform angles.

Tool Use

Only two flakes (0.04%) exhibit evidence of damage that could be attributed to use-wear. These are obsidian biface flakes with damage situated along a straight lateral edge with angles of 40 degrees. They too have an acute angle like that exhibited by the retouched tools and were presumably removed from large bifacial cores.

Two of the retouched flakes exhibit evidence of use-wear, whereas, all the biface fragments appear to have been broken during manufacturing. A composite tool includes two retouched lateral edges with acute angles and a steeply angled edge at the distal end of the flake. Use-wear is present along these edges indicating use as both a cutting and scraping tool (see Figure 38.9).

A single one-hand quartzite cobble mano was analyzed. It exhibits two well-worn opposing surfaces and has some battering along one end (Figure 38.11).

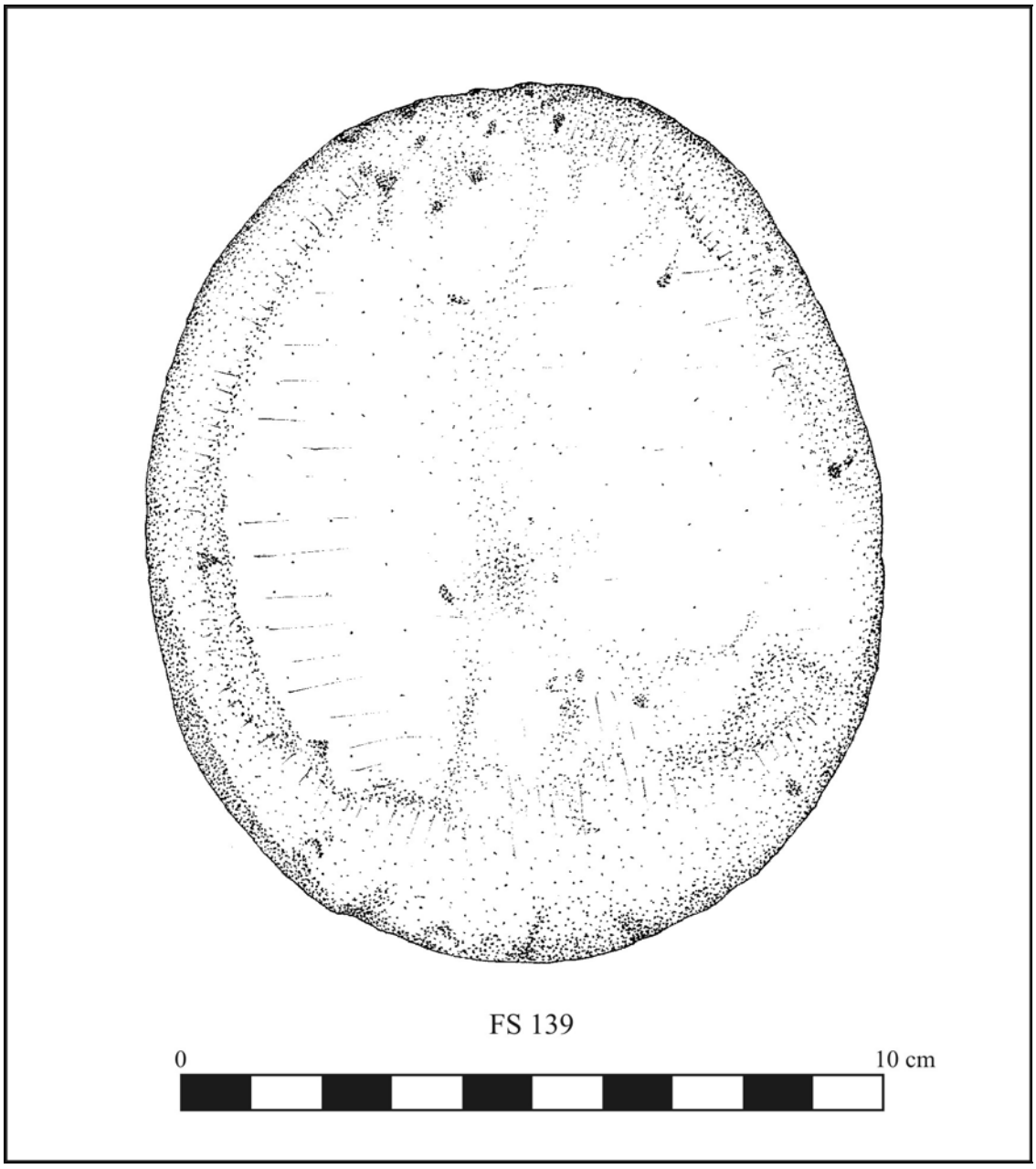


Figure 38.11. One-hand cobble mano.

Faunal Remains (Kari Schmidt)

Fourteen pieces of bone were recovered from this site. All of the bones were modern, and all are pocket gopher (*Thomomys bottae*) remains. None of the bones were burned, and none showed signs of weathering. Bones were recovered throughout the excavated levels. Methods used in the analysis of the bone are detailed in Volume 3 (Schmidt, Chapter 64).

Archaeobotanical Remains (Pamela McBride)

The majority of flotation and vegetal samples were from the center of the main activity area (grid 90N/109E) from strata that yielded the highest number of lithic artifacts. One of these samples produced a goosefoot seed fragment. The remaining assemblage consisted of burned and unburned conifer duff including pine cone fragments, piñon and ponderosa needles, and juniper twigs (Table 38.13). Samples from that part of the site along the upper western margin (FS 353) and from the northeastern portion of the site (FS 310) also contained unburned weed seeds of goosefoot, spurge, bean family, composite family, and the knotweed family.

Table 38.13. Flotation sample plant remains from LA 85859.

FS No.	**108**	**123**	**136**	**143**	**310**	**311**	**348**
Feature	90.9/ 109.7 strat 3a, level 3	90.95/109.7 strat 3b, level 4	90.95/109.8 strat 3c, level 5	90.95/109.85 strat 3c, level 6	92/11 4 strat 1	92/114 strat 2	90/112 strat 3a
Cultural							
Annuals							
Goosefoot				1(0)			
Perennials							
Juniper					twig +		
Pine					poss. ♂ cone +, umbo +	umbo +	
Ponderosa pine	needle + pc		needle +		needle +	needle +	
Non-Cultural							
Annuals							
Goosefoot					+		
Spurge					+		
Other							
Bean family					+		
Composite family					+		
Perennials							
Juniper		twig +			+, twig +	twig +	
Pine					umbo +		
Piñon		needle +			nutshell +		

FS No.	108	123	136	143	310	311	348
Feature	90.9/ 109.7 strat 3a, level 3	90.95/109.7 strat 3b, level 4	90.95/109.8 strat 3c, level 5	90.95/109.85 strat 3c, level 6	92/11 4 strat 1	92/114 strat 2	90/112 strat 3a
Ponderosa pine	needle +	needle +	needle +		needle +	needle +	needle +

Table 38.13 (continued). Flotation sample plant remains from LA 85859

FS No.	351	353	354	355
Feature	90/112 strat 4	90/107 strat 3a, level 3	90/107 strat 3b, level 4	90/107 strat 3c, level 5
Perennials				
Pine		umbo +		
Ponderosa pine		needle +		
Non-Cultural				
Annuals				
Goosefoot		+		
Spurge		+		
Other				
Composite family		+		
Knotweed family		+		
Perennials				
Pine		umbo +		
Ponderosa pine	needle +	needle +	needle +	needle +

+ 1-10/liter, pc partially charred.

Wood charcoal was entirely coniferous and piñon was the only taxon identified as charcoal was very fragmented and sparse (Tables 38.14 and 38.15). Unknown conifer and undifferentiated pine were also part of the record. The archaeobotanical remains from LA 85859 could be remnants of vegetation that burned during the Cerro Grande fire, especially those from Strata 1 and 2 that both contained material burned during the fire. Strata 4 and 5 displayed frequent rodent burrows indicating floral material from the fire could have been deposited by bioturbation.

Table 38.14. Flotation sample wood charcoal taxa by count and weight in grams from LA 85859.

FS No.	108	310	311	315	348
Context	90.9/109.7 strat 3a, level 3	92/114 strat 1	92/114 strat 2	92/114 sand	90/112 strat 3a
Conifers					
Piñon		1/<0.1 g, 1 pc/<0.1 g			
Unknown conifer	1/<0.1 g		1/<0.1 g	1/<0.1 g	2/<0.1 g
Totals	**1/<0.1 g**	**2/<0.1 g**	**1/<0.1 g**	**1/<0.1 g**	**2/<0.1 g**

Table 38.15. Vegetal sample wood charcoal taxa, by count and weight in grams from LA 85859.

FS No.	138	361	362	363
Feature	90/109.95 strat 3c, level 5	90308/119 strat 3b	87.8/112.4 strat 3c	89.6/112.4 strat 3bc
Conifers				
Pine	12/0.2 g			
Piñon		1/<0.1 g	1/<0.1 g	
Unknown conifer				1/<0.1 g
Totals	**12/0.2 g**	**1/<0.1 g**	**1/<0.1 g**	**1/<0.1 g**

Pollen Remains (Susan Smith)

Nineteen pollen samples were analyzed from LA 85859. Table 38.16 lists the frequency of identified pollen types. No cultigens were identified in the botanical assemblage. Beeweed and lily family were identified as other economic resources in the assemblage. Several other potential economic resources were identified in the assemblage (Table 38.16), and these are discussed in detail in Smith's chapter in Volume 3.

Table 38.16. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85859 (*n* = 19)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85859 (*n* = 19)
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	2
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	6
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, Shrubs & Subs. Resources	Cheno-Am	Cheno-Am	10
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85859 (*n* = 19)
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	7
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	1
	Pinus	Pine	11
		Pine Aggregates	0
	Pinus edulis type	Piñon	8
	Juniperus	Juniper	9
		Juniper Aggregates	0
	Quercus	Oak	1
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	2

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85859 (*n* = 19)
	Artemisia	Sagebrush	7
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

EXCAVATION SUMMARY

LA 85859 is an Early Archaic lithic scatter located on the northeast slope of a knoll situated along the north side of Rendija Canyon. The implemented data recovery plan resulted in a block excavation from which 5595 lithics were recovered. The vast majority of the lithics were debitage made of obsidian, with a few items of other materials also present.

The least disturbed portion of the site is located in the west-central portion of the block excavation, directly east of a dacite cobble outcropping. With removal of the overlying soil, it was apparent that a hollow had formed in the Toledo Pumice deposit directly downslope from a cascade of dacite rocks and cobbles. The bottom of the hollow sloped down to the east for 4 to 5 m until it merged with a drainage that ran from southwest to northeast across the knoll slope. The drainage is evidenced by a shallow trough that was cut into the pumice deposit. It is likely that the hollow originally functioned as a drainage channel that funneled runoff into the lower southwest-to-northeast-trending drainage.

The dacite cobble outcropping apparently formed a barrier that allowed the preservation of soils within the hollow. The stabilized soils included an intact Bt1b1 through Bt3b1 sequence from which the majority of cultural remains were located. As indicated by the systematic site augering and selective test units, the Bt soil horizons are virtually non-existent above (west) and patchy when present out to either side of the hollow. It is inferred from the site stratigraphy that the upper hillslope was eroded during the late Pleistocene or early Holocene and that colluvium derived from Toledo bedrock or Toledo soils was deposited in the concave part of the hillslope (Drakos and Reneau 2004). The complete Bt soil sequence is limited to an approximately 3- by 4-m area located directly east of the dacite rock barrier as the upper Bt1b1 soil horizon is missing from the northern and eastern sides of the block excavation. The lower Bt1b1 and Bt2b1 soils are present throughout the hollow; however they are so heavily mixed that they are indistinguishable through the east-central portion of the excavation. It appears that many of the cultural materials originally retained in the hollow have gradually moved downslope toward the east and northeast in concert with the original hillside drainages. Significant vertical

displacement of cultural materials also appears to be a byproduct of this depositional movement and significant bioturbation. Although the artifact density remains fairly high throughout the eastern half of the excavation, the context becomes more blurred with an increase in artifacts in lower soil horizons due to post-occupation mixing.

The maximum artifact concentration at the site was found in unit 90N/110E, and the majority of these artifacts were recovered from the Bt1b1 soil horizon. The lack of artifacts recovered from the Bt soils within 90N/107E provides evidence that the artifacts were not transported from upslope, but were originally deposited in the vicinity of 90N/110E. Although the artifact content in grids to the north and east of 90N/110E decreases somewhat, the similar artifact distribution pattern leads to the assessment that this general area is the focus for site activities.

No occupation surface was encountered during excavations. This lack of a surface is likely due to significant post-occupational mixing of cultural materials between strata as is indicated by the large number of artifacts scattered throughout the soil horizons. The relatively high Bt1b1 artifact content suggests that the site occupation surface was within this upper late-Pleistocene or early-Holocene colluvium, and likely within the upper half of this horizon (Stratum 3A). This infers that the artifacts found in the late-Holocene colluvium were supplied from local bioturbation of the underlying b1 soils. As evidence of extensive burrowing was observed in the Bt3b1 and Bkb1 soil horizons, associated artifacts are assessed to have been transported into these deeper deposits through rodent burrowing. Bioturbation that occurred after abandonment is also the likely source of artifact movement into the Bt2b1 soil horizon. The fact that the maximum artifact density occurs in the best-developed soil horizon (Bt1b1) suggests that most of the bioturbation occurred relatively soon after deposition of the colluvium and site abandonment, before development of these soil horizons. As the peak artifact density occurs in the upper part of the b1 soil, site occupation also apparently occurred late in the period of deposition (Drakos and Reneau 2004).

The drop in artifact totals observed in units 90N/115E and 90N/118E suggests that the site focus is located in the hollow and that several artifacts have eroded east into the area situated below the hollow. The good soil development in the focus area infers that the site has been relatively stable since the period of high bioturbation that occurred shortly after abandonment. Although bioturbation has obliterated the site structure, including the spatial relationship of artifacts and charcoal, the sheltered environment provided by the hollow allowed the majority of cultural remains to be retained in relative proximity to their original setting. The good assemblage composition should facilitate an assessment as to the site function(s) and to establish the general period(s) of site occupation. Charcoal was fairly rare below the late-Holocene deposits that contained charcoal associated with the Cerro Grande fire. Seventeen charcoal samples were recovered from the Bt soils. Approximately half of the charcoal samples were submitted for radiocarbon dating from which four dates were obtained. Three of the samples date to the Early Archaic period and one from the Ancestral Pueblo Classic period, which indicates that some stratigraphic mixing was occurring throughout the history of the site. The Classic period date likely corresponds to use of the area during the Ancestral Pueblo era as indicated by sites LA 85861 and LA 85415 located approximately 150 and 300 ft upslope to the southwest and south-southwest, respectively. The range of obsidian hydration dates for the site tend to support the two distinct periods of site activity with the three oldest dates derived from lower strata

corresponding with the Early Archaic radiocarbon dates and the two youngest dates corresponding with the Classic period radiocarbon date. The remaining four obsidian hydration dates suggest that site activities also occurred between the Late Archaic and Classic periods. Unfortunately, with bioturbation obscuring the spatial relationship of the cultural remains, there are no distinct cultural lenses or use surfaces from which to establish a specific occupational sequence at the site, nor to establish the number of occupations that it took to build the site.

CHAPTER 39
RENDIJA TRACT (A-14): LA 85861

Gregory D. Lockard

INTRODUCTION

LA 85861 is the remains of a one-room Late Coalition period fieldhouse located on an east-facing slope on the mesa between Rendija and Guaje canyons. The site is located in the east-central portion of the Rendija Tract. Vegetation on the site consists of piñon, juniper, and ponderosa pines. The site is situated at an elevation of 2103 m (6900 ft).

LA 85861 was first recorded on September 12, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. Hill interpreted the site as a campsite or possible fieldhouse. A diffuse artifact scatter at the site included obsidian, chalcedony, and siliceous rhyolite lithics and ceramics. The ceramics in the scatter included Wiyo and Santa Fe Black-on-white sherds, which led Hill (1991) to conclude that the site was occupied during the Late Coalition period. On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992.

A single 1- by 1-m test pit (Unit A) was excavated at LA 85861. Unit A was placed within a diffuse scatter of rocks that measured 4 by 5 m, which was designated Feature 1. No clear rock alignments were visible in the scatter of rocks. For this reason, Peterson and Nightengale believed the scatter to be the foundation stones of a structure built primarily of perishable materials. Unit A was excavated to a maximum depth of 55 cm below the ground surface. No clear rock alignments or living surfaces were encountered in the excavation. Ten sherds, however, were recovered from the unit. In addition, six lithics (including a chert core/chopper) and 20 sherds were recovered during a surface collection of the site. The ceramics recovered from the excavation and surface collection consist of one Black-on-red decorated sherd (possibly Glaze A or White Mountain Redware), five Wiyo Black-on-white, three Biscuit B, one Biscuit A, four smeared-indented, and 16 other utilityware sherds. Finally, a rock alignment located a few m to the northeast of Feature 1 was recorded. No excavations were conducted of this rock alignment, which was designated Feature 2.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a diffuse scatter of rocks approximately 4 by 5 m in area, designated Area 1 (Peterson and Nightengale's Feature 1), and a small concentration of rocks to the northeast, designated Area 2 (Peterson and Nightengale's Feature 2) (Figure 39.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwestern portion of the site. The site was then covered with a 1- by 1-m grid that extended 9 m to the north, 7 m to

the east, and 3 m to the west of the site datum. Four subdata (A-D) were set up for taking elevations. The site was then photographed. Artifacts visible on the surface were then collected by grid unit. The location of artifacts outside of the grid was determined with tape measures. A 6- by 1-m east-west trench (units 104N/99-104E) was initially excavated across Area 1.

Figure 39.1. Pre-excavation photograph of LA 85861.

Because there were no clear rock alignments on the surface, the primary purpose of this trench was to determine if the rocks in the area were the remains of a structure. The trench also served to expose a profile of the site's stratigraphy. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. No living surface was encountered in any of the trench units. Excavation of these units therefore proceeded down to Cerro Toledo bedrock. A concentration of several rocks was encountered in units 104N/100-101E, and two rocks were encountered in unit 104N/99E. These rocks, however, did not form any obvious alignments. It was therefore unclear whether they were part of the walls of a structure. The later excavation of units to the north, however, revealed that they were in fact the remains of the disturbed southernmost portion of a one-room fieldhouse, which was designated Room 1. After the excavation of the trench units, the north profile of the trench was drawn and photographed. The rest of the area was subsequently excavated, again by strata and arbitrary levels for thicker strata.

In all, 36 units were excavated in Area 1. During the excavation of these grid units, the diffuse scatter of rocks in Area 1 was determined to be a one-room fieldhouse, and the walls of the fieldhouse were defined. Patches of a poorly preserved living surface were only encountered in

two units (105N/99-100E). The units that were excavated before Room 1 was discovered (105N/103E and 106N/103E and 104E) were excavated to bedrock. Subsequently, units were excavated to the level of the base of the foundation of the room's walls, or the living surface in the case of units 105N/99-100E. Excavation of Area 1 focused on defining the room's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The small concentration of rocks in Area 2 was excavated in four units (107-108N/105-106E). The excavations revealed the rocks to be superficial, and no clear alignments were detected. If the concentration of rocks was a cultural feature, its function is therefore unknown. After the excavation of Areas 1 and 2 was complete, the site was mapped (Figure 39.2) and photographed (Figure 39.3).

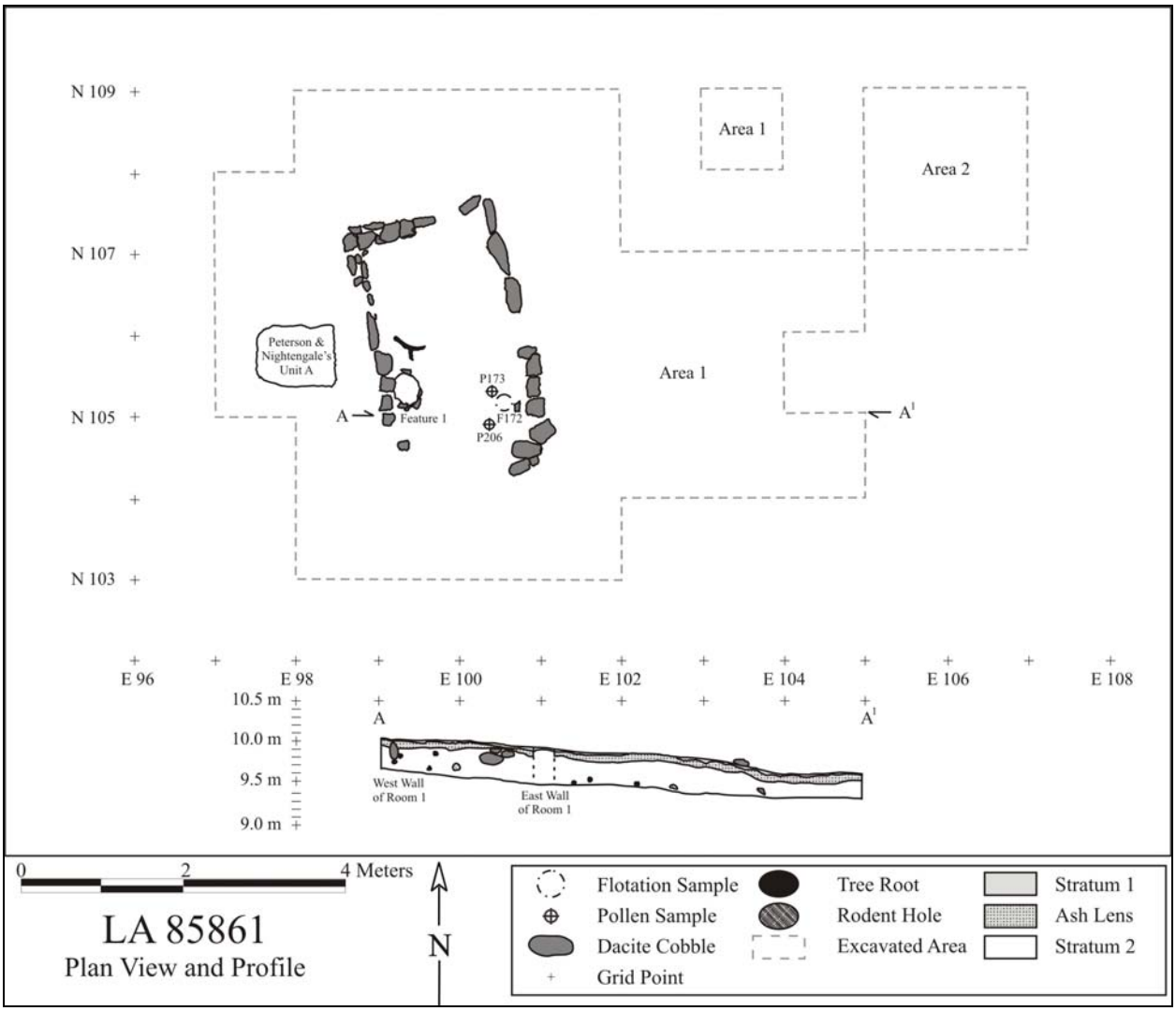


Figure 39.2. Plan view and profile of the fieldhouse at LA 85861.

Figure 39.3. Post-excavation photograph of the fieldhouse at LA 85861.

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Alan Madsen, Brian Harmon, Jen Nisengard, Sandi Copeland, and Bettina Kuru'es. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa was the site monitor representing Santa Clara Pueblo, as well as an additional excavator.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 2 to 7 cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 20 to 40 cm in thickness in Area 1 and 20 to 25 cm in thickness in Area 2. Stratum 2 is more or less equivalent to the Bw and Bwb1 horizons. Stratum 3 is the backfill removed from Peterson and Nightengale's Unit A. Stratum 3 is therefore a disturbed context. Stratum 4 is the ashy fill removed from Feature 1 (hearth). Tables 39.1 through 39.5 summarize and describe the strata excavated at LA 85861.

Table 39.1. LA 85861 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface

Stratum	Color	Texture	Thickness (cm)	Description
1	10YR 5/4	Loamy sand	2–7	Surface sediment
2	10YR 4/4	Sandy loam	20–40	Post-occupational fill
3	10YR 4/4	Sandy loam	20	Backfill from P & N test pits
4	10YR 4/2	Sandy loam	9	Feature 1 (hearth) fill

Table 39.2. LA 85861 soil horizon descriptions from the north profile of unit 106N/104E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/4	Sandy loam	0–13	Topsoil
Bw	10YR 4/4	Sandy loam	13–26	Late-Holocene soil
Bwb1	7.5YR 4/6	Sandy loam	26–39	Middle/late-Holocene soil
Rk	-	-	39+	Cerro Toledo bedrock

Table 39.3. LA 85861 soil horizon descriptions from the north profile of unit 108N/106E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/4	Loamy sand	0–5	Topsoil
Bw	10YR 4/3	Sandy loam	5–15	Late-Holocene soil
Bwb1	7.5YR 4/6	Sandy clay loam	15–27	Middle/late-Holocene soil
Rk	-	-	27+	Cerro Toledo bedrock

Table 39.4. LA 85861 soil horizon descriptions from the exterior face of the north wall of Room 1 (within unit 107N/99E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/3.5	Loam	0–16	Topsoil
Bw	7.5YR 4/6	Loam	16–31	Late-Holocene soil
Bwb1	7.5YR 4/6	Sandy clay loam	31–50	Middle/late-Holocene soil
Rk	-	-	50+	Cerro Toledo bedrock

Table 39.5. LA 85861 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	6	6	0	0	**12**
1	42	8	1	0	**51**
2	386	86	12	1	**485**
3	0	0	0	0	**0**
4	0	1	0	4	**5**
Total	**434**	**101**	**13**	**5**	**553**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small rectangular structure that probably functioned as a fieldhouse. The walls in the southernmost portion of the room have been severely disturbed, and many of the rocks are missing in this area. The room measures approximately 3.05 m in length (north to south) by 1.70 m in width (east to west), with approximately 5.19 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the diffuse scatter of rocks visible on the surface of Area 1 (units 104N/99-104E). The excavation of this trench served to define the room's stratigraphy, as well as to locate several rocks that turned out to be the extant portions of the walls that formed the southernmost portion the room. These rocks were not determined to be part of the walls of a structure, however, until grid units to the north of the trench were excavated. No living surface was encountered in any of the trench units. The poorly preserved remains of the room's living surface were encountered, however, in two grid units to the north of the trench (105N/99-100E). The room's only internal feature, a small, stone-lined hearth, was also encountered in unit 105N/99E. No living surface was encountered within Room 1 in the units to the north (106-107N/98-100E). The excavation of these grid units therefore terminated at the base of the foundation of the room's walls.

Fill. The interior of Room 1 was filled with 2 to 7 cm of surface sediment on top of 20 to 35 cm of post-occupational fill. A flotation sample (Field Specimen [FS] 98) and a pollen sample (FS 99) were taken from the Room 1 fill, but these samples were not analyzed.

Floor. During the excavation of unit 105N/99E, a small elliptical hearth was encountered. A few very small patches of a poorly preserved living surface were encountered in the area surrounding the hearth. These small patches of living surface were presumably preserved as a result of being slightly hardened by the heat from the hearth. A compact surface relatively devoid of rocks was also encountered in the unit directly to the east (105N/100E). This surface extends into the northernmost portion of unit 104N/100E. By itself, it was not a convincing living surface. Due to the fact that it was at about the same level as the top of the hearth and the small patches of living surface in unit 105N/99E, however, it probably was in fact the very poorly preserved remains of the Room 1 living surface. A flotation sample (FS 172) and two pollen samples (FS 173 and FS 206) were taken from directly on top of this presumed living surface. The flotation sample was not analyzed, and taxa identified in FS 173 included rose family, cheno-ams, grass family, sunflower family, piñon pine, juniper, oak, and sagebrush. No living surface of any kind was encountered in other areas of the room. For this reason, these areas were excavated to the base of the foundation of the room's walls.

Wall Construction. The extant portions of the Room 1 walls were composed of dacite rocks, many of which are tall, thin, upright slabs (Table 39.6). The elevation of the living surface encountered in the southern half of the room, as well as staining on some of the rocks, indicates that the room's foundation was placed in a trench approximately 15 cm deep. The remains of a second course of rocks were preserved in all but the west wall. The rocks that form this second course tend to be tabular dacite cobbles placed flat on top of the foundation rocks. There is a 30-cm gap in the eastern half of the northern wall. This gap is most likely the result of a missing

foundation rock. There is also a gap in the east wall, which is 55 cm wide. Due to its width and the fact that the fieldhouses excavated in the Rendija Tract during the Conveyance and Transfer Project tend to have entryways to the east, this gap was most likely the room's entryway. Just south of the entryway, a patch of burned daub was encountered on the east wall's exterior face. A piece of this burned daub was collected as a thermoluminescence (TL) sample (FS 249) and dated to 1193±53. Much of the walls that form the southernmost portion of the room have been severely disturbed. Several rocks appear to be missing from the southernmost portion of the west wall, and all but the easternmost 35 cm of the south wall is missing. It is therefore possible that the room's entryway was located in the south wall instead of the east wall.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation. In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in two stacks, which were then measured. The stacks measured 1.60 by 0.88 by 0.60 m and 1.80 by 0.55 by 0.37 m, for a total of approximately 1.21 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 1.10 m in height. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. A number of pieces of burned adobe were in fact recovered from the site.

Table 39.6. LA 85861 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.70	0.18–0.32	0.10–0.26	1 to 2
South	~1.60	0.25–0.30	0.10–0.26	1 to 2
East	2.45 (3.00)	0.08–0.35	0.10–0.23	1 to 2
West	>2.56	0.15–0.25	0.10–0.20	1

Notes: The exact prehistoric length of the south and west walls could not be determined; the length of the east wall including the possible entryway is given in parentheses; the wall height measurements for the north, south, and east walls were measured from the base of the walls instead of from a living surface.

Feature 1

Feature 1 is a shallow, elliptical hearth located just inside the west wall of Room 1 (Figures 39.4 and 39.5). A large, flat rock forms the base of the hearth. Much of the perimeter of the southern half of the hearth is formed by three small rocks. A fourth rock defines the northern edge of the hearth. Three of the rocks are dacite, and the fourth is tuff. The rest of the hearth's perimeter appears to have been formed by an adobe lining. This lining, however, is now only preserved on the east wall and in a small patch on the west wall of the hearth. The adobe lining on the east wall extends down and partially covers the rock at the base of the hearth. This indicates that the adobe lining probably originally covered the entire interior of the hearth, including the base. The hearth was filled with ashy sediment. A medium- to large-sized mammal bone awl (FS 196) and a lithic (FS 197) were recovered from the upper portion of this fill. The rest of the fill was collected in four flotation samples (FS 191, FS 192, FS 193, and FS 194). Carbonized taxa from these samples included beeweed, unknown conifer, piñon pine, cheno-ams, mint family, unidentified pine, ponderosa pine, and maize. Three additional faunal remains were recovered

from the heavy fraction of two of these samples. In addition, a pollen sample (FS 195) was taken from the base of the hearth. Identified taxa included maize, buckwheat, grass family, cheno-ams, sunflower family, evening primrose, ragweed/bursage, unidentified pine, piñon pine, and sagebrush.

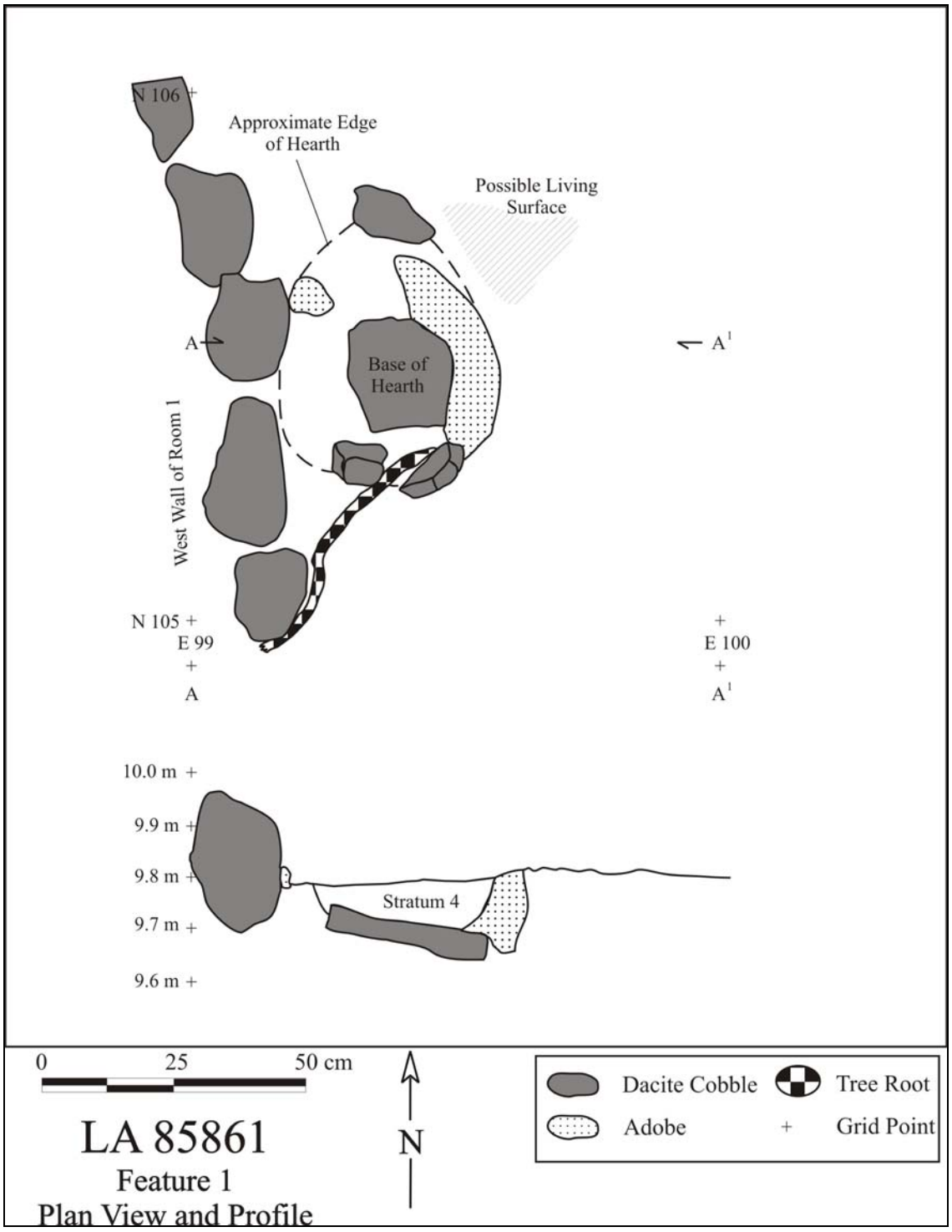


Figure 39.4. Plan view and profile drawing of Feature 1, a hearth.

Figure 39.5. Post-excavation photograph of Feature 1, a hearth.

Geological Analysis

Geologists Paul Drakos and Steven Reneau conducted a full analysis on three profiles (see Tables 39.2 through 39.4) and a partial analysis on a fourth profile at LA 85861. The profiles that were fully analyzed were the north profile of unit 106N/104E, the north profile of unit 108N/106E, and the exterior face of the north wall of Room 1 (within unit 107N/99E). The partially analyzed profile was the north profile of unit 108N/99E. All four profiles contained a soil sequence consisting of an A horizon (topsoil), a Bw horizon (a late Holocene soil), a Bwb1 horizon (a middle- to late-Pleistocene soil), and a Rk horizon (Cerro Toledo bedrock).

Artifact Distribution

The grid units with the highest number of artifacts in Area 1 at LA 85861 include the unit in which Feature 1 is located (105N/99E) and the unit immediately to the east (105N/100E) (Table 39.7). The high number of artifacts in these units is therefore most likely due to activities that took place around the hearth. The other units with a high number of artifacts in Area 1 are located to the east of Room 1 (104-106N/101-104E). This indicates that the area to the east of the room was most likely an outdoor activity area. This conforms to the pattern for most of the

fieldhouses excavated in the Rendija Tract during the Conveyance and Transfer Project. Furthermore, it supports the interpretation that the gap in the east wall of Room 1 is the room's entryway, as outdoor activity areas also tend to be located directly in front of the entryway.

Table 39.7. LA 85861 artifact counts by grid unit.

	E97	E98	E99	E100	E101	E102	E103	E104	E105	E106
N108	--	2	11	7	6	--	6	--	19	24
N107	--	**4**	**6**	**7**	11	--	--	--	14	0
N106	5	**5**	**5**	**7**	12	40	22	26	--	--
N105	5	17	**31**	**26**	37	14	20	--	--	--
N104	--	5	11	**8**	13	26	28	21	--	--
N103	--	10	9	13	7	--	--	--	--	--

Note: Does not include 10 artifacts found outside of the excavated area during surface collection; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 537 artifacts were analyzed from the excavations conducted at LA 85861. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and Feature 1 hearth fill (Stratum 4) (Table 39.8). Maize was submitted for radiocarbon dating, and a sherd and piece of burned adobe wall plaster were selected for TL dating. The results of the artifact and sample analyzes are presented in the following sections.

Table 39.8. Samples selected for analysis from LA 85861.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**TL**
1				
2		173, 184		142, 249
3				
4	191, 192, 193, 194	195	193	

Chronology

Radiocarbon Dating

One maize sample was submitted for accelerator mass spectroscopy dating. This specimen was derived from a flotation sample taken from the Feature 1 hearth fill (FS 193). The sample provided a date of 930±40 BP (Beta-221842), with calibrated intercepts of AD 1050, AD 1100, and AD 1140 and a two-sigma range of AD 1020 to 1200.

Thermoluminescence Dating

A single smeared plain corrugated sherd and a piece of burned adobe wall plaster were submitted for TL dating from LA 85861 (Table 39.9). All derived ages are given in years BP, which refers to years before 2003. Both TL dates correspond to the two-sigma range of the radiocarbon dates.

Table 39.9. TL dates from LA 85861.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
142	UW1508	Sherd, Room 1, Stratum 2	33	795	9.2	1211±73
249	UW1509	Burned plaster, Room 2, Stratum 2	30	813	6.6	1193±53

Archaeomagnetic Dating

A single surface room with a hearth was the only candidate for archaeomagnetic sampling at this site. The surface room was a fieldhouse, and associated pottery suggested an Early Classic period occupation to the field excavators. The hearth itself was rock lined, and the interstitial plaster was too weakly burned and too disturbed for normal sample definition and collection. Four specimens were prepared and were submitted for measurement as ADL 1307. An experimental approach was used during the collection of this sample, and although these results are not helpful for the dating of the LA 85861 structure, they do validate the experimental field sampling approach used in this case (see Blinman and Cox, Volume 3 for further details).

Ceramic Artifacts (Dean Wilson)

A total of 439 ceramics were analyzed from LA 85861. The majority of the pottery consists of smeared plain corrugated and Santa Fe Black-on-white sherds. These types, in conjunction with the presence of Wiyo Black-on-white, would indicate a Late Coalition period date during the 13th century (Table 39.10). However, the radiocarbon date reflects an Early Coalition period occupation dating to the 12th century, and the TL dates overlap both the 12th and 13th centuries. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 39.11 through 39.13. The graywares and whitewares appear to have been locally made from tuff temper while the Sapawe Micaceous sherds contained a non-local micaceous temper. All of the grayware and micaceous ceramics were jars while the whiteware sherds consisted solely of bowl sherds.

Table 39.10. Ceramic types from LA 85861.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	28	6.4
Indeterminate organic	11	2.5

Ceramic Type	Frequency	Percent
Unpainted white undifferentiated	1	0.2
Santa Fe Black-on-white	40	9.1
Wiyo Black-on-white	2	0.5
Jemez/Santa Fe/Vallecitos Black-on-white	1	0.2
Biscuit unpainted one side slipped	3	0.7
Biscuit B	2	0.5
Biscuit B/C body	1	0.2
Northern Rio Grande Utilityware		
Plain gray body	2	0.5
Clapboard neck	1	0.2
Smeared plain corrugated	270	61.5
Smeared-indented corrugated	71	16.2
Alternating corrugated	1	0.2
Sapawe Micaceous	3	0.7
Total	**439**	**100.0**

Table 39.11. Tradition by ware for LA 85861 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	345	100.0	91	100.0	0	0.0	0	0.0	426	99.3
Rio Grande (Tewa Micaceous)	0	0.0	0.0	0.0	0	0.0	3	100.0	3	0.7
Middle Rio Grande	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0
Total	**345**	**100.0**	**91**	**100.0**	**0**	**0.0**	**3**	**100.0**	**429**	**100.0**

Table 39.12. Temper by ware for LA 85861 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sherd and sand	0	0.0	1	1.0	0	0.0	0	0.0	1	0.2
Fine tuff or ash	0	0.0	10	10.9	0	0.0	0	0.0	10	2.3
Fine tuff and sand	0	0.0	78	85.7	0	0.0	0	0.0	78	11.1
Anthill sand	345	100.0	0	0.0	0	0.0	0	0.0	345	80.4
Oblate shale and tuff	0	0.0	2	2.0	0	0.0	0	0.0	2	0.4
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	3	100.0	3	0.6
Total	**345**	**100.0**	**91**	**100.0**	**0**	**0.0**	**3**	**100.0**	**429**	**100.0**

Table 39.13. Vessel form by ware for LA 85861 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	3	0.8	7	7.6	0	0.0	0	0.0	10	2.3
Bowl rim	0	0.0	15	16.4	0	0.0	0	0.0	15	3.5

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl body	0	0.0	69	75.8	0	0.0	0	0.0	69	16.0
Jar neck	36	10.4	0	0.0	0	0.0	0	0.0	36	8.3
Jar rim	23	6.6	0	0.0	0	0.0	0	0.0	23	5.3
Jar body	283	82.0	0	0.0	0	0.0	3	100.0	286	66.6
Total	**345**	**100.0**	**91**	**100.0**	**0**	**0.0**	**3**	**100.0**	**429**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 108 artifacts were analyzed from LA 85861, consisting of two cores, 79 pieces of debitage, 10 retouched tools, 14 ground stone artifacts, and three hammerstones. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 39.14 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony, with less Pedernal chert, obsidian, and other materials. The presence of cortex on 10.1 percent of the debitage indicates that these materials were collected from waterworn (n = 7) and nodule (n = 1) sources. The chalcedony, Pedernal chert, and quartzite are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 39.14. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Other	Total
Cores	Core	0	0	0	0	0	0	1	0	0	1	0	0	0	2
	Subtotal	0	0	0	0	0	0	1	0	0	1	0	0	0	2
Debitage	Angular debris	1	0	0	0	0	0	1	8	0	3	0	0	0	13
	Core flake	0	0	1	0	0	0	4	24	0	17	0	1	0	47
	Biface flake	0	0	0	0	0	0	9	3	0	2	0	0	0	14
	Microdeb.	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Und. flake	0	0	0	0	0	0	1	3	0	0	0	0	0	4
	Subtotal	1	0	1	0	0	0	15	39	0	22	0	1	0	79
Retouched Tools	Retouched piece	0	0	0	0	1	0	0	1	0	2	0	1	0	5
	Biface	0	0	0	0	0	0	3	0	0	0	0	0	0	3
	Uniface	0	0	0	0	0	0	1	0	0	1	0	0	0	2
	Subtotal	0	0	0	0	1	0	4	1	0	3	0	1	0	10

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Other**	**Total**
Ground Stone	One-hand mano	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Und. mano fragment	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Und. metate fragment	0	0	0	0	4	0	0	0	0	0	0	0	0	4
	Polishing stone	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Grooved abrader	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Hoe	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Und. ground stone	0	0	0	0	3	1	0	0	0	0	0	0	0	4
	Subtotal	1	0	0	0	10	2	0	0	0	0	0	0	0	14
Other	Hammer stone	0	0	0	0	0	0	0	3	0	0	0	1	0	3
	Subtotal	0	0	0	0	0	0	0	3	0	0	0	0	0	3
Total		**2**	**0**	**1**	**0**	**11**	**2**	**20**	**43**	**0**	**26**	**0**	**3**	**0**	**108**

Nine pieces of obsidian debitage, an obsidian biface, and a single basalt flake were submitted for X-ray fluorescence analysis. The obsidian artifacts are mostly made from Valle Grande obsidian, however, two artifacts are made of Cerro Toledo obsidian (Table 39.15). The Valle Grande (Cerro del Medio) and Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source areas are located about 17 km (11 m) and 19 km (12 mi) to the west and southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. The single basalt flake is actually dacite derived from a local source.

Table 39.15. Obsidian source samples.

FS #	Artifact	Color	Source
1	Debitage	Translucent	Valle Grande rhyolite
3	Debitage	Translucent	Valle Grande rhyolite
5	Biface	Translucent	Valle Grande rhyolite
8	Debitage	Translucent	Valle Grande rhyolite
59	Debitage	Translucent	Cerro Toledo rhyolite
78	Debitage	Translucent	Valle Grande rhyolite
79	Debitage	Translucent	Cerro Toledo rhyolite
87	Debitage	Translucent	Valle Grande rhyolite
175	Debitage	Translucent	Valle Grande rhyolite

FS #	Artifact	Color	Source
225	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The cores were reduced using a bidirectional, bifacial, and 90 degrees reduction technique (Figure 39.6). They were classified as still useable and discarded due to extensive hinging/stepping. Table 39.16 presents the metric information on the cores.

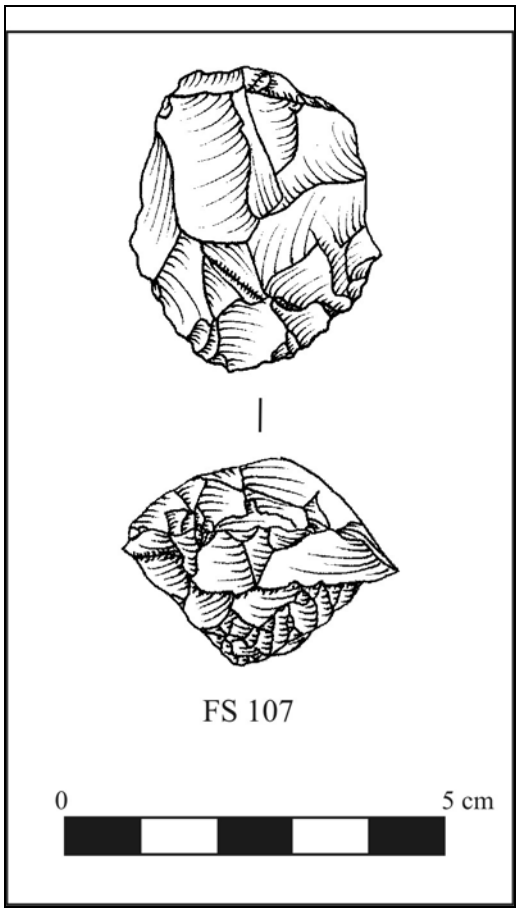


Figure 39.6. Bifacial core.

Table 39.16. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bi-directional	41	52	95	196.7
Bi-directional	42	35	26	30.1

The debitage consists of core flakes, with fewer biface flakes, angular debris and other items. The overall cortical:non-cortical ratio of 0.14 reflects a slight emphasis on the later stages of core reduction and biface production/maintenance. The flakes mostly have single-faceted platforms (*n* = 19), with fewer cortical (n = 1), multi-faceted (n = 1), collapsed (*n* = 5), and crushed (*n* = 8)

platforms. Four of the platforms exhibit obvious evidence of preparation by abrading/crushing. The majority of the core flakes are whole (*n* = 20), with fewer proximal (*n* = 6), midsection (*n* = 3), and distal (*n* = 18) fragments. Most of the biface flakes are also whole (*n* = 7), with fewer proximal (*n* = 1), midsection (*n* = 2), and distal (*n* = 4) fragments. The whole core flakes have a mean length of 20.2 mm (*std* = 8.9), the biface flakes a mean length of 28.7 mm (*std* = 7.6), and the angular debris a mean weight of 4.0 g (*std* = 5.7).

The retouched tools consist of retouched pieces, bifaces, and unifaces (Figure 39.7). The retouched pieces can be differentiated between small and large retouched flakes. The small flakes include a fragment with unidirectional dorsal retouch along two edges that produces a slight project where the edges intersect. Another retouched piece is a wedge-shaped flake fragment that also exhibits unidirectional dorsal retouch along a lateral edge. The three large flakes are made of dacite, chalcedony, and quartzite and exhibit marginal unidirectional dorsal or ventral retouch along their lateral sides or ends with edge angles of 65 to 75 degrees.

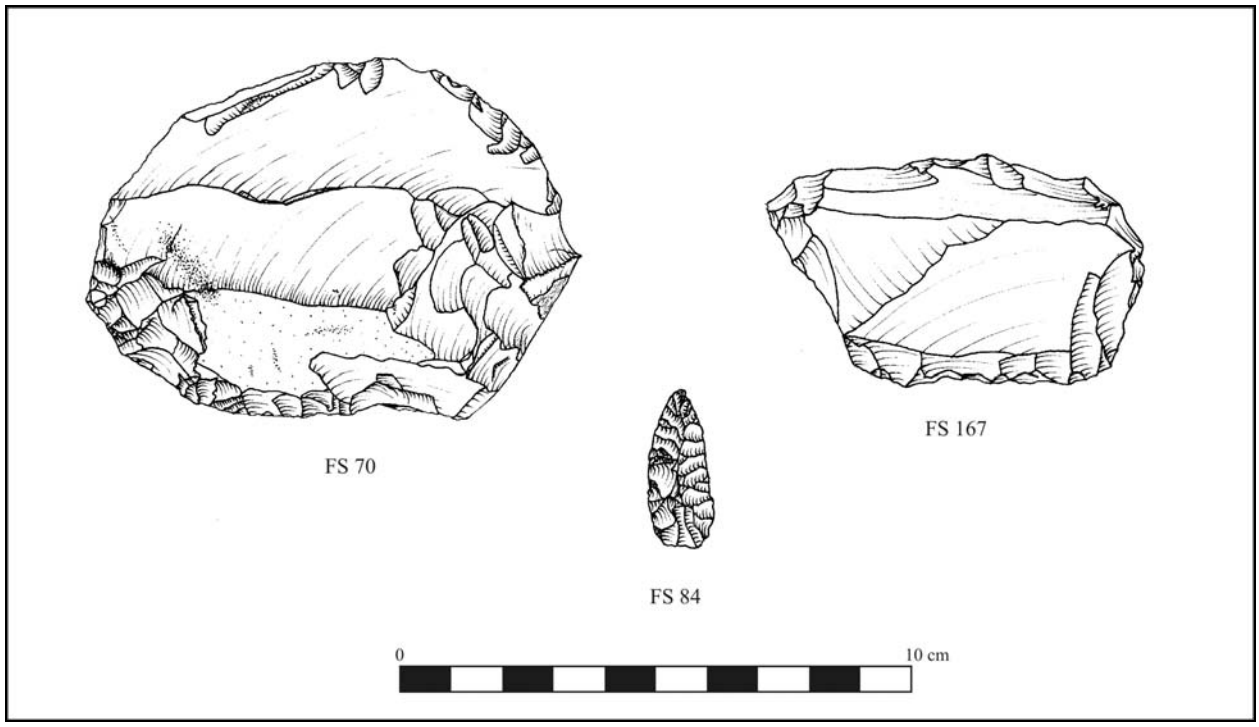


Figure 39.7. Retouched flake, biface, and uniface from LA 85861.

The bifaces include a whole lanceolate-shaped late-stage biface. This item presumably represents a preform with a thickness of 5 mm and edge angle of 50 degrees. The other biface is a distal fragment. The unifaces are flakes with unidirectional dorsal retouch along most of their perimeters, with steep edge angles of 70 and 75 degrees. One has a slightly denticulated edge that could represent both a scraper and graving tool.

Tool Use

A single flake exhibits evidence of edge damage that could be attributed to use. This flake has some rounding and microscarring on its lateral edge with an edge angle of 55 degrees. Three of the five retouched pieces exhibit some round, polish, or microscarring that could be attributed to use and both unifaces also exhibit use-wear consisting of microscarring.

The ground stone includes manos, a metate, a polishing stone, a grooved abrader, and a hoe (Figure 39.8).

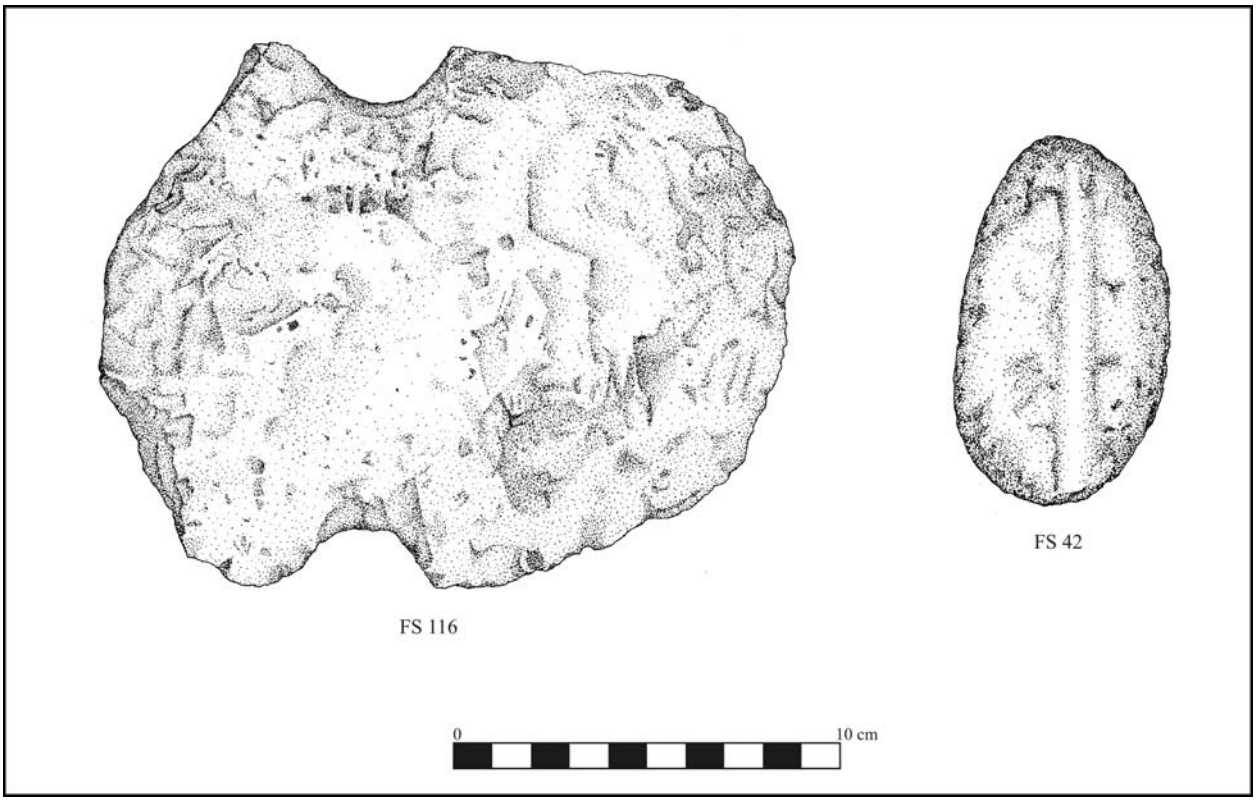


Figure 39.8. Hoe and grooved abrader from LA 85861.

The manos consist of a one-hand cobble with two opposing ground surfaces and a cobble fragment with a single ground surface. The metate is a large piece of dacite with a single flat ground surface. This item could represent a millingstone. The polishing stone is a small basalt pebble that is highly polished and exhibits multiple striations. The grooved abrader is a tuff cobble with a ground central groove**.** The hoe is a large thin piece of basalt that has been notched along both sides for hafting and the bit has been slightly shaped into a convex outline. It seems more likely that the artifact represents a hoe rather than an axe because it does not exhibit scarring along the edge, but polish on the high spots of both opposing blade surfaces. The undetermined ground stone consists of a dacite cobble fragment with a single ground surface and battered end. It could represent a mano that was also used as a hammerstone. The second ground stone item is a tuff slab fragment with a flat ground surface that could be part of a metate.

Lastly, the other two fragments are pieces of dacite that refit and have a single slightly concave grinding surface.

Faunal Remains (Kari Schmidt)

Five pieces of bone were recovered during excavations of this Late Coalition/Early Classic period fieldhouse. One piece of bone was recovered from Stratum 2 (post-occupational fill). This bone was identified as an unidentified mule deer (*Odocoileus hemionus*) second phalanx. The remaining four bones were recovered from the hearth (Feature 1, Stratum 4) and included a leporid molar and small-sized, small/medium-sized, and medium/large-sized mammal long bone fragments. None of the remains were burned. The medium/large-sized mammal long bone fragment was manufactured into an awl fragment.

Archaeobotanical Remains (Pamela McBride)

Although lacking the diversity of some of the other Rendija Canyon fieldhouses, the hearth in this fieldhouse contained beeweed seeds. A cheno-am seed fragment, a mint family seed, and unidentifiable plant part fragment, piñon needles, and two maize cupules comprise the balance of the cultural plant material recovered (Table 39.17). Unburned piñon needles were the only modern plant parts present. Small quantities of pine, piñon, ponderosa pine, and unknown conifer charcoal were also identified (Table 39.18).

Table 39.17. Flotation plant remains, count, and abundance from Feature 1 (hearth).

FS No.	191	192	193	194
Cultural				
Annuals				
Beeweed	3(3), 2(2) pc	6(5)		
Cheno-Am		1(0)		
Cultivars				
Maize			2(2) c	
Other				
cf. Mint family		1(1)		
Unidentifiable	1(0) pp			
Perennials				
Piñon				needle +
Non-Cultural				
Perennials				
Piñon				needle +

+ 1-10/liter, c cupule, cf. compares favorably, pc partially charred, pp plant part.

Table 39.18. Wood charcoal taxa by count and weight in grams from Feature 1 (hearth).

FS No.	191	192	193	194
Conifers				
Pine		2/<0.1 g		
Piñon	1/<0.1 g		1/<0.1 g	
Ponderosa pine				1/<0.1 g
Unknown conifer	2/<0.1 g	2/<0.1 g		
Totals	**3/<0.1 g**	**4/<0.1 g**	**1/<0.1 g**	**1/<0.1 g**

Pollen Remains (Susan Smith)

Three pollen samples were analyzed from LA 85861. Table 39.19 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage and was found in only one sample. Beeweed, which is also an economic resource, was identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 39.19), and these are discussed in detail in Smith's chapter in Volume 3.

Table 39.19. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85861 (*n* = 3)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	1
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85861 (*n* = 3)
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	1
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	3
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	3
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85861 (*n* = 3)
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	1
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	1
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	0
	Pinus	Pine	2
		Pine Aggregates	0
	Pinus edulis type	Piñon	3
	Juniperus	Juniper	2
		Juniper Aggregates	0
	Quercus	Oak	1
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	0
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85861 is a small one-room Late Coalition period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is situated on the mesa above Rendija Canyon near LA 85417 (another Coalition period fieldhouse). One feature, a small hearth, was identified at the site. The presence of maize cupules and pollen indicates that the one-room structure may have been occupied during the growing season. Unlike most the fieldhouses which emphasize core reduction activities, this site also included evidence of biface production/maintenance.

CHAPTER 40
RENDIJA TRACT (A-14): LA 85864

Steven R. Hoagland

INTRODUCTION

LA 85864 is a tipi or wickiup ring situated on the tip of a ridge finger situated between two 2- to 3-m-deep, narrow arroyos. The site is located at an elevation of 2127 m (6980 ft) in an area dominated by piñon-juniper woodland. The site has been severely impacted by erosion with the east side and most of the north side tipi ring rocks apparently having washed down into the adjacent arroyos. The north side arroyo, which has a 30-degree side slope, has cut into the tipi ring, and the south-side arroyo is located from 2 to 3 m south of the tipi ring. Most of the remaining site surface slopes down toward the south-side arroyo. This southern slope is subject to sheet washing. The two arroyos intersect approximately 12 m east of the site. The extensive erosion along the northern and eastern sides of the site is estimated to have washed away about 40 percent of the rock ring. The site has also been impacted by five trees growing in the northern half of the tipi ring.

PREVIOUS INVESTIGATIONS

The site was originally documented in 1991 for the Bason Land Exchange Project as a curvilinear alignment of large rocks spaced between 0.4 and 0.75 m apart (Hill 1991). The rocks that originally formed the eastern half of the tipi ring had eroded down into the site-cutting arroyos before its recordation. The original tipi ring was assumed to have measured 4.5 m in diameter. Two sherds were found near the structure; one was located in the arroyo south of the cobble ring and the other located on the ridge approximately 8 m west of the tipi ring. One sherd had a micaceous black paste and the other had a gray paste and tuff temper. A chalcedony core was also observed near the structure. A rhyolitic tuff slab with a grounded surface was located 20 m east of the structure.

A 1- by 1-m test unit (Unit A) and two shovel tests were excavated in 1992 during testing conducted for the Bason Land Exchange Project (Peterson and Nightengale 1993). Unit A, which was placed within the rock ring, was excavated to a depth of 22 cm. The southwest quadrant of a hearth was exposed at a depth of 16 cm. The hearth was represented by a concentration of ash and charcoal with burned clay beneath. It appeared that the hearth was built on the ground surface with no pit or enclosing rock ring. Charcoal submitted for radiocarbon analysis was dated to 130±60 BP (AD 1820/AD 1740 to 1900). Five small unidentified pieces of burned bone were recovered from a flotation soil sample collected from the hearth. No cultural materials were located in the shovel tests that were placed just beyond the tipi ring rocks to the west and south.

During site testing, four surface artifacts were observed and collected (Peterson and Nightengale 1993). The sherds included a Biscuit A decorated sherd and two utilitywares (one broken into

two pieces). One of the utilityware ceramics was a smeared-indented sherd. The remaining artifact was a chalcedony core/chopper. With the exception of the Biscuit A sherd, these artifacts were found in eroded areas of the site.

Before the 2003 excavations, the site consisted of a semi-circular alignment of 11 dacite rocks spaced from 0.1 to 1.7 m apart. The rocks that appeared to form the western half of a tipi ring ranged from about 15 to 40 cm in diameter. Based on the location of the existing rocks, the tipi ring would have been 4.5 to 5 m in diameter.

FIELD METHODS

Fieldwork at LA 85864 began on December 8, 2003, with an initial assessment of the site. The crew, which initially consisted of Steve Hoagland, Bettina Kuru'es, Michael Kennedy, Mark Hungerford, and Aaron Gonzales, walked over the site area and delineated the site boundary. As the fieldwork progressed, Alan Madsen, Greg Lockard, and Mia Jonsson aided in the excavations. The assessment consisted of the crew systematically walking the site at 2- to 3-m intervals. No surface artifacts were located close to the tipi ring.

After the site assessment was completed, the main site datum (Datum A) and baselines for a 1- by 1-m grid system were established. The datum was placed 2 m west of the western edge of the tipi ring on top of the ridge finger. It was designated as grid point 100N/100E and assigned an elevation of 8.0 m. One-hundred-meter tapes were used to set up the grid system. The southwest corner intersection of each grid unit determined its coordinates. Before initiation of the site excavation, the grid system was used to complete a comprehensive metal detector survey of the site (see Appendix N for results).

The site excavation involved the hand excavation of 1- by 1-m grid units. This technique was used to define the extent, depth, and character of the subsurface deposits. Grid level excavation designations started with zero at the surface, then from 1-n from the top to bottom of each grid unit (regardless of whether the level was natural or arbitrary). The excavation was conducted using shovels and hand trowels. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh screens. All collected materials were documented within a Field Specimen (FS) Catalog form.

A Grid Level Excavation Form was completed for each completed excavation level. Documented information included the depth of the excavation level, description of the sediment matrix, recovered cultural materials, and the nature and reason for samples collected. Pollen and flotation samples were collected from selected strata. Macrobotanical samples were also collected from the site.

Grids were excavated by natural stratigraphic units. Those units thicker than 10 cm were excavated in arbitrary 10-cm levels. A stratum was defined as a distinct depositional unit. To facilitate vertical control, subdata containing the same 8-m elevation as Datum A were established close to the excavation units. Grid levels were measured from the datum or subdata

using string and line levels. An assessment for geomorphic context and integrity was conducted by Steve Reneau and Paul Drakos, and results can be found in Chapter 57 in Volume 3.

An overall site map was assembled during the course of excavation (Figure 40.1). It depicted the site boundary, site datum, subdata, and excavation units. The site map was created with 100-m tapes. The site and components that make up the sites were photographed with a color digital camera and a 35-mm camera with black-and-white film (ASA 100).

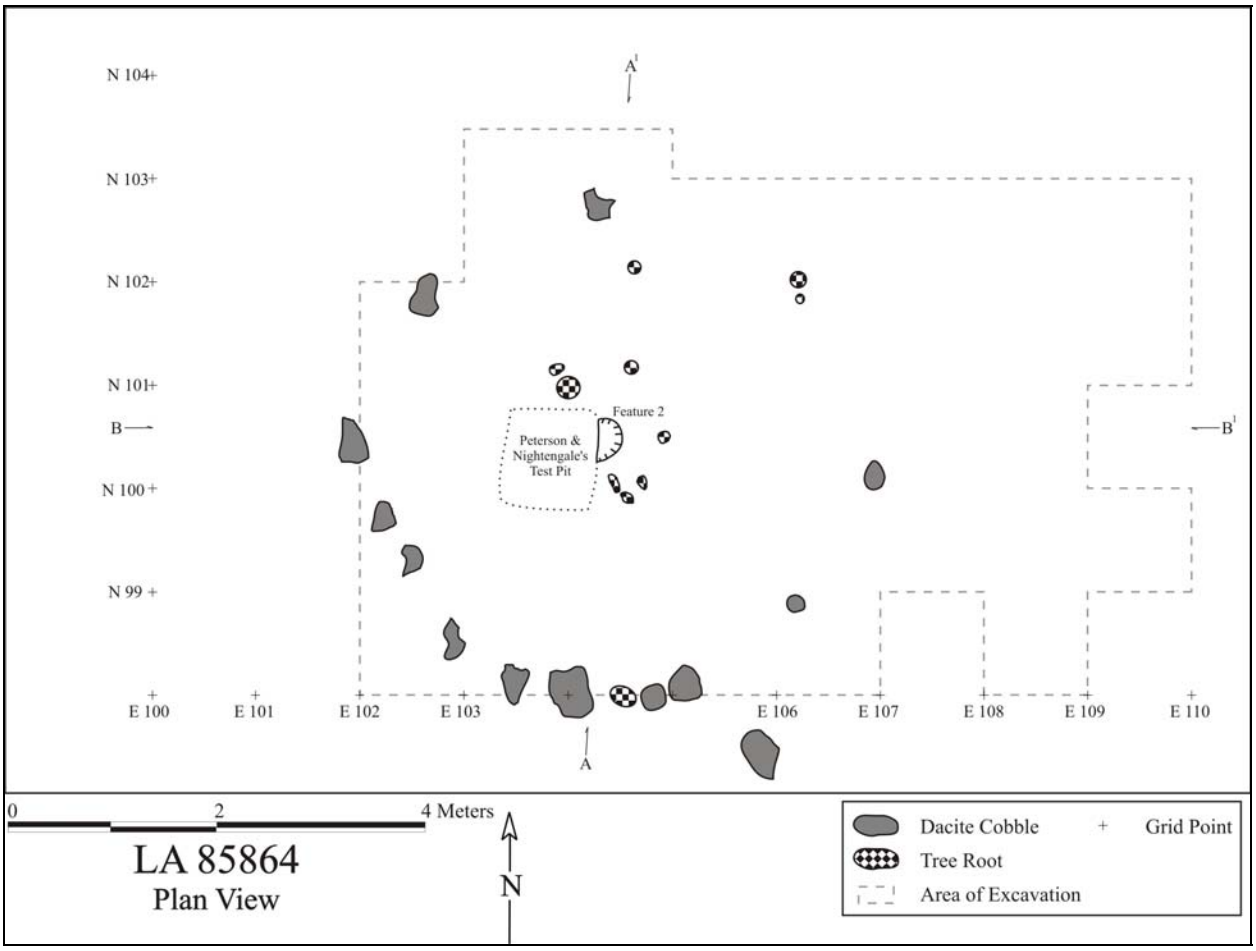


Figure 40.1. Post-excavation plan view of the structure at LA 85864.

STRATIGRAPHY

LA 85864 is situated on a preserved valley bottom remnant between two 2- to 3-m-deep southeast-sloping gullies. The soil at the site includes a 1- to 18-cm-thick A horizon overlying a 10-plus-cm-thick Ab1 horizon. The tipi ring rocks are set on top of or slightly within the Ab1 horizon. No distinct occupational surface was encountered during the excavation, however, based on the stratigraphy, it was likely established on top of the Ab1 horizon. The A horizon post-dates construction of the tipi ring.

The A horizon soil is a loose to lightly compact sandy to silty loam (10YR 4/4) that was divided into and excavated in two distinct stratums. Stratum 1 was the upper loose surface component that contained varying amounts of duff. Stratum 2 was the lightly compacted lower A horizon component that ranged in thickness from 0 to 15 cm. The compaction of Stratum 2 increases slightly with depth. The areas of greater A horizon thickness were located adjacent to trees growing out of the center of the tipi ring. The trees tended to minimize erosion and stabilize the adjacent soil. A few small pockets of A horizon soil containing from 10 percent to 40 percent pumice gravels were noted along the south side of the block excavation.

The Ab1 horizon (Stratum 4) is a fairly compact and often friable silty clay loam (10YR3/4). The Ab1 soil texture became friable where it had apparently been impacted by water erosion. The horizon boundary between A and Ab1 is abrupt and smooth within the west-central portion of the excavation (in the vicinity of the tree cover) and patchy elsewhere. The patchy nature of the deposit suggests that post-occupational erosion cut into and around sections of the Ab1 deposit with A horizon soils filling the resulting voids. As a result, the remaining Ab1 deposits extend up into the lower portion of the A horizon. The abrupt horizon boundary noted in the west-central portion of the tipi ring suggests that the horizon surface was subject to erosion before the occupational episode. Stratum 3 was the charcoal and ash fill located in the remainder of the hearth that was partially excavated in 1992 during the Bason Land Exchange Project. Table 40.1 summarizes the stratigraphic blocks that were excavated at LA 85864.

Table 40.1. Stratigraphic summary for LA 85864.

Prov	Strat	Hori-zon	Texture	Munsell Color	Thickness	Description
Area 1	1	A	Sandy to silty loam	10YR4/4	1 to 5 cm	Post-occupation late-Holocene loose surface deposit with pea-sized pumice gravels (10% to 40%), increasing in content toward the eastern end of the ridge finger. Surface and upper few cm contained varying amounts of duff.

Prov	Strat	Hori-zon	Texture	Munsell Color	Thickness	Description
	2	A	Lightly compact sandy to silty loam	10YR4/4	0 to 15 cm	Late-Holocene soft to slightly hard deposit with pea-sized pumice gravels (20% to 30%), increasing in content toward the eastern end of the ridge finger. Compaction increased slightly with depth. A few flecks of charcoal presumably associated with the site hearth were scattered throughout the deposit. Stratum 2 has been removed through erosion along the northern edge of the site. Other than degree of compaction, stratum is extremely similar to Stratum 1.
	3	Hearth deposit	Slightly compact ash and charcoal deposit	7.5YR3/4	1 to 5 cm	Charcoal and ash mix concentrated within a 40- by 25-cm basin-shaped area. Western third of hearth previously removed during testing phase.
	4	Ab1	Compact silty clay loam	10YR6/3	1 to 8+ cm	Pre-occupation late-Holocene deposit. The boundary between Strata 2 and 4 is abrupt and smooth, suggesting that erosion occurred between depositional episodes.

SITE EXCAVATION

The excavation at LA 85864 was initiated along the south and west edges of the tipi ring, which was the area that appeared to have minimal erosional damage. It was anticipated that the outlining tipi ring rocks could be used as an aid in locating an associated occupational surface. The excavation revealed that the majority of outlining rocks had been set on the top of the Ab1 soil horizon; however, no occupational surface was encountered. As a result, unit 100N/104E, which contained the remaining portion of the test phase that encountered hearth, was excavated to determine its relationship to the soil deposition and to ascertain whether an occupation surface was associated.

Remnants of the hearth were encountered at the interface of the A and Ab1 soil horizon, although the hearth was not clearly defined until 1 to 2 cm of the upper Ab1 soil were removed (Figure 40.2). Post-occupational erosion apparently impacted the upper level of the hearth. The top of the hearth was situated at a depth of 17 to 19 cm below the surface with charcoal flecking first noted at a depth of 14 cm below the surface. Concentrated charcoal flecking extended out

into a 70-cm-diameter area surrounding the hearth. A few small charcoal chunks and flecks were also noted sporadically throughout the excavation, suggesting that erosion spread some of the upper hearth remains after the site was abandoned.

The hearth was evidenced by a 40- by 25-cm area with a 1- to 5-cm-deep deposit of charcoal and ash (Figure 40.3). Before the testing phase excavation, the hearth would have been approximately 40 cm in diameter. The shape and the fact that the charcoal and ash extended down into the pre-occupational Ab1 soil horizon indicated that the hearth was situated within a shallow basin that would have been scooped out during construction. The surface sediment of the basin exhibited alteration due to a significant amount of heat with the clay content having been partially oxidized (Figure 40.4).

Figure 40.2. Feature 2 (hearth) exposed with 1993 test pit located directed to the west.

Up to 6 cm of Ab1 soil was excavated from within and around unit 100N/104E to explore for an occupation surface associated with the hearth. The Stratum 4 excavations indicated that the soil within the Ab1 horizon was culturally sterile. As both the outlining rocks and the hearth appeared to have been situated on top of the Ab1 soil horizon, it was assumed to be the occupational surface associated with the tipi ring. However, no evidence of cultural modification or use was encountered to support this assumption. The excavation was then continued to the north and south with the remaining units terminated at the A/Ab1 soil horizon. The continued excavation resulted in the exploration of most of the grid units in a 5- by 8-m area situated around the tipi ring (Figure 40.5). The excavation extended to the east about 3 m

beyond the assumed eastern edge of the rock ring and continued to the north to include about 1 to 1.5 m of the drainage slope that has cut into the site to check for eroding cultural materials (Figure 40.6). A compact lens of A horizon soil was situated directly above the Ab1 soil horizon in the excavated units located to the west and immediately north of the hearth (Figure 40.7). It was also speculated that this lens was the occupation surface associated with the tipi ring. However, as with the top of the Ab1 horizon, no evidence of cultural modification or use was encountered. The Ab1 soil situated in the eastern half of the excavation became friable and softer, suggesting that the area was affected by water erosion (Figure 40.8). The east-side excavation resulted in the uncovering of two previously buried dacite cobbles that appear to extend the circular cobble alignment out to form the southeastern section of the tipi ring.

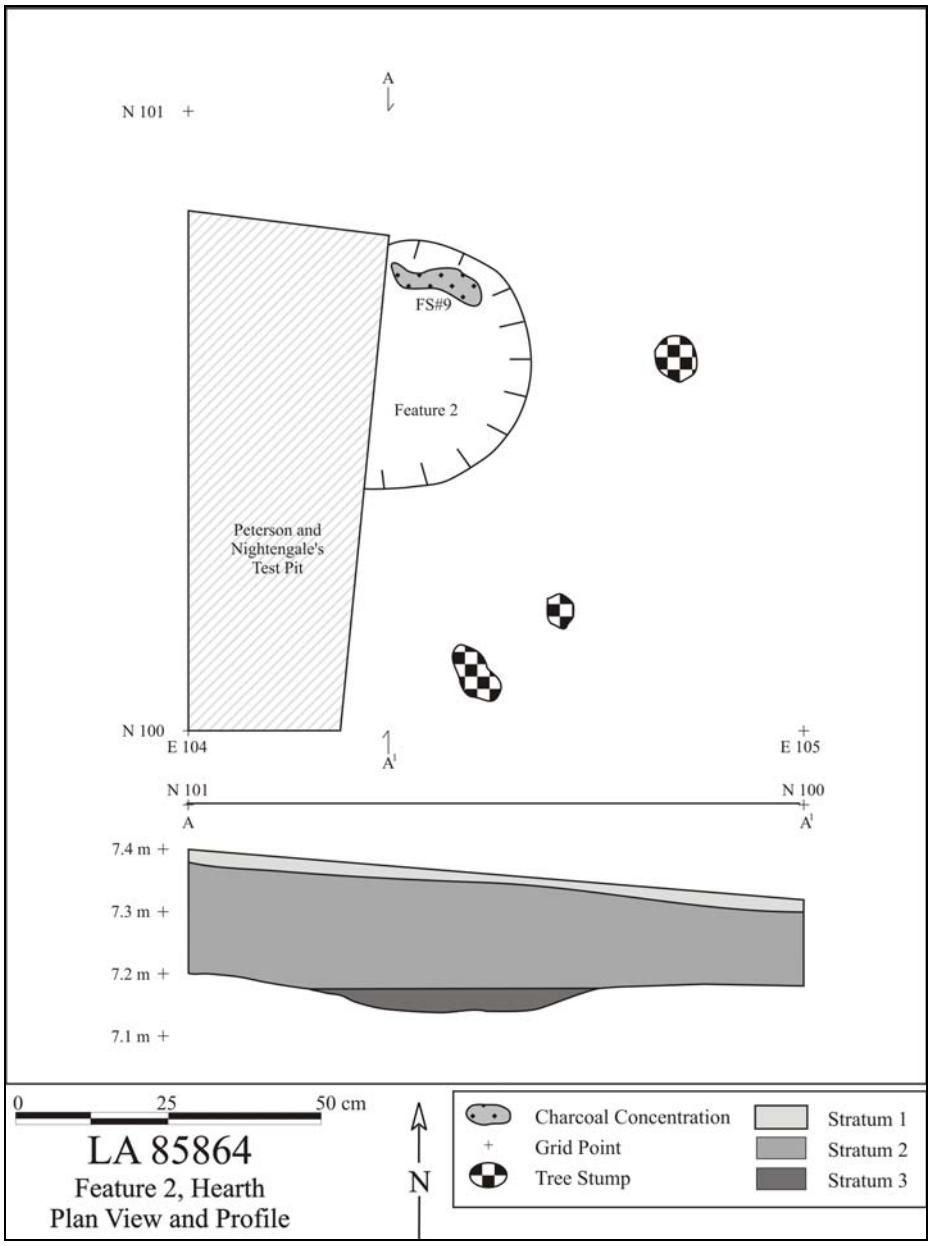


Figure 40.3. Feature 2 plan view and profile.

Figure 40.4. Post-excavation photo of the hearth excavated in the tipi ring at LA 85864.

Figure 40.5. Post-excavation photo of LA 85864 looking east.

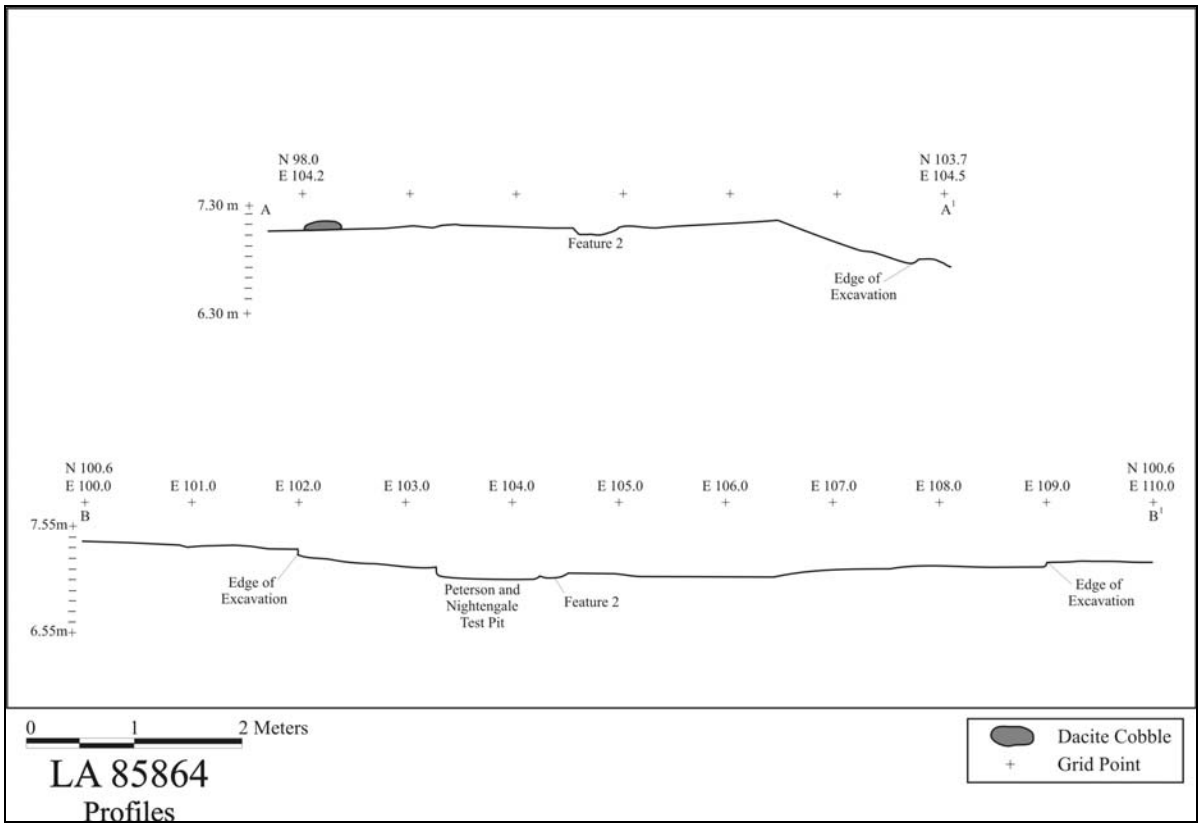


Figure 40.6. LA 85864 site excavation surface profiles.

Only six artifacts were recovered from the excavation phase at LA 85864. These included two ceramics and four heavily burned and unidentified pieces of bone (FS 11) that were recovered from the hearth. A smeared-indented corrugated utilityware sherd (FS 1) was collected from the surface of unit 97N/95E, which is located about 9 m west-southwest of the southwestern outer edge of the tipi ring. The other ceramic was a Santa Fe Black-on-white sherd (FS 16) located in Stratum 2 of 100N/102E, which would be about 1 to 2 m west of the hearth. Stratum 2 in this area was situated between 1 and 3 cm below the surface and was from 2 to 7 cm thick. No metallic artifacts were recovered. The only other potential cultural item recovered during the excavation was a badly eroded possible wheat seed recovered from a flotation sample collected from the hearth (FS 10). Table 40.2 lists the artifacts by stratum.

Table 40.2. Artifact count by stratum.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	1	0	0	0	1
1	0	0	0	0	0
2	1	0	0	0	1
3	0	0	0	4	4
4	0	0	0	0	0
Total	**2**	**0**	**0**	**4**	**6**

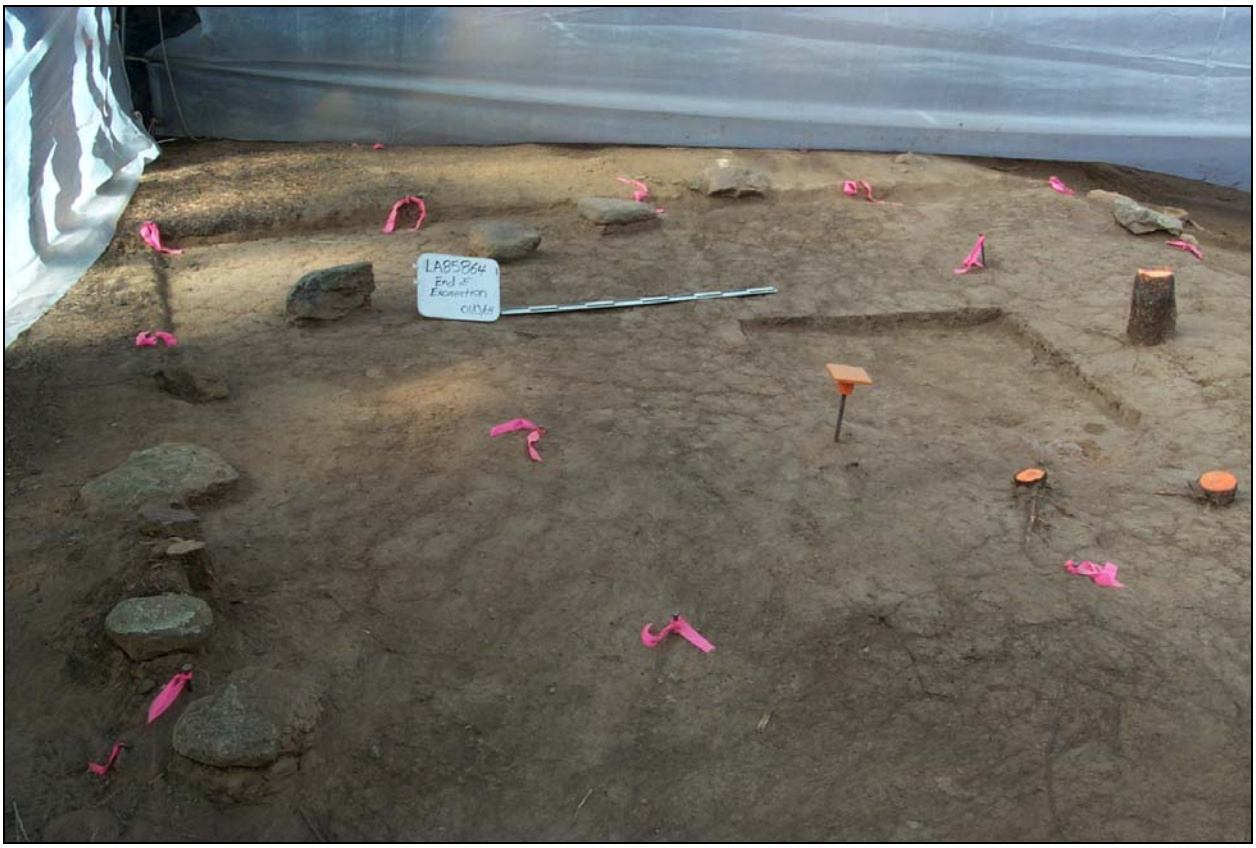


Figure 40.7. Post-excavation photo of the western end of LA 85864.

Other than rocks forming the tipi ring, the fairly well-preserved hearth at the center of the rock ring, the sherd situated in Stratum 2 of 100N/102E, and the four burned bone fragments recovered from the hearth, no cultural materials were encountered during the excavation. The lack of cultural materials is likely due to the extensive erosion that has impacted the site. Several small juniper trees in the vicinity of the hearth have reduced the amount of erosion in the immediate vicinity and upslope to the north and west. Although erosional activity could explain the lack of cultural materials from the southern and eastern portions of the tipi, the area to the west and within 1.5 m to the north of the hearth retain two surfaces that could be associated with the occupation. One potential occupation surface is the compact A horizon lens situated directly on top the Ab1 soil horizon that also could have been the occupation associated surface. As the soil deposition in this area appears to be intact, it seems likely that cultural materials located within the area would still be present if they were ever deposited. It therefore is speculated that the site represents a very short occupation from which very few cultural materials were discarded or lost.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of five artifacts (ceramics) were analyzed from the excavations conducted at LA 85864. In addition, flotation, and pollen samples were selected for analysis from Strata 2 and 3 (Table

40.3). Charcoal was submitted for radiocarbon dating from Stratum 3 and an archaeomagnetic sample was taken from the hearth (Feature 2). The results of the artifact and sample analyses are presented in the following sections.

Figure 40.8. Post-excavation photo of the eastern end of LA 85864.

Table 40.3. Samples selected for analysis from LA 85864.

Stratum	Sample Type		
	Flotation	Pollen	Radiocarbon
1			
2	4, 5, 6, 14	3	
3	10	8	10

Chronology

Radiocarbon Dating

A single charcoal (piñon pine) sample was submitted for radiocarbon dating. It yielded several possible intercepts that range from AD 1680 to 1950 (Table 40.4).

Table 40.4. Radiocarbon data from LA 85864.

FS	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	Two-sigma calibrated result
10	199371	170±40 BP	AD 1680 AD 1770 AD 1800 AD 1940 AD 1950	AD 1650 to 1890 or AD 1910 to 1950

Archaeomagnetic Dating

A single archaeomagnetic sample was taken from the hearth in the tipi ring. Blinman (see Chapter 66, Volume 3) indicates that the sample likely dates to the late 19th century, although the date estimates provide a range from AD 1730 to the present.

Table 40.5. Archaeomagnetic date for LA 85864.

Sample Number	Feature	VGP Curves and Date Estimates (AD)	
		Wolfman	SWCV2000
1234	Hearth	AD 1600–1820 1730–present	ca. 1675–1840 ca. 1850–present

Ceramic Artifacts (Sunday Eiselt)

The four ceramics collected during the testing and excavation phases were analyzed by Sunday Eiselt. Three of the ceramics were micaceous sherds representing two vessels (one sherd apparently broke into two pieces some time after collection) and one was a Biscuit A body sherd. The two sherds from the same vessel displayed characteristics most similar to a Jicarilla Apache Cimarron Micaceous ceramic dating from AD 1730 to present. The moderate amount of mica along with rosy quartz and magnetite temper indicate a Cordova-Truchas Source District origin for the clay. The exterior and interior sherd surfaces were burnished and compacted, unlike Tewa vessels. The other sherd appeared to be made from alluvial clay containing mica rather than primary micaceous clay. The origin of the clay is unknown, although micaceous clays are present north of Abiquiu. The ethnic affiliation for the ceramic could not be determined.

Although the type identifications are tentative, the three micaceous sherds likely represent Cimarron Micaceous vessels based on paste characteristics and surface finish. The Cordova-Truchas source district was used extensively by the Jicarillas (Eiselt 2006). The vessel surfaces are also highly compacted through burnishing and polishing; traits that are likewise commonly found 19th century Cimarron Micaceous sherds (Eiselt 2005). The Biscuit A sherd and the Santa Fe Black-on-white and smeared-indented corrugated sherds recovered during the excavation may represent earlier activities conducted in the site vicinity.

Faunal Remains (Kari Schmidt)

Four unidentified pieces of bone (FS 11) were recovered from this site. The bones were heavily burned (calcined) and were recovered in Stratum 3 in Feature 2.

Archaeobotanical Remains (Pamela McBride)

The sample from the base of the informal central hearth in the tipi ring produced charred conifer duff (juniper twigs, pine needles, and bark) along with an unusual find: a badly eroded possible wheat caryopsis (or seed). The caryopsis appeared to have two attributes characteristic of wheat: a crease running longitudinally for the length of the grain and the germ. The distal end of the seed was the most eroded and the general condition of the seed led to a tentative identification. As wheat had been around a long time before the occupation of LA 85864, it would not be unusual for it to have been part of the Jicarilla Apache diet. The Mescalero Apache would obtain wheat from raids in Mexico or from early settlers; wheat was planted in sandy loam, harvested by beating it with a stick, and subsequently used to make bread (Castetter and Opler 1936). Aside from wood, the remainder of the archaeobotanical assemblage consisted of unburned goosefoot seeds and burned and unburned conifer duff (Table 40.6).

Table 40.6. Flotation sample plant remains from LA 85864.

FS No.	**4**	**5**	**6**	**10**	**14**
Feature	2 Hearth, strat 2, level 3			2 Hearth, strat 3, level 4	1 Tipi ring
	100.5/104.35	100.65/104.5	100.9/104.4	100.6/104.4	strat 2, lvl 3
Cultural					
Cultigens					
Possible Wheat				1(1)	
Perennials					
Juniper		twig +			
Pine	bark +			bark +	
Ponderosa pine		needle +			
Non-Cultural					
Annuals					
Goosefoot	+				
Perennials					
Juniper	+	twig +		twig +	twig +
Pine	bark +		umbo +		
Piñon	needle +	needle +	needle +	needle +	needle +
Ponderosa pine					needle +

+ 1-10/liter

Flotation and vegetal sample wood charcoal was primarily piñon, present in 84 percent and 89 percent respectively by weight (Tables 40.7 and 40.8). Juniper, pine, cf. ponderosa pine, and

unknown conifer were also recovered. The occupants of LA 85864 were probably incorporating the Old World grain wheat into their diet and burning local conifers for fuel.

Table 40.7. Flotation sample wood charcoal taxa by count and weight in grams from LA 85864.

FS No.	**4**	**5**	**6**	**10**	**Totals**	
Feature	2 Hearth, strat 2, level 3			2 Hearth, strat 3, level 4	Weight	%
	100.5/104.35	100.65/104.5	100.9/104.4	100.6/104.4		
Conifers						
Juniper				4/0.2 g	0.2 g	11%
Pine		2/<0.1 g			<0.1 g	<1%
Piñon	20/0.5 g	18/0.5 g	13/0.1 g	14/0.5 g	1.6 g	84%
Unknown conifer			1/<0.1 g	2/0.1 g	0.1 g	5%
Totals	**20/0.5 g**	**18/0.5 g**	**14/0.1 g**	**20/0.8 g**	**1.9 g**	**100%**

Table 40.8. Vegetal sample wood charcoal taxa, by count and weight in grams from LA 85864.

FS No.	**7**	**9**	**12**	**Totals**	
Feature	1 Tipi ring strat 2, level 3	2 Hearth 100.76/104.4 strat 3, level 4	2 Hearth 100/104 strat 2, level 3	Weight	%
Conifers					
Juniper	1/<0.1 g	7/0.5 g		0.5 g	7%
Piñon	10/0.5 g	50/4.8 g	19/1.5 g	6.8 g	89%
cf. Ponderosa pine	3/<0.1 g	4/0.3 g		0.3 g	4%
Totals	**14/0.5 g**	**61/5.6 g**	**19/1.5 g**	**7.6 g**	**100 %**

cf. compares favorably

Pollen Remains (Susan Smith)

Two pollen samples were analyzed from LA 85864. Table 40.9 lists the frequency of identified pollen types. No cultigens were identified in the botanical assemblage. Beeweed and sunflower type were the only other taxa identified as other economic resources in the assemblage. Several other potential economic resources were also identified in the assemblage (Table 40.9), and these are discussed in detail in Smith's chapter in Volume 3 (Chapter 63).

Table 40.9. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85864 (*n* = 2)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	1
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	2
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85864 (*n* = 2)
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	2
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	2
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	1
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	0
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	1
	Pinus	Pine	2

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85864 (*n* = 2)
		Pine Aggregates	0
	Pinus edulis type	Piñon	2
	Juniperus	Juniper	2
		Juniper Aggregates	0
	Quercus	Oak	2
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	0
	Artemisia	Sagebrush	2
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

The site contained an approximate 5-m-diameter tipi ring that was located on a narrow ridge finger between two deep drainages. The tipi ring had been significantly affected by erosional processes. Other than the rock tipi ring and an associated hearth, one ceramic, four burned bone fragments, and a possible wheat seed were recovered during the excavation. The lack of cultural materials is likely due somewhat to the extensive erosion that has impacted the site with several small juniper trees in the vicinity of the hearth having reduced the amount of erosion in the immediate vicinity. Although erosional activity could explain the lack of cultural materials from the southern and eastern portions of the tipi, the area to the west and within 1.5 m to the north of the hearth retain remnants of two stratigraphic lenses, either one of which may represent the occupation surface. One potential surface is the compact A horizon lens situated directly on top of the truncated Ab1 soil horizon that also could have been the occupation surface. As the soil deposition in this area appears to at least be partially intact, it seems likely that cultural materials located within the area would still be present if they were ever deposited. It is therefore speculated that the site represents a very short occupation from which very few cultural materials were discarded or lost.

Based on the site type, the three micaceous ceramics, and the cultural history of the area, the tipi ring is assessed to be associated with a Jicarilla Apache occupation dating to the 19th century. As

wheat had been around a long time before the occupation of LA 85864, it would not be unusual for it to have been part of the Jicarilla Apache diet (Chapter 62, Volume 3).

CHAPTER 41
RENDIJA TRACT (A-14): LA 85867

Gregory D. Lockard

INTRODUCTION

LA 85867 is the remains of a one-room Classic period fieldhouse and several small features located on a south-facing slope on the mesa between Rendija and Guaje canyons. The site is located in the eastern quarter of the Rendija Tract. A two-track dirt road passes through the site. Vegetation consists of piñon-juniper woodland with a grass understory. The site is situated at an elevation of 2114 m (6935 ft).

LA 85867 was first recorded on September 14, 1991, by David Hill (1991) during a survey for the Bason Land Exchange Project. According to Hill, the site consisted of two one-room fieldhouses. The first fieldhouse was located within and adjacent to a modern roadbed. A chalcedony core, two eroded biscuitware sherds, and a micaceous sherd with black paste were the only artifacts observed in the area. The presence of the biscuitware sherds led Hill to tentatively date the site to the Classic period. The second fieldhouse was located 35 m to the northeast of the first. A micaceous sherd with black paste and an eroded whiteware sherd were the only artifacts observed in the area. Hill also noted the presence of two smaller rock concentrations that he interpreted as possible hearths located halfway between the fieldhouses.

On July 20, 1992, Archaeological Research, Inc., was awarded the contract to conduct archaeological testing of the Bason Land Exchange Project sites. John Peterson and Christian Nightengale (1993) supervised the excavations, which took place between July 27 and August 23 of 1992. Three 1- by 1-m test pits (Units A-C) were excavated at LA 85867.

Unit A was placed within the fieldhouse by the road, which was designated Feature 1. A floor was encountered 27 cm below the surface in this unit. The floor was described as "a very hard packed clay surface" (1993:184). Several smeared-indented sherds and two Biscuit A sherds were recovered from the floor surface. A sample of charcoal was taken from the floor and submitted to Beta Analytic for radiocarbon analysis. The sample produced a date of 430 ±60 BP. The excavation of the unit continued below the floor to a maximum depth of 72 cm below the ground surface. No features or artifacts were encountered below the floor.

Unit B was located in one of the small rock concentrations noted by Hill. According to Peterson and Nightengale, the concentration, which they designated Feature 3, was 21 m northwest of Feature 1. The unit was excavated to a maximum depth of 20 cm below the ground surface. The excavation revealed that the rock concentration was a single course of stones, and no cultural materials were recovered. According to Peterson and Nightengale, the only other rock concentration in the area was a recent firepit, which they did not test.

Unit C is located in the remains of the second structure that Hill interpreted as a fieldhouse. The unit was excavated to a maximum depth of 30 cm below the ground surface. No living surface

or cultural materials of any kind were encountered. As a result, Peterson and Nightengale suggest that any structural remains that may have existed in this location have been eroded down slope. Due to the fact that they found no cultural materials of any kind in Units B and C, Peterson and Nightengale argue that the research potential of Features 2 and 3 was exhausted by their excavations. As a result, only Peterson and Nightengale's Feature 1, which was re-designated Room 1, was excavated during the Conveyance and Transfer (C&T) Project.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. Area 1 was then visible as a small rubble mound approximately 4 by 4.5 m in area and approximately 30 cm in height (Figure 41.1). An arbitrary site datum (100N/100E, 10.00 m elevation) was set up in the southwest corner of the area. The area was then covered with a 1- by 1-m grid that extended 6 m north and 5 m east of the site datum. Two subdata (A and B) were set up for taking elevations, and the site was photographed. Artifacts visible on the surface were collected by grid unit, and the location of artifacts outside of the grid was determined with tape measures. A 5- by 1-m east-west trench (103N/100-104E) was initially excavated across the structure in Area 1. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels.

Figure 41.1. Pre-excavation photograph of LA 85867.

Peterson and Nightengale's Unit A was encountered while excavating the trench. Unit A occupies all but the westernmost 30 cm of unit 103N/102E. It extends eastward approximately 25 cm into unit 103N/103E and northward approximately 5 cm into units 104N/102-103E. The backfill within Unit A, which was excavated to a maximum depth of 72 cm, was removed as a separate stratum (Stratum 3). A poorly preserved living surface was encountered to the east and west of Unit A within the trench. The room's east wall was encountered in unit 103N/103E, and the west wall was encountered along the border between units 103N/100-101E. After the excavation of the trench units, the north profile of the trench was drawn and photographed. The rest of the area was subsequently excavated, again by strata and arbitrary levels for thicker strata.

In all, 23 units were excavated. Within the structure, excavation proceeded down to the living surface encountered while excavating the trench. Outside the structure, excavation proceeded down to the top of the sterile Bw2 horizon. Excavation focused on defining the room's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m to the south, east, and west of the structure to locate external features and/or outdoor activity areas. The excavation area extended to the north of only the eastern half of the structure. The area to the north of the western half of the structure was not excavated because it had been severely impacted by the presence of a two-track dirt road. The structure was then mapped (Figure 41.2) and photographed (Figure 41.3).

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Alan Madsen, Brian Harmon, Bettina Kuru'es, Margaret Dew, and Rhonda Robinson. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa was the site monitor representing Santa Clara Pueblo, as well as an additional excavator.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 1 to 6 cm thick across the site and is more or less equivalent to the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 3 to 25 cm in thickness. The post-occupational fill was thickest in and around the collapsed walls and thinned away from the walls and towards the center of the room. It was particularly thin (in fact, almost non-existent) in the grid units to the north of Room 1 that are located within and/or near the two-track dirt road. Stratum 2 is more or less equivalent to the Bw1 horizon. Stratum 3 is the backfill removed from Peterson and Nightengale's Unit A. Stratum 3 is therefore a disturbed context. Stratum 4 is the Room 1 living surface. Tables 41.1 through 41.3 summarize and describe the strata that were excavated at LA 85867.

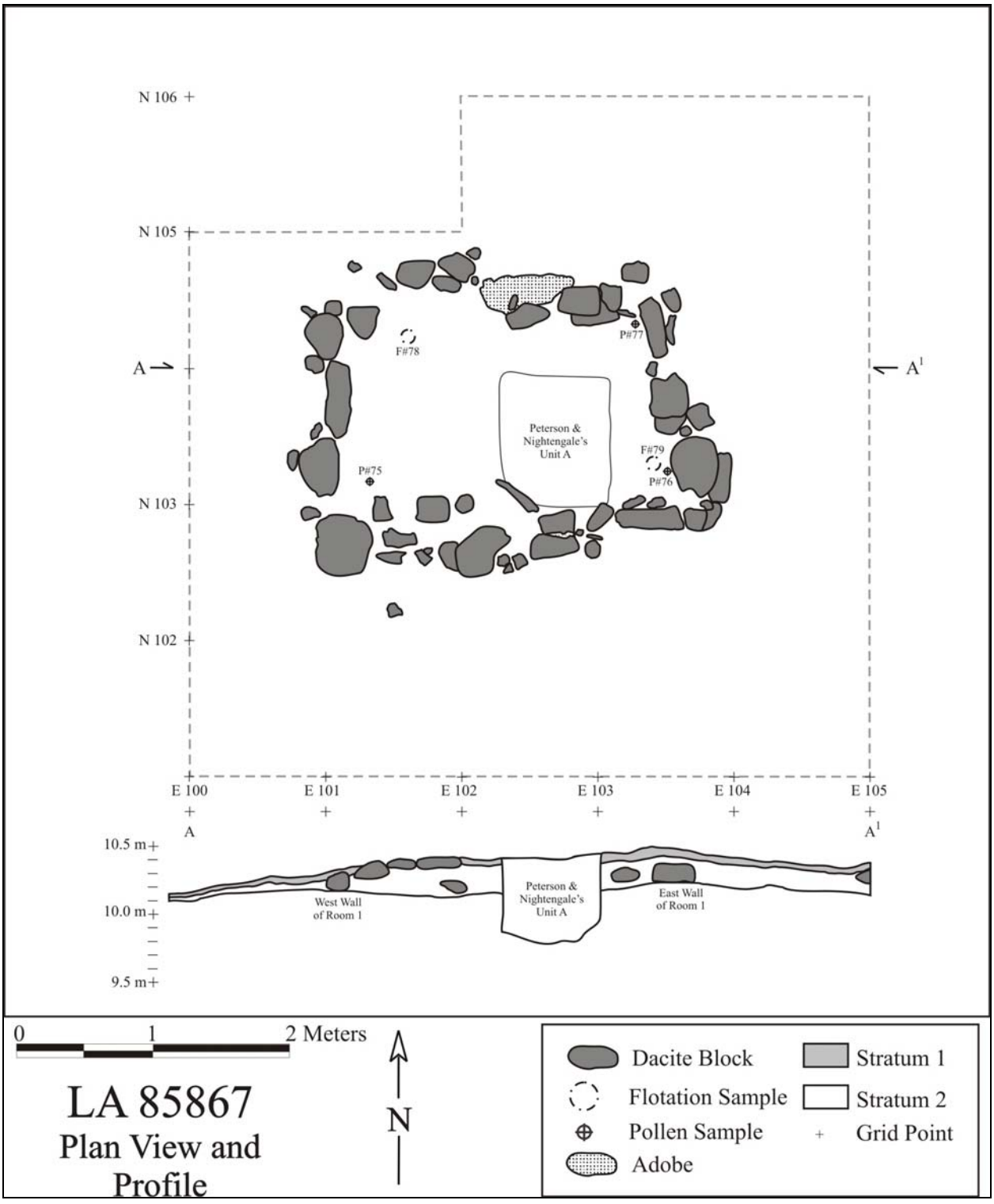


Figure 41.2. Plan view and profile map of LA 85867.

Figure 41.3. Post-excavation photograph of LA 85867.

Table 41.1. LA 85867 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/4	Silt loam	1–6	Surface sediment
2	10YR 4/3	Silty clay loam	3–25	Post-occupational fill
3	10YR 4/3	Silty clay loam	60	Back fill from P & N test pit
4	10YR 4/3	Clay loam	-	Room 1 living surface

Table 41.2. LA 85867 soil horizon descriptions from the south profile of Peterson and Nightengale's Unit A (within unit 103N/102E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/4	Silt loam	0–5	Topsoil
Bw1	10YR 4/3	Silty clay loam	5–25	Late-Holocene soil
Bw2	10YR 4/4	Silty clay loam	25–75	Holocene soil
Bw3	10YR 4/3	Silt loam	75–110+	Holocene soil

Table 41.3. LA 85867 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	1	3	0	0	**4**
1	13	13	0	0	**26**
2	53	37	2	2	**94**
3	0	0	0	0	**0**
4	0	0	0	0	**0**
Total	**67**	**53**	**2**	**2**	**124**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small rectangular structure that probably functioned as a fieldhouse. The room measures approximately 1.25 m in width (north to south) by 2.27 m in length (east to west), with approximately 2.84 m^2 of interior space. Excavation of the room began with an east-west trench that extended across Area 1 (units 103N/100-104E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's east and west walls. Most of Peterson and Nightengale's Unit A was located within the trench (units 103N/102-103E). To the east and west of Unit A, a poorly preserved living surface was encountered. After the excavation of the trench, the rest of the room was excavated down to the living surface. This living surface was slightly burned and thus better preserved in the northwest corner of the room (see below).

Fill. The interior of Room 1 was filled with 1 to 4 cm of surface sediment on top of 15 to 25 cm of post-occupational fill. Flotation (Field Specimen [FS] 3 and FS 26) and pollen (FS 4 and FS 27) samples were taken of the Room 1 fill, but they were not analyzed.

Floor. The Room 1 living surface is a poorly preserved layer of compact, clay-rich sediment. This surface takes the form of a fairly large patch of burned floor in the northwest corner of the room. Even in this location, however, there is no evidence that the floor was plastered. Elsewhere, the living surface is marked by black staining and charcoal inclusions, as well by an absence of rocks. As noted above, Peterson and Nightengale reportedly found a well-preserved clay floor in Unit A, upon which they recovered several sherds, many of which appear to have come from the same vessel (a possible pot drop). The living surface encountered during the C&T Project does not appear to have been as well preserved as that described by Peterson and Nightengale. The living surface, however, is located at about the same depth as the floor reported by Peterson and Nightengale. In addition, several sherds were encountered near Unit A at about the same level. None of these sherds, however, were in direct contact with the living surface. It is possible that the Room 1 living surface was best preserved in the area where Unit A was excavated. Because the excavation of this unit continued well below floor level, nothing remains of the floor described by Peterson and Nightengale.

A pollen sample (FS 66) was taken from below a masonry block that was sitting directly on top of or just above the living surface in the north-central portion of the room. Taxa identified in this sample included maize, beeweed, locoweed, grass family, cheno-ams, sunflower family, ragweed/bursage, chicory tribe, spurge family, evening primrose, unidentified pine, piñon pine, juniper, oak, and sagebrush. Additional pollen samples were scraped from directly on top of the living surface in the southwest (FS 75), southeast (FS 76), and northeast (FS 77) corners of the room. Taxa identified in these samples included prickly pear, cactus family, beeweed, sunflower type, purslane, rose family, buckwheat, mustard family, locoweed, grass family, willow, cheno-ams, sunflower family, globemallow, evening primrose, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush. Flotation samples were taken of the living surface matrix in the northwest (FS 78) and southeast (FS 79) corners of the room. Charred taxa identified in these samples included unknown conifer and ponderosa pine.

Wall Construction. The walls in Room 1 are constructed of dacite cobbles and upright slabs. The rocks that form the foundation of the walls appear to have been placed in a shallow trench excavated into the Bw2 horizon, which is a compact, reddish, clay-rich soil that predates the site's occupation. Some of the foundation stones are upright slabs, and others are cobbles. In some places, the walls are formed by a single row of large dacite cobbles. In other places, the wall is formed by two rows of rocks. When this is the case, one or both of the rocks are usually upright slabs. In the western half of the south wall, there are three rows of rocks. This portion of the wall, however, is probably at least partially disturbed.

The western half of the north wall has been disturbed by the two-track dirt road. Some dacite cobbles were encountered in this area of the site. It is highly unlikely, however, that these rocks are *in situ*. One of these is a thin, flat rock located just east of the northernmost rock in the west wall. This rock appears to have been an upright slab that was pushed over to the south during the grading or subsequent use of the road. If this is the case, the northwest corner of the rock defines the far northwest corner of the room. The other rocks that formed the western half of the north wall appear to have been pushed to the north of their original location. The foundation of the eastern half of the north wall appears to be largely intact. The western half of this section of the wall is formed by a large, linear concentration of compact adobe. This adobe may have been a doorsill. If this is the case, the entryway into Room 1 was located in the center of the north wall. A thin, flat rock was encountered directly south of the adobe. This rock may be an upright slab that was pushed over onto its side. Alternatively, it could be a southward extension of the adobe doorsill.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation (Table 41.4). In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in three stacks, which were then measured. The stacks measured 1.57 by 1.42 by 0.47 m, 1.93 by 1.05 by 0.53 m, and 1.74 by 1.05 by 0.50 m, for a total of approximately 3.04 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 1.63 m high. This is considerably higher than wall heights calculated for other fieldhouses excavated in the Rendija Tract during the C&T Project, excluding those in areas that are

naturally rocky. Although at least some of the rocks recovered during the excavation of LA 85867 probably do not represent wallfall, the site does not appear to be located in an area with a lot of naturally occurring rocks. Some of the rocks may have been pushed onto the excavated portion of the site during the grading and/or use of the two-track dirt road. These factors, however, do not appear to fully account for the wall height presented above. The masonry portions of the walls were therefore probably at least a little bit higher than those of the average fieldhouse in the Rendija Tract. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, only two pieces of burned adobe (FS 20 and FS 54) were recovered from the site.

Table 41.4. LA 85867 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	2.22	0.02–0.29	0.14–0.33	1 to 2
South	2.30	0.12–0.27	0.25–0.55	1 to 2
East	1.24	0.15–0.26	0.19–0.40	1
West	~1.25	0.06–0.25	0.17–0.35	1

Geological Analysis

Geologists Paul Drakos and Steven Reneau utilized a single profile to reconstruct the natural soil horizons at the site (see Table 41.2). The profile that they utilized was the south profile of Peterson and Nightengale's Unit B, located in about the same location as the south profile of unit 103N/102E. The profile includes the interior face of the south wall of Room 1, as well as significant sub-floor deposits. The profile contained a soil sequence consisting of an A horizon (topsoil) and three Bw horizons (a late-Holocene soil and two Holocene soils).

Artifact Distribution

The grid units with the highest number of artifacts are those located within and to the east of Room 1 (Table 41.5). The artifacts within Room 1 are concentrated in the western half of the room. This is almost certainly a result of the fact that many of the artifacts in the eastern half of the room were recovered during the excavation of Peterson and Nightengale's Unit A. In fact, 32 sherds (30 smeared-indented and two Biscuit A sherds) were recovered from Unit A. The higher concentration of artifacts to the east of the fieldhouse follows a pattern observed at many of the fieldhouses in the Rendija Tract excavated during the C&T Project. Presumably, the people who utilized the fieldhouses tended to choose the area to the east as a work area to best take advantage of the warmth and/or sunlight from the morning sun. The room's entryway, however, appears to be located in the north wall, rather than the east wall. Although there is a slight tendency for entryways to be located in the east wall, it is not as strong as the tendency for activity areas (indicated by a higher concentration of artifacts) to be located in the area to the east of the fieldhouse.

Table 41.5. LA 85867 artifact counts by grid unit.

	E100	E101	E102	E103	E104
N105	--	--	1	2	9
N104	0	**6**	**7**	**7**	11
N103	1	**18**	**9**	**1**	8
N102	0	1	5	4	5
N101	3	2	5	1	16

Note: Does not include two artifacts found outside of the excavated area during surface collection; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 122 artifacts were analyzed from the excavations conducted at LA 85867. In addition, flotation and pollen samples were selected for analysis from the post-occupation fill (Stratum 2) and the Room 1 living surface (Stratum 4) (Table 41.6). The results of the artifact and sample analyses are presented in the following sections.

Table 41.6. Samples selected for analysis from LA 85867.

	Sample Type			
Stratum	**Flotation**	**Pollen**	**Radiocarbon**	**TL***
1				
2		66		
3				
4	78, 79	75, 76, 77		

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 68 ceramics were analyzed from LA 85867. The majority of the pottery consists of Sapawe Micaceous and Biscuit A sherds, which presumably date to the Early Classic period (14th century) (Table 41.7). Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 41.8 through 41.10. The grayware and whiteware pottery appear to have been locally made from tuff temper, however, the micaceous pottery is a non-local type. Otherwise, all of the grayware and micaceous ceramics consist of jar vessel forms, whereas the whiteware sherds are derived from bowls.

Table 41.7. Ceramic types from LA 85867.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Biscuit unpainted slipped on one side	2	2.9
Biscuit A	12	17.6

Ceramic Type	Frequency	Percent
Northern Rio Grande Utilityware		
Plain gray body	4	5.9
Sapawe Micaceous	50	73.5
Total	**68**	**100.0**

Table 41.8. Tradition by ware for LA 85867 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	4	100.0	14	100.0	0	0.0	0	0.0	18	26.4
Rio Grande (Tewa Micaceous)	0	0.0	0.0	0.0	0	0.0	50	100.0	50	73.6
Middle Rio Grande	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0
Total	**4**	**100.0**	**14**	**100.0**	**0**	**0.0**	**50**	**100.0**	**68**	**100.0**

Table 41.9. Temper by ware for LA 85867 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff and sand	0	0.0	14	100.0	0	0.0	0	100.0	14	20.5
Mostly tuff with phenocrysts	2	50.0	0	0.0	0	0.0	0	0.0	2	2.9
Large tuff fragments	2	50.0	0	0.0	0	0.0	0	0.0	2	2.9
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	50	100.0	50	73.5
Total	**4**	**100.0**	**14**	**100.0**	**0**	**0.0**	**50**	**100.0**	**68**	**100.0**

Table 41.10. Vessel form by ware for LA 85867 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl rim	0	0.0	6	43.8	0	0.0	0	0.0	6	8.8
Bowl body	0	0.0	8	57.2	0	0.0	0	0.0	8	11.7
Jar neck	0	0.0	0	0.0	0	0.0	2	4.0	2	2.9
Jar rim	0	0.0	0	0.0	0	0.0	3	6.0	3	4.4
Jar body	4	100.0	0	0.0	0	0.0	45	90.0	49	72.0
Total	**4**	**100.0**	**14**	**100.0**	**0**	**0.0**	**50**	**100.0**	**68**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 54 artifacts were analyzed from LA 85867, consisting of six cores, 45 pieces of debitage, one retouched tool, and two ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 41.11 presents the

data on lithic artifact type by material type. The debitage is primarily made of chalcedony, with less Pedernal chert, greenstone, obsidian, and other materials. The presence of cortex on 26.6 percent of the debitage indicates that these materials were collected from waterworn (n = 11) and nodule (n = 1) sources. The chalcedony, Pedernal chert, and greenstone are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the Pajarito Plateau.

Table 41.11. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. wood	Quartzite	Greenstone	Total
Cores	Core	0	0	0	0	0	0	0	1	0	4	0	0	0	5
	Cobble uniface	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	0	1	0	4	0	0	0	6
Debitage	Angular debris	1	0	0	0	0	0	0	5	0	0	0	0	1	1
	Core flake	5	0	1	0	1	0	2	15	0	7	0	0	5	36
	Biface flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Microdeb.	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	6	0	1	0	1	0	3	21	0	7	0	0	6	45
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Ground Stone	Two-hand mano	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Und. mano fragment	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Subtotal	0	0	0	0	0	1	0	0	0	0	0	1	0	2
Total		**7**	**0**	**1**	**0**	**1**	**1**	**3**	**23**	**0**	**11**	**0**	**1**	**6**	**54**

Three pieces of obsidian and three pieces of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifacts are solely made from Cerro Toledo obsidian (Table 41.12). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source area is situated about 19 km (12 mi) to the southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. One of the basalt flakes appears to be made of basalt, however, the other is dacite, which is derived from a local source.

Table 41.12. Obsidian source samples.

FS #	Artifact	Color	Source
23	Debitage	Translucent	Cerro Toledo rhyolite
35	Debitage	Translucent	Cerro Toledo rhyolite
39	Debitage	Translucent	Cerro Toledo rhyolite

Lithic Reduction

Four of the five cores were reduced using a single-directional reduction technique that involved either a single or multiple faces; whereas, the fifth core was reduced using a bidirectional, bifacial technique (Figure 41.4). Otherwise, flakes were also removed from a cortical platform on a cobble uniface. Three of the cores were classified as still having been discarded due to a break along a material flaw, whereas, the other cores were considered exhausted and the cobble uniface as still useable. Table 41.13 presents the metric information on the cores.

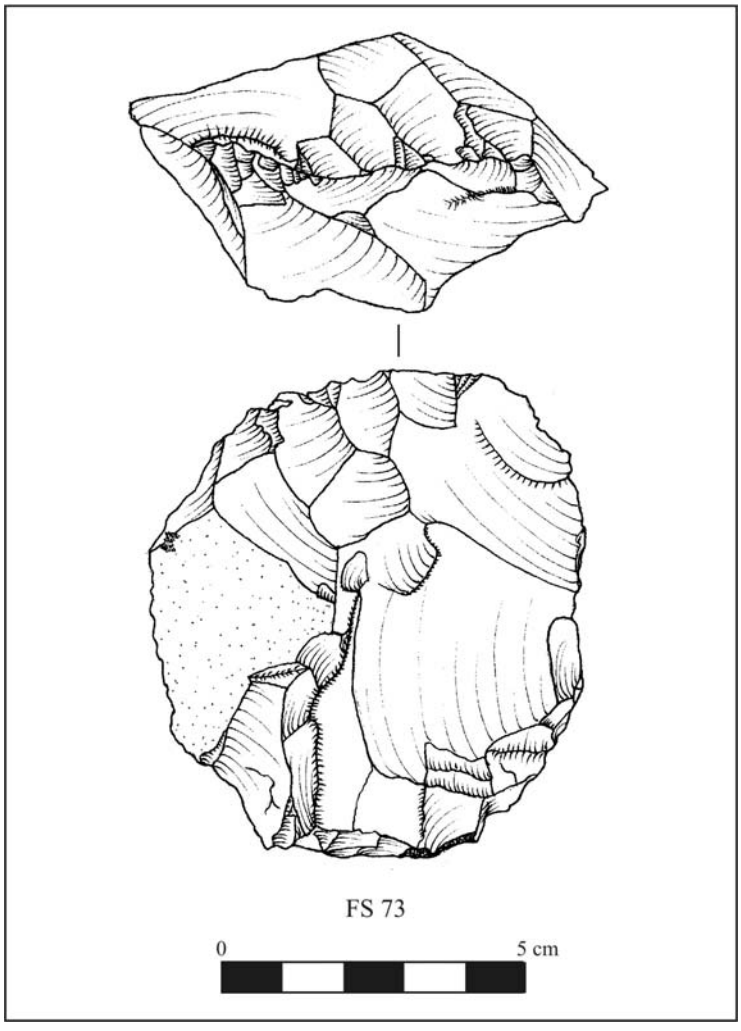


Figure 41.4. Bifacial core from LA 85867.

Table 41.13. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	106	91	60	600.9
Single-directional	34	68	52	124.6
Single-directional	48	58	74	182.3
Single-directional	41	77	73	268.7
Bidirectional	79	72	43	243.7
Cobble Uniface	51	103	99	544.1

The debitage mostly consists of core flakes, with a few other items. The overall cortical:non-cortical ratio of 0.50 reflects an emphasis on the later stages of core reduction. The flakes mostly have single-faceted platforms (n = 14), with fewer cortical (n = 7), multi-faceted (n = 1), collapsed (n = 2), and crushed (n = 3) platforms. Only one of the platforms exhibits abrading/crushing. The majority of the core flakes are whole (n = 21), with fewer proximal (n = 5), midsection (n = 3), and distal (n = 9) fragments. Most of the biface flakes are also whole (n = 7), with fewer proximal (n = 1), midsection (n = 2), and distal (n = 4) fragments. The whole core flakes have a mean length of 27.8 mm (*std* = 16.2) and the angular debris a mean weight of 6.5 g (*std* = 7.6).

The retouched tools consist of a single retouched piece of angular debris. It has a bidirectionally retouched edge with an angle of 75 degrees.

Tool Use

A single flake exhibits evidence of edge damage that could be attributed to use. It exhibits rounding and polish at the distal end, with an edge angle of 50 degrees. The retouched piece also exhibits some rounding and scarring along a lateral edge with an angle of 75 degrees.

The ground stone assemblage consists solely of manos. The two-hand mano is a loaf-shaped, elongated tuff cobble with a single flat grinding surface (Figure 41.5). The undetermined mano fragment is a quartzite cobble fragment on one surface and appears to be fire-cracked.

Faunal Remains (Kari Schmidt)

One piece of bone was recovered during excavations of this Classic period fieldhouse. This bone was identified as an unburned, unidentified large-sized mammal rib fragment.

Archaeobotanical Remains (Pamela McBride)

Two samples from the living surface of this one-room fieldhouse yielded charred ponderosa pine needles and uncharred hedgehog cactus seeds. Fourteen pieces of ponderosa pine and 12 pieces of unknown conifer, weighing 0.5 g round out the cultural plant material recovered.

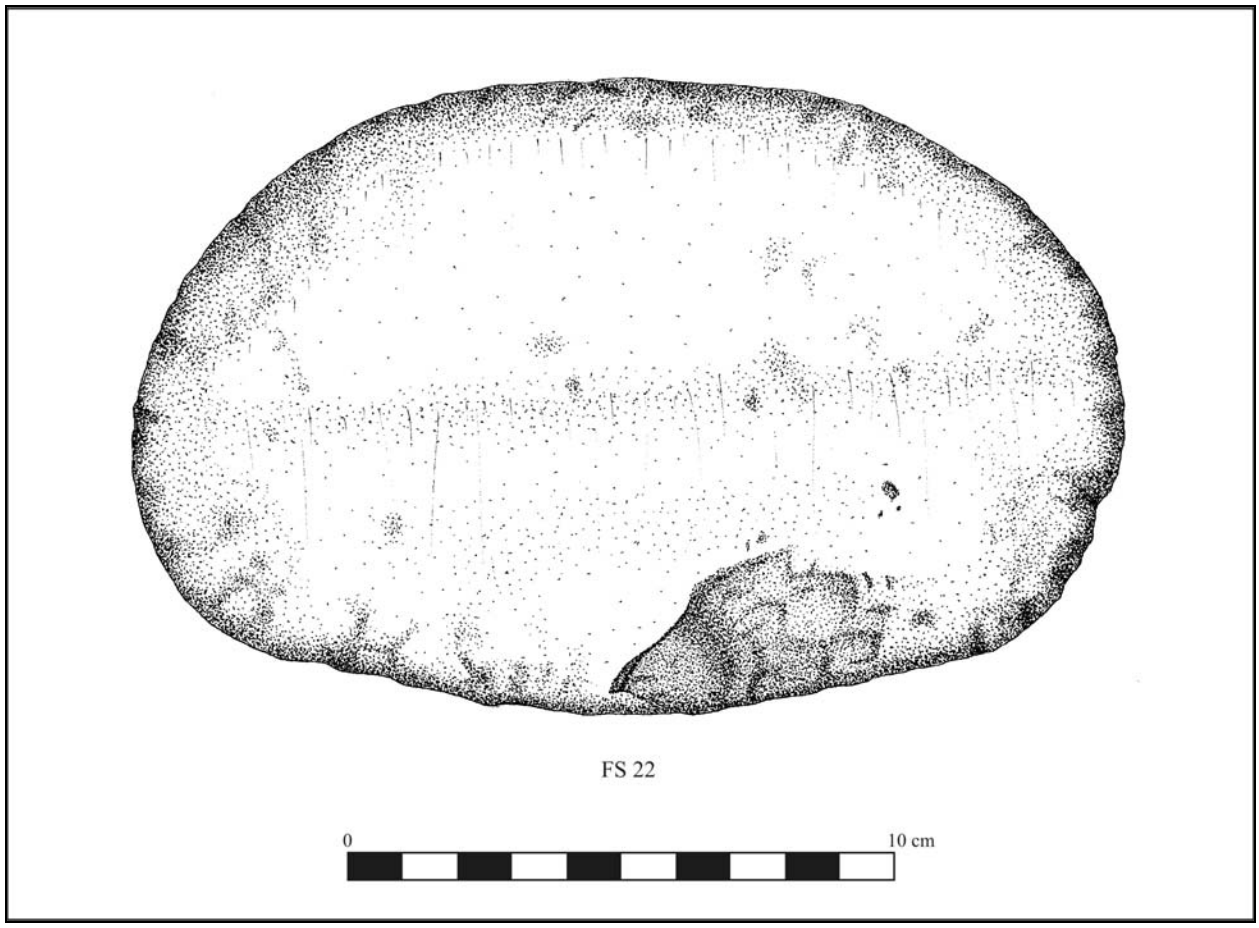


Figure 41.5. Two-hand mano.

Pollen Remains (Susan Smith)

Four pollen samples were analyzed from LA 85867. Table 41.14 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage and was found in only one sample. Prickly pear, cactus family, beeweed, sunflower type, and purslane were all identified as economic resources in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 41.14), and these are discussed in detail in Smith's chapter in Volume 3.

Table 41.14. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85867 (*n* = 4)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85867 (*n* = 4)
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	1
	Cactus Family Aggregates	Cactus Family Aggregates	1
	Cleome	Beeweed	3
	cf. *Helianthus*	Sunflower type	2
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	1
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	2
	Brassicaceae	Mustard Family	3
		Mustard Aggregates	2
	cf. *Astragalus*	Locoweed	3
		cf. Locoweed Aggregates	1
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85867 (*n* = 4)
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	3
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	1
	Sphaeralcea	Globemallow	2
		Globemallow Aggregates	1
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	2
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	0
	Pinus	Pine	4
		Pine Aggregates	0
	Pinus edulis type	Piñon	3
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85867 (*n* = 4)
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	1
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY

LA 85867 is a small one-room Classic period fieldhouse that was constructed from both shaped and unshaped tuff blocks. The site is located on a south-facing slope on the mesa between Rendija and Guaje canyons. No features, other than the fieldhouse, were identified at the site. The presence of maize pollen indicates that the one-room structure may have been occupied during the growing season.

CHAPTER 42
RENDIJA TRACT (A-14): LA 85869

Brian C. Harmon

INTRODUCTION

LA 85869 is a late 19th/early 20th century Jicarilla Apache tipi ring site situated on the northeast-facing slope of a narrow ridge. A small intermittent drainage is located to the north of the site. The site is located in piñon-juniper woodland and is at an elevation of 2132 m (6994 ft). In May of 2000 the Cerro Grande fire burned 195 ha (480 ac) in the Rendija Canyon Tract. The severity of the burn at LA 85869 was low; much of the duff in the central portion of the site was burned off and some ladder fuels were consumed. LA 85869 covers and area of approximately 1500 m^2 (Figure 42.1).

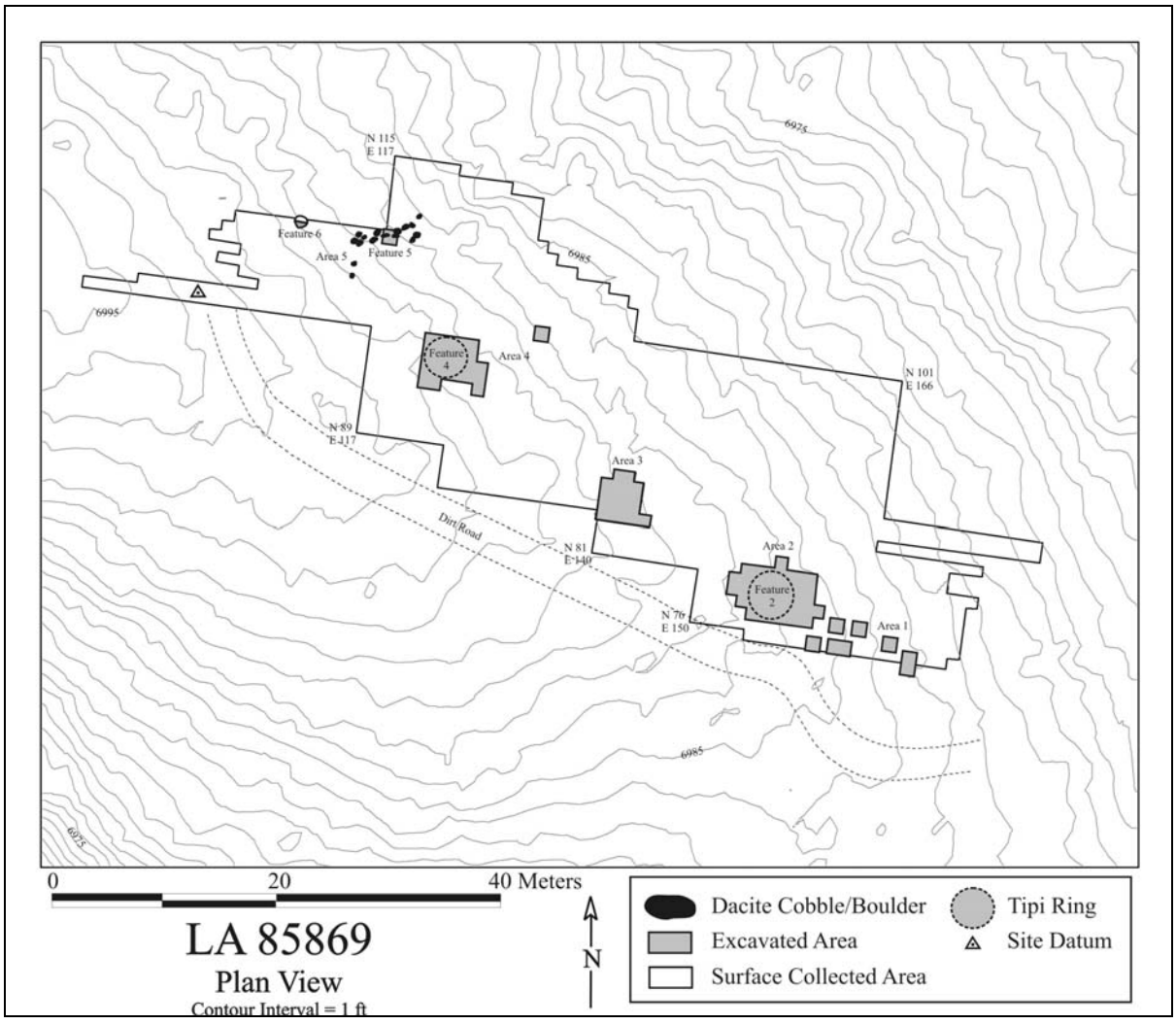


Figure 42.1. Plan view of the excavations at LA 85869.

The soil around LA 85869 is part of the Rendija-Bayo complex; a complex that "contains deep, well-drained soils weathered from materials derived from tuff (Rendija series) or pumice (Bayo series)" (Nyhan et al. 1978:54). The local stratigraphy consists of 10 to 15 cm of late-Holocene colluvium overlying Pleistocene colluvium. At the eastern edge of the site there are outcrops of dacite cobbles and small boulders.

A light scatter of modern garbage (several small automotive parts, pieces of plastic, several fragments of concrete, scraps of clothing, and bullet shells) is present across the site. A dirt road runs along the ridge top and defines the southern boundary of the site.

SITE DESCRIPTION

LA 85869 consists of two rock rings (Features 2 and 4) that mark the former locations of conical tipis. The rocks were used to weight down hides or canvases that were wrapped around a framework of interlocking poles. Both rings are approximately 4 m in diameter and are 33 m apart. Each contained a central, shallow, ash/charcoal deposit (Features 9 and 4, respectively). There is an obsidian debitage concentration immediately east of Feature 4 (the western tipi ring), and a diffuse scatter of obsidian debitage is found across the entire site. Four ceramic sherds from a single micaceous vessel were found 65 m northwest of Feature 4.

Fifteen m northwest of Feature 4 there are two rock features: an uneven alignment of boulders (Feature 5) and a small ring of cobbles (Feature 6). Feature 5 is modern in origin; Feature 6 could not be assigned a date.

PREVIOUS INVESTIGATIONS

LA 85869 was first recorded in 1991 by David Hill (1991:19–20) for the Bason Land Exchange Project. The site was described as consisting of a tipi ring (our Feature 2) and the remains of a possible rock structure (our Feature 5). Between these two features Hill observed a diffuse obsidian debitage scatter. One year later, as part of the same project, Peterson and Nightengale (1993:187–191) revisited the site to conduct more detailed recording. Their work consisted of mapping, in-field analysis, surface collection, and shovel testing. They could not relocate the obsidian scatter mentioned by Hill.

The tipi ring was described as a 4- to 5-m diameter rock ring composed of a surface alignment of large cobbles spaced 40 to 60 cm apart. Peterson and Nightengale excavated a 1- by 1-m unit in the center of this feature and exposed a concentration of burned soil and ash with small flecks of charcoal (our Feature 9) on the western edge of the unit.

The possible rock structure was described as a boulder concentration about 6.5 m long located in an area of erosion. No clear alignments of the boulders were discerned, and several appeared to have been moved in the not too distant past. Recent trash, including a car mirror bracket, pieces of plastic, and several fragments of concrete, had been dumped near this feature. Peterson and

Nightengale placed a 1- by 1-m unit in this feature and found only one retouched flake of Jemez obsidian. This was the only artifact Peterson and Nightengale recovered from the site. They concluded that the boulder concentration was probably not cultural in origin.

The Los Alamos National Laboratory Cultural Resources Management Team revisited LA 85869 in October 2000 as part of the Cerro Grande Fire Assessment Project (Nisengard et al. 2002) at which time the fire impacts discussed above were recorded.

FIELD METHODS

Most of the work reported here took place on September 18, 22, 23, and 30, and between November 10 to December 23, 2003; however, the site was sporadically visited until January 15, 2004. The crew consisted of Steven Hoagland (crew chief), Brian Harmon (assistant crew chief), Sandi Copeland, Michael Dilley, Aaron Gonzales, Mark Hungerford, Maria Jonsson, Bettina Kuru'es, Greg Lockard, Alan Madsen, and Bradley Vierra.

Inspection of the site before excavation revealed seven potential features, including the two that Hill and Peterson and Nightengale had previously recorded. A possible tipi ring at the east end of the site was identified as Feature 1, the original tipi ring was identified as Feature 2, two addition potential tipi rings to the west were identified as Features 3 and 4, the possible rock structure was identified as Feature 5, a possible hearth at the west end of the site was identified as Feature 6, and a possible grid garden at the east end of the site was identified as Feature 7. The obsidian scatter was relocated during the surface collection.

Based on the pre-excavation inspection at LA 85869, the site was divided into six areas. Area 1 is an area of dacite cobbles and boulders in the southeast part of the site. It encompasses Features 1 and 7. Area 2 is just west of Area 1; it encompasses Feature 2. Area 3 is located in the south central part of the site; this area encompasses Feature 3. Feature 4 and the adjacent lithic concentration define Area 4. Area 5 encompasses Features 5 and 6. The rest of the site is Area 6.

After the initial inspection at the site, most of the trees within the site boundary were cut down and cleared. This was done to facilitate the laying out of a grid based on magnetic north. Once the grid was in place, a collection of 100 percent of the surface artifacts was made. The boundaries of the surface collection coincide with the drop off of surface artifact density while also encompassing all potential features. Artifacts were collected in 1- by 1-m grid units and the surface collection consisted of 1448 units.

Two remote sensing surveys were conducted before excavation: a ground penetrating radar (GPR) survey and a metal detector survey. The GPR survey was performed by John Isaacson and Jennifer Nisengard on September 23, 2003. A 96-m^2 area (corners at 76N/150E, 84N/150E, 84N/162E, and 76N/162E) encompassing Feature 2 was surveyed. No subsurface anomalies were observed.

Since this site was known to date to the historic period and since it was large enough that only a portion of it would be excavated, a metal detector survey was carried out on September 30, 2003, to find metal artifacts that would otherwise be missed (Appendix N). The area between the dirt road and the northern boundary of the surface collection was surveyed from approximately the 105E line to the 175E line. When metal was signaled it was excavated with a hand trowel and its location marked with a pin flag. The horizontal coordinates of these artifacts were recorded with a transit. Unfortunately, this method of excavation made it impossible to determine the vertical provenience. However, it was clear that all metal artifacts were found above Stratum 5.

A second class of artifacts expected to be encountered at the site was trade beads. Some of these beads are quite small, so nearly all fill was sifted through two-level screens. The upper screen consisted of 1/8-in. mesh; the lower screen consisted of 1/16-in. mesh. Due to problems with these screens during the first days of excavations, only 20 percent of the fill from units 84N/144E, 94N/127E, 95N/122E, 100N/132E, and 107N/117E was screened through the fine mesh. One hundred percent of the fill from all other units was screened through the fine mesh.

Excavation began by focusing on Features 2, 3, and 4. The interiors and immediately adjacent exteriors of the potential tipi rings were excavated to the top of Stratum 4, the probable occupation surface. After 19 units had been excavated at Feature 3, it was apparent that this was not a cultural feature and the area was abandoned. After the interiors of Features 2 and 4 were exposed and the central ash/charcoal deposits were excavated, focus shifted to the east of the tipi rings since large, formal, thermal features are often found to the east of Jicarilla tipi rings (Anschuetz 2000:23). Eleven square meters were excavated to the east of Feature 2 and 7 m^2 were opened to the east of Feature 4. By the time excavations began outside of Feature 4, much of the ground had frozen, limiting the amount of area that could be excavated. No exterior hearths were found within 2 m of either ring. Later, units to the west of Feature 2 and to the south of Feature 4 were opened. Finally, three units inside each tipi ring were excavated down to Stratum 5 to investigate Stratum 4.

Excavation units in Features 1 and 7 were placed so as to straddle the most promising alignments, and one unit was placed in the approximate center of Feature 1. Five units placed in Feature 1 and three in Feature 7 sufficed to determine that these features were, in fact, natural deposits.

Pre-excavation observations of Feature 5 suggested that this feature is of modern origin. Nevertheless, one excavation unit was placed at the center of the feature to see several boulders in profile. Nothing in this unit suggested anything other than a modern origin and no further excavations were performed.

The southern half of Feature 6 was excavated. As no ash, charcoal, oxidized sediments, or artifacts were found, the northern half was not excavated (however, a small amount of charcoal was recovered from flotation samples).

A single excavation unit (100N/132E) was placed at the edge of the debitage concentration. This unit was excavated into Stratum 5.

STRATIGRAPHY

The stratigraphic sequence at LA 85869 consists of late-Holocene deposits overlaying Pleistocene deposits. Dacite boulders and cobbles outcrop on the eastern edge of the site. Table 42.1 summarizes the strata at the site; it, and the following discussion, draw heavily on the geomorphic descriptions in Drakos and Reneau (Chapter 57, Volume 3).

Table 42.1. Stratigraphic sequence used during excavation at LA 85869.

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
Entire site	0	7.5-10 YR 4-6/3-4	sandy loam, loamy sand	0	Surface
Entire site	1	7.5-10YR 4-6/3-4	sandy loam, loamy sand	1–13	A horizon, contains organics, 10%–50% gravel
Entire site	2	7.5-10 YR 6/2-3	sandy to silty loam	1–11	Bw horizon, very fine, loose, sometimes gravelly
Entire site	3	10YR 3-5/3-5	sandy clay loam	1–17	Bw horizon, some organics, 20%–30% gravel
Entire site	4	7.5-10YR 6/2-3	sandy to silty loam	1–13	Bw horizon, similar to Stratum 2 but more consolidated
Entire site	5	7.5YR 4/4	silty clay	13+	Btb1 horizon
Feature 4	6	10YR 6/3	sandy loam	NA	Feature 4, habitation surface
Feature 8	7	7.5YR 4/3	silt loam	4	Feature 8, fill, ash/charcoal
Feature 9	8	7.5 YR 3/2	silty clay	4	Burned soil below Feature 9
Feature 10	9	7.5YR 5/3	sandy loam	7	Feature 10, fill

The A horizon (Stratum 1) is up to 13 cm deep, although it is rarely deeper than 6 cm. Stratum 1 post-dates the construction of the tipi rings. Most of the sub-surface artifacts were found in this stratum. A Bw horizon underlies Stratum 1. During excavation, three strata (Strata 2, 3, and 4) were distinguished within the Bw horizon. Strata 2 and 4 are similar; they both consist of sandy to silty loam and are light in color. What distinguished these strata from each other is their consistency and stratigraphic position; Stratum 2 is loose and when it is present it always overlays Stratum 4. Stratum 4 is soft to slightly hard. Several of the tipi ring stones and two ground stone artifacts were found on top of Stratum 4. The top of this stratum is interpreted as the surface of the site at the time of habitation. Stratum 2 and 4 are present in Areas 2, 3, and 4. Additionally, a small deposit of Stratum 4 was found in unit 107N/117E. Stratum 3 is a more clayey and darker variation within the Bw horizon. It often overlies Stratum 4 although in a few

excavation units it was the only Bw horizon stratum present. Stratum 3 is found in Areas 1 and 4 and in units 100N/132E and 107N/117E. A Btb1 horizon (Stratum 5) underlies the Bw horizon. Stratum 5 is inferred to date to the Pleistocene and is culturally sterile. The other strata are discussed below in the context of the features with which they are associated. Table 42.2 gives the total artifacts recovered from each stratum.

Table 42.2. Artifact count by stratum at LA 85869.

Stratum	Ceramics	Chipped Stone	Ground Stone	Beads	Metal	Bone	Total
0	5	334	3	0	12	1	355
1	2	25	0	148	15	2	192
2	0	2	0	5	2	0	9
3	0	4	0	0	0	0	4
4	1	4	0	2	0	0	7
5	0	0	0	0	0	0	0
6	0	1	2	0	0	0	3
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
Unknown[1]	0	0	0	3	0	0	3
Total	**8**	**370**	**5**	**158**	**29**	**3**	**573**

[1]The provenience information was lost.

SURFACE COLLECTION

The surface collection covered 1448 m^2 and 334 chipped stone artifacts were recovered. Figure 42.2 shows that there is an obsidian debitage concentration to the east of Feature 4 and only a handful of debitage elsewhere at the site. This concentration is discussed in greater detail below (see Feature 4).

SITE EXCAVATION

Area 1

Dacite cobbles in this area suggested the outlines of a tipi ring (Feature 1) centered at 77N/162E and a grid garden (Feature 7) centered at 76N/169E. Units 75N/161E, 75N/163E, 75N/164E, and 77N/165E were placed to explore parts of the cobble arc thought to compose the tipi ring. Additionally, units 77-80N/159-160E and 78N/161E, which were excavated to explore the eastern exterior of Feature 2, covered an area potentially inside Feature 1. Unit 77N/163E was dug to explore the central part of the potential ring. Units 74-75N/170E and 76N/168E straddled likely alignments in the potential grid garden. All units were excavated to the top of Stratum 5. None of the potential alignments appeared to have a cultural origin once excavation was complete, and no evidence of a surface or heating feature was found in the possible tipi ring.

The stratigraphy of Area 1 consists of 1 to 13 cm (4 cm on average) of Stratum 1 overlaying 1 to 17 cm (8 cm on average) of Stratum 3. Stratum 3, in turn, overlies Stratum 5. All the strata in these units contain a great many dacite cobbles. Only three artifacts were found in this area: a .50-caliber lead rifle ball (Field Specimen [FS] 215) was recovered from Stratum 1 and two glass seed beads (FS 276) were recovered from Stratum 4. These artifacts are probably associated with Feature 2. Three pollen samples (FS 307, FS 308, and FS 314) from this area were analyzed. Taxa identified in these samples included rose family, buckwheat, grass family, cheno-ams, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

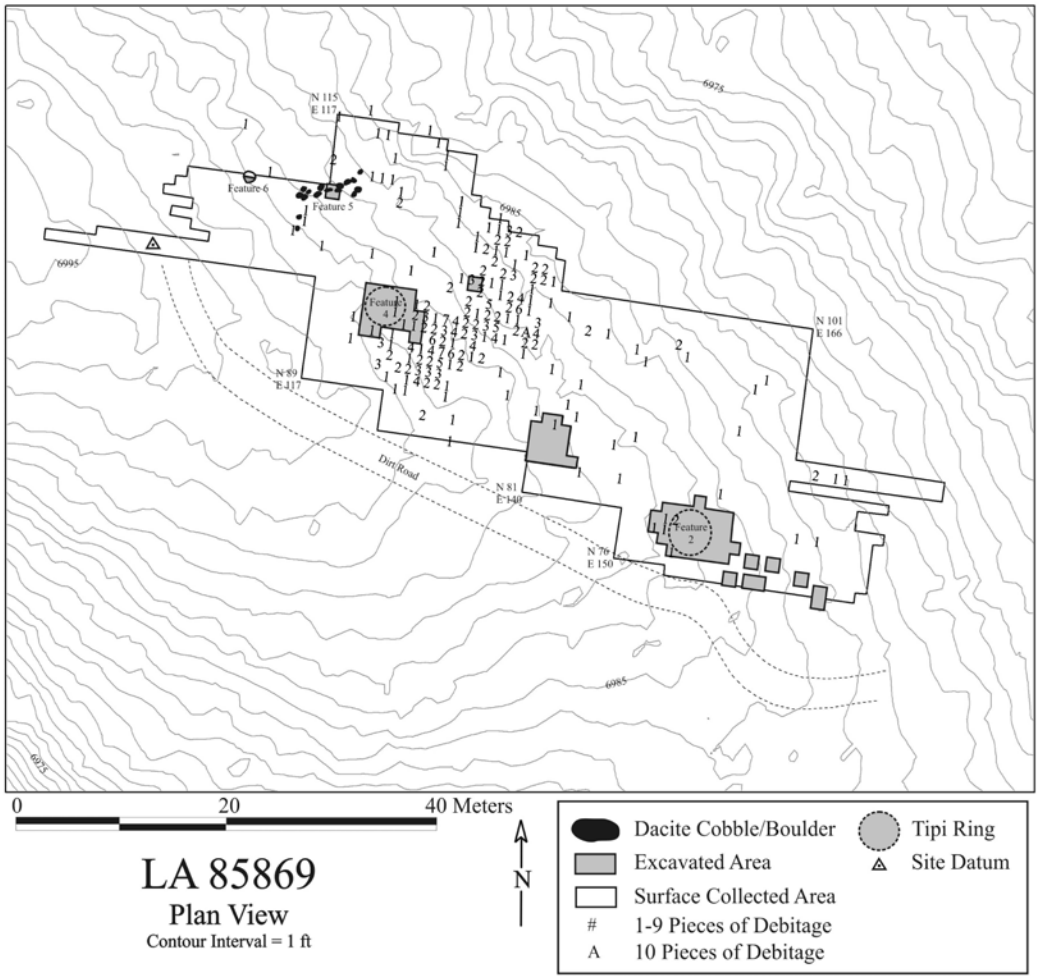


Figure 42.2. Surface debitage distribution at LA 85869.

Area 2

Area 2 was defined as Feature 2 (a tipi ring) and the area immediately around the feature. The stratigraphy outside of the feature to the west consisted of 1 to 8 cm (2.5 cm on average) of Stratum 1 overlaying 1 to 3 cm (1.5 cm on average) of Stratum 2. Stratum 4 underlies Stratum 2.

In the east, Stratum 1 is no different than has been previously noted. In units 77N/159E, 77N/160E, and 80N/159E, Stratum 1 is underlain by Stratum 3. In unit 79N/159E, Stratum 1 is underlain by Stratum 4. In all other units, Stratum 1 directly overlies Stratum 5.

Feature 2

This feature is the tipi ring identified by Hill and tested by Peterson and Nightengale (Figures 42.3 and 42.4). The tipi ring is composed of 22 dacite cobbles arranged in a circle with interior dimensions of 4.23 m north-south and 3.92 m east-west. The remains of a heating feature (Feature 9) are present in the center of the ring, and a possible posthole (Feature 10) is located outside to the southwest.

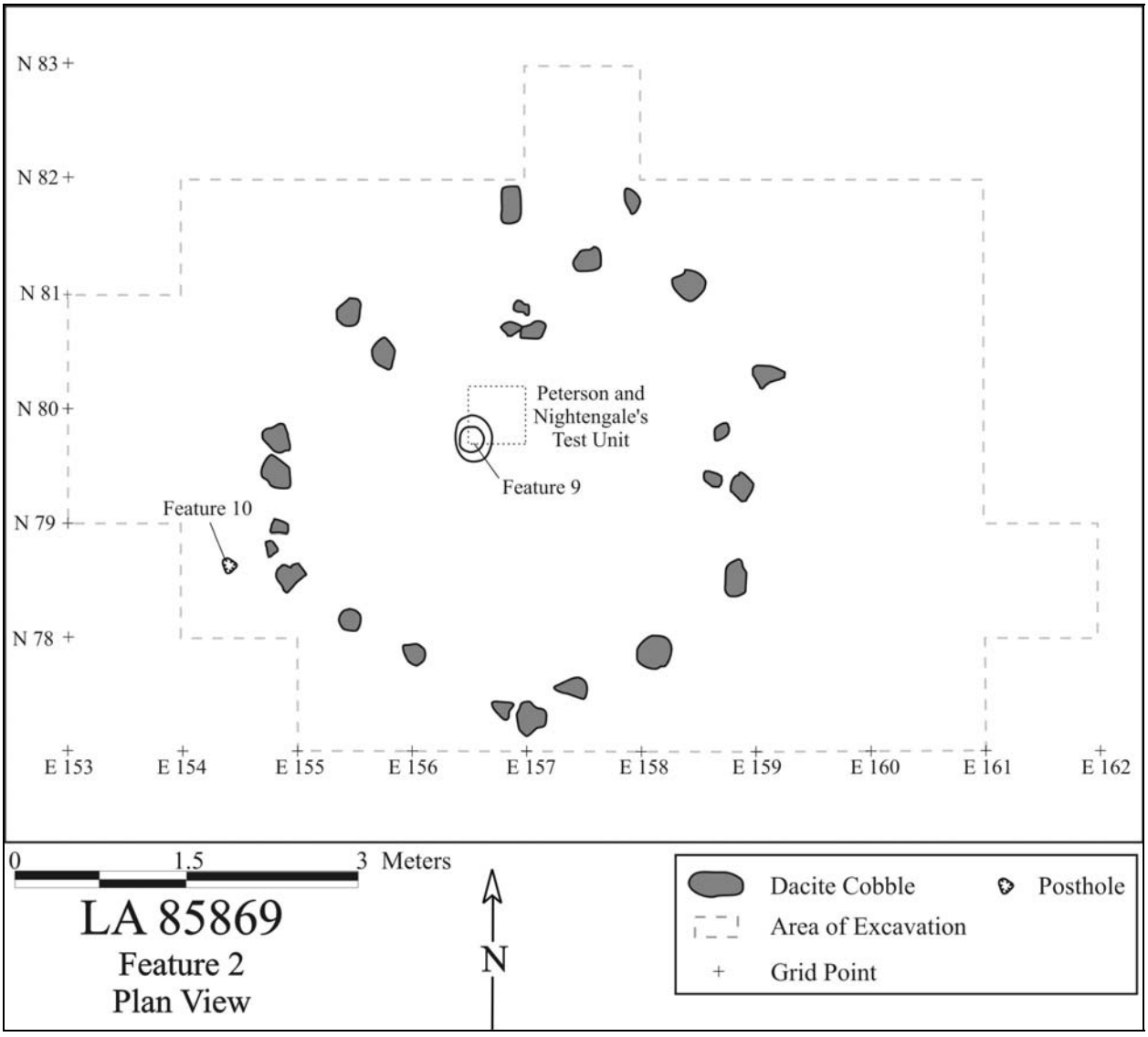


Figure 42.3. Plan view of Feature 2, a tipi ring.

Figure 42.4. Post-excavation photograph of Feature 2, a tipi ring.

Peterson and Nightengale placed a 1- by 1-m test unit in the center of Feature 2. This unit covers about 40 percent of units 79N/156E and 79N/157E and about 10 percent of units 80N/156E and 80N/157E. The test unit was excavated down to, and in places into, Stratum 5.

The stratigraphy of Feature 2 is straightforward. One to 5 cm (2.5 cm on average) of Stratum 1 overlies 1 to 4 cm (2 cm on average) of Stratum 2. Below Stratum 2 a compacted surface at the top of Stratum 4 is present in most places. The top of Stratum 4 is interpreted as the living surface at the time Feature 2 was inhabited. Stratum 4 was excavated in units 78-80N/158E. In this area Stratum 4 is 4 to 6 cm thick in most places save the western edge of 78N/158E where it is between 8 and 13 cm thick. Stratum 5 underlies Stratum 4.

Seventeen of the tipi ring cobbles were partially buried in Strata 1 and 2 and their upper surfaces were covered with lichen; the other five cobbles were completely buried. Most of the cobbles rest directly on top of Stratum 4. Three additional cobbles are located in the north-central portion of the tipi ring (80N/156E and 80N/157E). The base of these rocks is in Stratum 2 and it is not clear if these rocks were associated with the occupation of the tipi.

Since all the non-modern artifacts found in Area 2 are probably associated with Feature 2, Table 42.3 combines the artifact counts for both Area 2 and Feature 2.

Table 42.3. Area 2 and Feature 2 artifact counts by stratigraphic units.

Stratum	Ceramics	Chipped Stone	Ground Stone	Beads	Metal	Total
0	1/0/1[1]	5/1/6	0/0/0	0/0/0	0/1/1	6/2/8
1	2/0/2	2/4/6	0/0/0	54/94/148	1/0/1	59/98/157
2	0/0/0	0/0/0	0/0/0	0/5/5	0/1/1	0/6/6
3	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
4	0/0/0	0/1/1	0/0/0	0/0/0	0/0/0	0/1/1
8	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
9	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
Total	**3/0/3**	**7/6/13**	**0/0/0**	**54/99/156[2]**	**1/2/3**	**65/107/175[1]**

[1]1/0/1: 1 = outside Feature 2, 0 = inside Feature 2, 1 = total; [2]The provenience information for three beads was lost.

The three ceramic sherds (FS 129 and FS 309) are micaceous jar sherds from a single vessel. The chipped stone artifacts consist of angular debris, core fakes, and flake fragments. The material is approximately evenly divided between black translucent obsidian, Pedernal chert/chalcedony, and unspecified chert. The metal artifacts from inside Feature 2 consist of a 4.5-cm-long, 1-cm-wide tin/zinc alloy strip (FS 135) and a metal (possibly lead alloyed with tin or antimony) flake (FS 238). The metal artifact from outside the feature is a lead fishing line weight (FS 310). For a discussion of the bead artifacts see the 'Artifacts and Sample Analysis' section below.

Flotation samples were taken from Stratum 1 (FS 283) and Stratum 2 (FS 288) of Feature 2. The samples were 2.0 and 1.8 liters, respectively. The only charred material recovered was a piñon pine needle fragment from FS 283. A pollen sample from Stratum 1 (FS 282) and a pollen sample from Stratum 2 (FS 287) were analyzed. Taxa identified in these samples included grass family, cheno-ams, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Feature 9

Feature 9 is either a small firepit or a place where heated charcoal and rocks were deposited. It is located near the center of Feature 2 at 79.75N/156.55E. Peterson and Nightengale's excavations removed most of Feature 9. Peterson and Nightengale (1993:190) describe the feature as consisting of "a concentration of burned soil and ash with small flecks of charcoal…The burned area was first hit at a depth of about 5 cm bgs [below ground surface] and the burned clay associated with the hearth [i.e., Stratum 5] extended down to a depth of about 15 cm." Stratum 5 was excavated in the northwestern part of the test unit to determine if a firepit was present. No evidence of a depression in the Btb1 horizon was found, although the soil was burned to a depth of 4 cm from the top of the stratum. Peterson and Nightengale (1993:190) concluded that, "the fire was situated on the surface that formed the floor of the structure."

During excavation, no ash or charcoal were found. However, Strata 2 and 4 were absent in the north-central portion of unit 79N/156E, just west of Peterson and Nightengale's test unit. Here Stratum 1 directly overlays Stratum 5, suggesting that a shallow depression had been dug into Stratum 4. It was also in this area that Stratum 5 was burned. The burned area measures 42 cm

north-south and 11 cm east-west (truncated by the test unit). Stratum 5 was burned to a depth of 4 cm (i.e., from the top of Stratum 5 at 6.74 m to 6.70 m). The base of the burned area is about 20 cm in diameter. The burned portion of Stratum 5 was taken as a flotation sample (FS 318). No charred macrobotanical remains were recovered from this sample.

Feature 10

Feature 10 is a possible posthole located at 78.65N/154.43E (about 40 cm from the edge of Feature 2). The hole is 10 cm by 9 cm across, 7 cm deep, and triangular in shape. The upper 2 or 3 cm of the feature were filled with small pebbles and sediment that was slightly darker than the surrounding Stratum 2 matrix. The rest of the fill (Stratum 9) was collected as a pollen sample (FS 320). Taxa identified included plantain, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Area 3

Before excavation began it seemed possible that a tipi ring (Feature 3) was present and centered on unit 86N/142E. Nineteen excavation units were dug in this area. No alignment of cobbles was found that suggested any part of a tipi ring arch, and no evidence of a heating feature was observed. The stratigraphy in Area 3 is uniform and similar to that in Area 1. Stratum 1 overlies Stratum 2 and both are usually 1 to 4 cm thick, occasionally they are up to 9 cm thick. Stratum 4 is present everywhere beneath Stratum 2. The strata and cobble deposits in Area 3 do not have a cultural origin.

The only artifacts found in Area 3 were two pieces of chipped stone debitage from Stratum 0 and four pieces of chipped stone debitage Stratum 1. A pollen sample (FS 249) from Stratum 2 was analyzed. Taxa identified included grass family, cheno-ams, sunflower family, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

Area 4

Area 4 is defined as Feature 4 (a tipi ring) and the concentration of chipped stone debitage to the immediate east. As there is no stratigraphic difference between the interior and the exterior of the feature, the stratigraphy of Area 4 is given in the discussion of Feature 4.

The concentration of lithic debitage to the east of Feature 4 covers an area about 10 m wide (east-west) and 20 m long (north-south). The north-south dimension is parallel to the slope of the ground surface, so the length of this dimension is due, at least in part, to the movement of artifacts downslope. A single test unit (100N/132E) was placed at the edge of this artifact scatter. The stratigraphy consisted of 4 cm of Stratum 1, which contained one piece of chipped stone debitage, and 5 to 10 cm of Stratum 3, which contained two pieces of chipped stone debitage. Stratum 5 was encountered below Stratum 3. Juniper charcoal (FS 244) from Stratum 3 was submitted for accelerator mass spectroscopy analysis. FS 244 returned a post-AD 1950 date (Beta-199372).

Feature 4

This tipi ring consists of 11 dacite cobbles arranged in a circle with interior dimensions of 3.25 m north-south and 3.75 m east-west (Figure 42.5). The cobbles are unshaped and range in size from 17 by 12 cm to 30 by 25 cm. The remains of a heating feature (Feature 8) were found in the center of the ring.

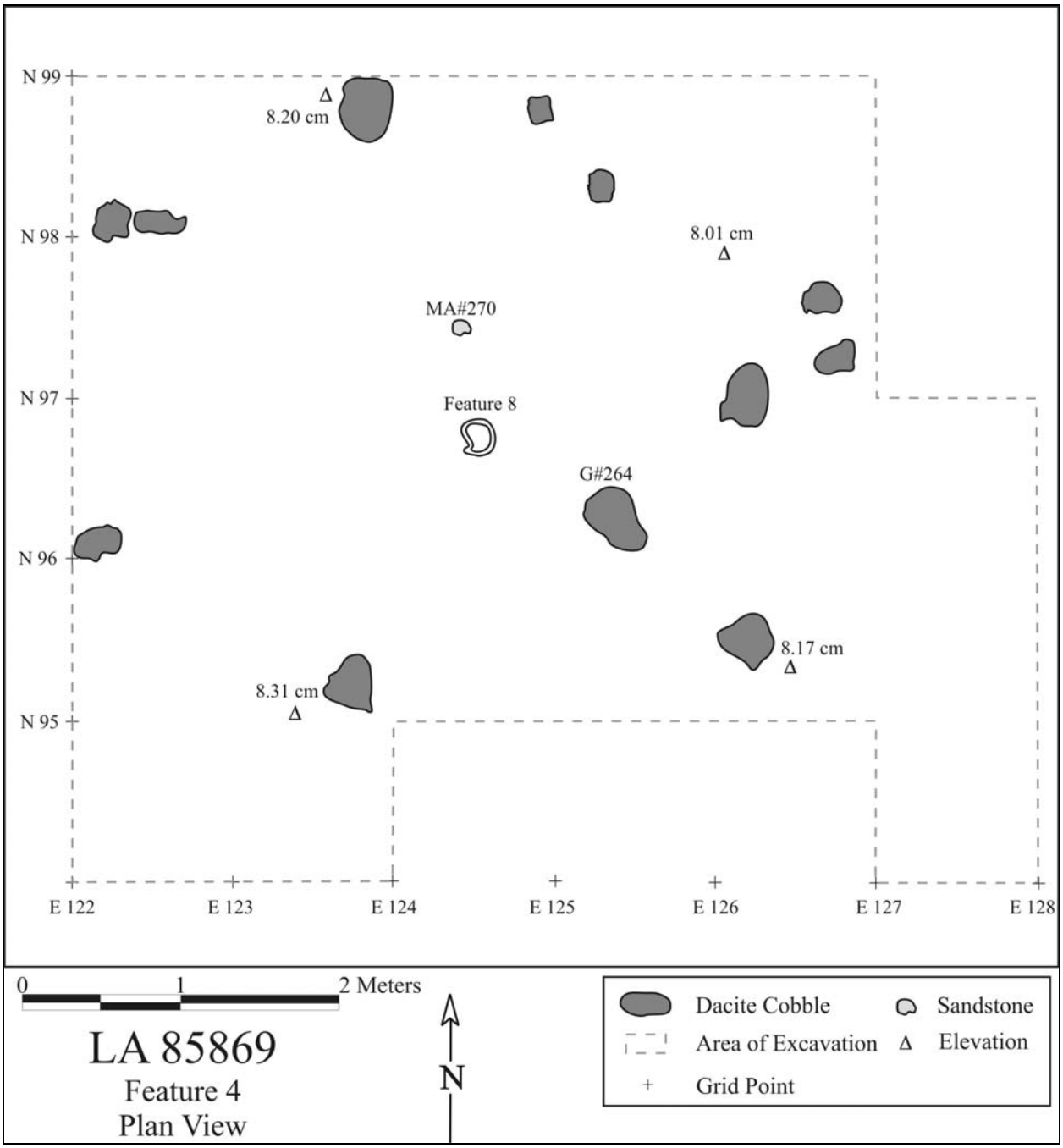


Figure 42.5. Plan view of Feature 4, a tipi ring.

Stratum 1 (1 to 6 cm) covers the entire area, but below this there is some variation. In the central and southwestern part of the tipi ring the stratigraphic sequence consists of Strata 1, 2, and 4. The sequence in the eastern part of the ring and the immediate exterior is Strata 1, 3, and 4. At the extreme east and southwest edges of the area, Stratum 1 directly overlays Stratum 4. In the northernmost units, Strata 2 and 4 are absent. Here Stratum 3 overlays Stratum 5. All of the cobbles were partially buried in Strata 1 and 2 and their upper surfaces were covered with lichen. Most of the cobbles composing the tipi ring were resting on top of Stratum 4; on this basis the top of Stratum 4 is interpreted as the living surface (the actual living surface is designated as Stratum 6). Stratum 4 was excavated in units 95N/123E and 95N/124E and 96N/124E. The stratum was 1 to 11 cm deep (3 to 5 cm deep on average). Stratum 5 underlay Stratum 4 in all three units. Since all the non-modern artifacts found in Area 4 are probably associated with Feature 4, Table 42.4 combines the artifact counts for both Area 4 and Feature 4.

Table 42.4. Area 4 and Feature 4 artifact counts by stratigraphic units.

Stratum	Ceramics	Chipped Stone	Ground Stone	Beads	Metal	Total
0	0/0/0[1]	263/2/265	0/0/0	0/0/0	0/0/0	262/2/265
1	0/0/0	4/11/15	0/0/0	0/0/0	3/7/10	7/18/25
2	0/0/0	1/1/2	0/0/0	0/0/0	0/0/0	1/1/2
3	0/0/0	2/2/4	0/0/0	0/0/0	0/0/0	2/2/4
4	1/0/1	3/0/3	0/0/0	0/0/0	0/0/0	4/0/4
6	0/0/0	0/1/1	0/2/2	0/0/0	0/0/0	0/3/3
Total	**1/0/1**	**273/17/290**	**0/2/2**	**0/0/0**	**3/7/10**	**276/26/303**

[1]0/0/0: 0 = outside Feature 2, 0 = inside Feature 2, and 0 = total

The ceramic artifact (FS 325) is an unidentified plainware sherd. The metal artifacts from inside the feature consist of a straight pin or round wire fragment (FS 210), two possible cone tinkler fragments or pieces of tinkler manufacturing debris (FS 211 and FS 212), a can fragment cut into a 3.0-cm-long strip (FS 213), a .50-caliber lead/alloy rifle ball with an impact surface (FS 214), three joined segments of a *coscojo* (FS 220), and a 4.0-cm-long rolled steel strip (FS 268). Metal artifacts from outside of the feature consist of a *coscojo* fragment (FS 209), two joined *coscojo* segments (FS 221), and a possible cone tinkler fragment (FS 219). The two ground stone artifacts consist of a sandstone mano fragment (FS 270) at 97.2N/124.55E and a dacite millingstone (FS 264) at 96.30N/125.40E. Both of these artifacts were found on the habitation surface of the tipi ring. A pollen sample (FS 263) was taken from below the millingstone. Taxa identified in the sample included grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, Mormon tea, sagebrush, and greasewood. The chipped stone artifacts from Area 4 account for most of the chipped stone artifacts recovered from the site. Instead of being discussed here they are analyzed in the 'Artifact and Sample Analysis' section below.

Feature 8

A concentration of charcoal and charcoal-stained soil was found in the center of Feature 4 at 96.75N/124.52E. This charcoal concentration is 13 cm in diameter and 4 cm deep and is situated

in a very shallow depression in Stratum 4. No burning or oxidation was present in the surrounding matrix. The contents of this feature were taken as a flotation sample (FS 272) and a pollen sample (FS 271). Charred taxa identified in the flotation sample included goosefoot and piñon pine. Taxa identified in the pollen sample included mustard family, grass family, cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, and oak. Feature 8 is interpreted as a locale that served as the receptacle for heated rocks and/or charcoal from an external hearth or as a small fire pit.

Material from FS 272 was submitted for accelerator mass spectroscopy analysis. The sample returned an age of 260±40 (Beta-199373) and a date of cal AD 1650 with a two-sigma date range of cal AD 1520–1590, cal AD 1620–1670, cal AD 1770–1800, and cal AD 1940–1950. As the artifacts associated with LA 85869 indicate, the late 19th/early 20th century habitation date returned by this radiocarbon sample is interpreted as reflecting the use of old wood.

Area 5

Area 5 encompasses Features 5 and 6. In addition to the artifacts found in these two features, four chipped stone artifacts were found in Area 5 during the surface collection.

Feature 5

Feature 5 was the second feature tested by Peterson and Nightengale. It is a rough line of unshaped dacite boulders about 8.5 m long and 0.5 to 3.0 m wide (Figure 42.6). The boulders range in size from 25 by 20 by 15 cm to 45 by 25 by 14 cm. Lichen was observed on the bottom of several of the boulders of this feature. Additionally, $CaCO_3$ was found on the top of two other boulders. The modern trash observed by Peterson and Nightengale is still present. An excavation unit (107N/117E) was placed in the center of this feature. The only artifacts recovered were three pieces of chipped stone debitage from Stratum 3.

The upper stratum in unit 107N/117E is Stratum 1, which was about 2 cm deep. This is underlain by Stratum 3 (6 to 8 cm deep) except in the northwest and northeast corners of the unit. In these corners, Stratum 4 (4 to 6 cm deep) is immediately below Stratum 1. As Stratum 4 is only found downslope from and behind the boulders, it was probably present over a greater area in the past, but has since eroded away. The boulders of the feature sit on top of Stratum 3 or are partially buried in it (up to 5 cm in depth). Stratum 5 underlies Strata 3 and 4, and it was here that excavation stopped. A small amount of shallow rodent or root disturbance was observed at the top of this stratum. Two pollen samples (FS 252 and FS 254) from Stratum 3 were analyzed. Taxa identified in these samples included sedge, grass family, cheno-ams, sunflower family, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

The presence of modern trash coupled with the inverted location of lichen and calcium carbonate on some boulders indicates that this feature is most probably a push pile or dump of modern origin.

Figure 42.6. Feature 5, an alignment of dacite cobbles.

Feature 6

Feature 6 consists of 12 small cobbles arranged into a rough circle 75 cm by 90 cm (Figure 42.7). Four additional cobbles are present inside the ring. A shallow rill runs north-south along the western edge of the feature. The rill may have removed a few cobbles and deposits from the western part of the feature, particularly from the northwest corner. The southern half of the interior of the ring was excavated to a depth of 10 cm. The fill consisted entirely of Stratum 1 and excavation ended at the top of Stratum 5. No artifacts were found. It was originally thought that Feature 6 was a hearth but no ash and very little charcoal was found. No evidence of burning, such as oxidation, was observed.

Three of the rocks that make up the feature were identified as ground stone artifacts: a dacite polishing stone (FS 286), a basalt one-hand mano (FS 286), and a dacite one-hand mano (FS 319). No other artifacts were found.

Three flotation samples were analyzed from Feature 6 (FS 295, FS 296, and FS 297). Each sample contained less than 0.1 g of wood charcoal. Charred taxa identified included unknown conifer, juniper, piñon pine, ponderosa pine, and unidentified pine. A pollen sample (FS 294) from this feature was analyzed and identified taxa included sunflower type, cheno-ams, grass family, sunflower family, ragweed/bursage, spurge family, spruce, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Figure 42.7. Feature 6, a cobble circle.

Material from FS 295 and FS 297 were submitted for accelerator mass spectroscopy delivery analysis. FS 295 returned an age of 1040±40BP (Beta-199374) and a date of cal AD 1000 with a two-sigma date range of cal AD 910–920 and cal AD 960–1030. FS 297 returned an age of 500±40 BP (Beta-199375) and a date of cal AD 1420 with a date range of cal AD 1400–1450. Given the small amount of charred material present and the disparate radiocarbon dates, it is unclear how to interpret Feature 6.

Area 6

Area 6 includes all the other unaffiliated areas of the site that have not already been discussed. A light scatter of chipped stone debitage is present in this area, and a total of 58 chipped stone artifacts were recovered from the surface. Four sherds from a single Cimarron Micaceous vessel (FS 328) were found 65 m northwest of Feature 4. Due to the paucity of artifacts and absence of cultural features, no excavation took place in this area.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 566 artifacts were analyzed from the excavations conducted at LA 85869 (Table 42.5). In addition, flotation and pollen samples were selected for analysis from Strata 1, 2, 7, and 8 (flotation) and Strata 1, 2, 3, 4, 6, 7, and 9 (pollen). Charcoal was submitted for radiocarbon dating from Strata 1, 3, and 7, and six pieces of obsidian were submitted for hydration dating from Strata 1 and 4. The results of the artifact and sample analyses are presented in the following sections.

Table 42.5. Samples selected for analysis from LA 85869.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**Hydration**
1	283, 295, 296, 297	282, 294	295, 297	265, 266, 267, 277, 322
2	288	249, 287		
3		252, 254, 307, 314, 329	244	
4		308		324
5				
6		263		
7	272	271	272	
8	318			
9		320		

Chronology

Radiocarbon Dating

Four radiocarbon samples were submitted to Beta Analytic for analysis. Table 42.6 gives the results of the radiocarbon analysis. Only FS 272 is clearly associated the Apachean occupation of the site. This sample probably represents the use of old wood.

Table 42.6. Radiocarbon dates from LA 85869.

FS	Context of sample	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	Two-sigma calibrated result
244	100N 132E Stratum 3	199372	155.5±0.8 pMC[1]	NA	post-AD 1950
272	Feature 8 (heating feature)	199373	260±40	AD 1650	AD 1520–1590 AD 1620–1670 AD 1770–1800 AD 1940–1950
295	Feature 6	199374	1040±40	AD 1000	AD 910–920

FS	Context of sample	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	Two-sigma calibrated result
	(possible hearth)				AD 960–1030
297	Feature 6 (possible hearth)	199375	500±50	AD 1420	AD 1400–1450

[1]Percent modern carbon; results that post-date AD 1950 can only be reported in pMC.

Thermoluminescence Dating

One micaceous ceramic sherd (FS 328) was submitted for thermoluminescence dating. Table 42.7 presents the results generated from this analysis.

Table 42.7. Thermoluminescence dating.

FS	Lab #	Context	Burial depth (cm)	Age (ka)	% error	Years AD
328	UW1245	65 m NW of Feature 4	0	0.146±0.021	9.1	1859±13

Obsidian Hydration Dating

Six obsidian artifacts from LA 85869 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site were estimated so that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts from LA 85869 was calculated (Table 42.8).

Table 42.8. Obsidian hydration dates for LA 85869.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
265	2006-11	Valle Grande	3.26	-869	176
266	2006-12	Valle Grande	2.95	-1408	231
267	2006-13	Valle Grande	3.27	-2146	254
277	2006-14	Valle Grande	2.94	-1417	233
322	2006-15	Valle Grande	2.99	-1711	249
324	2006-16	Valle Grande	3.43	1393	33

Only the 14th century obsidian hydration dates correspond with any of the radiocarbon dates. Otherwise, they appear to be too old.

Historic Artifact Dating

Analysis of the beads and metal artifacts (Appendix N) from LA 85869 suggests that the site dates to the late 19th or early 20th century. Artifacts with known temporal associations include a .50-caliber unalloyed lead ball (FS 215), *coscojos* fragments (FS 209, FS 220, and FS 221), a pony bead (FS 304), and seed beads (multiple FS numbers). The following is summarized from Appendix N. Unalloyed lead is characteristic of firearm projectiles before circa AD 1870. *Coscojos* have been found at Apache and Ute sites in New Mexico dating to between AD 1840 and 1900+, and pony beads entered the west in quantity around AD 1800 and remained popular in some areas until the early AD 1880s. Many of the seed beads from LA 85869 are of the smallest size category (0.5 to 0.7 mm in diameter). Additionally, 11 beads are tan in color and five are pink. This size and these colors of beads did not become readily available to the Jicarilla Apache until the early AD 1880s.

The presence of 12 "sanitary seal" can fragments (FS 197 and FS 199) may indicate a post-1897 date for the site. However, these fragments were found in units 103N/114E and 104N/114E. These units are within the light scatter of modern trash around Feature 5. It is unlikely that the can fragments are associated with the Apachean occupation of the site.

Four Cimarron Micaceous sherds from a single vessel (FS 328) were identified by Eiselt (Volume 4, Chapter 75). This type dates to between circa AD 1750 and the 1900s (Gunnerson 1969:33).

Ceramic Artifacts (Sunday Eiselt)

Seven micaceous sherds (FS 129, FS 309, and FS 328) that represents two vessels and one non-micaceous plainware sherd (FS 325) were found at LA 85869. Six of the micaceous sherds were analyzed by Eiselt (Volume 4, Chapter 75) and the results are briefly summarized. Inclusions in the paste of the three jar sherds from a single vessel found near Feature 2 (FS 129 and FS 309) suggest that the clay came from Picuris, Cordova, or Guadalupita, all of which are located in New Mexico. The surface finish, which was compacted with no wipe or scrape marks visible and a mica slurry application, indicates that the vessel may be attributed to Taos, Picuris, or Jicarilla makers. Inclusions in the paste of the four jar sherds from a single vessel found to the northwest of the site (FS 328) suggest that the clay came from Petaca. The probable clay source and surface finish, which was compacted with wipe-marks present and vessel walls sanded or burnished before mica slip or slurry application, indicate that the vessel was probably made by Jicarilla Apaches and is of the Cimarron Micaceous type.

Metal Artifacts (Charles Haecker)

The metal artifacts from LA 85869 were analyzed by Haecker and are summarized in Appendix N. Table 42.9 summarizes the results of Haecker's analysis.

Table 42.9. Metal artifacts from LA 85869.

FS	Artifact Type	No.	Provenience	Description	Dates
135	metal strip	1	Feature 2	tin/zinc alloy, 1 cm wide, 4.2 cm long, ends bent together, oxidized	unknown
197	can fragments	10	Area 5	"sanitary seal" can fragments	post-AD 1897
199	can fragments	2	Area 5	"sanitary seal" can fragments	post-AD 1897
209	*coscojo*	1	Area 4	two joined parts	circa AD 1840–1900+
210	straight pin or round wire fragment	1	Feature 4	ferrous, 3.0 cm long	19th century to present
211	trapezoidal white metal sheet	1	Feature 4	tin(?), folded, cut edges, 4.0 by 2.5 cm, possible cone tinkler or cone tinkler manufacturing debris	19th century to present
212	white metal fragment	1	Feature 4	tin(?), cut on all sides, oxidized, possible cone tinkler manufacturing debris	19th century to present
213	metal strip	1	Feature 4	can fragment, possible fastener hole, wavy in profile, 3.0 by 1.0 cm	19th century to present
214	.50-caliber lead/alloy rifle ball	1	Feature 4	cast seams visible, impact surface present	Mid/late 19th century to present
215	.50-caliber lead rifle ball	1	Area 1	mold-cast, apparently unfired, more oxidized (older) than FS 214	before circa AD 1870
216	.30-caliber brass pistol shell casing	1	Area 6	rim-fired	post-AD 1871
217	lead (bullet?) fragment	1	Area 6	possibly from a fired bullet, slightly oxidized	19th century to present
218	brass rifle shell fragment	1	Area 6	unknown caliber	20th century to present
219	white metal fragment	1	Area 4	tin(?), cut on two sides, oxidized, possible cone tinkler manufacturing debris	19th century to present
220	*coscojo*	1	Feature 4	three joined parts	circa AD 1840–1900+
221	*coscojo*	1	Area 4	two joined parts	circa AD 1840–1900+
238	metal flake	1	Feature 2	possibly lead alloyed with tin or antimony, 0.5 by 0.7 cm	unknown

FS	Artifact Type	No.	Provenience	Description	Dates
268	rolled steel strip	1	Feature 4	3.81 by 1.9 cm, three sides cut, one side showing fatigue from back-and-forth bending, wavy in profile	unknown
310	split-shot lead sinker	1	Area 2	out-of-round, 0.30-in.-diameter	unknown

While 29 metal artifacts were recovered, only the three *coscojo* fragments (FS 209, FS 220, and FS 221) can be unambiguously assigned to the Jicarilla occupation of the site, although it is likely that the .50-caliber lead ball (FS 215) was also deposited at this time. If the white metal fragments (FS 211, FS 212, and FS 219) are, in fact, cone tinkler fragments, then they are almost surely associated with the Apachean occupation. The temporal affiliation of the rest of the metal artifacts cannot be determined given that a light scatter of modern trash is present. However, the spatial association of FS 135, FS 238, and FS 310 with Feature 2, and FS 210, FS 213, FS 214, and FS 268 with Feature 4, may be indicative of a temporal association.

Beads (Charles Haecker)

All 158 glass beads from LA 85869 were analyzed; Table 42.10 summarizes the results of this analysis.

Table 42.10. Glass beads from LA 85869.

FS#	Seed Beads (Color)								Seed Bead Total	Other Beads	Total
	White	Black	Blue	Dark Blue	Green	Pink	Red	Tan			
232			1						1	1[1]	2
234	1						1		2		2
245	8	1	2		1				12		12
250	1								1		1
251	2		2			1			5		5
258	12	2	1		1	1		2	19		19
259	2								2		2
273	6		3		3			1	13		13
274	9				1			2	12		12
275	2								2		2
276	1			1					2		2
279	6		3						9		9
280	6		1						7		7
281	5	2	2		2	1		4	16		16
284	1				1				2		2
289	1							1	2		2
290	5			1		1			7		7
292	4		1						5		5

FS#	Seed Beads (Color)								Seed Bead Total	Other Beads	Total
	White	Black	Blue	Dark Blue	Green	Pink	Red	Tan			
298	8		2						10		10
300			1						1		1
301	1								1		1
303	3		3		1	1			8		8
304									0	1[2]	1
312	5		1					1	7		7
315	2		1						3		3
316	2		1						3		3
317	1								1		1
332	3								3		3
Total	**97**	**5**	**25**	**2**	**10**	**5**	**1**	**11**	**156**	**2**	**158**

[1]*Cornaline d'Aleppo* bead, red rim with a white core, 3 mm diameter; [2]"Pony" bead fragment, 20-mm-diameter when whole.

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 374 artifacts were analyzed from LA 86869, consisting of 364 pieces of debitage, four retouched tools, five ground stone artifacts, and a piece of fire-cracked rock. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 42.11 presents the data on lithic artifact type by material type. The majority of the debitage is made of obsidian, with lesser amounts of chalcedony, Pedernal chert, and other materials. The presence of cortex on 23.0 percent of the debitage indicates that these materials were collected from mostly nodule (n = 75) and fewer waterworn (n = 9) sources. Most of the nodule cortex was observed on the obsidian artifacts. Although obsidian is present at nearby primary sources in the Jemez Mountains, it is also present in the area of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval and are scattered across the mesa top. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources and the basalt from local bedrock outcrops and stream gravels. The ground stone artifacts are made of igneous materials, which are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 42.11. Lithic artifact type by material type.

Artifact Type		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Sandstone	Total
Debitage	Angular debris	0	0	0	0	0	0	35	7	0	6	0	0	48
	Core flake	3	0	1	0	0	0	155	17	0	14	0	0	189
	Biface flake	0	0	0	0	0	0	48	2	0	1	0	0	51
	Bipolar flake	0	0	0	0	0	0	1	0	0	0	0	0	1
	Outrepasse	0	0	0	0	0	0	1	0	0	0	0	0	1
	Microdebitage	0	0	0	0	0	0	29	1	0	0	0	0	30
	Und. flake	0	0	0	0	0	0	39	2	0	3	0	0	44
	Subtotal	3	0	1	0	0	0	308	29	0	24	0	0	364
Retouched Tools	Retouched piece	0	0	0	0	0	0	2	0	0	0	0	0	2
	Biface	0	0	0	0	0	0	1	0	0	0	0	0	1
	Projectile point	0	0	0	0	0	0	1	0	0	0	0	0	1
	Uniface	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	4	0	0	0	0	0	4
Ground Stone	One-hand mano	1	0	0	0	1	0	0	0	0	0	0	0	2
	Und. mano Fragment	0	0	0	0	0	0	0	0	0	0	0	1	1
	Millingstone	0	0	0	0	1	0	0	0	0	0	0	0	1
	Polishing stone	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	1	0	0	0	3	0	0	0	0	0	0	1	5
Other	Hammerstone	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fire-cracked rock	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	1	0	0	0	0	0	0	0	1
Total		**4**	**0**	**1**	**0**	**3**	**0**	**312**	**29**	**0**	**24**	**0**	**1**	**374**

Six pieces of debitage and four retouched tools were submitted for X-ray fluorescence analysis. All but one of the artifacts was from the Valle Grande source, with a single biface from the Cerro Toledo source (Table 42.12). The Valle Grande (Cerro del Medio) source area is located about 17 km (11 mi) and the Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source area about 19 km (12 mi) to the west and southwest of the site. However, as previously noted, there are pebbles of Cerro Toledo obsidian that are also present in the area of the site.

Table 42.12. Obsidian source samples.

FS #	Artifact	Color	Source
75	Tool	Black opaque	Cerro Toledo rhyolite
160	Tool	Translucent	Valle Grande rhyolite
184	Tool	Translucent	Valle Grande rhyolite
202	Tools	Translucent	Valle Grande rhyolite
FS #	**Artifact**	**Color**	**Source**
265	Debitage	Translucent	Valle Grande rhyolite
266	Debitage	Translucent	Valle Grande rhyolite
267	Debitage	Translucent	Valle Grande rhyolite
277	Debitage	Translucent	Valle Grande rhyolite
322	Debitage	Translucent	Valle Grande rhyolite
324	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

Although no cores were recovered at the site, the presence of a bipolar flake indicates that both platform cores and bipolar cores were reduced at the site. The bipolar reduction technique was presumably used to reduce a small obsidian pebble that was present at the site.

The debitage mainly consists of core flakes (52.1%), with some biface flakes (14.0%), angular debris (13.1%), undetermined flake fragments (12.0%), and microdebitage (8.2%). In addition, a single bipolar flake and *outrepasse* flake were also identified. Table 42.13 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The overall cortical:non-cortical ratio of 0.63 reflects an emphasis on the later stages of core reduction and tool production/maintenance, although there is relatively more cortex present on the small obsidian sample.

Table 42.13. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Basalt	0	0	0	0	---
Obsidian	0	6	2	2	1.5
Chalcedony	0	1	2	0	0.50
Pedernal chert	0	0	4	1	---
Total	**0**	**7**	**8**	**3**	**0.63**
Percentage	0.0	38.8	44.4	16.6	---

The majority of the flakes exhibit single-faceted platforms (32.8%; n = 22), with cortical (n = 12), multi-faceted (n = 1), collapsed (n = 14), and crushed (n = 18) platforms. Only five (7.4%) of the flake platforms exhibit evidence of preparation and all of these were abraded/crushed.

The majority of the core flakes consist of distal fragments (n = 90; 47.6%), with fewer whole (n = 17), proximal (n = 35), midsection (n = 43), lateral (n = 1), and undetermined fragments (n =

3). Most of the biface flakes are midsection (*n* = 17) and distal fragments (*n* = 17), with fewer whole (*n* = 3) and proximal (*n* = 14) fragments. The whole core flakes have a mean length of 20.1 mm (*std* = 6.5), whereas the whole biface flakes exhibit a mean length of 18.6 mm (*std* = 3.1). Lastly, angular debris have a mean weight of 2.1 g (*std* = 2.4).

The retouched tools consist of both expedient flakes tools (i.e., retouched pieces) and formal tools (i.e., bifaces and projectile points). Both retouched pieces exhibit a single marginally retouched edge. One of these items has unidirectional dorsal retouch and the other has bidirectional marginal retouch with edge angles of 55 and 65 degrees, respectively. The biface consists of a proximal fragment with an edge angle of 45 degrees. This acute angle indicates that the artifact was probably broken late during the manufacturing process. The projectile point is an undetermined fragment that probably represents a dart point.

Tool Use

Only one flake (0.2%) exhibits evidence of damage that could be attributed to use-wear. The damage is located along the lateral edge of the flake with a concave outline and angle of 40 degrees. One of the retouched pieces does exhibit microflaking; however, this was interpreted as being the result of preparation for further reduction and not use-wear.

Five ground stone artifacts were identified during the analysis, including manos, a millingstone, and a polishing stone. The manos consist of basalt, dacite, and sandstone cobbles. Two of these are one-hand manos with single flat ground surfaces. The other is an undetermined fragment that probably represents a one-hand mano, but is ground on both sides. The millingstone is a large fragment of dacite with a single flat ground surface. Lastly, the polishing stone consists of a small dacite pebble that exhibits polish and grinding on a single surface.

Faunal Remains (Kari Schmidt)

One elk (*Cervus elaphus*) scapula (FS 161) and two small, unidentified mammal fragments (FS 241) were recovered from LA 85869. Based on their general appearance, all of the faunal material appears to be modern in origin.

Archaeobotanical Remains (Pamela McBride)

Seven of nine flotation samples and four of nine macrobotanical samples were submitted for analysis. Table 42.14 shows that little charred material was recovered from the site.

Table 42.14. Charred macrobotanical remains from LA 85869.

FS	Provenience	Charred Material
Flotation Samples		
272	Feature 8, heating feature	1 *Chenopodium* seed, 1.4 g *Pinus edulis* wood,

FS	Provenience	Charred Material
		0.1 g Gymnospermae wood
283	Feature 2, tipi ring	*Pinus edulis* needle
288	Feature 2, tipi ring	None
295	Feature 6, possible hearth	<0.1 g *Pinus edulis* wood *Juniperus* twig, *Pinus ponderosa* needle
296	Feature 6, possible hearth	<0.1 g *Pinus edulis* wood, <0.1 g *Juniperus* wood, *Pinus edulis* needle, *Juniperus* twig, two unidentified specimens
297	Feature 6, possible hearth	<0.1 g *Pinus* wood <0.1 g Gymnospermae wood, *Pinus edulis* needle, *Pinus ponderosa* needle, *Pinus* umbo, *Juniperus* twig, one unidentified specimen
318	Feature 9, heating feature	None
Macrobotanical Samples (from screen)		
237	Feature 2, tipi ring	<0.1 g *Pinus edulis* wood
244	100N 132E, Stratum 3	<0.1 g *Juniperus* wood
247	Feature 2, tipi ring	None (one uncharred *Opuntia* seed)
278	Feature 4, tipi ring	None (uncharred, unidentified fibrous mass)

Two Jicarilla Apache tipi rings and a ring of cobbles were sampled for floral material at LA 85869. A charcoal concentration in the center of the Feature 4 tipi ring was the only context where carbonized plant material that was not associated with firewood use was recovered, represented by a single goosefoot seed (Table 42.15). The balance of the recognizable plant remains consisted of charred and uncharred conifer duff. Aside from conifer twigs, needles, and cone parts, non-cultural plant material included weedy annual, dock, sweet clover, and hedgehog cactus seeds, as well as unknown dicot and oak leaves. Rodent activity was especially evident in the vegetal sample from the Feature 4 tipi ring, where sample taxa and rodent feces suggested the remains of a rodent nest (unburned juniper twigs and seeds, pine cone parts, and piñon needles). Rodent feces were also present in FS 297 from the Feature 6 cobble ring.

Table 42.15. Flotation sample plant remains from LA 85869.

FS No.	272	283	288	295	296	297	318
Feature	8 Charcoal concentration in center of F. 4 tipi ring	2 Eastern tipi ring		6 Ring of cobbles			9 Heating feature in F. 2 tipi ring
		strat 1, level 1	2 strat 2, level 2				
Cultural							
Annuals							
Goosefoot	1(1)						
Other							
Unident.					2(0) pp	1(0) pp	
Perennials							
Juniper				twig +	twig +	twig +	
Pine						umbo +	
Piñon		needle +			needle +	needle +	
Ponderosa pine				cf. needle +		needle +	
Non-Cultural							
Annuals							
Cheno-Am			+				
Goosefoot		+					
Spurge						+	
Other							
Composite family					+	+	
Dicot	leaf +						
Purslane family			+		+	+	
Sweet clover	+	+	+		+		
Perennials							
Dock						+	
Hedgehog cactus				+	+	+	
Juniper	♂ cone +, twig +	+, twig +		♀ cone +, twig +	♀ cone +, ♂ cone +, twig +	♀ cone +, ♂ cone +, twig +	twig +
Oak							leaf +
Pine		twig +, umbo		umbo +	umbo +	♂ cone +, twig	

FS No.	272	283	288	295	296	297	318
		+				+, umbo +	
Piñon		+, needle +	needle +	needle +	needle ++	nsg +, needle +	needle +, nutshell +
Ponderosa pine					needle +	needle +	

+ 1-10/liter, ++ 11-25/liter, cf. compares favorably, nsg needle spindle gall, pp plant part.

Wood from flotation and vegetal samples was entirely coniferous, with the most significant amount of charcoal (piñon 1.4 g and unknown conifer 0.1 g) occurring in the Feature 8 charcoal concentration (Tables 42.16 and 42.17). The site occupants were using locally available wood for fuel and kindling and possibly processing goosefoot seeds as food. However, it is unknown if the goosefoot seed represents accidental charring from food processing or of a wind blown seed.

Table 42.16. Flotation sample wood charcoal taxa by count and weight in grams.

FS No.	272	295	296	297
Feature	8 Charcoal concentration in center of F. 4 tipi ring	6 Ring of cobbles		
Conifers				
Juniper			1/<0.1 g	
Pine				4/<0.1 g
Piñon	17/1.4 g	2/<0.1 g	2/<0.1 g	
Unknown conifer	3/0.1 g			4/<0.1 g
Totals	**20/1.5 g**	**2/<0.1 g**	**3/<0.1 g**	**8/<0.1 g**

Table 42.17. Vegetal sample taxa, by count and weight in grams.

FS No.	237	247	244	278
Feature	2 Eastern tipi ring		4 Tipi ring	
	strat 2, level 2	strat 1, level 1	strat 3, level 2	strat 1, level 1
Cultural				
Conifer Wood				
Juniper			2/<0.1 g	
Piñon	1/<0.1 g			
Non-Cultural				
Perennials				
Juniper				seed +, twig +

FS No.	237	247	244	278
Feature	2 Eastern tipi ring		4 Tipi ring	
	strat 2, level 2	strat 1, level 1	strat 3, level 2	strat 1, level 1
Pine				umbo +
Piñon				needle +
Prickly pear cactus		1 seed/<0.1 g		
Totals	**1/<0.1 g**	**1/<0.1 g**	**2/<0.1 g**	**-**

Pollen Remains (Susan Smith)

Thirteen pollen samples were analyzed from LA 85869. Table 42.18 lists the frequency of identified pollen types. No cultigens were identified in the botanical assemblage. Sunflower type and sedge were the only other economic resources identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 42.18), and these are discussed in detail in Smith's chapter in Volume 3.

Table 42.18. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85869 (*n* = 13)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	1
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Resources	Rosaceae	Rose Family	3

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85869 (*n* = 13)
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	1
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	1
	Polygala type	Milkwort	0
	Poaceae	Grass Family	13
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	13
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	13
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	6
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 85869 (*n* = 13)
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	3
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	5
	Pinus	Pine	12
		Pine Aggregates	1
	Pinus edulis type	Piñon	12
	Juniperus	Juniper	13
		Juniper Aggregates	0
	Quercus	Oak	11
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	4
	Artemisia	Sagebrush	11
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	1

SITE SUMMARY

LA 85869 consists of two late 19th/early 20th century Jicarilla Apache tipi rings. Most of the artifacts recovered from LA 85869 were found in the vicinity of Features 2 and 4. The artifact assemblages associated with each tipi ring are distinct. The artifacts in and around Feature 2 consist of glass beads, a few pieces of chipped stone debitage, three ceramic sherds from a single vessel, a .50-caliber rifle ball, a split-shot lead sinker, and a small fragment of metal. The artifacts in and around Feature 4 consist of two ground stone artifacts, an obsidian debitage scatter to the east of the feature, *coscojo* fragments, possible cone tinkler fragments, and several other miscellaneous metal fragments. The nearby tipi ring site at LA 85864 may be contemporaneous with LA 85869.

CHAPTER 43
RENDIJA TRACT (A-14): LA 86605

Michael J. Dilley and Bradley J. Vierra

INTRODUCTION

LA 86605 is a small one-room Late Classic period fieldhouse situated on the broad, gently sloping, east-facing shoulder of the terrace about 150 m south of the ephemeral creek in Rendija Canyon. The area is covered by a ponderosa pine forest at an elevation of 2110 m (6920 ft). The fieldhouse is located at the end of the Los Alamos Sportsmen's Club rifle range, but did not appear to have been impacted by these activities.

The site was originally recorded by Stolpe, Hoagland, and McGehee in 1991 and given the temporary site number of M-49. Stolpe et al. described the site as a one- to two-room masonry structure that was constructed from both shaped and unshaped tuff blocks within a 50-m^2 area. A total of eight pieces from a polychrome glaze bowl, four Pedernal chert flakes, and a flake made of Jemez obsidian were identified during this visit. Based on the ceramic evidence, they surmised the site dated to the Classic period.

FIELD METHODS

Fieldwork began with a reconnaissance of the area around the fieldhouse to define the nature and extent of the surface remains. The site datum was set at the southwestern corner of the site and was designated as 100N/100E and 10.00 m elevation. A 1- by 1-m grid system was laid in around the surface architecture with grid corners at 100N/100E, 100N/1007E, 107N/100E, and 107N/107E. Subdata were subsequently shot in along each of the four sides of the excavation block (A-D). The site was photographed and surface collected (Figure 43.1), and a total of 14 chipped stone and four ceramic artifacts were recovered.

An east-west trench was excavated along the 103N grid line from 101 to 105E to expose and define the walls of the structure and the site stratigraphy. The east and west walls were identified, as was a possible unprepared living surface about 35 cm below the present surface. The block excavation was, therefore, expanded to include the area bounded by 101N/101E, 101N/104E, 104N/101E, and 104N/104E, in addition to grids 102-104N/105E. A total of 19 grids were excavated in and around the one-room fieldhouse.

Excavations within the structure involved removing post-occupational fill down to the level of the possible unprepared floor surface. This surface was situated at the top of the Btb1 soil horizon. Excavations outside the structure were also conducted to the top of the Btb1 soil horizon, but the soil was much shallower in this area (ca. 20 cm). Obvious wallfall was removed so that the structure's walls and any internal or external features could be identified. The context of this wallfall was also used to help expose the level of the unprepared floor surface.

Figure 43.1. Pre-excavation photograph of LA 86605.

Pollen and flotation samples were taken from each stratigraphic unit and various locations on the possible floor surface. All excavated soil was sieved through a 1/8-in. mesh to aid in the recovery of cultural remains. The excavation area was extended approximately 1 m around the structure to locate external features and to identify outside activity areas. This actually included 2 m to the east of the structure to help isolate any activity areas. No internal or external features were identified. After the excavations were complete, the site was mapped (Figure 43.2) and photographed (Figure 43.3).

The excavation of the site was supervised by Michael Dilley. Crew members included Joseph (Woody) Aguilar, Greg Lockard, Kari Schmidt, and Bradley Vierra. Aaron Gonzalez, Timothy Martinez, and Michael Chavarria served as site monitors, representing both San Ildefonso and Santa Clara pueblos.

STRATIGRAPHY

Five stratigraphic units were defined during the excavations. These are illustrated in the profile provided in Figure 43.2 and are listed in Table 43.1. Stratum 1 is the loose topsoil that covered the site and represents most of the A soil horizon. Some of the surface organic material had been burned by the Cerro Grande fire. Stratum 2 consists of a silty loam that characterizes the post-occupational fill. This stratum is situated within the structure and represents the Bw soil horizon.

Stratum 3 is an unprepared occupational surface (upper and lower). Stratum 4 is similar to Stratum 2 except that it represents the Bw soil horizon situated outside of the structure. Lastly, Stratum 5 is the basal stratigraphic unit at the site and is composed of silty loam clay.

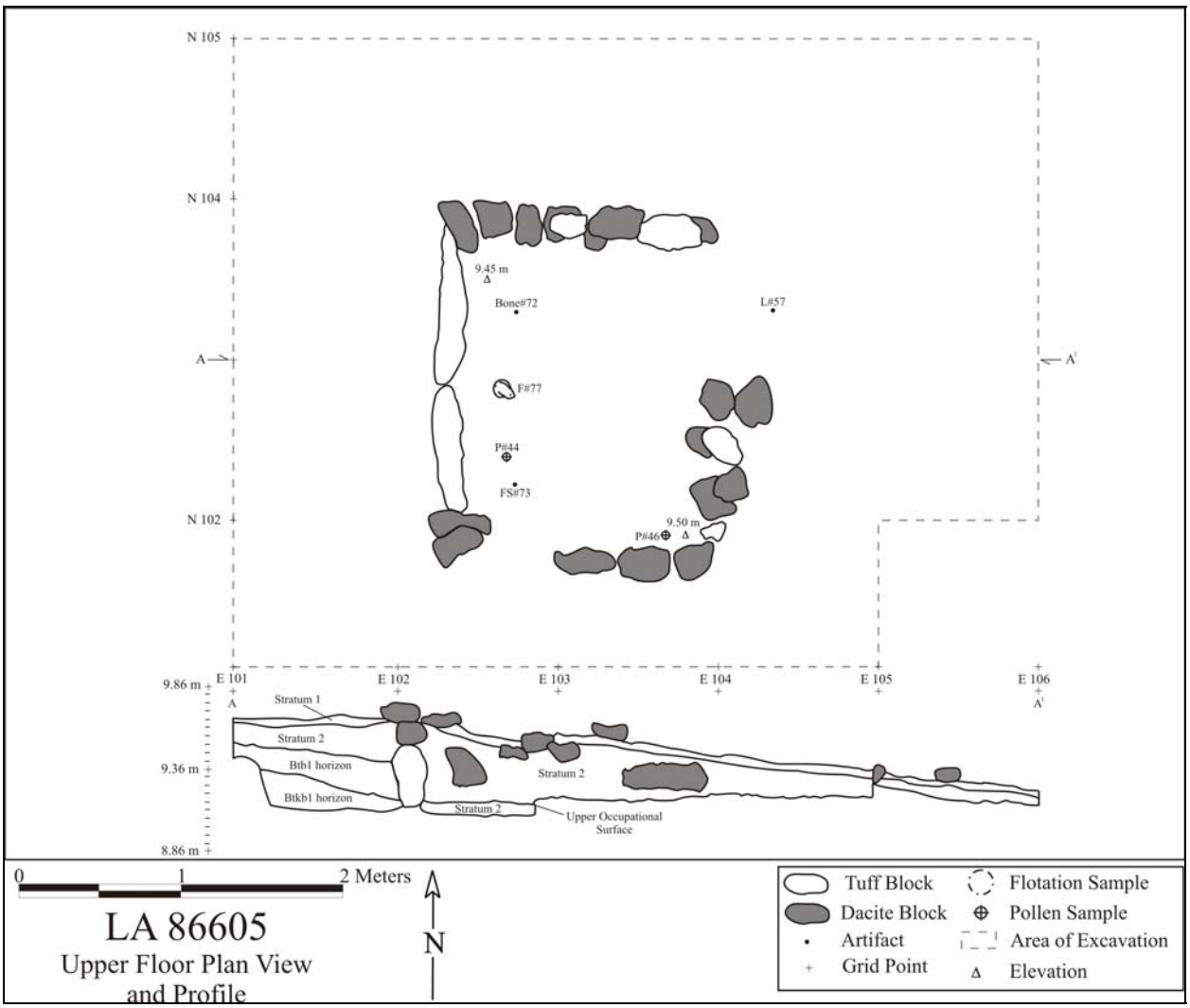


Figure 43.2. Plan view and profile map of LA 86605.

Table 43.1. LA 86605 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4/4	Loamy sand	2–6	Surface sediment
2	7.5YR 4/4	Silty loam	5–40	Post-occupational fill within the structure
3	7.5YR 4/4	Silty loam	0	Living surface (upper and lower)
4	7.5YR	Silty loam	10–15	Post-occupational fill outside the

Stratum	Color	Texture	Thickness (cm)	Description
	4/4			structure
5	7.5 YR 5/4	Silty loam clay	35+	Pre-occupational fill outside of structure, but below the floor level

Figure 43.3. Post-excavation photograph of LA 86605.

A geomorphic test pit was excavated adjacent and outside the west wall of the structure in unit 103N/101E (see Drakos and Reneau, Volume 3). The pit was excavated to a depth of about 1 m, and five separate soil horizons were identified (Table 43.2). From top to bottom these consist of A, Bw, Btb1, and Btkb1. The characterization of the soil profile continued within the structure at 103N/102E. In contrast to the outside profile, the inside profile did not include the Btb1 soil horizon, but rather an upper A and a middle Bw, which laid on top of the Btkb1 soil (Table 43.3). The Bw horizon could be separated into upper and lower sections that were approximately 30 and 10 cm thick, respectively. These differences became important once the inside fill of the structure had been excavated. Table 43.4 provides the artifact count information by stratigraphic unit at the site, with a total of 189 artifacts being recovered.

Table 43.2. LA 86605 soil horizon descriptions from the south profile of the geological test pit located outside the structure (103N/101E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/4	Loamy sand	0–7	Topsoil
Bw	7.5YR 4/4	Silty loam	7–19	Late-Holocene soil
Btb1	7.5YR 5/4	Silty loam	19–35	Late-Pleistocene/early-Holocene soil
Btkb1	7.5YR 5/4	Silty loam	35–50+	Late-Pleistocene/early-Holocene soil
Btkb1	-	-	54–93+	Late-Pleistocene/early-Holocene soil

Table 43.3. LA 86605 soil horizon descriptions from the south profile of grid unit 103N/102E located inside the structure.

Horizon	Color	Texture	Depth (cm)	Description
A	-	-	?	Topsoil
Bw	8.75YR 4/3	Silt	? to 40–45	Late-Holocene soil
Btkb1	-	-	(40–45)+	Late-Pleistocene/early-Holocene soil

Table 43.4. LA 86605 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	5	14	0	0	**19**
1	19	10	0	0	**29**
2	85	50	3	1	**139**
Total	**109**	**74**	**3**	**1**	**187**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a single room in a small fieldhouse (see Figure 43.3). The room measures 2.0 m north-south by 1.75 m east-west, with about 3.5 m^2 of interior space. Excavation of the room began with the east-west trench that extended across the rubble area along the 103N grid line. This excavation defined the east and west walls of the structure, the internal stratigraphy, and a possible unprepared floor surface. After the trench was completed, the remainder of the room fill was removed down to the level of the possible floor.

The geologic test pit was subsequently excavated adjacent to the west wall of the structure to define the stratigraphic context of the walls and occupational surfaces. As previously noted, separate soil profiles were identified within and outside of the structure.

Floor. Approximately 20 to 30 cm of post-occupational fill was removed before exposing a possible unprepared living surface within the structure. It was difficult to discern, being mostly disturbed in the western section of the room. However, it was defined by isolating charcoal bits, burned daub, a few blocks of wallfall, and a couple of artifacts along a horizontal break in the

soil profile. This break was defined between the upper Bw(1) and lower Bw(2) soil horizons within the room fill.

A flotation sample (Field Specimen [FS] 77) was taken from under a tuff block in the middle of the room. Charred taxa identified in this sample included ponderosa pine, piñon pine, maize, and unknown conifer. Two pollen samples (FS 44 and FS 46) were taken from areas adjacent to the west and south walls. Identified taxa included maize, cholla, prickly pear, beeweed, lily family, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, spruce, fir, unidentified pine, piñon pine, juniper, oak, squawbush, Mormon tea, and sagebrush. In addition, three artifacts were found lying on the floor surface. These consist of a Pedernal chert flake (FS 57), a mule deer bone fragment (FS 72), and a piece of burned adobe (FS 73).

A second lower occupational surface was identified. This floor also consisted of an unprepared living surface that was situated about 20 cm lower than the upper floor. However, the lower floor was located at the break between the Bw and Btkb1 soil horizon. That is, the upper floor was located near the bottom of the masonry wall, whereas the lower floor was located below the level of the walls. Nonetheless, additional wallfall, bits of charcoal, and a few artifacts were also recovered from the fill between the two floors. A flotation (FS 107) and pollen (FS 106) sample were taken from the lower floor. Ponderosa pine was the only charred taxon identified in the flotation sample, while grass family, cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, oak, and sagebrush were all identified in the pollen sample. In addition, a single chalcedony flake was recovered from the same level and grid (103N/103E).

The identification of these two possible floor surfaces is tentative, but do appear to correlate with breaks in the stratigraphic profile and architectural remains. Drakos and Reneau (see Volume 3, Chapter 57) suggest that these represent two distinct occupations at the site, with the later occupants reusing the building stone from the previous occupation. In addition, Drakos and Reneau relate the upper occupation to the top of the exterior Bw soil horizon and the lower occupation to the top of the Btb1 soil horizon. They speculate as to whether the lower occupation might date to the Coalition period and the upper occupation to the Classic period.

Wall Construction. The walls in Room 1 were composed of tuff blocks and dacite cobbles. The tuff is available from outcrops in the canyon and the dacite from the gravels in the nearby ephemeral drainage. Most of the north, east, and west walls are composed of dacite cobbles that are resting near the upper floor level. Some adobe was observed below the central part of the north wall, which could represent foundation; however, no other evidence of adobe was observed below or within the other wall sections. Most of the building stones were set horizontally, with a few being upright in the north, east, and south walls. These appear to be dry-laid walls, with one to two courses remaining. Two very large tuff blocks are all that represent the western wall segment. These blocks have been set into a trench that cuts down into the lower Bw(2) soil horizon inside the room and the Btkb1 soil horizon outside of the room. The trench was filled with nearby soil that contained a few artifacts.

Based on the amount of wallfall removed during the excavation (1.2 m^3), it is speculated that the original walls were only three courses high. Wall measurement information is provided in Table 43.5. The remaining sections of the north, west, and south walls appear to be *in situ*; however,

the nature of the east wall is unclear. This wall only partially extends along the east side of the room, leaving an opening in the northeast corner. The remainder of the wall does not appear to be *in situ* and may actually represent a cluster of building stones. If so, then the opening may not reflect a doorway, and there may not have been any standing masonry along this side of the room.

Table 43.5. Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.74	0.09–0.25	0.17–0.30	1 to 2
South	1.60	0.13–0.40	0.13–0.17	1
East	1.15 (1.65)	0.12–0.26	0.18–0.33	1 to 2
West	2.08	0.28–0.43	0.11–0.31	1

Note: The length of the east wall including the entryway is given in parentheses.

Artifact Distribution

Table 43.6 graphically illustrates the distribution of artifacts recovered during the site excavations (i.e., ceramics, chipped stone, ground stone, and faunal remains). However, this does not include the 18 artifacts found outside of the excavated area during surface collection. The bold numbers indicate grid units that are located completely or partially within Room 1, which indicates that the majority of the artifacts were recovered from within the structure or directly to the east of the room. The latter may reflect an outside activity area that was situated in front of the fieldhouse, or possibly reflects material removed from inside the structure during cleaning episodes.

Table 43.6. Artifact distribution by grid unit.

	E101	E102	E103	E104	E105
N104	2	6	1	5	2
N103	5	**33**	**14**	13	4
N102	4	**34**	**12**	13	0
N101	2	**13**	**4**	4	--

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 189 artifacts were analyzed from the excavations conducted at LA 86605. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and the upper and lower floors (Stratum 3) in the structure. Maize that was recovered from the flotation sample on the upper floor (FS 77) was submitted for radiocarbon dating (Table 43.7).

Table 43.7. Samples selected for analysis from LA 86605.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	94	39, 93, 95	77	
3 (upper)	77	44, 46		
3 (lower)	107	106		

*thermoluminescence

Chronology

Radiocarbon Dating

A single maize sample was submitted for accelerator mass spectroscopy dating. The sample provided a date of 360±40 BP (Beta-215551), with a calibrated intercept of AD 1500 and a two-sigma range of AD 1440 to 1640. The sample was recovered from the upper floor of the structure.

Ceramic Artifacts (Dean Wilson)

A total of 105 ceramics were analyzed from LA 86605. The majority of the pottery represents local Rio Grande decorated ceramics, with a few utilityware types (Table 43.8). These include Biscuit B, Biscuit C, Sankawi Black-on-cream, and Sapawe Micaceous. The whitewares are primarily tempered with local fine tuff or ash and the utilitywares with non-local granite and mica (Table 43.9). Most of the whitewares are represented by jar vessel forms, while all the utilitywares are jars (Table 43.10). Given the presence of Biscuit C and Sankawi Black-on-cream, the site probably dates to the Late Classic period. This corroborates the potential 16th century occupation represented by the radiocarbon date. It seems unlikely that the lower floor dates to the Coalition period given the absence of any earlier ceramic types.

Table 43.8. Ceramic types from LA 86605.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	3	2.9
Biscuit B rim	1	1.0
Biscuit C rim	2	1.9
Sankawi Black-on-cream	1	1.0
Biscuit B-C body	36	34.3
Biscuit unpainted, slipped both sides	1	1.0
Biscuit painted unspecified	8	7.6
Biscuit slipped one side	37	35.2
Biscuit undifferentiated	2	1.9

Ceramic Type	Frequency	Percent
Northern Rio Grande Utilityware		
Mica utility undifferentiated	5	4.8
Sapawe micaceous	9	8.6
Total	**105**	**100.0**

Table 43.9. Temper by ware for ceramics from LA 86605.

Temper	Ware		
	Gray	White	Total
Granite with mica	14	0	14
Sherd and sand	0	1	1
Fine tuff or ash	0	89	89
Fine tuff and sand	0	1	1
Total	**14**	**91**	**105**

Table 43.10. Vessel form by ware for ceramics from LA 86605.

Vessel Form	Ware		
	Gray	White	Total
Indeterminate	0	10	10
Bowl rim	0	4	4
Bowl body	0	8	8
Jar neck	0	2	2
Jar rim	2	1	3
Jar body	12	65	77
Flared bowl rim	0	1	1
Total	**14**	**91**	**105**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 72 artifacts were analyzed from LA 86605, consisting of 67 pieces of debitage, four retouched tools, and a ground stone artifact. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 43.11 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony, with less Pedernal chert and other materials. The presence of cortex on 23.8 percent of the debitage indicates that these materials were collected from waterworn (n = 14) and nodule (n = 2) sources. The chalcedony, Pedernal chert, silicified wood, and quartzite are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 43.11. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Sandstone	Total
Debitage	Angular debris	0	0	0	0	0	0	0	4	0	3	0	0	0	7
	Core flake	3	0	4	1	0	0	2	25	0	12	2	1	0	50
	Biface flake	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	CO flake*	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Microdeb.	0	0	0	1	0	0	2	2	0	0	0	0	0	5
	Und. flake	1	0	0	0	0	0	0	1	0	0	0	0	0	2
	Subtotal	4	0	4	2	0	0	6	32	1	16	2	1	0	67
Retouched Tools	Retouched piece	0	0	1	0	0	0	1	0	2	0	0	0	0	4
	Subtotal	0	0	1	0	0	0	0	0	2	0	0	0	0	4
Ground Stone	Grinding slab	0	0	0	0	1	0	0	0	0	0	0	1	0	1
	Subtotal	0	0	0	0	1	0	0	0	0	0	0	1	0	1
Total		**4**	**0**	**5**	**2**	**1**	**0**	**6**	**32**	**3**	**16**	**2**	**1**	**0**	**72**

*Change-of-Orientation Flake

Three obsidian flakes, three basalt flakes, and a retouched piece were submitted for X-ray fluorescence analysis. The obsidian artifacts are made from Valle Grande, Cerro Toledo, and El Rechuelos obsidian (Table 43.12). The Valle Grande (Cerro del Medio) and Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source areas are situated about 17 km (11 mi) and 19 km (12 mi) to the west and southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the mesa to the northeast of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. In contrast, the El Rechuelos (Polvadera Peak) source area is located about 27 km (17 mi) northwest of the site. Both of the basalt flakes appear to be made of dacite; however, one of these is derived from a local source and the other from the San Antonio Mountain source.

Table 43.12. Obsidian source samples.

FS #	Artifact	Color	Source
1	Debitage	Black dusty	El Rechuelos
27	Debitage	Translucent	Cerro Toledo rhyolite
41	Debitage	Translucent	Valle Grande rhyolite
59	Tool	Translucent	Valle Grande rhyolite

Lithic Reduction

The debitage mostly consists of core flakes, with a few other items. The overall cortical:non-cortical ratio of 0.37 reflects an emphasis on the later stages of core reduction. The flakes mostly have single-faceted platforms (n = 16), with fewer cortical (n = 2), collapsed (n = 7), and crushed (n = 9) platforms. None of the platforms exhibit any obvious evidence of preparation. The majority of the core flakes are proximal fragments (n = 22), with fewer whole (n = 13), midsection (n = 6), and distal (n = 9) fragments. The whole core flakes have a mean length of 23.5 mm (*std* = 6.9) and the angular debris a mean weight of 1.3 g (*std* = 8.8).

The retouched tools consist solely of retouched pieces. They exhibit both unidirectional dorsal and bidirectional marginal retouch along the lateral sides of the flake, with one situated at the distal end of the flake. These edge angles range from 55 to 70 degrees.

Tool Use

None of the flakes exhibit evidence of edge damage that could be attributed to use. In contrast, three of the four retouched pieces exhibit rounding and scarring that appears to be the result of use. The only ground stone artifact was a grinding slab fragment with a single ground surface. The ground surface is slightly concave and ovoid shape, with some of the high spots being smoothed and polished.

Faunal Remains (Kari Schmidt)

One piece of bone was recovered from Room 1 (Stratum 2, Level 5). The bone was a mule deer (*Odocoileus hemionus*) distal humerus (right) that was fairly weathered and may have been exposed to the elements for quite some time before deposition. The bone was unburned, and its location in the fieldhouse was point-plotted (103.35N/102.72E).

Archaeobotanical Remains (Pamela McBride)

Corn cupules, a grass seed fragment, and ponderosa pine needles were recovered from the two samples analyzed from the fieldhouse floor and post-occupational fill (Table 43.13). With the exception of four fragments of ponderosa pine charcoal (Table 43.14), the sample from the lower living surface contained only unburned plant material. In comparison, the wood assemblage from post-occupational fill was quite diverse, including mountain mahogany, piñon pine, ponderosa pine, cottonwood/willow, and sagebrush.

Table 43.13. Flotation plant remains, count, and abundance per liter from LA 86605.

FS No.	**77**	**94**	**107**
Feature	Floor matrix	Stratum 2 Post-occupational fill	Wallfall on lower living surface
Cultigens			

FS No.	77	94	107
Maize	1(0) c	1(0) c	
Grasses			
cf. Grass family		1(0)	
Other			
Unidentifiable	2(0) pp		
Perennials			
Ponderosa pine	+ needle	+ needle	
Non-Cultural			
Annuals			
Goosefoot	+	+	
Sunflower		+	
Grasses			
Grass family		+	
Other			
Groundcherry		+	
Purslane family	+		+
Perennials			
Hedgehog cactus	+		+
Ponderosa pine	+ needle		

+ 1-10/liter, c cupule, cf. compares favorably, pp plant part.

Table 43.14. Flotation sample wood charcoal by count and weight in grams.

FS No.	77	94	107
Feature	Floor matrix	Stratum 2 Post-occupational fill	Wallfall on lower living surface
Conifers			
Piñon	1/0.2 g		
Ponderosa pine	5/0.2 g	4/0.1 g	4/0.3 g
Unknown conifer	14/0.3 g	3/<0.1 g	
Non-Conifers			
Cottonwood/ Willow		1/<0.1 g	
Mountain mahogany		3/0.1 g	
cf. Sagebrush		1/<0.1 g	
Totals	**20/0.7 g**	**12/0.2 g**	**4/0.3 g**

Pollen Remains (Susan Smith)

Six pollen samples were analyzed from LA 86605. Table 43.15 lists the frequency of identified pollen types. Maize and cholla were the only cultigens identified in the botanical assemblage. Prickly pear, beeweed, and lily family were all identified as economic resources in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 43.15), and these are discussed in detail in Smith's chapter in Volume 3.

Table 43.15. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86605 (*n* = 6)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	2
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	1
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	2
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	0
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86605 (*n* = 6)
	Polygala type	Milkwort	0
	Poaceae	Grass Family	6
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	6
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	6
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	3
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86605 (*n* = 6)
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	1
	Pinus	Pine	6
		Pine Aggregates	0
	Pinus edulis type	Piñon	6
	Juniperus	Juniper	6
		Juniper Aggregates	0
	Quercus	Oak	4
	Rhus type	Squawbush type	1
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	3
	Artemisia	Sagebrush	6
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 86605 consists of a one-room fieldhouse. The north, west, and south walls are clearly defined, but it is unclear as to whether the east wall is *in situ* or simply represents a cluster of building stones. Excavations revealed the presence of possibly two unprepared floors that correspond to changes in the soil profile. The upper floor was situated at the base of the masonry walls, whereas the lower floor was located below the walls. No features and only a few artifacts were present on either floor, with bits of charcoal and adobe. The project geomorphologists suggested that the upper floor might date to the Classic period and the lower floor to the Coalition period; however, the radiocarbon and ceramic evidence indicates that the site was probably occupied during the Late Classic period. The presence of maize and the prevalence of storage jars reflect the agricultural function of the site, with limited core reduction and grinding activities also being represented.

CHAPTER 44
RENDIJA TRACT (A-14): LA 86606

Gregory D. Lockard

INTRODUCTION

LA 86606 is the remains of a small structure located on the tip of an east-facing ridge finger in Cabra Canyon, which is located in the northwest extension of the Rendija Tract. The site is located a few tens of m to the west and directly uphill from the end of a two-track dirt road and the Pajarito Trail (Trail #286). Vegetation on the site consists of ponderosa pine with some juniper and scrub oak. The site is situated at an elevation of 2122 m (6960 ft).

LA 86606 was first recorded on March 16, 1992, by Binzen, Hoagland, and Manz as part of the Environmental Restoration Program (McGehee et al. 1992) and given the temporary site number of B-19. The site was believed to be the remains of a one-room structure and an associated rock alignment located approximately 6 m to the west. No artifacts were visible on the surface due to the presence of a thick layer of pine duff.

FIELD METHODS

The excavation of LA 86606 began during the 2004 field season and was completed during the 2005 field season of the Conveyance and Transfer Project. In 2004, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a mound of rubble (designated Area 1) and a short rock alignment a few m to the west (designated Area 2) (Figure 44.1). The rubble mound measured 3 by 3.5 m in area and was approximately 20 cm tall. An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwestern portion of Area 1. The entire site was then covered with a 1- by 1-m grid that extended 4 m north, 2 m south, 7 m east, and 3 m west of the site datum. Four subdata (A-D) were set up for taking elevations. The site was then photographed. The site was not surface collected because no artifacts were visible on the surface.

Excavation of a 5- by 1-m east-west trench (units 101N/102-106E) across the structural remains in Area 1 was begun during the 2004 field season and completed during the 2005 field season. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Grid units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. The room's west wall was encountered in the western half of unit 101N/103E, and the east wall was encountered in unit 101N/105E. Within Room 1, excavation of the trench units proceeded down to a poorly preserved living surface. Outside of the room, the trench units were excavated down to the top of a sterile Bw horizon. The westernmost unit in the trench was chosen to serve as a test pit for geological analysis. Excavation of this unit therefore continued for approximately 90 cm below the top of the sterile soil horizon. No artifacts were recovered during the excavation of this stratum (Stratum 4). The northern profile of the trench was then drawn and photographed.

Figure 44.1. Pre-excavation photograph of LA 86606.

The rest of Area 1 was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 23 units were excavated. Within the structure, excavation proceeded down to the poorly preserved living surface encountered while excavating the trench. Outside of the structure, excavation proceeded down to the top of the sterile soil horizon. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. Area 1 was then mapped (Figure 44.2) and photographed (Figure 44.3). Lastly, the geological test pit was extended to the exterior face of the west wall of Room 1. The purpose of this excavation was to determine the depth of the foundation of the room's walls.

The rock alignment in Area 2, located a few m to the southwest of Room 1 in Area 1, was fully excavated in six units (98-100N/97-98E). Grid units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. Excavation revealed that the rock alignment was a wall, which was designated Feature 1. This wall most likely functioned as a wind break for a possible hearth (see below). After the excavation of the feature was complete, Feature 1 was photographed (Figure 44.4) and mapped (Figure 44.5).

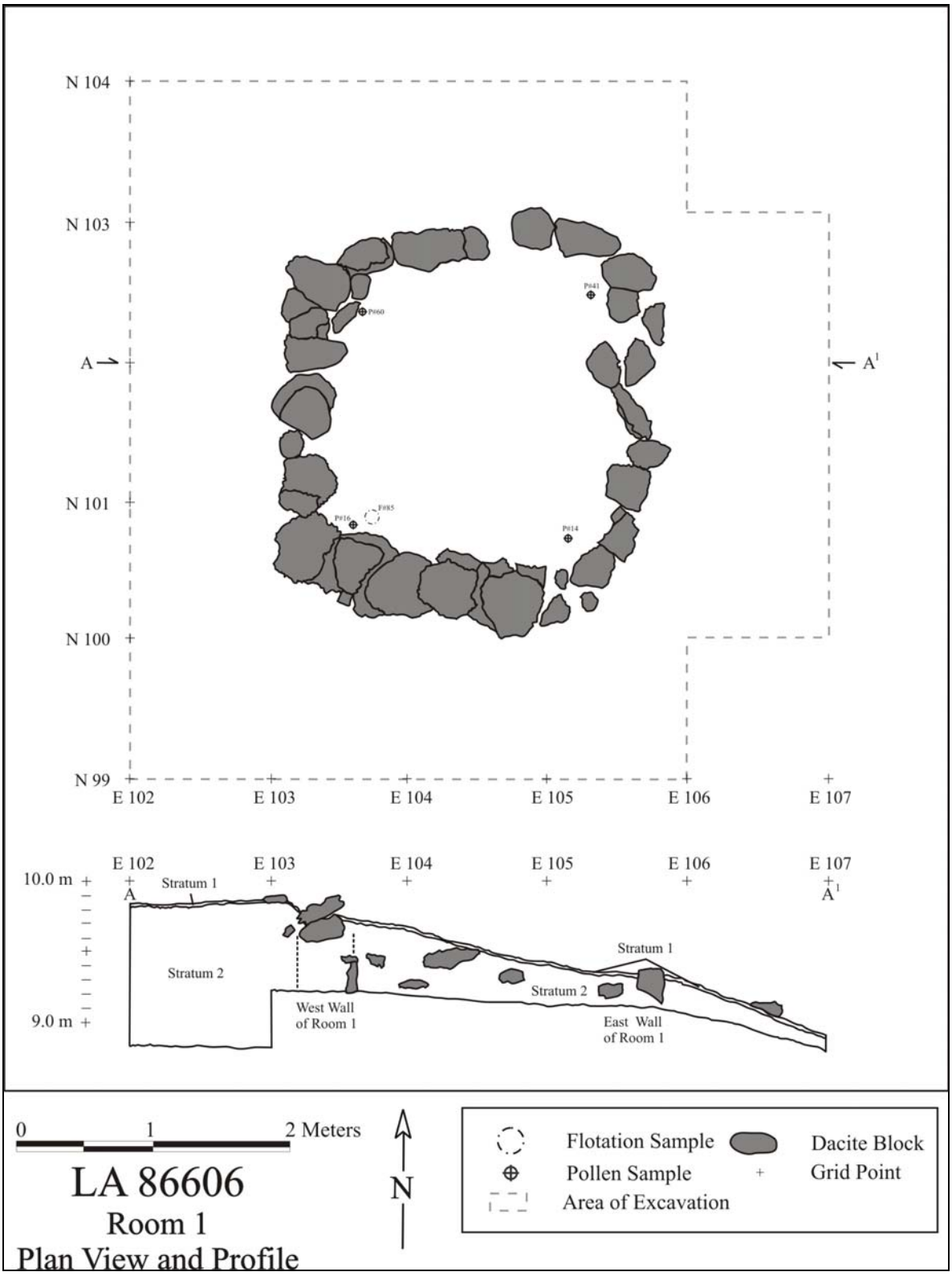


Figure 44.2. Post-excavation plan view and profile map of LA 86606.

Figure 44.3. Post-excavation photograph of the fieldhouse at LA 86606.

Figure 44.4. Post-excavation photograph of Feature 1, a rock alignment.

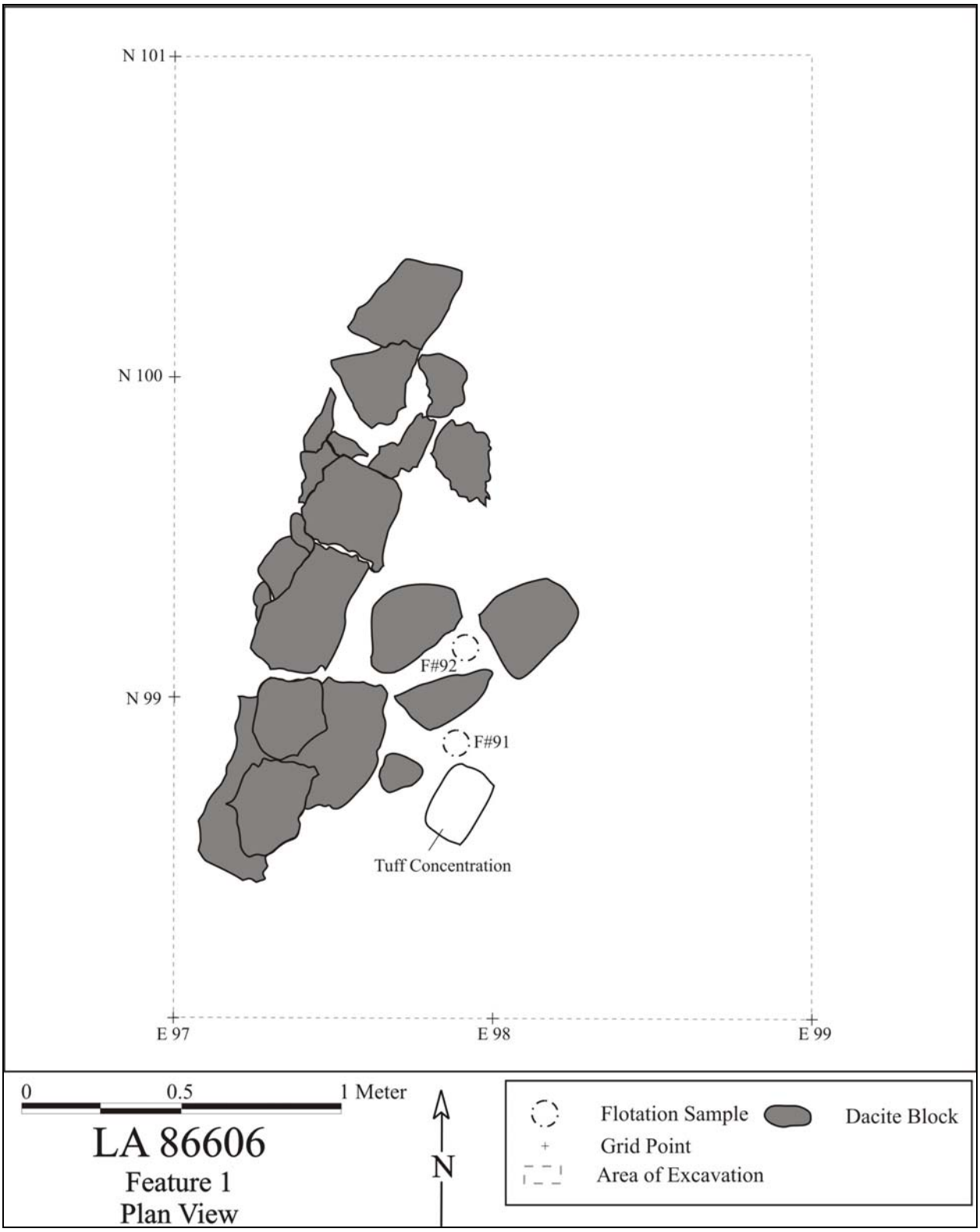


Figure 44.5. Plan view drawing of Feature 1, a rock alignment.

During the 2004 field season, the excavation of the site was supervised by Michael Dilley, and the field crew included Alan Madsen, Sandi Copeland, and Hannah Lockard. During the 2005 field season, the excavation of the site was supervised by Greg Lockard, and the field crew included Michael Dilley, Joseph (Woody) Aguilar, Brandon Gabler, and Samuel Duwe. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners during both field seasons.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 2 to 5 cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 10 to 50 cm in thickness in Area 1 and 10 to 30 cm in Area 2. In Area 1, the post-occupational fill became progressively thinner in the eastern, downhill portion of the area. This was due to erosion of the eastern edge of the ridge finger upon which Area 1 is located. The post-occupational fill was still thicker in the western, uphill portion of Area 1, however, than it was in Area 2 to the west. This was most likely the result of aeolian sediments becoming trapped in the Room 1 wallfall. Stratum 2 corresponds with the upper substrata of the Bw horizon. Stratum 3 is the Room 1 living surface, which was very poorly preserved in all but the southwest corner of the room. Stratum 4 is the sterile soil horizon excavated in the geological test pit (unit 101N/102E) and corresponds with the lower substrata of the Bw horizon. Tables 44.1 through 44.3 describe and summarize the strata excavated at the site.

Table 44.1. LA 86606 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4.5/3	Loamy sand	2–5	Surface sediment
2	10YR 5/3	Loamy sand	10–50	Post-occupational fill
3	10YR 5/3	Clay loam	-	Room 1 living surface
4	10YR 5/4	Sandy loam	90	Middle/late-Holocene soil

Table 44.2. LA 86606 soil horizon descriptions from the north profile of the geological test pit (unit 101N/102E) and its eastern extension (within unit 101N/103E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4.5/3	Loamy sand	0–8	Topsoil
Bw1	10YR 5/3	Loamy sand	8–22	Late-Holocene soil
Bw2	10YR 5/4	Sandy loam	22–36	Middle/late-Holocene soil
Bw3	10YR 5/4	Sandy loam	36–51	Middle/late-Holocene soil
Bw4	10YR 5/3	Loamy sand	51–89	Middle/late-Holocene soil
BCk	10YR 5/3	Loamy sand	89–120+	Middle/late-Holocene soil

Table 44.3. LA 86606 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	0	0	0	**0**
1	26	6	0	3	**35**
2	120	13	10	0	**143**
3	0	0	0	0	**0**
4	0	0	0	0	**0**
Total	**146**	**19**	**10**	**3**	**178**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small structure that probably functioned as a fieldhouse. The shape of the fieldhouse is square with slightly rounded corners. Room 1 measures 2.05 m in length (north to south) by 1.85 m in width (east to west), with approximately 3.79 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the rubble mound in Area 1 (101N/102-106E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's east and west walls. The room's east wall was encountered in unit 101N/105E, and the west wall in unit 101N/103E. A poorly preserved living surface was encountered between the walls. After the excavation of the trench, the rest of the room was excavated down to the living surface encountered in the trench.

Fill. The interior of Room 1 was filled with 2 to 5 cm of surface sediment on top of 25 to 40 cm of post-occupational fill. The fill was thickest just inside the room's west wall and was progressively thinner to the east. A flotation sample (Field Specimen [FS] 45) and a pollen sample (FS 44) were taken from the Room 1 fill, but were not analyzed.

Floor. No prepared floor was encountered during the excavation of Room 1. Excavation of the interior of the room proceeded to a few centimeters above the base of the room's walls. At this level, a compact surface was encountered throughout most of the room. In some locations, the compact surface took the form of a thin layer of dark, ashy sediment. This was most likely the remains of an informal (i.e., not plastered) living surface. A layer of reddish, clay-rich soil was encountered just beneath and surrounding the patches of compact, ashy sediment. When the room was first constructed, this natural surface most likely functioned as the room's living surface. The thin layer of compact, ashy sediment is therefore most likely sediment that accumulated and became compacted during the site's occupation. The flatness of the room's living surface compared to the slope of the surrounding natural hillside indicates that the living surface was most likely leveled to some degree during the room's construction. The living surface therefore appears to have been constructed by first clearing the entire surface of loose sediment and exposing the layer of reddish, clay-rich sediment beneath. Additional sediment was then removed from the western, uphill side of the room to create a level surface.

A flotation sample (FS 17) and a pollen sample (FS 16) were taken from just above the living surface in the southwest corner of the room. The flotation sample was not analyzed, but taxa identified in the pollen sample included rose family, grass family, cheno-ams, sunflower family, ragweed/bursage, fir, unidentified pine, piñon pine, juniper, oak, and sagebrush. Additional pollen samples were taken from about the floor level in the southeast (FS 14), northeast (FS 41), and northwest (FS 60) corners of the room. Taxa identified in these samples included maize, rose family, grass family, birch, cheno-ams, sunflower family, ragweed/bursage, spruce, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Flotation samples were also taken from about floor level in the north-central portion (FS 54) and northwest corner (FS 59) of the room, but these were not analyzed. A well-preserved patch of living surface in the southwest corner of the room was also removed as a flotation sample (FS 85). Charred taxa identified in this sample included purslane, grass family, unidentified pine, and ponderosa pine.

Wall Construction. The extant portions of the Room 1 walls were composed of dacite rocks of various shapes and sizes (Table 44.4). The foundations of the north, south, and west walls were composed of large upright slabs. The base of the interior faces of these walls was formed by the flat surfaces of these slabs. Slabs with flat faces in fact appear to have been specifically chosen as foundation rocks. Almost all of the slabs are sloped slightly outwards, forming an obtuse angle between the living surface and the wall faces. The rocks in the courses above are more irregular in size and shape. Some are long rocks placed on their sides across the top of two or more foundation slabs. The base of the exterior wall faces was composed of adobe that was placed within the acute angle formed by the outward sloping foundation slabs. The east wall was considerably shorter than the other walls. The east wall may simply have been more poorly preserved than the other walls because of its location along the edge of the eroding slope to the east. It is more likely, however, that the east wall of the structure was open. If the site's occupant was farming the land at the base of Cabra Canyon, an opening to the east would have provided an ideal view of this land. If the east wall was not completely open, the room's entryway was most likely located in this wall. The extant portion of the east wall, or at least some portion thereof, therefore most likely represents a short doorsill.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation. In order to estimate the original height of the walls, all of the rocks removed as wallfall during the site's excavation were placed in two stacks, which were then measured. The stacks measured 3.25 by 0.50 by 0.6 m and 3.25 by 0.40 by 0.558 m, for a total of approximately 1.69 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 1.06 m in height. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, only three pieces of burned adobe were recovered from Area 1 (FS 9, FS 74, and FS 77).

Table 44.4. LA 86606 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.70	0.28–0.43	0.17–0.40	1 to 2
South	1.80	0.18–0.52	0.28–0.55	2
East	1.97	0.12–0.30	0.17–0.32	1
West	1.92	0.40–0.67	0.30–0.43	3 to 4

Feature 1 (Area 2)

Feature 1 is a short wall composed of unshaped dacite blocks of varying sizes. The wall was approximately 2 m in length and was two to three courses high. The foundation rocks were placed in a shallow trench dug into the sterile Bw2 horizon. The wall most likely functioned as a wind break. Five large rocks were encountered directly east of the wall. One of these is a dacite block that was placed directly adjacent to the wall. This rock was most likely a later addition that functioned to provide additional support for the base of the wall. Three of the remaining rocks formed a circular alignment. These rocks were most likely a pot rest or the remains of a hearth. A concentration of ash and charcoal was in fact encountered to the south of the three rocks.

In addition, several pieces of burned adobe were recovered from throughout Area 2. The entire area to the east of the wall has been heavily disturbed by rodents, however, and none of the burned adobe was found *in situ*. As a result, the exact location of any hearth that may have existed within Area 2 could not be determined. It may have been in the center of the three rocks. Alternatively, it may have been in the ash concentration to the south, in which case the three rocks were an adjacent pot rest. It could have even been located to the north, between the three rocks and the fifth rock encountered to the east of the wall. If there was a hearth in Area 2, it was almost certainly located to the east of the wall. The wall, therefore, appears to have functioned as a wind break to protect the hearth from easterly winds. A concentration of decomposing, laminar, soft tuff was also encountered along the northern edge of the ash concentration and to the south of the three rocks. This concentration of soft tuff was completely surrounded by post-occupational fill. In addition, nothing of its kind was found elsewhere at the site. As a result, the soft tuff was most likely brought to the site by the person who built and/or last utilized Feature 1. One possible explanation as to its function is that it was meant to be used as temper for ceramics. Lastly, several biscuitware ceramics were recovered from Area 2. This indicates that Feature 1 was contemporaneous (and thus most likely associated) with Room 1.

Two flotation samples and a pollen sample were taken from Feature 1. One of the flotation samples (FS 92) was taken from between the three rocks to the east of the wall. Charred taxa identified in the sample included unknown conifer, mountain mahogany, unidentified pine, ponderosa pine, and oak. The other flotation sample (FS 91) was taken from the area to the south of the three rocks and to the north of the concentration of soft tuff. Charred taxa identified in this sample included mountain mahogany, piñon pine, ponderosa pine, and oak. The pollen sample (FS 93) was taken from the narrow area between the wall and the three rocks, but it was not analyzed. Finally, a sample of the soft tuff (FS 89) was also taken.

Geological Test Pit

Geologists Paul Drakos and Steven Reneau analyzed the north profile of the geological test pit (unit 101N/102E) and its eastward extension (within unit 101N/103E) to reconstruct the natural soil horizons at the site. This profile contained a soil sequence consisting of an A horizon (topsoil), four Bw horizons (a late-Holocene soil and three middle/late-Holocene soils), and a BCk horizon (a middle/late-Holocene soil). The rocks that form the foundation of the west wall of Room 1 extend down into the Bw4 horizon. Just inside the west wall, the room's living surface is at or just above the top of the Bw4 horizon.

Artifact Distribution

The distribution of artifacts within Room 1 is fairly uniform. A greater number of artifacts were recovered from the units to the north and especially west of the room (Table 44.5). This is fairly surprising, as most of the fieldhouses in the Rendija Tract excavated during the Conveyance and Transfer Project had the highest concentration of artifacts to the east of the structure. There is also a tendency for there to be a higher concentration of artifacts on the side of the structure in which the entryway is located. In Room 1, the entryway appears to have been to the east. The lack of artifacts to the east of the structure is most likely the result of site formation processes. The site is located on the tip of a ridge finger. Just east of the structure, the downward slope of the natural surface becomes increasingly steep. As a result, there was very little post-occupational fill to the east of the structure. Most of the artifacts that once existed to the east of the structure have most likely eroded downhill to the east. An additional factor that helps explain the higher concentration of artifacts to the west of the structure is the location of Feature 1. If this feature was indeed a wind break for an outdoor hearth, the area surrounding the hearth was most likely an activity area. More artifacts were recovered from the units to the east of the Feature 1 wall (Table 44.6). The number of artifacts recovered from these units, however, was still smaller than the number of artifacts recovered from the units just west of Room 1 in Area 1.

Table 44.5. LA 86606, Area 1 artifact counts by grid unit.

	E102	E103	E104	E105	E106
N103	22	10	8	8	--
N102	12	**5**	**6**	**0**	0
N101	0	**4**	**2**	**3**	6
N100	15	**3**	**5**	**2**	0
N99	16	7	6	4	--

Note: Bold numbers indicate grid units that are located completely or partially within Room 1.

Table 44.6. LA 86606, Area 2 artifact counts by grid unit.

	E97	E98
N100	1	2
N99	3	8
N98	9	11

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 153 artifacts were analyzed from the excavations conducted at LA 86606. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and the Room 1 living surface (Stratum 3) (Table 44.7). The results of the artifact and sample analyses are presented in the following sections.

Table 44.7. Samples selected for analysis from LA 86606.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	91, 92	14, 16, 41, 60		
3	85			
4				

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 143 ceramics were analyzed from LA 86606. The majority of the pottery consists of smeared plain and smeared-indented corrugated, with some Santa Fe Black-on-white and Biscuitware sherds (Table 44.8). All of the Santa Fe Black-on-white and the single Wingate Black-on-red sherds were derived from Area 1 and the fieldhouse. In contrast, the biscuitwares are present in both Area 1 and Area 2. Therefore, it appears that the site is multi-component, with a Coalition period fieldhouse and a Classic period feature (Feature 1). Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 44.9 to 44.11. The graywares and whitewares appear to have been locally made from tuff temper; however, a single grayware sherd does exhibit granite with mica temper. This latter sherd is presumably associated with the Classic period occupation. The redware sherd also differs by exhibiting non-local sherd and sand temper. All of the grayware ceramics consist of jar vessel forms, while the whiteware and redware sherds derived only from bowls.

Table 44.8. Ceramic types from LA 86606.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	2	1.4

Ceramic Type	Frequency	Percent
Santa Fe Black-on-white	6	4.2
Biscuit A	1	0.7
Biscuit B	1	0.7
Biscuit C	2	1.4
Biscuit B/C body	5	3.5
Northern Rio Grande Utilityware		
Plain gray rim	3	2.1
Plain gray body	5	3.5
Smeared plain corrugated	66	46.2
Smeared-indented corrugated	50	35.0
Alternating corrugated	1	0.7
Cibola Redware		
Wingate Black-on-red	1	0.7
Total	**143**	**100.0**

Table 44.9. Tradition by ware for LA 86606 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Redware			
Rio Grande (Prehistoric)	125	100.0	17	100.0	0	0.0	0	0.0	142	99.3
Rio Grande (Tewa Micaceous)	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0
Cibola	0	0.0	0.0	0.0	0	0.0	1	100.0	1	0.7
Total	**125**	**100.0**	**17**	**100.0**	**0**	**0.0**	**1**	**100.0**	**143**	**100.0**

Table 44.10. Temper by ware for LA 86606 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Redware			
Sherd and sand	0	0.0	0	0.0	0	0.0	1	0.0	1	0.6
Fine tuff or ash	0	0.0	8	0.0	0	0.0	0	0.0	8	5.5
Fine tuff and sand	0	0.0	7	0.0	0	0.0	0	0.0	7	4.8
Mostly tuff with phenocrysts	5	0.0	0	0.0	0	0.0	0	0.0	5	3.4
Anthill sand	119	100.0	0	0.0	0	0.0	0	0.0	119	83.2
Oblate shale and tuff	0	0.0	2	2.0	0	0.0	0	0.0	2	1.3
Granite with mica	1	0.0	0	0.0	0	0.0	0	0.0	1	0.6
Total	**125**	**100.0**	**17**	**100.0**	**0**	**0.0**	**1**	**100.0**	**143**	**100.0**

Table 44.11. Vessel form by ware for LA 86606 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Redware			
Bowl rim	0	0.0	4	23.5	0	0.0	0	0.0	4	2.7
Bowl body	0	0.0	13	76.4	0	0.0	1	100.0	14	9.7

Vessel Form	Ware								Total	
	Gray		White		Glaze		Redware			
Jar neck	6	4.8	0	0.0	0	0.0	0	0.0	6	4.1
Jar rim	6	4.8	0	0.0	0	0.0	0	0.0	6	4.1
Jar body	113	90.4	0	0.0	0	0.0	0	0.0	113	79.0
Total	**125**	**100.0**	**17**	**100.0**	**0**	**0.0**	**1**	**100.0**	**143**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 28 artifacts were analyzed from LA 86606, consisting of a core, 17 pieces of debitage, nine ground stone artifacts, and a hammerstone. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 42.12 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony, with other materials. The presence of cortex on 23.5 percent of the debitage indicates that these materials were collected from waterworn ($n = 4$) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 44.12. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Other	Total
Cores	Core	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Debitage	Angular debris	0	0	0	0	0	0	1	0	0	1	0	0	0	3
	Core flake	1	0	2	2	0	0	1	6	0	1	0	0	0	13
	Core trimming flake	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	1	0	2	2	0	0	2	7	0	3	0	0	0	17
Ground Stone	Two-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Grinding slab	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Und. metate fragment	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Axe	0	0	0	1	0	0	0	0	0	0	0	0	0	1

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Other	Total
	Und. ground stone	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Shaped slab	0	0	3	0	0	0	0	0	0	0	0	0	0	3
	Subtotal	0	0	3	1	4	1	0	0	0	0	0	0	0	9
	Hammerstone	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Other	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total		**1**	**0**	**5**	**3**	**4**	**1**	**2**	**9**	**0**	**3**	**0**	**0**	**0**	**28**

Two pieces of obsidian and a piece of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifacts are made from Cerro Toledo and Bear Springs Peak obsidian (Table 44.13). The Cerro Toledo (Obsidian Ridge/Rabbit Mountain) and Bear Springs source areas are situated about 19 km (12 mi) and 38 km (24 mi) to the southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the nearby mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. The single basalt flake appears to be made of basalt and not dacite.

Table 44.13. Obsidian source samples.

FS #	Artifact	Color	Source
47	Debitage	Translucent	Bear Springs Peak
73	Debitage	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The single core was reduced using a bidirectional, discoidal reduction technique. Table 44.14 presents the metric information on the core.

Table 44.14. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bidirectional	49	54	27	65.4

The debitage mostly consists of core flakes, with a few other items. The overall cortical:non-cortical ratio of 1.00 reflects an equal emphasis on the early and later stages of core reduction. The flakes mostly have single-faceted platforms (n = 4), with fewer cortical (n = 1) and collapsed (n = 2) platforms. None of the platforms exhibit evidence of preparation. The majority of the core flakes are distal fragments (n = 5), with fewer whole (n = 4), proximal (n = 3), and midsection (n = 1) fragments. The whole core flakes have a mean length of 28.5 mm (*std* = 7.5) and the angular debris a mean weight of 2.9 g (*std* = 2.3).

Tool Use

None of the debitage exhibit evidence of edge damage that could be attributed to use. The ground stone items included a mano, metate, and axe. The two-hand mano is a loaf-shaped, elongated tuff cobble with a single flat grinding surface (Figure 44.6). The undetermined metate is a broken fragment of tuff with a single grinding surface. In contrast, the grinding slab is a small piece of dacite with grinding present on the high spots of a single surface. The axe consists of a butt fragment from a full-grooved polished axe (Figure 44.7). The butt does exhibit some battering. Three fragments of a rhyolite slab were classified as the remnants of a possible shaped slab. The undetermined ground stone artifacts are two small pieces of fire-cracked dacite slabs. They both exhibit some grinding on the high spots of a single surface and could be parts of the same artifact (a millingstone?).

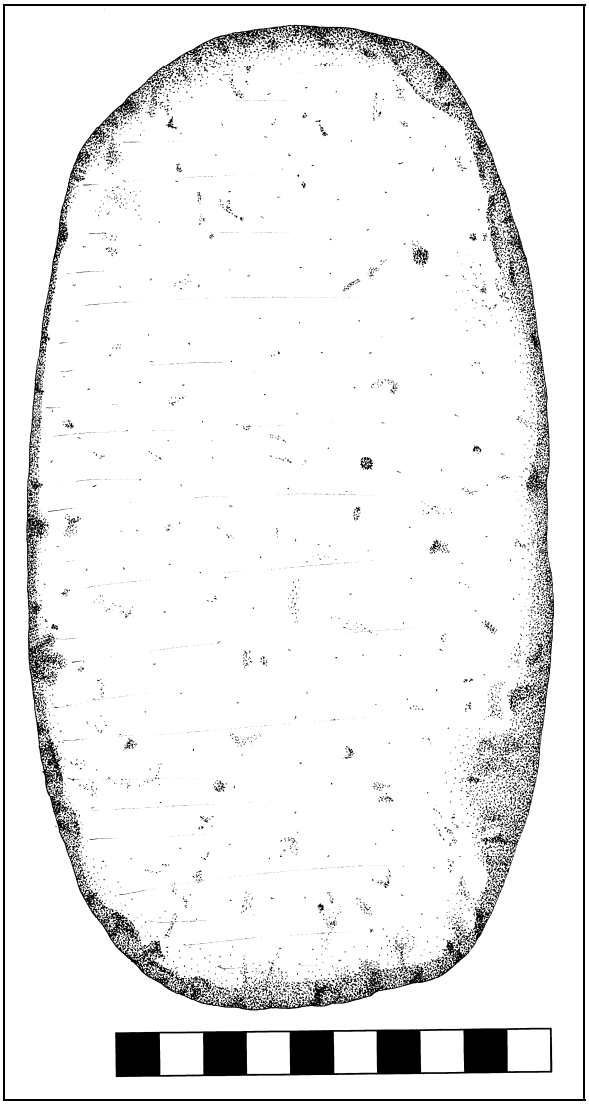


Figure 44.6. Two-hand mano from LA 86606.

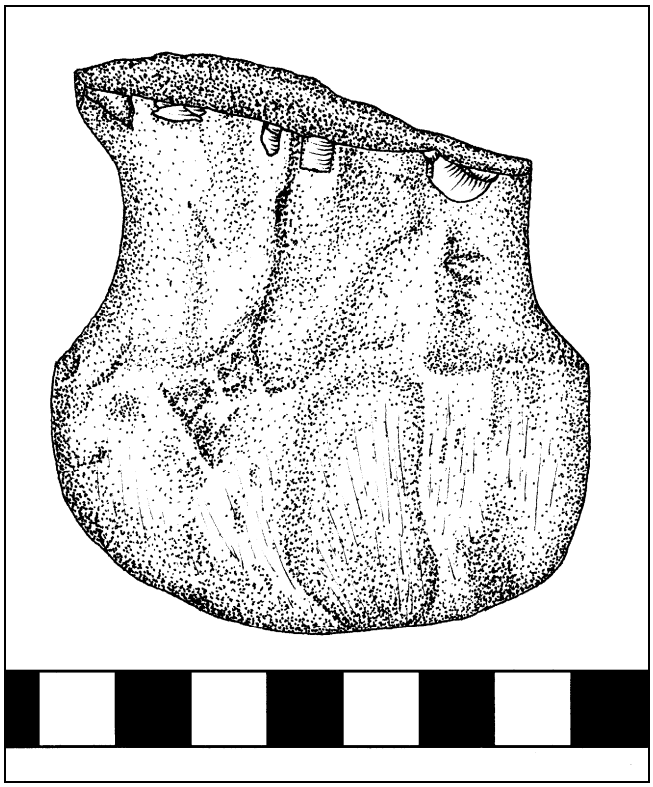


Figure 44.7. Axe fragment from LA 86606.

Faunal Remains (Kari Schmidt)

One piece of bone was recovered from this Classic period fieldhouse. The bone was identified as a heavily burned medium/large-sized mammal long bone fragment and was recovered in the post-occupational fill level (102N/104E).

Archaeobotanical Remains (Pamela McBride)

Carbonized purslane seeds, grass stems, conifer duff, and unidentifiable plant parts were found on a well-preserved patch of the living surface in the southwest corner of the fieldhouse (Table 44.15). An unidentifiable plant part and ponderosa pine needles were recovered from the fill between three rocks that may have been the remnants of an exterior hearth or pot rest next to a hearth. Ashy sediment found south of the three rocks yielded ponderosa pine needles. Ponderosa pine was the only taxon identified from the structure living surface, possibly indicating the identity of a ceiling element. Mountain mahogany was the dominant wood taxon in the ashy sediment and the possible hearth (Table 44.16). Logically, the ashy sediment (possible dump from the hearth) was the most diverse, containing ponderosa pine, piñon, mountain mahogany, and oak.

Table 44.15. Flotation plant remains, count and abundance from LA 86605.

FS No.	85	91	92
Context	Room 1 floor, SW corner	Ashy sediment south of the 3 rocks in Area 2	Fill between 3 rocks east of possible windbreak in Area 2
Cultural			
Annuals			
Purslane	1(1)		
Grasses			
Grass family	culm +		
Other			
Unidentifiable	2(0) pp		1(0) pp
Perennials			
Pine	umbo +		
Ponderosa pine	needle +	needle +	needle +
Non-Cultural			
Annuals			
Goosefoot	+	+	
Grasses			
Dropseed grass	+		

+ 1-10/liter, pp plant part.

Table 44.16. Wood charcoal taxa by count and weight in grams.

FS No.	85	91	92
Context	Room 1 floor, SW corner	Ashy sediment	Fill between 3 rocks east of wall
Conifers			
Pine			1/<0.1 g
Piñon		2/0.2 g	
Ponderosa pine	20/0.8 g	7/0.6 g	
Unknown conifer			4/0.1 g
Non-Conifers			
Mountain mahogany		10/0.6 g	12/0.2 g
Oak		1/0.1 g	3/0.1 g
Totals	**20/0.8 g**	**20/1.5 g**	**20/0.4 g**

Pollen Remains (Susan Smith)

Four pollen samples were analyzed from LA 86606. Table 44.17 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage. No other economic resources were identified in the assemblage. A number of potential economic

resources were also identified in the assemblage (Table 44.17), and these are discussed in detail in Smith's chapter in Volume 3.

Table 44.17. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86606 (*n* = 4)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	2
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	4
		Grass Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86606 (*n* = 4)
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	1
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	0
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86606 (*n* = 4)
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	2
	Pinus	Pine	4
		Pine Aggregates	0
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	3
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	1
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 86606 consists of a one-room fieldhouse and a rock alignment located on a ridge in Cabra Canyon. All four walls were intact and appeared to contain an opening to the east. No floors or prepared surfaces were identified in the fieldhouse. A single linear rock alignment just outside the fieldhouse was the only feature identified. Bits of charcoal and adobe were identified at the site. Ceramic evidence indicates that the fieldhouse was probably occupied during the Late Coalition period and that the rock alignment (Feature 1) likely dates to the Classic period. The presence of maize and the prevalence of storage jars reflect the agricultural function of the site, with limited core reduction and grinding activities also being represented. The site is situated near another Coalition period fieldhouse (LA 86607).

CHAPTER 45
RENDIJA TRACT (A-14): LA 86607

Gregory D. Lockard

INTRODUCTION

LA 86607 is the remains of a one-room Coalition period fieldhouse located on top of a ridge in Cabra Canyon to the northwest of Rendija Canyon. The site is located less than 100 m to the northwest of LA 86606, in the northwest extension of the Rendija Tract. A leg of the Pajarito Trail (Trail #286) passes through and has significantly impacted the site. Vegetation on the site consists of ponderosa pine with some piñon, juniper, and scrub oak. The site is situated at an elevation of 2146 m (7040 ft).

LA 86607 was first recorded on March 16, 1992, by Manz, Hoagland, and Binzen as part of the Environmental Restoration Program (McGehee et al. 1992) and given the temporary site number of B-20. The site was believed to be the remains of a two- to four-room structure. Two indented corrugated utilityware jar sherds and a basalt interior flake were the only artifacts visible on the surface. As Manz, Hoagland, and Binzen note, additional surface artifacts may have been collected by hikers utilizing the Pajarito Trail.

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a mound of rubble measuring 5 by 4 m in area (Figure 45.1). The mound appeared to be the remains of a one-room structure. An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 6 m north and 5 m east of the site datum. Two subdata (A and B) were set up for taking elevations. The site was then photographed. The site was not surface collected because no artifacts were visible on the surface (although one sherd was later recovered from the surface of an excavated grid unit). As mentioned, the paucity of artifacts on the surface of the site may be the result of the collection of artifacts by hikers utilizing the Pajarito Trail, which passes through the site.

A 5- by 1-m east-west trench (units 103N/100-104E) was initially excavated across the remains of the structure, which was designated Room 1. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the room's east and west walls. Grid units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. The room's west wall was encountered in the eastern half of unit 103N/101E, and the remains of the east wall were encountered in the eastern half of unit 103N/103E. Within Room 1, excavation of the trench units proceeded down to a poorly preserved living surface. Outside of the room, the trench units were excavated down to the top of a sterile Btb1 horizon. The westernmost grid unit in the trench was chosen to serve as a test pit for geological analysis.

Excavation of this unit therefore continued for approximately 30 cm below the top of the Btb1 horizon. The northern profile of the trench was then drawn and photographed.

Figure 45.1. Pre-excavation photograph of LA 86607.

The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 23 units were excavated. Within the structure, excavation proceeded down to the poorly preserved living surface encountered while excavating the trench. Outside of the structure, excavation proceeded down to the top of the Btb1 horizon. Excavation focused on defining the structure's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The site was then mapped (Figure 45.2) and photographed (Figure 45.3). Lastly, the geological test pit was extended to the exterior face of the west wall of Room 1. The purpose of this excavation was to determine the depth of the foundation of the room's walls.

The excavation of the site was supervised by Greg Lockard. The field crew included Michael Dilley, Joseph (Woody) Aguilar, Brandon Gabler, Margaret Dew, and Samuel Duwe. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Jeremy Yepa was the site monitor representing Santa Clara Pueblo, as well as an additional excavator.

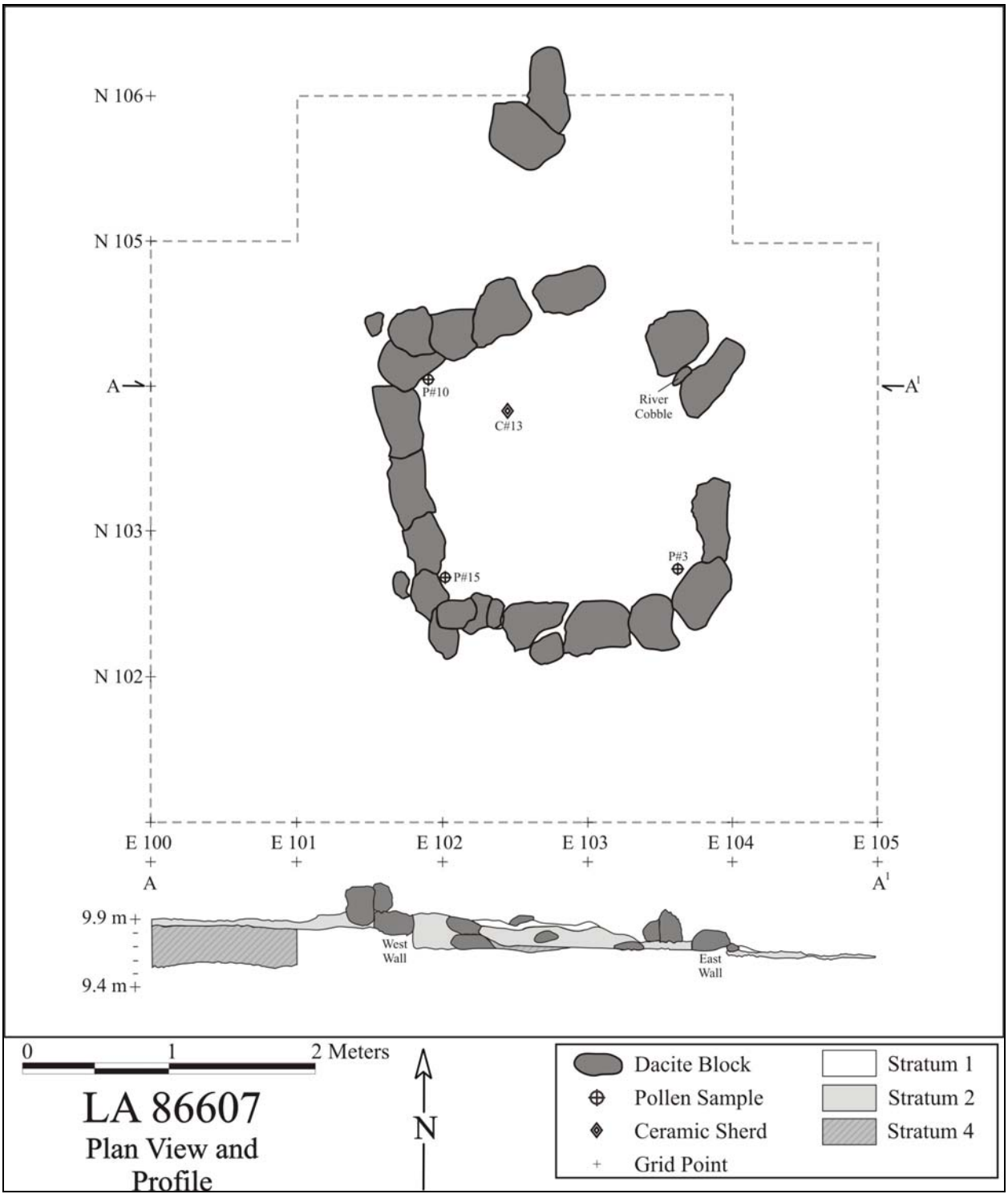


Figure 45.2. Plan view and profile of the fieldhouse at LA 86607.

Figure 45.3. Post-excavation photograph of the fieldhouse at LA 86607.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 1 to 4 cm thick across the site and is part of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 2 to 30 cm in thickness. The post-occupational fill was thickest just inside of the south wall of Room 1 and thinned to the north. Stratum 2 is also part of the A horizon. Stratum 3 is the Room 1 living surface. Stratum 4 is the sterile soil horizon excavated in the geological test pit (unit 103N/100E) and corresponds with the Btb1 horizon. Tables 45.1 through 45.3 summarize and describe the strata that were excavated at LA 86607.

Table 45.1. LA 86607 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4/3	Sandy loam	1–4	Surface sediment
2	10YR 4/3	Sandy loam	2–30	Post-occupational fill
3	7.5YR 5/4	Clay	-	Room 1 living surface
4	7.5 YR 5/4	Clay	30	Pleistocene soil

Table 45.2. LA 86607 soil horizon descriptions from the north profile of the geological test pit (unit 103N/100E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/3	Sandy loam	0–4	Topsoil
Btb1	7.5YR 5/4	Clay	4–33+	Pleistocene soil

Table 45.3. LA 86607 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	1	0	0	0	**1**
1	5	0	0	0	**5**
2	1	0	0	0	**1**
3	1	0	0	0	**1**
4	1	0	0	0	**1**
Total	**9**	**0**	**0**	**0**	**9**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small structure that probably functioned as a fieldhouse. Most of the room's northeast quadrant has been disturbed, presumably by the construction and use of the trail that passes through this area of the site. Nevertheless, it was possible to determine that the room was roughly square in shape. The room measures 2.10 m in length (north to south) by approximately 1.80 m in width (east to west), with approximately 3.78 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the room (103N/100-104E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's east and west walls. The room's east wall was encountered in unit 103N/101E and the west wall in unit 103N/103E. A poorly preserved living surface was encountered between the walls. After the excavation of the trench, the rest of the room was excavated down to the living surface encountered in the trench.

Fill. The interior of Room 1 was filled with 1 to 4 cm of surface sediment on top of 10 to 30 cm of post-occupational fill. The fill was thickest just inside the room's south wall and thinned to the north. A flotation sample (Field Specimen [FS] 5) and a pollen sample (FS 6) were taken of the Room 1 fill, but these samples were not analyzed.

Floor. No prepared floor was encountered during the excavation of Room 1. Instead, the people who constructed the room appear to have utilized the Btb1 horizon as a living surface. The Btb1 horizon is a layer of highly indurated, clay-rich soil that would have made an ideal natural living surface. The top of the Btb1 horizon is fairly flat within the room, despite the fact that it slopes upward to the west outside of the room. The surface is 20 to 25 cm lower just inside of the room's west wall as it is just outside of the wall. The surface is at about the same level, on the other hand, on either side of the east wall. This indicates that the living surface was leveled by

excavating into the Btb1 horizon in the uphill (i.e., western) half of the room. The living surface is slightly convex. It is between 5 and 10 cm lower in the middle of the room than it is along the edges. The living surface is lower than the base of the walls in the western half of the room and significantly lower than the base of the west wall. In addition, there is significant coping between the living surface and the interior wall faces, especially in the northwest and southwest corners of the room. The walls therefore appear to have been constructed before the room's living surface was leveled. At the very least, the rocks that form the base of the walls were not placed on top of the excavated living surface.

A single Santa Fe Black-on-white sherd (FS 13) was encountered directly on top of the living surface in the northwest quadrant of the room. This was the only floor-contact artifact recovered from the site. A pollen sample (FS 3) was taken from near the level of the living surface in the southeast corner of the room, but was not analyzed. Additional pollen samples were taken from directly on top of the living surface in the northwest (FS 10) and southwest (FS 15) corners of the room. Taxa identified in these samples included rose family, mustard family, grass family, cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush.

Wall Construction. The Room 1 walls were constructed of unshaped dacite cobbles. The foundation rocks were placed in a shallow trench dug into the Btb1 horizon. These rocks tended to have flat surfaces that formed the interior wall faces. This was also characteristic of the foundation rocks in Room 1 at LA 86606, which is located nearby. The foundation of the south and west walls was well preserved. The foundation rocks in the western half of the north wall and the southernmost portion of the east wall also appeared to be *in situ*. The walls that form the northeast corner of the room, however, were significantly disturbed by the construction and/or use of a hiking trail that passes through this part of the site. There were two large cobbles in the approximate location of the northeast corner of the room. These rocks probably formed the northernmost portion of the east wall. The location of floor coping in this area indicated that the northern rock was probably *in situ*, while the southern rock was slightly east of its original location. A small, rounded river rock was encountered between these two rocks. This rock was unlike any other rock in the Room 1 walls. It may have therefore been deposited between the rocks after the site's occupation. Alternatively, it may have been utilized as a chinking stone.

There is a gap to the south of the two rocks in the east wall. This gap, which is 70 cm wide, was most likely the room's entryway. There is also a gap of approximately 45 cm to the west of the two rocks in the north wall. This portion of the north wall was probably disturbed by the people who constructed the trail just north of the room. There is in fact an alignment of four large dacite cobbles just north of Room 1 (the two southern rocks in this alignment appear in Figure 45.2). These rocks were placed across the trail as erosion control. It is likely that the rocks were either wallfall or *in situ* foundation rocks removed from the north wall of Room 1. The easternmost rock in the extant portion of the north wall also appeared to have been moved slightly to the north of its original location.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the masonry portions of the room's walls were originally considerably higher than they were at the time of excavation (Table 45.4). In order to estimate the original height of the walls,

all of the rocks removed as wallfall during the site's excavation were placed in two stacks, which were then measured. The stacks measured 2.50 by 0.35 by 0.55 m and 1.70 by 0.40 by 0.50 m, for a total of approximately 0.82 m^3 of wallfall. Based on this volume of wallfall and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portions of the room's walls were originally approximately 0.68 m in height. This is significantly less than the height calculated for most of the Rendija Tract fieldhouses excavated during the Conveyance and Transfer Project.

There are several possible explanations for this lower wall height. First, some of the rocks that formed the room's walls appear to have been removed by the people who constructed the nearby hiking trail. Some even appear to have been utilized in the construction of alignments across the trail designed to reduce erosion. Second, some of the rocks from LA 86607 may have been utilized in the construction of the fieldhouse at LA 86606. The latter is located nearby to and clearly postdates the former. Lastly, the masonry portions of the Room 1 walls at LA 86607 may have simply been shorter than those of the average Ancestral Pueblo fieldhouse in Rendija Canyon. Unfortunately, there is no way to test any of these hypotheses. The uppermost portions of the walls, as well as the ceiling, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, no adobe was recovered from LA 86607.

Table 45.4. LA 86607 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.76	0.08–0.25	0.16–0.32	1 to 2
South	1.76	0.12–0.25	0.13–0.35	1 to 2
East	~1.65	0.08–0.31	0.13–0.30	1
West	1.66	0.04–0.15	0.17–0.28	1

Geological Test Pit

Geologists Paul Drakos and Steven Reneau analyzed the north profile of the geological test pit (unit 103N/100E) and its eastward extension (within unit 103N/101E) to reconstruct the natural soil horizons at the site. This profile contained a soil sequence consisting of an A horizon (topsoil) and a Btb1 horizon (a Pleistocene soil). The profile indicates that the foundation rocks were set approximately 5 cm into the Btb1 horizon.

Artifact Distribution

Very few artifacts were recovered during the excavation of LA 86607. One possible explanation for the lack of artifacts is that many, especially those visible on the surface, were collected by hikers utilizing the trail that passes through the site. The fact that very few subsurface artifacts were recovered, however, indicates that the collection of artifacts by hikers does not completely account for the lack of artifacts at the site. Another possible explanation is that the site was only used for a short period of time. Because of the small number of artifacts recovered from the site,

very little can be said about the artifact distribution. There does appear to be a slight tendency for a greater number of artifacts in the grid units to the southeast, but given the small sample size, this could be incidental. Table 45.5 shows the distribution of artifacts at the site.

Table 45.5. LA 86607 artifact counts by grid unit.

	E100	E101	E102	E103	E104
N105	--	0	0	0	--
N104	0	**0**	**0**	**0**	0
N103	0	**0**	**1**	**0**	2
N102	0	**0**	**0**	**2**	0
N101	0	0	1	2	0

Note: Does not include one artifact found outside of the excavated area during surface collection; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of nine artifacts were analyzed from the excavations conducted at LA 86607. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and the Room 1 living surface (Stratum 4) (Table 45.6). The results of the artifact and sample analyses are presented in the following sections.

Table 45.6. Samples selected for analysis from LA 86607.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**TL***
1				
2	9	3, 10		
3		15		
4				

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of nine ceramics were analyzed from LA 86607. The majority of the pottery consists of Santa Fe Black-on-white and smeared-indented corrugated sherds, which presumably date to the Coalition period (Table 45.7). Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 45.8 through 45.10. The grayware and whiteware pottery appear to have been locally made from tuff temper. All of the grayware sherds consist of jar vessel forms, whereas the whiteware sherds are derived from bowls.

Table 45.7. Ceramic types from LA 86607.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Indeterminate organic	2	22.2
Santa Fe Black-on-white	4	44.4
Northern Rio Grande Utilityware		
Smeared-indented corrugated	3	33.3
Total	**9**	**100.0**

Table 45.8. Tradition by ware for LA 86607 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	3	100.0	6	100.0	0	0.0	0	0.0	9	100.0
Rio Grande (Tewa Micaceous)	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0
Middle Rio Grande	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0
Total	**3**	**100.0**	**6**	**100.0**	**0**	**0.0**	**0**	**0.0**	**9**	**100.0**

Table 45.9. Temper by ware for LA 86607 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff and sand	0	0.0	6	100.0	0	0.0	0	100.0	6	66.6
Anthill sand	3	100.0	0	0.0	0	0.0	0	0.0	3	33.3
Total	**3**	**100.0**	**6**	**100.0**	**0**	**0.0**	**0**	**100.0**	**9**	**100.0**

Table 45.10. Vessel form by ware for LA 86607 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Bowl body	0	0.0	6	100.0	0	0.0	0	0.0	6	66.6
Jar body	3	100.0	0	0.0	0	0.0	0	0.0	3	33.3
Total	**3**	**100.0**	**6**	**100.0**	**0**	**0.0**	**0**	**0.0**	**9**	**100.0**

Archaeobotanical Remains (Pamela McBride)

One fragment of ponderosa pine charcoal weighing less than a tenth of a gram was the sole floral material from post-occupational fill in the structure. The paucity of remains is not surprising considering the impact of trail building (Pajarito Trail #286 passes through the site); some of the rocks that were originally part of the structure walls were probably used to construct the trail and rock alignments that cross the trail, built to control erosion.

Pollen Remains (Susan Smith)

Three pollen samples were analyzed from LA 86607. Table 45.11 lists the frequency of identified pollen types. No cultigens or other economic resources were identified in the botanical assemblage. A number of potential economic resources were also identified in the assemblage (Table 45.11), and these are discussed in detail in Smith's chapter in Volume 3.

Table 45.11. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86607 (*n* = 3)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	3
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	2
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86607 (*n* = 3)
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	3
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	3
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	0
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	0
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 86607 (*n* = 3)
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	1
	Pinus	Pine	3
		Pine Aggregates	0
	Pinus edulis type	Piñon	3
	Juniperus	Juniper	3
		Juniper Aggregates	0
	Quercus	Oak	2
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	2
	Artemisia	Sagebrush	2
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 86607 consists of a one-room fieldhouse located in Cabra Canyon. The south and west walls were intact, while the other walls appear to have been disturbed by the trail that runs through the site. No floors or prepared surfaces were identified in the fieldhouse. Ceramic evidence indicates that the fieldhouse was probably occupied during the Coalition period, with a second Coalition period fieldhouse (LA 86606) being situated nearby. Although no cultigens were recovered, the site was presumably occupied during the growing season when maize was cultivated.

CHAPTER 46
RENDIJA TRACT (A-14): LA 87430

Gregory D. Lockard

INTRODUCTION

LA 87430 is a small one-room Classic period fieldhouse located on the edge of an approximately 15-m-high terrace to the immediate south of the creek in Rendija Canyon. The site is situated less than 100 m east of the western boundary of the Rendija Tract, on a slope of approximately five degrees. The surrounding area is covered with ponderosa pine trees, many of which were severely burned in the Cerro Grande fire. The understory is dominated by several grass and wildflower species. The site is situated at an elevation of 2111 m (6925 ft).

The site was first surveyed on August 7, 1991, by Manz, Parish, Wallace, and Jandacek and given a temporary site number of M37. In the Site Survey Form, they interpret the site as a one-room fieldhouse. A charcoal stain visible in a nearby trail was thought to indicate the possible presence of a hearth. Artifacts encountered during a surface survey included plainware and glazeware sherds and obsidian flakes. On the basis of architecture and the artifacts present, the site was argued to be Ancestral Pueblo (AD 1200–1600).

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth (Figure 46.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was then set up. The site datum could not be placed in the southwest corner of the site, which was common practice, because of the steep escarpment just to the northwest of the site. The site datum was therefore placed in the center of the southern edge of the site. The site was then covered with a 1- by 1-m grid system that extended 7 m north and 8 m east of the site datum, and three subdata (A-C) were set up for taking elevations. Three additional subdata (D-F) were set up at later times. The site was then photographed and surface collected. Two ceramic sherds and a lithic were the only artifacts encountered in the surface collection.

A 5- by 1-m east-west trench was initially excavated across the middle of the rock alignments and wallfall visible on the surface of the site (103N/98-102E). The purpose of this trench was to define and present a profile of the stratigraphy both within and outside of the structure, as well as to determine the location of the east and west walls of the structure. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. During the excavation of grids 103N/98E and 103N/99E, a compact surface was encountered. Excavation within the structure thereafter proceeded down to the level of this compact surface, which was presumed to be a living surface. In the area of the trench to the east of the structure, excavation proceeded down to the top of the sterile Btb1 horizon. The north profile of the trench was then drawn (Figure 46.2) and photographed. The rest of the site was subsequently excavated. In all, 18 units were excavated in their entirety and three additional units were partially excavated.

Figure 46.1. Pre-excavation photograph of LA 87430.

Within the structure, excavation proceeded down to the compact surface encountered in the western portion of the trench, when present. When this compact surface was not encountered, excavation proceeded down to either the top of the sterile Btb1 horizon or the level of the structure's nearest perimeter wall. Outside of the structure, excavation proceeded down to the top of the Btb1 horizon except in the southeast corner of the area excavated. The stratigraphy in this area of the site has been badly disturbed by an uprooted tree. Excavation in this area proceeded down to the level of the top of the Btb1 horizon in the nearest, undisturbed area. Excavation included the removal of rocks that could be clearly identified as wallfall to define the structure's walls and locate any internal or external features.

Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area was extended approximately 1 m to the north, south, and east of the structure to locate external features and identify outside activity areas. The area to the west of the structure could not be excavated because the steep escarpment is directly adjacent to the structure's west wall. The excavations were extended 2 m to the east of the structure to investigate a charcoal lens that turned out to be associated with an external, slab-lined hearth (Feature 1). This area also contained the highest concentration of artifacts at the site. The high concentration of artifacts, coupled with the presence of an external hearth, indicates that the area to the east of the structure was an outdoor activity area. After the excavations were complete, the site was mapped (Figure 46.2) and photographed (Figure 46.3).

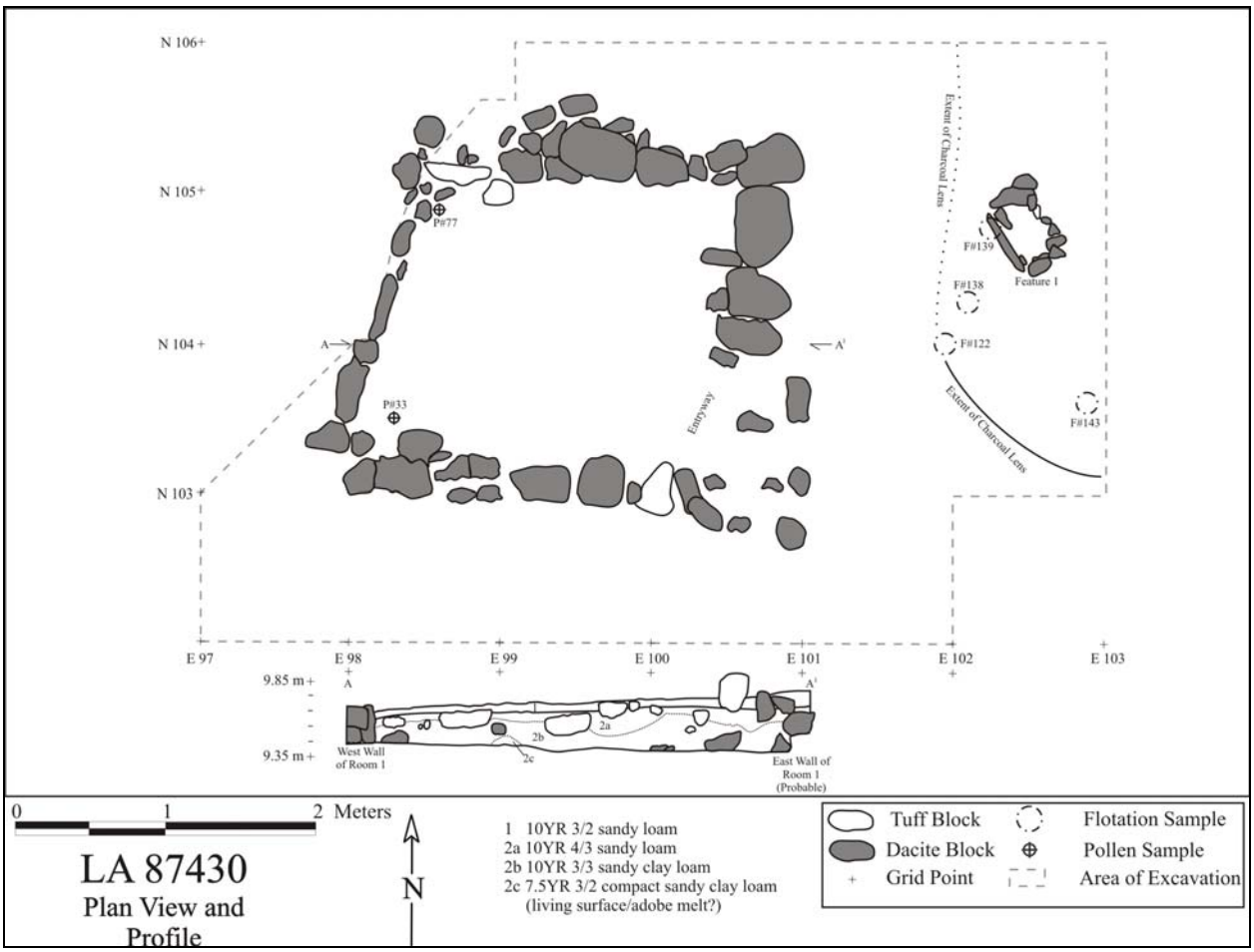


Figure 46.2. Plan view and profile drawing of the fieldhouse at LA 87430.

The excavation of the site was supervised by Greg Lockard. Crewmembers included Joseph (Woody) Aguilar, Brian Harmon, Bettina Kuru'es, and Jennifer Nisengard. Aaron Gonzalez and Michael Chavarria served as site monitors, representing San Ildefonso and Santa Clara pueblos, respectively.

Figure 46.3. Post-excavation photograph of the fieldhouse at LA 87430.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 3 to 5 cm thick across the site and is roughly equivalent to the top half of the A horizon (topsoil). Stratum 2, which ranges from 5 to 20 cm thick in the area excavated, is post-occupational fill. This fill was thickest in and around the structure, especially in the area just south (downhill) of its north wall. Stratum 2 is roughly equivalent to the lower half of the A horizon and the Bw horizon. Stratum 3 is a charcoal lens associated with a slab-lined hearth located to the east of the structure. This lens, along with the hearth, is designated Feature 1. Stratum 4 is the oxidized soil encountered directly beneath some areas of the Stratum 3 charcoal lens. Stratum 5 is the Feature 1 hearth fill. Strata 3, 4, and 5 are cultural strata. Stratum 6 is the unconsolidated soil excavated beneath the Stratum 3 charcoal lens in grid 104N/102E. Stratum 6 is part of the Bw horizon. Beneath the Bw horizon (Strata 2 and 6) is the Btb1 horizon. This horizon is a terrace that most likely dates to the middle Holocene. Beneath the Btb1 horizon is the Bcb1 horizon, which is transitional between the B and C horizons. Tables 46.1 through 46.3 summarize and describe the excavated strata at LA 87430.

Table 46.1. LA 87430 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 3/2	Sandy loam	3–5 (25–45)	Surface sediment (and organic matter and tree throw)
2	10YR 4/3	Sandy loam	15–35	Post-occupational fill
3	10YR 3/2	Sandy loam	8–10	Feature 1 charcoal deposit
4	10YR 4/4	Sandy clay loam	3	Feature 1 oxidized soil below charcoal deposit
5	10YR 4/3	Sandy loam	10	Feature 1 hearth fill
6	10YR 4/3	Sandy loam	10	Below occupation level, east of the Feature 1 hearth

Table 46.2. LA 87430 soil horizon descriptions from the south profile of 103N/102E.

horizon	Color	Texture	Depth (cm)	Description
"C"	-	-	+22–0	Organic material and tree throw
A	10YR 3/2	Sandy loam	0–6	Topsoil
Bw	10YR 4/3	Sandy loam	6–18	Late-Holocene soil
Btb1	10YR 4/4	Sandy clay loam	18–41	Middle-Holocene soil

Table 46.3. LA 87430 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	2	1	0	0	**3**
1	51	3	3	0	**57**
2	378	72	3	0	**453**
3	57	13	1	0	**71**
4	0	0	0	0	**0**
5	3	0	0	0	**3**
6	4	0	0	0	**4**
Total	**495**	**89**	**7**	**0**	**591**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is the only room in a small fieldhouse (see Figure 46.3). The room measures 1.85 m north to south by 2.10 m east to west, with approximately 3.885 m^2 of interior space. Excavation of the room began with the east-west trench that extended across the

site (103N/98-102E). The excavation of this trench served to define the stratigraphy and locate the east and west walls and floor of the room. After the excavation of the trench, the rest of the room was excavated. In the western half of the room, excavation proceeded down to the level of a compact surface presumed to be the room's living surface. In the western half of the room, where this compact surface was not encountered, excavation proceeded down to the top of the Btb1 horizon or to the level of the base of the foundation of the nearest wall. The room was then photographed (see Figure 46.3). The portion of unit 104N/98E was subsequently excavated as a test pit below the presumed living surface. The purpose of this test pit was to determine whether or not there were any floors or additional living surfaces below, as well as to ascertain how deep the foundation of the west wall extends in that location. No floor or additional living surface was encountered, and the wall foundation was found to extend only a few centimeters into the Btb1 horizon.

Fill. The room was filled with 3 to 5 cm of surface sediment and 15 to 30 cm of post-occupational fill. A flotation sample (FS 26) and a pollen sample (FS 25) were taken of Room 1 fill. Charred taxa identified in the flotation sample included ponderosa pine and unknown conifer. Taxa identified in the pollen sample included grass family, cheno-ams, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush.

Floor. Room 1 does not appear to have had a prepared floor (i.e., a purposefully constructed layer of adobe and/or plaster). Nevertheless, a compact surface was encountered in much of the western half of the room. This compact surface appears to be the remains of the room's living surface. When present, it is located directly or only a few centimeters above the top of the sterile Btb1 horizon. This presumed living surface was not encountered in the eastern half of the room. In most of this area of the room, excavation proceeded down to the top of the Btb1 horizon, which is considerably more compact than the room fill. In the far southeast corner of the room, both the living surface and the integrity of the Btb1 horizon have been severely disturbed by an uprooted tree.

No artifacts were found in direct association with the presumed living surface. Two pollen samples (FS 33 and FS 77), however, were taken from directly on top of the surface. One of these (FS 33) is from the southwest corner and other (FS 77) is from the northwest corner of the room. Taxa identified in these samples included maize, grass family, cheno-ams, sunflower family, fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Wall Construction. The walls in Room 1 are composed mostly of dacite cobbles and upright slabs. There are also a few tuff blocks, but only in the upper courses of the walls. All of the foundation rocks are dacite. The foundation rocks are mostly upright slabs in the western half of the room and mostly large cobbles in the eastern half. In most places, the wall is formed by a single row of rocks. In two locations, however, walls are formed by two rows of rocks (i.e., a double wall). In a small section of the western half of the south wall, a large, upright slab backed by two small, flat cobbles form a double wall. In the northwest corner of the room, several rocks form a double wall. A small, flat, upright rock backed by a large upright slab forms the westernmost portion of the north wall, and several small cobbles form the northernmost portion of the west wall.

The west wall of Room 1 is oriented at a slight angle to what it should be if the room was rectangular. If the wall extended northward at a right angle from the southwest corner of the room, however, it could not continue to the north wall because of the escarpment to the northwest of the site. Instead, it is angled inward such that the northwest corner of the room is located just east of the escarpment. This suggests that the escarpment was more or less in the same location when the room was built as it is today. Room 1 was therefore built right on the edge of a significant drop off, presumably to provide a good view of the Rendija Canyon arroyo below.

As mentioned, the southeast corner of the room has been severely disturbed by an uprooted tree. As a result, the rocks that presumably formed the foundation of the eastern half of the south wall have been slightly displaced. The foundation of southern half of the eastern wall may also have been disturbed. No *in situ* rocks were found in this area, despite the fact that the northern half of the east wall is fairly well preserved. The 73-cm-long gap in the southern half of the east wall could alternatively be an entryway. In fact, the usual pattern for prehistoric architecture on the Pajarito Plateau is for entryways to be placed in the east wall of residential rooms, presumably to take advantage of the light from the rising sun. If the gap encountered in the east wall of Room 1 is an entryway, it is almost identical in form to that of the fieldhouse (Room 1) at LA 85403. The entryway to both fieldhouses is in the southern half of the east wall. In addition, the northern boundary of both entryways is marked by a small, short rock. At LA 85403, the entryway's southern border is marked by a rock that forms a very short southern section of the east wall, as well as the southeast corner of the room. Although the southeast corner of the room is disturbed, this also appears to have been the case for Room 1 at LA 87430. Additional upright slabs and dacite cobbles were encountered in the area just east of the presumed entryway. Three of these form a north-south alignment. A fourth is an upright slab oriented east to west. These rocks may be part of an elaborate entryway (similar to that of LA 127634), but are probably wallfall disturbed by the uprooted tree.

The high quantity of wall encountered during the excavation of Room 1 indicates that the masonry portion of the walls were originally considerably higher than they are today (Table 46.4). In order to estimate how much higher, all of the rocks removed as wallfall during the excavation were placed into two stacks for measurement. One of these stacks measured 2.00 by 1.00 by 0.45 m, for a total of 0.90 m^3. The second stack measured 1.80 by 0.80 by 0.40 m, for a total of 0.576 m^3. Based on the combined volume of these stacks of wallfall (1.476 m^3) and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portion of the Room 1 wall was originally only about 107 cm in height (116 cm if the possible entryway is excluded from the wall length total). The upper part of the walls and ceiling were most likely composed of vegetal material and adobe. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. Two small pieces of burned adobe (FS 50 and FS 148) were the only evidence found of such a superstructure.

Table 46.4. LA 87430 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	1.90	0.17–0.40	0.22–0.40	1 to 3
South	~2.15	0.12–0.35	0.13–0.28	1 to 2

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
East	1.37 (2.10)	0.03–0.28	0.14–0.32	1 to 2
West	1.70	0.01–0.30	0.04–0.22	1 to 2

Note: The length of the east wall including the possible entryway is given in parentheses.

Feature 1

Feature 1 is an external slab-lined hearth (Figures 46.4 and 46.5) and associated charcoal lens. The interior of the hearth measures 40 cm northwest to southeast by 26 cm northeast to southwest and is 22 cm deep. Upright slabs form the north, south, and west walls of the hearth. No upright slab was encountered along the eastern border of the hearth.

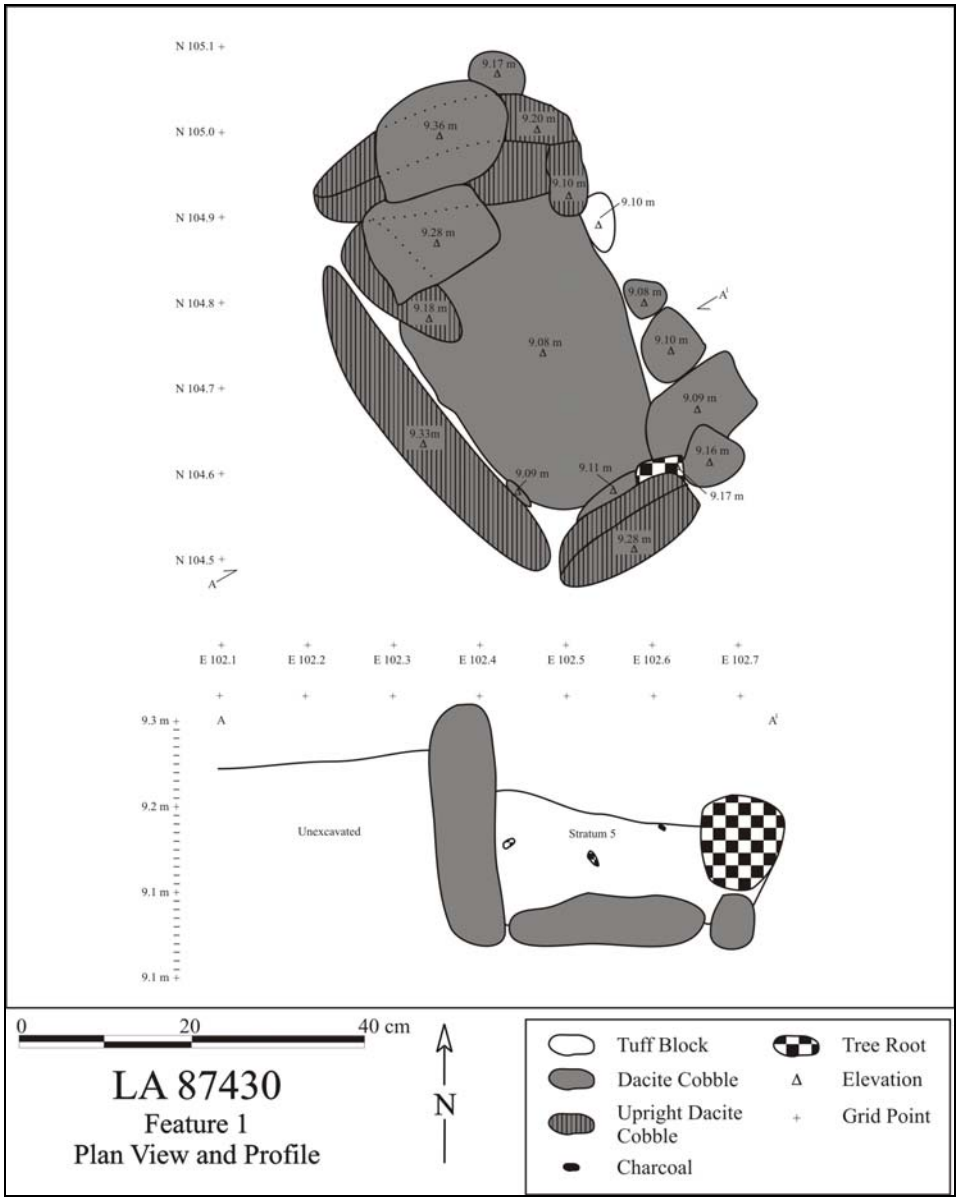


Figure 46.4. Plan view and profile drawing of Feature 1, a slab-lined hearth.

Figure 46.5. Post-excavation photograph of Feature 1, a slab-lined hearth.

The eastern border of the hearth is defined by five small cobbles. The tops of these rocks, however, are significantly lower than the tops of the upright slabs that form the other sides of the hearth. Originally, the cobbles probably functioned as a foundation for an upright slab, or at least a larger rock, that formed the east wall of the hearth. The cobbles are in fact similar in size and elevation to rocks found at the base of the slabs that form the south and west walls of the hearth. The stone that originally formed the east wall of the hearth was probably either removed by someone or displaced by root activity, which has significantly disturbed much of the surrounding area of the site. Several rocks were removed from the fill just above the hearth. Several medium-sized rocks and small cobbles were also recovered from within the hearth. Some or all of these rocks may have once formed the east wall of the hearth. None of the rocks, however, are large slabs similar to those that form north and west walls of the hearth. Some are similar, however, to the smaller slab that forms the south wall of the hearth. A large, flat slab forms the base of the hearth. No adobe or plaster was encountered within or around the hearth. All of the rocks that form the hearth walls and base and the rocks found at lower elevations within the hearth are dacite and show evidence of burning (i.e., a darkened color). The surrounding soil has not been hardened by the burning, however, suggesting that the soil has a low clay content.

Although the hearth fill contained charcoal, it appears to have contained very little ash. More ash and charcoal were encountered in the area surrounding the hearth. This charcoal deposit was

present in a lens as thick as 10 cm directly around the hearth. This charcoal lens was considered to be part of Feature 1 due to its association with the slab-lined hearth. This charcoal lens (Stratum 3) was encountered in the northeast half of grid 103N/102E, all of grids 104-105N/102E, and small portions of grids 103-104N/101E. The charcoal lens also extends into unexcavated areas to the north and east. Its full extent is therefore unclear. Small patches of oxidized soil (Stratum 4) were encountered in some areas beneath the charcoal lens.

All of the fill removed from the hearth (Stratum 5) was kept as flotation (FS 170 to FS 173 and FS 175 to FS 177) and pollen (FS 169 and FS 178) samples. Charred taxa identified in the flotation samples included ponderosa pine, piñon pine, sagebrush, mountain mahogany, maize, beeweed, unknown conifer, unidentified pine, oak, purslane, and Douglas fir. Taxa identified in FS 169, which was taken from near the top of the hearth, included grass family and sagebrush. The other pollen sample (FS 178) was taken from directly on top of the rock that forms the base of the hearth. Taxa identified in this sample included maize, beeweed, grass family, cheno-ams, pea family, sunflower family, spurge family, unidentified pine, piñon pine, juniper, and sagebrush. Flotation samples (FS 138, FS 139 and FS 143) were also taken from the charcoal lens (Stratum 3) surrounding the hearth. Charred taxa identified in these samples included ponderosa pine, beeweed, unknown conifer, maize, unidentified pine, and piñon pine. Lastly, a flotation sample (FS 122) was taken of the oxidized soil (Stratum 4) directly below the charcoal lens and charred taxa included ponderosa pine and oak.

Geological Analysis

No specific unit was excavated as a geological test pit at LA 87430. Instead, geologists Paul Drakos and Steven Reneau analyzed the south profile of grid 103N/102E, the south profile of the sub-floor excavation in grid 104N/98E, and the profile of the escarpment located just to the northwest of the site (see Figure 46.3). Their analysis indicates that the upper portion of the terrace upon which the site was built is composed of a Btb1 horizon overlaying a Bcb1 horizon. As mentioned above, the sub-floor excavation in grid 104N/98E also indicates that the rocks that form the foundation of the Room 1 walls do not extend more than a few centimeters into the Btb1 horizon. Most of the foundation rocks are in fact lying directly on top of this surface.

Artifact Distribution

There are two noticeable trends in the artifact distribution at LA 87430 (Table 46.5). One of these is the result of cultural formation processes, while the other is most likely due to natural formation processes. The first trend is a higher concentration of artifacts to the east of the fieldhouse. By far the highest number of artifacts from any unit was from grid 104N/102E. This unit, located over a meter to the east of the fieldhouse, also contains the Feature 1 slab-lined hearth. Most of the artifacts from this unit are from the charcoal lens that surrounds the hearth (Stratum 3), although a large number of artifacts were also encountered in the post-occupational fill directly above. A high number of artifacts were also recovered from Strata 2 and 3 in the units directly to the north and south. The high number of artifacts and the presence of a hearth and associated charcoal lens to the east of Room 1 suggest that it was an activity area, a midden,

or possibly both. Activity areas are often encountered to the east and/or directly outside the entryways of prehistoric Native American residences. If it was an activity area, the vertical distribution of artifacts into several strata is most likely the result of bioturbation. Tree roots in particular appear to have significantly affected this area of the site. If it was a midden, the depth of the deposits could instead indicate that the site was occupied for a significant period of time. The second trend in artifact distribution at LA 87430 is a higher concentration of artifacts in the northern, downslope half of the site compared to the southern, upslope half. This is most likely the result of erosion, which is a natural formation process.

Table 46.5. LA 87430 artifact counts by grid unit.

	E102	E103	E104	E105	E106	E107
N104		1	41	68	50	48
N103		**23**	**41**	**29**	30	91
N101	2	**8**	**17**	**18**	18	51
N100	12	4	6	4	28	

Note: Does not include one artifact found outside of the excavated area during surface collection; lightly shaded grid units were partially excavated; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 583 artifacts were analyzed from the excavations at LA 87430. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and the floor (Stratum 3) (Table 46.6). The results of the artifact and sample analyses are presented in the following sections. In addition, a maize sample was submitted for radiocarbon dating.

Table 46.6. Samples selected for analysis from LA 87430.

Stratum	Sample Type			
	Flotation	**Pollen**	**Radiocarbon**	**TL***
1				
2	26	25, 33, 77		123
3	138, 139, 143		139	
4	122			
5	170, 171, 172, 173, 175, 176, 177	169, 178	173	
6				

*thermoluminescence

Chronology

Radiocarbon Dating

Two maize samples were submitted for accelerator mass spectroscopy dating. The sample from Stratum 3 provided a date of 370±40 BP (Beta-215552), with a calibrated intercept of AD 1490

and a two-sigma range of AD 1440–1640. It was taken from a charcoal lens that surrounded the Feature 1 hearth. The second sample was taken from the fill of the hearth (Stratum 5). It yielded a date of 390±40 BP (Beta-215553), with a calibrated intercept of AD 1470 and a two-sigma range of AD 1430–1630.

Thermoluminescence Dating

A single Biscuit B sherd was submitted for TL dating from LA 87430 (Table 46.7). All derived ages are given in years BP, which refers to years before 2003. The TL date is about 100 years earlier than the radiocarbon dates, but overlaps at two-sigma.

Table 46.7. TL date from ceramics at LA 87430.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
123	UW1416	North wall Room 1	16	623	6.2	1384±39

Ceramic Artifacts (Dean Wilson)

A total of 487 ceramics were analyzed from LA 87430. The majority of the pottery consists of Sapawe Micaceous, Biscuit B, and Biscuit B/C (Biscuit B?), which presumably reflects a Middle Classic period occupation (Table 46.8). This corresponds with the 15th century radiocarbon date, but not the TL date. Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 46.9 through 46.11. The graywares and whitewares appear to have been locally made from smeared-indented sand or tuff, in contrast to Sapawe Micaceous, which contained a non-local micaceous temper. All of the grayware and most of the micaceous ceramics consist of jar vessel forms. Several micaceous sherds were derived from a bowl(s). The whiteware sherds include mostly bowls, but some jars are present.

Table 46.8. Ceramic types from LA 87430.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	5	1.0
Indeterminate organic	1	0.2
Santa Fe Black-on-white	1	0.2
Wiyo Black-on-white	1	0.2
Biscuit paint and slip absent	1	0.2
Biscuit unpainted one side slipped	1	0.2
Biscuit unpainted both sides slipped	6	1.2
Biscuit painted unspecified	2	0.4
Biscuit A	2	0.4
Biscuit B	10	2.1
Biscuit C	1	0.2
Biscuit B/C body	47	9.7

Ceramic Type	Frequency	Percent
Northern Rio Grande Utilityware		
Plain gray rim	6	1.2
Plain gray body	50	10.3
Smeared-indented corrugated	10	2.1
Mica utility undifferentiated	16	3.3
Sapawe Micaceous	327	67.1
Total	**487**	**100.0**

Table 46.9. Tradition by ware for LA 87430 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	25	100.0	78	100.0	0	0.0	0	0.0	144	29.5
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	384	100.0	343	70.5
Middle Rio Grande	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	**25**	**100.0**	**78**	**100.0**	**0**	**0.0**	**384**	**0.0**	**487**	**100.0**

Table 46.10. Temper by ware for LA 87430 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sherd and sand	5	20.0	3	3.8	0	0.0	0	0.0	5	1.0
Fine tuff or ash	0	0.0	73	93.5	0	0.0	0	0.0	73	14.9
Fine tuff and sand	0	0.0	2	2.7	0	0.0	0	0.0	2	0.4
Anthill sand	20	80.0	0	0.0	0	0.0	0	0.0	20	4.1
Granite with mica	0	0.0	0	0.0	0	0.0	67	17.4	67	13.7
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	317	82.6	317	65.0
Total	**25**	**100.0**	**78**	**100.0**	**0**	**0.0**	**384**	**100.0**	**487**	**100.0**

Table 46.11. Vessel form by ware for LA 87430 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	1	4.0	10	12.8	0	0.0	2	0.5	13	2.6
Bowl rim	0	0.0	1	1.2	0	0.0	5	1.3	6	1.2
Bowl body	0	0.0	41	52.5	0	0.0	1	0.25	42	8.6
Jar neck	1	4.0	3	3.8	0	0.0	7	1.8	11	2.2
Jar rim	0	0.0	1	1.2	0	0.0	19	4.9	20	4.1
Jar body	22	84.0	9	11.5	0	0.0	350	91.1	381	78.2
Miniature pinch pot body	1	4.0	0	0.0	0	0.0	0	0.0	1	0.2
Flared bowl rim	0	0.0	13	16.6	0	0.0	0	0.0	13	2.6
Total	**25**	**100.0**	**78**	**100.0**	**0**	**0.0**	**384**	**100.0**	**487**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 96 artifacts were analyzed from LA 87430, consisting of four cores, 80 pieces of debitage, five retouched tools, and seven ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 46.12 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony and Pedernal chert with other materials. The presence of cortex on 13.7 percent of the debitage indicates that these materials were collected from waterworn (n = 11) sources. The chalcedony, Pedernal chert, and silicified wood are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. The igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 46.12. Lthic artifact type by material type.

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
Cores	Core	0	0	0	0	0	0	0	2	0	2	0	0	0	4
	Subtotal	0	0	0	0	0	0	0	2	0	2	0	0	0	4
Debitage	Angular debris	0	0	0	0	0	0	2	2	0	3	0	0	0	7
	Core flake	0	0	3	2	0	0	1	28	0	26	2	0	0	62
	Biface flake	0	0	0	0	0	0	7	1	0	0	0	0	0	8
	Micro-debitage	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Und. flake	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	Subtotal	0	0	3	2	0	0	10	34	0	29	2	0	0	80
Retouched Tools	Retouched piece	1	0	0	0	0	0	0	0	0	1	0	0	0	2
	Biface	0	0	0	0	0	0	0	0	0	2	0	0	0	2
	Projectile point	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	1	0	0	3	0	0	0	5
Ground Stone	Und. mano	0	0	0	1	0	0	0	0	0	0	0	3	0	4
	Millingstone	0	0	0	1	1	0	0	0	0	0	0	0	0	2
	Abrading stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	2	2	0	0	0	0	0	0	3	0	7
Total		**1**	**0**	**3**	**4**	**2**	**0**	**11**	**36**	**0**	**34**	**2**	**3**	**0**	**96**

Five pieces of obsidian and a piece of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifacts are Valle Grande and Cerro Toledo obsidian (Table 46.13). The Valle Grande (Cerro del Medio) and Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source areas are situated about 17 km (11 mi) and 19 km (12 mi) to the west and southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the nearby mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. The single basalt flake appears to be made of dacite from the Newman Dome source.

Table 46.13. Obsidian source samples.

FS #	Artifact	Color	Source
69	Debitage	Translucent	Valle Grande rhyolite
107	Debitage	Translucent	Valle Grande rhyolite
127	Debitage	Translucent	Valle Grande rhyolite
131	Debitage	Translucent	Cerro Toledo rhyolite
145	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

All four cores were reduced using a single-directional, single-face technique (Figure 46.6). Three of these were classified as still useable when discarded and one as discarded due to a culturally induced fracture. Table 46.14 presents the metric information on the cores.

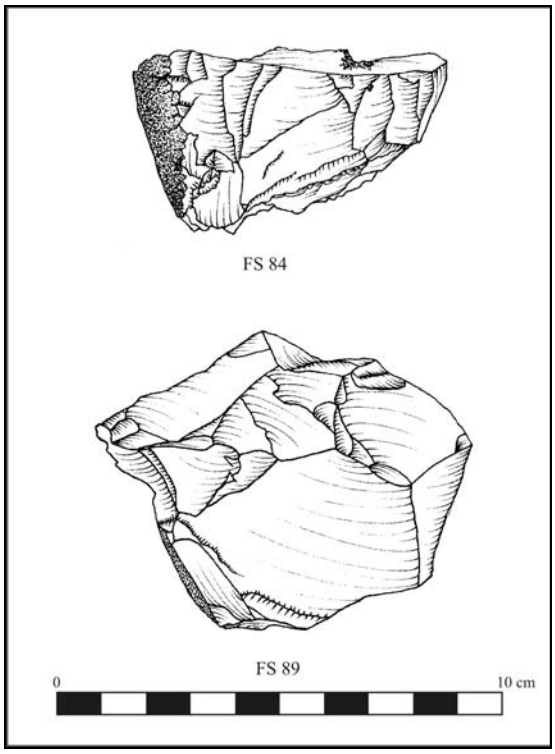


Figure 46.6. Single-directional, single-face cores.

Table 46.14. Core type dimensions (mm) and weight (g).

Core Type	Length (*std*)	Width (*std*)	Thickness (*std*)	Weight (*std*)
Single-directional	42	62	71	222.9
Single-directional	55	53	59	245.9
Single-directional	50	83	65	288.9
Single-directional	60	78	49	255.6

The debitage mostly consists of core flakes, with a few biface flakes and angular debris. The overall cortical:non-cortical ratio of 23.5 reflects an emphasis on the later stages of core reduction and tool production/maintenance. The flakes mostly have single-faceted platforms (n = 29), with fewer cortical (n = 3), multi-faceted (n = 3), collapsed (n = 11), and crushed (n = 5) platforms. Four of the platforms exhibit evidence of preparation by abrasion/crushing. The majority of the core flakes are proximal fragments (n = 24), with fewer whole (n = 21), midsection (n = 2), and distal (n = 15) fragments. In contrast, the biface flakes consist of six proximal and two distal fragments. The whole core flakes have a mean length of 28.6 mm (*std* = 9.4) and the angular debris a mean weight of 4.5 g (*std* = 4.6).

The retouched tools consist of retouched pieces, bifaces, and a projectile point (Figure 46.7). The retouched pieces are two flakes with unidirectional dorsal retouch along a lateral edge with angles of 70 degrees. One of the bifaces was rejected during the early stages of the reduction process with a thickness of 12 mm and edge angle of 70 degrees. It is triangular-shaped with alternate beveled edges. The other biface is a proximal fragment of a knife or spear point. Most of the blade is missing and it appears that the base was being thinned because one side is ground and the other exhibits a series of small retouch flakes. Small notches are present at the shoulder that could have been an attempt to haft the artifact. Lastly, the projectile point is the base fragment of a side-notched arrow point. Metrical and descriptive information on the point is presented in Table 46.15.

Table 46.15. Projectile point metrical (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (g)	Haft Type	Blade Shape	Base Shape
146	Obsidian	Proximal	--	--	7	7	14	3	0.6	Side-notched	Und.	Straight

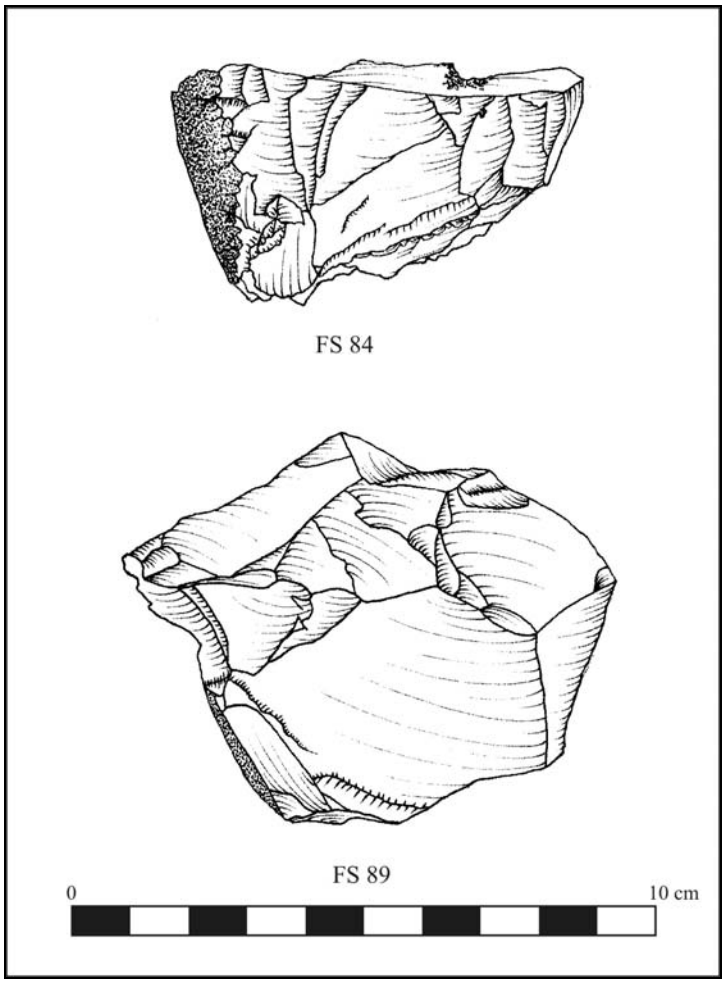


Figure 46.7. Projectile point and bifaces from LA 87430.

Tool Use

None of the debitage exhibit evidence of edge damage that could be attributed to use. Both retouched pieces exhibit rounding and scarring that reflect use and the biface fragment has rounding and polish along the remaining portion of the blade. The ground stone artifacts include a mano, millingstones, and grooved abrader. The manos consist of fire-cracked cobbles with a single grinding surface that probably represent broken one-hand manos. The millingstones are fragments of dacite and andesite with a single flat ground surface. The abrading stone is an odd-shaped dacite cobble with a flat ground surface that exhibits unidirectional striations. It could have been used as a mano, but was classified as an abrading stone due to the irregular shape and wear.

Archaeobotanical Remains (Pamela McBride)

Burned pine needles were the most common plant materials recovered from this Classic period fieldhouse, followed by corn parts (Table 46.16). Besides corn, samples from the hearth yielded

charred goosefoot, purslane, and beeweed seeds. A seed that compares favorably to beeweed was also identified from the charcoal concentration in Room 1. Young beeweed plants were used as greens, eaten much like spinach. The seeds were also dried, ground, and mixed with cornmeal. The leaves of older plants were cooked down until they formed a paste, sun-dried, and made into cakes that could later be eaten with cornmeal mush or fried with fat. Another, more unusual and important use of the reconstituted cakes was as a black pigment for decorating pottery and baskets (Dunmire and Tierney 1995:182–184).

Table 46.16. Flotation plant remains, count and abundance per liter at LA 87430.

FS No.	**26**	**122**	**138**	**139**	**170**
Feature	Room 1, post-occupational fill, strat. 2, Level 3	Oxidized soil under charcoal concentration	Charcoal concentration	Charcoal concentration from Hearth	Hearth fill 104.8N/102.5 E
Cultural					
Annuals					
Beeweed			cf. 1(1)		1(1)
Cultivars					
Maize				1(0) c, 1(1) k	1(0) cf. e
Grasses					
cf. Grass family		+ stem			
Perennials					
Piñon					+ needle
Ponder-osa pine	+ needle	+ needle	+ needle	+ needle	+ needle
Non-Cultural					
Annuals					
Goose-foot	+			+	
Grasses					
Grass family	+				
Perennials					
cf. Dock	+				
Ponder-osa pine	+ needle				

Table 46.16 (continued). Flotation plant remains, count and abundance per liter at LA 87430.

FS No.	**171**	**172**	**173**	**175**	**176**	**177**
Feature	Hearth fill 104.7N/102.57E			Hearth fill 104.85N/102.5E		
Cultural						
Annuals						

FS No.	171	172	173	175	176	177
cf. Beeweed				2(2)		
Goosefoot						1(1)
Purslane		2(2)		1(1)		1(1)
Cultivars						
Maize	1(0) poss. stalk		1(0) c, 1(0) k			
Other						
Unidentifiable			1(0) pp	4(0) pp	1(0) pp	
Perennials						
cf. Douglas fir				+ needle	+ needle	
Piñon			+ needle		+ needle	
Ponderosa pine	+ needle		+ needle	+ needle	+ needle	+ needle
Non-Cultural						
Annuals						
Goosefoot		+			+	
Perennials						
Ponderosa pine		+ needle	+ needle		+ needle	+ needle

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, c cupule, cf. compares favorably, e embryo, k kernel, pp plant part.

Piñon and ponderosa pine dominated the wood assemblage, while mountain mahogany was the most common non-conifer with small amounts of sagebrush and oak also occurring (Table 46.17). Corn, grown in nearby fields, was probably cooked on the hearth, possibly along with goosefoot, purslane, and beeweed. Locally available woods were used as fuel.

Table 46.17. Flotation sample wood charcoal by count and weight in grams.

FS No.	26	122	138	139	143
Feature	Room 1, post-occupational fill, strat. 2, Level 3	Oxidized soil under charcoal concentration	Charcoal concentration	Charcoal concentration from Hearth	Charcoal lens in hearth
Conifers					
Pine				2/<0.1 g	
Piñon					4/0.3 g
Ponderosa pine	6/0.7 g				2/1.3 g
Unknown conifer	1/0.1 g		6/0.1 g	2/<0.1 g	11/0.3 g
Non-Conifers					
Oak		11/0.2 g			
Totals	**7/0.8 g**	**11/0.2 g**	**6/0.1 g**	**4/<0.1 g**	**17/1.9 g**

Table 46.17 (continued). Flotation sample wood charcoal by count and weight in grams

FS No.	170	171	172	173	175	176	177
Feature	Hearth fill 104.8N/102.5E	Hearth fill 104.7N/102.57E			Hearth fill 104.85N/102.5E		
Conifers							
Pine		2/<0.1 g	3/0.2 g	1/<0.1 g			
Ponderosa pine	7/0.5 g	9/0.2 g		3/0.1g	9/0.1 g	8/0.2 g	13/0.4 g
Unknown conifer	6/0.7 g	3/<0.1 g	17/0.8 g	14/0.5 g	6/0.1 g	5/0.1 g	
Non-Conifers							
Mountain mahogany	1/<0.1 g	2/<0.1 g		1/<0.1 g	1/<0.1 g		2/<0.1 g
Oak		4/<0.1 g					
cf. Sagebrush	1/<0.1 g						
Totals	**15/1.2 g**	**20/0.2 g**	**20/1.0g**	**19/0.6 g**	**16/0.2 g**	**13/0.3 g**	**15/0.4 g**

Pollen Remains (Susan Smith)

Five pollen samples were analyzed from LA 87430. Table 46.18 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage. Beeweed was the only other economic resource that was identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 46.18), and these are discussed in detail in Smith's chapter in Volume 3.

Table 46.18. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 87430 (*n* = 5)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	2
	Zea Aggregates	Maize Aggregates	1
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 87430 (*n* = 5)
	Cleome	Beeweed	1
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	0
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	4
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	2
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	1
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 87430 (*n* = 5)
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	0
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	1
	Pinus	Pine	4
		Pine Aggregates	0
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	3
		Juniper Aggregates	0
	Quercus	Oak	0
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	1
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 87430 (*n* = 5)
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 87430 consists of a one-room fieldhouse and a slab-lined hearth. All four walls were intact and appeared to contain an opening to the east. A formal floor was not identified, but the fieldhouse did contain a compact surface. The slab-lined hearth contained bits of charcoal. Ceramic and radiocarbon evidence indicate that the fieldhouse was probably occupied during the Middle Classic period. The presence of maize and the prevalence of storage jars reflect the agricultural function of the site. This is supported by the limited core reduction represented in the lithic assemblage and by the grinding activities.

CHAPTER 47
RENDIJA TRACT (A-14): LA 99396

Brian C. Harmon

INTRODUCTION AND SITE SETTING

LA 99396 is a multicomponent site consisting of an Archaic period lithic artifact scatter and a Coalition period one-room fieldhouse. The site is situated on the broad, open southeast-facing slope of a saddle (Figure 47.1). The site covers an area of about 1385 m^2 and is at an elevation of 2110 m (6925 ft). Headwater cutting of several small washes has created an area of shallow erosion across much of the southeast portion of the site. While located within piñon-juniper woodland, the site itself is relatively clear of trees. The Cerro Grande fire did not impact this site.

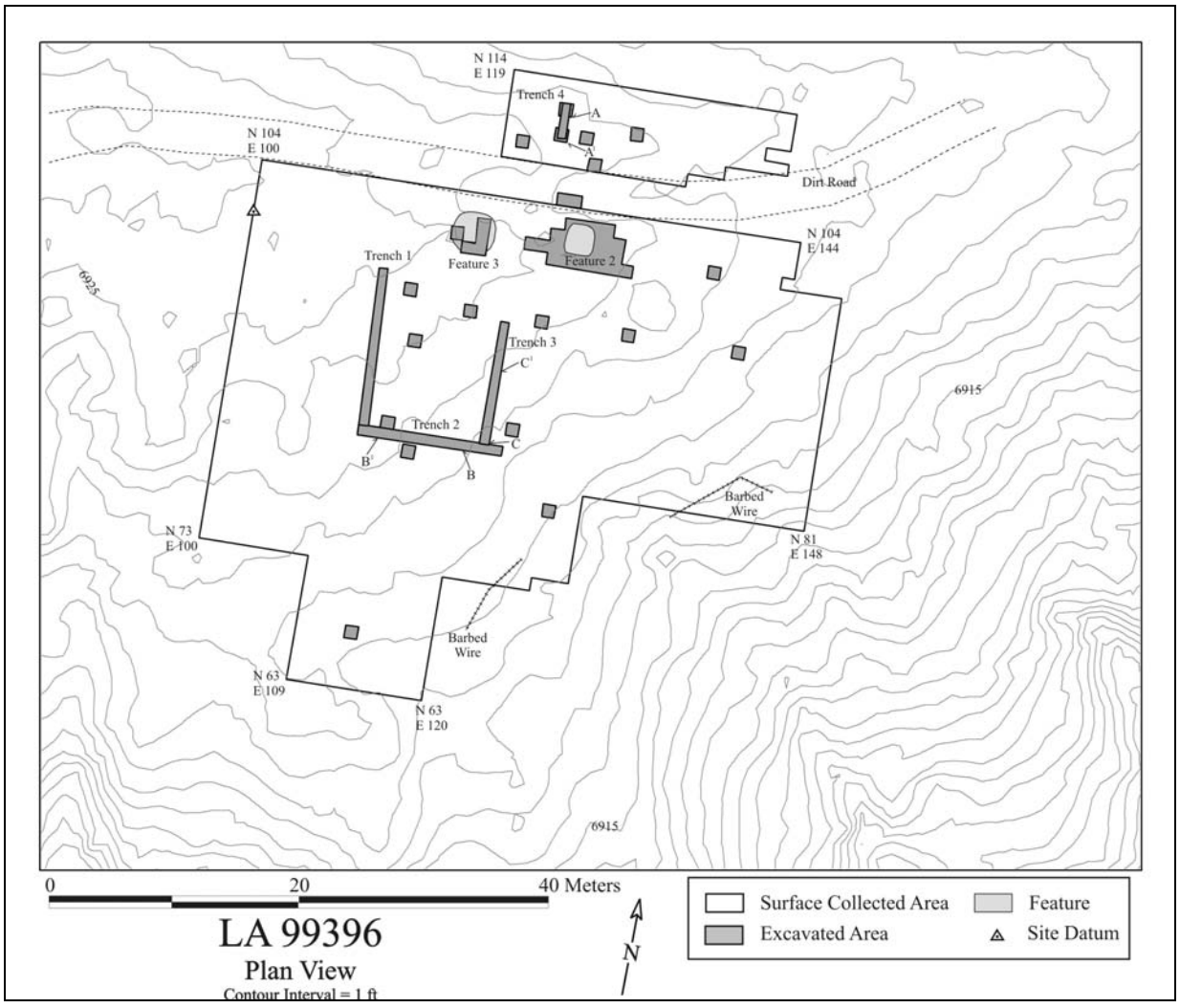


Figure 47.1. Plan view drawing of LA 99396.

The soil at LA 99396 is part of the Rendija-Bayo complex; a complex that "contains deep, well-drained soils weathered from materials derived from tuff (Rendija series) or pumice (Bayo series)," (Nyhan et al. 1978:54). The local stratigraphy consists of 2 to 37 cm of late-Holocene eolian and colluvial deposits overlying late-Pleistocene or early-Holocene eolian deposits. At the northern end of the site, Cerro Toledo or Guaje pumice (Qct or Qbog) underlies the Pleistocene deposits at about 120 cm below the surface. In the southern and central parts of the site, pumice is found 8 to 24 cm below the surface.

A dirt road runs through the northern portion of the site. This road appears to have been bladed in areas and is cut into the late-Pleistocene/early-Holocene deposits. A dirt bike track is present on the slope and valley north of the site. The edge of an old open-pit pumice mine defines the southern and southeastern boundaries of the site. In recent years the site has been used as an informal shooting range; many bullet cartridges, skeet fragments, metal and plastic fragments, and other debris are found within several meters of the dirt road. This site is located within the boundaries of the Serna Homestead patent (see Chapter 32, this volume).

SITE DESCRIPTION

The lithic artifact scatter covers an area of approximately 1385 m^2 and consists mostly of obsidian debitage. Several biface fragments, including four projectile point bases, and ground stone artifacts were also recovered. These artifacts are in a reworked context.

The one-room structure (Feature 2) is partially subterranean: a shallow pit was excavated into the late-Pleistocene/early-Holocene deposits and this forms the living surface of the structure. The walls were built of unshaped dacite and tuff cobbles. None of the walls are standing but the cobbles are still present in the form of two low mounds; one (Feature 1) directly overlays the excavated portion of the structure and the second (Feature 3) is located 7 m to the west. A light scatter of ceramic sherds and ground stone artifacts is present in and around Feature 2.

No homestead era artifacts were recovered during excavation, but the remains of a barbed wire fence, which probably marked the Serna Homestead patent boundary, is present along the southeast edge of the site.

PREVIOUS INVESTIGATIONS

LA 99396 was first recorded in 1992 by Peterson and Nightengale (1993:208–212) for the Bason Land Exchange Project. Their work consisted of mapping, infield analysis, surface collection, and shovel testing. Hoagland et al. (2000:7–38) summarized Peterson and Nightengale's results:

> Testing included 10 shovel tests, a 1- by 23.5-m-long artifact collection transect across the center of the site, plus a site-wide infield analysis of 157 [lithic] artifacts. Ceramics, all from surface finds, amounted to only three sherds: one Biscuit A, one Pajarito smeared-indented, and one gray utilityware. The majority of lithic materials

> collected from this site consisted of obsidian debitage including 15 [sic, 16] flakes recovered from [six of] the shovel tests. The few pieces of debitage that were not obsidian include a tertiary flake of a gray opaque material as well as four tertiary flakes, two secondary flakes, and two angular pieces of chalcedony. In addition to this, a broken basalt point base, that was thought to be from a Bajada projectile point, was collected. All but one of the pieces of debitage are the result of secondary or tertiary reduction suggesting that partially reduced materials were transported to the site where they were further reduced in the course of chipped stone tool manufacture and/or to obtain flakes as expedient tools. Utilized or retouched flakes comprise about 4 percent of the site debitage.

Peterson and Nightengale also recorded two small rock concentrations immediately south of the dirt road. The westernmost concentration (our Feature 3) was recorded as being approximately 3 m in diameter, and the other (our Feature 1) as approximately 1.5 m in diameter. One test unit was placed immediately south of Feature 3 and encountered the Btb1 horizon 5 cm below surface. No artifacts were found. A second test unit was placed in the center of the eastern concentration and encountered the Btb1 horizon at 20 cm below surface. One obsidian flake was found. On the basis of these tests Peterson and Nightengale (1993:208) concluded that the concentrations "were probably formed in the course of road construction and maintenance". The Los Alamos National Laboratory Cultural Resources Management Team visited LA 99396 in 2000 during the Cerro Grande Fire Assessment Project (Nisengard et al. 2002).

FIELD METHODS

Most of the work reported here took place between September 29 and December 10, 2003, although the site was sporadically visited until January 15, 2004. The crew consisted of Steven Hoagland (crew chief), Brian Harmon (assistant crew chief), Maria Jonsson, Michael Kennedy, Bettina Kuru'es, and Alan Madsen. Aaron Gonzales was the San Ildefonso tribal monitor. Leo Martinez operated the bobcat during trenching operations.

A grid was laid out at the site based on magnetic north. Investigations began with a ground penetrating radar (GPR) survey with the goal of locating potential cultural deposits associated with the lithic artifact scatter. The area between 77 to 100N and 111 to 130E was surveyed. Several anomalies were found and, in the course of excavation, four units (81N/127E, 82N/115E, 91N/114E, and 99N/124E) were dug to investigate these anomalies. No cultural features were encountered in these excavations and additional anomalies were not investigated. The GPR anomalies are interpreted to be variations in pumice depth, variability in soil characteristics, etc.

After the GPR survey, a surface collection was made of 100 percent of the artifacts within the estimated site boundaries. Collection did not take place in the dirt road. Artifacts were collected in 1- by 1-m grid units and 1566 units were included in the surface collection.

Significant erosion has occurred in the southeastern part of LA 99396. For this reason, initial excavations focused on the high areas of the site, where it was thought that intact cultural deposits would most likely be encountered. The high areas are 84-102N/113-118E and 106-

110N/120-130E. No intact cultural deposits were found. Later, several units were placed in the eroded area. Intact cultural deposits were not found here, either. Additional excavations focused on the two rock piles south of the road. Five excavation units placed in the western rock pile (Feature 3) demonstrated that it was not associated with any subsurface cultural deposits. However, the subterranean remains of a one-room structure (Feature 2) were found below the eastern rock pile (Feature 1). Initially, Feature 2 was thought to be the remains of an Archaic structure unassociated with Feature 1 (hence the separate feature numbers). The entire fill of Feature 2 was saved as flotation and pollen samples. When several ceramic sherds were encountered in the fill of the hearth, it became obvious that this was a Puebloan structure.

While Feature 2 was being excavated, an ashy deposit was observed in the road just north of the structure. Units 104N/124-125E were opened and a hearth (Feature 5) was discovered. The remains of a possible post (Feature 4) were found immediately north of Feature 2. These discoveries suggested the possibility of additional exterior features, so a 24-m^2 area was opened around the structure. No additional features were found.

After excavation, four trenches (Table 47.1.) were dug by backhoe to make long profiles of the site stratigraphy visible. Trenches 1 to 3 were placed to explore the west-central portion of the site. Trench 4 was dug to explore the high area north of the road.

Table 47.1. Trench dimensions.

Trench #	Coordinates		Dimensions	
	From	To	Length (m)	Width (m)
1	83.2N 111.3E	96.8N 110.7E	13.6	0.80
2	83.2N 111.3E	83.2N 123E	11.7	0.80
3	84N 121E	94N 121E	10	0.80
4	109.2N 123.2E	112N 123.2E	2.8	0.80

STRATIGRAPHY

The general stratigraphic sequence at LA 99396 consists of late-Holocene eolian and colluvial deposits overlaying late-Pleistocene or early-Holocene eolian deposits that, in turn, overlay Qct or Qbog pumice (see Chapter 57, Volume 3). During excavation, variations within soil horizons were given different stratum numbers. Table 47.2 summarizes the strata at LA 99396. Table 47.3 lists the artifact count by stratum.

Table 47.2. Stratigraphic sequence used during excavation.

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
Entire site	0	7.5-10YR 4-5/3-4		0	surface
Entire site	1	7.5-10YR 4-5/3-4	sandy to silt loam, loamy sand	1–10	A horizon, loose consistency

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
Entire site	2	7.5-10YR 4-5/3-4	sandy to silt loam, loamy sand	1–27	A horizon, soft consistency
Central and south part of site	3	5-7.5YR 3-5/2-4	silty clay	5–10	Btb1 horizon, same depositional unit as Stratum 10
Central and south part of site	3A	7.5YR 4/3.5	silty clay	1–8	Bt2b1 horizon, same depositional unit as Stratum 10A
Entire site	4	7.5YR 3/3 8.75YR 4/3	sandy to silt loam	11–21	Bk1b1 horizon
Entire site	5	8.75YR 3/3	sandy loam	16+	Bk2b1 horizon
Entire site	6	7.5YR 4/4	sandy clay loam	13–20	Bwb1 horizon, swale fill
Entire site	7	7.5YR 5/3	sandy loam	10–12	Bkb1 horizon, swale fill
Eastern half of site	8	7.5YR 4-5/6	silt loam	5–12+	Variant of Stratum 4, less compact
Entire site	9	7.5YR 7/3 and 4/4	pumice and sandy clay loam	8+	R and 2Btb2, Qct or Qbog pumice and deposits
North edge of site	10	7.5-10YR 4-5/3 (7.5YR 4/3)	silty clay loam	5–16	Bt1b1 horizon, same depositional unit as Stratum 3
North edge of cite	10A	7.5YR 4/3	silty clay loam	15–20	Bt2b1 horizon, same depositional unit as Stratum 3A
Feature 2	11	10YR 5/3-4	sandy loam	6–15	Bw horizon, fill of the feature
Feature 2	12	NA	NA	NA	Floor surface
Feature 5	13	7.5YR 2.5/1	silty clay loam	2–5	Upper fill of hearth
Feature 5	14	7.5YR 2.5/1	sandy loam	1–2	Lower fill of hearth
Entire site	15	7.5YR 5/4	silt loam	1–7	Possibly

Provenience	Stratum	Color	Texture	Thickness (cm)	Description
					disturbed Stratum 3 or 4
Feature 7	16	7.5YR 3/2	clay loam	8	Hearth fill
Feature 2	17				Combined with Stratum 11
Entire site	18	8.75YR 5/3	silt loam	21–38	Btkb1 horizon

Table 47.3. Artifact count by stratum.

Stratum	Ceramics	Chipped Stone	Ground Stone	Total	Volume of Stratum Excavated (m^3)	Artifacts per cubic meter
0	32	625	2	659	NA	NA
1	12	136	1	149	1.39	107.19
1/2	0	52	1	53	.49	108.16
2	24	461	3	488	3.68	132.61
2/5	0	4	0	4	.14	28.57
3	0	13	0	13	.49	26.53
3A	0	0	0	0	.13	0
3/4	0	0	0	0	.07	0
4	0	0	0	0	.14	0
4/5	0	0	0	0	.10	0
5	0	0	0	0	0	0
6	0	1	0	1	.29	3.45
7	0	0	0	0	.11	0
8	0	4	0	4	.47	8.51
9	0	0	0	0	.21	0
10/10A	0	9	0	9	.74	12.16
11/17	0	75	2	77	.48	160.42
12	0	0	0	0	0	0
13/14	2	0	0	2	.03	66.67
15	0	0	0	0	0	0
16	15	12	0	27	.02	1350.00
18	0	0	0	0	0	0
Total	**85**	**1392**	**9**	**1488**	**8.98**	**NA**

The uppermost soil horizon across the site is a late-Holocene A horizon consisting of eolian and colluvial deposits. During excavation, the A horizon was divided into two strata based on consistency: Stratum 1 consisted of loose surface sediments and Stratum 2 consisted of underlying soft sediments. Although there is considerable variation in the thickness of these two strata, Stratum 1 was usually about 3 cm thick and Stratum 2 was usually about 8 cm thick. Strata 1 and 2 were probably deposited within the last 1000 years.

In most places, the A horizon is underlain by late-Pleistocene or early-Holocene eolian deposits. The uppermost of these deposits is a truncated Bt1b1 horizon. This truncation indicates erosion at LA 99396 some time during the Holocene before the deposition of Strata 1 and 2. In the field, this horizon was divided into two strata (Stratum 3 and Stratum 10) based on textual, structural, and consistency differences. In Drakos and Reneau (Volume 3, Chapter 57 and Appendix L), the Bt1b1 horizon in LA 99396-1 is an example of Stratum 3; the Bt1b1 horizon in LA 99396-4 is an example of Stratum 10. Stratum 3 was encountered south of 108N, while Stratum 10 was found north of 108N. Strata 3A and 10A are Bt2b1 horizons.

Stratum 3 and 10 are underlain by sterile Bk and Btk horizons (Volume 3, Chapter 57). The deepest of these late-Pleistocene or early-Holocene deposits occur on the northern part of the site (Figure 47.2). A piece of wood charcoal (Field Specimen [FS] 774) from the Btkb1 horizon (Stratum 18) in Trench 4 was submitted for radiocarbon analysis. This sample returned an age of 33660±320 BP (Beta-199381). In the southern portion of the site, sterile horizons are considerably shallower (Figures 47.3 and 47.4). Across the site, the late-Pleistocene or early-Holocene soils are underlain by Cerro Toledo or Guaje pumice deposits.

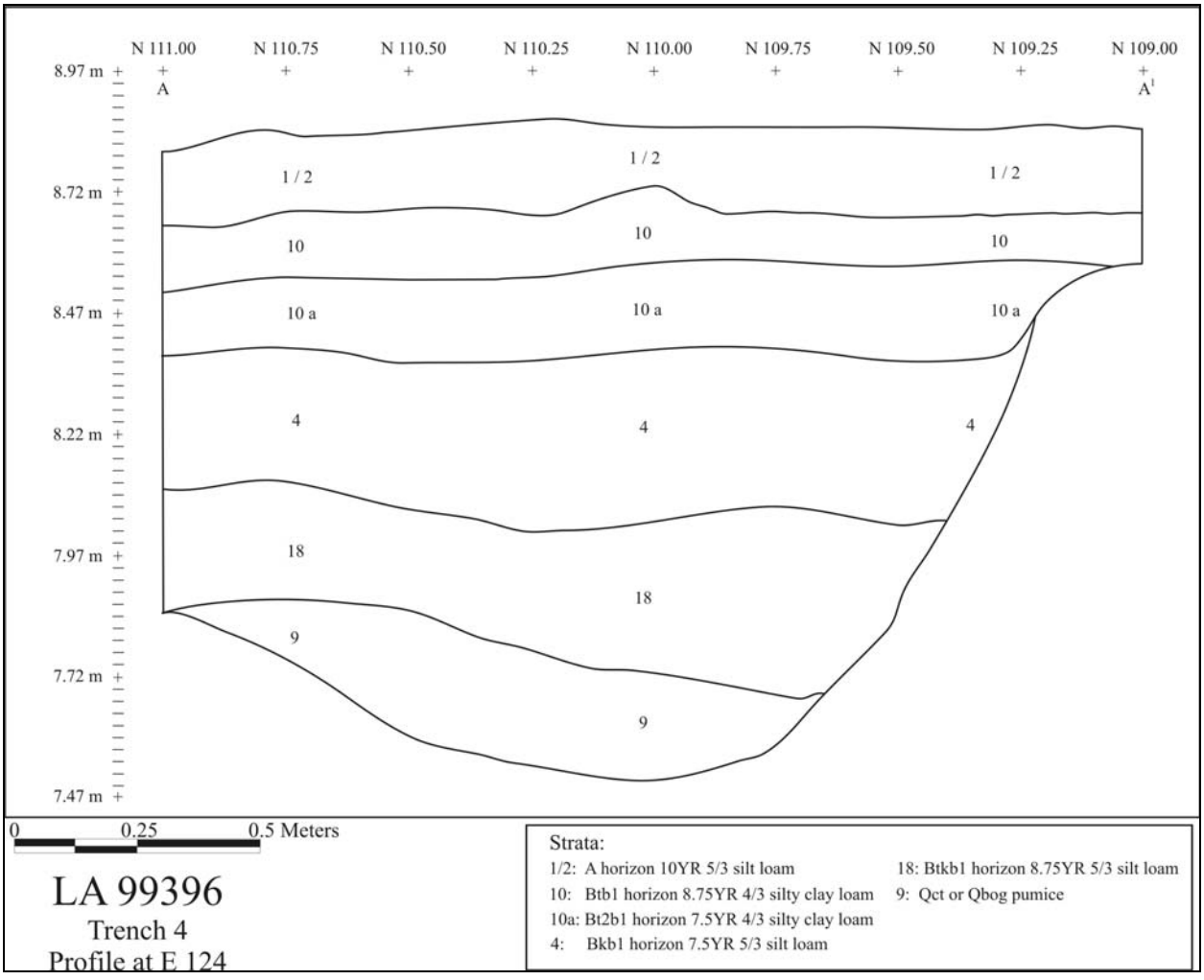


Figure 47.2. Profile of Trench 4 at LA 99396.

Swale fill (Strata 6 and 7) was observed in unit 84N/113E and in Trenches 2 and 3. Deposits are present between 114.4 to 121E and between 83.2 to 88N. The swale fill consists of a sandy clay loam Bwb1 horizon (Stratum 6) overlying a sandy loam Bkb1 horizon (Stratum 7). The swale fill deposits were likely derived from the reworking of older upslope soils some time in the middle to late Holocene. These strata are overlain by the A horizon and underlain by Stratum 4 and Stratum 9.

A piece of wood charcoal (FS 775) from Stratum 6 was submitted for radiocarbon analysis. The sample returned an age of 1000±40 BP (Beta-199382) and a date of cal AD 1020 with a two-sigma date range of AD 980–1060 and AD 1080–1150.

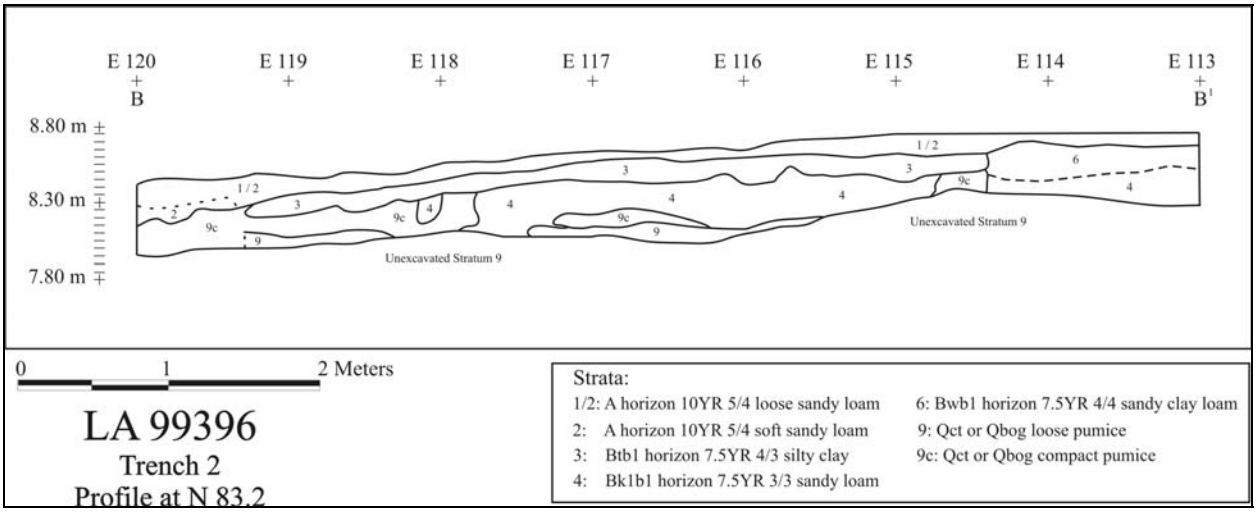


Figure 47.3. Profile of Trench 2 at LA 99396.

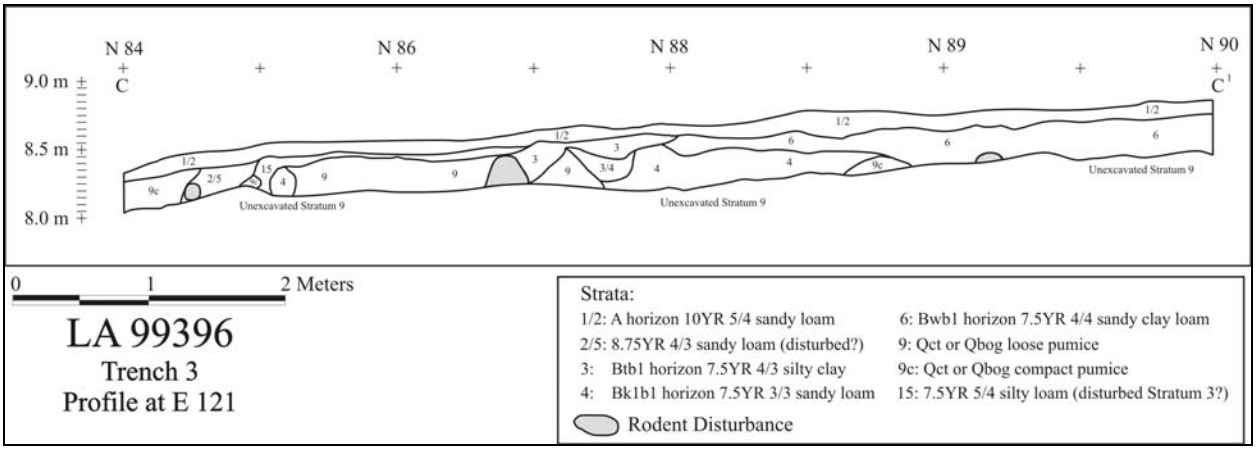


Figure 47.4. Profile of Trench 3 at LA 99396.

SURFACE COLLECTION

An area of 1566 m^2 was surface collected and 659 artifacts were recovered. Figures 47.5 and 47.6 show the distribution of surface artifacts. Most of the chipped stone debitage is found on the southeast-facing slope of the site. Headwater cutting of several small washes has created an area of shallow erosion across much of this area. In contrast to the chipped stone debitage, nearly all of the surface ceramic artifacts are found immediately east of Feature 2.

SITE EXCAVATION

Archaic Component. The Archaic component of the site consists of a moderately dense scatter of chipped stone debitage and a few stone tools. Most of these artifacts are located on a shallowly eroded southeast-facing slope. Given that the A horizon is probably not older than 1000 years and that the underlying truncated Btb1 horizon dates to the late Pleistocene or early Holocene, it is unlikely that any Archaic period habitation surface is still intact. All of the Archaic period artifacts are in a reworked context.

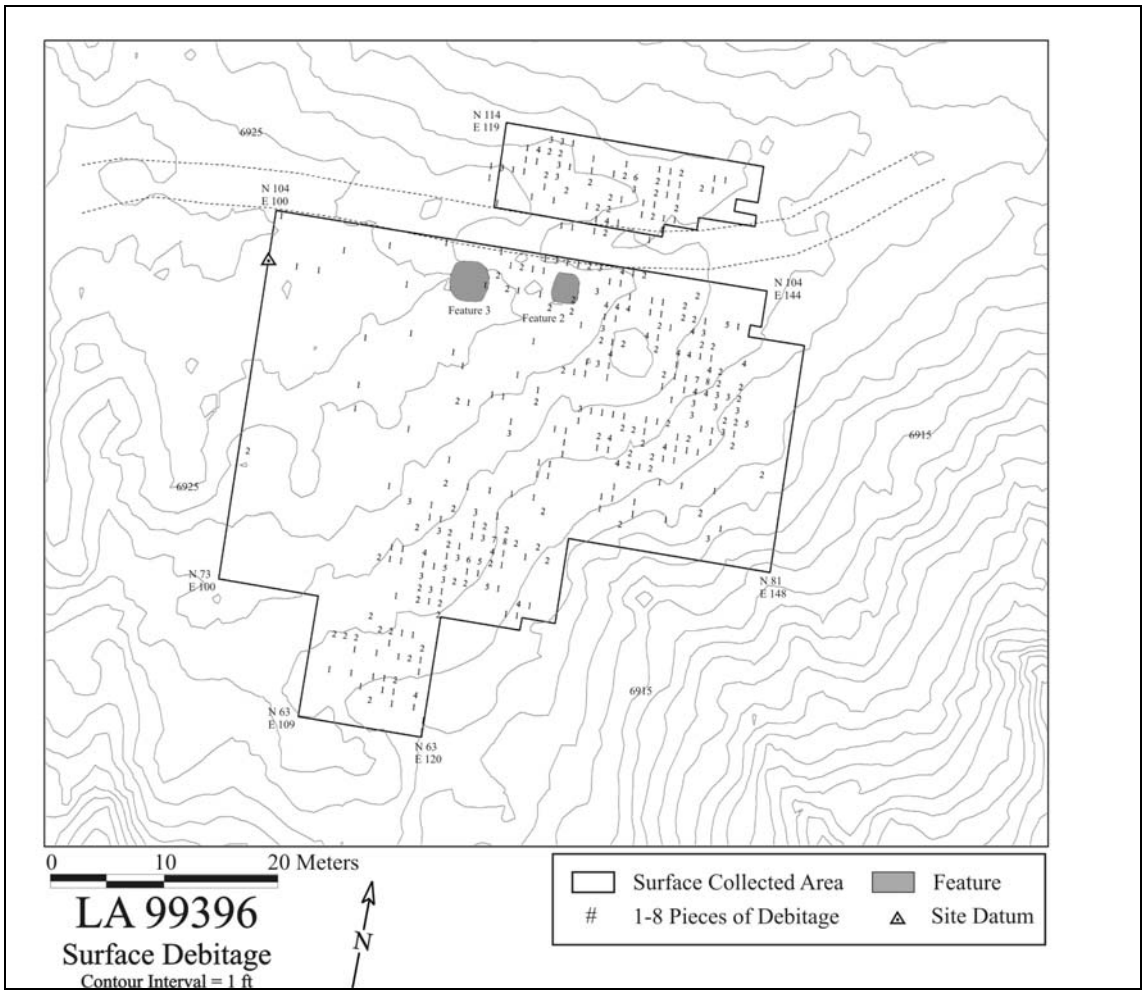


Figure 47.5. LA 99396 surface chipped stone debitage.

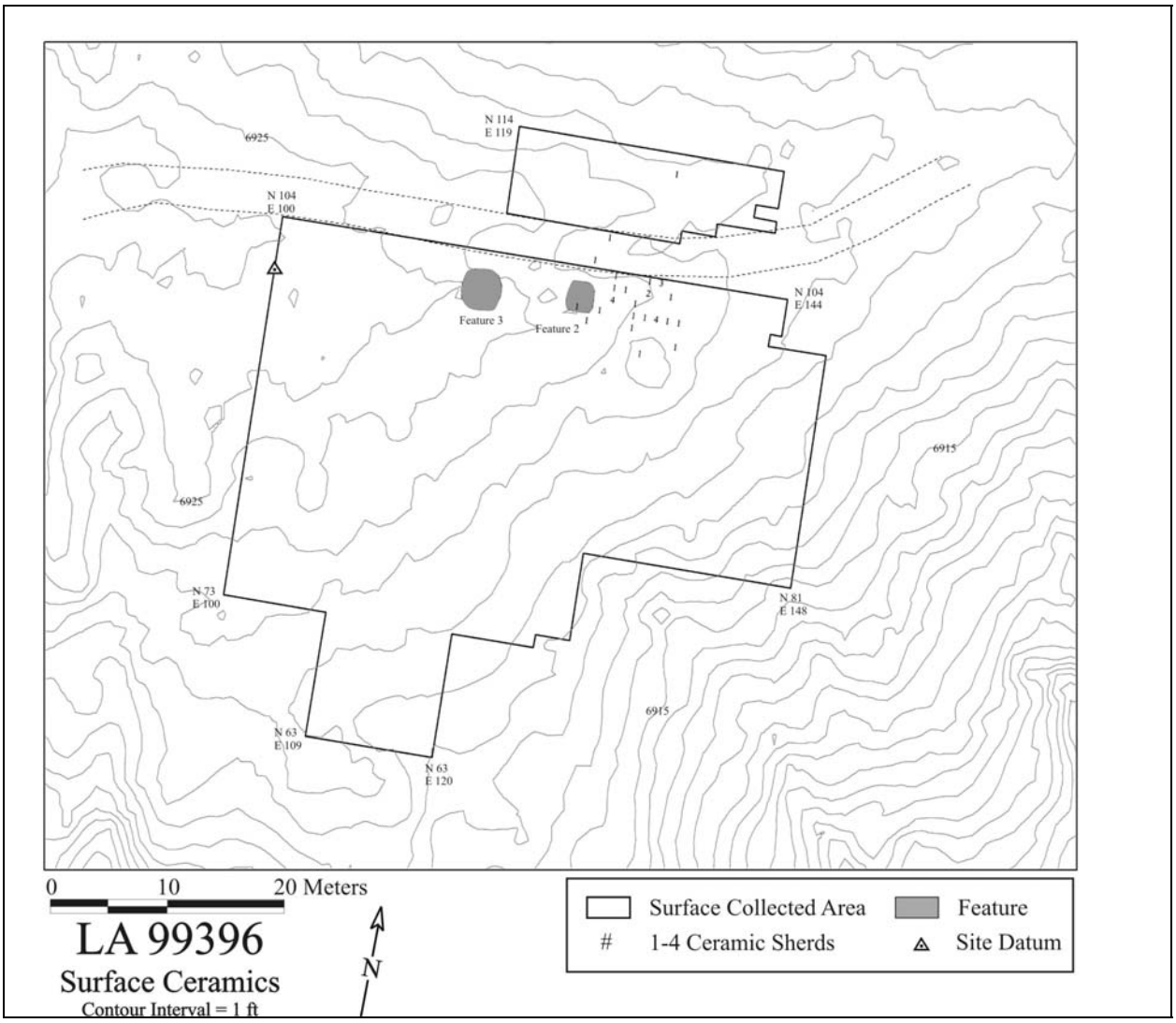


Figure 47.6. LA 99396 surface ceramic artifacts.

Coalition Period Component. This component consists of a one-room structure and associated features and artifacts.

Features 1 and 2

Feature 1 is a low mound of approximately 100 unshaped dacite cobbles and several unshaped tuff cobbles (Figure 47.7). It is approximately 3 m north-south by 2 m east-west. The cobbles range in size from 9 by 9 by 8 cm to 33 by 21 by 11 cm. The most common size is 16 by 14 by 10 cm. The matrix around these cobbles consists of Strata 1 and 2, although some cobbles extended down into Stratum 11 and two or three cobbles rested on the floor of the structure. These cobbles (and those of Feature 3) were the aboveground walls of Feature 2.

Figure 47.7. Feature 1, partially excavated.

Feature 2 (Figures 47.8 and 47.9) is the subterranean portion of a one-room structure that was excavated into Stratum 3. The structure is oriented approximately north-south. It is rectangular in shape, although the corners are rounded. The interior dimensions at the level of the floor are 2.3 m north-south by 2.1 m east-west. A hearth (Feature 7) is present at the center of the structure, and outside, to the north, a second hearth (Feature 5) and a post fragment (Feature 4) are present. In the discussion that follows, Feature 2 is used to refer to the one-room structure as a whole while Feature 1 is used to refer specifically to the cobble concentration (which is treated as a sub-feature of Feature 2).

Five (originally six) strata are associated with Feature 2. Strata 1 and 2 are associated with Feature 1, Stratum 11 (and Stratum 17, see Table 47.1) is the fill of the structure, Stratum 12 is the living surface, and Stratum 16 is the fill of the interior hearth (Feature 7) (Figure 47.10).

Strata 1 and 2 are described above. Stratum 11 is a Bw soil horizon consisting of 6 to 15 cm of sandy loam. Given the paucity of cobbles in Stratum 11, it appears that this stratum was deposited before the walls collapsed. The living surface of Feature 2 (Stratum 12) consists of smooth and compacted Stratum 3. A light scatter of ash and charcoal flecks is embedded in this surface, giving it a grayish color. No artifacts were found on the living surface.

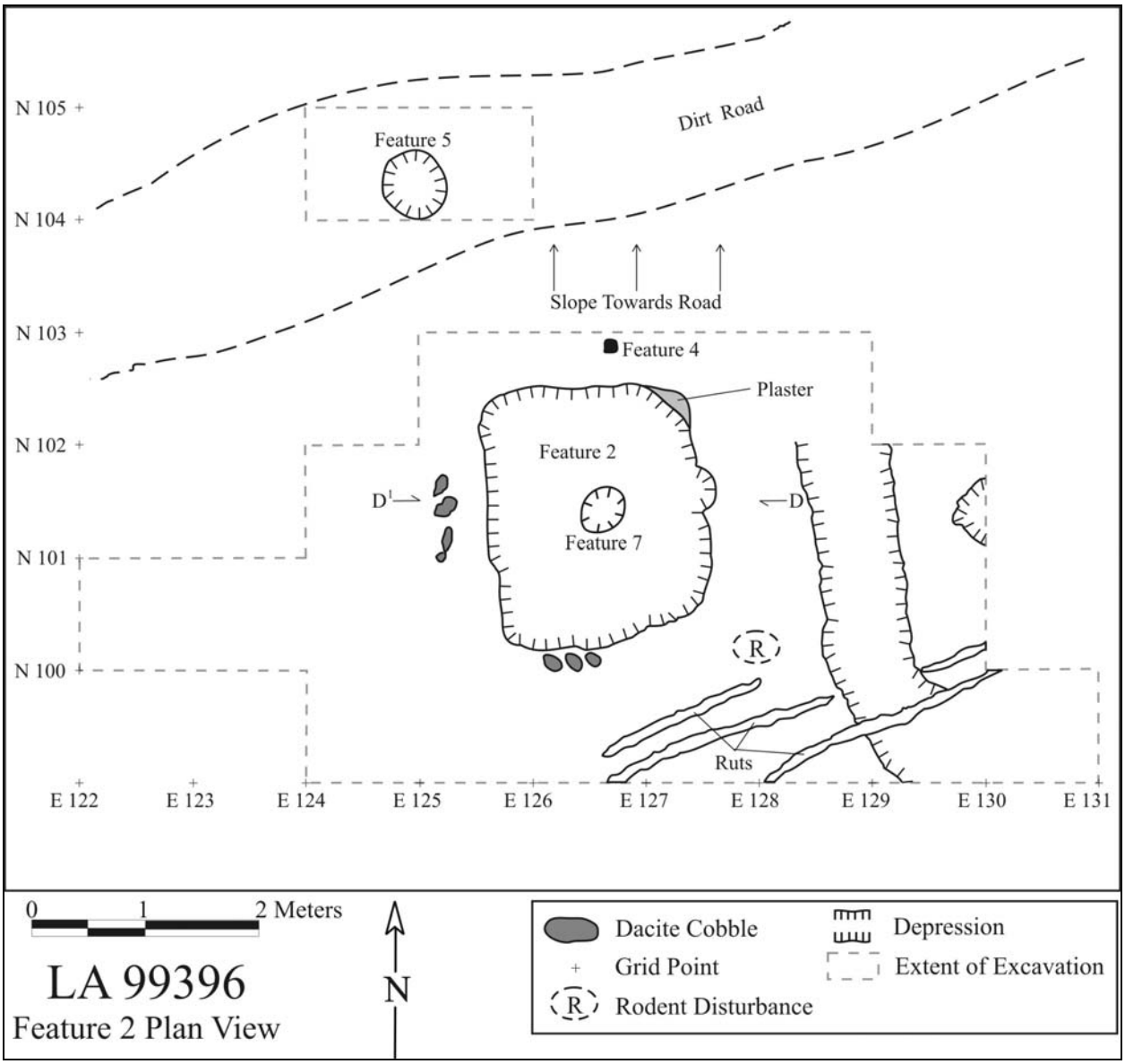


Figure 47.8. Plan view of Feature 2.

Figure 47.9. Photograph of Feature 2 at LA 99396.

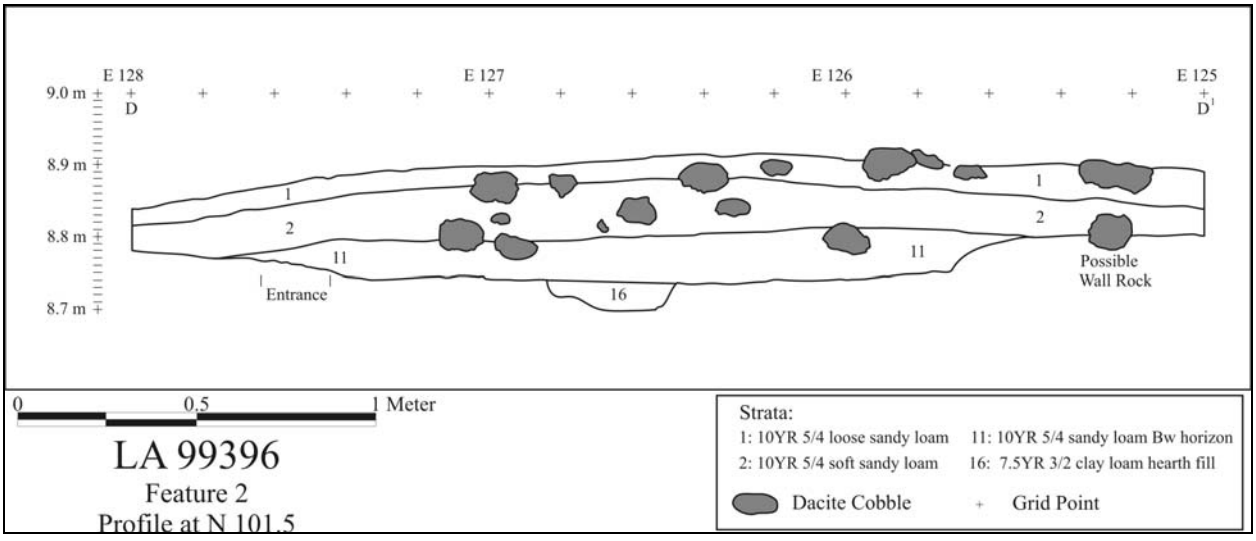


Figure 47.10. Profile of Feature 2 at LA 99396.

The subterranean walls are 5 to 12 cm high and are outwardly sloped. The western wall is slightly longer than the eastern wall; their respective lengths are 2.2 m and 1.9 m. All the walls are straight except for the east wall, which is slightly concave. A thin coat of plaster is present in

the northeast corner of Feature 2. Near the center of the east wall (101.6N/127.5E), a 40-cm-wide gentle slope extends from the floor to the top of Stratum 3. The soil along this slope is highly compacted. This is the entrance of the structure.

No standing walls were encountered, but several unshaped dacite cobbles were found set into Stratum 3 just outside the subterranean portion of Feature 2. A set of three adjacent cobbles is present to the south, and a second three-cobble set is present on the west. These cobbles probably formed the base of the structure's above-ground walls, although they are separated from the subterranean walls by 5 to 30 cm.

About 1 m east of Feature 2, there is a narrow, shallow depression running roughly north-south. The depression is 70 to 80 cm wide and up to 8 cm deep. The depression runs from about 102N to 99N, and at both the north and south ends the top and base of the depression gradually converge to a single surface. Three roughly parallel narrow furrows cut across the depression, from about 100N/130E to 99.2N/126.7E. These furrows are 5 to 10 cm wide and 3 to 5 cm deep. It is not know if the depression is the result of natural or cultural activities. The furrows appear to be cultural in origin, but it is unclear if they are associated with homesteading activities (e.g., plow scars), with the creation of the road (e.g., marks from a backhoe), or with some other activity. Table 47.4 summarizes the artifacts found in Features 1, 2, and 7.

Table 47.4. Features 1, 2, and 7 artifact counts by stratigraphic units.

Stratum	Ceramics	Chipped Stone	Ground Stone	Total
0	2	6	0	8
1	7	56	0	63
2	13	179	2	194
11	0	75	2	77
16	15	12	0	27
Total	**37**	**328**	**4**	**369**

Four ground stone artifacts were found in Feature 2: a dacite two-handed mano (FS 420), a dacite ground stone fragment (FS 461), a welded tuff grinding slab (FS 697), and a dacite grinding slab (FS 723). A dacite one-handed mano (FS 467) was found just west of Feature 2 in unit 101N/124E. A small piece of mica schist (FS 380) was found just north of Feature 2 in unit 103N/125E.

Three flotation samples (FS 438, FS 493, and FS 712) were analyzed from Feature 2. Charred taxa identified in the samples included unknown conifer, piñon pine, unidentified pine bark, and juniper wood.

Feature 3

Feature 3 (Figure 47.11) is a low circular mound approximately 10 cm high and 3 m in diameter. The northern side of the feature is slightly truncated by the dirt road. The tops of about two dozen unshaped dacite cobbles were visible on the surface of the mound before excavation. Five units were excavated to explore this feature (99N/117E, 99N/118E, 100N/116E, 100N/118E, and

101N/118E). Excavation revealed a loose jumble of about 60 unshaped cobbles. Most of the cobbles are dacite; a few are tuff. The cobbles are similar in size to those in Feature 1. The stratigraphy of Feature 3 consists of 1 to 2 cm of Stratum 1 overlaying 10 to 15 cm of Stratum 2. Excavation ended at the top of Stratum 3 where considerable rodent disturbance was visible. All of the cobbles were found in Strata 1 and 2. The bases of most of the cobbles are about 10 cm above the top of Stratum 3, although a few cobbles are within 2 cm of the Btb1 horizon.

Figure 47.11. Post-excavation photograph of Feature 3.

Only six artifacts were found in or near Feature 3: a sandstone mano fragment (FS 487) and five pieces of debitage.

The cobbles of this feature formed no discernable alignments and no cultural deposits were found beneath the cobbles. The Feature 3 cobbles were probably once part of the Feature 1 walls. Feature 3 was probably formed by field clearing associated with the Serna Homestead or during road construction activities.

Feature 7

Feature 7 is a circular hearth at the center of Feature 2 (101.38N/126.66E). It measures 51 cm north-south and 44 cm east-west and is 8 cm deep. The hearth is not plastered or rock-lined, although a small rock was found at its base. The walls and base are simply exposed Stratum 3

sediment. The north wall is well-baked and a sample was taken from it for archeaomagnetic dating. In contrast, the south wall and the base of the hearth are not well defined; consequently the north-south and vertical dimensions given above may be several centimeters too large. The fill of the hearth (Stratum 16) is clay loam mixed with charcoal flecks. No ash was present. Excavation of the hearth ended at 8.53 m, but artifacts were found only as deep as 8.55 m. The artifacts recovered from Feature 7 are discussed above as part of Feature 2.

The error ellipse of the archaeomagnetic sample overlaps two segments of the Wolfman calibration curve: AD 1020–1085 and AD 1175–1260. Based on the archaeomagnetic result and on the ceramic assemblage, the later age range is the most likely (Chapter 66, Volume 3).

Two pieces of wood charcoal from flotation samples (FS 753 and FS 758) taken from Feature 7 were submitted for radiocarbon analysis. FS 753 returned an age of 930±40 BP (Beta-199379) and a date of cal AD 1050, cal AD 1000, and cal AD 1140 with a two-sigma date range of cal AD 1020–1200. FS 758 returned an age of 870±40 BP (Beta-199380) and a date of cal AD 1180 with a two-sigma date range of cal AD 1040–1260.

Two flotation samples (FS 753 and FS 758) were analyzed from Feature 7. Charred taxa identified in these samples included unknown conifer, piñon pine, and ponderosa pine.

Feature 4

Feature 4 is located just north of Feature 2 at 102.88N/126.77E. It is a chunk of charcoal that appears to be the remains of a burned post. The charcoal is roughly a half-cylinder 12 by 6 cm wide and 10 cm tall. Most of this charcoal was buried in Stratum 3; only a few fragments stuck up into Stratum 2. The wood was identified as cf. piñon pine.

A portion of this feature (FS 472) was submitted for radiocarbon analysis. The sample returned an age of 810±60 BP (Beta-199376) and a date of cal AD 1240 with a two-sigma date range of cal AD 1050–1100 and cal AD 1140–1290.

Feature 5

Feature 5 is an oval-shaped hearth located north of Feature 2 in the middle of the dirt road (Figure 47.12). The hearth is centered at 104.40N/125.00E and measures 80 cm north-south and 60 cm east-west and is 7 cm deep. A 1-cm-thick layer of Stratum 1 covered the feature.

The hearth consists of a shallow depression excavated into Stratum 3. Twenty-six unshaped dacite cobbles ranging in size from 3 by 3 cm to 20 by 9 cm were found throughout the fill of the hearth. Some of the cobbles are fire-cracked. It is not clear if all these cobbles are part of the base of the hearth, or if some of them once lined the walls. The top several centimeters of Feature 5 were destroyed when the road was created.

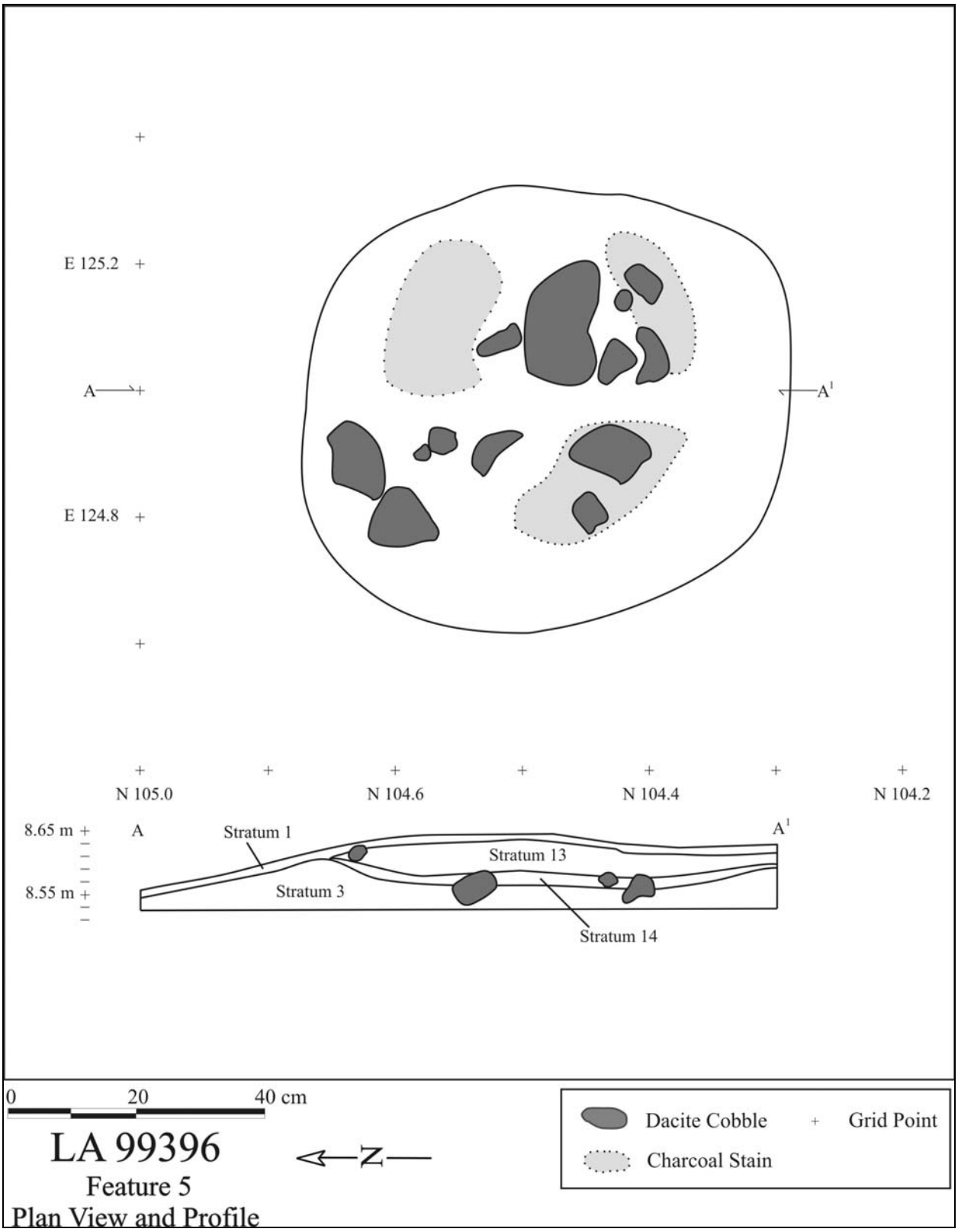


Figure 47.12. Feature 5 plan view and profile.

The upper fill of the hearth (Stratum 13) consists of 2 to 5 cm of silty clay loam. Below is a 1- to 2-cm deep deposit of sandy loam (Stratum 14). Both of these strata are charcoal-stained and contain charcoal fragments. These soils are oxidized, as is the Stratum 3 matrix surrounding the hearth. No ash was found in the hearth, nor was there evidence of a living/use surface around the feature. Two plain gray jar sherds (FS 614) were recovered from the hearth.

A piece of wood charcoal identified in a flotation sample (FS 608) from the hearth was submitted for radiocarbon analysis. The sample returned an age of 890±40 BP (Beta-199378) with a date of cal AD 1170 and a two-sigma date range of cal AD 1030–1240.

One flotation sample (FS 608) was analyzed from Feature 7. Charred taxa identified in the sample included purslane, unknown conifer, juniper, unidentified pine, and piñon pine.

Homestead Component. Approximately 20 m of several lengths of barbed wire form a rough northeast-to-southwest alignment near the southeast corner of the site. Most of the barbed wire is on the ground but occasionally it is wrapped around tree trunks. In these cases the barbed wire has been partially enveloped by the tree. The line defined by the barbed wire is parallel to the homestead patent boundary and is within 20 m of it. Since most of the southeastern patent boundary is located on a slope, it is not surprising that the fence-line is located on the nearest level ground. No other Homestead Era artifacts were found.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 1488 artifacts were analyzed from the excavations conducted at LA 99396. In addition, flotation and pollen samples were selected for analysis from Strata 1, 2, 11, 13/14, and 16. Charcoal was submitted for radiocarbon dating from Features 1, 4, 5, and 7 and Strata 6 and 18. A burned piece of the hearth was submitted for archaeomagnetic dating, two sherds were submitted for thermoluminesence (TL) dating, and 14 pieces of obsidian were submitted for hydration dating (Table 47.5). The results of the artifact and sample analyses are presented in the following sections.

Table 47.5. Samples selected for analysis from LA 99396.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL
1	438	439		
2	493	411, 450, 506, 532, 555	493	414, 612
3			472	
6			775	
11	712	562, 676		
13/14	608	615	608	
16	753, 758	769	753, 758	
18			774	

Chronology

Radiocarbon Dating

Five burned piñon pine samples and two burned juniper samples were submitted for radiocarbon dating (Table 47.6). Most of the dates are associated with the occupation of the one-room structure (Feature 2); however, two samples were also submitted from geologic contexts (Strata 6 and 18). The calibrated intercepts are between circa AD 1140 to 1240, reflecting an Early to Middle Coalition period occupation. Geologic dates were derived from Stratum 6 (a swale fill Bwb1 soil horizon) and Stratum 18 (a Btkb1 soil horizon).

Table 47.6. Radiocarbon dates from LA 99396.

FS	Context of sample	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	Two-sigma calibrated result
472	Feature 4 (Post)	199376	810±60	AD 1240	AD 1050–1100 AD 1140–1290
493	Feature 1, Stratum 2	199377	860±40	AD 1190	AD 1040–1260
608	Feature 5 (Hearth)	199378	890±40	AD 1170	AD 1030–1240
753	Feature 7 (Hearth)	199379	930±40	AD 1050 AD 1100 AD 1140	AD 1020–1200
758	Feature 7 (Hearth)	199380	870±40	AD 1180	AD 1040–1260
774	Stratum 18	199381	33660±320	N/A	N/A
775	Stratum 6	199382	1000±40	AD 1020	AD 980–1060 AD 1080–1150

Archaeomagnetic Dating

A single archaeomagnetic sample was taken from the hearth (Feature 7) in the one-room structure (Feature 2). Blinman and Cox (Volume 3, Chapter 66) state that the best date for the last burning of the hearth is AD 1175–1260, which corresponds with the radiocarbon dates (Table 47.7).

Table 47.7. Archaeomagnetic date from LA 99396.

Sample Number	Feature	VGP* Curves and Date Estimates (AD)	
		Wolfman	SWCV2000
1233	Feature 7, Hearth	1175–1260 1020–1085	1010–1125 1155–1320

*Virtual Geomagnetic Pole

Thermoluminescence Dating

A Santa Fe Black-on-white (FS 414) and incised corrugated sherd (FS 612) were submitted for TL dating (Table 47.8). Both sherds came from within the one-room structure. The age for the Santa Fe Black-on-white sherd seems quite early, whereas, the corrugated sherd fits the range provided by the radiocarbon and archaeomagnetic dates.

Table 47.8. Thermoluminescence dates from LA 99396.

FS	Lab #	Context	Burial depth (cm)	Age (ka)	% error	Years AD
414	UW1246	Feature 1, Stratum 2	10	1.169±0.134	11.5	836±134
612	UW1247	Feature 1, Stratum 2	22	0.847±0.062	7.4	1158±63

Figure 47.13 shows all the dates derived from within and around Feature 2. The radiocarbon dates, the archaeomagnetic date, and one of the TL dates are in agreement.

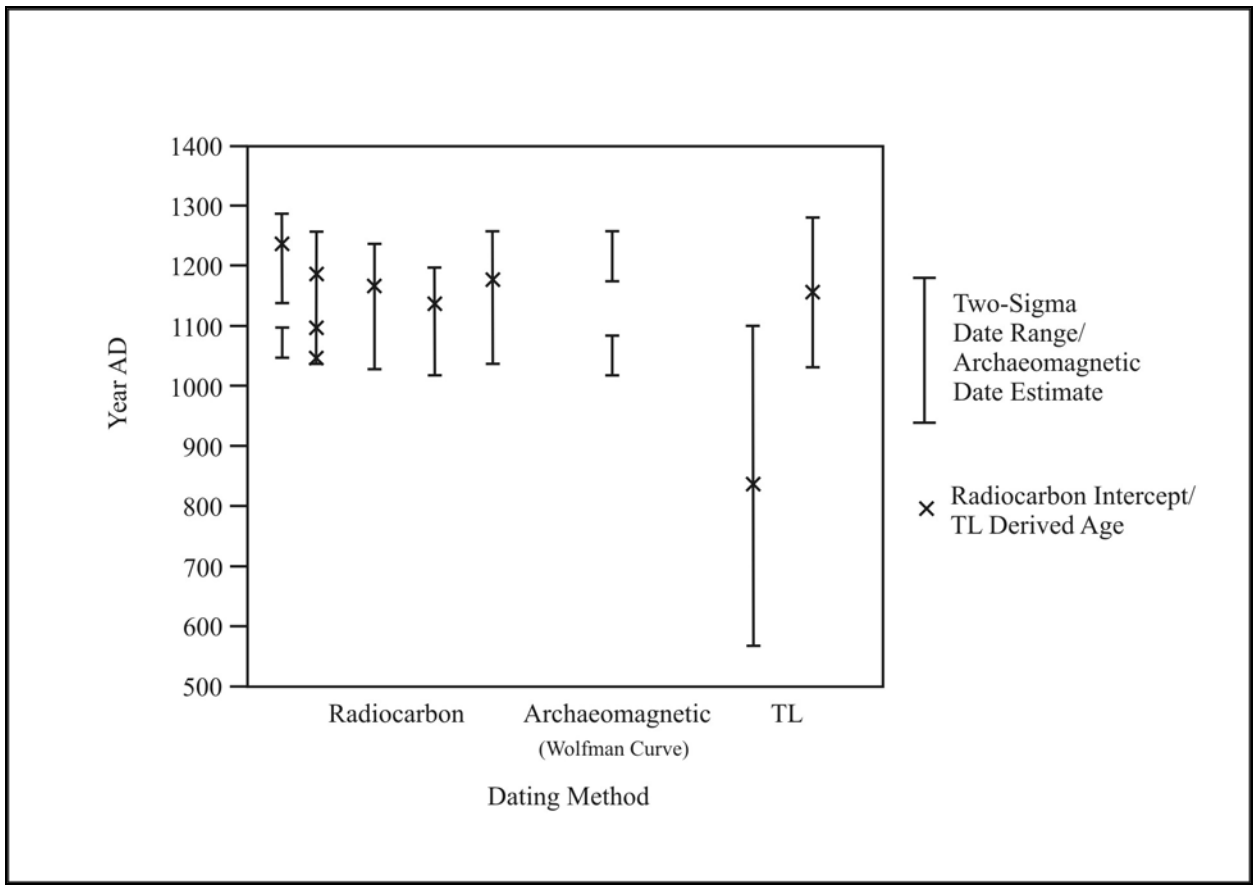


Figure 47.13. Dating methods comparison from LA 99396.

Obsidian Hydration Dating

Fourteen obsidian artifacts from LA 99396 were submitted for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the site were estimated so that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 47.9).

Table 47.9. Obsidian hydration dates from LA 99396.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
38	2006-17	Cerro Toledo	5.56	-10,245	443
48	2006-18	Cerro Toledo	3.95	-4244	317
54	2006-19	Cerro Toledo	3.88	-4009	311
126	2006-20	Cerro Toledo	4.44	-5599	344
186	2006-21	Cerro Toledo	3.32	-2228	256
289	2006-22	Valle Grande	4.16	-4803	328
318	2006-23	Valle Grande	3.30	-365	143
354	2006-24	El Rechuelos	n/a		
385	2006-25	Cerro Toledo	2.88	-1350	233
397	2006-26	El Rechuelos	n/a		
402	2006-27		3.75	-3646	302
430	2006-28	El Rechuelos	2.95	-1422	233
501	2006-29	Valle Grande	3.39	-2610	273
546	2006-30	El Rechuelos	2.13	187	169

The obsidian artifacts were selected from the surface scatter on the site. The obsidian hydration dates range from 10,245 BC to AD 187; however, most are distributed between from 5599 to 1350 BC. Excluding the 10,000 BC date, the remainder consists of four Early Archaic, three Middle Archaic, and four Late Archaic dates. This corresponds with the presence of several Archaic projectile point bases that were recovered from the same area of the site. This includes a possible Bajada point recovered during the initial test excavations by Peterson and Nightengale.

Ceramic Artifacts (Dean Wilson)

Eighty-five ceramic artifacts were analyzed from LA 99396; most of these artifacts were found near or in the one-room structure (Feature 2). The majority of the pottery consists of smeared-indented corrugated and Santa Fe Black-on-white sherds, which indicate a Coalition period occupation (Table 47.10). The utilitywares and whitewares are primarily tempered with anthill sand and tuff, respectively, and most of the utilitywares are jars and all the whitewares are bowls. One of the utilityware sherds is classified as a bowl rim and two sherds are from a miniature pot (Tables 47.11 and 47.12).

Table 47.10. Ceramic types from LA 99396.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	12	14.1
Santa Fe Black-on-white	9	10.6
Northern Rio Grande Utilityware		
Plain gray	11	13.0
Indented corrugated	1	1.2
Incised corrugated	1	1.2
Smeared-indented corrugated	51	60.0
Total	85	100.0

Table 47.11. Temper by ware for ceramics from LA 99396.

Temper	Ware		
	Gray	White	Total
Fine tuff or ash	2	19	21
Anthill sand	62	0	62
Oblate shale and tuff	0	2	2
Total	64	21	85

Table 47.12. Vessel form by ware for ceramics from LA 99396.

Vessel Form	Ware		
	Gray	White	Total
Bowl rim	1	0	1
Bowl body	0	20	20
Jar neck	2	0	2
Jar rim	4	0	4
Jar body	52	1	53
Indeterminate coil, strap handle	3	0	3
Miniature pot rim	1	0	1
Miniature pot body	1	0	1
Total	64	21	85

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 1401 artifacts were analyzed from LA 99396, consisting of two cores, 1366 pieces of debitage, 23 retouched tools, nine ground stone artifacts, and a hammerstone. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Tables 47.13

and 47.14 present the data on lithic artifact type by material type. Table 47.13 represents the surface artifact assemblage at the site, and Table 47.14 consists of the lithic artifacts recovered during the excavation of Features 2 and 7. In both cases, the majority of the debitage is made of obsidian, with lesser amounts of chalcedony, Pedernal chert, and other materials. The retouched tools are also primarily made of obsidian. The presence of cortex on 6.4 percent of the debitage indicates that these materials were collected from mostly nodule (n = 80) with some waterworn (n = 8) sources. Most of the nodule cortex was observed on the obsidian artifacts. Although obsidian is present at nearby primary sources in the Jemez Mountains, it is also present on the mesa to the north of the site as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. For example, the obsidian core is a pebble that might have been obtained from this local source. On the other hand, the chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 47.13. Lithic artifact type by material type from the surface scatter.

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
Cores	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Debitage	Angular debris	0	0	0	0	0	0	73	10	0	7	0	0	0	90
	Core flake	0	0	0	0	1	0	334	19	0	10	0	1	0	365
	Biface flake	0	0	0	1	0	0	261	7	0	1	0	0	0	270
	Bipolar flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Core trim. flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Outrepasse	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	Microdeb.	0	0	0	0	0	0	300	12	0	2	0	0	0	314
	Und. flake	0	0	0	1	1	0	66	5	0	3	0	0	0	176
	Subtotal	0	0	0	2	2	0	1138	53	0	23	0	1	0	1219
Re-touched Tools	Retouched piece	0	0	1	0	0	0	3	0	0	1	0	0	0	5
	Biface	0	0	0	0	0	0	11	0	0	0	0	0	0	11
	Projectile point	0	0	0	0	0	0	4	0	0	0	0	0	0	4
	Uniface	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Endscraper	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Ret. piece/ perforator	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	1	0	0	0	18	1	0	3	0	0	0	23

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
Ground Stone	One-hand mano	0	0	0	0	1	1	0	0	0	0	0	0	0	2
	Two-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Und. mano frag.	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Grinding slab	0	0	0	0	1	1	0	0	0	0	0	0	0	2
	Und. metate	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Und. ground stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	6	2	0	0	0	0	0	0	1	9
Other	Hammer-stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total		**0**	**0**	**1**	**2**	**9**	**2**	**1156**	**54**	**0**	**26**	**0**	**1**	**1**	**1252**

Table 47.14. Lithic artifact type by material type from Features 2 and 7.

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
Cores	Core	0	0	1	0	0	0	1	0	0	0	0	0	0	2
	Subtotal	0	0	1	0	0	0	1	0	0	0	0	0	0	2
Debitage	Angular debris	0	0	0	0	0	0	6	2	0	1	0	0	0	9
	Core flake	0	0	0	1	0	0	14	3	0	14	0	0	0	27
	Biface flake	0	0	0	0	0	0	31	1	0	1	0	0	0	33
	Uniface flake	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Pot lid	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Microdebitage	0	0	0	0	0	0	29	0	0	12	0	0	0	41
	Und. flake	0	0	0	0	0	0	22	3	0	5	0	0	0	30
	Subtotal	0	0	0	1	0	0	102	9	0	35	0	0	0	97
Total		**0**	**0**	**1**	**1**	**0**	**0**	**103**	**9**	**0**	**35**	**0**	**0**	**0**	**149**

Fourteen pieces of debitage, a core, and nine retouched tools were submitted for X-ray fluorescence analysis. The artifacts represent a mixture of Valle Grande, Cerro Toledo, and El Rechuelos obsidian types (Table 47.15). The Valle Grande (Cerro del Medio) source area is

located about 17 km (11 mi) and the Cerro Toledo (Rabbit Mountain/Obsidian Ridge) source area about 19 km (12 mi) as the "crow flies" to the west and southwest of the site. However, as previously noted, there are pebbles of Cerro Toledo obsidian that are also present on the mesa top, and the pebble core is made of Cerro Toledo obsidian. The El Rechuelos (Polvadera Peak) source area is located approximately 27 km (17 mi) to the northwest.

Table 47.15. Obsidian source samples.

FS	Artifact	Color	Source
48	Debitage	Black opaque	Cerro Toledo ryholite
54	Debitage	Translucent	Valle Grande rhyolite
84	Tool	Translucent	Valle Grande rhyolite
117	Tool	Translucent	Valle Grande rhyolite
126	Debitage	Black opaque	Cerro Toledo rhyolite
183	Tool	Translucent	Cerro Toledo rhyolite
186	Debitage	Translucent	Valle Grande rhyolite
189	Point	Black dusty	El Rechuelos
201	Point	Black opaque	Cerro Toledo rhyolite
229	Debitage	Translucent	Valle Grande rhyolite
240	Tool	Translucent	Valle Grande rhyolite
289	Debitage	Translucent	Valle Grande rhyolite
318	Debitage	Black dusty	El Rechuelos
354	Debitage	Black dusty	Cerro Toledo rhyolite
376	Point	Green	Cerro Toledo rhyolite
385	Debitage	Black dusty	El Rechuelos
397	Debitage	Translucent	Valle Grande rhyolite
402	Debitage	Black opaque	Unknown
430	Debitage	Black dusty	El Rechuelos
474	Point	Translucent	Cerro Toledo rhyolite
501	Debitage	Translucent	Valle Grande rhyolite
546	Debitage	Black dusty	El Rechuelos
568	Tool	Translucent	Cerro Toledo rhyolite
695	Core	Translucent	Cerro Toledo rhyolite

Lithic Reduction

The two cores were reduced using a bidirectional, multi-face technique. One is a small obsidian pebble core and the other is a large rhyolite cobble core. The presence of an obsidian bipolar flake indicates that this technique was also being used to reduce small pebbles. Table 47.16 presents the metric information on these cores.

Table 47.16. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bi-directional	36	27	17	18.2

Core Type	Length	Width	Thickness	Weight
Bi-directional	86	98	52	376.9

The debitage mainly consists of core flakes, biface flakes, and microdebitage, with less angular debris and undetermined flake fragments. In addition, a single bipolar flake, core trimming flake, *outrepassé* flake, and uniface flake were also identified. Table 47.17 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The overall cortical:non-cortical ratio of 0.30 reflects the emphasis on the later stages of core reduction and tool production/maintenance. However, the presence of primary and secondary cortical obsidian flakes corroborates the possible use of local pebbles.

Table 47.17. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Obsidian	1	5	8	9	0.35
Chalcedony	0	0	2	2	---
Pedernal chert	0	2	5	0	0.40
Total	**1**	**7**	**15**	**11**	**0.30**
Percentage	2.9	20.5	44.1	32.3	---

The majority of the flakes exhibit crushed platforms (*n* = 94; 56.9%), with cortical (*n* = 9), single-faceted (*n* = 7), multi-faceted (*n* = 31), and collapsed (*n* = 24). The large number of crushed and collapsed platforms is associated with the reduction of obsidian. Forty-six (27.8%) of the flake platforms exhibit evidence of preparation. Most of these are abraded/crushed, with two ground and a single abraded/ground platform.

The majority of the core flakes consist of distal fragments (*n* = 167; 42.0%), with fewer whole (*n* = 23), proximal (*n* = 51), midsection (*n* = 131), lateral (*n* = 6), and undetermined fragments (*n* = 19). Most of the biface flakes are proximal (*n* = 112) and midsection (*n* = 103) fragments, with fewer whole (*n* = 11), distal (*n* = 71), lateral (*n* = 1), and undetermined (*n* = 5) fragments. The whole core flakes have a mean length of 18.6 mm (*std* = 5.6), and the whole biface flakes exhibit a mean length of 18.5 mm (*std* = 6.8). Lastly, angular debris have a mean weight of 1.8 g (*std* = 3.9).

The retouched tools primarily consist of formal tools like bifaces and projectile points, with fewer informal tools such as retouched pieces. Three of the retouched pieces exhibit a single marginally retouched edge, whereas two exhibit double retouched edges. The former consist of unidirectional ventral retouch along straight edge outlines with angles ranging from 55 to 65 degrees. The other two artifacts have unidirectional ventral, unidirectional dorsal, and alternate retouch along straight, straight/concave, and a projection with angles ranging from 60 to 75 degrees. Two uniface/scrapers were also identified during the analysis (Figure 47.14). Both are distal fragments with all or a portion of the working edge present and angles of 60 and 75 degrees.

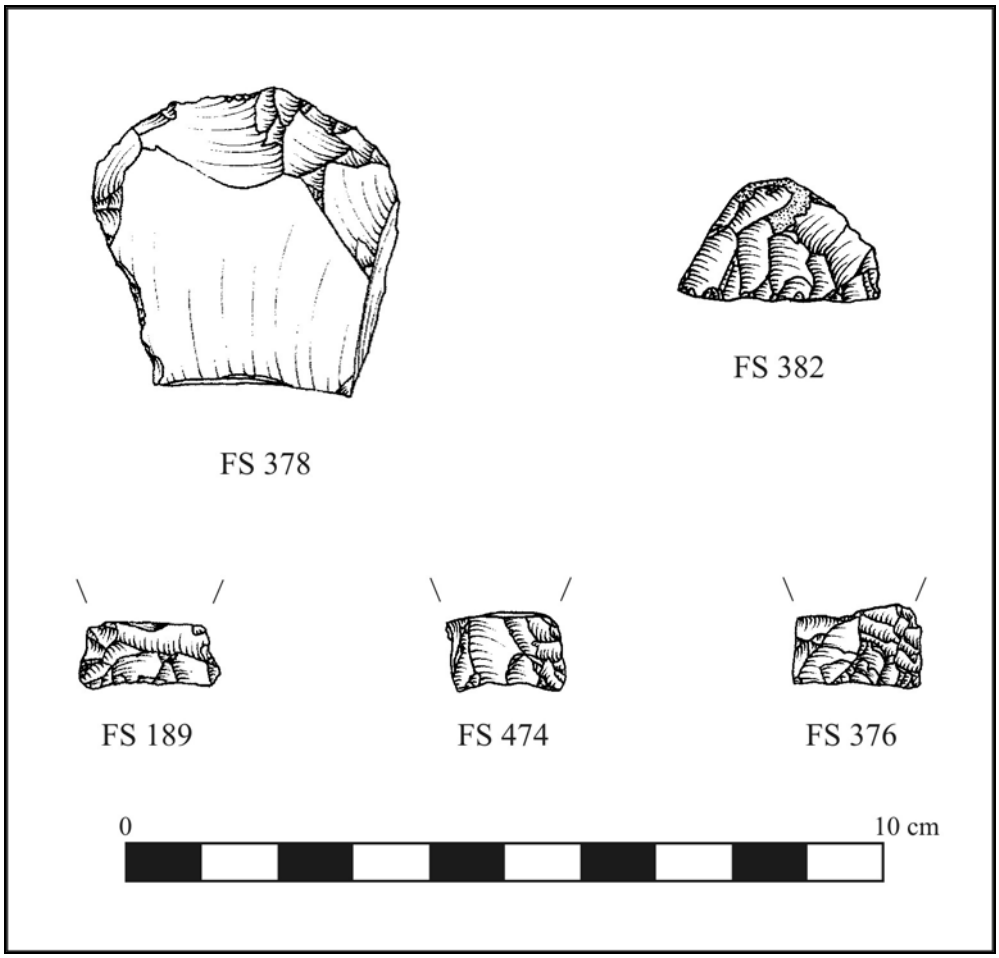


Figure 47.14. Uniface, endscraper, and projectile points.

The bifaces primarily consist of undetermined fragments, with a single piece being identified as distal fragment. Most of these appear to be early- to middle-stage bifaces that were presumably broken during manufacturing and therefore have edge angles ranging from 45 to 65 degrees. All four of the projectile points are proximal fragments with stems that contract towards the neck and have slightly concave bases that could represent either Middle or Late Archaic dart points (see Figure 47.14).

Tool Use

Only three flakes (0.8%) exhibit evidence of damage that could be attributed to use-wear. Two are flakes with damaged lateral edges and angles of 50 and 55 degrees. The other is a utilized projection on flake. Four of the five retouched pieces exhibit edge damage that could reflect use-wear and both of the scrapers have rounding and polish along the working edge. These lateral items were presumably broken during use. On the other hand, the biface fragments appear to have been broken during manufacturing, and the projectile points due to use.

Nine ground stone artifacts were identified during the analysis, including manos, a grinding slab, and undetermined fragments. The one-hand manos consist of a dacite cobble with a single

ground surface and what appears to be a metate fragment that had been reworked into a mano. The possible two-hand mano consists of a broken dacite cobble with opposing grinding surfaces. The grinding slabs are made of tabular tuff and a large piece of dacite. The former item is rectangular-shaped with striations along the long axis and a slightly concave grinding surface. The latter artifact also has a slightly concave surface with evidence of grinding and polish. The undetermined metate fragment is also a large piece of dacite, but with a well-worn and slightly concave grinding surface. Lastly, the single undetermined piece of ground stone is a tabular piece of dacite with grinding and polish present along several high spots of one surface.

Archaeobotanical Remains (Pamela McBride)

Evidence from the use of the one-room structure, an extramural hearth, and the central hearth of the structure consisted of pine bark, piñon and ponderosa pine needles, an unidentifiable plant part, and one purslane seed (Table 47.18). Non-cultural plant material included weedy annual and dropseed grass seeds and juniper duff. The charred bark and needles are probably artifacts of firewood use. Piñon dominated the wood assemblage (present in 70% of samples by weight; Table 47.19). Small amounts of juniper, unknown conifer, and unknown non-conifer were also present. The post fragment from the structure was most likely piñon (Table 47.20). Economic activity at the site is reflected in the use of locally available wood taxa for fuel and building materials and the possible use of purslane for food although one charred seed could have been burned in the exterior hearth after being deposited there by vectors other than humans. Samples were not taken from the Archaic component.

Table 47.18. Flotation sample plant remains from LA 99396.

FS No.	**438**	**493**	**608**	**712**	**753**	**758**
Feature	1 Cobbles of structure walls		5 Extramural hearth north of structure	2 Subterranean portion of one-room structure	7 Hearth in structure	
	strat 1, level 1	strat 2, level 2				
Cultural						
Annuals						
Purslane			1(1)			
Other						
Unidentifiable		1(0) pp				
Perennials						
Pine			bark +	bark +		
cf. Piñon					needle +	
Ponderosa pine					needle +	needle +
Non-Cultural						
Annuals						
Amaranth			+			

FS No.	438	493	608	712	753	758
Goosefoot	+	+	+	+		
Grasses						
Dropseed grass			+			
Grass family			+	floret +		
Other						
Composite family				+		
Purslane	+	+				
Purslane family	+	+				
Perennials						
Juniper			♂ cone +, twig +			

+ 1-10/liter, cf. compares favorably, pp plant part.

Table 47.19. Flotation sample wood charcoal taxa by count and weight in grams from LA 99396.

FS No.	438	493	608	712	753	758	Totals	
Feature	1 Cobbles of structure walls		5 Extramural hearth north of structure	2 Subterranean portion of one-room structure	7 Hearth in structure		Weight	%
	strat 1, level 1	strat 2, level 2						
Conifers								
Juniper	1/<0.1 g		3/0.1 g				0.1 g	5%
Piñon		5/0.3 g	11/0.6 g	15/0.3 g	7/0.1 g	5/0.1 g	1.4 g	70%
Unknown conifer	3/<0.1 g	2/<0.1 g	6/0.4 g	5/0.1 g	2/<0.1 g		0.5 g	25%
Non-Conifers								
Unknown non-conifer					1/<0.1 g		<0.1 g	<1%
Totals	**4/<0.1 g**	**7/0.3 g**	**20/1.1 g**	**20/0.4 g**	**10/0.1 g**	**5/0.1 g**	**2.0 g**	**100%**

Table 47.20. Vegetal sample wood charcoal taxa, by count and weight in grams from LA 99396.

FS No.	472	774	775
Feature	4 Post fragment	110N/123E	84.7/114E
Conifers			
Juniper		1/<0.1 g	1/<0.1 g
Pine	20/3.5 g		

FS No.	472	774	775
cf. Piñon	77/46.3 g		
Unknown conifer	5/0.6 g		
Non-Conifers			
Mountain mahogany	6/0.3 g		
Totals	**108/50.7 g**	**1/<0.1 g**	**1/<0.1 g**

Pollen Remains (Susan Smith)

Ten pollen samples were analyzed from LA 99396. Table 47.21 lists the frequency of identified pollen types. No cultigens were identified in the botanical assemblage. Prickly pear and lily family were the only other economic resources that were identified in the assemblage.

Table 47.21. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 99396 (*n* = 10)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	2
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 99396 (*n* = 10)
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	8
		Grass Aggregates	2
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	9
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	9
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	5
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	1
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 99396 (*n* = 10)
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	2
	Pinus	Pine	8
		Pine Aggregates	0
	Pinus edulis type	Piñon	9
	Juniperus	Juniper	9
		Juniper Aggregates	0
	Quercus	Oak	4
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	1
	Ephedra	Mormon Tea	7
	Artemisia	Sagebrush	8
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SITE SUMMARY

LA 99396 is a multicomponent site consisting of an Archaic period lithic artifact scatter and a Coalition period one-room fieldhouse. The artifact scatter probably represents a Middle to Late Archaic period campsite. The Coalition period fieldhouse was inhabited some time between the late 12th century and middle 13th century AD; however, evidence for cultigens is lacking from the site.

CHAPTER 48
RENDIJA TRACT (A-14): LA 99397

Brian C. Harmon

INTRODUCTION, SITE SETTING, AND SITE DESCRIPTION

LA 99397 is a Middle to Late Archaic period chipped stone debitage scatter that may have been a habitation site. The site may have been reused in the Classic period. LA 99397 is situated on the gentle east-facing slope of a narrow ridge at an elevation of 2136 m (7008 ft). The site covers an area of approximately 1500 m^2 (Figure 48.1) and is centered on a small clearing surrounded by dense piñon-juniper woodland. In May of 2000 the Cerro Grande fire burned 195 ha (480 ac) in the Rendija Tract. The central portion of LA 99397 was unburned, but severe burning occurred on the northern and northwestern periphery of the site. A dirt road runs east-west through the site.

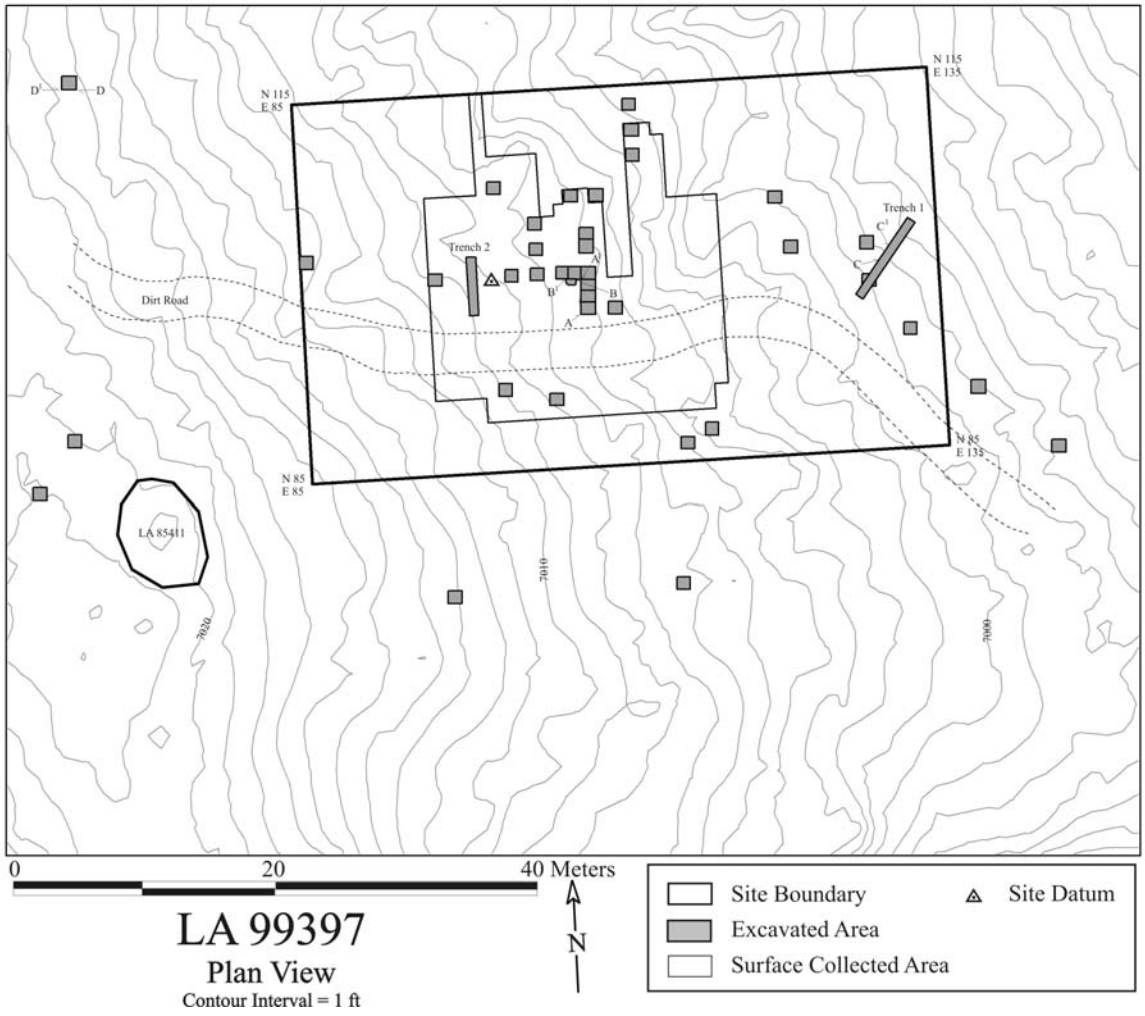


Figure 48.1. Plan view map of LA 99397.

The soil around LA 99397 is part of the Rendija-Bayo complex; a complex that "contains deep, well-drained soils weathered from materials derived from tuff (Rendija series) or pumice (Bayo series)," (Nyhan et al. 1978:54). The sediment consists of late-Holocene colluvial and eolian deposits, sporadically capped by surface gravel or a weak desert pavement. In most places, the late-Holocene deposits are 10 to 20 cm thick and overlay truncated late-Pleistocene or early-Holocene colluvium. Cerro Toledo gravels (Qct) underlie the soil on the ridge top just west of the site. Bedrock was not encountered within the site boundary.

Several large rills run through the site, generally trending to the east. The largest of these is in the eastern half of the site. It runs northeast from the dirt road for about 10 m before turning to the east. The north-running portion of the drainage is about 4.5 m wide and 0.4 to 0.5 m deep. Peterson and Nightengale (1993:212) defined this as the eastern boundary of the site.

Nearly all of the artifacts at LA 99397 were recovered from strata that post-date the Archaic period, indicating that they are in a reworked context. No cultural features were encountered and it is unlikely that any aspects of culturally derived site structure are present.

A Classic period fieldhouse (LA 85411) is located upslope and to the southwest of the site (Chapter 34, this volume). It is possible that some of the artifacts at LA 99397 are derived from this site.

PREVIOUS INVESTIGATIONS

LA 99397 was first recorded in 1992 by Peterson and Nightengale (1993:212–215) for the Bason Land Exchange Project. The initial site recording consisted of mapping, in-field analysis, surface collection, and shovel testing. Hoagland and Vierra (2002:5-18) summarize Peterson and Nightengale's testing as follows:

> The site covers an area of about 900 m^2. Fourteen shovel tests were dug at the site, with 10 pieces of debitage being recovered from six of the tests. These were located in the central area of the site with the highest surface artifact densities. These items were recovered from depths of up to about 40 cm. Artifacts were also collected from a 1- x 38-m transect laid out across the center of the site; [a total of 31 pieces of debitage were collected from the surface, and in-field observations were made on an additional 104 pieces of debitage]. Except for one metate fragment, all of the lithic artifacts observed were either debitage or chipped stone tools. Obsidian constituted 76 percent of the lithics with chalcedony forming the remaining 24 percent. A dusty obsidian similar to Polvadera Peak obsidian was most abundant (75%). The vast majority of the lithic debitage were tertiary flakes. In addition, three formal tools or tool fragments were collected from the site. They consist of a retouched Polvadera Peak obsidian tertiary flake, a crude lanceolate chalcedony biface, and the distal fragment of a Polvadera Peak obsidian biface or projectile point. A fragment of a metate was also observed on the site. Based on the high percentage of obsidian tertiary flakes and the lack of ceramics at the site, it presumably represents an Archaic period occupation.

The Los Alamos National Laboratory Cultural Resources Management Team visited LA 99397 in October of 2000 as part of the Cerro Grande fire Assessment Project (Nisengard et al. 2002).

FIELD METHODS

Most of the work reported here took place between August 12 and September 17, 2003; however, the site was sporadically visited until January 15, 2004. The crew consisted of Steven Hoagland (crew chief), Brian Harmon (assistant crew chief), Hannah Dodd, Mark Hungerford, Maria Jonsson, Michael Kennedy, Bettina Kuru'es, and Alan Madsen. Aaron Gonzales was the San Ildefonso tribal monitor. Leo Martinez operated the bobcat during trenching operations.

Work began at LA 99397 by establishing a grid based on true north (in actuality, the grid is about four degrees west of north). Once the grid was in place, a surface collection was made of 100 percent of the artifacts in the area that was clear of pine duff and trees. Artifacts were collected in 1- by 1-m grid units, and 457 units were included in the surface collection. Surface artifacts extend outside of the surface collection area, but the heavy duff and tree cover prevented collection in these areas. Excavation units were used to assess artifact densities in these areas.

Excavation units were initially placed in non-drainage areas that had the highest density of surface artifacts. Unit placement proceeded to move outwards, ending when units yielded two or fewer artifacts. Three units (85N/63E, 89N/66E, and 117.1N/67.3E) were not placed according to this strategy. During excavation it became apparent that many of the artifacts had likely been reworked into the A and Bw horizons, so the higher elevation to the west was investigated to determine if any *in situ* Archaic deposits were present. After the three units mentioned above failed to produce any artifacts, excavation in this area was discontinued. Excavation of the first several units indicated that while Stratum 3 (the Bt1b1 horizon) contained artifacts, Stratum 4 (the Bt2b1 horizon) did not. For this reason later excavation units were ended once Stratum 4 was reached.

After the site boundaries had been determined by excavation of 1- by 1-m units, two 0.80-m-wide trenches were dug by backhoe to expose long profiles of the site stratigraphy. Trench 1 was excavated to more clearly define the stratigraphy at the eastern end of the site. The western wall of Trench 1 was 7.15 m long and ran from 97.50N/128.50E to 103.25N/132.75E. The high density of the trees in this area prohibited the trench from being aligned with the grid. Trench 2 was located to expose the stratigraphy of the central portion of the site. It was 4.75 m long and ran from 97.50N/98E to 102.25N/98E.

STRATIGRAPHY

This section draws on Drakos and Reneau's geomorphological summary of the site (Chapter 57, Volume 3). Table 48.1 summarizes the stratigraphy at LA 99397; the individual strata are discussed in more detail below. Table 48.2 lists the artifact count by stratum.

Table 48.1. Stratigraphic summary of LA 99397.

Stratum	Provenience	Thickness (cm)	Color	Texture	Comment
0	Entire site	0	10YR 5/3	loam, sandy loam, loamy sand	Modern surface, sporadic gravel cap or weak desert pavement
1	Entire site	1–18	10YR 5/3	loam, sandy loam, loamy sand	A to Av horizon, late Holocene
2	Entire site	1–29	10YR 5/3	loamy sand, sandy loam	Bw horizon, late Holocene
3	Entire site	7–30	7.5YR 3.5/3.5	silty clay, sandy clay, clayey silt	Bt1b1 horizon, truncated, late Pleistocene or early Holocene, roots and rodent disturbance prevalent
3A	Entire site	1–10	7.5YR 3/3	silty clay, sandy clay	Same as Stratum 3 but texture is fine and granular. Only found sporadically at top of Stratum 3. Probably result of bioturbation
4	Entire site	30–45	7.5-10YR 5/4		Bt2b1 horizon, rodent disturbance prevalent
5	Excavation unit 117.1N 67.3E	1–6	10YR 3/2	loamy sand	AC horizon, pumice and abundant Cerro Grande fire charcoal
6	Excavation unit 117.1N 67.3E	6+	10YR 6/6	fine gravel, & cemented granules	R horizon, Cerro Toledo gravel, 1.2-1.6 Ma
7	Excavation unit 117.1N 67.3E	10–12	10YR 4/3	sand	Bw horizon, late Holocene, part of the same depositional unit as Stratum 2
8	98N 129E	10–12	10YR 4/3	silt loam	Bw horizon, middle to late Holocene, swale fill
9	98N 129E	22+	10YR 4/3	silt loam	Bw horizon, middle to late Holocene, swale fill
10	Entire site	30–40	7.5YR 5/3	sandy loam, silty clay loam	Btkb1 horizon, late Pleistocene to early Holocene
11	Entire site	Unknown	8.75YR 3/3	sandy loam	Btkb1 horizon, late Pleistocene to early Holocene

Table 48.2. Artifact count by stratum.

Stratum[1]	Ceramics	Chipped Stone	Ground Stone	Total	Volume of Stratum Excavated (m^3)	Artifacts per cubic meter
0	2	540	3	545	NA	NA
1	1	282	0	283	1.74	162.64
1/2	0	3	0	3	0.16	18.75
2	0	183	0	183	1.52	120.39
2/8	0	22	0	22	0.22	100.00
3	0	53	0	53	3.38	15.68
3A	0	4	0	4	0.09	44.44
Total	**3**	**1087**	**3**	**1093**	**7.11**	**NA**

[1]No cultural material was found below Stratum 3A.

The stratigraphy of LA 99397 consists of late-Holocene colluvial and eolian deposits (A and Bw horizons, Strata 1 and 2, respectively) with a discontinuous cover of desert pavement. Below the late-Holocene deposits are strata of late-Pleistocene or early-Holocene colluvium (Btb and Btk horizons). Stratum 3 (a Bt1b1 horizon) is truncated, indicating erosion at the site some time during the Holocene, before the deposition of the late-Holocene deposits (see Drakos and Reneau 2003; Figure 23). Artifacts were not found below Stratum 3.

The stratigraphic column of the west and central portions of the site (between 85E and 120E) consists of Strata 1 (mean thickness of 6 cm), 2 (mean thickness of 6 cm), 3 (mean thickness of 13 cm), and 4 (mean thickness of 20 cm), and 10 (40+ cm thick). In a few places, Stratum 3A is present above Strata 3. In this area, both Strata 1 and 2 are soft loamy sands and are approximately 20 percent and 5 percent gravel, respectively. Figure 48.2 shows the profile to the base of Stratum 3 along the 107E line.

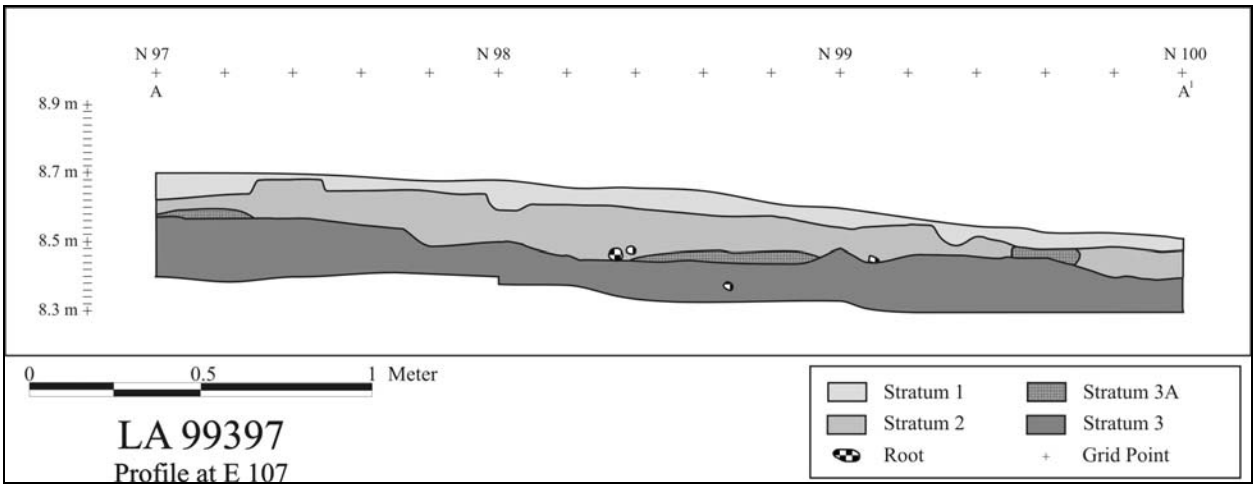


Figure 48.2. 107E profile at LA 99397.

The remains of a burned stump, consisting of fragments of charcoal and charcoal stained soil, were found at 100N/106.2E (Figure 48.3). Analysis of the charcoal indicated that the tree was likely a ponderosa pine (Chapter 62, Volume 3). The tree grew after the deposition of Stratum 3 and before the deposition of Stratum 1. The stump hole of the tree was filled with Stratum 2.

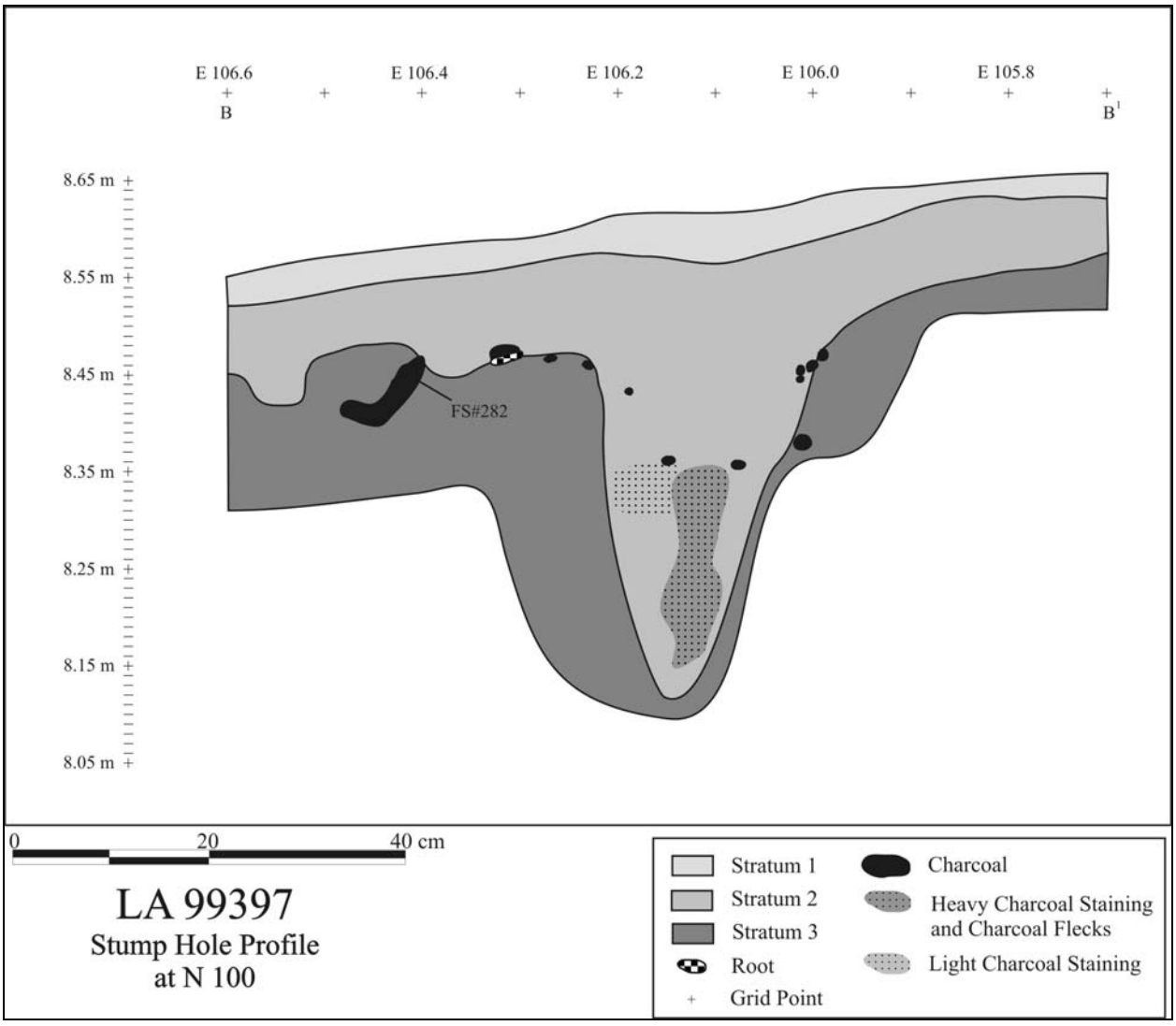


Figure 48.3. Profile of the stump hole at 100N.

One piece of wood charcoal from the burned stump (Field Specimen [FS] 282) and two pieces of wood charcoal (FS 211 and FS 214) from Stratum 3 were submitted for radiocarbon analysis. FS 211 was taken from unit 100N/95E and FS 214 was taken from unit 91N/100E; both samples were taken at an elevation between 9.60 and 9.50 m. FS 282 appears to be a sample of root wood. It returned an age of 880±40 BP (Beta-202213) and a date of cal AD 1180 with a two-sigma age of cal AD 1030–1250. This date supports the geomorphological interpretation that Strata 1 and 2 were formed within the last 1000 years. FS 211 returned an age of 2110±60 BP (Beta-199383) and a date of cal 160 BC with a two-sigma date range of cal 360–280 BC and cal 240 BC–AD 20. FS 214 returned an age of 2280±40 BP (Beta-199384) and a date of cal 380 BC

with a two-sigma date range of 400–350 BC and 310–210 BC. Both of these dates are younger than the inferred late-Pleistocene/early-Holocene date of Stratum 3. The presence of this later material is probably the result of bioturbation and/or infiltration.

East of 120E, there is a subtle change in the stratigraphy. Strata 1 and 2 are present as sandy loams. Stratum 2 is generally thicker (mean thickness of 17 cm) and slightly harder than in the west. Stratum 1 consists of about 5 percent gravel and Stratum 2 is approximately 30 percent gravel. Strata 3, 4, 10, and 11 underlie Strata 1 and 2 (Figure 48.4).

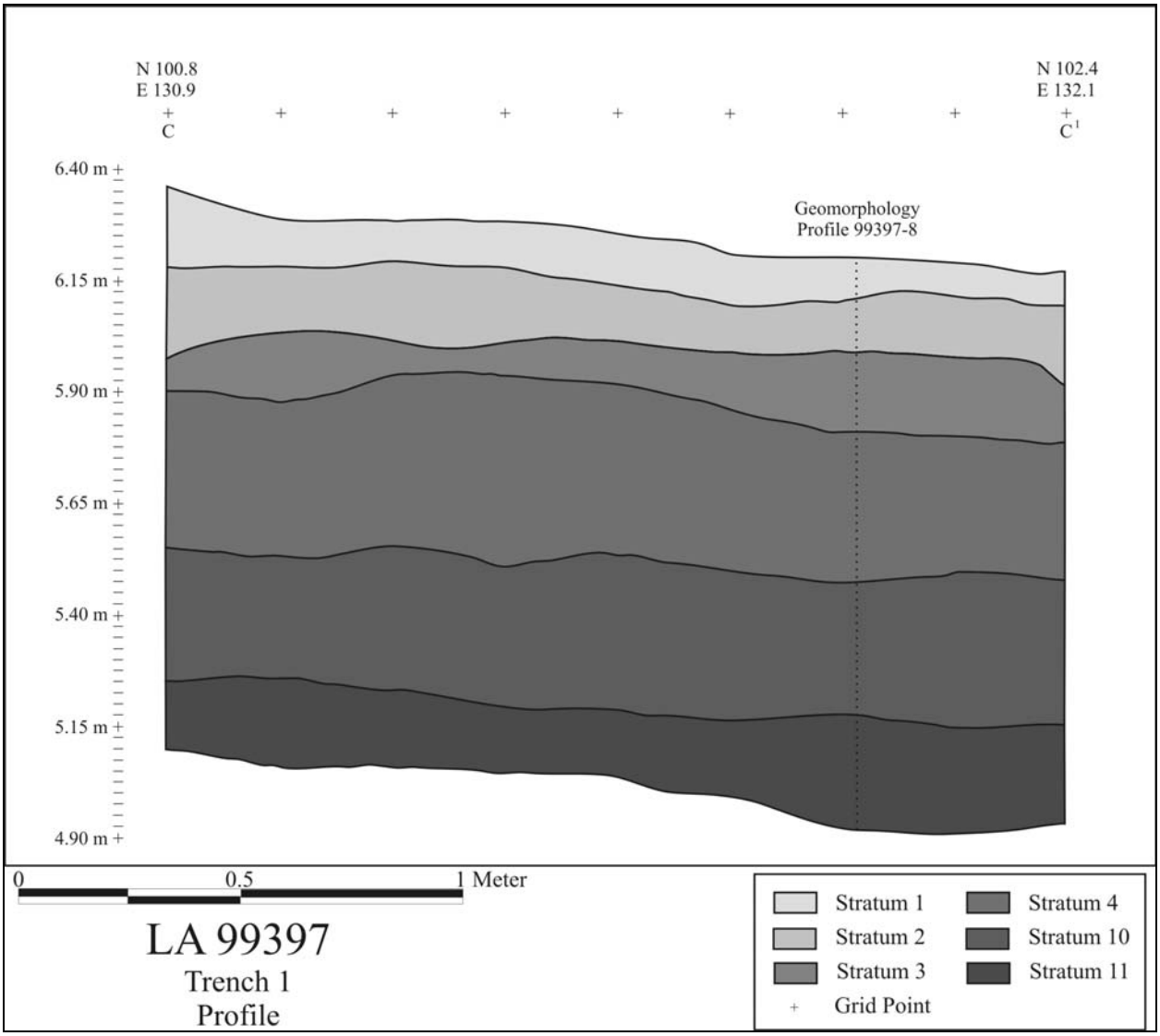


Figure 48.4. Profile of Trench 1.

Excavation in unit 98N/129E revealed swale fill deposits (Strata 8 and 9) underlying Strata 1 and 2. The presence of these deposits indicates the development of shallow drainages in the area and their subsequent filling by episodic deposition in the middle to late Holocene.

A piece of wood charcoal (FS 292) from Stratum 2 in unit 98N/129E was submitted for radiocarbon analysis. The sample returned an age of 530±40 BP (Beta-199385) and a date of cal AD 1420 with a two-sigma date range of AD 1320–1350 and AD 1390–1440.

The stratigraphy from the two units on the ridge top and near LA 85411 (85N/63E and 89N/66E) is similar to that from within the LA 99397 boundaries, although the Bw horizon (Stratum 2) is absent. Unit 117.1N/67.3E, however, represents a different stratigraphic pattern (Figure 48.5). This unit is capped by a 4-cm-thick AC horizon (Stratum 5) of fine pumice gravel. This is underlain by a 10-cm-thick A horizon (Stratum 1). The underlying Bw horizon (Stratum 7) is composed of soft to loose sand. Cerro Toledo (Qct) gravel bedrock (Stratum 6) was encountered approximately 25 cm below the surface.

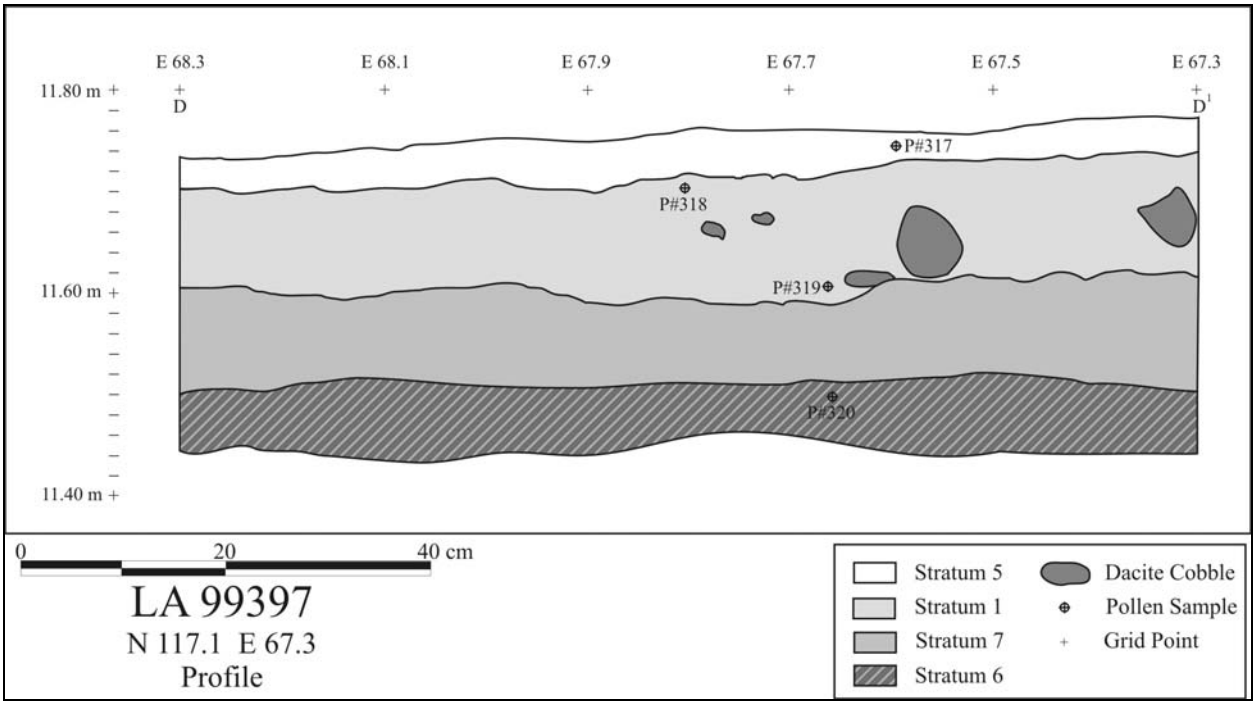


Figure 48.5. Profile of 117.1N/67.3E.

In summation, Stratum 3 and the underlying strata were deposited during the late Pleistocene or early Holocene. The parent material of these strata may be bioturbated Qct deposits and eolian fines. During the early to middle Holocene, the upper portion of Stratum 3 was removed by erosion. Sometime in the middle to late Holocene, shallow drainages developed in the site area and were subsequently episodically filled (Strata 8 and 9). Strata 1 and 2 were deposited during the late Holocene, probably within the last 1000 years.

SURFACE COLLECTION

The surface collection covered 453 1- by 1-m units in the center of the site. Outside of this area pine duff cover was too thick to undertake a meaningful collection. The distribution of the ground stone and lithic debitage collected from the surface is shown in Figure 48.6.

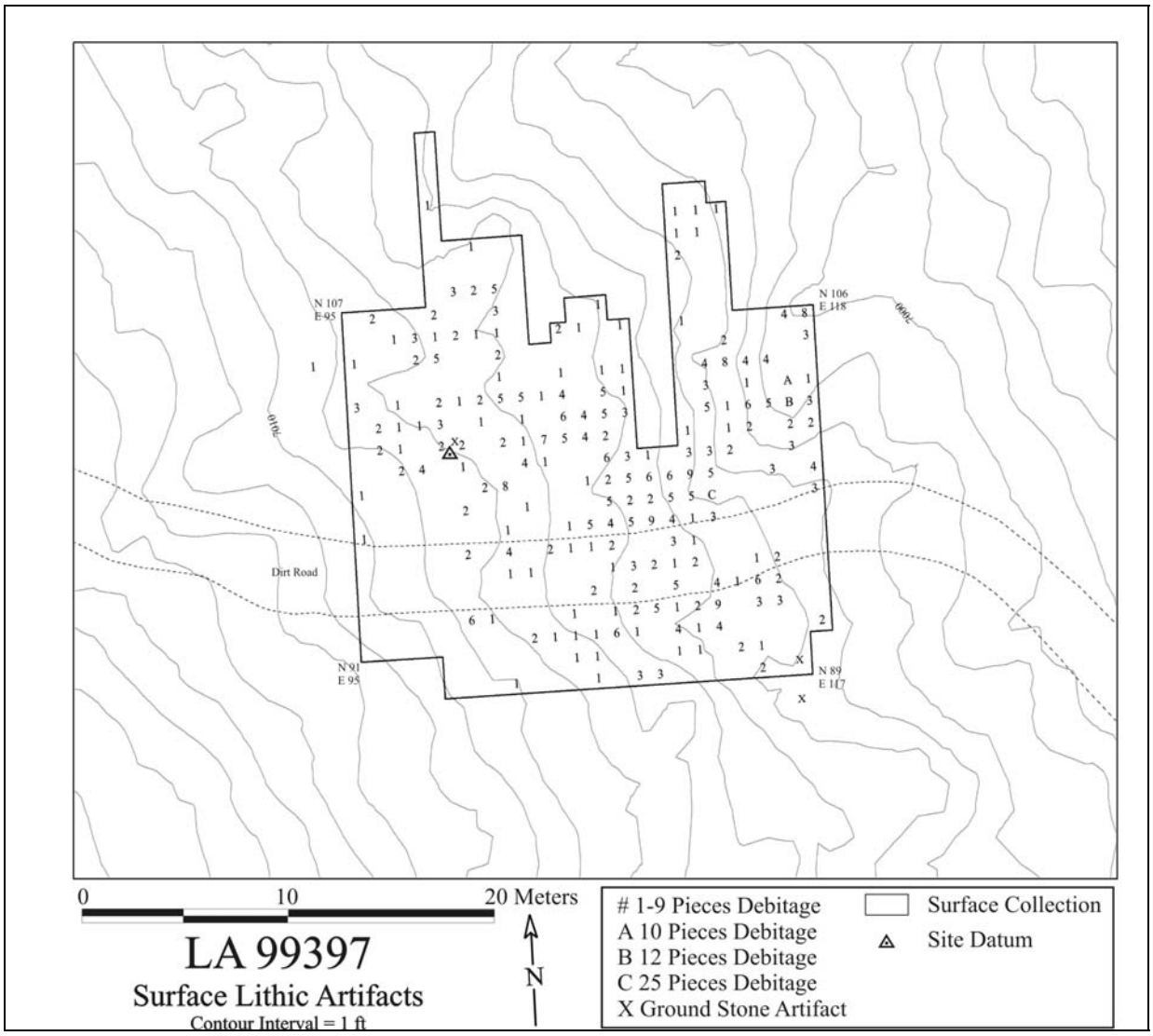


Figure 48.6. Surface artifact distribution.

Figure 48.6 shows that the densest concentration of artifacts is located just north of the road near the center of the surface collection area. Part of this concentration lies within a shallow rill and at the head of a larger erosional channel. Two smaller concentrations are also present; both are located in and near erosional channels. One is centered at 102N/115E, the other at 92N/112E. Note the area along the 103N line where there are few artifacts. A small erosional channel runs through this area, emptying into the northern "drainage concentration." In general, the distribution of the surface artifacts appears to have been shaped by erosional activity.

SITE EXCAVATION

One dozen excavation units were placed in the central artifact concentration (i.e., between 95 to 104N and 101E to 110E). Not surprisingly, subsurface artifact density was higher here than on

the rest of the site (Table 48.3). Subsurface artifact density was moderately high in the five excavation units between 118E and 135E. Everywhere else artifact densities were very low. No artifacts were found in the three units west of 85E and east of 135E, and only four artifacts (including one ceramic sherd) were found in the two units south of 85N.

Table 48.3. Artifact density: chipped stone/m^3 by area.

		Central Concentration			East Area			Periphery[1]	
Stratum	Volume	Debitage	Density	Volume	Debitage	Density	Volume	Debitage	Density
1[2]	0.5225	158	302.4	0.3050	55	180.3	1.0675	65	61.0
2[3]	0.4650	122	262.4	0.6450	58	89.9	0.6275	22	35.1
3[4]	1.3575	50	36.8	0.2000	1	5.0	1.9100	6	3.1

[1]Excluding units outside of the site boundary; [2]Including Stratum 1/2 in Periphery units; [3]Including Stratum 2/8 in the East Area; [4]Stratum 3 and 3A combined in Central Concentration and Everywhere Else

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 1093 artifacts were analyzed from the excavations conducted at LA 99397. In addition, flotation and pollen samples were selected for analysis from Strata 1 to 4 and 9 (flotation) and Strata 1 to 7 and 9 (pollen) (Table 48.4). Charcoal was submitted for radiocarbon dating from Strata 2 and 3, and 10 pieces of obsidian were submitted for hydration dating from Stratum 0. The results of the artifact and sample analyses are presented in the following sections.

Table 48.4. Samples selected for analysis from LA 99397.

	Sample Type			
Stratum	**Flotation**	**Pollen**	**Radiocarbon**	**Hydration**
0				5, 12, 32, 43, 50, 60, 66, 67, 76, 77
1	301, 313	299, 309, 318		
2	302, 314	300, 310	292	
3	315	311	211, 214, 282	
4	316	294, 312		
5		317		
6		320		
7		319		
8				
9	331	332, 333		
10				
11				

Chronology

Radiocarbon Dating

Four charcoal samples were submitted for radiocarbon analysis (Table 48.5). Two of these are piñon pine wood (FS 211 and FS 214) and two are ponderosa pine wood. Although none of the samples can be associated with cultural activities they help refine the stratigraphic chronology.

Table 48.5. Radiocarbon dates from LA 99397.

FS	Context of Sample	Laboratory (Beta)#	Conventional radiocarbon age	Intercept of radiocarbon age	Two-sigma calibrated result
211	100N/95E, Stratum 3	199383	2110±60 BP	160 BC	360–280 BC 240 BC–AD 20
214	91N/100E, Stratum 3	199384	2280±40 BP	380 BC	400–350 BC 310–210 BC
282	100.00N/106.42E, burned tree stump (root)	202213	880±40 BP	AD 1180	AD 1030–1250
292	98N/129E, Stratum 2	199385	530±40 BP	AD 1420	AD 1320–1350 AD 1390–1440

Obsidian Hydration Dating

Ten obsidian artifacts from LA 99397 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. All of these artifacts came from Stratum 0. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site were estimated so that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 48.6).

Table 48.6. Obsidian hydration dates for LA 99397.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
5	2006-31	Valle Grande	3.15	-1914	249
12	2006-32	Valle Grande	2.71	-1029	224
32	2006-33	Valle Grande	3.46	-2715	274
43	2006-34	Valle Grande	2.98	1527	29
50	2006-35	Valle Grande	3.54	-1402	192
60	2006-36	Valle Grande	2.80	1492	33
66	2006-37	Valle Grande	3.43	-2778	280
67	2006-38	Valle Grande	2.69	-903	216

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
76	2006-39	Valle Grande	3.02	-1656	243
77	2006-40	Valle Grande	3.59	-3156	288

The obsidian hydration dates range from 3156 BC to AD 1527; however, they tend to cluster into two groups: 3156 to 903 BC (Middle to Late Archaic) and AD 1492 to 1527 (Middle to Late Classic).

Ceramic Artifacts (Dean Wilson)

Only three ceramic artifacts were recovered from LA 99397. All of these artifacts were identified as smeared-indented corrugated jar sherds; two came for Stratum 0 (FS 105 and FS 111) and one came from Stratum 1 (FS 230).

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 1090 lithic artifacts were analyzed from LA 99397, consisting of one core, 1068 pieces of debitage, 18 retouched tools, and three ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 48.7 presents the data on lithic artifact type by material type. The majority of the debitage and retouched tools are made of obsidian, with some chalcedony and other materials. The presence of cortex on 8.1 percent of the debitage indicates that most of these materials were collected from primary nodular sources (74.7%), with some from secondary waterworn sources. The obsidian is present at nearby sources in the Jemez Mountains. In contrast, the chalcedony and Pedernal chert are available from local Rio Grande Valley gravel sources.

Table 48.7. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Sandstone	Total
Cores	Core	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Debitage	Angular debris	0	0	0	0	0	0	38	31	0	10	0	0	0	79
	Core flake	1	0	0	0	0	0	209	76	0	28	0	0	0	314
	Blade	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Biface flake	0	0	0	0	0	0	303	17	0	9	0	0	0	329
	Microdeb.	0	0	0	0	0	0	205	21	0	2	0	0	0	228

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
	Und. flake	0	0	0	0	0	0	89	21	1	6	0	0	0	117
	Subtotal	0	0	0	0	0	0	845	166	1	55	0	0	0	1068
Retouched Tools	Retouched piece	0	0	0	0	0	0	4	1	1	1	0	0	0	7
	Biface	0	0	0	0	0	0	5	3	0	0	0	0	0	8
	Projectile point	0	0	0	0	0	0	3	0	0	0	0	0	0	3
	Subtotal	0	0	0	0	0	0	12	4	1	1	0	0	0	18
Ground Stone	Millingstone	0	0	0	0	3	0	0	0	0	0	0	0	0	3
	Subtotal	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Total		**0**	**0**	**0**	**0**	**3**	**0**	**857**	**170**	**2**	**57**	**0**	**0**	**0**	**1090**

Ten pieces of debitage were submitted for X-ray fluorescence analysis. All of these artifacts were identified as being obtained from the Valle Grande source (Table 48.8). The Valle Grande (Cerro del Medio) source area is located about 17 km (11 mi) as the "crow flies" to the west of the site.

Table 48.8. Obsidian source samples.

FS #	Artifact	Color	Source
5	Debitage	Translucent	Valle Grande rhyolite
12	Debitage	Translucent	Valle Grande rhyolite
32	Debitage	Translucent	Valle Grande rhyolite
43	Debitage	Translucent	Valle Grande rhyolite
50	Debitage	Translucent	Valle Grande rhyolite
60	Debitage	Translucent	Valle Grande rhyolite
66	Debitage	Translucent	Valle Grande rhyolite
67	Debitage	Translucent	Valle Grande rhyolite
76	Debitage	Translucent	Valle Grande rhyolite
77	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The core consists of a bidirectional, bifacial core made on a chalcedony cobble. It exhibits waterworn cortex indicating that it was obtained from secondary gravel sources. The core was classified as exhausted when discarded. Table 48.9 presents the metric information on this core.

Table 48.9. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bi-directional	51	36	18	29.5

The debitage mainly consists of biface flakes, core flakes, and microdebitage, with some undetermined flake fragments and angular debris. Table 48.10 summarizes the various stages of reduction represented by the whole core and biface (tertiary) flakes. The debitage assemblage is primarily composed of tertiary flakes, with less secondary non-cortical and cortical flakes. No primary flakes were identified. The overall cortical:non-cortical ratio of 0.41 reflects an emphasis on the later stages of core reduction and tool production.

Table 48.10. Debitage reduction stages.

Material	Primary	Secondary Cortical	Secondary Non-cortical	Tertiary	Cortical: Non-cortical ratio
Obsidian	0	9	8	13	0.42
Chalcedony	0	1	2	1	0.33
Total	**0**	**10**	**10**	**14**	**0.41**
Percentage	0	29.4	29.4	61.1	---

The majority of the flakes exhibit crushed platforms (*n* = 90), with cortical (*n* = 9), single-faceted (*n* = 38), dihedral (*n* = 4), multi-faceted (*n* = 26), and collapsed (*n* = 38) platforms. Fifty-six (27.3%) of the flake platforms exhibit evidence of preparation, with most of these being abraded/crushed and a few ground, abraded/ground, retouched, and retouched/abraded.

The majority of the core flakes consist of distal fragments (*n* = 145; 46.2%), with fewer whole (*n* = 21), proximal (*n* = 45), midsection (*n* = 86), lateral (*n* = 3), and undetermined (*n* = 14) fragments. Most of the biface flakes are also proximal fragments (*n* = 127; 38.6%), with fewer whole (*n* = 14), midsection (*n* = 99), distal (*n* = 85), lateral (*n* = 2), and undetermined (*n* = 2) fragments. The whole core flakes have a mean length of 20.4 mm (*std* = 8.2), whereas the whole biface flakes exhibit a mean length of 16.0 mm (*std* = 6.9). Lastly, angular debris have a mean weight of 1.4 g (*std* = 1.8).

The retouched tools consist of a mix of expedient flakes tools (i.e., retouched pieces) while the formal tools consist primarily of bifaces and projectile points (Figure 48.7). All the retouched pieces exhibit a single modified edge. The edges are unidirectional ventral (*n* = 1), unidirectional dorsal (*n* = 3), and bidirectional (*n* = 1) retouched, with straight (*n* = 5), concave/convex (*n* = 1), and undetermined outlines (*n* = 1). The edge angles range from 40 to 70 degrees, with a mean of 52.1 degrees (*std* = 11.1)**.**

All eight bifaces are broken, consisting of three proximal, one lateral, and four undetermined fragments. Edge angles range from 35 to 65 degrees, with a mean of 52.5 degrees (*std* = 8.4). Most of these appear to have been broken during manufacture, with the range of edge angles indicating middle- to late-stage reduction. A review of Figure 48.8 indicates a modal distribution for biface platform angles, with peaks at 55 to 65 degrees, but an overall range from 40 to 80

degrees. This indicates that early-, middle-, and late-stage bifaces, and possibly bifacial cores, were being reduced at the site.

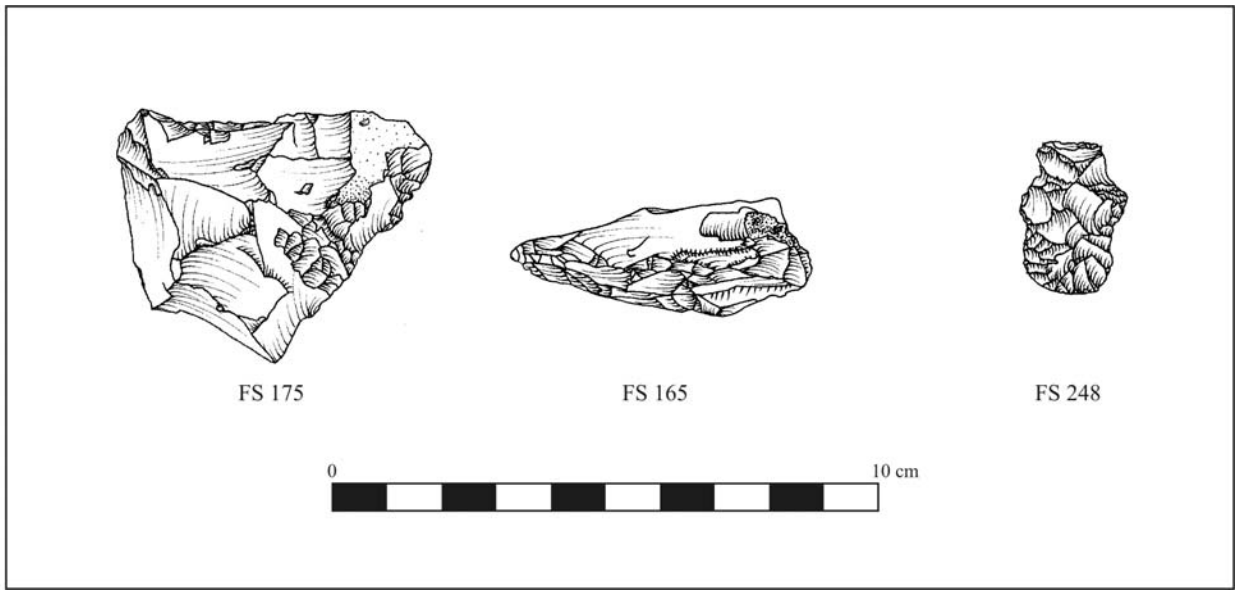


Figure 48.7. Retouched flake, biface fragment, and projectile point.

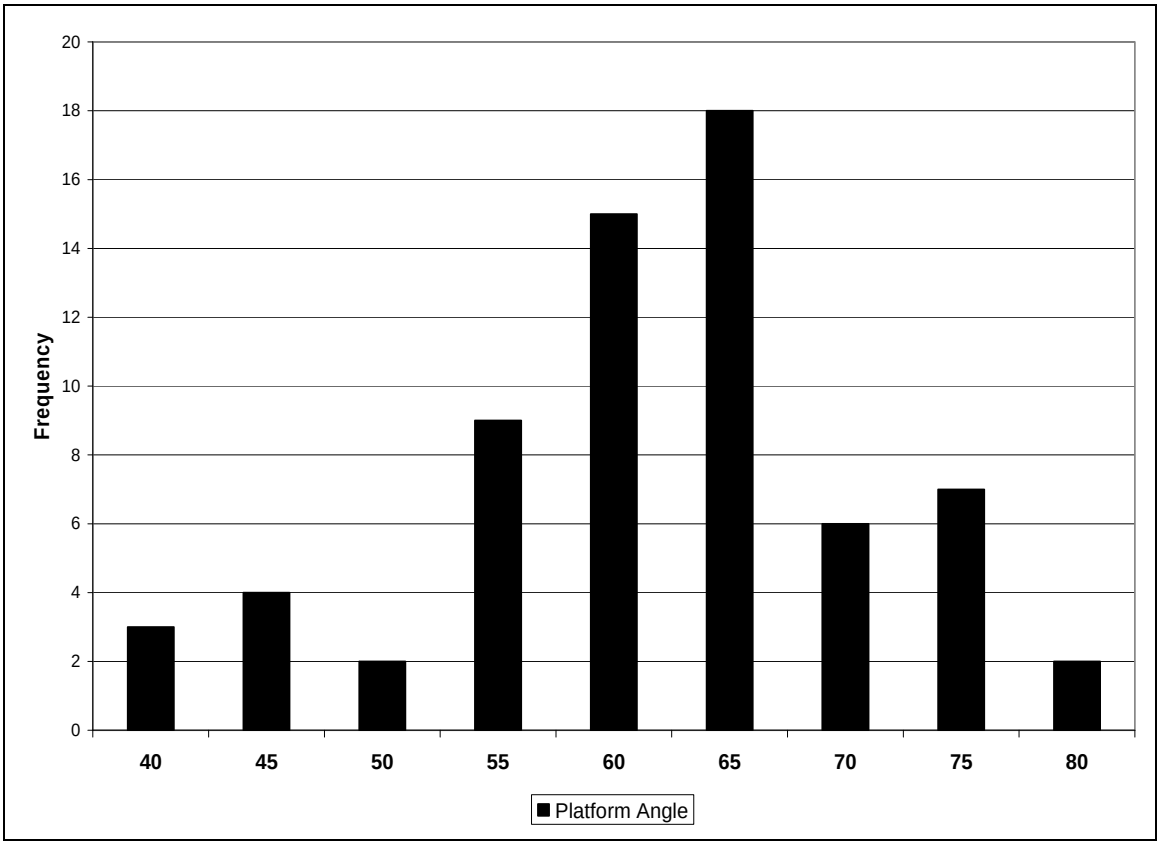


Figure 48.8. Biface platform angles.

The three projectile points consist of proximal, midsection, and distal fragments. The base fragment is a possible Late Archaic dart point with a snap break at the tip (see Figure 48.7). It exhibits marked tangs and was manufactured on a flake blank with a marked ventral curvature. Metric and descriptive information on the projectile points is presented in Table 48.11.

Table 48.11. Projectile point metric (mm) and descriptive data.

FS #	Material	Condition	Overall Length	Blade Length	Neck Width	Stem Length	Stem Width	Thickness	Weight (g)	Haft Type	Blade Shape	Base Shape
248	Obsidian	Proximal	--	--	11	7	--	4.9	2.7	Stemmed	Und.	Con-cave

Tool Use

None of the debitage exhibit evidence of damage that could be attributed to use-wear. In contrast, two marginally retouched flakes do exhibit evidence of edge damage consisting of rounding and scarring. One of these is a biface flake that is 25 mm long and the other is a large core flake that is 57 mm long (see Figure 48.7). In addition, two of the projectile points appear to have impact breaks.

Three millingstones were identified during the analysis. All three items are broken dacite fragments that have oval-shaped grinding surfaces that are concave in cross-section.

Archaeobotanical Remains (Pamela McBride)

Very little wood charcoal or other charred macrobotanical remains were found at LA 99397 and none of the remains could be linked to cultural activities. Seven flotation samples and six macrobotanical samples were submitted for analysis. Table 48.12 reflects the paucity of charred macorbotanical items at the site.

Table 48.12. Charred macrobotanical remains from LA 99397.

FS	Provenience	Charred Material
Flotation Samples		
301	98N 129E, Stratum 1	None
302	98N 129 E, Stratum 2	<0.1 g *Pinus edulis* wood *Pinus ponderosa* needle
313	100N 101E, Stratum 1	None
314	100N 101E, Stratum 2	None

FS	Provenience	Charred Material
315	100N 101E, Stratum 3	None
316	100N 101E, Stratum 4	None
331	98N 129E, Stratum 9	*Pinus ponderosa* needle
Macrobotanical Samples (from screen)		
211	100N 95E, Stratum 3	0.1 g *Pinus edulis* wood
214	91N 100E, Stratum 3	4.0 g *Pinus edulis* wood, 0.4 g unknown conifer wood
282	100N 106E, burned tree sump	1.7 g cf. *Ponderosa pine* wood
283	100N 106E, burned tree stump	3.8 g cf. *Pinus ponderosa* wood
291	98N 129E, Stratum 2	0.1 g unknown conifer wood
292	98N 129E, Stratum 2	0.7 g cf. *Pinus ponderosa* wood

Pollen Remains (Susan Smith)

Thirteen pollen samples were analyzed from LA 99397. Table 48.13 lists the frequency of identified pollen types. Maize was the only cultigen identified in the botanical assemblage. Prickly pear, beeweed, and sunflower type were the only other economic resources that were identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 48.13), and these are discussed in detail in Smith's chapter in Volume 3.

Table 48.13. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 99397 (*n* = 13)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	1
	cf. *Helianthus*	Sunflower type	1
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 99397 (*n* = 13)
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	7
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	1
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs, and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	9
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	11
		Sunflower Family Aggregates	1
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 99397 (*n* = 13)
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	3
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	6
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	4
	Pinus	Pine	12
		Pine Aggregates	1
	Pinus edulis type	Piñon	11
	Juniperus	Juniper	9
		Juniper Aggregates	0
	Quercus	Oak	4
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	1
	Ephedra	Mormon Tea	3
	Artemisia	Sagebrush	9
		Sagebrush Aggregates	1
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	1
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SITE SUMMARY

Obsidian hydration dates suggest Middle to Late Archaic period occupation of LA 99397. A Late Archaic projectile point fragment (FS 248) lends additional support to a Late Archaic period occupation. Two charcoal samples returned Late Archaic dates (FS 211 and FS 214); however these dates are several hundred years younger than the youngest obsidian hydration date and there is no evidence that these samples are the result of cultural activity. Nearly all of the artifacts recovered from LA 99397 come from Strata 0, 1, and 2. These strata do not appear to be older than AD 1000; consequently it seems likely that the LA 99397 Archaic assemblage is in a reworked context and that no culturally derived site structure patterns remain. Analysis of the lithic artifacts indicates that a wide range of core reduction and tool production/maintenance activities were performed at the site. LA 99397 may therefore represent a habitation site. All of the sourced obsidian is from the Valle Grande source, implying that the site inhabitants had geared up with obsidian from the caldera and then moved into the Rendija Canyon area.

Two obsidian hydration samples and a single radiocarbon sample returned Classic period dates. These dates may represent a Puebloan use of the site; specifically, this use may be associated with the nearby fieldhouse, LA 85411.

CHAPTER 49
RENDIJA TRACT (A-14): LA 127627

Michael J. Dilley and Bradley J. Vierra

INTRODUCTION

LA127627 is a small one-room Classic period fieldhouse situated on a northwest-facing slope of a terrace about 110 m south of the ephemeral creek in Rendija Canyon. The area is covered by a ponderosa pine forest at an elevation of 2117 m (6940 ft). The fieldhouse is located to the immediate north of the Los Alamos Sportsmen's Club, but did not appear to have been impacted by these activities.

The original survey identified alignments of unshaped dacite blocks, one to two courses in height, within a 3- by 3-m area that incorporated naturally occurring bedrock boulders. The alignments were situated in a section of the forest that was heavily burned by the Cerro Grande fire, including burned pine duff and ponderosa pine trees. No surface artifacts were observed.

FIELD METHODS

Fieldwork began with the cutting and removal of several burned ponderosa pine trees that were partially covering the site. A reconnaissance was subsequently conducted of the area around the fieldhouse to define the nature and extent of the surface remains. No artifacts or any other features were identified. The site datum was set at the southwestern corner of the site and designated as 100N/100E and 10.00 m elevation. A 1- by 1-m grid system was laid in around the surface architecture with grid corners at 101N/101E, 105N/101E, 105N/107E, and 101N/107E. Subdata were shot in along the north, east, and south sides of the excavation (A-C). The site was photographed and excavations begun (Figure 49.1).

An east-west-oriented trench was excavated across the site through grids 103N/101-106E. It was excavated to define the walls within the structure and identify the stratigraphic sequence. Upon completion, it was determined that the alignments represented a one-room structure. Excavations proceeded to expose the remaining walls of the structure and removal of the interior fill by stratigraphic layers and 1- by 1-m grids. A block excavation including grids 101-106N/103-106E was excavated around the room.

Pollen and flotation samples were taken from each stratigraphic unit and various locations on the floor of the structure. All excavated soil was sieved through 1/8-in. mesh to aid in the recovery of cultural remains. The immediate area bounding the structure was exposed to locate external features or outside activity areas. After excavations were complete, the site was mapped and photographed (Figure 49.2).

The excavation of the site was supervised by Michael Dilley. Crew members included Sandi Copeland, Maggie Dew, Alan Madsen, and Aaron Lenihan. Timothy Martinez, Aaron Gonzales,

and Michael Chavarria served as site monitors representing both San Ildefonso and Santa Clara pueblos.

Figure 49.1. LA 127627 before excavation.

STRATIGRAPHY

Four stratigraphic units were defined during the excavations. These are illustrated in the profile provided in Figure 49.2 and are listed in Table 49.1. Stratum 1 is the loose topsoil that covered the site and represents the A soil horizon. Some of the surface duff had been burned by the Cerro Grande fire. Stratum 2 consists of a sandy loam that characterizes the post-occupational fill. This stratum is situated within and outside the structure and represents the Bw soil horizon. Stratum 3 is an unprepared occupational surface that is situated inside the structure.

A geomorphic test pit was excavated outside and adjacent to the structure in grid 103N/106E (see Chapter 57, Volume 3). It was excavated to a depth of about 1 m and four separate soil horizons were identified (Table 49.2). From top to bottom these horizons consisted of A, Bw, Bt1b1, and Bt2b1. The site is buried in a weakly developed soil in a colluvial deposit, but the Bw horizon has a hard consistency. The occupation surface at the site is situated at the top of the Bt1b1 horizon. Table 49.3 provides the artifact count information by stratigraphic unit at the site. A total of 173 artifacts were recovered.

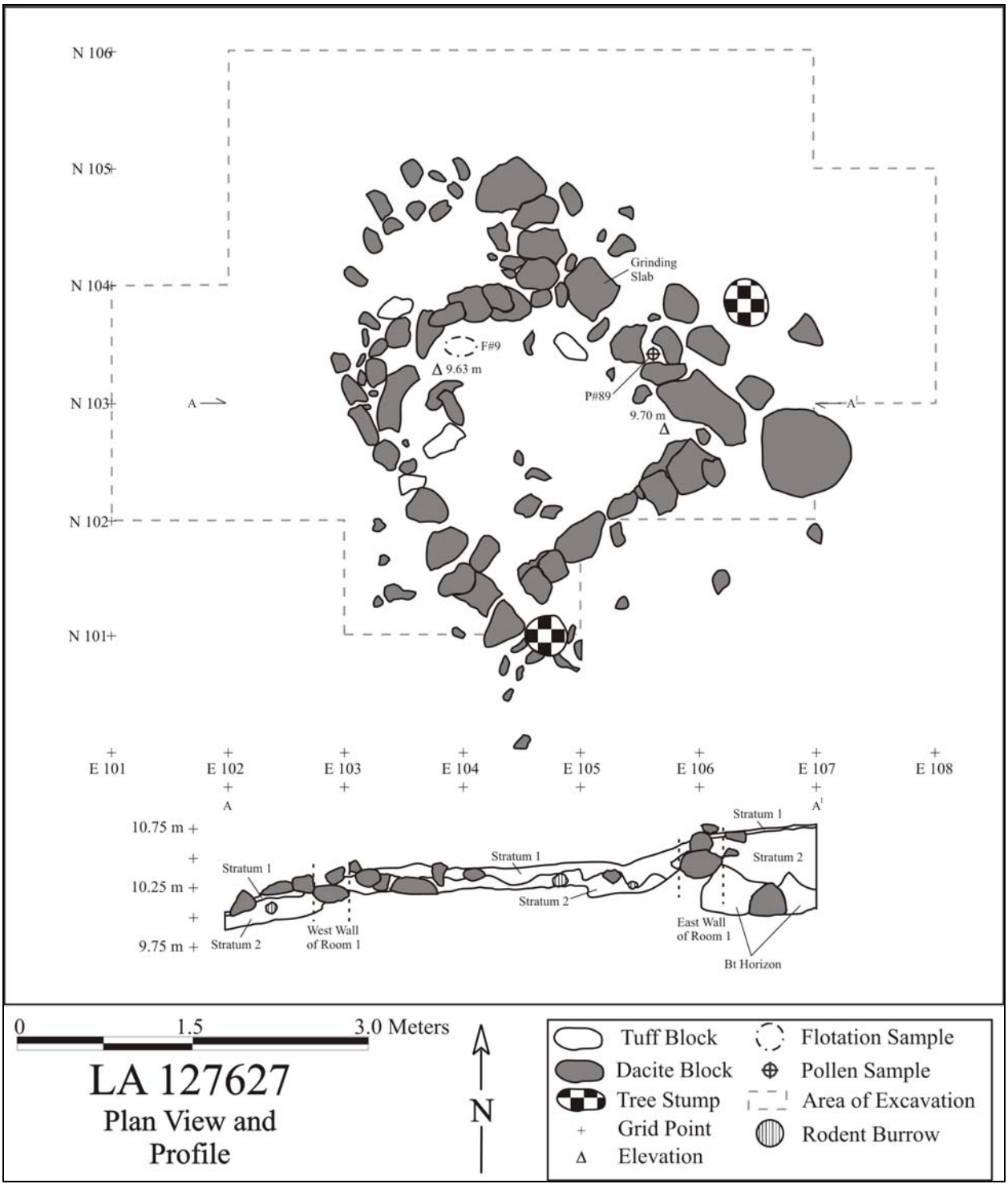


Figure 49.2. LA 127627 plan view and profile.

Table 49.1. LA 127627 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 3/3	Sandy loam	1–6	Surface sediment
2	10YR 4.5/3	Sandy loam	5–30	Post-occupational fill
3	10YR 4.5/3	Sandy clay loam	0	Floor/living surface

Table 49.2. LA 127627 soil horizon descriptions from the south profile of the geological test pit.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 3/3	Sandy loam	0–5	Topsoil
Bw	10YR 4.5/3	Sandy loam	5–21	Late-Holocene soil
Bt1b1	7.5YR 4/4	Sandy clay loam	21–48	Late-Pleistocene soil
Bt2b1	7.5YR 4/5	Sandy clay loam	48–72+	Late-Pleistocene soil

Table 49.3. LA 127627 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	0	1	0	0	**1**
1	9	10	0	1	**20**
2	75	63	12	1	**151**
3	1	0	0	0	**1**
Total	**85**	**74**	**12**	**2**	**173**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a single room in a small fieldhouse (Figure 49.3). The room is oriented along a northwest-southeast line, with the northern side situated downslope. The room measures 1.87 m north-south by 1.66 m east-west, with about 3.1 m^2 of interior space. The excavation of the room began with the east-west trench that extended across the rubble area along the 103N grid line. This excavation defined the east and west walls of the structure, the internal stratigraphy, and a possible unprepared floor surface. After the trench was completed, the remainder of the room fill was removed down to the level of the possible floor. The geomorphic test pit was subsequently excavated adjacent to the southeastern walls of the structure to define the stratigraphic context of the walls and occupational surface.

Floor. Approximately 5 to 30 cm of post-occupational fill was removed before exposing a possible unprepared living surface within the structure. It was difficult to discern as it was heavily disturbed by rodent activity and slope wash. Nonetheless, patches were preserved in the northeastern and southern sections of the room. These were defined by a buff color and the presence of ashy adobe melt that was situated on top of the Bt1b1 soil horizon. The portion of

the floor in the northeastern corner of the room also contained some adobe plaster that extended onto the floor from the adjacent wall. Since the fieldhouse was constructed on a northwest-facing slope, the floor appears to have been leveled by cutting into the slope above and filling on the downslope side; however, the floor still sloped about 10 cm down. No features or artifacts were associated with the floor. A single pollen sample (Field Specimen [FS] 89) was taken from the better-preserved northeastern area of the room. Taxa identified in this sample included cheno-ams, sunflower family, ragweed/bursage, spruce, unidentified pine, piñon pine, juniper, oak, Mormon tea, sagebrush, and greasewood. A flotation sample (FS 9) was also taken from directly on top of the floor in the northwestern corner of the room. Charred taxa identified in this sample included unidentified pine, piñon pine, ponderosa pine, cheno-ams, maize, and unknown conifer.

Figure 49.3. LA 127627, Room 1.

Wall Construction. The walls in Room 1 were primarily composed of dacite cobbles, with a few tuff blocks. In addition, some *in situ* dacite boulders were also integrated into the construction of the fieldhouse, as was a dacite grinding slab. The dacite is available from the nearby ephemeral drainage and the tuff from outcrops in the canyon. The walls are resting on top of the floor and Bt1b1 soil horizon. There is no evidence of a foundation, and adobe plaster was only observed on a few cobbles located in the eastern section of the room. Otherwise, the building's stones appear to be dry-laid walls, with one to two courses remaining. A possible doorway is situated at the northeastern corner of the room, where a grinding slab is located. Wall measurement information is provided in Table 49.4. Most of the standing walls had collapsed and the original walls were estimated at approximately 1 m high.

Table 49.4. LA 127627 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
West	1.87	0.07–0.33	0.17–0.31	1 to 2
East	1.87	0.21–0.43	0.15–0.29	1 to 2
North	1.56	0.12–0.42	0.24–0.49	1 to 2
South	1.75	0.12–0.46	0.17–0.34	1 to 2

Artifact Distribution

Table 49.5 illustrates the distribution of artifacts that were recovered during the site excavations. These totals do not include one artifact that was recovered outside of the excavated area during the surface collection. The bold numbers indicate grid units that were located completely or partially within Room 1, which indicates that most of the artifacts were recovered from within the structure or directly north of the room. However, since the room and hill slope is oriented to the northwest, the higher levels of artifacts located in grids 105N/104-105E may reflect an outside activity area that was located in front of the fieldhouse.

Table 49.5. Artifact distribution by grid unit.

	101E	102E	103E	104E	105E	106E	107E
105N		0	3	11	16	0	
104N		8	**17**	**25**	**7**	8	0
103N	0	5	**7**	**20**	**8**	4	2
102N	2	2	5	**8**	8	4	
101N			1	1			

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 173 artifacts were analyzed from the excavations of LA 127627. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) and the living surface (Stratum 3). Maize recovered from the flotation samples was submitted for radiocarbon dating (Table 49.6).

Table 49.6. Samples selected for analysis from LA 127627.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	31, 52	8, 66, 67, 69, 71	9, 52	
3	9	89		

*thermoluminescence

Chronology

Radiocarbon Dating

Maize that was recovered from two separate contexts at LA 127627 were submitted for radiocarbon dating. The first sample was recovered from the floor of the structure (FS 9). It provided a date of 380±40 BP (Beta-215554), with a calibrated intercept of AD 1480 and a two-sigma range of AD 1440–1640. The second sample was recovered from under a rock in the northeast corner of the room (FS 52). This sample provided a date of 400±40 BP (Beta-215555), with a calibrated intercept of AD 1460 and a two-sigma range of AD 1430–1530. Both dates indicate a 15th century occupation at the site.

Ceramic Artifacts (Dean Wilson)

A total of 82 ceramics were analyzed from LA 127627. The majority of the pottery represents local Rio Grande utilityware ceramics, with a few decorated wares (Table 49.7), including Biscuit B and Sapawe Micaceous. The whitewares are primarily tempered with local fine tuff or ash, whereas the utilitywares are tempered with non-local granite and mica and tuff with phenocrysts (i.e., smeared-indented sand) (Table 49.8). The differences in utilityware temper reflect the non-local production of Sapawe Micaceous (and plain gray) versus the local production of smeared-indented corrugated ceramic vessels. All of the utilitywares are represented by jar vessel forms, whereas the whitewares are mostly bowls with a single jar sherd (Table 49.9). The glazeware sherds appear to be from the same jar. Based on these assemblage characteristics (i.e., Biscuit B and Sapawe Micaceous), it is likely that LA 127627 dates to the Middle Classic period. This corroborates the potential 15th century occupation represented by the radiocarbon dates.

Table 49.7. Ceramic types from LA 127627.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Santa Fe Black-on-white	1	1.2
Biscuit B rim	1	1.2
Biscuit B-C body	1	1.2
Biscuit unpainted, slipped one side	4	4.9
Northern Rio Grande Utilityware		
Plain gray rim	1	1.2
Plain gray body	26	31.7
Smeared-indented corrugated	19	23.2
Sapawe Micaceous	16	19.5
Middle Rio Grande Glazeware		
Glaze red body	3	3.7
Total	82	100.0

Table 49.8. Temper by ware for ceramics from LA 127627.

Temper	Ware			
	Gray	White	Glaze	Total
Granite with mica	21	2	0	23
Fine tuff or ash	1	13	0	14
Fine tuff and sand	0	1	0	1
Latite Keres area	2	0	0	2
Smeared-indented sand	32	1	0	33
Basalt	0	0	3	3
Sapawe Micaceous temper	6	0	0	6
Total	**62**	**17**	**3**	**82**

Table 49.9. Vessel form by ware for ceramics from LA 127627.

Vessel Form	Ware			
	Gray	White	Glaze	Total
Indeterminate	4	10	0	14
Bowl rim	0	1	0	1
Bowl body	0	5	0	5
Jar neck	1	0	0	1
Jar body	57	1	3	61
Total	**62**	**17**	**3**	**82**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 74 artifacts were analyzed from LA 127627, consisting of three cores, 68 pieces of debitage, two retouched tools, and four ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 49.10 presents the data on lithic artifact type by material type. The debitage is primarily made of Pedernal chert and chalcedony with other materials. The presence of cortex on 8.8 percent of the debitage indicates that these materials were collected from waterworn (n = 6) sources. The Pedernal chert and chalcedony are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

One piece of obsidian and a piece of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifact is derived from the El Rechuelos (Polvadera Peak) source area located about 27 km (17 mi) northwest of the site (Table 49.11). The basalt artifact was determined to be basalt and not dacite.

Table 49.10. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Schist	Total
Cores	Core	0	0	0	0	0	0	0	0	0	3	0	0	0	3
	Subtotal	0	0	0	0	0	0	0	0	0	3	0	0	0	3
Debitage	Angular debris	0	0	0	0	0	0	0	1	0	2	0	0	0	3
	Core flake	1	0	4	2	0	0	1	24	0	26	0	0	0	59
	Biface flake	0	0	0	0	0	0	0	0	0	2	0	0	0	2
	Microdebi-tage	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Und. flake	0	0	0	0	0	0	1	1	0	1	0	0	0	3
	Subtotal	1	0	4	2	0	0	2	26	0	32	0	0	0	68
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Biface	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Projectile point	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Ground Stone	Two-hand mano	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Und. mano	0	0	0	0	0	1	0	0	0	0	0	1	0	2
	Und. ground stone	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	1	1	0	0	0	0	0	1	1	4
Total		**1**	**0**	**4**	**2**	**1**	**1**	**2**	**26**	**0**	**37**	**0**	**1**	**1**	**74**

Table 49.11. Obsidian source samples.

FS #	Artifact	Color	Source
93	Debitage	Black Dusty	El Rechuelos

Lithic Reduction

Two of the cores are a platform and flake core that were reduced using a single-directional, multi-face technique. The other artifact is a core fragment. All were still useable and broken on a material flaw when discarded. Table 49.12 presents the metric information on the cores.

The debitage mostly consists of core flakes, with a few other debitage types. The overall cortical:non-cortical ratio of 16.0 reflects an emphasis on the later stages of core reduction and tool production/maintenance. The flakes mostly have single-faceted platforms (n = 31), with

fewer cortical (n = 1), collapsed (*n* = 4), and crushed (*n* = 5) platforms. None of the platforms exhibit evidence of preparation. The majority of the core flakes are whole (*n* = 28), with fewer proximal (*n* = 10), midsection (*n* = 6), distal (*n* = 13), and undetermined flake (*n* = 1) fragments. In contrast, the biface flakes consist of a whole and proximal fragment. The whole core flakes have a mean length of 31.7 mm (*std* = 11.1), the single whole biface a length of 23.0 mm, and the angular debris a mean weight of 6.7 g (*std* = 5.8).

Table 49.12. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	39	43	43	96.9
Single-directional	24	47	39	58.2

The retouched tools consist of a retouched piece and a biface. The retouched piece is a large chalcedony flake fragment with unidirectional dorsal retouch along an edge with an angle of 80 degrees. The biface is a proximal fragment with an edge angle of 80 degrees, indicating that it was broken during the early stage of manufacturing.

Tool Use

One piece of debitage exhibits evidence of edge damage that could be attributed to use. It is a core flake with a concave/convex-shaped damaged lateral edge with an angle of 55 degrees. The retouched flake also exhibits rounding/polish along the edge. This tool could have been broken during the resharpening process.

The ground stone artifacts include manos. One of the manos is a two-hand variety made on an oblong-shaped schist cobble with a single heavily ground flat surface (Figure 49.4). The other two manos are cobble fragments with one and two ground surfaces that are flat and convex-shaped. Lastly, the undetermined piece of ground stone is a piece of dacite with the high points ground on a single side. This artifact could be a mano fragment or a small grinding slab.

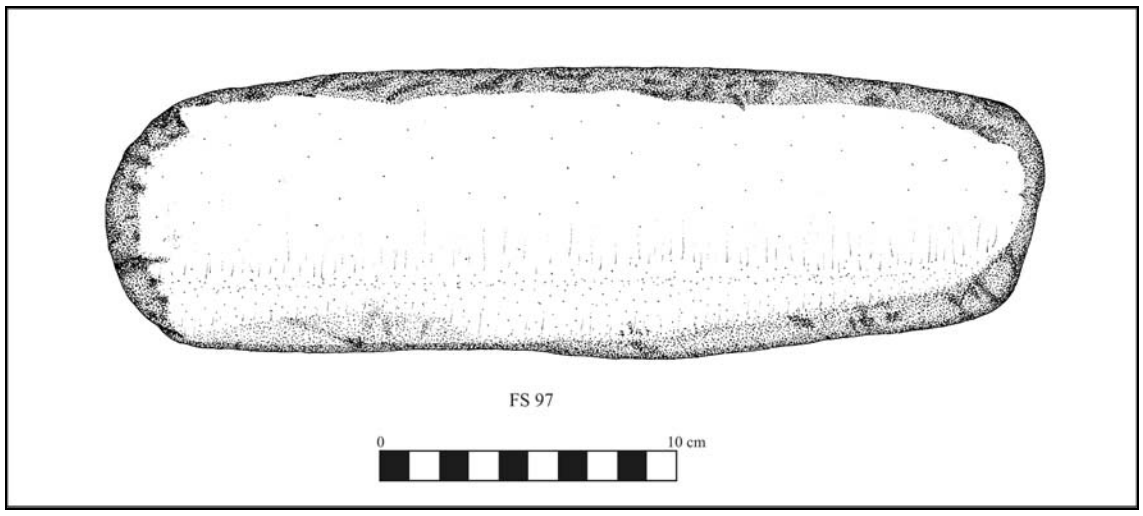


Figure 49.4. Two-hand mano.

Faunal Remains (Kari Schmidt)

Two pieces of unidentified bone were recovered from LA 127627. The bones were both recovered from the same unit (103N/107E), both were burned, and both were very small. Both pieces of bone were recovered from the fill of the fieldhouse, and both contained old breaks.

Archaeobotanical Remains (Pamela McBride)

Cultural plant material consisted of conifer duff, unknown seeds and plant parts, corn cupules, and a goosefoot seed fragment (Table 49.13). More conifer duff was recovered unburned, along with annual seeds and grass parts.

Table 49.13. Flotation plant remains, count, and abundance per liter from LA 127627.

FS No.	**9**	**31**	**52**
Feature	Living surface	Occupational fill	Under stone in NW corner
Cultural			
Annuals			
Cheno-Am	1(0)		
Cultivars			
Maize	2(1) c	2(1) c, 1(1) cs	1(0) c
Other			
Unidentifiable	1(0), 5(0) pp	1(0), 2(0) pp	3(2) pp
Unknown #1			1(1)
Perennials			
Juniper			+ twig
Pine	+ umbo		cf. 1(1), + barkscale, + umbo
Piñon	+ needle		+ needle
Ponderosa pine	+ needle	+ needle	+ fascicle, + needle
Non-Cultural			
Annuals			
Amaranth	+		
Goosefoot			+
Purslane			+
Other			
Spurge			+
cf. Wild lettuce			+
Grasses			
Grass family			+ floret, + stem
Ricegrass			+
Perennials			
cf. Douglas fir			+ needle
Juniper			+ twig

FS No.	9	31	52
Pine			+ umbo
Piñon			+, + needle
Ponderosa pine		+ needle	+ needle

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, c cupule, cf. compares favorably, cs cupule segment, pp plant part.

Coniferous woods dominated the wood assemblage; two fragments of oak identified in occupational fill were the only representatives of non-conifer wood (Table 49.14). Ponderosa and pine were the most abundant wood taxa, but may not be cultural in origin as the site area was heavily burned in the Cerro Grande fire. A single fragment of juniper was recovered from under the stone in the northwest corner of the structure. Corncobs and possibly local woods were used for fuel and site occupants may have consumed goosefoot (but considering only a fragment was recovered and the condition of the site, this is equivocal at best).

Table 49.14. Flotation sample wood charcoal by count and weight in grams.

FS No.	9	31	52
Feature	Living surface	Occupational fill	Under stone in NW corner
Conifers			
Juniper			1/<0.1 g
Pine	2/<0.1 g	3/0.1 g	1/0.4 g
Ponderosa pine	3/<0.1 g	3/0.2 g	2/0.1 g
Unknown conifer	5/0.1 g	2/<0.1 g	1/<0.1 g
Non-Conifers			
Oak		2/<0.1 g	
Totals	**10/0.1 g**	**10/0.3 g**	**5/0.5 g**

Pollen Remains (Susan Smith)

Six pollen samples were analyzed from LA 127627. Table 49.15 lists the frequency of identified pollen types. No cultigens or other economic resources were identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 49.15), and these are discussed in detail in Smith's chapter in Volume 3.

Table 49.15. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127627 (*n* = 6)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127627 (*n* = 6)
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	4
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	1
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	6
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127627 (*n* = 6)
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	3
	Abies	Fir	1
	Pinus	Pine	5
		Pine Aggregates	1
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	5
		Juniper Aggregates	0
	Quercus	Oak	4
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127627 (*n* = 6)
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	2
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 127627 consists of a one-room fieldhouse. The site was situated on the terrace overlooking the adjacent drainage in Rendija Canyon, with the room constructed to offset the northwest-facing slope. The walls were built from local dacite cobbles and tuff blocks, with several boulders integrated into the architecture. Excavations revealed a single unprepared living surface with no interior features. This surface was situated at the top of the Bt1b1 horizon, with the post-occupational fill being composed of the Bw soil. The majority of the artifacts were recovered from the fill of the structure, with a concentration located to the immediate northeast that could represent an outside activity area. Although no cultigens were recovered, the site presumably was occupied during the growing season with maize being cultivated. The radiocarbon dates and ceramic evidence indicate a Middle Classic period occupation during the 15th century.

CHAPTER 50
RENDIJA TRACT (A-14): LA 127633

Michael J. Dilley and Bradley J. Vierra

INTRODUCTION

LA 127633 is the remains of a rock feature consisting of four upright slabs, with several other blocks eroding downslope. The site is located on a north-south-trending ridge near the bottom of Rendija Canyon. The northern and western (upslope) portion of the site remains intact while the southern and eastern sides of the site have eroded downslope. Vegetation on the site consists of ponderosa pine and various tall grasses, with a heavy pine duff ground cover. The site is situated at an elevation of 2109 m (6900 ft).

The site was first recorded on April 1, 1999, by Hoagland and Campbell during a survey for the Conveyance and Transfer Project and given the temporary site number of Q-195. The site was initially recorded as a rock feature, possibly representing the remains of a structure foundation. No surface artifacts were recorded. The site was partially eroded and some questions were raised about the presence of intact subsurface deposits.

FIELD METHODS

Before excavation proceeded, the slab feature and surrounding area was cleared of fallen trees and underbrush to ensure safe working conditions and to expose the extent of the feature. The feature was visible as four unshaped upright dacite slabs with several other dacite and tuff blocks eroding downslope (Figure 50.1). The slab feature was 1.3 m in length (east-west) and 1 m in width (north-south). An arbitrary site datum was established (designated 100N/100E) and the site was then covered with a 1- by 1-m grid that extended 2 m north and 4 m east of the site datum. Two subdatums (A-B) were established for taking elevations and pre-excavation photographs were taken (see Figure 50.1). A surface survey of the site was conducted, and no artifacts were recovered. A 1- by 3-m east-west trench (101N/101-103E) was then excavated across the feature. The purpose of this trench was to expose the stratigraphy of the site and to determine the extent of the feature. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. No living surface was determined, and the excavations were terminated at the base of the upright slabs. Upon completion of the trench excavation, the rest of the feature area was then excavated by grid unit and strata, with thicker units excavated in arbitrary 10-cm levels. Since excavated units outside the feature produced no subsurface deposits, excavations focused on the interior of the structure. A total of seven units were excavated for this feature (Area 1). Grid unit 101N/101E served as a geomorphic test pit and was excavated below the base of the upright slabs into the Btjb1 horizon.

Figure 50.1. Pre-excavation photograph of the feature at LA 127633.

Approximately 10 m downslope to the southwest of the slab feature, a rough alignment of tuff blocks was partially exposed on the surface of the ridge slope (Area 2). The grid was extended to include the possible alignment. A second trench was excavated to investigate this area for possible cultural deposits. The trench was oriented north-south to accommodate the slope and included grids 89-91N/98E. A subdatum (C) was established to take elevations. No cultural deposits were determined for this area, but the trench was utilized for further geomorphological investigations. A total of three units were excavated in Area 2.

Soil and pollen samples were taken from selected locations in both Areas 1 and 2, and all other soil was screened through a 1/8-in. screen to recover any artifacts. Subsequent to excavation, both areas were mapped (Figure 50.2) and photographed (Figure 50.3).

The excavation of the site was supervised by Michael Dilley. The field crew included Sandi Copeland, Hannah Lockard, Rhonda Robinson, and Bradley Vierra. Timothy Martinez represented San Ildefonso Pueblo as site monitor.

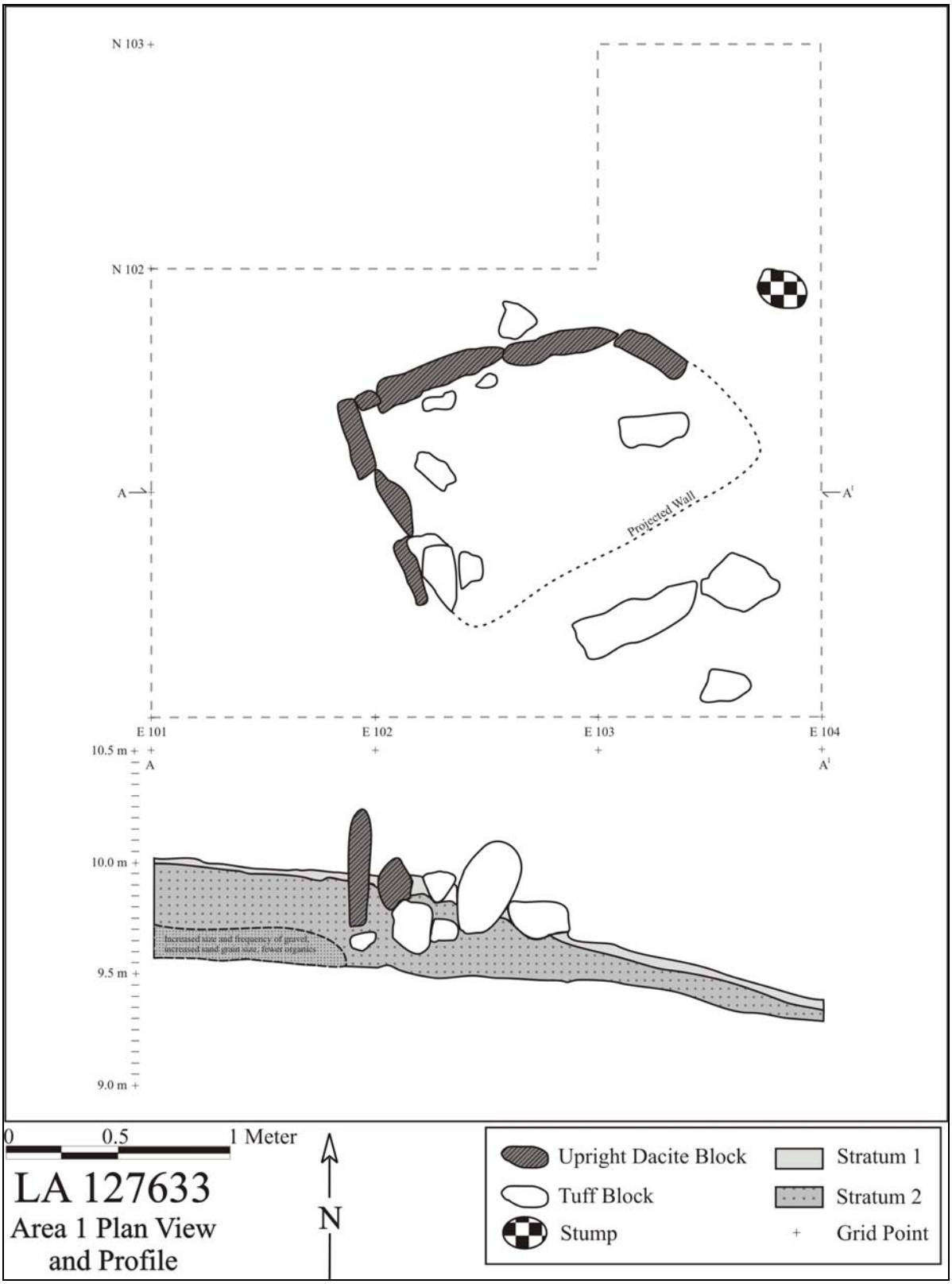


Figure 50.2. Plan view and profile of the excavations in Area 1.

Figure 50.3. Post-excavation photograph of Feature 1.

STRATIGRAPHY

Stratum 1 is the loose surface sediment, consisting of loamy sand and pine duff (Table 50.1). The stratum is 3 to 9 cm thick across Area 1 and 1 to 6 cm thick in Area 2. Stratum 2 is post-occupational fill and semi-consolidated soils consisting of loamy sand with gravel inclusions, ranging from 9 to 56 cm in thickness in Area 1. In Area 2, Stratum 2 was not considered post-occupational fill, but included the semi-consolidated soils, ranging from 6 to 57 cm in thickness (Table 50.2). Excavation below Stratum 2 was limited to geomorphological investigations and included sterile soils.

Table 50.1. Area 1 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 6/3	Loamy sand/ pine duff	3–9	Surface sediment
2	8.75 YR 4/3	Loamy sand w/gravel inclusions	9–56	Semi-consolidated fill
3	10YR 4/3	Sandy soil w/gravels/pumice	56+	Sterile

Table 50.2. Area 2 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/3	Loamy sand/pine duff	1–6	Surface sediment
2	10YR 6/3	Loamy sand w/gravel inclusions	6–57	Semi-consolidated fill
3	7.5YR 5/4	Sandy soil w/gravels/pumice	57+	Sterile

SITE EXCAVATION

Area 1, Feature 1

Sequence of Excavation. Area 1 included the slab feature (Feature 1), which consisted of four upright dacite slabs (see Figure 50.3). Feature 1 is considered to be a possible storage bin. The feature measures 1.3 m east-west by 1.0 m north-south. Feature 1 is situated on an eroding south-facing slope and the four upright slabs were all that remained intact. Excavation began with an east-west trench across the feature (101N/101-103E). The trench was excavated in an attempt to define the feature and to determine the extent and condition of the feature. Upon completion of the trench excavation, the remainder of the feature area was excavated by grid down to the base of the upright slabs. Grids surrounding the feature were also excavated, but were determined to contain no additional cultural information and were abandoned in favor of concentrating on excavation of the feature's interior. During the excavation of the interior of Feature 1, several tuff and dacite blocks were recovered as well as several small fragments, these rocks were recorded as possible construction materials. No floor, defined living surface, or additional feature elements were encountered. After the feature excavation was completed, samples were taken and the feature was mapped and photographed.

Fill. The interior of the feature was filled with 1 to 10 cm of loose surface sediment overlying 10 to 56 cm of a semi-consolidated post-occupational fill. The soil below the loose surface sediment was a loamy sand (BC horizon) that contained numerous small gravel inclusions that increased in size and frequency with depth, indicating episodic erosion. Flotation (Field Specimen [FS] 2) and pollen samples (FS 3) were taken from the Feature 1 fill. The flotation sample was not analyzed, but taxa identified in the pollen sample included grass family, cheno-ams, sunflower family, fir, unidentified pine, piñon pine, juniper, and oak.

Floor. No floor or living surface was determined for Feature 1. Due to the feature's location on an eroding slope, a good portion was eroded away, and any interior surface was also eroded away. There also was root and rodent disturbance noted within the interior of the feature. As best as could be determined, the base of the upright slabs was used as an indicator of the living surface. No artifacts were recovered from the interior. Flotation (FS 14 and FS 15) and pollen

(FS 11, FS 12, and FS 13) samples were taken from the interior of the feature. FS 14 was analyzed and the only charred taxon identified was ponderosa pine. Taxa identified in the pollen samples included rose family, buckwheat, mustard family, grass family, cheno-ams, sunflower family, spurge family, fir, unidentified pine, piñon pine, juniper, oak, ash, Mormon tea, and sagebrush.

Wall Construction. Feature 1 was constructed of upright dacite slabs, only four of which remained in place. These slabs made up the north and west walls of the feature. The slabs, as far as could be determined due to the eroded nature of the area, were set into the BC soil horizon. The slabs were apparently held in place, or supported by, smaller rocks that were situated at and against the base of the slabs. Several of these smaller rocks were still noted in place and several more were encountered in the fill during excavation. There was also some evidence of possible mortar still in place. Some hardened clay/adobe was exposed at the base of the large slab in grid 101N/102E. There also were some larger tuff rocks included in the fill of the feature's interior that may represent additional construction material, or were weights used to hold down a cover of the feature. Units excavated outside of Feature 1, immediately to the south, produced additional tuff and dacite rubble (additional dacite slab fragments were also noted on the surface downslope), indicating the possibility that the south and east side of the feature had eroded downslope.

Area 2

Sequence of Excavation. Area 2 consisted of a suspected rock alignment that was located approximately 10 m downslope to the southwest of Feature 1. The alignment included several partially buried tuff blocks transversing a narrow eroding ridge. A test trench was excavated north-south through the suspected tuff block alignment (89-91N/98E).

Fill. Fill from the trench excavation consisted of a loose surface sediment including pine duff (Stratum 1) that was 1 to 6 cm in thickness, a semi-consolidated loamy sand with dacite and pumice inclusions (Stratum 2) that was 6 to 21 cm thick, and a more consolidated, darker fine-grained loamy sand (Stratum 3) that was 21 to 57 cm thick (Figure 50.4). Pollen (FS 8) and flotation (FS 9) samples were taken from the fill, but were not analyzed.

Excavation of the trench produced no subsurface cultural deposits. No actual alignments were exposed and no artifacts were recovered. The area was then abandoned, but the trench was subsequently utilized in a geomorphological profile.

Geomorphic Analysis

A single grid unit was excavated below the BC horizon (Stratum 2) to serve as a geomorphic test pit in Area 1. The profile of this unit was analyzed by geomorphologists Paul Drakos and Steven Reneau. A soil sequence was determined consisting of an A horizon young colluvium topsoil (middle-late Holocene), a BC/IIC young colluvium post-occupation (middle-late Holocene), and a IIIBwb1 horizon (middle-late Holocene).

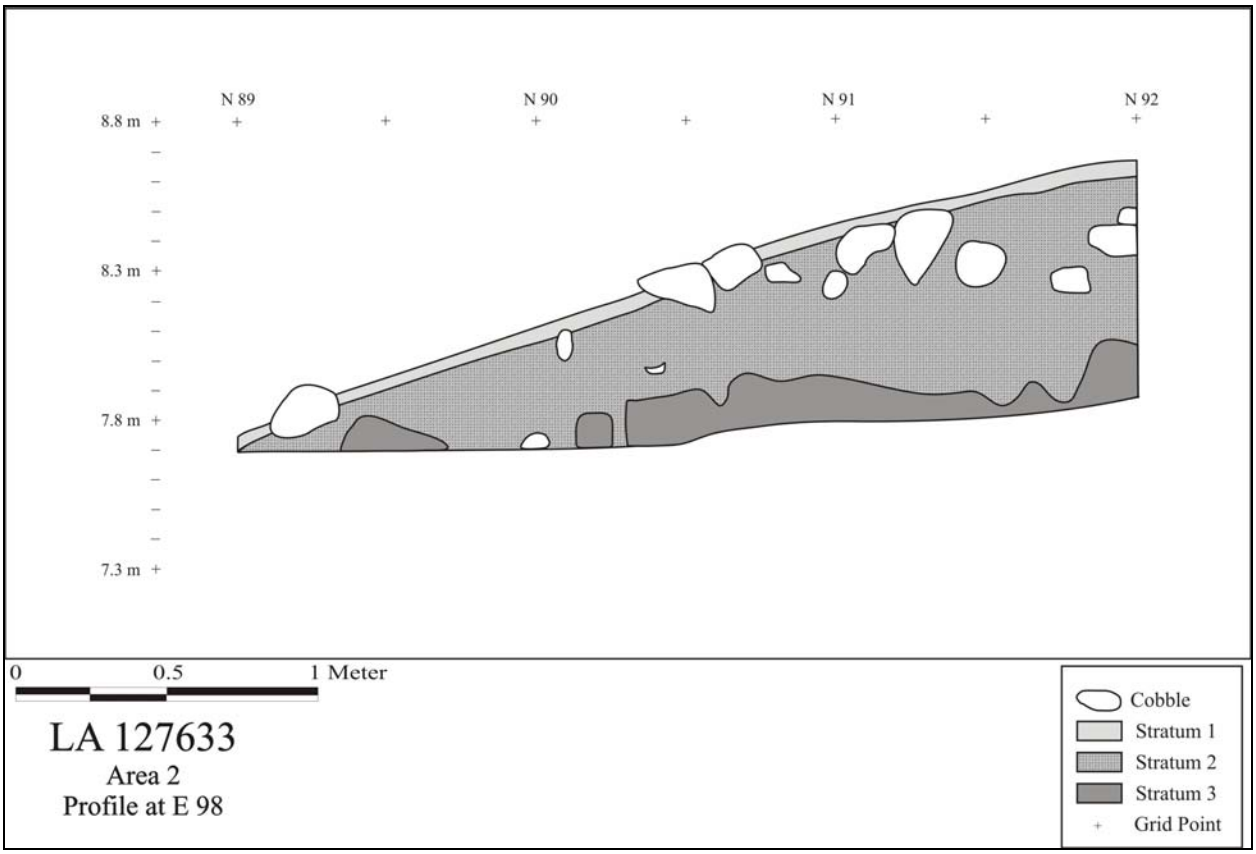


Figure 50.4. Profile of the 98E line in Area 2.

In Area 2, a test trench was excavated (89-91N/98E) into the slope of the ridge 10 m below Area 1. The profile of this trench was also analyzed by Paul Drakos and Steven Reneau. A soil sequence was determined consisting of an A horizon late-Holocene topsoil, a BC horizon late Holocene, and a Btjb1 horizon middle-late Holocene.

The likely occupation surface at LA 127633 is within the upper part or at the top of the BC soil horizon. The weak soil development both above and below the structure indicates a likely Classic period age.

SITE CHRONOLOGY AND ASSEMBLAGE

Only two artifacts were analyzed from the excavations conducted at LA 127633. Flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2) (Table 50.3). The results of the artifact and sample analyses are presented in the following sections.

Table 50.3. Samples selected for analysis from LA 127633.

Stratum	Flotation	Pollen	Radiocarbon	TL*
1				
2	2,4,14	3,5,11,13		
3				

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A single plain gray body sherd was the only ceramic artifact that was recovered from the site. It is a jar body sherd that was tempered with smeared-indented sand.

Lithic Artifacts (Bradley Vierra and Michael Dilley)

A single Pedernal chert core was the only lithic artifact recovered from LA 127633. It was reduced using a bidirectional, 90-degree technique and was classified as being discarded due to extensive hinging/stepping. Table 50.4 presents the metric information on the core.

Table 50.4. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bidirectional	75	62	33	164.3

Archaeobotanical Remains (Pamela McBride)

Contexts associated with a rectangular feature that could be all that remains of a storage bin or cist, produced carbonized goosefoot seeds, ponderosa pine needles, and unidentifiable plant parts (Table 50.5). The site was extremely compromised, the southern and eastern sides of the site having eroded downslope. Wood taxa were limited to ponderosa pine and unknown conifer (Table 50.6). Considering the poor condition of the site, the charred plant remains are most likely non-cultural.

Table 50.5. Flotation plant remains, count and abundance per liter from LA 127633.

FS No.	4	6	10	14
Feature	West end next to No. slab	East end next to No. slab	Post-occupational fill	NE ¼ of Feature against upright
Cultural				
Annuals				
Goosefoot		1(1)		
Other				
Unidentifiable		4(0) pp		1(0) pp

FS No.	4	6	10	14
Perennials				
Ponderosa pine		+ needle, + needle pc	+ needle	
Non-Cultural				
Annuals				
Goosefoot	+			
Perennials				
Ponderosa pine	+ needle			+ needle

+ 1-10/liter, pc partially charred, pp plant part.

Table 50.6. Flotation sample wood charcoal by count and weight in grams.

FS No.	4	6	10	14
Feature	West end next to No. slab	East end next to No. slab	Post-occupational fill	NE ¼ of Feature against upright
Conifers				
Ponderosa pine	1/<0.1 g	4/0.1 g	1/<0.1 g	2/0.1 g
Unknown conifer			1/<0.1 g	
Totals	**1/<0.1 g**	**4/0.1 g**	**2/<0.1 g**	**2/0.1 g**

Pollen Remains (Susan Smith)

Five pollen samples were analyzed from LA 127633. Table 50.7 lists the frequency of identified pollen types. No cultigens were identified in the botanical assemblage. Lily family was the only other economic resource that was identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 50.7), and these are discussed in detail in Smith's chapter in Volume 3.

Table 50.7. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127633 (*n* = 5)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	0
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127633 (*n* = 5)
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	1
	Brassicaceae	Mustard Family	1
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	5
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	5
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127633 (*n* = 5)
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	5
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	5
	Pinus	Pine	5
		Pine Aggregates	2
	Pinus edulis type	Piñon	5
	Juniperus	Juniper	5
		Juniper Aggregates	0
	Quercus	Oak	3
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	2

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127633 (*n* = 5)
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	1
Exotic	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 127633 consists of a rectangular feature with upright slabs that could be the remains of a storage bin or cist. The presence of a single plain gray jar sherd could indicate a Classic period occupation. No evidence of cultigens was recovered.

CHAPTER 51
RENDIJA TRACT (A-14): LA 127634

Gregory D. Lockard

INTRODUCTION

LA 127634 is a small one-room Classic period fieldhouse situated on a ridge finger overlooking Rendija Canyon. The site is located 340 m north of the Rendija Canyon bottom and just east of site LA 127635, which is another small one-room fieldhouse (see Chapter 52, this volume). The site is on a slope of approximately four degrees. The surrounding area is covered with ponderosa pine trees, most of which were severely burned in the Cerro Grande fire, and a scattering of juniper trees. The understory is dominated by several grass and wildflower species. The site is situated at an elevation of 2115 m (6940 ft).

The site was first surveyed on April 1, 1999, by Hoagland and Campbell and given a temporary site number of Q196. In the Laboratory of Anthropology Site Record, they interpret the site as a two-room fieldhouse. Nineteen artifacts were discovered in a surface survey of the site and analyzed in the field. Fourteen lithics were encountered. Eleven were Pedernal chert, two were black translucent obsidian, and one was rhyolite. Five biscuitware sherds were encountered, three of which were identified as Biscuit B. The structure was therefore presumed to date to the Classic period (AD 1325–1600).

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid system that extended 7 m north and 8 m east of the site datum, and four subdatums (A-D) were set up for taking elevations (Figure 51.1). The site was then photographed and surface collected. A ceramic sherd and a lithic were the only artifacts encountered in the surface collection.

A 6- by 1-m east-west trench was initially excavated across the middle of the rock alignments and wallfall visible on the surface of the site (103N/100-105E). The purpose of this trench was to define and present a profile of the stratigraphy both within and outside of the structure, as well as to determine the location of the east and west walls of the structure. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. During the excavation of grid 103N/103E, a small patch of burned floor was encountered. Excavation within the structure thereafter proceeded down to the level of this patch of floor. In the areas of the trench to the east and west of the structure, excavation proceeded down to the top of the sterile Btkb1 horizon. The westernmost unit in the trench (103N/100E) was chosen to serve as a test pit for geological analysis. Excavation in this unit therefore continued through the Btkb1 horizon down to the underlying Bandelier Tuff bedrock. The north profile of the trench was then drawn and photographed.

Figure 51.1. Pre-excavation photograph of LA 127634.

The rest of the site was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 29 units were excavated. Within the structure, excavation proceeded down to the floor surface where present. In areas where no clearly discernible floor surface was encountered, excavation proceeded down to a compact surface often found at or just below the level of nearby patches of well-preserved floor. This compact sediment is most likely the floor matrix that was once just beneath the floor's smooth surface. Outside of the structure, excavation proceeded down to the top of the sterile Btkb1 horizon. Excavation included the removal of rocks that could be clearly identified as wallfall to define the structure's walls and locate any internal or external features.

Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifactual remains. The excavation area was extended approximately 1 m outside of the structure in all directions to locate external features and identify outside activity areas. The excavations were extended 2 m to the east of the structure as this area contained the highest concentration of artifacts at the site and may therefore have been an outdoor activity area. The site was then mapped (Figure 51.2) and photographed (Figure 51.3).

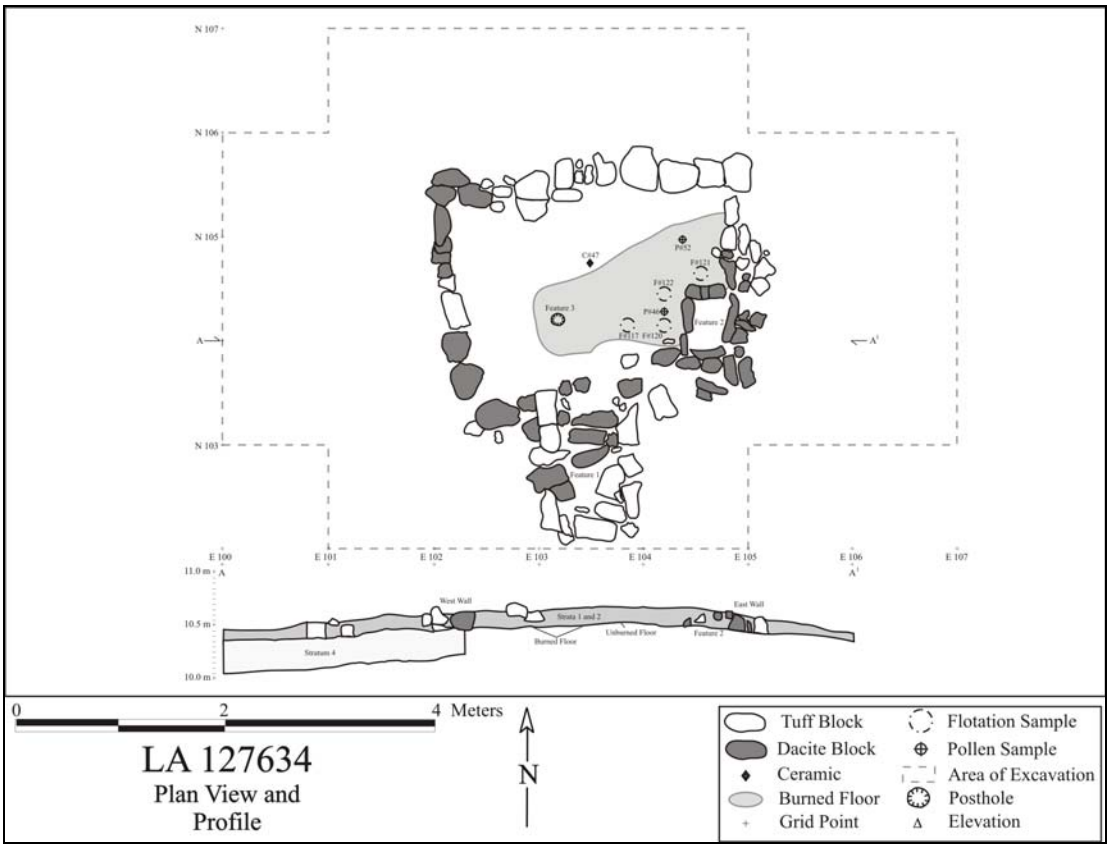


Figure 51.2. Plan view and profile drawing of the fieldhouse at LA 127634.

Figure 51.3. Post-excavation photograph of LA 127634.

The excavation of the site was supervised by Greg Lockard. Crewmembers included Joseph Aguilar, Brandon Gabler, and Jeanine Wood. Aaron Gonzalez and Michael Chavarria served as site monitors, representing San Ildefonso and Santa Clara pueblos, respectively.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 2 to 10 cm thick across the site and is roughly equivalent to the top half of the A horizon (topsoil). Stratum 2, which ranges from 7 to 25 cm thick in the area excavated, is post-occupational fill. This fill was thickest in and around the structure, especially in the area just south (downhill) of its north wall. Stratum 2 includes the lower half of the A horizon. A thin Bw horizon may have also existed in some areas of the site, although it was not present in the profile analyzed by geologists Paul Drakos and Steven Reneau. Stratum 3 is a prepared floor within the structure and Stratum 4 is the sterile Btkb1 horizon. The Btkb1 horizon, upon which the structure was built, contains discontinuous $CaCO_3$ coatings and is most likely a Pleistocene colluvium. Stratum 5 is the ashy fill from a slab-lined hearth (Feature 2) and Stratum 6 is the fill from a small posthole (Feature 3), both of which are inside the structure. Tables 51.1 through 51.3 summarize and describe the strata excavated at LA 127634.

Table 51.1. LA 127634 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 5/3	Loamy sand	2–10	Surface sediment
2	10YR 5/3	Loamy sand	7–25	Post-occupational fill
3	10YR 5/2	Clay	-	Room 1 floor
4	7.5YR 4/6	Sandy clay loam	25	Late-Pleistocene soil
5	10YR 6/2	Loamy sand	10	Feature 2 (hearth) fill
6	10YR 5/3	Loamy sand	7	Feature 3 (posthole) fill

Table 51.2. LA 127634 soil horizon descriptions from the north profile of the geological test pit (103N/100E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 5/3	Loamy sand	0–6	Topsoil
Btkb1	7.5YR 4/6	Sandy clay loam	6–23	Late-Pleistocene soil
IICBk	-	-	23–36+	Bedrock

Table 51.3. LA 127634 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	6	2	0	0	**8**
1	50	33	1	0	**84**
2	96	69	2	0	**167**

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
3	1	0	0	0	**1**
4	0	0	0	0	**0**
5	0	0	0	0	**0**
6	0	0	0	0	**0**
Total	**153**	**104**	**3**	**0**	**260**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is the only room in a small fieldhouse. The room measures 1.80 m north-south by 2.50 m east-west, with approximately 4.50 m^2 of interior space. Excavation of the room began with the east-west trench that extended across the site (103N/100-105E). The excavation of this trench served to define the stratigraphy and locate the east and west walls and floor of the room. After the excavation of the trench, the rest of the room was excavated down to the floor level and then photographed. A small test pit was subsequently excavated below the floor level in unit 104N/103E. The purpose of this test pit was to determine whether there were any additional living surfaces below. No additional living surface was encountered. In addition, the geological test pit (103N/100E) was extended eastward to the west wall of the room to ascertain how deep the foundation of the west wall extends in that location. The wall foundation was found to extend only a couple of centimeters into the Btkb1 horizon, indicating that the structure was basically built directly on top of this surface.

Fill. The room was filled with 2 to 10 cm of surface sediment and 10 to 20 cm of post-occupational fill. The fill was thickest just south (downhill) of the room's north wall. Two flotation samples were taken of Room 1 fill (Field Specimen [FS] 39 and FS 84), one of which came from directly on top of floor (FS 84). Charred taxa in these samples included piñon pine, ponderosa pine, sagebrush, unidentified pine, maize, mountain mahogany, unknown conifer, cottonwood/willow, and oak. Two pollen samples (FS 40 and FS 72) were also taken of Room 1 fill. One of these (FS 72) is from directly beneath a ground stone metate fragment that was at or near floor level (the floor was badly disturbed in this area). Taxa identified in these samples included maize, cholla, buckwheat, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, spruce, fir, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

Floor. The first step in the construction of the living surface of Room 1 was to clear the area of loose surface sediment and expose the top of the more compact Btkb1 horizon. The living surface has about the same slope as the surrounding hillside (sloping upward to the northwest), and therefore does not appear to have been leveled. The surface was not plastered. It was, however, covered with a thin layer of clay-rich sediment (i.e., adobe). This layer of adobe was either added to the top of or formed by wetting and packing down the surface of the Btkb1 horizon. This floor is very poorly preserved except where it was burned. This burning is most extensive near Feature 2, which is a slab-lined hearth located in the southeast corner of the room. The floor is best preserved just to the north and especially west of the hearth. In the western third of the structure, the floor is very poorly preserved and in places indiscernible.

Burned, hardened adobe was also encountered on top of the rock slab that defines the northern border of the Feature 2. This adobe is most likely the remains of a collar that covered the stone slab that defines the northern boundary of the hearth. The two slabs that form the western boundary of the hearth were probably also covered by the adobe collar. The slabs to south and east, on the other hand, probably were not covered with adobe as they extend significantly higher above the floor level and directly abut the perimeter wall of the structure. In addition to the hearth (Feature 2), the floor is also associated with a posthole (Feature 3). This posthole, which is located just to the southwest of the center of the room, is 9 cm in diameter and 7 cm deep.

Two pollen samples (FS 46 and FS 52) were taken from directly on top of the living surface. Taxa identified in these samples included maize, prickly pear, beeweed, rose family, buckwheat, grass family, cheno-ams, sunflower family, ragweed/bursage, spurge family, evening primrose, fir, unidentified pine, piñon pine, oak, and sagebrush. Four flotation samples (FS 117 and FS 120-122) were taken of burned floor matrix. Three of these are from areas directly to the west (FS 120 and FS 122) and north (FS 121) of the slab-lined hearth (Feature 2). Charred taxa identified in the samples taken from west of the hearth included piñon pine, ponderosa pine, unidentified pine, maize, oak, squash/coyote gourd, mountain mahogany, and unknown conifer. Charred taxa identified in FS 121 included juniper, piñon pine, ponderosa pine, unidentified pine, maize, beeweed, bugseed, and unknown conifer, while charred taxa identified in FS 117 included ponderosa pine, oak, goosefoot, unknown conifer, sagebrush, piñon pine, and unidentified pine. Two charcoal samples were also taken from these areas (FS 118 and FS 119) to serve as radiocarbon samples if no better botanical samples are recovered from flotation samples, but these samples were not analyzed.

Wall Construction. The rocks that form the perimeter walls of the fieldhouse are mostly long shaped tuff blocks (Table 51.4). Dacite cobbles were also used, especially as foundation rocks. As mentioned above, the geological test pit was extended eastward to the west wall of Room 1 in order to determine how deep the wall foundation is in this location. The wall foundation was found to extend only a few centimeters into the Btkb1 horizon, upon which the Room 1 floor was built. The Room 1 perimeter walls did not therefore have a very deep foundation. The upright slabs that form the perimeter of Feature 2 (slab-lined hearth), on the other hand, were embedded much deeper into the Btkb1 horizon (they extend below the base of the hearth, which is about 15 cm below floor level). The remains of the north and west walls of Room 1 are still two courses high. The east and especially south walls are more poorly preserved. They are only a single course high and contain some small gaps were no *in situ* rocks were encountered. One of the gaps in the south wall, however, may be an entryway (see Feature 1 description below).

Table 51.4. LA 127634 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	2.60	0.13–0.35	0.17–0.34	1 to 2
South	2.30	0.05–0.15	0.10–0.30	1
East	1.75	0.05–0.11	0.10–0.30	1
West	1.85	0.08–0.25	0.10–0.22	1 to 2

The high quantity of wallfall encountered during the excavation of Room 1 indicates that the masonry portion of the walls were originally considerable higher than they are today. In order to estimate how much higher, all of the rocks removed as wallfall during the excavation were placed into two stacks for measurement. One of these stacks measured 2.95 by 0.58 by 0.25 m, for a total of 0.428 m^3. The second stack measured 3.40 by 0.80 by 0.35 m, for a total of 0.952 m^3. Based on the combined volume of these stacks of wallfall (1.38 m^3) and the overall length, average thickness, and average height of the extant portions of the walls, the masonry portion of the Room 1 wall was originally only about 94 cm in height. The upper part of the walls and ceiling were most likely composed of vegetal material and adobe. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, four small pieces of burned adobe (FS 10, FS 60, FS 65, and FS 86) were the only evidence found of such a superstructure.

Feature 1 (Staircase/Entryway)

Feature 1 appears to be a staircase leading to the Room 1 entryway (Figures 51.4). It is an external feature located directly south of the central portion of the south wall of Room 1. The feature is composed of dacite cobbles and several shaped tuff blocks. The feature's south, east, and west perimeter walls are mostly composed of the shaped tuff blocks. The south and west perimeter walls are fairly well preserved, while the east perimeter wall appears to have been partially disturbed. The northern boundary of the feature is defined only by a couple of small dacite cobbles that appear to form the threshold (i.e., doorsill) of the entryway into Room 1. The feature measures approximately 1.5 m north-south by 1.0 m east-west.

Figure 51.4. Post-excavation photograph of Feature 2, an entryway/staircase.

Three long, flat dacite rocks are located within the feature. These rocks are oriented east to west and appear to have functioned as steps leading up to the entryway. If this interpretation is correct, the shaped tuff block that forms the south perimeter wall of the feature also functioned as the first step in the staircase. There is a gap of approximately 40 cm between this first step and the southernmost interior step. Originally, this gap was probably filled by another step that is now missing or displaced. If Feature 1 functioned as a staircase, it probably originally had five steps.

Feature 2 (Hearth)

Feature 2 is a rectangular, slab-lined hearth located in the far southeast corner of Room 1 (Figure 51.5).

Figure 51.5. Feature 2, a slab-lined hearth at LA 127634.

All of the slabs that form the perimeter of the hearth are dacite. Two upright slabs form the western border of the hearth and the other three borders are each formed by a single upright slab. The top of the slab that forms the northern border of the hearth has broken off. This area of the slab is covered with burned adobe, however, indicating that it was broken either before or during the occupation of the fieldhouse. The presence of adobe on top of this slab also suggests that an adobe collar once covered the northern border of the hearth. If this is the case, the adobe collar probably also covered the slabs that formed the western border of the hearth. The adobe collar probably did not cover the slabs that formed the southern and eastern borders of the hearth, on

the other hand, as they extend significantly higher above the floor level and directly abut the perimeter wall of the structure. The interior of the hearth measures 47 cm north-south by 27 cm east-west and is 15 cm deep. The hearth was filled with very ashy sediment that contained some small pieces of charcoal. Burned, hardened adobe was encountered in the bottom corners of the hearth, especially the northwest corner. This adobe does not appear to be the remains of a hearth lining. Instead, the adobe appears to have been used only to fill in the places in between the slabs that form the hearth's perimeter.

A pollen sample (FS 104) was taken from beneath a rock lying directly on top of the ashy sediment that filled the hearth, at about floor level, but no taxa were identified. The rest of the ashy fill (Stratum 5) removed from the hearth was kept as eight flotation samples (FS 105 through FS 112). Charred taxa identified in these samples included maize, beans, tobacco, oak, banana yucca, goosefoot, sagebrush, ponderosa pine, beeweed, mountain mahogany, and piñon pine.

Feature 3 (Posthole)

Feature 3 is a posthole located just to the southwest of the center of Room 1 (Figure 51.6). The center of the posthole is located at 104.23N/103.16E on the excavation grid.

Figure 51.6. Post-hole (Feature 3).

The posthole is 9 cm in diameter and 7 cm deep. All of sediment excavated from within the posthole (Stratum 6) was kept as a pollen sample (FS 116). Taxa identified in this sample included maize, rose family, mustard family, grass family, cheno-ams, ragweed/bursage, sunflower family, unidentified pine, piñon pine, and sagebrush.

Geological Test Pit

A single unit (103N/100E) was excavated below the top surface of the Btkb1 horizon as a geological test pit. The north profile of this unit, which was analyzed by geologists Paul Drakos and Steven Reneau, contained a soil sequence consisting of A and Btkb1 horizons (see Table 51.2). The Btkb1 horizon rests directly on top of Bandelier Tuff bedrock. After the site was completely excavated and photographed, the northern half of the test pit was extended eastward to the west wall of Room 1 to determine the depth of the wall's foundation. This excavation revealed that the foundation of the west wall of Room 1 extends only a couple of centimeters into the Btkb1 horizon in that location.

Artifact Distribution

The usual pattern for prehistoric architecture on the Pajarito Plateau is for entryways to be placed in the east wall of residential rooms, presumably to take advantage of the light from the rising sun. Artifact density is usually high in the areas directly outside of the entryways, to the east of the rooms. One explanation for the high artifact density to the east of the rooms is that this locale functioned as an activity area. An alternative, or possibly complementary, explanation is that the artifacts were swept into the area from inside the rooms through their doorways. As Table 51.5 demonstrates, the majority of artifacts encountered from LA 127634 are from the area just east of Room 1. The entryway to Room 1, however, appears to be to the south (see Feature 1 description above). The increased artifact density to the east of the room therefore cannot be the result of sweeping artifacts through the doorway, and instead most likely reflects its use as an activity area. Surprisingly, the southern, downhill half of the area excavated did not contain significantly more artifacts than the northern, uphill half. This suggests that erosion was not a significant natural formation process affecting the distribution of artifacts at the site.

Table 51.5. LA 127634 artifact counts by grid unit.

	E100	E101	E102	E103	E104	E105	E106
N106		1	2	9	8		
N105	0	0	**3**	**5**	**7**	25	29
N104	0	1	**2**	**17**	**12**	21	14
N103	1	10	**6**	**7**	**13**	23	13
N102		6	5	2	12		

Note: Does not include six artifacts found outside of the excavated area during surface collection; bold numbers indicate grid units that are located completely or partially within Room 1.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 247 artifacts were analyzed from excavations at LA 127634. Analyses of the ceramics, lithics (chipped and ground stone), pollen, and archaeobotanical materials were conducted (Table 51.6). In addition, samples were submitted for radiocarbon, thermoluminescence (TL), and obsidian hydration dating. The results of these analyses, as well as associated tables, are presented in the following pages.

Table 51.6. Samples selected for analysis from LA 127634.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL
1				
2	39, 84	40, 72		43, 95
3	117, 120, 121, 122	46, 52		
4				
5	105, 106, 107, 108, 109, 110, 111, 112	104	105, 108	
6		116		

Chronology

Radiocarbon Dating

Two maize samples recovered from Feature 5 (hearth) were submitted for accelerator mass spectroscopy dating. The first sample provided a date of 350±40 BP (Beta-215556), with calibrated intercepts of AD 1510, AD 1600, and AD 1620, and a two-sigma range of AD 1470–1630. The second sample yielded a similar date of 340±40 BP (Beta-215557), with calibrated intercepts of AD 1520, AD 1590, and AD 1620, and a two-sigma range of AD 1480–1640.

Thermoluminescence Dating

Two Biscuit B sherds were submitted for Optically Stimulated Luminescence (OSL) dating from LA 127634 (Table 51.7). All derived ages are given in years BP, which refers to years before 2003, and both are consistent with a Middle Classic period date.

Table 51.7. Thermoluminescence dates from ceramics at LA 127634.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
43	UW1417	East wall Room 1	8	542	6.1	1464±33
95	UW1418	East of Room 1	17	512	5.5	1494±28

Obsidian Hydration Dating

Three obsidian artifacts from LA 127634 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site were estimated so that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 51.8).

Table 51.8. Obsidian hydration dates for LA 127634.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
8	2003-74	Cerro Toledo	4.49	1565	17
19	2003-75	Valle Grande	3.13	-2166	267
99	2003-76	Valle Grande	4.26	-5023	331

Relative to other dating methods conducted at the site, the obsidian hydration dates seem to be the least accurate. Radiocarbon and OSL dates indicate a Middle to Late Classic period date (16^{th} or 17^{th} century), with only one of the three obsidian samples providing a 16^{th} century date. The other two obsidian artifacts might have been scavenged from nearby Early and Middle Archaic sites.

Ceramic Artifacts (Dean Wilson)

One-hundred-forty-nine sherds were recovered from the fieldhouse at LA 127634. These primarily consist of Biscuit B/C (Biscuit B?) and Sapawe Micaceous sherds, which indicate a Middle Classic period date (16^{th} century). This corresponds with the presence of Sankawi Black-on-cream and glazeware ceramics, which also support a Classic period occupation. Tables 51.9 through 51.12 show the summary ceramic data for the site, including general type, types by tradition, temper material by ware type, and ware by vessel form. Most of the graywares and all of the whitewares contain local tempering material like smeared-indented sand to tuff; however, the glazewares and five graywares contain basalt temper and the Sapawe Micaceous sherds a granitic temper with mica. The graywares, micaceous wares, and most of the glazewares represent jar vessel forms. In contrast, the whitewares exhibit mostly bowls, with some jars.

Table 51.9. Distribution of ceramics types from LA 127634.

Ceramic Types	Frequency	Percent
Northern Rio Grande Whiteware		
Biscuitware unpainted slipped both sides	4	2.7
Biscuitware unpainted slipped one side	6	4.0
Biscuitware paint and slip absent	9	6.0

Ceramic Types	Frequency	Percent
Biscuit A	5	3.4
Biscuit B	6	4.0
Biscuit B/C	52	34.9
Sankawi Black-on-cream	2	1.3
Northern Rio Grande Utilityware		
Plain gray body	3	2.0
Sapawe Micaceous	50	33.6
Middle Rio Grande Utilityware and Glazeware		
"utility ware"	5	3.4
Glaze red body unpainted	3	2.0
Glaze yellow body unpainted	1	0.7
Glaze yellow body undifferentiated	1	0.7
Glaze unslipped body	1	0.7
Total	**149**	**100.0**

Table 51.10. Tradition by ware for LA 127634 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	3	100.0	85	100.0	0	0.0	0	100.0	88	59.0
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	50	100.0	50	33.5
Middle Rio Grande	5	0.0	0	0.0	6	100.0	0	100.0	11	7.3
Total	**8**	**100.0**	**85**	**100.0**	**6**	**0.0**	**50**	**0.0**	**149**	**100.0**

Table 51.11. Temper by ware for LA 127634 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Sand	0	0.0	1	1.1	0	0.0	0	0.0	1	0.6
Granite with mica	0	0.0	1	1.1	0	0.0	1	2.0	2	1.3
Highly micaceous paste	0	0.0	0	0.0	0	0.0	5	10.0	5	3.3
Fine tuff or ash	1	12.5	67	78.8	0	0.0	0	0.0	68	45.6
Fine tuff and sand	0	0.0	15	17.6	0	0.0	0	0.0	15	10.0
Fine sandstone	1	12.5	0	0.0	0	0.0	0	0.0	1	0.6
Anthill sand	1	12.5	0	0.0	0	0.0	0	0.0	2	1.3
Basalt	5	62.5	0	0.0	6	100.0	0	0.0	11	7.3
Sapawe Micaceous temper	0	0.0	1	1.1	0	0.0	44	88.0	44	29.5
Total	**8**	**100.0**	**85**	**100.0**	**6**	**0.0**	**50**	**100.0**	**149**	**100.0**

Table 51.12. Vessel Form by ware for LA 127634 ceramics.

Vessel Form	Ware				Total
	Gray	White	Glaze	Micaceous	

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	8	9.4	1	20.0	0	0.0	9	6.0
Bowl rim	0	0.0	8	9.4	0	0.0	0	0.0	8	5.3
Bowl body	0	0.0	58	68.2	0	0.0	0	0.0	58	38.9
Jar neck	1	12.5	0	0.0	0	0.0	2	4.0	3	2.0
Jar rim	1	12.5	1	0.0	0	0.0	2	4.0	4	2.6
Jar body	6	75.0	9	0.0	5	80.0	46	92.0	66	44.2
Jar rim with strap handle	0	0.0	1	0.0	0	0.0	0	0.0	1	0.6
Total	**8**	**100.0**	**85**	**100.0**	**6**	**0.0**	**50**	**100.0**	**149**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 98 artifacts were analyzed from LA 127634, consisting of 94 pieces of debitage, a retouched tool, and three ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 51.13 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony and Pedernal chert, with some other materials. The presence of cortex on 17.0 percent of the debitage indicates that these materials were collected from waterworn (n = 15) and nodule (n = 1) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. The igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 51.13. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Sandstone	Total
Debitage	Angular debris	0	0	5	0	0	0	0	10	0	5	0	0	0	20
	Core flake	2	0	4	1	3	0	3	26	0	21	0	0	0	60
	Biface flake	0	0	0	0	0	0	1	3	0	0	0	0	0	4
	Bipolar flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Core trimming flake	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Microdeb.	0	0	0	0	0	0	0	4	0	0	0	0	0	4
	Und. flake	0	0	1	0	0	0	0	2	0	1	0	0	0	4

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
	Subtotal	2	0	10	1	3	0	5	46	0	27	0	0	0	94
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Ground Stone	Und. mano	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Und. metate	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Misc.ground stone	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	1	1	1	0	0	0	0	0	0	0	3
Total		**2**	**0**	**10**	**2**	**4**	**1**	**5**	**47**	**0**	**27**	**0**	**0**	**0**	**98**

Three pieces of obsidian and two pieces of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifacts are Valle Grande, Cerro Toledo, and El Rechuelos obsidian (Table 51.14). The Valle Grande (Cerro del Medio) and Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source areas are situated about 17 km (11 mi) and 19 km (12 mi) to the west and southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the nearby mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. The El Rechuelos (Polvadera Peak) source area is located approximately 27 km (17 mi) northwest of the site. A single basalt flake is actually made of dacite that was derived from local sources, however, the other flake appears to be basalt.

Table 51.14. Obsidian source samples.

FS #	Artifact	Color	Source
8	Debitage	Translucent	Cerro Toledo rhyolite
19	Debitage	Black dusty	El Rechuelos
99	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The debitage mostly consists of core flakes and angular debris, with a few biface flakes and microdebitage. The presence of a single obsidian bipolar flake may reflect the reduction of small nodules that are locally available on the nearby mesa top. The overall cortical:non-cortical ratio of 27.2 reflects an emphasis on the later stages of core reduction and tool production/maintenance. The flakes mostly have single-faceted platforms (n = 20), with fewer cortical (n = 3), dihedral (n = 1), collapsed (n = 3), and crushed (n = 9) platforms. Only one of the platforms exhibit evidence of preparation by abrasion/crushing. The majority of the core flakes are distal fragments (n = 24), with fewer whole (n = 12), proximal (n = 19), and

midsection (*n* = 5) fragments. In contrast, the biface flakes consist of two whole, one proximal, and a distal fragment. The whole core flakes have a mean length of 30.8 mm (*std* = 14.8), biface flakes a mean length of 13.0 mm (*std* = 2.8), and the angular debris a mean weight of 5.6 g (*std* = 12.6).

A single retouched flake was identified during the analysis. It exhibits unidirectional ventral retouch that creates a convex-shaped lateral edge with an angle of 70 degrees.

Tool Use

Three pieces of debitage exhibit evidence of edge damage that could be attributed to use. Two of the flakes have rounding/polish along a lateral edge with a straight outline and the third a concave outline. Each exhibits an edge angle of 55, 60, and 70 degrees, respectively.

The ground stone artifacts include a mano and metate. The mano is a fire-cracked cobble fragment with small ground areas on two opposing surfaces. The metate is also fire-cracked, consisting of a dacite fragment with a single ground surface. Lastly, the undetermined ground stone artifact is a black piece of tuff that has been shaped on two sides by abrasion and grinding to create two smooth flat surfaces.

Archaeobotanical Remains (Pamela McBride)

Aside from charred conifer duff, beeweed and corn were the most common taxa identified in flotation samples (Table 51.15). Banana yucca, beans, and tobacco seeds were found in samples from the hearth, while bugseed and possible squash rind were present in floor contexts near the hearth. This is quite a remarkable floral assemblage from a one-room fieldhouse. Carbonized tobacco indicates ritual activities may have taken place here that may have included using beeweed pigment to paint pottery or ritual items (Adams et al. 2002). Beeweed was of course also used extensively as a pot herb and the seeds were ground into a meal for flour or gruel (see Jones 1931 or Lange 1968a) and its presence may have more to do with food preparation rather than pigment manufacture.

Table 51.15. Flotation plant remains, count, and abundance per liter from LA 127634.

FS No.	**39**	**84**	**105**	**106**	**107**	**108**
Feature	Room 1, post-occupational fill, Stratum 2	Floor surface	Hearth fill 104N/104E			
Cultural						
Annuals						
cf. Beeweed				1(1)	7(6)	2(2)
Tobacco						1(1)
Cultivars						
Bean				cf. 5(0) cot	5(0) cot	

FS No.	39	84	105	106	107	108
Maize	6(2) c	1(0) cf. c	1(0) c, 1(1) e	3(0) c		2(0) c, 1(0) e pc
Other						
Unident.				2(0) pp	2(0) pp	
Perennials						
Piñon	+ needle					
Ponderosa pine	+ needle	+ needle		+ needle		
Non-Cultural						
Annuals						
Goosefoot	+	+		+		
Perennials						
Juniper					+ twig	
Piñon	+ needle			+ needle	+ needle	
Ponderosa pine	+ needle		+ needle	+ needle	+ needle	+ needle

Table 51.15 (continued). Flotation plant remains, count, and abundance per liter from LA 127634.

FS No.	109	110	111	112
Feature	Hearth fill 104N/104E			Hearth fill 103N/104E
Cultural				
Annuals				
cf. Beeweed	7(7), 1(0) pc	3(0)	1(1)	1(1)
Cultivars				
Maize	1(0) c, 2(0) cf. e pc			
Perennials				
Piñon				+ needle
Ponderosa pine	+ needle	+ needle	+ needle	+ needle
Banana yucca				1(1)

Table 51.15 (continued). Flotation plant remains, count, and abundance per liter from LA 127634.

FS No.	117	120	121	122
Feature	Floor matrix, level 4	Floor matrix W of hearth	Floor matrix N of hearth	Floor matrix NW of hearth
Cultural				
Annuals				
cf. Beeweed			1(1) pc	
Bugseed			1(1)	

FS No.	117	120	121	122
Cultivars				
Maize		2(0) c, 1(0) k	1(0) c	1(1) c
Other				
poss. Coyote gourd/Squash				+ rind
Perennials				
Juniper			+ twig	
Pine		+ barkscale	+ barkscale	+ barkscale
Piñon		+ needle	+ needle	+ needle
Ponderosa pine	+ needle	+ needle	+ needle	+ needle
Non-Cultural				
Annuals				
Goosefoot	+		+	
Perennials				
Piñon	+ needle		+ needle	+ needle
Ponderosa pine			+ needle	

All plant remains are seeds unless indicated otherwise. Cultural plant remains are charred, non-cultural plant remains are uncharred. + 1-10/liter, c cupule, cf. compares favorably, cot cotyledon, e embryo, k kernel, pc partially charred, pp plant part.

The wood assemblage at LA 127634 was composed of piñon, cottonwood/willow, ponderosa pine, mountain mahogany, oak, and sagebrush (Table 51.16). Site occupants probably used corncobs for fuel and the presence of kernels and embryos points to processing of maize. Compared to other fieldhouses in the Rendija Tract, LA 127634 and LA 127635 (see Chapter 52, this volume) yielded the greatest number of wild and domesticated taxa, including ritual plants, indicating that perhaps these sites were in use over a longer period of time.

Table 51.16. Flotation sample wood charcoal by count and weight in grams from LA 127634.

FS No.	39	84	105	106	107	108	109
Feature	Room 1, post-occupational fill, Stratum 2	Top of floor	Hearth fill 104N/104E				
Conifers							
Pine	2/0.2 g	3/<0.1 g	4/0.1 g	1/<0.1 g		1/<0.1 g	6/0.1 g
Ponderosa pine	13/0.6 g	11/0.7 g		1/<0.1 g		15/0.7 g	
Unknown conifer		1/<0.1 g	7/0.2 g	5/0.1 g	9/0.3 g	3/<0.1 g	5/0.1 g
Non-Conifers							
Cottonwood/ Willow		1/<0.1 g					

Mountain mahogany		1/<0.1 g				1/<0.1 g	
Oak	3/<0.1 g		4/<0.1 g				
Sagebrush	2/0.1 g						
Unknown Non-conifer					2/<0.1 g		
Totals	**20/0.9 g**	**17/0.7 g**	**15/0.3 g**	**7/0.1 g**	**11/0.3 g**	**20/0.7 g**	**11/0.2 g**

Table 51.16 (continued). Flotation sample wood charcoal by count and weight in grams from LA 127634.

FS No.	**110**	**111**	**112**	**117**	**120**	**121**	**122**
Feature	Hearth fill 104N/104E				Floor matrix W of hearth	Floor matrix N of hearth	Floor matrix NW of hearth
Conifers							
Pine	1/<0.1 g	3/0.2 g		6/0.6 g		5/0.2 g	
Piñon				3/0.5 g	2/0.9 g		
Ponderosa pine	5/0.4 g	3/<0.1 g	2/<0.1 g	5/0.2 g	16/1.4 g	8/0.1 g	
Unknown conifer	2/<0.1 g		2/<0.1 g	2/<0.1 g		7/0.1 g	3/<0.1 g
Non-Conifers							
Mountain mahogany			2/<0.1 g				2/0.1 g
Oak				1/<0.1 g	2/<0.1 g		
Sagebrush				3/0.1 g			
Totals	**8/0.4 g**	**6/0.2 g**	**6/<0.1 g**	**20/1.4 g**	**20/2.3 g**	**20/0.4 g**	**5/0.1 g**

Pollen Remains (Susan Smith)

Six pollen samples were analyzed from LA 127634. Table 51.17 lists the frequency of identified pollen types. Maize and cholla were the only cultigens identified in the botanical assemblage. Prickly pear and beeweed were the only other economic resources that were identified in the assemblage. A number of potential economic resources were also identified in the assemblage (Table 51.17), and these are discussed in detail in Smith's chapter in Volume 3.

Table 51.17. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127634 (*n* = 6)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	4
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	1
Economic Resources	*Opuntia* (Platy)	Prickly Pear	1
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	1
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	2
	Eriogonum	Buckwheat	2
	Brassicaceae	Mustard Family	1
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	4
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	2
Riparian Types	*Populus*	Cottonwood, Aspen	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127634 (*n* = 6)
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	5
		Cheno-Am Aggregates	2
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	5
		Sunflower Family Aggregates	1
	Ambrosia	Ragweed, Bursage	4
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	1
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees & Shrubs	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	3
	Pinus	Pine	5
		Pine Aggregates	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127634 (*n* = 6)
	Pinus edulis type	Piñon	5
	Juniperus	Juniper	3
		Juniper Aggregates	0
	Quercus	Oak	0
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	1
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	1
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 127634 consists of a one-room fieldhouse, a staircase/entryway, a slab-lined hearth, and a posthole. All four walls were intact and appeared to contain an opening to the east. A formal floor was not identified, but the fieldhouse did contain a compact living surface. The slab-lined hearth contained both maize and beans. The ceramic, radiocarbon, and TL evidence indicate that the fieldhouse was probably occupied during the Middle Classic period.

CHAPTER 52
RENDIJA TRACT (A-14): LA 127635

Michael J. Dilley and Bradley J. Vierra

INTRODUCTION

LA 127635 consists of the remains of a one-room early Classic period fieldhouse. The site is located near the southern end of a low north-south trending ridge overlooking Rendija Canyon. Vegetation in the site area is primarily ponderosa pine with scattered junipers and various grasses, with a surface covering of pine duff. The site is situated at an elevation of 2120 m (6950 ft).

The site was first recorded on April 1, 1999, by Hoagland and Campbell during a survey for the Conveyance and Transfer Project and given the temporary site number of Q-197. The site was initially recorded as a one-room fieldhouse with very little remaining rubble but having an intact foundation with potential for subsurface deposits. Surface artifacts consisted of three ceramic sherds identified as a single Biscuit A and two non-micaceous plainware sherds. Based on the surface-identified artifacts, the site was tentatively dated to the Classic period.

FIELD METHODS

Before excavation proceeded, the site and surrounding area was cleared of felled trees and underbrush to ensure safe working conditions and to expose the extent of the structure. The structure was visible as a roughly rectangular outline of shaped and unshaped tuff blocks, roughly 3 m north-south by 2 m east-west in size. An arbitrary site datum was established (designated 100N/100E) and the site was then covered with a 1- by 1-m grid that extended 6 m north of the datum and 3 m east and 3 m west of the datum. Two subdatums (A and B) were set up for taking elevations. Pre-excavation photographs were then taken and the site was surveyed for surface artifacts. A 6- by 1-m trench was initially excavated across the site (grids 103N/97-103E) to determine stratigraphy and to locate the east and west walls of the structure. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. The west wall of the structure was encountered in unit 103N/98E, and the east wall was encountered in unit 103N/100E. The alignment of the walls was not oriented exactly north to south. Wall orientation was more along a northeast to southwest axis. Units excavated for the trench were taken down to a compact surface that was ashy with charcoal flecking imbedded. This surface was determined to be the floor (living surface).

Upon completion of the excavation of the trench, the remainder of the site was then excavated by grid unit and strata, with thicker units excavated in 10-cm arbitrary levels. A total of 21 units were excavated. Within the structure, units were excavated to the floor/living surface determined during the excavation of the trench. Outside the structure, units were excavated to the top of a sterile Bwb1 horizon. The focus of excavation was on defining the walls of the structure, removing wallfall, exposing the floor/living surface, and locating any internal or

external features. Soil and pollen samples were taken from selected locations, and all other soil removed was screened through a 1/8-in. screen to recover any artifacts. Excavation was extended at least 1 m around the perimeter of the structure to locate any external features or activity areas. Subsequent to excavation the structure was mapped (Figure 52.1) and photographed (Figure 52.2). Grid unit 104N/101E was excavated below the Bw horizon to serve as a geomorphological test pit.

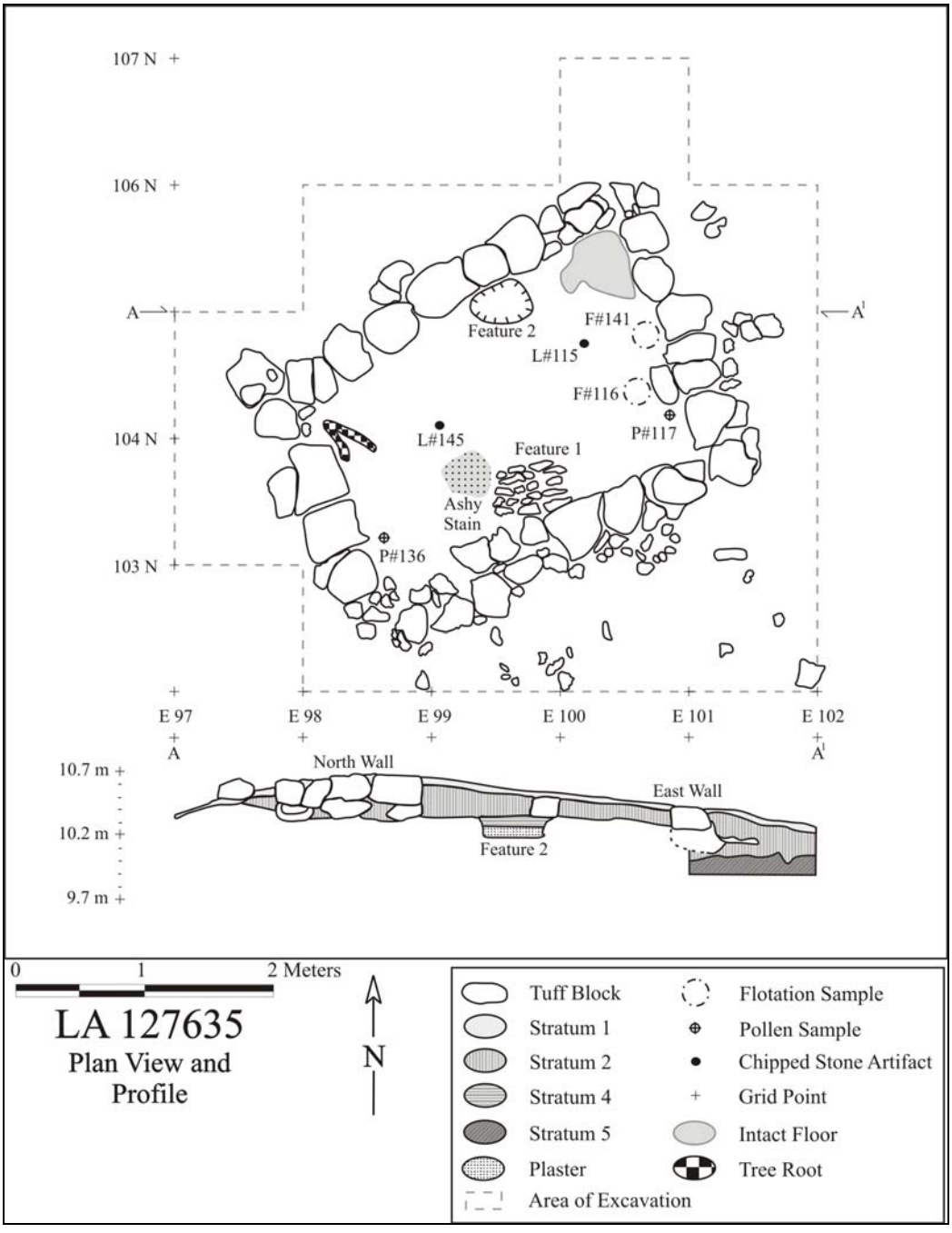


Figure 52.1. Plan view and profile drawing of LA 127635.

Figure 52.2. Post-excavation photograph of LA 127635.

The excavation of the site was supervised by Michael Dilley. The field crew included Sandi Copeland, Hannah Lockard, Aaron Lenihan, and Alan Madsen. Timothy Martinez and Mike Chavarria served as monitors and screeners representing San Ildefonso and Santa Clara pueblos, respectively.

STRATIGRAPHY

Stratum 1 is loose surface sediment and is composed of a loamy sand that is 1 to 7 cm thick across the site (A horizon). Stratum 2 is post-occupational fill ranging from 7 to 19 cm in thickness and is composed of a sandy loam (Bw horizon). Stratum 3 is the living surface and is the top of a soil horizon composed of a sandy clay loam (Bwb1 horizon). Stratum 4 is feature fill from Feature 2 and is composed of an ashy sandy loam. Stratum 5 is soil excavated outside of the structure and is composed of the sandy clay loam below the living surface (Bwb1 horizon). Excavation into this stratum went to depths ranging from 19 to 33 cm. Stratum 6 is composed of the sandy clay loam soil excavated from a subfloor test pit in 103N/98E, which was inside the structure (Bwb1 horizon). Stratum 7 is soil excavated from a bioturbated area outside the south wall of the structure and is composed of loamy sand with charcoal flecking (Bw horizon). Tables 52.1 through 52.3 summarize and describe the strata excavated at LA 127635.

Table 52.1. LA 127635 strata descriptions.

Stratum	Color	Texture	Thick (cm)	Description
0	-	-	-	Surface
1	10yr 5/3	Loamy sand	1–7	Surface sediment
2	10yr 5/3	Sandy loam	7–19	Post-occupational fill
3	8.75yr 5/4	Sandy clay loam	19–33	Living surface and below
4*	10yr 5/2	Ashy sandy loam	17	Feature fill (Feature 2)
5*	10yr 5/3	Sandy loam	7–19	Outside of structure
6*	10yr 5/3	Sandy loam	7–19	Sub floor pit
7*	10yr 5/3	Sandy loam	7–19	Bioturbated area

*Note: Strata are not listed as a strict soil horizon sequence, but rather as an excavation sequence.

Table 52.2. LA 127635 soil horizon descriptions from geomorphic test pit profile.

Horizon	Color	Texture	Depth (cm)	Description
A	10yr 5/3	Loamy sand	0–7	Young colluvium (late Holocene)
Bw	10yr 5/3	Sandy loam	7–19	Young colluvium (late Holocene)
Bwb1	8.75yr 5/4	Sandy clay loam	19–33	Middle to late Holocene
Bkb1	8.75yr 5/4	Sandy clay loam/carbonate	33–43+	Middle to late Holocene

Table 52.3. LA 127635 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	5	0	0	0	5
1	92	9	0	0	101
2	257	60	1	0	318
3	0	2	0	0	2
4	3	0	0	0	3
5	15	4	0	0	19
6	0	0	0	0	0
7	9	8	0	0	17
Total	**381**	**83**	**1**	**0**	**465**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a relatively small one-room rectangular structure that probably functioned as a fieldhouse. The room measures 2.75 m north-south by 1.9 m east-west with approximately 5.23 m^2 of interior space. Construction of the room consisted of two courses of shaped and unshaped tuff block. Excavation of the room began with an east-west trench that

extended across the structure (units 93N/97-103E). The excavation of this trench served to define the stratigraphy within the room, to locate the east and west walls of the room, and to determine the floor/living surface within the room. After the trench was excavated, the rest of the room was excavated, by grid, down to the presumed living surface (top of the Bwb1 soil horizon). During the excavation of the room, two features were exposed. Feature 1 (103N/99E) consisted of a patterned concentration of tuff rocks and Feature 2 (104-105N/99E) consisted of a formal plastered hearth. The features were excavated, samples were taken, and the features were mapped. Following the completion of the room and feature excavations, photographs of the features, walls, and living surface were taken. A subfloor pit was excavated in the southwest corner of the room (103N/98E) to determine if any living surfaces were below the initial surface and to determine the depth of the wall foundation.

Fill. The interior of the room was filled with 1 to 7 cm of loose surface sediment overlying 7 to 19 cm of a more consolidated post-occupational fill. Flotation (Field Specimen [FS] 45 and FS 53) and pollen (FS 42) samples were taken from the room fill. Charred taxa identified in the flotation samples included unidentified pine, piñon pine, ponderosa pine, unknown conifer, squash/coyote gourd, maize, and mountain mahogany. Taxa identified in the pollen sample included rose family, cheno-ams, grass family, sunflower family, spurge family, evening primrose, unidentified pine, piñon pine, and sagebrush.

Floor. Although no formal plastered floor was encountered, patches of a prepared surface were exposed during excavation of Room 1 in 104-105N/100E. This surface consisted of a compact clay-rich mud that was 1 to 2 cm thick, ashy gray in color, and contained imbedded charcoal pieces and flecking. Within these grid units some evidence of coping was also encountered, where the mud was smoothed and curved upwards to the base of the wall. There was also some evidence for an episode of remodeling, or an earlier occupation. The top layer of the smoothed surface (1 to 2 cm) popped off when it was scraped with a trowel, revealing another surface. This lower surface (an additional 2 to 3 cm thick) was a very compact ashy/burned surface, exhibiting oxidation and discoloration. Other areas across the living surface within Room 1 exhibited ashy staining and charcoal flecking, but no other patches of the smoothed mud were encountered. It is likely that the top of the compact Bwb1 horizon served as a foundation for the floor. The living surface was disturbed by roots and insect and rodent activity.

Feature 2, a formal hearth, was exposed in unit 104-105N/99E and was situated at floor level adjacent to the north wall of the room (see feature description). Two chipped stone artifacts (FS 115 and FS 145) were recovered from floor context. Flotation (FS 116) and pollen (FS 117) samples were taken from the floor context. Charred taxa identified in the flotation sample included piñon pine, mountain mahogany, unidentified pine, and unknown conifer. Taxa identified in the pollen sample included cheno-ams and unidentified pine.

Additional samples were taken from wall and floor contexts along the west wall (FS 136, pollen) and east wall (FS 141, flotation). Taxa identified in the pollen sample included maize, cheno-ams, grass family, sunflower family, ragweed/bursage, spruce, fir, unidentified pine, piñon pine, oak, Mormon tea, and sagebrush. Charred taxa identified in the flotation sample included maize and ponderosa pine. A pollen (FS 134) and flotation sample (FS 135) were taken from underneath soil that a tuff rock concentration (Feature1) was resting on, which was located 10

cm above the floor (see feature description). Taxa identified in the pollen sample included maize, rose family, grass family, cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush. No charred specimens were identified in the flotation sample.

An area of ashy staining was also observed in unit 103N/99E just to the west of Feature 1. This ashy stain contained charcoal flecking and small pieces of charcoal. A flotation sample (FS 53) was taken from this stain and identified charred taxa included ponderosa pine, squash/coyote gourd, maize, mountain mahogany, and unknown conifer. Several small chipped stone flakes were also recovered from this area. Although the south wall of the structure appeared to be complete, it is possible that this area may have served as an entryway. The ashy staining, chipped stone flakes, and the presence of the rock concentration (Feature 1) may indicate this area was an entryway. Additionally, the wall block encountered in grids 102-103N/99E appear to be smaller and more jumbled than the rest of the wall.

Wall Construction. All that remained of the walls of Room 1 are two courses, in a single row, of shaped and unshaped tuff blocks that formed the foundation of the structure. Very little wallfall was observed during the excavation of Room 1 and it is possible that wall block from this site was scavenged and utilized elsewhere either during prehistoric times or more recently. What remained of the walls formed a well-preserved rectangular foundation. There were areas within the wall block where there was some remnant mortar, consisting of chunks of clay adhering to the block. Chinking stones were also present, some still in place between larger wall blocks, and these smaller rocks were also the most common rubble in the post-occupational fill.

It is possible that the walls of the structure were not very high to begin with and the foundation blocks may have had a stick and adobe superstructure (Table 52.4). Several pieces of burned adobe were recovered from the room fill. Very compact clay (wall slump?) was noted in areas along the base of the walls inside the room. As described briefly above, wall/foundation blocks along the west end of the south wall were of a somewhat different nature than the rest of the wall. Rocks were smaller and appeared to be in a double row. This could have been intentional or could represent either wallfall or a purposeful closing off of this section of wall. Just inside the room, an area of ashy staining and a light concentration of small chipped stone flakes, which could possibly represent a limited work, were noted on the floor. Excavation to the base of the wall blocks showed that, for the most part, the foundation of the structure was set into the Bwb1 horizon by means of a shallow, narrow trench, not more than 8 to 10 cm in depth.

Table 52.4. LA 127635 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	2.75	0.35	0.35	2
South	2.65	0.36	0.38	2
East	1.82	0.20	0.36	2
West	1.90	0.29	0.35	2

Feature 1

Feature 1 is a concentration of 18 small tuff rocks located next to the south wall of Room 1 in units103N/99-100E. The rocks appear to be in rows, in a rough alignment. These rocks were not resting on the living surface. Two ceramic sherds and two chipped stone artifacts were recovered from the fill underneath the rocks and it was determined that this fill was part of the post-occupational fill. It is possible these rocks were originally part of the wall construction and fell into the structure subsequent to abandonment. Though there is no direct supportive evidence for it, these rocks could possibly represent the walling up of the entry way to the structure, the concentration was located adjacent to an area of the south wall where the foundation rocks differed from the rest of the wall. Wall blocks in this section were smaller and appeared to be in a double row, whereas in the rest of the wall and the structure, wall block was only a single row in width. Additionally, just inside the room, there was an area of ashy staining on the living surface that contained several small chipped stone artifacts, suggesting a possible activity area that may have been situated by the entryway. This area of ashy staining was located immediately to the west of the rock concentration. A flotation sample (FS 135) and pollen sample (FS 134) were taken from the fill below the rock concentration. No charred taxa were identified in the flotation sample, and taxa identified in the pollen sample included maize, rose family, grass family, cheno-ams, sunflower family, unidentified pine, piñon pine, juniper, and sagebrush.

Feature 2

Feature 2 consists of a prepared plaster hearth located against the north wall and inside of Room 1 (Figures 52.3 and 52.4). The top of the feature was roughly level with the living surface. Feature 2 is roughly ovoid in shape with plastered sides and bottom.

Figure 52.3. Post-excavation photograph of Feature 2 (hearth).

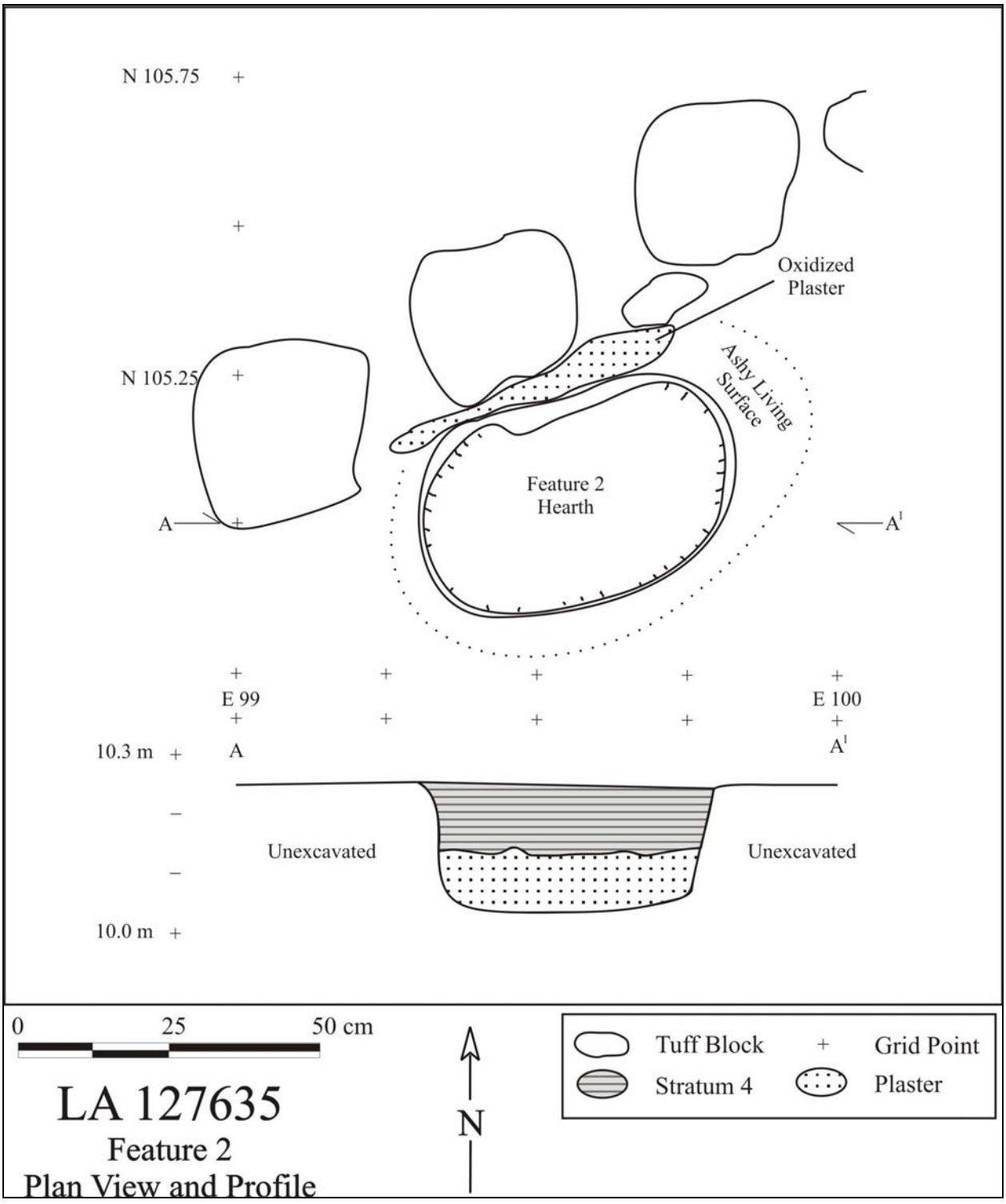


Figure 52.4. Plan view and profile drawing of the hearth (Feature 2) at LA 127635.

Feature 2 is heavily oxidized on the plaster surfaces, and the wall behind the feature also exhibited oxidation, indicating some fairly heavy use. Feature fill consisted of solid ash with

some charcoal flecking. Although rootlets were observed growing in the bottom of the hearth, it was basically intact. The plaster on the upper sides of the hearth was somewhat damaged and crumbling, but the sides were also intact. There was no prepared collar noted but there was evidence of a small lip around the perimeter at the top of the hearth. The space between the feature and the north wall of the room was filled in with reddish dirt that also may be oxidized. The dirt fill appeared to be intentional as it was of a different color and texture and was looser than the surrounding compacted dirt of the living surface. Pollen (FS 109 and FS 127), flotation (FS 105, FS 123, FS 124, FS 125, and FS 126), charcoal (FS 107), and macrobotanical/corn (FS 108) samples were all collected from the hearth. No identifiable taxa were recovered from the pollen sample (FS 109). Charred taxa identified in the flotation samples included unknown conifer, unidentified pine, mountain mahogany, maize, tobacco, sagebrush, cheno-ams, ponderosa pine, oak, juniper, bugseed, cottonwood/willow, hedgehog cactus, and beeweed. The charcoal sample was not analyzed, but the maize sample was submitted for radiocarbon dating (see Chronology section below).

Geomorphic Analysis

A single grid unit (104N/101E) was excavated below the Bwb1 horizon to serve as a geomorphic test pit. The profile of this unit was analyzed by geomorphologists Paul Drakos and Steven Reneau. A soil sequence was determined consisting of an A horizon topsoil young colluvium (late Holocene), a Bw post-occupation colluvium with wallfall (late Holocene), a Bwb1 level, the top of which was the likely living surface (middle to late Holocene), and a Bkb1 sterile soil with carbonate development (middle to late Holocene).

Artifact Distribution

A total of 465 artifacts were recovered from the excavation of LA 127635, including 83 pieces of chipped stone, 381 ceramics, and one piece of ground stone. A total of 37 chipped stone artifacts were recovered from inside Room 1. The majority of these artifacts were recovered from units 103-104N/99E, located between Feature 2 and Feature 1 (including the ashy stain next to the feature) (Table 52.5). Both of these units were in direct line with the possible entry way (grid 102N/99E). Three chipped stone artifacts were recovered from the fill beneath Feature 1. Two chipped stone artifacts were recovered from the Feature 2 fill. As stated previously, several small chipped stone flakes (n = 17) were recovered from the ashy area next to Feature 1, suggesting the possibility of a limited activity area. These artifacts constituted almost half of the chipped stone recovered from inside the room.

Most of the chipped stone artifacts were recovered from Stratum 2, Level 2 (post-occupational fill), with fewer artifacts recovered from the ash stain area (Level 4) and the feature fill. The remaining 46 chipped stone artifacts were recovered from outside of Room 1. Located just outside of the south wall of Room 1 (102N/99E) there was a heavily bioturbated area from which 12 chipped stone artifacts were recovered. This unit was in line with the grids inside the room with the highest artifact concentration, suggesting the possibility of an activity area associated with the entryway of the structure. However, a large burrow continued from the unit outside the

structure up under the wall and just inside the structure, which could have resulted in the loss of integrity of *in situ* artifacts due to rodent activity. If not for the rodent disturbance it could be suggested that artifacts recovered from the grid line 102-104N/99E represented a possible limited activity area, or was the result of sweeping out the structure. The remainder of the chipped stone artifacts was fairly evenly distributed across the site with no apparent concentrations.

Of the 381 ceramic sherds recovered from the excavation, 154 were recovered from inside Room 1. The majority were recovered from the post-occupational fill, with only three sherds recovered from the living surface (Stratum 3). Additionally, two sherds were recovered from the fill beneath Feature 1 and six sherds were recovered from the Feature 2 fill. As with the chipped stone artifacts, the highest concentration of ceramics was recovered from grids 103-104N/99E. A total of 227 ceramic sherds were recovered from units excavated outside of Room 1. The highest concentrations were recovered from units just to the east of the structure (104-105N/101E) and from the bioturbated area just outside the structure to the south (102N/99E). A total of 57 ceramic sherds were recovered from 104-105N/101E, all of which were from Stratum 2, Level 2. Thirty-one sherds were recovered from the bioturbated area in grid 102N/99E.

A single ground stone artifact, a two-hand mano, was recovered in an area located less than 1 m from the southeast corner of the structure. The mano was not associated with any activity area or features.

Table 52.5. LA 127635 artifact counts by grid unit.

	97E	98E	99E	100E	101E
102N	0	6	39	32	23
103N	12	25	43	17	10
104N	6	29	65	22	50
105N	0	14	16	7	41

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 448 artifacts were analyzed from the excavations conducted at LA 127635. In addition, flotation and pollen samples were selected for analysis from the post-occupational fill (Stratum 2), the floor (Stratum 3), the hearth fill (Stratum 4), and outside the structure (Stratum 5) (Table 52.6). Two maize samples were submitted for radiocarbon dating, a micaceous sherd for thermoluminescence (TL) dating, and three pieces of obsidian for hydration dating. The results of the artifact and sample analyzes are presented in the following sections.

Table 52.6. Samples selected for analysis from LA 127635 by FS#.

Stratum	Flotation	Pollen	Radiocarbon	TL
1				
2	135	134,136		
3	116,141	117		106
4	105, 123–126	109,127	105, 125	

Stratum	Flotation	Pollen	Radiocarbon	TL
5	100	99		

Chronology

Radiocarbon Dating

Two maize samples were submitted for accelerator mass spectroscopy dating. Both of the maize specimens were derived from flotation samples taken from the Feature 2 hearth fill. The first sample provided a date of 800±40 BP (Beta-215558), with a calibrated intercept of AD 1250 and a two-sigma range of AD 1180–1280. The second sample yielded a similar date of 760±40 BP (Beta-215559), with a calibrated intercept of AD 1270 and a two-sigma range of AD 1210–1290. Both dates indicate a Coalition period occupation dating to the 13th century.

Thermoluminescence Dating

A single Sapawe Micaceous sherd was submitted for TL dating from LA 127635 (Table 52.7). All derived ages are given in years BP, which refers to years before 2003. The TL date corresponds with the two radiocarbon dates, indicating a 13th century occupation.

Table 52.7. Thermoluminescence date from ceramics at LA 127635.

FS#	Lab #	Context	Burial depth (cm)	Years BP	% error	Years AD
106	UW1419	Stratum 3	40	753	14.3	1253±108

Obsidian Hydration Dating

Three obsidian artifacts from LA 127635 were submitted to the Diffusion Laboratory for age determination using the obsidian hydration dating method. In order to calculate the absolute date for an obsidian artifact, three analytical procedures were completed. First, the amount of surface hydration, or the thickness of the hydration rim, was measured. Second, the high-temperature hydration-rate constants for each artifact were determined from the composition of the glass. Lastly, the soil temperature and relative humidity at the archaeological site were estimated so that the rate of hydration determined at high temperature may be adjusted to reflect ambient hydration conditions. Using these methods, a hydration rate for the obsidian artifacts was calculated (Table 52.8).

Table 52.8. Obsidian hydration dates for LA 127635.

FS No.	Lab No.	Source	Rim (um)	AD/-BC	1 S.D.
6	2003-77	Valle Grande	1.37	1732	33
43	2003-78	Cerro Toledo	n/a		
103	2003-79	Valle Grande	4.11	-4556	321

Relative to other dating methods conducted at the site, the obsidian hydration dates seem to be the least accurate. Radiocarbon and TL dates indicate a Late Coalition period date (13th century), with neither of the two obsidian samples providing results.

Ceramic Artifacts (Dean Wilson)

A total of 371 ceramics were analyzed from LA 127635. The majority of the pottery consists of smeared-indented corrugated and Biscuit A sherds. In addition, the presence of Santa Fe Black-on-white, Wiyo Black-on-white, Galisteo Black-on-white, and Sapawe Micaceous would seem to reflect an Early Classic period occupation (Table 52.9). This would, however, represent a 14th century and not an earlier 13th century occupation as indicated by the radiocarbon dates. On the other hand, it would fit the two-sigma range of the TL date. Therefore, this site may have been occupied early in the 14th century or circa AD 1300. Information on ceramic tradition by ware, temper by ware, and vessel form by ware is provided in Tables 52.10 through 52.12. The graywares and whitewares appear to have been locally made from smeared-indented sand or tuff, in contrast to Sapawe Micaceous, mica utility, seven smeared-indented, and one plain gray sherd, which contained a non-local micaceous temper. Most of the grayware and all of the micaceous ceramics consist of jar vessel forms, while several grayware sherds were derived from a bowl(s). In contrast, the whiteware sherds include mostly bowls, with some jars.

Table 52.9. Ceramic types from LA 127635.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	18	4.9
Indeterminate organic	1	0.3
Santa Fe Black-on-white	11	3.0
Wiyo Black-on-white	7	1.9
Galisteo Black-on-white	1	0.3
Unpainted Galisteo paste	1	0.3
Biscuit unpainted both sides slipped	2	0.5
Biscuit A	15	4.0
Biscuit B/C body	3	0.8
Northern Rio Grande Utilityware		
Plain gray rim	1	0.3
Plain gray body	20	5.4
Indented corrugated	1	0.3
Smeared-indented corrugated	262	70.6
Mica utility undifferentiated	4	1.1
Sapawe Micaceous	24	6.5
Total	**371**	**100.0**

Table 52.10. Tradition by ware for LA 127635 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	277	100.0	59	100.0	0	0.0	0	0.0	336	90.5
Rio Grande (Tewa Micaceous)	0	0.0	0	0.0	0	0.0	35	100.0	35	9.5
Middle Rio Grande	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	**277**	**100.0**	**59**	**100.0**	**0**	**0.0**	**35**	**0.0**	**371**	**100.0**

Table 52.11. Temper by ware for LA 127635 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	3	1.0	0	0.0	0	0.0	0	0.0	3	0.8
Sherd	0	0.0	2	3.3	0	0.0	0	0.0	2	0.5
Fine tuff or ash	8	2.8	37	62.7	0	0.0	0	0.0	45	12.1
Fine tuff and sand	0	0.0	11	18.6	0	0.0	0	0.0	11	2.9
Anthill sand	266	96.0	5	8.4	0	0.0	0	0.0	271	73.0
Oblate shale and tuff	0	0.0	4	6.7	0	0.0	0	0.0	4	1.0
Granite with mica	0	0.0	0	0.0	0	0.0	12	0.0	12	3.2
Sapawe Micaceous temper	0	0.0	0	0.0	0	0.0	23	0.0	23	6.1
Total	**277**	**100.0**	**59**	**100.0**	**0**	**0.0**	**35**	**100.0**	**371**	**100.0**

Table 52.12. Vessel form by ware for LA 127635 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	0	0.0	3	5.0	0	0.0	0	0.0	3	0.8
Bowl rim	5	1.8	9	15.2	0	0.0	0	0.0	14	3.7
Bowl body	5	1.8	41	69.4	0	0.0	0	0.0	46	12.3
Jar neck	31	13.8	0	0.0	0	0.0	0	0.0	31	8.3
Jar rim	7	2.5	0	0.0	0	0.0	2	5.8	9	2.4
Jar body	224	80.8	6	10.1	0	0.0	33	94.2	263	70.8
Jar body with strap	5	1.8	0	0.0	0	0.0	0	0.0	5	1.3
Total	**277**	**100.0**	**59**	**100.0**	**0**	**0.0**	**35**	**100.0**	**371**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 77 artifacts were analyzed from LA 127635, consisting of two cores, 71 pieces of debitage, three retouched tools, and one ground stone artifact. This represents a 100 percent

sample of the total lithic artifacts recovered during the site excavations. Table 52.13 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony and Pedernal chert, with other materials. The presence of cortex on 12.6 percent of the debitage indicates that these materials were collected from waterworn (n = 9) sources. The chalcedony and Pedernal chert are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 52.13. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
Cores	Core	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Cobble uniface	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Debitage	Angular debris	0	0	0	0	0	0	0	3	0	3	0	0	0	6
	Core flake	0	0	0	3	0	0	2	18	0	18	0	0	0	41
	Biface flake	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	Microdeb.	0	0	0	0	0	0	0	6	0	5	0	0	0	11
	Und. flake	0	0	0	0	0	0	1	8	0	2	0	0	0	11
	Subtotal	0	0	0	3	0	0	3	37	0	28	0	0	0	71
Retouched Tools	Retouched piece	1	0	0	0	0	0	1	0	0	0	0	0	0	2
	Notch	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	1	0	0	0	0	0	1	1	0	0	0	0	0	3
Ground Stone	Two-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Subtotal	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total		**1**	**0**	**0**	**3**	**1**	**0**	**4**	**40**	**0**	**28**	**0**	**0**	**0**	**77**

Three pieces of obsidian and a piece of basalt debitage were submitted for X-ray fluorescence analysis. The obsidian artifacts are Valle Grande and Cerro Toledo obsidian (Table 52.14). The Valle Grande (Cerro del Medio) and Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source areas are situated about 17 km (11 mi) and 19 km (12 mi) to the west and southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the nearby mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. A single basalt flake is actually made of dacite that was derived from a local source.

Table 52.14. Obsidian source samples.

FS #	Artifact	Color	Source
6	Debitage	Translucent	Valle Grande rhyolite
43	Debitage	Translucent	Cerro Toledo rhyolite
103	Debitage	Translucent	Valle Grande rhyolite

Lithic Reduction

The platform core was reduced using a bidirectional, 90 degree technique, whereas the cobble uniface represents the removal of flakes from an unprepared cortical platform. The core was classified as exhausted and the cobble uniface as still useable when discarded. Table 52.15 presents the metric information on the core and cobble uniface.

Table 52.15. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Bidirectional	27	44	30	39.3
Cobble Uniface	42	94	103	526.0

The debitage mostly consists of core flakes, with a few other items. The overall cortical:non-cortical ratio of 33.3 reflects an emphasis on the later stages of core reduction and tool production/maintenance. The flakes mostly have single-faceted platforms (n = 11), with fewer cortical (n = 1), dihedral (n = 1), collapsed (n = 4), and crushed (n = 3) platforms. Only one of the platforms exhibited evidence of preparation by abrasion/crushing. The majority of the core flakes are distal fragments (n = 20), with fewer whole (n = 11), proximal (n = 8), and midsection (n = 2) fragments. In contrast, the biface flakes consist of a whole and distal fragment. The whole core flakes have a mean length of 25.0 mm (*std* = 10.5), the single whole biface flake a length of 16.0 mm, and the angular debris a mean weight of 2.3 g (*std* = 3.1).

Two retouched pieces and a notch were identified during the analysis. One of the retouched pieces is an obsidian flake with alternate retouch that creates a rounded end that could have been used as perforator or drill. The other item is a flake with bidirectional retouch along a lateral edge with an angle of 55 degrees. The notched tool is actually a double notch with an edge angle of 40 degrees.

Tool Use

None of the debitage and two of the retouched tools exhibit evidence of edge damage that could be attributed to use. The obsidian retouched tool has rounding along the end, which indicates possible use as a perforator or drill. The retouched flake also exhibits rounding and scarring along the lateral retouched edge.

The ground stone artifacts solely consist of a two-hand mano. The mano is a well-worn loaf-shaped piece of tuff with flat and convex-shaped grinding surfaces (Figure 52.5).

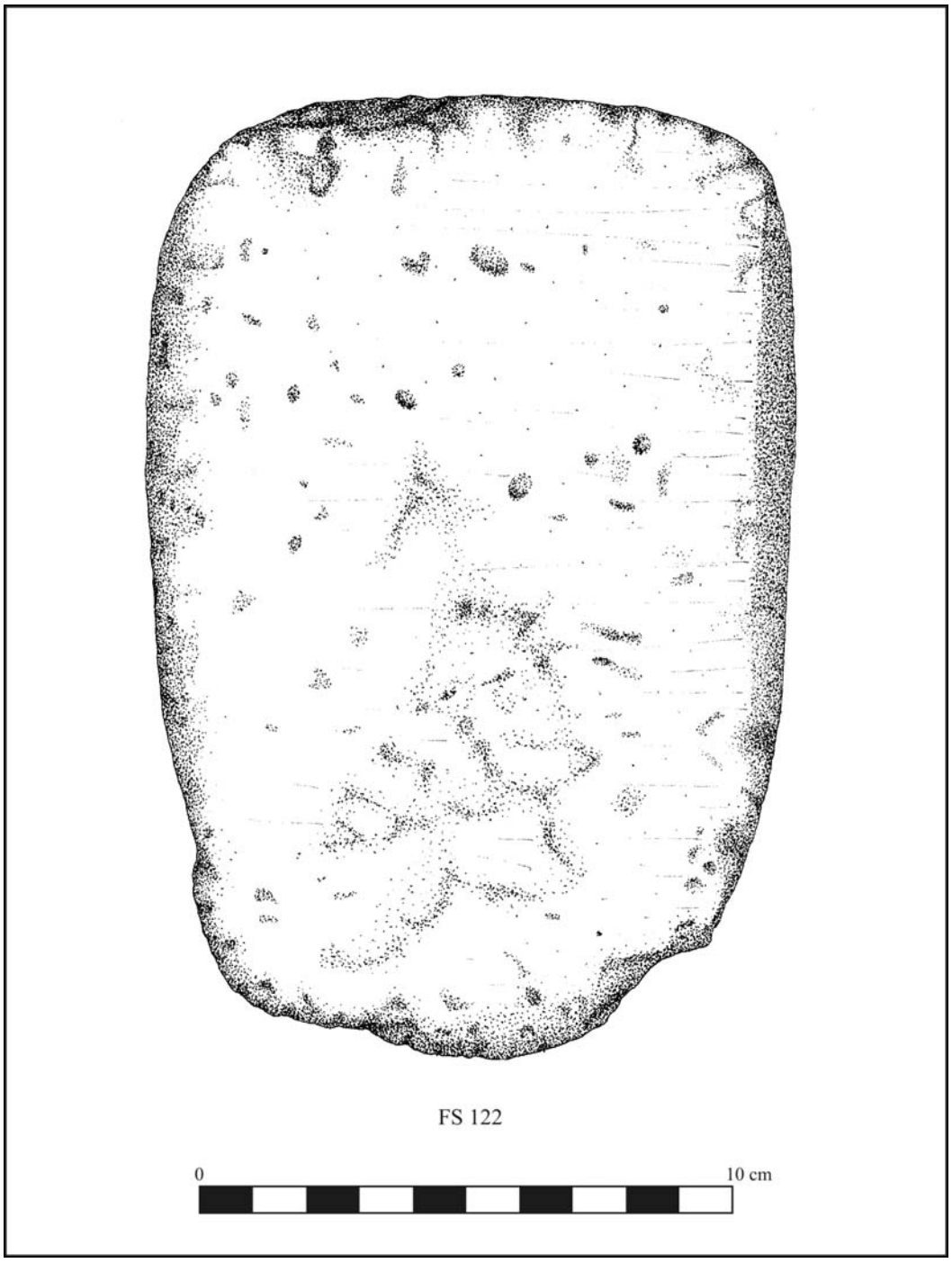


Figure 52.5. Two-hand mano from LA 127635.

Archaeobotanical Remains (Pamela McBride)

Floral remains from this Classic period fieldhouse resemble those from the neighboring fieldhouse, LA 127634, to the east. Beeweed and maize were the most common taxa from both fieldhouses. While tobacco was found in hearths at both sites, only one sample out of 14 at LA

127634 yielded tobacco, whereas tobacco was present in 56 percent of samples from LA 127635. Beans were present at LA 127634 and not at LA 127635. Aside from conifer needles and bark, evidence for perennial plant use was represented by a hedgehog cactus seed fragment from the upper fill of the hearth, while at LA 127634, a banana yucca seed in the hearth was the only non-conifer perennial plant part recovered. Possible squash rind was identified from both structures.

LA 127635 floor scrape and floor samples (FS 116 and FS 141) yielded very similar taxa to those encountered in post-occupational fill samples (FS 45 and FS 53), including corn cupules and charred conifer duff (Table 52.16). The exception was possible squash rind identified in the general fill sample. Only unburned material was recovered from under the patterned rock concentration (Feature 1). Lower and upper fill of the hearth (Feature 2) yielded cheno-ams, tobacco, beeweed, maize, and conifer duff; bugseed and hedgehog cactus seeds were restricted to the upper fill. One sample from the upper fill of the hearth consisted almost entirely of kernel fragments. In general, much higher concentrations of maize kernels were present at LA 127635 than at LA 127634. The sample taken from under the concentration of tuff rocks adjacent to the south wall of the structure (Feature 1) contained only unburned plant material. It was suggested earlier in this chapter that this rock concentration may represent the deliberate walling up of the entrance to the structure. Two ceramic sherds and two chipped stone artifacts were found in the fill under Feature 1 and it was determined that this was post-occupational fill. However, if this were the case, the sample would be more likely to contain similar remains to those found in FS 45 that included conifer needles, bark, and charcoal.

Table 52.16. Flotation plant remains, count and abundance per liter from LA 127635.

FS No.	**45**	**53**	**105**	**116**	**123**
Feature	N ½ unit inside room above living surface	Ash stain west of F. 1	Hearth, lower ½	Floor	Hearth, upper fill
Cultural					
Annuals					
cf. Beeweed			3(1)		3(2)
cf. Bugseed					1(0)
Cheno-Am			2(2)		
Tobacco			1(1)		5(5)
Cultivars					
Maize		1(0) c, 1(0) poss. c	1(0) cf. c, 2(2) e, 3(2) e pc, 26(0) cf. k		16(11) e, 50(1) k
Other					
cf. Coyote gourd/Squash		+ rind			
Unidentifiable				1(0) pp	
Perennials					
Pine	+ barkscale		+ barkscale		
Piñon	+ needle			+	

FS No.	45	53	105	116	123
				needle	
Ponderosa pine	+ fascicle, + needle	+ needle			+ needle
Non-Cultural					
Annuals					
Goosefoot	+	+		+	+
Perennials					
Piñon	+ needle				
Ponderosa pine	+ fascicle, + needle			+ needle	+ needle

Table 52.16 (continued). Flotation plant remains, count and abundance per liter from LA 127635.

FS No.	124	125	126	135	141
Feature	Hearth, upper fill			Under F. 1 and above floor	Floor scrape
Cultural					
Annuals					
Beeweed	4(3), 1(0) pc	4(3)	1(1), cf. 1(0)		
Cheno-Am		1(1)			
Tobacco	6(6)	3(3)	5(5)		
Cultivars					
Maize	5(3) e, 16(0) k	5(3) e, 37(0) k	1(0) c, 5(4) e, 17(0)k		2(0) c
Other					
Unidentifiable					1(0) pp
Perennials					
Hedgehog cactus		1(0)			
Pine		+ barkscale			
Ponderosa pine	+ needle pc	+ needle			+ needle
Non-Cultural					
Annuals					
Goosefoot	+			+	+
Perennials					
Piñon	+ needle				
Ponderosa pine	+ needle	+ needle	+ needle	+ needle	+ needle

+ 1-10/liter, c cupule, cf. compares favorably, e embryo, k kernel, pc partially charred, pp plant part.

Wood charcoal from the floor scrape was very different from the floor sample; ponderosa pine was the only wood type identified in the floor scrape sample, while pine, piñon, and mountain mahogany were identified in the floor sample (Table 52.17). Charcoal from the two general fill

samples was also very different. Fill above the living surface produced only coniferous woods, while the majority of charcoal from the general fill sample was mountain mahogany with a small amount of unknown conifer. The Feature 2 wood assemblage was much more diverse than other contexts, yielding coniferous (including juniper), cottonwood/willow, mountain mahogany, oak, and sagebrush.

Table 52.17. Flotation sample wood charcoal by count and weight in grams from LA 127635.

FS No.	**45**	**53**	**105**	**116**	**123**	**124**	**125**
Feature	N ½ unit inside room above living surface	Ash stain west of F. 1	Hearth, lower ½	Floor	Hearth, upper fill		
Conifers							
cf. Juniper						5/0.1 g	
Pine	3/0.1 g			3/0.2 g			
Piñon			4/0.2 g	8/0.4 g			
Ponderosa pine	4/0.1 g		3/0.1 g			6/0.1 g	3/0.1 g
Unknown conifer	1/<0.1 g	2/0.1 g	3/<0.1 g	7/0.3 g	1/<0.1 g	2/<0.1 g	4/<0.1 g
Non-Conifers							
cf. Cottonwood/ Willow							1/<0.1 g
Mountain mahogany		18/0.6 g	1/<0.1 g	2/<0.1 g		7/<0.1 g	
Oak			4/<0.1 g				
cf. Sagebrush			2<0.1 g				
Totals	**8/0.2 g**	**20/0.7 g**	**17/0.2 g**	**20/0.9 g**	**1/<0.1 g**	**20/0.2 g**	**8/0.1 g**

Table 52.17 (continued). Flotation sample wood charcoal by count and weight in grams from LA 127635.

FS No.	**126**	**141**
Feature	Hearth, upper fill	Floor scrape
Conifers		
cf. Juniper	1/<0.1 g	
Pine	1/<0.1 g	
Ponderosa pine	2/<0.1 g	20/0.3 g
Unknown conifer	2/<0.1 g	
Non-Conifers		
Oak	2/<0.1 g	
Totals	**8/<0.1 g**	**20/0.3 g**

Feature 2 was the best-preserved hearth that was excavated in Rendija Canyon (Lockard, personal communication), and the preservation of plant material certainly confirms this observation. Plant remains indicate that the occupants of LA 127635 were utilizing several annual species (including ritual use of tobacco), hedgehog cactus, maize and possibly squash, and wood species from the riparian, mountain foothills, and ponderosa pine forest zones.

Pollen Remains (Susan Smith)

Five pollen samples were analyzed from LA 127635. Table 52.18 lists the frequency of identified pollen types. Maize was the only cultigen identified in the assemblage. No other economic resources were identified. A number of potential economic resources were also identified in the assemblage, and these are discussed in Smith's chapter in Volume 3.

Table 52.18. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127635 (*n* = 5)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	2
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	2
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127635 (*n* = 5)
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs and Other Possible Subsistence Resources	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	3
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	1
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	1
	Scrophulariaceae	Penstemon Family	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 127635 (*n* = 5)
	Onagraceae	Evening Primrose	1
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	1
	Abies	Fir	1
	Pinus	Pine	4
		Pine Aggregates	0
	Pinus edulis type	Piñon	3
	Juniperus	Juniper	1
		Juniper Aggregates	0
	Quercus	Oak	1
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	1
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	0
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 127635 consists of a one-room fieldhouse with plaster-lined heath. All four walls were intact, with evidence for two possible floors. This evidence, in conjunction with the ceramic, radiocarbon, and TL data, indicates that the fieldhouse was probably occupied during the Late Coalition and Early Classic period. Maize pollen was recovered during the site excavations indicating that the fieldhouse may have been seasonally occupied during the growing season.

CHAPTER 53
RENDIJA TRACT (A-14): LA 135291

Michael J. Dilley and Bradley J. Vierra

INTRODUCTION

LA 135291 is a small one-room Classic period fieldhouse situated on a north-facing slope of the terrace about 115 m south of the ephemeral creek in Rendija Canyon. The area is covered by a ponderosa pine forest at an elevation of 2108 m (6915 ft). The fieldhouse is located to the east and outside the Los Alamos Sportsmen's Club and to the immediate north of the Rendija Canyon road. Neither of these appear to have impacted the site.

The site was originally identified by Brian Harmon during the Cerro Grande post-fire assessment project and given a temporary number of BCH-1. It was described as a possible fieldhouse consisting of a large cluster of cobbles that covered a 10- by 10-m area; however, most of the rocks were centered in a roughly rectangular-shaped 3- by 4-m area. This locale was severely burned during the Cerro Grande fire, as is evidenced by the remains of two burned junipers on the site. The architectural feature was surrounded by a light scatter of artifacts that included a Wiyo Black-on-white sherd, two Biscuit A sherds, two plainware sherds, a Pedernal flake, and a quartzite cobble fragment. The site was said to date to the Classic period.

FIELD METHODS

Fieldwork began with a reconnaissance of the area around the fieldhouse to define the nature and extent of the surface remains. The site datum was set at the southwestern corner of the site and designated 100N/100E and 10.00 m elevation. A 1- by 1-m grid system was laid in around the surface architectural remains. Subdatums were subsequently shot in along the west and south sides of the excavation block (A and B). The site was photographed and excavations begun (Figure 53.1).

An east-west trench was excavated along the 104N grid line from 100 to 106E to expose and define the walls of the structure and the site stratigraphy. The east and west walls were identified, as was a possible unprepared living surface about 20 cm below the present surface. The block excavation was, therefore, expanded to include the area bounded by 103N/100E, 106N/100E, 106N/106E, and 103N/106E. A total of 26 grids were excavated in and around the one-room fieldhouse.

Excavations within the structure involved removing the post-occupational fill down to the level of the possible unprepared living surface. This surface was situated at the top of the Btb1 soil horizon and was covered by fill consisting of Bw soil. Obvious wallfall was removed so that the structure's walls and any internal features could be identified. It appeared that the south wall had collapsed within the structure, whereas, the north, east, and west walls had collapsed towards the outside of the structure.

Figure 53.1. Pre-excavation photograph of LA 135291.

Pollen and flotation samples were taken from each stratigraphic unit and various locations on the possible floor surface. All excavated soil was sieved through a 1/8-in. mesh to aid in the recovery of cultural remains. The excavation was extended approximately 1 m around the structure to locate external features and identify outside activity areas. Both internal and external features were found during the excavations. After the excavations were complete, the site was mapped (Figure 53.2) and photographed (Figure 53.3).

The excavation of the site was supervised by Michael Dilley. Crewmembers included Sandi Copeland, Hannah Lockard, Greg Lockard, Alan Madsen, and Bradley Vierra. Timothy Martinez and Mike Chavarria served as monitors and screeners representing San Ildefonso and Santa Clara pueblos, respectively.

STRATIGRAPHY

Four stratigraphic units were defined during the excavations. These are illustrated in the profile provided in Figure 53.2 and are listed in Table 53.1. Stratum 1 is the loose topsoil that covered the site and represents most of the A soil horizon. Some of the surface organic material and two juniper trees burned during the Cerro Grande fire. Stratum 2 consists of the sandy loam that characterizes the post-occupational fill. This stratum is situated within and outside of the

structure, consisting of the Bw soil horizon. Stratum 3 is an unprepared occupational surface. Stratum 4 is the ashy clay soil that filled Feature 2, an ashpit.

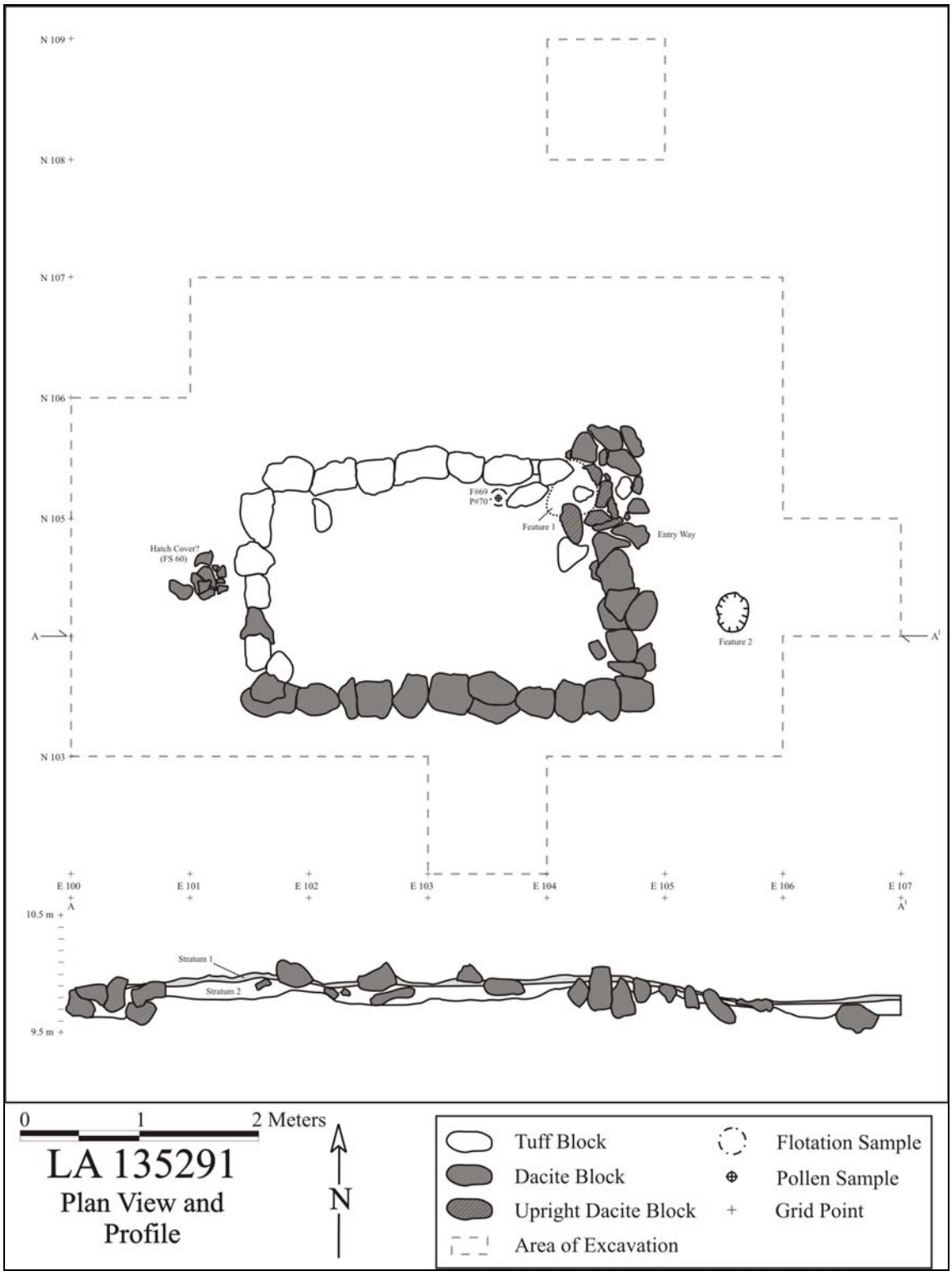


Figure 53.2. Plan view and profile drawing of LA 135291.

Figure 53.3. Post-excavation photograph of the fieldhouse at LA 135291.

Table 53.1. LA 135291 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 3/3	Sandy loam	1–5	Surface sediment
2	10YR 3/4	Sandy loam	10–30	Post-occupational fill
3	7.5YR 3/3	Sandy clay	-	Living surface
4	10YR 7/2	Sandy loam	18	Feature 2 (ash pit) fill

A geomorphic test pit was excavated adjacent and outside the east wall of the structure in grid 103N/105E (see Chapter 57, Volume 3). It was excavated to a depth of about 1 m, and three soil horizons were identified (Table 53.2). From top to bottom these consist of A, Bw, and Btb1. As previously noted, the A and Bw soil horizons relate to Strata 1 and 2; whereas, the site occupation was associated with the top of the Btb1 soil horizon and Stratum 3. Table 53.3 provides the artifact count information by stratigraphic unit at the site, with a total of 113 artifacts recovered.

Table 53.2. LA 135291 soil horizon descriptions from the east profile of unit 103N/105E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 3/3	Sandy loam	0–4	Topsoil
Bw	10YR 3/4	Sandy loam	4–11	Late-Holocene soil
Btb1	7.5YR 3/3	Sandy clay	11–30+	Pleistocene soil

Table 53.3. LA 135291 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	6	2	0	0	**8**
1	8	1	0	0	**9**
2	66	16	14	0	**96**
3	0	0	0	0	**0**
4	0	0	0	0	**0**
Total	**80**	**19**	**14**	**0**	**113**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a one-room fieldhouse (see Figure 53.3). The room measures about 1.70 m north-south by 2.85 m east-west, with about 4.8 m^2 of interior space. Excavation of the room began with an east-west trench that extended across the rubble area along the 104N grid line. This excavation defined the east and west walls of the structure, the internal stratigraphy, and a possible unprepared floor surface. After the trench was completed, the remainder of the room fill was removed to the level of the possible floor. The geomorphic test pit was subsequently excavated to the immediate east of the structure to define the stratigraphic context of the walls and occupational surfaces.

Floor. Approximately 20 to 30 cm of post-occupational fill was removed before exposing a possible unprepared living surface within the structure. The floor was poorly defined with no obvious preparation, but was primarily identified by the break in the soil profile and the top of the Btb1 horizon. The surface was not level, but sloped down towards the north. No artifacts were recovered from the floor, but a flotation (Field Specimen [FS] 69) and pollen (FS 70) sample were taken from the southeastern corner of the room. Charred taxa identified in the flotation sample included unknown conifer, mountain mahogany, juniper, unidentified pine, and ponderosa pine. The pollen sample was not analyzed.

Features

Feature 1. Feature 1 consists of a circular set of upright dacite cobbles that bound a 43- by 57-cm area (Figure 53.4). At least one cobble is set in the bottom of the feature, but none exhibit any obvious evidence of burning, nor was any ash or charcoal present as fill. Therefore, it seems unlikely that it represents a hearth, but could be a pot rest. A pollen (FS 57) and two flotation

samples (FS 58 and FS 59) were taken from the fill. Taxa identified in the pollen sample included cheno-ams, grass family, sunflower family, ragweed/bursage, globemallow, spurge family, fir, unidentified pine, piñon pine, juniper, oak, Mormon tea, and sagebrush. Charred taxa identified in the flotation samples included juniper, piñon pine, ponderosa pine, and unknown conifer.

Figure 53.4. Post-excavation photograph of Feature 1.

Feature 2. Feature 2 consists of a small ash concentration that is located outside and to the immediate east of the structure (see Figures 53.2 and 53.3). The concentration is ovoid in plan view and is 25 by 30 cm in size and 6 cm in depth (Figure 53.5). The feature could represent a discard pile, since it was not well-preserved, exhibited no evidence of *in situ* burning, and contained no charcoal or artifacts. The feature was situated directly on top of the Btb1 soil horizon. A flotation (FS 61) and pollen (FS 62) sample were taken from the fill of the feature (Stratum 4). Charred taxa identified in the flotation sample included mountain mahogany, unidentified pine, ponderosa pine, Douglas fir, oak, and maize. Taxa identified in the pollen sample included buckwheat, grass family, cheno-ams, sunflower family, ragweed/bursage, unidentified pine, piñon pine, juniper, Mormon tea, and sagebrush.

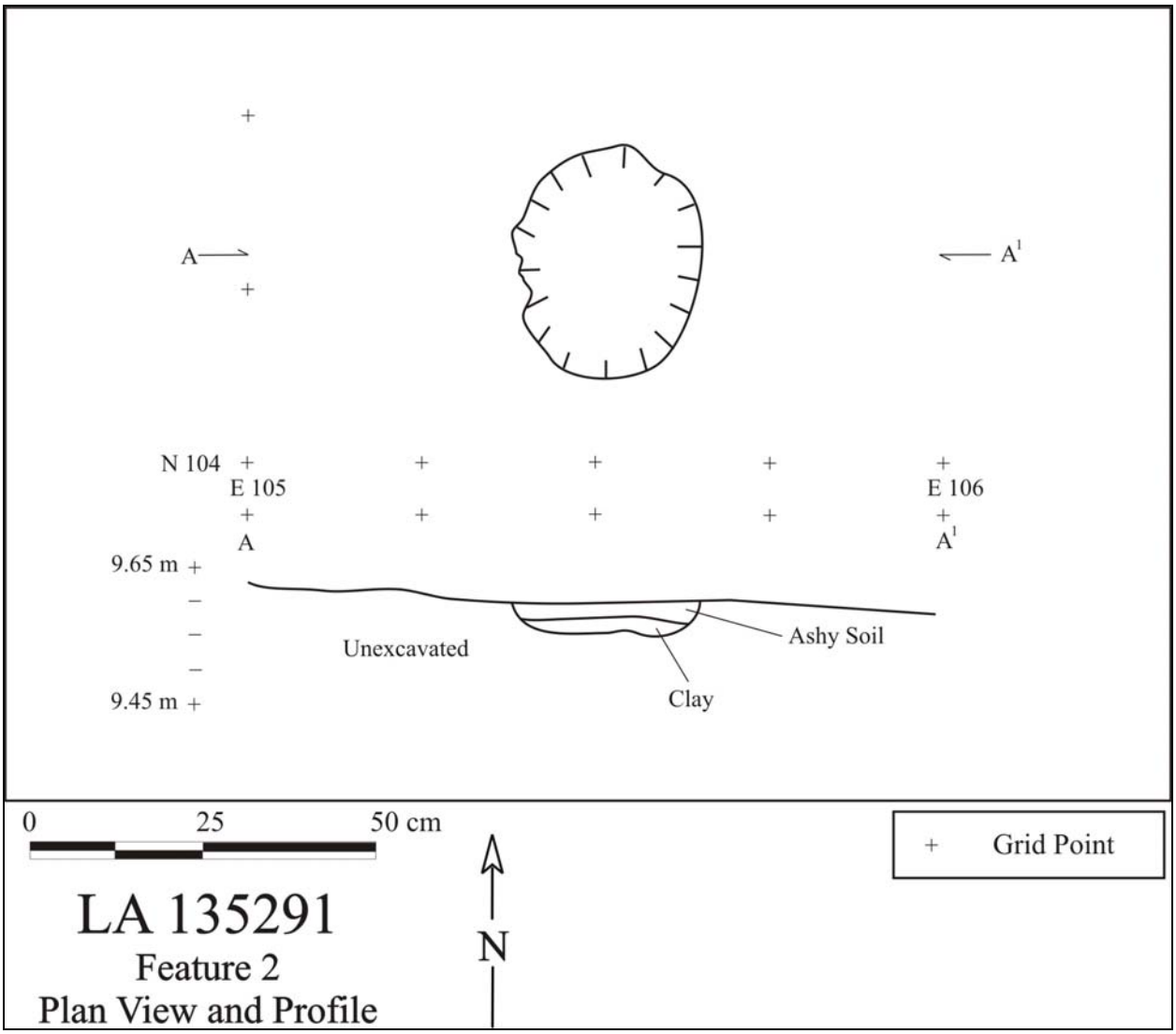


Figure 53.5. Plan view and profile drawing of Feature 2.

Wall Construction. The walls in Room 1 were composed of dacite cobbles with a few tuff blocks. The dacite is available from gravels in the nearby drainage and the tuff from outcrops in the canyon. The existing walls are one to two courses high, with dacite cobbles composing the upper course and more uniform tabular dacite cobbles the lower course. This basal course has been placed a few centimeters below the surface in a foundation trench. There was no evidence of mortar or plaster, indicating that the walls were probably dry laid. A broken dacite slab was embedded in the east wall and could represent a possible doorway into the room. The distribution of wallfall indicates that the north, east, and west walls collapsed towards the outside of the room and the south wall towards the inside of the room. A total of 2.5 m^3 of masonry rubble was removed from the fill of the room, indicating that the original walls may have stood less than 1 m high. Fragments of a broken dacite slab were identified outside the west wall that could be the remains of a hatch cover. Wall measurement information is provided in Table 53.4.

Table 53.4. LA 135291 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	2.80	0.05–0.25	0.18–0.30	1
South	2.90	0.10–0.25	0.20–0.30	2
East	1.85	0.12–0.24	0.17–0.30	1 to 2
West	1.60	0.05–0.21	0.17–0.34	1 to 2

Artifact Distribution

Table 53.5 illustrates the distribution of artifacts recovered during the site excavation (i.e., ceramics, chipped stone, ground stone, and faunal remains). The bold numbers indicate grid units that are located completely or partially within Room 1, which indicates that the majority of the artifacts were recovered from within the structure; however, there are three grids with numerous artifacts that are located to the north of the fieldhouse.

Table 53.5. LA 135291 artifact distribution by grid unit.

	E100	E101	E102	E103	E104	E105	E106
N108					8		
N107							
N106		11	0	2	9	3	
N105	4	**3**	**7**	**9**	**3**	0	
N104	3	**13**	**5**	**6**	**0**	0	1
N103	2	**3**	**2**	**9**	**4**	1	
N102				5			

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 113 artifacts were analyzed from the excavations conducted at LA 135291. In addition, flotation and pollen samples were selected for analysis from the post-occupation fill (Stratum 2), Feature 1 (Stratum 3), and Feature 2 (Stratum 4) (Table 53.6).

Table 53.6. Samples selected for analysis from LA 135291.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	30, 32	11, 31		
2 (Feature 1)	58, 59	57		
3	69	70		
4	61	62	61	

*thermoluminescence

Chronology

Radiocarbon Dating

A single maize sample was submitted for accelerator mass spectroscopy dating from LA 135291. The sample provided a date of 410±40 BP (Beta-229536), with a calibrated intercept of AD 1450 and a two-sigma range of AD 1430 to 1520.

Ceramic Artifacts (Dean Wilson)

A total of 82 ceramics were analyzed from LA 135291. The majority of the pottery represents local Rio Grande decorated ceramics, with a few utilityware types (Table 53.7). These include Biscuit A, smeared-indented corrugated, and micaceous plain gray sherds. The whitewares are primarily tempered with fine ash tuff, the corrugated wares with smeared-indented sand, and the plain gray sherds with granite and mica (Table 53.8). Most of the whitewares are represented by bowl forms and the utilitywares by jar forms; however, two whiteware sherds are from jars and one of the plain gray sherds is from a bowl (Table 53.9). The site probably dates to the early Classic period (14th century) given the presence of Biscuit A.

Table 53.7. Ceramic types from LA 135291.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Biscuit A	12	14.6
Unpainted Biscuit one side slipped	3	3.7
Biscuit paint and slip absent	14	17.1
Northern Rio Grande Utilityware		
Plain gray rim	3	3.7
Plain gray body	13	15.9
Smeared-indented corrugated	37	45.1
Total	82	100.0

Table 53.8. Temper by ware for ceramics from LA 135291.

Temper	Ware		
	Gray	**White**	**Total**
Granite with mica	13	0	13
Fine tuff or ash	0	26	26
Anthill sand	40	3	43
Total	53	29	82

Table 53.9. Vessel form by ware for ceramics from LA 135291.

Vessel Form	Ware		
	Gray	White	Total
Indeterminate	0	3	3
Bowl rim	0	11	11
Bowl body	1	13	14
Jar neck	6	0	6
Jar body	46	2	48
Total	53	29	82

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 32 artifacts were analyzed from LA 135291, consisting of two cores, 14 pieces of debitage, two retouched tools, and 14 ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 53.10 presents the data on lithic artifact type by material type. The debitage is primarily made of Pedernal chert and chalcedony, with a single obsidian artifact. The presence of cortex on 14.2 percent of the debitage indicates that these materials were collected from waterworn (n = 2) sources. The Pedernal chert and chalcedony are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains. Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 53.10. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	Vesic. Basalt	Rhyolite	Andesite	Dacite	Tuff	Obsidian	Chalcedony	Chert	Pedernal	Sil. Wood	Quartzite	Sandstone	Total
Cores	Core	0	0	0	0	0	0	0	0	0	2	0	0	0	2
	Subtotal	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Debitage	Angular debris	0	0	0	0	0	0	0	0	1	3	0	0	0	4
	Core flake	0	0	0	0	0	0	0	4	0	4	0	0	0	8
	Biface flake	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Bipolar flake	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	1	5	1	7	0	0	0	14
Retouched Tools	Retouched piece	0	0	0	0	0	0	1	0	0	1	0	0	0	2

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Sandstone**	**Total**
	Subtotal	0	0	0	0	0	0	1	0	0	1	0	0	0	2
Ground Stone	One-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Two-hand mano	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Und. mano	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Und. metate	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Shaped slab	0	0	0	0	10	0	0	0	0	0	0	0	0	10
	Subtotal	0	0	0	0	13	0	0	0	0	0	0	1	0	14
Total		**0**	**0**	**0**	**0**	**13**	**0**	**2**	**5**	**1**	**10**	**0**	**1**	**0**	**32**

Lithic Reduction

The platform core was reduced using a bidirectional, opposed-same-face technique; whereas, the flake core was reduced using a single-face technique. The platform core was classified as exhausted and the flake core as broken due to a culturally induced fracture when discarded. Table 53.11 presents the metric information on the cores.

Table 53.11. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Single-directional	22	40	31	28.2
Bidirectional	24	40	42	41.7

The debitage consists mostly of core flakes and angular debris, with a few other items. The flakes mostly have collapsed platforms (n = 3), with fewer cortical (n = 1), single-faceted (n = 2), and multi-faceted (n = 2) platforms. Only one of the platforms exhibits evidence of preparation by abrasion/crushing. The majority of the core flakes are whole (n = 8), with fewer proximal (n = 3), midsection (n = 1), and distal (n = 2) fragments. In contrast, the biface flakes consist of a whole and distal fragment. The whole core flakes have a mean length of 36.5 mm (*std* = 6.3), the single whole biface flake a length of 12.0 mm, and the angular debris a mean weight of 2.8 g (*std* = 2.3).

Two retouched pieces were identified during the analysis. One of the retouched pieces is an obsidian flake fragment with bidirectional retouch along a lateral edge with an edge angle of 55 degrees. The other is a Pedernal chert flake fragment that exhibits unidirectional dorsal retouch along a lateral edge with an angle of 65 degrees.

Tool Use

None of the debitage or the retouched tools exhibit evidence of edge damage that could be attributed to use.

The ground stone artifacts include manos and metates. The one-hand mano consists of a piece of dacite with a single ground surface. The two-hand mano consists of a loaf-shaped piece of dacite with flat and convex-shaped grinding surfaces. The undetermined mano fragment is a fire-cracked quartzite cobble with some evidence of grinding on two opposing surfaces. The undetermined metate is a fire-cracked piece of dacite with a single heavily ground flat surface. Lastly, the undetermined ground stone items compose part of a shaped dacite slab.

Archaeobotanical Remains (Pamela McBride)

Maize cupules from the ash concentration found outside the structure just to the east were the only plant remains hinting at the agricultural activities that took place near the fieldhouse (Table 53.12). Juniper twigs and ponderosa pine and piñon needles could be related to fuelwood use or represent residue from the Cerro Grande fire. Unburned juniper twigs, ponderosa pine needles, hedgehog cactus seeds, and weedy annual seeds most likely represent modern intrusives transported into the site by wind or rodents.

Table 53.12. Flotation plant remains, count and abundance per liter from LA 135291.

FS No.	**30**	**32**	**58**	**59**	**61**	**69**
Feature	Under rock inside structure next to wall	Post-occupational fill	F. 1 (possible pot rest) fill		F. 2 Exterior ash concentration fill	Floor
Cultural						
Cultivars						
Maize					2(2) cupule	
Other						
Unidentifiable					3(0) plant part	
Perennials						
Juniper	+ twig		+ twig	+ twig		+ twig
Piñon			+ needle			
Ponderosa pine	+ fascicle, + needle	+ needle	+ needle	+ needle	+ needle	+ needle
Non-Cultural						
Annuals						
Amaranth	+		+	+		

FS No.	30	32	58	59	61	69
Goosefoot	+	+	+	+	+	+
Purslane	+	+	+		+	+
Spurge			+			
Sunflower		+				
Other						
Bean family		+				
Composite family	+	+	+		+	
Knotweed family			+			
Perennials						
Hedgehog cactus	+					
Juniper	+ twig	+ twig	+ twig	+ twig	+ twig	+ twig
Ponderosa pine	+ needle	+ needle	+ needle	+ needle	+ needle	

+ 1-10/liter.

Wood charcoal from inside the structure consisted of pine, ponderosa pine, and unknown conifer (Table 53.13). The wood may also be the result of the Cerro Grande fire. The site is located in a pine forest that was severely burned during the fire and two burned juniper trees were found inside the feature. In contrast, the wood assemblage from the possible discard pile outside the structure was quite different in composition, including possible Douglas fir, mountain mahogany, and oak. The presence of maize in this feature along with this unique wood assemblage suggests a discrete dumping episode that may be the only intact evidence at the site of fuel use.

Table 53.13. Flotation sample wood charcoal by count and weight from LA 135291.

FS No.	30	32	58	59	61	69
Feature	Under rock inside structure next to wall	Post-occupational fill	F. 1 (possible pot rest) fill		F. 2 Exterior ash concentration fill	Floor
Conifers						
cf. Douglas fir					1/<0.1 g	
Pine	1/<0.1 g				6/0.2 g	1/<0.1 g
Ponderosa pine	7/<0.1 g	2/<0.1 g	1/<0.1 g			cf. 5/0.1 g
Unknown conifer	5/0.1 g	2/<0.1 g	1/<0.1 g	3/<0.1 g		13/0.7 g
Non-Conifers						

cf. Mountain mahogany					9/0.3 g	1/<0.1 g
cf. Oak					4/0.2 g	
Totals	**13/0.1 g**	**4/<0.1 g**	**2/<0.1 g**	**3/<0.1 g**	**20/0.7 g**	

cf. compares favorably.

Pollen Remains (Susan Smith)

Four pollen samples were analyzed from LA 135291. Table 53.14 lists the frequency of identified pollen types. Maize was the only cultigen identified in the assemblage. No other economic resources were identified. A number of potential economic resources were also identified in the assemblage, and these are discussed in Smith's chapter in Volume 3.

Table 53.14. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135291 (*n* = 4)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	0
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	0
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	1
	Eriogonum	Buckwheat	2
	Brassicaceae	Mustard Family	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135291 (*n* = 4)
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	4
		Grass Aggregates	1
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	4
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	4
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	3
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	1

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135291 (*n* = 4)
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	2
	Pinus	Pine	4
		Pine Aggregates	0
	Pinus edulis type	Piñon	4
	Juniperus	Juniper	4
		Juniper Aggregates	0
	Quercus	Oak	2
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	4
	Artemisia	Sagebrush	4
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	1
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 135291 consists of a one-room fieldhouse. Excavations revealed the presence of an unprepared floor that corresponded with the top of the Btb1 soil horizon. No artifacts were exposed on the floor; however, a single feature was identified. The feature consisted of several upright dacite cobbles that enclosed the northeast corner of the room. The cobbles do not appear

to be the remains of a hearth given the absence of burning, but may be a pot rest. An ash discard pile was identified outside and to the east of the fieldhouse. The presence of maize and the prevalence of storage jars reflect the agricultural function of the site, with limited core reduction and grinding activities also being represented. The occupation of the site dates to the 14th century (Early Classic) based on the presence of Biscuit A ceramics.

CHAPTER 54
RENDIJA TRACT (A-14): LA 135292

Gregory D. Lockard

INTRODUCTION

LA 135292 is the remains of a one-room Classic period fieldhouse located on a terrace to the south of the Rendija Canyon channel. The site is located a few tens of m north of the Rendija Canyon Road. It is covered with grass, but otherwise contains only a few small bushes that were burned during the Cerro Grande fire. The site is situated at an elevation of 2080 m (6915 ft).

LA 135292 was first recorded on October 19, 2000, by Nisengard, Harmon, and Schmidt as part of the Cerro Grande post-fire assessment project. The site was identified as a possible fieldhouse. Artifacts visible on the surface included an obsidian core flake, a Pedernal chert core flake, a Wiyo black-on-white sherd, a Biscuit B sherd, two indeterminate whiteware sherds, two smeared-indented sherds, and three plainware sherds. Based on these ceramics, the site was likely occupied during the Classic period (AD 1325–1600).

FIELD METHODS

Before excavation, the site and surrounding area were cleared of trees and large undergrowth. The site was then visible as a small rubble mound approximately 2 by 2 m in area (Figure 54.1). An arbitrary site datum (designated 100N/100E, 10.00 m elevation) was set up in the southwest corner of the site. The site was then covered with a 1- by 1-m grid that extended 5 m north and 6 m east of the site datum. Two subdatums (A and B) were set up for taking elevations. The site was then photographed. Artifacts visible on the surface were collected by grid unit, and the location of artifacts outside of the grid was determined with tape measures. A 6- by 1-m east-west trench (102N/100-105E) was initially excavated across the rubble mound. The purpose of this trench was to expose a profile of the site stratigraphy, as well as to determine the location of the structure's east and west walls. Units were excavated by strata, and thicker strata were excavated in arbitrary 10-cm levels. The southwest corner of the structure was encountered in unit 102N/102E. The south wall extends eastward through unit 102N/103E and into the western half of unit 102N/104E.

No discernible living surface was encountered in any of the grid units in the trench. Excavation of the trench units proceeded down to the base of the walls. Unit 102N/101E, located just west of the southwest corner of the room, was selected to serve as a test pit for geological analysis. Excavation in this unit therefore proceeded an additional 50 cm below the surrounding units. After the excavation of the trench units, the north profile of the trench was drawn and photographed. The rest of the area was subsequently excavated, again by strata and arbitrary levels for thicker strata. In all, 18 units were excavated. Excavation revealed that only the structure's southwest corner was preserved. The other corners, along with most if not all of the room's north and east walls, were destroyed, probably by modern machinery. As a result, there

was no clear boundary between the inside and outside of the room, except in the southwest corner.

Figure 54.1. Pre-excavation photograph of LA 135292.

Excavation throughout the site therefore terminated at the same level—the base of the extant portions of the room's walls. Excavation focused on defining the room's walls, removing wallfall, and locating features. Soil samples were taken from select locations, and all other soil was passed through screens with 1/8-in. mesh to aid in the recovery of artifacts. The excavation area extended at least 1 m beyond the structure in all directions to locate external features and/or outdoor activity areas. The structure was then mapped (Figure 54.2) and photographed (Figure 54.3).

The excavation of the site was supervised by Greg Lockard. The field crew included Joseph (Woody) Aguilar, Bettina Kuru'es, Brandon Gabler, Margaret Dew, Jeanine Wood, and Aaron Lenihan. Timothy Martinez and Aaron Gonzalez served as site monitors from San Ildefonso Pueblo and as screeners. Michael Chavarria was the site monitor representing Santa Clara Pueblo, as well as an additional screener.

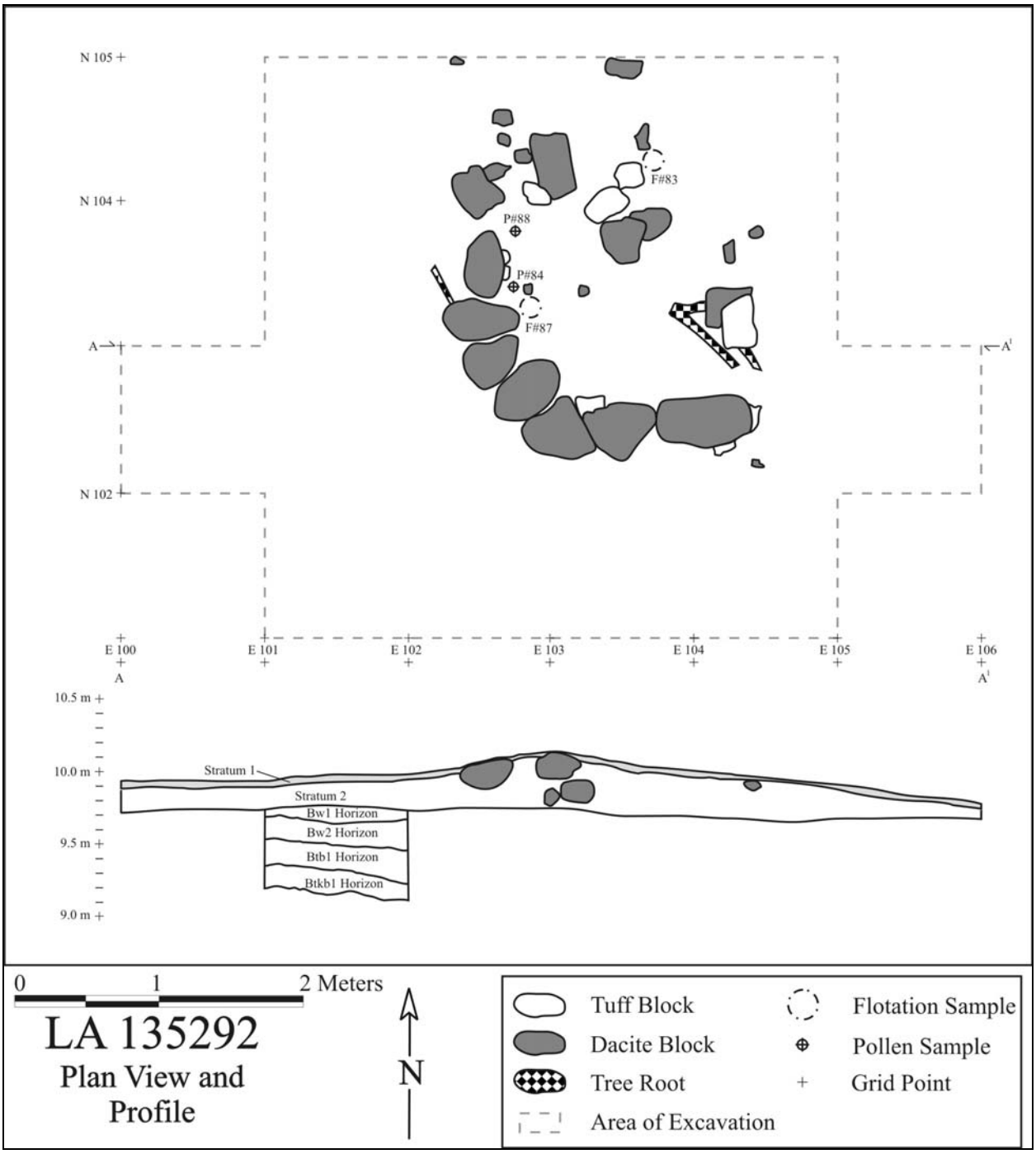


Figure 54.2. Plan view and profile drawing of LA 135292.

STRATIGRAPHY

Stratum 1 is composed of loose surface sediment. It is uniformly 2 to 6 cm thick across the site and is equivalent to the upper portion of the A horizon (topsoil). Stratum 2 is post-occupational fill and ranges from 20 to 35 cm in thickness. The post-occupational fill was thickest in the

southwest (i.e., preserved) corner of the room. Stratum 2 includes the lower portion of the A horizon and the upper portion of the Bw1 horizon. Stratum 3 is the sterile sediment excavated in the geological test pit and includes the lower portion of the Bw1 horizon and the Bw2, Btb1, and Btkb1 horizons. Tables 54.1 to 54.4 describe the strata.

Table 54.1. LA 135292 strata descriptions.

Stratum	Color	Texture	Thickness (cm)	Description
0	-	-	-	Surface
1	10YR 4/3	Silty loam	2–6	Surface sediment
2	10YR 4/4	Silty loam	20–35	Post-occupational fill
3	8.75YR 4/4	Silt	45	Pleistocene soil

Figure 54.3. Post-excavation photograph of the fieldhouse at LA 135292.

Table 54.2. LA 135292 soil horizon descriptions from the north profile of the geological test pit (102N/101E).

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4/3	Silty loam	0–14	Topsoil
Bw1	10YR 4/4	Silty loam	14–30	Late-Holocene soil

Horizon	Color	Texture	Depth (cm)	Description
Bw2	10YR 3.5/4	Silt	30–44	Late-Holocene soil
Btb1	8.75YR 4/4	Silt	44–61	Pleistocene soil
Btkb1	7.5YR 3/3	Silty clay	61–70+	Pleistocene soil

Table 54.3. LA 135292 soil horizon descriptions from the north profile of unit 102N/103E.

Horizon	Color	Texture	Depth (cm)	Description
A	10YR 4.5/3	Silt	0–28	Topsoil
Bw1	10YR 4/4	Silt	28–36+	Late-Holocene soil

Table 54.4. LA 135292 artifact counts by strata.

Stratum	Ceramics	Chipped Stone	Ground Stone	Faunal Remains	Total
0	3	7	0	0	**10**
1	25	13	0	1	**39**
2	64	63	3	0	**130**
3	0	0	0	0	**0**
Total	**92**	**83**	**3**	**1**	**179**

SITE EXCAVATION

Room 1

Sequence of Excavation. Room 1 is a small structure of unknown shape and dimensions that probably functioned as a fieldhouse. Excavation of the room began with an east-west trench that extended across the site (102N/100-105E). The excavation of this trench served to define the room's stratigraphy, as well as to locate the room's south and west walls. No living surface was encountered in any of the grid units in the trench. The excavations therefore terminated at the base of the room's walls. After the excavation of the trench, the area to the northeast of the south and west walls was excavated down to the level of the base of the room's walls. A small patch of burned earth was encountered in 104N/103E. This patch of burned earth may have been part of the room's living surface.

Fill. Due to the destruction of all but the southwest corner of the room, the room's fill could not be differentiated from the post-occupational fill outside of the room. Nevertheless, three flotation samples (Field Specimen [FS] 75, FS 77, and FS 87) and three pollen samples (FS 76, FS 78, and FS 88) were taken of post-occupational fill in the area to the northeast of the south and west walls. All of these samples are from locations that were most likely within Room 1. The samples may therefore represent room fill. The machinery that disturbed the room's walls, however, most likely also disturbed the post-occupational fill in all but the room's southwest corner. As a result, the samples probably represent mixed deposits rather than pure room fill. Charred taxa identified in the flotation samples included ponderosa pine, unidentified pine, maize, cheno-ams, juniper, unknown conifer, and mountain mahogany. Taxa identified in the pollen samples included maize, beeweed, lily family, rose family, grass family, cheno-ams,

sunflower family, ragweed/bursage, spurge family, unidentified pine, piñon pine, juniper, oak, and sagebrush.

Floor. No floor or prepared living surface was encountered during the excavation of LA 135292. A small patch of burned earth was encountered in the southeast quadrant of 104N/103E (Figure 54.4). This patch of burned earth could be part of the room's living surface. It is equally likely, however, that the earth was burned during a forest fire. A small pit was encountered nearby in 103-104N/103E. This pit was most likely the remains of an animal burrow. The pit contained four large rocks. These rocks may have been placed within the pit during the site's occupation. If this is the case, the animal burrow probably post-dates the room's construction, as it is unlikely that a fieldhouse would have been built around such a large hole. The site was thereafter reoccupied, at which time the rocks were placed in the animal burrow to repair the room's living surface. There is no firm evidence, however, that the rocks were placed within the pit prehistorically. In other words, the animal burrow may post-date the site's occupation. If this is the case, the rocks are wallfall that fell into the burrow, or were pushed into the burrow by the modern machinery that destroyed the walls in this area of the site.

Figure 54.4. Burned patch of earth in Room 1 at LA 135292.

A pollen sample (FS 84) was taken from just inside the room at the base of the west wall. Taxa identified in this sample included beeweed, grass family, cheno-ams, ragweed/bursage, sunflower family, spurge family, unidentified pine, oak, and sagebrush. A flotation sample (FS 87) and a pollen sample (FS 88) were also taken from just inside the room's west wall, a few

centimeters above the base of the walls (see above for results). At least one of these three samples is from a level that is at least near the Room 1 living surface. A flotation sample (FS 83) was taken of the burned earth in the southeast quadrant of 104N/103E. Charred taxa identified in this sample included juniper, Douglas fir, oak, mountain mahogany, unknown conifer, and ponderosa pine. A great deal of charcoal was encountered during the excavation of the site. Most if not all of the charcoal, however, was produced during the Cerro Grande fire. This modern charcoal could not be distinguished from any possible prehistoric charcoal. As a result, no charcoal was kept from the site as a radiocarbon sample.

Wall Construction. The only walls in Room 1 that were preserved at the time of excavation were the south and west walls. These walls join to form the southwest corner of the room, which is well-rounded. The walls do straighten out, however, away from the corner. The room therefore does not appear to have been elliptical in shape. Instead, it was most likely rectangular with rounded corners. The easternmost two rocks of the south wall are elongated and oriented lengthwise. The cobbles that form the southwest corner and west wall, on the other hand, tend to be rounder and more irregular in shape. Small tuff rocks were utilized as foundations for, and placed in, the spaces between the large dacite cobbles. Because the northwest and southeast corners of the structure were destroyed, the prehistoric lengths of the walls are unknown (Table 54.5). Two stones, one on top of the other, were encountered to the north of the east end of the south wall. The lower rock is not like the cobbles that form the south and east walls and is considerably deeper. It therefore does not appear to have been part of the room's walls. The upper rock, on the other hand, is a shaped tuff block, and therefore probably was part of the room's walls. It is unknown, however, whether the rock is *in situ*. Its north-south orientation suggests that it is *in situ* and was part of the east wall. If this is the case, however, the room was very narrow (about 1.5 m). A large dacite cobble was encountered to the north of the west wall. This rock was most likely part of the west wall and is only slightly displaced. Two tuff blocks were encountered to the northeast of the west wall. These rocks were probably part of the north wall. Their orientation, however, indicates that they are not *in situ*.

Table 54.5. LA 135292 Room 1 wall measurements.

Orientation	Length (m)	Height (m)	Thickness (m)	Number of Courses
North	0	N/A	N/A	0
South	1.42	0.10–0.27	0.18–0.36	1
East	0.36	0.16–0.29	0.18	1 to 2
West	1.21	0.13–0.23	0.10–0.40	1

Note: The lengths are of the extant portions of the walls.

Judging from the amount of wallfall removed during the excavation of the area in and around Room 1, the room's masonry was originally considerably higher than it was when the site was excavated. Due to the fact that the lengths of the room's walls could not be determined, the original height of the masonry could not be determined. All of the rocks removed as wallfall during the site's excavation, however, were placed in a large stack for measurement. The stack measured 4.35 by 0.30 by 0.45 m, for a total of approximately 0.59 m^3 of wallfall. This number is significantly less than the average volume of wallfall removed during the excavation of other fieldhouses in the Rendija Canyon Tract during the Conveyance and Transfer Project. The rest

of the rocks that formed the room's walls were probably pushed off of the excavated portion of the site by the modern machinery that destroyed the room's north and east walls. This interpretation is supported by the fact that most of the wallfall removed from the site was from the southwest (i.e., preserved) corner of the room. The uppermost portions of the room's walls, as well as the roof, were most likely composed of wattle and daub. These materials are rarely preserved at archaeological sites on the Pajarito Plateau. In fact, only seven pieces of burned adobe (FS 45, FS 51, FS 55, FS 60, FS 67, FS 82, and FS 86) were recovered from the site.

Geological Analysis

Geologists Paul Drakos and Steven Reneau utilized two profiles to reconstruct the natural soil horizons at the site. The first is the north profile of the geological test pit (102N/101E). The profile contained a soil sequence consisting of an A horizon (topsoil), Bw1 and Bw2 horizons (late-Holocene soils), and Btb1 and Btkb1 horizons (Pleistocene soils) (see Table 54.2; Figure 54.5). The second profile, the north profile of 102N/103E, was examined just after the excavation of the east-west trench across the site. This profile contained a soil sequence consisting of an A horizon (topsoil) and a Bw1 horizon (a late-Holocene soil) (see Table 54.3). An examination of the relationship between the stratigraphy and the extant portions of the Room 1 walls reveals that the foundations were constructed directly on top of the Bw1 horizon.

Artifact Distribution

There are no obvious patterns in the distribution of artifacts at LA 135292 (Table 54.6). Much of the site has been severely disturbed, probably by modern machinery. Even if patterns were evident in the artifact distribution, they would have probably been the result of modern rather than prehistoric site formation processes anyway.

Table 54.6. LA 135292 artifact counts (ceramics, chipped stone, ground stone, and faunal remains) by grid unit.

	E100	E101	E102	E103	E104	E105
N104		13	5	14	6	
N103		0	6	12	17	
N102	0	14	5	17	5	3
N101		11	15	18	9	

Note: Does not include nine artifacts found outside of the excavated area during surface collection.

Figure 54.5. Profile of the north wall in the geologic test pit.

SITE CHRONOLOGY AND ASSEMBLAGE

A total of 178 artifacts were analyzed from the excavations conducted at LA 135292. In addition, flotation and pollen samples were selected for analysis from the post-occupation fill

(Stratum 2) (Table 54.7). The results of the artifact and sample analyzes are presented in the following sections.

Table 54.7. Samples selected for analysis from LA 135292.

Stratum	Sample Type			
	Flotation	Pollen	Radiocarbon	TL*
1				
2	77, 83, 87	78, 84, 88		
3				

*thermoluminescence

Ceramic Artifacts (Dean Wilson)

A total of 89 ceramics were analyzed from LA 135292. The majority of the pottery consists of smeared-indented corrugated and Biscuit A sherds. In addition, the presence of Santa Fe Black-on-white, Wiyo Black-on-white, Galisteo Black-on-white, and Sapawe Micaceous would seem to reflect an Early Classic period occupation (Table 54.8). Information on ceramic tradition by ware, temper by ware, and vessel form by ware are provided in Tables 54.9 to 54.11. The graywares and whitewares appear to have been locally made from smeared-indented sand or tuff, although a single whiteware sherd does exhibit non-local micaceous temper. Most of the grayware ceramics consist of jar vessel forms, however, one sherd was derived from a bowl. In contrast, the whiteware sherds include mostly bowls, with some jars.

Table 54.8. Ceramic types from LA 135292.

Ceramic Type	Frequency	Percent
Northern Rio Grande Whiteware		
Unpainted undifferentiated	1	2.2
Santa Fe Black-on-white	2	2.2
Biscuit paint and slip absent	4	4.5
Biscuit painted unspecified	2	2.2
Biscuit unpainted one side slipped	2	2.2
Biscuit unpainted both sides slipped	4	4.5
Biscuit A	3	3.4
Biscuit B/C body	14	15.7
Sankawi Black-on-cream	2	2.2
Northern Rio Grande Utilityware		
Unknown gray rim	1	1.1
Plain gray body	3	3.4
Smeared-indented corrugated	50	56.4
Total	**89**	**100.0**

Table 54.9. Tradition by ware for LA 135292 ceramics.

Tradition	Ware								Total	
	Gray		White		Glaze		Micaceous			
Rio Grande (Prehistoric)	54	100.0	34	97.1	0	0.0	0	0.0	88	98.8
Rio Grande (Tewa Micaceous)	0	0.0	1	2.9	0	0.0	0	0.0	1	1.2
Middle Rio Grande	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	**54**	**100.0**	**35**	**100.0**	**0**	**0.0**	**0**	**0.0**	**89**	**100.0**

Table 54.10. Temper by ware for LA 135292 ceramics.

Temper	Ware								Total	
	Gray		White		Glaze		Micaceous			
Fine tuff or ash	0	0.0	29	82.8	0	0.0	0	0.0	29	32.5
Fine tuff and sand	0	0.0	1	2.8	0	0.0	0	0.0	1	1.1
Smeared-indented sand	54	100.0	3	8.5	0	0.0	0	0.0	57	64.0
Oblate shale and tuff	0	0.0	1	2.8	0	0.0	0	0.0	1	1.1
Granite with mica	0	0.0	1	2.8	0	0.0	0	0.0	1	1.1
Total	**54**	**100.0**	**35**	**100.0**	**0**	**0.0**	**0**	**100.0**	**89**	**100.0**

Table 54.11. Vessel form by ware for LA 135292 ceramics.

Vessel Form	Ware								Total	
	Gray		White		Glaze		Micaceous			
Indeterminate	4	7.4	4	11.4	0	0.0	0	0.0	8	8.9
Bowl rim	1	1.8	0	0.0	0	0.0	0	0.0	1	1.1
Bowl body	0	0.0	25	71.4	0	0.0	0	0.0	25	28.0
Jar neck	2	3.7	1	2.8	0	0.0	0	0.0	3	3.3
Jar body	47	87.0	5	14.2	0	0.0	0	0.0	52	58.4
Total	**54**	**100.0**	**35**	**100.0**	**0**	**0.0**	**0**	**100.0**	**89**	**100.0**

Lithic Artifacts (Bradley Vierra and Michael Dilley)

Material Selection

A total of 89 artifacts were analyzed from LA 135292, consisting of a core, 78 pieces of debitage, six retouched tools, and four ground stone artifacts. This represents a 100 percent sample of the total lithic artifacts recovered during the site excavations. Table 54.12 presents the data on lithic artifact type by material type. The debitage is primarily made of chalcedony, Pedernal chert, and obsidian, with a few other materials. The presence of cortex on 12.8 percent of the debitage indicates that these materials were collected from waterworn (n = 7) and nodule (n = 3) sources. The chalcedony, Pedernal chert, and silicified wood are available from local Rio Grande Valley gravels and the obsidian from nearby sources in the Jemez Mountains.

Otherwise, the igneous materials are available both as bedrock outcrops and in stream gravels that cross-cut the plateau.

Table 54.12. Lithic artifact type by material type.

Artifact Type		Material Type													
		Basalt	**Vesic. Basalt**	**Rhyolite**	**Andesite**	**Dacite**	**Tuff**	**Obsidian**	**Chalcedony**	**Chert**	**Pedernal**	**Sil. Wood**	**Quartzite**	**Greenstone**	**Total**
Cores	Core	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Subtotal	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Debitage	Angular debris	0	0	0	0	0	0	4	2	0	3	0	0	0	9
	Core flake	1	0	4	0	1	0	2	2	0	1	1	0	1	45
	Biface flake	0	0	0	0	0	0	7	2	0	1	1	0	0	11
	Microdeb.	0	0	0	0	0	0	1	1	0	0	0	0	0	4
	Und. flake	0	0	0	0	0	0	1	8	0	0	0	0	0	9
	Subtotal	1	0	4	0	1	0	15	35	0	19	2	0	1	78
Retouched Tools	Retouched piece	0	0	0	0	0	0	0	0	0	2	0	0	0	2
	Biface	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	Projectile point	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	Subtotal	0	0	0	0	0	0	4	0	0	2	0	0	0	6
Ground Stone	One-hand mano	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	Und. mano	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Polishing stone	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	Hoe	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Subtotal	1	1	0	1	0	0	0	0	0	0	0	1	0	4
Total		**2**	**1**	**4**	**1**	**1**	**0**	**19**	**36**	**0**	**21**	**2**	**1**	**1**	**89**

Four pieces of obsidian debitage, a single piece of basalt debitage, and four obsidian retouched tools were submitted for X-ray fluorescence analysis. The obsidian artifacts are Valle Grande, Cerro Toledo, and El Rechuelos obsidian (Table 54.13). The Valle Grande (Cerro del Medio) and Cerro Toledo (Obsidian Ridge/Rabbit Mountain) source areas are situated about 17 km (11 mi) and 19 km (12 mi) to the west and southwest. Although obsidian is present at these nearby sources in the Jemez Mountains, it is also present on the nearby mesa as small pebbles. These pebbles compose part of the secondary deposits associated with the Cerro Toledo interval. The El Rechuelos (Polvadera Peak) source area is located approximately 27 km (17 mi) northwest of the site. A single basalt flake is actually made of dacite that was derived from a local source.

Table 54.13. Obsidian source samples.

FS #	Artifact	Color	Source
20	Debitage	Translucent	Cerro Toledo rhyolite
30	Biface	Translucent	Cerro Toledo rhyolite
33	Debitage	Translucent	Valle Grande rhyolite
39	Biface	Black dusty	El Rechuelos
63	Debitage	Translucent	Valle Grande rhyolite
73	Debitage	Translucent	Cerro Toledo rhyolite
89	Point	Black Dusty	El Rechuelos

Lithic Reduction

The single core is a flake core that was reduced using opposed-same-face technique. It was classified as still useable when discarded. Table 54.14 presents the metric information on the core.

Table 54.14. Core type dimensions (mm) and weight (g).

Core Type	Length	Width	Thickness	Weight
Flake core	45	44	15	32.0

The debitage mostly consists of core flakes, with fewer biface flakes, angular debris, and other items. The flakes mostly have single-faceted platforms (n = 20), with fewer multi-faceted (n = 1), collapsed (n = 9), and crushed (n = 10) platforms. Only two of the platforms exhibit evidence of preparation by abrasion/crushing. The majority of the core flakes are whole (n = 16), with fewer proximal (n = 15), distal (n = 13), and undetermined (n = 1) fragments. In contrast, the biface flakes consist of a whole (n = 2), proximal (n = 7), and midsection (n = 2) fragments. The whole core flakes have a mean length of 24.1 mm (*std* = 11.4), the whole biface flakes a mean length of 24.5 mm (*std* = 7.7), and the angular debris a mean weight of 1.5 g (*std* = 1.4).

The retouched tools consist of retouched pieces, bifaces, and projectile points. The retouched pieces are large flakes with laterally retouched edges. One has been retouched along the dorsal surface and the other exhibits alternating retouch (dorsal and ventral), with edge angles of 75 and 70 degrees. The bifaces consist of a distal fragment from a large biface and a whole late-stage biface. The latter may be a reworked point or an unfinished preform (Figure 54.6). The projectile points consist of two base fragments. One appears to be a corner-notched point with a broken blade and tangs. The other is a stemmed point with a concave base. It exhibits an impact fracture that burinated the tip and lateral side of the point. Both of these items could represent Archaic dart points.

Tool Use

Only one piece of debitage and none of the retouched tools exhibit evidence of edge damage that could be attributed to use. The single utilized flake has rounding use along a lateral straight edge with an angle of 45 degrees.

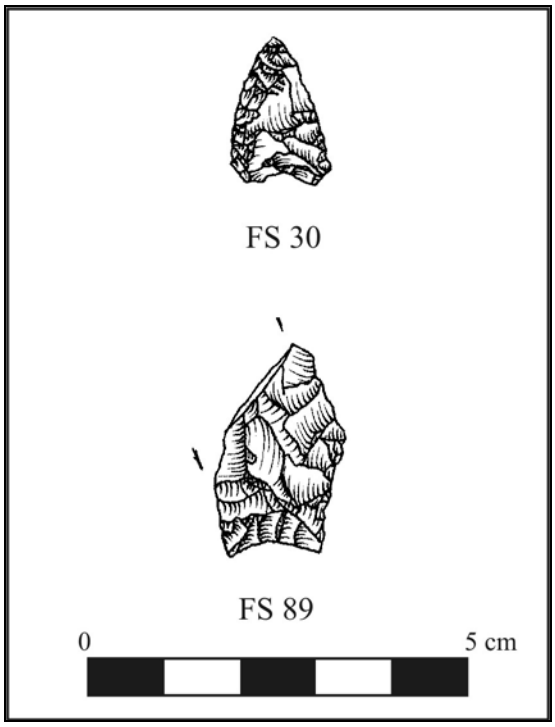


Figure 54.6. Biface and projectile point.

The ground stone artifacts include manos, a polishing stone, and an axe. The two-hand mano is a fragment that appears to have been reworked and continued to be used as a one-hand mano (Figure 54.7). It has two opposing heavily ground surfaces and a wedge-shaped cross-section. The other mano is a fire-cracked quartzite cobble fragment with a single ground surface. The polishing stone consists of a flat andesite pebble with a single ground/polished surface. Lastly, the axe is a butt fragment with a full groove (Figure 54.7). The faces are polished, indicating that the item might have been ground during resharpening, rather that chipped; however, this might also be the by-product of use.

Faunal Remains (Kari Schmidt)

One piece of unidentified bone was recovered from LA 135292. The bone was recovered from unit 102N/103E, was heavily burned, and was a very small fragment of cancellous bone. The bone was recovered from the upper fill of the fieldhouse and contained an old break.

Archaeobotanical Remains (Pamela McBride)

LA 135292 was severely affected by the Cerro Grande fire and all but the southwest corner of the room was destroyed by modern machinery. The sample from room fill contained a charred cheno-am seed, ponderosa pine needles, and a possible cupule fragment (Table 54.15). Unidentifiable plant parts were recovered from the area of burned earth that may represent what

remains of the living surface. Modern uncharred grass, annual, and groundcherry seeds were all that was recovered from the sample just inside the room's west wall.

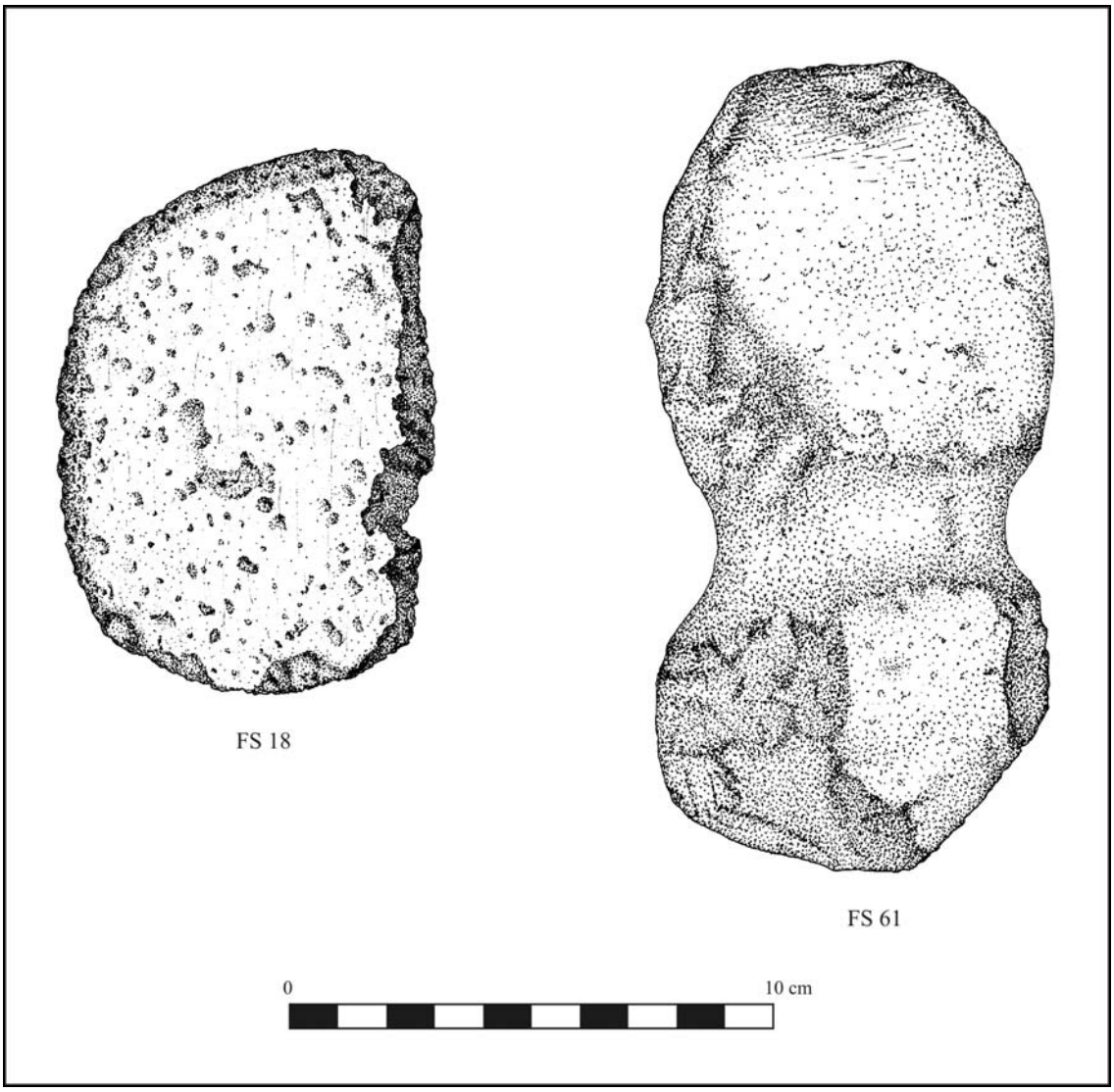


Figure 54.7. Mano and axe from LA 135292.

Table 54.15. Flotation plant remains, count, and abundance per liter from LA 135292.

FS No.	**77**	**83**	**87**
Feature	Post-occupational fill, Strat. 2, level 3	Burned earth	Strat. 2, level 4, just E of W wall of Rm. 1
Cultural			
Annuals			
Cheno-Am	1(1)		
Cultivars			
Maize	1(0) cf. c		

FS No.	77	83	87
Other			
Unidentifiable		1(0), 1(1) pc	
Perennials			
Ponderosa pine	+ needle		
Non-Cultural			
Annuals			
Amaranth	+	+	+
Goosefoot	+	+	+
Purslane	+		+
Sunflower		+	
Grasses			
Dropseed grass		+	
Grass family	+	+	+
Other			
Evening primrose		+	
Groundcherry	+	+	+

+ 1-10/liter, c cupule, cf. compares favorably, pc partially charred.

The wood assemblage was much more diverse than that present at LA 135291 and included juniper, ponderosa pine, and mountain mahogany (Table 54.16). Possible Douglas fir and oak were identified in the sample from the burned earth, wood taxa that were absent from general fill samples. Excavators noted that burned wood resulting from the Cerro Grande fire could not be distinguished from possible prehistoric charcoal. Therefore, the cultural origin of wood from flotation samples is doubtful.

Table 54.16. Flotation sample wood charcoal by count and weight in grams from LA 135292.

FS No.	77	83	87
Feature	Post-occupational fill, Strat. 2, level 3	Burned earth	Strat. 2, level 4, just E of W wall of Rm. 1
Conifers			
cf. Douglas fir		1/<0.1 g	
Juniper	2/0.1 g	1/<0.1 g	
Pine	1/<0.1 g		
Ponderosa pine		5/0.1 g	8/0.4 g
Unknown conifer	2/<0.1 g	2/<0.1 g	1/<0.1 g
Non-Conifers			
Mountain mahogany	3/<0.1 g	10/0.2 g	1/<0.1 g
Oak		1/<0.1 g	
Totals	**8/0.1 g**	**20/0.3 g**	**10/0.4 g**

Pollen Remains (Susan Smith)

Three pollen samples were analyzed from LA 135292. Table 54.17 lists the frequency of identified pollen types. Maize was the only cultigen identified in the assemblage. Beeweed and lily family were also identified as economic resources. A number of potential economic resources were also identified in the assemblage, and these are discussed in Smith's chapter in Volume 3.

Table 54.17. Pollen types identified by taxa and common names with sample frequency.

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135292 (*n* = 3)
Cultigens	*Gossypium*	Cotton	0
	Cucurbita	Squash	0
	Zea mays	Maize	1
	Zea Aggregates	Maize Aggregates	0
	Opuntia (Cylindro)	Cholla	0
Economic Resources	*Opuntia* (Platy)	Prickly Pear	0
		Prickly Pear Aggregates	0
	Cactaceae	Cactus Family	0
	Cactus Family Aggregates	Cactus Family Aggregates	0
	Cleome	Beeweed	3
	cf. *Helianthus*	Sunflower type	0
	Liliaceae	Lily Family includes yucca (*Yucca*), wild onion (*Allium*), sego lily (*Calochortus*), and others	1
	Solanaceae	Nightshade Family	0
	Apiaceae	Parsley Family	0
	Typha	Cattail	0
	Cyperaceae	Sedge	0
	Lamiaceae	Mint Family	0
	Portulaca	Purslane	0
Other Potential Economic Resources	Rosaceae	Rose Family	2
	Eriogonum	Buckwheat	0
	Brassicaceae	Mustard Family	0
		Mustard Aggregates	0
	cf. *Astragalus*	Locoweed	0
		cf. Locoweed Aggregates	0
	Polygonaceae	Knotweed Family	0
	Polygonum (frilly grain, cf. *Paronychia)* type	Knotweed cf. *Paronychia* type	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135292 (*n* = 3)
	Plantago	Plantain	0
	Polygala type	Milkwort	0
	Poaceae	Grass Family	3
		Grass Aggregates	0
	Large Poaceae	Large Grass includes Indian ricegrass (Achnatherum, cereal grasses (oats, Avena, wheat, Triticum, etc.), and others	0
Riparian Types	*Populus*	Cottonwood, Aspen	0
	Juglans	Walnut	0
	Betula	Birch	0
	Alnus	Alder	0
	Salix	Willow	0
Native Weeds, Herbs, and Shrubs	Cheno-Am	Cheno-Am	3
		Cheno-Am Aggregates	0
	Fabaceae	Pea Family	0
	Asteraceae	Sunflower Family includes rabbitbrush (Chrysothamnus), snakeweed (Gutierrezia), aster (Aster), groundsel (Senecio), and others	3
		Sunflower Family Aggregates	0
	Ambrosia	Ragweed, Bursage	2
		Ragweed/Bursage Aggregates	0
	Unknown Asteraceae type only at LA 86637	Unknown Sunflower Family type only at LA 86637	0
	Asteraceae Broad Spine type	Sunflower Family broad spine type	0
	Unknown Asteraceae Low-Spine type	Unknown Low-Spine Sunflower Family, possible Marshelder	0
	Liguliflorae	Chicory Tribe includes prickly lettuce (Lactuca), microseris (Microseris), hawkweed (Hieracium), and others	0
	Sphaeralcea	Globemallow	0
		Globemallow Aggregates	0
	Euphorbiaceae	Spurge Family	2
	Scrophulariaceae	Penstemon Family	0
	Onagraceae	Evening Primrose	0
	Unknown cf. Brassicaceae (prolate, semi-tectate)	Unknown Mustard type	0

Ecological and Ethnobotanical Category	Taxa Name	Common Name	LA 135292 (*n* = 3)
	Nyctaginaceae	Four O'Clock Family	0
	Unknown cf. Nyctaginaceae	Unknown cf. Four O'Clock Family (periporate, ca. 80 µm)	0
	Convolvulaceae	Morning Glory Family	0
Regional to Extralocal Native Trees and Shrubs and Subsistence Resources	*Pseudotsuga*	Douglas Fir	0
	Picea	Spruce	0
	Abies	Fir	0
	Pinus	Pine	3
		Pine Aggregates	0
	Pinus edulis type	Piñon	2
	Juniperus	Juniper	2
		Juniper Aggregates	0
	Quercus	Oak	2
	Rhus type	Squawbush type	0
	Rhamnaceae	Buckthorn Family	0
	Ephedra	Mormon Tea	0
	Artemisia	Sagebrush	3
		Sagebrush Aggregates	0
	Unknown Small *Artemisia*	Unknown Small Sagebrush	1
		Small Sagebrush Aggregates	0
	Sarcobatus	Greasewood	0
	Fraxinus	Ash	0
Exotics	*Ulmus*	Elm (exotic)	0
	Elaeagnus	cf. Russian Olive type (exotic)	0
	Erodium	Crane's Bill (exotic)	0
	Carya	Pecan (exotic)	0

SUMMARY OF SITE EXCAVATIONS

LA 135292 consists of a probable one-room fieldhouse that did not contain a formal floor or a living surface. Ceramic evidence suggests the site was occupied during the Early Classic period. The presence of maize and the prevalence of storage jars reflect the agricultural function of the site, with limited core reduction and grinding activities also being represented. The occupation of the site dates to the 14th century (Early Classic) based on the presence of Biscuit A ceramics.

CHAPTER 55
TESTING FOR SITE ELIGIBILITY IN THE TA-74 AND WHITE ROCK Y TRACTS

Steven R. Hoagland

INTRODUCTION

Portions of two Land Conveyance and Transfer Tracts, that were scheduled to be conveyed to the County of Los Alamos (County), New Mexico, or its designee, contained archaeological sites that were assessed to have an undetermined Register eligibility. Under 36 CFR 800.5(vii), the conveyance of lands to the County is considered an adverse effect to historic properties, if adequate and legally enforceable restrictions or conditions to ensure the long-tern preservation of these properties' historic significance are not established. The original cultural resources evaluation for this project assessed 10 archaeological sites in the TA-74 Tract and two sites in the White Rock Y Tract as having an undetermined potential under Criterion D to yield information important to New Mexico's history and prehistory. As a result, 11 of these 12 sites were tested to determine whether they qualify as historic properties (Register eligible). The sites tested in the TA-74 Tract include LA 21596, LA 86528, LA 86531, LA 110121, LA 110126, LA 110130, LA 110132, LA 110133, and LA 117883, and White Rock Y Tract tested sites include LA 61034 and LA 61035. Prior to testing, an eligibility evaluation was conducted for TA-74 Tract site LA 86532. Upon review, a determination was made to concur with a New Mexico State Historic Preservation Officer (SHPO) assessment that LA 86532 was not eligible to the Register as the information potential had been exhausted through survey recording. As LA 86532 was no longer assessed to have an undetermined eligibility, it was not tested.

TA-74 TRACT

The TA-74 Tract is located east of the Los Alamos town site and below the mesa upon which the town site is built. This tract is comprised of several canyons and mesas. The northern half of the tract is dominated by lower Bayo Canyon and Barrancas Canyon, whereas the southern half includes Pueblo Canyon. The tract that is situated at an elevation between 2013 m and 2333 m (6040 to 7000 ft) is forested by a piñon-juniper woodland with stands of ponderosa pine present along the south side of some canyons. The TA-74 County parcel is located in a relatively broad part of lower Pueblo Canyon. Surficial geologic units within the parcel include the active stream channel and adjacent floodplains of Pueblo Canyon with areas of colluvium and alluvial fans on the side slopes and along tributary drainages. All of the sites with an undetermined Register eligibility are located south of the Pueblo Canyon drainage. The sites and testing are described below by Laboratory of Anthropology (LA) site number order.

LA 21596

LA 21596 is a set of three distinct series of garden plots (A-C) that is associated with Otowi Pueblo (LA 169), a very large multi-room Classic period habitation site located upslope to the

east-northeast. LA 21596 is located along the north side of the Pueblo Canyon drainage. The surficial geologic units within the site vicinity include the active stream channel and adjacent floodplains of Pueblo Canyon, higher stream terraces of Holocene and Pleistocene age, and areas of colluvium and alluvial fans on the side slopes and along tributary drainages (Drakos and Reneau 2003). The grid gardens are located at the base of a colluvial slope adjoining floodplains or fluvial terraces in the bottom of Pueblo Canyon. The area is vegetated by a piñon-juniper woodland and ponderosa pine forest. Heavy vegetation obscures the center portion of the site. The site is at an elevation of 1989 m (6460 ft) above sea level.

The Pajarito Archaeological Research Project (PARP) originally recorded LA 21596 in 1978. The site was described as four sets of grid gardens and terraces although it was noted that erosion and rock fall may have erased links between some of them. Running from west to east the gardens were labeled D, A, B, and C. The site area measured 204.5 by 24.5 m with Plot A situated 12 m east of Plot D, Plot B located 52 m east of Plot A, and Plot C situated 26 m east of Plot B. According to the site form, garden plot D measured 24.5 by 19 m, Plot A measured 10 by 23.5 m, Plot B measured 15.5 by 5.0 m, and Plot C measured 56.5 by 4 m. Garden plots A and D were 100 percent collected. No collections were taken at Plots B and C. PARP noted that ceramics on the site most likely washed down from Otowi Pueblo or were deposited during agricultural-related activities.

The current project survey documented three sets of terraced garden plots with associated artifacts. Additional erosion and rock fall apparently has obscured the fourth set documented by PARP. Also, subsequent alluvial and colluvial processes and the schematic nature of the original PARP site sketch make it impossible to correlate the 1978 recorded plots with the 1994 plots. The recent project documentation labeled the garden plots from east to west as Components A, B, and C (Figure 55.1).

Site Setting

Otowi Pueblo is located on the second bench upslope from LA 21596. There is a continuous scatter of artifacts extending down from Otowi, with hundreds of artifacts situated on the first bench. The associated artifact boundaries for Components A through C are relatively arbitrary and restricted to the immediate garden plot vicinity. Within these areas either all of the observed artifacts or a sample of the artifacts were documented.

Site Description

LA 21596A consists of a series of 10 to 12 garden plots outlined by tuff, basalt, and rhyolite rocks. The series of plots cover an area measuring approximately 11 by 16 m in size. Several good linear alignments are visible.

Two-hundred-seventy-three artifacts were recorded near LA 21596A. Most of these were ceramics (n = 259) with fewer lithics. Most of the identified ceramics consist of Biscuit A and Biscuit B, with a few Santa Fe Black-on-white, Espinosa Glaze-on-Polychrome, Potsu'ii Incised, and micaceous and non-micaceous plainwares. The chipped stone artifacts consist of Pedernal chert and obsidian chipped stone debitage and a retouched flake.

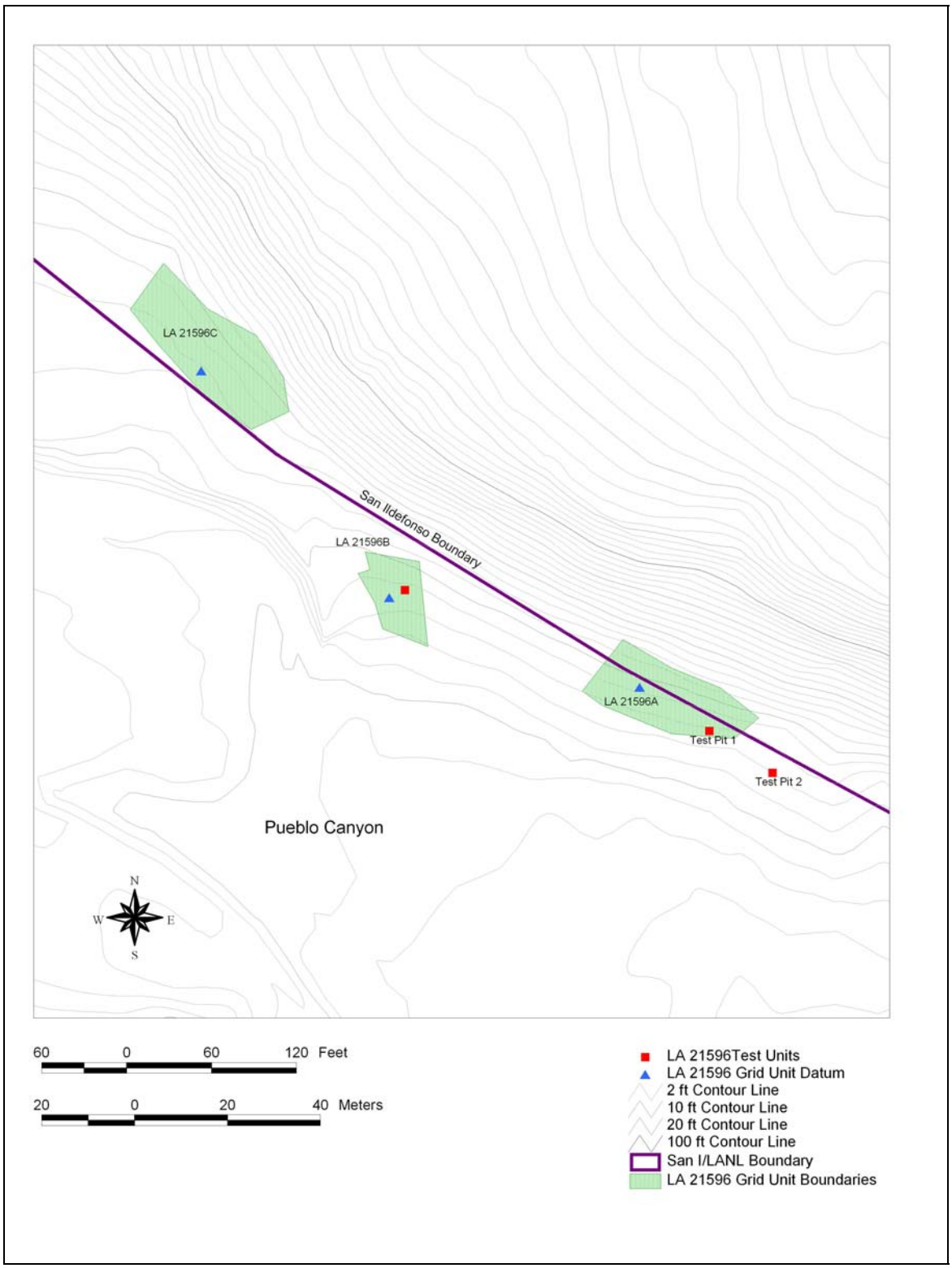


Figure 55.1. LA 21596 geographic positioning system (GPS) differential map.

LA 21596B consists of a series of five to six small garden plots constructed of tuff, basalt, and rhyolite blocks. The rocks range in size from 10 by 6 by 6 cm to 50 by 36 by 25 cm, averaging 35 by 30 by 20 cm. The features cover an area approximately 12 by 15 m in size.

Forty-four artifacts were recorded in this area, with most being ceramics (n = 46). The majority of the ceramics consist of Biscuit A and Biscuit B, with less Santa Fe Black-on-white, Sankawi Black-on-cream, and non-micaceous and micaceous plainwares. The lithic artifacts primarily consist of Pedernal chert and obsidian debitage with two metate fragments.

LA 21596C consists of a series of three small garden plots constructed of tuff, basalt, and rhyolite blocks. The rocks forming the garden plots range in size from 12 by 10 by 8 cm to 60 by 40 by 30 cm, the average being 40 by 35 by 20 cm. The plots are in two rectangular shapes, covering an area of approximately 17 by 15 m. The plots are oriented roughly northwest to southeast.

There is a continuous scatter of artifacts down from Otowi including approximately 200 to 300 items on the first bench near the site. The artifact boundary for LA 21596C is arbitrary and is restricted to a 30- by 40-m area. Within this area, all the lithic artifacts and only a 30 percent sample of the ceramic artifacts were flagged, examined, described, and quantified. Numerous other artifacts were observed and there is good potential for many more to be located under high concentrations of pine duff. Artifacts were also abundant on the slope between the first and second benches.

Ninety-one artifacts were recorded in the garden plot boundary. Most of these are ceramics (n = 76) with fewer lithics. The majority of the ceramics consists of Biscuit A and Biscuit B, with less Santa Fe Black-on-white, Sankawi Black-on-cream, Potsu'ii Incised, smeared-indented, and obliterated corrugated sherds. The lithics consist of Pedernal chert and obsidian debitage with a single obsidian uniface.

Site Excavation

LA 21596 is located in Los Alamos National Laboratory, Technical Area (TA) 74. The boundary between Los Alamos County and San Ildefonso properties runs through the approximate center of LA 21596. Garden plot C and the approximate northern half of Plot A are on land that will be transferred to the Department of the Interior and the southern half of Plot A and Plot B are on land that will be conveyed to Los Alamos County. Garden Plot B and the southern half of Garden Plot A were tested in October and November of 2002 because of their potential to be adversely affected.

One 2- by 1-m test unit was excavated within both Garden Plot A and the southern half of Garden Blot B (Figures 55.2 and 55.3). The two test units were situated where they straddled what appeared to be the lowest (southern) enclosing garden plot wall in hopes of recovering comparative data from within and outside of the features. Also, a 1- by 1-m test unit was placed to the east of Garden Plot A, outside of any garden plot, to use for a comparison. The test units were excavated in arbitrary 10-cm levels with shovel and trowel. With the exception of pollen,

soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh.

Figure 55.2. Plan view of Garden Plot A at LA 21596.

The 2- by 1-m test unit in Plot A (Test Pit 1) was excavated to a depth of 30 cm below surface. The northern half was assumed to be within the garden plot and the slightly downslope southern half to be outside the garden plot. The fill within the two 1- by 1-m test units was essentially the same. They contained three stratigraphic deposits with the upper 4 cm being an A horizon soil consisting of a soft/loose loamy sand with abundant decomposed organic material. Stratum 2 (4 to 15 cm), a Bw1 horizon soil, consisted of a soft sandy loam with about 30 percent to 40 percent gravel and several tuff and basalt rocks that were generally 10 cm in diameter or less. Stratum 3 (15 to 30 cm), a Bw2 horizon soil, was a soft loamy sand with about 30 percent to 40 percent gravel and several tuff and basalt rocks that tended to become larger with depth (5 cm diameter and larger).

The northern half of the 2- by 1-m test unit placed in Plot B was excavated to a depth of 50 cm below surface (Test Pit 1), while the southern half (Test Pit 2) that was assumed to be outside of the garden plot was excavated to a depth of 30 cm. Fill within Test Pit 1 consisted of three stratigraphic deposits with the upper 5 cm (A horizon) consisting of loamy sand with abundant decomposed organic material. Stratum 2 (5 to 22 cm), a Bw1 horizon soil, consisted of a soft sandy loam containing 20 percent to 30 percent gravel and several fist-sized and smaller tuff, basalt, and rhyolite rocks. Stratum 3 (22 to 50 cm), a Bw2 horizon soil, was a soft sandy loam with about 20 percent to 30 percent gravel.

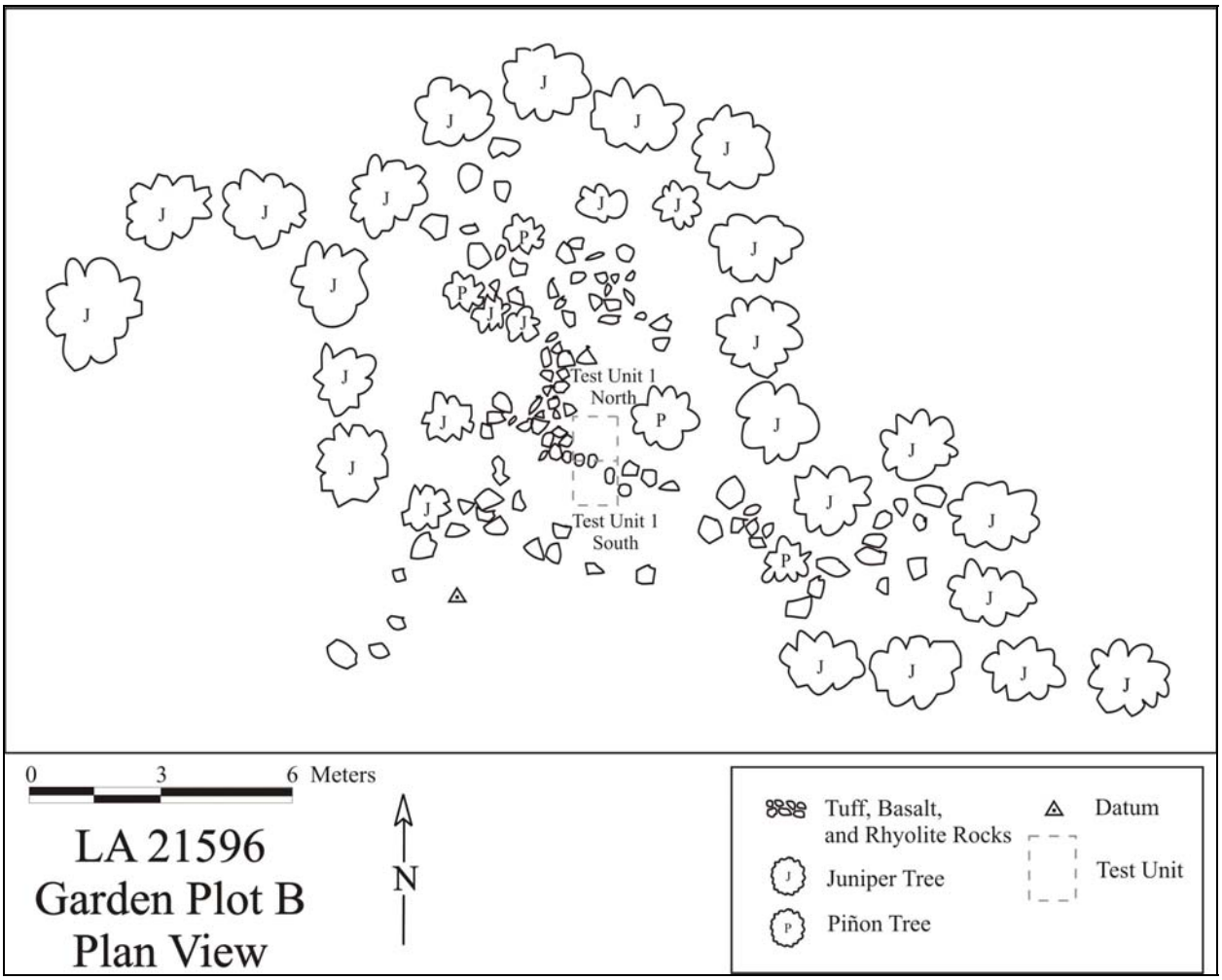


Figure 55.3. Plan view of Garden Plot B at LA 21596.

The southern half of the test unit (Test Pit 2) contained only two soil strata. Stratum 1 (0 to 6 cm) was soft loamy sand with 10 percent to 20 percent gravel (A horizon) and Stratum 2 (6 to 30 cm) was a soft/loose sand with 10 percent to 20 percent gravel (Bw1 horizon). Both strata contained fist-sized and smaller tuff and basalt rocks scattered throughout, although they did become less abundant with depth.

Although excavated at a similar elevation, the 1- by 1-m test unit was placed to the east of the LA 21596A garden plots for comparison (Test pit 2) and was excavated into a relatively open area on the colluvial slope. As such, it did not have the rich organic material that was observed within the garden plot test units. It contained only two soil strata. Stratum 1 (0 to 12 cm), an AC horizon soil, was a loose sandy loam with about 40 percent gravel. Stratum 2 (12 to 30 cm), a C horizon soil, was a loose loamy sand with 40 percent to 50 percent gravel. It contained tuff and basalt rocks ranging from 5 to 10 cm in diameter. Lenses of dry sand were noted throughout the lower portion of Stratum 2. These lenses appeared to be somewhat graded lenses deposited through erosional runoff.

Site Chronology and Assemblage

The test unit in LA 21596A combined with the control test unit located just east of Garden Plot A contained 371 ceramics and 19 chipped stone artifacts, while the LA 21596B test unit contained 264 sherds and four pieces of chipped stone. The ceramics recovered from the testing exhibited combinations of Santa Fe Black-on-white and biscuitware types that may indicate mixed or transitional site utilization between the Ancestral Pueblo Coalition and Classic periods. An even mixture of Biscuit A and Biscuit B ceramics was noted at both LA 21596A and LA 21596B. The presence of Sapawi and Potsuwi may indicate that some of this site dates fairly late in the Classic Period.

The excavations indicated that artifacts are abundant from 0 to 30 cm and present but less abundant from 30 to 50 cm. The excavation also indicates that relatively little sediment has been deposited since construction of the grid gardens. Rocks forming the grid gardens are set on the Bw1 horizon and are buried by only 4 to 6 cm of sediment. Unlike the recovered ceramics, these observations suggest that the gardens were created during a relatively late stage of occupation at Otowi Pueblo and that a significant amount of colluvial deposition occurred at this location concurrent with the Ancestral Puebloan occupation. The control test unit placed to the east of LA 21596A showed that the thickness of young colluvium is greater than 30 cm. It is possible that human traffic or other disturbances on the steep slope between Otowi Pueblo and the grid gardens accelerated the rate of colluvial transport and deposition at this location (Drakos and Reneau 2003). Thus, it is also possible that the Late Coalition and Early Classic ceramics were deposited at LA 21596 before establishment of the grid gardens.

Macrobotanical (flotation samples) and pollen samples were collected and processed from all three LA 21596 test units. These samples were collected from the soil horizons exposed within both the north and south sides of the LA 21596A Test Unit and from the horizons exposed within the control test unit excavated to the east of LA 21596A. Macrobotanical and pollen samples were also collected from each 10-cm arbitrary level (Levels 1-3) excavated within the LA 21596B Test Unit.

The macrobotanical analysis produced charred corn cupules from the test units in both LA 21596A and LA 21596B. One cupule was recovered from Stratum 3 (Bw2 horizon) collected from the north side of LA 21596A, and five cupules were recovered from Level 3 (Bw1 horizon) collected from the south side of LA 21596B. The presence of these charred cupules suggest one of two scenarios: 1) the occupants were cooking nearby and a few cob remains that were used as fuel ended up in the garden plots or 2) the occupants of Otowi Pueblo were throwing garbage over the escarpment and some landed approximately 40 ft below within the grid gardens (Chapter 62, Volume 3).

The charred corn cupules were submitted to Beta Analytical, Inc., for accelerator mass spectrometer radiocarbon dating. The calibration of radiocarbon age to calendar years for the LA 21596 North sample (Beta Number 183768) resulted in a conventional age of 600±40 BP and a two-sigma calibration date range of AD 1290 to 1420 with intercepts of AD 1320, AD 1340, and AD 1390. The calibration of the LA 21596 South sample (Beta Number 183769)

resulted in a conventional age of 70±30 BP with two-sigma calibration date ranges of AD 1690 to 1730, AD 1810 to 1920, and AD 1950 to 1960, and an intercept of AD 1950.

The pollen analysis also produced evidence of cultigens as well as some evidence as to the occupational surface. Both the north- and south-side samples recovered from LA 21596A exhibited a trend for decreasing pollen abundance with depth matched by decreasing values of tree pollen and a higher representation of cheno-am (*Chenopdoium/Amaranthus*), sunflower family (Asteraceae), and grass (Poaceae). This observed signature could reflect an agricultural weed signal that would mark Stratum 3 (Bw2 horizon) as the cultural surface. Maize pollen was identified from Strata 2 (Bw1 horizon) and 3 from the north side of the test unit and from Stratum 3 from the south side. There were no observed trends in pollen spectra with increasing depth from either the north- or south-side samples collected from LA 21596B. Two of the three north side samples were sterile (too little pollen for a significant count), although maize was identified in one of the sterile samples. Evidence for cultigens was also documented from the south half of the test unit with maize (*Zea mays*) and squash (*Cucurbita*) pollen recovered from Level 2 and maize pollen recovered from Level 3 (both are from the Bw1 horizon). One of the two samples recovered from the control test unit excavated outside of LA 21596A was sterile. Neither of the test unit stratigraphic samples produced any agricultural pollen evidence (Chapter 63, Volume 3).

Summary

The preservation of corn cupules along with maize and squash pollen from within stratigraphic deposits suggests that the unexcavated portions of the site likely contain potential for additional significant cultural remains. Floral and pollen materials could aid in establishing additional subsistence crops and other crops that may have been utilized by Classic period inhabitants of the area. There is also potential for establishing a chronological sequence that could aid in establishing agricultural changes that may have occurred during the Ancestral Pueblo Classic period and potentially through reuse of the site in later Historical periods. As the research potential at LA 21596 is still assessed to be excellent, it is considered eligible to the Register under Criterion D, likely to yield information important in prehistory or history.

LA 86528

Site LA 86528 (Q-28) is a partially enclosed rock overhang that likely served as a temporary shelter. It is located at the base of the steep talus slope that forms the upper north side of Pueblo Canyon. The local vegetation is transitional between piñon-juniper woodland and ponderosa pine forest. The site is situated at an elevation of 2024 m (6640 ft). This site consists of a large tuff boulder overhang associated with 8 to 10 large rocks representing an enclosed area (Figure 55.4). The overhang, which is 2.55 m wide, 2.25 m deep, and 0.9 m high at the mouth, opens to the south. A small water channel running from southeast to northwest has cut through the overhang and below the large tuff boulder (Figure 55.5).

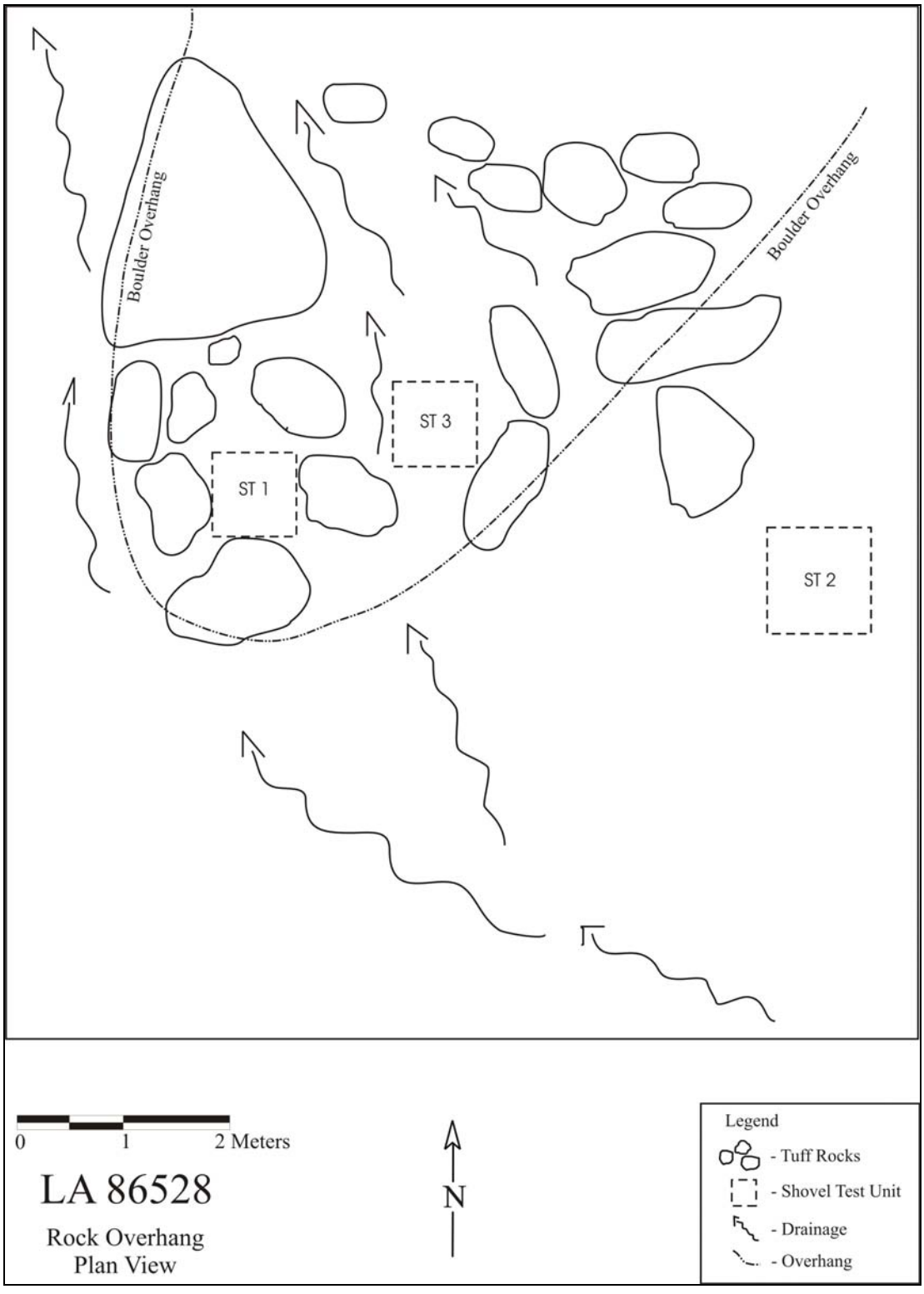


Figure 55.4. Plan view of overhang at LA 86528.

Figure 55.5. Post-testing photo of LA 86528 looking northwest.

During the original site recording, a few small chunks of charcoal were observed just downslope from the overhang. It was assumed that the charcoal could have washed out from the overhang via the small drainage that has cut through the feature. Approximately nine Glaze E sherds (same vessel) were associated with the structure. These sherds were situated within a small drainage running across the front and down along the west side of this shelter. A rhyolite core flake was observed about 8 to 10 m below the overhang. Three grooves measuring 40 by 4 cm, 35 by 2 cm, and 1 by 5 cm were potentially cut into the rock above the overhang. Based on the presence of the Glaze E ceramics, the site likely dates to the Classic period.

Testing

Two test units (referred to as shovel tests) were initially excavated to assess whether there was any potential for intact cultural remains to be present within or adjacent to the overhang. Test Unit 1 was a 40- by 40-cm unit placed between fallen enclosure rocks beneath the overhang. It was situated in the outer southwestern portion of the overhang in the area that displayed the least amount of water erosion. Test Unit 2 was located just over a meter southeast (upslope) of the overhang in an area that displayed less colluvial erosion than that observed within the general area. Test Unit 3 was placed within the overhang, to the east-northeast and beyond the enclosure rocks that surrounded Test Unit 1. This test unit was excavated to further explore a charcoal stain that was encountered within Test Unit 1. All three test units were excavated in arbitrary 10-cm levels. No artifacts were recovered from any of the test units.

Test Unit 1 that exhibited three soil horizons was excavated to a depth of 40 cm below surface. The upper 5 cm of the unit contained an AC horizon sandy loam (Stratum 1). A few charcoal flecks were observed within the upper half of the stratum and a 2- to 3-cm-thick lens with charcoal staining was present at the base of the stratum. Situated from 5 to 21 cm in depth was a late-Holocene Bwb1 horizon sandy loam (Stratum 2) that overlaid a Btb2 horizon sandy clay loam (Stratum 3) that likely dates to the Pleistocene. The boundary between the A/C horizon and the Bwb1 horizon was abrupt and smooth suggesting that an erosional cycle occurred between depositions of the two horizons. The boundary between the Bwb1 and Btb2 horizons was abrupt and irregular, which also may indicate erosional impacts.

Test Unit 2 was excavated to a depth of 30 cm below surface. It contained two soil horizons, a relatively recent (AC horizon) sandy loam from surface to 10 cm and a Pleistocene, Btb1 horizon, sandy, clay loam from 10 to 30 cm. A small chunk of charcoal was recovered from a depth of 4 cm below surface.

Test Unit 3 was excavated within the overhang to clarify the nature of charcoal encountered within Test Unit 1. The unit, which contained four soil horizons, was excavated to a depth of 30 cm. The upper 3 cm was a C horizon with loose sandy loam that overlaid a late-Holocene Ab1 sandy loam (3 to 10 cm). A Bwb1 horizon sandy clay loam (10 to 20 cm), which overlaid a Pleistocene era Btb2 sandy clay loam (20 to 30 cm), was located below. A few chunks and flecks of charcoal were observed throughout the test unit, which indicates that there has been some degree of mixing between strata.

One flotation (Stratum 2), one macrobotancial (charcoal), and two pollen samples (Strata 1 and 2) were collected from Test Unit 1. A macrobotanical charcoal sample from Test Unit 2 and two macrobotanical charcoal samples from Test Unit 3 were also collected. The flotation and macrobotanical samples represented charred and uncharred wood materials that were dominated by oak and unknown conifer. Oak and conifer trees are abundant on the canyon slope in the vicinity of LA 86528. The Stratum 1 pollen sample was dominated by tree pollen and the Stratum 2 sample contained too little pollen for a significant count. Prickly pear pollen was documented from Stratum 1 and maize was identified from Stratum 2.

The test units situated within the overhang exhibit late-Holocene (possibly Puebloan-age) Bwb1 horizons overlying Pleistocene colluvial soils. Test Unit 2, situated on the colluvial slope outside the overhang, exhibits only young colluvium (<500 years) overlying Pleistocene soil. These soil profiles are indicative of a stripped, Pleistocene colluvial hillslope overlain by thin (10 to 20 cm thick) late-Holocene to historic age colluvium (Drakos and Reneau 2003).

Drakos and Reneau (2003) noted that the abrupt, irregular boundary between the Bwb1 and underlying Btb2 Pleistocene soil can be interpreted as resulting from either cultural or non-cultural processes. One explanation is that a pit or similar excavation was dug into the Pleistocene soil during cultural use of the overhang. An alternative explanation is that the irregular boundary between the Bwb1 and the Btb2 horizons was caused by erosion on the fairly steep slope that moved materials down through the overhang with an opening at the downslope end. In this scenario, subsequent partial plugging of the erosional escape hole facilitated

colluvial deposition, which was followed by a non-cultural fire. Overall, the geomorphic evidence is ambiguous with respect to whether or not the overhang contained intact cultural deposits. The charcoal stain at the base of the AC horizon in Test Unit 1 may be of relatively recent origin, post-dating the Puebloan occupation (Drakos and Reneau 2003).

The formation of tuff stones situated around the overhanging boulder indicates cultural modification and likely utilization. This assessment is supported by the maize pollen recovered from Stratum 2 in Test Unit 1. However, the lack of artifacts from within the shelter suggests that deposited remains subsequently eroded downslope and out of the shelter or that the original occupation was of such a short duration that few to no cultural remains were discarded or lost.

Summary

The two test units placed within the overhang did not expose any traces of a previous excavation such as a pit dug into the floor of the shelter. There was no patterned concentration of charcoal or charcoal-stained fill that would suggest that it had originated from a hearth. As a result, it is assumed that the second scenario is more likely, that post occupation charred and uncharred wood materials and possibly the maize and prickly pear pollen eroded down into and were subsequently trapped within the overhang as the escape hole was temporally plugged. Erosion again appears to be moving materials downslope through the overhang. The integrity of the fill beneath the overhang has been subjected to bioturbation and likely replacement as colluvial materials have eroded, and are continuing to erode, down through the feature. As a result, the research potential of LA 86528 was likely exhausted during the testing activities and is no longer considered eligible to the Register.

LA 86531

LA 86531 (Q-33) is an artifact scatter located in a 582-m² area on the top and upper northern slope of a narrow ridge situated along the south side of Pueblo Canyon (Figure 55.6). The ridge is a fluvial fill terrace located approximately 30 m above the canyon floor. The deposit underlying the terrace comprises multiple fluvial sequences, with a coarsening upward deposit capped by imbricated boulders at the top (Drakos and Reneau 2003). The site, which is located at an elevation of 2009 m (6590 ft), is in an area that is transitional between a piñon-juniper woodland and ponderosa pine forest. When originally recorded the observed artifacts included approximately 20 ceramic sherds representing five to seven vessels and three pieces of chipped stone debitage.

Identified ceramics represent one or two Wiyo Black-on-white vessels, a Biscuit B vessel, a Sankawi Black-on-cream vessel, and one or two smeared-indented utilityware vessels. Also noted was a bowl sherd that appeared to have remnants of a reddish or orange slip on the interior and an incised line on the exterior. The lithics included a basalt, an obsidian, and a quartzite core flake. Based on the ceramic assemblage, the site likely dates to the Late Coalition/Early Classic period.

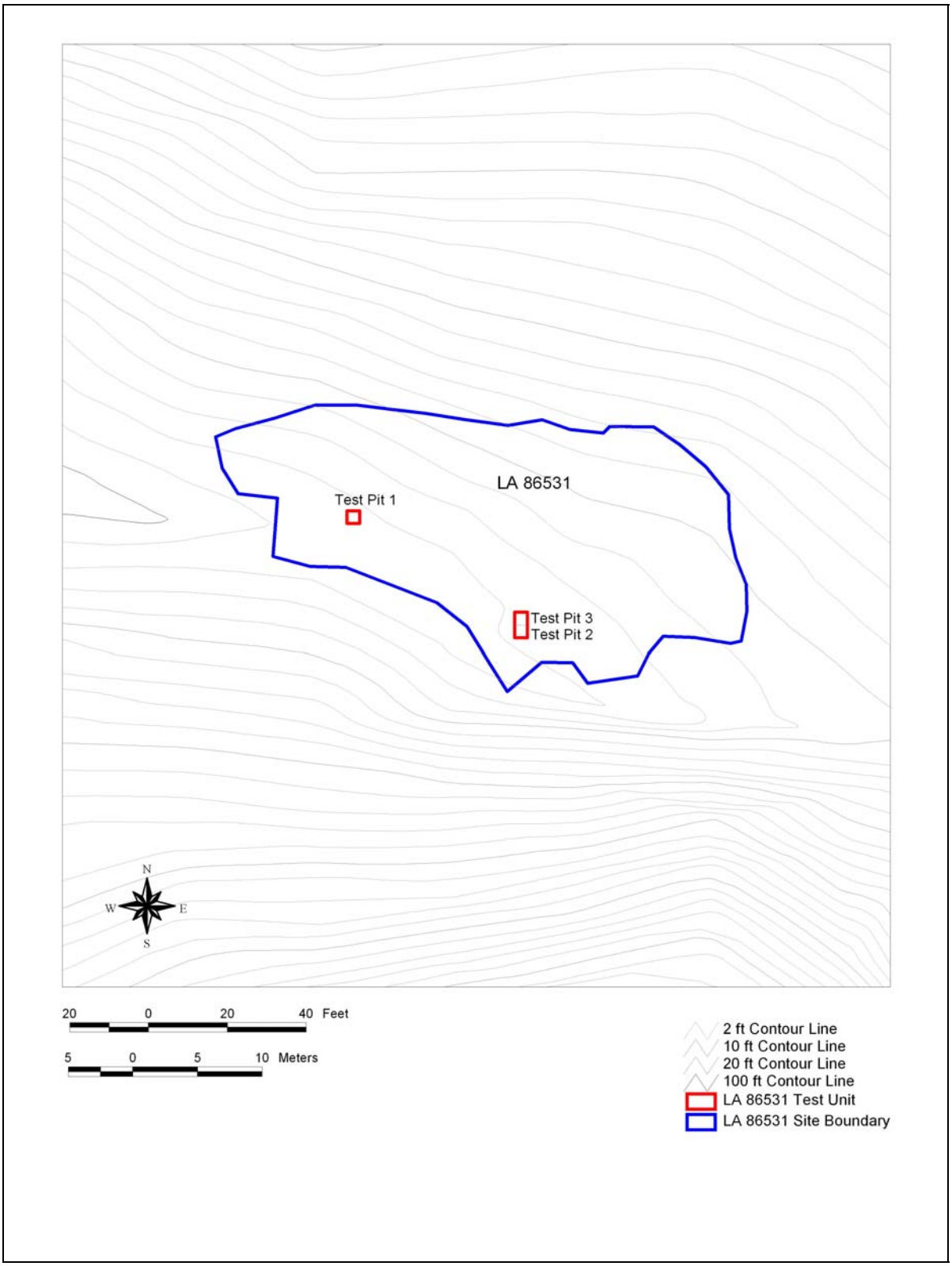


Figure 55.6. LA 86531 GPS differential map.

Testing

In January of 2003, three 1- by 1-m test units were excavated by trowel at LA 86531 in arbitrary 10-cm levels (Figure 55.7). With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh. Test Unit 1 was excavated into the west central portion of the site. It was excavated to a depth of 10 to 20 cm below surface where it was terminated after encountering boulders forming the top of the fluvial terrace. The test unit contained three stratigraphic layers. The upper 3 cm consisted of a C horizon soil that contained a loose sandy clay loam with gravel that formed 20 percent to 30 percent of the deposit (7.5YR4/3 damp). Stratum 2 (3 to 10 cm), an Ab1 horizon soil, was also a sandy clay loam with 20 percent to 30 percent gravel (7.5YR3/3 damp). Stratum 3 (10 to 20 cm) was a Btb2 horizon sandy clay (5YR4/3 damp) containing 20 percent to 30 percent gravel (middle to late Pleistocene). A few charcoal flecks were observed within the Ab1 horizon. Other than the charcoal flecks, which may or may not be cultural, no cultural materials were recovered.

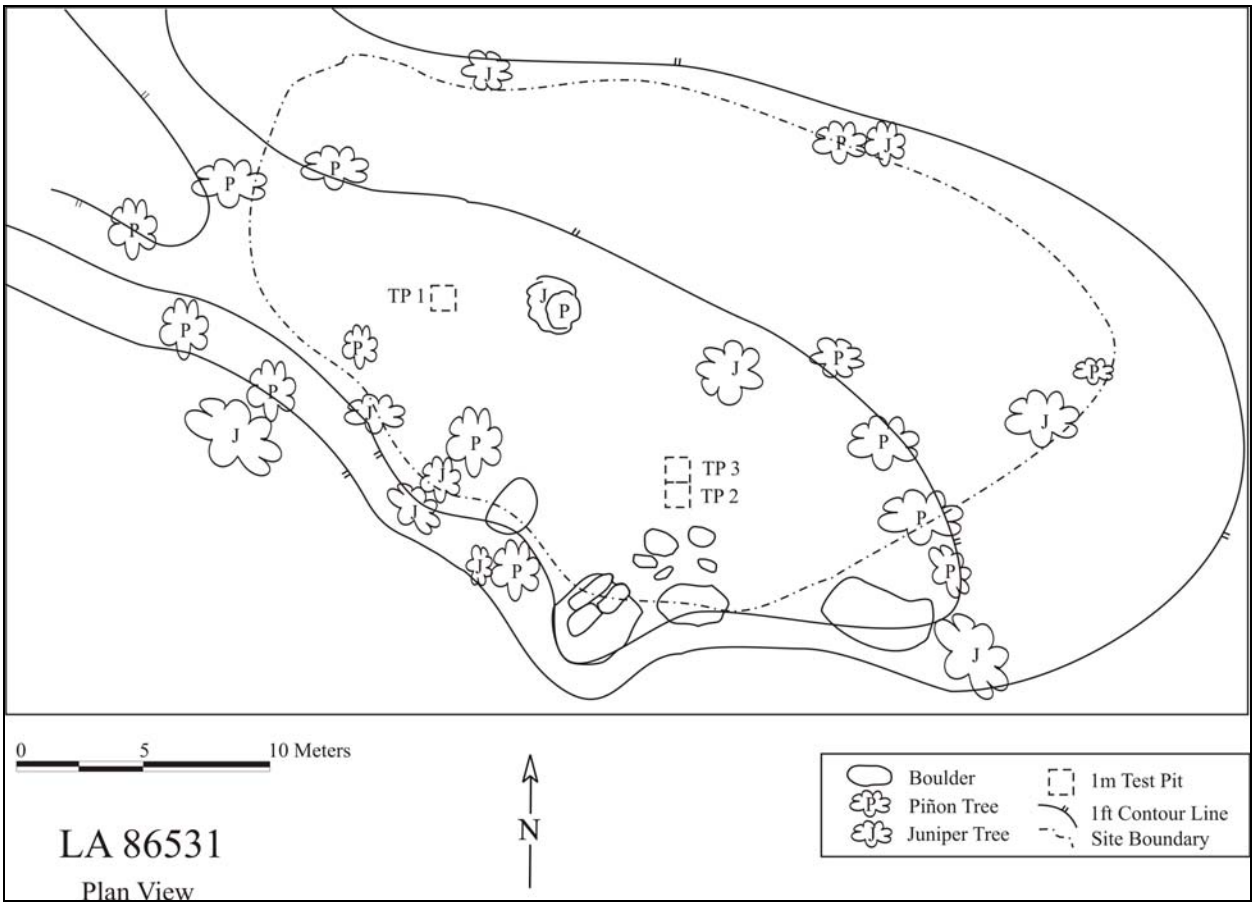


Figure 55.7. Plan view of artifact scatter at LA 86531.

Test Unit 2 was excavated into the east-central portion of the ridge top. It was excavated to a depth of 3 to 17 cm where the underlying boulders were encountered. Two soil strata were encountered within the excavation (Figure 55.8). The upper 3 cm was a C horizon soil consisting of loose silty loam with 20 percent to 30 percent gravel (10YR3/3 damp). This

stratum was assessed to be recent slopewash. The underlying stratum was an Ab1 horizon soil consisting of a sandy clay loam with 20 percent gravel (10YR3/2 damp). A small amount of burned soil and charcoal was located within the northwest corner of the unit. As a result, the adjacent 1- by 1-m unit to the north (Test Unit 3) was excavated. It also was terminated at the underlying boulder zone that was encountered at depths ranging from 8 to 23 cm below surface. The stratigraphy was the same as that encountered in Test Unit 2 except that a third potential Bk horizon soil was encountered at depths ranging from 12 to 23 cm (7.5YR6/4 to 10YR6/4). This soil that was a compact silty loam with virtually no gravel was assessed to be a Pleistocene deposit. Charcoal and charcoal-stained fill were situated throughout the southern third of the unit in Strata 2 and 3 (8 to 23 cm). As the charcoal was inset into the Pleistocene soil, the stain was interpreted to be a root burn rather than a cultural feature. One indented corrugated utilityware sherd was recovered from Stratum 2 within Test Unit 3.

Figure 55.8. Photo of LA 86531, Test Units 2 and 3 looking north.

Based on the soils exposed through excavation, the top of the terrace appears to be a stripped surface that is capped by a thin (less than 20 cm thick) young soil overlying a stripped Pleistocene soil or bedrock. Stratum 1 appears to be a 0- to 3-cm-thick (less than 100 years?) slopewash that overlies Stratum 2, a thin 7- to 11-cm-thick late-Holocene/post-Puebloan(?) deposit. Based on the relatively well-developed stripped Bt horizon encountered within Test Unit 1 and the height of the terrace above the canyon floor, the terrace is inferred to be middle Pleistocene in age (Drakos and Reneau 2003).

The likely cultural horizon (Ab1) observed at LA 86531 is thin. The presence of the surficial artifact scatter on an eroded ridge top with thin soils indicates that LA 86531 represents an eroded site situated on the Pleistocene terrace. The observed artifacts may represent a lag and may have only been transported a short distance (Drakos and Reneau 2003).

Macrobotanical (flotation and charcoal) and pollen samples were collected and processed from Test Unit 3, Level 1 (Stratum 2) and Level 2 (Stratum 2/3.). The flotation sample from Level 1 produced two charred corn cupules and five possible charred corn kernel fragments. No cultigens were identified from Level 2. The pollen sample assemblages were characterized by tree pollen although maize pollen was recovered from the Stratum 2/3 sample. The charred corn cupules and kernel fragments were submitted to Beta Analytical, Inc., for accelerator mass spectrometer radiocarbon dating. The results of the two-sigma calibration produced a date range of AD 1180 to 1280 (Cal BP 780 to 670).

Summary

The testing conducted at LA 86531 indicates that most of the surface soils have been stripped from the ridge and that the remaining deposits are quite thin. The upper two soil horizons are assessed to post-date the Ancestral Puebloan area utilization as indicated by the site associated ceramics, and the underlying soil horizon is assessed to date to the middle Pleistocene. The site cultural materials that are situated within the upper 20 cm of soil deposition remaining on the ridge are the result of slopewash colluvium or are surface lag (Drakos and Reneau 2003). Based on this assessment, the cultural materials associated with LA 86531 are not in their original context and there is no potential for intact cultural remains to be situated on the site. As a result, LA 86531 is no longer eligible to the Register.

LA 86532

LA 86532 (Q-34) is the remains of a homestead cabin that was subsequently utilized as Camp Hamilton Boy Scout Camp. It is located within the Pueblo Canyon floodplain directly north of the existing channel. Situated at an elevation of 1987 m (6520 ft), the site area is transitional between a piñon-juniper woodland and ponderosa pine forest.

The site contains the foundation and some wall and roof remains of an approximately 7- by 7-m log cabin mortared with concrete. The foundation consists of stacked rock slabs. Although deteriorated, portions of standing walls form a 3- by 3-m two-room area. Two window openings

remain within the structure: one in the south wall of the southernmost room and one in the west wall of the northernmost room. Roof beams are located on the ground within and near the northeast corner of the structure. A 12-m-long stacked masonry wall built against a dirt bank is located about 2 to 3 m north (upslope) of the cabin. Outhouse material remains are located several meters northwest of the structure.

Historic trash is scattered throughout a 12- by 112-m area surrounding the cabin. Some observed items include a car seat, brick, mortar, milled lumber, a silver knife blade, assorted broken bottle glass, and a 1944 New Mexico license plate from a truck.

The cabin was originally constructed by a Santa Fe resident named Coomer. Coomer, who leased the land from the Forest Service, conducted guided tours ("Tent Cities of the Rockies") in Pueblo Canyon during the early 1920s. In 1923, S. C. Hamilton bought the lease and improved the cabin. Hamilton was the father of Ranch School student Samuel Hamilton. Upon renovation, the cabin was used as a base for schoolboy outings. These outings, which were frequently conducted during the winter months, continued for two decades. When the cabin reached a state of disrepair, some of the original timbers were used to construct the National Historic Registry Landmark shelter on Trinity Drive just south of Ashley Pond in Los Alamos, NM (Hoard 1981:47). Based on documented history, this Homestead Era site was occupied from the early 1920s to 1943.

Upon completion of a review conducted for the Land Conveyance and Transfer Project site eligibility testing program, LA 86532 was re-evaluated and deemed ineligible to the Register. The re-evaluation was based upon the SHPO opinion that the information potential of LA 86532 had been exhausted through survey recording. As the decision was made to concur with the SHPO eligibility evaluation, and as LA 86532 is not eligible under other criteria, it was reassessed as not eligible to the Register. As LA 86532 is no longer assessed to be a potentially eligibility property, it was not tested for site eligibility.

LA 110121

LA 110121 (V-117) is located on the eroding slope of an eastern-trending ridge in the bottom of Pueblo Canyon. The site is situated between two east-west-running drainages (Figure 55.9). The area is dominated by a piñon-juniper woodland. The site slopes five degrees to the east and is at an elevation of 1967 m (6450 ft).

The site consists of a light artifact scatter situated within a 25- by 43-m area. Observed surface artifacts included 56 ceramic sherds and 12 pieces of lithic debitage. Decorated ceramics included 11 Santa Fe Black-on-white, two Santa Fe/Wiyo Black-on-white, three Wiyo Black-on-white, and nine unidentified black-on-white sherds. Utilityware ceramics included 11 indented corrugated, 10 smeared-indented-corrugated, eight obliterated, and two non-micaceous plainware sherds. Lithic debitage consisted of 10 Pedernal chert core flakes, one piece of Pedernal chert angular debris, and one obsidian core flake.

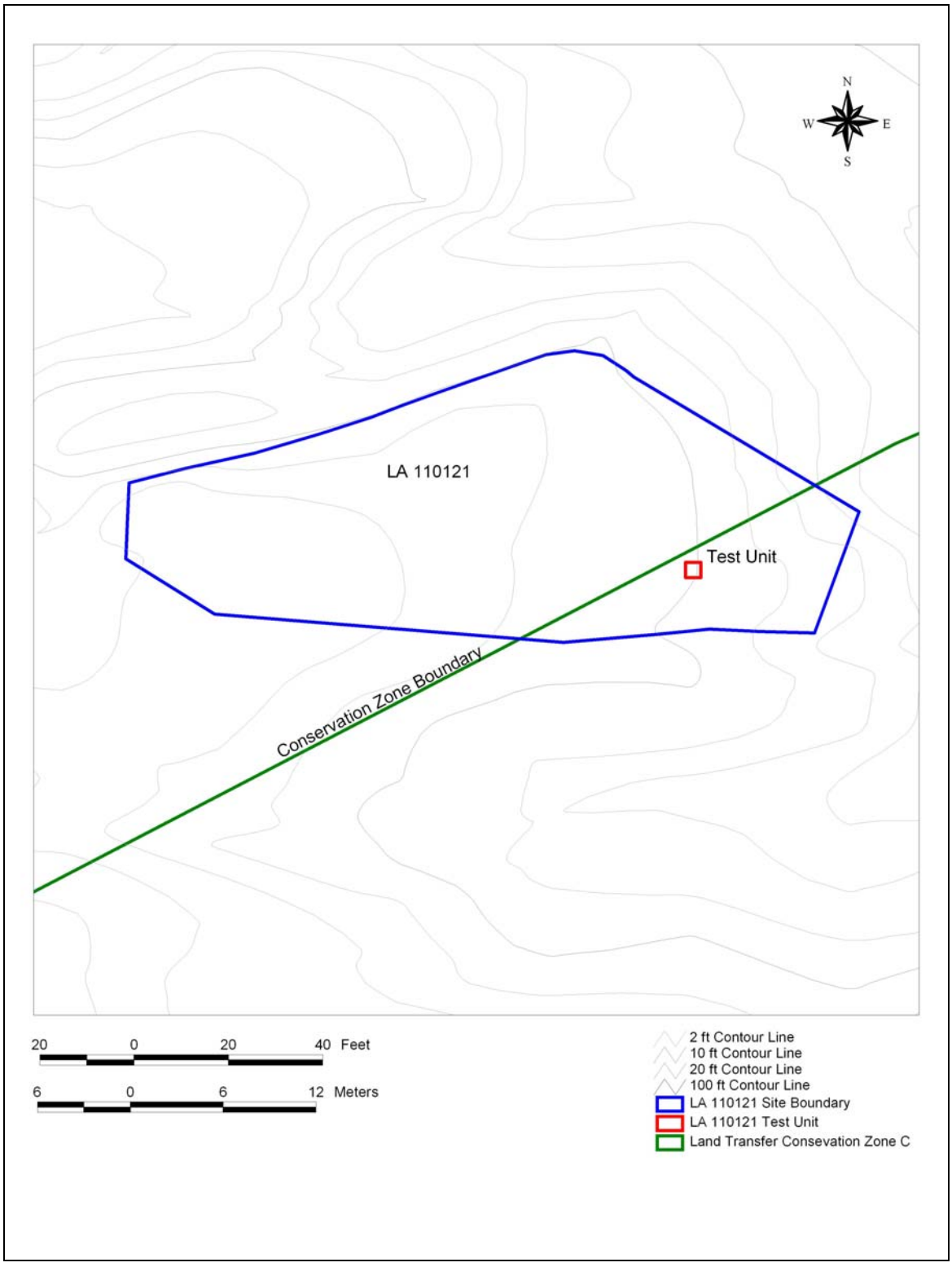


Figure 55.9. LA 110121 GPS differential map.

Testing

The eastern quarter of LA 110121 was tested to establish whether there were any intact cultural remains that could be adversely affected by the land conveyance. As the eastern end of LA 110121 appeared to have been impacted by erosion, a 1- by 1-m test unit was established outside the conservation zone boundary in the area that appeared to have the most potential for retaining surface soils and cultural remains (Figure 55.10). The test unit was excavated in arbitrary 10-cm levels by trowel. With the exception of pollen, soil, and macrobotanical samples, all excavated materials were screened through 1/8-in. mesh.

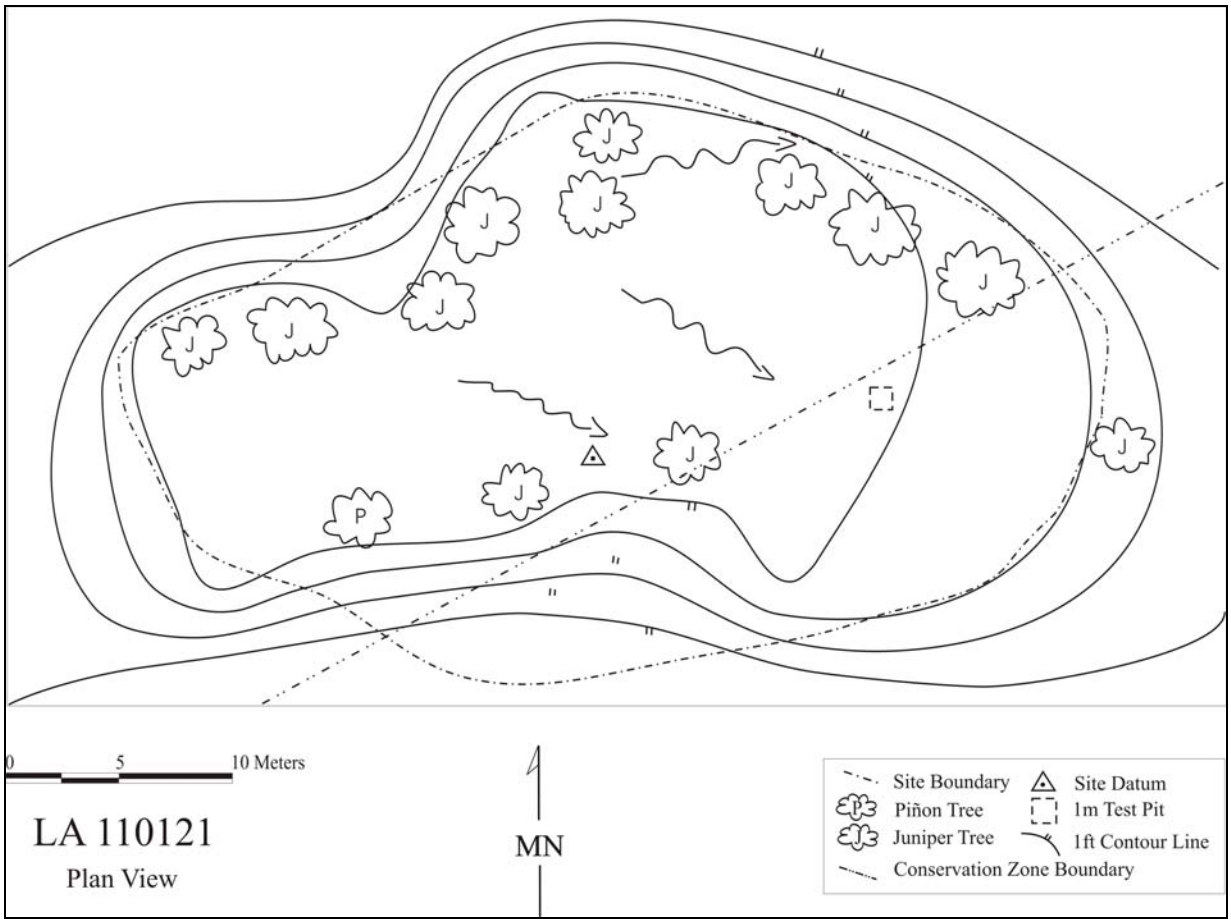


Figure 55.10. Plan view of artifact scatter at LA 110121.

Test Unit 1 was excavated to a depth of 20 cm below surface. The upper 11 cm contained an A horizon sandy clay loam with a pumice gravel content that increased with depth (10YR5/4). The upper 2 to 3 cm of the deposit contained about 5 percent pumice gravels, which increased to about 60 percent by the base of the stratum. Underlying the A horizon soil was a Bw horizon sand and pumice deposit. Pumice clasts formed approximately 90 percent of this deposit. At a depth of 19 cm below surface, a Guaje pumice bed deposit (C horizon) was encountered (Drakos and Reneau 2003). No cultural materials were encountered during the excavation.

As the post-Guaje sediment was only 11 cm thick at the test unit location, the artifact scatter that is apparently part of the thin overlaying colluvium is not in cultural context (Drakos and Reneau 2003). The testing indicated that the western quarter of LA 110121 contains no intact cultural deposits and as such should be removed from the site. As testing was not conducted in the western 3/4 of the site, although unlikely, there is some potential that intact cultural deposits could still be present. A few piñon and juniper trees have facilitated the retention of soil along the west side ridge edges. Until such time as these ridge edge locations can be tested, LA 110121 is still assessed to have an undetermined Register eligibility.

LA 110126

LA 110126 (V-123) consists of a highly eroded one-room structure situated on a north facing ridge finger that formed between two small drainages on the south side of Pueblo Canyon (Figure 55.11). The site was recorded in October of 1994 by Los Alamos National Laboratory Cultural Resources Team archaeologists during fieldwork conducted for the Environmental Restoration Canyon Bottom Project. This area is dominated by piñon-juniper and ponderosa pine. The site area slopes 10 degrees to the north and is at an elevation of 1960 m (6430 ft).

The structure was constructed of shaped and unshaped tuff blocks. An average tuff block measured 15 by 10 by 8 cm. The limited number of blocks located in the vicinity suggests that they originally formed the foundation of a one-room structure. In the least disturbed northern area of the site, an alignment of four tuff rocks is still present (Figure 55.12). Most of the remaining blocks are located downslope to the north and east from this alignment. A juniper tree is located directly south of the four rock alignment and a piñon and a juniper tree are located just northeast of the northern end of the alignment. These trees have partially stabilized the tip of the ridge finger containing the structural remnants. Defining the original size and shape of the structure was impossible due to the high degree of erosion (Figure 55.13).

The surface artifact assemblage, which was located in a 270-m² area situated within and downslope from the structural remains, consists of both chipped stone debris and ceramics. Decorated ceramics include three Biscuit A sherds (one is worked), nine Biscuit B sherds, one Santa Fe Black-on-white sherd, and two indeterminate black-on-white sherds. Utilityware ceramics included seven obliterated, one smeared-indented sherd, and one Sapawe Micaceous sherd. Chipped stone debitage included one obsidian biface flake, four chalcedony core flakes, one chalcedony core, and one piece of chalcedony angular debris. These surface artifacts indicated an Ancestral Pueblo Classic period affiliation for the site.

Testing

Site testing that resulted in the excavation of four 0.5- by 0.5-m test units, was conducted from October 18 through the 22, 2002. Although the test units were termed shovel tests to denote that they were smaller than a 1- by 1-m test unit, they were excavated by trowel in arbitrary 10-cm levels. Shovel Test 1 was placed 2 m east of the juniper located south of the four-rock alignment along the eastern edge of the tree-supported knoll. Shovel Test 2 was positioned at the northern edge of the knoll just above the slope where many of the structural tuff rocks have been

redeposited by erosion. Shovel Test 3 was sited approximately 1 m east of the rock alignment within what appeared to be a stabilized portion of the structure interior. Shovel Test 4 was located just south of the juniper located south of the rock alignment in an area that did not appear to be impacted by erosion.

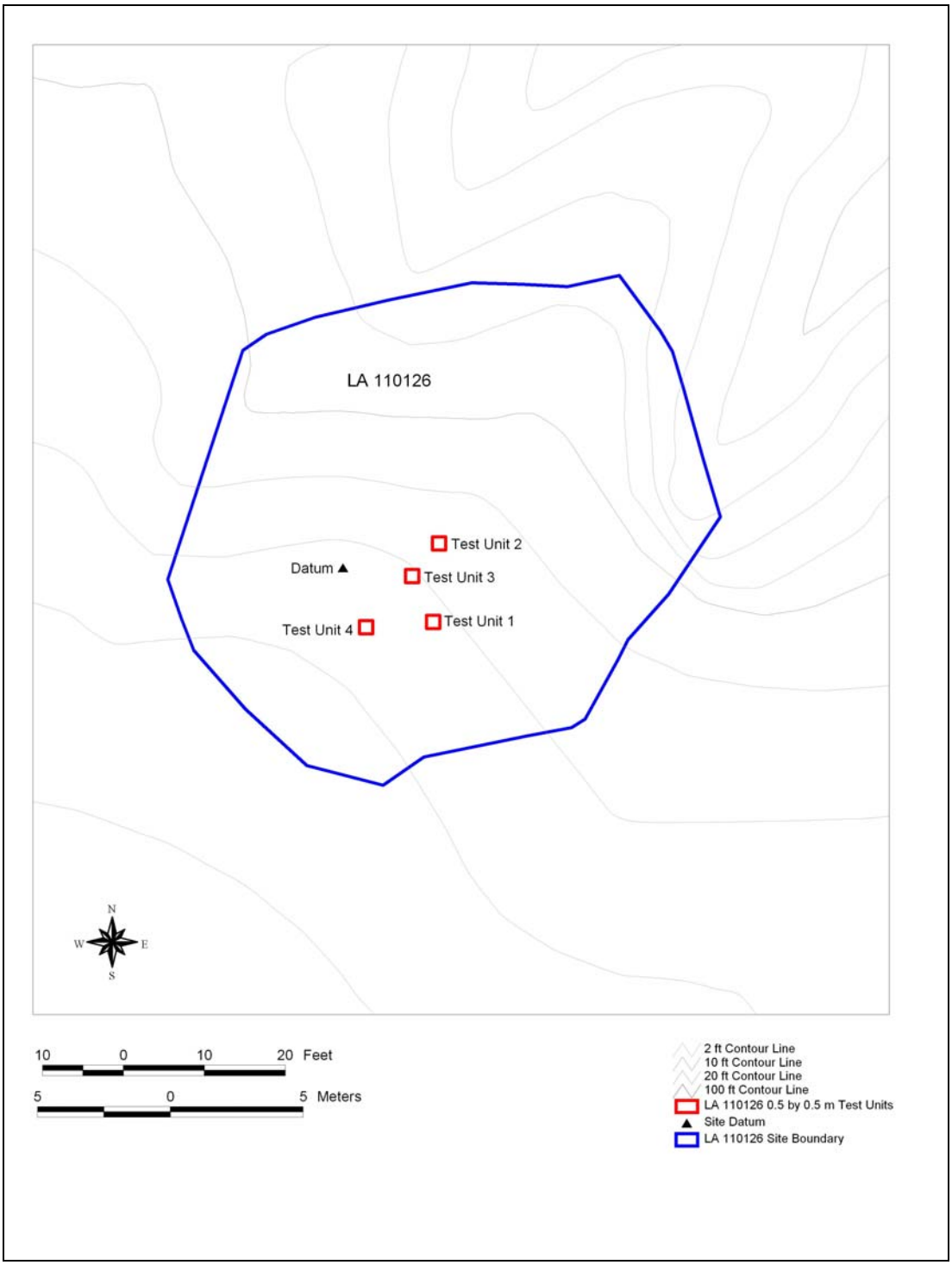


Figure 55.11. LA 110126 GPS differential map.

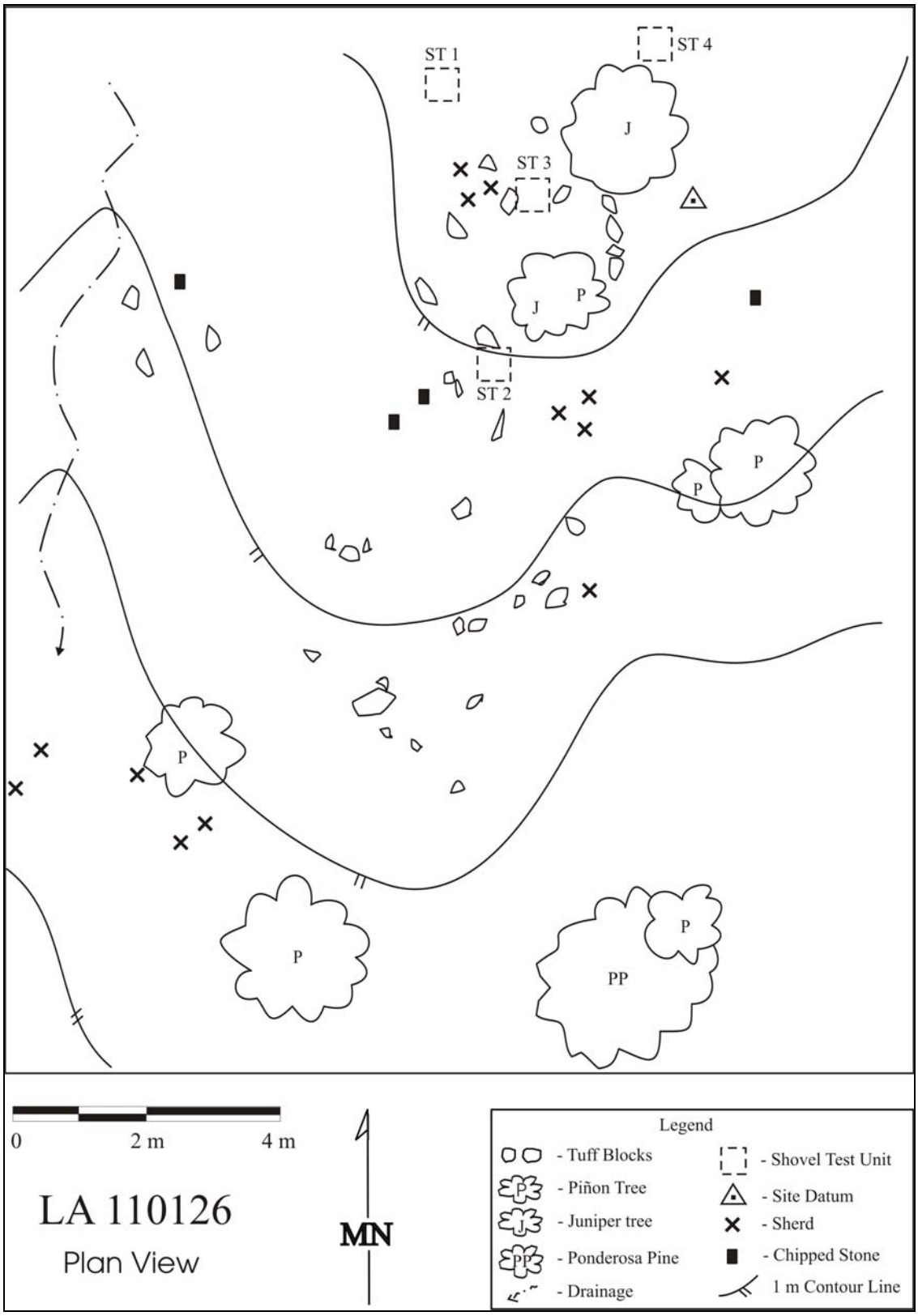


Figure 55.12. Plan view of the one-room structure at LA 110126.

Figure 55.13. Photo of LA 110126 looking southeast.

The stratigraphy was similar across the site with only the depth of deposits varying. Stratum 1 was a silty sandy loam ranging from 8 to 13 cm in depth. The upper 1 to 3 in. was loose with light to abundant duff. The soil below was lightly compacted. The Munsell color of the loam ranged form 7.5 to 10Y4/3. Stratum 1 was distinguished from Stratum 2 primarily on the level of compactness, color mottling, and the presence of decomposed tuff blocks and gravels (5% to 10%). The soil was a semi-compact silty sandy loam with 5 percent to 10 percent gravel. Also present were a few decomposing tuff blocks within ST 1 through 3. Although the soil was assessed to be Munsell color 7.5 to 10YR4/3, it visually ranged from a light brown to a grayish or reddish brown. Charcoal-stained fill was noted within the northwest quadrant of Shovel Test 1 and a few chunks and flecks of charcoal were observed within Shovel Tests 2 and 3. The charcoal chunks noted in Shovel Test 3 were assessed to be associated with a burned root, and it is likely that the other charcoal remains were associated with a tree fire. Stratum 3 consisted of compact clay with some well developed peds (7.5 to 10 YR 5/4).

Shovel Test 4 was apparently positioned beyond the original site activity area as no cultural materials were encountered or any materials that were present subsequently eroded downslope into the structural remains. Eleven ceramics and four pieces of chipped stone debris were recovered from Strata 1 and 2 within Shovel Tests 1 through 3. The ceramics recovered from the test unit excavations included seven Biscuit B sherds, two unpainted biscuitwares that were slipped on one side, and two Sapawe Micaceous sherds. The chipped stone included a

chalcedony core flake recovered from Level 1 in Shovel Test 2 and core flake, a piece of microdebitage and a piece of Pedernal chert angular debris recovered from Level 3 in Shovel Test 3.

Macrobotanical and pollen samples were taken from Stratum 2 and 3 from Shovel Test 2. No culturally significant remains were recovered from either sample.

No evidence of an occupational surface or intact cultural deposit was encountered. Both Strata 1 and 2 are assessed to be post-occupational deposits with Stratum 3 being a late-Pleistocene culturally sterile soil. Many of the cultural remains associated with the structure have eroded downslope, primarily to the north and east. The remaining subsurface cultural materials have been mixed into Strata 1 and 2. The localized erosion has destroyed the original site context with only the four-tuff-rock alignment still assumed to be intact due to its location between trees that have reduced the amount of soil movement. As erosional processes have destroyed the site integrity, LA 110126 is no longer considered eligible to the Register.

LA 110130

LA 110130 (V-127) consists of a one-room structure located on the north edge of an eroded, gently east-sloping fluvial terrace (Figure 55.14). The terrace is situated above the Pueblo Canyon floodplain. It is situated within the transition zone from piñon-juniper woodland to ponderosa pine forest, at an elevation of 1954 m (6410 ft).

The structure is represented by partial alignments of tuff blocks with additional blocks deposited downslope to the north and east (wallfall?) (Figure 55.15). Based on the partial alignments, the masonry structure roughly measured 4 by 3 m with an associated earthen mound measuring approximately 0.2 m in height. The masonry blocks are relatively small, averaging about 15 by 10 by 6 cm in size. The overall extent of the site, including artifacts and eroded building material, is approximately 15 by 35 m.

About 10 m to the west of the one-room structure is another rough alignment of tuff rocks. It is unclear what the function of this feature might have been. The 1.1-m-long eight-stone alignment is oriented in an east to west direction.

Testing

Two 1- by 1-m test units and two 0.5- by 0.5-m units termed shovel tests were excavated into the masonry block concentration in November of 2002 (Figure 55.16). All four test excavations were excavated in arbitrary 10-cm levels using a trowel. With the exception of pollen, soil, and macrobotanical samples, all excavated materials were screened through 1/8-in. mesh.

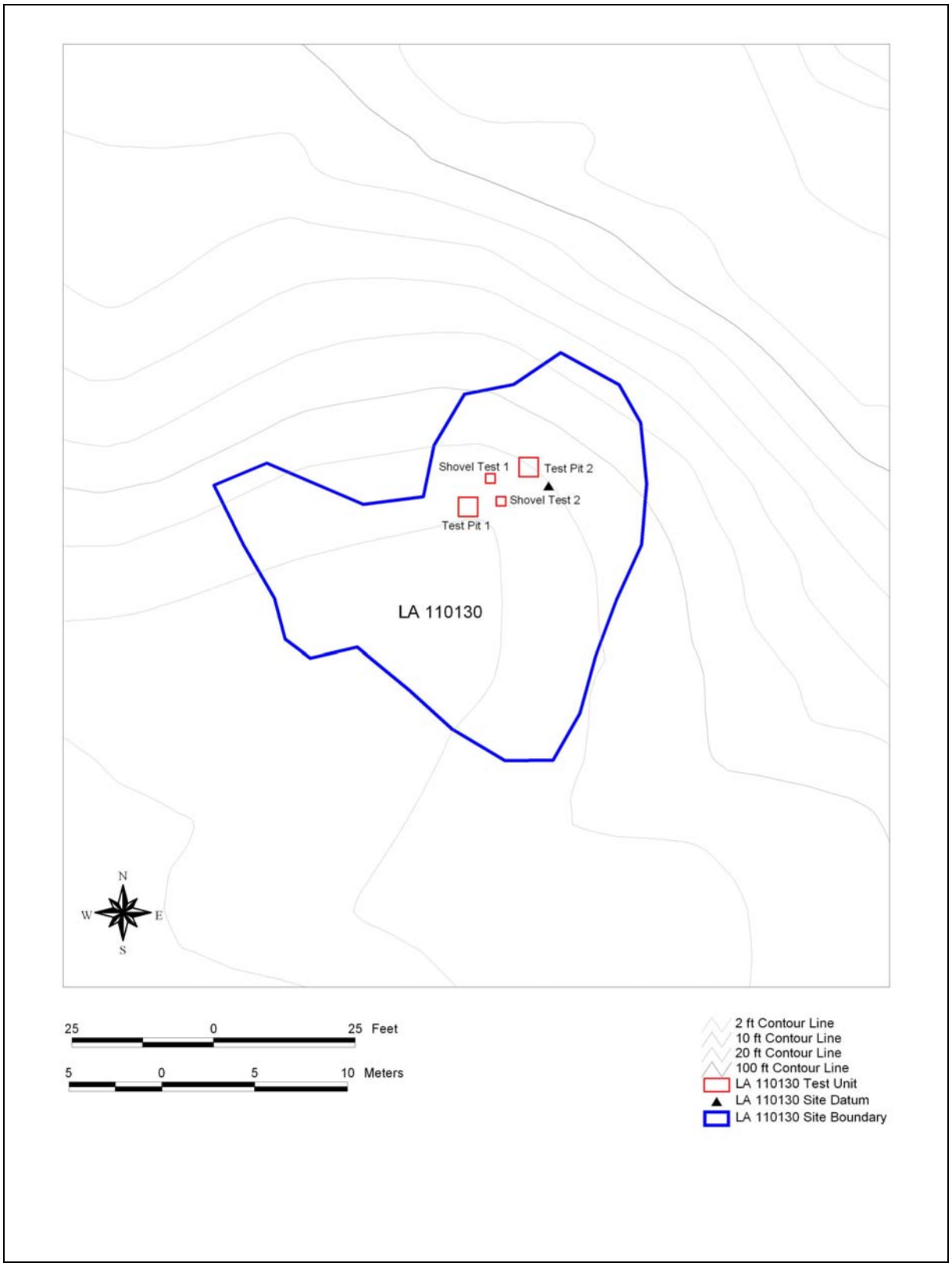


Figure 55.14. LA 110130 GPS differential map.

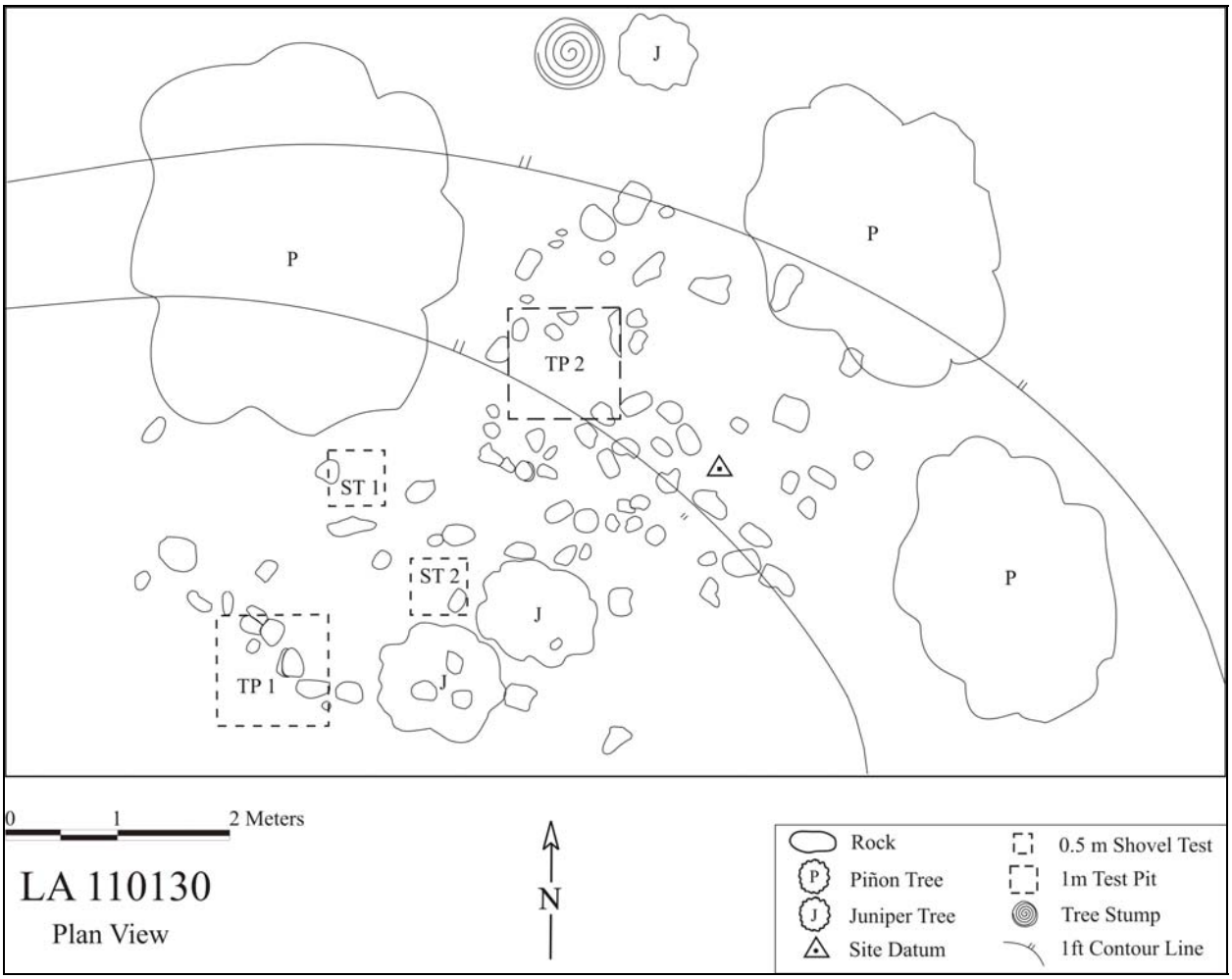


Figure 55.15. Plan view of structure at LA 110130.

Test Unit 1 was situated to straddle the apparent southwest corner of the masonry structure, while Test Unit 2 was placed within the rubble concentration located in the southeastern portion of the structure. Both test units were terminated at a depth of 20 cm after approximately 3 to 4 cm of culturally sterile soil was encountered. There was essentially no difference in the encountered stratigraphy between Test Unit 1 and Test Unit 2 except that there was a pocket of lightly charcoal-stained soil located within the southwest quadrant of Unit 2. The charcoal-stained soil that was encountered at a depth of 12 to 15 cm below the surface was 20 cm in diameter. There was also virtually no stratigraphic variability between the assumed interior and exterior of the structure as defined by the rock alignment in Test Unit 1. As a result, the two shovel tests were placed between Test Unit 1 and Test Unit 2 into what was assumed to be the interior of the structure to ascertain whether an activity surface was present. Shovel Test 1 was located about 1 m to the north-northeast, and Shovel Test 2 was located about 0.75 m to the east-northeast of Test Unit 1. Shovel Test 1 was excavated to a depth of 20 cm while Shovel Test 2 was excavated to a depth of 30 cm. No activity surface was encountered within either shovel test. The stratigraphy in both shovel tests was virtually the same as that encountered in the two test units, although an additional 10 cm of culturally sterile soil was removed from Shovel Test 2 (20 to 30 cm). Twenty Sapawe Micaceous and two smeared-indented utilityware sherds were

recovered from Levels 1 and 2 and a quartzite core flake from Level 1 in Shovel Test 2. Other recovered artifacts included one Wiyo Black-on-white sherd from the surface and a plain non-micaceous utilityware sherd from Level 1 in Test Unit 1; two rhyolite core flakes, two Pedernal chert core flakes, and one piece of Pedernal chert angular debris from Level 1; one plain non-micaceous utilityware sherd from Level 2 in Test Unit 2; one Sapawe Micaceous sherd from Level 1; and one rhyolite core flake from Level 2 in Shovel Test 1.

Figure 55.16. Post-testing photo of LA 110130 looking east.

As the soil stratigraphy within all four test excavations was very similar, only the Test Unit 1 profile is described. The upper 5 cm was an A horizon soil consisting of loose sandy loam with about 5 percent gravel content. Stratum 2, a Bw soil, ranged from about 5 to 17 cm below surface. It consisted of soft to slightly hard sandy clay loam with about 10 percent gravel content. Stratum 3 (17 to 20+ cm) is a Btb1 horizon soil consisting of soft/loose sandy clay loam with a 40 percent to 50 percent gravel content.

The test excavations revealed approximately 17 cm of sediment overlying a buried Bt horizon interpreted to likely represent a stripped or eroded late-Pleistocene soil. The tuff blocks associated with the partial structural alignments are set slightly into or on top of the Btb1 horizon. The tuff block alignments are not clearly walls, but may represent the foundation of a structure. The additional tuff blocks to the north and east likely represent the fall and downslope erosion of upper course wall blocks. An alternative assessment is that the partial tuff block alignments may represent the remnants of a rock-lined grid garden.

The A and Bw horizons likely represent slopewash colluvium that includes reworked older soil in the Bw horizon that has partially buried the rock alignments. The artifacts observed within the A and Bw horizons are likely part of the slopewash colluvium although their presence does suggest an association with the alignments and a Classic period affiliation for the structure. The artifacts may also represent locally bioturbated material that is in reasonably good archaeological context (Drakos and Reneau 2003).

Strata 2 and 3 macrobotanical (flotation) and pollen samples were collected and processed from both the assumed interior and exterior of the structure as defined in Test Unit 1. A flotation sample collected from the charcoal stain observed in Test Unit 2 was also collected. The flotation sample from Test Unit 1, Stratum 2 produced one charred *Amaranthus* seed while the charcoal stain in Test Unit 2 produced a corn cupule and a corn cupule fragment. The corn cupule was submitted to Beta Analytical, Inc., for accelerator mass spectrometer radiocarbon dating (Beta Number 183767). The calibration of radiocarbon age to calendar years resulted in a conventional age of 360±30 BP, a two-sigma calibration date range of AD 1450 to 1640, and an intercept date of AD 1500.

Pollen samples from the assumed exterior of the structure were more productive, exhibiting a gradient from the shallow to the deeper samples of decreased tree pollen and increased cheno-am. No cultigen pollen was recovered from any of the samples.

Summary

Although likely bioturbated, the artifacts and corn cupule remains suggest that the cultural material is in reasonably good archaeological context. As a result, there is still potential that LA 110130 contains cultural materials that could aid in establishing the nature of the structural remains (i.e., is the site the remains of a fieldhouse or grid garden). With the establishment of the site type, there is additional potential to address regional and site-specific research questions concerning the Classic period adaptation on the Pajarito Plateau such as establishing land and resource utilization patterns. As LA 110130 is assessed to retain research potential that could better establish the Ancestral Pueblo Classic period cultural adaptation on the Pajarito Plateau, it is considered eligible to the Register under Criterion D, likely to yield information important in prehistory or history.

LA 110132

LA 110132 (V-129) contains two adjoining partial rock alignments that, based on the apparent association of artifacts, were assessed to be potential masonry structure foundation or garden plot enclosure alignments (Figures 55.17 and 55.18). The site is located on a ridge situated along the south side of Pueblo Canyon. It is situated at an elevation of 1955 m (6415 ft), within an area that is transitional between piñon-juniper woodland and ponderosa pine forest.

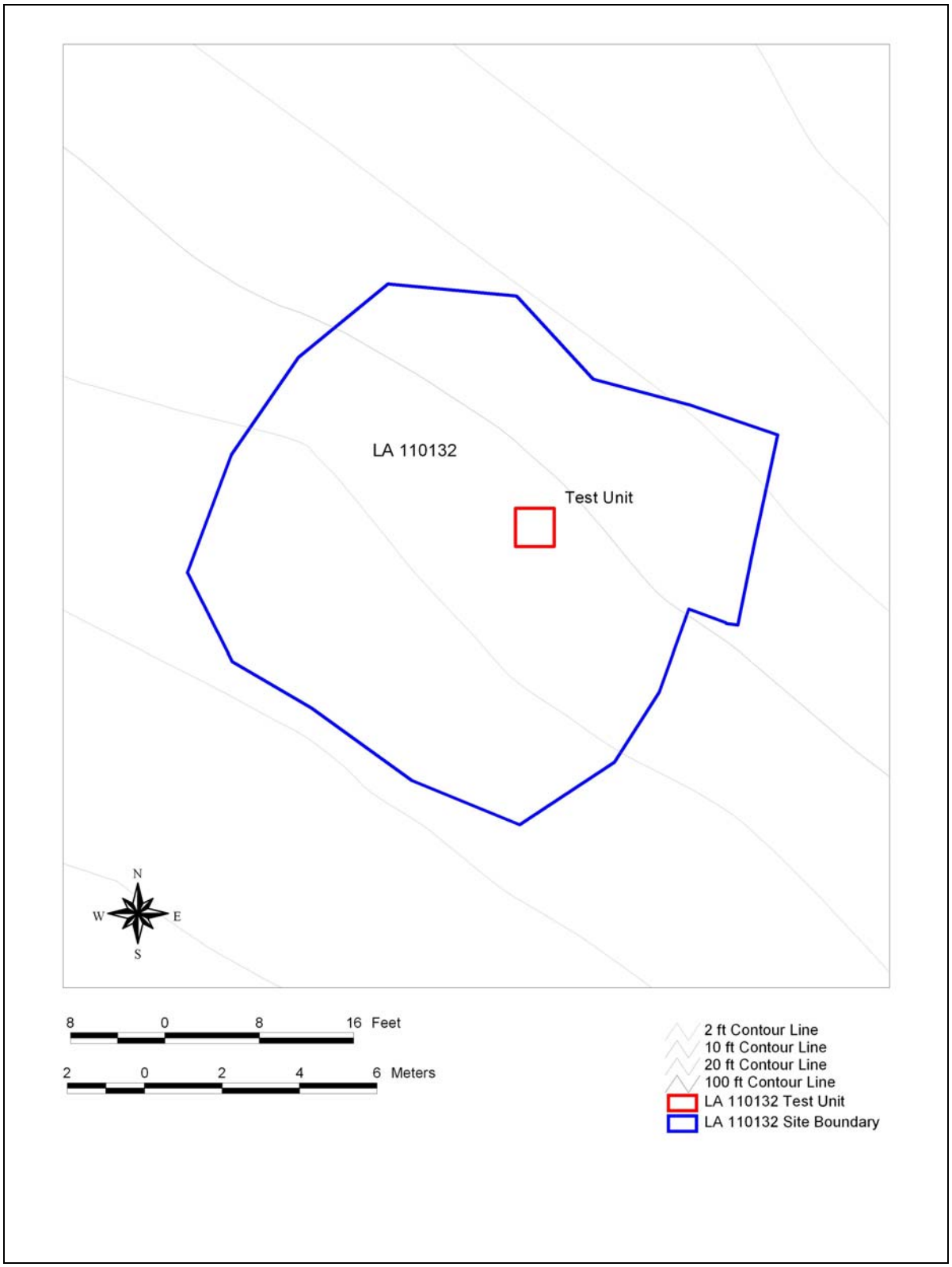


Figure 55.17. LA 110132 GPS differential map.

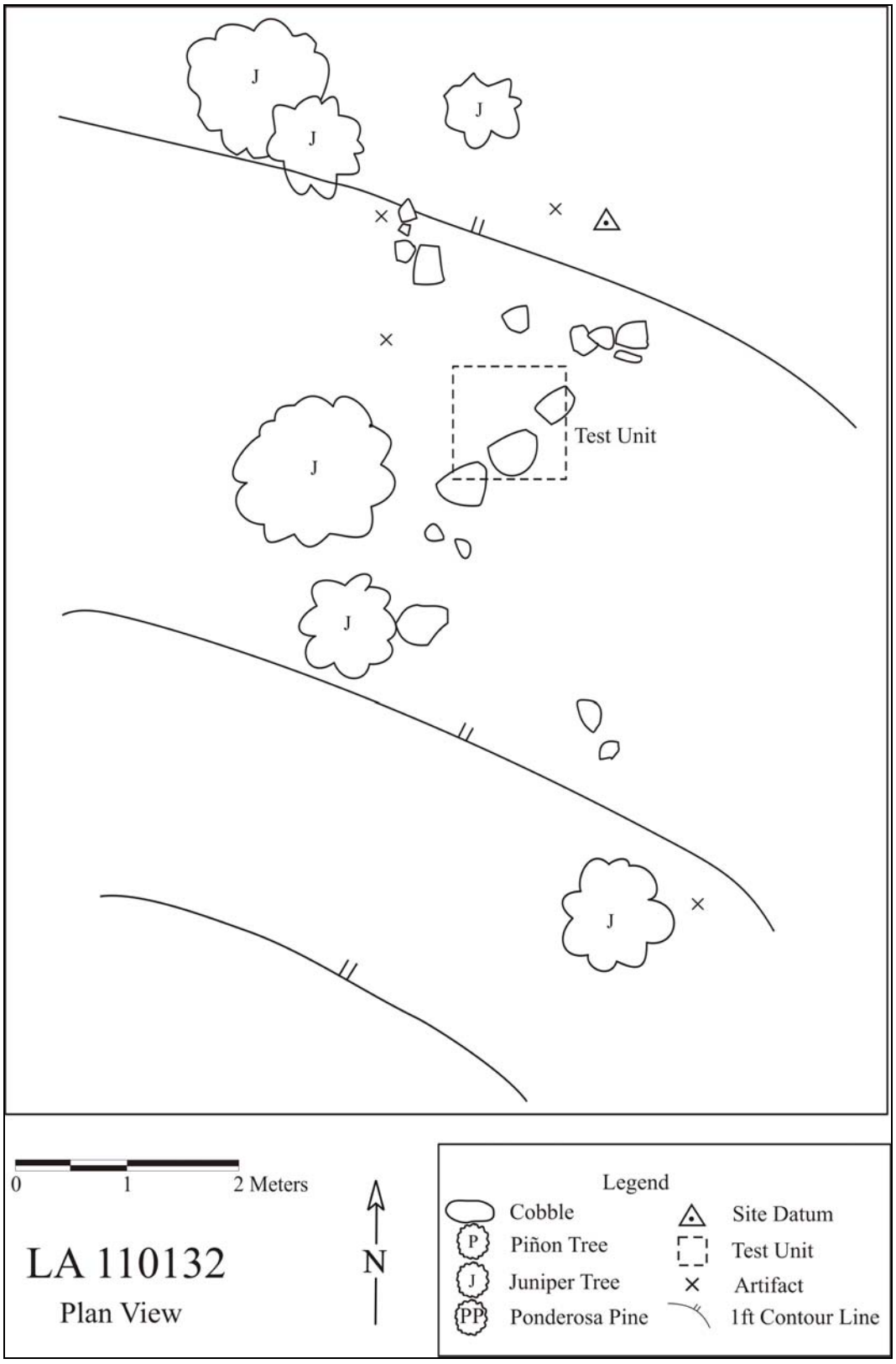


Figure 55.18. Plan view of potential structure at LA 110132.

The partial alignments are one course wide, with the north-south alignment measuring 2.4 m and the east-west alignment measuring 2.1 m in length. These intersecting alignments appear to form the northeast corner of a feature. The overall site area, including associated artifacts, is about 36 m². The rocks forming the potential cultural alignments average about 25 by 15 by 10 cm.

Four artifacts were observed within the site perimeter. The two ceramics consisted of a Santa Fe Black-on-white bowl sherd and a Biscuit A bowl sherd. The two lithics include an obsidian biface fragment, possibly a knife tip, and a broken quartzite cobble, possibly a mano fragment.

Testing

One test unit (A) was positioned over the east-side alignment to assess any stratigraphic differences from the inside to the outside of the structure. The test unit was excavated to a maximum depth of 10 cm with a trowel. All excavated materials were screened through 1/8-in. mesh.

The surface of a terrace boulder(s) was encountered between 2 cm (southwest corner) and 10 cm (southeast corner) below surface in the test unit. The fill above the terrace boulder was a sandy loam colluvium, which included reworked terrace gravels. There was no discernable difference in the colluvium from one side of the cobble alignment to the other. Based on the test unit, the potential structural alignments were assessed to be naturally occurring terrace cobbles and not of cultural origin. Other than the four surface artifacts, no cultural materials were associated with LA 110132. As no intact cultural materials were present, LA 110132 is no longer assessed to be eligible to the Register.

LA 110133

LA 110133 (Q-199) consists of a sparse ceramic and lithic artifact scatter. It is located on a north-facing colluvial slope situated below the mesa cliff face, along the southern edge of Pueblo Canyon (Figure 55.19). The site abuts the north side of the Pueblo Canyon dirt road. It is situated at an elevation of 1995 m (6540 ft) within a piñon-juniper woodland.

The artifact scatter is situated within an area that measures 2803 m². The 27 observed surface artifacts were dominated by ceramics. The decorated ceramics included four Santa Fe Black-on-white, one Wiyo Black-on-white, one Wingate Black-on-white, two unidentified redwares, two Biscuit A, one Biscuit B, and one Potsuwi'i Incised sherd. Utilityware ceramics included one indented corrugated, eight smeared-indented corrugated, one obliterated, and three unidentified sherds. The lithics consist of a chert biface flake and a ground quartzite cobble fragment.

Testing

Two 1- by 1-m test units were excavated into light artifact concentrations, one just below a two-track dirt road in the lower southern quarter of the site (Test Unit 1) and the other in the upper southeast corner of the site (Test Unit 2). Both test units were excavated in arbitrary 10-cm

levels with shovel and trowel. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh.

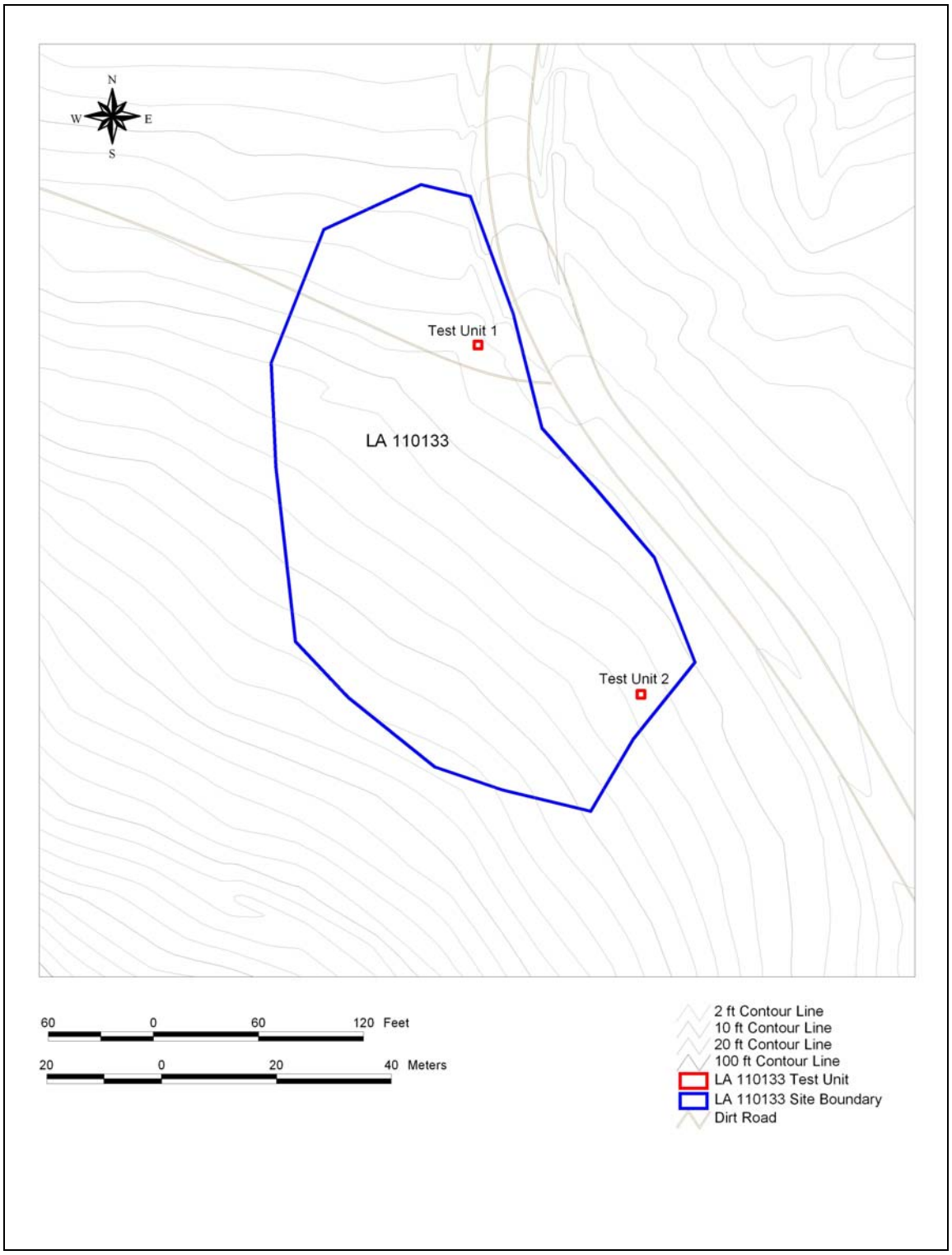


Figure 55.19. LA 110133 GPS differential map.

Test Unit 1 was excavated to a depth of 1 m and Test Unit 2 was excavated to a depth of 0.7 m below surface. Both test units were extremely similar in that they contained young colluvium throughout. The upper 16 to 19 cm contained a loose sand to loamy sand (10YR5/4) AC horizon soil that was assessed to be less than 100 years in age. The underlying fill was a loose to soft sandy loam (7.5YR5/4) BC or CB horizon soil exhibiting very weak soil development that was assessed to be less than 500 years in age (Drakos and Reneau 2003). Test Unit 1 was terminated within the colluvium, whereas Test Unit 2 was terminated at a change in the soil stratigraphy. At a depth of about 65 cm below surface, the colluvium in Test Unit 2 became extremely compact although pockets of loose sandy loam were still present. The hardening of the soil may have been produced by silica cement.

One ceramic was recovered from the upper 10 cm within both test units, and two ceramics were recovered from depths of 40 to 70 cm below surface in Test Unit 1. A plain gray utilityware sherd was recovered from the upper 10 cm (level 1), while smeared-indented utilityware sherds were recovered from Levels 5 (40 to 50 cm) and 7 (60 to 70 cm) in Test Unit 1. An unpainted, undifferentiated sherd was recovered from Level 1 in Test Unit 2. Other than theses four ceramics, no cultural materials were observed from within the two test units.

The test unit profiles indicated that LA 110133 is located on a very active colluvial slope with 70 cm or greater of post-Ancestral Pueblo colluvial deposition. The artifacts observed at LA 110133 appear to be part of the colluvium and are not in archaeological context (Drakos and Reneau 2003). As there appears to be no intact cultural deposits associated with LA 110133, it is no longer assessed to be eligible to the Register.

LA 117883

LA 117883 (Q-39) consists of a sparse lithic scatter situated within an area measuring 1410 m². The site is located on a north-side colluvial slope that forms a bench situated 3 m above the current drainage channel within Pueblo Canyon (Figure 55.20). The south and west sides of the site have been exposed to recent channel cutting. The area is vegetated by a piñon-juniper woodland and a ponderosa pine forest. The site is situated at an elevation of 1969 m (6460 ft).

During the initial recording, 62 lithic artifacts and four ceramics that were thought to be intrusive were documented during infield analysis. The chipped stone tools include the proximal end of an obsidian dart point with a concave base, an obsidian uniface, and a chert biface fragment. The debitage consisted of 39 pieces of obsidian, 14 pieces of Pedernal chert, and two pieces of basalt. The obsidian included 24 core flakes, 14 biface flakes, and one piece of angular debris. The Pedernal chert consisted of 10 core flakes and three biface flakes. The basalt included one core flake and one biface flake. The ceramics were identified as one unidentified biscuitware and three smeared-indented corrugated utilityware sherds.

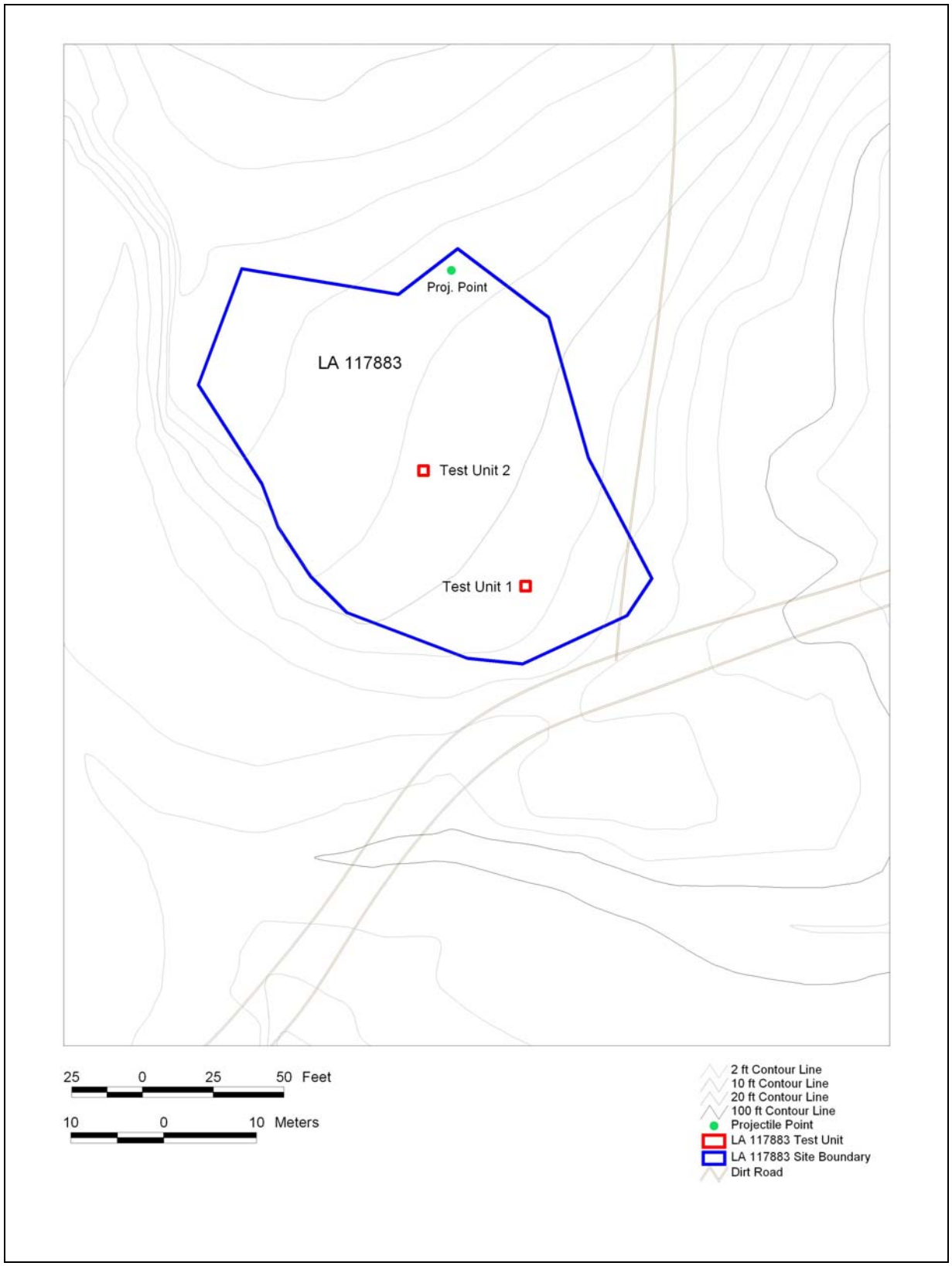


Figure 55.20. LA 117883 GPS differential map.

One ground stone artifact that was identified as a possible spade-shaped, tabular, polishing stone was also documented. It showed evidence of polishing along one rounded and one angled edge. It measured 12 by 7.5 by 5 cm and appeared to be made from a slate-like material.

Testing

Before the initiation of test unit excavations, an infield analysis was conducted on all observed surface artifacts located on LA 117833 (Table 55.1). The infield analysis resulted in the documentation of 75 lithics, including a projectile point, a biface fragment, a core, and 71 pieces of chipped stone debitage. Obsidian artifacts formed 81 percent of the surface lithics and Pedernal chert formed 13.5 percent. Biface flakes formed 51 percent of the lithic debitage while core flakes and flake fragments formed 28 percent and 10 percent, respectively. Also noted during the infield analysis were a Biscuit A ceramic and a Biscuit B ceramic sherd.

Table 55.1. Lithic artifact type by material type from LA 117833.

Artifact Type		**Obsidian**	**Pedernal**	**Basalt**	**Chert**	**Chalce-dony**	**Total**
Debi-tage	Angular debris	1	2	0	0	0	3
	Core flake	15	4	0	1	0	20
	Biface flake	30	4	1	0	1	36
	Microdebitage	3	0	0	0	0	3
	Und. flake	7	0	0	0	0	7
	Retouched flake	1	0	0	0	0	1
Tool	Core	1	0	1	0	0	2
	Biface fragment	1	0	0	0	0	1
	Projectile point	1	0	0	0	0	1
Total		**60**	**10**	**2**	**1**	**1**	**74**

Two 1- by 1-m test units were excavated into light artifact concentrations. Test Unit 1 was located on a terrace situated 20 m north of the Pueblo Canyon channel and Test Unit 2 was situated upslope approximately 32 m north of the Pueblo Canyon channel. Both test units were excavated in arbitrary 10-cm levels with shovel and trowel. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh.

Test Unit 1 was excavated to a depth of 0.67 m and Test Unit 2 was excavated to a depth of 1 m below surface. Both test units were similar in that they contained colluvium overlying buried terrace gravels. The upper 9 to 15 cm contained a loose sand (10YR4/3 to 10YR4/2) AC horizon soil that was assessed to be less than 500 years in age. Underlying the AC soil horizon was a 25- to 28-cm-thick C horizon soil deposit of loose sand (10YR5/3 to 10YR4/3) that was also assessed to be less than 500 years in age. Situated between the C horizon and the gravel terrace was an 18- to 23-cm-thick Bwb1 horizon soft sand deposit (10YR5/3) that was assessed to be less than 1000 to 2000 years in age. In Test Unit 2, a 60-cm-thick BCb1 horizon deposit of soft sand (10YR5/3) was situated between the C horizon soil and the terrace gravels. The test unit

deposits suggest that there were two depositional events, with older colluvium, less than 1000 to 2000 years, overlain by young colluvium, less than 500 years (Drakos and Reneau 2003).

The buried soil in with the gravels in Test Unit 2 includes a Stage I carbonate suggesting a late-Pleistocene to early-Holocene age for the terrace. In contrast, the buried terrace gravels in Test Unit 1 lack carbonate, soil structure, or other indicators of soil development, suggesting that this terrace is late Holocene in age. These differences suggest that two terraces of different age are buried beneath the colluvium, with the terrace below Test Unit 1 inset into the terrace situated beneath Test Unit 2 (Drakos and Reneau 2003).

Lithic debitage was recovered from every level of both test units (Table 55.2) with 42 collected from Test Unit 1 and 105 from Test Unit 2. Also recovered was an undetermined biscuitware sherd from Level 3 (20 to 30 cm below surface) in Test Unit 1. Chunks of charcoal were also recovered from Level 6 in Test Unit 1 and Level 8 from Test Unit 2. The presence of lithics throughout the colluvium in the test units suggests that the artifacts have been transported from upslope and are not in place (Drakos and Reneau 2003).

Table 55.2. Excavation recovered artifacts from LA 117883.

Test Unit	Depth of Test Unit (cm)	Level (depth in cm)	No. of Lithics	No. of Sherds	Ground Stone	Faunal Bone	Charcoal	Total Arti-facts
TP 1	0 to 67	1 (0 to 10)	3					43
		2 (10 to 20)	6					
		3 (20 to 30)	2	1				
		4 (30 to 40)	13					
		5 (40 to 50)	9					
		6 (50 to 60)	5				Fragment	
		7 (60 to 67)	4					
TP 2	0 to 100	1 (0 to 10)	6					105
		2 (10 to 20)	6					
		3 (20 to 30)	5					
		4 (30 to 40)	3					
		5 (40 to 50)	9					
		6 (50 to 60)	11			1		
		7 (60 to 70)	11			1		
		8 (70 to 80)	20			1	Fragment	
		9 (80 to 90)	18			1		
		10 (0 to 100)	12					
Totals			**143**	**1**		**4**		**148**

Summary

The testing at LA 117883 indicated that there are no intact cultural deposits associated with the site. Although several artifacts and a few chunks of charcoal were recovered, they were all

mixed in with colluvium, and as such, lack cultural context. As there appears to be no intact cultural deposits associated with LA 117883, it is no longer eligible to the Register.

WHITE ROCK TRACT

As originally defined, the White Rock Y Tract was located south of State Road (SR) 502 and west of SR 4 and included the interchange between the two. Sandia Canyon ran through the southern portion and Los Alamos Canyon, including its confluence with Pueblo Canyon, ran through the northern portion of the tract. Elsewhere, the tract was dominated by several small mesas that are dissected by narrow valleys. The tract, which is lightly forested with a piñon-juniper woodland and ponderosa pine forest, ranged in elevation from 2107 m to 2267 m (6320 to 6800 ft).

The U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) made a decision after the cultural resource survey phase to remove most of the White Rock Y Tract from the proposed conveyance. The remaining areas proposed for conveyance include the highway right-of-way surrounding the interchange and the SR 4 and 502 corridors. The SR 4 and 502 interchange is located just west of the confluence of Los Alamos and Pueblo canyons. The two sites with an undetermined Register eligibility are located directly south of Los Alamos Canyon, which is situated a short distance south of SR 502. Within the cultural site vicinities, Los Alamos Canyon is incised into basalt bedrock and contains an adjacent stream terrace that is overlain by colluvium derived from a higher terrace.

LA 61034

LA 61034 is an artifact scatter situated on a colluvial bench slope located directly south of the Los Alamos Canyon drainage (Figure 55.21). The site is at an elevation of 1922 m (6305 ft) in an area that is dominated by piñon-juniper woodland. The several hundred artifacts are situated in an area measuring 2190 m². When originally recorded, no formal artifact analysis was conducted. Observed ceramics included Potsuwi'i Incised, Sankawi Black-on-cream, red-slipped ware, Jemez Black-on-white, and smeared-indented corrugated sherds. The lithic assemblage was not detailed. The presence of Sankawi Black-on-cream and Potsuwi'i Incised ceramics dated this site to the Classic period.

Testing

Before initiating the excavation of test units, infield analysis was conducted on 100 percent of the observed surface artifacts. The infield analysis resulted in the documentation of 32 ceramics (Table 55.3) and 147 pieces of lithic debitage (Table 55.4). The four decorated ceramics are associated with the Classic period. The three micaceous plainware sherds and the Potsuw'ii Incised sherd support the Classic period assessment.

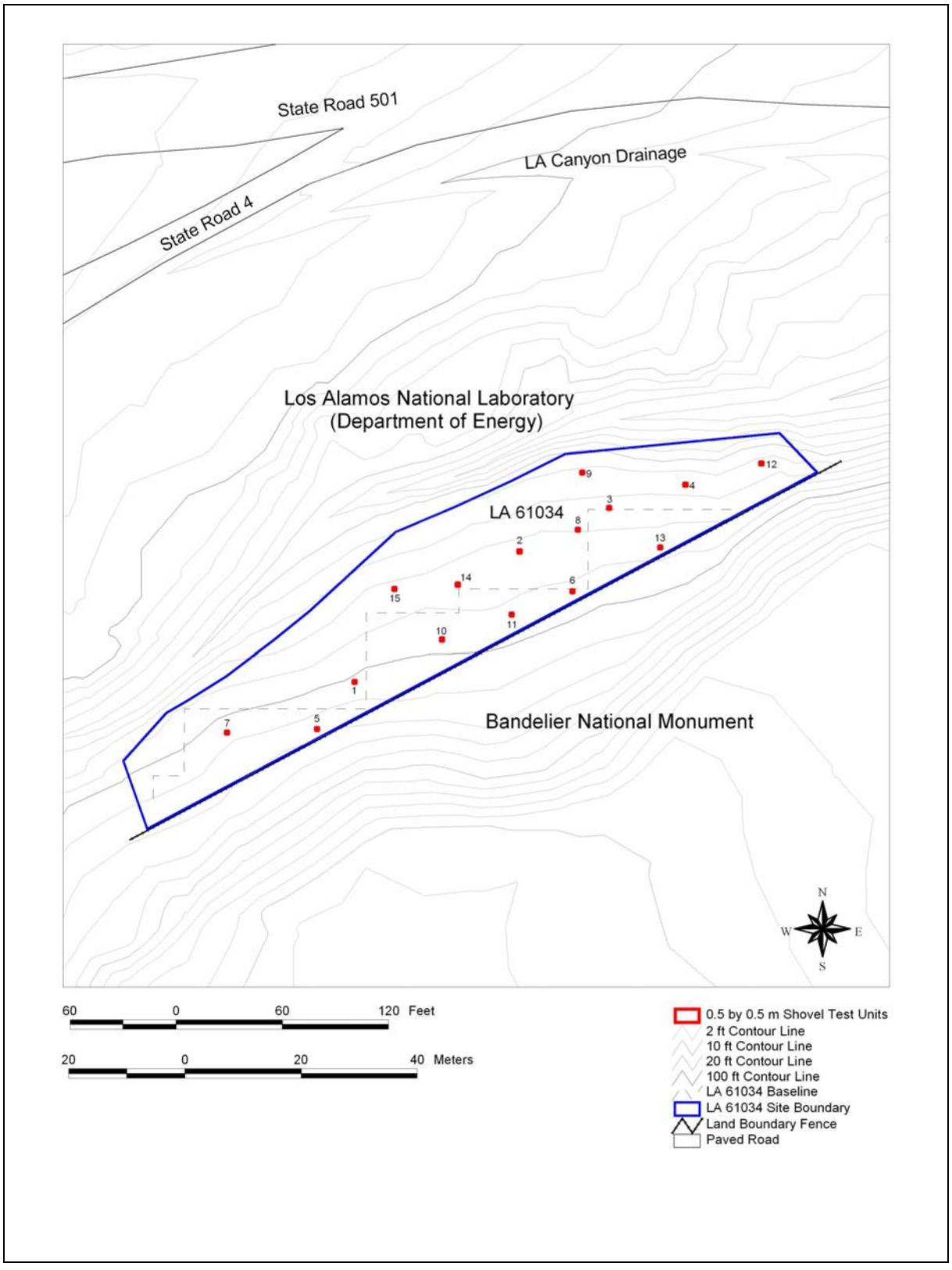


Figure 55.21. LA 61034 GPS differential map.

Table 55.3. LA 61034 infield ceramic analysis.

Ceramic Type		Total
Decorated	Wiyo Black-on-white	1
	Biscuit B	1
	Sankawi Black-on-cream	1
	Unidentified red glazeware	1
	Subtotal	**4**
Utilitywares	Smeared-indented corrugated	23
	Obliterated	1
	Micaceous plainware	3
	Potsuwi'i Incised	1
	Subtotal	**28**
Total		**32**

Obsidian artifacts formed 82 percent of the lithic debitage and Pedernal chert formed the remaining 18 percent. Biface flakes formed 58 percent of the lithic debitage while core flakes and flake fragments formed 28.5 percent and 8 percent, respectively.

Table 55.4. Lithic artifact type by material type from LA 61034.

Artifact Type		Obsidian	Pedernal	Total
Debitage	Angular debris	5	0	5
	Core flake	27	15	42
	Biface flake	76	9	85
	Microdebitage	1	1	2
	Undetermined flake	10	2	12
	Utilized flake	1	0	1
Total		**120**	**27**	**147**

Excavation

Fifteen 50- by 50-cm test units, termed shovel tests, were excavated into the site. The test units were excavated with a trowel in arbitrary 10-cm levels. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh. The test units were positioned across the site with a larger number placed in the northeastern portion where the surface artifact density was higher (Table 55.5). The shovel tests varied in depth from 10 cm near the Los Alamos Canyon drainage (Shovel Test 9) that runs along the northwestern edge of the site to 70 cm in an upslope location near the Bandelier National Monument Boundary Fence where colluvial deposits are much deeper (Shovel Test 6).

Although depths and thickness varied, the soil stratigraphy was similar throughout all of the test units. The upper 4 to 6 cm was a loose sandy to silty loam (10YR5/3). Directly below this A horizon was a 10- to 16-cm-thick Bw Soil horizon deposit consisting of lightly compacted sandy clay loam (7.5YR5/4). At depths ranging from 18 to 32 cm below surface, a compact sandy clay loam was encountered (7.5YR5/4). This Btj1(b1?) soil horizon that was approximately 10- to

15-cm-thick, overlaid a 10- to 30-cm-thick Btj2(b1?) soil horizon, which was also a compact sandy clay loam that contained cicada burrows forming hard peds (7.5YR5/4). When present, the Btj2 horizon soils overlaid a sandy clay loam deposit containing numerous (60% to 70%) rounded stream cobbles (IIBC horizon). In test units that were situated closer to Los Alamos Canyon, the stream cobble deposit was encountered at fairly shallow depths (10 to 28 cm below surface), often situated directly below the Bw Soil horizon. An exception to this general soil stratigraphy sequence occurred in Shovel Test 4 where basalt bedrock was encountered from 5 to 20 cm below surface.

Lithic debitage and a few ceramic sherds were recovered from several of the test units and charcoal fragments and/or flecks were present in three of the units (Table 55.5). The lithics were recovered from throughout the soil sequence, whereas the ceramics were recovered from the upper 20 cm. The vast majority of excavation-recovered artifacts were located in the central and northern end of the site.

Table 55.5. Artifacts recovered during excavation of LA 61034.

Test Unit	Grid	Depth of Test Unit (cm)	Level (depth in cm)	Number of Lithics	No. of Ceramics	Charcoal	Total Artifacts
ST-1	83N/65E	0 to 30					0
ST-2	105N/90E	0 to 50	1 (0 to 10)	8			62
			2 (10 to 20)	6		Flecks	
			3 (20 to 30)	14			
			4 (30 to 40)	34			
ST-3	115N/105E	0 to 40	1 (0 to 10)	3			17
			2 (10 to 20)	6			
			3 (20 to 30)	8			
ST-4	120N/118E	0 to 20	1 (0 to 10)	7			9
			2 (10 to 20)	1	1	Fragment	
ST-5	75N/60E	0 to 25					0
ST-6	100N/100E	0 to 70	1 (0 to 10)		1		7
			2 (10 to 20)	2			
			5 (40 to 50)	1			
			6 (50 to 60)	1			
			1-7 (0 to 70) Unit sidewall	2			
ST-7	75N/45E	0 to 28	1 (0 to 10)	2			2
ST-8	100N/110E	0 to 66	1 (0 to 10)	2	1		16
			2 (10 to 20)	3		Fragment	
			3 (20 to 30)	6		Fragment	
			5 (40 to 50)	3			
			6 (50 to 60)	1			

Test Unit	Grid	Depth of Test Unit (cm)	Level (depth in cm)	Number of Lithics	No. of Ceramics	Charcoal	Total Artifacts
ST-9	120N/100E	0 to 14					0
ST-10	90N/80E	0 to 29					0
ST-11	95N/90E	0 to 40					0
ST-12	124N/130E	0 to 20	1 (0 to 10)		1		1
ST-13	110N/115E	0 to 40	3 (20 to 30)	2			2
ST-14	100N/80E	0 to 60	1 (0 to 10)	3			6
			2 (10 to 20)	1			
			4 (30 to 40)	1			
			5 (40 to 50)	1			
ST-15	89N/70E	0 to 20					0
Total Artifacts				**118**	**4**		**122**

The presence of artifacts situated throughout the site colluvium suggests that the artifacts have been transported from upslope and are not in place. An Archaic period site is located on a terrace situated upslope between 18 and 30 m to the southeast of LA 61034. The stratigraphic sequence suggests that Ancestral Puebloan or post-Puebloan colluvium (A and Bw horizons) overlays Archaic period colluvium (Btj1 and Btj2 horizons) that buries Holocene terrace gravel (IIBCb2 horizon). This interpretation is supported by the distribution of artifacts with ceramics and lithics found in excavation depths corresponding to the A and Bw horizons, whereas only lithics were found in excavation depths corresponding to the Btj1 and Btj2 horizons (Drakos and Reneau 2003). The artifacts observed and recovered from LA 61034 also support the presence of two cultural manifestations. The high percentage of obsidian debitage and lithic debris that indicates a biface manufacturing strategy suggests that many of the lithics are affiliated with an Archaic period area utilization, while the diagnostic ceramics suggest a Classic period utilization.

Summary

LA 61034 is located on a colluvial slope that overlies a Los Alamos Canyon stream terrace of probable Holocene age. The colluvium appears to have been deposited from an adjacent, higher Pleistocene terrace (Drakos and Reneau 2003). The test units excavated into LA 61034 indicate that the site-associated artifacts are intermixed within the colluvium and are not in a cultural context. As there are no intact cultural remains located at LA 61034, it is no longer considered eligible to the Register.

LA 61035

LA 61035 is a sparse artifact scatter situated in a 327-m² area. The site is situated on a small, narrow, fairly flat bench situated between a terrace to the south and the Los Alamos Canyon drainage to the north (Figure 55.22). The site is at an elevation of 1916 m (6285 ft) in an area that is dominated by piñon-juniper woodland. Dirt piles, assumed to have been deposited during

the construction of SR 501, which is located directly north of the Los Alamos Canyon drainage, were observed on both the east and west ends of the site.

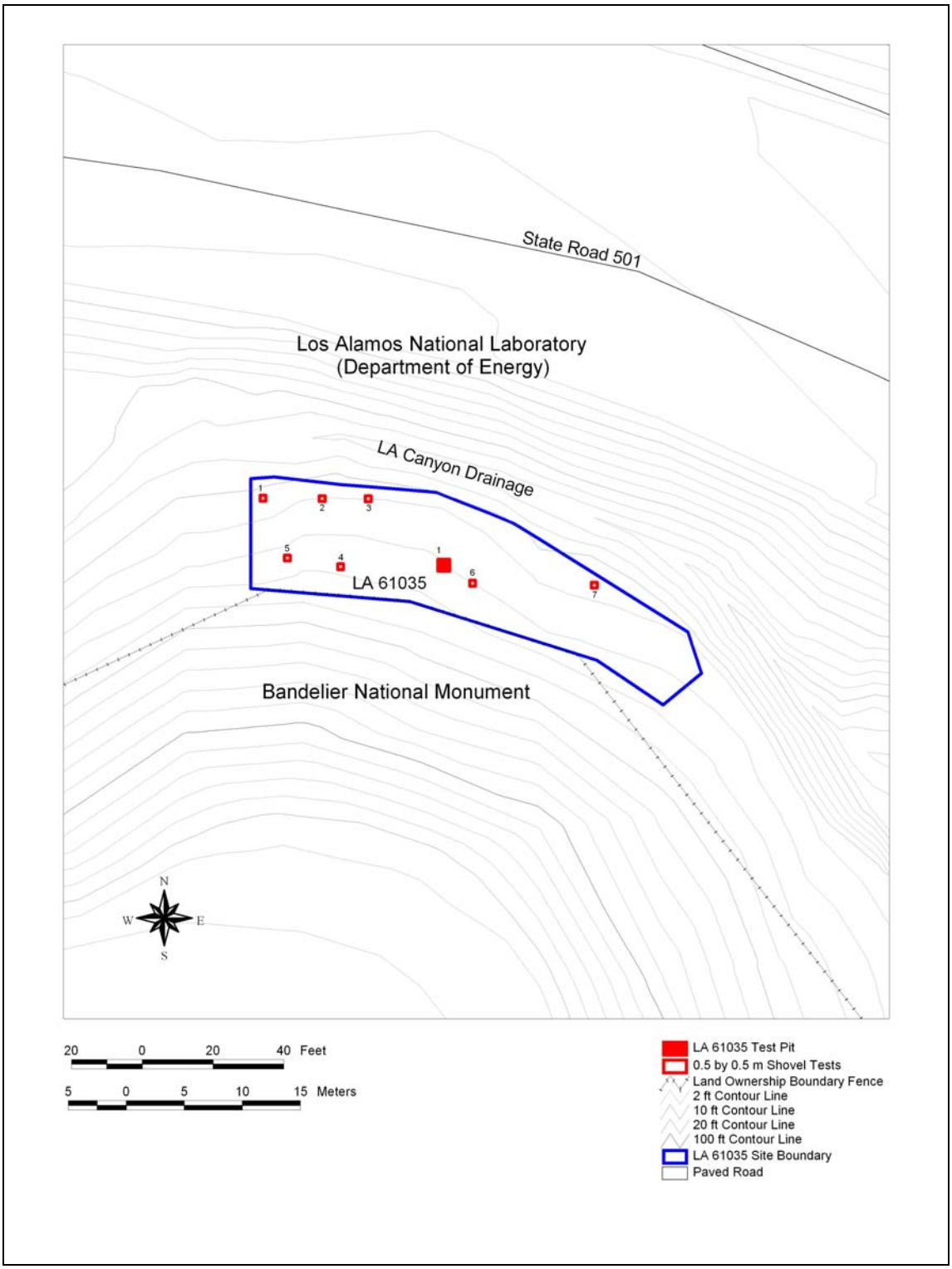


Figure 55.22. LA 61035 GPS differential map.

When originally recorded, no formal analysis was conducted on the artifacts that were assessed to number in the tens. Observed diagnostic ceramics included Sankawi Black-on-cream sherds. Lithics were mostly obsidian with a small percentage of chalcedony also present. Based on the ceramics, this site dated to the Classic period.

Testing

Before excavation of the test units, an infield artifact analysis was conducted on 100 percent of the observed surface artifacts. The infield analysis resulted in the documentation of seven ceramics (Table 55.6) and 146 lithics (Table 55.7). The four decorated ceramics are associated with the Classic period.

Table 55.6. Infield ceramic analysis from LA 61035.

Ceramic Type		**Total**
Decorated	Wiyo Black-on-white	1
	Biscuit B	1
	Unidentified biscuitware	1
	Unidentified redware	1
	Subtotal	**4**
Utilitywares	Smeared-Indented Corrugated	2
	Obliterated	1
	Subtotal	**3**
Total		**7**

The analyzed lithics included one chalcedony biface and 145 pieces of chipped stone debitage. Obsidian artifacts formed 83 percent of the lithic debitage and Pedernal chert formed 9 percent. Biface flakes formed 56 percent of the lithic debitage, while core flakes and flake fragments formed 26 percent and 7.5 percent, respectively.

Table 55.7. Lithic artifact type by material type from infield analysis at LA 61035.

Artifact Type		**Obsidian**	**Pedernal**	**Basalt**	**Chert**	**Chalcedony**	**Tot-al**
Debi-tage	Angular debris	5	2	0	0	0	7
	Core flake	25	6	3	1	3	38
	Biface flake	75	3	2	1	0	81
	Microdebitage	7	0	0	0	0	7
	Undetermined flake	8	2	1	0	0	11
	Retouched flake	1	0	0	0	0	1
	Biface (Knife)	0	0	0	0	1	1
Total		**121**	**13**	**6**	**2**	**4**	**146**

Excavation

One 1- by 1-m test unit and seven 50- by 50-cm test units called shovel tests were excavated into the site. The 1- by 1-m test unit was excavated by shovel and trowel and the shovel tests were excavated by trowel. The units were excavated in arbitrary 10-cm levels unless a distinct stratigraphic change was encountered. With the exception of pollen, soil, and macrobotanical samples, all hand-excavated materials were screened through 1/8-in. mesh.

Although depths and thickness varied, the soil stratigraphy was similar throughout all of the test units with three colluvial soil horizons situated above a gravel and cobble stream terrace. The upper 8 to 12 cm of soil was loose loamy sand (A horizon) that overlaid lightly compacted loamy sand (Bw horizon). The Bw soil horizon that increased in compaction with depth extended down to depths of 40 to 45 cm below surface in locations where the terrace deposits were deeply buried. A C horizon soil that contained hard peds formed from cicada burrows intermixed with lightly compacted to loose loamy sand was situated below the Bw horizon.

The depth of colluvial deposits increased rapidly upslope to the south with increased distance away from the Los Alamos Canyon drainage channel. In the northwest corner of the site, Shovel Tests 1 and 2 were terminated at depths of 18 to 40 cm below surface, respectively, as terrace deposits of rounded stream gravels and cobbles were encountered. Shovel Tests 5 and 7 that extended down into the C horizon were also terminated at or just below contact with the gravel and cobble terrace deposit. All other test units were terminated within the C soil horizon with Test Unit 1 excavated to a depth of 1.4 m below surface (Figure 55.23).

Figure 55.23. Post-excavation photo of Test Pit 1 at LA 65035.

Cultural materials were situated throughout the site colluvial deposits. Lithic debitage and ceramic sherds were recovered from the upper 40 cm, while only lithics were recovered from depths greater than 40 cm below surface. Charcoal flecks and/or fragments were noted in all of the test units except for Shovel Test 4. The charcoal was intermixed throughout the colluvial deposits, ranging from 0.05 to 1.0 m in depth. It is not known whether the charcoal was associated with a cultural occupation or whether it resulted from an area wildfire.

The presence of artifacts throughout the entire colluvial deposit suggests that the cultural materials have been transported from upslope and are not *in situ* (Table 55.8). The presence of ceramics in the upper 40 cm indicates significant colluvial deposition since the Ancestral Pueblo occupation of the site area. Although the sample of recovered ceramics is extremely small, the two diagnostic sherds recovered from test units indicate a Coalition period cultural affiliation, whereas the surface ceramics indicate a Classic period affiliation. The presence of lithic debitage and the lack of ceramics at depths greater than 40 cm below surface suggest that colluvial deposition began before the Ancestral Pueblo area utilization, likely during the Archaic cultural period (Drakos and Reneau 2003). Much of the debitage located at LA 61035 was likely derived from upslope erosion of a nearby Archaic period site. The high percentage of obsidian debitage and lithic debris that indicates a biface manufacturing strategy supports the assumption that many of the lithics are affiliated with an Archaic period area utilization.

Table 55.8. Artifacts recovered during excavation at LA 61035.

Test Unit	Depth of Test Unit (cm)	Level (depth in cm)	No. of Lithics	No. of Sherds	Ground Stone	Fauna	Char-coal	Total Arti-facts
TP-1	0 to 140	Surface (0)	1					352
		1 (0 to 10)	4					
		2 (10 to 20)	18					
		3 (20 to 30)	32					
		4 (30 to 33)	38	3		6	Flecks	
		5 (33 to 43)	12			1	Flecks	
		6 (43 to 53)	24				Flecks	
		7 (53 to 63)	35					
		8 (63 to 73)	33				Flecks	
		9 (73 to 86)	33				Flecks	
		10 (86 to 96)	37				Frag-ments	
		11 (96 to 106)	39					
		12 (106 to 116)	14					
		13 (116 to 126)	9					
		14 (126 to	13					

Test Unit	Depth of Test Unit (cm)	Level (depth in cm)	No. of Lithics	No. of Sherds	Ground Stone	Fauna	Char-coal	Total Arti-facts
		136)						
ST-1	0 to 18	1 (0 to 10)	1				Frag.	1
ST-2	0 to 40	1 (0 to 10)	2				Frags.	5
		2 (10 to 20)	3					
ST-3	0 to 80	1 (0 to 10)	1					79
		2 (10 to 20)	8					
		3 (20 to 30)	5					
		4 (30 to 40)	10	1			Flecks	
		5 (40 to 50)	20				Flecks	
		6 (50 to 60)	8				Flecks	
		7 (60 to 70)	14					
		8 (70 to 80)	12				Flecks	
ST-4	0 to 60	1 (0 to 10)	1					8
		2 (10 to 20)	2	1				
		4 (30 to 40)	2	1	1			
ST-5	0 to 68	1 (0 to 10)		1				5
		4 (30 to 40)	1					
		5 (40 to 50)	1					
		6 (50 to 60)	2				Flecks	
		7 (60 to 68)					Fleck	
ST-6	0 to 80	1 (0 to 10)	8	1				104
		2 (10 to 20)	13					
		3 (20 to 30)	10				Flecks	
		4 (30 to 40)	9				Flecks	
		5 (40 to 50)	8				Flecks	
		6 (50 to 60)	16					
		7 (60 to 70)	16				Flecks	
		8 (70 to 80)	23				Frags	
ST-7	0 to 56	1 (0 to 10)	9	4			Frags	21
		2 (10 to 20)	3				Frags	
		3 (20 to 30)	2				Frags	
		4 (30 to 40)	3					
Totals			**555**	**12**	**1**	**7**		**575**

Summary

LA 61035 is located on a colluvial slope that overlies a Los Alamos Canyon stream terrace of probable Holocene age. The colluvium appears to have been deposited from an adjacent, higher Pleistocene terrace (Drakos and Reneau 2003). The test units excavated into LA 61035 indicate that the site-associated artifacts are intermixed within the colluvium and are not in a cultural

context. As there are no intact cultural remains located at LA 61035, it is no longer considered eligible to the Register.

CONCLUSION

Ten archaeological sites with an undetermined eligibility were tested to establish whether they were eligible to the Register and LA 86532, the remains of a Homestead Era structure, was re-evaluated as not eligible based on previous consultation with the SHPO. LA 110121 was only partially tested. The western three-quarters of LA 110121 is situated in a conservation zone being established by DOE, NNSA to provide protection for Historic Properties. As a result, only the eastern quarter of LA 110121 that is situated outside the conservation zone and subject to potential impacts, was tested. The testing indicated that the artifacts associated with LA 110121 lacked spatial integrity as they were mixed in with a thin colluvial deposit. It is therefore recommended that the LA 110121 site boundary be re-established along the outer edge of the conservation zone and that the site retain its undetermined eligibility status.

Of the remaining 10 tested sites, two were assessed to be eligible and eight were assessed as not eligible to the Register. LA 21596 and LA110130 retain information important to New Mexico's history and prehistory and as such are eligible to the Register under Criterion D. All of the sites assessed as not eligible to the register lack site integrity. Ceramic and/or lithic scatter sites LA 61034, LA 61035, LA 110133, and LA 117883 are located on active colluvial slopes where the associated artifacts are part of the colluvium and lack any spatial integrity. Sites LA 86528, LA 110121, and LA 110126 are situated on eroded colluvial slopes. Artifacts associated with ceramic and lithic scatter site LA 110121 are part of the colluvium and lack spatial context. The cultural remains associated with LA 86528, a potential rockshelter, and LA 110126, a one-to- three room structure, have been severely impacted by erosional processes and the associated cultural remains are mixed in with slopewash colluvium or a surface lag. Testing revealed that the structural remains assumed to be associated with LA 110132 were natural exposed terrace cobbles and not cultural materials. As LA 110132 is no longer assessed to be a cultural site, it is not eligible to the Register.