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Title: Cultural Resource Assessment for the Department of
Energy Conveyance and Transfer Project

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**Cultural Resource Assessment
for the Department of Energy
Conveyance and Transfer Project**

Cultural Resource Assessment for the Department of Energy Conveyance and Transfer Project

Cultural Resource Survey Report No. 176

Los Alamos National Laboratory

July 2000
Survey No. 742

Prepared for the Department of Energy
Los Alamos Area Office

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Cultural Resource Assessment for the Department of Energy Conveyance and Transfer Project

ABSTRACT

PL 105-119, *The Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998*, was passed by Congress on November 26, 1997. Section 632 of this Act directs the Secretary of Energy to convey to the Incorporated County of Los Alamos, New Mexico, or its designee and to transfer to the Secretary of the Interior in trust for the Pueblo of San Ildefonso, parcels of land under the jurisdictional administrative control of the Secretary of Energy at or in the vicinity of Los Alamos National Laboratory. Based on this legislation the Department of Energy (DOE) is examining ten tracts of land proposed for the Land Conveyance and Transfer Project (LCT). In support of this effort, cultural resources investigations were conducted for all ten proposed tracts that contained a total of 1942 ha (4796 ac). This investigation resulted in the review of 820 ha (2025.5 ac) of previously inventoried properties and the intensive archaeological survey of an additional 1122 ha (2770.5 ac) of DOE managed properties. Since the completion of fieldwork, the total acreage proposed for conveyance or transfer has decreased to 1644 ha (4046 ac) as defined in the “preferred alternative” (draft Record of Decision version 4.1).

This archaeological investigation resulted in the location and documentation of 213 cultural resource sites from seven LCT tracts. Eighty-five of these sites are newly recorded and 128 have received at least some level of previous documentation. One hundred and eighty-eight of the sites are thought to have prehistoric cultural affiliations, 14 are thought to be historic, two have both prehistoric and historic components, and nine have an unknown cultural and temporal affiliation. Twenty-seven of the prehistoric sites, three of the historic sites, one site with a prehistoric/historic affiliation, and two of the sites with an unknown cultural affiliation are no longer considered eligible to the National Register of Historic Places (NRHP). They are no longer considered eligible as their potential to yield information important to history or prehistory has been exhausted through site recordation and/or testing, or they have been previously destroyed. The remaining 161 prehistoric sites, 11 historic sites, the remaining prehistoric/historic site, and the seven sites with an unknown cultural affiliation are considered eligible to the NRHP or have an undetermined eligibility. Most of these sites have been evaluated under Criterion D of the National Historic Preservation Act (NHPA), as they are likely to yield information important to New Mexico’s prehistory and/or history. Seventeen of these sites may also be eligible under Criterion C, for their distinctive characteristics of type, period, or method of construction and/or possess high artistic values. Thirteen sites may also be eligible as traditional cultural properties.

One hundred and eight of the prehistoric sites, three of the historic sites, the one site with a prehistoric/historic affiliation, and four of the sites with an unknown cultural affiliation are considered eligible to the NRHP. Conversely, 53 of the prehistoric sites, eight of the historic sites, and three of the sites with an undetermined cultural affiliation have an undetermined eligibility. Five of the sites with an undetermined eligibility recommendation (LA 86530, LA 86533, LA 86544, LA 86634, and LA 110113) have previously received a State Historic

Preservation Officer (SHPO) concurrence with being eligible under Criterion D. DOE has reassessed these sites and now believes that they require testing to determine whether they contain significant intact remains that could be important to New Mexico's prehistory and/or history.

Lands transferred from DOE to the Department of the Interior to hold in trust for San Ildefonso Pueblo is not an "undertaking" under the NHPA. Therefore no further compliance is required.

Under 36 CFR 800.5(vii), the conveyance of lands to the County of Los Alamos is an adverse effect if adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the properties' historic significance are not established. Two issues must be resolved before the transfer can be finalized. (1) Those sites that require further testing to establish NRHP eligibility must be evaluated. (2) After NRHP eligibility has been determined, preservation measures must be established for all historic properties located on land tracts going to Los Alamos County before they are transferred out of DOE ownership. A number of options exist to resolve adverse effects. These options vary from the establishment of protective covenants, to nomination to the New Mexico State Official Register, to the development of data recovery strategies for those properties that will unavoidably be destroyed through commercial and residential development.

It is recommended that DOE, the County, the SHPO, and the Advisory Council on Historic Preservation (if necessary) negotiate and formalize an agreement as to the measures that will be established to resolve adverse effects. This agreement shall be formalized before transference of the land.

Chapter 1

INTRODUCTION

Steven R. Hoagland

Los Alamos National Laboratory (LANL) is located in north-central New Mexico approximately 100 km north-northeast of Albuquerque and 40 km northwest of Santa Fe (Figure 1.1). The Department of Energy (DOE) proposes to convey properties at or in the vicinity of LANL to the Incorporated County of Los Alamos, New Mexico, or its designee and to transfer properties to the Secretary of the Interior in trust for the Pueblo of San Ildefonso. This land conveyance or transfer undertaking is directed by Section 632 of PL 105-119, *the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998*, that was passed by Congress on November 26, 1997.

In response to this Act, the DOE is examining ten tracts of land proposed for the Land Conveyance and Transfer Project (LCT). In support of this effort, cultural resources investigations were conducted for all ten tracts that contain a total of 1942 ha (4796 ac). This investigation, which represents the archaeological phase of the project, resulted in the review of 820 ha (2025.5 ac) of previously inventoried properties and the intensive archaeological survey of an additional 1122 ha (2770.5 ac) of DOE managed properties. See Table 1.1 for a listing of the ten tracts and their respective acreage.

Table 1.1. Project Area Acreage by Tract

Tract	Total Area
TA 21	105 ha (260 ac)
DP Road	20 ha (50 ac)
DOE LAAO	6 ha (15 ac)
Airport	83 ha (205 ac)
White Rock	40 ha (100 ac)
Rendija Canyon	369 ha (910 ac)
White Rock Y	219 ha (540 ac)
Site 22	< .2 ha (< 0.5 ac)
Manhattan Monument	< .2 ha (< 0.5 ac)
TA 74	1100 ha (2715 ac)
Total	1942 ha (4796 ac)

Eight of the ten tracts are scattered throughout LANL (Figure 1.2). The DOE administered Rendija Canyon Tract and the Manhattan Monument Tract are located within Los Alamos County and the Los Alamos townsite, respectively. A brief location description for each tract is presented below

The Technical Area (TA) 21 Tract is located east of the Los Alamos townsite at the eastern end of DP Mesa. It is a short distance south of State Road 502 (East Road), across the highway from the Los Alamos Airport. DP Mesa is located between DP Canyon to the north and Los Alamos Canyon to the south.

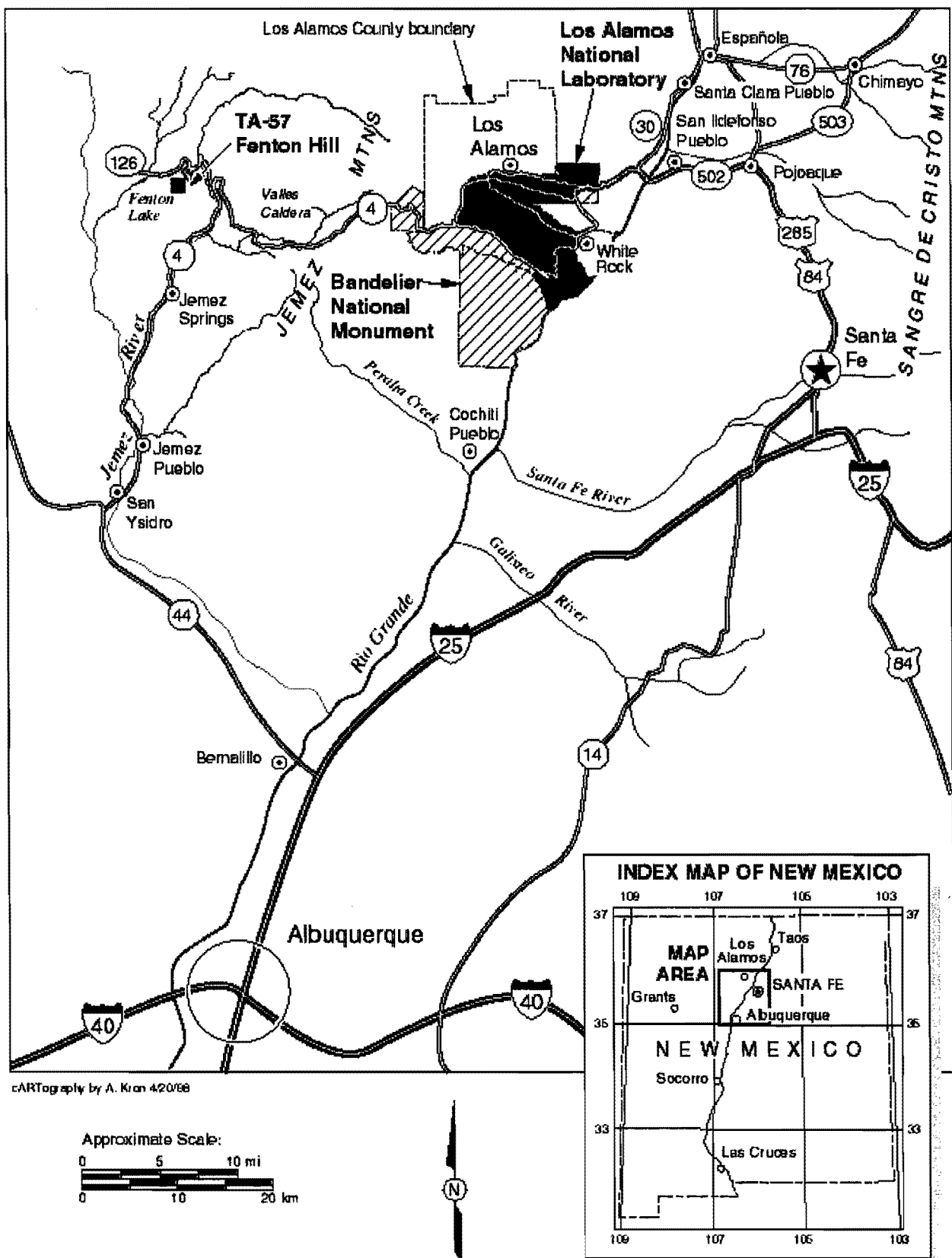


Figure 1.1. Location of Los Alamos National Laboratory.

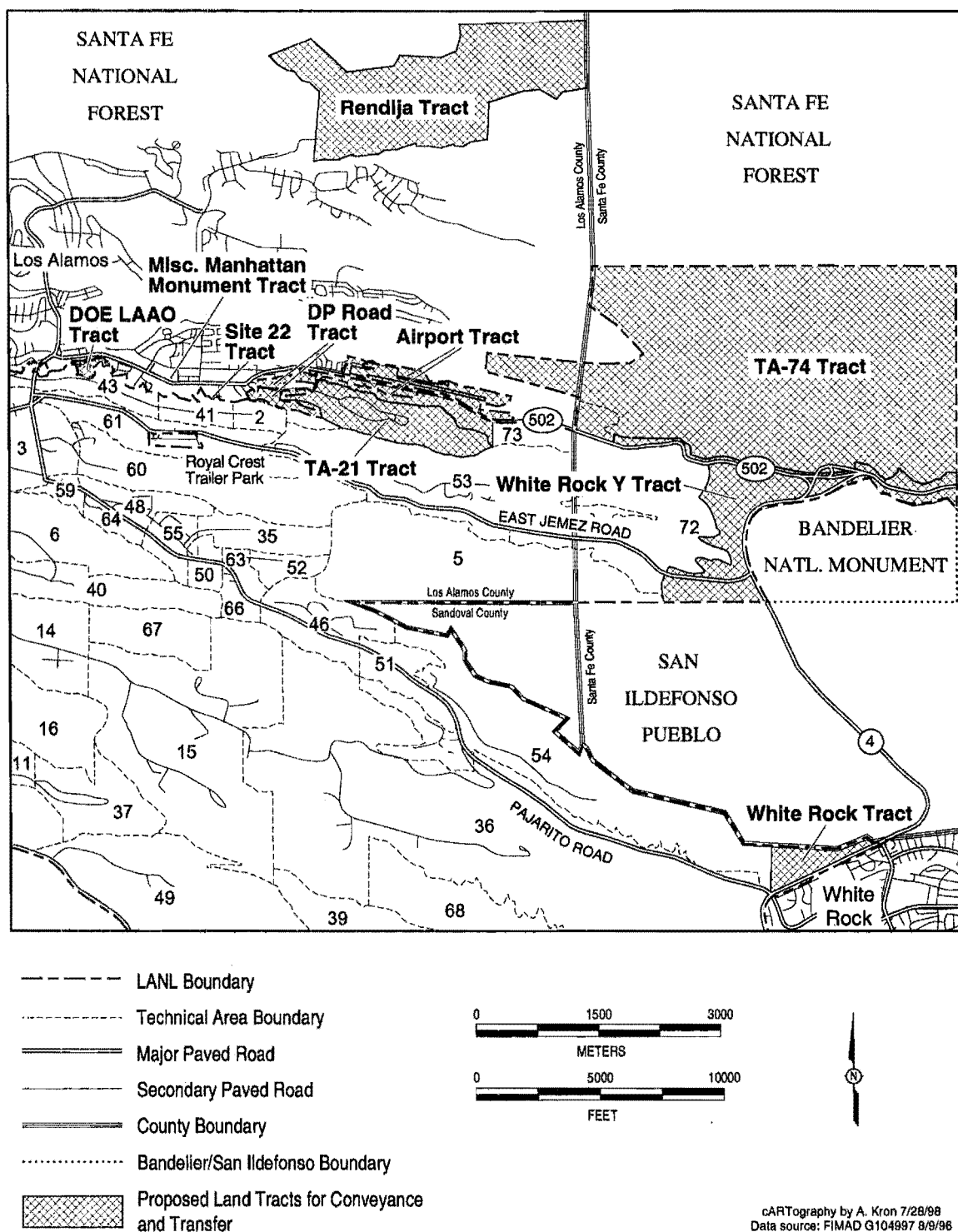


Figure 1.2. Communities, LANL TAs, and project tracts.

The DP Road Tract is situated along the southeastern edge of the Los Alamos townsite. It is located along the north and south sides of DP Road a short distance east of its intersection with Trinity Drive. The southern portion of this tract is on the mesa located directly north of Los Alamos Canyon and the northern portion is along the upper portion of DP Canyon.

The DOE Los Alamos Area Office Tract is within the Los Alamos townsite a short distance south of Trinity Road and east of the Los Alamos Medical Center. It is situated on the mesa located to the north of Los Alamos Canyon.

The Airport Tract is located east of the Los Alamos townsite. It is situated along the north and south sides of State Road 502 (East Road) a short distance west of the East Gate Business Park. This tract is on the mesa located between Pueblo Canyon to the north and DP Canyon to the south.

The White Rock Tract is located directly north of the community of White Rock and State Road 4. The western boundary runs northward from the State Road 4 and Pajarito Road intersection. Topographically it is on the tip of Mesita del Buey and within the Cañada del Buey floodplain.

The Rendija Canyon Tract is located to the north of the Los Alamos townsite's Barranca Mesa residential subdivision. It is situated within Rendija Canyon and Cabra Canyon. Barranca Mesa forms the southern boundary and Guaje Mountain forms a good portion of the northern boundary. The tract is bounded by U.S. Forest Service (USFS) property to the north, east, and west and Los Alamos County lands to the south.

The White Rock Y Tract incorporates the alignments and intersections of State Road 502 and State Road 4, and State Road 4 and East Jemez Road. It is bounded to the north by State Road 502, to the east by Bandelier National Monument, to the south by San Ildefonso Pueblo, and to the west by LANL, TA-72. The tract is located along the tip of Mesita de los Alamos and within Los Alamos Canyon to the north and Sandia Canyon to the south.

The Site 22 Tract is located within Los Alamos townsite on the northern edge of the mesa located directly north of Los Alamos Canyon. The northern edge of the tract is situated behind an adjacent commercial storage business and a fast-food restaurant. The southern edge of the tract conforms to the topography of the mesa's edge.

The Manhattan Monument Tract is located in the center of the Los Alamos townsite. It is adjacent to Ashley Pond, just north of Trinity Drive.

The TA-74 Tract is located east of the Los Alamos townsite and below the mesa upon which the townsite is built. The southern portion of TA-74 is dominated by Pueblo Canyon, the central portion by Bayo Canyon, and the northern portion by Barrancas Canyon. It is bounded by USFS property to the north, San Ildefonso Pueblo to the east, and Bandelier National Monument to the south.

The LANL Environmental, Safety, and Health Division, Ecology Group (ESH-20) Cultural Resources Team conducted the archaeological phase of this cultural resources investigation in 1998 and 1999. Project personnel included John Isaacson, W. Bruce Masse, Kari L. M. Garcia, Margaret Powers, Kirsten Campbell, Alan Madsen, Jennifer Oakley, Dean Wallace, and Yvette Tuell. The project and field directors were Bradley Vierra and Steven Hoagland.

Chapter 2

ENVIRONMENTAL SETTING

Alan L. Madsen

LANL is situated on the Pajarito Plateau, which consists of a series of narrow mesas and deep canyons that trend east-southeast from the Jemez Mountains to the Rio Grande. The defining feature of the Plateau is the Tshirege Member of the Bandelier Tuff, a massive series of ignimbrites (also called "ash-flow tuffs") erupted from the Jemez Mountains at ca. 1.22 Ma and associated with development of the Valles Caldera. The Tshirege Member buried most of the former topography between the mountains and the Rio Grande creating a new landscape and providing a temporal datum for the early Pleistocene (Reneau and McDonald 1996:3, LASL 1976:4–6). The subsequent erosion of this formation has resulted in the distinctive topography of the Pajarito Plateau and LANL.

LANL contains several distinct environmental zones. Ranging between the Rio Grande and the base of the Jemez Mountains, the elevation gradient at LANL is approximately 800 m (2400 ft); it extends from a low of 1620 m (5400 ft) to approximately 2340 m (7800 ft). This elevation change and a complex geological history has created several different climatic zones, soil types, vegetative zones, and animal habitats (Reneau and McDonald 1996:1–3; Balice 1998:4–6; LASL 1976: 2–6; Burton 1982:1–6).

There are ten land tracts at LANL that are part of the LCT. The six largest tracts (TA-21, DP Road, White Rock, Rendija Canyon, White Rock Y, and TA-74) contain archaeological sites. These tracts are situated on the eastern and southeastern areas of LANL property. The topography for the tracts is typically rugged and undulating, containing a number of mesa tops and canyon bottoms and their associated steep talus slopes and cliffs. The tracts are situated primarily at the lower elevations in the piñon-juniper woodland, with the upper portions of the tracts containing sizable stands of ponderosa pine. Soils in the canyon bottoms and on the mesa tops of the south and southeastern part of LANL are mostly Aridisols and Entisols. Throughout the tracts there is an abundance of alluvium on the steep slopes, large tuff rock outcrops, volcanic rock outcrops, talus slopes, and gravelly and sandy loams.

GEOLOGIC HISTORY

The Pajarito Plateau is located along the western part of the Rio Grande Rift, a structural depression formed by faulting, extending from southern Colorado to northern Mexico. In the LANL area, the Rift is approximately 60 km wide and includes the Española Valley, the Pajarito Plateau, and the Jemez Mountains (Reneau and McDonald 1996:1-3; LASL 1976:5-7; Nyhan et al. 1978:4–14; Burton 1982:1–10). The Rift is bounded by the Sangre de Cristo Mountains, to the east, and the southern extension of the Rocky Mountains, the Sierra Nacimientos, to the west.

The geologic formations at LANL were created by volcanism and sedimentation that began in the late Oligocene or early Miocene (18 to 25 million years ago) (Burton 1982:3–6; Reneau and

McDonald 1996:1–5). The oldest rocks in the Los Alamos area are the siltstones and sandstones of the Tesuque Formation. The formation was deposited on a broad floodplain of the Rio Grande Rift. The formation underlies the Española Valley and outcrops along the lower edges of the Puye Escarpment and White Rock Canyon.

The Tschicoma Formation overlies the Tesuque Formation in the western part of the Los Alamos area and forms the volcanic highlands of the Sierra de los Valles. This formation consists of andesites, dacites, rhyodacites, and quartz latites. Radiometric dates of the flow rocks range from 3.7 to 6.7 million years ago. The thickness of this formation is estimated to exceed 800 m (LASL 1976:5; Nyhan et al. 1978:13–15).

The Puye Formation is a fanglomerate made up of volcanic debris eroded from the volcanic pile. This formation is exposed in grayish-buff cliffs along the Puye Escarpment and White Rock Canyon. This formation is also exposed in deeper canyon cuts on the eastern edge of the Plateau. The Puye Formation consists of angular to sub rounded boulders and cobble rocks in the matrix of sand and gravels. Thin beds of ash and pumice are common. The thickness of the conglomerate exceeds 200 m near the center of the Pajarito Plateau.

The basaltic rocks of Chino Mesa are present in outcrops along White Rock Canyon and overlay the Tesuque Formation and interface to the west into the Puye Formation. The dark gray basalts originated as a series of flows and interbedded sediments that exceed a thickness of 350 m (LASL 1976:8).

The Bandelier Tuff forms the upper surface of the Pajarito Plateau. The lower member, Guaje, is an air-fall pumice with a thickness that ranges up to 10 m. The middle member, Otowi, is a massive-nonwelded rhyolite tuff laid down as an ash-flow. Its thickness is as much as 80 m. The upper member, Tshirege, is a series of ashflow and ashfall nonwelded to welded units of rhyolite tuff. It is a cliff-forming unit found in canyons cut into the Plateau. The thickness in the western part of the Plateau exceeds 250 m (LASL 1976:8; Reneau and McDonald 1996:7–16).

SOILS

In the LANL area there are several different types of soils and unconsolidated materials that overlay the natural bedrock. Out of the 10 different soil orders, only five exist on LANL property: Alfisols, Aridisols, Entisols, Inceptisols, and Mollisols. The properties used to differentiate among soil orders are those that tend to give broad climatic groupings of soils. The Entisols are an exception to this and can occur in many different kinds of climates (LASL 1976:14, Nyhan et al. 1978:14–25). The Inceptisols and Mollisols are generally confined to the higher elevations at LANL. As they make up only a small portion of LANL soils and are lacking from most of the LCT tracts, they will not be further considered here.

Approximately 80% of Los Alamos County soils can be grouped into the Alfisol, Entisol, and Aridisol soil orders. Aridisols are soils that in arid climates commonly go through prolonged periods—greater than 90 consecutive days—in which they have no water available for plants. Aridisols primarily occur at the lower elevations in the southeastern portion of the Laboratory,

and are present in most of the LCT tracts. Plant communities found in association with Aridisols at LANL consist primarily of piñon-juniper woodlands, with ephemeral grasses and forbs and other scattered plants such as cacti.

Alfisols have water available for plants during at least 90 days when the soil is warm enough for plant growth. In this area these soils occur at higher elevations along the base of the Jemez Mountains. They have significantly more clay and develop in forested areas (for example, ponderosa pine).

The Entisols have little or no evidence of development, in contrast to the Alfisols. The Entisols are found intermingled with the Aridisols and Alfisols on several low elevation areas in the southern and southeastern portions of LANL mesa and canyon landscapes. Entisols are found on the erosional surfaces of steep slopes, or on floodplains that frequently receive new deposits of alluvium (Nyhan et al. 1978:14-25; LASL 1976:14-16).

There are several different soil series at LANL. It is important to stress for this report that some of the soil series have a greater agricultural potential than others due to topographic location. The agricultural potential is based on soil depth, water capacity, and slope. This soil information comes from two different studies, one for Los Alamos County and one for Santa Fe County. As is common for Soil Conservation Service reports for adjacent counties, the names of soil series differ. Due to these differences in nomenclature, we cannot exactly match the series in each study. The TA-74 Tract and White Rock Y Tract are particularly affected by the differences in these two studies because both tracts are situated in Santa Fe County. In addition, portions of Rendija Canyon and the Airport Tracts have not been subjected to formal survey and classification. The following is a list of each soil series at LANL:

Hackroy sandy loam (Los Alamos County) – The Hackroy series consists of very shallow to shallow, well-drained soils that formed in material weathered from tuff on mesa tops. The native vegetation is mainly piñon pine, one-seed juniper, scattered ponderosa pine, and blue grama. The surface layer is a brown sandy loam about 10 cm thick. The subsoil is a reddish brown clay, gravelly clay, or clay loam, approximately 20 cm thick. The depth to tuff bedrock and the effective rooting depth are 20 to 50 cm (Nyhan et al. 1978:24-25). This soil type has a high potential for agricultural use.

Rock outcrop, mesic (Los Alamos County) – This soil series is found on moderately sloping to steep mesa tops and edge and consists of about 65% tuff rock outcrop. Native vegetation is blue grama, piñon pine, and one-seed juniper. Included in this series are about 5% very shallow, undeveloped soils on tuff bedrock, 5% Hackroy soils, and 25% narrow escarpments (Nyhan et al. 1978:28). The agricultural potential for this soil is very poor.

Rendija-Bayo complex (Los Alamos County) – This complex contains deep, well-drained soils that weathered from materials derived from tuff (Rendija series) or pumice (Bayo series). These soils are found on moderately steep to very steep mountain sideslopes vegetated by piñon-juniper woodlands. These soils have a light gray gravelly sandy loam surface layer approximately 5 cm thick. The subsoil is a dark grayish brown or light yellowish brown clay, or clay loam, about 30 cm thick underlain by a light gray loam or sandy loam substratum greater than 100 cm thick.

The depth to bedrock and the effective rooting depth are greater than 153 cm. The soils in this complex have moderate permeability, high available water capacity, and moderate to high erodibility (Nyhan et al. 1978:54-55). This soil complex has moderate to high potential for agricultural use.

Rock outcrop, steep (Los Alamos County) – This series has slopes greater than 30% on steep to very steep mesa breaks and canyon walls and consists of approximately 90% rock outcrop. The rocks are mainly tuff except at the lower end of some canyons where basalt is present. The south-facing canyon walls are steep and have little or no soil matrix or vegetation. The north-facing walls have areas of very shallow, dark-colored soils. Vegetation is ponderosa pine, spruce, and fir (Nyhan et al. 1978:28-29). This soil type has a very low agricultural potential.

Sanjue-Arriba complex (Los Alamos County) – This complex consists of deep, well-drained soils with weathered materials derived from pumice (Sanjue series) or dacites of the Puye Conglomerate (Arriba series). This complex is found on moderately steep to very steep mountain sideslopes forested with ponderosa pine. The surface layer is typically a grayish brown or light brownish gray gravelly sandy loam or loamy sand about 20 cm thick. These soils have rapid to very rapid permeability and a very low available water supply (Nyhan et al. 1978:59-60). This soil complex has a low to moderate agricultural potential.

Penistaja series (Los Alamos County and Santa Fe County) – This series consists of deep, well-drained soils that formed in material weathered from alluvial and eolian deposits on basalt, found on nearly level to gently sloping topography in the White Rock and Pajarito Acres area. Slopes range up to 5%. Native vegetation is mainly blue grama, piñon pine, and one-seed juniper. The surface layer is a brown sandy loam approximately 8 cm thick. The subsoil is a light brown clay loam and heavy fine sandy loam approximately 95 cm thick. The available water capacity is high, and the rooting depth is 150 cm or more (Nyhan et al. 1978:26; Folks 1975:41). This soil type has a high agricultural potential.

Potrillo series (Los Alamos County) – This series consists of deep, well-drained soils that formed in alluvial and colluvial sediments derived from tuff and pumice. Potrillo soils are found on level to gently sloping canyon floors and on small, flat benches along the Rio Grande Gorge. The native vegetation for this soil is blue grama, piñon pine, one-seed juniper, and annual grasses and forbs. When the Potrillo series is found in canyon floors the surface layer is typically a brown loam about 10 cm thick. The subsoil is a brown loam, or a sandy loam, about 30 cm thick. The available water capacity is high and the effective rooting depth is 150 cm or more. When the Potrillo series is found along the Rio Grande, the surface layer is typically a brown gravelly sandy loam about 15 cm thick. The subsoil is a brown gravelly sandy loam about 25 cm thick. The available water capacity is medium to high with an effective rooting depth of 150 cm or more (Nyhan et al. 1978:27). This soil type has a high agricultural potential.

Typic Ustorthents–Rock outcrop complex (Los Alamos County) – This complex consists of deep, well-drained soils that weathered from dacites and latites of the Puye Conglomerates. This complex is found on very steep to extremely steep mountain-side slopes vegetated with a piñon-juniper woodland. The surface layers are generally a pale brown stony or gravelly sandy loam approximately 5 cm thick. These soils have a rapid to very rapid permeability and a very low

available water capacity (Nyhan et al. 1978:65-66). This soil type has a low agricultural potential.

Totavi series (Los Alamos County) – This series consists of deep, well-drained soils that formed in alluvium in canyon bottoms. Native vegetation is blue grama, piñon pine, one-seed juniper, and annual grasses and forbs. The surface soil is a brown gravelly sand, or sandy loam, to 150 cm or more, with 15% to 20% gravel. The available water capacity in this soil is low (Nyhan et al. 1978:31). Totavi soils have a high agricultural potential.

Guaje sandy gravelly loam (Santa Fe County) – This type is part of the Guaje series, consisting of well-drained soils that formed in pumice and other volcanic debris on slopes and foothills. At LANL this soil is found on strongly sloping to moderately steep areas. The vegetation is mostly middle-sized grasses, shrubs, and trees. The surface layer is a light brownish gray gravelly sandy loam approximately 24 cm thick. The available water capacity is 2.5 to 5 cm (Folks 1975:27-28). Agricultural potential is moderate to high.

Tuff Rock land (Santa Fe County) – This type consists of exposed areas of welded tuff and pumice and, in places, extremely stony talus slopes. The tuff and pumice are along very steep canyon walls. During heavy storms this series yields large amounts of surface water (Folks 1975:49). The agricultural potential is very low.

Los Alamos-Silver complex (Santa Fe County) – This complex consists of the related Los Alamos series and the Silver series. The Silver series is found outside of the LCT area. The Los Alamos series consists of well-drained soils that formed in material weathered from pumice and other volcanic debris on uplands. Depth to pumice is approximately 50 to 125 cm. The soils in this complex range from level to strongly steep sloping. The vegetation is mostly mid grasses, annuals, and trees. The soil is a light brown sandy loam about 12.5 cm thick. The subsoil is a brown clay loam and light brown loam approximately 50 cm thick. Los Alamos-Silver sand loams consist of about 55% Los Alamos sandy loam and 35% Silver sandy loam. Available water capacity is between 10 and 15 cm in the Los Alamos series and 27 to 29 cm in the Silver series (Folks 1975:32-33). The agricultural potential is moderate to high.

Bluewing gravelly sandy loam (Santa Fe County) – This soil consists of excessively drained soils on terraces. This soil is present on level to gently sloping areas. The available water holding capacity is 7.5 to 10 cm. Permeability in this soil is rapid. The surface layer is grayish brown gravelly sandy loam approximately 10 cm thick. The subsoil layer is brown and about 40 cm thick (Folks 1975:15-16). This soil type has a moderate agricultural potential.

Basalt rock land (Santa Fe County) – This series is located on very steep areas. In places, where this land type is less sloping, are small benchlike areas. These areas formed as a result of slipping and falling basalt boulders that became lodged and partly stabilized. Slopes are 50% to 90%. There are several areas of exposed rock, cliffs, and ledges (Folks 1975:15). The potential for this soil type to be used for agriculture is very low.

CLIMATE

Los Alamos has a semiarid, temperate mountain climate. Mean temperatures vary with altitude, averaging 5°F (3°C) higher in and near the Rio Grande Valley (1980 m, 6500 ft) and 5°F to 10°F (-3°C to -5.5°C) lower in the nearby Jemez Mountains (2600 to 3050 m, 8500 to 10,000 ft) (Bowen 1990:3–17).

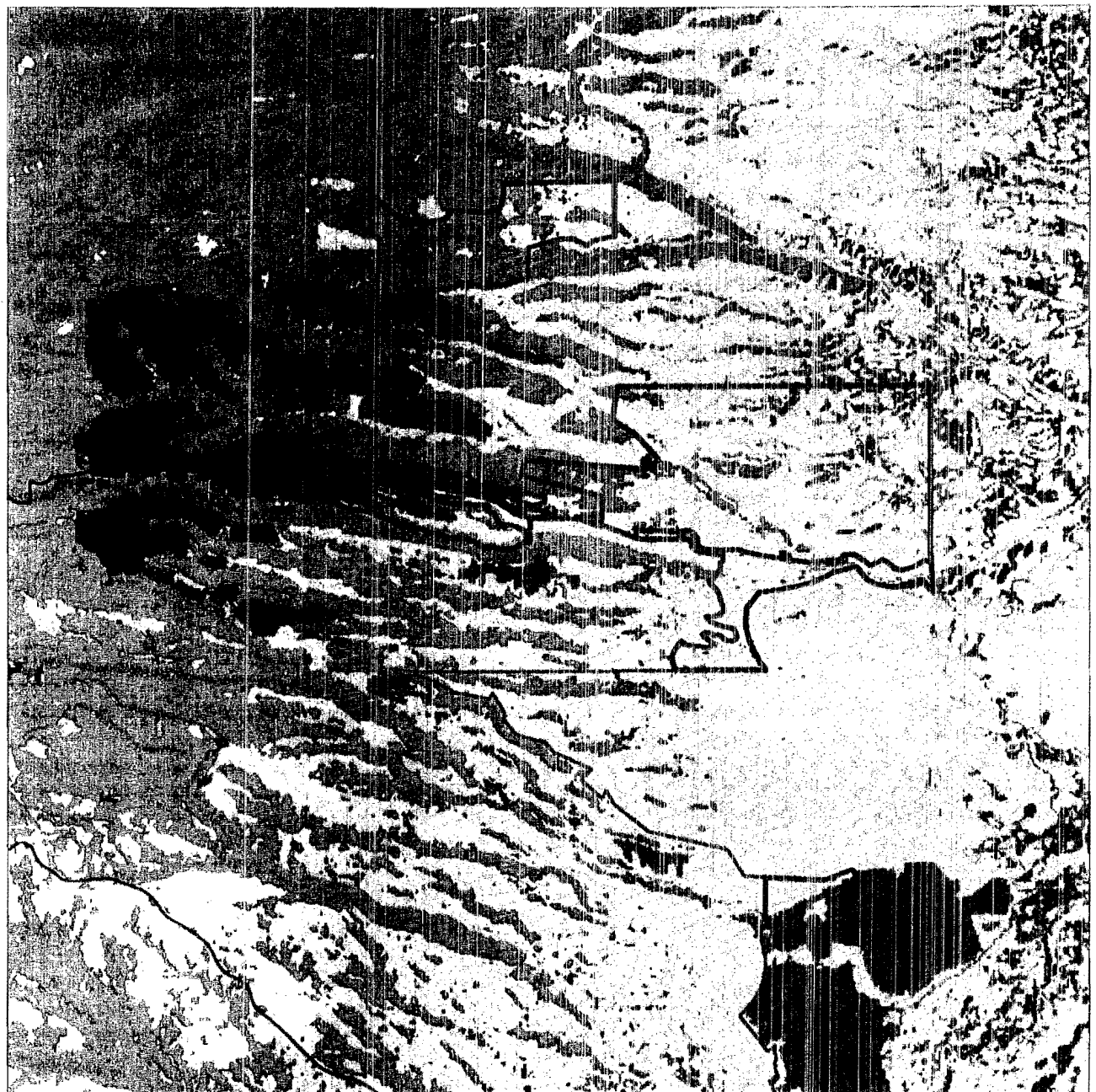
Winter temperatures range from 15°F to 25°F (-9°C to -4°C) during the night and from 30°F to 50°F (-1°C to 10°C) during the day. Cold arctic air masses occasionally invade the Los Alamos area from the north and east, but often the shallow layer of coldest air is dammed to the east by the Sangre de Cristo Mountains. Temperatures in the Los Alamos area occasionally will drop to 0°F (-18°C) or below. The freeze-free growing season of 157 days in Los Alamos is relatively short. The normal growing season in White Rock is even shorter at 145 days. Above 2743 m (9000 ft), frosts can occur during any time throughout the year (Bowen 1990:3–17; Reneau and McDonald 1996:2-3; Nyhan et al. 1978:9).

The normal annual precipitation, including rainfall and snowfall, totals approximately 46 cm (18 in.). Annual precipitation decreases rapidly toward the valley, with the normal White Rock precipitation at 33 cm (13 in.). Annual precipitation in the Jemez Mountains is normally higher than 51 cm (20 in.). The precipitation in the area is characteristic of a semiarid climate where variations in precipitation are quite large from year to year. The annual precipitation extremes range from 17.77 to 77.06 cm (6.08 to 30.34 in.) over a 69-year period (Bowen 1990: 3–17, Nyhan 1978:9–12, Balice 1998:1–12).

Over the months of July and August is the monsoon season. Convection of warm air over the Jemez Mountains causes thundershowers to develop during the afternoons and early evenings that drift out over the Pajarito Plateau, causing brief, but intense, rains (Bowen 1990:3-17). Westerly winds push the thunderstorms above the Jemez Mountains towards Los Alamos. Up to forty percent of the annual precipitation falls during these two months. Winter precipitation falls primarily as snow, with accumulation of approximately 130 cm (51 in.) seasonally. Snowfall varies considerably from year to year.

PLANT COMMUNITIES

The diversity in the ecosystems at LANL are due to the dramatic 1500-m elevation gradient from the Rio Grande on the east to the Jemez Mountains 20 km to the west, and to the many canyons with abrupt surface slope changes that parallel this gradient. The mesa orientation, solar radiation, and the differences in soils and moisture create several ecotones throughout the Pajarito Plateau. The elevation gradient and the corresponding variable climatic conditions in the LANL region are reflected by the presence of five major vegetational cover types. These major cover types are defined by their dominant tree species and by their structural characteristics as follows: juniper savannas, piñon-juniper woodlands, ponderosa pine forests, mixed conifer forests, and spruce-fir forests. Figure 2.1 illustrates the distribution of these land cover types across LANL.



0 9000 18000 Feet

0 3000 6000 Meters



- Land Transfer Tracts
- LANL Boundary
- Overstory Vegetation
- Unclassified
- Water
- Unvegetated Land
- Mixed Conifer
- Aspen/ Other Deciduous
- Ponderosa Pine
- Piñon-Juniper
- Juniper Savannah
- Grassland
- Developed

Figure 2.1. Tract Area Vegetation

In contrast to these five general cover types, several specific vegetation communities contained within the general cover types are not primarily influenced by elevation and climatic gradients. These communities are the aspen forests, grasslands, shrublands, open water, and non-vegetated lands, which are controlled instead by topographic features such as soils, geologic structures, and moisture conditions (LASL 1976; Balice 1998:4–29; Balice et al. 1997:3–29).

Juniper savannas are common between elevations of 1768 m (5800 ft) and 1951 m (6400 ft). One-seed juniper is typically the only overstory species in the juniper savanna. Grama grasses dominate the understory but blue grama, hairy grama, and false buffalo grass are also widely distributed as a codominant species. The average annual precipitation in this zone is approximately 25.4 cm (10 in.) (Balice et al. 1997:17).

Piñon-juniper woodlands are found between 1890 m (6200 ft) and 2195 m (7200 ft) in Ancho, Water, Sandia, and Los Alamos Canyons. On mesa tops they are the predominant vegetation type. Juniper is codominant with piñon in this coverage especially at lower elevations. Piñon increases in importance at higher elevations. The average annual precipitation in this area is approximately 30.5 to 35.5 cm (12 to 14 in.) (Balice et al. 1997:18).

Ponderosa pine forests extend to as low as 1890 m (6200 ft) in some of the protected canyons such as Ancho and Water. In more open canyons, like Sandia and Los Alamos, ponderosa pine is not normally found below 1921 m (6300 ft). On the mesa tops and the lower slopes of the Sierra de los Valles, ponderosa pine forests extend to 2378 m (7800 ft) in elevation. The ponderosa pine is the only overstory species throughout most of the elevation range of this community type. However, at lower elevations juniper may also be present and at higher elevations an occasional Douglas fir may be found. The understory commonly consists of kinnikinnik, Colorado barberry, and Gambel oak along with numerous species of herbs and grasses in the forb layer (Balice et al. 1997:19; Balice 1998:14–18).

Mixed conifer forests appear at higher elevations in the mountains and consist of trees that are at least 5 m (16 ft) tall. Douglas fir or white fir are the dominant overstory species, although other tree species may also be present in the overstory or midstory. On north aspects of canyons and on the canyon bottoms above 2104 m (6900 ft), the mixed conifer forest intergrades with ponderosa pine communities. In flat areas or on eastern exposures the mixed conifer forest extends to 2591 m (8500 ft). In protected drainage bottoms and on southern exposures, mixed conifer forests extend to 2744 m (9000 ft). Some limber pine may be present sporadically. The understory may consist of several shrubs, including ninebark, wild rose, cliffbush, and dwarf juniper along with numerous species of herbs and grasses. The average annual precipitation ranges from 51 to 76 cm (20 to 30 in.) (Balice et al. 1997:23; Balice 1998:17).

Spruce-fir forests are widely distributed throughout the highest elevations in northern New Mexico. They can be found on north aspects as low as 2439 m (8000 ft) and on more exposed slopes as low as 2591 m (8500 ft). The spruce-fir communities continue to the highest elevations in the Los Alamos region, approximately 3138 m (10,441 ft). Engelmann spruce and Douglas fir are the dominant tree species. Aspen is also a major overstory species on exposed slopes above 2683 m (8800 ft) that have been burned in recent decades (Balice et al. 1997:28-29, Balice 1998:23-24).

Aspen forest communities are common at mid-elevations in the mountains. They range in elevation from approximately 2700 to 3030 m (8900 to 9950 ft). Below 2820 m (9250 ft), aspen stands occupy north and northeast aspects, whereas above this elevation they are mostly found on southeast- to southwest-facing positions. Aspen is present in the overstory with at least 20% coverage. Combinations of Douglas fir, ponderosa pine, white fir, or Englemann spruce are also present but do not dominate the overstory, either as an individual species or together (Balice et al. 1997:27; Balice 1998:21-22).

Shrublands are identified by the presence of shrub species that are greater than 0.46 m (1.5 ft) in height and with at least 15% cover. Trees species are absent or, if present, only occupy less than 10% of the coverage (Balice et al. 1997:31).

Grasslands are identified as areas dominated by grasses and grasslike plant species. Forbs and other non-shrubby species may be codominant. Trees and shrubs taller than 0.46 m (1.5 ft) or less than 15% coverage are absent. Subalpine grasslands occur above 2743 m (9000 ft) on steep, southerly and southwesterly slopes. Subalpine grasslands occur in stony or bouldery soils that create conditions that are not moist enough to support the establishment of tree species. They may also be perpetuated by the effects from fire (Balice et al. 1997:32; Balice 1998:26).

ANIMAL COMMUNITIES

Several animal communities of both invertebrates and vertebrates are represented at LANL. Many species of small mammals such as mice, woodrats, moles, squirrels, and chipmunks occur in the area, some of which are specific to certain elevation gradients. Other small mammals, such as bats, are present within the Laboratory boundaries as well, and consist of at least 15 different species (Biggs et al. 1997:1-3, LASL 1976:24-27). The area also contains mule deer and elk. Little is known about other large and medium size mammals of the area, but based on observations and current studies, a minimum of 12 species of carnivores are present. Among these are black bear, mountain lion, bobcat, fox, and coyote (Biggs et al. 1997:1-3, LASL 1976:24-27).

Cold blooded animals in the area include several species of fish found in the Rio Grande. The carp, chub, white sucker, and carp-sucker are abundant in the waters of the Rio Grande on the eastern boundary of LANL. There are a few brown trout found in the area but not enough to represent a significant population, probably due to the turbidity of the river (LASL 1976:25).

There are approximately nine species of reptiles in the LANL area including small lizards and king, bull, garter, and rattlesnakes. The Jemez Mountains salamander is a rare amphibian that is found in the area (LASL 1976:25).

There are some 187 bird species from 44 families reported in the area, some of which are permanent residents and some transients. Observed permanent residents include the common raven, pygmy nuthatch, western bluebird, gray-headed junco, and rufous-sided towhee. Summer

birds include the turkey vulture, red-tailed hawk, American kestrel, peregrine falcon, chipping sparrow, and violet-green swallow (LASL 1976:25).

The ecological relationships to the topography are interesting. In the lower elevation zone (1700 to 2000 m [5610 to 6600 ft]) are coyote, rattlesnake, bobcat, gray fox, red-tailed hawk, spiny lizard, mule deer, deer mouse, and the mountain cottontail. In the middle elevation zone (2000 to 2400 m [6600 to 7920 ft]), especially in the canyons, are coyote, raccoon, mountain lion, American black bear, turkey vulture, American kestrel, golden eagle, gopher snake, rock squirrel, and mule deer. In the same elevation zone (2000 to 2400 m [6600 to 7920 ft]) on the mesa tops are American black bear, mountain lion, common raven, pygmy nuthatch, Colorado chipmunk, pine squirrel, and mule deer. In the upper elevations (2400 to 3200 m [7920 to 10,560 ft]) are American black bear, mountain lion, green-tailed towhee, hairy woodpecker, Rocky Mountain elk, mule deer, western bluebird, and gray-headed junco (LASL 1976:24–26).

ENVIRONMENTAL CHARACTERISTICS OF SPECIFIC TRACTS

TA-21 Tract

The TA-21 Tract is located on a mesa top at an elevation between 2347 m and 2380 m (7040 to 7140 ft). Although the area has been developed the overstory vegetation on this mesa top is predominantly piñon-juniper woodland with areas of ponderosa pine forest and native grasses and shrubs. Totavi gravelly loam soils are present in the bottoms of Los Alamos and DP Canyons. The mesa top is mostly comprised of the Pogna fine sandy loam soil and with exposed Bandelier Tuff. The soil types present throughout the tract range from Hackroy sandy loam, Typic Ustorthents (rock outcrop complex), Totavi gravelly loamy sand, and Pogna fine sandy loam.

DP Road Tract

The DP Road Tract is located on a mesa top in an elevation between 2347 m and 2380 m (7040 to 7140 ft). This tract is close to the TA-21 Tract and has very similar environmental characteristics. The vegetation communities at this site are predominantly piñon-juniper woodland with few areas of ponderosa pine forest. Soils in the area consist of Alfisols and rock outcrop. The soil types range from Hackroy sandy loam, rock outcrop (steep, frigid, and mesic), Typic Ustorthents (rock outcrop complex), Totavi gravelly loamy sand, and Pogna fine sandy loam. Although the tract is heavily developed, it is typified by the Pogna fine sandy loam soil type and steep rock outcrops along the canyon rim.

White Rock Tract

The White Rock Tract is located at the base of a mesa at an elevation between 2133 m and 2186 m (6400 to 6560 ft). The vegetation community in this area includes piñon-juniper woodland and juniper savannah. The soil types in this area consist of Penistaja sandy loam, Prieta silt loam, Servilleta loam, and Totavi gravelly loamy sand.

Rendija Canyon Tract

Rendija Canyon is located at an elevation between 2293 m and 2426 m (6880 and 7280 ft). Rendija Canyon is a relatively broad, flat-bottomed canyon that serves as a major drainage basin for the Jemez Mountains. The site is heavily forested with ponderosa pine, mixed conifers, and aspen. Rendija Canyon contains archaeological sites and sensitive wildlife habitat. The vegetation communities in Rendija Canyon are ponderosa pine forest and piñon-juniper woodland. The soil types in this area consist of Latas gravelly sandy loam, Boletas (Rock outcrop complex), Turkey-Cabra-Rock outcrop complex, Sanjue-Arriba complex, Rendija-Bayo complex, Canada-Bayo complex, Typic Ustorthents-Rock outcrop complex, Shell-Anesa-Rock outcrop complex, tuff rock land, dacite sandy loam, and Rocky Outcrop-Cone-Stoneliion complex.

White Rock Y Tract

The White Rock Y Tract is located at an elevation between 2107 m and 2267 m (6320 to 6800 ft). Los Alamos Canyon runs through the northern portion of this tract. However, there are several small mesas that are dissected by narrow valleys throughout the tract. The tract is lightly forested with a piñon-juniper woodland and ponderosa pine forest. The soil types in this area consist of tuff rock land, basalt rock land, and Penistaja fine sandy loam. The abundance of Bandelier Tuff outcrops makes it ideal for prehistoric cavates and rockshelters. This tract is in Santa Fe County, so the soil survey contains different definitions and soil classifications than that used previously described for Los Alamos County.

TA-74 Tract

The TA-74 Tract is located at an elevation between 2013 m and 2333 m (6040 to 7000 ft). This site is comprised of several canyons and mesas. The northern half of the site is dominated by lower Bayo Canyon and Barrancas Canyon, whereas, the southern half includes Pueblo Canyon. The area is forested by a piñon-juniper woodland with stands of ponderosa pine present along the south side of some canyons. The soil types in this tract consist mostly of Bandelier Tuff rock land, Guaje gravelly sandy loam, Los Alamos-Silver sandy loam, tuff rock land-Guaje gravelly sandy loam, and Bluewing gravelly sandy loam. This tract is also located in Santa Fe County.

Chapter 3

CULTURE HISTORY OVERVIEW

Bradley J. Vierra and Steven R. Hoagland

Overviews of the regional culture history are presented in Cordell (1979a, 1979b, 1997), Stuart and Gauthier (1981), and, most recently, Riley (1995). The chronological sequence was developed by Wendorf (1954) and later modified by Wendorf and Reed (1955) for the northern Rio Grande. Table 3.1 illustrates the regional chronologies as defined by Cordell (1979a), Irwin-Williams (1973), and Wendorf and Reed (1955). The following outline briefly summarizes each cultural period, as it is understood for the central portion of the Pajarito Plateau.

Table 3.1. Culture Historical Chronology for the Northern Rio Grande

Culture	Period	Dates
Paleoindian	Clovis	9500–9000 BC
	Folsom	9000–8000 BC
	Late Paleoindian	8000–5500 BC
Archaic	Jay	5500–4800 BC
	Bajada	4800–3200 BC
	San Jose	3200–1800 BC
	Armijo	1800–800 BC
	En Medio	800 BC–AD 400
	Trujillo	AD 400–600
	Early Developmental	AD 600–900
Ancestral Pueblo	Late Developmental	AD 900–1200
	Coalition	AD 1200–1325
	Classic	AD 1325–1600
	Spanish Colonial	AD 1600–1821
Native American, Hispanic, and Euro-American	Mexican	AD 1821–1846
	U.S. Territorial	AD 1846–1912
	Statehood to World War II	AD 1912–1945
	Recent	AD 1945–present

PALEOINDIAN PERIOD: 9,500 BC to 5500 BC

Small groups of Paleoindian hunter-gatherers may have followed bison herds up and down the Rio Grande, with trips onto the Pajarito Plateau to procure obsidian and other subsistence resources. This period is represented on LANL land by a Folsom point found by Steen (1977:7) on a mesa north of Ancho Canyon. Clovis, Folsom, and Planview points have also been identified at other locations on the Plateau (Acklen 1993, 1997; Lent et al. 1986; Traylor et al. 1990; Wiseman 1992). Obsidian obtained from Jemez Mountains sources has been found on Paleoindian sites located as far away as northern Colorado (Wilmsen 1974:114).

ARCHAIC PERIOD: 5500 BC to AD 600

Archaic hunter-gatherer groups relied on a variety of small game and plant species, while hunting with the spear and atlatl. Piñon-juniper woodlands on LANL land contain evidence of these temporary campsites as scatters of obsidian lithic tools, chipping debris, and diagnostic projectile points (Biella 1992; Moore et al. 1998; Baker and Winter 1981). These sites presumably reflect the seasonal use of these upland settings during the fall for pine nut collecting, hunting, and lithic procurement activities. Winter sites with structures have been excavated at lower elevations near Otowi at the Rio Grande (Lent 1991) and at Abiquiui Reservoir (Stiger 1986). The Late Archaic continues the hunting and gathering pattern with the addition of maize cultivation to the subsistence base. Maize has been directly dated to 2440 ± 250 BP (uncorrected; M-466; Crane and Griffen 1958) and 2410 ± 360 BP (Arizona; Long in Ford 1985) at Jemez Cave located near the Soda Dam at State Road 4.

EARLY DEVELOPMENTAL PERIOD: AD 600 to AD 900

Maize horticulturists who lived in semi-subterranean pithouses characterized the Early Developmental period. They began to make painted pottery with simple designs (e.g., Lino Gray or Kana'a Gray) and used the bow and arrow. Most habitation sites are located at lower elevations near the Rio Grande, with the Plateau continuing to be used on a seasonal basis. There is no archaeological evidence for this period at LANL.

LATE DEVELOPMENTAL PERIOD: AD 900 to AD 1200

Late Developmental horticulturists still relied to a great extent on hunting and gathering. Pithouses persisted in some places, but sites are typically small adobe masonry structures that are found at wider range of altitudes. Kawhe'e Black-on-white is a mineral-painted pottery that is produced during this time period. Indented corrugated wares are used as cooking and storage vessels. Only a few possible pithouse locations and associated artifacts have been identified on LANL land.

COALITION PERIOD: AD 1200 to AD 1325

The Coalition period saw a substantial increase in the number, size, and distribution of above-ground habitation sites, with year-round settlements expanding into upland areas on the Pajarito Plateau. The long-term process of site aggregation begins during this period, with early sites containing adobe and masonry rectangular structures with 10 to 20 rooms. These small rubble mound sites are the most common at LANL. In contrast, later sites of this period consist of large masonry enclosed plaza pueblos that contain over 100 rooms. Figure 3.1 provides site type illustrations of a Coalition roomblock (LA 4715), Late Coalition plaza pueblo (LA 4665), and Classic period plaza pueblo (LA 170). The construction of agricultural features such as terraces, gravel mulch gardens, and dams suggest an even greater reliance on horticulture. Most

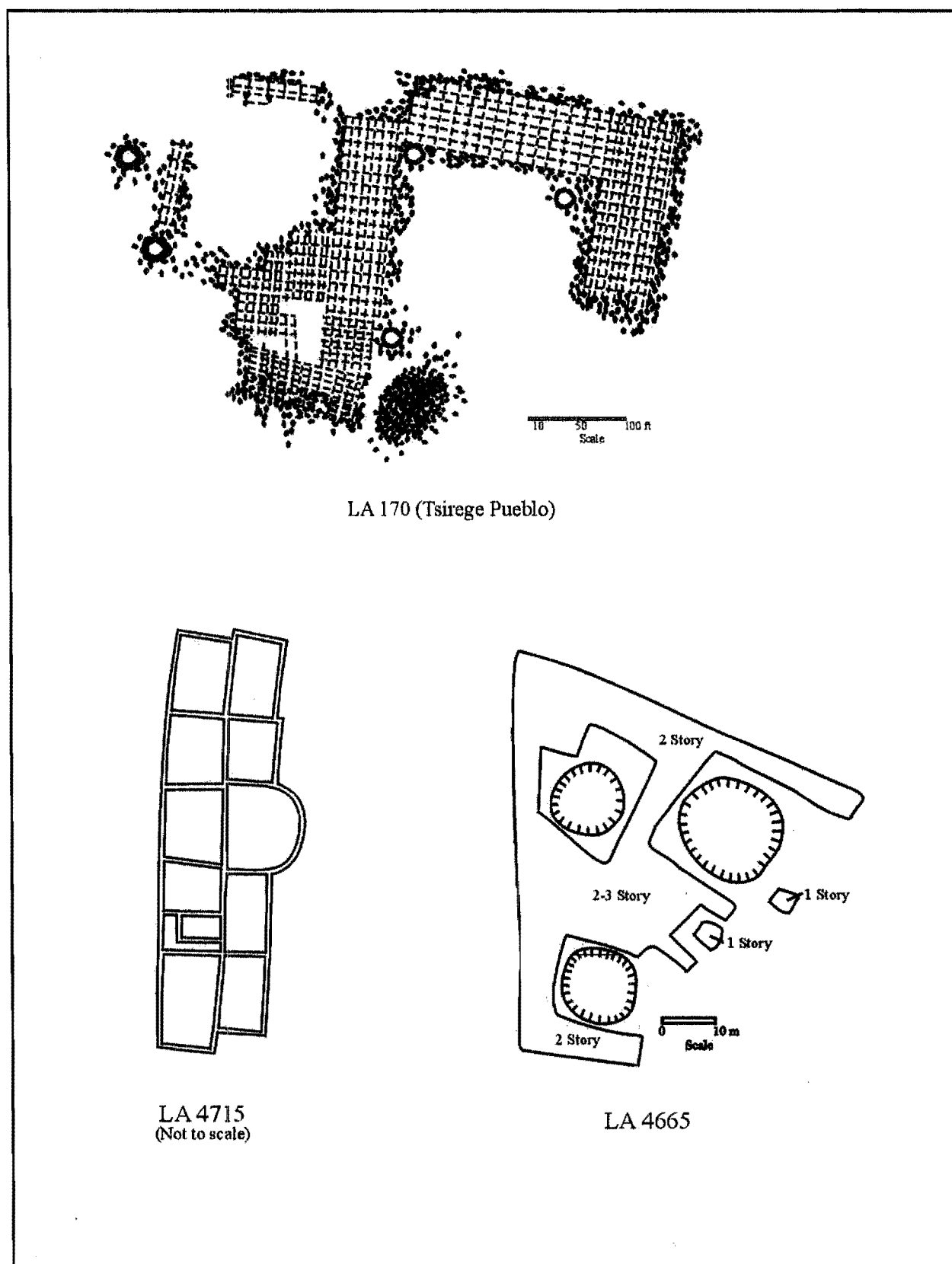


Figure 3.1. Site type illustrations for Coalition (lower left), Late Coalition (lower right), and Classic (top) periods.

researchers attribute the increase in site density to migration (Wendorf and Reed 1955, Cordell 1979b, Hill and Trierweiler 1986, Hill et al. 1996), but others see the increase in site numbers a result of local population growth (Steen 1982). The beginning of the Coalition period coincides with the shift from mineral- to organic-painted pottery, including Santa Fe Black-on-white. Ceramic cooking and storage vessels are mainly produced using a smeared-indented corrugated style.

CLASSIC PERIOD: AD 1325 to AD 1600

The Classic period is characterized by intensive maize agriculture. Ancestral Pueblo settlements on the Pajarito Plateau are aggregated into three population clusters with outlying one- to two-room fieldhouses. The central site cluster consists of four temporally overlapping sites: Tsirege, Navawi, Tsankawi, and Otowi. Otowi and Tsirege are located on LANL land. Mera (1935) suggested that the initial occupation of these pueblos had occurred during the 14th century. Tsirege, Tsankawi, and Otowi continued to be occupied during the 15th century, with only Tsirege and Tsankawi remaining by the 16th century. Oral traditions at San Ildefonso indicate that Tsankawi was the last of the Plateau pueblos to be abandoned. The introduction of glaze-painted ceramics to the south of Frijoles Canyon and the production of biscuitwares in the northern Rio Grande area mark the beginning of the Classic period. These biscuitwares include a temporal sequence from Biscuit A (Abiquiu Black-on-gray), Biscuit B (Bandelier Black-on-gray), to Biscuit C (Cuyamungue Black-on-tan). Sankawi Black-on-cream, Potsuwi'i Incised, and plainware cooking vessels are also produced during this time period. The latter utility pottery can include micaceous types. This central group of four Classic period ruins are ancestral to the Tewa speakers now living at San Ildefonso Pueblo.

SPANISH COLONIAL PERIOD: AD 1600 to AD 1821

Due to a series of droughts, the Plateau was eventually abandoned during the mid-1500s. New pueblos were occupied in the Rio Grande Valley. Although the historic period begins with Coronado's exploratory expedition up the Rio Grande in 1540–1541, most researchers date the period from about AD 1600. This date corresponds with Oñate's settlement in New Mexico and imposition of the Spanish *encomienda/estancia* system on Rio Grande populations. The Spanish controlled Pueblo pottery production requiring the manufacturing of European vessel forms and taxation jars. These jars were sized to provide specific volumes for grain taxation and often exhibited a distinctive shoulder at the mid-point of the vessel. Historic ceramic types include Tewa Polychrome, Kapo Gray or Black, and Ogapoge Polychrome. The Pueblo Indians revolted against the Spanish in 1680, with some sites on the Plateau being reoccupied during this refugee period (e.g., Nake'muu).

With the reconquest and resettlement of New Mexico by de Vargas (1693–1696), the economic and settlement systems were completely overhauled (Simmons 1969). The huge mission establishments disappeared as did the *estancias* of the *encomenderos*. In their place land was granted to dozens of Hispanic communities and individuals that worked the property themselves. Hundreds of these small landholdings were scattered throughout the *Rio Arriba* and *Rio Abajo*.

Athabaskans have been present in northwestern New Mexico since the 15th century; however, the ethnohistorical evidence for Navajos and Jicarilla Apaches in the northern Rio Grande begins with the Spanish Colonial period (Forbes 1960; Friedlander and Pinyan 1980; Marshall 1995; Marshall and Hogan 1991; Opler 1936, 1971; Tiller 1992). The Navajos primarily resided in the Gobernador region, but made periodic visits to the Rio Grande Valley and Jemez Mountains. The presence of Tewa Polychrome and Jemez obsidian at Pueblito sites attests to these contacts. Some Jicarilla groups wintered in the area of Abiquiu, with seasonal hunting and gathering trips made to the nearby mountains. Two rock rings that could possibly represent the remains of a tipi or wickiup were recorded in Rendija Canyon (Peterson and Nightengale 1993). Test excavations identified the presence of a hearth inside one of the structures that yielded a radiocarbon date of 130 ± 60 BP (Beta-58428). This would reflect a calibrated date for the feature within the 18th or 19th centuries. A single obsidian flake was the only artifact recovered. Possible Jicarilla rock ring sites with associated micaceous pottery have been reported for the Rio del Oso valley near Española (Anschuetz per. comm. 1999) and at Pecos National Monument (Gunnerson and Gunnerson 1970). Schaasfma (1977, 1992) suggests a possible Navajo affiliation for Piedra Lumbre sites in the Abiquiu area, although Carrillo (1992) considers that some of these sites are associated with local Tewa peoples.

MEXICAN PERIOD: AD 1821 to AD 1846

Mexico declared its independence from Spain in 1821, which brought about a more lenient land grant policy and expansion of the trade network (Levine et al. 1985). Trade along the Santa Fe Trail between Missouri and Santa Fe began soon after independence and dominated events in New Mexico for the next quarter-century (Connor and Skaggs 1977). This introduced some comparatively inexpensive Euro-American goods to New Mexico, which is reflected in the increase of manufactured items found on sites from this period (Moore 1993).

U.S. TERRITORIAL: AD 1846 to AD 1912

New Mexico remained a part of Mexico until war broke out with the United States. Troops led by Colonel Stephen W. Kearny raised the American flag at Santa Fe and took possession of New Mexico for the United States on 18 August 1846. Grazing and seasonal utilization of the Plateau occurred by non-Indians during the early historic periods, with the first homesteads being established on the Pajarito Plateau during the 1880s (Scurlock 1981:138). New Mexico was provided with a territorial government in 1850, and it remained a territory until it was granted statehood in 1912.

STATEHOOD TO WORLD WAR II PERIOD: AD 1912 to AD 1945

The early 1900s in New Mexico saw a continuation of traditional farming, cattle grazing, timbering, and cultural practices. Seasonal homesteading continued on the Plateau, though mostly as a supplement to established year-round residences. Hispanic and Anglo Homestead Era sites are characterized by wooden cabin and corral structures, rock or concrete cisterns, and a

scattering of debris associated with household and farming/grazing activities. In discussing the homestead occupation of current LANL lands in this report, it is noted that nearly all of the evidence for homesteading dates to the period of 1912–1945, likely reflecting response to the Enlarged Homestead Act of 1909 and the Grazing Homestead Act of 1916 (Scurlock 1981). Greater railroad and automobile use allowed for an increase in commerce and tourism, and by the 1940s, New Mexicans began to leave the village rural life for jobs in the larger cities, such as Albuquerque, or for jobs outside the state (Simmons 1993:182).

In 1942, Franklin D. Roosevelt gave the approval to develop the world's first atomic bomb. Because of its isolated location, Los Alamos, New Mexico, was selected as the site of the bomb's design and construction. This project came to be known as Project Y, a subset of the Manhattan Project. The creation of a modern town in Los Alamos influenced surrounding communities in northern New Mexico. Lands owned by the Los Alamos Ranch School and mostly Hispanic homesteaders were appropriated for use by the Manhattan Project in 1942, thus effectively ending the homesteading era on the Pajarito Plateau (LANL 1997).

Chapter 4

PAST INVESTIGATIONS

Bradley J. Vierra

Over 100 years of archaeological research has been conducted on the Pajarito Plateau. This chapter provides a brief review of this fieldwork as it pertains to the LCT area.

HEWETT AND WILSON (1900–1917)

It was Adolph Bandelier who first described the ancient ruins on the Pajarito Plateau, visiting Otowi and Tsirege in 1885 (Lange et al. 1975:58). However, it was Edgar Lee Hewett who initially investigated these sites. He described and drew site sketches of at least five sites at LANL (Hewett 1906): Otowi, Tsirege, a small pueblo located three miles west of Tsirege, the Pulsed High-Energy Radiographic Machine Emitting X-Rays (PHERMEX) site (LA 4665), and Nake'muu. Each was assigned a site number consisting of 8, 15, 16, 17, and 18, respectively. Hewett later conducted excavations at Otowi and Tsirege from ca. 1900 to 1904 (Hewett 1934). This work focused on the middens at Otowi and the midden and pueblo at Tsirege, and was done with the help of workers from San Ildefonso Pueblo.

Lucy Wilson also conducted excavations at Otowi from 1915 to 1917. Her work focused on the four northern roomblocks, with less in the southwestern roomblock (Wilson 1916a, 1916b, 1917, 1918a, 1918b). Figure 4.1 illustrates the Hewett and Wilson maps of Otowi pueblo. Both Hispanic and Pueblo workers assisted her with these excavations. The latter included workers from San Ildefonso Pueblo: Santiago, Agapito, Altilano, Facunda, and Crescencio Martinez. In addition, Pueblo women also helped at the field camp.

The current disposition of most of the Hewett collections is unknown. Nonetheless, he does mention that pottery recovered from the burials at Otowi is at the National Museum and the Museum of New Mexico (Hewett 1938:132). Wilson also states that “the very considerable result of his [Hewett] two weeks excavation is now installed in the Hall of the Southwest in the National Museum, Washington” (Wilson 1918b:291). Research into the current location of these collections reveals that the human remains recovered during Hewett’s excavations are curated at the Smithsonian Institution. There are 91 accession numbers for human remains from Otowi and 65 accession numbers for pottery vessels from Otowi. In addition, a few items are also curated at the Laboratory of Anthropology, Museum of New Mexico (LOA/MNM).

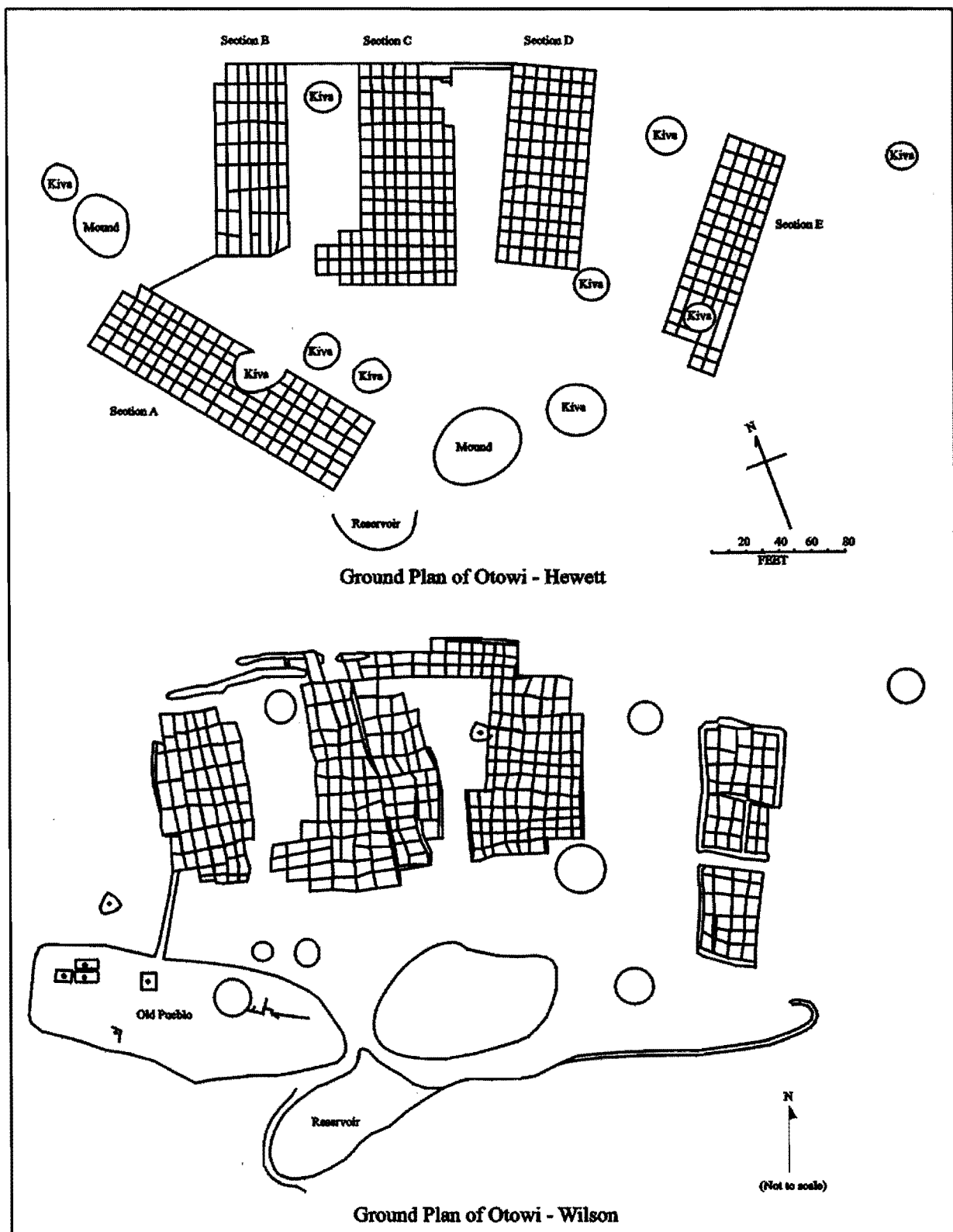


Figure 4.1. The Hewett and Wilson maps of Otowi Pueblo.

In respect to Wilson's collections, Hewett states that

the collection from Dr. Wilson's excavations went to the Commercial Museum of Philadelphia. With especial gratitude I acknowledge the recent gift of this valuable collection to our institution [Museum of New Mexico] in Santa Fe (Hewett 1938:130)

Steen also reports that the artifacts recovered from Wilson's excavations "are in the Museum of New Mexico" (Steen 1977:5). There are approximately 900 accession numbers for items from Wilson's Otowi excavations at the Museum of Indian Arts and Culture, Museum of New Mexico. In addition, Wilson's site photographs are curated at the Museum of New Mexico archives. An original copy of a J. Percy Adams' map of Wilson's work at Otowi is located at the Archeological Research Management System (ARMS), New Mexico Historic Preservation Division. This map is similar to the one published by Wilson (1916a), but has specific rooms that are outlined and marked with an "x".

H. P. MERA (1920s–1930s)

H. P. Mera conducted a series of surveys in the northern Rio Grande during the 1920s and 1930s. In the early 1930s his work focused on defining the area of biscuitware production, including visits to some of the larger pueblo sites on the Pajarito Plateau (Mera 1932, 1934). Tsirege (LA 170), Navawi (LA 257), Tsankawi (LA 211), and Otowi (Potsuwi'i; LA 169) were all visited, described, and had ceramic collections taken by Mera. Based on the relative ceramic chronologies, he suggested the initial occupation of these sites had occurred during the 14th century. Tsirege, Tsankawi, and Otowi continued to be occupied during the 15th century, with only Tsirege and Tsankawi remaining by the 16th century. The Laboratory of Anthropology (LA) was created in 1930, and it was Mera who assigned the first LA numbers to these sites. Mera visited LA 29, Little Otowi (LA 32), and Otowi (LA 169) in TA-74. The surface collections from these sites are curated at the LOA/MNM.

BANDELIER NATIONAL MONUMENT: OTOWI SECTION (1935–1962)

Jim Fulton conducted the first archaeological survey in the area of LANL. This work was done on the Ramon Vigil Grant in 1935. Steen states that a "1935 survey was made by a forester, a map was made, and then the field book was lost, so the total result is a map of about 200 site locations" (Steen 1977:5). A copy of the Fulton map is curated at the ARMS, New Mexico Historic Preservation Division. A review of this map indicates that Fulton's survey only went as far north as Mortandad Canyon. Therefore, the White Rock Tract is the only part of the LCT area included within his survey. A single site (#105) was located southeast of Tsirege; however, there is no information on what the site is, and the scale of the map is too large to determine whether it is actually inside or outside the project area.

Robert Lister conducted stabilization work at Otowi and some of the nearby cavates in 1939 (Lister 1939a, 1939b, 1939c, 1939d, 1940a, 1940b). This involved removing debris along the

outside sections of the walls from two of the large roomblocks. Approximately 250 ft of wall was exposed along the west- and/or south-facing façades. The walls were remortared and rechinked. In some cases, the initial floor of the rooms was below the modern surface. In this case backfilled materials were removed and a hole excavated through the wall to allow for interior drainage. Before and after photographs were taken of all the walls. Artifacts were collected during the project, including sherds, projectile points, clay pipes, axes, and grooved abraders (i.e., arrow shaft straighteners). Artifacts recovered during this project are curated at the Western Archaeological and Conservation Center, National Park Service (WAC/NPS).

Salvage excavations were conducted by J. W. Hendron of two sites located on the mesa north of Los Alamos Canyon. The sites were situated in the construction right-of-way for the road to Los Alamos. Potsuwi'i I is a one-room fieldhouse, and Potsuwi'i II is a ten-room pueblo. A review of the records at ARMS indicates that neither site was given an LA number. A report was never written for the first site, however, one was completed for Potsuwi'i II (Hendron 1945). The site consists of a linear, two-room-deep roomblock. Several of the east-facing rooms contain hearths, indicating that the front rooms were probably habitation rooms and the back rooms were used for storage. The walls were constructed of unshaped blocks with adobe mortar and underlain with foundations of river cobbles and adobe. Very little artifactual material was recovered from inside of the rooms; however, habitation Room 3 did appear to be burned and contained numerous burned corncob fragments. An earlier pit structure was situated below the room foundations at the southern end of the roomblock. The structure was partly filled with refuse after it had been abandoned. This room was obviously not associated with the main occupation at the site. Approximately 3000 sherds, 350 chipped stone artifacts, five metates, 10 manos, and other various artifacts were recovered from these excavations. The ceramics primarily consist of Santa Fe Black-on-white reflecting a Coalition period occupation. Artifacts recovered from the excavation of Potsuwi'i II are curated at WAC/NPS.

John Turney conducted a survey of the Otowi Section of Bandelier National Monument in 1955 (Turney 1955). The Otowi section included portions of Barrancas, Bayo, Pueblo, Otowi, Los Alamos, Sandia, and Mortandad Canyons. He visited and made surface collections of diagnostic sherds from 55 sites: LA 42, LA 169, LA 211, LA 338, LA 394, and LA 2760–LA 2999. Several sites appear to have subsequently been given new LA numbers: 2761–2764 as 8709–8712, 2968 as 8734 and 2985–2988 as 8735–8738. Two of these sites are included within the LCT area: Otowi (LA 169) and LA 394, which is a Coalition site with several mounds. Turney analyzed a total of 13,875 sherds. Table 4.1 presents the results of this analysis for the total project sites LA 169 and LA 394. As can be seen, about 40% of the sherds were identified as culinary wares, 20% as Santa Fe Black-on-white, 20% as Biscuit B, 6% as Biscuit A, 5% as Wiyo, 2% as Sankawi Black-on-cream, and 7% for other types. Most of the Santa Fe Black-on-white was present on the small linear early Coalition period sites, Wiyo Black-on-white on the late Coalition plaza pueblos, and the biscuitwares on the Classic period pueblo sites. For example, the majority of the ceramics from LA 394 are Santa Fe Black-on-white with some Wiyo Black-on-white, whereas, Biscuit B dominates the ceramics from LA 169. Artifacts collected during the survey are curated at WAC/NPS.

Table 4.1. Turney Survey Ceramic Analysis Data*

Ceramic Type	Otowi (LA 169)	LA 394	Total Project
Culinary wares	41.4	54.5	38.0
Santa Fe Black-on-white	4.5	33.3	20.7
Basket impression	0.0	0.0	0.1
Wiyo Black-on-white (plateau variant)	1.3	6.8	5.2
Wiyo Black-on-white	2.4	5.4	4.7
Biscuit A	7.7	0.0	6.3
Biscuit B	36.5	0.0	20.8
Potsuwi'i Incised	1.2	0.0	0.5
Sankawi Black-on-cream	3.0	0.0	2.0
Kwahe'e Black-on-white	0.1	0.0	0.1
Jemez Black-on-white	0.0	0.0	0.1
Little Colorado Redwares	0.0	0.0	0.1
Mesa Verde Black-on-white	0.0	0.0	0.1
Galisteo Black-on-white	0.0	0.0	0.1
Poge Black-on-white	0.1	0.0	0.1
Galisteo Glaze	0.0	0.0	0.1
Kapo Black	0.0	0.0	0.2
Rio Grande Glaze	1.0	0.0	0.7
Possible Glaze	0.6	0.0	0.4
Unidentified	0.3	0.0	0.3

* The information is provided by column percentages as given by Turney (1955).

During the 1960s, the Otowi section, including the area around Otowi Pueblo, and Mortandad Canyon was transferred from National Park Service to Los Alamos Scientific Laboratory (LASL) control.

FREDERICK WORMAN (1950–1971)

Frederick Worman was the archaeologist at the LASL from 1950 to 1971. His work focused on salvage archaeological surveys and excavations for proposed construction projects. Worman did excavate two Coalition sites within the project area. LA 4710 is a double-rowed pueblo with eight rooms located at TA-21 (Figure 4.2). No site report was written; however, there is a brief description, a site sketch map, and photographs provided by Steen (1977:54-56). The walls consisted of tuff blocks with adobe mortar. Most of the rooms along the eastern side of the pueblo contained collared hearths, presumably reflecting a domestic function; whereas, the back rooms at the site were presumably used for storage rooms.

LA 4729 was located on a bench along the southern side of Los Alamos Canyon. It consisted of a double row of ten rooms (Figure 4.2). Worman died before a site report was written; however, Steen provides a brief description, site sketch map, and photographs (Worman and Steen 1978:2–9). No hearths are noted on the map, but photographs reveal that plaster was still adhering to the walls in several rooms. LA 4729 was destroyed by a gravel borrow pit.

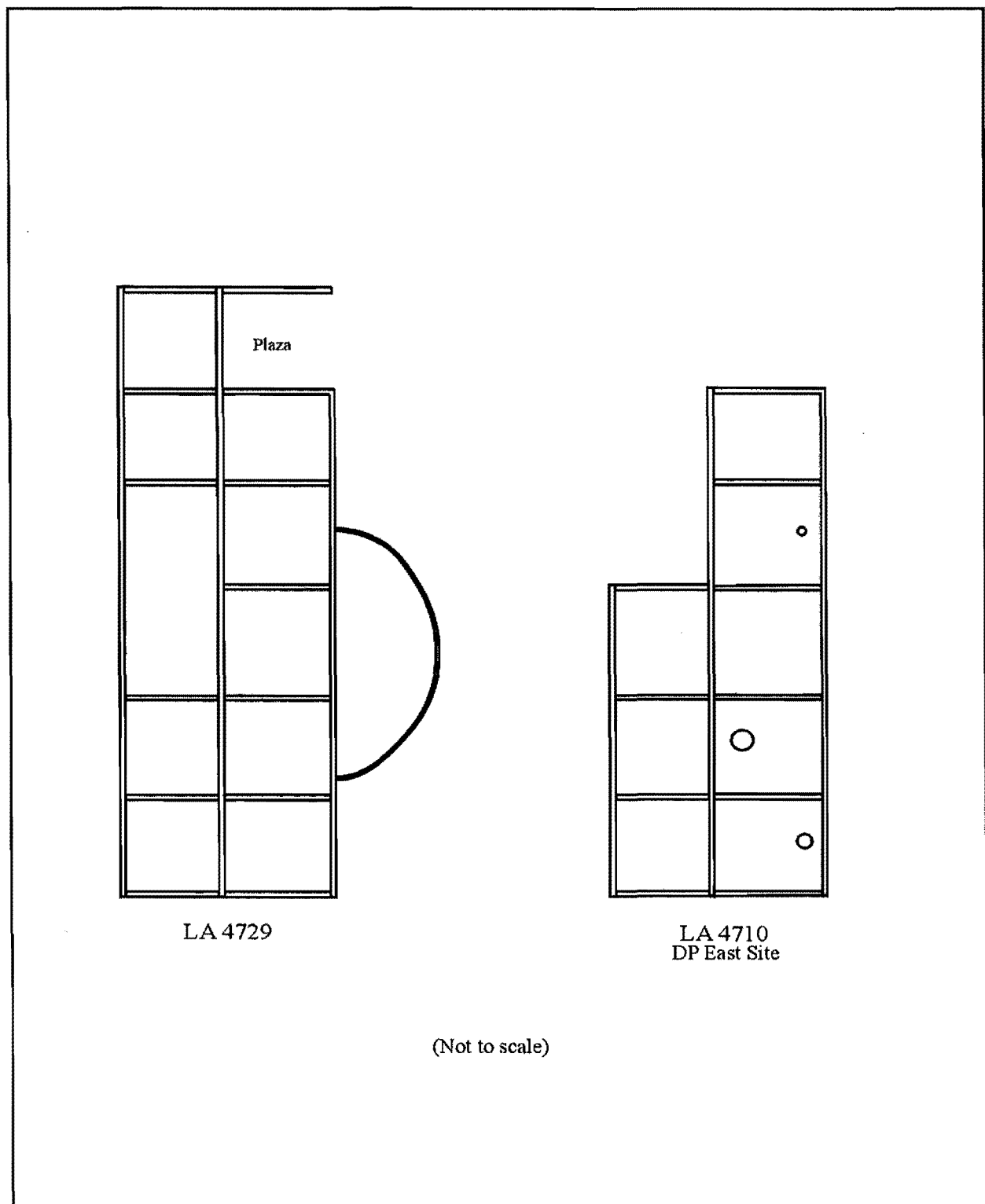


Figure 4.2. Drawing of the two sites surveyed by Frederick Worman that are in the LCT area.

Artifacts recovered from the excavations of LA 4710 and LA 4729 are curated at the LOA/MNM. A human skull fragment recovered from LA 4710 is curated at the Maxwell Museum of Anthropology, University of New Mexico.

CHARLIE STEEN (1973–1981)

Charlie Steen was the LASL archaeologist from 1973 to 1981. He conducted a three-year survey from 1973 to 1975 (Steen 1977). As stated by Hansen (1977) the project had three main objectives: 1) to evaluate and summarize the previous survey and excavation work done by Worman, 2) to survey LASL lands in anticipation of future construction projects, and 3) to recommend sites for inclusion to the National Register of Historic Places (NRHP). The survey was conducted

to locate and identify ruins that might be destroyed or damaged by future construction, the search was concentrated on the mesa tops. No particular effort was made to locate groups of cavate rooms (Steen 1977:3).

After the initial surveys, Steen's work focused on specific construction locations. He lists 37 new sites that were recorded since 1977 (Steen 1982); however, most of these were identified during the reconnaissance of the area burned by the La Mesa fire.

Within the LCT area Steen originally recorded at least 14 archaeological sites: LA 12587A–D, LA 12605, LA 14870, LA 15116, LA 15117, LA 16798, LA 3500, LA 35001 A–F, and LA 35002. These sites are located within the White Rock, White Rock Y, Rendija Canyon, and TA-74 land tracts.

PAJARITO PLATEAU ARCHEOLOGICAL PROJECT (1977–1985)

James Hill of the University of California, Los Angeles (UCLA) directed the Pajarito Plateau Research Project (PARP). This project was the first systematic archaeological survey conducted on the Plateau (Hill and Trierweiler 1986). It was organized into three phases from 1977 to 1985. A small portion of the Phase I sample survey did include open access areas on LASL lands near Otowi Pueblo and White Rock, and the Phase II survey included various sample quadrats across LASL. PARP recorded a total of 251 sites at LASL during this time period. This consists of 185 sites that were originally recorded by PARP, and an additional 66 sites that were re-recorded Mera, Worman, or Steen sites. PARP used LA numbers ranging from 21268 to 21686 and 29721 to 29797. Approximately 200,000 sherds and 60,000 lithic artifacts were collected from 246 sites. These artifacts are curated at a UCLA facility (Walsh 1999 per. comm.). Thirteen of these sites were recorded by PARP within the LCT area: LA 21439, LA 21511, LA 21584, LA 21585, LA 21591, LA 21592, LA 21593, LA 21595, LA 21596A–C, LA 21636, LA 21637, LA 21638, and LA 21639. In addition, they revisited previously recorded sites like Otowi (LA 169) and Little Otowi (LA 32).

DAVID SNOW (1983–1985)

David Snow was a contracting archaeologist to LANL from 1982 to 1985. Most of this work consisted of small clearance surveys within proposed construction areas. None of his work was conducted within the LCT.

BEVERLY LARSON (1986–1997)

Beverly Larson replaced David Snow as contracting archaeologist to LANL from 1986 to 1997. During the 1980s and early 1990s most of this work also consisted of small surveys within proposed construction zones. The first large-scale survey project conducted by the Cultural Resource Team was for the Environmental Restoration (ER) Project from 1991 to 1994. Members of the survey teams included Tim Binzen, Ellen McGehee, Steve Hoagland, Mike Hannaford, Steve Lakatos, and Kari Manz. A total of 59 sites were recorded in seven of the LCT tracts as part of the ER Project. This includes Operable Units 1049 and 1106, Table 4.2 lists the site numbers by tract.

Table 4.2. Sites Recorded within the LCT during the ER Project

Tract	LA Numbers
TA-21	86544, 110122, 110141
DP Road	86545
Airport	86533–86535
White Rock	86636, 86637
Rendija Canyon	70025, 70026, 86553, 86604–86607
White Rock Y	86634, 110113, 110115
TA-74	86528–86532, 86542, 86543, 110121, 110126–110136, 110138, 11040, 117883, 127644–127665

Jim Jorgensen conducted a cavate survey at LANL during the 1980s. He was a LANL employee who volunteered to do this project. Approximately 40 cavate sites were recorded, including sketch maps, photographs, and site forms. Several of these sites are located in Los Alamos Canyon: LA 15117, LA 16798, LA 21638, LA 21639, LA 127636, and LA 127637.

Two archaeological surveys were conducted by the Museum of New Mexico as part of a road construction project along State Road 4 and the White Rock Y in 1987 (Moore and Levine 1987; Wiseman 1987). One of the sites recorded by Moore and Levine (1987) is situated within the LCT area. LA 65007 consists of a Late Archaic lithic scatter. Testing revealed the presence of subsurface artifacts in five of the seven test pits. Most of the artifacts were limited to the surface and upper 40 cm of soil, but one test pit did yield artifacts to a depth of 90 cm (Moore 1993).

Wiseman (1987) identified 18 archaeological sites within the LCT area during his survey of the White Rock Y: LA 61033 to LA 61050. Fifteen of these sites are lithic and sherd scatters, with a single rubble mound, a rock art site, and a lithic scatter. The sites include components dating from Middle to Late Archaic, Coalition, and Classic periods. Test excavations were conducted at 11 sites, including the nine lithic and ceramic scatters, the rock art site, and the lithic scatter. The

latter site was determined to also include ceramics. The rock art site was photographed, and tracings were made of the petroglyphs. Subsurface artifacts were identified at all but two of the tested artifact scatters; however, these items were primarily limited to the upper 10 cm of sediment. Buried pithouses were identified in two separate areas at the east end of site LA 61041. These pithouses were subsequently given new site numbers (LA 65420 and LA 65421). They are associated with Santa Fe Black-on-white ceramics, and therefore appear to date to the Coalition and not the earlier Developmental period.

An archaeological survey was conducted for the proposed Bason Land Exchange in Rendija Canyon in 1992 (Hill 1992). Thirty archaeological sites were recorded within the LCT area: LA 85402 to LA 85870. Most of these sites consist of fieldhouses, with three rock features, a lithic and ceramic scatter, a lithic scatter, a wagon trail, a possible tipi ring, and a homestead. The fieldhouses date to the Coalition and Classic periods, and the artifact scatters to the Coalition and Middle Archaic periods. Twenty-six of the 30 sites were subsequently tested, and an additional six sites were also located and tested (LA 99391 to LA 99397; Peterson and Nightengale 1993). Sixteen of these sites were considered eligible consisting of 12 fieldhouses, two lithic scatters, and two tipi ring sites.

LANL SURVEY DATA

As of 1997, a total of approximately 16,000 acres had been 100% surveyed and an additional 5500 acres unsystematically surveyed at LANL. The former figure represents about 57% of the land area at LANL. A total of 1595 sites have been recorded, for a site density of about 0.1 sites per acre or 24.8 sites per km². This compares with the PARP figure of 21.8 sites per km².

Table 4.3 presents a contingency table of survey team by site type. These survey teams consist of Steen, PARP, and LANL. The figures for Steen and LANL include sites that they originally recorded; whereas, the PARP figure includes sites that were both originally recorded and revisited by PARP. This was done because their survey represents specific sample quadrats. As can be seen, there is a significant difference in the distribution of site types by survey team ($\chi^2 = 282.9$, $df = 12$, $p = <0.001$). Adjusted residuals were therefore calculated to determine which of the contingency table cells were contributing to the significant chi-square value. Adjusted residuals greater than 1.96 or -1.96 are significant at the .05 level. There were significantly more small pueblos and plaza pueblos recorded by Steen, as compared to more artifact scatters and plaza pueblos identified by PARP and more artifact scatters, cavates, prehistoric other, and historic sites recorded by LANL. The results reflect the differing project objectives, site definitions, and survey techniques used by each group. Steen conducted these surveys alone and used a meandering survey technique that emphasized the identification of large rubble mounds. In contrast, PARP teams recorded a variety of prehistoric artifact scatters and pueblo habitation sites, whereas, LANL teams identified a range of prehistoric and historic sites, including smaller sites like trails and water-control features.

Table 4.3. Survey Team by Site Type

Site Type	Steen	PARP	LANL	Total
Artifact scatter	14* -8.0	73 5.7	161 2.7	248
One- to three-room fieldhouse	102 0.9	57 -1.0	208 0.0	367
Pueblo roomblock (linear)	141 10.8	53 1.1	77 -10.4	271
Plaza pueblo (L-shaped, U-shaped, and enclosed)	29 5.0	19 3.8	4 -7.3	52
Cavate	33 -2.9	18 -3.0	138 4.9	189
Prehistoric other	25 -4.1	21 -2.2	136 5.3	182
Historic sites	35 -0.5	10 -3.5	99 3.1	144
TOTAL	379	251	823	1453

Chi-square = 282.9, df = 12, $p = <0.001$

*Upper number is cell frequency and lower number is adjusted residual value. Significant positive adjusted residual values are highlighted in bold. This table includes sites that were originally recorded and revisited by PARP.

Chapter 5

RESEARCH ISSUES

Bradley J. Vierra and W. Bruce Masse

Approximately 1600 archaeological sites have been identified at LANL. Some of these sites consist of artifact scatters that reflect the ephemeral remains of temporary campsites, while others are large rubble mounds that represent the collapsed remains of multi-story pueblos. Together they reveal a story of over 10,000 years of human occupation on the Pajarito Plateau. Two hundred and thirteen of these sites are located within the 1942 ha (4796 ac) of LCT lands. Of the 10 separate parcels within the LCT lands, archaeological sites have been identified in the six larger land tracts.

As Cordell's (1997) overview of Southwestern prehistory states, the variation seen in Southwestern prehistoric societies is most likely due to differing responses to resource unpredictability. Working with this assumption, several recent studies on the Pajarito Plateau have attempted to address how environmental stress and resource unpredictability affect these societies (Hill et al. 1996; Kohler 1989; Kohler and Linse 1993; Orcutt 1991; Powers and Orcutt 1999; Walsh 1998). All of these studies have attempted to understand the cultural dynamics of the Coalition and Classic periods on the Pajarito Plateau. Much of this research indicates that there is a succession of settlement types from the Coalition to Classic periods culminating in an aggregated system with a smaller population and a broader subsistence base that is more heavily dependent on maize agriculture. On the other hand, little attention has been paid to understanding the seasonal use of the Plateau by Archaic populations (Biella 1992; Leach 1981; Moore et al. 1998).

The LCT survey provides us with the opportunity to study a small portion of the Pajarito Plateau. The 213 archaeological sites surveyed represent about 13% of the total number at LANL. These sites are primarily distributed across the piñon-juniper zones, but also include the ponderosa forest in Rendija Canyon. Site types range from surface artifact scatters to large plaza pueblos that date from Archaic through historic time periods. Information on approximately 19,000 artifacts was collected during the infield analyses.

This chapter presents a series of research issues that are concerned with understanding prehistoric land-use patterns, site function, and technology. Survey and infield analysis data will be used to evaluate the specific questions presented below. The realization here is that data obtained from the LCT survey may not be enough in itself to provide satisfactory answers for all these questions; however, the very act of framing these questions will help guide future research and management at LANL.

PALEOINDIAN LAND USE ON THE PLATEAU

There is very little evidence for a Paleoindian occupation on the Pajarito Plateau (10,000 BC to 5500 BC). What has been identified is often limited to isolated projectile points. For example, Steen (1977) notes the presence of a Folsom point on the mesa north of Ancho Canyon and Traylor et al. (1990) identified a Clovis point from the mesa south of Capulin Canyon. Clovis and Folsom points have also been identified near Polvadera Peak to the north of LANL (Acklen 1993, 1997; Lent et al. 1986). These points were manufactured on local Cerro Pedernal chert and Polvadera Peak obsidian. Lastly, a single Plainview point was recovered from test excavations conducted on a large artifact scatter (LA 61041) in the White Rock Y (Wiseman 1992). These upland settings were presumably used on a seasonal basis for the exploitation of subsistence and lithic resources.

Question 1: Is there any evidence of a Paleoindian presence within the project area?

Question 2: If present, is the Paleoindian presence limited to an isolated point, or is there evidence of a temporary campsite?

ARCHAIC LAND USE ON THE PLATEAU

The Archaic occupation (5500 BC to AD 600) on the Pajarito Plateau is primarily represented by surface obsidian artifact scatters that represent the remains of temporary campsites. These sites presumably reflect a seasonal pattern of upland resource exploitation during the fall for piñon nut collecting, hunting and lithic raw material procurement (e.g., see Baker and Winter 1981; Moore et al. 1998). Vierra's (1987) regional study of Archaic mobility patterns indicates that the Jemez Mountains area may have been characterized by low levels of occupational intensity during the Early and Middle Archaic period, followed by a marked peak in occupation during the Late Archaic.

Only one Archaic site has been excavated at LANL. LA 70029 consists of a surface lithic scatter located on a mesita overlooking Cañada del Buey. Biella's (1992) study revealed that the site represents a series of episodic occupations dating to the Late Archaic (Armijo and En Medio phases). The assemblage was dominated by the by-products of obsidian biface tool manufacturing activities. Otherwise, no ground stone or features were associated with the Archaic component at the site.

Moore et al. (1998) also excavated a stratified Archaic site along State Road 502 near the confluence of Los Alamos and Guaje canyons. Three separate Late Archaic components were identified at the site, with most of the occupation dating to the Armijo phase. Excavations revealed the presence of several hearths and a lithic assemblage that also emphasize the production/maintenance of obsidian bifaces; however, macrobotanical remains recovered from the site indicate a possible fall occupation, and the presence of rabbit and deer bone reflects hunting activities.

Recent survey work in Mortandand Canyon (Knight et al. 2000) has yielded evidence of a large, buried Archaic lithic scatter (LA 70023) situated in the alluvial fill of the canyon bottom. The site was primarily noticeable along a road cut, some 10 to 15 cm below the present ground surface. Evidence from the road cut suggests that the site is nearly 1100 m in length and presumably 30 to 60 m in width, with at least six distinct concentrations of artifacts but no obvious features. The physical setting of LA 70023 in the canyon bottom raises the possibility that other sizable undocumented archaic sites are present in the previously surveyed portions of LANL, but have not yet been identified due to burial in the canyon alluvial fill.

Questions 3: Do Late Archaic sites dominate the Archaic archaeological record of the project area?

Question 4: Are most of the Archaic sites situated in the piñon-juniper zone?

Question 5: Is there any evidence for hearths that could potentially yield information on dating, subsistence, and season of occupation?

Question 6: Is there any possible evidence for the presence of habitation structures?

Question 7: Is the lithic assemblage characterized by the production and maintenance of obsidian bifacial tools?

Question 8: What is the likelihood that currently undocumented substantive Archaic sites are present in the alluvial fills of LCT canyons?

ANCESTRAL PUEBLO LAND USE ON THE PLATEAU

Following the Archaic period, there is little evidence for the occupation of the Pajarito Plateau during the succeeding Developmental period (ca. AD 600 to AD 1200). Only a few pithouse locations and associated artifact scatters have been identified at LANL.

Question 9: Is there any evidence for Developmental period sites in the project area, and if so, what does this evidence consist of?

The lack of Developmental period sites contrasts markedly with the expansion of Puebloan populations on to the Plateau during the succeeding Coalition period (AD 1200 to AD 1325) (Hill et al. 1996; Orcutt 1981; Stuart and Gauthier 1981). Numerous small rubble mounds dot the LANL landscape reflecting the presence of small linear roomblocks that are typical of the Coalition period. These sites often contain two rows of about 10 rooms that face towards the east. One kiva and a midden might be present in front of the pueblo (Steen 1978, 1982; Worman and Steen 1978). Larger plaza pueblos that contain approximately 100 rooms appear later in this period. Examples are LA 394 adjacent to Los Alamos Canyon, LA 4619 on Mesita del Buey, and LA 4665 (PHERMEX Site) on Mesita del Potrillo.

During the succeeding Classic period (AD 1325 to AD 1600) many of these mesa top sites are abandoned with most of the population aggregating into several large plaza pueblos. This aggregation includes Navawi, Otowi, Tsirege, and Tsankawi in relative order of site occupation (Mera 1935). Nonetheless, Hewett's excavations at the latter three sites and Wilson's work at Otowi have provided little information on individual site histories (Hewett 1906, 1934; Wilson 1916a, 1917, 1918b). Little Otowi also represents an early Classic period pueblo that is located near Otowi and presumably overlaps with the initial occupation at that site.

Recent archaeological studies have focused on understanding this long-term process of community aggregation and its social and economic implications. For example, Kohler (1989) has proposed an aggregation model that suggests a long-term process of regional population packing, depletion of indigenous flora and fauna, and agricultural intensification that conditions site aggregation. He sees several competitive advantages for aggregation: (1) it facilitates the process of reallocating land across generations, (2) it facilitates the process of sharing food, and (3) since aggregates were regularly spaced within defined boundaries, they offer more defendable territories.

Hill et al. (1996), Hill and Trierweiler (1986), and Orcutt (1981) also assume a population-resource-imbalance model involving short-term and long-term environmental degradation, agricultural intensification, and site aggregation. They offer several testable propositions concerning this long-term process, involving information on changes in site distribution and assemblage composition.

How are these changes in settlement organization, agricultural production systems, and agricultural land-use practices reflected in the archaeological record of the Coalition and Classic periods? The long-term pattern of regional site aggregation can be represented in several ways (Hill et al. 1996; Orcutt 1981, 1993, 1999).

Question 10: Is there a shift towards larger-sized pueblos through time?

Question 11: Are there fewer habitation sites through time?

Question 12: Is there an increase in the regular spacing of these sites through time?

Important changes in settlement distribution are expected to occur with increasing agricultural productivity, including the expansion of sites into new areas (Hill et al. 1996; Orcutt 1981, 1993, 1999; Preucel 1988; Toll 1995).

Question 13: Are Classic period habitation sites located in areas with greater agricultural productivity?

Question 14: Is there an increase in the number of landforms and soil types used for agricultural sites through time?

Question 15: Is there an increase in the number of fieldhouses and agricultural features through time?

Question 16: Does the distance between fieldhouses and habitation sites increase through time, including the increased use of higher elevations?

The function and temporal usage of the many cavate structures at LANL and throughout the Pajarito Plateau are poorly known. Individual cavates are assumed to have functioned as habitation, storage, and/or ceremonial rooms during portions of the Coalition and Classic periods. Cavates can contain unique features and architectural details not known for seemingly contemporaneous free-standing pueblos, such as the intentional smoke-blackening of ceilings and the upper portions of walls, and a distinctive petroglyph style scratched into these smoked walls and ceilings. Detailed studies of cavate structures at Bandelier National Monument (Toll 1995) have led to some preliminary conclusions regarding cavates, but for the most part questions regarding both function and usage remain largely unanswered. There is some likelihood that groups of cavates are spatially and temporally related to nearby large, free-standing pueblos, but even the timing and nature of these relationships are uncertain. For example, do cavates represent the abodes of certain specific social groups within an individual Pueblo community?...seasonal habitations of entire Pueblo communities?...places of temporary refuge?...the fulfillment of certain religious or cosmological belief?...or perhaps a combination of these purposes?

Question 17: How do groups of cavates appear to relate spatially and temporally to free-standing pueblos?

Question 18: Is there a change in the nature and distribution of cavates through time?

Question 19: Do isolated cavates exhibit any noticeable differences in size, shape, or internal features from the characteristics observed in groups of cavates?

Question 20: What is the distribution of internal (inside cavate) petroglyph numbers and motifs among the various cavate groups and isolated cavates?

Question 21: What is the relationship between external petroglyphs and cavates in terms of proximity and the nature of motifs?

Besides changes in settlement organization and distribution, we can also expect important changes in ceramic and lithic technology to occur with an increasing dependence on agriculture and a greater reliance on stored foods (Hard et al. 1996; Head 1988, 1999; Hill et al. 1996; Kohler and Gray 1993; Root and Harro 1993; Vierra 1993a and b; Vint 1998).

Question 22: Is there an increase in the relative proportion of utility jar vessels through time?

Question 23: Is there a greater emphasis on the expedient flake component of the chipped stone technology through time?

Question 24: Is there a decrease in hunting-related tools through time?

Question 25: Is there an increase in mano grinding surface area through time and how does this correlate with changes in metate form?

Regional exchange can be used as a buffering mechanism for reducing environmental uncertainty and agricultural risk. In addition, competition and territoriality can limit access to subsistence and raw material sources distributed across the landscape (Hill et al. 1996; Vint 1998; Walsh 1998).

Question 26: Are there changes in the presence of nonlocal lithic material and ceramic types that could reflect shifts in Puebloan interaction spheres and territoriality through time?

ATHABASKAN LAND USE ON THE PLATEAU

Athabaskans have been present in northwestern New Mexico since the 15th century; however, the ethnohistorical evidence for Navajos and Jicarilla Apaches in the northern Rio Grande begins with the Spanish Colonial period (Forbes 1960; Friedlander and Pinyan 1980; Marshall 1995; Marshall and Hogan 1991; Opler 1936, 1971; Tiller 1992). The Navajos primarily resided in the Gobernador region, but made periodic visits to the Rio Grande Valley and Jemez Mountains. Some Jicarilla groups wintered in the area of Abiquiu, with seasonal hunting and gathering trips made to the nearby mountains. Possible Athabaskan rock ring sites have been recorded in Rendija Canyon (Peterson and Nightengale 1993).

Questions 27: Is there any evidence of Athabaskan sites in the project area, and if so, what does this evidence consist of?

HISTORIC LAND USE ON THE PLATEAU

In addition to research issues relating to the prehistory of the area, it is also important to consider the research potential of the historic use of the Plateau during the Spanish Colonial, Mexican, and Territorial periods (ca. AD 1600 to AD 1912), and the homestead occupations that may have taken place during the late Territorial and New Mexico Statehood periods (ca. AD 1880 to AD 1943). Historic use of the project area by Native American and non-Native American groups is poorly documented, especially when compared with other areas of New Mexico. These upland areas continued to be used for agricultural purposes, as well as for seasonal hunting and gathering and religious pilgrimages (Friedlander and Pinyan 1980; Martinez pers. comm. 1999). By the turn of the century, Hispanic homesteaders were living on the Plateau. Farming, sheep/cattle grazing, logging, and mineral prospecting were important economic activities (McGehee et al. n.d.; McGehee and Larson 1993; Scurlock 1981:138). Two homesteader cabins have been excavated at LANL, the Romero (LA 16806) and Vigil and Montoya cabins (LA 70028) (McGehee and Larson 1993; McGehee et al. n.d.; Foxx and Tierney 1999). Ashley Pond founded the Los Alamos Ranch School in 1918. By the 1930s, the school had grown to include about 50 students. Eventually the lands owned by the Los Alamos Ranch School and mostly

Hispanic homesteaders were appropriated for use by the Manhattan Project in 1942 (LANL 1997).

Research questions concerning a regional pattern of historic land use include the following:

Question 28: What evidence is there for this historic use of the project area before the homestead occupation, and what is the nature of that evidence?

Question 29: What evidence is there for the historic use of the project area during the late Territorial and New Mexico Statehood periods?

Question 30: What types of activities were carried out at the homestead sites and during what seasons?

Question 31: How do these homestead activities relate to subsistence and the local economy?

Question 32: Which ethnic populations utilized the project area before and during the late Territorial and New Mexico Statehood periods, and what indicators are there for interaction between these ethnic populations?

Chapter 6

FIELD METHODS

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SURVEY STRATEGY

The LCT involves the examination of 10 separate land tracts for their potential to be conveyed to the County of Los Alamos or to be transferred to the Secretary of the Interior, in trust for San Ildefonso Pueblo. The project tracts vary greatly in size with their combined areas calculated to be approximately 4796 acres. See Table 5.1 for individual tract acreage. All areas that had not been previously inventoried or that were deemed to have had an inadequate inventory were surveyed for this project. Areas within the tracts that were considered by ESH-20 archaeologists to have had a previous adequate 100% pedestrian survey or a 100% pedestrian survey and site testing program were not re-inventoried during the survey phase of this project. In general, the results, site documentation, and recommendations for these previous studies were accepted as documented. However, cultural resource sites within these areas that appeared to have records with either questionable or limited information were re-visited, assessed, and, when appropriate, site documentation was updated or the site was completely recorded. Minimally the site revisit resulted in an infield artifact analysis. Table 5.1 lists the approximate tract acreage that has received previous good quality inventories and the tract acreage that was surveyed during the field phase of this project.

Table 6.1. Project and Survey Area Acreage

Tract	Total Area	Area Previously Surveyed	New Area Surveyed for LCT
TA-21	105 ha (260 ac)	105 ha (260 ac)	0
DP Road	20 ha (50 ac)	15 ha (37.5 ac)	5 ha (12.5 ac)
DOE LAAO	6 ha (15 ac)	4 ha (10 ac)	2 ha (5 ac)
Airport	83 ha (205 ac)	83 ha (205 ac)	0
White Rock	40 ha (100 ac)	35 ha (88 ac)	5 ha (12 ac)
Rendija Canyon	369 ha (910 ac)	247 ha (610 ac)	122 ha (300 ac)
White Rock Y	219 ha (540 ac)	55 ha (135 ac)	164 ha (405 ac)
Site 22	< .2 ha (< 0.5 ac)	< .2 ha (< 0.5 ac)	0
Manhattan Monument	< .2 ha (< 0.5 ac)	< .2 ha (< 0.5 ac)	0
TA-74	1100 ha (2715 ac)	275 ha (679 ac)	824 ha (2036 ac)
Total	1942 ha (4796 ac)	820 ha (2025.5 ac)	1122 ha (2770.5 ac)

The previous adequate cultural resource investigations for project areas were conducted between 1987 to 1997. Table 5.2 shows site number, site type, site cultural affiliation, and site recording history. See the list at the end of the table for the abbreviations and acronyms used in the last column.

Table 6.2. Cultural Resource Site Recording History**Cultural Resource Sites for the TA-21 Tract**

Site Number	Site Type	Cultural Affiliation	Recording History
LA 4710	single roomblock pueblo	Coalition period	Worman, excavated
LA 86544	rock enclosure	NM Statehood	ER OU 1106, SHPO Review 4/6/92
LA 110122	rockshelter	Unknown	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110141	Mattie Brook Trail	Historic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 127624 Q 244	Los Alamos Bench Trail	Manhattan Project	Documented for LCT

Cultural Resource Site for the DP Road Tract

Site Number	Site Type	Cultural Affiliation	Recording History
LA 86545	cavate	Coalition period	ER OU 1106, SHPO review 4/6/92

Cultural Resource Sites for the Airport Tract

Site Number	Site Type	Cultural Affiliation	Recording History
LA 86533	lithic scatter	Late Archaic period	ER OU 1071, SHPO review 5/10/93
LA 86534	single roomblock pueblo	Coalition period	ER OU 1106, SHPO review 4/6/92
LA 86535	trash scatter	Manhattan Project Era	ER OU 1106, SHPO review 4/6/92

Cultural Resource Sites for the White Rock Tract

Site Number	Site Type	Cultural Affiliation	Recording History
LA 12587 LA 12587-C	artifact scatter/single roomblock pueblo	Archaic/Coalition period	Steen, ER OU 1148, ER re-recording not submitted to SHPO
LA 86636	one- to three-room structure	Coalition period	ER OU 1148, not previously submitted to SHPO
LA 86637	one- to three-room structure/artifact scatter	Classic period/Archaic-Historic periods	ER OU 1148, not previously submitted to SHPO
LA 127625 K 170	artifact scatter	Coalition/Classic period	Documented for LCT
LA 127631 Q-247	one- to three-room structure	Coalition period	Documented for LCT
LA 127705	cavates	Coalition/Classic period	Documented for LCT
LA 128155	one- to three-room structure	Coalition/Classic period	Documented for LCT
LA 128803 LA 12587-A	garden plot	Ancestral Pueblo	Steen, ER OU 1148, ER re-recording not submitted to SHPO
LA 128804 LA 12587-B	water-control device	Coalition period	Steen, ER OU 1148, ER re-recording not submitted to SHPO
LA 128805 LA 12587-D	one- to three-room structure	Coalition period	Steen, ER OU 1148, ER re-recording not submitted to SHPO

Cultural Resource Sites for the Rendija Canyon Tract

Site Number	Site Type	Cultural Affiliation	Recording History
LA 15116	one- to three-room structure	Ancestral Pueblo	Steen, re-recorded for LCT
LA 21439	one- to three-room structure	Classic period	UCLA PARP, ARI BLE, tested
LA 70025	one- to three-room structure	Coalition/Classic period	ER OU 1071, SHPO review 5/10/93
LA 70026	log enclosure	Undetermined historic	ER OU 1071, SHPO review 5/10/93

Cultural Resource Sites for the Rendija Canyon Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 85402	one- to three-room structure	Classic period	BLE, TFA, submitted to SHPO (could not relocate for LCT Project)
LA 85403	one- to three-room structure	Ancestral Pueblo	BLE, TFA, submitted to SHPO
LA 85404	one- to three-room structure	Coalition/Classic period	BLE, TFA, submitted to SHPO
LA 85405	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85406	one- to three-room structure	Ancestral Pueblo	BLE TFA & ARI tested, to SHPO
LA 85407	homestead	NM Statehood	BLE TFA & ARI tested, to SHPO
LA 85408	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85409	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85410	water-control features	Ancestral Pueblo	BLE TFA & ARI tested, to SHPO
LA 85411	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85412	one- to three-room structure	Ancestral Pueblo	BLE TFA & ARI tested, to SHPO
LA 85413	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85414	one- to three-room structure	Ancestral Pueblo	BLE TFA & ARI tested, to SHPO
LA 85415	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85416	rock feature	Classic period	BLE TFA & ARI tested, to SHPO
LA 85417	one- to three-room structure	Coalition/Classic period	BLE TFA & ARI tested, to SHPO
LA 85418	rock feature	Unknown	BLE TFA & ARI tested, to SHPO
LA 85419	rock feature	Classic period	BLE TFA & ARI, submitted to SHPO
LA 85857	one- to three-room structure	Coalition period	BLE TFA & ARI tested, to SHPO
LA 85858	rock piles	Classic period	BLE TFA & ARI, submitted to SHPO
LA 85859	lithic scatter	Middle Archaic	BLE TFA & ARI tested, to SHPO
LA 85860	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85861	one- to three-room structure	Coalition/Classic period	BLE TFA & ARI tested, to SHPO
LA 85862	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85863	one- to three-room structure	Coalition/Classic period	BLE TFA & ARI tested, to SHPO
LA 85864	tipi/wickiup ring	Unknown historic	BLE TFA & ARI tested, to SHPO
LA 85865	artifact scatter	Classic period	BLE TFA & ARI tested, to SHPO
LA 85866	one- to three-room structure	Coalition period	BLE TFA & ARI tested, to SHPO
LA 85867	one- to three-room structure	Classic period	BLE TFA & ARI tested, to SHPO
LA 85868	natural outcrop		BLE TFA & ARI tested, to SHPO
LA 85869	tipi/wickiup ring	Unknown	BLE TFA & ARI tested, to SHPO
LA 85870	rock features	Unknown	BLE TFA & ARI tested, to SHPO
LA 86553	wagon trail	NM Statehood	ER OU 1071, SHPO review 5/10/93
LA 86604	one- to three-room structure	Classic period	ER OU 1071, SHPO review 5/10/93
LA 86605	one- to three-room structure	Classic period	ER OU 1071, SHPO review 5/10/93
LA 86606	one- to three-room structure	Ancestral Pueblo	ER OU 1071, SHPO review 5/10/93
LA 86607	one- to three-room structure	Coalition period	ER OU 1071, SHPO review 5/10/93
LA 87430	one- to three-room structure	Classic period	Seismic Hazards, SHPO review 10/29/91
LA 99391	artifact scatter	Coalition period	BLE ARI tested, to SHPO
LA 99392	one- to three-room structure	Classic period	BLE ARI tested, to SHPO
LA 99393	one- to three-room structure	Classic period	BLE ARI tested, to SHPO
LA 99395	one- to three-room structure	Ancestral Pueblo	BLE ARI tested, to SHPO
LA 99396	artifact scatter	Early Archaic, Classic period	BLE ARI tested, to SHPO
LA 99397	lithic scatter	Archaic period	BLE ARI tested, to SHPO
LA 127626 K 100	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127627 K 109	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127628 K 133	one- to three-room structure	Classic period	Documented for LCT

Cultural Resource Sites for the Rendija Canyon Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 127629 K 139	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127630 K 140	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127632 Q-246	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127633 Q 195	one- to three-room structure	Unknown	Documented for LCT
LA 127634 Q 196	one- to three-room structure	Classic period	Documented for LCT
LA 127635 Q 197	one- to three-room structure	Classic period	Documented for LCT

Cultural Resource Sites for the White Rock Y Tract

Site Number	Site Type	Cultural Affiliation	Recording History
LA 394-A	plaza pueblo	Coalition period	Mera, Steen, re-recorded LCT
LA 394-B	single roomblock pueblo	Coalition period	
LA 394-C	single roomblock pueblo	Coalition period	
LA 394-D/E	single roomblock pueblo	Coalition period	
LA 4729	single roomblock pueblo	Coalition period	Worman, excavated
LA 12605	single roomblock pueblo	Classic period	Steen, re-recorded LCT
LA 14870	one- to three-room structure	Coalition period	Steen, re-recorded LCT
LA 15117	cavate series	Coalition period	Steen, re-recorded LCT
LA 16798	cavate series	Coalition period	Steen, re-recorded LCT
LA 21636	cavates	Ancestral Pueblo	PARP, re-recorded LCT
LA 21637	cavate series	Coalition period	PARP, re-recorded LCT
LA 21638	isolated cavate	Ancestral Pueblo	PARP, re-recorded LCT
LA 21639	cavate series	Coalition period	PARP, re-recorded LCT
LA 61033	artifact scatter	Classic period	MNM WRY, tested, submitted to SHPO
LA 61034	artifact scatter	Classic period	MNM WRY, submitted to SHPO
LA 61035	artifact scatter	Classic period	MNM WRY, submitted to SHPO
LA 61036	artifact scatter	Classic period	MNM WRY, BNM, submitted to SHPO
LA 61037	petroglyph panel	Ancestral Pueblo	MNM WRY, submitted to SHPO
LA 61038	artifact scatter	Late Archaic, Classic period	MNM WRY, tested, submitted to SHPO
LA 61039	artifact scatter	Late Archaic, Classic period	MNM WRY, tested, submitted to SHPO
LA 61040	artifact scatter	Classic period	MNM WRY, tested, submitted to SHPO
LA 61041	artifact scatter	Mid to Late Archaic, Coalition/Classic period	MNM WRY, tested, submitted to SHPO
LA 61042	artifact scatter	Coalition/Classic period	MNM WRY, tested, submitted to SHPO
LA 61043	artifact scatter	Coalition/Classic period	MNM WRY, tested, submitted to SHPO
LA 61044	artifact scatter	Classic period	MNM WRY, tested, submitted to SHPO
LA 61045	artifact scatter	Coalition/Classic period	MNM WRY, tested, submitted to SHPO
LA 61046	artifact scatter	Classic period	MNM WRY, tested, submitted to SHPO

Cultural Resource Sites for the White Rock Y Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 61047	artifact scatter	Classic period	MNM WRY, BNM, submitted to SHPO
LA 61048	artifact scatter	Coalition/Classic period	MNM WRY, BNM, submitted to SHPO
LA 61049	single roomblock pueblo	Coalition/Historic period	MNM WRY, BNM, submitted to SHPO
LA 61050	artifact scatter	Classic period	MNM WRY, tested, submitted to SHPO
LA 65007	artifact scatter	Late Archaic, Classic period	MNM NM 502, tested, submitted to SHPO
LA 65420	pit structure	Coalition period	MNM WRY, tested, submitted to SHPO
LA 65421	pit structure	Coalition period	MNM WRY, tested, submitted to SHPO
LA 86634	lithic scatter	Archaic period	ER FU4 RLA-3, NMCRS #56397, SHPO review 5/14/97
LA 110113	one- to three-room structure	Coalition period	ER FU4 RLA-3, NMCRS #56397, SHPO review 5/14/97
LA 110115	one- to two-room structure	Coalition period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 127636 J 19	bedrock niches/petroglyphs	Ancestral Pueblo	Jorgensen not previously submitted to SHPO, re-recorded LCT
LA 127637 J 20	cavate series	Ancestral Pueblo	Jorgensen not previously submitted to SHPO, re-recorded LCT
LA 127638 Q 189	artifact scatter	Archaic, Coalition period	Documented for LCT
LA 127639 Q 190	artifact scatter	Coalition period	Documented for LCT
LA 127640 Q 191	artifact scatter	Ancestral Pueblo	Documented for LCT
LA 127641 Q 192	rock enclosure	Undetermined historic	Documented for LCT

Cultural Resource Sites for the TA-74 Tract

Site Number	Site Type	Cultural Affiliation	Recording History
LA 29 LA 29-A	plaza pueblo	Coalition period	Mera, re-recorded ER not submitted to SHPO
LA 32	plaza pueblo	Coalition/Classic period	Mera, re-recorded ER not submitted to SHPO
LA 169	plaza pueblo	Classic period	Mera, UCLA PARP, re-recorded LCT (Excavations Bandelier, Hewett, and Wilson)
LA 21511	single roomblock pueblo	Coalition period	UCLA PARP, re-recorded ER not submitted to SHPO
LA 21584	one- to three-room structure	Coalition period	UCLA PARP, re-recorded ER not submitted to SHPO
LA 21585	Otowi Mesa Trail	Ancestral Pueblo	UCLA PARP (stairway), recorded LCT
LA 21591	cavate series	Coalition/Classic period	UCLA PARP, re-recorded LCT
LA 21592	garden plots	Coalition/Classic period	UCLA PARP, re-recorded LCT
LA 21593	single roomblock pueblo	Coalition period	UCLA PARP, re-recorded LCT
LA 21595	single roomblock pueblo	Coalition period	UCLA PARP, re-recorded ER not submitted to SHPO
LA 21596-A	garden plots	Classic period	UCLA PARP, re-recorded ER not submitted to SHPO
LA 21596-B	garden plots		
LA 21596-C	garden plots		

Cultural Resource Sites for the TA-74 Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 35000 Q 36	single roomblock pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 35001 LA 35001C Q-12	plaza pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 35002	single roomblock pueblo	Coalition period	Steen (Could not relocate during LCT)
LA 86528	rockshelter	Classic period	ER OU 1079, SHPO review 9/3/93
LA 86529	one- to three-room structure	Ancestral Pueblo	ER OU 1079, SHPO review 9/3/93
LA 86530	one- to three-room structure	Classic period	ER OU 1079, SHPO review 9/3/93
LA 86531	artifact scatter	Coalition/Classic period	ER OU 1079, SHPO review 9/3/93
LA 86532	homestead/boy scout camp	NM Statehood	ER OU 1071, SHPO review 5/10/93
LA 86542	trash scatter	Manhattan Project Era/Modern	ER OU 1071, SHPO review 5/10/93
LA 86543	game pit	Ancestral Pueblo	ER OU 1071, SHPO review 5/10/93
LA 110121	artifact scatter	Coalition period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110126	one- to three-room structure	Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110127	artifact scatter	Late Archaic, Post 1900	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110128	rock feature	Unknown historic	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110129	one- to three-room structure	Coalition period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110130	one- to three-room structure	Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110131	one- to three-room structure	Coalition/Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110132	one- to three-room structure	Coalition/Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110133 Q 199	artifact scatter	Coalition/Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110134	one- to three-room structure	Coalition/Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110135	garden plot	Coalition/Classic period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110136	single roomblock pueblo	Coalition period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110138	garden plot/artifact scatter	Coalition period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 110140	single roomblock pueblo	Coalition period	ER OU 1049, NMCRS # 49414, not previously submitted to SHPO
LA 117883	lithic scatter	Early to mid Archaic	ER, not previously submitted to SHPO
LA 127642 K 171	lithic scatter	Ancestral Pueblo	Documented for LCT Project
LA 127643 K 172	artifact scatter	Ancestral Pueblo	Documented for LCT Project
LA 127644 Q 2	single roomblock pueblo	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127645 Q 3	single roomblock pueblo	Coalition period	ER, re-recorded LCT, not previously submitted to SHPO
LA 127646 Q 6	single roomblock pueblo	Coalition period	ER, re-recorded LCT, not previously submitted to SHPO

Cultural Resource Sites for the TA-74 Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 127647 Q 7	artifact scatter	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127648 LA 35001F Q-8	single roomblock pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 127649 LA 35001E Q 9	single roomblock pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 127650 LA 35001A Q 10	single roomblock pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 127651 LA 35001B Q 11	single roomblock pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 127652 LA 29-B	single roomblock pueblo	Coalition period	Mera, re-recorded ER not submitted to SHPO
LA 127653 LA 35001D Q 13	single roomblock pueblo	Coalition period	Steen, re-recorded ER, updated LCT, re-recordings not previously submitted to SHPO
LA 127654 Q 16	rock feature	Classic period	ER, re-recorded LCT, not previously submitted to SHPO
LA 127655 Q 18	single roomblock pueblo	Coalition/Classic period	ER, re-recorded LCT, not previously submitted to SHPO
LA 127656 Q 19	one- to three-room structure	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127657 Q 22	one- to three-room structure	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127658 Q 23	single roomblock pueblo	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127659 Q 24	one- to three-room structure	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127660 Q 31	single roomblock pueblo	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127661 Q 32	single roomblock pueblo	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127662 Q 35	single roomblock pueblo	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127663 Q-245	petroglyphs	Ancestral Pueblo	Documented for LCT Project
LA 127664 Q 37	single roomblock pueblo	Coalition/Classic period	ER, updated LCT, not previously submitted to SHPO
LA 127665 Q 38	one- to three-room structure	Coalition period	ER, updated LCT, not previously submitted to SHPO
LA 127666 Q 198	single roomblock pueblo	Coalition period	Documented for LCT
LA 127667 Q 200	cavate series	Ancestral Pueblo	Documented for LCT
LA 127668 Q 201	cavate series	Coalition/Classic period	Documented for LCT
LA 127669 Q 202	cavate series	Coalition/Classic period	Documented for LCT
LA 127670 Q 203	garden plots	Coalition period	Documented for LCT
LA 127671 Q 204	lithic scatter	Undetermined	Documented for LCT

Cultural Resource Sites for the TA-74 Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 127672 Q 206	cavate series	Ancestral Pueblo	Documented for LCT
LA 127673 Q 208	cavate series	Classic period	Documented for LCT
LA 127674 Q 210	artifact scatter	Coalition period	Documented for LCT
LA 127675 Q 211	one- to three-room structure	Classic period	Documented for LCT
LA 127676 Q 212	artifact scatter	Classic period	Documented for LCT
LA 127677 Q 213	one- to three-room structure	Coalition period	Documented for LCT
LA 127678 Q 214	artifact scatter	Coalition period	Documented for LCT
LA 127679 Q 215	rockshelter	Ancestral pueblo	Documented for LCT
LA 127680 Q 216	one- to three-room structure	Classic period	Documented for LCT
LA 127681 Q 217	one- to three-room structure	Classic period	Documented for LCT
LA 127682 Q 218	one- to three-room structure	Classic period	Documented for LCT
LA 127683 Q 219	one- to three-room structure	Classic period	Documented for LCT
LA 127684 Q 220	rockshelter	Unknown	Documented for LCT
LA 127685 Q 221	petroglyphs	Ancestral Pueblo	Documented for LCT
LA 127686 Q 222	cavates	Ancestral Pueblo	Documented for LCT
LA 127687 Q 223	cavate with talus house	Ancestral Pueblo	Documented for LCT
LA 127688 Q 224	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127689 Q 225	artifact scatter	Ancestral Pueblo	Documented for LCT
LA 127690 Q 226	one- to three-room structure	Classic period	Documented for LCT
LA 127691 Q 227	lithic scatter	Ancestral Pueblo	Documented for LCT
LA 127692 Q 228	lithic scatter	Archaic	Documented for LCT
LA 127693 Q 229	stairways	Coalition/Classic period	Documented for LCT
LA 127694 Q 230	rock feature	Unknown	Documented for LCT
LA 127695 Q 231	rock feature	Recent	Documented for LCT
LA 127696 Q 232	one- to three-room structure	Coalition period	Documented for LCT
LA 127697 Q 233	one- to three-room structure	Coalition period	Documented for LCT
LA 127698 Q 234	artifact scatter	Classic period	Documented for LCT

Cultural Resource Sites for the TA-74 Tract (Cont.)

Site Number	Site Type	Cultural Affiliation	Recording History
LA 127699 Q 235	Camp Hamilton Trail	Historic period	Documented for LCT
LA 127700 Q 240	one- to three-room structure	Ancestral Pueblo	Documented for LCT
LA 127701 Q 241	petroglyph	Ancestral Pueblo	Documented for LCT
LA 127702 Q 242	rockshelter	Unknown	Documented for LCT
LA 127703 Q 243	artifact scatter	Late Archaic, Classic period	Documented for LCT

***Recording History Table Abbreviations:**

Bandelier: Adolph Bandelier, Archaeological Institute of America (visited Pajarito Plateau in 1885)

Hewett: Edgar Hewett, Smithsonian Institute (documented and excavated Pajarito Plateau sites (ca. 1900 to 1906)

Wilson: Lucy Wilson, Commercial Museum of Philadelphia (Excavated at Otowi 1915 to 1917)

Mera: Harry P. Mera, Laboratory of Anthropology (surveys in the Northern Rio Grande 1920s and 1930s)

Worman: Frederick Worman, LASL (1950 to 1971)

Steen: Charlie Steen, LASL (1973 to 1981)

Jorgensen: Jim Jorgensen, volunteer (LANL employee, documented cavates during the 1980s)

UCLA PARP: University of California at Los Angeles, Pajarito Archaeological Research Project (1978 to 1980)

BNM: Bandelier National Monument (Site recording between 1988 and 1989)

MNM WRY: Museum of New Mexico, White Rock Y Project (State Road 502) (Wiseman 1987; 1992)

MNM NM 502: Museum of New Mexico, NM 502 Near San Ildefonso Project (State Road 502) (Moore and Levine 1987; Moore 1993)

Seismic Hazards: LANL Seismic Hazards Investigation (McGehee and Manz 1991)

ER OU 1148: Environmental Restoration, Operable Unit 1148 (1991 LANL Project)

ER: Environmental Restoration (1991 to 1994 General LANL Project)

ER OU 1106: Environmental Restoration, Operable Unit 1106 (McGehee et al. 1992)

ER OU 1071: Environmental Restoration, Operable Unit 1071 (McGehee et al. 1993)

BLE: Bason Land Exchange Project (Hill 1992; Peterson and Nightengale 1993)

TFA: Forestry Association Inc. (Hill 1992)

ARI: Archaeological Research, Inc. (Peterson and Nightengale 1993)

ER OU 1079: Environmental Restoration, Operable Unit 1079 (Hoagland et al. 1993)

ER OU 1049: Environmental Restoration, Operable Unit 1049 (1994 LANL Project)

ER FU4 RLA-3: Environmental Restoration, Field Unit 4, Reach LA-3 (Hoagland et al. 1997)

LCT: Land Conveyance and Transfer Project

NMCRIS: New Mexico Cultural Resource Information System

SHPO: New Mexico State Historic Preservation Officer

ARCHAEOLOGICAL SITE TYPES

The following is the classification system used for defining specific site types in the LCT. A total of 20 individual categories of sites were defined on the basis of their size, morphological characteristics of associated features, and the nature of the associated artifact assemblages.

Lithic scatter: Limited to clusters of chipped stone tools and/or pieces of chipped stone produced during the manufacturing of chipped stone tools.

Artifact scatter: Includes a combination of ceramic sherds, chipped stone, and/or ground stone artifacts, but lacks identifiable surface structural remains or evidence of pit structures.

Pit structure: Presumed habitation sites with evidence (e.g., depressions) of one or more structures built entirely or partially underground.

One- to three-room structures: The remains of a small surface structure constructed of adobe, jacal, or masonry. This site typically consists of square to rectangular-shaped rock alignments, with individual units being no more than 3 m in length. The majority of these sites are identical to what many researchers term “fieldhouses.” Also included in the one- to three-room structure category is one example of a single unusually large rectangular structure, along with several smallish structures that are unusual due to the presence of upright stones or because of locational considerations. Some of these “unusual” structures may represent shrines or other purposes not directly related to agriculture.

Pueblo roomblock: The remains of a contiguous, multiroom habitation structure (four or more rooms with no enclosed plaza) constructed of adobe, jacal, or masonry. In several cases, somewhat amorphous mounds containing evidence of stone rubble but no distinct alignments were included in this category.

Plaza pueblo: Contains one or more pueblo roomblocks partially or completely enclosing a plaza. Plaza pueblos typically are much larger (in both room numbers and site size) than single pueblo roomblock sites.

Cavate: Consists of a room carved into a cliff face within the Bandelier Tuff geological formation. The category includes isolated cavates, multiroomed contiguous cavates, and groups of adjacent cavates that together form a cluster or complex.

Rockshelter: An overhang, indentation, or alcove formed naturally in a rockface or large boulder, or alternatively, a partly enclosed area created by rockfalls leaning against a rockface or large boulder, and which exhibits evidence of human use. Rockshelters generally are not of great depth, in contrast to caves.

Water-control feature: A device (e.g., stone check dams) that controls the flow of water, particularly run-off.

Garden plots: Small, formal agricultural areas often bounded with cobbles and containing gravel mulch (e.g., grid gardens and/or terraces). This site category typically consists of square to rectangular-shaped rock alignments, with individual units being more than 3 m in length (in contrast with one- to three-room structures, defined above).

Rock feature: Includes typically isolated examples of rock piles, amorphous rock concentrations, and/or upright stones. Some of these features may be identical to what some researchers refer to as shrines and boundary markers.

Tipi/wickiup ring: A circular arrangement of rocks representing the residue from a dismantled tipi or wickiup.

Rock/log enclosure: A small area enclosed by loosely stacked rock or log alignments (e.g., corral or lambing pen). These are distinguished from one- to three-room structures by the nature of the stacking methods and often by the presence of historic artifacts in and around the enclosure.

Petroglyphs: A design or set of symbols scratched, pecked, or scraped into a rock or plastered surface. Petroglyphs are distinguished from historic and modern graffiti.

Stairway: A set of two or more steps carved into a steep section of tuff bedrock, typically associated with trails.

Trail: Prehistoric or historic path defined by use-wear or cutting into bedrock or soil surfaces.

Game pit: Cavity dug down into the tuff bedrock presumed to have been used as a passive hunting drop site for larger game animals (e.g., deer) or as concealment from which to lure and trap birds.

Wagon trail: Rutted trail formed as a result of historic wagon use.

Historic structure: A building or other structure constructed after AD 1593 (but most typically in the Los Alamos area constructed after about AD 1900).

Historic artifact scatter/trash scatter: A concentration of items produced and deposited after AD 1593 (but most typically in the Los Alamos area deposited after about AD 1900).

CHRONOLOGICAL CONSIDERATIONS

Chapter 3 introduced the general background for the culture history and aspects of the archaeological chronology for the Pajarito Plateau. The specific chronology used for the LCT is provided below:

- Undetermined Prehistoric (before AD 1539)
- Paleoindian (9500 to 5500 BC)
- Archaic (5500 BC to AD 200)
- Developmental (AD 600 to 1200)
- Coalition (AD 1200 to 1325)
- Coalition/Classic (AD 1250 to 1350)
- Classic (AD 1325 to 1600)
- Undetermined Historic (AD 1539 to present)
- Colonial (AD 1539 to 1821)
- Mexican (AD 1821 to 1846)
- US Territorial (AD 1846 to 1912)
- NM Statehood, including World War II and the Manhattan Project (AD 1912 to 1945)
- Recent, including Cold War (post-World War II)

This chronology differs somewhat from that used by archaeologists in other portions of the Pajarito Plateau and northern New Mexico. Two major factors are responsible for this situation. First, very few excavations have been accomplished at LANL (apart from the poorly reported large-scale excavations conducted in the early 1900s by Hewett and Wilson) with very few absolute dates reported based on tree rings, radiocarbon analysis, or archaeomagnetism. Second, there have been few detailed studies of ceramics and other critical aspects of Puebloan material culture from projects conducted at LANL. Thus we have only a subjective understanding of the relative seriation and temporal use of long-lived pottery types, in particular Santa Fe Black-on-white. Likewise, at present we have only a subjective understanding of the temporal implications of the composition of entire cultural assemblages. For example, the presence and percentages of corrugated and plainware pottery, the percentage of obsidian in lithic assemblages, and the presence or absence of shaped stone in construction all provide some general guidance for temporal classification. However, there has been no attempt to quantify these data individually or in terms of complete assemblages.

For these reasons we have created a transitional “Coalition/Classic period” that represents our attempt to provide a clean separation between those sites and features that exhibit a great preponderance of Coalition period traits from those that exhibit a great preponderance of Classic period traits. For archaeological sites with a sufficiently large ceramic assemblage, the Coalition/Classic period designation is primarily based on the ratios of Santa Fe Black-on-white and biscuitware ceramics. Sites containing 30% or more Santa Fe Black-on-white sherds were affiliated with the Coalition period. Sites containing 30% or more biscuitware sherds were affiliated with the Classic period. Sites containing 30% or more Santa Fe Black-on-white sherds and 30% or more biscuitware sherds were affiliated with the Coalition/Classic period. In the case of small ceramic assemblages, other observations such as shaped building stone and corrugated pottery would be used to assist in the chronological assessment.

It is anticipated that as more studies are accomplished at LANL, finer chronological resolution will be achieved for Puebloan remains, such as has been recently accomplished at Bandelier National Monument (Powers and Orcutt 1999).

SURVEY TECHNIQUE

A 100% pedestrian survey was conducted for all tract areas that had not been previously inventoried or had been inadequately inventoried. The survey was conducted by two to four archaeologists systematically walking the project areas. The predominant survey method employed had archaeologists walking linear transects with a slight zigzag coverage. The transect spacing between archaeologists averaged 10 to 12 m with a maximum interval restricted to 15 m. A compass was used to orient transects, and flag lines were used to assure an even survey coverage. The exception to the above survey methodology occurred along steep canyon talus slopes where the archaeologists walked along contours that emphasized the coverage of benches, ledges, cliff face/talus slope interfaces, and other terrain features that were more likely to retain evidence of human activities.

CULTURAL PROPERTIES

As defined for this project, a cultural resource site is the physical location of past human activity. Sites are often represented by architectural remains including, rubble mounds, cavates, structures, and associated features. However, they also include artifact scatters that contain more than about 10 artifacts with two or more artifact types that represent multiple activities. Features such as hearths, cairns, rock alignments, petroglyphs, and corrals are also recorded as sites. Sites are in primary contexts. Sites also include locations of traditional cultural or religious significance to specific cultural groups.

Artifacts located during survey that did not meet the site criteria were documented as isolated occurrences (IOs). An IO generally contains fewer than about 10 artifacts or a single isolated undateable feature. The assemblage consists of one or two artifact types that represent a single activity. The artifacts may be situated in a secondary context. IOs include isolated projectile points, ground stone artifacts, and pot drops.

Not all IOs were recorded during the survey portion of this project. In areas at LANL where the site density is extremely high there tends to be a light scatter of artifacts throughout the non-site areas. Primarily this is the case for the White Rock Y Tract and the portion of the TA-74 Tract in the vicinity of LA 32 (Little Otowi) and LA 69 (Otowi). In these areas the density of non-site artifacts was so high that it became unrealistic to try to record them all, thus they were treated as background noise and not individually documented. On the other hand, in areas such as the portion of TA-74 that is not in close proximity to LA 32 and LA 69, the IO artifact density was appreciably lower. In tract areas such as this, IOs were fully documented.

FIELD RECORDING PROCEDURE

When an archaeological site was encountered a reconnaissance was conducted. The reconnaissance included locating features (if present), pin flagging individual artifacts when they occurred in low enough numbers to make this feasible, or pin flagging site boundaries and diagnostic materials when artifacts were overly abundant.

Upon completion of the reconnaissance a site datum was established. The datum was a steel rebar with an attached aluminum cap that was stamped with the Laboratory of Anthropology site number if it was recognized as being previously documented. For newly discovered sites or sites that were not recognized as having been previously documented, a temporary site designation was assigned. The temporary site designation contained the letter J, K, or Q plus a sequential unique number (e.g., Q-3).

Site documentation included the filling out a Laboratory of Anthropology Site Record Form, the production of a site sketch and/or of a Global Positioning System (GPS) map, the taking of photographs, and the completion of a 100% or sample unit infield artifact analysis. As appropriate the site sketch map depicted the site datum, site boundary, features, sample artifact locations, diagnostic and/or collected artifacts, as well as physiographic features to aid in site relocation. GPS readings were taken for site datum's, site boundaries, internal features, artifact sample locations, all collected diagnostic artifacts, as well as the locations of all ground stone and other classes of non-collected material considered important to depict on a GPS site map. Artifact scatters were generally mapped with a GPS unit. See Appendix A for a copy of the infield artifact analysis coding sheet and for lithic artifact definitions.

An infield artifact analysis was conducted on all new or updated sites containing items to analyze. A 100% artifact analysis was conducted on sites that had small-sized artifact scatters. For sites with medium-sized artifact scatters, artifacts were pin flagged and a percentage of the artifacts were analyzed, e.g., 1 of 2 (50%), 1 of 3 (30%), or 1 of 4 (25%). Infield analysis for sites with large artifact scatters involved the 100% analysis of artifacts located in sample units. The sample units were either 1- to 2-m-diameter dogleashes or a suitably sized linear transect. When sample units were utilized, the site was divided into four quadrants and a single sample was taken from the area of highest artifact density within the quadrant. Additional sample units were analyzed when it was believed to be beneficial. Also, potentially analyzed on sites with large artifact scatters were diagnostic artifacts or tools situated outside of sample units.

Artifact documentation during previous LANL archaeological surveys tended to vary depending on the site type and density of artifacts. For sites such as pueblos where the artifact density is very high, documentation involved a subjective summary of the types and numbers of artifacts present. On the other hand, documentation for lithic scatters and sites with low artifact densities involved the quantitative listing of all or a percentage of the observed artifacts.

Chapter 7

CULTURAL RESOURCE DESCRIPTIONS

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The LCT cultural resource investigation resulted in the location and documentation of 213 cultural resource sites from seven of the proposed tracts and 127 IOs from three of the tracts. Eighty-one of the sites are newly recorded and 131 have been previously documented. One hundred and eighty-eight of the cultural resource sites are thought to have prehistoric cultural affiliations, 14 are thought to be historic, two have both prehistoric and historic components, and nine have an unknown cultural and temporal affiliation. These sites are described below in ascending order by tract.

TA-21 TRACT

LA 4710

Frederick Worman conducted excavations at LA 4710 from November 1963 to March 1964. The site consists of an eleven-room Coalition period roomblock. It is located on DP Mesa in an area mostly covered with piñon and junipers at an elevation of 2180 m (7160 ft). Steen (1977:54) provides a brief description of the site with several photographs and a sketch map of the pueblo's ground plan.

The linear-shaped roomblock is oriented north-south with two rows of rooms. See Chapter 4, Figure 4.2 for an illustration of the pueblo floor plan. Wall construction varied with some walls being made of adobe and others being constructed of large unshaped tuff block masonry. A few walls were constructed from adobe to a height of about 60 cm and then capped with masonry. Three rooms along the east side of the pueblo contained hearths (Rooms 2, 6, and 8). These rooms presumably represent habitation rooms at the front of the pueblo. Each hearth was round with a diameter of about 50 cm. Two of the hearths had collared adobe rims. The one without a rim appeared to have been filled with soil and then was subsequently plastered over. A large metate was also found on the floor of Room 2. No interior features were identified in Room 7 that was situated at the rear of the pueblo. Room 10 had a storage pit in the southeast corner of the room. Room 11 appeared to have been burned since it contained charcoal from burned beams. The location of these two latter rooms is not noted on the site plan map. No artifact descriptions are provided.

LA 86544

LA 86544 is a low rock wall enclosure located on a shelf along the south side of DP Mesa. It is located at an elevation of 2160 m (7080 ft) in a piñon-juniper woodland zone.

The wall consists of three segments of unshaped tuff rocks piled among naturally occurring boulders. The wall segments are on the approximate west, south, and east sides with the approximate north wall utilizing natural boulders to form the enclosure. On the northeast corner the tuff rocks have been shaped to fit around the trunk of a juniper tree. The enclosure measures 4.3 m north-south by 10.5 m east-west. It may have served as an animal pen based on its similarity to others that have been documented for the Spanish Colonial to Homesteading periods, A.D. 1600 to 1943. No artifacts were observed at this site.

LA 110122

LA 110122 (V-118) consists of a rockshelter located along the north side of Los Alamos Canyon. The site is situated at an elevation of 2021 m (6640 ft), within the transitional zone from a piñon-juniper woodland to ponderosa pine forest. Various grasses and wildflowers are present as an understory. A layer of pine duff covers approximately most of the site thereby reducing surface visibility.

The rockshelter is located on a 35-degree slope and is roughly 4 by 4 m in width and length and 1.5 m in height. The west side of the shelter is constructed by a partial wall formed by a large boulder and associated tuff blocks. The wall stones average 30 by 20 by 10 cm in size. Other possible construction stones were observed scattered downslope. Although artifacts were not observed, charcoal fragments were noted in the fill of the shelter. It is likely that artifacts are indeed present under the pine duff. As there were no diagnostic artifacts, the cultural affiliation of the site is unknown. The surface charcoal fragments suggest a Historic period occupation.

The site appears to be largely intact, other than moderate water erosion. The rockshelter subsurface deposits are likely to be shallow (e.g., 5 to 10 cm in depth), but there is some potential for subsurface features.

LA 110141

LA 110141 is the portion of the Mattie Brook Trail situated within the LCT area. It is located within DP Canyon and runs into Los Alamos Canyon. The total length of the section within the project area is 1891 m. For the most part, the trail follows the canyon floor exiting the project area at Los Alamos Canyon. The canyons are vegetated primarily by ponderosa pine with mixed piñon-juniper woodland. The trail ranges in elevation from 2025 to 2143 m (6640 to 7025 ft).

The trail follows an old two-track road that is one of the earlier homesteading roads up onto Los Alamos Mesa. It follows DP Canyon east from LANL TA-21 then heads south where it intersects with Los Alamos Canyon and then exits the project area. This trail primarily dates between 1910 and 1943, during the Mexican and US Territorial (homestead) periods. This trail is significant because few of these roads exist today from the Homestead Era. This road is also significant because it was used by the Los Alamos Ranch School. The trail contains numerous masonry supports that are in good condition.

LA 127624

LA 127624 (Q-244) is known as the “Los Alamos Bench Trail” and is situated directly south of the Los Alamos townsite business district. The trail extends for 5980 m (19,615 ft) parallel to the north rim and to the bench of Los Alamos Canyon. The trail is located on the edge of a ponderosa pine forest at an average elevation of 2195 m (7200 ft). The western end, known as “Trailhead 1,” terminates at the south parking lot of the Los Alamos Medical Center. The eastern end of the trail, known as “Trailhead 2,” terminates near the entrance gate of the DP site located on DP Road.

Although not within the project area, numerous historic era features and historic artifacts dating from the “Manhattan Project” continuing to the present, line the trail. The features and artifacts include structures, trash scatters, footings for World War II guard towers, barbed wire, corrals, stone stem walls, a 1940 automobile, a boulder carved with “ $E=MC^2$ ”, and other World War II memorabilia. Many archaeological sites are situated along either side of the trail’s length, and appear not to have been impacted from the trail’s rigorous use.

Parts of the trail are either well utilized, missing, or are in poor condition. The far western portion of the trail is well established and utilized. The central portion needs maintenance. One-half of the eastern portion is overgrown with vegetation and needs repair. Some sections of the eastern portion are missing entirely.

LA 127631

LA 127631 (Q-247) is a fieldhouse situated where Pajarito Canyon opens into a broader valley setting. The local vegetation is comprised of a piñon-juniper woodland, at an elevation of 1979 m (6494 ft).

The site consists of an eroded one-room fieldhouse. The rock alignments are made from approximately 25 tuff blocks that are located within a 2 by 3 m area. Several of the tuff blocks appear to have been shaped. An average size for a tuff block from this site is 25 by 18 by 10 cm. The feature’s rocks are eroding slightly along the northern edge of the canyon’s floodplain.

A single Santa Fe Black-on-white sherd was located in a drainage about 2 m northwest of the feature. No other artifacts were observed at the site. The fieldhouse presumably dates to the Coalition period.

DP ROAD TRACT

LA 86545

LA 86545 is a cavate that is situated along the cliff face forming the south side of Los Alamos Canyon. It is located at an elevation of 2188 m (7180 ft) in a transitional ponderosa pine forest and piñon-juniper woodland ecological zone.

The one-room cavate is approximately 2 m deep. There is some smoke blackening on the roof of the cavate. A 5 m by 5 m scatter of artifacts is associated with this site. This consists of several smeared-indented utilityware sherds and Cerro Pedernal chert flakes. Based on the ceramics, the site may date to the Coalition period.

AIRPORT TRACT

LA 86533

Site LA 86533 (S-11) is a large lithic scatter extending in an east-west direction. It is located south of East Road on Los Alamos "Town Site Mesa." The site area contains vegetation that is transitional between a ponderosa pine forest and piñon-juniper woodland. LA 86533 is situated at an elevation of 2149 m (7050 ft). Some erosional damage has occurred around the site.

The lithic artifact scatter contains thousands of artifacts, distributed over a 50 m north-south by 400 m east-west area. Most of the lithic materials are made of obsidian with some chert also being present. An obsidian projectile point was observed within the site boundary. The point displays shallow corner notching with a short stem and a slightly concave base with basal flaking for hafting purposes. It most closely resembles Late Archaic projectile points that are associated with the Armijo phase of the Oshara Tradition (Irwin-Williams 1973).

Based on the observed projectile point and lithic debitage, the site was occupied during the Late Archaic period (1800 BC to AD 400). Two Santa Fe Black-on-white sherds reflect a later Coalition period site area utilization.

LA 86534

Site LA 86534 (S-11) is a low roomblock rubble mound with a potential associated midden area. The site is located on "Town Site Mesa" north of East Road. It is situated at an elevation of 2149 m (7050 ft) in an area with sparse or no vegetation.

Characterized by rough alignments of shaped and unshaped tuff blocks the roomblock measures approximately 18 m north-south by 16 m east-west. The midden area, which contains mostly lithics, is located about 10 m to the northwest of the roomblock and runs in an east-west direction.

The associated artifact scatter is in an area measuring 50 m north-south by 44 m east-west. The majority of the ceramics consist 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 are primarily made of obsidian and chert. An obsidian projectile point tip was observed. One mano fragment was found in the midden area and one possible floor polisher was also noted. Based on the ceramics and masonry style, the site dates to the Coalition period.

LA 86535

LA 86535 is a historic dump containing broken glass and cans. A variety of glass colors are represented, including green, aqua, clear, amber, and milk glass bottle glass. Thirty-one crimped and sanitary seal cans were recorded. A 1.2 cm diameter mother-of-pearl button was observed. Sherds of a 4 mm thick modern redware clay pot, sherds of a 2 to 3 mm thick modern ceramic plate (tourist ware), and a 1946 "s" Wheat Cent penny were also noted at the site.

The glass sherds are so numerous only those embossed fragments will be discussed here. One is a possible lib balm jar with white milk glass base, metal cap, and green painted label. The base is embossed with the number 25. The jar is approximately 1½ in. in diameter and ¾ in. in height. Also noted was one milk glass sherd with a brown painted design/label. The painted area is too small to identify. There are two sherds of a modern, ceramic plate, tourist ware. They are 2 to 3 mm thick, creamy yellow in color with green, blue, yellow, gold, brown, and black painted designs. The designs are of cactus and pueblo pots. There are three sherds of a modern redware clay pot. The paste is fine and is red in color throughout. They could possibly be from a flowerpot. No window glass was observed at this site. Based on the artifact assemblage, this site most likely dates to the Manhattan Project era.

WHITE ROCK TRACT

LA 12587

LA 12587 (LA 12587C) contains an area of structural rubble. It is situated on the open canyon floor of Cañada del Buey. The area is vegetated by a piñon-juniper woodland. The site slopes less than one degree, and is at an elevation of 1979 m (6500 ft).

The site contains a fairly sparse and dispersed scatter of tuff rubble. One rough north-south alignment is visible in the southern area of the rubble scatter. The distribution of rubble covers an area measuring 20 m north-south by 12 m east-west. It indicates one or possibly two small roomblocks. The site area is highly eroded and a strip running through the south-central portion of the site has been disturbed by a bulldozed power line access road.

The associated artifact scatter, which encompasses the rubble concentration, contains over a thousand items distributed over an area measuring approximately 140 m north-south by 100 m east-west. The artifact distribution suggests that the site is multicomponent with an Archaic and a Coalition period occupation. Remains from the Archaic period occupation are primarily located within the southern third of the site while the Coalition period remains are predominantly situated within the northern two thirds of the site. Infield analysis was conducted on 100% of the artifacts found within two 1 m dogleashes, one 2 m dogleash, and a 5 m by 27 m sample transect unit. The dogleashes were located with the northern Coalition period site area, and the sample transect was located within the Archaic period area of occupation.

The majority of decorated ceramics within the Coalition period occupational area were Santa Fe Black-on-white sherds, with a few Wiyo Black-on-white and a Biscuit A sherd also noted. The utilityware ceramics were dominated by smeared-indented sherds with a few indented corrugated and obliterated sherds also present. The southern Archaic period occupational area included one Santa Fe Black-on-white sherd, one Biscuit A sherd, two Biscuit B sherds, and two smeared-indented utilityware sherds.

Approximately 70% of the lithics observed within the three Coalition area dogleashes were of Cerro Pedernal chert. Other noted lithic materials included obsidian, basalt, chert, and quartzite. The debitage from within the dogleashes were primarily core flakes (71%) or angular debris (15%). Other noted chipped stone artifacts included biface flakes, microdebitage, and a core.

Obsidian comprised over 96% of the chipped stone debris situated within the south side sample transect. Other noted chipped stone materials were Cerro Pedernal chert, other chert, and basalt. Excluding over 100 pieces of obsidian microdebitage located on an anthill, the chipped stone in this area was fairly evenly split between core flakes (32%), biface flakes (29%), and microdebitage (26%). The remaining debitage were either unidentified flakes (12%) or angular debris (1%). Also noted in the southern portion of the site were a corner-notched, obsidian, Late Archaic, projectile point base and a rhyolite one-hand mano.

Based on the very high percentage of obsidian debitage and the corner notched projectile point, the southern portion of the site is primarily affiliated with the Archaic period. The high percentage of Santa Fe Black-on-white sherds indicates that the northern portion of the site is predominantly affiliated with the Coalition period.

LA 86636

LA 86636 is situated in Cañada del Buey between the drainage and the mesa wall to the north. The area is vegetated by piñon-juniper woodland and the site is at an elevation of 1944 m (6480 ft).

The site consists of an eroded rubble mound with a few rough alignments and associated artifacts. The structure is a one- to two-room fieldhouse built with prepared tuff blocks and basalt stones. It is approximately 3 by 5 m and is situated in a larger artifact scatter of 10 by 10 m. There is a piñon tree growing in the middle of the structure. The largest of the tuff blocks is 37 cm in diameter.

Associated artifacts include chert, obsidian, and chalcedony lithics, as well as Santa Fe Black-on-white, Wiyo Black-on-white, and brown utilityware ceramics. The lithics are evenly distributed across the three material types. Tools include an obsidian point base and a brown chalcedony scraper. The ceramics are dominated by Santa Fe Black-on-white, followed by smaller numbers of the other types. Based on these artifacts, this site is affiliated with the Ancestral Pueblo, Coalition period.

LA 86637

LA 86637 is a fieldhouse surrounded by an extensive, but somewhat thinly dispersed, ceramic and lithic artifact scatter. The site is located on a small rise above an ephemeral drainage in Cañada del Buey. The area is vegetated by a piñon-juniper woodland, with the site being situated at an elevation of 1973 m (6475 ft).

The site consists of a fieldhouse that is situated within a much larger lithic and ceramic artifact scatter. Much of this material appears to be part of a background scatter that reflects a long period of use over a 45 by 90 m area. The fieldhouse is a small rubble mound measuring 2.5 m by 3.7 m in size that probably represents two rooms. It is constructed of shaped tuff blocks, the largest of which measures about 80 cm in length. The mound is in good condition. An infield analysis was conducted in a 10 m catchment area around the structure (Sample 1). A total of 46 artifacts were recorded. A single Biscuit B and obliterated corrugated sherd with some Cerro Pedernal chert debitage were identified near the fieldhouse.

A dense cluster of lithic and ceramic artifacts is located about 50 m downslope from the fieldhouse. A 10 by 20 m transect that included much of the scatter was analyzed in this location (Sample 3). A total of 55 artifacts were recorded, including a few sherds of Santa Fe Black-on-white, Wiyo Black-on-white, biscuitwares, Sankawi Black-on-cream, Tewa Polychrome, and utilitywares ($n = 15$). Most of the artifacts in the artifact cluster were Cerro Pedernal chert and obsidian core flakes, with other debitage, two cores, a retouched flake, two projectile points, and a one-hand mano. The projectile points are made of obsidian and appear to be Late Archaic in age. One of these points was collected, consisting of a heavily resharpened stemmed point. Two unmodified quartzite river cobbles and three quartzite one-hand manos were also recorded on the site. Much of this material appears to be part of a background scatter that reflects multiple components.

Based on the single Biscuit B sherd and the presence of shaped masonry blocks, the fieldhouse probably dates to the Classic period. However, the background lithic and ceramic artifact scatter distributed across the site appears to contain components dating from the Late Archaic, Coalition, Classic, and early Historic periods.

LA 128155

LA 128155 is a possible fieldhouse that has been severely eroded by sheet wash. It is situated on an alluvial fan where Pajarito Canyon opens onto the mesa. The area is sparsely vegetated by a piñon-juniper woodland at an elevation of 1976 m (6491 ft).

The site consists of a concentration of unshaped tuff rock that may represent the remains of a fieldhouse. Most of the rubble is clustered within a 4 by 3 m area, but the associated scatter covers an approximate 375 m² area. Some of the larger tuff rocks are 30 by 20 by 15 cm in size, but many are much smaller fragments.

The ceramic assemblage primarily consists of unidentified whitewares and smeared-indented corrugated sherds, with some Biscuit A, unidentified glazeware, Wiyo Black-on-white, and

Santa Fe Black-on-white sherds also present. Most of the lithic artifacts are Cerro Pedernal chert core flakes. One unidentified mano fragment was also noted. Broken fragments of brown glass attest to recent site visitations. Based on the ceramics, the site appears to date to the Coalition/Classic period.

LA 127625

LA127625 (K-170) is a dispersed artifact scatter with a large area and low density. Most of the site is situated in a low-lying, erosional flat area just north of State Road 4. However, artifacts do extend up the talus slope to the north, although not to the top of the mesa. There is no evidence of structural remains, and the presence of subsurface deposits has not been assessed. Vegetation found around the site includes juniper, ponderosa pine, prickly pear, sage, and various grasses. The site is located at an elevation of 1951 m (6400 ft).

Artifacts are somewhat evenly divided, with ceramics at 44% and lithic materials at 56%. The site perimeter was recorded with a GPS and all visible artifacts were flagged. An in-field analysis was conducted on 50% of all flagged artifacts. Santa Fe Black-on-white amounted to 34% of the total ceramic assemblage. Smeared-indent and indented corrugated sherds accounted for another 36%. 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 comprised of Cerro Pedernal chert with a lesser amount of black translucent and opaque brown Jemez obsidian and Polvadera Peak obsidian. A few flakes of basalt and rhyolite were also present. Most of the chipped stone was core flakes or pieces of angular debris. One small projectile point fragment was located but it was too small to be diagnostic. A rhyolite milling stone was also recorded. Based on the associated artifact assemblage, this site is affiliated with the Coalition period.

LA 127631

LA 127631 (Q-247) is a one-room structure situated in a floodplain. Vegetation on the site is comprised of a piñon-juniper woodland. The site is at an elevation of 1977 m (6494 ft).

The site consists of an eroded one-room fieldhouse. The rock alignments are made from approximately 25 tuff blocks and rocks. Several of the tuff blocks and rocks appear to have been shaped. An average size for a tuff block from this site is 25 by 18 by 10 cm. The rocks are situated within an area measuring 3 by 2.2 m. The tuff blocks and rocks are eroding slightly downslope along the northern edge of the canyon floodplain.

One Santa Fe Black-on-white ceramic sherd was located in a drainage 2 m northwest of the feature. Lithic artifacts were not observed. Based on the assumed association of the sherd, this site is affiliated with the Coalition period.

LA 127705

LA 127705 (H-8) consists of an unknown number of cavates, roomblocks on the talus slopes, petroglyphs, stairs, and other features. It is located along a low cliff face and talus slope that

forms the north side of Cañada del Buey. The area is vegetated with a piñon-juniper woodland at an elevation of 1979 m (6500 ft).

The majority of the site (85%) is on San Ildefonso land. No attempt was made to record features located on San Ildefonso property. The portion of site situated on LANL property includes one cavate, two petroglyph panels, one set of stairs, several roomblocks on the talus slope, and an artifact scatter. The cavates appear to be in excellent condition.

In-field artifact analysis was conducted in two 1 and 2 m dogleash sample units. Plainware ceramics dominated in quantity. The frequency of Santa Fe Black-on-white and Biscuit A sherds was higher than unidentified whitewares, Wiyo Black-on-white, unidentified redwares, Biscuit B, and Sankawi Black-on-cream. Most of the lithic artifacts consist of core flakes with fewer unidentified flake fragments, biface flakes, and retouched flakes. One Late Archaic obsidian projectile point and one unidentified mano fragment were also recorded.

Based on the architectural styles of the roomblock features, style of the petroglyphs, and diagnostic ceramics, this site has a Coalition to Classic period affiliation. The projectile point suggests a Late Archaic utilization of the site area, however, it could have been curated by the later site inhabitants.

LA 128803

LA 128803 (LA 12587A, H-2)) is situated on the base of an incline/canyon rim within Cañada del Buey. The area is vegetated by a piñon-juniper woodland. The site area is on a five degree slope and is at an elevation of 1967 m (6462 ft).

The site consists of a waffle garden constructed with basalt blocks that are about 50 cm in length. The garden is rectangular measuring 5.5 by 2.7 m. The site is somewhat eroded; however, the integrity of the waffle garden alignments remains intact.

Infield artifact analysis of the surface scatter revealed one non-locale chert flake and one quartzite hoe. No ceramics were located on the surface of this site. Based on the observed artifacts and style of construction, this site component has an Ancestral Pueblo affiliation.

LA 128804

LA 128804 (LA 12587B, H-3) is a check dam running northwest to southeast across a drainage that runs through Cañada del Buey. The area is vegetated by piñon-juniper woodland. The site is situated on a slope of less than five degrees. It is located in the open canyon floor at an elevation of 1980 m (6495 ft).

The check dam is an alignment of twelve large tuff 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 associated artifacts, is in a 10 by 10 m area.

Smeared-indentured utilityware sherds (90%) dominate the associated artifacts. Also noted were Santa Fe Black-on-white and Wiyo Black-on-white sherds. Based on the observed artifacts this site is affiliated with the Coalition period.

LA 128805

LA 128805 (LA 12587D, H-1) is a one-room structure situated in the floodplain of Cañada del Buey. The site area has been impacted by heavy erosion. The site is at an elevation of 1978 m (6490 ft). It is in an area vegetated by a piñon-juniper woodland and is resting on a gentle eastward slope of less than five degrees.

The site consists of a one-room fieldhouse with good wall alignments. It measures 3.3 by 2.5 m. Its masonry consists of tuff blocks ranging from 0.45 to 1.35 m in length and averaging 0.35 m in width.

Infield artifact analysis documented Santa Fe Black-on-white and brown smeared-indentured utilityware sherds. The lithics included 20% obsidian, 20% chert, and 60% basalt flakes. Artifacts were sparse and scattered in a 15 by 15 m area. Based on the associated ceramics, this site component is affiliated with the Coalition period.

RENDIJA CANYON TRACT

LA 15116

LA 15116 (K-138) is a one-room structure situated on the southern slope of Rendija Canyon. The area is vegetated by piñon-juniper and ponderosa pine trees. It is located at an elevation of 2116 m (6944 ft).

The site consists of a one-room structure, likely Ancestral Pueblo, but the time period cannot be accurately assessed. The structure has interior dimensions of 3 by 3.5 m that includes a smaller interior compartment. Small piñon and juniper trees have impacted the southeast corner of the structure. The fieldhouse is primarily constructed of unshaped tuff cobbles stacked against large boulders that form the southwest corner of the structure. No artifacts were observed to be in association with the structure, possibly due to the thick layer of pine duff that covers the site.

LA 21439

LA 21439 is represented by boulder alignments, a structural mound, and associated features. It is at the end of an east to west trending ridge at an elevation of 2146 m (7040 ft). The area vegetation is comprised of ponderosa pine, piñon, and juniper trees.

The features presented on the site are comprised of boulder alignments and a mound. The mound is made up of unshaped cobbles and boulders that measure approximately 5 by 6 m in maximum plan dimensions and between 30 and 40 cm in height. There is an alignment of

boulders that extends 7.5 m south from the southeastern corner of the mound. The second feature is another boulder alignment. This boulder alignment extends north from the structural mound for approximately 27 m. There is a foot trail that crosses the site and is parallel to the east side of the southern boulder alignment, the structure mound, and the west side of the northern boulder alignment.

A total of four test units, A, B, C, and D, were excavated at this site. Units A and B are 1 m² units and units C and D are 0.5 m². Unit A is located on the western edge of the mound. Unit B lies in the depression at the center of the mound. Unit C is located along the northern boulder alignment at the site. Unit D was placed on the southeastern edge of the mound and is adjacent to the southern boulder alignment.

Unit A contained a possible wall alignment along the eastern half of the excavation. This alignment is oriented north-south and may well be the western wall foundation of the structure. One piece of obsidian angular debris was recovered from the upper 20 cm in Unit B. A fairly clear alignment of rocks was uncovered at a depth of 50 cm below surface. This alignment is oriented east-west and may represent the foundation of the north wall of the structure. No cultural materials were recovered from Unit C. Two plain utilityware sherds and one obsidian flake were recovered from the upper 20 cm of Unit D. Units C and D indicated that the wall alignments were only one course high.

Two undifferentiated biscuitware sherds and a Biscuit B jar sherd date this site to the Ancestral Pueblo, Classic period. The recording and testing have not exhausted the research potential of this site; thus it is eligible to the NRHP under Criterion D.

LA 70025

Site LA 70025 consists of two one-room masonry structures situated on a low ridge finger in western Cabra Canyon. The site is located at an elevation of 2122 m (6960 ft) in an ecological zone of ponderosa pine with small amounts of juniper and scrub oak present.

The two rubble mounds are approximately 7 m apart and are composed of rough stone tuff blocks, three or four of which appear roughly shaped. The western structure is slightly upslope and is approximately 2 m². Due to the extremely dense pine duff cover, more specific measurements could not be obtained. The second structure is approximately 3 m² and has building rubble downslope to its south.

The artifacts at the site were found south and downslope of the eastern structure. They include one worked Santa Fe/Wiyo Black-on-white or Biscuit A bowl sherd, three additional sherds from one vessel (including a rim fragment and two body sherds), and one Cerro Pedernal chert flake. One of the body sherds has a thick and crackled slip and could be a Galisteo Black-on-white or a Biscuit.

Based on the artifacts present, LA 70025 was occupied during the Late Coalition or Early Classic periods.

LA 70026

Site LA 70026 (L-54) is a historic log structure of unknown function located in the bottom of Cabra Canyon. The site is situated at an elevation of 2118 m (6950 ft) in a ponderosa pine forest ecological zone.

The structure is constructed out of a single tier of logs. These log "footings" indicate one complete enclosure and two smaller possible enclosures. A large rock pile is located inside the main enclosure and could be the result of a tree fall. The main enclosure is approximately 5 m north-south by 7 m east-west. The entire site area measures approximately 16 m north-south by 10 m east-west.

The site is apparently historic. There were no artifacts associated with the structure. The Historic period identification is based on the weathered and deteriorated nature of the logs and the evidence of historic lumbering activities (cut stumps) in the area. The logs had been cut with a hand saw and placed across each other. No notches were noted. No nails or nail holes were seen and the structure appears to have been constructed with minimal effort. LA 70026 could have been an animal pen or a temporary structure associated with the nearby lumbering activities. Based on the history of land use on the Pajarito Plateau, this site of possible Anglo/Hispanic origin probably dates to the Homestead Era.

LA 85402

LA 85402 is located approximately a quarter of a mile south of the Rendija Canyon Road on the edge of an unnamed drainage. The site lies on a north-facing slope in an area of a piñon, juniper, and ponderosa pine trees. The ground in the area is covered with pine duff that could obscure additional surface artifacts. This site is situated at an elevation of 2152 m (7060 ft).

The site is comprised of an irregular shaped structure made of unshaped tuff cobbles. It is approximately 2 m in diameter. The northernmost wall stands 35 cm in height with three levels of undisturbed masonry. The artifacts observed at the site consist of two biscuitware sherds located 2.5 m north of the structure. These sherds appear to be from different vessels. Based on the ceramics this site dates to the Ancestral Pueblo, Classic period. LA 85402 could not be relocated during this project.

LA 85403

LA 85403 consists of a fieldhouse located a short distance off the Rendija Canyon Road. It is on a hilltop in an area that is transitional between a ponderosa pine forest and piñon-juniper woodland. It is situated at an elevation of 2131 m (6990 ft). The site area drains to the south into a series of shallow drainages.

This site consists of a single masonry room that measures 5 by 4.8 m (Figure 7.1). Rubble consists of unshaped tuff blocks.

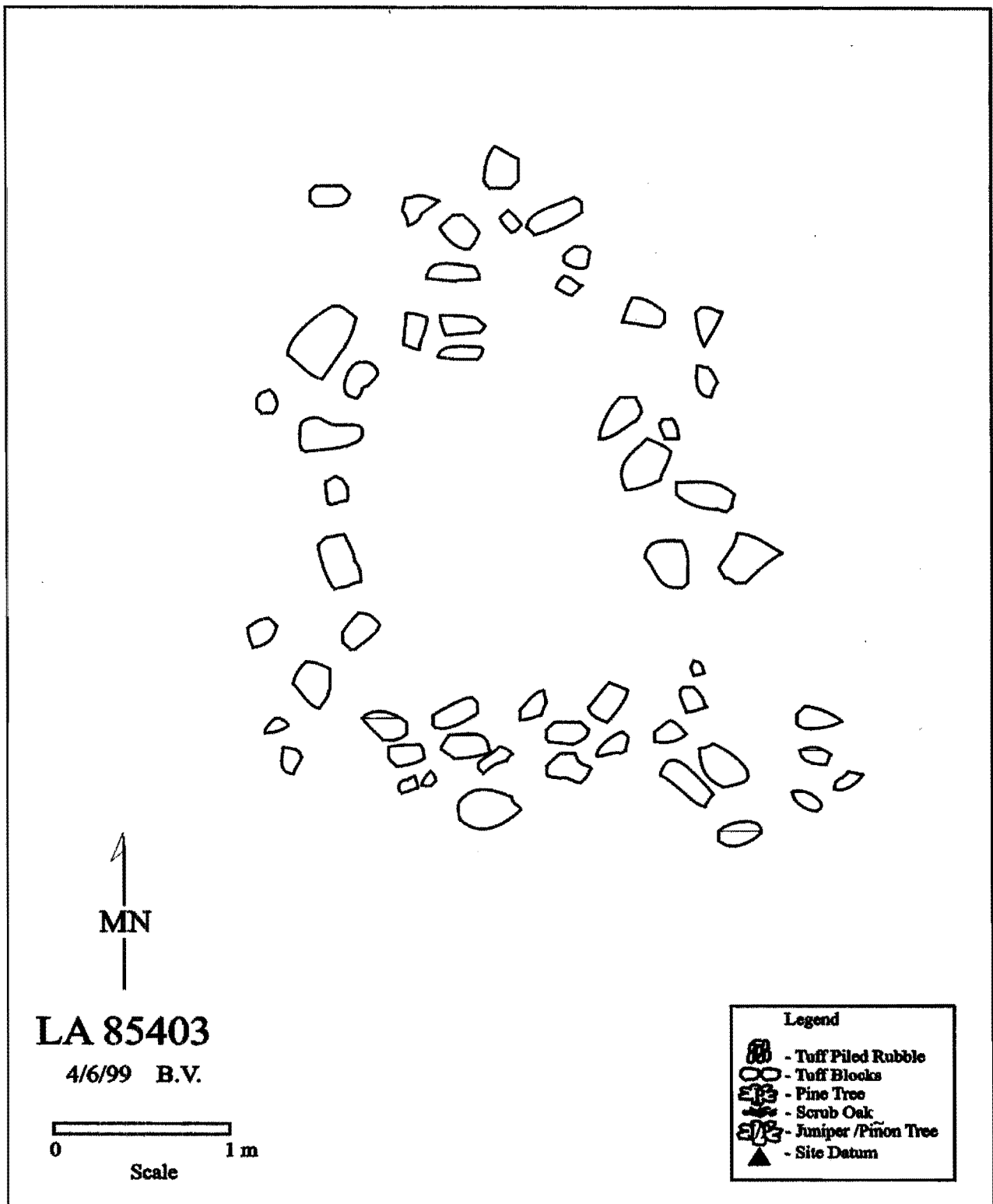


Figure 7.1. LA 85403, a masonry fieldhouse.

Associated with the site were two obsidian flakes and one chalcedony flake located to the southwest of the structure in a 20 cm diameter area. Based on the style of construction, this site has an Ancestral Pueblo cultural affiliation.

LA 85404

LA 85404 consists of a fieldhouse and two rock features and a diffuse scatter of chipped stone and ceramic artifacts (Figure 7.2). It is located south of the Rendija Canyon Road at an elevation of 2120 m (6954 ft). An intermittent drainage runs to the south of the site. The site is in a ponderosa pine and juniper woodland with mixed grasses and forbs as an understory. The soil depth at the site is a minimum of 1 m deep.

Feature 1 consists of a rectangular outline of unshaped tuff that measures 4.3 by 5 m in size. Feature 2 consists of a linear arrangement of unshaped tuff cobbles measuring 2.5 by 13 m. Since this feature is oriented parallel to the slope rather than perpendicular, it is more likely to represent a structure than an agricultural terrace. Feature 3 is a rectangular fieldhouse comprised of shaped blocks and unshaped tuff blocks. It measures 4 by 3.5 m.

Associated is a very light scatter of obsidian debitage, one heat treated chalcedony flake, and three sherds. The ceramics are an unpainted biscuitware, a Wiyo Black-on-white, and a Santa Fe Black-on-white sherd. Based on the ceramics, the site has a Coalition/Classic period affiliation.

LA 85405

LA 85405 is comprised of rock concentrations and alignments that represent the remains of a stone masonry surface structure. It is located at an elevation approximately 2134 m (7000 ft) on a fairly steep east-facing ridge slope. The dominant vegetation in the area includes piñon, juniper, and sparse ponderosa pine trees.

The site is comprised of a low mound concentration of cobbles and boulders that measure about 4.5 by 4.5 m in plan dimensions. There are other rocks scattered down the slope from the densest area of the concentration. These scattered rocks are most likely the result of a fallen wall. As originally recorded a small concentration of the rocks just to the west of the main feature was interpreted as a possible hearth. A test excavation was performed and revealed that the site was nothing more than a surface concentration of rocks. The surface artifact scatter extends approximately 9 m downslope from the site feature.

Three test pits (A, B, and C), measuring 1 m² each, were excavated at this site. Unit A was located in a rock concentration, or possible hearth, at the west side of the main site feature. Unit A was excavated 36 cm below ground level. No cultural materials or charcoal were found in this unit. Units B and C were located respectively within the southwest and northeast corners of the main feature. Unit B was excavated 74 cm below ground surface and yielded Pleistocene age clay and one biscuitware sherd. A definite structural wall was exposed in the south face of this excavation unit. Unit C was excavated to 44 cm below the surface. A biscuitware sherd and

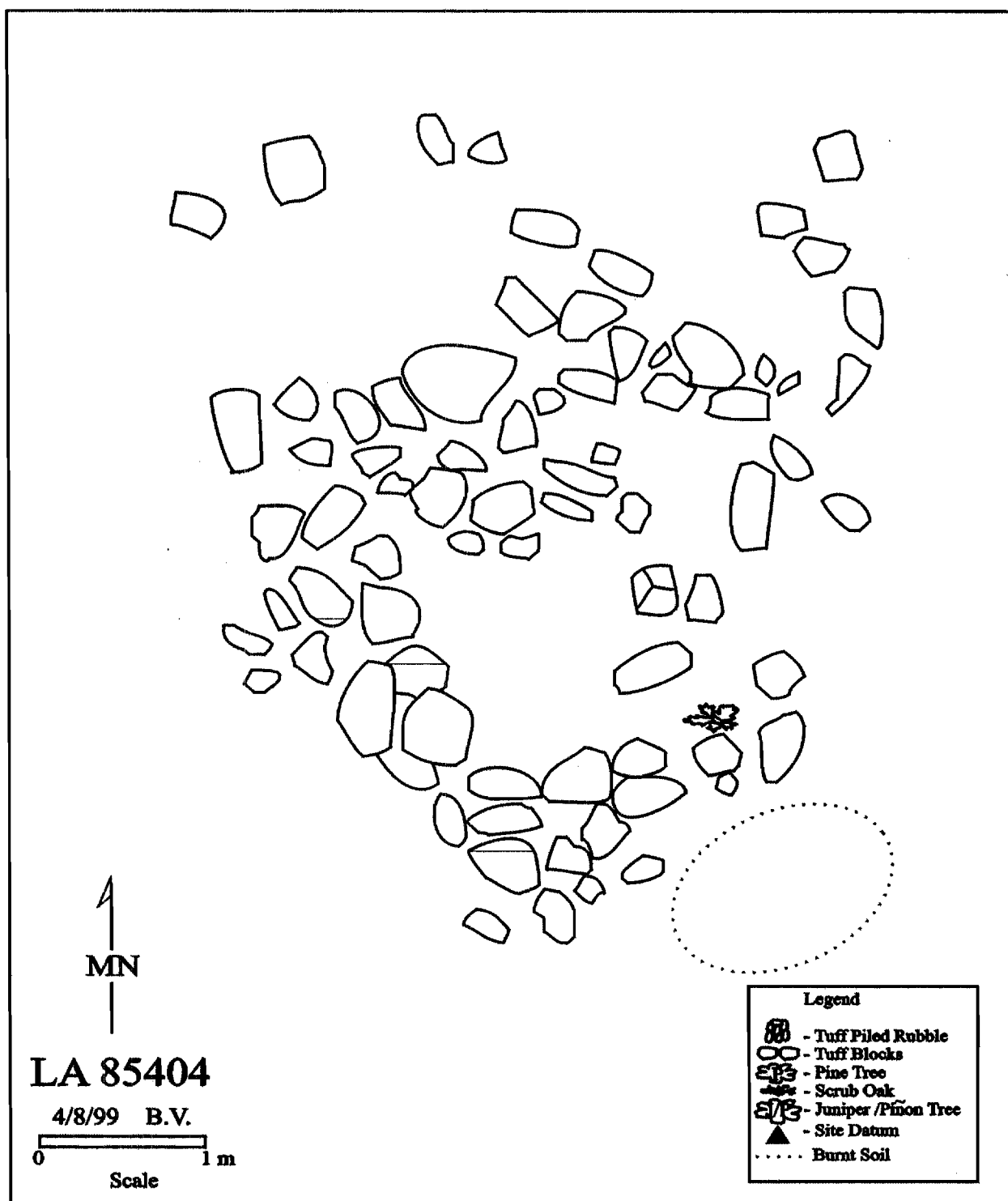


Figure 7.2. LA 85404, Feature 3.

a tertiary flake of red chalcedony were encountered. A total of six lithic artifacts and 18 sherds were recovered from the surface and the test excavations. Based on the ceramics this site is affiliated with the Ancestral Pueblo Classic period.

The testing has confirmed the presence of a partially intact structure.

LA 85406

LA 85406 is comprised of rock concentrations and alignments that represent the remains of a stone masonry surface structure. Representatives of the San Ildefonso Pueblo have identified this site as a traditional cultural property. It is located on a northeast-facing slope on a fairly level hilltop situated along the north side of Rendija Canyon. It is at an elevation of 2152 m (7060 ft). The dominant vegetation in the vicinity is comprised of piñon and juniper trees.

The structure measures 5 by 6 m with a long axis oriented north-south. The north and south parts of the feature consist of semicircular rock alignments separated by a low mound of unshaped cobbles and boulders that measure about 1 m in width and 5 m in length.

Two test units, A and B, and a test pit extension, A-EX, were excavated within the structure. Unit A-EX is an extension to Unit A and was excavated in order to better define the structure. Unit A and Unit A-EX revealed a one-course rock wall alignment oriented north-south across the eastern half of the unit. Unit B uncovered a possible floor between 25 to 30 cm below the surface. A radiocarbon test was conducted on a sample of charcoal recovered from Level 3 in Unit B. The sample was dated to 1040 ± 60 years BP, AD 910 or AD 850–970.

Only two artifacts were recovered from this site. A piece of Jemez obsidian angular debris and a retouched tertiary flake of Jemez obsidian were recovered from Unit A. The site is affiliated with the Ancestral Pueblo period, and the single radiocarbon implies a Developmental period association. However, the lack of diagnostic artifacts and the fact that Developmental period sites are very rare on the Pajarito Plateau makes this affiliation questionable.

LA 85407

LA 85407 consists of a historic log cabin and trash scatter located on the north rim of Rendija Canyon. It is in an open meadow that is surrounded by a piñon-juniper woodland. This site is situated at an elevation of 2097 m (6880 ft)

The walls of the log cabin are constructed with cut logs that are roofed with iron and asphalt. North of the structure is a circular rock feature measuring 2 m in diameter that might be a hearth. To the north of the site lies a pile of cut logs. An animal pen is located on the northern edge of the site.

There is a trash scatter located near the site consisting of lard, sardine, coffee, kerosene, and condensed milk cans. Also present were galvanized metal and purple glass fragments. One sherd of Kapo Black was found adjacent to this site. A potential prehistoric use of the site is

suggested by the presence of four obsidian flakes found near the trash scatter. Based on the construction style and materials as well as the associated artifacts, this site dates to the historic Homestead Era.

LA 85408

LA 85408 consists of a low structural mound of unshaped cobbles and boulders. It is located on the east-facing slope of a narrow ridge that has formed along the northern slope of Rendija Canyon. It is at an elevation approximately 2124 m (6970 ft). The vegetation on site is mostly piñon, juniper, and ponderosa pine trees.

The mound measures approximately 5 m by 6 m and is between 20 cm and 30 cm in height. The feature is oriented in a north-south direction. The majority of artifacts were located downslope to the northeast, however, a few artifacts were found in the area southeast of the mound. There is a two-track road located 3 m to the south of the site.

A single 1 m² excavation unit, Unit A, was excavated near the west corner of the structure. A hard surface was encountered at a depth of 35 cm. It is possible that this surface is the structure floor, however, further excavation indicates that this is more likely degraded bedrock. Bedrock was encountered at a depth of 42 cm. Rock alignments and wall foundations exposed in the north and south sides of the unit are one course thick and do not extend to bedrock.

The artifacts recovered from Unit A include four flakes, a core of Cerro Pedernal chert, and a dark gray igneous tertiary flake. Two sandstone metate fragments as well as nine Cerro Pedernal chert secondary and tertiary flakes and one tertiary flake of basalt were observed. One brown utilityware sherd was recovered from Unit A and sherds were surface collected. Eleven of these sherds were from Biscuit A bowls. Also noted were two Biscuit B sherds, two undifferentiated biscuitwares, one White Mountain Redware, and two utilityware sherds.

Ceramics indicate that the occupation at this site dates to the Ancestral Pueblo, Classic period. This site may have been a fieldhouse associated with small agricultural fields located in a swale to the west or along the drainage to the east.

LA 85409

LA 85409 consists of a structural mound situated on a fairly steep, west-facing, colluvial slope located along the north side of Rendija Canyon. It is about 50 m east of a southerly flowing intermittent drainage at an elevation of approximately 2121 m (6960 ft). The dominant vegetation in the area is comprised of piñon, juniper, and ponderosa pine.

The feature is a low mound of unshaped cobbles and boulders that is partially covered by trees and a thick layer of duff. Due to these conditions it was very difficult to determine the exact size and configuration of the feature. It appears to be about 6 by 6 m and 20 cm in maximum height. Surface artifacts have mostly been found southwest down the slope from the feature.

A single 1 m² test pit, Unit A, was excavated near the north wall of the surface structure. Four levels were excavated and the bottom was comprised of natural bedrock. No cultural materials were recovered from the unit.

Debitage found on the site includes one primary flake of Jemez obsidian, one large secondary flake of white chalcedony, and two angular pieces of chalcedony. Ceramics found on the site include 21 sherds of Biscuit A, eight sherds of Biscuit B, two sherds of an undifferentiated biscuitware, one sherd of Wiyo Black-on-white, one sherd of Pajarito Smeared-Indented, and six other utilityware sherds.

The biscuitware sherds place the occupation of the site sometime during the Classic period.

LA 85410

LA 85410 is a site that consists of a series of long rock alignments, or check dams (Feature 1), as well as two small check dams (Features 2 and 3). These features are situated on a gentle, east-facing slope at an elevation of 2137 m (7000 ft). This site was originally recorded as a large surface structure with associated check dams; however, an intensive walkover of the features revealed that it consisted of an extensive rock concentration, with several alignments, that appeared to be the remains of a series of long dams. The size of the feature measures 325 m² with the alignments that are as long as 36 m. Most of the site is covered with dense piñon, juniper, and debris that made it difficult to determine the exact feature configuration and the number of alignments. There is a concentration of cobbles and boulders at the eastern edge of Feature 1. The area on the upslope side of Feature 1 is fairly level and was possibly utilized for agricultural purposes. Feature 2, about 3 m in length, and Feature 3, about 2.5 m in length, are located about 14 m north-northwest of Feature 1.

Four test units were excavated. Unit A is a 1 m² unit that was located in the rock concentration on the western edge of Feature 1. Units B, C, and D were all 0.5 m² test pits. Unit B was placed behind Feature 2 and was excavated to a depth of 60 cm. Unit C was placed behind Feature 3 and Unit D was placed on one of the long rock alignments. No cultural materials were found in any of these test units.

A total of seven lithic artifacts were found on the surface of the site. These artifacts include three tertiary flakes, one angular piece of white chalcedony, and three tool fragments from a biface of dark gray chert. There are also two fragments of a Jemez obsidian projectile point and a biface. It is very possible that this site was utilized for agricultural purposes. Due to the low artifact density, the interpretation is that the site was a non-habitation area. The research potential of this site has been exhausted as a result of the test investigations.

LA 85411

LA 85411 is a site that consists of a surface structure mound (Feature 1) and a possible feature situated on the crest of a broad ridge (Feature 2). The site is located approximately 2134 m (7000 ft) in a piñon-juniper woodland.

Feature 1 is a definite surface structure mound that measures approximately 5 by 5 m and between 20 and 30 cm high. Feature 2 consists of a possible rock alignment and is located approximately 35 m to the south of Feature 1. The ground surface in the vicinity of this feature is very rocky and it is difficult to distinguish any alignments from the surrounding natural rock.

Two test excavation pits (Units A and B) measuring 1 m² were excavated within each of the site features. Unit A was placed in the center of Feature 1, and Unit B was placed within the possible rock alignments that form Feature 2.

Unit A was excavated to a depth of 36 cm. Artifacts recovered from Unit A include one small obsidian flake and two sherds of Pajarito Smeared-Indented in Levels 1 and 2. Five sherds of Pajarito Smeared-Indented as well as one rim sherd of Biscuit A were found in Level 3. No artifacts were located in Level 4.

Unit B was excavated to a depth of 35 cm. Artifacts were recovered from Level 1. Level 1 had one sherd of utilityware, one sherd of biscuitware, and one primary flake of chalcedony. This unit was located near a narrow ridge.

Ceramics recovered from the surface as well as the excavations indicate that the site was occupied some time in the Classic period. The ground surface of this area is very rocky and would not have been suitable for cultivation.

LA 85412

LA 85412 is a site that consists of a surface structure mound situated at the point of a narrow ridge. The site is approximately 2112 m (6930 ft) in a piñon-juniper woodland.

The feature on the site can be described in two parts. First, the main portion of the feature consists of a mound of unshaped cobbles and boulders that measures about 3 by 4 m and is between 20 and 25 cm high with a shallow depression at the center. The second part of the feature consists of a concentration of cobbles located southeast and downslope of the main portion. The second part of the feature measures 4 by 4 m and possibly represents the remains of a room or some type of structure that was attached to the main portion of the feature.

Two 1 m² units (Units A and B) were excavated on both feature areas on the site. Unit A was excavated to a depth of 40 cm in four levels. Obsidian and chalcedony artifacts were recovered from Levels 1, 2, and 3. A large cobble metate as well as a possible stone hoe were recovered from Level 4. A cigarette wrapper was found in Level 2 and suggests that the depression in the center of the surface structure mound is the result of pothunting. Unit B was excavated to pumice bedrock at a depth of 40 cm in three levels. The only artifacts recovered from this unit were two sherds of Pajarito Smeared-Indented that were located in the first level.

Very few artifacts were found at this site. No temporally diagnostic artifacts were found in the course of the test investigations. Based on the ceramics the occupation period of this site is most likely from the Coalition to Classic periods. This site should not be considered eligible for the NRHP.

LA 85413

LA 85413 consists of a structural mound and associated features. The site is located at the base of a ridge finger that forms a portion of the northern slope of Rendija Canyon. The site is at an elevation approximately 2109 m (6920 ft) and located in a piñon-juniper woodland.

The structural mound, Feature 1, straddles a short slope with the upper and lower portions of the feature situated on fairly level ground. The upper portion of Feature 1 measures approximately 3.5 by 4 m and resembles a single-room structure. The lower portion of the feature measures approximately 3 by 3 m. Two other features recorded at this site, Features 2 and 3, are both short check dams that span a shallow wash. They are situated about 16 m northeast of Feature 1. Feature 2 measures about 1.5 m in length, and Feature 3 is about 2 m in length.

Two 1 m² test pits, Units A and B, were excavated into the site. Unit A was placed in the center of the upper portion of Feature 1, and Unit B was placed in the lower portion. Both units were excavated in an attempt to define room walls, floors, or floor features. Unit A was excavated to a depth of 60 cm. No floor or other features were found. Recovered artifacts include 13 pieces of chalcedony debitage, one Jemez obsidian secondary flake, and three Biscuit A sherds. The chalcedony debitage consisted of 11 tertiary flakes, one secondary flake, and one piece of angular debris. Unit B was excavated to a depth approximately 60 cm. Two burned rocks were found in Level 1 and charcoal was found in Levels 1 and 2. A compact surface, a possible floor, was located at a depth of 39 cm. A possible rock alignment along the western edge of the unit at the surface consisted of a single course of stone. Recovered artifacts included nine pieces of chalcedony debitage, one Jemez obsidian tertiary flake, three Biscuit A sherds, and ten Pajarito Smeared-Indented sherds. The chalcedony debitage consisted of one tertiary flake, five secondary flakes, and three pieces of angular debris.

All surface lithics were chalcedony that consisted of five tertiary flakes, four secondary flakes, three pieces of angular debris, and one possible core. A total of 41 ceramics were collected from the surface of the site. These ceramics included 23 Biscuit A sherds, three Wiyo Black-on-white sherds, five Black-on-red sherds, four unidentified decorated sherds, one Pajarito Smeared-Indented sherd, and five other utilityware sherds.

Ceramics indicate that the site was occupied during the Classic period. The test excavations revealed that there are deep cultural deposits within both portions of the structural mound.

LA 85414

LA 85414 contains a rock concentration that represents the remains of a structure. It is situated in an eroded area on a southeast-facing slope within Rendija Canyon. The site is located approximately 2109 m (6920 ft) in a piñon-juniper woodland.

The rock concentration is approximately 4.5 by 4.5 m in size. The eastern edge of the feature has sustained significant impact as a result of erosion and a portion of the feature may well have been washed away. There is a two-track road in close proximity on the southeastern side of the feature.

Two 1 m² test pits, Units A and B, were excavated. Unit A, excavated to a depth of 62 cm, was located within the site feature in hope of locating a floor or floor features. Rocks were common throughout Levels 1 to 4 however; no clear alignments were encountered. Recovered artifacts include 11 pieces of chalcedony, two pieces of Jemez obsidian debitage, nine Pajarito Smeared-Indented sherds, and two other utilityware sherds. The chalcedony debitage included three secondary flakes, five tertiary flakes, and three pieces of angular debris. The obsidian debitage included one primary and one secondary flake. Unit B, excavated to a depth of 20 cm, was placed adjacent to what appeared to be the southwestern corner of the feature. It was placed in this locale in an attempt to locate the corner and define the structure wall. Rocks encountered across the eastern half of the unit did not form a clear alignment. The only artifact recovered was a piece of chalcedony angular debris from Level 1.

Surface lithics included a chalcedony tertiary flake and a Jemez obsidian tertiary flake. The lone surface ceramic was a polished plain brown sherd.

The ceramics indicate that the site has an Ancestral Pueblo cultural affiliation, however, as no temporally diagnostic sherds were found, it is difficult to determine the period of occupation. Many of the vicinity sites have been dated between the Coalition and Classic periods so it is possible that this site was occupied during similar times.

LA 85415

LA 85415 consists of a structural mound situated on the north side of a narrow ridge crest that forms a portion of the north side of Rendija Canyon. The site is at an elevation of approximately 2112 m (6930 ft). The dominant vegetation in the area is piñon, juniper, and ponderosa pine.

The low mound, that is formed with unshaped cobbles and boulders, measures approximately 4.5 by 4.5 m and is between 20 and 30 cm in height. There were some surface artifacts located downslope from the feature. Representatives from San Ildefonso Pueblo have identified this site as a traditional cultural property.

A single 1 by 2 m unit, Unit A, was excavated in the center of the mound in order to look for interior floor features. This unit was excavated to a depth of 43 cm below the surface. The only cultural materials found in the unit were one Biscuit B sherd and one Jemez obsidian flake fragment recovered from the upper portion of Level 1. A large upright rock located along the south side of the unit may be part of a foundation wall.

Collected surface lithics included six tertiary flakes and two pieces of angular debris of chalcedony, ten tertiary flakes and two secondary flakes of Jemez obsidian, one secondary flake of Polvadera Peak obsidian, and one tertiary flake of basalt. One large boulder metate of volcanic rock with shallow basin grinding was located near the northeast corner of the site feature. Twenty-two sherds were recovered including nine Biscuit B sherds, one undifferentiated biscuitware sherd, eleven Pajarito Smeared-Indented sherds, and one other utilityware sherd. The ceramics indicate that this site was occupied during the Middle to Late Classic period.

LA 85416

LA 85416 consists of a loose pile of rocks that may be the remnants of a structure. This feature is situated on an east-facing gentle slope that forms a portion of the northern side of Rendija Canyon. It is south of an easterly flowing intermittent drainage at about 2094 m (6870 ft). The dominant vegetation in the area is ponderosa pine, piñon, and juniper.

The rocks that make up the mound appear to have been placed recently as there is very little soil accumulation among the rocks. The rock pile measures 2.5 by 4 m and is between 30 and 60 cm in height. Representatives from San Ildefonso Pueblo have identified the site as a traditional cultural property.

Two 1 m² test pits, Unit A and Unit B, were excavated into the edges of the rock mound. Unit A was excavated to a depth of 40 cm. Unit B was excavated to a depth of 60 cm. No clear wall alignments or floors were located in either test unit. Six pieces of chalcedony debitage, one Biscuit A sherd, three Biscuit B sherds, 20 Pajarito Smeared-Indented sherds, and five other utilityware sherds were recovered from Unit A. The artifact density in Unit B was considerably higher than that found in Unit A. Chipped stone artifacts included 32 pieces of chalcedony debitage, one piece of Jemez obsidian debitage, and one piece of unidentified volcanic debitage. Ceramics included three Biscuit A sherds, six Biscuit B sherds, one unknown decorated sherd, 52 Pajarito Smeared-Indented sherds, and 7 other utilityware sherds. Surface chipped stone artifacts consisted of three pieces of chalcedony debitage and one piece of Jemez obsidian debitage. Surface ceramics included four Biscuit A sherds, six Biscuit B sherds, two Tewa Polychrome sherds, 18 Pajarito Smeared-Indented sherds, and three other utilityware sherds. Also a possible stone hoe was collected from the surface.

The test excavations revealed that there are deep cultural deposits within the rock mound, however, no evidence was found that would clearly indicate that it was a structure. Ceramics found on the site indicate that the site was occupied during the Classic period.

LA 85417

LA 85417 consists of several rock features that are situated on a low rise that forms a portion of the northern slope of Rendija Canyon. It is located at approximately 2091 m (6860 ft). The dominant vegetation in the area is juniper, piñon, and ponderosa pine.

The main site feature, Feature 1, is a low structural mound with concentrations of burned clay visible on the surface. This feature measures approximately 5 by 6 m and is between 10 and 15 cm in height. There are five other features on the site. Feature 2 is a rock concentration that measures about 3 by 2 m. Feature 3 is a rock concentration with a possible hearth that measures 2 by 2 m. Feature 4 is another rock concentration that measures 2 by 2.5 m. Features 5 and 6 are both rock alignments, possible check dams, that measure 4 m and 2 m in length. The surface artifacts were found to the east and southeast of Feature 1.

Seven test units, Units A through G, were excavated into various site locations. Two 1 m² test units were placed in Feature 1 (A and B), a 1 m² unit was excavated in each of Features 2, 3, and

4 (C-E), a 0.5 m² unit was placed in Features 5 and 6 (F and G). In addition, a 0.5 m² test unit expansion was placed to the east off the northeast quadrant of Unit E.

Unit A was excavated to a depth of 41 cm. Pieces of burned clay were found in Levels 1 through 3. Other cultural materials collected include a large secondary flake of chalcedony and one plain utilityware sherd from Level 2. Over most of the unit sterile clay was encountered at a depth of 30 cm. However, in the northeast quadrant of the unit the clay occurred at about 19 cm and there was a clear edge to this elevated clay layer. Several small pieces of charcoal were recovered from the surface of the elevated clay surface. It is possible that this clay layer is a corner of the floor of a jacal structure and that the layer is elevated due to the accumulation of soil within the structure.

Unit B was excavated to a depth of 20 cm. A dense concentration of burned clay was found on the surface as well as in the first level. No cultural materials were found.

Unit C was placed in order to determine the nature of a small rock feature that was interpreted as a hearth during the initial recordation of the site. It was excavated to a depth of 30 cm. Pieces of partially burned wood were found in Level 1. This feature appears to be the remains of a hearth, however, the intact burned wood suggests that the hearth may be recent.

Unit D was excavated to a depth of 40 cm. This excavation found no cultural materials. The rock concentration where Unit D was located may well have served as some type of soil control device.

Unit E was excavated to a maximum depth of 40 cm. This unit was placed on a hearth. The excavation indicated that the hearth was about 70 cm in diameter. It was outlined with flat rocks set on edge and the bottom of the hearth was lined with small cobbles. The deposits within the hearth consisted of a thin layer of gray ash, with layers of burned gray and red clay beneath. Artifacts recovered from within the unit included three sherds of plain gray utilityware, one sherd of clear glazed earthenware, and numerous small bits of rusted iron (possibly the remains of food cans). There were no artifacts found outside of the hearth.

Unit F was excavated adjacent to a rock alignment, Feature 5, that was interpreted as a possible agricultural feature. The unit was excavated to a depth of 40 cm. No cultural materials were recovered.

Unit G was placed adjacent to another rock alignment, Feature 6, which had also been interpreted as an agricultural feature. This unit was excavated to a depth of 35 cm. No cultural materials were found.

Six pieces of chalcedony debitage were recovered from the site; one from Unit A and the rest on the surface to the east and southeast of Feature 1. Including four utilityware sherds recovered from Test Units A and E, 57 sherds were collected from the site. With the exception of tentatively identified Wiyo Black-on-white sherd, all of the ceramics were utilityware sherds. The Wiyo Black-on-white sherd tentatively suggested a Late Coalition to Early Classic period occupation for this site.

The results of the excavations show that the cultural deposits in the vicinity of Feature 1 are probably very shallow. A small portion of what may be a jacal floor was exposed at a depth of 19 cm in Unit A. It is probable that all of the structural remains associated with this feature are within 20 cm of the surface. It was the opinion of the archaeologists that the research potential of Features 2 through 6 has been exhausted through the testing program. However, they felt that Feature 1 should be completely excavated in order to determine the exact extent, configuration, and age of the structure.

LA 85418

LA 85418 contains two rock features with associated artifacts. This site is situated on a bench north of Rendija Canyon. It is located just west of an intermittent drainage at an elevation of approximately 2083 m (6835 ft). The dominant vegetation in the area is juniper and piñon.

LA 85418 contains a rock pile (Feature 1) and a long boulder alignment (Feature 2). Feature 1 is approximately 2.5 m in diameter and approximately 30 cm in height. Feature 2 is approximately 45 m in length. A fairly dense concentration of obsidian debitage covers an approximately 100 m² area about 40 m south of Feature 2.

Five test pits were excavated in the features. Unit A is a 1 m² test pit placed on Feature 1 and Units B through E were test pits placed along Feature 2. Unit A was excavated to a depth of 40 cm. An angular piece of obsidian and a possible fragment of ground stone were recovered. Unit B was placed on the east side of the boulder alignment and excavated to a depth of 40 cm. No artifacts were recovered from Unit B. Unit C was excavated to a depth of 40 cm. A total of three pieces of obsidian debitage, all tertiary flakes, were recovered. Unit D was located on the east side of the alignment and was excavated to a depth of 30 cm. No cultural materials were recovered from Unit D. Unit E was placed on the west side of the rock alignment and was excavated to a depth of 52 cm. No cultural materials were recovered from Unit E.

No ceramics were found on this site. Lithics found on the surface in the vicinity of the site features consist of 15 tertiary flakes of Jemez obsidian, six tertiary flakes of Polvadera Peak obsidian, and two tertiary flakes of white chalcedony. Two thin-shaped slabs of volcanic rock, possible stone hoes, were collected from this site for analysis. A complete one-hand cobble mano of quartzite was found on the surface of this site approximately 3 m northwest of Feature 1. Unit A appears to be nothing more than a rock pile. Due to the lack of temporal artifacts the occupational period has not been determined. The test excavations are believed to have exhausted the research potential of this site.

LA 85419

LA 85419 contains a rock feature with associated artifacts. It is located on a southeast-facing slope at an elevation approximately 2088 m (6850 ft). The dominant vegetation in the area is mostly piñon and juniper.

The site consists of a large mound of rocks that measures 6 m in diameter and approximately 1 m in height. Informants from the Pueblo of San Ildefonso have identified this site as a traditional cultural property.

Fourteen sherds and two tertiary flakes of chalcedony were found on the site. Seven of the ceramics are utilityware sherds and one sherd was Pajarito Smeared-Indented. Four other sherds were Biscuit A and three were Wiyo Black-on-white. These artifacts are mostly located on the east side of the feature. Based on the associated ceramics this site is affiliated with the Classic period.

LA 85857

LA 85857 is situated in Rendija Canyon on a south-facing erosional slope. The site is between two shallow drainages. Vegetation at the site consists of a piñon-juniper, ponderosa pine woodland at an elevation of 2095 m (6875 ft).

The site consists of an “L” shaped surface alignment of widely spaced rocks. Dimensions of the feature measure about 5 by 6 m with the angle of the “L” pointing to the east-southeast. Surface artifacts were analyzed and recorded. Testing strategy was based on two 1 m² units (Units A and B). Both test units were excavated from the corner of the “L”.

An infield artifact analysis of surface artifacts was conducted. Ceramics consisted of seventeen sherds that were collected. Sixteen of the sherds were utilitywares, and one was an eroded sherd of a Wiyo Black-on-white. Two lithic artifacts were recorded and collected. These artifacts consisted of a small core of orange/white chalcedony and one tertiary flake of opaque black obsidian or a black chert. One large basalt boulder metate was found on the surface 4 m north of the site feature. Four shaped slabs of volcanic rock, interpreted as hoes, were collected from the surface. Rock materials have been determined to be andesite and basalt.

Testing of Unit A began at the corner of the “L” shaped alignment. This unit was excavated in three levels to a depth of 30 cm. The soil throughout the excavation consistently was of a loose silty loam. One possible burned clay/daub was collected from the surface of the unit. Charcoal was found near the bottom of Level 2 and at the top of Level 3. This was collected for curation in two radiocarbon samples. No artifacts were observed.

Unit B was located about 1 m to the west of Unit A and was also excavated to a depth of 30 cm. Soil content was a silty loam. No cultural materials were observed in this unit.

Based on the associated architecture, this site is affiliated with the Coalition period. The site feature appears to have been impacted by erosional processes associated with overflow from drainages that bracketed the site. It appears that the site's deposits have been washed away.

LA 85858

LA 85858 contains three rock features that have been identified as traditional cultural properties by informants from San Ildefonso Pueblo. It is located on a hillslope that forms a portion of the

northern side of Rendija Canyon. The site is at an elevation approximately 2100 m (6890 ft) and is located in a piñon-juniper woodland.

Feature 1 appears to be the primary feature and consists of a loose pile of cobbles and boulders that are approximately 2.5 by 4 m in width and between 40 and 50 cm in height. The remaining two features consist of a small rock pile, Feature 2, that measures about 1.5 by 2 m, and a 2 m long alignment of boulders, Feature 3. Six artifacts were recovered from the surface. These include two sherds of Biscuit A, three utilityware sherds, and one tertiary flake of quartzite. Based on the associated artifact assemblage, this site is affiliated with the Classic period. These artifacts were found to the north and west of the site features.

LA 85859

LA 85859 is a small concentration of lithic tools and debitage situated on an east-facing ridge slope that forms a portion of the northern side of Rendija Canyon. The site is at an elevation approximately 2100 m (6890 ft) and is located in a ponderosa pine forest. The artifact concentration covers an area of approximately 225 m². Artifacts found at the site include lithics and two small plain utilityware sherds.

Two 1 m² test units, Units A and B, were excavated at this site. Unit A was placed at the edge of the artifact scatter and Unit B was placed upslope from the observed scatter. Unit A was excavated to a depth of 60 cm. Obsidian debitage was recovered from all but the first level of the unit. Unit B was excavated to a depth of 30 cm and no cultural materials were recovered. In addition, artifacts were collected from a 1 m wide by 15 m long transect that was laid out across the center of the site. Two collected projectile point bases comprise a grab sample.

A total of 224 pieces of obsidian debitage were recovered from the excavation and 15 pieces were recovered from the sample transect. All of the debitage is the result of secondary or tertiary reduction. This suggests that partially reduced materials (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 suggests 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.

Analysis showed that the projectile point bases were early Archaic, Bajada phase points. The two utilityware sherds suggest that the area was also utilized during the Ancestral Pueblo, Coalition to Classic periods.

LA 85860

LA 85860 contains a structural mound situated on the northeast-facing slope of a narrow ridge that forms a portion of the northern side of Rendija Canyon. It is at an elevation of approximately 2127 m (6980 ft). The dominant vegetation in the area are piñon and juniper trees. This site is believed to be a traditional cultural property by informants from San Ildefonso Pueblo.

The mound measures about 4 by 4 m and is between 30 and 40 cm in height. There is a depression in the center of the mound that is believed to be the result of pothunting, however, San Ildefonso Pueblo representatives stated that the feature had been partly “dismantled.”

Three pairs of 0.5 m² test units were excavated into the edges of the mound. Each pair of excavation pits were contiguous and basically formed three 1 by 0.5 m excavation pits, Units A and E, Units B and F, and Units C and D. Units A and E, excavated into the southeastern edge of the feature, were excavated to a depth of 20 cm. The test pits indicated that this portion contained wall fall. Cultural materials included one sherd of Pajarito Smeared-Indented and one sherd of Biscuit B recovered from Level 2.

Units B and F were excavated to depths of 30 and 20 cm, respectively. They were excavated into the northern portion of the feature. The excavations located the northeast corner of a structure/room. Cultural materials included a piece of burned clay/daub, some charcoal, and three sherds of Pajarito Smeared-Indented pottery.

Units C and D were placed on the high point of the western portion of the structural mound. These units were excavated to depths of 30 and 40 cm, respectively. This set of test units revealed the southwest corner of the structure. Cultural materials included small pieces of burned clay/daub, some charcoal, and three sherds of Pajarito Smeared-Indented pottery. It is possible that the charcoal marred the floor level of the room.

In addition to the ceramics recovered during testing, another Pajarito Smeared-Indented and three Biscuit B sherds were recovered from the surface of the site. These ceramics indicate a Classic period occupational date. The excavations on this site confirmed that the mound is the remains of at least a one-room structure. As with several of the other fieldhouse sites within the project area, it appears that the structure here was partially excavated into the slope in order to provide a level floor.

LA 85861

LA 85861 is a site consisting of possible rock alignments that could be the remains of a surface structure. The site is located on a gentle slope at an elevation approximately 2103 m (6900 ft). The dominant vegetation at the site is piñon, juniper, and ponderosa pine. The northern half of the site area, as defined by the surface artifacts, has sustained significant impact as a result of water erosion.

The rock scatter measures 4 by 5 m. A second feature, Feature 2, is an alignment of boulders that measures about 1.5 m in length. The function of Feature 2 is unknown.

A single 1 m² test pit was excavated at this site. The unit was placed adjacent to a rock alignment. This unit was excavated to a depth of 55 cm below the surface. Ceramics were recovered from all but the upper excavation level.

Six artifacts found on the surface comprise the lithic assemblage at the site. One tertiary flake fragment of Jemez obsidian, three Polvadera Peak obsidian flakes, one flake of basalt, and one

core of dark green chert were found. A total of 30 sherds were recovered from the site. The ceramics included five sherds tentatively classified as Wiyo Black-on-white, one White Mountain Redware sherd, one sherd of Biscuit A, three sherds of Biscuit B, one possible Glaze A sherd, four sherds of Pajarito Smeared-Indented, and 16 other utilityware sherds. The artifacts discovered at this site indicate that the occupational period was during the Coalition/Classic period.

LA 85862

LA 85862 is a site consisting of rock alignments that appear to form the outline of a small room. The site is situated on a very low and narrow ridge located between two drainages. The site is at an elevation approximately 2131 m (6990 ft) in a piñon-juniper woodland. The dirt road that crosses LA 85862 has had a substantial impact on the site. A charcoal stain was observed in the bed of the road just to the south of the rock feature.

The rock alignments that form the site feature are about 3 by 6 m in area. The site as defined by the feature and its associated artifacts is about 75 m² in size.

Two 1 m² test pits, Units A and B, were excavated at the site. Unit A was placed at the charcoal stain. It was excavated to a depth of 20 cm. A variety of prehistoric and historic materials were collected from the surface and from within the test pit. Unit B was placed within the area of the rock alignments. It was excavated to a depth of 30 cm. This unit contained a variety of prehistoric and historic materials as well.

Lithics found at the site include Jemez obsidian and chalcedony. Ceramics included five Biscuit B sherds, 15 Pajarito Smeared-Indented sherds, and 14 other utilityware sherds. Two unidentified sherds were also located in Unit A. Both types have a glaze paint over a thin white or tan slip with a dark gray to red paste. Historic materials recovered from the site are green, brown, amber, and aqua bottle glass. Cartridges are also present. Based on the associated artifact assemblage, this site is affiliated with the Classic period.

The excavations found that the rock alignments are only single course in height. It is believed that the road has heavily disturbed the site. It has been assessed that this disturbance has exhausted the potential of the site.

LA 85863

LA 85863 is a site that consists of a rock concentration with possible alignments that has been interpreted as the remains of a surface structure. It is situated on a steep, rocky colluvial slope. The site elevation is approximately 2115 m (6940 ft). The dominant vegetation in the area is mostly piñon, juniper, and ponderosa pine.

The rock concentration at this site is approximately 4 by 4.5 m in size and between 10 and 15 cm in height. A 1 m² test unit, Unit A, was excavated at the site. The unit was excavated to a depth of 55 cm below the surface. The test excavation located no alignments or cultural materials.

Testing indicated that if the rock concentration represents a structure then it is entirely a surface manifestation.

Three sherds of utilityware and one large tertiary flake of chalcedony were collected. These artifacts were located in the southwest portion of the rock concentration. Based on the associated artifact assemblage, this site is affiliated with the Coalition/Classic period. Based on the test excavations the research potential of this site is assessed as having been exhausted.

LA 85864

LA 85864 is a wickiup ring located on a low ridge between two shallow arroyos. It is at an elevation of 2127 m (6980 ft) in an area dominated by a piñon-juniper woodland. Extensive erosion along the northern edge of the site is estimated to have washed away about 40% of the rock ring.

The site consists of a semi-circular alignment of large tuff rocks that is approximately 4.5 m in diameter. The rocks are spaced about 0.4 to 0.75 m apart.

A 1 m² test unit and two shovel tests were excavated into this site. Unit A, placed within the rock ring (Figure 7.3), 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 gave a date of 130 ± 60 BP (AD 1820/AD 1740 to 1900). Five small unidentified pieces of burned bone were recovered from a floated soil sample recovered from the area containing the hearth. No cultural materials were located in the shovel tests.

Two sherds were found near the structure, one located in the arroyo south of the cobble ring and the other located on the ridge. One sherd has a micaceous black paste and the other has 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.

Based on the radiocarbon sample, this site dates to sometime in the 18th to 19th centuries. It was speculated by the archaeologists that conducted the eligibility testing that this site contains the remains of a wickiup that would have been associated with nomadic peoples such as the Navajo or Apache.

LA 85865

LA 85865 is a site consisting of a very sparse artifact scatter located on a ridge between two deep arroyos. The site elevation is approximately 2127 m (6980 ft) in a piñon-juniper woodland.

Artifacts observed on the surface of the site include two sherds and five pieces of lithic debitage, as well as two large metates. The artifact scatter is approximately 285 m² in size.

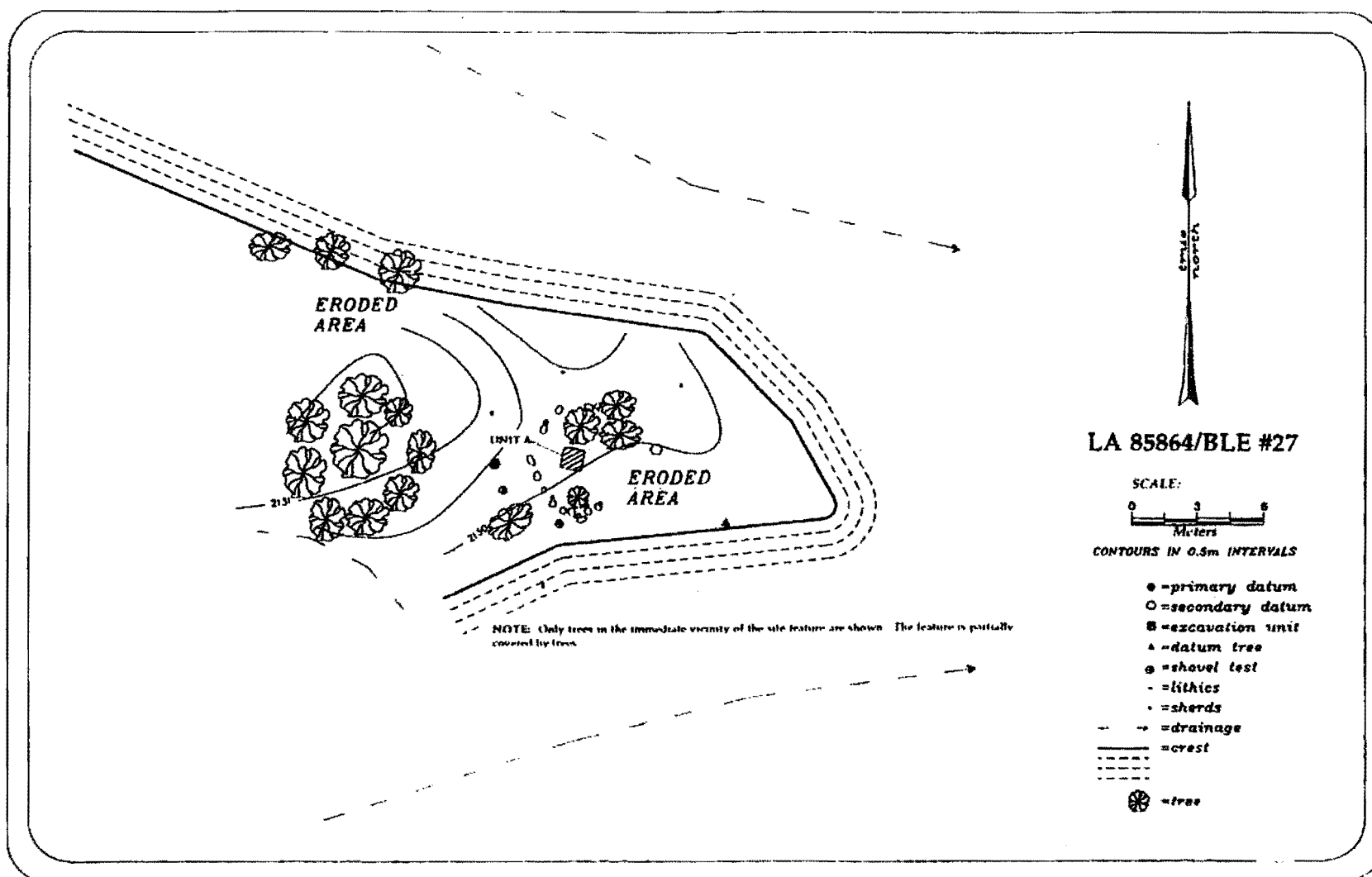


Figure 7.3. LA 85864, semi-circular rock feature (Peterson and Nightengale 1993:173).

Several shovel tests were excavated and no cultural materials were located. Two Biscuit A sherds, three tertiary flakes of obsidian, and two tertiary flakes of chalcedony were recovered from the surface. Both metates, containing shallow ground basins, were located near the northern edge of the site. Based on the ceramics this site is affiliated with the Early Classic period. It was speculated that this site could represent some type of processing outlier associated with a larger site located to the north outside of the project area. Based on the site testing the research potential of this site is assessed as having been exhausted.

LA 85866

LA 85866 is a site consisting of two rock concentrations, Features 1 and 2, located along a north-facing ridge slope. The site is situated in a piñon-juniper woodland at an elevation of 2103 m (6900 ft). The site is comprised of two distinct areas spaced about 30 m apart and connected by a very sparse lithic scatter. A two-track dirt road crosses the north half of Feature 1 and passes just south of Feature 2. The artifact scatter associated with Feature 2 is dense.

Feature 1, located in the westernmost site area, is a rock concentration measuring about 4 by 5.5 m. The Feature 2 rock concentration is much less distinct and measures about 2 by 2 m.

Two 1 m² test units were excavated into each feature. One obsidian flake was recovered from Unit A (Feature 2) that was excavated to 25 cm. No cultural materials were recovered from Unit B (Feature 1) that was excavated to 30 cm.

The majority of surface artifacts were located to the north, northeast, and east of Feature 2. A total of 22 sherds and 15 pieces of lithic debitage were collected from this site. The chipped stone included Jemez obsidian, Polvadera Peak obsidian, and chalcedony. The ceramics included one tentatively typed Santa Fe Black-on-white, four White Mountain Redwares, and 17 utilityware sherds.

Based on the ceramics this site is affiliated with the Coalition period. The density and variety of artifacts located near Feature 2 suggests that this might have been the remains of a structure. However, erosion of both features has apparently destroyed any structural remains. The test excavations have exhausted the research potential of this site.

LA 85867

LA 85867 is a site that consists of a surface structure, Feature 1, as well as two other rock features, Features 2 and 3. The site is located on a south-facing colluvial slope at an approximate elevation of 2114 m (6935 ft). The area is vegetated by a piñon-juniper woodland.

Feature 1 is comprised of a low mound of unshaped cobbles and boulders that measures about 4 by 4.5 m in size and approximately 30 cm in height. This feature is located at the base of the colluvial slope and has sustained impact from a two-track road that crosses the northern edge of the feature. Feature 2 is approximately 3 by 4.5 m in size and is comprised of alignments that appear to be the remains of a single-room structure located on the colluvial slope about 45 m

north of Feature 1. Feature 3 is a surface concentration of cobbles and boulders that measures about 0.5 m by 2 m. The function of Feature 3 is not known.

Three 1 m² test units were excavated on the site. Unit A was placed in the center of Feature 1. It was excavated to 72 cm. A floor was encountered at a depth of 27 cm. The floor consisted of a very hard packed clay surface with several sherds of Pajarito Smeared-Indented (possible pot drop) and two sherds of Biscuit B. Charcoal recovered from this test unit was submitted for radiocarbon testing. The sample was dated at 430 ± 60 BP (AD 1520/AD 1460 to 1580). Unit B was excavated on the upslope side of Feature 3 to 21 cm. No cultural materials were recovered from Unit B. Unit C was placed in the middle of Feature 2. Unit C was excavated to 30 cm. No cultural materials were located in this unit.

A total of four lithic artifacts were found on the site. One Jemez obsidian flake and two chalcedony flakes were recovered from the Unit A test excavation. A tertiary flake fragment of chalcedony was found on the surface of the site. All of the ceramics were located in the vicinity of Unit A. Thirty sherds of Pajarito Smeared-Indented and two of Biscuit A were found. The Biscuit A sherds and the radiocarbon date indicate that Feature 1 dates to the Classic period. This feature with intact floor retains considerable research potential. Based on the complete lack of associated cultural deposits, Features 2 and 3 have been assessed as having no further research potential.

LA 85868

LA 85868 is a site that was originally recorded as a series of rock alignments defining one or two structural rooms. The site is located on a ridge crest in an area that contains numerous boulders from a natural outcrop. The elevation of the site is approximately 2121 m (6960 ft) and is in a piñon-juniper woodland.

A single 1 m² test unit was placed over what appeared to be the best rock alignment. It was excavated to a depth of 45 cm. No cultural materials were encountered and the rock alignment was found to be natural.

No cultural materials were located on the surface of the site. Based on the site testing it appears that the assumed feature is a natural rock outcrop.

LA 85869

LA 85869 is a possible wickiup or tipi ring and a concentration of boulders. The site is located on top of a hill in a piñon-juniper woodland. There is a small intermittent drainage to the north of the site. The site is at an elevation of 2124 m (6970 ft).

Feature 1 is a circular rock alignment that is about 5 m in diameter (Figure 7.4). It is formed by a surface alignment of large cobbles each spaced between 40 and 60 cm apart. The boulder concentration is located in an eroded area situated about 44 m northwest of Feature 1. The boulders form no clear alignments and several appeared to have been recently moved. A recent trash scatter is associated with this cobble concentration.

A 1 m² test unit was excavated into each of the site features. Unit A was placed within the possible wickiup or teepee ring adjacent to and south of a small concentration of rocks that was thought to be a hearth. It was excavated to 11 cm where sterile clay was encountered. The small rock concentration was found not to be a hearth, however, a concentration of burned soil and ash with small flecks of charcoal was exposed along the west edge of the test unit. The burned materials were encountered at a depth of 5 cm and the burned clay extended to a depth of 15 cm as determined in a feature profile. No evidence of an associated pit or depression was found, thus the hearth is assumed to have been built on the surface that formed the floor of the structure. No other cultural materials were recovered from this test excavation.

The Unit B test excavation was terminated at a depth of 10 cm where sterile clay was encountered. No cultural materials were encountered and there was no evidence that Feature B was cultural in origin.

The only non-recent artifact found to be associated with the site was a tertiary flake of Jemez obsidian. A tuff metate and a white quartzite mano documented during the initial site recording could not be relocated during the site-testing phase. The archaeologists that conducted eligibility testing speculated that this site contains the remains of a tipi ring or wickiup that would have been associated with nomadic peoples such as the Navajo or Apache. Based on its similarity to LA 85864 it is possible that this site dates to the 18th or 19th centuries.

LA 85870

LA 85870 is a site that contains three rock concentrations, Features 1, 2, and 3. They are located on the crest of a broad ridge at an elevation of 2098 m (6885 ft). The dominant vegetation in the area is mostly piñon, juniper, and ponderosa pine. Representatives from the Pueblo of San Ildefonso have identified this site as a traditional cultural property. Feature 1 measures 1.5 by 1.5 m, Feature 2 measures 2 by 2 m, and Feature 3 measures 2 by 4 m in size.

Two 1 m² test units, Units A and B, and one 0.5 m² test pit, Unit C, were excavated at this site. Unit A was placed in the western cairn and was excavated to 30 cm. One obsidian flake was recovered from the second level. No other cultural materials were encountered. Unit B was located at the southern cairn and was excavated to 44 cm. No cultural materials were recovered.

Unit C was placed in the northern cairn and excavated to 20 cm. Again, no cultural materials were found.

A total of three flakes were collected from the site surface and one was collected from Level 2 of Unit A. These were all of Jemez obsidian. The three surface flakes were located a few meters east of Feature 1.

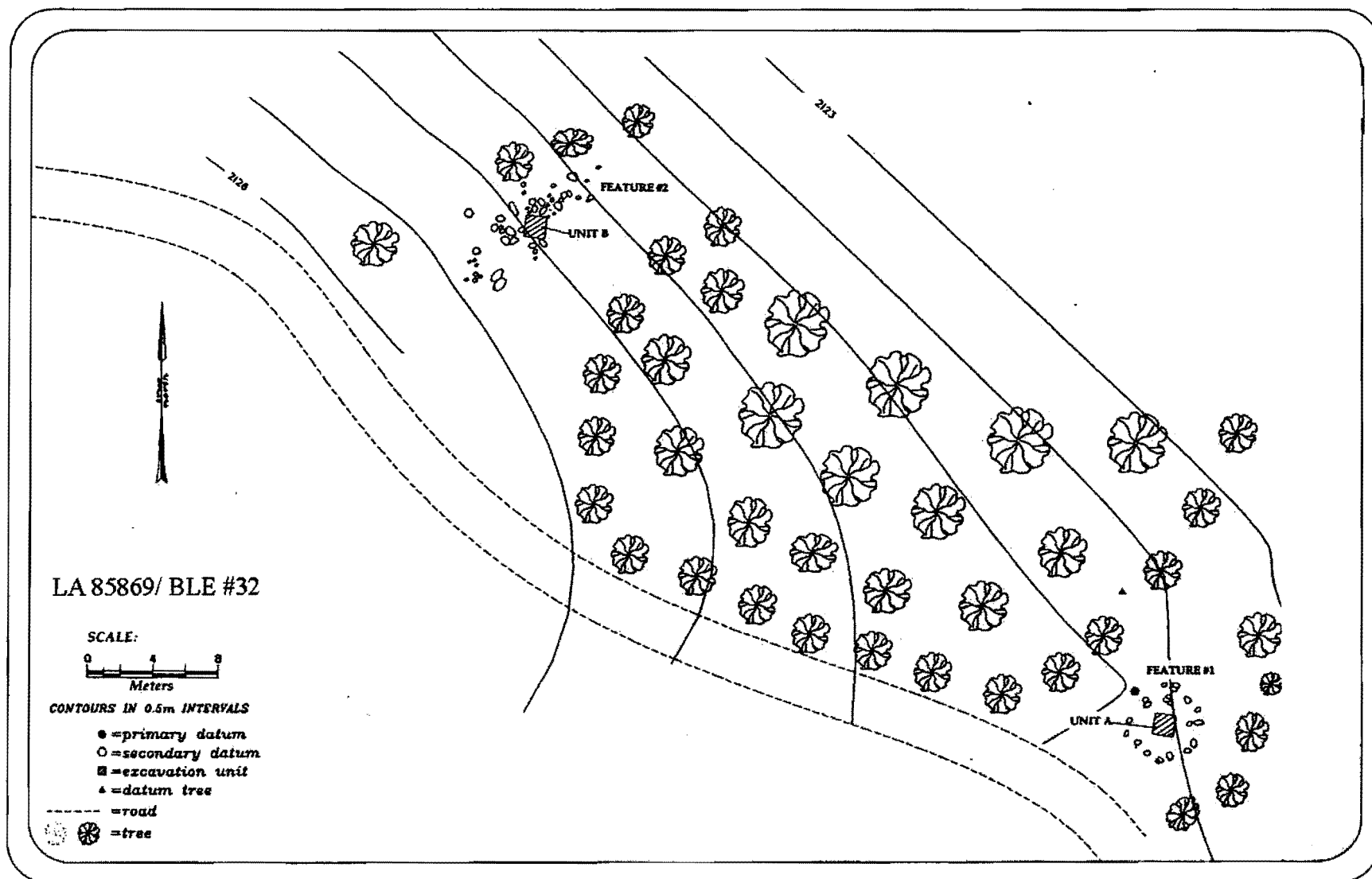


Figure 7.4. LA 85869, semi-circular rock feacture (Peterson and Nightengale 1993:188).

LA 86553

LA 86553 is a wagon road located in Rendija Canyon, north of the current drainage channel. Ponderosa pine and juniper dominate the locale vegetation. It ranges in elevation from 2085 to 2097 m (6840 to 6880 ft).

This site consists of wagon trail ruts and a historic trash scatter. The wagon trail is approximately 200 m long, 2.5 to 3 m wide, and runs east-west. The trash scatter is comprised of sheet metal, an enamelware basin, and miscellaneous sanitary seal and condensed milk cans. This site is part of the Homestead period.

LA 86604

LA 86604 contains a concentration of tuff rubble that is located on the south terrace of Rendija Canyon. It is situated at an elevation of 2109 m (6920 ft) in an area where the vegetation is transitional between a piñon-juniper woodland and a ponderosa pine forest.

LA 86604 contains an approximate 3 by 3 m concentration of tuff rubble (not shaped). There is a slight mound due to the rubble, however, unless there is a good depth the site building materials appear to have been salvaged.

Associated ceramics consisted of eight sherds. These ceramics included two Biscuit A sherds, two highly micaceous plain utilityware sherds, and four smeared-indented utilityware sherds (non-micaceous). Observed chipped stone artifacts consisted of one core recovery flake and interior flake of Cerro Pedernal chert. Based on the artifact assemblage, this site is affiliated with the Classic period.

LA 86605

LA 86605 (M-49) is a rock structure located on the south terrace of Rendija Creek at an elevation of 2109 m (6920 ft). Vegetation in the area is ponderosa pine forest and piñon-juniper woodland.

LA 86605 is a one or more room structure constructed with unshaped and shaped tuff blocks. The 4 by 4 m rubble mound is approximately 0.3 m high. One of the shaped tuff blocks is somewhat longer and wider than the rest (80 by 35 cm).

Approximately twelve to fifteen artifacts were observed. Lithics include interior flakes of Cerro Pedernal chert (4) and Jemez obsidian (1). Diagnostic ceramics include approximately eight glaze polychrome sherds and one glazeware sherd with a buff-colored interior and patches of red slip on the exterior. Based on the ceramics, this site dates to the Classic period.

LA 86606

LA 86606 (B-19) contains rubble from an apparent one-room structure. It is located on the tip of a ridge finger in western Cabra Canyon at an elevation of 2122 m (6960 ft). The surrounding vegetation consists primarily of ponderosa pine with some juniper and scrub oak present.

The masonry is composed of unshaped tuff blocks stacked one to two courses high. The structure measures 3 m north-south by 3.5 m east-west with blocks eroding downslope to the east. No artifacts were observed; this may be due to the extremely dense pine duff ground cover. For this reason, no date of occupation can be determined for this site, however, it is assumed to have an Ancestral Pueblo affiliation.

LA 86607

Site LA 86607 (B-20) contains an area of rubble that is the remains of a two- to four-room structure. It is located on a ridge that forms the south side of Cabra Canyon. It is at an elevation of 2146 m (7040 ft) in an ecological zone of ponderosa pine and scrub oak.

The masonry consists of unshaped tuff blocks stacked one to two courses high. There are two straight alignments and one curved alignment visible, as well as an apparent corner amid the rubble. The structure measures 5 m north-south by 4 m east-west. It has been impacted by a contemporary hiking trail that runs through the northern portion of the structure. It is also apparent that some structural rock was removed from the trail.

Artifacts at LA 86607 were scant. It is possible that hikers collected some artifacts. Two indented corrugated utilityware jar sherds with fingerprint marks were observed, in addition to one basalt interior flake. Based on the pottery present, the site was occupied during the Coalition period.

LA 87430

LA 87430 is a structure situated just above the south side of Rendija Canyon. Rendija Canyon is cutting into the north side of the site. The area is vegetated by ponderosa pine forest and is at an elevation of 2111 m (6925 ft).

The site consists of a possible roomblock or fieldhouse. There are a few alignments, some stones in up-right position, and a possible hearth. The alignments indicate an approximate 3 by 2 m room, however, additional rubble suggests that more rooms existed at one time. There is a small depression just southeast of the room(s). There is also rubble scattered to the east. A charcoal stain suggests that there is a hearth in the portion of Pajarito Trail that is located to the west of the site.

Artifacts on the site include obsidian flakes and some glazeware and plainware sherds. Based on the observed artifacts this site is affiliated with the Classic period.

LA 99391

LA 99391 is an extensive but thinly dispersed artifact scatter covering an area of approximately 900 m². The site is located on a relatively flat terrace directly southwest of an intermittent drainage that flows to the southeast. The site is situated in a piñon-juniper woodland at an elevation 2124 m (6970 ft). Several two-track dirt roads cross the site area contributing to minor erosional impacts to the site.

Site testing consisted of 17 shovel test excavations, the collection of surface artifacts from a 1 by 36 m transect, the collection of two sherds as a grab sample, and the infield plotting and analysis of all remaining artifacts. Only one subsurface artifact, a sherd of corrugated ware, was recovered as a result of the shovel testing. Ceramics observed on the surface amounted to only three decorated Santa Fe Black-on-white sherds and 50 or so undecorated sherds of gray or brown utilityware. Lithic material totaled two tertiary flakes of chalcedony and one small sandstone metate fragment.

The shovel tests indicated that this site consists entirely of a surface scatter of artifacts. Although the actual function of the site remains uncertain, the lack of any surface features or structural remains, combined with the paucity of artifacts, would suggest one of short-term or limited usage. Based on the ceramics the site appears to date to the Coalition period. The research potential for this site is assessed as being exhausted.

LA 99392

LA 99392 is a masonry rock structure with three sides represented by alignments. The site is situated on a northeast-facing slope near the base of a narrow ridge. The location is within a piñon-juniper woodland along with a few scattered ponderosa pines. It is at an elevation of 2124 m (6970 ft).

The structure measures 2.5 by 2.5 m and the three walls are about 20 cm high. The northeast side is open. A 1 m² unit was excavated within the feature to 80 cm. The only artifact recovered from this excavation was an eroded sherd of biscuitware. The rock alignments did not extend below the surface. Three sherds of Biscuit A and three sherds of Biscuit B were located on the surface. The function of the structure is uncertain, but the ceramics suggest a Classic period affiliation. The research potential for this site is assessed as being exhausted.

LA 99393

LA 99393 is rectangular rock feature of unshaped cobbles and boulders measuring about 2.5 by 3 m. The site is situated on a fairly steep, south-facing ridge slope that is located in a piñon-juniper woodland at an elevation of 2111 m (6925 ft).

Testing was conducted in a 1 m² unit that was excavated within the feature to 70 cm. Recovered cultural materials included scattered fragments of charcoal, one sherd of plainware, nine sherds of Pajarito Smeared-Indented, one tertiary flake of chalcedony, and one tertiary flake of Jemez obsidian. No artifacts were found on the surface in the immediate vicinity of the feature, but two

sherds of Biscuit B and one tertiary flake of chalcedony were found about 15 m downslope. Based on the ceramics found at or within close vicinity of the feature, this site is affiliated with the Classic period. The research potential for this site is assessed as being exhausted.

LA 99395

LA 99395 is a rock concentration with some alignments. The site is situated on the crest of a narrow ridge in a piñon-juniper woodland. It is located at an elevation of 2106 m (6910 ft).

The feature measures 2.5 by 4.5 m. A 1 m² test unit was excavated within the feature to 55 cm. No cultural materials were found in the excavation. A total of ten utilityware sherds were found on the surface approximately 7 m to the east of the feature. No temporally diagnostic artifacts were found on or near the site, however, it is assumed to have an Ancestral Pueblo cultural affiliation. The research potential for this site is assessed as being exhausted.

LA 99396

LA 99396 is a lithic scatter with a few ceramics situated on the broad, open, southeast-facing slope of a saddle. The site, covering an area of about 1080 m², is located in a piñon-juniper woodland at an elevation of 2103 m (6900 ft).

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 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 flakes recovered from 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% of the site debitage.

The surface artifacts suggest a multicomponent site occupation. The point base and the high percentage of obsidian indicate an Early Archaic period affiliation. Although not well represented, the sherds suggest a later Classic period site occupation. The shovel tests revealed intact subsurface cultural deposits, thus LA 99396 has potential to provide significant information concerning the prehistoric use of the Pajarito Plateau.

LA 99397

LA 99397 is a lithic scatter situated on the east-facing slope of a narrow ridge. The scatter, covering an area of about 900 m², is located in a piñon-juniper woodland at an elevation of 2131 m (6990 ft).

Testing included 14 shovel tests resulting in 10 pieces of obsidian and chalcedony debitage being recovered. In addition, artifacts were collected from a 1 by 38 m transect laid out across the center of the site. Except for one metate fragment, all of the lithic materials observed were either chipped stone tools or debitage. Obsidian constituted 76% of the lithics with chalcedony forming the remaining 24%. Polvadera Peak (75%) was the most abundant obsidian. The vast majority of the lithic debitage were tertiary flakes (71%) or flake fragments (20%). In addition to the debitage three formal tools or tool fragments were collected from the site. They include 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 boulder metate was also observed on the site. Based on the high percentage of obsidian tertiary flakes and the lack of ceramics this site is affiliated with the Archaic period.

The vast majority of the site debitage are the result of secondary or tertiary reduction. This suggests 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 10% of the site debitage. The presence of utilized or retouched flakes, the formal tools, and the metate indicate that various processing activities were conducted at the site.

The shovel test revealed that there are intact subsurface cultural deposits on the site, thus LA 99397 has potential to provide significant information concerning the prehistoric use of the Pajarito Plateau.

LA 127626

LA 127626 (K100) is a single-room structure located along the northern edge of a bench that overlooks the Rendija Canyon valley bottom. The site is situated at an elevation of 1787 m (5860 ft) in an area that is densely forested with ponderosa pine. The ground surface around the feature is covered with a dense litter of pine duff that obscures site visibility.

The site consists of a single-room fieldhouse that measures about 3 by 3 m in size. The walls consist of isolated and disarticulated unshaped tuff blocks that are poorly visible due to a thick cover of pine duff. The area appears eroded. If subsurface deposits are present, they are probably shallow.

No artifacts were observed, possibly due to the thick pine duff litter. For this reason, no date of occupation can be determined for this site of assumed Ancestral Pueblo origin.

LA 127627

LA 127627 (K-109) is a single-room structure situated on the north-facing slope of a low ridge within Rendija Canyon. It is located at an elevation of 2117 m (6940 ft). The area is densely forested with ponderosa pine. The ground is covered with a dense litter of pine needle duff.

The site consists of a single-room fieldhouse. It measures approximately 3 by 3 m in size. The walls are represented by approximately two standing courses of unshaped tuff blocks. No artifacts were observed even after the duff was swept away from around and within the room.

The structure is in good condition, although the area has been affected by slope wash and downslope movement. Because there were no associated artifacts, this site could not be assigned to a specific temporal period. It has an assumed Ancestral Pueblo cultural affiliation.

LA 127628

LA 127628 (K-133) is a possible fieldhouse located on the flat, lower portion of a southwest to northeast trending ridge along the south side of Rendija Canyon. The site is situated in a relatively open ponderosa pine forest, at the edge of the more heavily forested canyon bottom. The site is at an elevation of 2128 m (6976 ft). A fence line is located just to the north and may have partially disturbed the site area.

The site consists of a 12 m long rock alignment composed of unshaped tuff and rhyolite blocks. These tuff rocks were likely from a fieldhouse that may have been disturbed by heavy equipment used to clear the area of rocks and trees and/or for construction of the fence line.

Only thirteen artifacts were observed at the site. The ceramics consist of two Biscuit A, two Biscuit B, and a non-micaceous plainware sherd. The lithic artifacts consist of core flakes, biface flakes, and a piece of angular debris made of Cerro Pedernal chert, a black translucent obsidian, and Polvadera Peak obsidian. Based on the ceramics present, the site appears to date to the Classic period.

LA 127629

LA 127629 (K-139) is a one-room fieldhouse that is in good condition. The site is situated on the north side of a southwest to northeast trending ridge. The ridge is located along the south side of Rendija Canyon. The area is heavily vegetated with ponderosa pine and a few junipers at an elevation of 2114 m (6937 ft).

Alignments of the one-room fieldhouse are intact except the east wall. The wall alignments are constructed of unshaped tuff and rhyolite blocks. Additional tuff and rhyolite rubble located to the east and north may have originated from the east wall. The structure measures approximately 2.3 by 3.1 m. Vegetation growth of ponderosa pine has disturbed the site. Heavy pine duff obscures most of the site surface.

No artifacts were located, thus this site of assumed Ancestral Pueblo affiliation could not be specifically dated.

LA 127630

LA 127630 (K-140) is a small masonry structure located on a bench along the south side of Rendija Canyon. It is situated on the eastern end of an east to west trending bench at an

elevation of 2129 m (6980 ft). The area is covered by a ponderosa pine forest, with the surface of the site containing a heavy layer of pine duff.

The site consists of a one- to two-room fieldhouse with rubble scattered over a 4 by 4 m area. The structure is probably about 3 by 3 m in size and is constructed of unshaped rhyolitic tuff and basalt blocks. Erosion has displaced some of the wall material downslope to the north and east.

If artifacts are present they are obscured by the heavy pine duff that covers the site. The lack of diagnostic artifacts precludes any temporal designation for the site other than it is assumed to have an Ancestral Pueblo cultural affiliation.

LA 127632

LA 127632 (Q-246) is a possible fieldhouse that is situated on the slope of a hill within Rendija Canyon. The local vegetation is characterized by a ponderosa pine forest at an elevation of 2115 m (6949 ft). Heavy pine duff covers the surface of the site reducing surface visibility. The area around the site has been heavily used for recreational purposes. Modern trash is abundant. In addition, there is a heavily used dirt bike trail located downslope and to the north. Nonetheless, there is no obvious evidence of vandalism to the site.

LA 127632 consists of a small rubble mound covering an area approximately 3 m north-south by 1 m east-west and standing 15 to 20 cm in height. The feature presumably represents a one-room masonry structure. The rubble mound consists of tuff blocks and fill, with the tuff blocks measuring about 20 by 15 by 10 cm in size. A separate 5 by 7 m scatter of building stones is situated downslope to the north and northeast of the main feature.

A single unidentifiable black-on-white sherd was located in the area of the rubble mound. Otherwise, an isolated biscuitware sherd located about 20 m north of fieldhouse was the only other artifact observed at the site. Due to the lack of clearly associated diagnostic artifacts, no specific temporal designation can be given to the site. However, the unidentified sherd suggests an Ancestral Pueblo affiliation that likely dates to either the Coalition or Classic time periods.

LA 127633

LA 127633 (Q195) is located on a north to south trending ridge near the bottom of Rendija Canyon. The site is situated within a ponderosa pine forest at an elevation of 2105 m (6900 ft).

The site consists of a rock feature that could possibly represent the remains of a fieldhouse. The feature is constructed of upright rhyolite slabs interspersed with some unshaped tuff rubble. There is heavy lichen growth on the slabs. The northern (upslope) and western sides of the feature are still intact, whereas, the southern and eastern sides have eroded downslope. The rubble covers a 2 by 1.2 m area, with the central uprights being present within a 1 by 1.2 m area.

No artifacts were observed at this site, however, heavy pine duff obscures surface visibility. The cultural affiliation of this site is unknown.

LA 127634

LA 127634 (Q-196) is located on a low north to south trending ridge finger that slopes gently to the southeast overlooking Rendija Canyon. The site is situated in a ponderosa pine forest with a scattering of juniper at an elevation of 2115 m (6940 ft). A relatively recent fire has left the understory vegetation quite sparse.

The site consists of a two- to three-room structure with associated rubble and artifacts. The structure primarily contains unshaped tuff rocks, although there are a few rectangular-shaped tuff and rhyolite blocks. There is rubble around the structure that is likely wall fall. The structure is approximately 2.8 m east-west by 2.8 m north-south. Based on the height of the rubble mound, there is potential for 20 to 30 cm of intact subsurface deposits.

Associated artifacts consist of lithic debitage and ceramic sherds. 100% of the flagged artifacts were analyzed infield. Most of the debitage is Cerro Pedernal chert, with two pieces of black translucent obsidian and one rhyolite flake. Sherds are all biscuitwares, including three Biscuit B and two unidentified biscuit sherds. Based on these artifacts and the presence of shaped tuff blocks in the structure, this site likely dates to the Classic period.

LA 127635

LA 127635 (Q-197) is located on a low north to south trending ridge overlooking Rendija Canyon at an elevation of 2120 m (6950 ft). The local vegetation is primarily ponderosa pine, although there are a few junipers in the vicinity. The ground surface is heavily covered by pine duff.

The site consists of a one-room fieldhouse. The structure is approximately 2.5 by 3.5 m in area and is constructed of unshaped tuff blocks. There is very little rubble remaining, however, the foundation is intact. Based on a pin flag probe, there may be up to 20 cm of subsurface deposits present within the fieldhouse.

Only three sherds were identified at the site. These consist of a single Biscuit A and two non-micaceous plainware sherds. Based on these artifacts, the site appears to date to the Classic period.

WHITE ROCK Y TRACT

LA 394

LA 394 is a large site complex consisting of four two-story rubble mounds that are partially interconnected by several one-story roomblocks (Figure 7.5). The site has been divided into four spatially distinct loci based on the distribution of architectural mounds (i.e., A, B, C, and D). It is located on a ridge along the south side of Los Alamos Canyon. The canyon contains a piñon-juniper woodland and the site is situated at an elevation of 2028 m (6650 ft).

The site covers a 250 by 270 m area. The four separate two-story mounds were identified as A through D from east to west. Overall, the site could contain about 200 rooms. Mound A is about 15 by 30 m in size. It is U-shaped and opens towards the east. A circular depression located to the east of the mound may represent a kiva. At least two isolated set of rock alignments are situated near the kiva that could represent about three rooms. Two 1 by 5 m long transects were sampled for an infield artifact analysis to the northwest and southeast of the mound. A projectile point was located and collected to the immediate east of the mound.

Mound B is located about 20 m west of Mound A. It is 10 by 15 m in size and roughly L-shaped. Rock alignments are present in-between the mounds, as well as to the north and south of Mound B. These presumably represent single-story rooms. Four 1 m diameter dogleash samples were analyzed to the northwest, northeast, southwest, and southeast of the mound.

Mound C is situated approximately 40 m west of Mound B. It measures 15 by 36 m in area and is linear shaped. There are a series of rock alignments that connect Mound C to Mound D that are located about 20 m further to the west. These presumably represent a series of single-story rooms that would have connected the adjacent two-story roomblocks. Four 2 m diameter dogleash samples were analyzed around Mound C; two to the east, one to the west, and one to the south of the mound. Mound D is smaller than the other mounds being 7 by 12 m in area. Four 2 m diameter dogleashes were also analyzed around this mound. Two were located to the west and two to the east of the mound.

A bedrock with grinding slicks is located about 50 m south of Mounds C and D.

The site artifact assemblage is similar between all the sample units analyzed across the site. A total of 1685 artifacts were recorded during the infield analyses. Most of these are from the area around Mound C ($n = 883$), with less from Mound A ($n = 277$), Mound B ($n = 234$), and Mound D ($n = 291$). The majority of the painted ware ceramics consist of Santa Fe Black-on-white, with a few Wiyo Black-on-white, Wingate Black-on-red, St. Johns Black-on-red, Biscuit A, and Biscuit B sherds. The utilitywares are dominated by smeared-indented corrugated sherds, with some indented corrugated, obliterated corrugated, plainware, and clapboard corrugated. Most of the chipped stone artifacts are made of Cerro Pedernal chert, with some black translucent Jemez obsidian and basalt. A single side-notched obsidian arrow point was collected near Mound A. Ground stone artifacts include two one-hand manos, several mano and metate fragments, and undetermined ground stone fragments. These items are made of rhyolite, andesite, quartzite, and vesicular basalt.

Based on the ceramic assemblage, the site appears to date to the Coalition period. The fact that the ceramic assemblage is similar across the site, and that the mounds are interconnected by single-story roomblocks, would indicate that sections of this site complex were occupied contemporaneously.

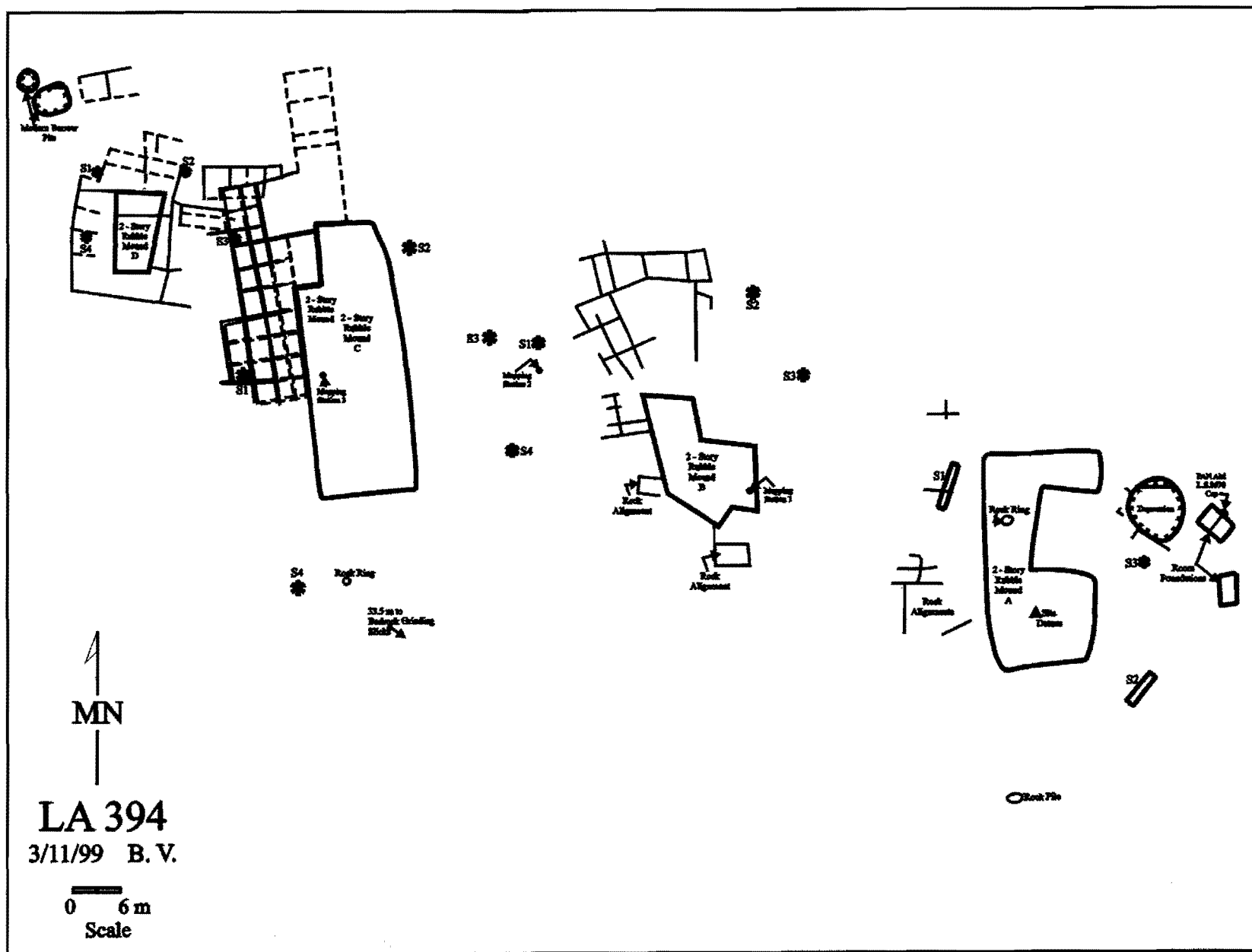


Figure 7.5. LA 394, a large site complex with four two-story rubble mounds and several one-story roomblocks.

LA 4729

LA 4729 consists of a Coalition period 10-room pueblo. It is located on a bench along the south side of Los Alamos Canyon at an elevation of 1991 m (6540 ft). Piñon and juniper trees dot the surrounding landscape. Frederick Worman excavated the site in July 1962. Worman and Steen (1978: 2, 10, 27) provide a brief site summary, ground plan, site photographs, and ceramic data. The site has since been destroyed by the construction of a gravel pit.

Worman's field notes contain vague information regarding excavation technique and artifact analysis. It was noted that excavation began on the south center of the pueblo mound. Rooms were assigned numbers in the order that they were excavated. The roomblock is linear in shape with a double set of rooms. See Chapter 4, Figure 4.2 for an illustration of the roomblock ground plan. A single room consisting of a half-arc is connected to the east side of the roomblock. Soil was removed in 6 in. levels. The room fill consisted of a chocolate brown soil that contained numerous building stones. Small quantities of floor plaster were also observed in each of the rooms.

The Room 2 wall plaster was in excellent condition. The floor was also in good condition with broad plaster covering it and the corners. Room 2 was the only room that contained a hearth. A large metate was uncovered in the northeast section of the room.

A half-circular alignment of shaped tuff building stones was identified adjacent to Rooms 3 and 4. The room appeared to have been a kiva, but it had no depth typical of a kiva. Beneath the room was 6 in. of a caliche gravel pit. Worman described this room as a circular ramada.

A total of 853 ceramic artifacts were recovered from the site. The majority of these were utilitywares ($n = 660$), with some Santa Fe ($n = 87$) and Wiyo ($n = 86$) Black-on-white. Nonlocal ceramics consist mostly of Jemez Black-on-white ($n = 24$), with a few sherds of Wingate Black-on-red ($n = 4$) and Wingate Polychrome ($n = 1$). Based on the ceramic assemblage, the site dates to the Coalition period.

LA 12605

LA 12605 is a pueblo roomblock with associated grid garden features. The site is situated on a hillslope facing east within Sandia Canyon at an elevation of 2054 m (6740 ft). The local vegetation includes ponderosa pine with some juniper.

The roomblock contains 6 to 8 one-story rooms and is represented by a series of surface rock alignments. Some of these alignments are quite clear while others are not due to vegetation obscuring surface visibility. The grid gardens are located about 15 m southeast of the roomblock. They consist of a set of linear rock alignments spaced closely together. The northern and southern sections are composed of larger rocks spaced farther apart.

An infield analysis was conducted of all the surface artifacts. Twelve ceramic and nine lithic artifacts were identified. The majority of the ceramics consist of Biscuit A and Biscuit B sherds with a few unidentified glazeware, smeared-indent corrugated, and a single Santa Fe Black-on-

white sherd. The lithics primarily consist of Cerro Pedernal chert core flakes with a biface flake, a biface, and a projectile point. The latter two artifacts are made of obsidian. The projectile point is a side-notched arrow point. Based on the ceramic assemblage, the site appears to date to the Classic period.

LA 14870

LA 14870 consists of a fieldhouse located on a low bench along the south side of Los Alamos Canyon. The site is situated at an elevation of 1959 m (6430 ft) in a area vegetated by piñon and juniper trees.

The fieldhouse is highly eroded and has been partially disturbed by the adjacent dirt road. The structure was constructed of unshaped tuff blocks that are concentrated within an 8 by 8 m area; however, the artifact scatter extends over a larger 29 by 38 m area. That portion of the artifact scatter that is situated along the south, east, and west sides of the site (i.e., away from the road) appears to be less impacted from the road construction. Architectural blocks have also been displaced due to the growth of a large juniper within the center of the fieldhouse.

An infield artifact analysis was conducted of 60% of the flagged surface artifacts ($n = 95$). Most of these are ceramics ($n = 73$) that include Santa Fe Black-on-white and smeared-indented corrugated types, with fewer indented corrugated and two Biscuit A sherds. The lithic artifacts ($n = 19$) were comprised of Cerro Pedernal chert core flakes, angular debris, and unidentified flake fragments. One piece of angular debris was identified as being made of a green Jemez obsidian. The ground stone artifacts consist of an unidentified vesicular basalt groundstone fragment, a quartzite mano fragment, and a rhyolite mano fragment. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 15117

LA 15117 is a series of cavates situated along the base of the cliff along the north side of Los Alamos Canyon. The site shows evidence of high visitor impact in the form of artifact collection and some petroglyph vandalism. The slope has a few piñon-juniper trees and some rabbitbrush and snakeweed. The site is located at an elevation of 2025 m (6645 ft)

The 18 cavates at the site can be divided into two sections, with eight in the eastern section and 10 in the western section. The cavates are labeled A through R from east to west. Detailed information is provided in Table 7.1. The cavates are variable in size, ranging from .50 to 3.0 m in diameter. They are generally circular in shape, with some having smoke staining and plaster still preserved. Cavates H and J are extremely deteriorated. Five of the cavates have niches, and half contain fill about 10 cm in depth. In addition to the cavates, there is a remnant masonry wall 4 m south of Cavate N.

Table 7.1. LA 15117, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket	Other
A	.6 by .5 by .7		None	None	None	
B	2 by 1.8 by 1	15 cm	None	None	None	
C	1.3 by 1.4 by .9		None	None	None	
D	.5 by .6 by .6		None	None	None	
E	1.5 by 3.4 by 1.35		None	None	Niche in northwest corner .15 by .4 by .6	
F	.9 by 1.2 by 1	10 cm	None	None		
G	2.9 by 3.4 by 1.65	10 cm	Ceiling is blackened.	Seventy cm from floor up wall.	Niche in east wall .3 by .45 by .55.	Modern graffiti.
H	---	---	---	---	---	Eliminated, too eroded
I	2.4 by 3.1 by 1.9		Ceiling is blackened.	White paint and plaster 16 cm and 55 cm above floor.	Niche in east wall .35 by .38 by .57.	Recent excavated pit in floor.
J	---	---	---	---	---	Eliminated, too eroded.
K	2.7 by 3.2 by 1.8	10 cm	Ceilings and walls	Paint and plaster above paint 15 cm, and 60 cm up from floor.	Niche in southeast corner .5 by .4 by .6.	
L	2.7 by 3.3 by 2.15	2 cm	Ceiling	Plaster on walls 50 cm above floor.	Two niches: 1 by 1.1 by .9 and .2 by .25 by .3.	Historic dung inside.
M	1.6 by 2.75 by 1.75	10 cm	Ceiling	Plaster 10 cm above floor.		
N	2.7 by 3.6 by 1.6	20 cm	Ceiling	Plaster 40 cm above floor.	Niche west of entrance 1.3 by 1.2.	Shaped blocks and dung inside.
O	1.8 by 2.2 by 1.3	5 cm	None	Plaster 50 cm above floor.	Eastern niche .2 by .7 by .4 and western niche .15 by .45 by .28.	2.1 m aboveground surface.
P	1.7 by 2.6 by .9	55+ cm	Staining on inside	None	None	Two blocks in front of entrance on western side.
Q	.9 length No other measurements possible.	---	None	None	None	2.55 m aboveground surface.
R	2.3 by 3.2 by 1.6	20 cm	Staining on inside.	Plaster 50 cm above floor.	Niche in northeast corner .2 by .5 by .6.	Animal dung and a few masonry blocks inside.

An infield analysis was conducted of all the associated artifacts. Twenty-one ceramics and four lithic artifacts were recorded. The majority of the ceramics consist of smeared-indent corrugated sherds, with a few obliterated corrugated, Santa Fe Black-on-white, and Biscuit A. The four lithic artifacts are all Cerro Pedernal chert core flakes. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 16798

LA 16798 (J-19) consists of a series of 12 cavates located on a cliff face along the north side of Los Alamos Canyon. The cavates can be spatially divided into the eastern cluster that contains three cavates (1 through 3) and the western cluster that contains nine cavates (4 through 12). There are isolated piñon and juniper trees distributed across the talus slope, with the site being located at an elevation of 2010 m (6595 ft).

The two cavate clusters are separated from each other by approximately 70 m. The eastern cluster contains three well defined cavates and perhaps five additional, very weathered, cavates. One of the well-defined cavates (#3) is a square-shaped room, perhaps a kiva. It contains two wall niches and a large rear niche that contains three floor pits. The western cluster contains nine well-defined cavates, including four 2nd story cavate rooms. Masonry tuff block situated in the area of Cavates 6 and 9 may represent talus. In addition, a possible one-room structure is located about 5 m in front of Cavates 10 and 11. Cavates 6 and 10 contain anthropomorphic and zoomorphic petroglyphs, respectively. The latter cavate is rectangular-shaped. There may also be an additional two to three cavates in this cluster, but they are highly eroded. A large tuff boulder with axe grooves is located at the western end of the site in-between Cavates 11 and 12. Overall, the cavates are generally circular-shaped, 1 to 2 m in diameter, they contain up to about 20 cm of fill, and most exhibit wall plaster. In addition, all the cavates have wall niches and/or sockets. Specific details on the cavates are provided in Table 7.2.

An infield analysis was conducted of the site. A total of 48 ceramic and 16 lithic artifacts were recorded. The majority of the ceramics are smeared-indent corrugated and obliterated corrugated sherds with some Santa Fe and Wiyo Black-on-white. The lithics primarily consist of Cerro Pedernal chert and rhyolite debitage, with a rhyolite core and a quartzite hammerstone. The ceramic assemblage indicates that the site dates to the Coalition period.

LA 21636

LA 21636 consists of two cavates located at the base of the cliff along the north side of Sandia Canyon. The site is situated at an elevation of 2025 m (6640 ft) within a piñon-juniper woodland.

Cavate #1 is a rectangular cavate that contains a floor niche, a wall niche, and 20 wall sockets. Seventeen of the sockets are located on the back wall at a distance of about 2 m above the floor. The remaining three sockets are also located on the back wall, but only about 60 cm above the floor. There are a few shaped tuff blocks in front of the cavate that indicate the presence of a talus room. Cavate #1 is 2 m long by 3 m wide and 2 m high. Maximum depth of the fill is 50+ cm. The ceiling has smoke sooting, and walls are plastered 2 m up from the floor. On the floor

Table 7.2. LA 16798, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/sockets	Petroglyphs	Other
1	2.2 by 3.0 by 1.75	20 cm	On ceiling	At floor and up walls 25 cm, also inside niche.	Niche in east wall (on floor) 0.9 by 1.0 m.	None	Animal dung inside.
2	2.1 by 2.8 by 2.0	None	On ceiling, in sockets.	Around smokehole, on ceiling, up walls 1.35 m.	East wall niche 15 cm above floor, 65 by 80 by 15 cm; west wall niche 50 cm above floor, 13 by 18 by 15. Five sockets 30 cm below ceiling, 15 cm diameter 10 cm deep (2 on east wall, 2 on north wall, 1 on west wall).	Possible petroglyph on west wall, but can't be made out.	
3	3.7 by 3.7 by 2.4	<5 cm	On ceiling, west wall, inside niche.	On floor and up to 90 cm, also inside niche.	Smokehole 50 by 25 cm, west wall niche 90 cm above floor, 25 by 40 by 40; small niche within in southwest corner, 15 by 20 by 25. East wall niche 75 cm above floor, 40 by 50 by 55. Large rear niche 1.1 by 2.1 m. Three floor pits within, depths 5 (#1), 20 (#2), and 5 (#3) cm; Wall niche in rear niche 55 cm above floor, 35 by 50 by 75.	No	Opening is rounded, but cavate is rectangular—corners of walls and ceiling are squared off.

Table 7.2. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum. Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Other
4	2.3 by 3.4 by 1.5	60+ cm	On ceiling, in sockets.	Fragments on all walls and ceiling.	Small sockets on north wall near ceiling 7 cm diameter, 22 cm deep. Larger sockets 85 cm above floor, 13 cm diameter 37 cm deep. One double socket 1.2 m above floor, 13 cm diameter, 18 to 25 deep.	No	Large rocks on floor, fallen boulders out front.
5	1.0 by 2.2 by 1.45	20 cm	On ceiling and in niche.	Up walls 45 cm and inside niche.	Rear niche 0.9 by 1.0 m	No	
6	1.7 by 2.0 by 1.4	None	On ceiling and walls.	On floor and up walls 80 cm.	North wall niche 45 cm above floor, 25 by 40 by 40; 9 to 10 sockets 5 cm in diameter; 8 to 10 cm deep (4 on east wall, 4 on north wall, 1 to 2 on west wall—6 near the ceiling, 3 on mid-wall).	Yes, human, kokopelli, and abstract figure.	
7	---	---	---	---	---	---	No attribute data— inaccessible.
8	---	---	---	---	---	---	No attribute data— inaccessible.
9	2.3 by 2.6 by 1.1	20 cm	On ceiling and entire length of walls.	No	Four sockets, 3 on north wall and 1 on east wall, 35 cm from ceiling (largest 20 by 10 by 10).	No	Animal dung on floor, branches, rock.

Table 7.2. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum. Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Other
10	2.1 by 2.8 by 1.6	15 cm	On ceiling and in sockets.	From floor up 80 cm.	Niche in east wall 60 by 70 by 45 cm, 2 sockets above niche, 10 cm diameter, 5 cm deep. Two sockets in north wall same dimensions. Five other small sockets on east and west walls. Small socket in northwest corner 5 cm diameter and 5 cm deep.	Yes, large animal figure.	Lots of charcoal, may be recent.
11	2.0 by 2.6 by 1.6	30 cm	On ceiling and in niches and sockets.	No	Rear niche 0.9 by 1.1 m, 3 sockets, 2 on east wall 35 and 50 cm from ceiling, 10 by 9 and 6 by 5 cm.	No	Possible structural stones inside. Ledge along north wall 50 cm above floor. Groove in north wall from ledge to ceiling. Talus room 6 m south.
12	2.0 by 2.3 by 1.7	5 cm	On ceiling and in socket.	No	One socket in west wall, 80 cm above floor, 5 cm diameter, 8 cm deep.	No	Two parallel grooves on west wall from floor up 35 cm— separated by 30 cm.

in the northwest corner is a niche measuring 1.5 by 1.22 by .85 m, and the north wall has a niche measuring .5 by .7 by .66 m. All of the 20 wall sockets measure 10 by 10 by 10 cm. Seventeen are between 1.5 and 2 m above the floor, and three are from .45 to .75 m from the floor.

Cavate #2 is a highly eroded cavate situated just below and to the east of Cavate #1. This cavate is in an extremely poor state of preservation, and was therefore not recorded in detail.

A single Cerro Pedernal chert biface flake in Cavate #1 was the only artifact observed at the site. Although no date can be attributed to the cavates, they presumably were constructed during the prehistoric Ancestral Pueblo period.

LA 21637

LA 21637 is a series of 10 cavates, two or more isolated masonry rooms located in front of the cavates, and three petroglyphs pecked into boulders slightly downslope of the cavates. The cavates extend for approximately 125 m across the cliff face. The site is situated on the south-facing side of an isolated butte located along the south side of Los Alamos Canyon. Isolated juniper and piñon trees dot the steep slope in front of the site, which is situated at an elevation of 1996 m (6550 ft).

Most of the cavates are highly eroded, although three contain some sooting and plaster. Cavate 1 also has a petroglyph pecked into the smoke sooting on the ceiling. Few intact floors remain. The rock alignments outside Cavate 1 suggest the presence of one or two exterior rooms. Other shaped tuff blocks are located outside some of the other cavates, but not in any clear alignments. Four amorphous petroglyph figures are present within Cavate 1. Overall, the cavates are generally oval-shaped, with the exception of Cavate 9 that is rectangular-shaped. The rooms tend to be 1.5 to 3.0 m in diameter, with 10 to 20 cm of fill. Three cavates are in somewhat better shape containing both sooting and plaster. Four have niches, and four have wall sockets. Detailed information on each of the cavates is provided in Table 7.3.

Boulders located slightly downslope of the cavates exhibit petroglyphs in the form of serpent figures. They cannot be identified as awanyu figures due to the lack of the large horned head.

An infield analysis was conducted of all the artifacts at the site. A total of 29 ceramic and 21 lithic artifacts were recorded. Most of the ceramics consist of smeared-indented corrugated sherds, with some Santa Fe Black-on-white, Wiyo Black-on-white, Biscuit B, indented corrugated, and obliterated corrugated. Lithic artifacts primarily consist of Cerro Pedernal chert debitage, with a few artifacts made of obsidian and rhyolite. A single rhyolite undetermined mano fragment was also identified. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 21638

LA 21638 (J-24) is an isolated cavate that is situated on the south-facing cliff face of Los Alamos Canyon. Isolated piñon and juniper trees dot the talus slope, with the site being located at an elevation of 2045 m (6710 ft).

Table 7.3. LA 21637, Cavate Descriptions

#	Maximum Dimensions (L by W by H m)	Maximum Fill Depth	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
1	2.1 by 1.65 by 1.5	7 cm	On ceiling.	On floor and up walls 90 cm.	One in northeast corner, 45 by 45 by 25 cm. Four sockets in wall, 3 with sooting: 8 by 8 by 15 cm, 16 by 11 by 8 cm; 30 by 25 by 17 cm; and 18 by 18 by 18 cm.	Yes, highly eroded, shapes difficult to determine.	One smeared- indented corrugated, 3 Cerro Pedernal chert core flakes.	
2	1.2 by 4.6 by 1.3	13 cm	Inside socket.	Small fragment at floor.	One possible viga socket in north wall.	No	No	
3	2.4 by 2.6 by 2.15	4 cm	No	From floor up 1.2 m.	Four sockets, 2 in east wall (12 by 20 by 13, 58 cm above floor; 25 by 17 by 27, 1.5 m above floor), 2 in west wall (15 by 23 by 12, 53 cm above floor; 29 by 18 by 25, 1.55 m above floor). Two lower sockets have interior plaster.	No	One smeared- indented corrugated, 1 Cerro Pedernal chert angular debris with water-worn cortex.	
4	2.6 by 3.5 by 1.8	4 cm	On ceiling and in sockets.	From floor up 56 cm.	Three sockets with sooting, all 90 cm above floor: 16 by 12 by 36; 17 by 12 by 35; and 8 by 8 by 26.	No	Two smeared- indented corrugated, 1 undefined Cerro Pedernal flake, 1 obliterated corrugated.	
5	1.5 by 2.0 by 1.0	20 cm	No	No	Floor niche 30 by 60 by 25 cm.	No	No	

Table 7.3. (Con't.)

#	Maximum Dimensions (L by W by H m)	Maximum Fill Depth	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
6	1.6 by 2.8 by 1.4	10 cm	No	No	Large niche 10 cm above floor, 50 by 48 by 24; 5 sockets 95 cm above floor: 5 by 8 by 6; 10 by 7 by 16; 14 by 8 by 23; 7 by 7 by 9; and 7 by 6 by 6.	No	One obliterated corrugated.	
7	2.1 by 4.0 by 2.4	30 cm	No	No	None	No	No	Animal burrow in northwest corner, 70 by 65 by 1+ m.
8	1.3 by 3.2 by 1.35	10 cm	No	No	West wall niche 90 by 58 by 25; east wall niche 37 by 35 by 32 cm.	No	No	
9	4.0 by 1.6 by 3.0	12 cm	No	No	Two sockets 2.4 and 2.6 m above floor, both 25 cm diameter.	No	No	
10	1.2 by 3.2 by 1.55	20 cm	Inside sockets.	Small fragment 35 cm above floor.	Five sockets ranging from 9 by 8 by 11 to 25 by 25 by 13 cm. One rectangular niche 21 by 8 by 20 cm.	No	No	

Jorgenson (1987) first recorded this cavate in 1987. It is 2.40 m wide, 1.30 m deep, and 1.40 m high. Although Jorgenson noted the presence of plaster and smoke sooting, these were not evident during the 1999 site revisit. The cavate is badly deteriorated with no floor being present. In addition, no artifacts were located in the vicinity of the cavate. Although the site presumably dates to either the Coalition or Classic periods, no specific temporal designation could be made besides prehistoric Ancestral Pueblo.

LA 21639

LA 21639 (J-23) is a series of cavates located on a south-facing cliff face along the north side of Los Alamos Canyon. The area is vegetated by a piñon-juniper woodland, dotted with snakeweed and saltbush. The site is situated at an elevation of 2052 m (6730 ft).

The site consists of 10 cavates distributed along a 35 m length of cliff face. They are labeled A through F and I through L from east to west. Two staircases are located in-between Cavates F and I, being labeled features G and H (Figure 7.6). Most of the cavates are oval-shaped, with three being rectangular (Cavates C, D, and L). They are generally 1 to 2 m in diameter, with smoke sooting and plaster often remaining. They all have niches and/or wall sockets, however, only three cavates contain petroglyphs. Most of these are present in Cavate D that contains over 20 petroglyphs representing birds, snakes, anthropomorphs, and kokopellis. Cavates L and F contain a few birds, people, or awanyu glyphs. Detailed information on each of the cavates is provided in Table 7.4.

An infield analysis was conducted of all the artifacts at the site. A total of 14 ceramic and five lithic artifacts were recorded. Most of the ceramics are smeared-indentated corrugated wares with a few Santa Fe Black-on-white sherds. The lithics consist of five Cerro Pedernal chert, rhyolite, and basalt core flakes. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 35002

LA 35002 consists of a linear roomblock that contains about 10 rooms. The site was originally recorded by Snow and Steen on March 19, 1982. The roomblock was located on a south-facing gravel terrace in Pueblo Canyon to the immediate north of the State Road 502/State Road 4 (White Rock Y) intersection. The valley contains a piñon-juniper woodland, with the site being situated at an elevation of 1948 m (6400 ft).

LA 35002 was described as a linear roomblock surrounded by room-sized garden plots. The roomblock was two rooms deep and five rooms long. The rubble mound covered a 5 by 12 m area and was oriented north-south. No specific dimensions were provided for the grid gardens. Wiyo Black-on-white ceramics were identified at the site. Therefore, the site appears to date to the Late Coalition period.

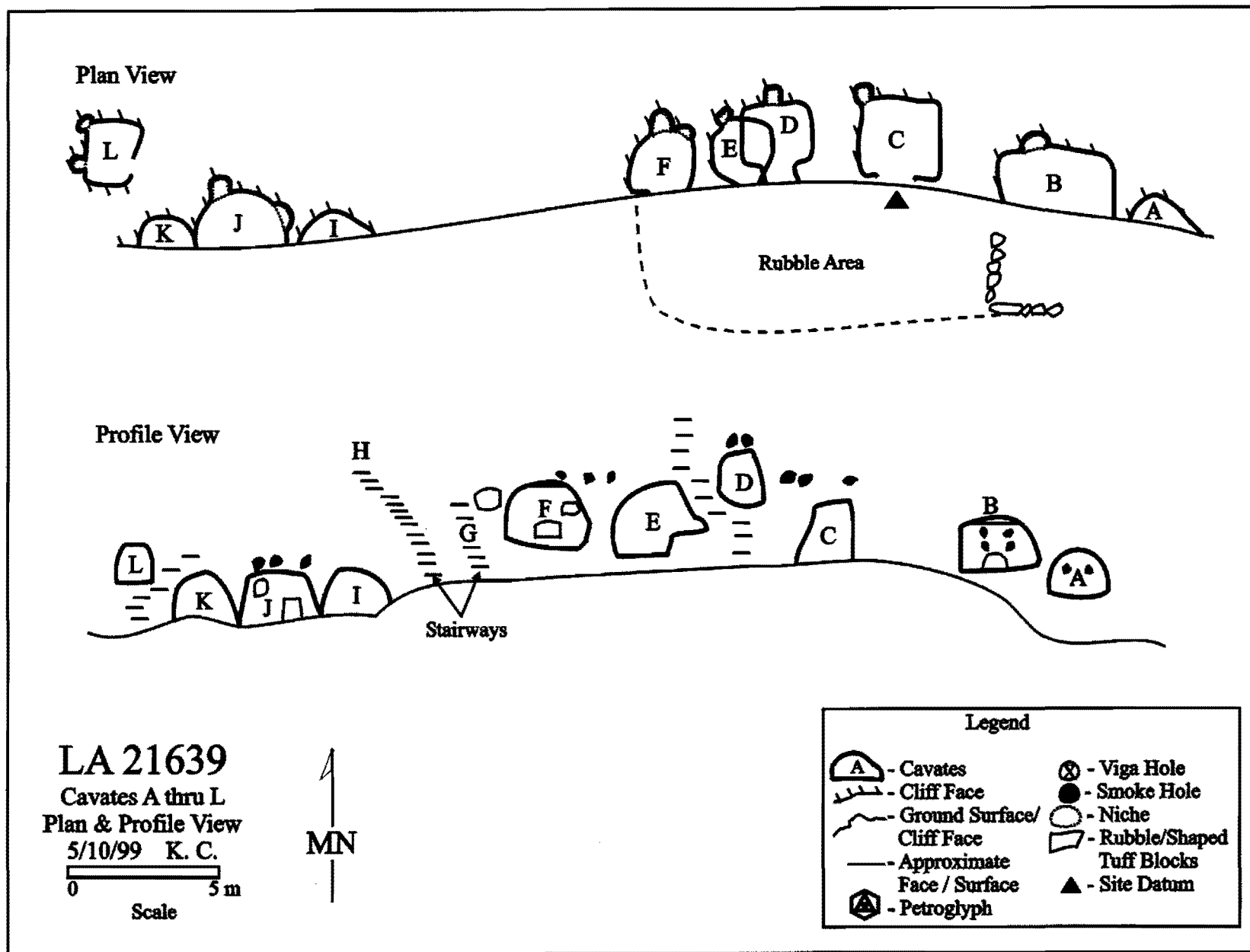


Figure 7.6. LA 21639, a series of cavates and two staircases.

Table 7.4. LA 21639, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
A	0.5 by 0.75 by undetermined (collapsed).	No	No	Two sockets, 80 cm above floor.	No	No	Original height undetermined.
B	1.4 by 3.4 by 2.0	On ceiling and in wall sockets.	Patches on floor.	Floor niche in north wall, 50 cm in diameter. Four sockets on north wall (lowest, 80 cm above floor), 2 on west wall (lowest 1.15 m above floor).	No	No	Rectangular room with distinct corners—possible kiva. Two wall alignments and rubble in front.
C	2.4 by 2.5 by 2.0	On ceiling and upper walls.	Patches at wall/floor intersection —one piece is 2.5 cm thick.	Floor niche in northwest corner, 50 cm in diameter. Four sockets on north wall (1.4 m above floor), 3 on west wall (1.5 m above floor).	No	No	Rectangular room with distinct corners—possible kiva. Sockets are perhaps loom holes.
D	1.9 by 2.2 by 1.5	On ceiling and walls, including on plaster.	Patches over 1/3 of floor and up to 95 cm above floor.	Niche in north wall, 40 by 55 by 55 cm and is 40 cm above floor.	At least 20, including birds and anthromorph on west wall, 4 kokopellis, snake, 2 anthromorphs, 2 zoomorphs on north wall, deteriorated glyphs on east wall, 2 birds on ceiling.		
E	1.9 by 2.5 by 1.35	On ceiling.	Patches 60 cm above floor.	Floor niche in north wall 25 cm in diameter. Two sockets in north wall, on each on east and west wall (1.05 to 1.2 m above floor).	No	Two smeared- indented corrugated sherds.	Tuff block on floor, 10 cm maximum fill depth. Thirty by 30 cm opening leading to Cavate D above.
F	2.0 by 2.55 by 1.55, opening 1.5 by 1.55.	On ceiling.	Patches 40 cm above floor.	Floor niche on north wall: 80 by 80 by 65 cm. Wall niche just east 25 by 60 by 45 cm.	Human figure on ceiling.	No	Animal dung on floor, 10 cm maximum fill depth.
I	1.0 by 2.4 by 1.5	No	No	No	No	No	No fill, badly eroded.
J	1.9 by 2.9 by 1.5	In wall niche.	Patches 40 cm above floor.	Niche in northwest wall 30 by 60 by 20 cm.	No	No	Ten cm maximum fill depth, animal dung on floor.

Table 7.4. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Smoke Sooting	Plaster	Niches/sockets	Petroglyphs	Artifacts	Other
K	1.0 by 1.5 by 1.2	No	No	No	No	No	Badly eroded.
L	1.7 by 2.0 by 1.3	On ceiling.	Patches 45 cm above floor.	Two floor niches: northwest niche: 25 by 25 by 30; southwest niche: 35 by 70 by 45 cm. One wall socket on north and south walls 95 cm above floor.	Nine on ceiling including bird, people, awanyu.	No	Subrectangular, 3 m aboveground surface.

LA 35002 could not be relocated by LANL during a site update revisitation in December of 1999. Based on the site location provided by ARMS, the site should be located in the area where State Road 502 or the Los Alamos County Road Department facility is currently located. LA 35002 has presumably been destroyed by the construction of State Road 502 and/or the Road Department facility.

LA 61033

LA 61033 is an artifact scatter situated within Los Alamos Canyon. The site is at an elevation of 1922 m (6305 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 61033 is documented as a 55 by 40 m, low-density (10s of artifacts), sherd and lithic scatter. There is evidence of mechanical disturbance from road construction within the site boundary.

Diagnostic ceramics included Sankawi Black-on-cream sherds. Chipped stone artifacts were mostly obsidian and chalcedony with a flake of quartzite also present. Based on the ceramics, this site is affiliated with the Ancestral Pueblo, Classic period.

The only cultural materials discovered during testing were three flakes and one piece of angular debris that were recovered from within 20 cm of the ground surface. Based on the widespread mechanical disturbance, the low density of artifacts on the surface, and the very shallow subsurface cultural materials, this site was determined not to be eligible to the NRHP.

LA 61034

LA 61034 is an artifact scatter situated on a bench-like slope located directly south of the Los Alamos Canyon drainage. The site is at an elevation of 1922 m (6305 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 61034 is documented as a 75 by 20 m sherd and lithic scatter with the artifacts numbering in the low 100s. No surface disturbance was recorded.

No formal artifact analysis was conducted. Ceramic artifacts include Potsuwi'i Incised, Sankawi Black-on-cream, red-slipped ware, Jemez Black-on-white, and smeared-indent corrugated sherds. The lithic assemblage was not detailed. The presence of Sankawi Black-on-cream and Potsuwi'i Incised ceramics dates this site to the Ancestral Pueblo, Classic period.

LA 61035

LA 61035 is situated on a small, narrow, fairly flat area situated between a terrace to the south and the Los Alamos Canyon drainage to the north. The site is at an elevation of 1916 m (6285 ft) in an area that is vegetated by a piñon-juniper woodland.

The site is documented as a 26 by 15 m low-density (10s of artifacts) sherd and lithic scatter. The site has been mechanically disturbed from road construction and natural erosional processes.

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 is affiliated with the Ancestral Pueblo, Classic period.

LA 61036

LA 61036 is situated directly south of the Los Alamos Canyon drainage. The site is at an elevation of 1917 m (6290 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 61036 is documented as a 104 by 31 m sherd and lithic scatter with the artifacts numbering to the 100s. The artifact scatter is primarily situated on Bandelier National Monument property. A small modern rock pile in the north end of the site was possibly constructed for erosion control.

An area around a boulder above the western boundary of the site was recorded as having a higher frequency of artifacts. One basalt metate was located within the same proximity. The recorded diagnostic ceramics include three Potsuwi'i Incised sherds, five Santa Fe Black-on-white sherds, 22 Biscuit B sherds, 44 unknown biscuit sherds, 39 Sankawi'i Black-on-cream sherds, and 22 glazeware sherds. The majority of ceramics date this site to the Ancestral Pueblo, Classic period.

LA 61037

LA 61037 is a petroglyph site situated along the northern slope of Los Alamos Canyon. The site is at an elevation of 1917 m (6290 ft) in an area that is vegetated by a piñon-juniper woodland.

The petroglyphs have been pecked into a 2 by 1 m series of panels located on a small basalt outcrop. The main panel contains prehistoric petroglyphs including two shield figures; a mask or face; a circle with a plus in the center; a second circle placed around a vug that has a series of circles and squares appended; two and possibly four snake-like figures placed vertically with the heads on the upward end; and several short segments of straight and curved lines. The main panel also contains two historic petroglyphs, the initials "DA" and an arrow pointing upward. Figures on adjacent basalt surfaces include two pairs of snake-like figures. The two longer figures are oriented horizontally and the second shorter pair are oriented vertically. One of the horizontal figures has an elaborate head suggestive of either the horned or the plumed serpent.

No diagnostic artifacts were located at the site. Based on the style, this site has an Ancestral Pueblo cultural affiliation.

LA 61038

LA 61038 is located just north of the current Los Alamos Canyon drainage channel. The area is vegetated by a piñon-juniper woodland with scattered ponderosa pine. It is situated at an elevation of 1919 m (6295 ft).

LA 61038 was a 170 by 35 m sherd and lithic scatter (artifacts in the low 100s). The northern section of the site was destroyed over 50 years ago when a road was constructed. All that remains is a 150 by 30 m strip that runs parallel along the south side of the present highway.

Documented ceramics include Santa Fe Black-on-white, Biscuit A, Sankawi Black-on-cream, glazeware, and utilityware sherds. Lithics were primarily chalcedony with flakes of chert, petrified wood, quartzite sandstone, and vitrophyre also present. Formal chipped stone tools include three En Medio points and one end scraper. A small niche located below the site in the north drainage canyon wall contains a small partially charred corncob.

Based on the percentages of ceramics and the projectile points, this site is affiliated with the Late Archaic period and the Ancestral Pueblo, Classic period.

The only cultural materials discovered during testing were three pieces of chipped stone that were recovered from within 10 cm of the ground surface. Based on the low density of cultural materials on the surface, the small site size, and the virtual absence of indications for subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61039

LA 61039 is an artifact scatter situated along the northern floodplain of Los Alamos Canyon. The area is vegetated by a piñon-juniper woodland with occasional ponderosa pine. It is situated at an elevation of 1917 m (6290 ft).

LA 61039 is a 30 by 25 m thin sherd and lithic scatter (artifacts in the 10s). Slope wash from a State Road 502 runoff diversion may be obscuring part of the site.

Ceramics included a Rio Grande Glaze A red jar sherd and three smeared-indented corrugated utilityware sherds. The chipped stone mostly consisted of obsidian debitage. A fragment of a possible En Medio projectile point was also located.

The Glaze A sherd suggests that this site is affiliated with the Late Ancestral Pueblo, Early Classic period. The possible En Medio projectile point, if identified accurately, also suggests a Late Archaic period utilization of the site area.

The only cultural materials discovered during testing were two flakes that were recovered from within 3 cm of the ground surface. Based on the low density of cultural materials on the surface, the small site size, and the absence of indications for subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61040

LA 61040 is an artifact scatter that is situated in the Los Alamos Canyon floodplain just north of the current drainage. The site is at an elevation of 1917 m (6290 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 61040 is documented as a sparse (artifacts in the 10s), 15 by 12 m, sherd and lithic scatter. Diagnostic ceramics included Sankawi Black-on-cream sherds. The chipped stone consisted of obsidian and chalcedony debitage. The Sankawi Black-on-cream sherd dates the site to the Ancestral Pueblo, Classic period.

The only cultural material encountered during testing was a chipped stone flake that was recovered from a shovel test. Based on the thin distribution of cultural materials on the surface, the small site size, and the absence of indications for subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61041

LA 61041 is an artifact scatter situated along the top and sides of a long ridge formed between Los Alamos and Pueblo Canyons. The area is vegetated by a piñon-juniper woodland with occasional ponderosa pine. It is located at an elevation of 1939 m (6360 ft).

LA 61041 was documented as a 700 by 230 m artifact scatter. A possible rock alignment was encountered in a 1 by 2 m test pit located in the southwestern part of the site. The four-rock alignment could be the remains of a fieldhouse, however, no definable floor or use-surface could be identified in conjunction with the alignment. Even if the alignment was part of a structure, it was clear that virtually nothing remained that would permit the retrieval of information useful to furthering our understanding of prehistory. Also noted on the site was a small independent pile of fire-cracked rock that could not be attributed to a cultural feature.

Observed artifacts numbered in the 1000s. Diagnostic ceramics included Santa Fe Black-on-white, Wiyo Black-on-white, Biscuit A, Biscuit B, and Sankawi Black-on-cream. Diagnostic chipped stone included a possible Plainview projectile point fragment, an En Medio projectile point, and a San Jose point fragment. Chalcedony and obsidian dominated the chipped stone debitage. Chert, petrified wood, quartzite, quartzite sandstone, rhyolite, vitrophyre, and unidentified igneous chipped stone materials were also noted. The diagnostic artifacts indicate that this site has affiliations with the Middle to Late Archaic periods and the Coalition to Classic Ancestral Pueblo periods. The potential Plainview points may also indicate a Paleoindian period site utilization. Testing indicated that the site occupations were ephemeral and that the nature and magnitude of the deposits did not warrant full excavation. Based on the testing it was determined that LA 61041 was not eligible to the NRHP.

LA 61042

LA 61042 is an artifact scatter situated along the north side of the ridge formed between Los Alamos and Pueblo Canyons. The site is at an elevation of 1960 m (6430 ft) in an area that is vegetated by a piñon-juniper woodland.

The site consisted of a light (10s of artifacts) 25 by 15 m ceramic and lithic scatter. Decorated ceramics included Sankawi Black-on-cream, Biscuit A, Potsuwi'i Incised, and glazeware sherds. Utilityware ceramics included plain, corrugated, and non-micaceous as well as micaceous

smearred-indentred corrugated sherds. Chipped stone included flakes of obsidian. Based on the artifact assemblage, this site dates to the Coalition/Classic period.

Two of the site testing auger holes produced one flake each from an approximate depth of 1.3 m. It was noted for both cases, however, that the flakes might have been dislodged from the sides of the auger hole at lesser depths. Based on the thin distribution of cultural materials on the surface, the small site size, and the absence of indications for subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61043

LA 61043 is an artifact scatter situated along a ridge slope at the confluence of Los Alamos and Pueblo Canyons. The site is at an elevation of 1935 m (6350 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 61043 is a 50 by 25 m sparse sherd and lithic scatter (artifacts in the 10s). Diagnostic ceramics included Santa Fe Black-on-white, Biscuit A, Biscuit B, Potsuwi'i Incised, and glazeware sherds. Lithics were primarily flakes of chalcedony with chert, vitrophyre, rhyolite, and obsidian also present. The ceramics suggest that this site represents one or more occupations ranging from the Ancestral Pueblo, Late Coalition to Classic periods.

The only cultural item discovered during testing was one flake recovered from an auger hole at an approximate depth of 30 cm. Based on the low density of cultural materials on the surface, the small site size, and the absence of indications for subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61044

LA 61044 is an artifact scatter located in the valley bottom near the confluence of Los Alamos and Pueblo Canyons. The area is vegetated with a piñon-juniper woodland with few ponderosa pine. The site is situated at an elevation of 1932 m (6340 ft).

LA 61044 is a 20 by 15 m sparse (artifacts in the 10s) prehistoric sherd and lithic scatter with two rock concentrations. One of the concentrations is a small cobble rock pile situated near the head of a small, shallow drainage and appears to be a modern erosional control device. The measurement of the circular rock pile is 1.5 by 1.5 m. The second group of rocks is located immediately adjacent to the erosional control feature and appears to have been deposited by a piece of heavy equipment before the last 20 years.

Diagnostic ceramics were Biscuit B sherds. Lithic materials were mostly obsidian with one chalcedony flake also observed. The ceramics suggest that the site is affiliated with the Classic period.

No cultural materials were recovered during site testing. Based on the dearth of cultural materials on the surface, the small site size, and the absence of indications for subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61045

LA 61045 is an artifact scatter situated within the Los Alamos Canyon floodplain. The site is at an elevation of 1929 m (6330 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 61045 is a 50 by 40 m sparse (artifacts in the 10s) prehistoric sherd and lithic scatter with a hunter's or camper's rock-ringed campfire and a pile of dirt made with heavy equipment. Both the campfire and the dirt pile were relatively recent, probably dating to the last two to three decades. A two-track road traverses the site from south to north.

Artifacts include four ceramics and seven lithics. Diagnostic ceramics included Wiyo Black-on-white and Biscuit B sherds. Chipped stone artifacts were of chalcedony and vitrophyre. The ceramics indicate that this site was occupied during Late Coalition to Classic periods.

The only cultural materials discovered during testing were three flakes that were recovered from within 50 cm of the ground surface. As the site consisted of a relatively few, broadly scattered artifacts on the surface and no subsurface deposits and features, this site was determined not to be eligible to the NRHP.

LA 61046

LA 61046 is an artifact scatter located in the floodplain of Los Alamos Canyon. The area is vegetated by a piñon-juniper woodland with occasional ponderosa pine. The site is situated at an elevation of 1925 m (6315 ft).

LA 61046 is a 15 by 12 m fairly dense (artifacts in the 10s) sherd and lithic scatter. The site was located immediately north of an abandoned road, and a drainage was located 5 m to the north.

The site diagnostic ceramics were Wiyo Black-on-white, Biscuit A, Sankawi Black-on-cream, and Cieneguilla Glaze-on-yellow. Lithic types and materials were not specified. Ceramic percentages indicate that this site was affiliated with the Classic period.

No cultural materials were recovered during site testing. Based on the absence of formal surface and subsurface features and subsurface deposits, this site was determined not to be eligible to the NRHP.

LA 61047

LA 61047 is an artifact scatter located along the southern edge of Los Alamos Canyon. It is located on either side of the DOE/National Park Service boundary line. The area is vegetated by a piñon-juniper woodland with ponderosa pine along the drainage. The site is situated at an elevation of 1932 m (6340 ft).

The site consists of a 49 by 41 m thinly dispersed ceramic and lithic scatter. On the eastern end of the site is a gravel dump that was probably associated with highway construction. Diagnostic ceramics were mostly Biscuit A with Santa Fe Black-on-white, Wiyo Black-on-white, Biscuit B,

and glazeware sherds also observed. Utilityware ceramics were plain and smeared-indented corrugated sherds. The ceramic percentages indicate a Classic period affiliation.

LA 61048

LA 61047 is an artifact scatter located along the southern edge of Los Alamos Canyon. It is located on either side of the DOE/National Park Service boundary line. The area is vegetated by a piñon-juniper woodland with ponderosa pine along the drainage. The site is situated at an elevation of 1935 m (6350 ft).

The site consists of a 44 by 80 m thinly (low 100s) dispersed ceramic and lithic scatter. The scatter is most dense at the north end of the site where it is possible that a structure or terracing could be present under tree duff. This possible feature is suggested by potential rock alignments. West of the potential alignments is a rock pile of unknown cultural context. Sheet washing has impacted the site.

Diagnostic ceramics are dominated by Santa Fe Black-on-white, with Biscuit A and Biscuit B sherds also present. Utilityware ceramics are primarily smeared-indented corrugated and plainwares with a few smeared corrugated sherds documented. The chipped stone artifacts were primarily obsidian and chalcedony with chert and quartzite flakes also documented. Based on the ceramics this site is affiliated with the Coalition to Classic periods.

LA 61049

LA 61049 contains a small pueblo and a two- to three-room structure with associated features and artifacts. It is located on either side of the DOE/National Park Service boundary line. It is situated along the southern edge of the Los Alamos Canyon floodplain. The area is vegetated by a piñon-juniper woodland with a few ponderosa pine trees in nearby drainages and on the mesas. The site is located at an elevation of 1939 m (6360 ft).

The pueblo is represented by a 16.7 by 7.7 by 0.4 m high mound of rubble. The extent and floorplan of the pueblo could not be determined due to the poor level of preservation. However it was estimated that there could be up to eight rooms within the structure. A grid garden series situated in an area measuring approximately 18 by 6 m is located to the north of the pueblo. A two- to three-room structure is located approximately 75 m to the east of the pueblo. It measures 4.5 by 5.7 m. An approximate 8 by 8 m artifact concentration is located about 25 m to the northeast of the pueblo.

The associated artifacts are located in an area measuring 60 by 120 m. Santa Fe Black-on-white and Wiyo Black-on-white sherds dominate diagnostic ceramics associated with the pueblo and grid gardens. Santa Fe Black-on-white and Wiyo Black-on-white as well as a similar number of glazeware sherds were located in the vicinity of the two- to three-room structure. Diagnostic ceramics within the northeastern artifact concentration included nine Kapo Black sherds along with a couple of Santa Fe Black-on-white and biscuit sherds. Utilityware sherds were dominated by smeared-indented corrugated and plainware sherds. Lithics are primarily chalcedony and obsidian. Based on the percentage of ceramics, the pueblo and the two- to three-room structure

are associated with the Coalition period while the artifact concentration with the predominance of Kapo Black sherds appears to have an early Historic, Spanish Contact/Colonial affiliation.

LA 61050

LA 61050 is an artifact scatter that is located in the Los Alamos Canyon floodplain. The area is vegetated by piñon-juniper woodland with few ponderosa pines. It is at an elevation of 1932 m (6340 ft).

The site is a light 23 by 6 m sherd and lithic scatter located 5 m to the south of the current Los Alamos Canyon drainage channel.

Most of the artifacts appeared to be eroding out along a small drainage channel. Diagnostic ceramics included Biscuit A, Biscuit B, and Sankawi Black-on-cream sherds. Also noted on the site were smeared-indentated corrugated and plain utilityware sherds. All of the observed chipped stone were chalcedony. Most of the artifacts on the site appear to have eroded out from the east bank of a small drainage. Based on the artifact assemblage, this site is part of the Ancestral Pueblo, Classic period.

A single chalcedony flake was recovered from an auger test at an approximate depth of 30 cm. Based on the smallness of the site and the absence of subsurface remains, this site was determined not to be eligible to the NRHP.

LA 65007

LA 65007 is located 20 m north of State Road 4 and approximately 300 m east of the Los Alamos "Y" intersection. The site is mainly a lithic scatter with several chipped stone artifacts and few sherds on the surface. The site is 250 m by 100 m in size. In addition to the chipped stone and sherds, two artifact concentrations were defined. The presence of a shallow basin metate, an obsidian biface, numerous biface flakes, and a Basketmaker II projectile point suggest that a Late Archaic component is present at the site. Several Coalition and Classic period sherds suggest the occupation of Ancestral Pueblo as well.

The first concentration is located at the west edge of the site and contains several chipped stone artifacts. Since the shallow basin metate and Basketmaker II point were also found in this area, it is likely that the occupation period of this area was during the En Medio phase. Concentration 2 was at the east end of the site and contains numerous sherds and chipped stone debitage. Concentration 2 is believed to have been part of the Ancestral Pueblo occupation.

Seven test pits and six auger tests were excavated at this site. Diagnostic artifacts recovered were collected. Chalcedony and obsidian flakes were highly present. Charcoal, chipped stone, and various sherds were found throughout the test and auger pits.

LA 65420

LA 65420, a probable pithouse or kiva site, is situated on a ridge located at the confluence of Los Alamos and Pueblo Canyons. The area is vegetated by piñon-juniper woodland with ponderosa pine along the drainage south of the site. The site's dimensions are 37 by 16 m at an elevation of 1931 m (6335 ft). LA 65420 was originally included within the eastern portion of LA 61041, a large artifact scatter. Subsequent to site testing it was broken out into a new site for management purposes. Site testing included infield artifact analysis, diagnostic artifact plotting and collection, and augering.

The site is subdivided into an eastern and western area. The western area has a probable pithouse or a kiva that has been partially filled in with bulldozed debris. The pithouse/kiva is suggested by a large deep depression. The depression is approximately 4 m in diameter. The eastern site area has a 3 m long rock alignment. Artifacts were surface collected, and a series of systematic auger tests were placed within the western portion of the site. Concentrated charcoal and artifacts were recovered from the auger tests.

The artifacts associated with this site are situated in an approximate 25 by 30 m area. The main concentration of artifacts associated with the pithouse/kiva is located in a 10 by 6 m area located directly to the east. The main concentration of artifacts for the eastern portion of the site is situated in an approximate 8 m diameter area located around the rock alignment. Diagnostic ceramics were Santa Fe Black-on-white. The ceramics indicate an Ancestral Pueblo, Coalition period affiliation for this site.

This site may have been part of a larger site that included LA 65421 but which was partly destroyed by construction of State Road 502.

LA 65421

LA 65421 is a probable pithouse site, situated on a ridge within a valley bottom at the confluence of Los Alamos and Pueblo Canyons. The area is vegetated by a piñon-juniper woodland. It is located at an elevation of 1929 m (6330 ft). LA 65421 was originally included within the eastern portion of LA 61041, a large artifact scatter. Subsequent to site testing it was broken out into a new site for management purposes. Site testing included infield artifact analysis, diagnostic artifact plotting and collection, and augering.

At least one pithouse was suggested from auger testing that located a concentration of charcoal and artifacts at a depth of 90 cm. Associated artifacts are located in a 25 by 30 m area. Artifacts were situated on the surface, eroding out of a drainage cutbank, and in the bottom of a highway (State Road 502) drain turnout. Diagnostic ceramics included Santa Fe Black-on-white sherds. Other documented ceramics were indented corrugated sherds. Based on the associated ceramics this site is affiliated with the Ancestral Pueblo, Coalition period.

LA 86634

LA 86634 is situated on a ridge within a valley bottom at the confluence of Los Alamos and Pueblo Canyons. The area is vegetated by a piñon-juniper woodland. The site's dimensions are 30 by 25 m at an elevation of 1929 m (6330 ft).

The site consists of a prehistoric ceramic and lithic artifact scatter and a pithouse. The artifact scatter appears on the surface, in a cutbank, and in the bottom of a water drainage. During augering, a pithouse was found on the southeast side of the water drainage. A concentration of charcoal and artifacts was found throughout the depths to 90 cm.

Infield artifact analysis was conducted with a dogleash sample unit, diagnostic plotting and collection, and augering. Diagnostic ceramics included Santa Fe Black-on-white. Other ceramics were indented corrugated. Lithic type and material was not specified. For this reason, no date of occupation can be determined for this site of Ancestral Pueblo origin.

LA 110113

LA 110113 (V-102) consists of one or two small Ancestral Pueblo structures with an associated surface artifact scatter. It is located along the southern margin of the Los Alamos Canyon floodplain. This site is situated at an elevation of 1951 m (6400 ft) in an area that is transitional between a piñon-juniper woodland and a ponderosa pine forest.

The structures, which appear to be one-room fieldhouses, are represented by two fragmentary, perpendicular, tuff stone alignments. The westernmost structure is represented by perpendicular wall or foundation alignments measuring 1 m north-south by 1 m east-west. The average tuff rock measures 30 by 20 by 10 cm.

A second set of perpendicular tuff rock alignments is situated under a clump of juniper trees about 18 m east (downslope) of the westernmost structure. The alignments measure 1 m north-south by 2 m east-west, although the east-west alignment is rather ephemeral. These tuff rocks may be the remains of a second fieldhouse, although it is also possible that they have been redeposited by tree root uplifting. The average tuff rock measures 15 by 12 by 8 cm.

The associated artifacts, most of which are situated between the two sets of alignments, are located in an area measuring 12 by 24 m. Observed artifacts include ceramics, lithics, and ground stone. Ceramics include three sherds of Santa Fe Black-on-white, two sherds of unidentified black-on-white, eight plain utilityware sherds, two corrugated utilityware sherds, two indented utilityware sherds, and 11 smeared-indent utilityware sherds. Chipped stone artifacts consist of two pieces of angular debris, one decortication flake, six interior flakes, and two thinning flakes of Cerro Pedernal chert; one piece of angular debris and one thinning flake of obsidian, one piece of angular debris, one interior flake of quartzite, and one basalt interior flake. One unifacially ground fragment of mudstone was also noted on the site. Based on the ceramic assemblage the site appears to date to the Coalition period.

LA 110115

LA 110115 (V-104) consists of a fieldhouse located on a ridge overlooking the south side of Los Alamos Canyon. The area is vegetated with a mixed piñon-juniper and ponderosa pine woodland. The site is situated at an elevation of 1963 m (6440 ft).

The fieldhouse is constructed of both shaped and unshaped tuff blocks. Internal feature dimensions are 1 m north-south by 1.8 m east-west. There are two to three courses of the wall that are still standing; however, five to six courses have fallen down towards the outside of the feature producing a much larger rubble area. The small mound is about 30 cm in height.

A total of 61 ceramic artifacts were identified at the site. These consist of 32 Santa Fe Black-on-white, 17 plainware, 14 smeared-indent corrugated, seven obliterated corrugated (one with a fillet rim), and one plain corrugated sherd. In addition 22 pieces of debitage and a sandstone metate fragment were also observed. The debitage primarily consists of biface flakes, with fewer core flakes and angular debris made of obsidian, Cerro Pedernal chert, and basalt. Based on the ceramic assemblage, the site appears to date to the Coalition period. LA 110115 is located near the large Coalition period site of LA 394.

LA 127636

LA 127636 (J-19) is a petroglyph panel and two niches located on a cliff face at the east end of a mesa situated along the north side of Los Alamos Canyon. They face east, overlooking State Road 4 and the site of Tsankawi. This is a prominent location near the confluence of Los Alamos and Pueblo Canyons. Piñon and juniper trees dot the talus slope below the site, which is situated at an elevation of 2003 m (6568 ft).

The site consists of two small niches in the cliff face and a large petroglyph panel that surrounds the niches. The upper niche is 1.25 m above the talus bench. Its maximum interior dimensions are 55 cm deep by 95 cm wide by 90 cm high. The opening is rectangular-shaped and expands into a rough oval with dimensions that are 70 cm wide by 90 cm high. The lower niche is at ground level. Its maximum interior dimensions are 75 cm deep by 65 cm wide by 70 cm high. There is a smaller niche inside at the back that is 50 cm deep. The opening is also rectangular-shaped and measures 40 cm wide by 65 cm high. The lower niche is situated about 70 cm below the upper niche and 55 cm to the east.

The petroglyph panel is approximately 4 by 8 m in size and is situated above and to the west of the niches. It contains several figures including large animals (e.g., deer), birds, a ladder, circles, stars, and human figures including guardians (Figure 7.7). At least one set of these may be part of a shield design. No specific temporal designation can be determined, however, the site presumably represents prehistoric Ancestral Pueblo rock art.

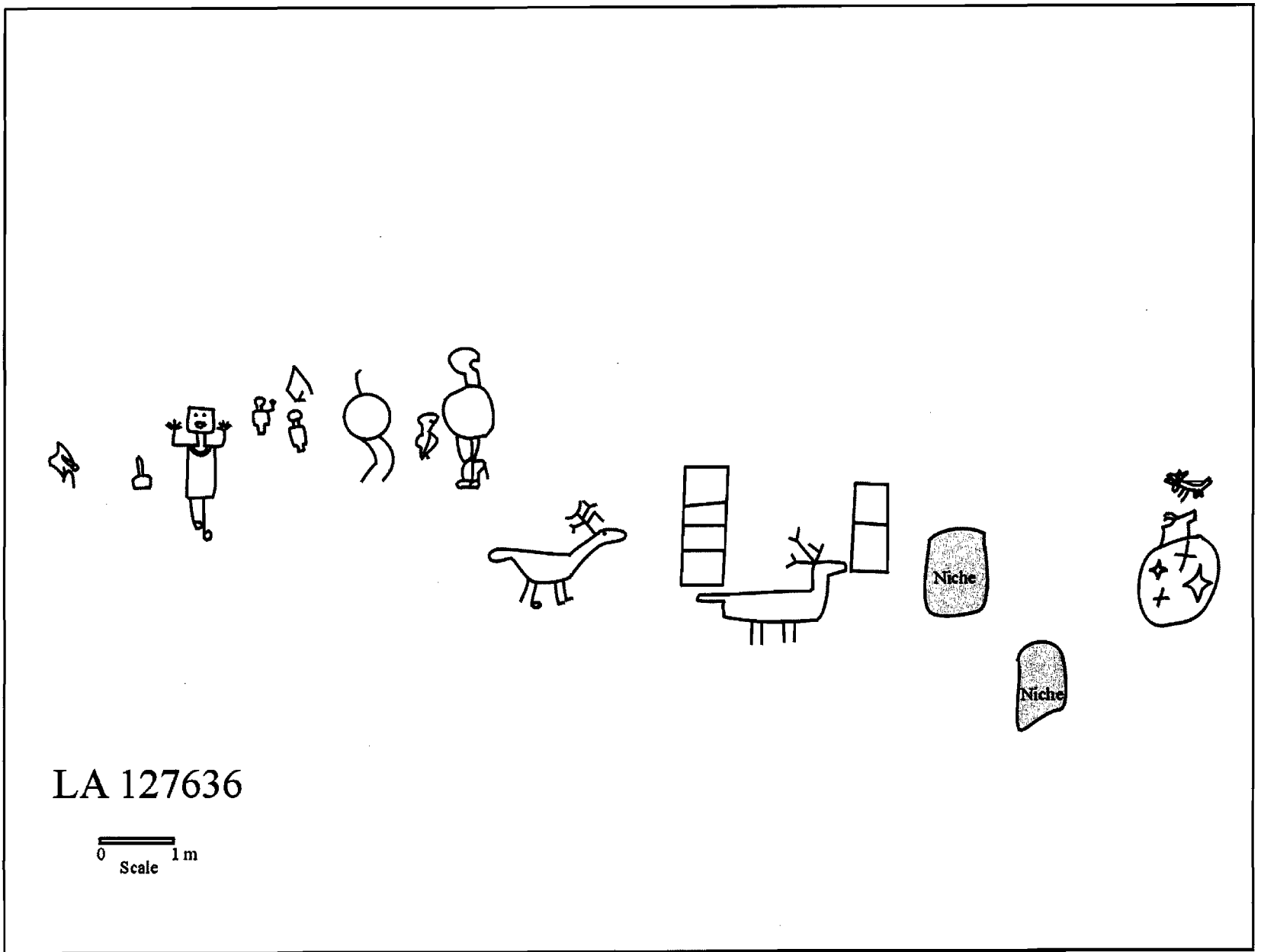


Figure 7.7. LA 127636, a 4 by 8 m petroglyph panel and two niches.

LA 127637

LA 127637 (J-20) consists of four cavates located on a south-facing cliff face along Los Alamos Canyon. The area is vegetated by a piñon-juniper woodland, although there is little vegetation around the actual site. The site is situated at an elevation of 2024 m (6640 ft).

Two of the cavates are badly deteriorated with little remaining to describe. The other two cavates were designated A and B. Civate "A" is 1 m wide by 3.2 m deep by 1 m high. It contains no evidence of floor fill, smoke sooting, niches, or petroglyphs. Civate "B" is 1 m wide by 1.7 m deep by 1.15 m high. It also lacks any interior fill, sooting, or niches.

No artifacts were located in the vicinity of the cavates. Therefore, no specific temporal designation can be given to the site. The site presumably represents a prehistoric Ancestral Pueblo occupation.

LA 127638

LA 127638 (Q-189) is a widely dispersed artifact scatter. It is located on a low hill along the south side of Sandia Canyon. The site is situated at an elevation of 2027 m (6650 ft) in an area that is transitional between a piñon-juniper woodland and a ponderosa pine forest.

The lithic and ceramic scatter is distributed across a 110 by 130 m area. An infield analysis was conducted of approximately 40% of the observed artifacts. A total of 72 artifacts were recorded. Lithic materials dominate ($n = 65$), although three Santa Fe Black-on-white and four Wiyo Black-on-white sherds are also present. The lithic debris is primarily obsidian (70%), including black translucent and black opaque Jemez obsidian and Polvadera Peak obsidian. The other chipped stone material type represented is Cerro Pedernal chert. The majority of the lithic debitage consists of biface flakes (78%) with fewer pieces of angular debris and core flakes. Chipped stone tools consist of one obsidian, one quartz, and four Cerro Pedernal chert core fragments, a Jemez obsidian projectile point, and a Polvadera Peak obsidian projectile point fragment. The Jemez obsidian projectile point is a stemmed arrow point crudely made from a flake. Ground stone artifacts consist of eight andesite mano fragments. Based on the projectile point and the diagnostic sherds, this site is affiliated with the Coalition period. However, it should be noted that the high percentage of obsidian biface flakes is similar to lithic debitage documented from other Archaic period sites located on the Pajarito Plateau.

LA 127639

LA 127639 is an extensive but widely dispersed lithic and ceramic scatter located on a hillslope along the south side of Sandia Canyon. It covers a 20 by 50 m area, being situated at an elevation of 1993 m (6540 ft) in a piñon-juniper woodland. The broad range of artifact types might indicate multiple occupations and/or a residential site function; however, there is no evidence of structural remains, and none of the artifact concentrations are dense enough to readily suggest the presence of subsurface features. There is a small nearly level area of about 20 to 30 m² in the upslope portion of the site along the ridgecrest. Previous site visitors suggested that this might be the most likely spot to expect subsurface features. Nonetheless, no structural remains are obvious, only scattered boulders, and artifact densities do not seem to be higher here

vs. elsewhere on the site. The site is situated on a relatively gentle northeast-facing hillslope. Some downslope artifact movement has occurred, with artifacts tending to concentrate in small erosional channels. One larger partly incised channel extends from a small upslope nearly level area, downslope towards the east and on towards the LANL property boundary line. Scattered items of modern trash including a line of ceramic tiles intrude on to the eastern part of the site.

Approximately 50% of the surface artifacts were selected for an infield analysis ($n = 94$). About one-third of the artifacts are ceramics ($n = 33$). Santa Fe Black-on-white and smeared-indent corrugated wares are the most abundant ceramic types, with less Wiyo Black-on-white, Biscuit A, Biscuit B, indented corrugated, and non-micaceous plainware. Most of the lithic artifacts consist of Cerro Pedernal chert and Jemez obsidian debitage (e.g., core flakes, biface flakes, and flake fragments), with a single retouched obsidian flake. Ground stone artifacts consist of one rhyolite metate fragment, two mano fragments, one undetermined fragment, and one andesite mano fragment. The ceramic assemblage indicates that the site dates to the Coalition period, however, the relatively large scatter of obsidian alludes to the possibility of an earlier Archaic component.

LA 127640

LA 127640 (Q-191) is a light artifact scatter with an associated rubble feature. It is located on the south side of a ridge that forms the northern edge of Sandia Canyon. It is situated at an elevation of 1993 m (6540 ft) in an area that is dominated by a piñon-juniper woodland.

This lithic and ceramic artifact scatter is widely dispersed and of relatively low density. Densities range from three to four artifacts per m^2 , which occurs in just a few locales, to the average artifact density of one artifact per $10 m^2$. Included in the site boundary is a potential rubble feature that is located about 25 m to the north of the artifact scatter. This feature consists of a 3 m diameter cluster of rubble. Some of these tuff blocks appear to be shaped.

An infield analysis was conducted of all observed artifacts. Most of these are lithic artifacts ($n = 98$), with fewer ceramic artifacts ($n = 24$). The chipped stone assemblage is dominated by Cerro Pedernal chert debitage (62%). Also noted were flakes of translucent brown and opaque black Jemez obsidians (28%), Polvadera Peak obsidian (6%), basalt (2%), chalcedony (1%), and quartzite (1%). Most of the chipped stone artifacts are core flakes ($n = 41$) and undetermined flake fragments ($n = 27$), with fewer biface thinning flakes, angular debris, and microdebitage. The blade fragment of a Jemez obsidian projectile point and a Jemez obsidian projectile point tip were also identified. The blade is the midsection and tip of a serrated point that likely dates to the Late Archaic period (Armijo Phase). Ground stone artifacts include two rhyolite and two quartzite mano fragments. Ceramics are primarily smeared-indent corrugated and plain utilityware sherds, with one Biscuit A sherd also present.

Based on the artifact assemblage, the site appears to be multicomponent, with both an undetermined prehistoric Ancestral Pueblo component and an earlier Archaic component.

LA 127641

LA 127641 (Q-192) is a corral or windbreak located near the base of a talus slope below the eastern end of a mesa. This location is near the confluence of Pueblo and Los Alamos Canyons at an elevation of 1966 m (6450 ft). The area is dotted with piñon and juniper trees.

The site consists of a circular dry-laid masonry wall. It measures 6 by 5 m, and is four to five courses high. Local unshaped tuff rocks were used in the construction, with some boulders also being incorporated into the upslope portion. The wall stands to a maximum height of 1.4 m, with individual rocks being about 50 cm in diameter. There is a 50 cm wide opening into the northeast end of the feature. There is no fill within the feature as exposed rock and bedrock are present.

No artifacts were observed at the site. Based on the feature type and condition, the feature likely represents a Homestead Era corral or windbreak. The cultural affiliation is undetermined historic.

TA-74 TRACT

LA 29

LA 29 (LA 29A) is a multiroom pueblo with a midden and surface artifact scatter (Figure 7.8). It is located on a bench along the south side of Pueblo Canyon. This site is situated at an elevation of 1975 m (6480 ft) in an area that is dominated by piñon-juniper woodland. The mound itself is covered with sagebrush.

Charlie Steen originally identified LA 29 as a small plaza site, with a kiva located within the plaza area. The site is represented by a low rubble mound, about 1 m high, with some shaped tuff blocks and basalt rocks. The mound measures about 15 m north-south by 20 m east-west. The mound is "U" shaped, opening to the east. There are no visible wall alignments within the area of the mound. A 6 by 6 m midden area is located about 35 m to the northeast of the mound. The north end of the site, and possibly the mound, were cut by the construction of the Pueblo Canyon dirt road. Otherwise, the site is in good condition.

A dispersed artifact scatter covers the site area, with a heavy concentration of artifacts being located to the northeast of the mound (i.e., a midden). Infield analysis was conducted in the form of a 2 m dogleash unit within the midden area (Sample 1) and one unbounded sample over the general mound area (Sample 2). A total of 290 artifacts were recorded. Most of these are ceramic artifacts ($n = 219$) with fewer lithic artifacts ($n = 71$). The majority of the ceramics consist of Santa Fe Black-on-white and smeared-indented corrugated sherds, with a few Wiyo Black-on-white, Biscuit A, Biscuit B, Sankawi Black-on-cream, and micaceous plainware sherds. The chipped stone assemblage is dominated by Cerro Pedernal chert core flakes, with lesser amounts of rhyolite and obsidian flakes. Two Jemez obsidian biface fragments, a Polvadera Peak obsidian arrow point fragment, and a Cerro Pedernal chert arrow point were also identified. The latter two points were collected. The point fragment is a small portion of a base,

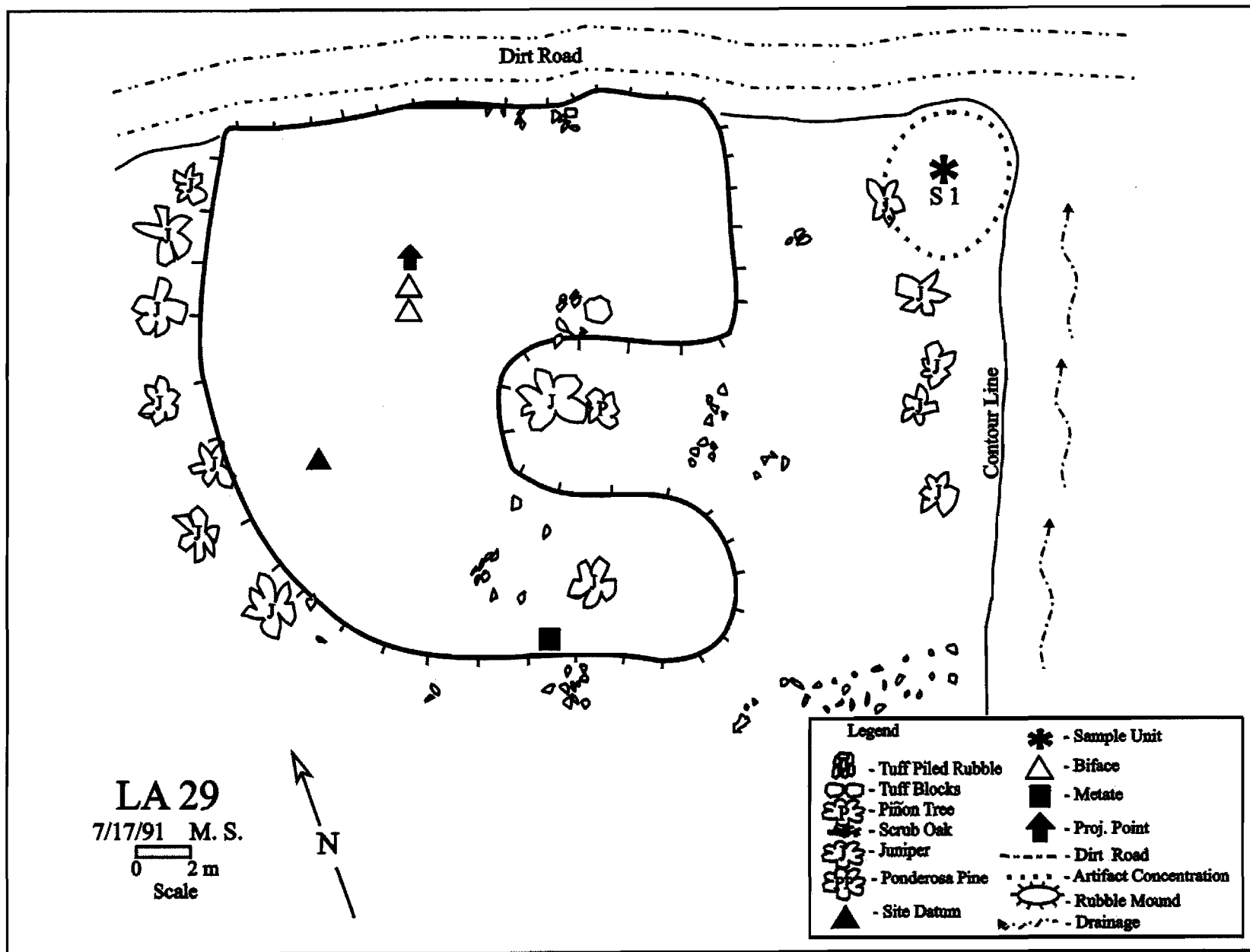


Figure 7.8. LA 29, a multiroom pueblo with a midden and surface artifact scatter.

and the whole point is a side-notched point. Based on the ceramic assemblage, the site is affiliated with the Coalition period.

LA 32

LA 32 (Little Otowi) (Q-5) consists of two adjacent rubble mounds within a 100 by 50 m area (Figure 7.9). LA 32 is located on a ridge situated along the southern side of Pueblo Canyon at an elevation of 1993 m (6500 ft). Although the ridge top is covered with a piñon-juniper woodland, the site area is covered with sagebrush. The site is in good condition, but it has experienced some surface collecting by site visitors and erosion along its periphery.

The eastern mound is linear (or rectangular) in shape, measuring approximately 24 m north-south by 14 m east-west. It is about 1 m in height, with only a few rock alignments providing any indication of rooms being present. The building material consists of shaped tuff blocks. A single room has been excavated. The mound primarily reflects a two-story structure, although portions of a single-story structure are connected to the southern end of the mound.

The western mound is located about 25 m from the eastern mound. It also reflects a two-story building, but with a square shape and an enclosed plaza. The entrance to the plaza is located in the northern corner of the mound. Only a few isolated rock alignments reflect the presence of rooms, and most of these are located in the southern portion of the mound. The mound measures about 47 m north-south by 38 m east-west.

There are a few rock alignments situated in between the two mounds. These appear to reflect the remains of one-story structures.

The site is covered with a light scatter of artifacts, with no obvious midden area present. Infield analyses were conducted along the four cardinal corners of the two mounds, consisting of 1 to 2 m diameter dogleashes (Samples 1 through 8). In addition, 20 isolated artifacts were also recorded across the site (Samples 9 through 28). All together, a total of 829 artifacts were sampled, with most of these being ceramics ($n = 686$) with fewer chipped stone ($n = 128$) and ground stone ($n = 15$) artifacts. The majority of the ceramics consist of Biscuit A and B, smeared-indented corrugated, non-micaceous plainware pottery, and micaceous plainware pottery. Other ceramics present include Santa Fe Black-on-white, Wiyo Black-on-white, and Sankawi Black-on-cream. The lithic assemblage is primarily composed of Cerro Pedernal chert core flakes, with some basalt and obsidian flakes. A Cerro Pedernal chert biface fragment, 10 undetermined ground stone fragments, two undetermined mano fragments, a grinding slab, a metate fragment, and a basalt axe were also observed. Based on the ceramic assemblage this site appears to date to the Classic period, with the possibility of a Late Coalition period component.

LA 169

Otowi is located on a ridge between Bayo and Pueblo Canyons. The area contains a piñon-juniper woodland, but the vegetation on the site primarily consists of grasses, sagebrush, saltbush, and wolfberry. Some isolated ponderosa pine are also present within the valley. The site is located at the highest point on the ridge at an elevation of 1997 m (6550 ft).

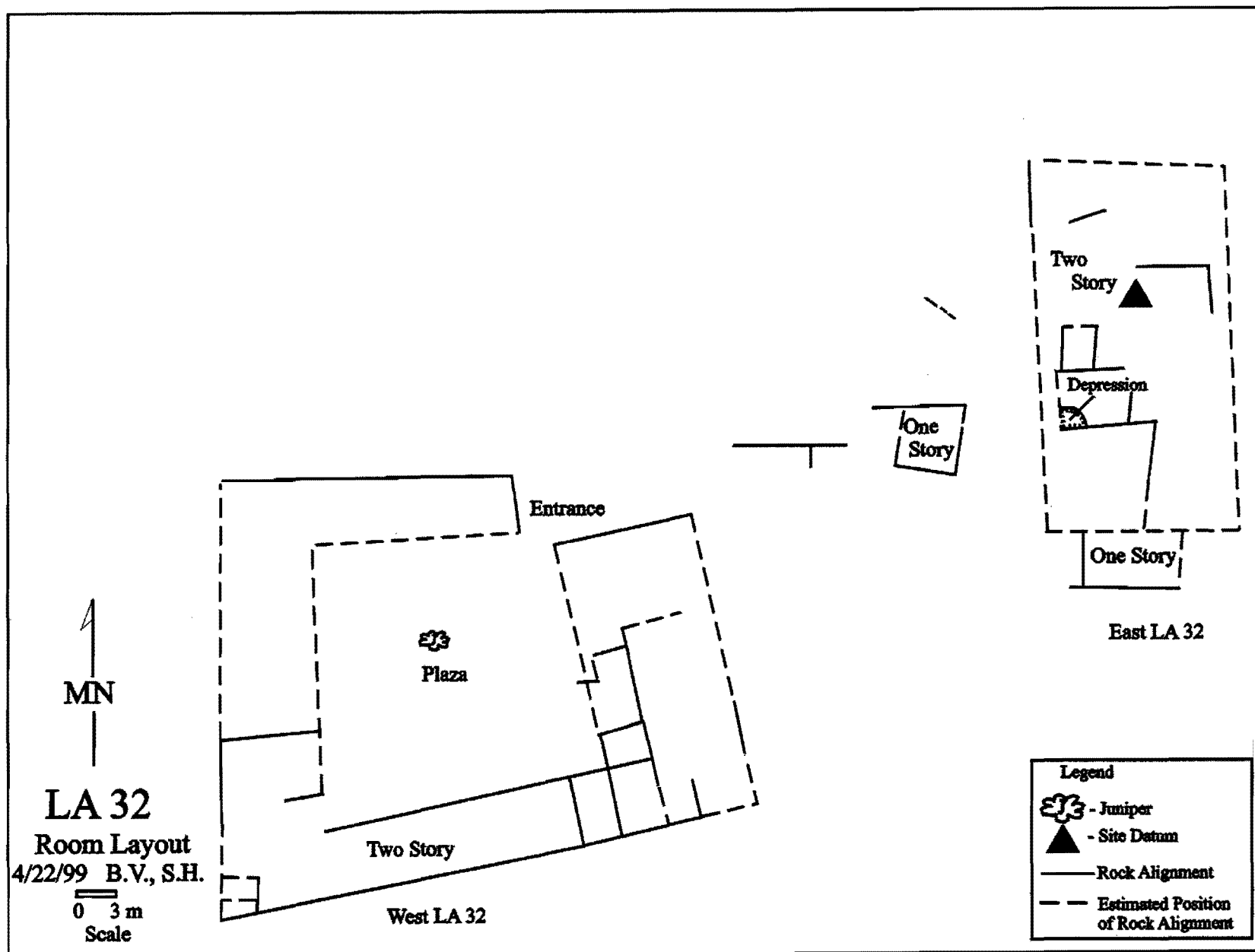


Figure 7.9. LA 32 (Little Otowi), two adjacent rubble mounds with rock alignments.

Otowi consists of five large roomblocks, seven kivas, four middens, and a reservoir (Figure 7.10). The roomblocks were estimated to be 2 to 3 stories tall and contained up to 700+ rooms. A set of three large roomblocks form the central core of the site, with a separate roomblock located to the east, and another to the southwest. Three middens are situated in the southern area of the site, bounded on the west by the reservoir. A fourth midden is located in the northwestern section, to the immediate west of a large roomblock. Seven kivas are also distributed across the site, with only one being located within a roomblock (northeastern). The site is covered with a surface scatter of artifacts. Artifact density increases in areas where subsurface deposits were exposed by the old excavations. For example, backdirt is present along the northern periphery of the site. Otherwise, the artifact scatter continues for approximately 90 m to the east, 30 m south, 110 m west, and 60 m north of the roomblocks.

Bandelier first visited Otowi in July of 1885; however, it was Hewett (1906, 1953) who conducted the first excavations at the site. There is no detailed report on these excavations, but Hewett does mention the site in his two publications on the region. He excavated the large mound located in the south-central section of the site and a small mound located to the west of the roomblocks. This work was carried out from April to September of 1905 (see Hewett's site map in Chapter 4, Figure 4.1). The large mound measured about 100 ft long, 80 ft wide, and 6 ft deep. Approximately 150 burials were removed during these excavations. The smaller mound measured about 30 ft in diameter and 3 ft in depth. An additional 25 burials were removed during these excavations. Ceramic "food bowls" were often found with the burials.

L.L. Wilson conducted extensive excavations at the site from 1915 to 1917. The map illustrated in Wilson (1916a) notes those rooms that were excavated. The map therefore shows that most (if not all) of the northern three roomblocks and the eastern roomblock were excavated (see Wilson's map in Chapter 4, Figure 4.1). She notes that all the rooms were excavated to bedrock. Wilson's map deviates somewhat from Hewett's noting the presence of a narrow roomblock that connects the northern exterior walls of the three large roomblocks. Hewett's map only notes an exterior wall bounding these three roomblocks. Wilson also conducted some limited excavations in the southwestern roomblock. She suggests that this area of the site appeared to be the oldest. Otherwise, Wilson's map illustrates the same number and location of kivas as found on Hewett's map.

UCLA conducted a systematic survey of the Pajarito Plateau during the 1970s (PARP). The survey included areas within LANL, and specifically the site of Otowi. The sketch map shows the rubble mounds of the main roomblocks, the eastern roomblock, the southwestern roomblock, several kivas, the southern two middens, and the reservoir (see PARP map). The site form notes that the main roomblock measures 73 by 38 m, the eastern room measures 44 by 13 m, and the southwestern roomblock measures 65 by 18 m. Rooms are generally about 2 by 2 m in size, and the kivas range from about 4 to 7 m in diameter. Twelve collection units were placed across the site (A through H, J through M). These units range from 1 by 1 m to 3 by 3 m in size.

The Cultural Resource Team (ESH-20) at LANL conducted an intensive survey of Otowi as part of the LCT. This form is the result of this project. The site is currently completely fenced around the perimeter of the roomblocks, middens, and reservoir. One isolated kiva is located outside of the fence to the northeast. Although the northern roomblocks have been completely excavated,

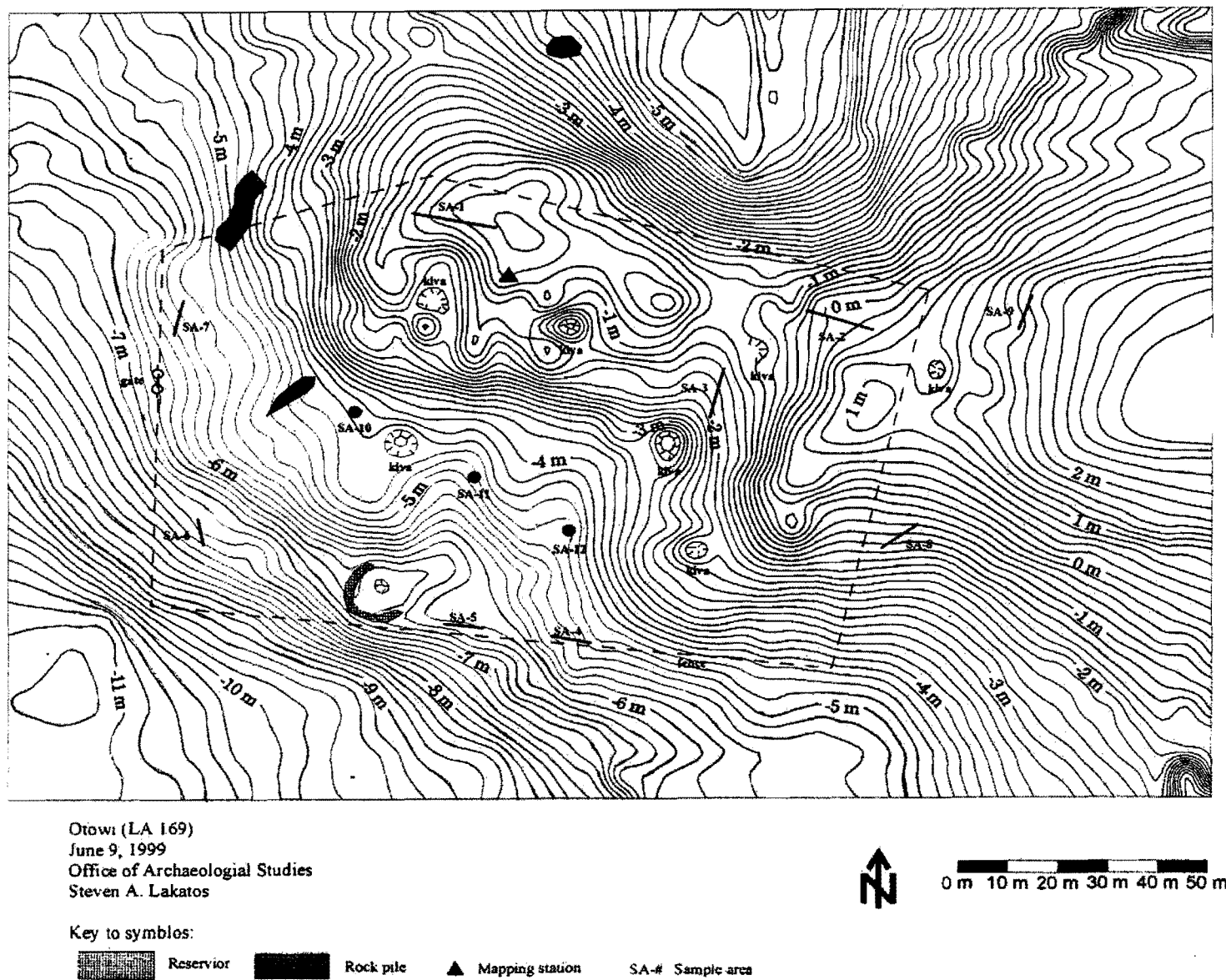


Figure 7.10. LA 169 (Otowi), contour map.

the rubble mounds show no obvious evidence of excavated rooms. The rubble mounds do stand about 2 m high. Backdirt is present along the northern periphery of the site, and it is unclear as to whether the two trash mounds on the southern side of the site are intact or backdirt from Hewett's excavations of the adjacent burial mound. The kivas are evidenced by depressions, but again, it is unclear as to whether these were also excavated by Wilson. The southwestern roomblock is in good condition, and remains the only portion of the site that was not fully excavated by Wilson.

An electronic distance measurer map was made of Otowi, including site contours and the locations of the perimeter fence, kivas, middens, reservoir, and infield sample units. Nine transects and three dogleashes were analyzed in the field: Transect 1 (1 by 17 m), 2 (1 by 14 m), 3 (1 by 12 m), 4 (1 by 8 m), 5 (1 by 8 m), 6 (1 by 6 m), 7 (1 by 6 m), 8 (1 by 8 m), and 9 (1 by 8 m) and dogleash 10 through 12 (2 m diameter). A total of 3328 artifacts were recorded. Most of these are ceramics ($n = 2553$), with fewer chipped stone ($n = 653$) and ground stone ($n = 22$) artifacts. The infield analyses conducted at the site indicate that most of the pottery consists of Biscuit A and B, smeared-indented, obliterated corrugated, and micaceous plainware ceramics. There are small amounts of Santa Fe and Wiyo Black-on-white present near the southwest roomblock. Otherwise, there is some Sankawi Black-on-cream and glazewares (Glaze D and E). The lithic assemblage is dominated by Cerro Pedernal chert debitage, with some basalt, obsidian, and rhyolite. Several slab metates, mano fragments, a basin metate, a polishing stone, a stone lid, and undetermined ground stone fragments are present on the site. A siltstone and ceramic pipe were recorded, as were four bone fragments. No formal lithic tools were observed, but the site has been visited by the public for many years.

Four tree ring samples are listed for Otowi at the University of Arizona Dendrochronological Laboratory with the latest date of AD 1491.

The ceramics and tree samples indicate that the site primarily dates to the Classic period; however, the presence of relatively more Santa Fe and Wiyo Black-on-white in the area of the southwest roomblock supports Wilson's contention that this area was the oldest on the site. Therefore, the site may also have a Late Coalition period component.

LA 21511

LA 21511 is a small pueblo located on the first bench along the south side of Pueblo Canyon. It is situated in an area dominated by a piñon-juniper woodland at an elevation of 1972 m (6470 ft).

The pueblo consists of a 9 by 8 m rubble mound that is covered by sagebrush. The mound, which is about 0.2 m high, is formed with tuff blocks that range in size from 15 by 15 by 10 cm to 60 by 25 by 10 cm; the blocks average 25 by 20 by 15 cm. Many of the tuff blocks appear weathered as they are roughly shaped and there are numerous fragments of decomposed tuff scattered all over the site. Only a small amount of rubble is visible on the site, which may be a function of alluvial fill eroding onto (burying) the site from the south. The rubble appears to represent the remains of a masonry pueblo that may contain up to eight rooms.

Situated 8 m south-southwest of the rubble mound is an oval-shaped rock alignment. It is located in a sheet washed area adjacent to a shallow drainage. The alignment measures 1 m by 1.65 m in size and is oriented perpendicular to the small drainage. It contains one rhyolite, three basalt, and four tuff rocks. The rocks range in size from about 20 to 40 cm in diameter.

The 800 to 900 associated artifacts are distributed across an area measuring 60 by 50 m. Observed artifacts include ceramics, chipped stone, and a ground stone fragment.

Approximately 70% of the ceramics were sherds from utilityware vessels. They were predominantly smeared-indentured (60%) sherds with corrugated (4%), indented corrugated (2%), and obliterated corrugated (2%) sherds also being noted. The decorated ceramics were sherds from Santa Fe Black-on-white (25%), Biscuit A (5%), and Wiyo Black-on-white (2%) vessels. Chipped stone debitage was dominated by Cerro Pedernal chert, which formed about 90% of the lithics. Also noted were basalt (5%), rhyolite (3%), and obsidian (2%). One quartzite cobble mano fragment was also observed. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 21584

LA 21584 is situated on the upper northern slopes of a ridge that is located south of Pueblo Canyon. The site is distributed along the side and bottom of the upper portion of a very small drainage. The main cluster of cobbles is located along the west side of this drainage. The area is vegetated by piñon-juniper woodland and ponderosa forest and is at an elevation of 1978 m (6490 ft).

Visually this feature looks to be a check dam, however, the abundance and varied artifacts suggest otherwise. The site is probably the badly eroded remains of a fieldhouse, the somewhat linear alignment of rocks being a function of the drainage washing cobbles slightly downslope to the northeast. There are about 40 to 45 unshaped tuff and basalt cobbles at the feature distributed across a 3 to 4 m area. Even though the site is badly eroded and is sitting in the mouth of a shallow drainage, there is potential for intact features and/or materials especially along the western side of the cobble feature.

Associated artifacts are scattered over an 18 by 25 m area. Ceramics consist of 10 Santa Fe Black-on-white sherds, three Biscuit A sherds, one Wiyo/Biscuit sherd, one possible Galisteo Black-on-white sherd, 17 smeared-indentured corrugated sherds, two plainware sherds, one obliterated corrugated sherd, and six undetermined sherds. Lithic debitage include five chert thinning flakes, three chalcedony decortication flakes, one chalcedony thinning flake, one quartzite decortication flake, one basalt decortication flake, one basalt thinning flake, and one obsidian thinning flake. Lithic tools include one basalt core/chopper (possibly polished on one side), one rhyolite shallow metate, two rhyolite mano fragments, and one quartzite ground stone fragment. Based on these artifacts, this site is likely affiliated with the Ancestral Pueblo, Coalition period.

LA 21585

LA 21585 is the Otowi Mesa Trail, situated on top of Otowi Mesa between Bayo and Barrancas Canyons. The trail begins at the end of Barranca Mesa (where Los Pueblos Road dead ends), and heads east on the mesa top. It ends near the eastern end of the southern branch of Otowi Mesa, where a staircase heads down the southern cliff face to the cavates of site LA 127673 (Q-208). The elevations range from 2121 m (6960 ft) (at the western end) to 2067 m (6782 ft) (at the foot of the second staircase). The mesa top is vegetated by piñon-juniper woodland.

The trail is carved into the mesa top bedrock in some sections and is dirt in others. The average width is approximately 20 cm. There are a few sets of three to four steps that head up and down the bedrock on the mesa top. The trail is in good condition and is clearly visible for the majority of its length. There are three associated staircases, one at the approximate midpoint, one at the eastern end of the mesa top that heads down the southern cliff face to the upper cavates at site LA 127673, and one leading from the upper to the lower cavates. The first and third staircases have associated petroglyphs, although the humanoid figures at the first staircase may be of recent origin.

Staircase 1 is located midway down the trail. It consists of seven steps and a ledge. The distances of the steps from the ground are as follows: 0.4 m, 1.0 m, 1.3 m, 1.6 m, 2.25 m (ledge), 2.7 m, 3.55 m, 4.0 m, and the mesa top is 4.5 m. The steps are between 10 and 15 cm wide. The anthropomorphic petroglyphs are associated with this staircase. Staircase 2 winds down from the mesa top to the second ledge, where the upper cavates of LA 127673 are located. The main staircase is spiral shaped. Staircase 3 goes from the second ledge (upper cavates of LA 127673 to the talus slope, lower cavates of LA 127673). There are three petroglyphs associated with this staircase (at the top) - a spiral, an animal figure, and a "bull's eye." Staircase 4 was recorded by PARP in 1978 and re-recorded by LANL. It consists of 13 steps, 3 m high by 1 m wide.

There are no artifacts associated directly with the trail, therefore the temporal affiliation remains unknown. Nevertheless, the trail could be speculatively associated with Q-208, as the trail leads directly to the site. Ceramics found at LA 127673 date to the Classic period, therefore, it could be assumed, that although the Otowi Mesa Trail might not have been constructed during this period, it was at least utilized.

LA 21591

LA 21591 (Q-207, Q207A) is a separate group of 12 (Locus #1) and 47 (Locus #2) cavates with associated petroglyphs and a staircase. The Locus #1 covers a 50 m distance, and Locus #2 a 310 m distance along the south-facing cliff face overlooking Bayo Canyon. Locus #1 is the westerly group and Locus #2 the easterly group that is separated by a distance of 25 m. The site is situated at an elevation of 2044 m (6700 ft), within a piñon-juniper woodland setting.

The Locus #1 cavates have been somewhat eroded by wind and water, as well as by colluvial processes that have redepositing some archaeological materials downslope. The cavates range in size from 1.5 to 3 m in diameter, with 11 being ovoid in shape, and two are sub-rectangular. Cavate 9 is the only cavate with a floor feature, otherwise, seven of the cavates have floor niches.

Plaster and soot is present in many of the cavates, with interior fill ranging from 0 to 30 cm in depth. Table 7.5 presents detailed information on the Locus #1 cavates.

There are numerous petroglyphs associated with Locus #1. Cavate 12 contains several, although only two were sketched as the prehistoric nature of the others is ambiguous. The two sketched petroglyphs were a large deer on the ceiling and a large awanyu that circles the wall. Cavate 10 has a small petroglyph carved into the plaster near the floor of two (possibly more) figures holding hands above their heads. Exterior petroglyphs include a series of figures above Cavates 5 and 6, with a human, a plant, and geometric figures. There is also a large petroglyph associated with a staircase east of Cavate 12 that is a geometric.

The Locus #2 cavates are well preserved for the most part, containing smoke sooting, plaster fragments, and intact deposits. They are mainly ovoid in shape, ranging from 1.2 to 3 m in diameter, and containing up to 50 cm of fill. Eighteen of the cavates contain niches. Many of the cavates have petroglyphs pecked into the sooting to create negative images (e.g., humans, animals, kokopelli, and awanyu). There are also two large petroglyph panels located on the cliff face above the cavates, pecked into the tuff. These include kokopelli, human figures, animals (e.g., birds), and three unidentified figures with round bodies and stick limbs. There are two pieces of intact wood beams (one lintel and one viga) associated with Cavates 2 and 6, respectively. Most of the second story cavates are accessible from the ground using existing hand and foot holds. Table 7.6 presents detailed information on the Locus #2 cavates.

Very few artifacts were located in and around the cavates. This is likely due to erosional processes and artifact collection by visitors to the site. A single micaceous plainware sherd was found in Cavate 7, and a Santa Fe Black-on-white sherd in Cavate 8 of Locus #1. Locus #2 contained a Santa Fe Black-on-white, two Wiyo Black-on-white, a Biscuit A ware, a micaceous plainware, and two smeared-indentured corrugated wares, with three Cerro Pedernal chert core flakes and a Cerro Pedernal chert core. Based on these ceramics and the known temporal association of similar cavate sites in the area, LA 21591 presumably dates to the Late Coalition-Early Classic period.

LA 21592

LA 21592 is a set of grid gardens situated on the Bayo Canyon valley floor near the Classic period pueblo of Otowi. The overstory contains mostly piñon-juniper with some ponderosa pine. Tall grasses and grama grass are present on the grid gardens. There is some downslope erosion and erosional downcutting by the valley bottom wash.

The site consists of two sets of grid gardens that are separated by a wash. The northern grid gardens are composed of a series of interlocking unshaped tuff block rock alignments that are a single coarse high. They are situated at the base of the slope, running perpendicular to the slope thereby creating a row of terraces and grids (Figure 7.11). The features cover an area of about 75 by 25 m in the northern section of the site. The southern portion of the site is separated by a 15 m wide wash. These features are constructed the same way but cover a smaller 33 by 30 m area. The southern gardens are located just below Otowi Pueblo.

Table 7.5. LA 21591, Locus #1 Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/sockets	Petroglyphs	Artifacts	Other
1	1.35 by 1.55 by 0.5	None	Very faint on ceiling.	No	Northeast corner niche, 5 cm above floor, 25 by 15 cm; southwest corner niche, 15 cm above floor, 15 cm diameter.	No	No	Heavily eroded.
2	1.5 by 2.0 by 0.95	25 cm	Very faint on ceiling.	No	None	No	No	
3	2.6 by 3.1 by 1.8	10 cm	On ceiling.	Up 50 cm above floor.	Northeast corner niche on floor, 0.75 by 0.83 by 1.75 m; two northwest corner niches on floor, 42 by 46 by 50 cm, 37 by 48 by 35 cm; southeast corner niche 25 cm above floor, 22 by 38 by 50.	Three concentric circles around hole in ceiling.	No	Hole in ceiling 35 cm deep.
4	0.67 by 3.0 by 1.15	30 cm	No	No	None	No	No	May not be a human-made cavate.
5	2.8 by 3.1 by 1.7	18 cm	Faint on ceiling.	Up 90 cm from floor.	None	No	No	
6	2.45 by 3.0 by 1.75	10 cm	Very faint on ceiling.	Up 70 cm from floor and inside niche.	Northwest corner niche, 63 by 95 cm.	No	No	Subrectangular hole in ceiling extends up 70 cm. Smokehole above and to west of entrance.
7	2.7 by 3.5 by 1.65	30 cm	No	Up 40 cm from floor.	Southeast corner niche 60 by 54 cm.	No	One micaceous plainware sherd.	

Table 7.5. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
8	0.86 by 1.2 by 0.73	25 cm	No	No	None	No	One Santa Fe Black-on-white sherd.	
9	1.65 by 1.85 by 1.4	15 cm	No	Up 1 m from floor.	East corner niche 40 by 59 cm; floor pit in south corner, 23 by 31 cm.	No	No	Subrectangular hole in ceiling 10 cm deep.
10	2.25 by 2.7 by 1.65	35 cm	No	Up 40 cm above floor.	Northwest corner niche 38 by 65 cm; northeast corner niche 14 by 50 cm; southeast corner niche 50 by 60 cm.	Yes, two human figures with arms raised carved into plaster on north wall.	No	
11	2.35 by 2.2 by 1.75	70 cm	On ceiling and walls and in niches and sockets.	Up 90 cm above floor.	West wall niche 40 by 49 cm; east wall niche 0.79 by 1.1 m; southeast corner niche 10 by 37 cm. Five sockets 1.15 m above floor, 6 cm in diameter.	No	No	Vandal carvings.
12	2.35 by 3.1 by 1.73	13 cm	On ceiling and entire length of walls.	Up 80 cm above floor.	Rear niche 1.0 by 1.1 by 1.2; northwest corner niche 55 by 83 by 80 cm. Two sockets 48 cm above floor, 5 cm in diameter, 45 cm apart.	Yes, several figures on ceiling including deer and awanyu.	No	Opening east of entrance, 30 by 40 cm.

Table 7.6. LA 21591, Locus #2 Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Seats	Petroglyphs	Artifacts	Other
1	2.5 by 3.0 by 1.7	None	On ceiling and in west wall niche.	On floor and up 65 cm.	Northwest corner niche 1.1 by 1.05 m; west wall niche 92 cm above floor, 58 by 85 cm.	No	No	
2								Inaccessible— has preserved lintel at bottom of opening.
3	1.85 by 3.1 by 1.65	8 cm	On ceiling and down east wall to floor.	Up 80 cm above floor.	Rear niche 1.25 by 1.4 m; 8 sockets ranging from 40 cm to 1.2 m above floor.	Yes, human and shield figures— maybe warriors.	No	
4	2.5 by 3.0 by 1.3	45+ cm	On north wall.	From 5 to 40 cm above floor.	Northeast corner niche 1.05 by 1.25 m.	No	No	Possible niche or shelf on back wall.
5								Inaccessible— no data.
6	2.5 by 2.8 by 1.85	5 cm	On ceiling and walls and in niches and sockets.	Up 75 cm from floor.	East wall niche/floor pit, 60 by 65 cm; wall niche 66 cm above floor, 35 by 60, 2 sockets north and south walls 90 cm above floor, 10 cm diameter.	Yes, kokopelli figure.	No	Butterfly wings in floor pit, could be natural. Viga in hole 1.5 cm above floor in south wall, 15 cm diameter. Viga on floor 70 cm long, 9 cm diameter.

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket	Petroglyphs	Artifacts	Other
7	3.5 by 3.8 by 2.0	20 cm	On ceiling.	Up 85 cm from floor.	Northeast corner niche 0.65 by 1.0 m; northwest corner niche 0.7 by 1.1 m with sooting; west wall niche 40 by 48 cm.	Yes, animal (maybe coyote) figure near northwest niche.	No	
8								Inaccessible— no data.
9	2.3 by 3.1 by 2.3	None	Small patch on ceiling.	Up 67 cm from floor and in wall niche.	Rear niche 28 by 60 cm; wall niche 63 cm above floor, 19 cm diameter.	No	No	
10	1.95 by 3.3 by 2.0	<5 cm	No	No	None	No	No	Hole in ceiling— may be natural.
11								Inaccessible— no data.
12	2.1 by 3.1 by 1.8	None	On ceiling and in one niche socket.	Fragments 1.05 m above floor.	Northeast corner niche 30 by 80 cm; two small sockets in rear of niche and one in ceiling niche. Three sockets 1.5 m above floor (2 on north wall, 1 on west wall— 2 with sooting).	Yes, including animal figure and paw prints.	One smeared- indented corrugated; 1 Wiyo Black-on- white, 1 Santa Fe Black-on- white, 1 Biscuit A.	
13								Inaccessible— no data.
14								Eroded out—no data.

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
15	1.8 by 2.6 by 2.0	2 cm	On ceiling.	Up 1.35 m above floor.	Southeast corner niche 0.45 by 1.1 m.	Abstract figures and kokopelli.	No	Floor heavily eroded.
16	0.6 by 1.75 by 1.5	None	In wall niche.	Up 45 cm above floor.	Wall niche 10 cm above floor, 75 cm high. Possible east wall socket, 30 cm above floor, 20 cm diameter.	No	No	
17	2.0 by 2.4 by 1.4	10 cm	No	No	East wall niche 34 by 62 by 45 cm.	No	No	Subrectangular window 60 cm above floor in southeast corner, 50 by 25 cm.
18	1.33 by 1.95 by 0.4	≈1 m	On ceiling.	No	None	No	No	Most of cavate is filled with sediment.
19	2.3 by 2.6 by 1.6	20 cm	No	Up 13 cm above floor and in northwest niche.	Northwest corner niche 0.38 by 1.6 m; southeast corner niche 32 by 84 cm, 2 sockets in ceiling 1.27 m above floor in west corner, 1.06 m above floor in east corner.	No	No	
20	1.8 by 2.95 by 1.45	15 cm	No	No	Rear niche 34 by 80 by 15.	No	No	

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket	Petroglyphs	Artifacts	Other
21	2.5 by 2.95 by 1.57	5 cm	On ceiling.	Up 66 cm from floor and in northeast corner niche and wall niche #2.	Northeast corner niche 62 by 63 cm; floor pit southeast corner, 45 cm diameter; 3 wall niches: 10 cm above floor, 30 by 45 by 20 cm; 25 cm above floor, 15 by 15 by 15; and 40 cm above floor, 9 by 9 by 6.	No	One Cerro Pedernal chert core flake.	Subrectangular; smokehole 1 m above floor, 23 by 17 cm, west of entrance.
22	2.15 by 2.75 by 1.77	8 cm	On ceiling.	Up 63 cm above floor.	Northeast corner niche 44 by 25 cm; east wall niche 56 by 86 cm; southeast corner niche 39 by 42 cm. Wall niche above east niche 1 m above floor, 96 by 35 cm.	No	No	
23	1.15 by 1.2 by 1.07	12 cm	No	No	None	No	No	Subrectangular
24	1.35 by 2.15 by 1.62	None	No	No	None	No	No	
25	2.65 by 3.5 by 2.0	10 cm	On ceiling.	Up 80 cm above floor.	Northeast corner niche 28 by 40 cm; west wall niche 50 cm above floor, 27 by 77 by 43 cm with smaller niche in south end.	No	No	Tuff blocks on floor.
26								Inaccessible—no data.

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
27	32 by 3.0 by 1.65	8 cm	On ceiling and in niche.	No	East wall niche 52 by 68 cm.	Animal, human, and abstract figures.	No	Some sooting may be recent.
28	2.25 by 2.95 by 1.2	10 cm	No	No	Rear niche 63 by 65 cm.	No	One Cerro Pedernal chert core flake.	
29	2.35 by 2.1 by 1.67	12 cm	On ceiling and west wall and in northwest and west wall niches.	Up 70 cm above floor.	Northwest corner niche 55 by 60 cm, southeast corner niche 40 by 74 cm, west wall niche 60 cm above floor, 20 by 74 by 40 cm. West two circular depressions above are sooted.	Human and serpent figure.	No	
30	2.3 by 2.5 by 1.6		Faint on ceiling.	Fragments 13 to 68 cm above floor.	Two west wall niches 44 by 50 by 37 cm (south), 48 by 50 by 75 cm (north).	Sun on ceiling.	No	Butterfly wing on floor.
31	2.0 by 3.0 by 1.05		On ceiling.	No	Two niches— west wall niche 32 by 73 by 57 cm (square).	Highly eroded awayu on back wall.	No	
32	1.8 by 2.6 by 1.5		No	On floor and at floor/wall intersection	Rear niche 50 by 53 by 46 cm.	No	No	Highly eroded.

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Seats	Petroglyphs	Artifacts	Other
33	1.8 by 3.4 by 1.7		Faint on ceiling and in west wall niche.	No	West wall niche 63 by 90 by 78 cm (with sooting), east wall niche/floor pit 80 by 83 by 83.	No	No	
34	1.2 by 2.5 by 1.4		No	No	Rear niche 45 by 67 by 56 cm; southeast corner niche 60 by 84 by 60; north wall niche 25 by 53 by 66 cm.	No	One worked micaceous plainware; 1 worked Wiyo Black-on-white; 1 undetermined chert flake.	
35	2.2 by 2.9 by 2.15		No	No	Round hole in ceiling—likely natural; 26 cm diameter, 2 m deep.	No	No	
36	2.7 by 2.7 by 1.65		On ceiling and in northeast corner niche.	Up 33 cm above floor and in northeast corner niche.	Rear niche 28 by 50 by 48 cm; northeast corner niche 0.9 by 1.35 by 0.76 m (with sooting and plaster).	No	No	
37	2.0 by 3.0 by 1.2		On ceiling.	No	Southwest corner niche 34 by 80 by 43.	No	No	
38			No	No	None	No		Inaccessible—no data.

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket	Petroglyphs	Artifacts	Other
39	2.1 by 3.1 by 1.3		No	No	Northeast corner niche 50 by 60 by 46 cm; east wall niche 36 by 94 by 30 cm.	No	One smeared- indented corrugated.	Highly eroded.
40	2.7 by 2.8 by 1.6		On ceiling.	Up 68 cm from floor.	Rear niche 93 by 53 by 73 cm.	Including awayu and human figures.		Opening between cavates 40 and 41.
41	3.0 by 3.2 by 1.5		On ceiling.	Up 72 cm above floor.	Rear niche 53 by 40 by 48 cm; east wall niche 22 by 41 by 63.	Abstract wavy lines and human figure.	No	
42	1.2 by 1.8 by 1.35		No	No	None	No	No	Highly eroded—faces southeast.
43	2.3 by 3.0 by 1.4		No	Inside niche.	Northwest corner niche 30 by 60 by 40 cm with plaster.	No	No	
44	3.0 by 2.9 by 1.7		On ceiling and walls.	Up 55 cm from floor and in niches.	Northeast corner niche 43 by 48 by 48 cm; east wall double niche 28 by 100 by 62cm; rear wall niche 0.3 by 1.32 by 0.38 m (oblong with plaster); 2 sockets 20 cm diameter, 15 to 20 cm deep. Upper east wall ledge niche 6 by 7 by 27 cm.	Eroded abstract figure.	No	

Table 7.6. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
45	1.8 by 2.0 by 1.4		No	On floor and up to 26 cm above.	East wall niche 18 by 37 by 55 cm.	No	No	
46	1.6 by 2.1 by 0.9		No	No	East wall niche 30 by 40 by 20 cm.	No	No	
47	2.1 by 2.3 by 1.75		On ceiling and in rear niche.	Ten to 63 cm above floor and in west wall niche.	Rear niche 26 by 24 by 14 cm; west wall niche 10 by 40 by 28 cm with plaster.	No	No	

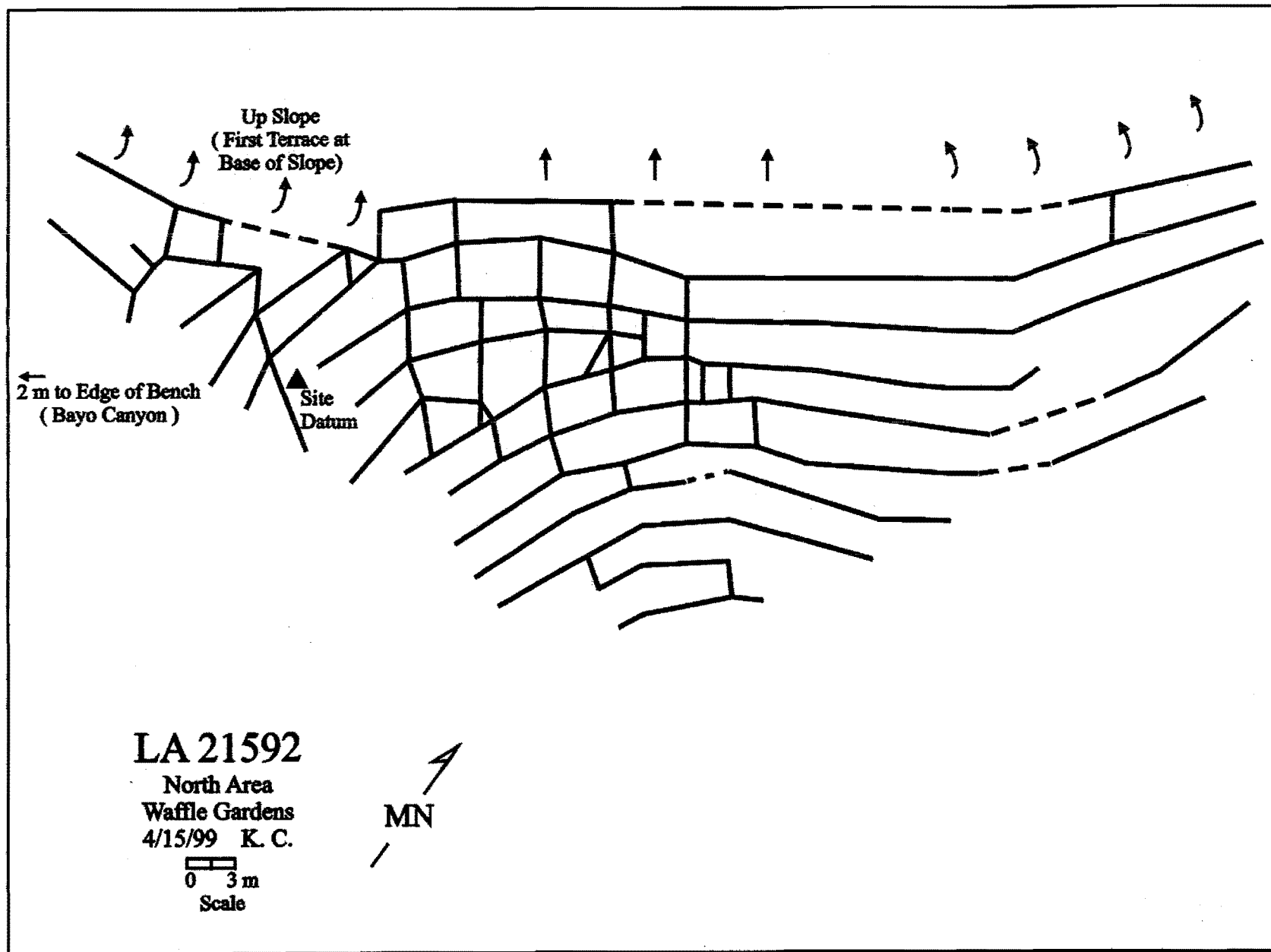


Figure 7.11. LA 21592, waffle (grid) gardens north of Otowi.

A light scatter of artifacts covers the grid gardens. One hundred and fifty seven artifacts were identified during the infield analysis of all surface artifacts. Most of these are ceramics ($n = 138$) with some debitage. In the northern area, the ceramics include Santa Fe Black-on-white and Biscuit A and B; however, only biscuitwares and Sankawi Black-on-cream were observed in the southern area of the site. This is presumably due to this latter area being located nearer to Otowi Pueblo. The debitage primarily consists of Cerro Pedernal chert core flakes with one Jemez obsidian biface fragment. Based on the ceramic assemblage, the site presumably dates to the Coalition and Classic periods.

LA 21593

LA 21593 (Q-209) is a large artifact scatter with possible structural remains. The site is situated on a gentle sloping bench of a south-trending ridge that descends to the wash channel of Bayo Canyon. The bench is some 30 m above the wash, with a panoramic view of Otowi Pueblo to the south. The site is situated at an elevation of 1993 m (6543 ft), which is directly above a series of grid gardens (LA 21592) on a lower terrace. A series of cavates (LA 21591, LA 127673) is situated at the top of the talus slopes immediately to the north. Piñon-juniper trees are scattered on the bench, along with various grasses.

The site is a large artifact scatter that covers a 75 by 130 m area. It contains four somewhat distinct activity loci based on artifact densities and the presence of possible structural remains that do not appear to represent grid garden alignments. Locus 1 is a relatively flat area about 20 m in diameter at the southern margin of the site. It contains a fairly high density of artifacts along with seemingly one and possibly a second small isolated rectangular structure constructed with a single course of mainly unshaped tuff stones. Locus 2 is about 25 m north of Locus 1 on a gently sloping portion of the ridge. A row of shaped tuff blocks and several scattered concentrations of shaped and unshaped stones suggest the possibility of two to four contiguous rooms surrounded by a moderate density of artifacts, although the evidence is by no means definitive. Locus 3 is on a flat portion of a bench about 15 m west of Locus 1. Locus 3 contained a relatively high density of artifacts but no obvious structural remains. Locus 4 is a series of two or three possible check dams in a small drainage about 20 m east of Locus 1. Other than some tree disturbance and a few scattered historic cans, there is little indication of historic or modern disturbance.

The surface artifacts included more than a thousand sherds and hundreds of items of chipped stone. Five 2 m diameter dogleash samples were analyzed in the field. A total of 190 artifacts were sampled, consisting of 134 ceramic, 54 chipped stone, and 2 ground stone items. Decorated wares comprise about 20% of the ceramics, with most of these being sherds of Santa Fe Black-on-white and a few of Wiyo Black-on-white, Biscuit A, and Sankawi Black-on-cream. Chipped stone assemblage is dominated by Cerro Pedernal chert debitage, with a single obsidian side-notched arrow point. Ground stone items consist of a rhyolite metate and quartzite mano fragment.

The numbers and diversity of artifacts present at LA 21593 are significantly greater than that expected in association with typical fieldhouses and agricultural garden sites. While the surface architectural indications are ambiguous, it is possible that testing of the site would reveal the presence of additional substantive architectural remains, perhaps even the presence of a small

roomblock pueblo dating to the transition between the Coalition and Classic Ancestral Pueblo periods. However, at present this site is simply considered an extensive artifact scatter with associated stone features of unknown function.

LA 21595

LA 21595 (Q-1) is a small eight-room masonry pueblo that was originally recorded in 1978 by the PARP. It is located at the tip of a small ridge, which trends east to west along the south side of Pueblo Canyon. The site is situated at an elevation of 1973 m (6460 ft) in an area that is dominated by piñon-juniper woodland.

LA 21595 is characterized by a small amount of shaped tuff rubble, which averages about 22 by 22 by 12 cm in size. The roomblock was originally recorded as being within an area measuring 13.5 m north-south by 2.45 m east-west. Based on the limited amount of rubble situated on the site, PARP speculated that masonry construction materials had been cannibalized from the pueblo. Erosion was noted as being extensive at the site and in the general area. The artifact scatter was described as being limited to a 27 by 28 m area. The majority of the ceramics observed at the site consisted of Santa Fe Black-on-white and Wiyo Black-on-white sherds, with a few pieces of biscuitware being noted. No biscuitwares could be relocated in 1999. PARP made a collection from two areas of the site that included approximately 30% of the total site assemblage.

When revisited the roomblock was observed in a 12 by 7 m area with additional rubble extending out into an area measuring 16 by 16 m. Partial tuff block alignments appeared to form six to eight rooms situated in a two-room-wide, north to south trending roomblock. Observed artifacts were situated within a 16 by 25 m area. A 10% sample of artifacts were analyzed across the site, consisting of 50 ceramics and 23 chipped stone artifacts. Most of the ceramics are Santa Fe Black-on-white and smeared-indented corrugated sherds, with some Wiyo Black-on-white and undetermined whitewares. The chipped stone artifacts mostly consist of Cerro Pedernal chert core flakes and some obsidian and basalt debitage. One basalt mano was noted as being present in previous visits to the site; this artifact could not be relocated in 1999. Based on the ceramic assemblage the site appears to date to the Coalition period.

LA 21596 (A through C)

LA 21596 is a set of three distinct garden plots (A–C). It is located along the north side of the Pueblo Canyon drainage. It is situated on a hillslope that leads up to the site of Otowi (LA 169). 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).

PARP originally recorded the site 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+ m, and Plot

C measured 56.5 by 4 m. Garden plots A and D were 100% collected. No collections were taken at Plots B and C. PARP noted that ceramics on the site most likely washed down from LA 169 (Otowi) 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 redocumented 1994 plots. The re-recorded garden plots are lettered from east to west as Components A, B, and C.

Otowi (LA 169), a very large multiroom Classic period pueblo, is located on the second bench upslope (east-northeast) 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.

LA 21596A consists of a series of 10 to 12 garden plots surrounded by tuff, basalt, and rhyolite rocks. The plots cover an area approximately 11 by 16 m in size. Several good linear alignments are visible. The site is located approximately 200 m south of Otowi and is likely associated with this large Classic period site.

A total of 273 artifacts were recorded in this area. Most of these 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, Potsuwi'i Incised, micaceous, and non-micaceous plainwares. The chipped stone artifacts consist of Cerro Pedernal chert and obsidian debitage and a retouched flake.

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, non-micaceous, and micaceous plainwares. The lithic artifacts mostly consist of Cerro 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. The site of Otowi is located approximately 200 m north up the hillslope.

There is a continuous scatter of artifacts down from Otowi including approximately 200 to 300 items on the first bench in the vicinity of the site. The 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% 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 1st and 2nd benches.

Ninety-one artifacts were recorded in this area. Most of these are ceramics ($n = 76$) with fewer lithics. The majority of the ceramics consist of Biscuit A and Biscuit B, with less Santa Fe Black-on-white, Sankawi Black-on-cream, Potsuwi'i Incised, smeared-indent, and obliterated corrugated. The lithics consist of Cerro Pedernal chert and obsidian debitage with a single obsidian uniface.

Biscuit A and B dominate the ceramic assemblages present in the three areas of the site. Therefore, the site appears to date to the Classic period.

LA 35000

LA 35000 is a small pueblo with associated artifacts. The site is located along the south side of Bayo Canyon a short distance west of its confluence with Pueblo Canyon. It is situated across a small ridge saddle approximately 450 m northwest of Otowi. This site is located at an elevation of 1997 m (6551 ft) in an area that is dominated by piñon-juniper woodland.

The roomblock is represented by a highly eroded rubble mound and three partial wall and/or foundation stone alignments. Based on the small amount of visible rubble, the masonry is well shaped to roughly shaped tuff blocks. An approximate 3 m diameter pothole is located in the central part of the roomblock. Additional tuff block alignments are visible a short distance to the south in a dirt road and across the road. These partial alignments appear to form an east to west trending wall with corner stones that jut out to the north.

The thousands of associated artifacts are located in a 70 by 50 m area situated around the rubble mound. Most of the observed ceramics were smeared-indent corrugated utilitywares and Santa Fe Black-on-white sherds, with fewer Wiyo Black-on-white, Biscuit A, Biscuit B, clapoard corrugated, and obliterated corrugated utilityware sherds. Approximately 70% of the chipped stone debitage are Cerro Pedernal chert core flakes. Flakes of basalt, obsidian, quartzite, and rhyolite make up the remaining 30%. Chert biface fragments were noted during an earlier visit to the site by LANL archaeologists in 1991; however, some of these appear to be scraper fragments and others could not be relocated. Additional artifacts include a quartzite hammerstone, a one-hand quartzite mano, an unknown igneous polishing stone, a rhyolite metate fragment, and a piece of ground sandstone. Based on the ceramic percentages, this site is affiliated with the Classic period.

LA 35001

LA 35001 (LA 35001C; Q-12) is the remains of a circular or oval-shaped pueblo with an enclosed plaza. It is located on a small ridge along the south side of Pueblo Canyon. The site is

situated at an elevation of 2014 m (6605 ft) in an area that is dominated by a piñon-juniper woodland.

The pueblo was constructed with shaped and unshaped tuff blocks. The roomblock covers an approximately 25 by 30 m area. The entrance to the central plaza is from the east and/or west sides. There is a rectangular alignment of rocks extending out from the south side of the pueblo. The alignment may be a small water-control device although it is more likely a room foundation. There are several small excavations that indicate that this site has been subject to pothunting.

Thousands of artifacts are located within a 73 by 77 m area. Although the associated artifacts are abundant throughout the site area, a possible midden is located downslope to the northeast. Three 2 m diameter and a 1 m diameter dogleash sample units were analyzed at the site, with a total of 513 ceramic and 38 lithic artifacts being recorded. The majority of the ceramics consist of Santa Fe Black-on-white and smeared-indented corrugated wares, with less Wiyo Black-on-white, undetermined whitewares, obliterated corrugated, and clapboard corrugated sherds. A few sherds of Biscuit A, Biscuit B, and unidentified redwares were also represented. The chipped stone artifacts primarily consist of Cerro Pedernal chert and rhyolite core flakes, with a single rhyolite core and a chert projectile point. The chert side-notched arrow point was collected. One vesicular basalt ground stone fragment was observed. Although a sandstone mano had been reported from a previous visit to the site in 1991, it could not be relocated. Based on the observed ceramics the site dates to the Coalition period.

LA 86528

Site LA 86528 (Q-28) is a rock overhang located at the base of the steep slope along the north side of Pueblo Canyon. The local vegetation is transitional between a piñon-juniper woodland and a 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 eight to ten large rocks representing an enclosed area. 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 few small chunks of charcoal were observed just downslope from the overhang. Associated with this structure were nine to ten Glaze E sherds (same vessel). These sherds were situated within a small drainage running across the front and down along the west side of this shelter. Observed about 8 to 10 m below the overhang was a rhyolite core flake. Three grooves, that have potential for having been culturally cut into the rock above the overhang, measured 40 by 4 cm, 35 by 2 cm, and 1 by 5 cm. Based on the presence of the Glaze E ceramics, the site presumably dates to the Classic period.

There is no potential for intact remains to be present within this overhang as fill has washed out. However, there is potential for materials and features from associated external activity areas to be located close to this shelter. Associated remains could be important for establishing the site function, for refinement of the date and affiliation of occupation, and for establishing the season and potentially the extent and frequency of use.

LA 86529

LA 86529 (Q-27) is a one-room masonry structure located on the lower south side of Pueblo Canyon. This site is situated in an area that is transitional between a piñon-juniper woodland and ponderosa pine forest. It is at an elevation of 2012 m (6600 ft).

The structure measures 2.8 m north-south by 1.8 m east-west. It is represented by a roughly rectangular-shaped cluster of tuff rock. The rock currently appears to be one course high.

No artifacts were found in association, however, the pine duff was so thick that ground visibility ranged from zero to only 5%. The construction style and size appear similar to other area structures associated with Puebloan artifacts, thus an unknown prehistoric Ancestral Pueblo affiliation is assumed.

LA 86530

Site LA 86530 (Q-26) is a one-room structure located on a north-sloping ridge finger near the Pueblo Canyon valley bottom. It is situated at an elevation of 2006 m (6580 ft) in an area that is transitional between a piñon-juniper woodland and ponderosa pine forest.

The structure is represented by one-course-high partial alignments of unshaped tuff. It appears from these highly eroded remains that the room would have measured about 3 by 2 m.

Associated artifacts were present within a 9 by 9 m area. The observed artifacts include a few sherds from a plain, micaceous, utilityware vessel and a few pieces of obsidian and chert chipped stone. Based on the presence of the micaceous pottery, this site probably dates to the Classic period.

LA 86531

LA 86531 (Q-33) is a sparse sherd and lithic artifact scatter located on the top and upper northern slope of a ridge situated along the south side of Pueblo Canyon. 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.

The artifact scatter covers a 20 m north-south by 25 m east-west area. Observed artifacts include 19 to 20 ceramic sherds representing five to seven vessels and three chipped stone lithics. Identified sherds appear to represent one to two vessels of Wiyo Black-on-white, a Biscuit B vessel, a Sankawi Black-on-cream vessel, and one to two vessels of a smeared-indented utilityware. 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 include a basalt, an obsidian, and a quartzite core flake. Based on the ceramics, the site appears to date to the Late Coalition/Early Classic period.

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 m 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 (Hoard 1981:47). Based on documented history, this Homestead Era site was occupied from the early 1920s to 1943.

In a 10 May 1993 letter to Mr. Jerry L. Bellows, the New Mexico State Historic Preservation Officer determined that LA 86532 was potentially eligible to the NRHP under Criterion D.

LA 86542

Site LA 86542 (S-5) is a Manhattan and Modern Era trash area. It is located on "Town Site Mesa" approximately 20 m south of the Pueblo Canyon rim. The site is situated in an area dominated by piñon-juniper woodland at an elevation of 2112 m (6930 ft).

The site area measures 15 m north-south by 12 m east-west. Artifacts consist of approximately 25 sanitary and crimped seal tin cans that may date to the 1940s and 1950s. Many other modern steel and aluminum cans were also noted. Modern metal, plastic, leather, styrofoam, cellulose, paper, and cardboard items are present in the immediate area. Four Biscuit B sherds from the same vessel and one unidentified Black-on-white sherd are located on the northern edge of the

trash scatter. Based on the artifacts, this site has been utilized periodically from the Manhattan Project era, 1940s, to the present day. The Puebloan sherds date to the Classic period.

LA 86543

Site LA 86543 (S-6) is a "bathtub" like feature (possibly a game trapping pit) that was carved into tuff bedrock. It is located near the northern edge of "Town Site Mesa." The site is situated at an elevation of 2103 m (6900 ft). Area vegetation is dominated by piñon-juniper woodland.

The pit measures approximately 0.8 m north-south by 1.5 m east-west. Due to a deposit of windblown materials, an accurate depth was not ascertained. No artifacts were found in association, therefore, the temporal affiliation is unknown. The size, shape, and setting of this feature is very similar to that described by Steen (1977) for eagle trapping pits. If this feature is some sort of game trapping pit, it would probably date to the prehistoric Ancestral Pueblo period.

LA 110121

LA 110121 (V-117) is located on an eastern-trending bench in the bottom of Pueblo Canyon. The site is situated between two east-west running drainages. The area is vegetated by 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 an artifact scatter of mostly ceramics with some lithics in a 25 by 43 m area. Eleven indented corrugated, 10 smeared-indented corrugated, eight obliterated corrugated, two plain utilityware, 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 were recorded at the site. Lithic artifacts consist of 10 Cerro Pedernal chert interior flakes, one piece of Cerro Pedernal chert angular debris, and one obsidian decortication flake.

Based on associated artifacts, the site is affiliated with the Coalition period. LA 110121 may be associated with the early occupation of Little Otowi (LA32) and other Coalition sites located in the canyon.

LA 110126

LA 110126 (V-123) consists of a highly eroded one-room fieldhouse situated on a ridge between two drainages on the south side of Pueblo Canyon. This area is vegetated with piñon and juniper and ponderosa pine woodland. The site slopes 10 degrees north and is at an elevation of 1960 m (6430 ft).

The structure is constructed of shaped and unshaped tuff blocks. In the least disturbed northern area of the site, an alignment of four tuff rocks exists. Defining the fieldhouse's surface measurement is impossible due to the high degree of erosion. Most of the shaped and unshaped rocks have eroded downslope into one or both drainages.

The artifact assemblage consists of both lithics and ceramics. Ceramic artifacts include three Biscuit A (one is worked), five Biscuit B, one Santa Fe Black-on-white, eight plainware, and an indeterminate black-on-white sherd. Lithic artifacts consists of one obsidian biface thinning flake, one piece of chert angular debris, and two chert core flakes. Based on the artifact assemblage, the site appears to be affiliated with the Classic period.

LA 110127

LA 110127 is an artifact scatter located on a bench along the south side of Pueblo Canyon. The site contains numerous small drainages trending east to southeast and has been subjected to extensive erosion. The area is vegetated by a piñon-juniper woodland and is situated at an elevation of 1986 m (6510 ft).

The site consists of a dispersed scatter of historic and prehistoric artifacts within a 20 by 40 m area. The prehistoric artifacts include a chalcedony core, an obsidian biface thinning flake, an obsidian Archaic corner-notched projectile point, and a stemmed Archaic point base. The projectile points are typologically Late Archaic.

Most of the artifacts at the site are, however, from the Historic period (Statehood – World War II). The historic artifacts consist of two hole-in-top cans and the partial or whole remains of 9 sanitary seal cans. All of the cans are clustered in a 1 by 2 m area within a shallow drainage traversing southeast through the site. Based on the associated lithic artifact assemblage, this site is in part associated with the Late Archaic period. During the Historic period (Statehood – World War II), it was reoccupied and possibly used as a campsite.

LA 110128

LA 110128 (V-125) is a rock feature located on a north-south trending ridge along the north side of Pueblo Canyon. The ridge is bordered by deep arroyos on the east and west. The area is vegetated by a piñon-juniper woodland with ponderosa pine below. The site slopes to the south at approximately seven degrees and is situated at an elevation of 1967 m (6455 ft).

LA 110128 consists of a small three-sided rectangular rock feature that is open to the north. This feature is formed by a single course of 16 welded tuff rocks. The average size of the rocks is 20 by 8 by 6 cm. The dimensions of the feature are approximately 1.2 by 1 m. The site could be the remains of a hearth although no charcoal was noted.

The only artifact noted in the vicinity was a Santa Fe Black-on-white sherd. It is unlikely however that this sherd is associated as the feature is thought to be somewhat recent. This assessment is suggested by the fact that the rocks are sitting on the ground surface with no dirt accumulation around them. Based on this, the site is thought to be historic and most likely post-World War II.

LA 110129

LA 110129 (V-126) is a possible fieldhouse located in a flat area on the south side of Pueblo Canyon. The site is situated within the transition zone between piñon-juniper woodland and ponderosa pine forest at an elevation of 1960 m (6430 ft).

The site consists of a small rubble mound composed of tuff blocks that is about 0.3 m in height. It is covered by a clump of piñon and juniper trees. As a result, the site is badly disturbed by the tree roots and only one coherent double alignment was noted on the south side of the structure. The structure is square in shape, measuring about 3.5 by 3.5 m in size. Construction blocks average 15 by 8 by 6 cm in size. The structure presumably represents a one-room fieldhouse.

Artifacts were observed within a 12 by 10 m area surrounding the structure. An estimated 90 artifacts were observed, but the majority of these were fingernail size sherds too small to identify. The 24 identifiable ceramics included four Santa Fe Black-on-white, three indeterminate black-on-white, six smeared-indent, four non-micaceous plainware (one with a coiled handle), and seven obliterated sherds. Chipped stone items including one obsidian biface thinning flake, one piece of obsidian angular debris, three pieces of angular chert debris, and three chert core flakes. Based on the observed ceramics, the site probably dates to the Coalition period.

LA 110130

LA 110130 (V-127) consists of a badly eroded, one-room fieldhouse on the south side of Pueblo Canyon. The site is located on a ridge top overlooking the canyon floor. It is situated within the transition zone from piñon-juniper woodland to ponderosa pine forest at an elevation of 1954 m (6410 ft).

The fieldhouse is badly eroded with masonry tuff blocks deposited downslope to the north and to the east. The room dimensions are roughly 4 m north-south by 3 m east-west, and the rubble is 0.2 m in height. The level of erosion makes an estimation of the original room size difficult. Tuff 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 m north-south and 35 m east-west.

About 10 m west of the fieldhouse is a rough alignment of tuff rocks. It is unclear what the function of this feature might have been. The alignment consists of eight stones 1.1 m in overall length, running approximately east-west in orientation. The alignment is eroding downslope to the north and east.

A total of 25 artifacts were observed on the site, most of which were distributed downslope and to the north of the structure. The ceramic artifacts consist of five Biscuit B, three unidentified black-on-white, and a micaceous utilityware sherd. The lithic artifacts are comprised of obsidian, chert, and basalt debitage. Based on the ceramic assemblage, the site presumably dates to the Classic period.

LA 110131

LA 110131 (V-128) is an amorphous tuff and basalt rock cluster representing remains of a fieldhouse. The site is located on a slight ridge along the south side of Pueblo Canyon within the transition from piñon-juniper woodland to ponderosa pine forest. It is situated at an elevation of 1978 m (6490 ft.).

LA 110131 consists of a squarish but amorphous concentration of stones about 1.8 m² in diameter. There are a few additional tuff cobbles slightly downslope to the east. The overall extent of the site, including eroded building material and artifact scatter, is approximately 9 m north-south and 8 m east-west. A total of about 80 cobbles are present, but no actual alignments could be discerned. Most of the stones are tuff, with some of the tuff and basalt stones reflecting evidence of having been roughly shaped. The tuff blocks average about 25 by 20 by 8 cm in size.

A total of 17 artifacts were observed on the site. The 13 recorded ceramics consist of four Sankawi Black-on-cream, a Biscuit A, four Santa Fe Black-on-white (two of which are rims), a smeared-indented corrugated, and a plainware sherd. The lithic artifacts consist of chert and quartzite core flakes and a projectile point tip that resembles alibates silicified dolomite. This latter artifact was observed within a drainage about 5 m south-southeast of the site datum. Based on the ceramic assemblage, the site appears to date to the Coalition and Classic periods.

LA 110132

LA 110132 (V-129) is two adjoining rock alignments located on the south side of Pueblo Canyon. The site is situated at an elevation of 1955 m (6415 ft) within the transition zone from piñon-juniper woodland to ponderosa pine forest.

The site consists of two perpendicular tuff rock alignments that could possibly represent a fieldhouse or a small prehistoric garden plot. The two alignments measure 2.4 m north-south by 2.1 m east-west, and they intersect at the northeast corner. The overall size of the site, including artifact distributions, is about 6 m². The severity of erosion has likely affected the distribution of rocks at the site. Construction rock dimensions average about 25 by 15 by 10 cm.

Only four artifacts were observed within the site perimeter. The ceramics consist of one Biscuit A and one Santa Fe Black-on-white sherd. The lithics consist of an obsidian biface fragment (possibly a knife tip) and one broken quartzite cobble (possibly a mano fragment). Based on the ceramics present, the site would be affiliated with the Late Coalition to Early Classic periods.

LA 110133

LA 110133 (Q-199) consists of a sparse ceramic and lithic artifact scatter. It is located on a north-facing slope below the mesa cliff face, along the edge of Pueblo Canyon. The site abuts up against the north side of the dirt road to the sewage treatment plant. It is situated at an elevation of 1995 m (6540 ft) within a piñon-juniper woodland. The area is eroded/deflated with no evidence of subsurface deposits exposed in a nearby gully.

The artifact scatter covers a 42 by 40 m area. It is primarily composed of ceramics, including Santa Fe Black-on-white, Wiyo Black-on-white, Wingate Black-on-white, smeared-indent corrugated, Biscuit A, Biscuit B, and Potsuwi'i Incised. The lithics solely consist of a chert biface flake and a ground quartzite cobble fragment. Only about 30 artifacts are present, but there are a variety of ceramic types representing both Coalition and Classic periods.

LA 110134

LA 110134 (V-131) consists of two one-room structures. It is located on a ridge along the south of Pueblo Canyon. The area is vegetated by piñon-juniper and is situated at an elevation of 1969 m (6460 ft).

The two one-room structures are located approximately 20 m apart. They are identified as Features A and B and are constructed of tuff and basalt rocks. The architectural rocks in Feature A range in size from 55 by 25 by 15 cm to 15 by 10 by 8 cm, with the average size being 30 by 20 by 10 cm. The rocks associated with Feature A are situated in an area measuring approximately 2.6 by 2.0 m. While Feature A is partially obscured by a juniper tree, the rocks appear to frame a shallow, semi-rectangular depression measuring 1 by 1.5 m. The architectural rocks in Feature B range in size from 25 by 15 by 12 cm to 10 by 10 by 8 cm, with the average size being 20 by 12 by 10 cm. This feature measures approximately 2.1 by 2.2 m in size. The double row of rocks in Feature B gives the impression that this is the remains of a foundation. Weathering has deteriorated the rocks in both features.

Artifacts were observed within a 60 by 45 m area surrounding both of the features. A variety of ceramic types are represented. These consist of 27 non-micaeous smeared-indent, 12 Santa Fe Black-on-white, three red glazeware, two micaceous smeared-indent, eight indent corrugated, five plain utilityware, one micaceous plain utilityware, three obliterated corrugated, one Biscuit B, two Biscuit A, and an unknown biscuitware sherd. All the biscuitware sherds are badly weathered. The glazeware sherds are located northeast of Feature A, while the biscuits are located southeast of Feature B. Lithic debitage consists of 15 Cerro Pedernal chert core flakes, one biface fragment, two biface flakes, a core, and a piece of angular debris, with a single obsidian core flake. Based on the ceramic assemblage, the site appears to date to the Coalition/Classic periods.

LA 110135

LA 110135 (V-132) consists of four garden plots and a few associated artifacts. It is situated on a bench located on the north side of the ridge along the south side of Pueblo Canyon. The site is situated in an area that is transitional between a piñon-juniper woodland and a ponderosa pine forest at an elevation of 1966 m (6450 ft).

The garden plots and associated artifacts are in an area measuring approximately 30 by 35 m in size. The garden plots are constructed (i.e., outlined) with unshaped basalt blocks that are often covered with a heavy growth of lichens. Garden Plot 1 consists of a single rectangular unit measuring approximately 5 by 2.5 m. With a generous projection of alignments, Garden Plots 2 through 4 appear to be rectangular plots that have been divided into two adjacent units by an

internal connecting rock alignment. Garden Plot 2 could be as large as 4 by 4 m while Garden Plots 3 and 4 measure approximately 7 by 3 m in size. The presence of exposed bedrock in the area indicates that fill situated within the garden plots will be fairly shallow.

Site artifacts consist of one Santa Fe Black-on-white, two Santa Fe/Wiyo Black-on-white, and two Sankawi Black-on-cream sherds. One of these latter sherds has been ground into the shape of a pendent. One obsidian core flake was also identified. Based on the ceramic assemblage, the site is likely to be affiliated with Coalition/Classic periods.

LA 110136

LA 110136 (V-133) consists of a masonry pueblo with an associated midden and a one-room masonry structure or rock-lined garden. It is located on a ridge top along the south side of Pueblo Canyon. The local vegetation is dominated by piñon-juniper woodland at an elevation of 1972 m (6480 ft).

The pueblo is represented by a 0.4 m high masonry mound that measures about 12 by 15 m in area. The masonry primarily consists of rough cut tuff blocks averaging 25 by 20 by 10 cm in size, although basalt rock is also present. The mound appears to be rectangular-shaped with the long axis oriented east to west. It is, however, possible that the pueblo was "L" shaped with rooms continuing down a short distance to the south from the west end of the rectangular mound as there is additional rubble situated in this area. The pueblo appears to have from 12 to 20 rooms with more rooms possible to the north where the area has been obscured by duff that accumulated under the trees.

Located 26 m north of the rubble mound are two small alignments of rock that form a very narrow rectangular enclosure. The eight rocks are situated in an area measuring 1.6 by 0.7 m. These rocks are situated parallel to the edge of a very small drainage.

A 22 by 18 m midden containing thousands of artifacts is situated about 5 m east of the pueblo rubble mound. Situated in the east-central portion of the midden are two partial, parallel, tuff and basalt rock alignments situated approximately 2 m apart. The westernmost alignment is about 4 m long and is formed with seven rocks situated from 10 to 40 cm apart. Five to six additional rocks are located a short distance to either side of this alignment. The easternmost alignment is about 5 m long and is formed with about 15 rocks slightly offset from each other. These partial alignments are likely discarded building materials although they could be the remains of a one-room structure or a rock-lined garden. One rock situated just upslope (west) from the easternmost alignment and three rocks situated downslope from the northern third of the westernmost alignment could be remnants of cross walls.

There are thousands of associated artifacts in roughly a 100 by 90 m area. Smeared-indented corrugated sherds (60%) dominate the ceramics. Other utilityware ceramics include obliterated (4%), corrugated (<1%), and indented-corrugated sherds. Sherds of Santa Fe Black-on-white (35%) dominate the decorated ceramics. Other decorated ceramics include Wiyo Black-on-white (<1%), White Mountain redware (<1%), Biscuit A (2% to 3%), and Biscuit B (<1%) sherds. The complete range of chipped stone debitage was observed at the site, however, most of the noted

lithics were interior flakes. Cerro Pedernal chert forms about 95% of the debitage, with rhyolite (2% to 3%), basalt (<1%), and obsidian (<1%) also present. A few pieces of a gray chert that grades into a fine-grained quartzite were also noted. Ground stone artifacts include an oval rhyolite mano, a sandstone mano fragment, and a quartzite mano fragment. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 110138

LA 110138 consists of a series of garden plots and two artifact concentrations located on a ridge along the south side of Pueblo Canyon. The area is situated within a piñon-juniper woodland setting at an elevation of 1967 m (6450 ft).

The site includes a series of garden plots within a 6 by 28 m area. The plots are constructed of unshaped basalt and tuff rocks that are oriented in an east-west direction. Only a few good linear alignments remain, indicating the presence of four to five plots.

Including the associated artifact assemblage the site is contained within a 55 by 40 m area. Two separate artifact concentrations are located about 15 (Concentration II) and 30 m (Concentration I) upslope from the agricultural features. They have similar compositions with all the artifacts present having been identified in the field. Concentration I has a total of 34 artifacts. The ceramics consist of 12 Santa Fe Black-on-white, three Biscuit A, two Biscuit B, two micaceous plainware, two clapboard corrugated, and four smeared-indented corrugated sherds. The chipped stone artifacts consist of four chalcedony biface flakes, three core flakes, and an obsidian biface flake. Concentration II has a total of 29 artifacts. The ceramics consist of 15 Santa Fe Black-on-white, two Biscuit A, four smeared-indented corrugated, and a micaceous plainware sherd. The lithic artifacts consist of six chalcedony biface flakes and a chalcedony core flake. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 110140

LA 110140 (V-137) is a low rubble mound located on the south side of Pueblo Canyon. It is situated on a ridge sloping north and downward at approximately five degrees toward the canyon floor. The area is vegetated by a piñon-juniper woodland merging into a ponderosa pine forest at an elevation of 1969 m (6460 ft).

The 0.4 m high rubble mound is the remains of an eight- to twelve-room masonry pueblo. The roomblock measures approximately 8 by 8 m and was constructed of unshaped tuff blocks that average 20 by 20 by 10 cm in size. The lack of any apparent wall-fall could indicate that the upper portion of the walls were constructed of adobe or that rock from the walls was scavenged for later construction. Erosion and downslope movement of tuff rocks has badly distorted wall and/or foundation stone alignments.

An associated 10 by 6 m sheet midden is located about 4 m east of the roomblock. Including the midden, the estimated 500+ artifacts are situated in an area measuring 30 by 25 m. Due to the sheer number of artifacts, no formal analysis was conducted. The ceramics include both decorated and utility sherds. Approximately 90% of the painted ceramics are Santa Fe Black-on-

white. Traces of St. Johns Black-on-red or polychrome were noted, as were four or five sherds that were thought to be Biscuit A. Over 80% of the utilitywares consist of smeared-indent corrugated sherds. Small amounts of brown and gray plainware sherds were also noted.

The chipped stone assemblage primarily consists of angular debris, core flakes, biface flakes, and flake fragments of chalcedony and white chert. Several pieces of dark gray chert were noted as were a handful of obsidian flakes. Also observed were one white quartzite and three basalt core flakes. The ground stone observed consists of four mud or siltstone mano fragments and a metate fragment. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 117883

Site LA 117883 (Q-39) consists of an artifact scatter located on a bench 3 m above the wash within Pueblo Canyon. A portion of the site has been exposed to recent channel down-cutting. The area is vegetated by both a piñon-juniper woodland and a ponderosa pine forest and is situated at an elevation of 1969 m (6460 ft).

The scatter covers a 40 by 35 m area and is primarily composed of lithic artifacts. The debitage assemblage consists of 24 obsidian core flakes, 14 obsidian biface flakes, and an obsidian piece of angular debris, with ten Cerro Pedernal chert core flakes, three biface flakes, and two basalt core flakes. The chipped stone tools consist of the proximal end of an obsidian dart point with a concave base, an obsidian uniface, and a chert biface fragment. The ground stone is a possible polishing stone that is spade-shaped and tabular. It shows evidence of polishing along one rounded and one angled edge. It measures 12 by 7.5 by 5 cm and appears to be of a slate-like material. The four ceramics are thought to be intrusive, with an unidentified biscuitware sherd and three smeared-indent corrugated sherds.

Based on the concave-based projectile point and prevalence of obsidian debitage, the site is presumed to date to the Early or Middle Archaic periods.

LA 127642

LA 127642 (K-171) is located on the gentle east- to southeast-facing slope of a ridge along the northern side of Bayo Canyon. The site is situated at an elevation of 1900 m (6230 ft) about 150 to 200 m from the valley bottom in a piñon-juniper woodland. The area has small erosional depressions, but little in the way of incised channels. There are widely scattered boulders and a mix of gravels with sandy silt and occasional cobbles on the site.

The site consists of a dispersed lithic scatter covering a 110 by 175 m area. There are two concentrations within the scatter with artifact densities of 3 to 4 artifacts per m². An infield analysis was conducted of 50% of the flagged surface artifacts ($n = 58$). Most of these are core flakes, biface flakes, and angular debris made of Cerro Pedernal chert with some Jemez and Polvadera Peak obsidian. An obsidian biface and three projectile points were also recorded. The biface is made of a black opaque obsidian. The projectile points consist of a side-notched arrow point made of Cerro Pedernal chert, a base fragment of a stemmed dart point made of Polvadera

Peak obsidian, and a point tip fragment made of a translucent Jemez obsidian. The dart point fragment may represent a scavenged artifact or an isolated artifact from a previous occupation. There is not enough evidence to date this site to any particular period. Due to the large amount of Cerro Pedernal chert debitage and the presence of an arrow point, the site is presumed to represent a prehistoric Ancestral Pueblo occupation.

LA 127643

LA 127643 (K-172) consists of a lithic and ceramic artifact scatter located on a ridge along the north side of Bayo Canyon. A drainage cuts through the southwest side of the site and there is significant slope wash at the western end of the site. The area is vegetated by a piñon-juniper woodland and is situated at an elevation of 1934 m (6345 ft). No visible features were identified at the site.

The artifact assemblage is dominated by lithic debitage. Most of this is Cerro Pedernal chert debitage including core flakes (61), biface flakes (28), flake fragments (16), pieces of angular debris (16), a retouched flake, a core, and a pot lid. There are lesser amounts of obsidian debitage with biface flakes (4), a core flake, unifaces (2), and a biface, with a single basalt biface flake, and a rhyolite core flake. Ground stone artifacts consist solely of an undetermined quartzite mano fragment. A single Santa Fe Black-on-white, Biscuit A, and a smeared-indent corrugated utilityware sherd were also identified. Based on the dominance of Cerro Pedernal chert artifacts and the presence of several ceramics, the site presumably represents a prehistoric Ancestral Pueblo occupation.

LA 127644

LA 127644 (Q-2) is a multiroom pueblo located on a small east to west trending ridge situated along the south side of Pueblo Canyon. This site is situated at an elevation of 1987 m (6519 ft) in an area that is dominated by piñon-juniper woodland.

A rubble mound measuring 30 by 20 m in size represents the pueblo. Based on the mound height, it is speculated that this linear pueblo would have been two stories high. The masonry consisted of stacked shaped tuff blocks. Downslope approximately 16 m to the east is an 11 by 15 m oval artifact midden. Vegetation on both the rubble mound and the midden is dominated by sagebrush. An approximate 1 by 1 m rock-lined hearth is located about 4 m north from the northwest corner of the rubble mound. Based on the presence of charcoal and the lack of re-vegetation, this hearth is thought to be fairly recent.

Thousands of artifacts were observed within a 60 by 80 m area situated around the rubble mound. Infield analysis was conducted on 100% of the artifacts situated within five artifact sample units (1 or 2 m dogleashes). Indented corrugated and smeared-indent corrugated utilityware sherds dominate the site ceramics. A few obliterated and plain utilityware sherds were also present. Decorated ceramics are primarily Santa Fe Black-on-white sherds. Also noted were a few Wiyo Black-on-white sherds, a Wingate Polychrome sherd, a St. Johns Black-on-red sherd, a Galisteo Black-on-white sherd, and a Biscuit B sherd. Most of the lithic debitage were core flakes of Cerro Pedernal chert. Also noted were core flakes of obsidian, quartzite,

chert, and petrified wood. Collected from the site was one translucent black Jemez obsidian arrow point. The one observed ground stone artifact was a basalt mano. Based on the associated ceramics this site is affiliated with the Ancestral Pueblo, Coalition period.

LA 127645

LA 127645 (Q-3) is situated on a small east to west trending ridge located along the south side of Pueblo Canyon. It is on a five-degree slope heading down to the east. The site is situated at an elevation of 1979 m (6493 ft) in an area that is vegetated by piñon, juniper, and sage.

LA 127645 consists of a two- to ten-room structure and possible grid gardens. The structure has been both buried by alluvium (on the north side) and eroded by several drainages (on the south side). Both shaped and unshaped tuff and rhyolite blocks are present. The structure may have originally measured 8 to 10 m. Most of the rooms are not currently visible. The total size is an estimate of the area between the currently visible alignments. The southern side is in a drainage although the alignments appear to be intact. The potential waffle gardens are situated in a heavily eroded area along the eastern side of the site. They are represented by one to two north to south running alignments that are 4 to 5 m in length.

Infield analysis was conducted on all artifacts located within four 1 m diameter dogleashes. Sherds dominate the artifact sample units, constituting 80% to 90% of all artifacts. Santa Fe Black-on-white sherds dominated the site ceramics. Also noted were three Wiyo Black-on-white, a Galisteo Black-on-white, a St. Johns Polychrome, and a Biscuit B sherd. Corrugated sherds (smeared-indent, indented, and obliterated) were numerous, and a few plainware sherds were also noted. The few lithics observed were all Cerro Pedernal chert except for one piece of obsidian. Core flakes and angular debris were noted. Ground stone included a rhyolite metate (likely basin or perhaps trough), an unidentified metate fragment, a grinding slab, and a one-hand mano. One unidentified piece of quartzite ground stone was also located, as well as a quartzite mano that was reworked into a cobble biface. Based on the architecture and the artifacts this site dates to the Coalition period.

LA 127646

LA 127646 (Q-6) is located on top and along the northern slopes of an east to west trending ridge (Little Otowi ridge) located along the south side of Pueblo Canyon, about 200 m west of Little Otowi Pueblo (LA 32). The eastern boundary of LA 127646 gradually merges with Little Otowi. LA 127656, a one-room fieldhouse, is also located at the northwestern corner of the site. LA 127646 is situated at an elevation of 1995 m (6542 ft) in an area that is vegetated by a piñon-juniper woodland.

LA 127646 consists of the remains of a roomblock (Feature 1) with an associated surface artifact scatter and an isolated hearth/pit feature. A low mound with about six visible alignments represents the roomblock. A few of the construction stones are shaped, but most are of unshaped tuff. The mound is roughly 10 by 20 m and less than 0.5 m high. Likely this roomblock contained no more than 8 to 12 rooms. The hearth feature (Feature 2) is a round circle of flat

cobbles set vertically or tilted to a 45 degree angle. The interior dimensions of this feature are approximately 60 by 80 cm. It is located downslope and northeast of the main mound.

Seven 2 m diameter dogleash sample units were situated across the site for the infield analysis. The surface artifact scatter consists mainly of ceramics with some lithic artifacts. The ceramics are dominated by smeared-indentated corrugated sherds, with less Santa Fe Black-on-white, Biscuit A, Biscuit B, obliterated and indentated corrugated, and plainware ceramics. A few St. Johns Black-on-red, Wingate Black-on-red, and glazeware sherds were also present. The lithic artifacts primarily consist of core flakes and angular debris made on Cerro Pedernal chert with some black translucent obsidian also present. A single heavily reworked obsidian projectile point is present. The tip of this point has been elongated and narrowed to the extent that it may have been reused as a drill. Ground stone artifacts consist of several unidentified pieces of rhyolite ground stone, a one-hand quartzite mano, and a polishing stone. Based on the ceramic artifacts, the site appears to date to the Coalition period.

LA 127647

LA 127647 (Q-7) consists of a dense sherd and lithic scatter located on a small ridge along the south side of Pueblo Canyon. The site is situated at an elevation of 2000 m (6560 ft) in an area that is dominated by a piñon-juniper woodland. Approximately 75% of the site has been severely impacted by erosion.

The sherd and lithic scatter contains thousands of artifacts that are situated in an area measuring 40 by 30 m. A dense artifact concentration is located within a 12 by 10 m area in the west-central portion of the site. Based on the large number of artifacts, it would seem likely that an associated structure(s) would be present. Although no obvious architectural remains were identified, there are two potential three to four tuff rock alignments that suggests the potential for structural remnants.

Two 2 m diameter dogleash sample units were analyzed. The ceramics mostly consist of obliterated and smeared-indentated corrugated utilitywares and Santa Fe Black-on-white sherds. Smaller amounts of Wiyo Black-on-white, Biscuit A, Biscuit B, Sankawi Black-on-cream, and a possible glazeware are also present. The chipped stone artifacts consist of core flakes and debris made primarily of Cerro Pedernal chert with a few pieces of obsidian, rhyolite, basalt, and quartzite present. The vast majority of diagnostic ceramics indicate that the site dates to the Coalition period.

LA 127648

LA 127648 (LA 35001F, Q-8) is the remains of a small pueblo roomblock. It is situated on an east to west trending ridge (Little Otowi ridge) located along the south side of Pueblo Canyon. It is situated about 350 m west of Little Otowi Pueblo. This site is located at an elevation of 2000 m (6560 ft) in an area that is dominated by piñon-juniper woodland.

The roomblock is represented by alignments of shaped and unshaped tuff blocks and igneous rocks. The alignments form an area measuring 17 by 11 m. Approximately seven rooms could

have been present at one time, however, disturbance has removed many of the rocks. A ridge top trail cuts through the site and has disturbed some alignments. One room is in particularly good condition, and has a DOE sign in its southwest corner (just north of the trail). There is a possible structural feature located about 40 m north of the main roomblock, but this could also be a natural feature. It is represented by a cluster of unshaped tuff and rhyolite blocks and is approximately 1.8 by 2.6 m in size.

The thousands of associated artifacts are scattered in an area measuring 40 by 30 m. Three 2 m diameter dogleashes were analyzed on the site. The majority of observed ceramics are smeared-indented corrugated utilitywares with obliterated utilitywares and Santa Fe Black-on-white sherds also abundant. Additional decorated ceramics include two Wiyo Black-on-white, one of Biscuit A, and one Biscuit B sherd. A brown smeared-indented corrugated utilityware with a red-slipped interior and a possible Galisteo Black-on-white sherd were noted during a previous visit to the site in 1991. However, these sherds were not relocated. Chipped stone artifacts primarily consist of core flakes and angular debris of Cerro Pedernal chert with some rhyolite, basalt obsidian, and quartzite also present. A rhyolite ground stone fragment and a quartzite mano/hammerstone were identified. Based on the diagnostic ceramics, the site appears to date to the Coalition period.

LA 127649

LA 127649 (LA 35001E, Q-9) is a rubble mound with rock alignments that compose about 12 rooms and the associated artifact scatter. The site is situated on the northern slope of a small ridge located along the south side of Pueblo Canyon. It is located at an elevation of 2000 m (6560 ft) in an area that is dominated by a piñon-juniper woodland. LA 127649 is located about 500 m west of the site of Little Otowi (LA 32).

The roomblock is represented by tuff block alignments that appear to form a linear, north to south trending, one room wide section of rooms. The roomblock is approximately 34 m long (north-south) by about 3.5 m wide (east-west). The associated rubble is situated in an area measuring 44 by 14 m. An approximate 8 m long section of rooms situated in the central portion of the structure has been excavated or pothunted. A 4 m wide bulldozer cut is visible adjacent to the south side of the excavation.

The artifact assemblage at this site includes a fairly dense sherd and lithic scatter. The majority of sherds and lithics, which are present in the thousands, are located to the north and in a 25 by 25 m area located 10 m downslope (east) from the northern end of the roomblock. The overall artifact scatter measures 60 by 50 m. Infield analysis was conducted on all of the artifacts situated within four 1.5 m diameter dogleash units. Observed ceramics were primarily smeared-indented corrugated utilityware sherds with Santa Fe Black-on-white sherds also abundant. Additional observed ceramics include a few Wiyo Black-on-white, Biscuit A, Biscuit B, and obliterated corrugated utilityware sherds. Associated chipped stone artifacts were mostly core flakes and angular debris made of Cerro Pedernal chert, with small amounts of obsidian, rhyolite, and basalt present. A single Cerro Pedernal chert core was also observed. Ground stone implements consist of a one-handed quartzite mano and an unidentified ground stone fragment. Based on the observed ceramics this site dates to the Coalition period.

LA 127650

LA 127650 (LA 35001A, Q-10) contains the remains of a pueblo roomblock. It is located on a small ridge situated along the southern side of Pueblo Canyon. This site is located at an elevation of 2003 m (6570 ft) in an area that is dominated by a piñon-juniper woodland.

Tuff block alignments are situated within the northern and southern portions of the site. These alignments appear to represent the remains of a small roomblock and nearby grid gardens. The locales containing rock alignments are situated about 20 m apart. The northernmost alignments are situated in a 10 by 5 m area, while the southern alignments are located in a 13 by 14 m area. Southern rock alignments are single courses of unshaped tuff. These may not be roomblocks, but grid gardens next to the excavated pueblo. An approximate 4 by 6 m excavation is situated between the two rock alignment locales, approximately 2 m south of the northern roomblock. Rock and fill from this excavation is thrown around the depression forming an oval shaped disturbance area measuring approximately 6 by 8 m. Based on the observed tuff blocks and rocks associated with the excavation, it appears that the southern portion of the northern roomblock has been destroyed. This would extend the northern roomblock to within approximately 10 m of the southern roomblock.

The artifact assemblage at the site includes hundreds of sherd and lithic artifacts situated within an area measuring 40 by 24 m. Five 2 m diameter dogleash sample units were analyzed on the site. The majority of the ceramics were smeared-indented utilityware and Santa Fe Black-on-white sherds. Most of the remaining utilityware ceramics were obliterated and non-micaceous plainware sherds. Additional decorated ceramics include Wiyo Black-on-white sherds, two sherds of St. Johns Black-on-red, a sherd of Wingate Black-on-red, a few Biscuit A, and Sankawi Black-on-cream sherds, and two unidentified whitewares. The chipped stone artifacts primarily include core flakes made of Cerro Pedernal chert with some rhyolite, basalt, obsidian, and chalcedony. A single chalcedony core was also recorded. A previous visit to the site in 1991 identified the presence of large basalt projectile point fragment and a chert biface. These artifacts were not relocated in 1999. The ground stone artifacts consist of three undetermined mano fragments and two ground stone fragments.

LA 127651

LA 127651 (LA 35001B, Q-11) is the remains of an excavated roomblock, surrounded by a series of rock alignments. It is located on a small ridge (with Little Otowi) situated along the southern side of Pueblo Canyon. The site is located at an elevation of 2006 m (6580 ft) in area that is dominated by a piñon-juniper woodland.

The site consists of an excavated roomblock measuring about 4 by 6 m in area. The outside wall alignments are present along the edge of the excavations. There are possibly three to six excavated rooms represented, although interior wall alignments are not visible. It is unclear whether more rooms are present in the area to the immediate east of the excavation or if this represents backdirt. It is undetermined as to whether this represents an old archaeological excavation or pothunting. Discontinuous alignments of unshaped tuff blocks continue about 12 m to the north and then about 8 m to the east. They presumably represent roomblocks, however,

it is unclear if they are connected to the excavated roomblock. If so, the site could actually represent a large L-shaped pueblo (20 by 10 m), rather than a small roomblock with associated surface structures. Lastly, a single masonry room is also present 2 m south of the excavated rooms.

The site is covered with a dispersed lithic and ceramic artifact scatter. A hiking trail cuts through the site, so the area has presumably experienced some surface collecting. Two high-density artifact areas (possible middens) are also found to be in association. Both are about 10 by 10 m in size, with one located about 15 m east of the roomblock and the other approximately 20 m to the southeast. Four dogleash sample units were analyzed in the field. Three were 2 m in diameter and one was 1 m in diameter. The majority of the ceramics include smeared-indent corrugated utilitywares with Santa Fe Black-on-white sherds. Only two sherds of Wiyo Black-on-white were identified, with some obliterated corrugated wares and unidentified whitewares. The chipped stone artifacts primarily consist of core flakes and angular debris made of Cerro Pedernal chert, with some basalt, rhyolite, chalcedony, and obsidian. The ground stone artifacts consist of a rhyolite mano fragment, a vesicular basalt slab, and an undetermined metate fragment. Diagnostic ceramics indicate that the site dates to the Coalition period.

LA 127652

LA 127652 (LA 29B; Q-21) is a multiroom pueblo with a midden and surface artifact scatter. The site is situated on a bench along the southern side of Pueblo Canyon. It is located at an elevation of 1969 m (6460 ft) in an area dominated by a piñon-juniper woodland. The rubble mound itself is covered with sagebrush.

A low rubble mound about 1 m high with some unshaped tuff blocks and basalt rocks represents the site. Few alignments are visible on the mound, but there are some on the northern and southern ends of the site. A 10 by 10 m midden area is located about 25 m east of the mound. A high-density cluster of artifacts represents the midden. A tuff bedrock outcrop in the northeastern section of the site contains an anthropomorphic figure and possible snake petroglyphs along with three to four ground depressions. An earlier survey noted the presence of another petroglyph in the northern section of the site on another bedrock exposure, but no feature could be relocated in this area. This feature was simply noted as an “unrecognizable character” pecked into the rock. The mound and midden are in good condition.

Thousands of artifacts were observed within a 65 by 55 m area that included the rubble mound and midden and their immediate periphery. Infield analysis was conducted in one 1 m and four 2 m dogleash units. Over 50% of all the ceramic material recorded were smeared-indent sherds. Santa Fe Black-on-white and obliterated sherds amounted to over 30%, and the remainder was comprised of unidentified whiteware and redware, unidentified biscuitware, Biscuits A and B, Sankawi Black-on-cream, indented-corrugated, non-micaceous and micaceous plainware, and clapboard corrugated sherds. A clay smoking pipe was also found. Lithic materials were primarily Cerro Pedernal chert flakes, with small numbers of rhyolite, basalt, obsidian, and chalcedony also present. A rhyolite metate, a quartzite mano, and one quartzite mano fragment were also located. Additionally, an unidentified bone fragment was also recorded. Based on the

abundance of Santa Fe Black-on-white and smeared-indented sherds, this site is affiliated with the Coalition period.

LA 127653

LA 127653 (LA 35001D, Q-13) consists of two small roomblocks that are situated on a narrow ridge that runs north down from LA 127652 (Q-12). The upper roomblock is located about 80 m south of LA 127652 and the lower roomblock about 30 m below the upper roomblock. The ridge is covered with a piñon-juniper woodland, with washes bounding the north-south trending ridge line. The site is situated at an elevation of 1997 m (6550 ft).

The upper section of the site consists of a small roomblock including a single row of three to four rooms and five isolated rock alignments. It is unclear as to whether these isolated alignments represent rooms or other features. The rubble and alignments are composed of unshaped tuff blocks. The overall section covers an area approximately 30 by 30 m in size, with the roomblock covering a smaller 6 by 6 m area.

The surface of the upper section is mostly void of artifacts. This may be due to casual artifact collection by hikers walking on a trail that runs through the site. However, artifacts are eroding out of subsurface deposits located along the southern periphery of the upper area where the ridge slopes down towards the lower section of the site. It is in this location that a roughly 10% sample of artifacts was analyzed in the field. The ceramic assemblage primarily consists of Santa Fe Black-on-white and smeared-indented corrugated sherds. The lithic assemblage consists of Cerro Pedernal chert core flakes with a few basalt and rhyolite flakes. Two quartzite one-hand manos and a quartzite cobble biface with a battered edge were also present.

The lower section of the site consists of a single roomblock. The roomblock is two rooms deep. A northern set of about six rooms are 2 by 2 m in size, whereas, two to four southern rooms are 2 by 4 m in size. It is unclear as to whether these southern rooms are actually larger or the subdividing interior walls have been obscured. One of the northern rooms has been pothunted. The walls consist of alignments of unshaped tuff blocks.

An artifact scatter surrounds the roomblock, most of which is located to the east. One hundred percent of the surface artifacts within three 2 m dogleashes were analyzed infield for this northern area. The majority of the ceramics consist of smeared-indented corrugated sherds with some Santa Fe Black-on-white. The lithic assemblage consists of Cerro Pedernal chert core flakes with a few basalt and rhyolite flakes. An undetermined mano fragment and piece of ground stone were also identified. The presence of mostly Santa Fe Black-on-white ceramics indicates that both the upper and lower portions of the site date to the Coalition period.

LA 127654

LA 127654 (Q-16) is located on the northern slope of Little Otowi Ridge within Pueblo Canyon about 40 m north of the ridge top at an elevation of 1987 m (6518 ft). The site is situated in a piñon-juniper woodland. Water has impacted the site, which is surrounded by erosional channels.

The site consists of a low tuff rock and artifact mound with little or no consistency to the rock size and with no observed alignments. There is no structural stone to suggest that this feature is the remnant of a structure, nevertheless, the question does remain. The site may represent an isolated (and perhaps specialized) trash dumping area from either nearby Little Otowi (LA 32) or from LA 127646. The deposit lacks large numbers of fire cracked rocks and ashy soil, so it does not appear to be a hearth or roasting pit.

The mound contains a small (approximately 2.5 by 2.5 m) dense concentration of potsherds combined with a very light scatter of lithics. One hundred percent of the artifacts situated within two dogleash sample units were analyzed in the field. The majority of decorated ceramics were Biscuit A, Biscuit B, or unidentified biscuitware sherds. Other decorated ceramics include four Santa Fe Black-on-white, one Wiyo Black-on-white, two unidentified whitewares, an unidentified glazeware, and an unidentified redware sherd. Smeared-indentured, micaceous plainware, and non-micaceous plainware sherds dominated utilityware ceramics. The sparse amount of chipped stone debitage was predominantly Cerro Pedernal chert with one piece of rhyolite angular debris also present. In addition, three unidentified pieces of ground stone, a quartzite hammerstone, and a granite/diorite cobble biface were observed. Based on the high percentage of biscuitware sherds, this site appears to date to the Classic period.

LA 127655

LA 127655 (Q-18) is a moderate sized rubble mound located on the northern slope of Little Otowi ridge. It is about 50 m directly downslope from the eastern mound of Little Otowi (LA 32). The site is situated at an elevation of 1990 m (6528 ft) in a piñon-juniper woodland. The bottom of Pueblo Canyon is about 150 m to the north.

The rubble mound is about 15 m north-south by 20 m east-west, but contains very little surface rubble, at most about 25 tuff stones, none of which are in visible alignment. Some of these stones are shaped. Possibly all the rooms were single story given the lack of stones and the relatively low height of the mound (less than .5 m).

One hundred percent of four 2 m dogleash units was analyzed. The most abundant pottery at the site was observed to be smeared-indentured. The dominant decorated ware was Santa Fe Black-on-white and to a lesser extent Biscuit A. Also represented were Wiyo Black-on-white, Galisteo Black-on-white, Biscuit B, and various other utilityware. The lithic assemblage found on the site includes chipped stone made almost exclusively of Cerro Pedernal chert and small amounts of Jemez obsidian and basalt. Several projectile points were recorded that included one small side-notched made from Cerro Pedernal chert, along with some bifaced fragments and some ground stone. Ground stone included mano fragments, some unidentified fragments of quartzite, and a small tuff cylinder of unknown function. Based on the high percentage of Santa Fe Black-on-white ceramics, this site appears to be associated with Coalition/Classic period.

LA 127656

LA 127656 (Q-19) is a one-room masonry structure with associated artifacts. This site is located on Little Otowi Ridge situated along the southern side of Pueblo Canyon. This site is located at an elevation of 1993 m (6539 ft) in an area that is dominated by piñon-juniper woodland.

The north wall and portions of the east and west walls are present, which indicates that this structure was originally 3 m north-south by 2 to 3 m east-west. The rubble that consists of shaped and unshaped tuff blocks extends out into an area measuring 5 by 10 m. The northeastern and northwestern corners of the structure contain pothunting excavations (Figure 7.12).

One hundred percent of the artifacts were analyzed along the south side of the site, and two 2 m dogleash units were analyzed on the north side. The associated artifacts that number in the hundreds are situated in an area measuring at least 25 by 18 m. Based on the infield analysis, the predominant decorated ceramics were Santa Fe Black-on-white sherds. A few Wiyo Black-on-white, Biscuit A, and Biscuit B sherds were also present. Utilityware ceramics were primarily smeared-indented sherds with considerably lesser numbers of indented corrugated, obliterated, and non-micaceous plainware. Observed chipped stone lithics included debitage of Cerro Pedernal chert, chalcedony, basalt, and obsidian. Two rhyolite flakes were also located. Based on the ceramics this site dates to the Coalition period.

LA 127657

LA 127657 (Q-22) is located on Little Otowi Ridge that is situated along the southern side of Pueblo Canyon. This site is located at an elevation of 1980 m (6495 ft) in an area that is dominated by piñon-juniper woodland.

The site consists of two separate rock alignments surrounded by a sparse ceramic and lithic scatter. The smaller rock alignment includes two wall segments that could reflect a single 2 by 2 m room. The larger alignment, located 4 m to the south, consists of a single 3 m long wall segment and a shorter 2 m long segment that might represent two single rooms. The rocks are all unshaped tuff blocks. The site is in good condition, with some water erosion.

The associated artifacts, numbering in the 100s, are roughly situated in a 10 by 10 m area. Infield analysis was conducted on approximately 50% of all observed artifacts. The ceramic assemblage primarily includes Santa Fe Black-on-white, smeared-indented, and obliterated sherds. A few Wiyo Black-on-white, Biscuit A, Biscuit B, and a Glaze A sherd (likely San Clemente Glaze-on-polychrome) were also observed. The lithic assemblage mostly consists of Cerro Pedernal chert core flakes with some rhyolite and basalt flakes. Based on the ceramics, the site probably dates to the Ancestral Pueblo, Coalition period.

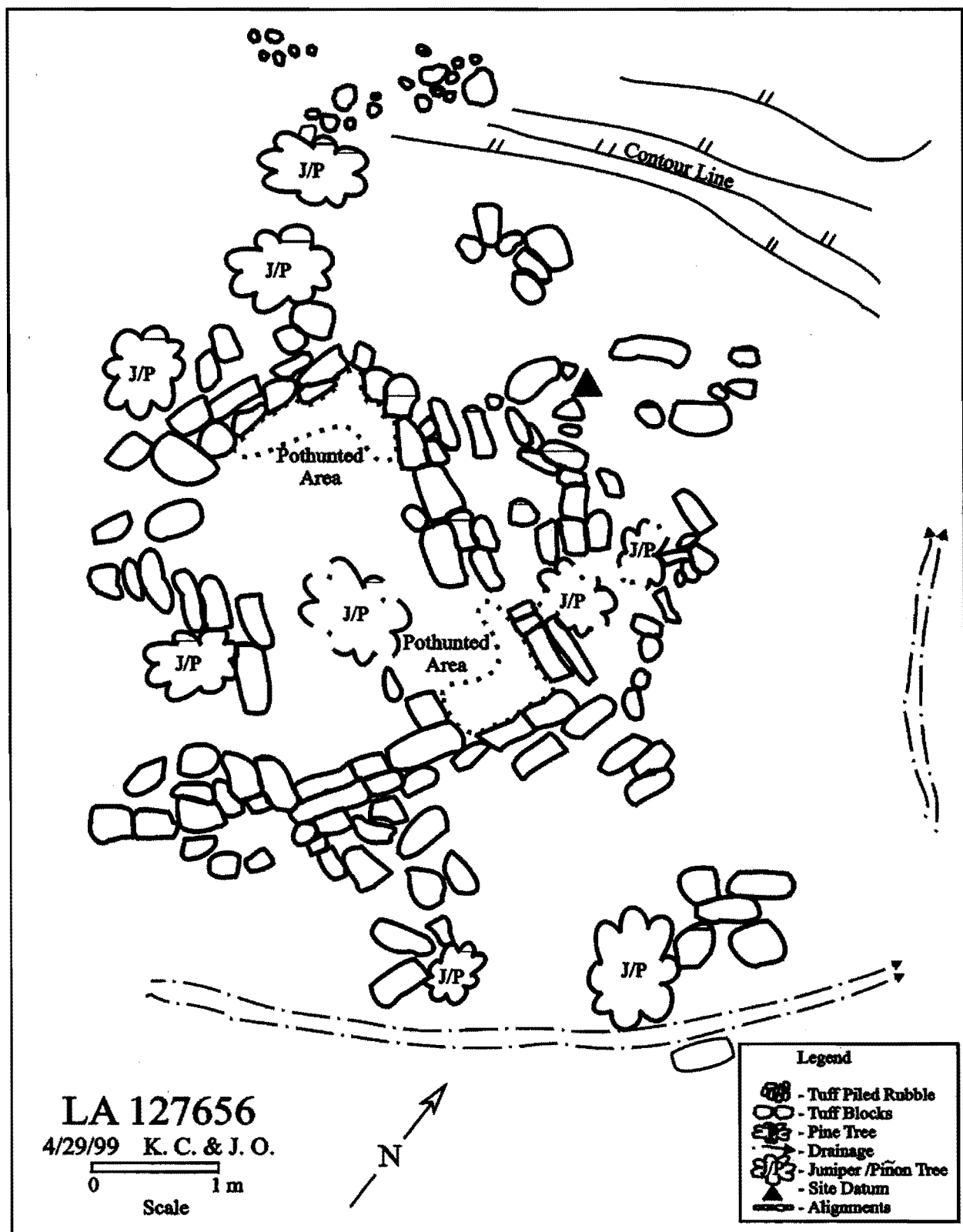


Figure 7.12. LA 127656, a one-room masonry structure.

LA 127658

LA 127658 (Q-23) consists of a roomblock with rock alignments, midden, and associated surface artifact scatter. The site is situated on a small ridge along the southern side of Pueblo Canyon. It is located at an elevation of 1981 m (6500 ft) in a piñon-juniper woodland.

The site consists of unshaped tuff rock alignments situated in a 4 by 15 m area. These alignments are thought to be the remains of a linear four- to five-room masonry pueblo. Additional nonaligned rubble is located in the approximate 4 by 15 m area situated directly to the east. This additional rubble may indicate an adjacent series of rooms. An approximate 8 by 8 m midden is located approximately 10 m downslope (east) from the rock alignments. The roomblock and midden are in good condition.

The associated artifacts that number in the hundreds were situated in an area measuring at least 30 by 25 m. One hundred percent of all artifacts located in four 2 m dogleash units were analyzed infield. Santa Fe Black-on-white sherds dominated the observed decorated ceramics. A few Wiyo Black-on-white, Biscuit A, and Sankawi Black-on-cream sherds were also present. Utilityware ceramics were predominantly smeared-indentured and obliterated along with a few sherds of non-micaceous plainware and clapboard corrugated. Chipped stone artifacts consisted of Cerro Pedernal chert, basalt, and obsidian. Based on the ceramics, the site is affiliated with the Coalition period.

LA 127659

LA 127659 (Q-24) appears to contain the remains of two one-room structures, a hearth, and associated artifacts. This site is located on Little Otowi Ridge along the southern side of Pueblo Canyon. This site is situated at an elevation of 1986 m (6515 ft) in an area that is dominated by piñon-juniper woodland.

The southernmost structure is indicated by a somewhat square 3 by 3 m cluster of basalt cobbles. Based on apparent alignments the structure would have been an approximate 2.1 by 2.3 m room. Located about 9 m upslope to the west is a series of nine tuff rocks situated in an approximate 2 by 2 m area. These rocks may form portions of the north, east, and south sides of a second small structure. A partially rock-lined hearth is located about 7 m south of the southern rock series. Five rocks that form the south, east, and west sides of the hearth partially enclose an approximate 0.5 by 0.5 m area. No charcoal or ash was visible on the surface.

The associated artifacts, which number in the hundreds, are situated in an area measuring approximately 27 by 27 m. One hundred percent of observed artifacts were flagged and analyzed in the field. The majority of the observed ceramics were Santa Fe Black-on-white, smeared-indentured, and obliterated sherds. Small numbers of Wiyo Black-on-white, Wingate Black-on-red, St. Johns Black-on-red, Biscuit B, and clapboard corrugated sherds were also noted. Lithic debitage consisted mostly of Cerro Pedernal chert with some chalcedony, rhyolite, and quartzite. A rhyolite maul was located within the basalt cobble concentration. Also noted on the site was an unidentified piece of quartzite ground stone. Based on the predominance of

Santa Fe Black-on-white ceramics, this site is affiliated with the Ancestral Pueblo, Coalition period.

LA 127660

LA 127660 (Q-31) is a rubble mound with some visible rock alignments and associated artifacts. The site is located on a small ridge along the southern side of Pueblo Canyon. This site is situated at an elevation of 1987 m (6520 ft) in an area that is dominated by piñon-juniper woodland.

A tuff rock/block rubble mound with partial wall alignments represents the roomblock. The rubble is situated in a 10 by 10 m area. The roomblock is estimated to contain eight to ten rooms. Erosion and possible pothunting have heavily impacted the roomblock.

The associated artifacts that number in the hundreds are situated in an area measuring at least 50 by 40 m. One hundred percent of the artifacts from three 1 m dogleash sample units and one 2 m unit were analyzed in the field. The most abundant ceramics were Santa Fe Black-on-white decorated sherds and smeared-indented utilityware sherds. Additional decorated ceramics included a few sherds each of Wiyo Black-on-white, Biscuit A, Biscuit B, and undetermined whiteware and redware sherds. Also documented were some obliterated, indented corrugated, and undetermined utilitywares. Chipped stone artifacts consisted mainly of Cerro Pedernal chert (95%), basalt, and obsidian. Lithic tools included a rhyolite one-hand mano, a rhyolite unidentified metate fragment, unidentified rhyolite and vesicular basalt ground stones, and a quartzite hammerstone. One basalt scraper, a polishing stone, and a vent plug were all observed on a previous survey, but could not be relocated during the 1999 survey. Based on the ceramics, this site is affiliated with the Coalition period.

LA 127661

LA 127661 (Q-32) is a low rubble mound that, along with associated artifacts, likely contains the remains of a small pueblo roomblock. The site is located on a small ridge along the southern side of Pueblo Canyon. It is situated at an elevation of 1984 m (6510 ft) in an area that is dominated by piñon-juniper woodland.

A low tuff block rubble mound with only partial wall alignments visible represents the apparent roomblock. The mound measures 14 by 16 m and has been impacted by water erosion. Small piles of artifacts, apparently made by visitors, were noted, suggesting the possible collection and removal of artifacts from the site.

The associate artifacts, which number in the hundreds, are situated in close proximity to the roomblock. The total scatter size is located within an area approximately 40 by 42 m. Infield analysis was conducted on four dogleash sample units (three 2 m and one 1 m). The dominant ceramics found on the site were Santa Fe Black-on-white and smeared-indented. Lesser numbers of unidentified whiteware, Wiyo Black-on-white, Wingate Black-on-red, unidentified biscuitware, Biscuit A, and obliterated were also recorded. Cerro Pedernal chert flakes dominated the chipped stone artifacts. Included in the lithic assemblage were small amounts of

basalt, rhyolite, and obsidian. Ground stone tools of rhyolite and basalt were also located, including mano and metate fragments. Based on the ceramics, this site is affiliated with the Ancestral Pueblo, Coalition period.

LA 127662

LA 127622 is a rubble mound with associated artifacts located along the south side of Bayo Canyon a short distance west of its confluence with Pueblo Canyon. The site is situated at an elevation of 2000 m (6562 ft) in an area that is dominated by a piñon-juniper woodland.

This site is a 22 m diameter rubble mound with an associated artifacts scatter extending to 51 by 39 m. The likelihood that it is the remains of a small pueblo roomblock is evidenced by well-shaped and roughly shaped tuff blocks, and as many as ten partial wall alignments. The site is badly eroded, and is cut, 4 m south of the rubble mound, by a two-track road.

The hundreds of artifacts are situated in a 51 by 39 m area, with the highest concentration located to the southeast of the rubble mound; unfortunately this area has been disturbed by a dirt road. Nevertheless, the possibility of this area of concentration representing a midden can not be ruled out. Four 2 m dogleash sample units were analyzed infield, and the predominant ceramic style observed was smeared-indentated. The predominant decorated style was Santa Fe Black-on-white. Lesser amounts of unidentified whiteware, Wiyo Black-on-white, Biscuit A, unidentified utilityware, indented-corrugated, obliterated, and clapboard corrugated were also recorded. Lithic material amounted to a large number of Cerro Pedernal chert flakes, with lesser amounts of quartzite, basalt, and rhyolite flakes and debris. Also noted were a hammerstone and an unidentified ground stone—both of quartzite—an unidentified basalt ground stone, a rhyolite shaped slab, a rhyolite two-handed mano, and another two-handed mano of andesite. One Polvadera Peak obsidian projectile point was collected. Based on the ceramics, this site is affiliated with the Ancestral Pueblo, Coalition period.

LA 127663

LA 127663 (Q-245) consists of a petroglyph panel located at the base of a south-facing cliff that overlooks Pueblo Canyon. A single petroglyph is also situated about 50 m above the panel on an overlying bench of the mesa. Isolated piñon and juniper trees dot the talus slope, with the site being located at an elevation of 2029 m (6660 ft).

The site consists of a large petroglyph panel with about 16 glyphs and a single isolated glyph. The main panel covers a 5 by 5 m area, including mostly anthropomorphic and zoomorphic figures with some ill-defined glyphs.

The panel is moderately weathered with green lichen growing in most of the petroglyphs. The lower left (west) corner of the rock face appears to have broken off within the last 50 years. The break of the cliff face has damaged an amorphous glyph. The upper isolated glyph is heavily weathered, but is also an anthropomorphic design.

No artifacts were observed in the vicinity of the site. The petroglyphs presumably reflect Ancestral Pueblo rock art.

LA 127664

LA 127664 (Q-37) is the remains of a small pueblo roomblock and an associated depression. The site is located northwest of Otowi Pueblo along the south side of Bayo Canyon. It is situated at an elevation of 1983 m (6507 ft) in an area that is dominated by a piñon-juniper woodland.

The roomblock consists of a rubble mound measuring 7 by 15 m in area. There are several rock alignments visible along the western side of the mound. The masonry observed on the site consists of unshaped tuff, rhyolite, and basalt. The southwestern portion of wall alignment is situated in a dirt road. Seven m south of the dirt road is a large circular depression. The depression is approximately 10 m in diameter. There is a stake pin with "5" on it located on the eastern side of the depression. The depression is filled with numerous small chunks of pumice, indicating that it was dug down into underlying formation. The depression could be the remains of a large kiva, however, the pumice fill suggests that this is not an aeolian or an alluvially filled-in feature. The fill gives the appearance that this depression is the result of a blast that exposed the natural underlying pumice. Whatever the cause, the depression does appear to be the result of some sort of cultural action rather than a natural occurrence.

The artifact assemblage numbers in the hundreds and is distributed across a 35 by 20 m area. Ceramics situated in the vicinity of the roomblock include Santa Fe Black-on-white, Wiyo Black-on-white, Biscuit A, and Biscuit B decorated sherds. The utilitywares include smeared-indented corrugated, obliterated, and one indented corrugated sherds. Ceramics located in the vicinity of the depression consist of Santa Fe Black-on-white, Wiyo Black-on-white, Biscuit A, and Biscuit B decorated sherds. The utilitywares include smeared-indented corrugated, obliterated, non-micaceous plainware, clapboard corrugated, and micaceous plainware. Overall, Santa Fe Black-on-white and smeared-indented corrugated sherds dominate the ceramic assemblage, which was evenly divided between the two features. Lithic materials are primarily comprised of Cerro Pedernal chert debitage, with the highest concentration found near the depression. Small numbers of rhyolite, Jemez obsidian, Polvadera Peak obsidian, and basalt debitage were also identified along with one fragment of basalt ground stone near the depression and one rhyolite ground stone close to the roomblock.

Based on the ceramic assemblage, the site dates to the Late Coalition/Early Classic periods.

LA 127665

LA 127665 (Q-38) is located on a northwest-southeast trending ridge west of Otowi Pueblo between Bayo and Pueblo Canyons. It is situated in a piñon-juniper woodland at an elevation of 1988 m (6523 ft). Pine duff obscures some of the surface visibility.

The site has been impacted by water erosion that has directly affected the two rubble concentration areas. The rubble consists of unshaped basalt and tuff blocks. There is no mound or obvious wall alignments that are visible. A two-track road cuts through the site that has

further altered the surface features. To assume that the surface rubble represents structural remains would be conjecture without further testing. However, the site does contain a substantial ceramic and lithic artifact scatter. This scatter, combined with the associated rubble, would at least suggest the possible existence of subsurface structural remains. Also noted was a historic campfire pit containing cans and glass. This fire pit is located in the northwest corner of the site on the north side of the roadway.

At this point the site could be considered a sherd and lithic scatter with associated rubble. An infield analysis was performed on 25% of all visible artifacts and on one 1 m dogleash unit in an area of dense concentration. A total of 185 artifacts were recorded consisting of ceramic artifacts ($n = 125$) with fewer lithic artifacts. The majority of the ceramics consist of Santa Fe Black-on-white and smeared-indentated corrugated, with fewer unidentified whiteware, Wiyo Black-on-white, St. Johns Black-on-red, Biscuit A, Biscuit B, indentated corrugated, obliterated, non-micaceous plainware, and clapboard corrugated sherds. The lithic artifacts primarily consist of Cerro Pedernal chert debitage with lesser amounts of Jemez obsidian, rhyolite, basalt, and chalcedony. A stemmed Polvadera Peak obsidian arrow point was collected. An earlier survey had also recorded a piece of petrified wood, but it could not be relocated on this survey. Based on the ceramic assemblage the site is affiliated with the Coalition period.

LA 127666

LA 127666 (Q198) is located on a low, narrow ridge along the south side of Pueblo Canyon at an elevation of 1969 m (6460 ft). The site consists of a 50+ room adobe pueblo with associated middens and artifact scatter. The ridge is bounded by colluvial runoff gullies that drain northeast towards the valley. The site is bounded by piñon and juniper trees, but the mound is covered with an understory of sage bush and grama grass.

The roomblock consists of a low mound with a scattered assemblage of tuff blocks. The mound is about 50 cm high and presumably reflects a single-story adobe wall pueblo with tuff blocks used as wall footings. No obvious rock alignments are visible. The mound is "L" shaped with the roomblock oriented northeast-southwest along the ridge. It measures about 40 by 15 m along the east-west side and 30 by 15 m on the north-south side. It opens southeast towards the area where eroding middens are scattered. The middens are dense surface artifact scatters, but are being cut into by the erosional gullies. There is a light scatter of artifacts on the mound and to the area northwest of the roomblock, with the midden areas being located to the front of the roomblock.

Infield analyses were conducted in two 1 m and two 2 m dogleash units. A total of 624 artifacts were recorded, consisting mostly of ceramics ($n = 513$) with fewer lithic artifacts. The ceramic assemblage is dominated by smeared-indentated corrugated, Santa Fe Black-on-white, and Wiyo Black-on-white, with a few Galisteo Black-on-white, Wingate Black-on-red, Biscuit A, Biscuit B, San Lazaro Glaze-on-polychrome, Sankawi Black-on-cream, and indentated corrugated sherds. The lithic artifacts are primarily composed of Cerro Pedernal chert debitage with single cores. A small side-notched arrow point was collected. The ground stone artifacts consist of a one-hand mano, two two-hand manos, a basin metate, and a grinding slab. Based on the ceramic assemblage the site is affiliated with the Coalition period.

LA 127667

LA 127667 (Q-200) consists of a group of six cavates on the south-facing cliff of a small mesa above Pueblo Canyon. The site is located along the cliff face above and approximately 250 m west of Otowi Pueblo at an elevation of 2013 m (6600 ft). Isolated piñon and juniper trees dot the talus slope.

The cavates are all heavily eroded, although some still contain evidence of sooting and intact plaster. Most are oval-shaped and about 2 by 2 m in size. Table 7.7 details specific information on each cavate. Cavate 4 is the largest of the set, with four floor pits and petroglyphs inside; however, the petroglyphs have been eroded and are impossible to make out. Cavate 2 has two wall niches and Cavate 5 a floor and wall niche. There are also six petroglyphs pecked into the tuff cliff face above Cavates 5 and 6. One is an anthropomorphic figure and the other five are line drawings. Based on the presence of viga holes above Cavates 4 to 6, these cavates appear to have been talus units that were two stories tall. Cavate 6 is located about 3 m above the talus bench and 1.5 m above Cavate 5. It was not accessible, so no information on internal layout or features was collected.

No artifacts were found directly associated with the site; however, several indented corrugated sherds and Cerro Pedernal chert core flakes were observed on the slope below the cavates. Although the site presumably dates to either the Coalition or Classic period, no temporal designation can be determined.

LA 127668

LA 127668 (Q201) is a series of 31 cavates and three possible exterior rooms located along a 150 m section of cliff that faces south towards Pueblo Canyon. The site is situated at an elevation of 2044 m (6700 ft) with isolated piñon and junipers dotting the lower talus slopes. Most of the cavates are deteriorated, with some being highly eroded and barely visible.

The cavates range in size from about 1.5 to 4 m in diameter, containing from 0 to 50 cm of fill. All but one are oval-shaped, with a single rectangular-shaped room. Sooting and plaster remnants are present in just a few cavates, with 14 containing interior features. Table 7.8 provides detailed information on all the cavates.

Three isolated rooms were identified about 5 to 10 m in front of the cliff face between Cavates 5 and 6 and 16 and 17. They consist of unshaped tuff rock alignments that outline a 2 by 2 m sized room. The presence of abundant rubble indicates that there may have been more of these rooms in the past. Indeed, two tiers of cavates with viga holes also reflect the presence of talus unit structures.

All visible surface artifacts within about 10 m of the cliff face were identified in the field; however, this area was separated into six sample units: S1 (Cavates 1–5), S2 (Cavates 6–10), S3 (Cavates 11–13), S4 (Cavates 14–19), S5 (Cavates 20–25), and S6 (Cavate 26). Most of the

Table 7.7. LA 127667, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket	Petroglyphs	Artifacts	Other
1	2.80 by 6.70 by 2.5	---	None	None	None	None	None	
2	2.70 by 4.20 by 1.40	---	Yes (very faint near entrance on ceiling).	Yes (fragments in larger niche and from 20 to 72 cm above floor).	Two wall niches. southwest corner 82 h by 1.03 w by .70 d m. Southeast corner 48 h by 70 w by 48 d cm.	None	None	
3	2.40 by 4.00 by 2.1	---	None	None	None	None	None	Viga holes (three interior holes).
4	4.00 by 3.50 by 1.70	None	Yes (on northern floor in back and in western niche on sides).	None	Three floor pits: 1.50 d by 1.25 w by .90 h m; .50 d by .80 w by .70 h m plaster on side; 30 d by .40 w by .70 h m.	Yes (4 m above cavate #5. Six in total. Three viga holes on same cliff face of petroglyphs).	None	Four floor pits: .50 by .60 by .40 m; .30 by .30 by .15 m; .10 by .10 by .70 m; and .08 by .08 by .20 m.
5	1.80 by 2.40 by 1.80	---	None	Yes (small plaster fragments at 1.10 to 1.18 m above floor).	One floor niche in southwest corner: .40 h by .55 w by .30 d m. One wall niche on north wall .71 h by .63 w by .20 d m.	None	None	
6	---	---	---	---	---	---	---	Inaccessible

Table 7.8. LA 127668, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets (H by W by D)	Petroglyphs	Artifacts	Other
1	1.50 by 2.20 by .5	3 cm	None	None	None	None	None	Mostly buried.
2	3.60 by 3.30 by 1.62	18 cm	Yes (small amount on ceiling and in niche).	Yes (from floor up 35 cm).	Three (first two are floor niches): 54 by 47 by 100 cm, no plaster, some sooting; 32 by 70 by 40 cm, plaster inside; and wall niche at west end 6 cm above floor 57 by 49 by 45 cm some sooting.	None	None	
3	1.40 by 1.50 by 1.42	8 cm	None	Yes (from floor up 48 cm).	None	None	None	Pit in floor 34 cm diameter.
4	2.50 by 2.50 by 2.00	None	None	None	One wall niche (80 by 60 by 60 cm deteriorated).	None	None	Burned adobe floor in northeast area.
5	3.00 by 3.40 by 3.00	None	None	None	One wall niche (80 by 80 by 50 cm) deteriorated.	None	None	Collapsed roof.
6	2.03 by 3.30 by 2.07	55 cm	Yes (some around base of walls).	Yes (from floor up 23 cm).	None	None	None	
7	1.65 by 3.40 by 1.55	25 cm	None	None	None	None	None	Highly eroded.
8	1.25 by 3.50 by 1.94	None	None	None	None	None	None	Highly eroded.
9	.80 by 1.25 by 2.65	None	None	None	None	None	None	Highly eroded.
10	2.45 by 5.00 by 1.90		Yes (some on rocks).	Yes (some on floor 3 cm thick, some on walls 40 cm high).	None	None	None	Deteriorated.
11	1.25 by 3.10 by 1.60	13 cm	None	None	One small niche in west wall near ceiling (20 by 30 by 14 cm). Some plaster inside.	None	None	
12	2.35 by 3.70 by 2.00	None	Yes (small amount on ceiling).	None	Two niches: Floor niche 1 by 1 m and wall niche 1.20 by 1 by .80 m.	None	None	Ceiling has eroded.

Table 7.8. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets (H by W by D)	Petroglyphs	Artifacts	Other
13	3.35 by 5.50 by 2.40	20 cm	None	None	None	None	None	Deteriorated.
14								Data Information lost. Profile only.
15	2.70 by 4.50 by 2.60	Yes (in viga holes).	Yes (on ceiling, less on walls, in niche one, on recessed areas around niches).	Yes (1.40 m above floor).	Three floor niches: .70 by .63 by 1 m, recessed area around exterior portion of niche, plaster inside; 1.0 by .80 by .30 m, recessed area around exterior niche; and 65 cm above floor is small niche 9 cm in diameter with plaster.	Yes (total of seven) animal figures with average length of 35 cm.	None	Three viga holes: two are 2.10 m above floor with 20 cm diameter and both with sooting and the third is 1.55 m above floor 15 cm by 10 cm with sooting inside. Both recessed areas around niches one and two have plaster.
16	2.40 by 3.50 by 1.50		None	None	One floor niche (50 by 30 by 65 cm).	None	None	Plaster in niche three outside of the cavate to the west.
17	1.50 by 2.15 by 1.60		None	None	One floor niche (50 by 43 by 35 cm)	None	None	Roomblock rock alignment in front of cavate.
18								Inaccessible, two separate entrances both ~1.20 m above and to the west of cavate 19.
19	1.60 by 3.35 by 1.77		Yes (small amount).	None	One floor niche (60 by 20 by 20 cm).	None	None	Four boulders within cavate entrance.
20	1.10 by 3.80 by 1.27	19 cm	None	Yes (from floor up 50 cm).	One floor niche. (80 by 25 by 22 cm).	None	None	Viga hole 10 by 10 cm.
21	1.40 by 3.00 by 1.45		None	None	One floor niche (1.10 by .73 by .70 cm).	None	None	
22	1.25 by 2.10 by 1.68		None	None	One floor niche (90 by 70 by 80 cm).	None	None	
23	3.00 by 3.50 by 1.75	8 cm	Yes (small amount).	None	One floor niche (50 by 50 by 23 cm).	None	None	

Table 7.8. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket (H by W by D)	Petroglyphs	Artifacts	Other
24	1.25 by 1.45 by 1.00		None	None	None	None	None	
25	Height 2.20							Inaccessible.
26	2.10 by 3.50 by ?	20 cm	Yes (on the ceiling)	Yes (From floor up 27 cm)	None	None	None	
27	1.40 by 1.90 by 1.30		None	Yes (from floor up 20 cm).	None	None	None	
28	3.00 by 4.00 by 2.00	11 cm	Yes (on ceiling and inside wall niche).	None	Three niches: floor niche 1.20 by .62 by .90 cm; floor niche .83 by .40 by .28 m; and wall niche .38 by .43 .26 m.	Yes, on ceiling on east side.	None	
29								Inaccessible.
30	1.00 by 2.00 by 1.20	None	None	None	None	None	None	
31	.85 by 1.10 by .80	50 cm	None	None	None	None	None	Deeply buried.

artifacts identified consist of smeared-indentured corrugated sherds, with some Santa Fe Black-on-white, Wiyo Black-on-white, and Biscuit A and Biscuit B ceramics. The majority of the lithics artifacts are core flakes made of Cerro Pedernal chert with some basalt. The ground stone are primarily made of rhyolite and consist of a one-hand mano, an undetermined mano fragment, a millingstone fragment, a trough metate, and an undetermined ground stone fragment. In addition, three hammerstones were also identified. A whole corncob and a cob fragment were collected from Cavate 6. Based on the ceramics present, the site appears to date to the Late Coalition/Early Classic period.

LA 127669

LA 127669 (Q202) is a set of six cavates located at the base of a south-facing cliff overlooking Pueblo Canyon. There are a few isolated piñon and juniper trees on the narrow bench and talus slope in front of the cavates, which are situated an elevation of 2013 m (6600 ft).

The site consists of six cavates along a 45 m long segment of the cliff. They are all oval-shaped and about 2 to 3 m in diameter. Two of the western cavates are collapsed with a third situated about 3 m above the bench. The eastern three cavates are intact, although deteriorated on the inside. Two of these have niches and one room has three possible floor post holes and a hearth. This latter cavate (#5) has a smoke covered roof with some graffiti and unshaped tuff rubble in front of its entrance. The westernmost cavate (#1) also has some rubble located in front and to the east. Both of these probably represent masonry rubble associated with a talus unit; however, no viga holes were evident above the cavates. Specific data on the cavates is provided in Table 7.9.

Twenty-four artifacts were identified on the bench and adjacent talus slope in front of the cavates. These consist of 17 ceramic and four lithic artifacts. The ceramics consist of biscuitwares, Santa Fe Black-on-white, Sankawi Black-on-cream, smeared-indentured, and non-micaceous plainware sherds. The lithic artifacts consist of three Cerro Pedernal chert core flakes and a quartzite cobble core. Based on the ceramics the site appears to date to the Late Coalition/Early Classic period.

LA 127670

LA 127670 (Q-203) consists of a series of rock alignments and a fieldhouse situated on a wide area of three adjacent ridges. The ridges slope slightly downward toward the south from the mesa talus slope to the valley floor of Pueblo Canyon. The site is located at an elevation of 2012 m (6600 ft) within a piñon-juniper woodland setting. The ridge top soil contains numerous volcanic gravels.

The site can be divided into five proveniences that spread over a 60 by 30 m area. Provenience 1 is located on the westernmost ridge. It contains possible rock alignments that could not be clearly delineated. Provenience 2 is located on the middle ridge. It consists of two sets of rock bordered grid gardens. Infield artifact analysis Samples 1 and 2 were monitored from the northern and southern areas of the provenience. Sample 3 was taken from a small artifact scatter

Table 7.9. LA 127669, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/sockets	Petroglyphs	Artifacts	Other
1	1.70 by 7.0 by 2.6	None	None	None	None	None	None	Shaped tuff block rubble at entrance to the east.
2	Entrance width = 1.50							Inaccessible.
3	2.60 by 2.50 by 1.73	17 cm	None	Only on Floor	None	None	None	
4	2.50 by 3.0 by 1.25	50 cm	Yes (smoke blackened roof).	None	None	None	None	
5	3.40 by 2.60 by 2.0	8 cm	Yes (smoke blackened roof).	None	One wall niche. (40 cm above floor, 60 cm by 1 by 45 cm).	None	None	Graffiti on ceiling; one floor pit 30 cm; and three holes: 32 cm deep; 26 cm deep; and 11 cm deep. Large tuff blocks piled in front of entrance.
6	2.60 by 2.20 by 1.80	5 cm	Yes (light smoke blackening, deteriorated).	None	One floor niche. (25 by 70 by 60 cm).	None	None	Three wall cracks.

located north of Provenience 2. Provenience 3 is situated on the easternmost ridge. It consists of several terraces, a rock bordered grid garden with three 2 by 2 m grids, and a small rubble area (2 by 2 m) that probably represents a fieldhouse. Sample 4 was taken from the area between the fieldhouse and grid garden. Provenience 4 is situated on the same ridge as Provenience 3, but faces south. It consists of two possible rock alignments (possible terraces) and two possible rock-bordered grid gardens. Provenience 5 is a series of five possible check dams or rock alignments on an erosional gully in between Proveniences 2 and 3. There are about 10 dams that are spaced about 3 to 4 m apart over a distance of approximately 30 m.

Very few artifacts were present on the site. The four unbounded sample units were placed in locations where observable artifacts were recorded. As a result, 37 artifacts were analyzed, ranging from 3 to 19 artifacts per sample area. About one-third of the items are ceramics ($n = 13$). Most of these are either unidentified whitewares or Santa Fe Black-on-white sherds, with a few plainware and indented corrugated sherds. The remaining artifacts primarily consist of core flakes that are either Cerro Pedernal chert, Jemez obsidian, or Polvadera Peak obsidian core flakes. Based on the ceramic assemblage, the site presumably dates to the Coalition period.

LA 127671

LA 127671 (Q204) consists of a small lithic scatter situated on top of a mesa at an elevation of 2025 m (6640 ft). The mesa top has a commanding view in all directions, including Bayo Canyon to the north and Pueblo Canyon to the south. It is covered with isolated piñon and juniper trees, with grama grass growing in areas with sandy soils. These soils are surficial and have eroded down to bedrock in some areas of the site.

The site consists of nine pieces of debitage and a projectile point within a 25 by 70 m area. The debitage consists of core flakes, biface flakes, angular debris, and unidentified flake fragments. All but one piece of debitage are obsidian, with a single piece of Cerro Pedernal chert. The projectile point is a side-notched point with a concave base made of Polvadera Peak obsidian. It has a neck width of about 9 mm indicating that it could represent a large arrow point or a small dart point. The point does not exhibit any resharpening, so it seems more likely that it represents an arrow point. Due to the lack of diagnostic materials, no specific temporal designation has been given to the site.

LA 127672

LA 127672 (Q-206) is a group of 12 cavates located along a south-facing cliff overlooking Bayo Canyon. A few piñon and juniper trees dot the talus slope below the cavates that are situated at an elevation of 2043 m (6700 ft).

The cavates have been somewhat eroded by wind and water, and surface artifacts are virtually absent due to collection by visitors and/or erosion downslope. The cavates are oval in shape and have an average height of 1.75 m and an average width of 2.5 m. Plaster and sooting are present in most of the cavates, but in very fragmentary condition. Fill remains in some cavates, ranging from 10 to 20 cm in depth. Table 7.10 provides detailed information on each of the cavates. Cavate 12 deserves special mention due to its possible kiva function. It is located on the second

Table 7.10. LA 127672, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Socket	Petroglyphs	Other
1	1.55 by 1.4 by 1.8 m	10 cm	No	No	None	No	
2	0.76 by 1.0 by 0.8 m		No	No	None	No	
3	2.4 by 2.3 by 1.8 m	20 cm	On ceiling.	Up 40 cm from floor.	Southwest corner niche 53 by 70 cm.	No	Semi-square shaped with plastered shelf on west wall.
4	1.9 by 2.25 by 1.5 m	20 cm	On ceiling and in niche.	70 cm above floor and at top of entrance.	Northwest corner niche 10 by 22 cm with sooting.	No	
5	2.1 by 2.3 by 1.5 m	10 cm	No	Up 60 cm from floor.	None	No	
6	2.15 by 2.65 by 1.7 m	15 cm	On ceiling.	Up 60 cm from floor.	Northeast corner niche 40 by 45 cm square; 5 sockets in north wall 80 to 110 cm above floor.		Hole in ceiling.
7	1.7 by 2.5 by 1.8 m	10 cm	Faint on ceiling.	Up 55 cm from floor.	East wall niche 71 by 64 cm.	No	Shelf along north wall 10 cm above floor, 1.15 m long, 30 cm wide.
8	1.2 by 1.45 by 1.35 m	None	No	Up 80 cm from floor.	None	No	
9	3.0 by 2.8 by 1.25 m	20 cm	On ceiling.	Up 30 cm from floor.	Northeast corner niche 81 by 99 cm with rocks around opening.	Awanyu-type design—may be recent.	Niche has been used as a modern fireplace.
10	2.45 by 3.0 by 1.85 m	15 cm	On ceiling.	30 to 50 cm above floor.	North corner niche 59 by 101 cm; 4 sockets 80 to 110 cm above floor.	No	

Table 7.10. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/sockets	Petroglyphs	Other
11	3.0 by 2.55 by 1.75 m	30 cm	On ceiling and in northeast corner niche.	Up 45 cm from floor and in northeast corner niche.	Northeast corner niche 0.5 by 1.35 m; southeast corner niche 42 by 81 cm; wall niche 60 cm above floor, 55 cm w by 50 cm h.	No	Smokehole above and east of entrance.
12	2.2 by 2.5 by 1.6 m	10 cm in pit	Faint on ceiling.	Up 65 cm from floor.	Double west wall niche 45 by 87 cm; 4 floor pits 14 to 46 cm in diameter; 5 rectangular niches 10 by 20 cm 65 to 75cm above floor.	No	Bird feather and butterfly wings in one floor pit.

story, is irregular in shape (roughly triangular), and contains several floor features including a possible sipapu.

Artifacts observed consist of one plainware sherd inside a cavate and a mano fragment and a Cerro Pedernal chert flake found downslope. These artifacts are not particularly useful for dating purposes. Therefore, the site has been assigned to an undetermined prehistoric Ancestral Pueblo time period. Other cavate sites in the area appear to date to the Coalition and Classic periods. If LA 127672, LA 21591, and LA 127673 are contemporaneous, they would constitute a very large residential complex.

LA 127673

LA 127673 (Q-208) is a series of cavates that is located on a cliff face along the south side of Bayo Canyon. The site is situated at an elevation of 2047 m (6716 ft) with scattered piñon and junipers in the area.

The cavates occur in two levels, connected by a trail on the eastern end of the site. The lower level cavates (#1 through 6) are highly eroded, containing little in the way of plaster or sooting. Many of the floors have eroded away also. The upper level (#7 through 23) is in somewhat better condition, likely due to fewer visitations. Most of the entrances are intact, and many of the cavates contain sooting and plaster. Of the 23 cavates recorded, only four were in extremely poor condition. The cavates are generally oval-shaped, range from 1.5 to 3.0 m in diameter, and contain an average fill depth of about 20 cm. Fifteen have niches and eight exhibit petroglyphs. The rock art includes anthropomorphic, bird, and serpent figures. Only two artifacts were identified within the cavates. These consist of jar sherd and a corncob. Table 7.11 provides specific information on each of the cavates.

The upper portion of the site contains many more artifacts than the lower, which is likely due to the presence of fewer visitors. 195 artifacts were recorded in the area of the cavates. Most of these are ceramic ($n = 140$) with fewer lithic artifacts. The majority of the ceramics consist of smeared-indentated corrugated and Biscuit A sherds, with some Biscuit B, Santa Fe Black-on-white, Wiyo Black-on-white, Sankawi Black-on-cream, obliterated corrugated, non-micaceous and micaceous plainware. Lithics include mostly Cerro Pedernal chert debitage, with smaller amounts of obsidian, rhyolite, and basalt. The ground stone artifacts consist of a rhyolite millingstone, a rhyolite mano fragment, and a quartzite mano fragment. Based on the ceramic assemblage the site appears to date to the Classic period, although there could be a Coalition period component as well.

LA 127674

LA 127674 (Q210) consists of a large dispersed artifact scatter that is located on an east-west trending ridge along the south side of Bayo Canyon. The area is heavily eroded with some water channels cutting through the site. It is possible that this site has been secondarily deposited by sheet wash erosion. The site is situated at an elevation of 1878 m (6163 ft) in an area covered by a piñon-juniper woodland.

Table 7.11. LA 127673, Cavate Descriptions

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
1	3.1 by 2.3 by 1.5	30 cm	On ceiling.	No	None	No	No	Rocks on floor.
2	3.0 by 3.2 by 1.9	8 cm	On ceiling.	Up 75 cm from floor.	Rear niche 70 by 70 cm.	No	No	
3	1.9 by 2.9 by 2.0	5 cm in niche.	No	No	Northeast corner niche 0.75 by 1.2 m.	No	No	
4	3.7 by 1.85 by 1.8	50+ cm	Near entrance.	On floor and 70 cm above floor.	Two east wall niches 65 and 75 cm above floor: 35 by 30 by 23 and 30 by 25 by 20; west wall niche 80 cm above floor 30 by 30 by 30 cm; 1 socket 1 m above floor.	No	No	Rectangular
5	---	---	---	---	---	---	---	Inaccessible—no data.
6	---	---	On ceiling	---	---	---	---	Likely not a cavate—heavily used by animals.
7	1.3 by 1.7 by 0.9	20 cm	No	No	None	No	No	
8	2.5 by 3.1 by 1.8	6 cm	On ceiling and down walls.	Up 1.1 m from floor and in crack in ceiling.	North wall: .92 by .98 by .7 m; east wall: .72 by .8 by .62 m; southwest corner: .26 by .6 by .9m; 2 sockets in north and east walls—1.1 m above floor, 6 to 9 cm diameter.	No	No	Some vandalism—recent graffiti.
9	---	---	---	---	---	---	---	Inaccessible—no data—highly eroded, no features.

Table 7.11. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
10	2.9 by 3.5 by 1.7	10 cm	On ceiling and walls.	Up 69 cm from floor.	North wall: 1.9 by 1.3 by 1.1 m; northeast corner: .4 by .9 by .65 m (interior niche .2 by .4 by .6); southwest corner .37 by .46 by .89 m.	Includes several anthropomorphic figures.	No	Large unshaped rocks on floor.
11	---	---	---	---	---	---	---	Inaccessible —no data
12	1.6 by 1.8 by 1.1	8 cm	No	One fragment 1 m above floor.	Southwest corner: .17 by .35 by .40 m.	No	No	
13	1.2 by 1.8 by .75	18 cm	No	No	No	No	One Sankawi or Biscuit B jar sherd.	Could be a large niche rather than habitational.
14	2.5 by 3.8 by 1.7	10 cm	On ceiling and walls.	Up 80 cm from floor.	Southeast corner: .25 by .75 by .77 m (with sooting); north wall: .34 by .63 by .42 m (25 cm above floor); northwest corner: 1.1 by 1.2 by .82 m (with sooting); southwest corner: .14 by .58 by .33 m; socket in south wall 1.1 m above floor, 23 by 20 cm.	Human figures—may be modern.	No	
15	2.0 by 3.5 by 1.2		On ceiling and walls.	Up 51 cm from floor and in west wall crack.	West wall: .55 by .44 by .27 m; northeast corner: .54 by .51 by .35 cm.	Including shield and plant figures.	No	

Table 7.11. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/sockets	Petroglyphs	Artifacts	Other
16	2.0 by 2.6 by 1.6		No	No	Northwest corner: 48 by 54 by 48 cm.	No	No	Smokehole above entrance: 15 W by 21 H by 44 D, (into eroded cavate above).
17	2.2 by 3.4 by 1.4	15 cm	Faint sooting on ceiling.	Up 56 cm from floor.	North wall niche: 64 by 50 by 57, 2 sockets in north wall; 33 cm above floor; 22 by 17 by 16, and 38 cm above floor; 11 by 15 by 19.	No	No	
18	2.1 by 3.3 by 1.0	40 cm	On ceiling.	Up 53 cm from floor.	North wall niche: 1.0 by 1.3 by 0.55 m, and southeast corner niche: 18 by 46 by 29 cm.	Possible petroglyphs — maybe recent.	No	
19	2.7 by 3.3 by 1.6	22 cm	On ceiling.	From floor up to 67 cm.	Northwest corner niche: .7 by .6 by .5 m, east wall niche: .32 by .75 by .48 m.	Possible petroglyphs — maybe recent.	No	
20	1.4 by 2.0 by 1.5	13 cm	Small amount in ceiling crack.	No	None	No	No	
21	2.4 by 2.8 by 1.7	25 cm	On ceiling.	Up 64 cm from floor, and in crack across ceiling 1.55 m above floor.	Southwest corner: .66 by .66 by .5 m, north wall niche: .5 by .3 by .24 m, and northeast corner niche: 20 cm above floor—.46 by .65 by .5 m (with sooting).	Serpent petroglyph	No	

Table 7.11. (Con't.)

#	Maximum Dimensions (L by W by H in m)	Maximum Depth of Fill	Smoke Sooting	Plaster	Niches/Sockets	Petroglyphs	Artifacts	Other
22	2.5 by 3.5 by 1.7	25 cm	On ceiling.	Up walls from floor 70 cm, and in ceiling crack 1.47 m above floor.	Southwest corner niche with sooting: .35 by .6 by .5 m, north wall niche: .4 by .9 by .37 m, east wall niche: .55 by 1.3 by .65 m, and southeast corner niche: 1.0 by 1.2 by .6 m.	Two humanlike figures.	No	
23	1.8 by 3.3 by 1.7	23 cm	On ceiling, and down east wall in niches.	Up from floor 1.1 m, and in north wall niche, northeast corner niche, and small fragment in ceiling crack.	North wall niche: .9 by 1.6 by .8 m, northeast corner niche: .5 by .9 by .6 m.	Petroglyphs include: a birdlike figure, a humanlike figure, and some scratches on ceiling of unclear age.	Corncob.	

The lithic and ceramic scatter covers a 100 by 85 m area. There are no visible architectural or other features on the site. An infield analysis was conducted of all the artifacts present, consisting of 36 lithics and 21 ceramics. The ceramics primarily consist of Santa Fe Black-on-white and smeared-indent corrugated sherds. Smaller numbers of Wiyo Black-on-white, indented corrugated, and obliterated corrugated were also noted. Most of the lithic artifacts are pieces of Cerro Pedernal chert debitage with some obsidian (black translucent, brown, and Polvadera Peak) and quartzite debitage also being noted. Three pieces of ground stone were recorded, consisting of a rhyolite mano and metate fragment and a quartzite mano fragment. The site likely dates to the Coalition period based on the presence of Santa Fe and Wiyo Black-on-white ceramic types.

LA 127675

LA 127675 (Q-211) is situated on the flat bench of a south trending ridge that descends to the drainage channel of Bayo Canyon. The bench is some 25 m above the wash, with a striking panoramic view of the Rio Grande Valley and the Sangre de Cristo Mountains to the east and the eastern tip of the escarpment between Pueblo and Bayo Canyon to the southwest. The bench substrate consists of a very shallow layer of silty sands (with some gravels) situated on bedrock. A few juniper and piñon trees are scattered on the bench, along with various grasses.

The site consists of a rectangular stone structure of unknown function estimated at about 8 by 9 m in overall width and length. The structure consists of a single course of generally small shaped and unshaped tuff stones along its southern and western sides. There is evidence of either the collapsed debris of higher adobe walls (evidenced by scattered probable chinking stones) along the northern and eastern sides of the structure, or perhaps instead representing a second smaller room or other structural remains. Juniper trees have disturbed two portions of the overall structure. The configuration of the structure and its location make it unlikely that it represents either a fieldhouse or an agricultural area. Curiously, the southern wall is oriented directly toward the top of the previously noted prominent escarpment to the southwest.

There is a cluster of 14 sherds along the eastern wall of the structure. Several of these sherds are from a Biscuit A bowl with a reworked rim. Also in the cluster are sherds to one or two additional Biscuit A bowls. A linear sparse scatter (2 m wide by 10 m long oriented northeast-southwest) of more than a dozen sherds is situated immediately to the southwest of the structure. These sherds represent at least one or two Biscuit A bowls that appear to be different from the vessels represented in the sherd cluster. Thus all 31 sherds identified at the site represent the remnants of what appear to be four to five individual Biscuit A bowls. Only three other artifacts were observed. These include the apparent tip of a Cerro Pedernal chert projectile point and the very fragmentary remains of a basalt metate of unknown form and a rhyolite mano. The artifacts indicate an Ancestral Pueblo, Classic period usage for the structure.

The nature, location, and orientation of the structure, along with the exclusive ceramic presence of multiple Biscuit A bowls, combine to suggest that the structure may have had, at least in part, a special function.

LA 127676

LA 127676 (Q-212) is a small concentrated artifact scatter. This site is situated on a low bench about 6 m above the north side of Bayo Canyon. It is at an elevation of 1870 m (6135 ft) in an area vegetated by a piñon-juniper woodland. The setting appears to be relatively intact with little erosion having taken place.

An infield analysis was conducted for all observed artifacts. This analysis resulted in the documentation of 50 lithics and two sherds. The ceramics consist of one Biscuit B sherd and one unidentified whiteware. The site is primarily composed of Cerro Pedernal chert lithics (48). Two obsidian (black translucent) biface flakes were also present. The chipped stone debitage was dominated by core flakes, biface flakes, and microdebitage. Based on the ceramics and the high percentage of Cerro Pedernal chert, this site likely dates to the Classic period.

LA 127677

LA 127677 (Q-213) is the remains of an apparent two-room structure situated on a narrow ridge along the south side of Barrancas Canyon. The ridge is covered by a piñon-juniper woodland at an elevation of 2055 m (6742 ft).

The structural rubble is situated in a 6 by 6 m area. The tuff block alignments appear to reflect two rooms with additional wall fall rubble located downslope to the east-southeast. The rooms appear to be fairly square, measuring 2 to 2.5 m along the sides. Although it is thought unlikely, potential rock alignments formed within the area of assumed wall fall suggest the potential for the remnants of one to two additional rooms. An exposed bedrock formation located approximately 20 m north of the structure exhibits two mortar holes.

An infield analysis was conducted on all visible artifacts. A total of 25 ceramic and five lithic artifacts were recorded. The ceramics primarily consist of obliterated corrugated sherds, with some Santa Fe Black-on-white sherds also present. Four of the lithics are of Cerro Pedernal chert including a core flake, a biface flake, and two pieces of angular debris. The remaining lithic is a basalt core flake. Based on the ceramic assemblage, the site appears to date to the Coalition period.

LA 127678

LA 127678 (Q214) is an artifact scatter situated on a small, narrow east-west trending ridge along the south side of Barrancas Canyon. Although the site is located in a relatively open area with grasses, it is surrounded by a piñon-juniper woodland at an elevation of 2027 m (6647 ft).

This site consists of a small artifact scatter that covers a 20 by 21 m area. A portion of the site lies within an erosional drainage and has been heavily eroded. The soil is a loose sandy silt with some cobbles and gravel.

An infield analysis was conducted of all the visible artifacts at the site. A total of 16 ceramic and 10 lithic artifacts were recorded. Most of the ceramics are non-micaceous plainwares with some

smear-indented corrugated and a Santa Fe Black-on-white sherd. The majority of the lithic artifacts are Cerro Pedernal chert core flakes and angular debris. A single Cerro Pedernal chert core and a rhyolite metate fragment were also identified. Based on the ceramics, the site appears to date to the Coalition period.

LA 127679

LA 127679 (Q-215) is a boulder rockshelter and wall alignment situated at the base of the talus slope along the south side of Barrancas Canyon. This is a 15 degree slope that faces due north. The site is at an elevation of 2036 m (6677 ft). The area is heavily vegetated with ponderosa, piñon, and juniper. Pine duff and dense bunch grass make surface visibility poor.

The site consists of a shelter constructed from a natural hollowed boulder and a dry laid masonry wall that encircles the boulder opening. The height of the opening is 90 cm, and the wall height (on the west side only) is 60 cm. The west side wall has two standing courses, while the remaining sections have collapsed. Some rubble has been redeposited downslope to the north.

The only artifact present at the site was a micaceous plainware sherd. The period of the site use could not be determined, however, based on the ceramic it is affiliated with the Ancestral Pueblo culture.

LA 127680

LA 127680 (Q-216) contains a light scatter of tuff rocks that are the remains of a masonry feature. It is situated on the tip of a northeast trending ridge finger that forms a portion of the south side of Barrancas Canyon. It is in a piñon-juniper woodland at an elevation of 2126 m (6613 ft).

The tuff rock scatter is primarily situated in a 6 by 5 m area. There is a north-south three-rock alignment with a possible fourth that is slightly offset to the west. The total length of this alignment is approximately 1.4 m. The rocks themselves are approximately 30 to 40 cm long.

Associated artifacts consist of six sherds situated in a 6 by 6 m area located within and to the north of the rock scatter. The ceramics include two Biscuit B sherds, two indented corrugated sherds, and one sherd each of unidentified biscuit and smear-indented corrugated. The site boundary that includes all tuff rubble and artifacts is 10 by 8 m. Based on the Biscuit B sherds, this site likely dates to the Classic period.

LA 127681

LA 127681 (Q-217) contains a light scatter of tuff rocks that are the remains of a masonry feature. It is situated on the tip of a northeast trending ridge finger that forms a portion of the south side of the Barrancas Canyon drainage. The site is located at an elevation of 2009 m (6593 ft) in an open area situated between piñon and juniper trees. Nearby ponderosa pine trees grow along the canyon channel approximately 40 m north of the site.

The tuff rock scatter is primarily situated in a 6 by 6 m area. Partial alignments suggest the presence of a 2.5 by 2 m room. There is a seven-rock 3.5 m long north-south trending alignment. A potential six-rock 2.5 m east-west alignment crosses the north-south alignment about 1 m north of its southern end. A three-rock north-south alignment is located 2 m to the east and parallels the longer north-south alignment. When viewed together, these three alignments tend to form remnants of a one-room structure.

The associated artifacts include a Biscuit B sherd, two pieces of Cerro Pedernal chert angular debris, a Jemez obsidian core flake, a rhyolite polishing stone, and a rhyolite metate fragment. The artifacts and rubble are situated in a 16 by 10 m area. Based on the Biscuit B sherd, the site is affiliated with the Ancestral Pueblo, Classic period.

LA 127682

LA 127682 (Q-218) is a single-room structure located on a ridge top along the south side of Barrancas Canyon. It is situated just north of where a separate drainage joins Barrancas Canyon. It is located at an elevation of 2009 m (6588 ft). The flat site area is heavily vegetated by piñon-juniper with a few ponderosa pines to the south.

The site consists of a rectangular one-room structure that is probably a fieldhouse. It is constructed of unshaped rhyolite blocks that cover a 2.5 by 2 m area. Clear alignments are still visible on all sides except for the south. There is some rubble downslope to the north that could also be part of the south wall.

Twenty-seven ceramic and lithic artifacts were observed at the site. The 20 ceramics are primarily Biscuit B sherds (12), with some Biscuit A (3), unidentified biscuit (2), and non-micaceous plainwares (3). It is likely that many of the biscuit sherds are from the same vessel(s). The seven lithic artifacts consist of core flakes, angular debris, and biface flakes of Cerro Pedernal chert. Based on the presence of the biscuit and plainware sherds, the site dates to the Classic period.

LA 127683

LA 127683 (Q-219) is situated on a north-south trending ridge finger on the north side of Barrancas Canyon. It is heavily vegetated by piñon and juniper trees. The area slopes to the south at an angle of approximately 22 degrees.

The site consists of a one-room fieldhouse measuring approximately 1 by 1.5 m in area; although the recorders estimated that it might originally have been more like 2.5 by 2 m. The fieldhouse consists of six upright tuff and rhyolite rocks and additional scattered rubble.

The only artifacts found were located about 30 m downslope to the south. It is possible that these artifacts are not associated with the fieldhouse, but they were included in the recording. They consist of one Cerro Pedernal chert core flake and five large Biscuit B sherds. Two of these sherds are bowl rims, but the decoration indicates they may be from different vessels. Based on these sherds (assuming they are associated), this site likely dates to the Classic period.

LA 127684

LA 127684 (Q-220) is a rockshelter located at the base of a south-facing cliff. The site is situated at an elevation of 1997 m (6552 ft) in an area of piñon and juniper.

The rockshelter is about 15 m long and 3 m deep to the drip line. Bedrock is exposed in some areas of the shelter, but soil up to 50 cm deep is also present towards the front of the shelter. The interior deposits are dry and in good condition. There is some animal dung on the surface.

One hundred percent of the observed artifacts were analyzed infield. A chert core flake and a rhyolite core flake were present on the surface. A possible wood fire drill was collected. A possible slab-lined hearth is located at the western end of the shelter. It consists of several upright pieces of tuff that form a partial square about 40 cm across. Due to a lack of diagnostic artifacts, no cultural or temporal affiliation could be established.

LA 127685

LA 127685 (Q221) consists of a set of three petroglyphs located on the south-facing cliff overlooking Pueblo Canyon. It is situated at an elevation of 1983 m (6500 ft), just west of where Pueblo Canyon connects with Los Alamos Canyon. There is a steep talus slope located beneath the site with enormous boulders and scattered piñon and juniper trees.

The site consists of three petroglyphs on the cliff face. The glyphs are located about 4 to 5 m above the base of the cliff. Two of the glyphs are spirals with five to six concentric rings. The third glyph is partially exfoliated but includes part of a rectangular-shaped box. The three glyphs are situated within a 2 by 3 m area.

No artifacts were observed in the area of the petroglyphs. Because of this, this site could not be assigned to any temporal period beyond prehistoric Ancestral Pueblo.

LA 127686

LA 127686 (Q-222) consists of two adjacent cavates that are situated along a south-facing cliff face that overlooks Los Alamos Canyon and State Road 4. The talus slope is dotted with a few piñon and juniper trees. The site is situated at an elevation of 1967 m (6450 ft).

The two cavates are located immediately next to each other. Both are circular shaped with deteriorated interior walls. Cavate 1 measures about 2.82 m by 3.00 m with a maximum height of 1.70 m. There is no remaining plaster or smoke staining. The cavate contains about 15 cm of fill. Two wall niches are located at the rear of the cavate. One is situated about 30 cm above the floor and the other approximately 78 cm above the floor. The lower niche is 70 cm wide, 60 cm deep, and 68 cm high vs. the upper niche, which is 1.80 cm wide, 30 cm deep, and 68 cm high. There are about 10 unshaped tuff blocks present near the front of the cavate.

Cavate 2 measures 2.40 m by 1.90 m in size with a maximum height of 2.10 m. It also lacks any wall plaster or smoke blackening. Room fill is again about 15 cm in depth.

No artifacts were observed at the site, therefore, no specific temporal designation can be given to it. The cavates presumably represent a prehistoric Ancestral Pueblo occupation.

LA 127687

LA 127687 (Q-223) is situated at the base of the cliff on the north side of Bayo Canyon (facing south) at an elevation of 2377 m (6648 ft). The site is approximately one mile northeast of Otowi Pueblo. Little vegetation surrounds the site, although there is piñon and juniper in the vicinity. The site is located on the second mesa north of Bayo Canyon.

The site consists of a single cavate and an associated talus structure. The cavate has no observed internal features, with the talus room being no more than 2 to 3 m in length and width. The cavate and talus slope room together most likely represent the residence of a single family. The cavate's maximum dimensions are 1.5 m high by 1.75 m wide by 1.8 m deep. There are rocks stacked up in front of the cavate that were likely part of a retaining wall and were probably connected to the talus structure in front. A few juniper branches have fallen across the talus structure. There is a niche above and to the east of the cavate, measuring approximately 45 cm in diameter.

One hundred percent of all observed artifacts found at the site were analyzed infield. The only artifacts found were a small obsidian projectile point base along with one piece of Cerro Pedernal chert angular debris. Due to the paucity of diagnostic artifacts, temporal affiliation can only be assigned to a broad time frame. Based on this, the site would be considered an undetermined Ancestral Pueblo period.

LA 127688

LA 127688 (Q-224) consists of a rockshelter and three associated artifacts. LA 127688 is situated on top of a narrow east-west trending ridge that parallels Bayo Canyon. The site is on relatively flat ground that slopes slightly to the east. Vegetation on the ridge top consists of grama grass and a few small shrubs. Piñon and juniper trees grow on the slopes surrounding the site.

The rockshelter is roughly rectangular in shape, oriented generally northwest-southeast, and is constructed of unshaped tuff blocks. Rocks remain five to six courses high along the northeast wall and two to three courses high on the other three walls. Maximum standing height is approximately 1 m. The approximate interior dimensions of the rockshelter are 1.6 by 1.25 m, with a smaller enclosed area inside that is approximately 1 by 1 m.

There are three associated artifacts that are all located 10 to 20 m to the east of the rockshelter. The two pieces of chipped stone are a Cerro Pedernal chert biface flake and a basalt core flake. The third artifact is a possible piece of rhyolite fire cracked rock.

The cultural affiliation for this site is likely Ancestral Pueblo based on the presence of chipped stone and the construction style of the rock feature. However, there is the possibility of more recent Pueblo use of the site.

LA 127689

LA 127689 (Q-225) is a widely dispersed lithic scatter situated in a flat saddle located on the eastern end of a ridge top. The ridge is situated between Bayo and Barrancas Canyons. The site is at an elevation of 1942 m (6367 ft) in an area vegetated by a piñon-juniper woodland.

The site has two small clusters of artifacts that are separated by about 50 m from each other (east and west). There is a small outlying scatter of artifacts in a small drainage immediately north of the eastern cluster. An infield analysis was conducted on all observed artifacts. The analysis resulted in the documentation of 64 artifacts including 60 pieces of chipped stone debitage, three pieces of ground stone, and one Wiyo Black-on-white sherd. The lithics represent the complete range of debris that is produced during the manufacturing of chipped stone tools. The lithic debris consisted of 32 pieces of angular debris, eight core flakes, seven biface flakes, four pieces of microdebitage, and nine unidentified flake fragments. The majority of chipped stone artifacts are Cerro Pedernal chert (92%). Other chipped stone flakes were of Jemez obsidian and basalt. Observed ground stone included a quartzite mano fragment, an andesite metate fragment, and an unidentified ground piece of andesite. Based on the high percentage of Cerro Pedernal chert and early phase lithic reduction materials, and supported by the Wiyo Black-on-white sherd, this site is affiliated with the Ancestral Pueblo culture. Unfortunately there is not enough information from the surface artifacts to determine which period it was occupied.

LA 127690

LA 127690 (Q-226) is located on an east-west trending ridge that parallels Bayo Canyon. The site is situated on a relatively flat ridge top at an elevation of 1947 m (6388 ft). The slope is less than 2 degrees and the aspect is generally south. Piñon and juniper are numerous but not especially dense.

LA 127690 consists of a one-room structure with associated artifacts. The structure is roughly square in shape with an interior measurement of 1.6 by 1.6 m. It is constructed with unshaped tuff blocks. Although relatively low, all four wall alignments remain relatively intact, with an apparent opening/entrance on the east side. There is little surrounding rubble to suggest that the walls were high enough to roof.

An infield artifact analysis was conducted for all observed artifacts. The artifacts are in two locations: either dispersed around the structure or clustered in a blowout on the southern side of the site. The ceramics associated with the structure include two Biscuit A sherds, three Biscuit B sherds, and one unidentified biscuitware. The associated lithics were either core flakes or angular debris of Cerro Pedernal chert. In the southern cluster only one unidentified whiteware sherd was located. The rest of southern cluster artifacts were Cerro Pedernal chert flakes and smaller numbers of black translucent obsidian, basalt, rhyolite, and quartzite debitage. The southern scatter included biface thinning flakes and microdebitage as well. Based on the presence of the biscuitware sherds and the high percentage of Cerro Pedernal chert, this site dates to the Classic period.

LA 127691

LA 127691 (Q-227) is a small lithic scatter situated in a saddle of a southeast trending ridge finger. The ridge is situated between Bayo and Barrancas Canyons. It is located at an elevation of 1910 m (6268 ft) in a relatively open piñon-juniper woodland.

Artifacts are primarily Cerro Pedernal chert lithic debitage (73%). Core flakes (23%), biface flakes (11%), and angular debris (47%) are all present. The remainder of the Cerro Pedernal chert debris is microflakes or unidentified flakes. Smaller numbers of black translucent Jemez obsidian (22%) were also observed. Most of the obsidian debitage were unidentified flakes (65%), with core (21%) and biface flakes (14%) also present. A basalt flake, a rhyolite flake, and a chalcedony flake completed the assemblage. Based on the high percentage of Cerro Pedernal chert this small lithic scatter likely has an Ancestral Pueblo cultural affiliation, however, the period of utilization is unknown.

LA 127692

LA 127692 (Q-228) is situated on a low wedge of valley bottom formed between two Barrancas Canyon drainages. The canyon is vegetated by piñon, juniper, and ponderosa, and the site is at an elevation of 1995 m (6544 ft).

The site consists of an obsidian lithic scatter with two ceramic sherds. There are over 100 pieces of obsidian debitage, two obsidian bifaces, and one obsidian corner-notched projectile point. There are two ceramic sherds, one Santa Fe Black-on-white and one smeared-indentured corrugated. The vast majority of the obsidian is the translucent black Jemez variety (90+%) with Polvadera Peak (1% to 2%) and opaque brown Jemez obsidian (<1%) also present. One biface and the projectile point are of Polvadera Peak obsidian; the other biface is a translucent black Jemez obsidian.

Based on the corner-notched projectile point and high percentage of obsidian debris, this site is likely affiliated with the Late Archaic period. The two ceramics are thought to reflect the general ridge use during the Ancestral Pueblo period and are not associated with the Late Archaic lithic scatter.

LA 127693

LA 127693 (Q-229) consists of two separate staircases cut/worn into the steep rock outcrop/cliff. LA 127693 is situated on the top western end of the mesa situated between Bayo and Pueblo Canyons. It is at an elevation of 2143 m (7030 ft) in an area that supports a piñon-juniper woodland.

The stairs have been cut/worn into a cliff face between the mesa top and lower bench. The bench is dotted with piñon and juniper. The southern staircase consists of 10 steps leading up about 7 m. The northern staircase also consists of 10 steps leading up about 7 m and then about six worn steps on the remaining 2 m of bedrock to the top.

A few artifacts are present on the bench below the staircases. The ceramics consist of two Biscuit A and two Biscuit B sherds, one undetermined Historic Pueblo sherd, one undetermined white ware, one Wingate Black-on-red, and three corrugated utilitywares. Lithics consist of three Cerro Pedernal chert core flakes and one Cerro Pedernal chert core fragment. Based on the diagnostic ceramics, LA 127693 dates to the Ancestral Pueblo, Coalition and Classic periods.

LA 127694

LA 127694 (Q-230) consists of a rock feature located on top of an isolated mesa. There is a panoramic view in all directions from the location. A few piñon and juniper trees are present with several saltbush, mountain mahogany, and some grass. It is situated at an elevation of 2063 m (6769 ft).

As originally observed during the survey, the rock formation was composed of an oblong tuff block held upright by two rock slabs. The upright block is about 70 cm long and 20 cm wide. A rectangular tuff slab (55 by 25 cm) and a triangular slab (40 by 40 cm) were positioned to either side to hold the oblong block upright. Upon returning to record the site, the upright block had collapsed and now lays flat on the bedrock. Fairly fresh footprints were located in the immediate vicinity.

One rhyolite core flake is located about 5 m from the feature. The cultural and temporal affiliation is currently assessed as unknown. If the flake is associated with the feature, it suggests an Ancestral Pueblo cultural affiliation. Based on the location it is probably associated with San Ildefonso Pueblo or with local hikers/picnickers from the community of Los Alamos. Due to the relative unsteady nature of the feature's construction, it is very difficult to assume that the upright rock had been standing for an extended period of time. This is not to say that it has not been maintained in an upright position over an extended period of time. However, based on its construction, it is thought more likely that the upright rock feature is fairly recent, i.e., World War II to the present.

LA 127695

LA 127695 (Q-231) consists of a modified tuff rock formation and an artifact scatter. It is located on an isolated mesa top at an elevation of 1995 m (6544 ft). There is a panoramic view in all directions from this location. Isolated piñon, juniper, and yucca dot the mesa top.

The site consists of two tuff blocks with a large rectangular (50 by 70 cm) tabular piece of tuff laid across the top. It creates a small tablelike feature and/or shelter area that is about 25 cm high, 30 cm wide, and 50 cm deep.

A few artifacts were present in a 10 by 10 m area around the rock formation. A 100% infield analysis was conducted on all visible surface artifacts. The analysis resulted in the documentation of one Santa Fe Black-on-white sherd, 11 pieces of debitage, one Jemez obsidian dart projectile point fragment, and one vesicular basalt mano fragment. The debitage was mostly Cerro Pedernal chert core flakes with a rhyolite and two Jemez obsidian core flakes also noted.

Based on the one Santa Fe Black-on-white sherd and the Cerro Pedernal chert, it appears that the site was utilized during the Ancestral Pueblo, Coalition period. The projectile point, that was classified as a dart point based on its size, is too fragmentary to be diagnostic. As a dart point it likely dates to the Archaic period, however, as it is very fragmentary and could have been curated, it has not been used to designate a separate cultural affiliation.

The cultural and temporal affiliation of the rock feature is unknown. Although the artifacts are situated around the feature, it is not clear whether they are associated or possibly deposited before its construction. Based on the relative unsteady nature of the feature's construction, it is very difficult to assume that it has been standing since the Coalition period (AD 1200 to AD 1325). This is not to say that it has not been maintained since this period. However, based on its construction, it is thought more likely that this tablelike rock feature is fairly recent, i.e., World War II to the present.

LA 127696

LA 127696 (Q-232) is a single feature site with associated artifacts. The site is located on a low east-west trending bench approximately 5 m above the south side of Bayo Canyon. It is in an area of piñon-juniper woodland at an elevation of 1920 m (6299 ft).

LA 127696 is an isolated room that is likely a fieldhouse. It is rectangular, measuring approximately 2 by 2.5 m in area, and is constructed of unshaped tuff blocks. The alignments are still clearly visible although the room lies beneath two piñon trees.

An infield artifact analysis was conducted on all associated artifacts. This analysis resulted in the documentation of 17 ceramics, eight pieces of chipped stone, and two pieces of ground stone. Associated ceramics consisted of smeared-indented (10) and obliterated corrugated (3) utilitywares, as well as Santa Fe Black-on-white (3) and a Biscuit B sherd. Lithic artifacts include Cerro Pedernal chert (unidentified flakes, angular debris, one core flake), two rhyolite flakes, one quartzite flake, and one piece of basalt angular debris. The two pieces of observed ground stone included a quartzite mano fragment and a quartzite metate fragment. Based on the percentages of associated ceramics, this site likely dates to the Coalition period.

LA 127697

LA 127697 (Q-233) contains one or more masonry structures that are situated on a northeast trending ridge finger. The ridge finger is located along the south side of Bayo Canyon. Angular igneous rubble and small boulders blanket the site thinly leaving fair surface visibility. The structure(s) are slightly obstructed by vegetation while the thin blanket of rubble makes the alignments less distinct. The site is situated at an elevation of 2007 m (6253 ft) in an area containing piñon and juniper.

A one-room structure is constructed from unshaped igneous rocks ranging in size from 10 to 90 cm. The structure is fairly square measuring approximately 3 by 3 m. Another set of fairly linear rock alignments may form the outline of a second structure located about 6 m to the south. Based on the partial alignments, a structure would have been approximately 4 by 4 m in size. A

five-rock alignment running north from the northwest corner of the potential structure may be remnants of an alignment that originally connected the two features.

The artifact assemblage consists of one smeared-indented, one plainware, and two Santa Fe Black-on-white sherds. Lithics consists of four Cerro Pedernal chert angular debris, core flakes of Jemez obsidian (1), and Cerro Pedernal chert (3). One Cerro Pedernal chert bipolar flake concludes the lithic assemblage. One quartzite mano fragment and one quartzite two-handed mano were also observed. The Santa Fe Black-on-white sherd is characteristic of the Ancestral Pueblo, Coalition period.

LA 127698

LA 127698 (Q-234) is a lithic situated on a ridge finger that formed along the south side of Barrancas Canyon. It is vegetated by piñon-juniper woodland and sits at an elevation of 1920 m (6299 ft).

LA 127698 consists of a dispersed lithic scatter with one Biscuit A sherd. The lithics are dominated by Cerro Pedernal chert core flakes (15), with thinning flakes (5), angular debris (3), flake fragments (2), and a core also present. Other lithic debris includes two core flakes and a thinning flake of translucent black Jemez obsidian, a rhyolite core flake, one core flake, and three thinning flakes of brown chert, and three core flakes of red chert. The brown and red cherts are not common on the Pajarito Plateau.

This site is Ancestral Pueblo, and may date to the Classic period based on the presence of the Biscuit A sherd and the high percentage of Cerro Pedernal chert.

LA 127699

LA 127699 (Q-235) is the Camp Hamilton Trail. The trail is situated near the east end of the mesa top that forms the south side of Pueblo Canyon. It travels north into Pueblo Canyon, crosses the drainage, and heads towards the Los Alamos County Sewage Treatment Plant. The mesa tops and slopes are vegetated by a piñon-juniper woodland, while the portions of the trail in the canyon bottom is vegetated by piñon, juniper, and ponderosa pine. The trail's elevation ranges between 1993 to 2103 m (6540 to 6900 ft).

The Camp Hamilton Trail is 1518 m (4983 ft) long and has a 1.2 m average width. In places it has been cut through solid tuff and/or supported with stacked tuff rocks. The boys of the Los Alamos Ranch School (1923 to 1943) constructed it as an equestrian trail. This trail is one of a series of trails built by the boys for recreational and academic purposes. The trail runs from "Camp Hamilton" (LA 86532) to the top of the mesa that forms the south side of Pueblo Canyon. Camp Hamilton, a log 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. Upon renovation, the cabin was used as a base for Los Alamos Ranch School outings. These outings, which were frequently conducted during the winter months, continued for two decades (Hoard 1981:47).

No artifacts were found to be directly associated with the trail. However, artifacts associated with prehistoric sites, i.e., LA 127649 a Coalition period pueblo roomblock, situated in close proximity to the trail, are present. Also historic artifacts associated with Camp Hamilton are located in vicinity of the trail. Temporal affiliation of LA 127699 dates to the New Mexico Statehood period based on historical documentation.

LA 127700

LA 127700 (Q240) consists of a one-room fieldhouse constructed of rhyolite blocks. The site is situated on a north-south trending ridge along the north side of Barrancas Canyon. It is at an elevation of 2007 m (6585 ft) in an area of heavy piñon-juniper woodland with a few ponderosas mixed in. The slope is gentle (six degrees) and is generally towards the north. Pine duff covers much of the fieldhouse itself, although visibility on the rest of the site is good.

Alignments are still clearly visible on all four sides. Some rubble that is likely wall fall has been redeposited downslope to the north and east. Dimensions of the room are approximately 3 by 3 m.

Only two artifacts were located at this site: one redware or glazeware sherd and one Cerro Pedernal chert core flake. The sherd's condition was too poor to make a better assessment. (Erosion may have carried more away, although they were not found on the nearby slope.) LA 127700 is not assigned a temporal period based on an insufficient artifact assemblage. Therefore, no date of occupation can be determined for this site of Ancestral Pueblo origin.

LA 127701

LA 127701 (Q-241) is a petroglyph site that is situated at the base of the talus slope on the south side of Barrancas Canyon. The site is at an elevation of 2042 m (6700 ft) in an area that is heavily vegetated with piñon and juniper. Slightly downslope, ponderosa pine begins to blend in with the piñon and juniper. Pine duff and short grasses mostly obscure the ground surface. There is a fallen piñon tree trunk in the front of the boulder.

The site contains two petroglyphs that are located on a north-facing boulder. Both petroglyphs are spiral/concentric circles. They measure 40 cm and 25 cm in diameter. They have been highly eroded by wind and rain but are still visible.

No artifacts are associated with the site. The site is Ancestral Pueblo, but more definite temporal affiliations cannot be made.

LA 127702

LA 127702 (Q242) is a rockshelter located at a canyon head tributary to Barrancas Canyon. The site is situated at an elevation of 2105 m (6900 ft) in an area dotted with piñon and juniper trees. The shelter faces south, and is bounded by large boulders with thick shrubs, saltbush, and grasses.

The rockshelter is about 15 m long and 3 m deep. Natural rock fall in front of the shelter has been used to construct five dry-laid masonry walls that linked to large boulders in front of the shelter. Together they provide a series of four enclosures, or pens, that could be used to contain animals. A hearth is located within the shelter. It consists of some burned rock with charcoal stained soil within a 50 cm diameter area. Animal dung is also present within the shelter. Outside the shelter and to the immediate east of the corrals is a hollowed out tuff block that could have been used as a water trough. The site probably represents a set of corrals that could have been used by Hispanic shepherders during the early 1900s.

A single micaceous plainware sherd and two Santa Fe Black-on-white sherds were observed in the area of the shelter; however, these presumably are isolated artifacts not associated with the historic use of the rockshelter.

LA 127703

LA 127703 (Q-243) is an artifact scatter located on the north side of Bayo Canyon. It is situated on a gentle slope at the base of the talus. No cavates are present in the cliffs above the site. The site is in a colluvial environment, and likely has been partially buried. It is in an open area that is surrounded by piñon and juniper trees.

Lithic debitage forms the majority of the artifacts associated with the site. Most of the debitage are angular debris and flakes of Cerro Pedernal chert (66%). A variety of obsidians (black translucent, black opaque, Polvadera Peak, brown) are also present (25%). Also noted were two basalt flakes and one quartz flake. Lithic tools included two projectile point fragments (one large black translucent obsidian point tip with serrations and one small basalt side-notched point base) and the midsection of a black translucent obsidian biface. Ground stone tools included a schist basin metate, a rhyolite basin metate, and a rhyolite one-hand mano. The site also contained one Biscuit A sherd. The historic artifacts are rusted evaporated milk cans (AD 1940 to 1950). It is likely that subsurface features are present at the base of the talus slope.

Based on the artifacts the site has two components. The side-notched projectile point and the basin metates indicate Middle to Late Archaic period affiliation. The high percentage of Cerro Pedernal chert and the Biscuit A sherd indicate an Ancestral Pueblo affiliation. The Biscuit A sherd tenuously suggests that the Ancestral Pueblo site utilization occurred during the Ancestral Pueblo, Classic period.

ISOLATED OCCURRENCES

One hundred twenty-seven IOs were documented from the areas specifically surveyed for this undertaking. Not all items that could be classified as IOs were recorded during the survey portion of this project. In areas at LANL where the site density is extremely high there tends to be a light scatter of artifacts throughout the non-site areas. This is primarily the case for the White Rock Y Tract and the southwest portion of TA-74 in the vicinity of LA 32 (Little Otowi) and LA 69 (Otowi). In these areas the density of non-site artifacts was so high that it became unrealistic to try to record them all, thus they were treated as background noise and not individually documented. On the other hand, in areas such as the remaining portion of TA-74, the IO artifact density was appreciably lower. In tract areas such as this, IOs were fully documented.

The documented IOs are from three of the tracts: Rendija ($n = 2$), White Rock Y ($n = 12$), and TA-74 ($n = 113$). Two Santa Fe Black-on-white sherds were located in the southwestern portion of the Rendija Canyon Tract (Table 7.12). This number of IOs seems significantly low when compared with the fairly high site density from within the tract. However, the number of IOs appears to be related to ground visibility rather than to a lack of past land use. A very high percentage of the 300 ac specifically surveyed for this project has extremely low ground visibility due to a thick overlying cover of pine duff.

As noted above, there are numerous cultural resource sites located within and close to the White Rock Y Tract. Therefore it is not surprising that there is a very high corresponding number of non-site artifacts. As such the vast majority of non-site artifacts were treated as background noise and not documented. The majority of the 12 documented IOs were formal or uniquely diagnostic artifacts. Also noted were groups of three or more sherds from the same vessel that may represent the remains of a pot drop. And lastly, due to the area's isolation, two IOs were documented on the narrow mesa located directly south of State Road 520. The formal tools include two projectile point fragments, one metate fragment, three mano fragments, and one axe.

As previously noted 113 IOs were documented from the northern and southeastern portion of TA-74. The site density is much lower in these areas than what is located in the southwest portion of the track. Therefore the documentation of non-site artifacts (IOs) was viewed as having potential for adding to our understanding of the land and resource use in these areas. The IOs indicate that this portion of TA-74 has been utilized from the Archaic period through to the first half of this century.

Prehistorically, the three dart points and the one dart point fragment indicate that Archaic period populations did utilize the TA-74 area, however, the vast majority of IOs suggest that the area was primarily utilized by Ancestral Pueblo populations. Coalition period use of the area is indicated by 17 Santa Fe Black-on-white sherds observed from nine different locations and a Santa Fe Black-on-white pot drop containing approximately 30 sherds. Classic period area utilization is indicated by 20 biscuitware sherds and a Biscuit B pot drop, two Sankawi Black-on-cream sherds, and two Potsuwi'i Incised sherds. The biscuitware ceramics include six Biscuit A

Table 7.12. Isolated Occurrences

Tract	IO #	Description
Rendija	1	Santa Fe Black-on-white sherd
Rendija	2	Santa Fe Black-on-white sherd
WRY	1	Polvadera Peak obsidian, corner-notched, arrow point base
WRY	2	Whole full-grooved unknown metamorphic axe
WRY	3	Undetermined Jemez obsidian projectile point base fragment
WRY	4	Basalt metate fragment
WRY	5	Indented corrugated and plain utilityware jar drop
WRY	6	Rhyolite mano fragment
WRY	7	St. Johns bowl sherd
WRY	8	Three Biscuit A sherds
WRY	9	Quartzite cobble mano fragment
WRY	10	Unknown igneous bifacial mano fragment
WRY	11	Cerro Pedernal chert angular debris with retouch on edge Translucent black Jemez obsidian angular debris
WRY	12	Four Biscuit A bowl sherds
TA-74	1	Jemez obsidian, stemmed, Late Archaic, dart point
TA-74	2	Polvadera Peak obsidian corner-notched arrow point base
TA-74	3	Jemez obsidian, stemmed, dart point (possibly San Jose)
TA-74	4	Polvadera Peak obsidian, corner-notched, Late Archaic dart point
TA-74	5	Red chert side-notched arrow point Proximal, Cerro Pedernal chert core flake Two complete Cerro Pedernal chert core flakes Distal Cerro Pedernal chert core flake Six Santa Fe Black-on-white bowl sherds
TA-74	(25 by 12 m area on bedrock saddle)	
TA-74	6	Corncob
TA-74	7	Opaque brown obsidian biface
TA-74	8	Two Sankawi Black-on-cream sherds One obliterated utilityware sherd
TA-74	9	One Santa Fe Black-on-white sherd
TA-74	10	Complete translucent brown obsidian biface thinning flake
TA-74	11	Translucent black obsidian dart point midsection
TA-74	12	Complete translucent black obsidian core flake
TA-74	13	Distal translucent black obsidian core flake
TA-74	14	Distal Cerro Pedernal chert core flake
TA-74	15	Distal translucent black obsidian core flake
TA-74	16	Translucent black obsidian projectile point tip
TA-74	17	Three distal translucent black obsidian core flakes Two proximal translucent black obsidian core flakes One complete translucent black obsidian core flake One distal translucent black obsidian biface thinning flake
TA-74	(5 by 8 m area)	
TA-74	18	Three unidentified historic Pueblo era ceramic sherds
TA-74	19	Distal translucent black obsidian core flake
TA-74	20	Translucent black obsidian biface fragment
TA-74	21	Biscuit C rim sherd
TA-74	22	Complete Polvadera Peak obsidian core flake
TA-74	23	Two unidentified historic Pueblo era ceramic sherds
TA-74	24	Complete white chalcedony core flake
TA-74	25	Proximal white chalcedony core flake
TA-74	26	Two complete Cerro Pedernal chert core flakes Proximal Cerro Pedernal chert core flake Proximal translucent black obsidian core flake
TA-74	(12 by 20 m area)	

Table 7.12. (Con't.)

Tract	IO #	Description
TA-74	27	One translucent black obsidian biface fragment
TA-74	28	Distal Cerro Pedernal chert core flake
TA-74	29	Complete Cerro Pedernal chert core flake
TA-74	30	Proximal/lateral Cerro Pedernal chert core flake
TA-74	31 (6 by 20 m area)	Four Biscuit B sherds
		Medial Cerro Pedernal chert core flake
		Distal Cerro Pedernal chert core flake
TA-74	32	Cerro Pedernal chert bidirectional core
TA-74	33	Cerro Pedernal chert multidirectional core
TA-74	34	Cerro Pedernal chert biface midsection (possibly heat treated)
		Seven Cerro Pedernal chert core flakes
		Translucent black obsidian core flake
TA-74	35	Translucent brown obsidian biface mid section
TA-74	36 (15 m dia area at base of knoll)	Translucent black obsidian core flake
		Rhyolite core flake
		Rhyolite cobble biface
		Black chalcedony core flake
TA-74	37	Four Santa Fe Black-on-white sherds
		Two obliterated utilityware sherds
TA-74	38	Santa Fe Black-on-white bowl sherd
TA-74	39	Smoky black chalcedony core flake
TA-74	40	Biscuit rim sherd
TA-74	41	Two Potsuwi'i Incised sherds (fit together)
TA-74	42	Biscuit A sherd
TA-74	43	Chert core flake
TA-74	44	Distal Cerro Pedernal chert core flake
		Complete Cerro Pedernal chert core flake
		Complete translucent black obsidian core flake
		Santa Fe Black-on-white bowl sherd
TA-74	45	Distal Cerro Pedernal chert core flake
TA-74	46	Biscuit B bowl sherd
TA-74	47	Two plain micaceous utilityware sherds
TA-74	48	Complete Cerro Pedernal chert core flake
TA-74	49	Cerro Pedernal chert bidirectional core
TA-74	50	Distal Cerro Pedernal chert core flake
TA-74	51	Medial/lateral Cerro Pedernal chert core flake
TA-74	52 (8 by 8 m area on sand bar in drainage)	Two complete Cerro Pedernal chert core flakes
		Medial translucent black obsidian core flake (minor edge retouch)
		Distal cloudy gray obsidian core flake
		Distal opaque black obsidian biface thinning flake
		Proximal beige chert core flake
TA-74	53	Two complete Cerro Pedernal chert core flakes
TA-74	54	Santa Fe Black-on-white sherd
TA-74	55	Two smeared-indent utilityware sherds
TA-74	56	Smeared-indent utilityware sherd
TA-74	57	Distal translucent black obsidian core flake
TA-74	58	Biscuit A bowl sherd
		Distal Cerro Pedernal chert core flake
TA-74	59	Complete white and black quartzite core flake
TA-74	60	Santa Fe Black-on-white sherd
TA-74	61	Complete Cerro Pedernal chert core flake

Table 7.12. (Con't.)

Tract	IO #	Description
TA-74	62	Complete Cerro Pedernal chert core flake
TA-74	63	Cerro Pedernal chert angular debris
TA-74	64	Quartzite core flake
TA-74	65	Basalt mano fragment
TA-74	66	White to light brown quartzite mano fragment
		Proximal Cerro Pedernal chert core flake
TA-74	67	Quartzite cobble mano/hammerstone fragment
TA-74	68	Twelve micaceous plain utilityware sherds (pot drop)
TA-74	69	Plain utilityware sherd
TA-74	70	Santa Fe Black-on-white sherd
TA-74	71	Red and gray quartzite cobble biface
TA-74	72	Gray to light brown quartzite cobble biface
TA-74	73	Distal Cerro Pedernal chert core flake
TA-74	74	Complete Cerro Pedernal chert core flake
TA-74	75	Cerro Pedernal chert angular debris
		Proximal Cerro Pedernal chert core flake
TA-74	76	Complete basalt core flake
TA-74	77	Gray rhyolite core flake
TA-74	78	Complete Cerro Pedernal chert core flake
TA-74	79	Basalt cobble biface fragment
		Distal Cerro Pedernal chert core flake
		Complete Cerro Pedernal chert core flake
		Medial Cerro Pedernal chert core flake
TA-74	80	Biscuit B pot drop (about 75 pieces in 5 m diameter area)
TA-74	81	Biscuitware sherd
TA-74	82	Biscuit bowl sherd
		Indented corrugated utilityware sherd
TA-74	83	Plain utilityware sherd
TA-74	84	Six smeared-indented corrugated utilityware sherds
TA-74	85	Biscuit A bowl sherd
TA-74	86	Proximal Cerro Pedernal chert core flake
TA-74	87	Rectangular meat tin "Uruguay Inspeccionado Aprobado"
	(10 by 20 m area; several axe cut trees in vicinity)	Three 2.5 in. diameter evaporated milk can
		Sanitary seal can with "811" on bottom
		Two can opener opened sanitary seal cans
TA-74	88	Polvadera Peak obsidian biface
TA-74	89	Distal Cerro Pedernal chert core flake
TA-74	90	Sardine can "Red Box 8"
TA-74	91	Biscuit B or C bowl sherd
TA-74	92	Complete Cerro Pedernal chert core flake
TA-74	93	Biscuit A bowl sherd
TA-74	94	Two indented corrugated utilityware sherds
		Santa Fe Black-on-white bowl sherd
TA-74	95	Biscuit A bowl sherd
TA-74	96	Biscuit B or C bowl sherd
TA-74	97	Biscuitware bowl rim sherd
TA-74	98	Proximal translucent black obsidian core flake
TA-74	99	Santa Fe Black-on-white pot drop (about 30 sherds)
TA-74	100	Complete Cerro Pedernal chert core flake

Table 7.12. (Con't.)

Tract	IO #	Description
TA-74	101	Cerro Pedernal chert early phase biface
		Complete Cerro Pedernal chert core flake
		Cerro Pedernal chert biface tip
TA-74	102	Two Biscuit B sherds
TA-74	103	Complete basalt core flake
		Translucent black obsidian biface midsection
TA-74	104	Proximal basalt core flake
		Proximal chalcedony core flake
		Basalt biface base fragment
		Translucent black obsidian biface midsection
TA-74	105	Complete gray chert core flake
		Complete Cerro Pedernal chert core flake
		Distal Cerro Pedernal chert core flake
TA-74	106	Medial Cerro Pedernal chert core flake
TA-74	107	Distal Cerro Pedernal chert core flake
TA-74	108	Biscuit A bowl sherd
TA-74	109	Distal white chalcedony core flake
TA-74	110	Quartzite bidirectional core
TA-74	111	Metal bucket
TA-74	112	Complete Cerro Pedernal chert core flake
TA-74	113 (20 by 10 m area)	Two sanitary seal cans with snap on lid
		Can opener opened sanitary seal can
		Small evaporated milk can

sherds from six different locations, seven Biscuit B sherds from three locations, two Biscuit B or C sherds from two locations, one Biscuit C sherd, and four unidentified biscuitware sherds from four locations. Historic Pueblo use of the area is also indicated by five unidentified historic Pueblo ceramic sherds documented from two locations. These ceramics along with the 19 utilityware sherds from 11 locations and a plain micaceous utilityware pot drop suggest that resource collecting and transporting was one of the activities that was conducted in the more remote portions of TA-74.

The vast majority of the lithic debitage is in the form of core flakes (92%) that suggests a general core reduction technology that frequently involves the production of expedient informal tools that are discarded after use. This is in contrast to a more formal tool development (biface production technology) and use strategy. A biface production technology is indicated by a high percentage of biface thinning flakes and facially flaked tools. Biface production is generally geared to the manufacture of formal functionally specific tools that are curated and reused until worn out. The fairly large number of expedient flakes could have been used to aid in processing game procured during hunting activities and/or to harvest vegetal materials.

Cerro Pedernal chert (60%) and obsidian (29%) artifacts dominate the lithic debitage documented as IOs. Other lithic debitage materials also include minor amounts of chalcedonies, cherts, quartzites, basalts, and rhyolites. The vast majority of these lithic materials would have been available locally from within area drainage gravels. As such they could have been expediently acquired for use in tool manufacturing.

Three Cerro Pedernal chert cores and one quartzite core that had cortical and/or simple single faceted platforms tend to support the assumption that flakes were expediently detached for use as tools. Also potentially utilized as cores were a rhyolite, two quartzite, and one basalt cobble bifaces. As tools these cobble bifaces could also have been utilized for chopping (harvesting) larger vegetative materials, for digging into the soft tuff as may be the case for cavate construction, or shaping tuff into blocks for structure construction.

Several formal tools or tool fragments were documented from the IO monitored area. They include three dart points, two arrow points, and eight projectile point fragments. These points or point fragments indicate that hunting was conducted within TA-74 during prehistoric times. Also documented as IOs were a basalt mano fragment and two quartzite mano fragments. These mano fragments suggest that some processing of vegetal materials occurred in the TA-74 area. Other evidence of formal tool manufacture and or use is indicated by five early stage bifaces or unidentified biface fragments.

Four locales containing historic metal artifacts were documented. Three of these contained cans and one was a rusted metal bucket. The can artifacts that included sanitary seal cans, evaporated milk cans, and a sardine can indicate that resources in the more remote areas within TA-74 were utilized during the early to mid 1900s. A few other locations with nondescript sanitary seal cans that were not documented support this supposition. Based on the label, one of the sanitary seal cans originated in Uruguay ("Uruguay, Inspeccionado Aprobado") which could be important for documenting the origins of supplies that were brought in to support the local economy. Based on a large number of axe cut stumps, especially in the lower portion of Bayo Canyon, it is speculated that wood fuel harvesting was a major activity conducted within the area during the early to mid parts of the century.

None of the IOs are considered eligible to the NRHP.

Chapter 8

SITE DISTRIBUTION

W. Bruce Masse and Bradley J. Vierra

INTRODUCTION

Approximately 1942 ha (4796 ac) were surveyed or reviewed during the course of the LCT, resulting in the identification and recording of 213 archaeological sites. This effort was intensive and 100% in coverage, and resulted in detailed information from several large, widely dispersed survey blocks (that is, individual LCT tracts). The resulting LCT data thus provide an excellent opportunity to investigate aspects of how these archaeological sites are distributed across the landscape through time and space.

In this chapter, the LCT data are used to address a set of 25 of the 32 questions presented in Chapter 5. Questions 7, 22, 23, 24, 25, and 26 are treated separately in Chapter 9. Question 18 is treated in both chapters. In addressing these questions, an attempt will be made to compare the LCT data with the results from other major studies in the region. These include the detailed study of cavates in Bandelier National Monument (Toll 1995), the UCLA PARP (Hill et al. 1996), and the Bandelier Archaeological Survey Project (Powers and Orcutt 1999).

It is noted that for the purposes of this chapter, the large Coalition period site of LA 394 was treated as a single large pueblo containing four connected roomblocks, rather than as four separate pueblo sites, each with a single roomblock. This differs from the following material culture analysis chapter (Chapter 9), in which each roomblock is treated separately in the attempt to identify temporal or functional differences between roomblocks.

PALEOINDIAN LAND USE ON THE PLATEAU

Question 1: Is there any evidence of a Paleoindian presence within the project area?

A Paleoindian presence is not clearly evident within the LCT area, or elsewhere on LANL property based on work conducted to date. However, given the proximity of Polvadera Peak as a Paleoindian lithic source area, and given the recovery of a possible Midland or Plainview basal point fragment from the testing of LA 61041 in White Rock Y (Wiseman 1992: 45, 65, Fig. 161), it is reasonable to assume that some limited utilization of LANL lands occurred during Paleoindian times, including within the project area.

Work conducted in Bandelier National Monument (Powers and Orcutt 1998) indicates a similar paucity of definable Paleoindian materials.

Question 2: If present, is the Paleoindian presence limited to an isolated point, or is there evidence of a temporary campsite?

As noted above, a single possible Paleoindian projectile point was recovered during test excavations in White Rock Y. However, the tests failed to yield evidence of diagnostic associated Paleoindian materials or features. The presumption by the excavator of LA 61041 is that other than the point itself, the remainder of the materials date to the Archaic and Puebloan periods (Wiseman 1992).

Only one of the lithic scatters identified during the LCT was unidentified as to time period, the remainder being either clearly Archaic or Puebloan in date. This small chronologically unplaced scatter (LA 127671) in the TA-74 Tract contained a small side-notched arrow or dart point and flake material types that suggest a Late Archaic or Puebloan date for the site.

Except for the unlikely possibility that one or more buried Paleoindian sites are present in the alluvial fill of the major canyons, it is extremely doubtful that Paleoindian campsites are present on LANL property, including the project area.

ARCHAIC LAND USE ON THE PLATEAU

Question 3: Do Late Archaic sites dominate the Archaic archaeological record of the project area?

Yes. As can be seen in Figure 8.1, there is a significant jump in the numbers and sizes of Archaic sites between those that appear to date to the early and middle portions of the Archaic period and those appearing to date to the Late Archaic. Clearly the largest sites and those with the greatest artifact density are Late Archaic. It is noted that “large” sites in Figure 8.1 are defined as those sites exceeding 10,000 m² in areal extent. The largest of the small sites is under 6000 m², so there is a clear dichotomy in the two sets of sizes. It is cautioned that there is a considerable range of artifact densities for both Archaic site size categories, with at least one of the large sites (LA 127638) having particularly low densities of artifacts.

Five of the 16 Archaic sites (31%) could not be precisely dated given the lack of diagnostic formal tools and projectile points; however, all but one were small and lacked the artifact densities of the better dated sites. It is not anticipated that better dating of these five sites would substantively alter the trends noted above.

Figure 8.1 also depicts a series of three hypothesized Archaic “camp zones.” These were defined by Beverly Larson based on archaeological survey conducted at LANL before 1998. The hypothesized zones reflect a variety of topographic and ecological factors, but can be grossly categorized as follows. The first zone is immediately adjacent to the Rio Grande; the middle zone is situated slightly lower than the transitions from the piñon-juniper woodland to the ponderosa pine forest; and the third zone is in the ponderosa pine forest at the base of the Jemez Mountains. The vast majority of LCT sites are in the hypothesized middle zone.

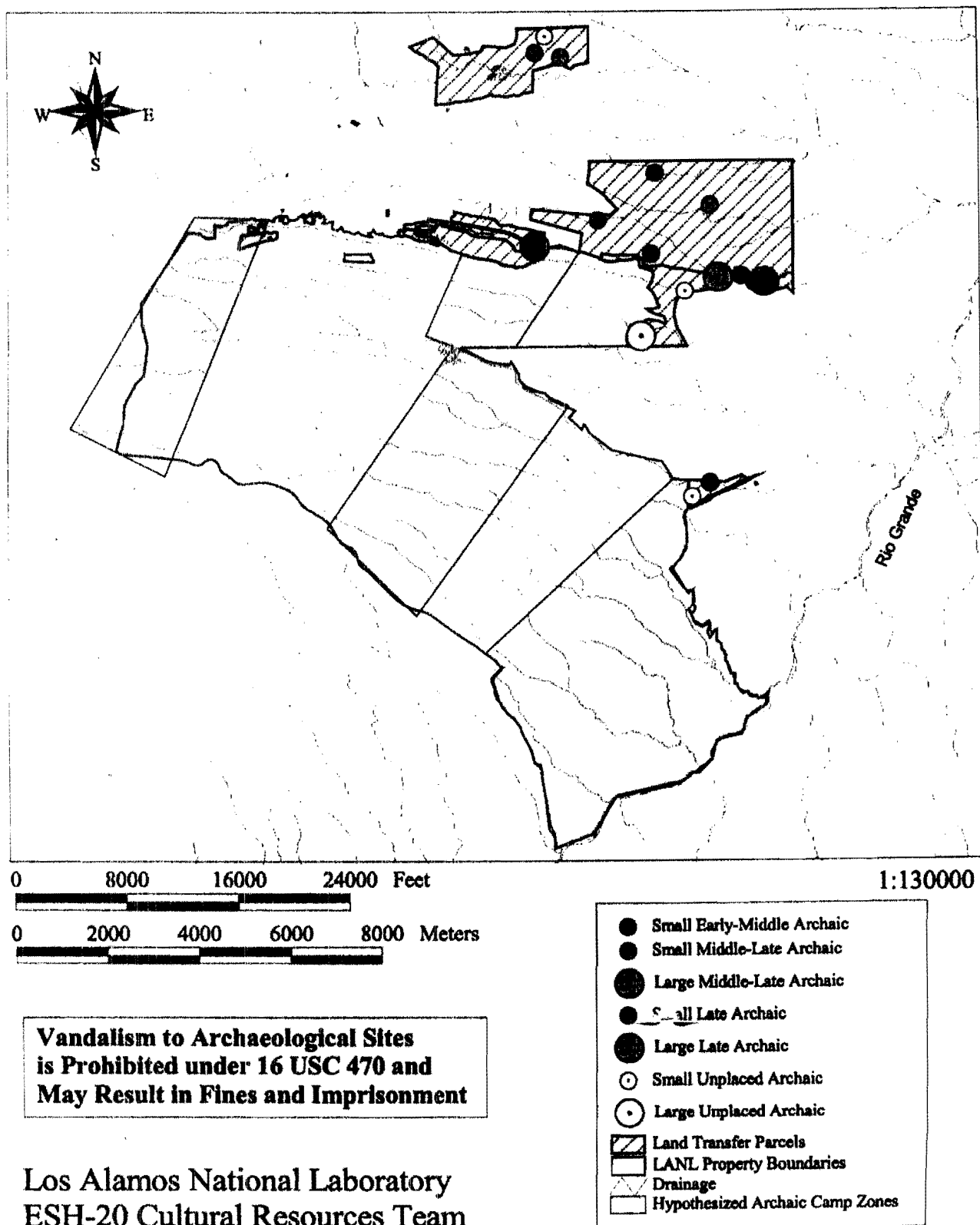


Figure 8.1. Archaic Period Site Distribution.

Question 4: Are most of the Archaic sites situated in the piñon-juniper zone?

Yes. A total of 75% of the Archaic sites are located in the piñon-juniper zone, including two of the four largest sites. Three sites (19%), including the two remaining large Archaic sites, while technically classified as being situated on “bare ground,” are in fact largely surrounded by piñon-juniper vegetation. Only one Archaic site (LA 85859) is located in the ponderosa pine forest. It is of interest to note that the latter site seemingly represents the earliest Archaic site identified in the project area (Peterson and Nightengale 1993), possibly occupied at a time during the Middle Archaic period when environmental conditions were somewhat warmer and drier than at present.

Question 5: Is there any evidence for hearths that could potentially yield information on dating, subsistence, and season of occupation?

Possibly, based on indirect evidence only. None of the 16 Archaic sites in the project area revealed definable hearths, although the presence of moderate density artifact clusters at several of the sites, including occasional pieces of ground stone, indicate at least some potential for hearths and other activity features. These include LA 85859 and possibly LA 99397 in the Rendija Tract; possibly LA 86533 in the Airport Tract; LA 127703 in the TA-74 Tract; LA 61038 in the White Rock Y Tract; and LA 86637 and LA 12587 in the White Rock Tract.

Question 6: Is there any possible evidence for the presence of habitation structures?

No. None of the Archaic sites exhibited the high artifact densities and the range of material types that would typically signify the presence of a seasonal habitation pit structure. However, while it is very unlikely such habitation structures are in the project area, we cannot rule out the presence of ramadas and other types of temporary shelters.

Question 8: What is the likelihood that currently undocumented substantive Archaic sites are present in the alluvial fills of LCT canyons?

Moderate likelihood. This assessment is based on the presence of a large, buried valley bottom Archaic site in Mortandad Canyon (LA 70023) that was only visible in a road cut (Knight et al. 2000), and on the geomorphic similarity of alluvial canyon bottom deposits in several of the project tracts. Those canyons in the project area with seemingly the greatest potential for such buried Archaic remains include Pueblo Canyon and Bayo Canyon in the TA-74 Tract, Cañada del Buey in the White Rock Tract, and Los Alamos Canyon in the White Rock Y Tract.

ANCESTRAL PUEBLO LAND USE ON THE PLATEAU

Question 9: Is there any evidence for Developmental period sites in the project area, and if so, what does this evidence consist of?

Very little. One of the most intriguing aspects of the cultural history of the Pajarito Plateau is the general lack of evidence for utilization of the Plateau during the Developmental period (AD 600–1150/1200). Not only is there an absence of habitation sites, but there is virtually no indication

whatsoever of even Developmental limited use activity areas in the project area, and throughout LANL in general. Bandelier National Monument exhibits a similar pattern (Powers and Orcutt 1999).

The identification of Developmental period archaeological manifestations is primarily dependent upon the presence of certain ceramic types, no examples of which were identified in the project area. It would be anticipated that had there been any sort of sustained use of the project area during the Developmental period, such as for seasonal plant gathering, at least a few sherds from this time period would have been encountered and identified. The absence of such sherds suggests minimal use of the project area during the Developmental period. However, such an assessment does not preclude the possibility of a few small buried sites dating to this period, or the possibility that a few of the encountered isolated projectile points are of this time period.

In this regard it is noted that LA 85406 in Rendija Canyon yielded charcoal during test excavations (Peterson and Nightengale 1993) that was radiocarbon dated at 1040 $\pm$ 60 BP (Lawrence Livermore Laboratories CAM #4844). The calibrated 2 sigma date range for this specimen is AD 886–1075 (relative area under distribution = 0.849) or AD 1077–1159 (relative area under distribution = 0.151). [These data were obtained from the internet beta test Radiocarbon Calibration Program Rev. 4.2, developed and maintained by the University of Washington Quaternary Isotope Laboratory.] The conclusion reached is that the dated charcoal is quite unlikely to have been created more recently than AD 1160, and that the sample most likely dates to within approximately 75 years of AD 1000. Such dating would place the sample into the late stages of the Developmental period.

However, there are several caveats about the radiocarbon sample and its original context. LA 85406 is a cobble structure of one or two rooms at the northeast corner of the top of a prominent isolated hill. A couple of pieces of obsidian were the only artifacts recovered from the site, but the unshaped nature of the cobbles indicates construction was likely before the Classic period. The charcoal was from the interior of the structure and consisted of very small fragments imbedded in the soil matrix underneath a large cobble, which itself was situated on a possible compacted clay floor. The charcoal sample proved too small for conventional radiocarbon dating and requiring processing using an accelerator. While the charcoal likely dates to the use of the visible surface structure, because of the small size of the charcoal fragments, there is a slight possibility that it may represent earlier natural events (e.g., forest fire) or a presently undefined earlier cultural use of the area.

The other significant aspect about this structure is its identification by San Ildefonso Pueblo as the “most sensitive sacred site” in the original Bason Land Exchange survey parcel within Rendija Canyon (Carmichael 1993). Thus the early date, the site location on top of a hill, and the traditional cultural values surrounding the site mark it as unusual and distinct from grossly similar structures identified as fieldhouses. What this may mean for the potential presence of other Developmental period sites in the project area is unknown.

Question 10: Is there a shift towards larger-sized pueblos through time?

Yes. This is illustrated by looking at three different measurements. The first is that of a size comparison among the largest known open (non-cavate) pueblos of each of the three periods, Coalition, transitional Coalition/Classic, and Classic. The second is a similar comparison for cavate pueblo complexes (defined as clusters of six or more cavates). The third is an attempt to derive the average number of rooms for the open pueblos from each time period.

In order to derive a meaningful relative comparison for the largest open pueblos, we utilized a crude formula for calculating the numbers of rooms at each of these sites based on the size (square meters), the nature of the rubble mounds, and associated surface architecture. The basic procedure is simply to measure the length times the width of any roomblock, and adding any other recognizable surface rooms in the vicinity of the mound. However, the calculations employ four basic assumptions. First, for ease of calculation it is assumed that the average area of a typical room at each pueblo is 6 m^2 (although the actual average for earlier pueblos may be slightly more and later pueblos slightly less). Second, it is assumed that in the case of apparent two-story roomblocks, the second story will cover only half of the space measured for the ground floor rooms, with a similar diminishing between a second- and third-story structure. Third, realizing that rubble typically is spread much farther than the original extent of rooms, especially in the case of multistory structures, we multiply the overall number of square meters by a constant of 0.5 (thus assuming that one-half of the areal extent of the rubble is outside the actual original room space). In the case of Otowi this process is not performed since our calculations were derived from Hewett's measurements of actual roomblock walls in contrast to ill-defined rubble. And fourth, it is assumed that the time periods are of comparable temporal duration (although Otowi was likely occupied longer than other earlier pueblos).

For example, a hypothetical pueblo site with a two-story rubble mound 15 by 20 m, and an additional six isolated rooms observable on the surface apart from the mound, would be determined to have 44 rooms. [Step 1: $1^{\text{st}} + 2^{\text{nd}}$ story = 450 m^2 . Step 2: 450 m^2 times 0.5 = 225 m^2 . Step 3: 225 m^2 divided by $6 \text{ m}^2 = 37.5$ which rounds to 38 rooms in the roomblock. Step 4: 38 rooms in roomblock, plus the 6 other rooms = 44 total estimated rooms].

Our model yields a figure of 682 total rooms for Otowi, which is reasonably close to Hewett's (1906:19-20) estimate of 450 ground floor rooms and 700 total rooms. Lucy Wilson (1918b:291-292) estimated 391 ground floor rooms, but did not attempt to calculate the numbers of upper story rooms, although her discussion would suggest that she favored a number considerably smaller than that provided by Hewett.

Table 8.1 lists all free-standing open pueblos for each time period. There are two immediately notable aspects about the data in this table. First is the fact that there is a marked decline in the number of pueblos for each time period (to be discussed below). The second is that for each time period there is a single primary pueblo that is more than twice the size of the next largest pueblo (in the case of the Classic period there is only one other open pueblo besides Otowi).

Table 8.1. Estimated Number of Rooms at Non-Cavate Pueblo Habitation Sites by Time Period

Site Number	Time Period	Estimated Rooms*	Comments
LA 394	Coalition	223	Four roomblocks (A-D) with 174 rooms; 65 other rooms
LA 127652	Coalition	92	Two-story pueblo with enclosed plaza
LA 127666	Coalition	88	"L"-shaped single story roomblock
LA 35001	Coalition	87	Two-story circular pueblo with enclosed plaza
LA 127644	Coalition	75	Two-story roomblock
LA 127649	Coalition	51	
LA 127662	Coalition	40	
LA 35000	Coalition	33	
LA 12587	Coalition	20	
LA 127661	Coalition	19	
LA 29	Coalition	18	Partially enclosed plaza
LA 127651	Coalition	18	Includes isolated structure
LA 127646	Coalition	17	
LA 127648	Coalition	16	
LA 110136	Coalition	15	
LA 127650	Coalition	13	
LA 61049	Coalition	11	
LA 4710	Coalition	11	Excavated
LA 4729	Coalition	10	Excavated
LA 127660	Coalition	8	
LA 21595	Coalition	8	Excavated
LA 127645	Coalition	7	
LA 21511	Coalition	6	
LA 35002	Coalition	6	
LA 21593	Coalition	6	Two isolated components of four rooms and two rooms
LA 127658	Coalition	5	
LA 11040	Coalition	5	
LA 127653	Coalition	4	
	Coalition TOTAL	912 [average = 33]	

Table 8.1. (Con't.)

Site Number	Time Period	Estimated Rooms*	Comments
LA 32	Coalition/Classic	251	Two roomblocks, one with large enclosed plaza
LA 127644	Coalition/Classic	75	Two-story roomblock
LA 127655	Coalition/Classic	25	Single-story roomblock
	Coalition/Classic TOTAL	351 [average = 117]	
LA 169 (Otowí)	Classic	682	Adapted from Hewett's 1906 map of five roomblocks, assuming three stories for each
LA 12605	Classic	8	
	Classic TOTAL	690 [average = 345]	

*Based on suggested average room size of 6 m², and adjusted for plaza/kiva spaces

The data for the three “primary” pueblos of each time period show only a minor increase in room numbers between the Coalition (LA 394) and the transitional Coalition/Classic (LA 32) periods (from about 223 to 251 rooms), although it is significant that the change was from the earlier widely dispersed pueblo of four roomblocks to a much more compact pueblo with only two roomblocks. The greatest transition was from LA 32 to Classic period Otowi in which the number of rooms more than doubles (from about 251 to 682).

The average number of rooms for all free-standing open pueblos steadily increases between the three periods, from 33 in the Coalition period, to an average of 117 rooms during the transitional Coalition/Classic period, to that of 345 rooms for the two sites of the Classic period, including Otowi.

Table 8.2 indicates a similar increase for cavate sites, although the sample is admittedly small. The four cavate pueblo complexes and one isolated cavate dating to the Coalition average 12 rooms each, while the three cavate pueblo complexes dating to the Coalition/Classic transition each contain an average of 32 cavates. Only one cavate pueblo complex could be associated with the Classic period, at a time when the use of cavates seems to be diminishing in the project area. There is a possibility that the Classic period cavate pueblo complex was actually initially constructed and used somewhat earlier during the Coalition/Classic transition; but regardless of the dating the number of rooms in this complex is greater than any of the four dated Coalition period cavate pueblo complexes.

Question 11: Are there fewer habitation sites through time?

Yes. Tables 8.1 and 8.2 and Figures 8.2 and 8.3 clearly depict this dramatic trend, both in terms of free-standing open pueblos and cavate pueblo complexes. Within the project area, there are 28 free-standing open pueblos and four dated cavate pueblo complexes during the Coalition period; three free-standing open pueblos and three dated cavate pueblo complexes during the Coalition/Classic transition period; and only two free-standing open pueblos and one cavate pueblo complex dating to the Classic period.

Although there is a dramatic decrease in the numbers of habitation sites through time, overall population based on the estimated numbers of rooms (including cavates) at first glance would seem bimodal, with larger numbers of total room spaces in the Coalition and Classic periods, as opposed to the transitional Coalition/Classic period. There are an estimated 974 pueblo/cavate/talus room spaces dating to the Coalition period; 452 pueblo/cavate/talus room spaces dating to the transition between the Coalition/Classic period; and 713 pueblo/cavate/talus room spaces dating to the Classic period.

We suggest that while the apparent bimodal distribution of room spaces and the dramatic decrease in total habitation site numbers may provide insights on the types and numbers of habitation facilities being used, these figures are deceptive in terms of understanding the overall numbers of people residing in and around the LCT area during the period of AD 1150–1550. Indeed, although the increase in cavate/talus structures during the transitional Coalition/Classic period is of considerable interest, the room space trend itself is not particularly significant for three reasons. First, the transitional Coalition/Classic period likely represents a shorter time span

Table 8.2. Number of Rooms for Isolated Cavate Sites and Cavate Pueblo Complexes by Time Period

Site Number	Time Period	Cavate Rooms	Talus Rooms	Total Talus and Cavate Rooms
LA 15117	Coalition	18	1	19
LA 16798	Coalition	17 (5 weathered)	3+ (minimum)	20+
LA 21637	Coalition	10	2+ (minimum)	12+
LA 21639	Coalition	10	0	10
LA 86545	Coalition	1	0	1
		TOTAL COALITION ROOMS 62 [average = 12]		
LA 21591	Coalition/Classic	59	0	59
LA 127668	Coalition/Classic	31	3	34
LA 127669	Coalition/Classic	6	2	8
		TOTAL COALITION/CLASSIC ROOMS 101 [average = 34]		
LA 127673	Classic*	23	0	23
	* [may possibly be earlier transitional Coalition/Classic]	TOTAL CLASSIC ROOMS 23 [average = 23]		

than the other two periods. There is also some question as to the length of time that Coalition period habitation sites were occupied. At least some archaeologists argue that Coalition period sites were occupied for a much more brief period than is the case for later sites.

A third notable reason is the presence of an immense cavate pueblo complex immediately outside of the LCT area that dates to this transitional period and to the Early Classic period. LA 35003 is situated on Los Alamos County land to the northwest of Little Otowi Ridge, on the southeastern face of Kwage Mesa near Camp Hamilton. LA 35003 contains at least 184 individual cavates (Marit Munson, pers. comm. 1999), with an unknown number of talus rooms along one of its three sections that would have created an impressive three-story cavate pueblo rivaling the largest cavate pueblo complexes in present-day Bandelier National Monument. If this site were to be added to the previously mentioned room counts, and given the possibility that the Coalition period pueblos had a shorter use-life than was the case for later pueblos, then it appears that the overall population in the general vicinity of the LCT area remained relatively constant during the period of AD 1150–1550.

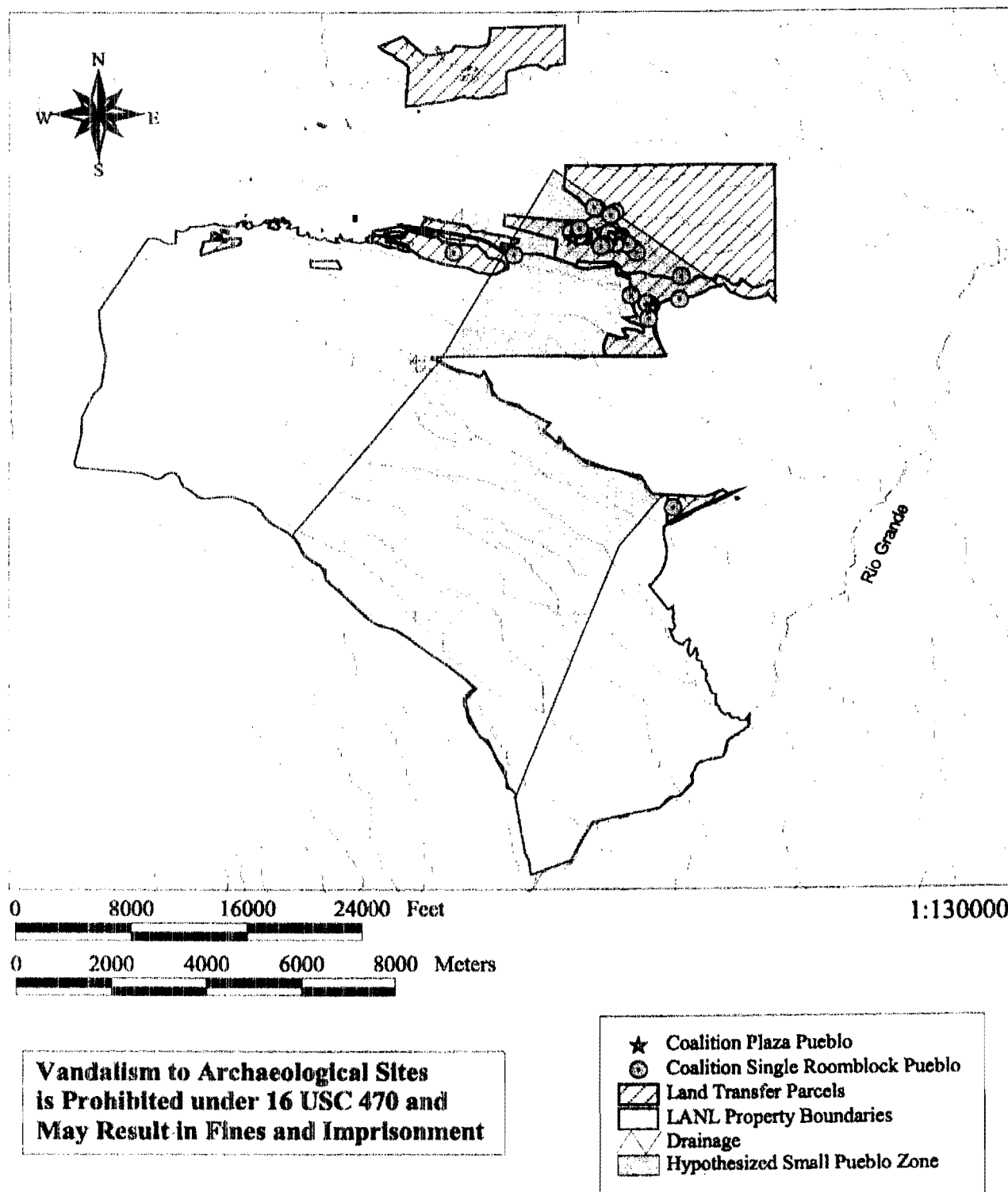
Question 12: Is there an increase in the regular spacing of these sites through time?

Possibly not. The issue of site spacing is difficult to assess within a dispersed small sample such as that provided by the LCT. It is necessary to have a much larger contiguous coverage when dealing with the distribution of habitation sites.

However, there are two potentially significant observations that can be drawn from the LCT data. First, within the project area there is a single large “primary” pueblo for each of the three temporal periods (Table 8.1, represented by LA 394, LA 32, and LA 169), although the location of the primary pueblo shifts between each period. This suggests that a single primary village “controlled” or otherwise may have maintained a well defined geographical space (see Masse 1991 for a discussion of examples of large village-based land-use patterns), but more significantly that the size of this space remained somewhat constant in the project area through each of the three periods. However, the present data are not sufficient to test this possibility.

The second observation is based on the fact that during the Coalition period, there is a noticeable clustering of smaller roomblock pueblos around those larger pueblos with complex architecture, as seen in Figure 8.2. A similar pattern may hold for the transitional Coalition/Classic period (Figure 8.3), although the sample is small. Such clusters are seemingly examples of structured and somewhat regularly spaced land-use planning.

As with Figure 8.1, Figures 8.2 through 8.4 depict a hypothesized zone of relatively dense occupation. This “small pueblo zone” is based on Beverly Larson’s analysis of LANL archaeological survey data prior to 1998. Virtually all of the Coalition through Classic period habitation sites (four or more contiguous rooms) in the LCT area are clustered in this zone. Furthermore, as will be discussed below, one- to three-room structures have a much more widespread distribution, with sizable numbers occurring in the ponderosa pine forest (Figure 8.4). Thus the hypothesized “small pueblo zone” may have general validity for this portion of the Pajarito Plateau.



Los Alamos National Laboratory
ESH-20 Cultural Resources Team

Figure 8.2. Coalition Period Site Distribution for Roomblock Pueblos.

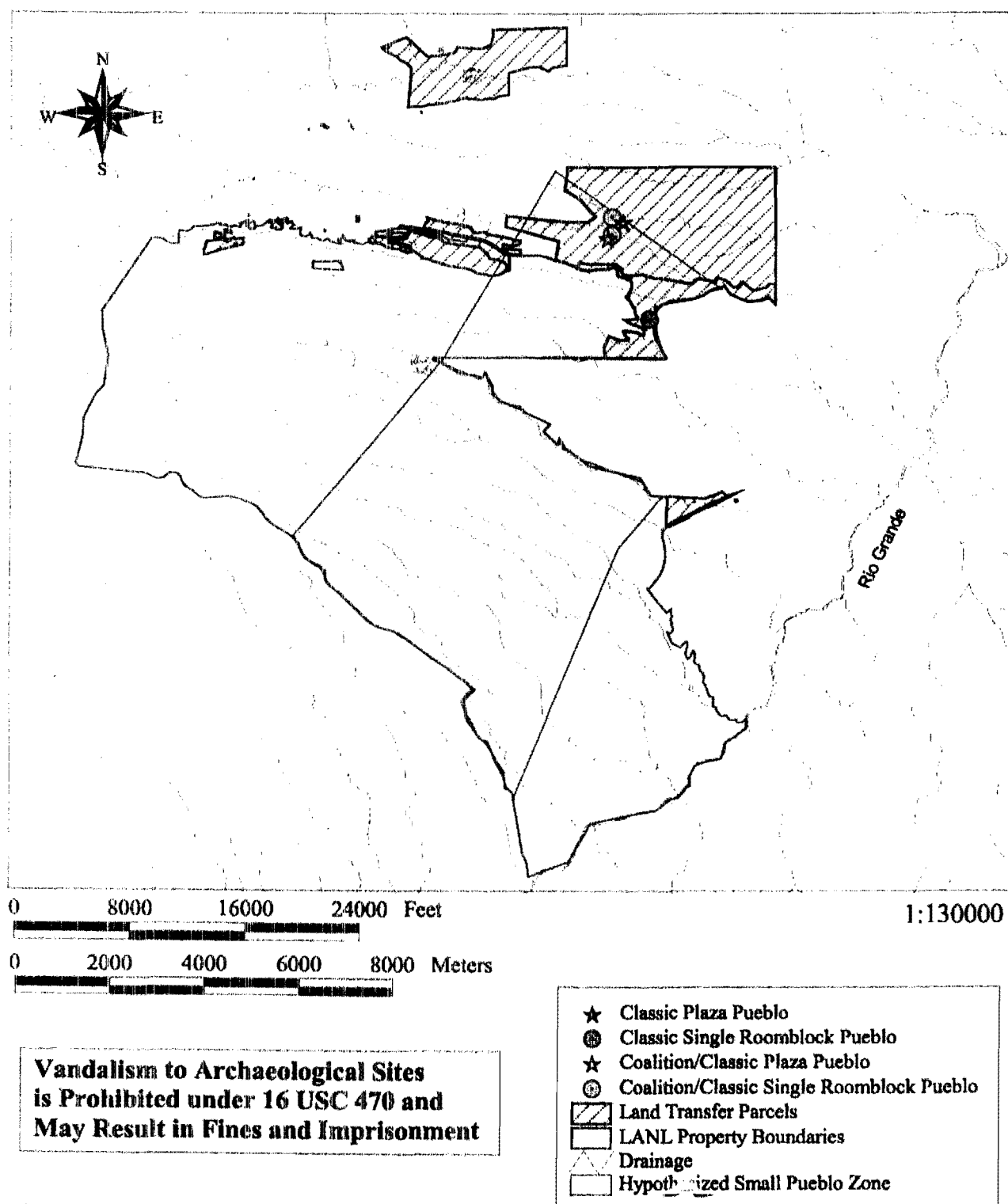


Figure 8.3. Coalition/Classic and Classic Period Site Distribution for Roomblock Pueblos.

AGRICULTURE AND FIELDHOUSES

Question 13: Are Classic period habitation sites located in areas with greater agricultural productivity?

Perhaps. This question cannot be satisfactorily answered within the limited context of the LCT. The only Classic period habitation sites (excluding one- to three-room structures) are Otowi (LA 169) and its likely associated cavate complex immediately to the north (LA 127673), and the small single roomblock at LA 12605. Nevertheless, it is notable that this portion of Pueblo Canyon and its juncture with Bayo Canyon provides what should have been the best watered and largest parcel of flat canyon bottomland in the LCT area. The fact that Otowi straddles the low flat ridge between these two canyons is certainly logistically favorable to the exploitation of agricultural products. Also notable is the fact that this area exhibits the greatest spatial and temporal diversity of rock-lined garden plots in the project area (Figure 8.4).

Table 8.3 presents the distribution of open (non-cavate) pueblo habitation site types by time period versus soil type. The great majority of early sites are associated with Guaje gravelly sand loam, which constitutes the sloping sides of most of the lower portions of weathered ridges in the LCT area, and which represents a favored locale for small-scale Puebloan agricultural production (based on the distribution of fieldhouses and garden plots). There is a much more limited use of Tuff rock land at this time, with the few Coalition period free-standing open pueblos associated with this soil type also being situated near areas (such as small drainages) suitable for small-scale runoff agriculture.

Of interest is the decline in the use of the Guaje soils during the later two periods, and the concomitant increase in the use of the Tuff rock land for three of the five free-standing open pueblos that post-date the Coalition period. This pattern has been thought to reflect a desire to ensure that habitation sites do not intrude upon locations suitable for agriculture, which in turn may reflect a shift from more widely dispersed settlement during the Coalition period to the aggregated pueblos of the later periods.

The relationship between free-standing open pueblos and vegetation type (Table 8.4; see also Figure 2.1) dramatically illustrates the preference for pueblos of all three time periods to be located in the piñon-juniper woodland, as opposed to higher elevations within the ponderosa pine forest. Interestingly, this holds true even for lithic artifact scatters from the Archaic period (Table 8.5), although the classes and time periods of lithic and artifact types reflect a wider distribution as would be expected for the different types of resource exploitation likely taking place. A potential bias in this observed relationship may arise from the fact that the leaf litter in the ponderosa pine forest more effectively conceals surface archaeology than is the case for piñon-juniper woodland, however, such a bias would be applicable primarily for sites and time periods without surface architecture. It is assumed that most free-standing pueblo roomblocks would yield rubble that should be visible even within heavy ponderosa pine leaf litter.

Table 8.3. Time Period by Soil Type for Pueblo Roomblocks and Plaza Pueblos for TA-74 and White Rock Y Tracts

Soil Type ¹	Time Period					
	Coalition Roomblock ²	Coalition Plaza Pueblo ²	Late Coalition/Early Classic Roomblock	Late Coalition/Early Classic Plaza Pueblo	Classic Roomblock	Classic Plaza Pueblo
BH	1	1	0	0	0	0
GL	5	1	1	1	0	0
TU	1	0	1	0	1	1
Total	7	2	2	1	1	1

¹ BH = Bluewing gravelly sandy loam, GL = Guaje gravelly sandy loam, TU = Tuff rock land.

² Mounds A–D at LA 394 treated as part of a single plaza pueblo

Table 8.4. Time Period by Vegetation Type for Pueblo Roomblocks and Plaza Pueblos

Vegetation Type	Time Period						
	Coalition Pithouse	Coalition Roomblock*	Coalition Plaza Pueblo*	Late Coalition/Early Classic Roomblock	Late Coalition/Early Classic Plaza Pueblo	Classic Roomblock	Classic Plaza Pueblo
Bare ground	0	1	0	0	0	0	0
Mixed conifer	0	0	0	0	0	0	0
Ponderosa pine	0	0	0	0	0	0	0
Piñon-juniper	2	26	3	2	1	1	1
Juniper savanna	0	0	0	0	0	0	0
Grassland	0	0	0	0	0	0	0
Developed	0	1	0	0	0	0	0
Total	2	28	3	2	1	1	1

*Mounds A–D at LA 394 treated as part of a single plaza pueblo

Table 8.5. Time Period by Vegetation Type for Artifact Scatters (lithic or lithic and ceramic)

Vegetation Type	Time Period							
	Undetermined Lithic Scatter	Archaic Lithic Scatter	Archaic/Coalition or Classic Artifact Scatter	Undetermined Ancestral Pueblo Lithic Scatter	Undetermined Ancestral Pueblo Lithic Scatter	Coalition Artifact Scatter	Coalition/Classic Artifact Scatter	Classic Artifact Scatter
Mixed conifer	0	0	0	0	0	0	0	0
Ponderosa pine	0	1	0	0	0	0	0	1
Piñon-juniper	0	6	4	0	2	7	6	7
Juniper savanna	0	0	0	1	1	0	1	1
Grassland	0	0	0	0	0	0	0	0
Developed	0	0	0	0	0	0	0	0
Total	0	7	4	1	3	7	7	9

Presumably because of the much larger numbers of Coalition habitation structures, there is greater diversity in terms of topographic setting earlier than is the case for the later two periods (Table 8.6).

Question 14: Is there an increase in the number of landforms and soil types used for agricultural sites through time?

No, although there may be a higher incidence of the use of higher elevations during the the Classic period (see Question 16). illustrates that one- to three- room structures (most of which are likely fieldhouses) and garden plots followed a similar usage of being located within the Guaje gravelly sandy loam and areas categorized as Tuff rock land from the Coalition through Classic periods. The one exception is a Coalition period one- to three-room structure situated on a ridge top in an area of Bluewing gravelly sandy loam, which is similar to the Guaje series. The fact that a number of these sites are located within the Tuff rock land reflects the use of the soils and moisture captured in small drainages within this soil formation, along with the fact that several of the one- to three-room structures likely were not directly related to agriculture, but rather represent possible shrines or structures of other non-agricultural function.

In terms of basic topography (Table 8.8), there is actually a decrease in the different types of landforms being used as probable agricultural sites. Floodplains and alluvials fans were not obviously used during the Classic period, in contrast to that of the Coalition period, although there is some increase during the Classic period in the use of valley floors. Likewise there is an increase in the use of hillslopes. This pattern may reflect changed conditions in terms of the seasonal pattern and intensity of rainfall, or it could reflect changes in technology that have resulted in different material culture patterns for basically similar types of agriculture.

Question 15: Is there an increase in the number of fieldhouses and agricultural features through time?

Yes, but only moderately so. Figure 8.4 illustrates the distribution of one- to three-room structures and definable garden plots for the Coalition through Classic periods. While there is a moderate increase in the total numbers of these likely agriculture features through time (from 21 during the Coalition period to 11 during the transitional Coalition/Classic period to 30 during the Classic period, with 16 unplaced as to time), these figures are a bit misleading in terms of the overall picture.

The Rendija Tract has many more Classic period than Coalition period one- to three-room structures, which accounts for virtually all of the seeming increase in total numbers through time. This more likely reflects the location of the primary pueblos for each period rather than an actual increase through time in agricultural production. There are actually more Coalition period fieldhouses and garden plots in the TA-74 Tract than Classic period (14 vs 10), but this makes sense if the majority of the Coalition period sites are actually related to LA 394 in the White Rock Y Tract rather than the immediately adjacent Coalition period pueblo sites in TA-74. It would make little sense to construct a fieldhouse if you are only a few hundred meters from your home pueblo. And while there are sizable Coalition period pueblos in TA-74, they are spread

Table 8.6. Time Period by Topographic Location for Pueblo Roomblocks and Plaza Pueblos

Topographic Location	Time Period						
	Coalition Pithouse	Coalition Roomblock	Coalition Plaza Pueblo	Late Coalition/ Early Classic Roomblock	Late Coalition/ Early Classic Plaza Pueblo	Classic Roomblock	Classic Plaza Pueblo
Hillslope	0	3	1	0	0	1	0
Ridge	2	16	1	2	1	0	1
Open canyon floor	0	1	0	0	0	0	0
Bench	0	3	1	0	0	0	0
Constricted canyon	0	0	0	0	0	0	0
Floodplain/valley	0	2	0	0	0	0	0
Canyon rim	0	0	0	0	0	0	0
Base of cliff	0	0	0	0	0	0	0
Mesa	0	2	0	0	0	0	0
Cave	0	0	0	0	0	0	0
Alluvial fan	0	0	0	0	0	0	0
Base of talus slope	0	0	0	0	0	0	0
Rockshelter	0	0	0	0	0	0	0
Cliff	0	0	0	0	0	0	0
Saddle	0	0	0	0	0	0	0
Mesa and canyon	0	0	0	0	0	0	0
Total	2	27	3	2	1	1	1

Table 8.7. Time Period by Soil Type for One- to Three-Room Structures and Garden Plots for TA-74 and White Rock Y Tracts

Soil Type*	Time Period						
	Undetermined Ancestral Pueblo One- to Three-Room Structure	Coalition One- to Three-Room Structure	Coalition Garden Plot	Late Coalition/ Early Classic One- to Three-Room Structure	Late Coalition/ Early Classic Garden Plot	Classic One- to Three-Room Structure	Classic Garden Plot
BH	0	1	0	0	0	0	0
GL	1	5	1	3	1	3	0
TU	2	6	1	0	1	6	1
Total	3	12	2	3	2	9	1

* BH = Bluewing gravelly sandy loam, GL = Guaje gravelly sandy loam, TU = Tuff rock land.

Table 8.8. Time Period by Topographic Location for One- to Three-Room Structures and Garden Plots

Topographic Location	Time Period								
	Undetermined One- to Three-Room Structure	Undetermined Ancestral Pueblo One- to Three-Room Structure	Undetermined Ancestral Pueblo Garden Plot	Coalition One- to Three-Room Structure	Coalition Garden Plot	Late Coalition/ Early Classic One- to Three-Room Structure	Late Coalition/ Early Classic Garden Plot	Classic One- to Three-Room Structure	Classic Garden Plot
Hillslope	0	2	0	3	0	2	0	10	1
Ridge	1	8	0	10	2	6	1	15	0
Open canyon floor	0	1	1	1	0	0	0	4	0
Bench	0	3	0	1	0	0	0	0	0
Constricted canyon	0	0	0	0	0	0	0	0	0
Floodplain/ valley	0	1	0	2	0	0	1	0	0
Canyon rim	0	0	0	1	0	0	0	0	0
Base of cliff	0	0	0		0	0	0	0	0
Mesa	0	0	0	0	0	0	0	0	0
Cave	0	0	0	0	0	0	0	0	0
Alluvial fan	0	0	0	1	0	1	0	0	0
Base of talus slope	0	0	0	0	0	0	0	0	0
Rockshelter	0	0	0	0	0	0	0	0	0
Cliff	0	0	0	0	0	0	0	0	0
Saddle	0	0	0	0	0	0	0	0	0
Mesa and canyon	0	0	0	0	0	0	0	0	0
Total	1	15	1	19	2	9	2	29	1

out over a sizable area and thus each may have adequate lands nearby for the majority of their agricultural needs.

The large size (and presumably large population) of Classic period Otowi Pueblo (LA 169) would have likely created a situation in which there was not nearly enough lands available in Pueblo and Bayo Canyons for normal agricultural needs. Therefore, the Rendija Tract area would have serviced Otowi Pueblo in much the same manner that fieldhouses in Pueblo and Bayo Canyons would have serviced the primary Coalition period pueblo of LA 394 in the White Rock Y Tract. Therefore, the differences in agricultural features between the Coalition and Classic periods are not great, at least based on the data from within the LCT area itself.

Question 16: Does the distance between fieldhouses and habitation sites increase through time, including the increased use of higher elevations?

Probably yes, but only moderately so. As with the previous question, this is a difficult question to answer without a broader picture than that provided by the LCT area. There are greater numbers of Classic period one- to three-room structures in the Rendija Tract than that of the Coalition period (Figure 8.4), but this may simply reflect a simple distance relationship between these sites and their primary pueblo(s) rather than an actual elevation gradient difference. This is also a difficult question to answer given the large number of temporally unplaced one- to three-room structures in Rendija Canyon (10), although based on the nature of the construction material (large, shaped tuff blocks) it seems likely that most are later (Classic period) rather than earlier (Coalition period).

Table 8.9 depicts the relationship by time period between one- to three-room structures and garden areas as plotted for average elevation and total site area. There is an average increase of about 70 m in elevation between the Coalition and the Classic period (with similar standard deviations), which is notable. However, the presence of three widely dispersed Coalition period one- to three-room structures suggests that even by this early date there was some exploitation of the higher elevations for agriculture. Because of the nature of nighttime air temperature inversions and other factors (see Chapter 2), it is not clear what this difference in elevation actually means.

In terms of distances between presumed fieldhouses (one- to three-room structures) and their associated pueblos, this cannot really be measured without a much broader regional picture (outside of the LCT area) and especially a better understanding of where all of the larger pueblos are located. It is reasonable to assume that the larger the pueblo is, the less likely the local agricultural lands around the pueblo would be sufficient for its population, and the more likely people would have to grow crops at farther distances from the pueblo.

Future projects should be designed to assess the degree to which forests were cleared adjacent to both habitation sites and fieldhouses.

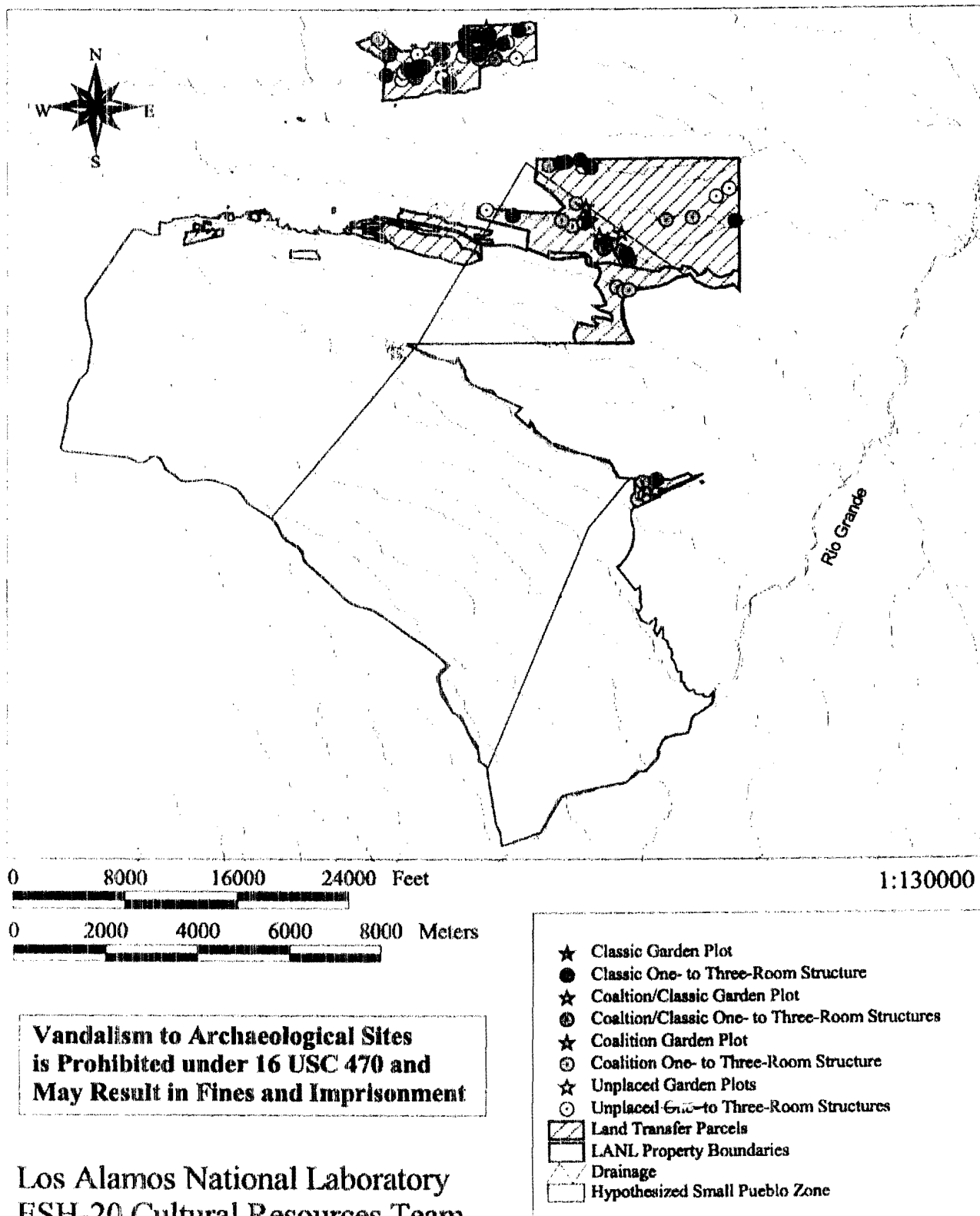


Figure 8.4. Site Distribution for One- to Three-Room Structures and Garden Plots.

Table 8.9. Time Period by Mean Elevation (m) and Site Area for One- to Three-Room Structures and Garden Plots

	Time Period								
	Undetermined One- to Three- Room Structure	Undetermined Ancestral Pueblo One- to Three- Room Structure	Undetermined Ancestral Pueblo Garden Plot	Coalition One- to Three- Room Structure	Coalition Garden Plot	Late Coalition/ Early Classic One- to Three- Room Structure	Late Coalition/ Early Classic Garden Plot	Classic One- to Three- Room Structure	Classic Garden Plot
Elevation	2130*	2089 (58.2)	1970	2004 (72.1)	1989 (32.5)	2048 (75.4)	1973 (10.6)	2073 (74.8)	1969
Site Area	3	44 (34.3)	15	574 (575.4)	1525 (953)	1207 (1727)	4200 (4454)	289 (450)	420
Total	1	15	1	19	2	9	2	28	1

* Values in cell represent mean value and standard deviation in parentheses.

CAVATES AND CAVATE PUEBLO COMPLEXES

Question 17: How do groups of cavates appear to relate spatially and temporally to free-standing pueblos?

There is a clear pattern of cavates, especially the larger cavate pueblo complexes (six or more associated cavate rooms), being associated with the largest (“primary”) contemporaneous complex free-standing pueblo (Figure 8.5). Thus the largest Coalition period pueblo, LA 394 in the White Rock Y Tract, is surrounded by virtually all of the large Coalition period cavate pueblo complexes in the LCT area; the only Classic period (Early Classic) cavate pueblo complex is immediately adjacent to Otowi (LA 169); and the majority of transitional Coalition/Classic period cavate pueblo complexes are clustered in the vicinity of Little Otowi (LA 32). Even the two temporally unplaced cavate pueblo complexes that lacked definable ceramic assemblages (LA 127667 and LA 127672) are situated near Little Otowi and Otowi, and based on general appearance and spatial relationships likely are part of the large number of transitional Coalition/Classic period cavate pueblo complexes associated with Little Otowi.

Those cavates sites (such as LA 86545, LA 127686, and LA 127687) that are most isolated from the known primary village are few in number, consist of only one or two structures, and visually reinforce the overall notion that cavate pueblo complexes go hand-in-hand with the largest primary pueblos. This finding matches the more extensive distribution studies recently accomplished as part of the Bandelier Archaeological Survey (Toll 1995; Powers and Orcutt 1999).

Table 8.10 quantifies the spatial relationships between the large primary villages of each time period and seemingly contemporaneous cavates and cavate pueblo complexes. These figures indicate that cavate pueblo complexes cluster within an average of less than 1000 m from their presumed contemporaneous associated primary pueblo. This situation helps to provide an explanation for why some portions of the Bandelier Tuff formation, which would otherwise seem ideally suitable for cavates (including proximity to water), lack such features. In these particular cases, the otherwise “suitable” cliff faces are thought to be simply too far from a primary pueblo.

Not included in the analysis of Table 8.10 is a sizeable transitional Coalition/Classic period cavate pueblo complex (including a number of talus room structures) in the White Rock Tract (LA 127705). This cavate pueblo complex is much too far (some 5800 m) from Pueblo Canyon and Little Otowi to be considered associated with that particular primary pueblo. However, this particular cavate pueblo complex is only about 900 m from the large primary Classic period pueblo of Tshirege. The presumption can be made that either Tshirege had a transitional Coalition component or that a separate primary pueblo of that time period is present on San Ildefonso Pueblo lands in the vicinity of LA 127705.

Question 18: Is there a change in the nature and distribution of cavates through time?

This question cannot be satisfactorily answered without a more exhaustive quantitative treatment of the cavates within the LCT area and other portions of LANL, which goes beyond the scope of

Table 8.10. Distance Relationship between Largest Open Pueblos and Cavate Pueblo Complexes

Pueblo Site No.	Average Distance to Coalition Period Cavate Complexes	Average Distance to Coalition/ Classic Period Cavate Complexes	Average Distance to Classic Period Cavate Complexes
Coalition period LA 394 (Mound A)	410 meters	2085 meters	2283 meters
Coalition/Classic period <i>LA 32 (Little Otowi)</i>	1518 meters	931 meters	817 meters
Classic period LA 169 (Otowi)	1706 meters	672 meters	360 meters

the present survey. However, the clear impression is that there is a general temporal continuity in the presumed spatial relationships that existed between cavate pueblo complexes and their associated primary pueblos. Also, there seems to be a general similarity in the temporal range of component features, such as the use of niches and the deliberate smoke blackening of the upper half of cavate rooms. There is some suggestion that squared “kiva” cavates may be more prevalent during the Coalition period than during the two later periods, but this idea needs further analysis.

Question 19: Do isolated cavates exhibit any noticeable differences in size, shape, or internal features from the characteristics observed in groups of cavates?

No. For example, LA 127687 contains both a single cavate and an associated talus room, just as in the larger cavate complexes; the two cavates at LA 127686 contain typical niches; and LA 86548 exhibits typical smoke blackening. Petroglyphs were not present at these locations, and there was no example of a squared kivalike isolate, but this may simply reflect the small number of cavates that are truly isolated in contrast to other social or locational factors.

Question 20: What is the distribution of internal (inside cavate) petroglyph numbers and motifs among the various cavate groups and isolated cavates?

No petroglyphs were found associated with isolated cavates within the LCT area.

Question 21: What is the relationship between external petroglyphs and cavates in terms of proximity and the nature of motifs?

The relationship between cavate pueblo complexes and petroglyphs is intriguing but has not yet been quantified in any meaningful fashion for the LCT area. In fact, this very question is currently being investigated by Marit Munson (pers. comm. 1999) for her Ph.D. thesis at the University of New Mexico, as part of a larger study of symbols used in the historic and traditional boundaries between Keresan and Tewa speakers.

It is clear, however, that the larger pueblo cavate complexes almost invariably contained a mixture of internal petroglyphs scratched into the smoke-blackened upper wall of the better preserved cavates (including awanyu, kokopelli, snakes [different from awanyu], shield warriors, along with some purely geometric motifs), as well as various petroglyphs pecked on the cliff faces above and surrounding the cluster. There seemed to be a preponderance of awanyu inside the cavates, while shield warriors particularly seemed to be most commonly on cliff faces and not in the interior of cavates. Much more work needs to be accomplished on both internal and external cavate imagery.

ATHABASKAN LAND USE ON THE PLATEAU

Question 27: Is there any evidence of Athabaskan sites in the project area, and if so, what does this evidence consist of?

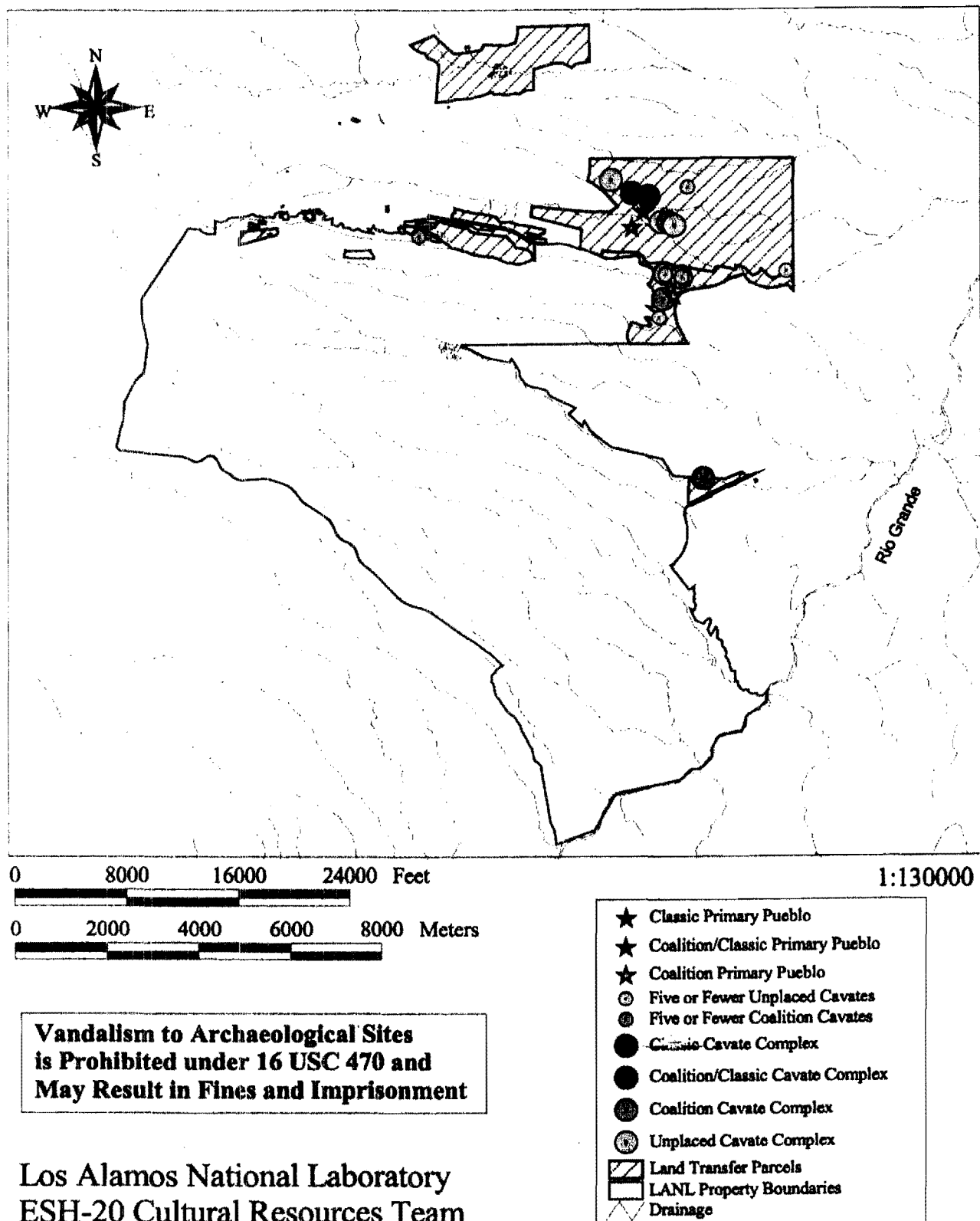


Figure 8.5. Site Distribution for Cavates.

The sites of LA 85864 and LA 85869 yielded the only likely Athabaskan archaeological remains encountered in the LCT survey area (Peterson and Nightengale 1993). Each site contained a roughly oval to circular alignment of large tuff stones that were identified as probable support stones for a wickiup or tipi structure. Associated material culture was sparse at the two sites, but one of two sherds noted at LA 85864 was stated to exhibit a micaceous black paste, a somewhat nebulous description that could apply to either historic Tewa or Athabaskan ceramic types.

Of considerable interest was a radiocarbon date of 130 $\pm$ 60 from LA 85864. While radiocarbon calibration of the post-AD 1650 period is problematic, the radiocarbon age of this sample is certainly what one might expect from the 17th or 18th century. The calibrated 2 sigma date range for this specimen is AD 1668–1783 (relative area under distribution = 0.408) or AD 1792–1947 (= 0.592). [These data were obtained from the internet beta test Radiocarbon Calibration Program Rev. 4.2, developed and maintained by the University of Washington Quaternary Isotope Laboratory.] The 1 sigma date range was best for AD 1805–1886 (= 0.501), and then for 1680–1744 (0.333), but also for 1752–1756 (= 0.052) and 1912–1935 (= 0.114). Based on the appearance and nature of this site, it would seem likely that the charcoal sample was created before 1900.

The weight of the historic documentary record (see Chapter 3) suggests that the Jicarilla Apache are the cultural group most likely responsible for the archaeological features at LA 85864 and LA 85869. During consultations performed for LANL's Site-Wide Environmental Impact Statement (DOE 1999:E-43), Jicarilla Apache tribal members indicated that they had historically utilized the Jemez Mountains and the Pajarito Plateau, including the general LANL area, for the gathering of various kinds of resources. In addition, consultations with the Mescalero Apache Tribe and the Navajo Nation indicated that these two groups have ceremonial sites within the confines of LANL. Based on these consultations and on the archaeology present at LA 85864 and LA 85869, it seems likely that at least the Rendija Canyon materials are attributable to probable Athabaskan use of the LCT area, presumably before 1900.

HISTORIC LAND USE ON THE PLATEAU

Question 28: What evidence is there for the historic use of the project area before the homestead occupation, and what is the nature of that evidence?

The first homestead on the Pajarito Plateau was patented in 1893 (Foxy and Tierney 1999:8). However, most homesteading at LANL seemingly begins no earlier than about 1900, with the great majority of homesteads being established after 1912 during the New Mexico Statehood period (Foxy et al. 1997; Ellen McGehee, pers. comm. 2000).

Excluding the previously discussed (Question 27) tipi or wickiup rings in Rendija Canyon, little material culture evidence was found for Colonial or Mexican period occupation of the LCT area, and virtually all of that found consists of scattered sherds at a few sites (see Chapters 7 and 9). These include eight Tewa Polychrome sherds (possibly from a single vessel) from LA 86337 in the White Rock Tract; nine sherds of Kapo Black (possibly from a single vessel) from LA 61049 in the White Rock Y Tract, which actually came from a component of the site within the

boundaries of Bandelier National Monument and a single sherd of Kapo Black at Otowi (LA 169). There are much large numbers of sherds of Sankawi Black-on-cream, especially from Otowi, but it is assumed that most if not all of these date before AD 1600.

The assumption is that all of these Late Classic period and Spanish Colonial period ceramics are the product of sporadic Native American use of the area from San Ildefonso and other nearby contemporaneous pueblos. For example, it is likely the Pueblo of Nakemuu' was reoccupied during the 1680 Pueblo Revolt. No material culture evidence exists for non-Native American (Spanish, Mexican, or Anglo American) use of the area before about 1900, such as might be indicated through majolica ceramics, or dateable glass, porcelain, and metal objects.

It is noted, however, that a number of cavates yielded what appears to be substantial deposits of dung, most of which appears to be goat but perhaps some sheep. Lucy Wilson (1916a:30), during her excavations at Otowi, noted that "Even now, every winter, a couple of Mexicans from the little village of Francho [location unknown to the authors] bring up their goats and live in caves shaped by hands long since still." It is unclear when this practice started, and it is possible that the use of the cavates for domestic animals is confined to the period after 1900.

Question 29: What evidence is there for the historic use of the project area during the late Territorial and New Mexico Statehood periods?

The evidence for use of the LCT parcel during the late Territorial and New Mexico Statehood periods consists of a single known homestead in the Rendija Tract (Peterson and Nightengale 1993) and a number of other widely scattered features and trash deposits occurring at Rendija and other LCT tracts.

Predictably, the evidence is most extensive in and around the Rendija Tract homestead (LA 85407), which may have been variously occupied from at least as early as 1913 until the beginning of the Manhattan Project. The homestead itself contains two structures (a log cabin and probable shed), a corral, an horno, unidentified rock features, and a scattering of trash. It is possible that a log enclosure (LA 70026) and wagon trail (LA 86553) were associated with the homestead, but they lie substantially to the west and may reflect unrelated historic usage of the area.

The TA-74 Tract also contains two sites dating to this time period, both relating to Camp Hamilton (LA 86532). As indicated in Chapter 7, Camp Hamilton was originally a homesteader's cabin that was subsequently converted into a base camp for winter outings by the Los Alamos Ranch School. Although historic records indicate that the Camp Hamilton Trail (LA 127699) was used to ferry people and supplies from the Ranch School to Camp Hamilton, and was claimed to have been originally constructed by boys from the Ranch School, it seems likely that it first existed as an Ancestral Puebloan trail (Ellen McGehee, pers. comm. 2000). Despite its known lengthy use as an historic trail, no definitive New Mexico Statehood trash deposits were found in direct association. A light scattering of historic trash at LA 127703 in Bayo Canyon cannot be positively linked with the usage of Camp Hamilton in nearby Pueblo Canyon.

The remainder of the late Territorial and New Mexico Statehood features through the LCT area include the Mattie Brook Trail (LA 110141) and possibly a rock enclosure of unknown function (LA 110122) in the TA-21 Tract; and miscellaneous trash scatter at LA 86637 in the White Rock Tract. It is somewhat surprising that there is not greater evidence for homestead activities in favorable locations such as the juncture of Pueblo and Bayo Canyons in the TA-74 Tract, especially before the New Mexico Statehood period. However, the proximity of San Ildefonso Pueblo may have served as a deterrent to potential homesteaders. Harrington's (1916) study of Tewa ethnogeography certainly suggests that residents of San Ildefonso Pueblo would have intensively utilized resources in the TA-74, White Rock Y, and White Rock Tracts.

One additional, but poorly documented, use of the area is evidenced in virtually all of the undeveloped portions of the LCT tracts. This is the widespread cutting of juniper trees, presumably during the New Mexico Statehood period. This activity was particularly evident in the TA-74 and White Rock Y Tracts, where clusters of extremely weathered axe-cut juniper stumps were frequently encountered. Presumably both homesteaders and members of San Ildefonso Pueblo would have used juniper for firewood, but it is possible that the juniper was being used for other purposes as well.

And finally, we note that a thin scattering of trash, primarily cans dating to the New Mexico Statehood period, was encountered throughout the various LCT tracts. Some of these were in contexts and locations near or at cavate complexes and at the larger roomblock sites, suggesting their use in conjunction with deliberate visits to the archaeological sites.

Question 30: What types of activities were carried out at the homestead sites and during what seasons?

Interviews conducted for the Bason Land Exchange project (Peterson and González-Peterson 1993) provide several direct insights into seasonal activities at some of the homesteads in and around the LANL area, including Rendija Canyon. Particularly revealing was the interview with the daughter of the homesteaders who occupied what is now the archaeological site of LA 85407.

Apparently the family lived in El Rancho and visited the Rendija Canyon family homestead three times a year to tend dry farming crops planted in the area. Each trip lasted approximately two weeks. The first was conducted in the spring in order to prepare the fields and to plant; the second was conducted in the summer to weed and clean the fields; the third was done in September or October to harvest the crops.

Supplies were brought with them (milking cow, chickens, and tools) and returned to the family residence in El Rancho after each season's activities. The men mainly accomplished harvesting, often with help from neighbors. The women cooked the meals and occasionally worked in the fields.

Apparently not every homestead in the LANL area was occupied on such a limited basis (Peterson and González-Peterson 1993). There are documented interviews with at least some homesteaders indicating that some families may have spent the entire spring and summer, and there is some indication that one or more homesteads (e.g., the Anchor Ranch) were occupied

year-round. However, none of these semi-permanent or permanent year-round homesteads were situated in the LCT area.

Such limited activities would be expected to leave a much less substantial archaeological record than would be the case for a permanently occupied year-round residence. Many types of domestic residue would be absent or would occur only in limited quantities. And such was the case for LA 85407, at which the artifactual residue was primarily limited to bottle glass and metal food cans. It is noted that the one contemporaneous permanent year-round occupied homestead at LANL, that of the Anchor Ranch (occupied 1901–1943) on the edge of Llano Largo to the west of Water Canyon (Martin 1998), exhibits both a richer assortment of trash and much greater quantities spread over a wider area than is the case for LA 85407 and other of the known seasonal homesteads (Ellen McGehee, pers. comm. 2000).

Question 31: How do these homestead activities relate to subsistence and the local economy?

Peterson and González-Peterson (1993) have summarized the known documentary subsistence data for the Pajarito Plateau and LANL area seasonal homesteaders. It is apparent that dry farming was the only method used for growing crops, due to the lack of available permanent water flow for irrigation. Crops included pinto beans, corn, pumpkins, peas, beets, turnips, and occasionally wheat. Informants indicated that the harvests were successful and bountiful every year despite the cold temperatures and lack of irrigation. In addition to these crops, local plants were gathered, including oregano, *podillo*, *chimajá*, and *yerba buena*.

The agricultural produce was both for local family consumption as well as a cash crop for buying supplies and items not grown or made by the homestead families. As such, the homesteads were an important component of the local economy. The fact that several of the homesteads, including seasonally occupied homesteads, were maintained and used throughout the duration of the late Territorial and New Mexico Statehood periods, indicates that homesteading and seasonal agriculture were at least a moderately successful form of subsistence economy.

Recent interviews and documentary research conducted in association with the ecological studies at the Romero cabin (Foxy and Tierney 1999) have further documented many significant aspects of homesteader subsistence and the nature of crops and produce in the LANL area. An impressive total of 54 different kinds of fruits and vegetables were grown at the Los Alamos Ranch School, along with at least 33 species of cultivated flowers (Foxy and Tierney 1999: Table 2.3).

Question 32: Which ethnic populations utilized the project area before and during the late Territorial and New Mexico Statehood periods, and what indicators are there for interaction between these ethnic populations?

The studies by Peterson and González-Peterson (1993) make it clear that the LANL area homesteads (ca. 1900–1943), including those in the LCT area, were dominated by members of the Hispanic community who lived in the Rio Grande Valley in places such as Española and San Ildefonso. There are a few exceptions in and around LANL. These would include the Anchor

Ranch; Ashley Pond's holdings within the area of the Los Alamos townsite and in Pajarito Canyon; the homestead that became Camp Hamilton in Pueblo Canyon within the TA-74 Tract; and several others including O.O. Grant, W. Grottenthaler, Mattie and H. H. Brook, and an individual named McDougall who was a neighbor to Victor Romero (Ellen McGehee, pers. comm. 2000). Detailed discussions of selected Anglo and Hispanic homesteads can also be found in the studies by Foxx et al. (1997) and Foxx and Tierney (1999), including recent valuable interviews with homesteaders and their children.

It seems clear that, for whatever reasons, the Native American community did not participate in the Pajarito Plateau homestead activities except in limited fashion. A few Native Americans were occasionally employed at the Anchor Ranch and at the Los Alamos Ranch School. The evidence prior to ca. 1900 is less clear. The fact that there are no known homesteads in such favorable locations as the TA-74 portion of Pueblo Canyon prior to about 1900 suggests that members of San Ildefonso Pueblo more frequently used these areas prior to the homestead period, and may have even actively discouraged potential homesteaders from attempting to settle in the area.

During the homestead occupation itself, there is every indication of cordial relations between the Hispanic community and the Native American community. Several Hispanic families lived at or near San Ildefonso Pueblo, and both communities actively exchanged produce and other subsistence items. The relations between the Anglo community and the Hispanic community were likewise generally cordial, although the Anglo community seemed less inclined to utilize the Pajarito Plateau prior to the Manhattan Project. The Manhattan Project itself served to redefine relationships in ways that have persisted to the present.

An interesting sidelight to relations between Anglos and the Native American community was the establishment of the so-called "Duchess Castle" on the northern slopes of Tsankawi Mesa a few hundred meters southeast of the boundary for TA-74 (Martin 1998). Madame Vera von Blumenthal constructed and used a summer home (the "castle") between 1917–1928 for the express purpose of encouraging Native American potters to revive past art traditions. In this she worked closely with Edgar Lee Hewett at the School of American Research. Among the potters helped in this endeavor were the now internationally famous team of Julian and Maria Martinez from San Ildefonso Pueblo.

Chapter 9

SITE ASSEMBLAGE ANALYSIS

Bradley J. Vierra

INTRODUCTION

As previously noted, a total of 213 archaeological sites were identified within the six larger tracts of the LCT. However, for the purposes of this chapter, the site of LA 394 is considered to represent four separate sites (one associated with each rubble mound) so as to help facilitate our analysis and understanding of this complex site. Thus the data analysis for this chapter is heuristically based on a figure of 216 total sites for the LCT. Infield analyses were conducted at 84 (38.8%) of these sites, with a total of 18,815 artifacts being recorded. Artifact analyses were conducted at sites that were initially recorded, or revisited and updated during the survey project. The majority of the artifacts consist of utilitywares ($n = 9171$; 48.7%), painted wares ($n = 4989$; 26.5%), and debitage ($n = 4313$; 22.9%), with fewer ground stone ($n = 189$), retouched tools ($n = 69$), cores/hammerstones ($n = 52$), and other ($n = 32$) artifacts. The latter category consists of fire-cracked rock, manuports, bone, wood artifacts, and maize cobs.

A detailed description of the infield analysis methods was presented in Chapter 6 and Appendix A. Summary information on the project sample, artifact types, and inter-assemblage variability is provided in this chapter. The discussion of inter-assemblage variability is subdivided into individual sections on artifact scatters, one- to three-room structures, pueblo roomblocks and plaza pueblos, and cavates. These data are discussed in respect to specific time periods. This information is then used to address a set of seven research questions as presented in Chapter 5.

PROJECT ARTIFACT SAMPLE

The project artifact sample does represent a cross-section of the time periods and site types present on the Pajarito Plateau. Table 9.1 provides information on artifact type by time period. The majority of the artifacts were recorded on Coalition period sites (65.3%; $n = 12,294$), with less on the Classic and Late Coalition/Early Classic period sites and very little on the undetermined Ancestral Pueblo, Archaic, Archaic-Coalition/Spanish Colonial, undetermined, and recent sites. Table 9.2 presents data on artifact type by site type. Most of the artifacts were recorded at pueblo roomblock sites ($n = 9589$; 50.9%), with less on plaza pueblos, fieldhouses, lithic and ceramic scatters, cavates, and lithic scatters. Very few artifacts were identified on the remaining site types.

Table 9.1. Total Artifacts by Time Period

Time Period	Total Sites	Total Artifacts
Undetermined	4	25
Archaic	3	355
Undetermined Ancestral Pueblo	8	506
Coalition	40	12,128
Late Coalition/Early Classic	9	1630
Classic	16	3933
Archaic-Coalition	1	72
Archaic-Spanish Colonial	2	58
Recent	1	14
Total	84	18,720

Table 9.2. Total Artifacts by Site Type

Site Type	Total Sites	Total Artifacts
Lithic scatter	6	487
Lithic/ceramic scatter	13	1242
Fieldhouse	20	1110
Pueblo roomblock	23	9589
Plaza pueblo	5	5175
Cavate	8	607
Rockshelter	3	15
Garden plot	2	267
Rock feature	3	214
Stairway	1	15
Total	84	18,720

ARTIFACT TYPES

Ceramic Artifacts

Pieces of pottery numbering 14,087 were analyzed during the infield analysis (Table 9.3). Ceramic type definitions and associated date ranges are derived from Breternitz (1966), Harlow (1973), and McKenna (1991). Santa Fe Black-on-white, Abiquiu Black-on-gray (Biscuit A), and Bandelier Black-on-gray (Biscuit B) dominate the painted ware types. Small quantities of nonlocal painted wares like Red Mountain redwares are present during the Coalition period and Rio Grande glazewares during the Classic period. The majority of the utilitywares consist of smeared-indented and obliterated corrugated, with fewer plainwares and indented corrugated types. Nonlocal micaceous plainwares could have been obtained from groups residing in the nearby Rio Grande Valley.

Table 9.3. Frequency of Ceramic Artifact Types with Associated Dates*

Ceramic Type	Dates (AD)	Total Artifacts
Undetermined whiteware	---	311
Santa Fe Black-on-white	1175-1350	2113
Wiyo Black-on-white	1300-1400	301
Galisteo Black-on-white	1300-1400	10
Undetermined redware	---	57
Wingate Black-on-red	1100-1200	12
St. Johns Black-on-red	1175-1300	13
St. Johns Polychrome	1175-1300	1
Undetermined biscuitware	---	66
Biscuit A	1375-1425	805
Biscuit B	1425-1475	971
Biscuit C	1475-1600	1
Undetermined glazeware	---	36
Undetermined Glaze-on-red	---	18
Undetermined Glaze-on-polychrome	---	10
Glaze A, Glaze-on-polychrome	1315-1425	1
Glaze D, San Lazaro Glaze-on-polychrome	1490-1515	5
Glaze E, Puaray Glaze-on-polychrome	1515-1650	4
Sankawi Black-on-cream	1525-1650	192
Potsuwi'i Incised	1450-1550	16
Tewa Polychrome	1650-1750	8
Kapo Black	1650-present	1
Undetermined historic	---	1
Undetermined corrugated	---	28
Undetermined utility	---	45
Indented corrugated	1150-1350	380
Smeared-indented corrugated	1250-1400	6110
Obliterated corrugated	---	1428
Incised corrugated	---	1
Clapboard corrugated	---	103
Non-micaceous plain	---	548
Micaceous plain	---	441
Micaceous slipped plain	---	50
Total	---	14,087

* Dates are derived from Breternitz (1966), Harlow (1973), and McKenna (1991).

Table 9.4 presents information on four temporally sequential sites. LA 127649 is a Coalition period linear roomblock located on a ridge in Pueblo Canyon. LA 394 is a Coalition period plaza pueblo situated on a ridge overlooking Los Alamos Canyon. LA 32 (Little Otowi) is a Late Coalition/Early Classic period plaza pueblo located on a ridge in Pueblo Canyon. Lastly, LA 169 (Otowi) is a large Classic period plaza pueblo site situated on a ridge between Bayo and Pueblo Canyons. A comparison of these ceramic assemblages illustrates the chronological sensitivity of certain ceramic types. For example, the Coalition period sites contain relatively more Santa Fe Black-on-white and the Classic period sites more biscuitwares. Santa Fe Black-on-white dominates at the two Coalition sites, but is present in the same amounts at Little Otowi. Little Otowi exhibits relatively equal amounts of Biscuits A and B vs. Otowi that contains mainly

Table 9.4. Frequency of Ceramic Types for Selected Coalition, Late Coalition/Early Classic, and Classic Period Sites

Ceramic Type	Sites			
	LA 127649*	LA 394	LA 32	LA 169
Undetermined whiteware	10	13	8	53
Santa Fe Black-on-white	102 (22.8)	212 (16.1)	37 (5.1)	33 (1.2)
Wiyo Black-on-white	9 (2.0)	19 (1.4)	37 (5.1)	42 (1.6)
Galisteo Black-on-white	1	0	0	0
Undetermined redware	0	0	2	28
Wingate Black-on-red	0	1	0	0
St. Johns Black-on-red	0	1	1	0
Undetermined biscuitware	1	6	6	26
Biscuit A	8 (1.7)	10 (0.7)	119 (16.5)	339 (13.2)
Biscuit B	3 (0.6)	6 (0.4)	108 (14.9)	722 (28.2)
Undetermined glazeware	0	0	10	11
Undetermined Glaze-on-red	0	0	0	17
Undetermined Glaze-on-polychrome	0	0	0	10
Glaze D, San Lazaro Glaze-on-polychrome	0	0	0	4
Glaze E, Puaray Glaze-on-polychrome	0	0	0	4
Sankawi Black-on-cream	0	2	9	153
Potsuwi'i Incised	0	0	0	14
Kapo Black	0	0	0	1
Undetermined corrugated	1	2	0	2
Undetermined utility	0	17	0	0
Indented corrugated	6	69	25	5
Smearred-indented corrugated	272 (60.9%)	864 (65.6)	127 (17.6)	273 (10.6)
Obliterated corrugated	29 (6.5)	50 (3.7)	29 (4.0)	438 (17.1)
Incised corrugated	0	1	0	0
Clapboard corrugated	2	5	9	3
Non-micaceous plain	2 (0.4)	38 (2.8)	127 (17.6)	47 (1.8)
Micaceous plain	0	0	67 (9.2)	278 (10.8)
Micaceous slipped plain	0	0	0	50 (1.9)
Total	446	1316	721	2553

* LA 127649 is a roomblock; LA 394, plaza pueblo; LA 32, plaza pueblo; and LA 169, plaza pueblo

Biscuit B. Most of the Sankawi Black-on-cream sherds were identified at Otowi, as were all of the Potsuwi'i Incised sherds. Smearred-indented corrugated wares dominate the Coalition period sites. In contrast, Little Otowi contains relatively more non-micaceous and micaceous plainware and Otowi more obliterated corrugated, micaceous plain, and micaceous slipped plainware ceramics. As previously noted, a few nonlocal Red Mountain redwares are present on the Coalition period sites and glazewares on the Classic period sites. The undetermined redware sherds at Little Otowi and Otowi may represent glazewares. This could include Glaze A at Little Otowi, as compared to the Glaze D and E at Otowi.

Chipped Stone Artifacts

A total of 4434 chipped stone artifacts were recorded during the infield analysis. Definitions for the chipped stone artifacts are provided in Appendix A. Table 9.5 presents the summary data on artifact type by material type. Overall, Cerro Pedernal chert/chalcedony dominates the chipped

Table 9.5. Frequency of Chipped Stone Artifact Type by Material Type

Artifact Type	Material Type												
	Basalt	Rhyolite	Andesite	Granite	Obsidian	Chalcedony	Chert	Cerro Pedernal	Silicified Wood	Quartzite	Green-stone	Quartz	Total
Angular debris	17	26	0	0	50	35	2	943	0	5	1	3	1082
Core flake	110	82	1	0	254	105	14	1408	4	18	1	0	1998
Biface flake	7	2	0	0	159	4	5	120	0	0	0	0	297
Microdebitage	4	2	0	0	107	52	1	242	0	0	0	0	410
Undetermined flake fragment	12	14	0	0	145	16	2	305	0	8	0	0	502
Pot lid	0	0	0	0	0	0	0	1	0	0	0	0	1
Fire-cracked rock	0	5	0	0	1	0	0	0	0	1	0	0	7
Manuport	0	0	0	0	0	0	0	0	0	2	0	0	2
Core	2	3	0	0	3	1	1	22	1	0	0	1	34
Cobble uniface	1	0	0	0	0	0	0	0	0	0	0	0	1
Cobble biface	1	3	0	1	0	0	0	0	0	1	0	0	5
Test material	0	0	0	0	0	0	0	0	0	1	0	0	1
Hammerstone	0	1	1	0	0	0	0	0	0	8	0	0	10
Utilized flake	0	0	0	0	1	0	0	3	0	1	0	0	5
Retouched flake	0	0	0	0	8	2	0	10	0	0	0	0	20
Denticulate	0	0	0	0	0	0	0	2	0	0	0	0	2
Uniface	0	0	0	0	2	0	0	1	0	0	0	0	3
Biface	0	0	0	0	11	0	0	1	0	0	0	0	12
Projectile point	1	0	0	0	25	0	0	4	0	0	0	0	31
Drill	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	155	138	2	1	768	216	25	3063	5	45	2	4	4424

stone artifact group, comprising 69.2% of the materials, with less obsidian (17.2%), chalcedony (4.8%), basalt (3.5%), rhyolite (3.1%), and other materials; however, it appears that most of the debitage and cores are made of Cerro Pedernal chert/chalcedony, obsidian, rhyolite, chalcedony, or basalt. In contrast, there are similar amounts of Cerro Pedernal chert/chalcedony, and obsidian for the retouched flakes, with most of the bifaces and projectile points being manufactured on obsidian. That is, relatively more chert, chalcedony, and igneous materials were used for the production of informal tools and obsidian for formal tools.

The volcanic materials like basalt and rhyolite are locally available. Cerro Pedernal chert/chalcedony, chalcedony, chert, and silicified wood are available from secondary terrace gravel sources. Indeed, 91.5% ($n = 357$) of the cortex on the Cerro Pedernal materials is waterworn cortex, as is most of the cortex on the chalcedony, chert, and silicified wood. Cerro Pedernal chert/chalcedony is derived from the Cerro Pedernal Member of the Abiquiu formation that outcrops near Cerro Pedernal at Abiquiu. It is colored white with mixtures of red, yellow, and black. The prehistoric inhabitants of the project area presumably obtained these materials from the terrace gravels located near Totavi in Los Alamos Canyon. Chalcedony is a clear or white material with no color variations as defined for Cerro Pedernal chert/chalcedony; however, it may simply represent an uncolored variety of the Cerro Pedernal rock type. The cherts tend to be gray, tan, red, and brown in color.

Several color variations were documented for the obsidians. These primarily consist of a black translucent ($n = 609$; 79.2%), with less opaque black ($n = 71$), dusty ($n = 54$), green ($n = 26$), and brown ($n = 8$). The original source for the black translucent would either be the Obsidian Ridge or Cerro del Medio areas. The black opaque, green, and brown varieties are also present at the Obsidian Ridge source area and the dusty type from Polvadera Peak. Most of the obsidian exhibits nodule cortex ($n = 43$; 72.8%) indicating that much of it was derived from primary sources. This contrasts with waterworn cortex that reflects secondary river gravel sources.

Twenty-one projectile points were collected from sites and seven as IOs (Figures 9.1–9.3). Table 9.6 presents the metrical and non-metrical data for these artifacts. Nine of the points can be classified as Archaic dart points with neck widths greater than 10 mm. One of these is a possible San Jose point with a concave base. It exhibits a broken tip, tang, and base (TA-74, IO3). The remaining eight dart points represent Late Archaic forms. These consist of three corner-notched and five stemmed points. Two of the corner-notched points are base fragments (LA 12587C and LA 127643) and the third point exhibits a heavily reworked blade (TA-74, IO4). All of these appear to reflect use breaks. The five stemmed points represent a variety of forms. One has a heavily resharpened blade and a slight concave base (LA 86637). Another stemmed point has a serrated blade and a convex base (LA 127640). This artifact appears to have been broken during an attempt to thin the base. The remaining three points have square-stemmed bases. One of these exhibits a heavily resharpened blade (LA 127692) and the others have two elongated blades with broken tips (LA 127665 and TA-74, IO1). The latter point has a very large blade. These stemmed points also appear to have been broken during use. Otherwise, most of the Archaic projectile points are made of Jemez ($n = 5$) and Polvadera Peak ($n = 3$) obsidian, with Cerro Pedernal chert/chalcedony ($n = 1$).

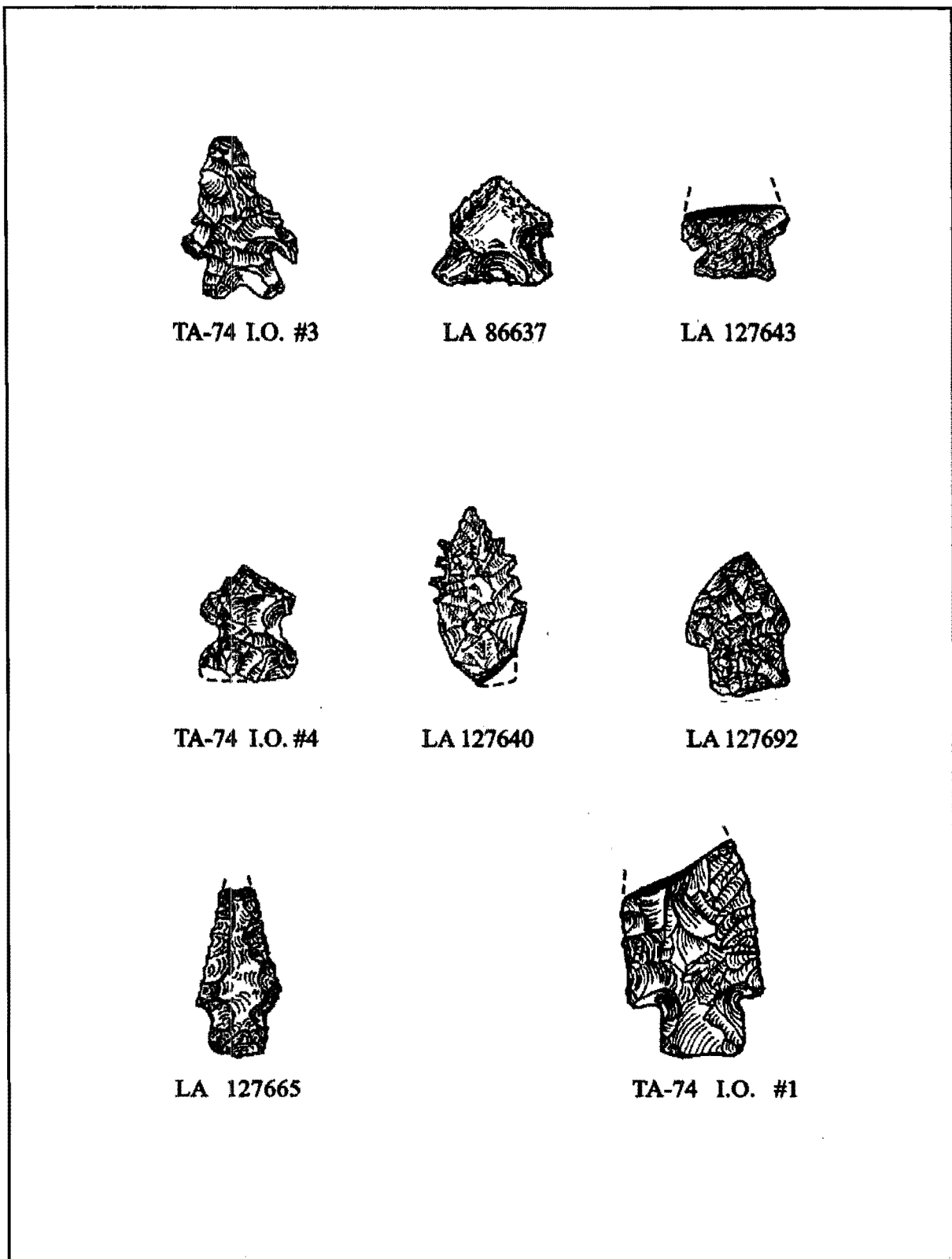


Figure 9.1. Dart points.

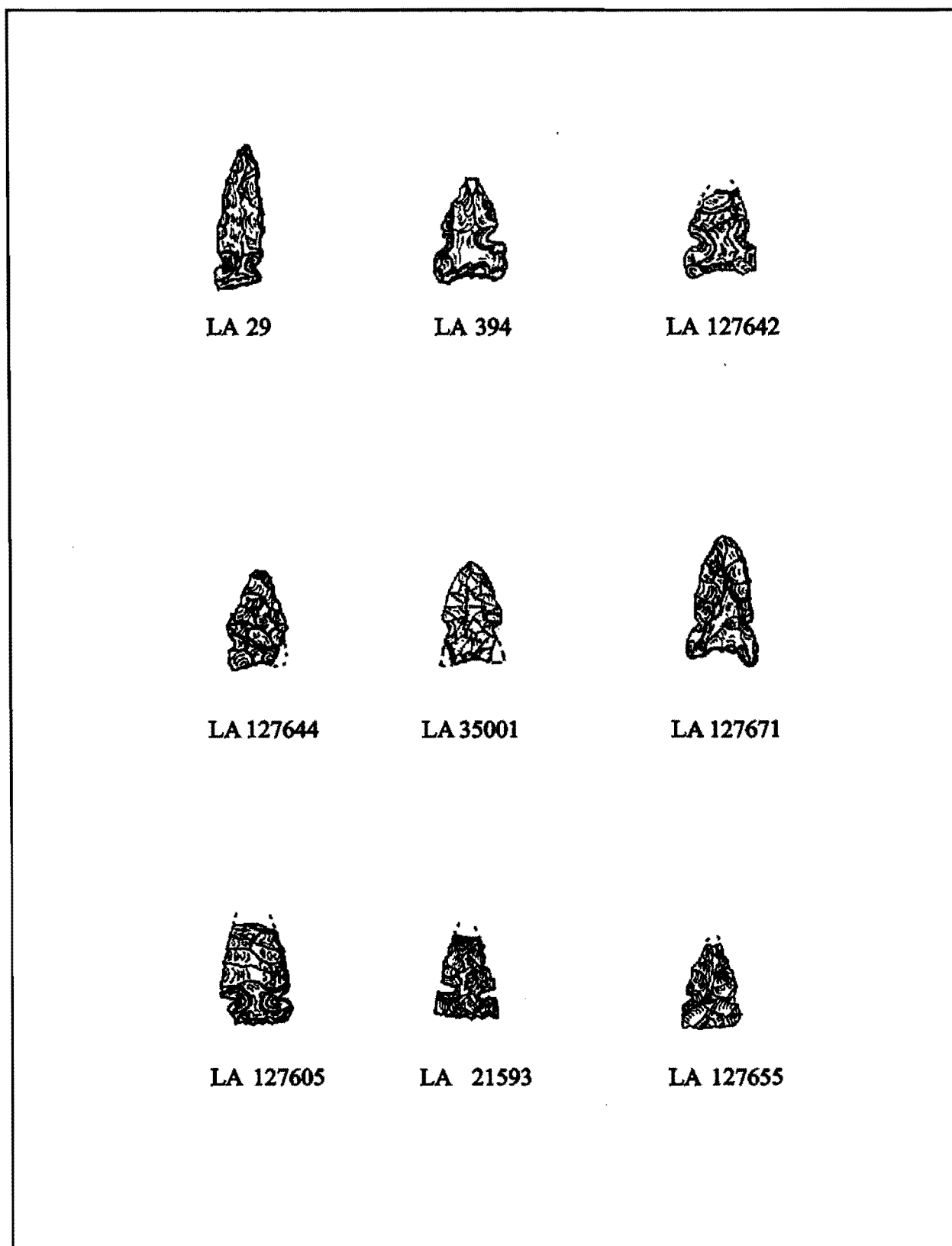


Figure 9.2. Arrow points found in the LCT area.

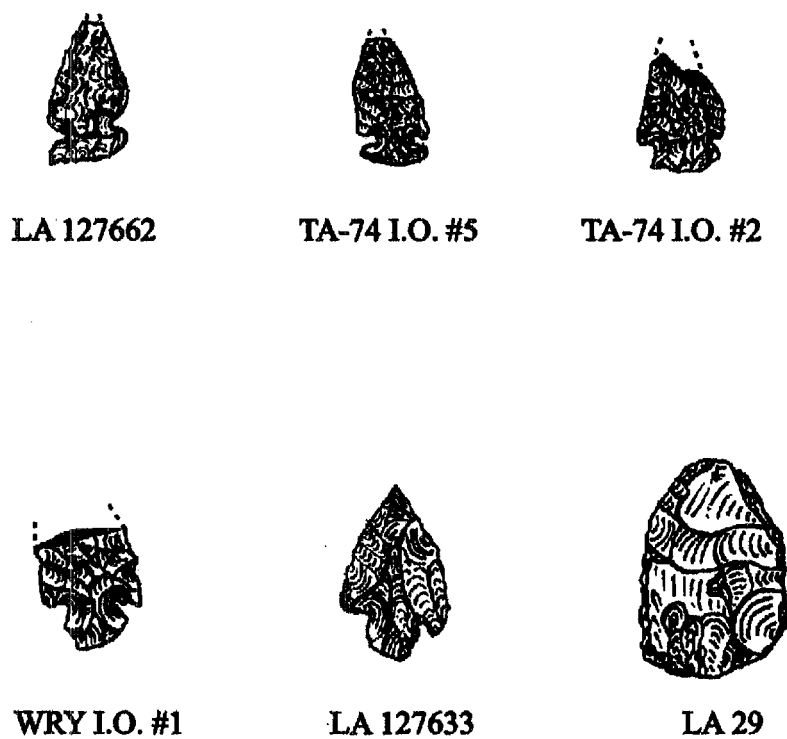


Figure 9.3. Arrow points and a biface (LA 29) found in the LCT area.

Table 9.6. Projectile Point Metrical and Non-Metrical Data

LA or Tract #	SU or IO #	Material	Condition	Overall Length (mm)	Blade Length (mm)	Neck Width (mm)	Stem Length (mm)	Stem Width (mm)	Thickness (mm)	Weight (gm)	Haft Type	Blade Shape	Base Shape	Edge Angle
29	2	Polvadera Peak obsidian	Proximal	---	---	---	---	---	3.3	0.4	---	---	---	---
29	2	Cerro Pedernal chert	Distal	29.4	23.4	7.0	6.0	10.6	4.1	1.2	Side-notched	Convex	Concave	55
29	2	Jemez obsidian	Whole	34.0	---	---	---	---	7.2	5.3	Biface/preform	Convex	Convex	35
394	3	Jemez obsidian	Whole	20.3	10.4	8.0	9.9	14.5	2.8	0.7	Side-notched	Straight	Concave	30
12587C	2	Jemez obsidian	Proximal	---	---	---	---	18.3	---	1.0	Corner-notched	---	Straight	---
12605	1	Polvadera Peak obsidian	Proximal	---	---	8.7	5.2	14.8	3.6	1.1	Side-notched	Straight	Straight	30
21593	7	Jemez obsidian	Proximal	---	---	6.8	7.8	12.8	3.1	0.6	Side-notched	Straight	Straight	30
86637	3	Jemez obsidian	Whole	20.2	8.6	17.1	11.6	22.7	5.4	2.1	Stemmed	Straight	Concave	40
127625	1	Polvadera Peak obsidian	Midsection	---	---	---	---	---	3.5	0.8	---	Straight	---	35
127638	1	Jemez obsidian	Whole	26.6	19.9	7.1	6.7	7.1	4.5	1.3	Stemmed	Convex	Convex	35
127640	1	Jemez obsidian	Distal	---	20.0	13.6	13.8	17.0	5.2	2.4	Stemmed	Serrated	Convex	40
127642	1	Cerro Pedernal chert	Proximal	---	---	7.7	6.2	13.7	3.2	0.6	Side-notched	Straight	Concave	35
127643	1	Polvadera Peak obsidian	Proximal	---	---	13.6	7.2	17.2	4.4	1.4	Corner-notched	---	Convex	---
127644	2	Jemez obsidian	Proximal	---	---	9.2	6.0	---	2.7	0.6	Side-notched	Straight	Concave	30
127646	6	Jemez obsidian	Midsection	---	---	---	---	---	2.7	0.6	Side-notched	Straight	---	50
127652	4	White chert	Proximal	---	---	8.1	6.8	---	3.5	0.8	Side-notched	Straight	Concave	40
127655	1	Cerro Pedernal chert	Midsection	---	---	8.3	---	11.2	3.2	0.6	Side-notched	Straight	---	40

Table 9.6. (Con't.)

LA or Tract #	SU or IO #	Material	Condition	Overall Length (mm)	Blade Length (mm)	Neck Width (mm)	Stem Length (mm)	Stem Width (mm)	Thickness (mm)	Weight (gm)	Haft Type	Blade Shape	Base Shape	Edge Angle
127662	3	Polvadera Peak obsidian	Proximal	---	---	8.0	6.1	---	3.3	0.8	Side-notched	Straight	Straight	45
127665	3	Polvadera Peak obsidian	Proximal	---	---	11.1	10.2	11.1	6.3	2.9	Stemmed	Straight	Straight	65
127671	1	Polvadera Peak obsidian	Whole	24.1	17.8	9.4	6.3	13.5	4.7	1.1	Side-notched	Convex	Concave	50
127692	1	Polvadera Peak obsidian	Whole	26.6	15.8	14.6	10.8	16.7	5.0	2.5	Stemmed	Straight	Straight	50
TA-74	1	Jemez obsidian	Proximal	---	---	14.3	11.4	15.7	6.1	7.0	Stemmed	Straight	Concave	35
TA-74	2	Polvadera Peak obsidian	Proximal	---	---	8.3	5.3	9.6	3.6	0.8	Corner-notched	Straight	Convex	35
TA-74	3	Jemez obsidian	Proximal	---	---	12.5	9.3	14.8	5.4	2.6	Stemmed	Straight	Concave	35
TA-74	4	Polvadera Peak obsidian	Whole	22.9	10.9	11.6	12.0	19.2	4.3	1.7	Corner-notched	Straight	Convex	50
TA-74	5	Red chert	Whole	19.9	17.6	6.3	5.2	9.9	2.8	0.7	Side-notched	Convex	Convex	25
WR-Y	1	Polvadera Peak obsidian	Proximal	---	---	7.6	7.3	10.0	3.8	1.0	Corner-notched	Straight	Convex	30
WR-Y	3	Jemez obsidian	Proximal	---	---	10.6	12.4	14.2	---	0.7	---	---	Straight	---

The majority of the collected projectile points consist of arrow points that were recovered from Coalition or Classic period pueblo sites and as IOs (LA 29, LA 394, LA 12605, LA 21593, LA 127638, LA 127642, LA 127644, LA 127652, LA 127655, and LA 127662; TA-74, IO2 and IO5; White Rock Y IO1). Neck width for these points is less than 10 mm. Most of the arrow points are side-notched ($n = 11$), with concave ($n = 6$), straight ($n = 4$), and convex-shaped ($n = 1$) bases. Otherwise, there are two corner-notched and one stemmed point. The stemmed point exhibits a contracting stem with a convex base. The two corner-notched points also exhibit convex bases. Most of these points have been broken due to use, with tips and/or corners of their bases missing. A single small ovate biface was collected from LA 29 that could represent a point preform. The remaining four projectile points are undetermined midsection or base fragments (LA 29, LA 127625, LA 127646, and White Rock Y IO3). Most of the arrow points are made of Polvadera Peak ($n = 7$) and Jemez ($n = 4$) obsidian, with less Cerro Pedernal chert/chalcedony ($n = 1$), white chert ($n = 1$), and red chert ($n = 1$). See Thoms (1977), Lord (1986), Brown et al. (1993), and Turnbow (1997) for projectile point type illustrations from the region.

Ground Stone Artifacts

A total of 189 ground stone artifacts were recorded during the infield analysis. Artifact type definitions are provided in Appendix A. Table 9.7 presents the summary information on artifact type by material type. Most of the ground stone items are undetermined mano fragments, metate fragments, and ground stone fragments. Most of the manos are made of rhyolite, quartzite, and andesite; whereas, most of the metates, undetermined ground stone fragments, an axe, and a maul are made of rhyolite. The polishing stones are composed of a variety of igneous materials, quartzite, and quartz. The volcanic materials used for ground stone production are locally available and the quartzite and quartz can be obtained from the nearby terrace river gravels. However, the source locations for the sandstone and metamorphic rock materials are undetermined. They were presumably derived from more distant sources in the Rio Grande Valley.

Other Artifacts

Thirty-two other artifacts were identified during the infield analysis. These consist of seven pieces of fire-cracked rock, two manuports, an axe, a maul, a stone lid, a shaped slab, 16 bone fragments, a wood artifact, and a maize cob. The fire-cracked rocks and bone fragments were identified in midden areas. These burned rocks mostly consist of rhyolite. The two manuports are unmodified quartzite river cobbles that could represent mano blanks. The wood artifact is a fire drill that was recovered from a rockshelter (LA 127684). The maize cob was collected from a cavate (LA 127673); however, two additional maize cob fragments were collected from an adjacent cavate (LA 127668) and a pack rat midden at LA 15117, but an infield artifact analysis was not conducted at these sites. An isolated maize cob (IO6) was also collected from a pack rat midden in TA-74. The cobs range from five- to seven-row varieties (Figure 9.4).

Table 9.7. Frequency of Ground Stone Artifact Type by Material Type

Artifact Type	Material Type											Total
	Undetermined Igneous	Basalt	Vesicular Basalt	Rhyolite	Andesite	Tuff	Sand-stone	Quartzite	Schist	Gneiss	Quartz	
One-hand mano	0	0	0	7	2	0	0	8	0	0	0	17
Two-hand mano	0	0	0	4	1	0	0	0	0	1	0	6
Undetermined mano fragment	0	1	5	26	12	0	0	22	0	0	0	66
Millingstone	0	1	0	3	1	0	0	0	0	0	0	5
Basin metate	1	0	0	2	0	0	0	0	1	0	0	4
Slab metate	1	0	2	4	0	0	0	0	0	0	0	7
Trough metate	0	0	0	2	0	0	0	0	0	0	0	2
Grinding slab	0	0	0	3	0	0	0		0	0	0	3
Undetermined metate fragment	0	1	2	11	2	0	0	1	0	0	0	17
Polishing stone	1	0	1	1	0	0	0	1	0	0	1	5
Axe	0	0	0	1	0	0	0	0	0	0	0	1
Maul	0	0	0	1	0	0	0	0	0	0	0	1
Stone lid	0	0	0	0	0	0	1	0	0	0	0	1
Shaped slab	0	0	0	1	0	1	0	0	0	0	0	2
Undetermined ground stone	0	4	7	24	4	1	3	7	1	1	0	52
Miscellaneous ground stone	0	0	0	0	0	0	0	0	1	0	0	1
Total	3	7	17	90	22	2	4	39	3	2	1	190



LA 127673
Cavate 23



LA 127668
Cavate 6



TA-74 IO #6

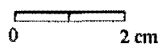


Figure 9.4. Maize cobs and fragments collected from the LCT area.

INTER-ASSEMBLAGE VARIABILITY

Artifact Density

The range of activities and intensity of site occupation varies greatly by site type. This is in part reflected in artifact density values that range from .01 to 200 artifacts per m². This pattern is illustrated as a continuous sequence in Figure 9.5. The greatest break is at about 150 artifacts per m². All but one of the sites above this value are Coalition roomblocks, with a single Coalition plaza pueblo. Otherwise, the highest density exhibited by a Late Coalition/Early Classic period plaza site is Little Otowi with 134 artifacts per m² and at the Classic period plaza site of Otowi, 116 artifacts per m². Overall, garden plots, cavates, and one- to three-room structures (e.g., fieldhouses) exhibit the lowest artifacts densities, with 0.1, 3.2, and 4.6 artifacts per m², respectively. Lithic and ceramic scatters and lithic scatters have the next greatest densities of 12.4 and 18.6, respectively. Lastly, roomblocks and plaza pueblo sites have the highest densities with 61.6 and 62.3 artifacts per m², respectively. The remaining site types have too few samples to make accurate density estimates (i.e., rockshelter, rock feature, and stairways).

Artifact Scatters

There are 19 surface artifact scatters represented in the infield analysis sample. As such, they make up one of the largest site types present. However, they can be subdivided into seven groups: undetermined lithic scatters ($n = 1$), Archaic lithic scatters ($n = 3$), undetermined Ancestral Pueblo lithic scatters ($n = 2$), undetermined Ancestral Pueblo lithic and ceramic scatters ($n = 3$), Coalition lithic and ceramic scatters ($n = 2$), Late Coalition/Early Classic lithic and ceramic scatters ($n = 2$), and Classic lithic and ceramic scatters ($n = 2$).

Discussions on inter-assemblage variability will focus on comparisons of lithic and ceramic assemblage composition between the groups. The single undetermined lithic scatter is excluded from the analysis, since it only contains a total of ten artifacts. Most of these consist of obsidian debitage; however, there is a side-notched arrow point with a concave base that could reflect a post-Archaic cultural affiliation. Table 9.8 is a contingency table of lithic artifact type by time period. A chi-square analysis of the table indicates that there is a significant difference in surface assemblage composition by time period (chi-sq = 207.9, df = 30, $p = <0.01$). Adjusted residuals were therefore calculated to determine which of the cells were contributing to the significant chi-square value. Adjusted residuals greater than 1.96 or -1.96 are significant at the 0.05 level. A review of the table indicates that there are significantly more biface flakes and microdebitage than expected in the Archaic assemblage and more angular debris, core flakes, undetermined flake fragments, and ground stone in the Ancestral Pueblo assemblages. This pattern is similar to that identified by other Southwestern researchers, whereby Archaic sites reflect a greater emphasis on biface production/maintenance and Ancestral Pueblo sites on core reduction (e.g., Parry and Kelly 1987; Sullivan and Rozen 1985; Vierra 1990, 1993a, 1993b). The relative similarity in the presence of retouched and ground stone tools is probably due to public access and site visitation, with most of the formal tools having been removed from the sites. The single exception to this appears to be the Coalition period artifact scatters that contain significantly more ground stone items. Most of these are undetermined mano fragments.

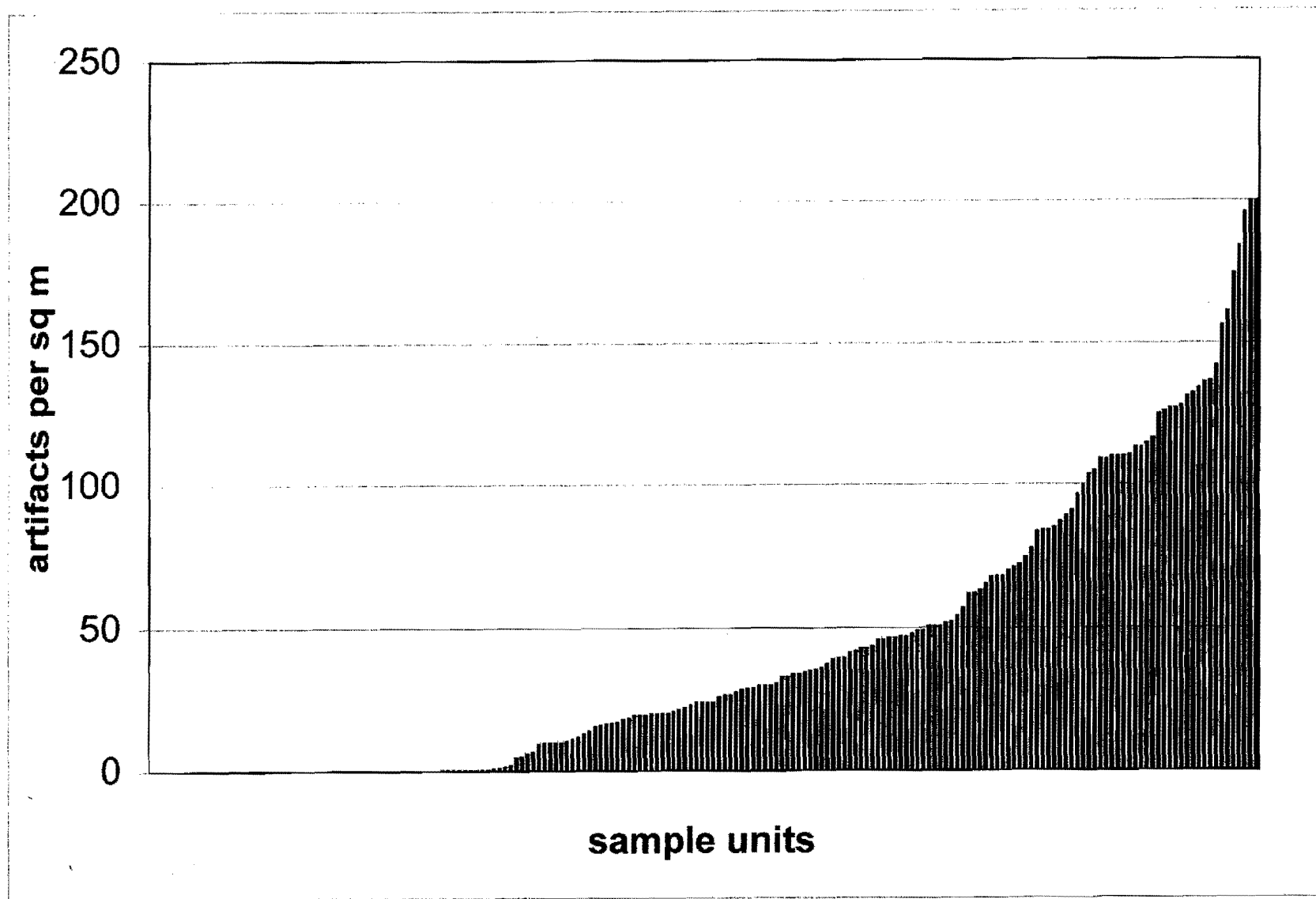


Figure 9.5. Artifacts per m^2 illustrated as a continuous sequence.

Table 9.8. Lithic Artifact Type by Time Period for Artifact Scatters

Artifact Type	Time Period					
	Archaic Lithic Scatter	Undetermined Ancestral Pueblo Lithic Scatter	Undetermined Ancestral Pueblo Lithic/Ceramic Scatter	Coalition Lithic/Ceramic Scatter	Late Coalition/Early Classic Lithic/Ceramic Scatter	Classic Lithic Ceramic Scatter
Debris	18* -7.3	36 3.8	56 0.7	49 4.7	22 2.4	10 -1.5
Core flake	111 0.0	26 -2.6	112 2.5	53 0.3	16 -2.4	31 0.8
Biface flake	90 4.8	15 -1.6	50 -0.5	14 -3.2	7 -2.2	18 0.8
Microdebitage	69 7.8	3 -2.8	10 -4.3	6 -2.8	6 -0.7	12 1.4
Undetermined flake fragment	46 -2.9	38 4.0	52 -0.4	25 1.0	24 2.8	15 -0.3
Retouched tool	7 0.0	2 -0.3	7 0.5	3 -0.1	3 1.1	0 -1.4
Ground stone	3 -1.8	0 -1.7	8 1.0	9 3.5	2 -0.3	0 -1.4
Total	344	120	295	159	80	86

Chi-square = 207.9, df = 30, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

The information on chipped stone material type by time period is presented in Table 9.9. The material type categories consist of igneous rock (e.g., rhyolite and basalt), obsidian, and chert/chalcedony. A chi-square test of the table indicates that there is a significant difference in the distribution of material types across the time periods ($\chi^2 = 623.8$, $df = 10$, $p = <0.01$). An inspection of the adjusted residuals indicates that the Archaic assemblage contains significantly more obsidian vs. the Ancestral Pueblo assemblages that contain relatively more chert/chalcedony or igneous rock materials. This pattern reflects a material selection bias towards the use of higher quality materials for the production of bifaces vs. lower quality materials for core reduction activities.

Tables 9.10 and 9.11 present information on ceramic type and vessel form for undetermined Ancestral Pueblo, Coalition, and Late Coalition/Early Classic artifact scatters. The Classic period lithic and ceramic scatter assemblage contained too few artifacts to include in the table ($n = 3$). Chi-square analyses of these contingency tables reveals that there are significant differences in the ceramic assemblages for these artifact scatters ($\chi^2 = 45.1$, $df = 2$, $p = <0.01$; $\chi^2 = 7.8$, $df = 2$, $p = 0.02$). The adjusted residuals indicate that there are relatively more utilityware sherds on the Coalition lithic and ceramic scatters vs. more painted ware sherds on the Late Coalition/Early Classic artifact scatters. This pattern is also evident when comparing bowl and jar sherds, with significantly more bowl sherds being present on Late Coalition/Early Classic artifact scatters. This appears to be the result of an increase in the number of painted ware jar sherds during this later period.

One- to Three-Room Structures

One- to three-room structures typically represent fieldhouses that are located near agricultural fields (e.g., garden plots). Comparisons could not be made between these temporary habitation sites and garden plots due to the fact that the artifact sample size for these latter sites was too small. Information on assemblage composition is available for Coalition and Classic period one- to three-room structures; however, Late Coalition/Early Classic period sites were excluded from the analysis because of a small sample size ($n = 44$). As a contrast, a comparison is made between these small structural sites and Coalition period lithic and ceramic scatters. The information on lithic artifact by time period is presented in Table 9.12. A chi-square analysis of the contingency table indicates that there is a significant difference in the distribution ($\chi^2 = 32.3$, $df = 10$, $p = <0.01$). It appears that there are relatively more biface flakes on the Coalition artifact scatters, core flakes on the Coalition small structural sites, and undetermined flake fragments on the Classic small structural sites. This represents a greater emphasis on core reduction activities at these latter sites.

Table 9.13 provides information on chipped stone material type by site type. There is also a significant difference in the distribution of material type by time period ($\chi^2 = 42.3$, $df = 4$, $p < .01$). The Coalition artifact scatters and the Classic structures contain relatively more obsidian than expected vs. more chert/chalcedony in the Coalition structural assemblages.

In general, there are far more ceramic artifacts represented at these sites than lithic artifacts; however, the sample size for ceramics from the Classic one- to three-room structures is small. Nonetheless, the information presented in Table 9.14 indicates that there is a significant

Table 9.9. Chipped Stone Artifact Material Type by Time Period for Artifact Scatters

Material Type	Time Period					
	Archaic Lithic Scatter	Undetermined Ancestral Pueblo Lithic Scatter	Undetermined Ancestral Pueblo Lithic/Ceramic Scatter	Coalition Lithic/Ceramic Scatter	Late Coalition/Early Classic Lithic/Ceramic Scatter	Classic Lithic Ceramic Scatter
Igneous	6* -2.6	3 -0.8	5 -2.3	17 4.8	6 1.8	5 1.1
Obsidian	311 21.7	27 -4.5	46 -10.7	36 -5.4	33 0.0	0 -8.0
Chert/Chalcedony	27 -20.5	93 4.8	237 11.5	103 3.5	38 -0.7	81 7.5
Total	344	123	288	156	77	86

Chi-square = 623.8, df = 10, $p = <0.01$ *Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.10. Ceramic Type by Time Period

Ceramic Type	Time Period		
	Undetermined Ancestral Pueblo Lithic/Ceramic Scatter	Coalition Lithic/Ceramic Scatter	Late Coalition/Early Classic Lithic/Ceramic Scatter
Painted ware	4* -1.9	90 -4.9	51 6.6
Utilityware	24 1.9	279 4.9	34 -6.6
Total	28	369	85

Chi-square = 45.1, df = 2, $p < 0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p < 0.05$) positive values are shown in bold.

Table 9.11. Vessel Form by Time Period

Vessel Form	Time Period		
	Undetermined Ancestral Pueblo Lithic/Ceramic Scatter	Coalition Lithic/Ceramic Scatter	Late Coalition/Early Classic Lithic/Ceramic Scatter
Bowl	4* -1.3	81 -1.9	31 2.9
Jar	24 1.3	283 1.9	54 -2.9
Total	28	364	85

Chi-square = 7.8, df = 2, $p = 0.02$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p < 0.05$) positive values are shown in bold. This table excludes five sherds for which vessel form could not be determined.

Table 9.12. Lithic Artifact Type by Time Period for Artifact Scatters and One- to Three-Room Structures

Artifact Type	Time Period		
	Coalition Lithic/Ceramic Scatter	Coalition One- to Three-Room Structures	Classic One- to Three-Room Structures
Debris	49* 1.4	58 -1.0	29 -0.4
Core flake	53 -3.7	132 4.5	46 -1.3
Biface flake	14 3.1	4 -2.8	5 -0.1
Microdebitage	6 0.7	5 -1.0	4 0.4
Undetermined flake fragment	25 0.9	22 -2.7	23 2.3
Ground stone	9 0.7	10 -0.5	5 -0.2
Total	156	231	112

Chi-square = 32.3, df = 10, $p < 0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p < 0.05$) positive values are shown in bold.

difference in ceramic type by time period (chi-sq = 120.7, df = 2, $p < 0.01$). That is, there are relatively more utilityware sherds on the Coalition artifact scatters and more painted ware sherds on the Classic small structural

sites. A similar significant difference is also evident in Table 9.15 when comparing ceramic vessel form ($\chi^2 = 95.4$, $df = 2$, $p = <0.01$). There are significantly more jar sherds represented on the Coalition artifact scatters vs. bowl sherds on the Classic small structural sites. Coalition small structural sites are more similar in ceramic composition to the Classic period sites, but do not exhibit significant adjusted residual values.

Table 9.13. Chipped Stone Material Type by Time Period for Artifact Scatters and Structures

Material Type	Time Period		
	Coalition Lithic/ Ceramic Scatter	Coalition One- to Three- Room Structures	Classic One- to Three- Room Structures
Igneous	17* 0.1	30 1.8	5 -2.2
Obsidian	36 2.7	12 -6.1	32 4.4
Chert/chalcedony	103 -2.5	183 3.9	69 -2.0
Total	156	225	106

Chi-square = 42.3, $df = 4$, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.14. Ceramic Type by Time Period for Artifact Scatters and One- to Three-Room Structures

Ceramic Type	Time Period		
	Coalition Lithic/ Ceramic Scatter	Coalition One- to Three- Room Structure	Classic One- to Three- Room Structures
Painted Ware	90* -6.3	239 0.6	75 10.1
Utilityware	279 6.3	427 -0.6	10 -10.1
Total	369	629	85

Chi-square = 120.7 $df = 2$, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.15. Vessel Form by Time Period for Artifact Scatters and One- to Three-Room Structures

Vessel Form	Time Period		
	Coalition Lithic/ Ceramic Scatter	Coalition One- to Three- Room Structures	Classic One- to Three- Room Structures
Bowl	81* -5.9	223 1.0	65 8.8
Jar	283 5.9	406 -1.0	18 -8.8
Total	364	629	83

Chi-square = 95.1, $df = 2$, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold. This table excludes 28 sherds for which vessel form could not be determined.

Pueblo Roomblocks and Plaza Pueblos

Coalition period roomblocks make up the largest single site component for the infield analysis, with information being collected from 21 sites. On the other hand, information on plaza pueblos and Coalition/Classic roomblocks is derived from just a few sites. That is, the Coalition plaza pueblo assemblage is the sum of three sites, with a single site representing the Late Coalition/Early Classic roomblock (LA 127664), the Late Coalition/Early Classic plaza pueblo (LA 32), the Classic roomblock (LA 12605), and the Classic plaza pueblo (LA 169) assemblages. The sample size from LA 12605 was too small to include in this comparative analysis ($n = 21$).

Table 9.16 presents the information on lithic artifact type by time period. There is a significant difference in the distribution of lithic artifact types across the time periods ($\chi^2 = 180.2$, $df = 24$, $p < 0.01$). Inspection of the adjusted residual values reveals some subtle differences between the assemblages. The Coalition roomblocks contain relatively more angular debris and flake fragments than expected. The Coalition plaza pueblos contain relatively more biface flakes and retouched tools. The Late Coalition/Early Classic roomblocks contain relatively more core flakes. The Late Coalition/Early Classic plaza pueblos contain more angular debris and ground stone. Lastly, the Classic plaza pueblo contains more microdebitage and retouched tools. It is unclear how much site visitation and artifact collection has affected the surface artifact assemblages at these highly visible sites. Nonetheless, differences in the presence of retouched tools and ground stone artifacts could be biased by these collecting activities. Otherwise, the lithic assemblages appear to be dominated by core reduction activities. For example, most of the assemblages contain about 1% to 2% biface flakes vs. 4.9% at the Coalition plaza pueblos. This seems somewhat high for the latter site type, with Coalition lithic and ceramic scatters containing 8.9% and Archaic assemblages 26.1% biface flakes.

Table 9.17 presents information on chipped stone material type by time period. A chi-square analysis of this contingency table indicates that there is a significant difference in distribution of material types by time period ($\chi^2 = 82.5$, $df = 8$, $p < 0.05$). There are relatively more igneous rock materials and chert/chalcedony in the Coalition roomblock assemblage vs. obsidian in the Classic plaza pueblo assemblage.

Tables 9.18 and 9.19 present information on ceramic vessel type and form by time period. Analyses of these contingency tables also indicate significant differences ($\chi^2 = 991.0$, $df = 4$, $p = 0.01$; $\chi^2 = 516.2$, $df = 4$, $p < 0.01$). There are relatively more utilitywares and jars in the Coalition roomblocks assemblages vs. more painted wares and bowls in the plaza pueblo assemblages. This pattern was also observed when comparing Coalition vs. Late Coalition and Classic period artifact scatters and one- to three-room structures.

Table 9.16. Lithic Artifact Type by Time Period for Roomblocks and Plaza Pueblos

Artifact Type	Time Period				
	Coalition Roomblock	Coalition Plaza Pueblo	Late Coalition/Early Classic Roomblock	Late Coalition/Early Classic Plaza Pueblo	Classic Plaza Pueblo
Debris	481* 2.9	43 -1.2	17 -2.7	56 3.3	151 -3.1
Core flake	749 -0.5	80 -0.7	70 4.1	36 -5.2	327 1.8
Biface flake	24 -0.2	9 3.9	3 1.1	3 0.6	2 -2.9
Microdebitage	128 -5.6	14 -1.3	12 0.2	18 0.9	115 6.6
Undetermined flake fragment	154 3.1	18 0.9	2 -2.4	13 0.5	34 -3.2
Retouched tool	7 -4.0	9 5.3	0 -1.1	1 -0.4	12 2.2
Ground stone	79 1.4	8 0.0	2 -1.3	14 3.3	17 -2.6
Total	1622	181	106	141	658

Chi-square = 180.2, df = 24, $p < 0.01$ *Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p < 0.05$) positive values are shown in bold.**Table 9.17. Chipped Stone Artifact Material Type by Time Period for Roomblocks and Plaza Pueblos**

Material Type	Time Period				
	Coalition Roomblock	Coalition Plaza Pueblo	Late Coalition/Early Classic Roomblock	Late Coalition/Early Classic Plaza Pueblo	Classic Plaza Pueblo
Igneous	140* 3.8	6 -2.1	9 0.5	11 0.5	28 -3.5
Obsidian	54 -6.9	12 0.4	11 1.9	4 -1.5	80 7.5
Chert/Chalcedony	1344 2.0	156 1.3	84 -1.7	111 0.6	537 -2.6
Total	1538	174	104	126	645

Chi-square = 82.5, df = 8, $p < 0.01$.*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p < 0.05$) positive values are shown in bold.

Table 9.18. Ceramic Type by Time Period for Roomblocks and Plaza Pueblos

Ceramic Type	Time Period				
	Coalition Roomblock	Coalition Plaza Pueblo	Late Coalition/Early Classic Roomblock	Late Coalition/Early Classic Plaza Pueblo	Classic Plaza Pueblo
Painted ware	1861*	405	40	295	1457
	-30.0	6.2	1.3	5.3	27.7
Utilityware	5797	530	59	384	1096
	30.0	-6.2	-1.3	-5.3	-27.7
Total	7658	935	99	679	2553

Chi-square = 991.0, df = 4, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.19. Vessel Form by Time Period for Roomblocks and Plaza Pueblos

Vessel Form	Time Period				
	Coalition Roomblock	Coalition Plaza Pueblo	Late Coalition/Early Classic Roomblock	Late Coalition/Early Classic Plaza Pueblo	Classic Plaza Pueblo
Bowl	1772*	367	37	258	1145
	-22.2	6.4	1.6	4.7	18.9
Jar	5887	568	62	420	1379
	22.2	-6.4	-1.6	-4.7	-18.9
Total	7659	935	99	678	2524

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Cavates

Although there are a large number of cavates located within the project area, most have been routinely visited by hikers over the years and therefore contain very few artifacts. The few remaining artifacts are primarily distributed along the slope immediately below the cavates. Nonetheless, infield analyses were conducted at ten cavate sites. These consist of two undetermined Ancestral Pueblo, four Coalition, three Late Coalition/Early Classic, and one Classic period site. Information on lithic artifact type and chipped stone material type by time period is presented in Tables 9.20 and 9.21; however, the contingency tables for these data contain too many cells with expected frequencies of less than five artifacts. Therefore, these tables have not been subjected to a chi-square analysis. A visual inspection of the tables indicates that the cavates generally contain core flakes and chipped stone items manufactured of chert/chalcedony. Data for ceramic type and vessel form by time period are presented in Tables 9.22 and 9.23. The pattern for the cavates is the same as previously described. That is, there is relatively more utilityware and jar sherds represented during the Coalition vs. more painted wares and bowls during the Late Coalition/Early Classic and Classic periods.

RESEARCH ISSUES

Archaic

Question 7: Is the lithic assemblage characterized by the production and maintenance of obsidian bifacial tools?

Yes, Archaic lithic assemblages do emphasize the production/maintenance of obsidian bifacial tools. They contain the highest percentage of biface flakes (26.1%) and obsidian (90.4%). This compares with only 1% to 2% biface flakes for most of the roomblock and plaza pueblo sites and about 10% biface flakes for lithic and ceramic artifact scatters. In addition, obsidian comprises from 3% to 12% of the roomblock and plaza pueblo site assemblages and 25% of the Pueblo artifact scatter assemblages. It should, however, be pointed out that there is significantly more obsidian on Classic one- to three-room structures and the plaza pueblo site when compared to the Coalition and Late Coalition/Early Classic sites.

Ancestral Pueblo

Question 18: Is there a change in the nature and distribution of cavates through time?

The majority of the cavate sites represented within the project area were situated in Bayo Canyon north of Otowi and in Los Alamos Canyon. Former cavates primarily date to the Classic period and the latter to the Coalition period. Both areas have been heavily visited by hikers and are mostly devoid of artifacts. The few artifacts present are primarily distributed along the slopes below the cavates. Assemblages sizes were too small to conduct any statistical analyses, but visual analyses of the tables indicated several possible differences in assemblage composition. Core flakes were the dominant item identified at the cavate sites, with most of the chipped stone artifacts being made of chert/chalcedony. The cavate sites do exhibit the same pattern as

Table 9.20. Lithic Artifact Type by Time Period for Cavates

Artifact Type	Time Period			
	Undetermined Ancestral Pueblo	Coalition	Late Coalition/ Early Classic	Classic
Debris	9	7	8	10
Core flake	7	34	24	34
Biface flake	2	1	1	3
Microdebitage	1	0	0	1
Undetermined flake fragment	1	3	7	2
Retouched tool	1	0	1	0
Ground stone	3	7	2	3
Total	24	52	43	53

Table 9.21. Chipped Stone Artifact Material Type by Time Period for Cavates

Material Type	Time Period			
	Undetermined Ancestral Pueblo	Coalition	Late Coalition/ Early Classic	Classic
Igneous	0	8	4	10
Obsidian	4	1	10	3
Chert/Chalcedony	17	34	28	35
Total	21	43	42	48

Table 9.22. Ceramic Type by Time Period for Cavates

Ceramic Type	Time Period			
	Undetermined Ancestral Pueblo	Coalition	Late Coalition/ Early Classic	Classic
Painted ware	6	29	45	42
Utilityware	23	134	50	96
Total	29	163	95	138

Table 9.23 Vessel Form by Time Period for Cavates

Vessel Form	Time Period			
	Undetermined Ancestral Pueblo	Coalition	Late Coalition/ Early Classic*	Classic
Bowl	6	28	8	41
Jar	23	135	19	97
Total	29	163	27	138

*excludes 68 sherds for which vessel form was undetermined.

represented for the other pueblo site ceramic assemblages. That is, there are relatively more utilityware and jar sherds during the Coalition period vs. more painted wares and bowls during the Late Coalition/Early Classic and Classic periods.

Question 22: Is there an increase in the relative proportion of utility jar vessels through time?

There is a long-term shift in ceramic vessel form represented on the Ceramic period sites (e.g., lithic and ceramic artifact scatters, one- to three-room structures, pueblo roomblocks, and plaza pueblos). As noted in the previous section, this generally consists of relatively more utilityware and jar sherds during the Coalition period vs. more painted wares and bowls during the Late Coalition/Early Classic and Classic periods. Based on this evidence, the answer to the proposed research question appears to be no; however, a closer inspection of painted ware sherds reveals a different pattern. Table 9.24 presents the information on painted ware vessel form by time period. A chi-square analysis of the contingency table indicates that there is a significant difference in the distribution of vessel form by time period ($\chi^2 = 180.4$, $df = 2$, $p < 0.01$). There are significantly more painted ware bowl sherds in the Coalition assemblages vs. jar sherds in the Classic period. The adjusted residual for the Late Coalition/Early Classic jar sherds is only slightly below a significant value. Overall, painted ware jar sherds increase through time from 5.9% to 13.6% to 19.1%. Although there is no general increase in utilityware jar sherds through time, there does appear to be a significant increase in painted ware jar sherds over time.

Question 23: Is there a greater emphasis on the expedient flake component of the chipped stone technology through time?

It was previously pointed out that Archaic assemblages do contain significantly more biface flakes than the later Ceramic period assemblages. For example, biface flakes compose 26.1% of the Archaic lithic assemblage vs. about 10% for lithic and ceramic artifact scatters and 1% to 2% for structural sites. Table 9.25 provides information on debitage type by time period. It also indicates a significant difference between Archaic and Ceramic period assemblages ($\chi^2 = 330.2$, $df = 3$, $p < 0.01$). Archaic assemblages contain relatively more biface flakes and the later Ceramic period sites more core flakes. Therefore, it does appear that the later Ceramic period sites generally reflect an emphasis on core reduction. Table 9.26 presents information on chipped stone material type by time period. Again, there is a significant difference in material types over time ($\chi^2 = 1634.0$, $df = 6$, $p < 0.01$), with relatively more obsidian in the Archaic assemblage, more igneous rock and chert/chalcedony in the Coalition assemblage, and more chert/chalcedony in the Classic assemblage. This also reflects a shift from an emphasis on the use of higher quality materials for biface production to lower quality materials for expedient flake production. Lastly, Table 9.27 provides information on informal vs. formal tools by time period. Informal tools consist of utilized flakes, retouched flakes, and denticulates vs. formal tools that consist of unifaces, bifaces, projectile points, and drills. The sample sizes are very small, but there are more formal tools represented in the Archaic and Coalition assemblages vs. more informal tools in the Late Coalition/Early Classic and Classic assemblages. This also provides some tentative support for the increased use of informal tools during the later Ceramic periods.

Question 24: Is there a decrease in hunting related tools through time?

Very few retouched tools were identified during the infield analyses. Nonetheless, if we look at the number of bifaces and projectile points as an indirect measure of hunting related tools then

there is a long-term decrease in the proportion of these tools through time. Table 9.27 provided information on informal vs. formal tools. All but one of the formal tools were bifaces or projectile points. The exceptions are a drill in the Coalition assemblage and a uniface in the Classic assemblage. If these items are removed, then we see a long-term decrease in the percentage of hunting related tools from 100% to 70% to 50% to 20%. Again, these are very small sample sizes that only provide some tentative patterns; however, if this pattern is an

Table 9.24. Vessel Form by Time Period

Vessel Form	Time Period		
	Coalition	Late Coalition/ Early Classic	Classic
Bowl	2472* 13.0	470 -1.9	1305 -12.4
Jar	154 -13.0	74 1.9	309 12.4
Total	2626	544	1614

Chi-sq = 180.4, df = 2, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.25. Debitage Type by Time Period

Debitage Type	Time Period			
	Archaic	Coalition	Late Coalition/ Early Classic	Classic
Core flake	111* -18.1	1062 8.0	183 0.9	445 2.8
Biface flake	90 18.1	53 -8.0	15 -0.9	29 -2.8
Total	201	1115	198	474

Chi-sq = 330.2, df = 3, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.26. Material Type by Time Period

Material Type	Time Period			
	Archaic	Coalition	Late Coalition/ Early Classic	Classic
Igneous Rock	6* -5.4	280 5.4	50 1.2	67 -3.5
Obsidian	311 39.7	125 -20.2	60 -0.9	125 -2.2
Chert/Chalcedony	27 -29.2	1834 13.1	311 0.0	734 4.2
Total	344	2239	421	926

Chi-sq = 1634.0, df = 6, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Table 9.27. Tool Type by Time Period

Tool Type	Time Period			
	Archaic	Coalition	Late Coalition/ Early Classic	Classic
Informal	0	6	3	16
Formal	7	14	3	4
Total	7	20	6	20

accurate representation of the archaeological record, then the answer to this research question would be yes.

Question 25: Is there an increase in mano grinding surface area through time and how does this correlate with changes in metate form?

Table 9.28 presents the limited information available on ground stone type by time period. As can be seen, most of these artifacts consist of undetermined mano and metate fragments. Other than this, the sample sizes are too small to make any temporal comparisons.

Question 26: Are there changes in the presence of nonlocal lithic material and ceramic types that could reflect shifts in Puebloan interaction spheres and territoriality through time?

Obsidian is the primary nonlocal lithic material type identified in the Ceramic period assemblages. This material is available from four main source areas: a) Cerro del Medio in the Valle Grande, b) the Rabbit Mountain area including the heads of Alamo, Frijoles, and Capulin Canyons and Obsidian Ridge, c) Polvadera Peak, and d) nodules that are present in secondary gravel deposits in the Rio Grande Valley. Previous discussions have noted the presence of significantly more obsidian in Archaic vs. Ceramic period assemblages, and more obsidian in Classic period assemblage vs. the earlier Ceramic periods. Table 9.29 reaffirms this pattern with a significant difference in the distribution of material type by Ceramic period ($\chi^2 = 84.5$, $df = 4$, $p = <0.01$); however, there appears to be relatively more obsidian in both the Late Coalition/Early Classic and Classic period assemblages than expected.

Table 9.30 presents the information on the visually distinctive types represented for all time periods. The translucent variety is potentially available from the Cerro del Medio and Obsidian Ridge source areas, the black opaque, green, and brown varieties from the Obsidian Ridge area, and the dusty variety from Polvadera Peak. The majority of the obsidian appears to have been derived from the Cerro del Medio or Obsidian Ridge source areas, with very little from Polvadera Peak. Dusty obsidian only comprises about 1% of the Archaic assemblage and from 4% to 10% of the Ceramic period assemblages. The Classic period contains the least amount of Polvadera Peak obsidian of the Ceramic period assemblages.

Nonlocal ceramics primarily consist of White Mountain redwares during Coalition period and glazewares during the Classic period. Table 9.31 provides information on nonlocal vs. local painted ware ceramics by Ceramic period. There is a significant difference in the distribution of these ceramic types by period ($\chi^2 = 17.5$, $df = 2$, $p = <0.01$). That is, there are significantly

more local painted wares in the Coalition assemblages vs. relatively more nonlocal wares in the Late Coalition/Early Classic and Classic period assemblages. In addition, some of the micaceous wares in the later Ceramic period assemblages may also be of a nonlocal origin.

The answer to this research question therefore appears to be yes, with more nonlocal lithic materials and painted ceramic wares present in the later Ceramic period assemblages. The higher representation of these nonlocal items presumably reflects an increase in regional interaction and access to raw materials.

Table 9.28. Ground Stone Type by Time Period

Ground Stone Type	Time Period			
	Archaic	Coalition	Late Coalition/ Early Classic	Classic
One-hand	1	12	0	2
Two-hand	0	5	0	1
Undetermined mano	0	38	5	5
Millingstone	0	3	1	1
Basin metate	2	1	0	1
Slab metate	0	2	0	5
Trough metate	0	2	0	0
Undetermined metate	0	13	1	2
Total	3	76	7	17

Table 9.29. Material Type by Ceramic Period

Material Type	Time Period		
	Coalition	Late Coalition/ Early Classic	Classic
Igneous Rock	280* 3.5	50 0.6	67 -4.3
Obsidian	125 -8.4	60 4.4	125 6.1
Chert/Chalcedony	1834 3.2	311 -3.5	734 -0.9
Total	2239	421	926

Chi-sq = 84.5, df = 4, $p < 0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p < 0.05$) positive values are shown in bold.

Table 9.30. Obsidian Type by Time Period

Obsidian Type	Time Period			
	Archaic	Coalition	Late Coalition/ Early Classic	Classic
Translucent	268	105	47	96
Black opaque	18	6	6	19
Green	18	3	0	4
Brown	3	1	1	1
Dusty	4	10	6	5
Total	311	125	60	125

Table 9.31. Nonlocal vs. Local Painted Wares by Ceramic Period

Ceramic Type	Time Period		
	Coalition	Late Coalition/ Early Classic	Classic
Nonlocal	33 -4.1	19 2.2	46 2.8
Local	2637 4.1	577 -2.2	1603 -2.8
Total	2670	596	1649

Chi-sq = 17.5, df = 2, $p = <0.01$

*Top value in cell represents artifact count and bottom represents adjusted residuals. Significant ($p = <0.05$) positive values are shown in bold.

Chapter 10

CULTURAL RESOURCE EVALUATIONS

Steven R. Hoagland

Two hundred and thirteen cultural resource sites have been located within the tracts associated with the LCT. Eighty-five of the sites are newly recorded and 128 have received at least some level of previous documentation. One hundred and eighty-eight of the cultural resource sites are thought to have prehistoric cultural affiliations, 14 are thought to be historic, two have both prehistoric and historic components, and nine have an unknown cultural and temporal affiliation. At least 71 of the previously documented sites have received a NRHP eligibility concurrence from the New Mexico State Historic Preservation Officer (SHPO). However, the eligibility of these sites has been reevaluated with five sites previously determined to be eligible under Criterion D being downgraded to having an undetermined eligibility. When originally assessed for eligibility, these five sites (LA 86530, a fieldhouse impacted by erosion, LA 86533, a lithic scatter, LA 86544, a rock enclosure, LA 86634, a lithic scatter, and LA 110113, a fieldhouse impacted by erosion) were assumed to contain information important to New Mexico's prehistory and/or history. DOE now believes that these sites require testing to determine whether these sites do indeed contain significant intact remains. Also, all of the other project area sites have been evaluated and received NRHP eligibility recommendations.

Cultural resource site eligibility was primarily assessed in accordance with four nonexclusive conditions that generally relate to specific NRHP eligibility criteria. The conditions are as follows:

1. Does the site appear to contain information that could be valuable for addressing project and regional research questions under Criterion D?
 - A. Does the site have integrity? Is the site sufficiently intact to have potential to yield the expected important information; i.e., is the site in the location where the original cultural activity occurred, has the site been destroyed or severely impacted by erosion, vandalism, previous construction activities, etc.?
 - B. Does the site have sufficient soil depth with the potential to contain features or significant remains that may aid in determining site function, cultural and temporal affiliation, resource utilization, etc.?
 - C. Does the site have discrete artifact concentrations that could be used to establish site function(s), intra-site activity areas, resource utilization, etc.?
 - D. Does the site contain architecture, features, and/or datable materials in which case there is greater potential for information that would be invaluable for addressing research questions?

2. Does the site embody or have elements that embody distinctive characteristics of a type, period, or method of construction under Criterion C?
 - A. Is the site rare and unique to New Mexico and/or the region and/or for the cultural and temporal affiliation?
 - B. Does the site have integrity of design, materials, and/or workmanship?
3. Does the site possess or have elements that possess high artistic value under Criterion C? The primary site type or site element that is considered for eligibility under this category is petroglyphs.
 - A. Do the petroglyphs represent the aesthetic values of a cultural group?
 - B. Do the petroglyphs illustrate a high degree of composition, design, and craftsmanship?
4. Is the site a traditional cultural property?

Based on these criteria conditions, 27 of the prehistoric sites, three of the historic sites, one site with a prehistoric/historic affiliation, and two of the sites with an unknown cultural affiliation are no longer considered eligible to the NRHP. They are no longer considered eligible as their potential to yield information important to history or prehistory has been exhausted through site recordation and/or testing, or they have been previously destroyed.

The remaining 161 prehistoric sites, 11 historic sites, the remaining prehistoric/historic site, and the seven sites with an unknown cultural affiliation are considered eligible to NRHP or have an undetermined eligibility. Of these, 108 of the prehistoric sites, three of the historic sites, the one site with a prehistoric/historic affiliation, and four of the sites with an unknown cultural affiliation are considered eligible to the NRHP. Conversely, 53 of the prehistoric sites, eight of the historic sites, and three of the sites with an undetermined cultural affiliation have an undetermined eligibility. The vast majority of these sites are considered eligible or have potential to be eligible to the NRHP under Criterion D, as they are likely to yield information important to New Mexico's prehistory and/or history. Seventeen sites are also eligible or potentially eligible under Criterion C, distinctive characteristics of type, period, or method of construction and/or possess high artistic values eligible (i.e., petroglyph sites, cavates with petroglyphs, and other unique features such as prehistoric trails and game pits). Also 13 sites are or have potential to be eligible as traditional cultural properties (i.e., rock features and one- to three-room structures that do not appear to be fieldhouses).

Based primarily on eligibility under Criterion D, the following is a general NRHP eligibility discussion by site type for the project area prehistoric and historic cultural resources. Sites with an undetermined cultural affiliation or type sites that have prehistoric and historic affiliations should be considered with the similar site type discussion.

SITES WITH A PREHISTORIC CULTURAL AFFILIATION

Significant surface and subsurface remains such as a burned hearth containing charcoal, baked clay, or wood, etc., can be used to chronometrically date the cultural utilization of the project area. Floral and faunal remains could be used to document the subsistence base exploited at each site and to determine the relative importance of agriculture, gathering, and hunting as it changes seasonally and through time. Spatial patterning of cultural remains and detailed artifact analysis could be used to identify intra-site activity areas and inter-site temporal relationships, which could be invaluable for establishing site functions as well as land and resource utilization patterns. The above remains can also be used to provide information on population dynamics and social interactions such as trade networks and regional alliances. Significant remains such as those listed above are thought to be present at the 116 sites considered eligible to the NRHP, and have potential to be present at the 64 sites that currently have an undetermined eligibility.

Archaic Period Cultural Affiliation

Twelve of the eligible sites or sites with an unknown eligibility date to or have components that date to the Archaic period. There is potential for features and materials to be present within these sites that could provide information about the insufficiently documented Pajarito Plateau Archaic period. These remains could generate information concerning site activities, the environment at the time of occupation, the season(s) of site use, type and range of exploited resources, occupying group size, and annual transhumance patterns. Project specific research would include Questions 3 through 8, 23, and 24.

Ancestral Pueblo Period Cultural Affiliation

One hundred sixty of the eligible sites or sites with an unknown eligibility date to or have components dating to the Ancestral Pueblo period. Sixty-one of the sites or site components are affiliated with the Coalition period, 22 to the Late Coalition/Early Classic periods, 42 are affiliated with the Classic period, and 35 have an unknown Ancestral Pueblo affiliation. All of these sites have potential for containing significant intact surface and subsurface cultural remains. With sufficient remains, chronometric dates can be employed to provide more secure use dates for particular ceramic types and subtypes. As ceramics become better dated and described, these artifacts could more specifically date the attributes that are diagnostic for distinguishing differences between Ancestral Pueblo cultural periods. Site remains could also be used to develop more specific information as to temporal affiliation, i.e., ceramic seriation used to establish intervals within Ancestral Pueblo cultural periods. Detailed artifact analysis could be important for determining whether there are changes in ceramic and lithic technologies through time due to increased dependence on agriculture. Quantified floral and faunal remains with specific temporal identification could be used to determine whether resource stresses and/or environmental conditions contributed to the changes in the settlement pattern observed through the Ancestral Pueblo adaptation.

Pueblos/Pit Houses

Twenty-six of the Ancestral Pueblo sites are pueblo roomblocks and two sites have associated pit structures (LA 65420 and LA 65421). Twenty-three of the roomblock sites are affiliated with the Coalition period, two with the Late Coalition/Early Classic periods (Little Otowi, LA 32, and LA 127664), and one with the Classic period (Otowi Pueblo, LA 69). The potential is excellent for features and materials to be present within the pueblo and pit structures and within associated external activity areas. Remains such as artifacts, flora, fauna, and datable materials will likely generate information relevant for regional and site specific research designs such as whether resource stresses, environmental conditions, and/or social changes precipitated the changes in settlement patterns observed during the Coalition to Classic Pueblo periods. Project specific research would include Questions 15, 16, and 22 through 25.

One- to Three-Room Structures

Sixty-two of the documented Ancestral Pueblo cultural resource sites are or include one- to three-room structures. Sixteen date to the Coalition period, seven to the Late Coalition/Early Classic periods, 24 to the Classic period, 14 have an undetermined Ancestral Pueblo cultural affiliation, and one site has an undetermined cultural affiliation. The function of these small structural sites is not well documented. Further data may establish whether these structures are fieldhouses and/or small habitations. If these sites are habitations, there is additional potential for determining whether these sites were occupied seasonally versus year-round and for documenting the subsistence base being exploited. If these sites are fieldhouses, there is further potential for information concerning local agricultural strategies. Project specific research would include Questions 10, 11, 12, 13, 16, 17, and 22 through 25.

Cavates

Sixteen project area sites are cavates or cavate complexes that are eligible to the NRHP or have an unknown eligibility. Of these, five are associated with the Coalition period, four have a Late Coalition/Early Classic period affiliation, one is affiliated with the Classic period, and six have an undetermined Ancestral Pueblo affiliation. Very little is known concerning the function(s) and relationship of cavates to the overall Ancestral Pueblo settlement system. With the potential for additional significant remains, it is possible that these sites can contribute to the documentation of cavate function and provide more secure use dates that would better facilitate the incorporation of these sites into the overall settlement and social systems. Project specific research would include Questions 17 through 25.

Lithic and Artifact Scatters

Twenty-four of the eligible artifact scatters or artifacts scatters with an unknown eligibility are or have components with Ancestral Pueblo affiliations. Six of these sites or site components date to the Coalition period, five to the Late Coalition/Early Classic periods, nine to the Classic period, and three have an unknown Ancestral Pueblo affiliation. The remaining site, LA 86637, has a

sherd and lithic scatter component that indicates an Ancestral Pueblo affiliation that ranges from Coalition through to the Colonial Historic period. In addition to the artifacts, there is potential for the presence of features and remains such as flora, fauna, and datable materials that could generate information concerning site function, period and season of use, and the resources being exploited. Spatial patterning and detailed artifact analysis could be invaluable for establishing functional differentiation within and between sites. Project specific research could include Questions 22 through 25.

Shelters

Five eligible or potentially eligible rockshelters have been documented from within the project areas. One of these sites is affiliated with the Classic period, one has an unknown Ancestral Pueblo affiliation, and three have an unknown cultural affiliation. If these sites were strictly utilized as expedient shelters, it is assumed that there would be few, if any, associated material remains. Based on the surface remains the project area shelters do have very few associated materials when present. However, even as an expedient shelter, there is potential for subsurface remains such as a hearth, diagnostic artifacts, and/or floral and faunal materials. Intact remains such as those noted above could be used to establish the site function, cultural and temporal affiliation, and the extent, frequency, and season of occupation.

Petroglyphs

There are five undetermined Ancestral Pueblo period petroglyph sites documented from within the proposed tracts. These petroglyphs have potential to provide information concerning cultural relationships, patterns of communication, and evidence of cultural contact. Changes in rock art styles and content are often indication of the adoption of new ideologies and religious practices, which in turn reflect other shifts within the cultural matrix (Schaafsma 1980). These sites are also likely to be eligible for possessing high artistic value under Criterion C. Project specific research would include Questions 20 and 21.

Trails/Stairways

One trail with associated stairways (LA 21591, Otowi Mesa Trail) and one site consisting of stairway segments (LA 127693) are located within the TA-74 Tract. The prehistoric trails and trail/stairway segments are relatively unique features that relate directly to prehistoric uses of the Pajarito Plateau landscape. These trails and trail segments along with the other Pajarito Plateau trail routes are potentially important for understanding aspects of the regional land-use system and the relationships and interactions between the area inhabitants. As a fairly rare New Mexico site type, depending on factors such as condition and setting, these sites may also be eligible to the NRHP under Criterion C.

Game Pit

The one potential game pit, LA 86543, is located within the TA-74 Tract. As there is an accumulation of fill within the pit there is potential for significant subsurface remains. Therefore

the site has potential to be eligible to the NRHP under Criterion D. As with prehistoric trails, game pits are fairly rare in New Mexico therefore it may also be eligible under Criterion C.

Water-Control Features and Garden Plots

Six garden plots and one water-control device are thought to have some potential for containing information concerning prehistoric land-use and subsistence patterns. Based on associated artifacts the water-control device and two garden plots are associated with the Coalition period, two to the Late Coalition/Early Classic periods, one to the Classic period, and one has an unknown Ancestral Pueblo cultural affiliation. There is potential for pollen and/or floral remains to be located within the garden plots or upslope from the water-control device. Remains such as these could provide valuable information concerning prehistoric agricultural activities as well as climatological conditions on the Pajarito Plateau. Project specific research would include Questions 14 and 15.

Rock Features

Seven project area rock features have been determined to be or are thought to have potential to be eligible to the NRHP. Four of these features date to the Classic period, two have an unknown temporal and cultural affiliation, and one that is unquestionably recent may have a Pueblo cultural affiliation. Rock features as defined include culturally derived rock piles, clusters of upright stones, and amorphous rock concentrations that do not appear to be the remains of a fieldhouse or small residential structure. The information potential for these sites depends on feature integrity (i.e., condition and setting) and the associated deposits (i.e., association of artifacts and soil deposition). With sufficient soil deposition there is potential for associated features and artifacts that could impart important information as to the function and affiliation of these features that in turn would be useful for understanding prehistoric and historic area land use. Beyond the informational value, at least some of these features are or have potential to be traditional cultural properties so there is potential that they are eligible to the NRHP in this regard.

HISTORIC PERIOD SITES

Ten eligible sites or sites that have an undetermined eligibility date or have components that date to the historic period. Seven of these sites date or partially date to the Pajarito Plateau Homestead Era, two have an unknown but assumed early historic affiliation and one is recent (LA 127695, see rock feature discussion). As historic use of the Pajarito Plateau is poorly documented these sites have potential to provide valuable information concerning land and resource utilization as well as area population dynamics.

Tipi/wickiup Rings

One wickiup ring site (LA 85864) and one site documented as tipi or wickiup ring (LA 85869) are documented from the Rendija Canyon Tract. Based on a radiocarbon date, LA 85864 dates to the 18th or 19th century, and based on its similarity to this site, LA 85869 is assumed to have a comparable date range. Both sites are assumed to have been occupied by nomadic peoples i.e.,

Navajos or Apaches. These cultural associations are virtually unknown for the Pajarito Plateau. As such the presence of features and definitive remains could generate information concerning site function, period and season of use, and the resources being exploited. The above information would then be invaluable for verifying and documenting Athabaskan land use of the Pajarito Plateau. Project specific research would involve Question 27.

Homestead

Remains of LA 85407, the Jose and Fidel Serna Homestead, are located in the Rendija Canyon Tract. Associated features, artifacts, floral, and faunal remains could aid in establishing the type and season of site specific activities and subsistence practices. When compared to other area homesteads, this information could be used to discern whether there are differences between activities and the material cultural for different ethnic groups. The above information could also be utilized to establish the type and range of local economic activities. Project specific research would involve Questions 29, 30, 31, and 32.

Trail/road

LA 85553 is a Homestead period wagon trail segment that is likely associated with LA 85407. LA 110141 and LA 127699 are historic period trail segments that were at least in part associated with the Homestead period. These road and trail segments along with the other Pajarito Plateau wagon road and trail routes are potentially important for understanding aspects of the regional land-use system. The wagon road and trails could also provide valuable information concerning the relationships and interactions between locale residents, as well as for documenting the workings of the areas local economy. Project specific research would involve Questions 29, 31, and 32.

LA 127624, the Los Alamos Bench Trail, dates to the Manhattan Project era. The trail and its associated features could provide information concerning life on the Pajarito Plateau during the restricted Manhattan Project era.

Rock/wood Enclosure

Two rock enclosures (LA 86544 and LA 126741) and one log enclosure (LA 70026) that are assumed to be corrals are documented from within project tracts. Historic period log and rock enclosures could contain significant subsurface features and remains that would be important for more precisely determining the site function and use date. This information would then be valuable for establishing local economic activities and/or resource utilization patterns. Project specific research would involve Questions 29, 30, and 31.

Chapter 11

SUMMARY AND RECOMMENDATIONS

Steven R. Hoagland

In response to Section 632 of PL 105-119, *The Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998*, the DOE is examining ten tracts of land proposed for conveyance or transfer. In support of this effort, cultural resources investigations were conducted for all ten proposed tracts that contained a total of 1942 ha (4796 ac). This investigation resulted in the review of 820 ha (2025.5 ac) of previously inventoried properties and the intensive archaeological survey of an additional 1122 ha (2770.5 ac) of DOE managed properties. Since the completion of fieldwork, the total acreage proposed for conveyance or transfer has decreased to 1644 ha (4046 ac) as defined in the “preferred alternative” (draft Record of Decision version 4.1).

This archeological investigation resulted in the location and documentation of 213 sites from seven LCT tracts. One hundred and eighty-eight of the sites have prehistoric cultural affiliations, 14 are historic, two have both prehistoric and historic components, and nine have an unknown cultural and temporal affiliation. Twenty-seven of the prehistoric sites, three of the historic sites, one site with a prehistoric/historic affiliation, and two sites with an unknown cultural affiliation are no longer eligible to the NRHP. They are not eligible because their potential to yield information important to history or prehistory has been exhausted through site recordation, testing, and/or excavation, or they have been destroyed. The remaining 180 archeological sites are considered eligible to the NRHP or require further testing for a determination to be made. Most of these sites have been evaluated under Criterion D of the National Historic Preservation Act (NHPA), as they are likely to yield information important to New Mexico’s prehistory and/or history. Seventeen of the sites may also be eligible under Criterion C, for their distinctive characteristics of type, period, or method of construction and/or because they possess high artistic value. Thirteen sites may also be eligible as Traditional Cultural Properties.

Impacts and Recommendations

Lands transferred from DOE to the Department of the Interior to hold in trust for San Ildefonso Pueblo, is not an “undertaking” under the NHPA. Therefore no further compliance is required.

Under 36 CFR 800.5(vii), the conveyance of lands to the County of Los Alamos is an adverse effect if adequate and legally, enforceable restrictions or conditions to ensure long-term preservation of the properties’ historic significance are not established. Two issues must be resolved before the transfer can be finalized: (1) Those sites that require further testing to establish NRHP eligibility must be evaluated; (2) After NRHP eligibility has been determined, preservation measures must be established for all historic properties located on land tracts going to Los Alamos County before they are transferred out of DOE ownership. A number of options exist to resolve adverse effects. These options vary from the establishment of protective covenants, to nomination to the New Mexico State Official Register, to the development of data

recovery strategies for those properties that will unavoidably be destroyed through commercial and residential development.

It is recommended that DOE, the County, the SHPO, and the Advisory Council on Historic Preservation (if necessary) negotiate and formalize an agreement as to the measures that will be established to resolve adverse effects. This agreement shall be formalized before transference of the land.

As a result of this cultural resource investigation, this undertaking complies with the National Historic Preservation Act of 1966 (as amended) and Executive Orders 11593 and 13007.

In compliance with the Native American Graves Protection and Repatriation Act of 1990, the American Indian Religious Freedom Act of 1978, and in following the directive provided in Federal Register Bulletin 38, a copy of this report is also being forwarded to San Ildefonso Pueblo, Santa Clara Pueblo, Cochiti Pueblo, Jemez Pueblo, and the Mescalero Apache Tribe for review of the possible effects this project may have on sacred and traditional places. Any comments received will be taken into consideration and incorporated into the project documentation called for by the National Environmental Policy Act of 1969.

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APPENDIX A

Infield Artifact Analysis Coding Sheets And Lithic Artifact Dictionary

INFIELD ARTIFACT ANALYSIS CODING SHEETS

SITE NUMBER

LA or Temporary site number.

SAMPLE NUMBER

1-n per site. Includes individual dogleash samples and isolated artifacts.

SAMPLE TYPE

1. 100%. Small-sized artifact scatter or pueblo site with few surface artifacts.
2. Unbounded. Medium-sized artifact scatter where artifacts are pin flagged and sample is taken of pin flags. For example, 1 of 2 (50%), 1 of 3 (30%), or 1 of 4 (25%).
3. Bounded. 1 to 2 m diameter dogleash, or transect sample is taken. Site is divided into four quadrants and a single sample taken from the area of highest artifact density within the quadrant. Quadrant should be laid out along a north-south/east-west axis. Center point would be located at: 1) center of large-sized surface artifact scatter, 2) center of fieldhouse, 3) center of linear roomblock with north-south axis running along back wall of roomblock (i.e., 2 samples in front and back of pueblo), or 4) large plaza pueblo samples are taken as in #3, but with additional samples placed within the quadrats depending on site size and configuration (e.g., along roomblocks, inside and outside plaza areas). Samples 1 through 4 are numbered clockwise by quadrant. That is 1 (NW) 2 (NE), 3 (SE) and 4 (SW). Samples 5-n are for extra dogleashes or isolated artifacts.
4. Isolated artifacts. For example, diagnostic artifacts or tools situated outside of sample units.

SAMPLE SIZE

0. Not a sample unit.
Square meters of area analyzed.

ARTIFACT TYPES

See coding list below.

CERAMIC CODES

1. Undetermined Whiteware
2. Kwahe'e Black-on-white
3. Santa Fe Black-on-white
4. Wiyo Black-on-white
5. Galisteo Black-on-white
6. Undetermined Redware
7. Wingate Black-on-red
8. St. Johns Black-on-red
9. Undetermined Biscuit
10. Biscuit A (Abiquiu Black-on-glaze)
11. Biscuit B (Bandelier Black-on-glaze)

12. Biscuit C (Cuyamungue Black-on-tan)
13. Undetermined Glazeware
14. Undetermined Glaze-on-red
15. Undetermined Glaze-on-polychrome
16. Agua Fria Glaze-on-red (A)
17. San Clemente or Cieneguilla Glaze-on-polychrome (A)
18. Cieneguilla Glaze-on-yellow (A)
19. Espinosa Glaze-on-polychrome (C)
20. San Lazaro Glaze-on-polychrome (D)
21. Puaray Glaze-on-polychrome (E)
22. Sankawi Black-on-cream
23. Potsuwi'i Incised
24. Tewa Polychrome
25. Kapo Gray
26. Kapo Black
27. Ogapoge Polychrome
28. Jemez Black-on-white
29. Undetermined historic
30. Undetermined Corrugated
- 31.
32. indented corrugated
33. smeared-indent
34. obliterated
35. non-micaceous plainware
36. incised corrugated
37. clapboard corrugated
38. micaceous plainware
39. St. Johns Polychrome
40. Micaceous slipped utility
41. Undetermined historic polychrome

CHIPPED STONE CODES

100. angular debris
101. core flake
102. biface flake
103. microdebitage (< 10 mm)
104. undetermined flake fragments
105. bipolar flake
106. hammerstone flake
107. Pot lid
108. fire-cracked rock
109. manuport
120. single-directional core
121. bidirectional core

GROUND STONE CODES

200. One-hand mano (<170 mm)
201. Two-hand mano (>=170 mm)
202. Undetermined mano fragment
203. Millingstone (> 250 mm)
204. Basin metate
205. Formal slab metate
206. Trough metate
207. Grinding slab (<250 mm)
208. Undetermined metate fragment
209. Polishing stone
210. palette
211. mortar
212. pestle
213. Abrading stone (generalized)

122. multi-directional core	214. Grooved abrader
123. bifacial core	215. axe
124. bipolar core	216. maul
125. core fragment	217. ornament
126. cobble uniface	218. effigy
127. cobble biface	219. Stone lid
128. tested material	220. Shaped slab
129. hammerstone	221. Undetermined ground stone (<100 mm)
130. anvil	222. miscellaneous ground stone (describe)
	223. hoe
140. utilized piece	
141. retouched piece	
142. notch (1-2 contiguous notches)	
143. denticulate (>2 contiguous notches)	
144. perforator	
145. graver	
146. uniface/scrapper	
147. biface	
148. projectile point	
149. drill	
150.	
151.	
- OTHER ARTIFACTS**
- | | |
|--|--------------------|
| | 300. Bone |
| | 400. Wood artifact |
| | 401. Corncob |

CERAMIC VESSEL FORM

1. N/a chipped and ground stone
2. unknown
3. bowl
4. jar
5. ladle
6. pitcher
7. pipe
8. effigy
9. mug
10. handle
11. worked sherd
12. spindle whorl
13. lug

CHIPPED AND GROUND STONE MATERIAL TYPE

1. n/a (ceramic)
100. undetermined Igneous
110. basalt
111. vesicular basalt
120. rhyolite

- 130. andesite
- 140. granite/diorite
- 180. obsidian
 - 181. black translucent (Jemez); also w/ white inclusions, banded and smokey.
 - 182. black opaque (with brown edges)
 - 183. black dusty (Polvadera)
 - 184. green (Jemez)
 - 185. brown (Jemez)
 - 186. gray (Cerro del Medio?)
- 192. tuff
- 193. pumice
- 200. Undetermined Sedimentary
 - 210. sandstone
 - 211. concretion
 - 212. fossil
 - 213. orthoquartzite
 - 214. conglomerate
 - 215. breccia
- 220. Siltstone
- 230. Shale
- 240. Jet
- 250. Limestone
- 260. Chalcedony
- 270. Chert
- 271. Pedernal chert/chalcedony (with black, red and/or yellow)
- 290. Silicified Wood
- 400. Undetermined Metamorphic
- 410. Quartzite
- 420. Schist
- 430. Soapstone
- 440. Metaconglomerate
- 450. Greenstone
- 460. Gneiss
- 470. Slate
- 899. Undetermined mineral

900. Quartz	904. Selenite/gypsum	908. Kaolinite
901. Quartz Crystal	905. Calcite	909. Turquoise
902. Hematite	906. Mica	910. Augite
903. Limonite	907. Azurite	911. Malachite

CHIPPED STONE CORTEX

- 1. n/a (ceramics and ground stone)
- 2. nodule
- 3. waterworn
- 4. tabular
- absent

MAXIMUM WHOLE MANO LENGTH

1. n/a (ceramics, chipped stone, other ground stone, or mano fragment)
2. <10 cm (one-hand mano)
3. 11-13
4. 14-17
5. 18-20 (two-hand mano)
6. 21-23
7. 24-27
8. 28-30
9. >30

TOTAL ARTIFACT COUNT PER ROW ENTRY

1-n

LITHIC ARTIFACT DICTIONARY

CORES AND CORE TOOLS

Cores are nodules that have faceted platforms from which specific kinds of flakes are removed; however, large flakes or angular debris with flakes removed from cortical platforms can also be classified as cores. *Tested materials* are nodules with a single flake removed from an unprepared cortical platform at one or more isolated locations. They may represent nodules that have been tested for material quality and were then rejected. *Cobble unifaces* have two or more flakes unifacially removed along a single edge margin, usually at one end of a pebble or cobble. Cobble unifaces probably represent unprepared cobble cores, but they might also have been used as heavy-duty tools. *Cobble bifaces* have two or more flakes bifacially removed from a single edge at the end of a pebble or cobble. They probably represent formal heavy-duty chopping tools (i.e., choppers), but they might also have been used as a source for flakes. Cobble bifaces differ from bifacial cores in that bifacial cores are generally made of siliceous materials and have more than one or a continuous bifacially retouched edge perimeter. A *hammerstone* is a nodule that exhibits battering on an otherwise unmodified cortical portion of its surface. This battering usually occurs on the end or along the perimeter of the nodule or cobble. In contrast, *anvils* are artifacts that exhibit repeated battering in a specific isolated location, so that a small circular depression is created on a planar surface.

Several core types are recorded based on platform orientation and core shape. These consist of single-directional cores, bidirectional cores, multi-directional cores, bipolar cores, and core fragments. *Single-directional cores* are single-face, multi-faced, prismatic, or pyramidal cores with flakes removed from a single striking platform. *Bidirectional cores* are change-of-orientation, discoidal, bifacial, opposed same face, opposed different face, and ninety-degree cores with flakes removed from two separate striking platforms. *Multi-directional cores* are globular, opposed/ninety degrees, and opposed same/different face cores with flakes being removed from three or more platforms. *Bipolar cores* exhibit battering, crushing and/or negative or positive bulbs of percussion at one or both opposing ends of the core. *Core fragments* are broken cores.

DEBITAGE

Debitage are the by-products of core reduction and tool production. *Flakes* are pieces of material that have been detached from a core or tool by percussion or pressure, as opposed to *angular debris* which are pieces that are incidentally broken off during core reduction. These pieces of shatter lack definable flake characteristics, such as a platform, bulb of percussion, ventral/dorsal surfaces, and proximal/distal ends. *Core flakes* are flakes that have been detached from a core. A polythetic set (Clark 1968:36–37) of attributes for core flakes includes: single or multi-faceted platforms; a platform angle of greater than 50 degrees; dorsal scars that may be absent, parallel or perpendicular to the platform; a thickness of greater than about 5 mm; a pronounced bulb of percussion; and an erillure scar. *Core trimming flakes* are pieces that have been struck at a 90-degree angle to the major flaking axis of the core, along the edge of the core platform and dorsal flaking surface. They are sometimes referred to as platform renewal flakes, since they often

remove the step fractures that can occur adjacent to the edge of the platform. They may also represent an attempt to change the orientation of the core, by preparing and reorienting a new flaking surface that is perpendicular to the previous major flaking axis. *Blades* are specialized forms of flakes that are twice as long as they are wide, with parallel lateral sides, and one or more parallel dorsal arrises. *Biface flakes* are flakes that have been detached from a bifacially retouched artifact. A polythetic set of attributes for biface flakes includes: a bidirectionally retouched platform; a lipped platform; a platform angle of less than 50 degrees; dorsal scars that are parallel to each other and perpendicular to the platform; a thickness of less than 5 mm that is relatively even from proximal to distal ends; a weak bulb of percussion; and a pronounced ventral curvature. *Hammerstone flakes* are primary flakes with cortical platforms and dorsal surfaces that exhibit heavy battering in the area of the platform. They presumably reflect flakes that were incidentally removed from a hammerstone. *Microdebitage* are pieces of debitage with a maximum length equal to or less than 10 mm. *Undetermined flake fragments* are flakes for which flake type could not be determined. *Pot lids* are hertzian cones produced when siliceous rocks are subjected to heat.

Fire-cracked rocks and manuports were also monitored with the debitage. *Fire-cracked rocks* are lithic materials that have been physically altered by the application of heat by a human agent. This artifact category specifically represents cobbles used as heat retainers in the processing of foodstuffs for consumption (e.g., stone boiling or earth ovens). *Manuports* are unmodified pieces of lithic raw material that have been transported from their source to another location as a result of human behavior. This may include materials to be used in lithic reduction, ceramic production, or other miscellaneous functions. Material type and weight were the only attributes monitored for these artifacts.

RETOUCHED TOOLS

Retouched tools are the result of the secondary percussion or pressure flaking of a piece in order to produce a specific tool shape. *Utilized pieces* are pieces of debitage that exhibit microscarring along one or more edge margins. *Retouched pieces* are pieces of debitage with retouch that extends over less than one-third of the surface of the artifact (Chapman and Schutt 1977:86). *Notches* are flakes with one or two contiguous notches along the edge of the piece; whereas, *denticulates* are flakes with three or more contiguous notches along the edge of the piece. *Perforators and graters* are flakes with unidirectionally retouched projections. Graters exhibit a blunt end and perforators a pointed end. *Unifaces/scrapers* are "artifacts which exhibit retouch scars over one-third or more of only one of their surfaces" (Chapman and Schutt 1977:93), with an edge angle between about 60 to 80 degrees. *Bifaces* are "artifacts which exhibit retouch scars extending over one-third or more of both their opposing surfaces" (Chapman and Schutt 1977:93). This type of retouch can be defined as invasive retouch. Generalized bifaces tend to be ovate or lanceolate in shape, with edge angles between about 30 to 50 degrees. Drills and projectile points are specialized forms of bifaces. *Drills* are bifacially retouched flakes that are twice as long as they are wide, about as thick as they are wide and often exhibit a diamond-shaped cross-section. *Projectile points* are bifaces that exhibit hafting modifications that distinguish a stem from the blade.

GROUND STONE TOOLS

Ground stone tools are artifacts that exhibit ground and/or abraded surfaces. *Manos* are cobbles or slabs with at least one surface characterized by one or more smooth facets produced through grinding. They were handheld artifacts that were primarily used to crush and grind vegetal foodstuffs against a metate (Chapman and Schutt 1977:95). Polished surfaces on manos may indicate a function other than vegetal processing (e.g., hide processing). One-hand manos are less than 170 mm in length and two-hand manos have a length equal to or greater than 170 mm. Undetermined manos are fragments where the projected length of the artifact could not be determined.

Metates are artifacts characterized by at least one large grinding surface upon which vegetal foodstuffs may have been crushed and ground with a mano. They generally have a grinding surface greater than 450 cm² in size. *Millingstones* are informal unmodified slabs with flat grinding surfaces. Although the grinding surface may exhibit some pecking, the slab itself exhibits little in the way of formal shaping. *Basin metates* are slabs with concave basin-shaped grinding surfaces. These two metate types are usually associated with generalized seed processing and the use of a one-hand mano in a rotary motion, although millingstones can also be used with two-hand manos in a longitudinal grinding fashion. *Slab metates* are formal-shaped metates with large flat prepared grinding surfaces. *Trough metates* have a deep prepared trough as a grinding surface. The trough may be open at one or both ends. These two metate types are usually associated with more specialized corn milling and the use of two-hand manos in a longitudinal back-and-forth motion. If the type of metate could not be determined, it was classified as an undetermined metate fragment. *Grinding slabs* were, however, distinguished from millingstones by having a length less than 250 mm. These artifacts may have been used for a variety of purposes. Grinding slab fragments were separated from undetermined ground stone fragments by having a length greater than 100 mm. Undetermined metate fragments are fragments sufficiently large to determine that they represent portions of metates, but specific metate type could be determined.

Polishing stones are pebbles with finely ground and polished surfaces. These generally consist of small quartzite pebbles that could have been used to polish ceramic vessels. *Palettes* are tabular-shaped artifacts with finely ground and polished flat surfaces. *Mortars* are artifacts with large, deep, pecked and ground concavities. *Pestles* are oblong artifacts with one or more ground ends. They presumably were used with the mortars to pulverize and grind various substances. *Abrading stones* are artifacts with localized but irregularly ground surfaces, with a distinction being made between generalized abrading stones and *grooved abraders*. *Axes* exhibit a prepared bit, whereas *mauls* exhibit battering on one or both butts. Either can be grooved for hafting. *Ornaments* are beads, pendants and other forms of jewelry. *Effigies* are anthropomorphic or zoomorphic figurines. *Stone ceramic lids* are thin circular-shaped artifacts whose perimeters have been bidirectionally retouched. These lids may have been used to cover storage or cooking vessels. *Undetermined ground stone* are unclassifiable ground stone fragments. These fragments often exhibit a single flat grinding surface. *Shaped slabs* are large rectangular-shaped slabs that have been bidirectionally flaked along their perimeters. These artifacts were often used to cover ventilator shafts or door openings.

