

MUSEUM OF NEW MEXICO

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ARCHAEOLOGY OF THE MOGOLLON HIGHLANDS: SETTLEMENT SYSTEMS AND ADAPTATIONS

edited by Yvonne R. Oakes and Dorothy A. Zamora

VOLUME 2. SITE DESCRIPTIONS

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ARCHAEOLOGY NOTES 232

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INTRODUCTION

Yvonne R. Oakes

The Office of Archaeological Studies excavated 25 sites during the course of four field seasons in the Reserve-Luna area. Sites were extremely varied, ranging in type from surficial Archaic artifact scatters to a very large Late Pueblo roomblock with a great kiva, and in time from ca. 1100 B.C. to the 1800s, a span of almost 3,000 years. Slightly over one-third of the sites were multi-componenet, which in most cases made separation, particularly of lithic artifacts, into discrete cultural periods impossible. Table 2.1 indicates the division of sites by cultural designations.

A total of 254,694 artifacts was recovered from all sites (Table 2.2). LA 3279, the Late Pueblo roomblock, accounted for almost half of them. While counts are high for projectile points, ground stone, bone tools, and miscellaneous items, they each constitute less than 1.0 percent of the total artifact assemblage. Ceramics dominate the assemblage, comprising 70 percent of all artifacts recovered. One hundred percent of the artifacts were analyzed, primarily because many of the sites were not

able to be completely excavated due to right-of-way limits, causing retrieval of only a sample of the site, and because we needed to compare intersite assemblages and units within sites with as much accuracy as possible. Comparisons between artifact assemblages of various cultural periods are summarized in later syntheses with-in this report.

A total of 2,581 cu m of dirt was removed from the sites by either hand or mechanical equipment. On several sites, mechanical trenching was employed to confirm that all cultural features had been located. In one case, LA 45507, mechanical trenching served as an exploratory tool to find buried pit structures. Specific excavation procedures are detailed under individual site descriptions.

The following site descriptions are comprehensive; however, they do not fully examine architectural or artifactual relationships between sites. These are discussed in subsequent chapters in more synthetic detail.

Table 2.1. Site Types on the Luna Project

Site	Archaic	Early Pithouse	Late Pithouse	EarlyPueblo	Late Pueblo	Athabaskan	Unknown
3279 AR-03-06-03-00159					X		
3563 AR-03-06-06-00277			X				
9721 AR-03-06-06-00824							X
37917* AR-03-06-06-00825	X					X	
37919 AR-03-06-06-00826						X	
39968 AR-03-06-06-00827					X		
39969 AR-03-06-06-00828				X			
39972* AR-03-06-06-00372		X		X			
39975 AR-03-06-06-00372		X					
43766* AR-03-06-06-00829	X			X			
43786 AR-03-06-06-00416			X				

Table 2.1. Continued.

Site	Archaic	Early Pithouse	Late Pithouse	EarlyPueblo	Late Pueblo	Athabaskan	Unknown
45507			X				
45508*	X	X					
45510 AR-03-06-03-00056			X				
70185 AR-03-06-03-00285					X		
70188* AR-03-06-06-00830	X					X	
70189* AR-03-06-06-00442				X		X	
70191 AR-03-06-06-00831							X
70196 AR-03-06-06-00832			X				
70201* AR-03-06-06-00833		X	X				
75791* AR-03-06-06-00834					X	X	
75792 AR-03-06-06-00286				X			
78439* AR-03-06-06-00835	X				X		
89846* AR-03-06-03-03723	X				X	X	
89847 AR-03-06-03-03724							X

* 9 MIXED SITES=36%

Table 2.2. Artifact Frequencies for Project Sites

Site	Ceramics	Lithic Artifacts	Projectile Points	Ground Stone	Miscella- neous	Bone Tools	Fauna	Total
LA 3279 AR-03-06-03-00159	100,316 83.4%	13,722 11.5%	116 .1%	394 .3%	167 .2%	121 .1%	5,462 4.5%	120,348
LA 3563 AR-03-06-06-00277	2,544 59.3%	1,659 38.7%	3 .0%	9 .2%			75 1.8%	4,290
LA 9721	1 3.7%	26 96.3%						27
LA 37917 AR-03-06-06-00825	1 .1%	658 98.2%	7 1.0%			1 .1%	4 .6%	671
LA 37919 AR-03-06-06-00826	8 1.1%	696 97.8%	2 .2%	5 .7%				711

Table 2.2. Continued.

Site	Ceramics	Lithic Artifacts	Projectile Points	Ground Stone	Miscellaneous	Bone Tools	Fauna	Total
LA 39968 AR-03-06-06-00827	19,438 76.4%	4,306 16.9%	14 .0%	210 .8%	51 .2%	20 .0%	1,387 5.4%	25,428
LA 39969 AR-03-06-06-00828	4,550 57.4%	3,035 38.3%	14 .2%	121 1.5%	30 .4%	12 .2%	169 2.1%	7,931
LA 39972	2,037 60.1%	1,229 36.4%	8 .2%	29 .9%	3 .1%	4 .1%	78 2.3%	3,388
LA 39975 AR-03-06-06-00372	2,305 57.5%	1,542 38.5%	6 .1%	31 .8%	24 .6%		100 2.5%	4,008
LA 43766 AR-03-06-06-00829	150 2.2%	6,220 92.2%	54 .9%	6 .08%			316 4.7%	6,746
LA 43786 AR-03-06-06-00416	75 44.2%	92 53.9%	1 .7%		2 1.2%		1 .7%	171
LA 45507	17,136 76.8%	2,197 9.9%	21 .1%	273 1.2%	50 .2%	28 .1%	2,608 11.7%	22,313
LA 45508	253 9.0%	2,506 88.5%	18 .6%	36 1.3%	6 .2%		13 .4%	2,832
LA 45510 AR-03-06-03-00056	8,020 86.4%	1,233 13.3%	20 .2%	7 .1%	5 .1%			9,285
LA 70185 AR-03-06-03-00285	14,248 85.3%	2,214 13.3%	29 .2%	119 .7%	33 .2%	4 .0%	49 .3%	16,696
LA 70188 AR-03-06-06-00830	57 .3%	16,062 74.7%	106 .6%	28 .2%	37 .2%		663 4.0%	16,953
LA 70189 AR-03-06-06-00442	458 58.3%	320 40.8%	2 .2%	5 .6%	1 .1%			786
LA 70191 AR-03-06-06-00831	3 1.6%	183 97.3%	2 1.1%					188
LA 70196 AR-03-06-06-00832	1,222 47.0%	852 32.8%	18 .7%	24 .9%	20 .8%		463 17.9%	2,599
LA 70201 AR-03-06-06-00833	1,166 67.8%	544 31.1%					10 .6%	1,720
LA 75791 AR-03-06-06-00834	144 47.5%	145 47.8%	1 .3%				13 4.4%	303
LA 75792 AR-03-06-06-00286	2,534 69.0%	1,099 30.0%	5 .1%	14 .4%	3 .08%		20 .55	3,675
LA 78439 AR-03-06-06-00835	6 .7%	779 97.5%	3 .5%	4 .5%	2 .3%	1 .1%	4 .5%	799
LA 89846 AR-03-06-03-03723	607 33.5%	1,096 60.5%	4 .2%	3 .2%			101 5.6%	1,811
LA 89847 AR-03-06-03-03724	382 37.6%	401 39.4%	1 .1%				233 22.9%	1,017
TOTAL	177,661 69.7%	62,866 24.7	455 .2	1,318 .5	434 .2	191 .1	11,769 4.6	254,694 100.0

LA 3279 (AR-03-06-03-00159)
THE HOUGH SITE

Dorothy A. Zamora and Yvonne R. Oakes

The Hough site is a large, Late Pueblo period roomblock located in the Luna Valley within the Mogollon Highlands. It is one of the earliest recorded sites in west-central New Mexico. Walter Hough first visited the site in 1904-1905 and described it as a ". . . great mass of debris of decayed walls. . . . This pueblo was evidently the most important of those in the neighborhood of Luna" (Hough 1907:61).

He recorded it as Site No. 70. It measured 33.5 m north-south by 54.8 m east-west and had an 81.2-m-sq kiva, an associated circular depression, a burial ground, and up to 140 rooms (Fig 2.1). Only his room count seems to be in error. Hough's writings infer that he dug in the burial area and a small amount within the large kiva. No evidence of these excavations remains today.

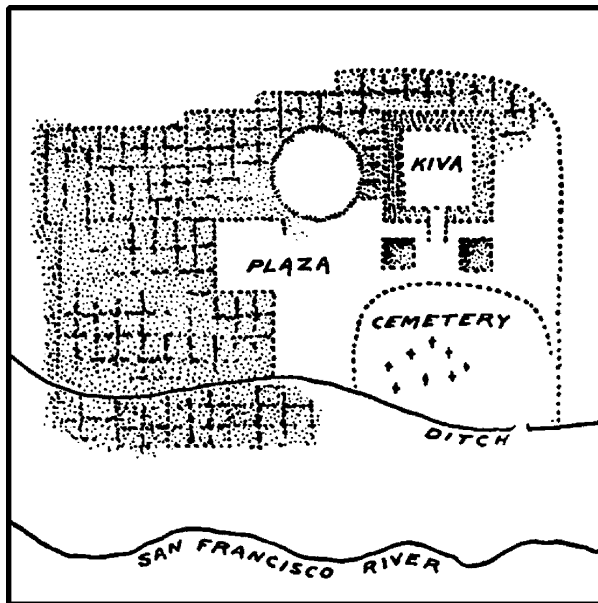


Figure 2.1. Hough's (1907) map of LA 3279. Reprinted from Smithsonian Institution, *BAE Bulletin*.

In just two days in 1954, Wendorf and colleagues (1963) excavated one room and tested three others for the Museum of New Mexico as part of initial highway construction activities in the area. They describe the pueblo as ". . . a low, rubble-strewn mound, slightly disturbed along the north face by recent road construction. No standing walls could be seen in the face of the cut . . . and highway construction . . . resulted in little or no damage to the pueblo itself." Their work consisted pri-

marily of defining the site through trenching to find walls and excavation to determine room depths. They discovered that rooms were up to a meter deep but that most of the pueblo was outside of the construction zone and, therefore, they stopped excavations.

Wendorf and colleagues (1963) assigned a Tularosa phase designation to the site and estimated that the pueblo contained up to 20 rooms, which is far less than the figure given by Hough (1907). The single room that they excavated was later identified on the site by OAS staff and was found to be within the limits of proposed excavations. Thousands of artifacts were recovered by the 1963 team including ceramics, lithic tools, ground stone, bone awls, and a grooved axe. They recorded all ceramics found but tabulated only formal lithic tools. Their data were used in comparison with later OAS findings.

In 1978, Rafferty (NMCRIS files) surveyed the site and assigned it a new site number, LA 39988, with a location slightly misplaced from that of LA 3279 (AR-03-06-03-00159). However, he acknowledged that this was the Hough pueblo. OAS chose not to use LA 39988 as the site number, but rather LA 3279 (AR-03-06-03-00159), the original one.

Currently, the Hough site is again scheduled to be possibly affected by a highway-widening project. OAS crews surveyed the site and conducted a testing program to determine the extent of ruins remaining within the proposed right-of-way (Oakes and Zamora 1993). Artifacts were observed on both sides of U.S. 180; however, no wall alignments were visible. Nine 1-by-1-m test pits were excavated on the site within the right-of-way, ranging up to 70 cm in depth. Wall alignments and a floor surface were uncovered on the south side of the highway in the roomblock area and a possible pit structure was found at a 40 cm depth on the north side. A total of 412 artifacts were recovered from the testing program. Ceramics included Alma Brown Wares, various corrugated types, Tularosa Black-on-white, Tularosa Red-on-white, Tularosa Patterned Corrugated, Reserve Smudged, and White Mountain Redwares. The ceramic assemblage suggested a post-A.D. 1200 date for the site. Site size was estimated at 100 m north-south by 70 m east-west with an area of 5,600 sq m.

A data recovery plan was prepared and excavations began in 1995. A total of ten rooms, a trash midden, and a great kiva were excavated on the south side of U.S. 180

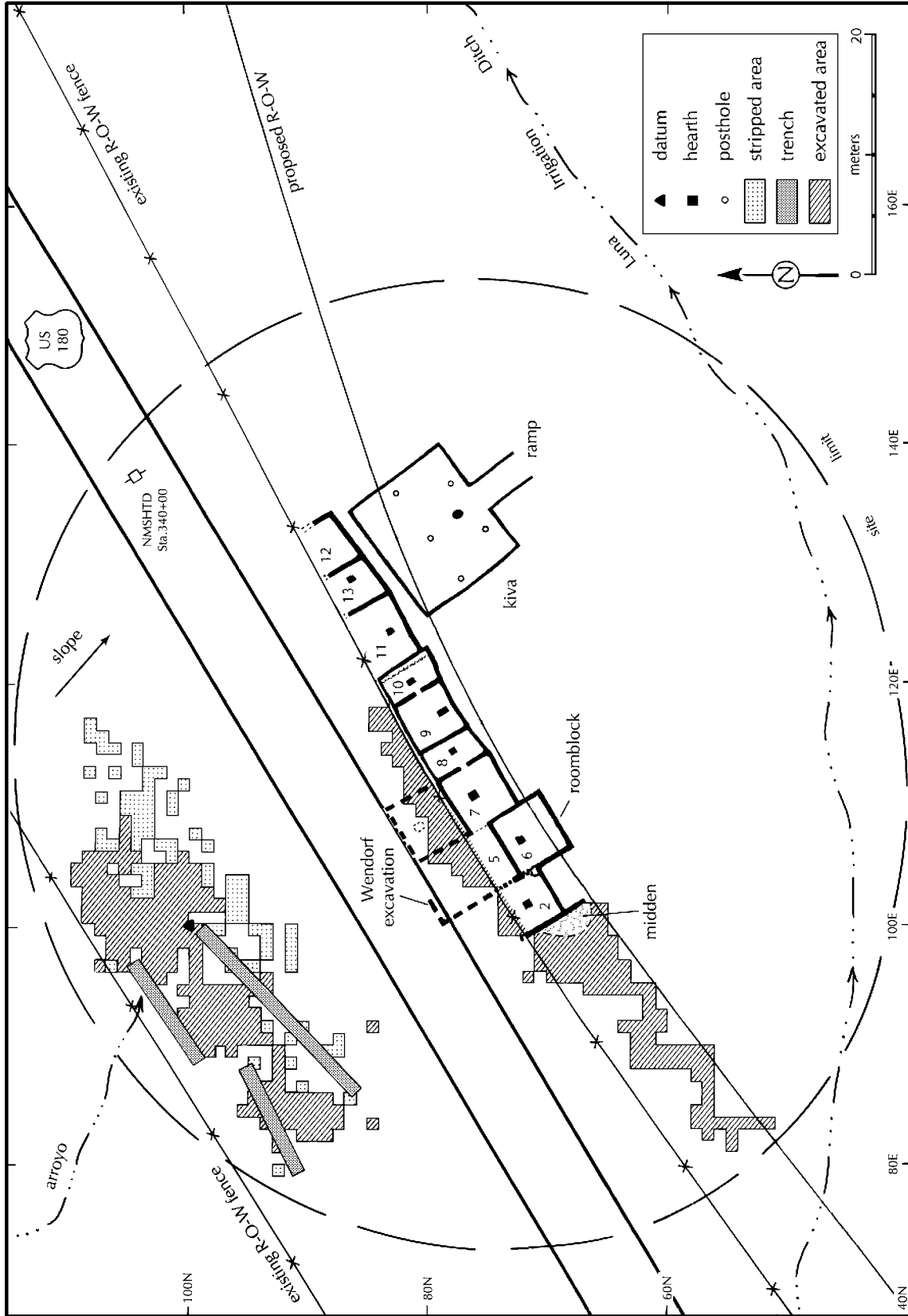


Figure 2.2. LA 3279 (AR 03-06-03-00159), Hough site.



Figure 2.3. The Hough site with ten rooms completed and excavation of great kiva underway.

(Figs. 2.2 and 2.3). The north side of the highway produced numerous artifacts but no cultural features. Another 20-30 rooms extend south from the excavated portion of the site. The Hough site has been dated through radiocarbon sampling and archaeomagnetic assays to ca. A.D. 1275-1320, which is very late in the Tularosa phase.

Site size was determined to be 74 m north-south by 80 m east-west, comprising an area of 5,920 sq m. On the north side of the road, 171 1-by-1-m grids were excavated to an average depth of 16.0 cm. Overall dirt removal was 27.5 cu m. Another 83 grids were surface collected, mostly on the slope cut above the road. This slope cut was partially faced to examine the stratigraphy of this area. Three backhoe trenches removed another 18.7 cu m of dirt.

On the south side, 170 grids outside of the roomblock were excavated, averaging 20 cm deep with 33.8 cu m of dirt removed. Within the pueblo rooms and great kiva, a total of 284.7 cu m of dirt was removed. For the site as a whole, 341 grids were excavated and together with the roomblock, kiva, and backhoe trenches, a total of 363.7 cu m of dirt was removed on the site.

SITE SETTING

The Hough site sits 60 m directly north of the perennial San Francisco River within the Luna Valley on the first terrace above the river. It is backed by steep rising slopes of the northern Mogollon Mountains. Elevation of the site is 2,170 m (7,120 ft). The Luna Valley opens up immediately southeast of the site and although modern grazing and some crop growing has denuded much of it, excellent maize fields could have been established here by prehistoric peoples (Figs. 2.4, 2.5). The only limiting factor would have been the short growing season of 87 days per year. Only small, family plots of corn are grown today. Near the Luna Irrigation Ditch, which cuts through the southern edge of the site, are several very large cottonwoods and yellow pine. Pine and piñon trees are more prevalent on the slopes just north of the site.

Wild game is plentiful in the area today and includes elk and deer as food sources, and mountain lion and bear. Vegetal resources include acorns, piñon nuts, and a variety of grasses, shrubs, and herbs.

A large Three Circle phase pithouse village lies 1.7 km to the east in the same environmental setting. Other sites in the vicinity span most of the cultural spectrum of



Figure 2.4. Overlooking the Luna Valley from the Hough site in 1954 during excavations conducted by Wendorf and others (1963), looking east. (Courtesy Archeological Records Management Section, New Mexico State Historic Preservation Division.)



Figure 2.5. Luna Valley looking southeast from the Hough site.

the Mogollon Highlands except for Early and Late Pithouse period sites. (There are no early ones and only a few Late Pithouse sites.) Most common are small Reserve phase sites and fieldhouses dotted around the flanks of the Luna Valley and to the southeast along Mail Hollow. Almost as prevalent are small Tularosa phase sites extending to the west in the more narrow ranges of Luna Valley and also in Mail Hollow. None, however, matches the size of the Hough site.

RESEARCH OBJECTIVES

Excavation of late Tularosa phase pueblos is rare in the northern Mogollon Highlands and LA 3279 (AR-030-6-03-00159) is the only one investigated in Luna Valley. OAS generally wanted to examine the structure of such a large site, looking at relationships of rooms to each other and to storage and other ancillary facilities. It was also decided to assess the function of the various types of rooms anticipated. Building construction sequences were noted, as well as evidence of reconstruction or reuse through time. Tying the structural aspects of the site to length of occupational period is important for understanding the forces that may have eventually led up to the abandonment of the pueblo.

The degree of dependence by site inhabitants on domesticated crops is important to the ongoing research on potentially changing use of domesticates through the Mogollon cultural sequence. The data from this and other sites will allow an examination of any variation in that dependence over time. Other utilized subsistence items recovered in flotation and palynological samples will be assessed in terms of their relative use.

It was not anticipated in the data recovery plan that the great kiva would be excavated; therefore, no statements of the significance of this feature or its implication for the social organization of the site were made. However, the structure and its socioeconomic relationships to the site will be examined.

EXCAVATION PROCEDURES

A primary datum was first established on the hillslope above the pueblo on the north side of U.S. 180 from which north-south and east-west baselines were set with a transit and stadia rod. A 1-by-1-m grid system was then laid out over the site. The site area was surface-stripped in 10-cm levels until several room walls were visible. In some cases, extensive wall rubble made it impossible to detect walls until lower in the fill. Each room was dug as a whole unit by stratigraphic levels and not by designated grids. However, areas outside of rooms were excavated in grid units. Hand tools (trowels, shov-

els, and picks) were used during the excavation of all features except for the great kiva. Mechanical equipment was used to remove the extensive overburden from the kiva and to explore areas to the east of the roomblock. A meter of fill was left within the great kiva and this was then removed with hand tools.

Fill within the rooms was excavated as a whole, within levels, to 50 cm above the floor. In the great kiva, because of its size, excavations were conducted by quadrants. Fill above the floors was removed by trowels only. All floor features and artifacts were piece-plotted. On the north side of the highway, the area was excavated in 10-cm levels until the sterile substrate was reached. Augering then confirmed the presence of this sterile level.

All fill and surface stripping was screened through ¼-inch wire mesh. For the floor fill, 1/8-inch mesh was used. All artifacts were collected by provenience level within rooms; floor and feature artifacts were collected individually. Pollen and flotation samples were recovered from each room and most features and also from numerous ceramic vessels and ground stone surfaces. Archeomagnetic samples were taken from oxidized hearths in several rooms. Radiocarbon samples were collected from hearths, ash pits, burned pits, and the kiva foot drums.

Profiles of rooms and features were drawn, along with plan views of each of these. Photographs were taken of rooms and features also. A site map was produced through the use of a stadia rod and transit.

Levels maintained during excavations include:

Level 1: Surface stripping, 3-10 cm. Numerous artifacts present.

Level 2: General fill, outside of rooms. Numerous artifacts present.

Level 3: Fill within rooms and great kiva. Many artifacts present.

Level 4: Fill below roof fall within rooms. Artifacts present.

Level 5: Floors.

Level 5.1: Lower floors.

Level 6: Subfloor feature fill.

CULTURAL UNITS

Excavations at the Hough site uncovered ten rooms, a great kiva, and a trash midden associated with the Late Tularosa phase pueblo (Fig. 2.6). More rooms extend to the south, perhaps as many as 20 or 30. Another room had been dug previously by Wendorf et al. (1963) and their results are also presented. Excavations on the north side of U.S. 180 produced no cultural features (Fig. 2.7);



Figure 2.6. Hand excavation of the Hough site, south side of road.



Figure 2.7. Excavations underway on the slope north of the pueblo, facing west.

however, numerous artifacts were recovered.

Preservation of the rooms and kiva was excellent, with, generally, a meter of fill remaining in the rooms. Floor features and artifacts remained intact and walls were partially standing. A total of 120,336 artifacts were recovered from the excavations and, along with the architectural data, provided an excellent opportunity to study a late pueblo of this size and obvious importance in the Luna Valley.

Trash Midden

The trash midden lies just outside of the roomblock on the western edge, adjacent to Room 2. It consisted of an amorphous-shaped pit dug into a sterile substrate, measuring 14.5-sq-m in area and ranging from 49 to 52 cm deep (see Fig. 2.10). It was deepest along the outside west wall of Room 2. The trash midden contained a high frequency of artifacts (N = 7,597), including 6,581 ceramics, 684 lithic artifacts, 13 pieces of ground stone, 305 faunal remains, 2 beads, 2 effigies, 7 quartz crystals, 1 bone awl, 1 bone bead, and 1 piece of a bone tool. It also included charcoal, burned soil, and rock wall fall. The extreme southern edge of the midden was outside of the right-of-way limits and was not excavated.

Soil within the trash midden consisted of a loose, sandy clay with a high density of cultural material. Three distinct stratigraphic layers were visible within the feature (Fig. 2.8), all part of Level 3, feature fill. Although artifacts were present throughout the feature, the bottom of Stratum 2 contained most of them.

Stratum 1: A fine, sandy silt that was found just above the cultural level. It is considered modern fill. Munsell color is 5YR 4/2, dark reddish gray.

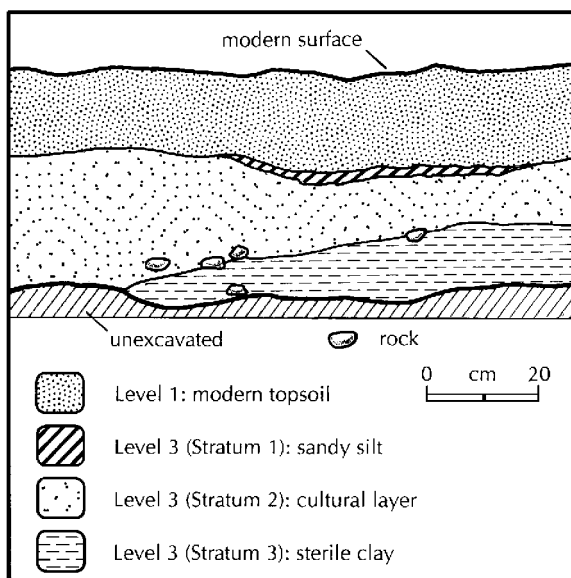


Figure 2.8. Stratigraphic profile of trash midden.

Stratum 2: The loose, sandy and clayish cultural fill containing many artifacts. Munsell color is 5YR 4/1, dark gray.

Stratum 3: The sterile red clay at the bottom of the midden pit. Munsell color is 5YR 4/3, reddish brown.

Room 1

Wall outlines defined a room located immediately south of Room 2. Its outer west wall was traced for 3.4 m, but the room itself was not excavated as it was outside of project limits.

Room 2

Room 2 was the first room to be excavated on the Hough site. It is a large rectangular room with a central hearth, located immediately east of the trash midden (Figs. 2.9-2.11). The north wall and a portion of the east wall are missing, probably from earlier shoulder blading of the road or previous excavations. The fill of the room consisted of mostly wall fall with very little soil.

A total of 4,823 artifacts were recovered from the room, of which most came from the room fill and approximately 20 percent from just above the floor. The artifact assemblage is made up of 3,953 ceramics, 658 lithic artifacts, 7 projectile points, 40 pieces of ground stone (including 12 two-hand manos), 155 faunal remains, 2 awls, 1 fragmented bone tool, 2 quartz crystals, 5 mineral-pigment samples, and 1 manuport.

Dimensions. The room was 4.10 m north-south by 5.10 m east-west and had a floor area of 20.9 sq m. The fill of the room ranged from 42 to 68 cm deep.

Walls. The walls were made of basalt boulders and rhyolite cobbles and slabs with mud mortar between the rocks. The south wall exhibited a possible doorway, slightly off center, which had been filled in with thin slabs and mud mortar (Fig. 2.12). The west wall was also the outside wall of the pueblo and was solidly built with coursed rhyolite stones interspersed with bands of tabular slabs and chinking (Fig. 2.13), unlike any of the interior walls. This wall is reminiscent of earlier Chacoan-type walls with coursings of different sized stones (Lekson 1984:17-19). The walls ranged from 16 cm to 49 cm in height (Table 2.3) and 24 to 35 cm in thickness. The west wall of the room is part of the continuous outside west wall of the entire pueblo. The south wall of Room 2 abuts this west wall. Other abutments were indeterminate.

Floor. The floor was fairly even and consisted of a compacted mud that had been laid over the reddish brown sterile clay. The prepared floor was not evident

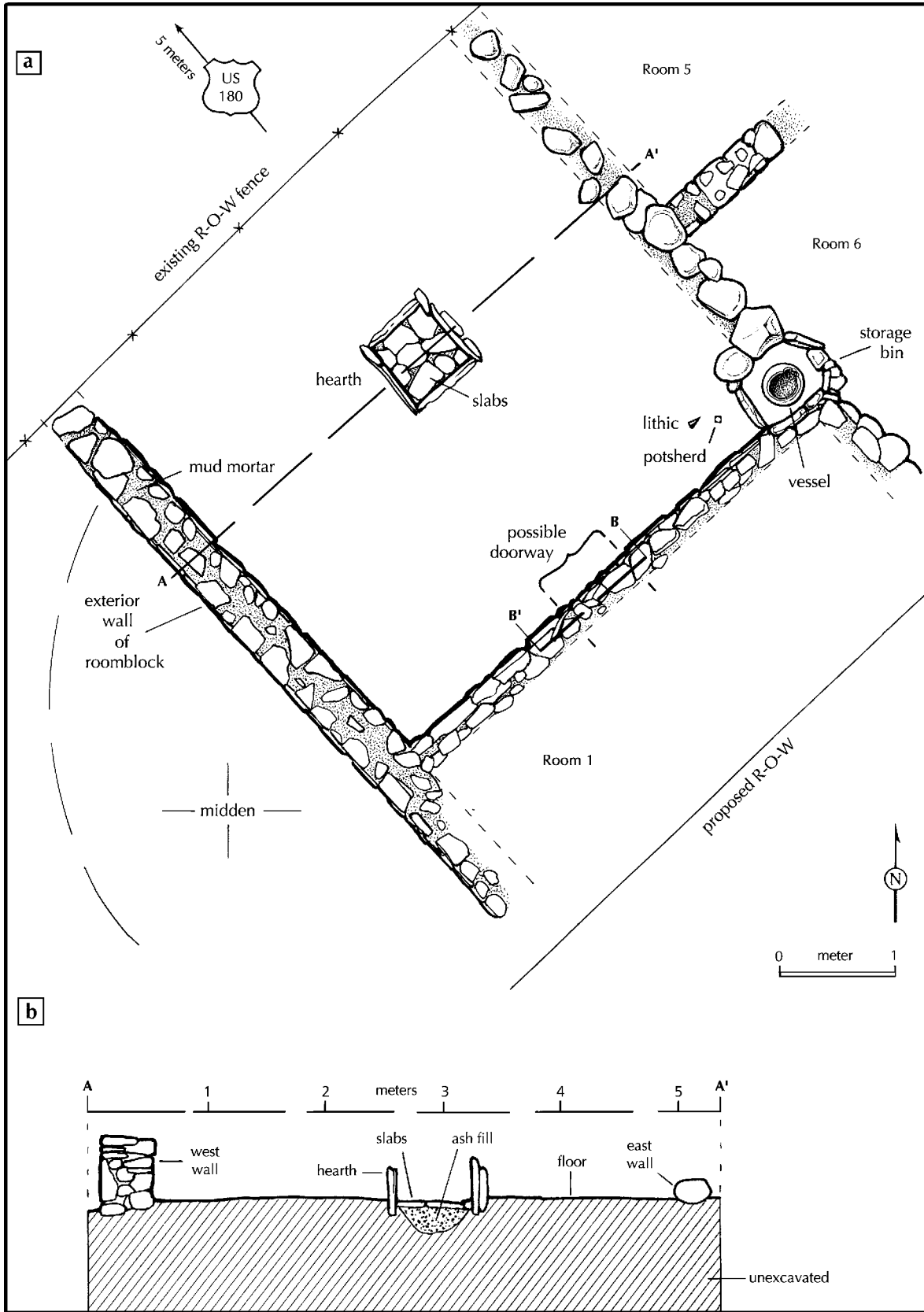


Figure 2.9. Room 2, plan view and profile.



Figure 2.10. Room 2, looking south. Trash midden area is in upper right.



Figure 2.11. Room 2 with Room 6 in background, facing east. Outer wall of pueblo is in foreground.

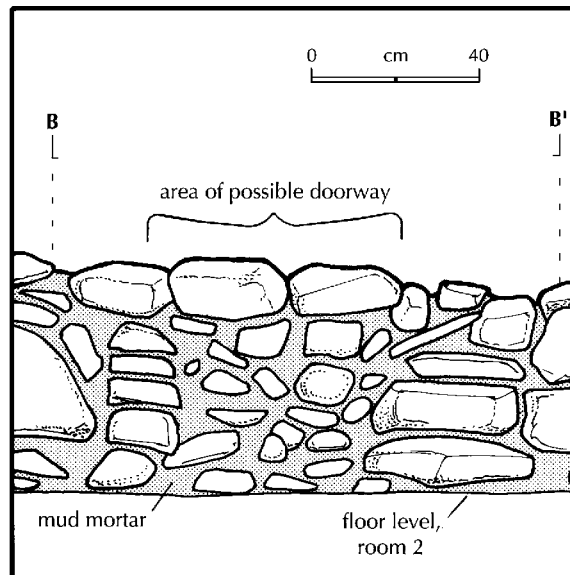


Figure 2.12. South wall of Room 2, rock with mud mortar showing possible blocked doorway.



Figure 2.13. Coursed outside west wall of roomblock.

Table 2.3. Room 2 Wall Dimensions

Wall	Thickness	Height
North	Missing	Missing
South	24 cm	49 cm
East (partial)	28 cm	16 cm
West	35 cm	47 cm

throughout the room, only around the hearth and in the southwest corner where it had not been obliterated by wall fall. Two lithic artifacts were found on the prepared floor around the hearth. One storage bin was also found between Room 2 and Room 6.

Hearth. The almost square-shaped hearth is centrally located and measures 55-by-61 cm with a depth of 25 cm. It is constructed of rhyolite slabs that line the sides and bottom (Fig. 2.14) and which have been set 10 cm into the floor with the upright slabs extending 35 cm above the floor. The fill was a fine silty sand with ash and charcoal.

Storage Bin. The storage bin is situated in the southeast corner between Rooms 2 and 6 (Fig. 2.15). The feature was constructed of upright rhyolite slabs and basalt cobbles. In back of the bin in the south wall, a trough metate was placed vertically as part of the wall. It is possible that this was a remodeled mealing bin. Within the bin was a restorable vessel, a Tularosa Corrugated jar, that had been set in a small depression in the bin.

Ventilator. None was found.

Postholes. None were found.

Roof. There was no evidence of any roof fall.

Room 3

This is the room formerly excavated by Wendorf et al. (1963) as Room 1. It lies immediately northwest of Room 7, within the bladed shoulder of U.S. 180 (see Fig. 2.2). It was reassigned as Room 3 to match the OAS coding system for room features. The room was dug in 1954 as a result of paving the dirt road to Springerville, Arizona, and the need to widen the new highway. Wendorf et al. (1963), through trenching, encountered two rooms extending just to the edge of the new highway limits. One room was completely excavated (Room 3) and the other only partially (Room 5). Scant evidence of Room 3 exists today. The south wall of the room, also the north wall of Room 7, was barely traceable. Modern-day blading of the highway shoulder area has scraped off all fill until only the culturally sterile red clay remains.

Wendorf et al. (1963) recovered 1,209 ceramic sherds, 1 Tularosa Fillet Rim bowl, 2 metates, 13 manos, a three-quarter grooved axe, 1 Archaic-like projectile

point, 2 flake knives, and two bone awls from the room. Lithic and faunal debris was neither collected nor counted at that time.

Dimensions. The room was roughly rectangular, measuring 4.45 m north-south by 4.72 m east-west, an area of 21.0 sq m (Fig. 2.16).

Walls. According to earlier room profiles, wall heights and thicknesses were:

North wall: 1.2 m by 0.40 m (approx.)

South wall: 1.2 m by 0.40 m (approx.)

West wall: 1.1 m by 0.35 m (approx.)

East wall: 1.0 m by 0.35 m (approx.)

Today, the south wall stands only 45 cm high.

Wall construction was of basalt boulders and some sandstone slabs set in a mud matrix. Larger boulders were situated at the base of the walls with flat surfaces facing toward the room. Some chinking with small tabular stone was evident. Occasionally, larger boulders extended across the entire width of the walls.

Floor. The floor consisted of hard-packed mud directly over the sterile clay substrate. It was in poor condition with no evidence of floor remodeling. A Tularosa Fillet Rim bowl was found on the floor near the east ash pit. Other artifacts recorded from a floor context include five manos and a bone awl.

Hearth. A rectangular, slab-lined hearth was located slightly east of center in the north portion of the room (Fig. 2.17). It was situated on a low dirt platform raised 5 cm above the floor. Clay berms, rising to 21 cm in height, surrounded the hearth on three sides. These were smoothed at the bottoms and gradually sloped into the platform. Sandstone slabs were placed within the clay berms and on the bottom of the hearth, which was ash-filled when excavated. Measurement of the hearth was 70 by 75 cm.

Ash Pits. Flanking the hearth on the east and west sides were two rectangular ash pits with partial stone slab sides (see Fig. 2.17). These were both dug 5 cm below the floor level and contained white ash. The west pit measured approximately 80 by 62 cm and the east one was 80 by 48 cm.

Posthole. A centrally placed posthole was the only visible roof support system present within the room. It was rectangular and slab-lined (see Fig. 2.17), measuring 20 by 18 cm with a depth of 30 cm. The slabs extended 4 cm above the floor. Within the fill of the posthole were pieces of decayed wood, small slab fragments, and several sherds.

Ventilator. In the center of the room's north wall, there was a rectangular wall opening at floor level, approximately 33 cm wide and 30 cm high (Fig. 2.17). It is thought to have been a ventilator opening.



Fig. 2.14. Hearth in Room 2, facing south.



Figure 2.15. Storage bin with jar in Room 2.

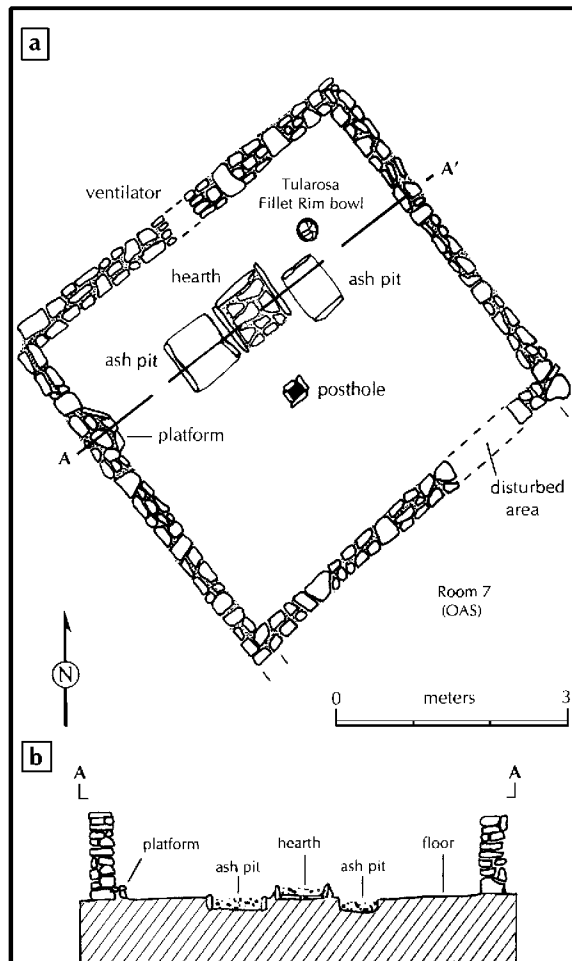


Figure 2.16. Plan view of Room 3, adapted from Wendorf et al. 1963:33.

Platform. Along the west wall, in line with the hearth and ash pits, was a small, semicircular shelf constructed of sandstone slabs. It was raised 15 cm above the floor, extended for 61 cm along the wall, and projected into the room for 13 cm. A large, flat stone had been placed directly behind the shelf within the wall (Fig. 2.18). The function of this platform feature was not determined.

Room 5

This is Wendorf and colleagues' (1963) Room 2 partially excavated in 1954. OAS uncovered another meter-wide strip at the south end of the feature (Fig. 2.19). The remainder had disappeared with blading activities so that only the sterile clay remained. According to Wendorf's map, the room was large, extending beyond the northern limits of adjoining Room 3. OAS uncovered no floor features and Wendorf et al. (1963) excavated a 16.25-sq-m portion along the wall at the north end of the room, but

stopped before the floor was reached. Artifacts recovered from their test grid included 235 sherds and one bone awl. OAS excavations retrieved 1,821 artifacts including 1,467 sherds, 227 lithic artifacts, 5 projectile points, 8 pieces of ground stone, 99 faunal remains, 3 bone tools (2 awls), and 12 miscellaneous items (including 6 quartz crystals and 3 beads).

Dimensions. The room was rectangular and measured 7.3-by-4.45 m with a floor area of 32.5 sq m.

Walls. Wendorf et al. (1963) show all walls still standing except for those in the northeast corner of the room (Fig. 2.19). They state that the height of the east wall was 1.1 m; the others were probably of comparable height. Today the south wall, also the north wall of Room 6, stands between 30 and 86 cm in height.

Floor. The small portion of the floor excavated by OAS was in generally poor condition, uneven, and difficult to follow. Some charcoal staining was present in patches.

Floor Features. None was found by OAS or by Wendorf et al. (1963) in their test excavations.

Room 6

All four walls of the room are present (Fig. 2.20). Room 6 lies east of Room 2 and south of Room 5. To the south of Room 6 is another room that was not excavated. The fill of Room 6 consisted mostly of wall fall to approximately 5 to 10 cm above the floor. In areas, the wall fall extended to the floor. Adobe roof casts, charcoal, ash, and artifacts were mixed in with the wall fall.

Room 6 had many floor features and several floor artifacts. Some broken vessels were also found next to the hearth. The total number of artifacts was 7,706, including 6,557 sherds (8 vessels), 807 lithic artifacts, 3 projectile points, 44 pieces of ground stone, 278 faunal remains, 3 bone tools, 4 beads, 1 effigy, and 9 miscellaneous items.

Dimensions. Room 6 is rectangular in shape with a floor area of 20.68 sq m (Figs. 2.20, 2.21). The room measures 4.40 m north-south by 4.70 m east-west with the south wall standing at 1.04 m.

Walls. The construction consisted of basalt boulders and rhyolite cobbles with rhyolite slabs used for chinking. A mud mortar was used between the rocks (Fig. 2.22). Although all four walls were standing, each wall had different thicknesses and heights.

North wall: 30 cm by 30 to 83 cm
 South wall: 29 cm by 40 to 106 cm
 East wall: 36 cm by 98 to 100 cm
 West wall: 29 cm by 80 to 90 cm



Figure 2.17. Hearth, flanking ash pits and posthole in Room 3 (Wendorf et al. 1963). Possible ventilator opening in wall directly above arrow. (Courtesy Archeological Records Management Section, New Mexico Historic Preservation Division.)



Figure 2.18. Platform against west wall in Room 3. (Courtesy Archeological Records Management Section, New Mexico Historic Preservation Division.)

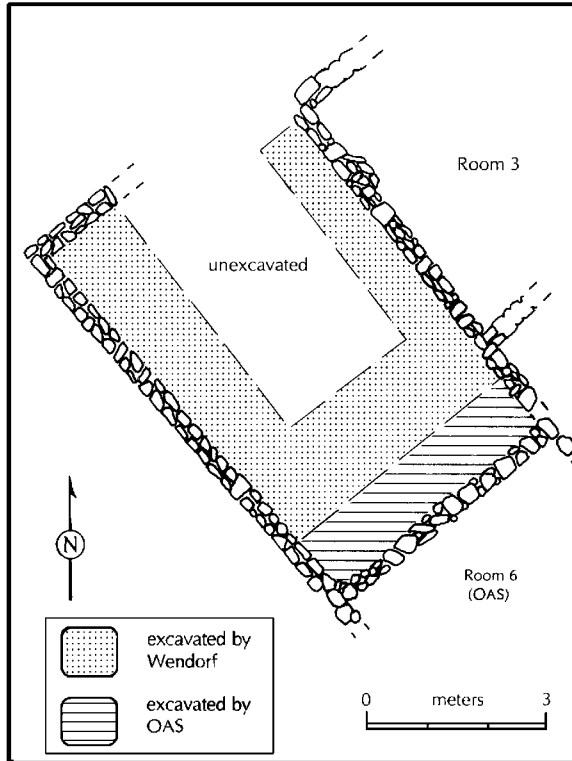


Figure 2.19. Plan view of Room 5 showing areas of OAS and Wendorf *et al.* (1963) excavations.

The wall abutments suggest that the west wall was the first one constructed and the south and east walls were added later. The north wall was remodeled. There was no evidence of plaster on the walls.

Floors. The floor was a thin clay (2 cm), which was smoothed over a heavily disturbed earlier floor. Areas of oxidation, especially in the southeast quarter of the room, were present. The floor had evidence of remodeling in the south half of the room. Eighteen features were present within the floor.

Floor Features

Floor features consisted of a slab-lined hearth, two ash pits, four postholes, one roasting pit, four pot rests, four storage pits, one ventilator, and an elongated pit that could have served as a footdrum. All the features had been dug into the reddish brown clay that underlies the site.

Hearth. The slabs that lined the hearth had been crushed with the weight of the wall debris. The rhyolite, slab-lined hearth measured 74 cm north-south by 83 cm east-west. The bottom was burned clay; it was 7 cm deep. The small amount of fill present was an ashy, charcoal-stained, sandy clay.

Ash Pits. Two ash pits were found next to the hearth. Ash Pit 1 is located on the east side of the hearth. Floor

vessels were in proximity to the ash pit. It was rectangular, measuring 53-by-56-by-10 cm, and was constructed of sandstone slabs on the north side, and adobe-collared on the east and west sides. The south side was level with the floor. The fill was primarily ash with some charcoal.

Ash Pit 2 was located on the west side of the hearth and is a large sandstone-lined pit (Fig. 2.23). The large pit was 88-by-86 cm and the depth ranged from 7 cm to 11 cm. The sandstone slabs were even with the floor, except for the south edge, which was 10 cm above the floor. The fill was a gray ash with some charcoal. Along the southeast corner of the pit were some sandstone slabs that were fire-cracked.

Roasting Pit. One large roasting pit was found along the south wall near the east corner. The pit is 69-by-68-by-20 cm and went partially under the wall (Fig. 2.24). The feature was dug into the reddish brown clay and then slab-lined. An adobe collar is present with the slabs. Charcoal staining at the bottom of the pit continued behind the slabs, suggesting that the pit had been remodeled.

Pits. Five pits were excavated on the floor, most of them fairly large in size.

Pit 1 is a large oval pit that is located south of the hearth. It is 46 cm by 75 cm and 50 cm deep. The fill consisted of dark sandy clay with charcoal and artifacts. Pit 2 is a large, oval, saucer-shaped, sand and ash pit. It was 83-by-80 cm in size and 25 cm deep. The bottom of the pit was oxidized. Pit 3 is located immediately west of the large ash pit. It is 53-by-34 cm in size and 7 cm deep. The fill contained ash and charcoal mixed with a sandy clay. Unlike the ash pit, this pit was not sandstone-lined. Pit 4 is a large circular-shaped pit measuring 73 cm in diameter with a depth of 23 cm, and has heavy oxidation. The pit fill contained wood fragments, ash, and artifacts. Pit 5 was found next to the triangular posthole to the west. Its function is unknown and measures 1.03 m long (north-south) by 19 cm wide (east-west) and 11 cm deep. It had the appearance of a possible foot drum. The pit was found after the remodeled portion of the floor was excavated.

Pot Rests. Four probable pot rests were excavated in Room 6. Pot Rest 1 is northeast of Ash Pit 1 (Fig. 2.25). It contained two plain smudged bowls that had been placed side by side. The pit was 63-by-36 cm with a depth of 15 cm and a fill of ashy, sandy clay. Pot Rest 2 is near the large storage pit between Rooms 2 and 6. It was 33-by-32 cm and 15 cm deep. The bottom of an indented corrugated jar was found in situ at the bottom of the feature. The fill consisted of sandy clay with charcoal staining. Pot Rest 3 is near Ash Pit 1 and is 69-by-25 cm and 10 cm deep. This irregular-shaped pit formed a semi-circle around the east side of the ash pit. Five broken ves-

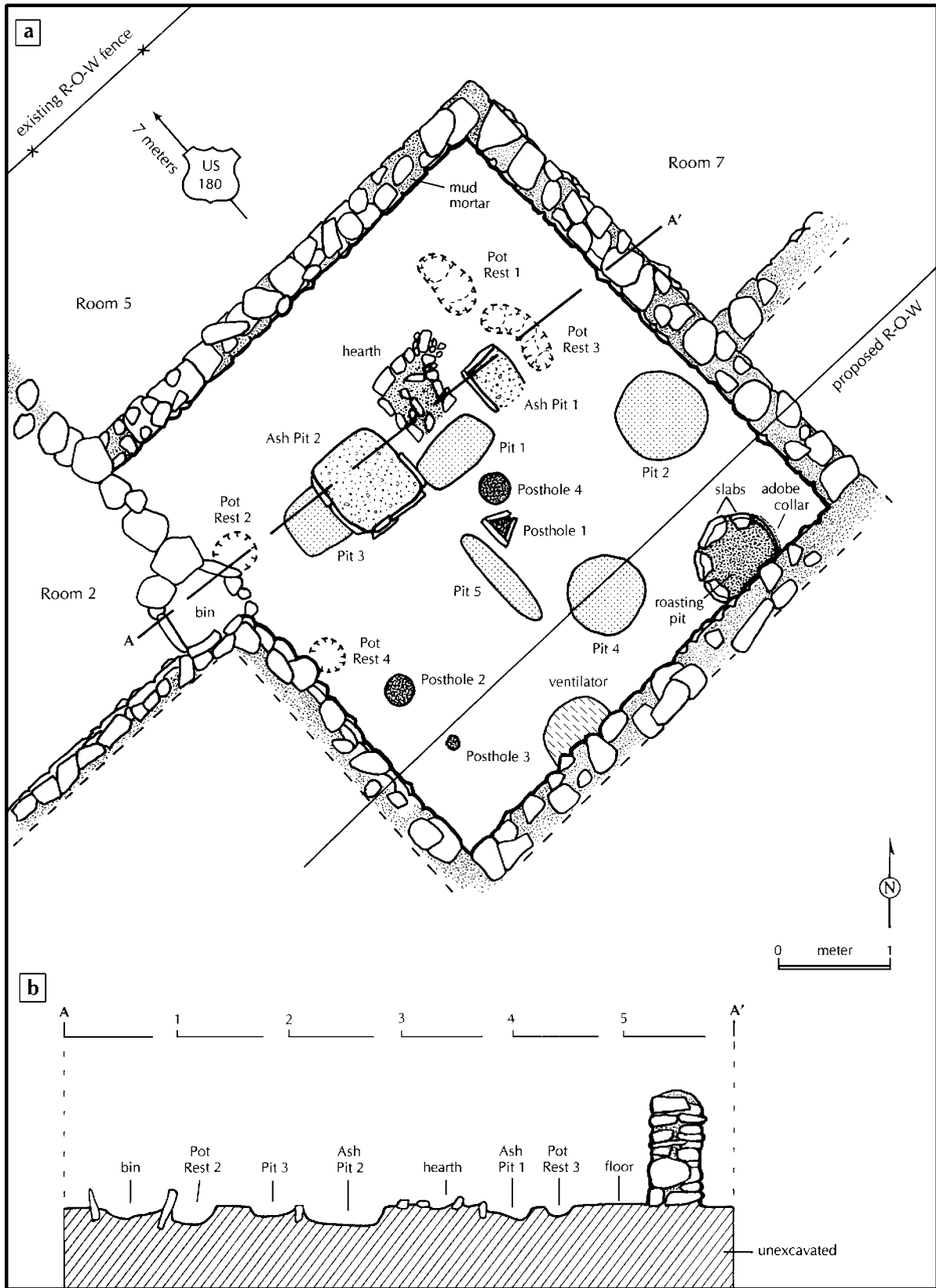


Figure 2.20. Room 6, plan view and profile.



Figure 2.21. Room 6, facing southwest.

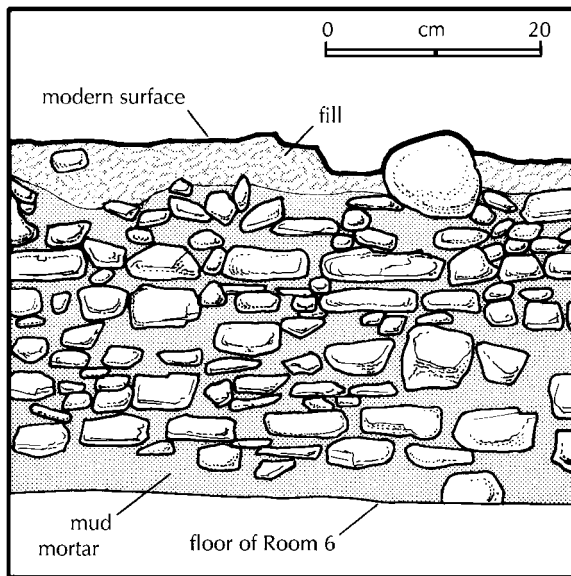


Figure 2.22. Profile of east wall, Room 6, rock and mud mortar.

sels were found in the pit lying on top of a layer of ash. These included an Alma Plain jar, indented corrugated jar, Klageto Black-on-white jar, and two plain smudged bowls. The fill of the feature contained mostly ash and some charcoal. Pot Rest 4 is located along the west wall, measuring 23 cm in diameter and 10 cm deep. The fill

was a sandy clay with fragments of Alma Plain sherds in situ at the bottom.

Postholes. The postholes found in Room 6 do not exhibit any particular pattern. Of the four found, two are in the center of the room and two are along the west wall.

Posthole 1 is somewhat unusual because it was triangular in shape and lined with rhyolite slabs that extend 10 cm to 12 cm above the floor. It is possible that it is, in fact, not a posthole. The feature is 20-by-29 cm and 26 cm deep. The fill consisted of a fine sand with minute wood fragments. A one-hand mano was placed below the east slab toward the bottom of the hole. Wendorf et al. (1963) found a similar type of posthole in one of their excavated rooms at the site. Posthole 2 is located along the west wall in an area of heavy wall fall. It measures 24 cm in diameter and 25 cm deep. The fill was a dark charcoal-stained, sandy clay. Charcoal fragments were present; however, no artifacts were found. Some bird bones were found just above the posthole. Posthole 3 is located 40 cm south of Posthole 2. The small posthole is 13 cm in diameter and 23 cm deep. The fill consisted of sandy clay with minute charcoal flecks. Posthole 4 would have supported a central post that is directly north of slab-lined Posthole 1. It is 26 cm in diameter with a depth of 22 cm. The fill was a sandy clay with charcoal flecking.

Ventilator. The feature was found along the bottom of the south wall in the southwest quarter of the Room. It is 35-by-65 cm and extends in depth 25 to 30 cm below



Figure 2.23. Ash Pit 2, Room 6.



Figure 2.24. Roasting pit, Room 6.



Figure 2.25. Pot Rest 1 in Room 6 with two vessels remaining in pit.

floor level. The feature continued under the south wall into an unexcavated room. The fill was a sandy clay that contained charcoal and some artifacts.

Room 7

Room 7 is located east of Room 6 and north of an unexcavated room. To the east is Room 8. All four walls are standing and the east wall exhibits a doorway (Figs. 2.26, 2.27). The fill of the room consisted of mostly wall fall; however, a high density of artifacts was recovered ($N = 8,255$), which included 6,650 ceramics (7 vessels), 927 lithic artifacts, 52 piece of ground stone, 14 miscellaneous items (including 1 effigy, 1 quartz crystal, and 9 mineral samples), 586 faunal remains, 17 bone tools (including 11 awls), and 9 projectile points. Only one floor level was noted; however, it had been remodeled in areas and had eighteen features.

Dimensions. The room is rectangular in shape and is 4.45 m north-south by 4.60 m east-west (Figs. 2.26, 2.27). The depth of the room ranges from 45 cm to 1.04 m, with the south wall standing at 1.04 m. The room floor area is 20.47 sq m.

Walls. The wall construction consisted of basalt and rhyolite boulders, with a mud plaster and rhyolite slab chinking between the rocks. A doorway is present in the

center of the east wall. The walls vary in height and thickness and are as follows:

- North wall: 45 cm by 30 cm
- South wall: 104 cm by 29 cm
- East wall: 95 cm by 33 cm
- West wall: 92 cm by 37 cm

Along the bottom of the east wall, plaster was noted. A portion of the west wall was missing near the northwest corner. Wall abutments were evident in two corners. The southwest corner abuts the west wall and the southeast corner against the south wall.

Floor. A smooth mud plaster had been placed evenly over the reddish brown clay. The floor was in fair condition considering the amount of wall debris that was on it. Several floor vessels were found and consisted of a Tularosa Corrugated jar, Reserve Corrugated jar, and an indeterminate corrugated jar. A stone bowl, a two-hand mano, and trough metate were also among the floor artifacts.

Floor Features

A total of 15 floor features were found in Room 7. They include a hearth, two ash pits, four pot rests, two post-

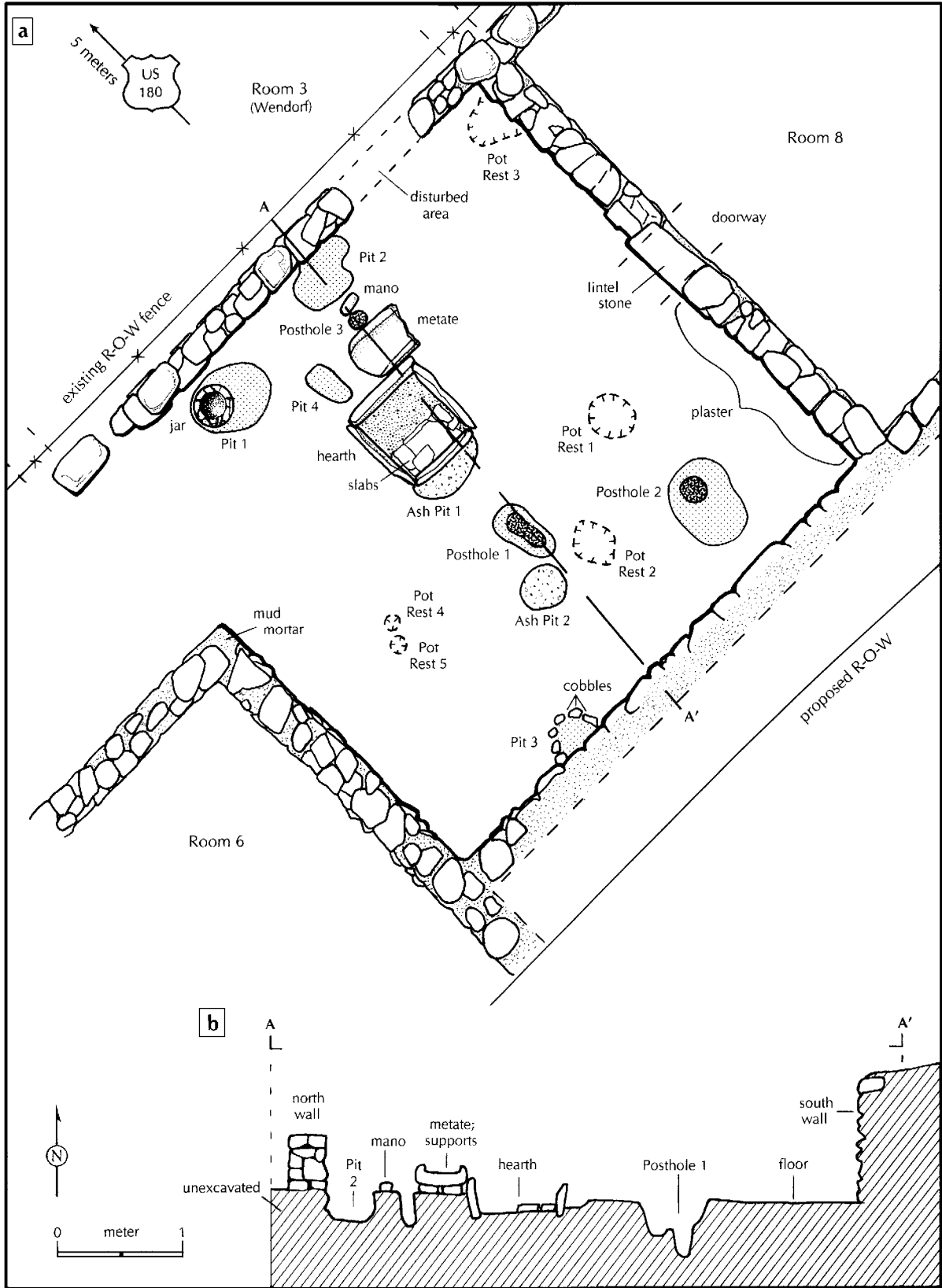


Figure 2.26. Room 7, plan view and profile.

holes, and a mealing area. A doorway is present in the center of the east wall.

Hearth. The hearth is slab-lined with the upright slabs 8 cm above the floor surface (Figs. 2.28, 2.29). It is rectangular, measuring 63-by-65 cm and 31 cm deep. The fill consisted of mostly ash with some sandy clay soil, charcoal, and animal bone. The bottom of the hearth had several sandstone slabs on the south half and charcoal-stained clay in the north. A plain smudged bowl and an indeterminate corrugated bowl were found in the hearth above the ash.

Ash Pits. Two ash pits were found on the floor of Room 7. Ash Pit 1 is located on the south side of the hearth. It was dug into the reddish brown sterile clay and was semicircular in shape and placed against the south slab of the hearth. It is 22 cm north-south by 70 cm east-west and 8 cm deep. The fill was composed of white ash and charcoal. The bottom of the pit was oxidized from intense heat. Ash Pit 2 is south of the hearth approximately 1.0 m. The pit is oval and measures 30-by-28 cm and 10 cm deep. The fill was mostly ash with some burned soil.

Pits. Four pits were present on the floor of the room. The features were dug into the reddish brown sterile clay. Pit 1 is an oval-shaped storage pit that contained an indented corrugated jar (Fig. 2.30). The pit measures 60-

by-64 cm and is 20 cm deep. The fill was a charcoal-filled sandy clay with chipped stone artifacts and faunal remains. Pit 2 is another storage pit that is 60-by-40 cm and 23 cm deep. It is located north of the hearth and had a fill of sandy clay with some charcoal. Two Alma Plain ceramics were the only artifacts found in the fill. Pit 3 is a cobble-lined feature that exhibited some burning. It is located along the south wall and continued slightly underneath it. The fill contained ash, charcoal, and oxidized soil. It measures 20-by-22 cm and is 20 cm deep. Pit 4 is oval-shaped and measures 30-by-17 cm with a depth of 21 cm. Several ceramics were found near the bottom in the sandy clay pit fill. Some charcoal flecks were also found in the pit; however, there was no evidence of burning.

Pot Rests. All of the features are shallow with the deepest being 11 cm. Pot Rest 1 is circular in shape, measuring 32 cm in diameter and 7 cm deep. The fill was sandy clay with minute charcoal flecks. A few artifacts were found in the fill. Pot Rest 2 is a shallow saucer-shaped pit that contained a partial corrugated jar. The feature is 30 cm in diameter and 10 cm deep. The fill consisted of a fine sandy clay with charcoal flecking. Pot Rest 3 is located in the northwest corner against the east wall. The oval-shaped pit is 42-by-38 cm and 11 cm deep. The fill consisted of a brownish clay soil with char-



Figure 2.27. Room 7, looking north. Note lintel and blocked doorway in east wall.

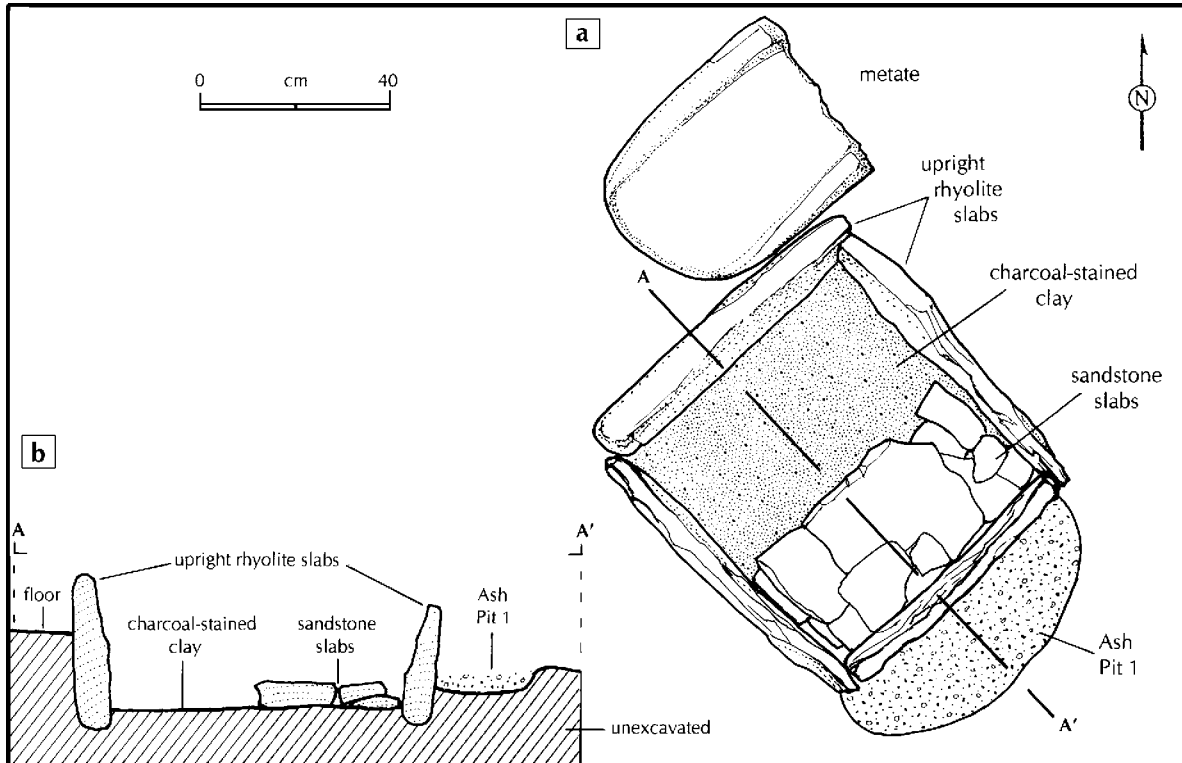


Figure 2.28. Room 7, hearth and ash pit.



Figure 2.29. View from north of hearth and ash pit.

coal and artifacts. Pot Rests 4 and 5 are side-by-side and are identical. They are saucer-shaped with measurements of 14 cm in diameter and 2 cm in depth and appear to have been clay-lined.

Postholes. Three postholes were found in Room 7. They are located north and south of the hearth and the third near the southeast corner. Posthole 1 is located 65 cm south of the hearth. It is large, measuring 57-by-31 cm and 46 cm deep. The feature consisted of one large hole with two smaller postholes inside. Some wood fragments were mixed with the sandy clay fill. Two crystals and two bone awls were found in the upper fill of the posthole. Posthole 2 is near the southeast corner and is 30-by-28 cm and 33 cm deep. A pit extends to the south of the posthole and is 56-by-54 cm and 10 cm deep. The fill consisted of an ashy, sandy clay with charcoal. Possible Posthole 3 is immediately north of the mealing bin. It is 12-by-14 cm and 27 cm deep. Part of the metate from the mealing area is over the posthole suggesting that it may have been remodeled or is possibly a rodent burrow. Rodent burrowing was present in the room particularly around the hearth.

Mealing Area. The feature is located immediately northeast of the hearth. It is composed of a large trough metate that had been propped up against some rocks (see Fig. 2.29). It is slanted downward to the east. A two-hand

mano was found on the floor north of the metate. No vessel was found at the bottom of the metate that would have served as a catchment for processed items.

Doorway. Along the center of the east wall a doorway was found leading into Room 8. A large rhyolite slab measuring 70 cm long and 8 cm thick had been placed above the opening as a lintel. The sides were neatly stacked slabs and rocks (Fig. 2.31). The measurements were 40 cm wide and 76 to 78 cm high. The fill consisted of loamy soil and small cobbles. There was no evidence that it had been closed-off.

Room 8

This small room lies centrally within the northern row of rooms at the Hough site. It is bounded on all sides by other pueblo rooms. Its size and the fact that it has a connecting doorway to the much larger Room 7, suggest that it may have served as a storage facility. A total of 6,300 artifacts were recovered from the fill and consisted of 5,308 ceramics, 698 lithic artifacts, 4 projectile points, 35 pieces of ground stone (including 14 two-hand manos), 233 faunal fragments, 15 bone tools (including 5 awls), and 7 miscellaneous items including a bone gaming piece.

Dimensions. The room is generally rectangular;



Figure 2.30. Storage Pit 1 with Reserve Indented Corrugated jar.

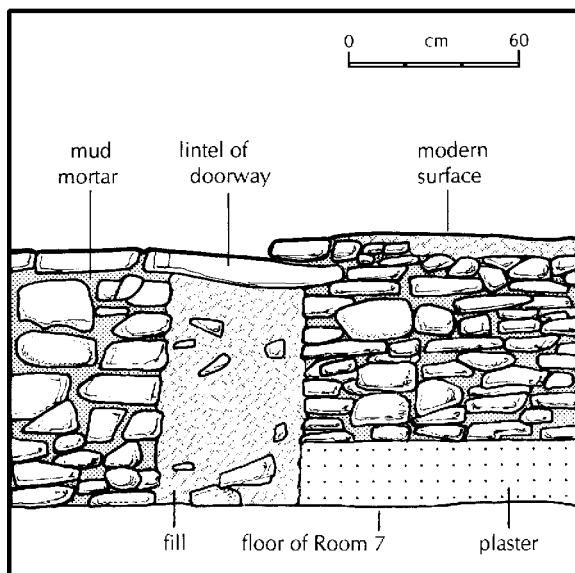


Figure 2.31. Doorway in east wall of Room 7.

however, the south wall is not parallel to the north one, but rather is at a slight angle (Figs. 2.32, 2.33). Using a central point along this south wall gives a room measurement of 4.30-by-2.71 m for a floor area of 11.65 sq m.

Walls. The south and west walls are in excellent condition, both standing to a height of 1.04 m (Fig. 2.34). However, the other walls are poorly preserved, with the north wall at 55 cm height and the east at 45 cm. Construction of the four walls also varies. The south wall is a continuation of the Room 7 south wall and it extends through Room 8 and along the south edges of Rooms 9 and 10 also. Large rocks are crudely coursed within this wall. The west wall was similarly constructed, but had a doorway linking Rooms 7 and 8. The remaining portion of the north wall was not coursed and it bulged from pressure applied to it from the north by the room fill. The wall continues east along Rooms 9 and 10. The east wall is in very poor condition, standing 45 cm high. The wall was built after the north and south walls were in place and construction is not as well done as other walls. All walls sit at, or slightly below, the floor surface.

Floor. A single floor was present within the room. A thin mud veneer, comprising the floor, covered the red sterile substrate in most areas but, in a few spots, the floor veneer had eroded. No artifacts were recovered directly on the floor.

Hearths. Two separate hearths were found in Room 8 (Figs. 2.35, 2.36). One was a floor feature; the other sat in the middle of room fill. The floor hearth was a generally rectangular (with the northeast corner eroded) pit measuring 48-by-56 cm. The remains of an adobe collar, 4 cm high and 2 cm thick, were present along the north edge. The firepit extended 10 cm below floor level and had been oxidized in areas. White ash filled the hearth.

The second hearth was located in room fill 32 cm directly above the other. This was a slab-lined hearth measuring approximately 69-by-62 cm with sandstone slabs also covering the bottom. A layer of ash, 15 cm thick, remained within the hearth. The feature was not associated with any use surfaces, rather, the fill surrounding and below it was very soft and loamy. The entire hearth was present, although slightly "off-kilter," with the north end 13 cm lower in the fill. It is conjectured that the entire hearth collapsed into the room from its position on the roof or a second floor room subsequent to abandonment.

Ash Pits. Three probable ash pits were aligned along the east wall of Room 8 (see Fig. 2.33). All were filled with white ash. Measurements for these pits are:

Ash Pit 1: 56 by 53 by 15 cm deep

Ash Pit 2: 46 by 57 by 14 cm deep

Ash Pit 3: 48 by 56 by 14 cm deep

All were built directly against the east wall and were rectangular in shape, although Ash Pit 3 was more irregular than the others. All seem to have had a raised adobe collar, approximately 4 cm thick, at least on their north sides.

Ash Pit 1 had a subsequent pit dug into the center of it. The pit was circular, 40 cm diameter and 42 cm deep, filled with dark, loamy soil, which included charcoal flecks and several ceramic and lithic artifacts. The location of the pit within the room is just north of center and it may have served as a post support for the roof, but constructed after the room had been in use for some time.

Ash Pit 2 is separated on the north edge from a small pit by the remains of its adobe collar. Ash Pit 3 is also immediately adjacent to a small pit with heavy rodent disturbance present between them.

Pits. Three small pits were uncovered within Room 8. Two are adjacent to ash pits along the east wall and the other is south of the hearth. Measurements for the pits are:

Pit 1: 22 cm diameter by 14 cm deep

Pit 2: 23 by 53 by 12 cm deep

Pit 3: 22 cm diameter by 14 cm deep

All were filled with dark loam. It is possible that Pits 1 and 3 were auxiliary post supports for an apparently deteriorating roof (see Ash Pit 1).

Postholes. A probable, post-room construction posthole and two smaller auxiliary postholes have been discussed above.

Ladder Holes. Two other small side-by-side floor holes are located 50 cm north of the hearth and may have served as ladder holes for a passage to the roof. They

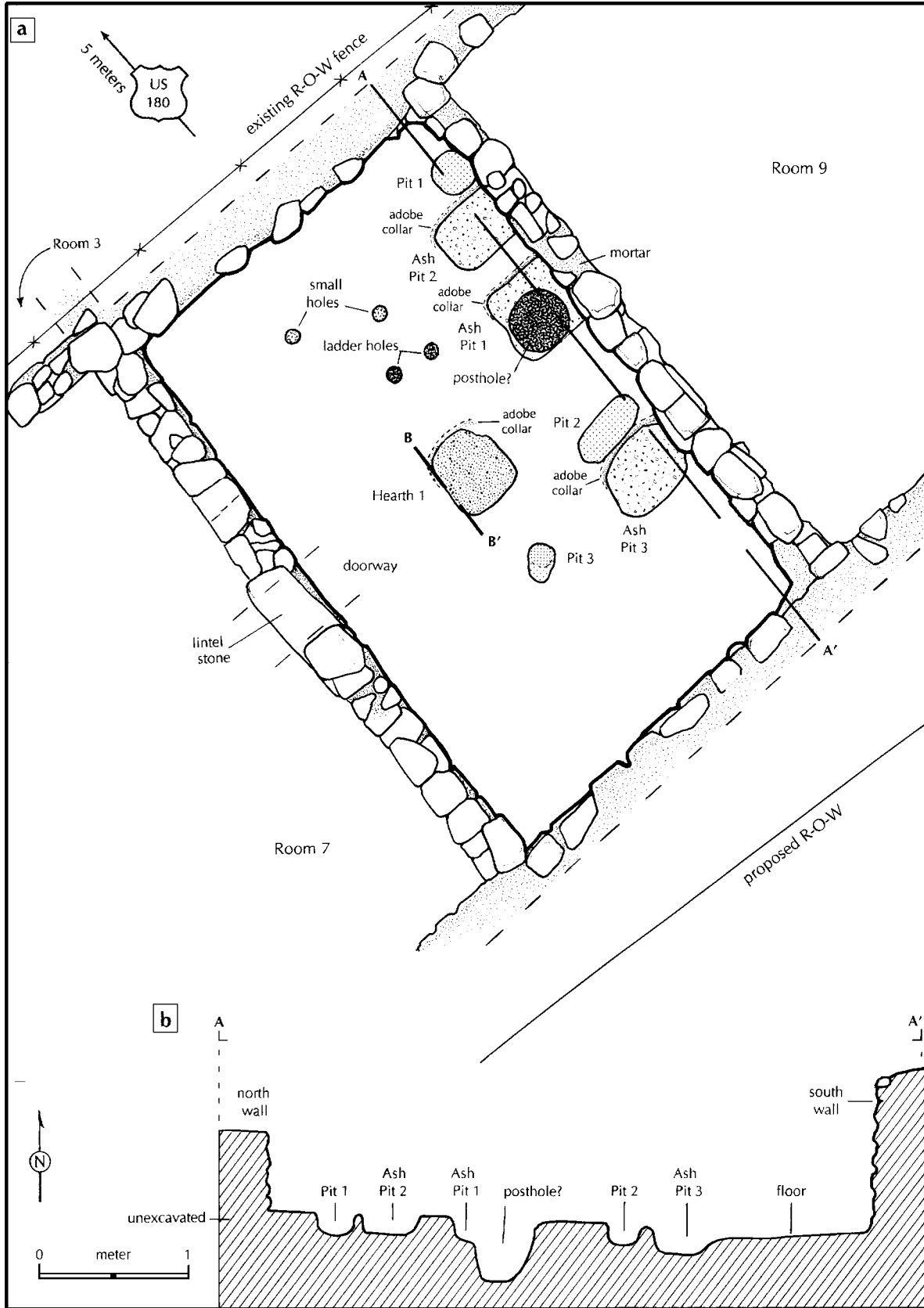


Figure 2.32. Room 8, plan view and profile.



Figure 2.33. Room 8.



Figure 2.34. South and west walls of Room 8; filled doorway in west wall.



Figure 2.35. Hearths 1 and 2; Hearth 2 suspended in fill.

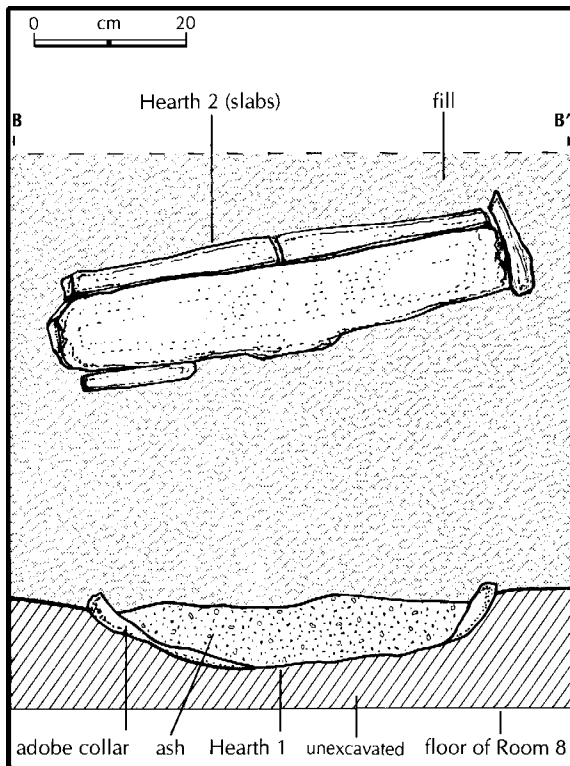


Figure 2.36. Profile of Hearths 1 and 2.

measure 10 and 11 cm in diameter, are 12 and 14 cm deep, and sit 19 cm apart. Both were filled with dark soil. One contained a few wood fragments.

Another set of small holes was found 30-40 cm north of the probable ladder holes. These were 9 and 10 cm in diameter and both 4 cm deep, filled with dark, loamy soil. Their function is unknown.

Doorway. In the west wall, a doorway connected Room 8 to Room 7 (Fig. 2.37). It opened slightly north of the center of Room 8 and was 45 cm wide by 89 cm high with a stone lintel on top, which measured 70 cm long by 21 cm wide.

Room 9

This is an almost square-shaped room within the north tier of rooms in the pueblo (Fig. 2.38). The room was in extremely poor condition and contained a great deal of slump that had adhered to the fragile floor in the northern half. This room also had an adjoining smaller room (Room 10) connected by a doorway. Artifacts recovered from the room totaled 5,084, including 4,240 sherds (8 vessels), 558 lithic artifacts, 3 projectile points, 29 pieces of ground stone (11 two-hand manos), 236 faunal remains, 12 bone tools (8 awls), and 6 miscellaneous items (3 quartz crystals, 1 bead, 1 bone ring).

Dimensions. The room measured 4.30 m north-south



Figure 2.37. Doorway in west wall of Room 8, looking west from Room 9.

by 4.22 m east-west with a floor area of 18.1 sq m (Fig. 2.39).

Walls. All walls were standing, but to various heights. Wall measurements were:

- North wall: 55 cm by 40 cm wide
- South wall: 95 cm by unknown
- West wall: 40 cm by 35 cm wide
- East wall: 50 cm by 40 cm wide

Walls are constructed of unfaced rhyolitic and basalt boulders. They were not coursed, but rather consisted of rocks placed on top of each other in no particular pattern with little chinking. Some mud mortar binds the rocks in place. The north wall is in poor condition and runs along the edges of Rooms 8, 9, and 10. The south wall is the highest at 95 cm but has a considerable inward bulge. It also runs the length of Rooms 8, 9, and 10. The east wall bonds with the north-south walls, whereas the west wall abuts the two and is poorly constructed (see Fig. 2.39 above).

A possible wall partition extends south from the north wall into the central area of the room. It measured 95 cm long, 40 cm wide and 38 cm high. It was constructed of large cobbles loosely piled into an alignment. This may represent some type of room partitioning or it

could be nothing more than wall fall fortuitously aligned. The slump in the area was heavy and made it difficult to assess this possible feature.

Floor. The floor was in extremely poor condition because of heavy slumping of adobe in the north half and erosion and rodent disturbance in the south half. In spite of this, eight partial ceramic vessels, one metate, and three manos were recovered from the floor along with several sherds and lithic artifacts. The vessels include three nested bowls of plain smudged, fillet rim smudged, and an Alma Plain bowl. Also found were another fillet rim smudged bowl, a plain smudged bowl, an indeterminate corrugated bowl, and an indented corrugated jar and bowl.

Hearth. The hearth lies in the south-central portion of Room 9. It is rectangular, measuring 87-by-65 cm by 14 cm deep with slab-lining remaining on the north and west sides and bottom (Fig. 2.40). Dark soil remaining in the north half of the hearth was heavily burned and also contained ash. The south half had been disturbed by rodents. Within the hearth were several sherds, a partial indented corrugated jar and lithic artifacts. To the west of the hearth was a partial indeterminate corrugated bowl.

Pits. Two pits were recorded within Room 9. Pit 1 is located against the north wall almost in the center of the room. It was circular and measured 50 cm in diameter

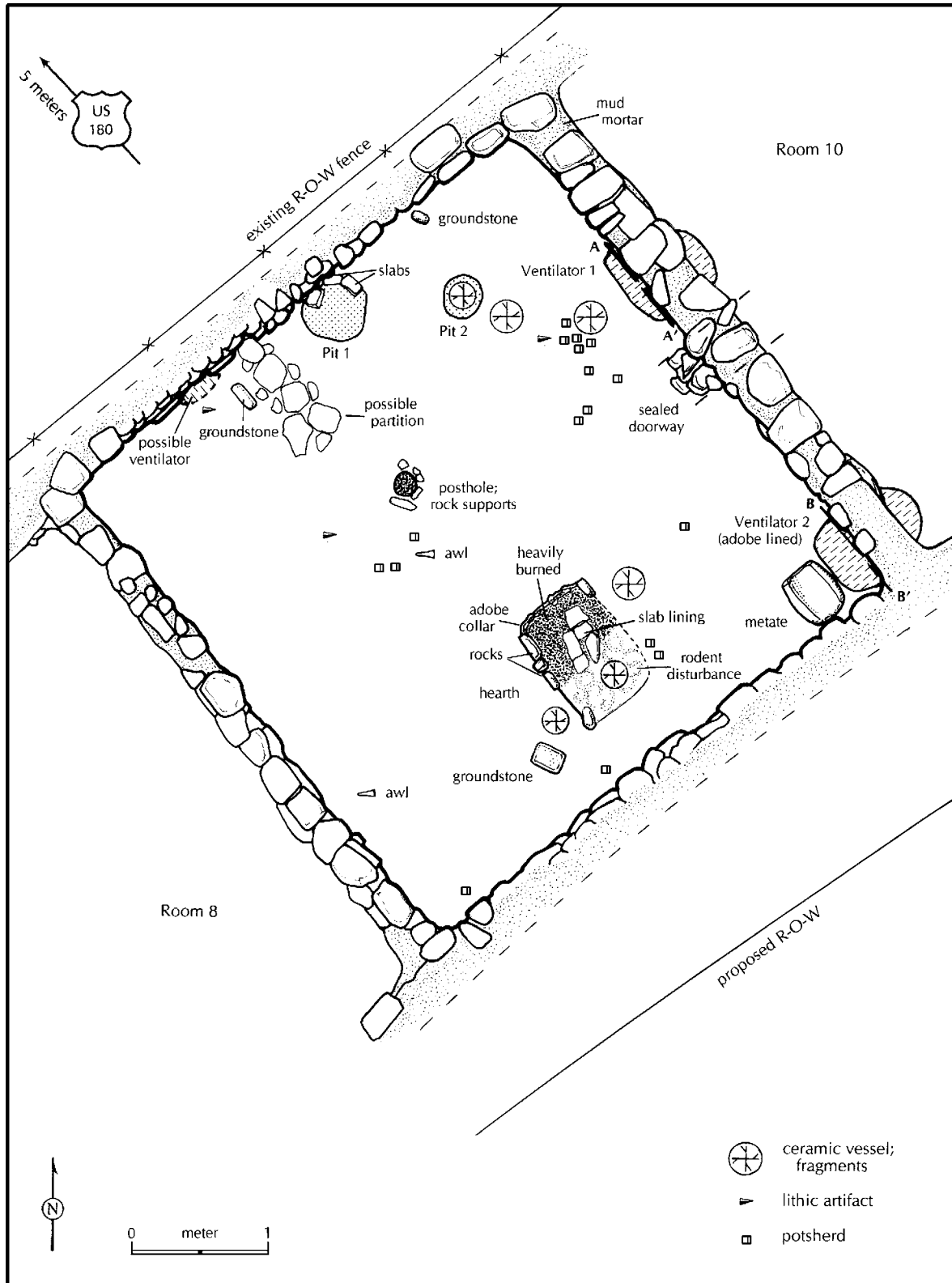


Figure 2.38. Room 9, plan view.



Figure 2.39. Room 9, facing south. Note blocked doorway in wall on the left.



Figure 2.40. Hearth in Room 9.

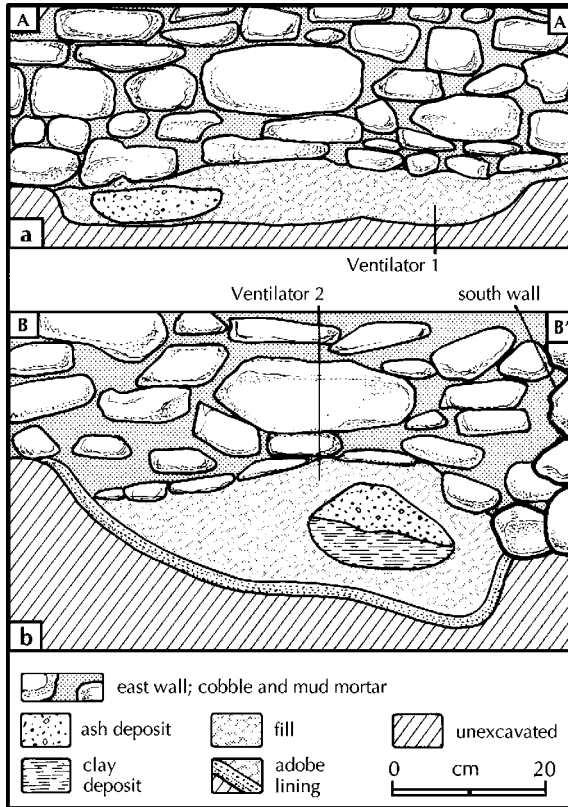


Figure 2.41. Ventilators in east wall; (a) Ventilator 1, (b) Ventilator 2.

and 12 cm deep. Along the northwest edge were several upright sandstone slabs. The fill consisted of slump-covered clay, which became softer and sandier towards the bottom. No artifacts were found within it. Its function is unknown.

Pit 2 was in the northeast quadrant of the room. It measured 32-by-30 cm and was 20 cm deep. Within the pit were two broken bowls of plain smudged and indeterminate corrugated. This may have been a storage pit with the broken bowls serving as a pit liner to keep out rodents and dampness.

Ventilator Openings. Two shallow depressions extended under the east wall of Room 9 into Room 10 (Fig. 2.41). These are probably ventilator openings. However, Vent 1 is oddly placed—almost directly adjacent to a sealed doorway and, therefore, probably constructed after the sealing of the doorway. The opening is 60 cm long and extends for 15 cm out into the room. Depth is 6 cm. It was apparently lined with sandstone slabs that have now mostly decomposed. The opening continues under the east wall and appears in Room 10. Within the shallow fill were charcoal, some ash, and several artifacts.

Ventilator 2 also was located along the east wall in the southeast corner of the room. It, also, was 60 cm long

but extended for 30 cm into the room and was 20 cm deep. It was adobe-lined and contained an 18-by-10 cm pocket of ash. A bone awl was recovered from the fill.

It appears that the doorway between Rooms 9 and 10 was sealed and that the ventilator openings were later additions in order to provide air circulation for Room 10, a possible storage facility.

Another possible ventilator opening was located in the western portion of the north wall. It was 35 cm wide and 8 cm high and flanked by two flat rocks. The amount of surrounding rubble and wall disturbance in this area made it difficult to determine if this was actually a room feature. It is believed that another tier of rooms lies to the north, which would have adjoined Room 9, making a ventilator opening in the north wall a definite possibility.

Doorway. A small doorway, similar to that between Rooms 7 and 8, was found in the east wall of Room 9 leading into Room 10 (see Fig. 2.39). It measured 40 cm wide by at least 70 cm high. (The lintel and upper wall areas were missing.) The doorway had been purposefully sealed from the Room 9 side with large cobbles and stones stacked against the doorway and extending out into the room. The doorway originally connected the much larger Room 9 with a smaller Room 10, possibly used as a storage area.

Room 10

This is the smallest room excavated within the pueblo. It adjoins Room 9 by way of a doorway. Within the room was a central hearth, several ventilator openings, and some small pits (Fig. 2.42). Because of its size, and access limited to only Room 9, this may once have been a storage facility.

A total of 3,605 artifacts were recovered from the fill within the room, including 2,675 ceramics (1 vessel), 651 lithic artifacts, 4 projectile points, 13 pieces of ground stone (8 two-hand manos and a stone bowl), 232 faunal remains, 12 bone tools (8 awls), and 18 miscellaneous items (1 bracelet, 2 ornaments, and 13 mineral samples).

Dimensions. The room measured 4.3 m north-south by an average of 2.1 m east-west for a floor area of 9.03 sq m (Fig. 2.43). The fill was 75 cm deep within the room.

Walls. The walls were constructed mostly from large rocks and slabs. Many had a flat side facing the room interior. The stones were not coursed although some layering was evident (Fig. 2.44). A mud plaster was used as a binder with some small flat spalls. One or two sherds were observed as chinking in the walls also. The wall foundation was built directly on the floor surface; there was no prior trenching. Over the years, the east wall has

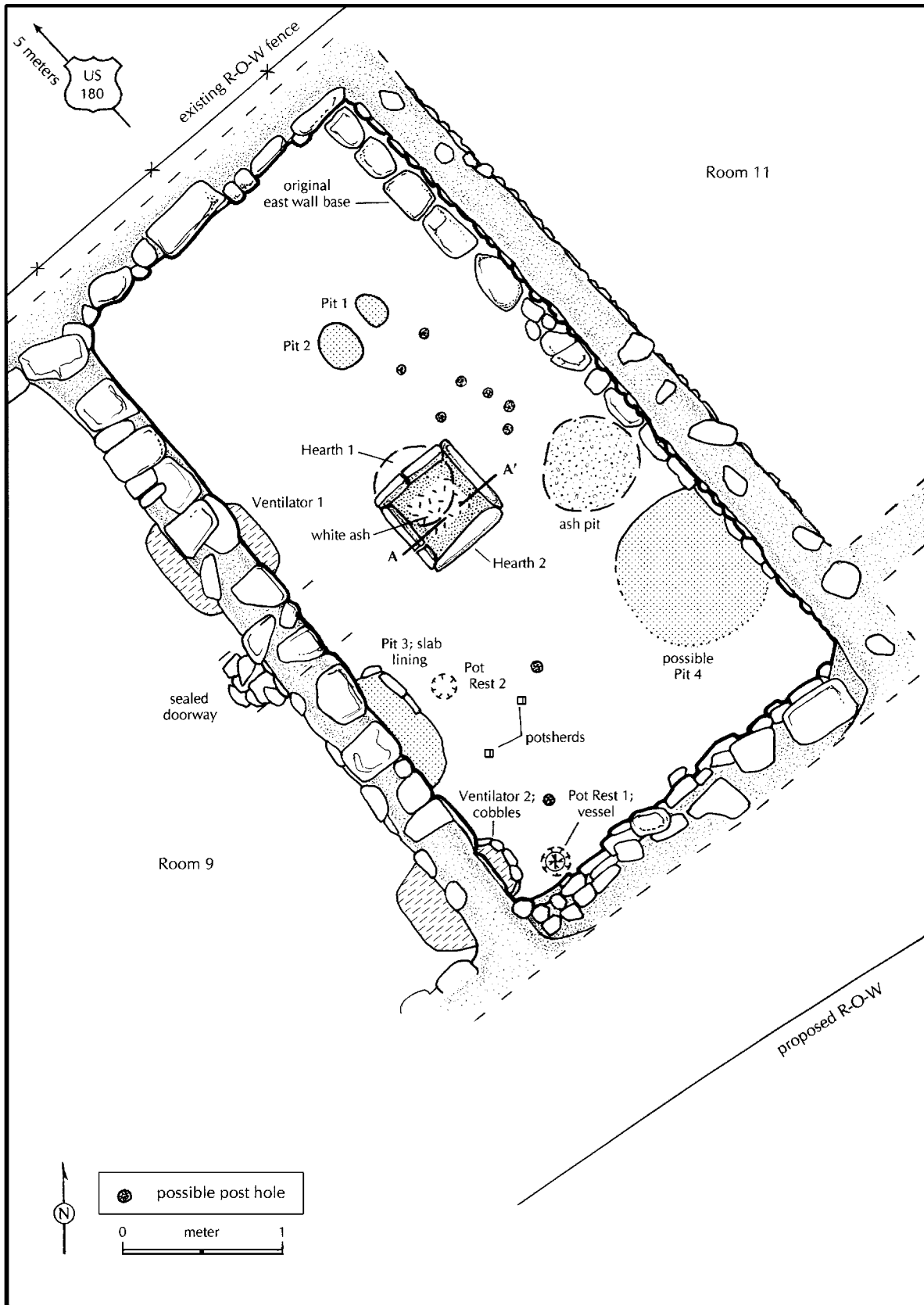


Figure 2.42. Room 10, plan view.



Figure 2.43. Room 10, facing south. Note wall shifted from its foundation.



Figure 2.44. West wall of Room 10 with doorway in center. Rooms 9 and 8 are immediately to the west.



Figure 2.45. Hearth in Room 10.

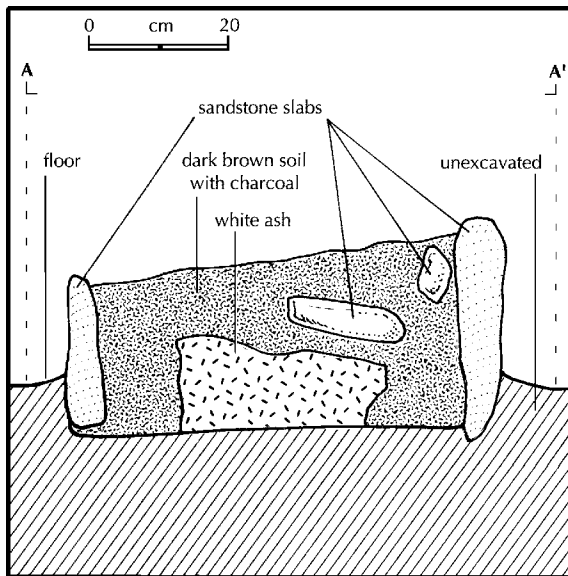


Figure 2.46. Profile of hearth and fill.

slid as a unit off of its foundation stones and jogged 18 cm to the east. The west wall contained a doorway to Room 9. Wall dimensions were:

North wall: 50 cm high by ? cm wide
 South wall: 38 cm high by ? cm wide

East wall: 66 cm high by 32 cm wide
 West wall: 75 cm high by 38 cm wide

Floor. The floor was originally a hard-packed mud but is poorly preserved, particularly in the south portion because of heavy rodent activity. Some remodeling of the floor area seems to have occurred here to cover these disturbances. A Tularosa Black-on-white jar was found in this area. A remodeled hearth and several ventilator openings were in undisturbed portions of the floor.

Hearth. A remodeled hearth was present in the center of the room directly in line with the doorway. The original hearth was basin-shaped, measuring approximately 40 cm in diameter and 10 cm deep. Over this was imposed a slab-lined firebox made of sandstone slabs 6-9 cm thick (Figs. 2.45, 2.46). It measured 62-by-61 cm with fire-reddened slabs standing 24 cm high. Dirt had been bermed around the outside edges of the hearth and then sloped down to meet the floor. The fill of the hearth consisted of compacted white ash with blackened dirt around the sides and bottom. Within the ash were small slab spalls, a few lithic artifacts, sherds from a variety of vessels, and many small pieces of calcined bone.

Because of the remodeling of the hearth to a more substantial firebox, floor smoothing, and blocking of the doorway and ventilator openings, it is possible that Room 10 may have once been a storage room, but was

reconfigured to meet a need for expanded living quarters.

Ash Pit. An earlier ash pit lying southeast of the fire-box was uncovered directly under the floor in the remodeled portion of the room. It apparently was contemporary with the earlier basin-shaped hearth. It measured 61-by-63-by-9 cm deep with sloping sides. The fill consisted of ash and charcoal flecks. No artifacts were within the feature.

Ventilator Openings. Two ventilator openings were found in the west wall corresponding to Vents 1 and 2 discussed for adjoining Room 9. Vent 1 was 49 cm wide, extended out from the wall for 11 cm and was 11 cm deep. It was filled with ash and lithic and sherd fragments. The vent had been purposefully blocked by cobbles as was the doorway. Vent 2 also continued through to Room 9 and had also been blocked. It was 37 cm wide and extended into Room 10 for 15 cm, was 7 cm deep, and also contained ash.

Pits. Three, and possibly four, pits were excavated in Room 10. Pits 1 and 2 were side-by-side in the northern portion of the room. Pit 1 measured 31-by-23-by-10 cm deep and Pit 2, at 10 cm distance, was 21-by-15-by-7 cm deep. The soil of both contained some charcoal flecking and Pit 2 also had a small lithic flake. Their function is unknown. Another pit, Pit 3, ran partially under the west wall. It measured 75 cm long by 30 cm wide and 23 cm deep. The fill contained soil, ash, a well-used polishing stone, and a piece of hematite. This feature was probably a storage pit. In the badly disturbed southeast corner of the room was another possible pit (Pit 4), but rodent disturbance makes this conjectural. Only a curving north edge could be accurately defined. Its possible measurements were 95-by-82-by-16 cm deep. The dirt fill had a little ash and charcoal and several small artifact fragments.

Pot Rests. Two pot rests were found in the floor near the west wall. Pot Rest 1 was in the southwest corner of the room and measured 18 cm in diameter and was 6 cm deep. Pieces of a Tularosa Black-on-white jar were found within the depression. Pot Rest 2, near the storage pit, measured 15 cm in diameter and was also 6 cm deep. No vessel was found with it.

Postholes. Nine very small possible postholes were recorded in Room 10. None may be considered definite post features, although they are of a consistent size. They are mostly focused to the northeast of the slab-lined hearth with two being located in the southwest quadrant of the room. There seems to be no patterning to their placement, although Postholes 1 and 2 may be paired. No wood was recovered from them. Measurements were:

- Posthole 1: 6 cm diameter by 3.5 cm deep
- Posthole 2: 5 cm diameter by 3 cm deep
- Posthole 3: 6.5 cm diameter by 3 cm deep

Posthole 4: 5 cm diameter by 3.5 cm deep

Posthole 5: 5 cm diameter by 4 cm deep

Posthole 6: 7 cm diameter by 4 cm deep

Posthole 7: 4.5 cm diameter by 4 cm deep

Posthole 8: 6 cm diameter by 7 cm deep

Posthole 9: 6.5 cm diameter by 7 cm deep

Doorway. The doorway in the west wall once connected to the much larger Room 9 but has been blocked with cobbles. It is described under Room 9 (see Fig. 2.44).

Roof. Evidence of a burned roof was found in charred beams and a few reddened adobe casts lying 5-10 cm above the floor. Entry to the room would have had to have been by way of the roof once the doorway to Room 9 was closed off.

Room 11

Rooms 11, 12, and 13, at the eastern end of the pueblo, share a different physical layout from the other rooms excavated. Each of the three rooms were built on top of a large trash midden apparently deposited before expansion of the pueblo to the east. The land here slopes somewhat sharply downward to the east and the midden brought the rooms up to the level of the others in the pueblo. Room 11 is the second largest pueblo room excavated with the exception of the great kiva. The only feature within the room was a slab-lined hearth (Fig. 2.47). A large tree had totally destroyed the floor in the extreme southwest corner of the room.

Artifacts recovered from the room totaled 5,126, including 4,388 ceramics, 474 lithic artifacts, 39 pieces of ground stone (16 two-hand manos), 209 faunal remains, 6 bone tools (1 awl and 1 knife handle), and 10 miscellaneous items (1 bracelet, 1 pendant, 2 effigies, and 1 bone bead).

Dimensions. The northern edge, or wall, of the room was not found. It definitely extends beyond the east-west wall running across all of the rooms to the west. Excavations could not continue to the north to locate the wall because of extreme closeness to the highway. Measurements for the room are at least 4.6 m north-south by 5.5 m east-west for a minimal floor area of 25.3 sq m.

Walls. All but the north wall were located. The west wall was in very good condition while the south wall had been badly disturbed and was missing in the southeast corner. The east wall is of unusual construction. The lower 15 cm is mud-adobe with cobbles and stones then placed above this earthen base. This suggests hasty construction with a lack of available stone or that different people had built this wall. (However, the fireplace is built in the same manner as all others in the pueblo.) Again,

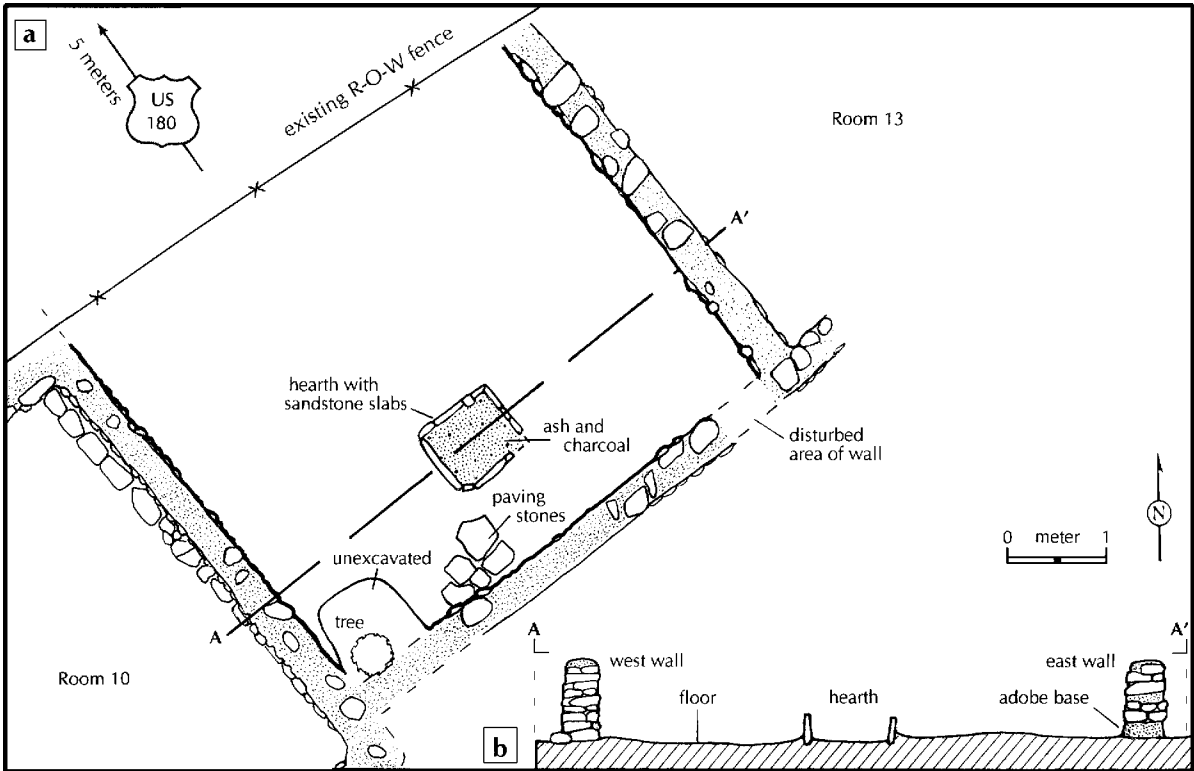


Figure 2.47b. Room 11, facing south.

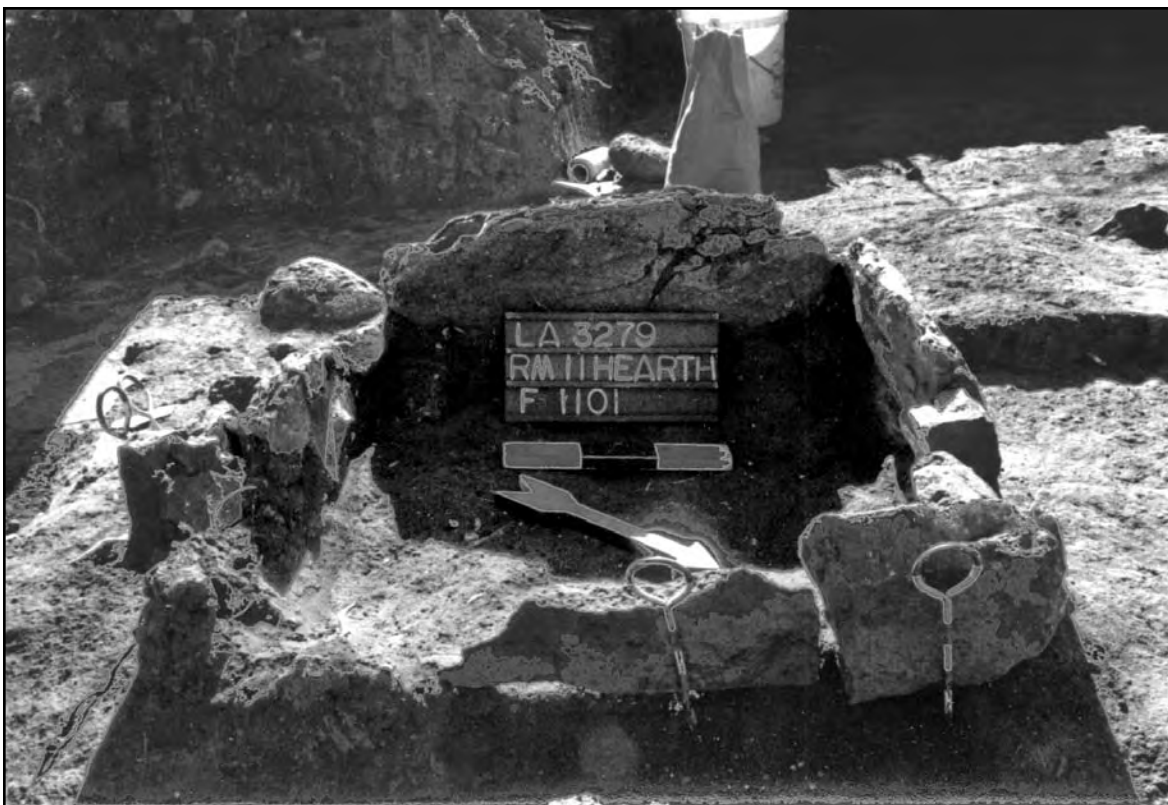


Figure 2.48. Hearth in Room 11.

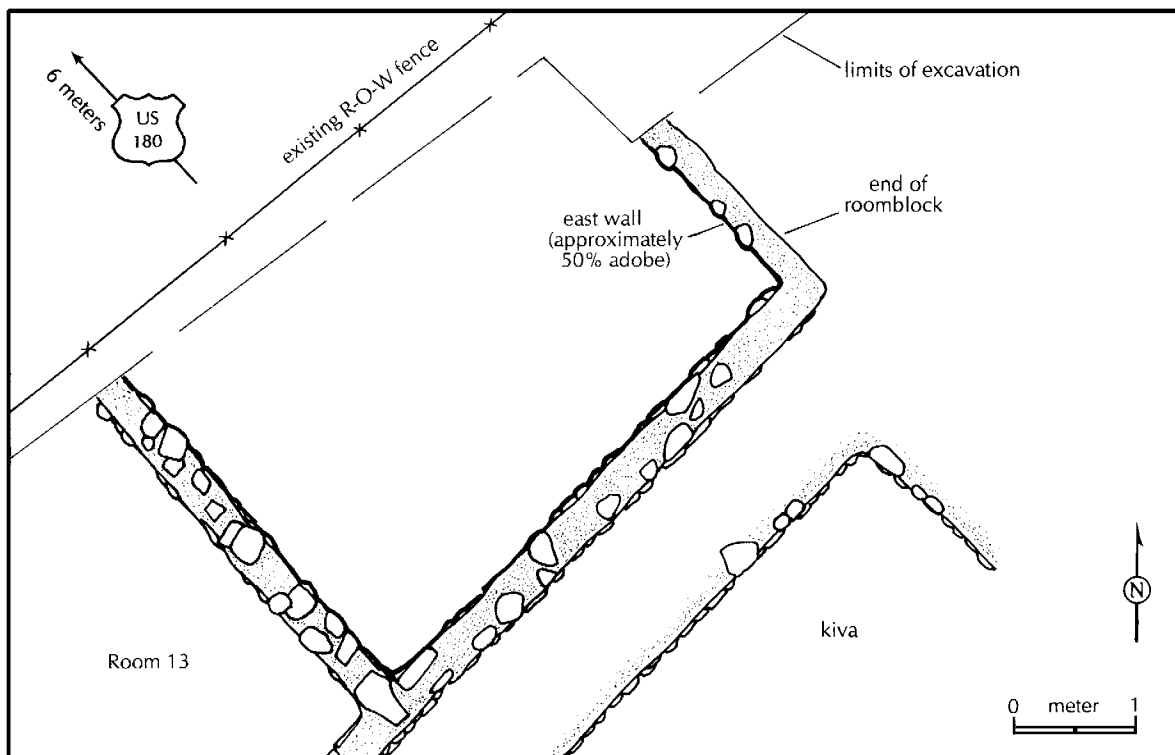


Figure 2.49. Room 12 plan view with no interior features.

walls had been placed directly on the floor. Wall heights and thicknesses are:

South wall: 40 cm by 40 cm
East wall: 70 cm by 35 cm
West wall: 80 cm by 35 cm

Floor. The floor was built on the trash midden and consisted of a softer, more loamy base than the excavated floors to the west. It was difficult to follow because it did not have a well-packed surface, suggesting less use than rooms to the west. A small window dug into the floor confirmed the presence of trash deposits to a depth of 30 cm.

Hearth. The hearth was a rectangular, slab-lined unit located in the south half of the room and measured 88-by-82-by-2 cm deep (Fig. 2.48). The slabs were broken sandstone and may have consisted of four solid slabs extending 26 cm above the floor. There was also a bottom slab. The floor had not been dug out for a pit, but rather, the fires had been built at floor level within the slab enclosure. The fill consisted of dark, loamy soil underlain by compacted ash. Within the fill were several large sherds, a few lithic and ground stone fragments, and some small pieces of bone.

Roof. No burned beams or roof fall were present within the fill.

Room 12

This is the easternmost room of the pueblo. It was built on top of a trash midden, as were Rooms 11 and 13. The room appears to not have been completed as there are no interior features (Fig. 2.49). Artifacts totaled 1,210, including 873 ceramics, 232 lithic artifacts, 6 pieces of ground stone, 1 projectile point, 96 fragments of faunal remains, and two miscellaneous items (1 bead and a mineral fragment).

Dimensions. The north wall of the room was not located because of the road proximity; however, room measurements are at least 4.4 m east-west by 3.3 m north-south for a minimum floor area of 14.52 sq m.

Walls. Walls in this room were the poorest of any of the walls in the pueblo. As in the east wall of Room 11, all of the walls were mud/adobe with rhyolite cobbles and slabs interspersed throughout. The east wall was over 50 percent adobe and was thinner than all of the others. Measurements (heights and thicknesses) for the standing walls are:

South wall: 40 cm by 35 cm
East wall: 40 cm by 28 cm
West wall: 76 cm by 35 cm

Floor. The floor consisted of poorly packed trash fill and was difficult to follow. No features were found in or on the floor.

Room 13

Room 13 is rectangular in shape and is located 1 m north of the kiva (Fig. 2.50). It is poorly preserved and was greatly disturbed by root and rodent activity. The north wall is missing, probably removed by road construction. Room 13 seems to have been built on approximately 30 cm of fill, making it difficult to find the floor. The walls were in poor condition, especially the south wall that was built into the fill.

The room is separated from the kiva by a 1-m area between the two. It is possible that the fill from the kiva was first placed in the area of Room 13 to stop erosion and the room added later.

The fill of the room was 80 cm deep and consisted of wall fall, roof fall, and artifacts. A total of 4,558 artifacts, which included 3,420 ceramics, 740 lithic artifacts, 17 pieces of ground stone, 9 projectile points, 364 faunal remains, six bone tools (including one awl), and two miscellaneous items (one discoidal bead), were recovered from the room. One whole Reserve Corrugated jar was found in the fill above the floor.

Dimensions. The room is 4.25 m north-south by 3.40 m east-west with the west wall standing at 75 cm (Fig. 2.51).

Walls. The walls were not plastered. They were built of rhyolite cobbles with a mud mortar and slab chinking. The north wall is not present and the south wall currently stands 15 cm above the floor in some spots. The wall height and thickness for each wall is:

North wall: missing
South wall: 70 cm by 45 cm
East wall: 65 cm by 35 cm
West wall: 75 cm by 30 cm

The profile of the west wall shows that the room is built on trash fill (Fig. 2.52).

Floor. The floor is very disturbed and poorly preserved. It is a brown to dark brown clay with some oxidation present and ash and charcoal mottling throughout. In the northwest quadrant there is a bench with the floor surface sloping to the south (Fig. 2.53). Although the floor is mostly rodent and root-disturbed there are small areas of prepared floor present. No features were found in the south half of the room; they are all located in the north half.

Hearth. The hearth is slab-lined and is on the small bench. The slabs rise 28 cm to 45 cm above the bench. It

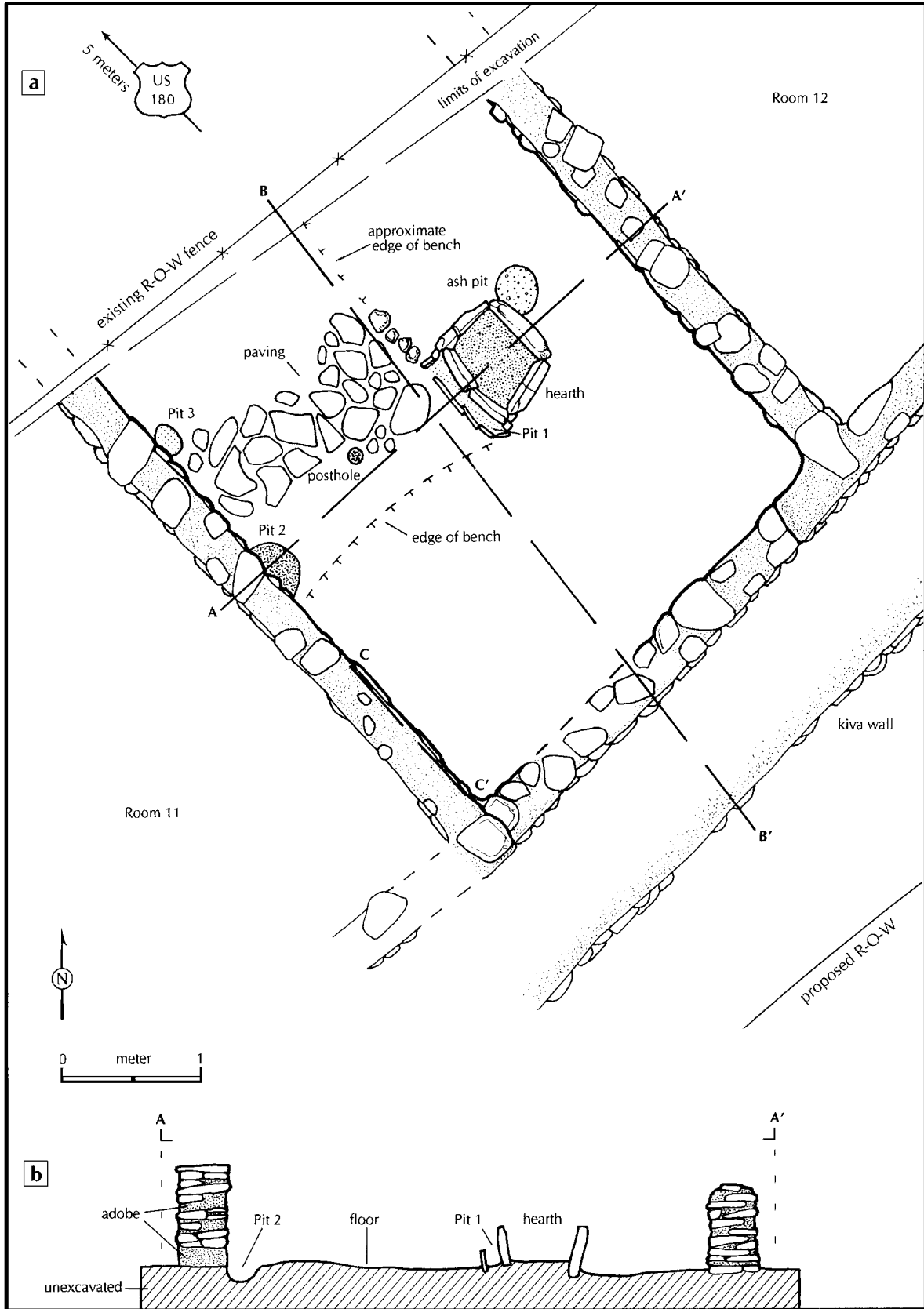


Figure 2.50. Room 13, plan view and profile.



Figure 2.51. Room 13, looking south. Note paving near hearth.

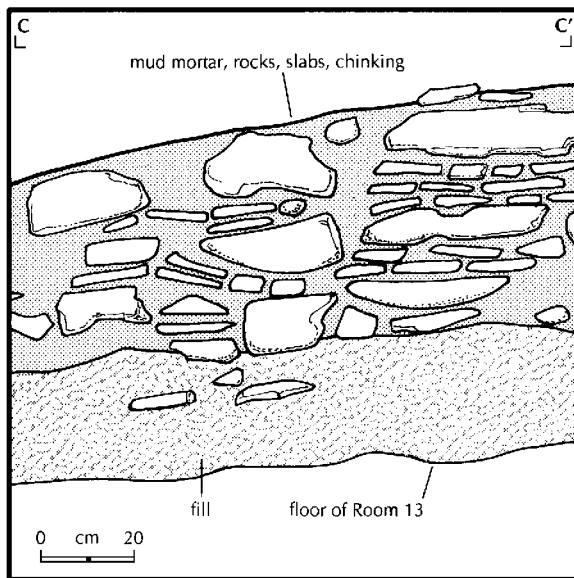


Figure 2.52. Room 13, west wall profile.

measures 65-by-75 cm and is 29 cm in depth (Fig. 2.54). The fill contained ash, charcoal, and burned soil. The bottom fill of the hearth remained loamy; however, oxidation was present. Several artifacts were found in the hearth including faunal remains.

Ash Pit. This feature is located immediately east of the hearth. The amorphous-shaped pit is 34-by-35 cm and 7 cm deep. It contained a great deal of charcoal, ash,

and burned wood.

Pits. A total of three pits were found in Room 13. Pit 1 is immediately west of the hearth on the bench level. It is 76-by-10 cm and 13 cm deep. This rectangular pit is slab-lined, with the east wall being part of the hearth wall. The fill consisted of sandy clay and two ceramics. Pit 2 is located against the west wall and measures 38-by-26 cm and has a depth of 14 cm. This semicircular pit exhibited some burning and contained charcoal and oxidized soil. The pit had been placed in the bench. Pit 3 is a small pit in the northwest quadrant along the west wall. It is 20-by-16 cm and 13 cm deep. The fill consisted of a sandy clay with no cultural material.

Bench. The bench covers the north mid-section of the room. It is partially paved, measures 1.55-by-1.85 m, and slopes up to 30 cm above the floor. Three features are associated with the bench and they are Pit 1, Pit 3, and a posthole (Fig. 2.53).

Posthole. One posthole was found in Room 13 below the pavement of the bench. It is located in the middle of the bench and is 10 cm in diameter and 9 cm deep. The fill contained charcoal mixed in with the sandy clay.

GREAT KIVA

A great kiva (Room 15) lies east-southeast of the pueblo roomblock (Figs. 2.1, 2.2, 2.55). It is free-standing, not attached to any of the pueblo rooms, although two unex-

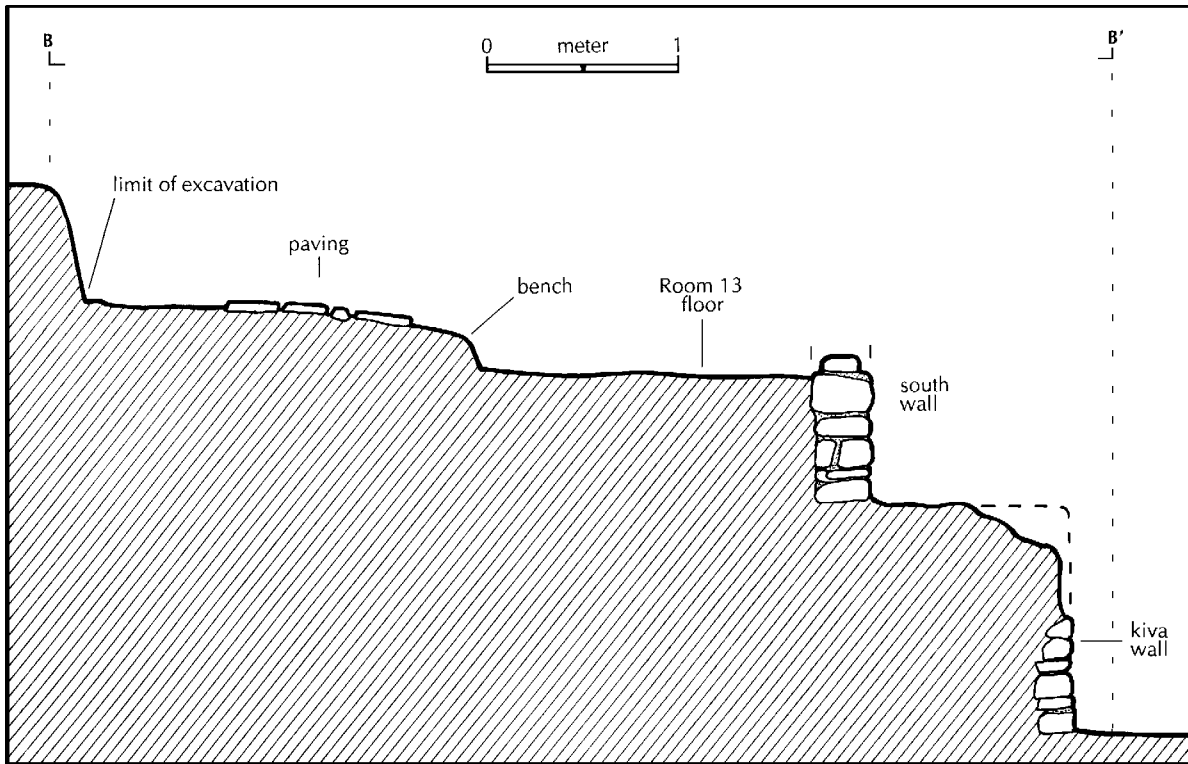


Figure 2.53. Room 13, bench and floor, north profile.

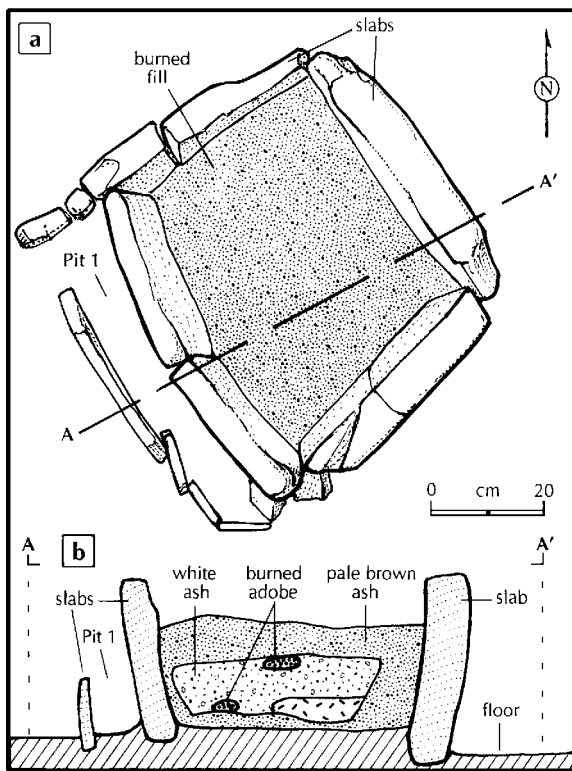


Figure 2.54. Slab-lined hearth, plan view and profile.

cavated rooms lie on either side of the long ramp entry. It sits directly south of the slope on which Rooms 11, 12, and 13 are located. The great kiva is very similar to one excavated at the Sawmill site near Reserve (Bluhm 1957). The rectangular structure is large, 96.0 sq m, with a lateral entryway, standing masonry walls, and several interior features. The features include a hearth area, two foot drums, three pits, five postholes, a small, stone-lined hole (sipapu?), and a burial. The fill extended to 2.48 m deep at the north end and 1.1 m on the south. Thousands of artifacts were recovered from the fill, many probably washed in from higher-situated Rooms 11, 12, 13, and the trash midden on which they sit.

The fill of the great kiva was estimated at 166.0 cu m (Fig. 2.55). Removal of all but a meter of dirt above floor level and near walls was performed with mechanical equipment. Artifacts were retrieved from the fill and backdirt by hand after each scoop of dirt was removed from the great kiva. Final fill above the floor and floor artifacts were excavated by quadrants. A total of 52,102 artifacts were recovered, including 45,277 ceramics, 4,444 lithic artifacts, 52 pieces of ground stone, 9 projectile points, 2,238 faunal remains, 40 bone tools (10 awls, 7 gaming pieces, 1 shuttle), and 42 miscellaneous items (10 effigies, 13 modified quartz crystals, 1 pendant, 8 beads).

Dimensions. The great kiva measured 9.15 m north-south by 10.5 m east-west with a floor area of 96.0 sq m,

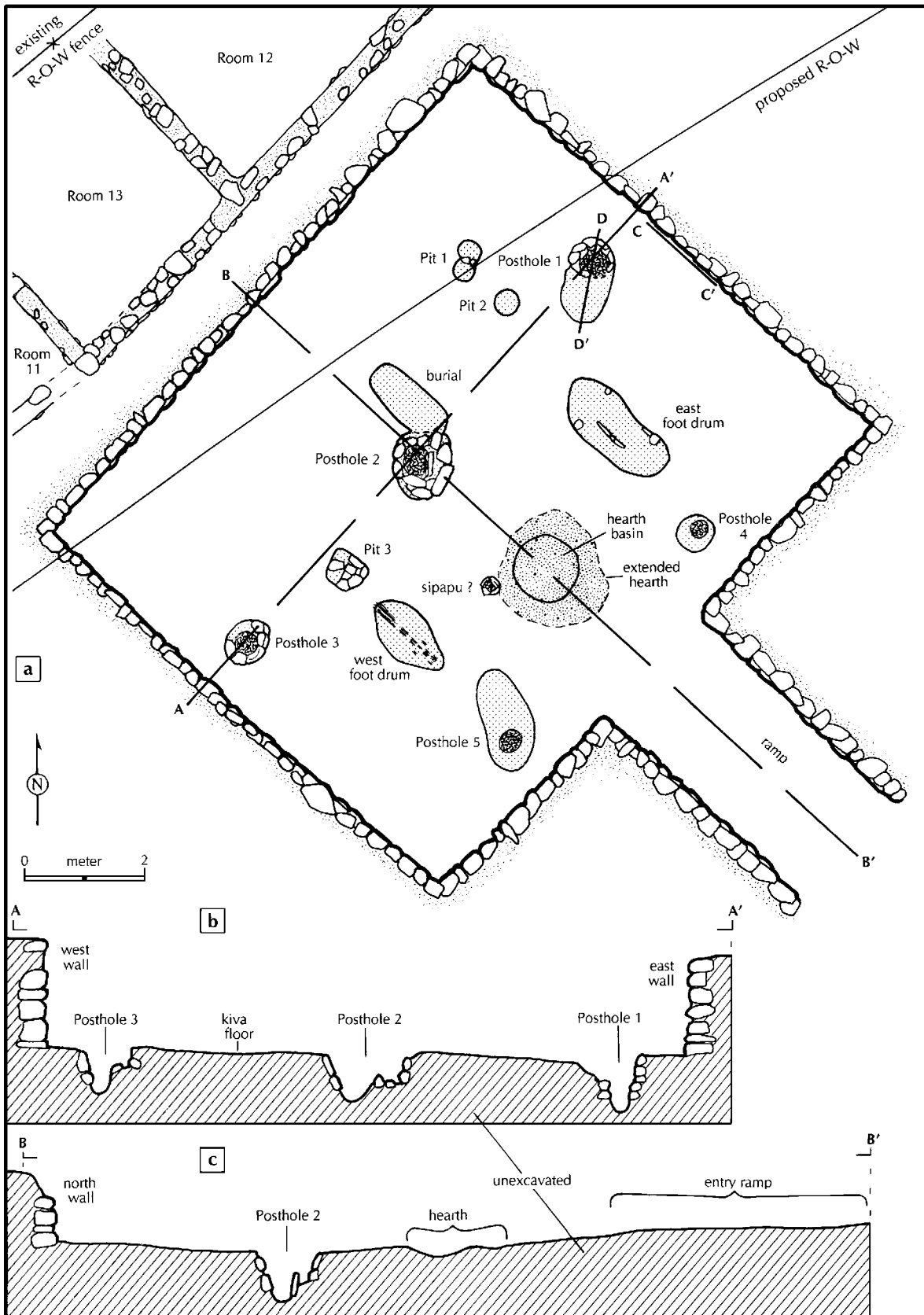


Figure 2.55. Great kiva, (a) plan view, (b) east-west profile, (c) north-south profile.



Figure 2.56. Great kiva midway through excavation, from Room 13.



Figure 2.57. Great kiva completed, facing east. Burial pit in center, hearth between burial pit and ramp entry flanked by two foot drums. Large posthole is in upper center of photo.

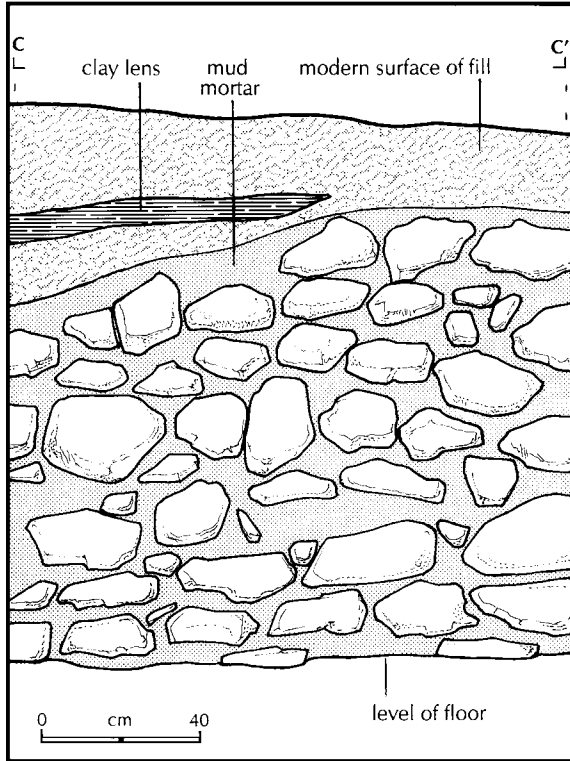


Figure 2.58. Great kiva, east wall profile.

as mentioned above. It presents a square appearance, although, in actuality, it is not. The ramp entry is 4.5-by-2.2 m wide with an area of 9.9 sq m.

Walls. To construct the great kiva, prehistoric inhabitants of the site originally dug a large rectangular pit, exactly to the dimensions they desired, into the ground surface. They then lined this pit with irregularly coursed rhyolite and basalt cobbles to give the appearance of stone masonry walls (Fig. 2.58). Larger, flatter cobbles were used along the bottom of the walls (Figs. 2.58, 2.59). Similarly impressed-stone walls were found at Spurgeon Draw (LA 39968, AR-00-00-00-00000, this volume), also a Tularosa phase site.

The walls stood at a maximum of 2.48 m high in the northwest corner of the great kiva when excavated. They probably were somewhat higher than this originally because no roof support niches were present in the remaining walls. The north wall had been built up against the trash midden and fill south of Rooms 11, 12, and 13. However, the south wall would have extended above the ground surface, being only 1.1 m below ground level today. This would have made construction of a free-standing stone wall necessary in the south portion of the room; however, no traces of such a wall remain. Wall heights were:

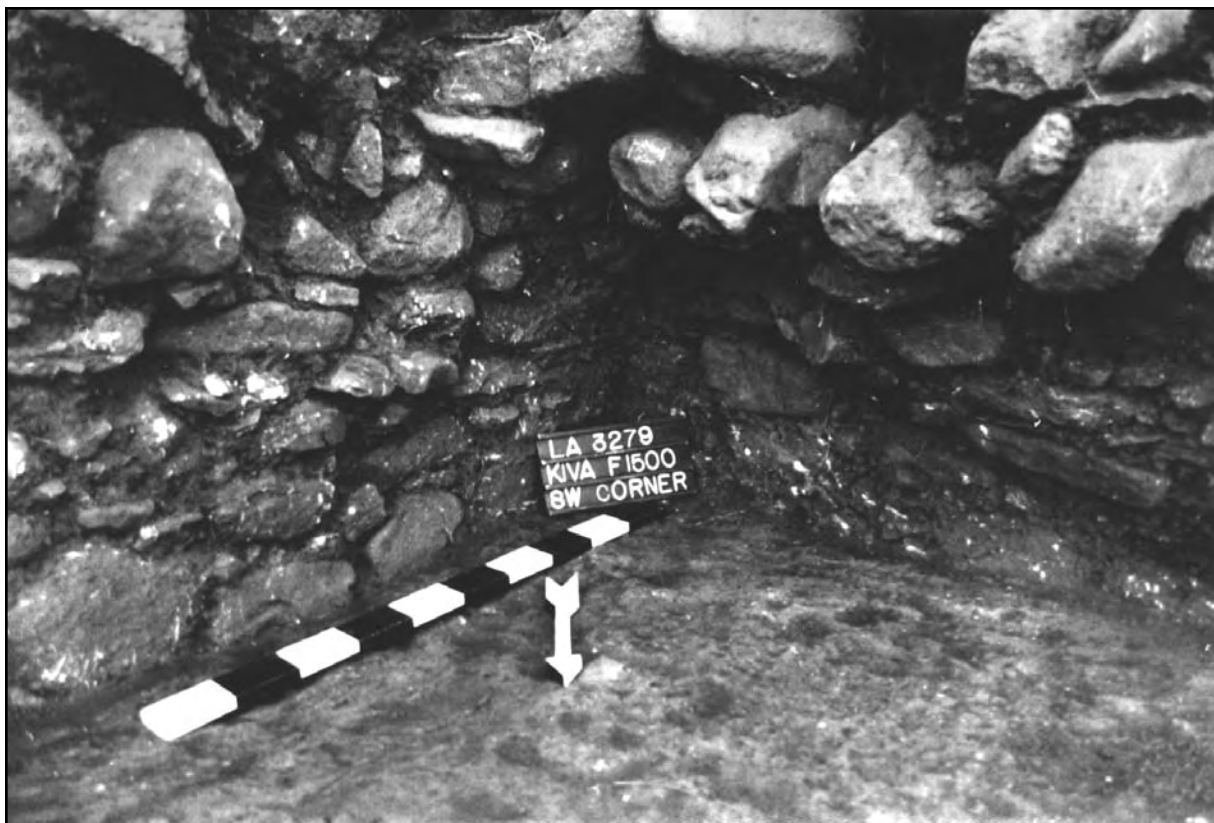


Figure 2.59. Wall juncture in southwest corner of great kiva.

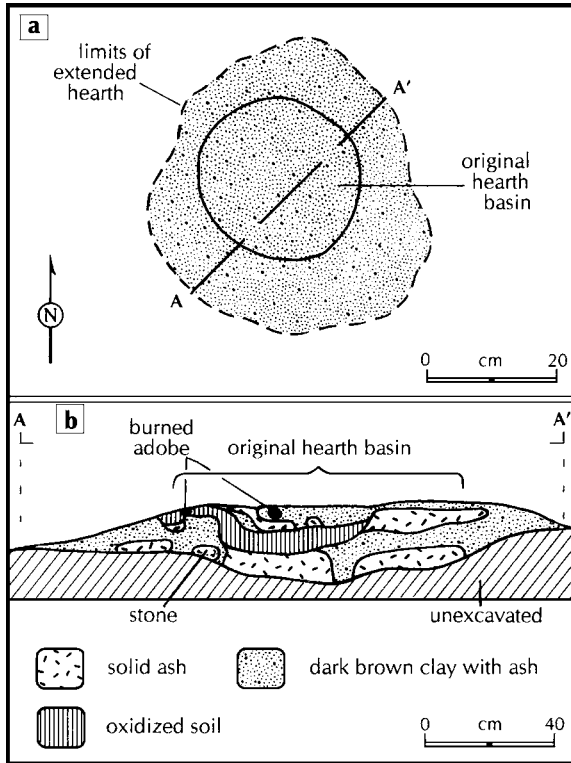


Figure 2.60. Plan view and profile of hearth in great kiva.

North wall: 0.54-2.48 m (some removed by trenching)
 South wall: 0.90-1.10 m
 East wall: 1.05-1.34 m
 West wall: 1.00-2.48 m

Walls were not abutted within the great kiva, but rather the stones were interlocked and bonded (Fig. 2.60).

Floor. The floor consisted of a dirt layer that was hard packed in areas but not in others. Heavy usage should have produced a harder surface than that found, suggesting a life-span for the kiva less than for the pueblo. The floor was fairly level with slump occurring only near the entry of the ramp into the room. The north portion of the great kiva contained no floor features (see Fig. 2.55). Charcoal staining was present generally only in the southwest quadrant, around the large posthole, one of the foot drums, and the hearth.

Hearth. The hearth is located directly facing the entry into the great kiva at 2 m from the south wall. It first appeared as a very heavy ash stain on the floor. Originally, it was a basin hearth measuring 1.0-by-.9 m by 15 cm deep with gradually sloping sides and no restraining rim or collar. However, it had overflowed its original depression and expanded to 1.9-by-1.7 m with subsequent fires built on a level with the floor surface (Fig. 2.60). The fill consisted of solid ash with several sherds and a few lithic artifacts.

Sipapu? This is a small, rectangular depression

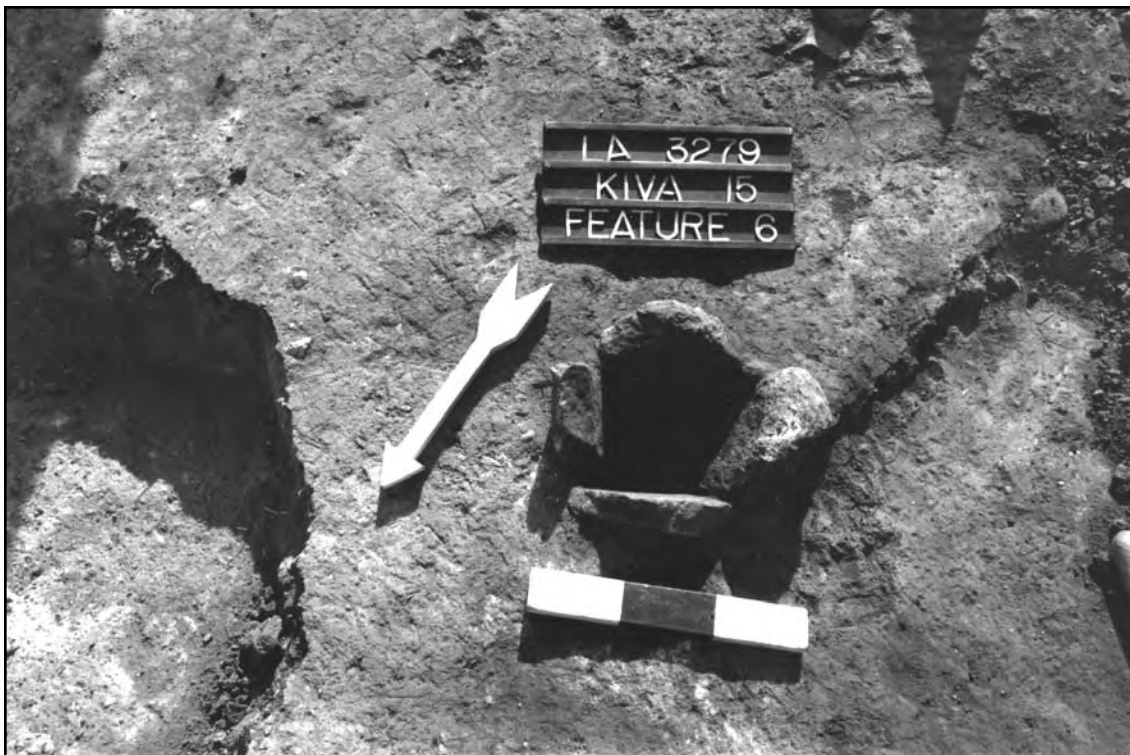


Figure 2.61. Possible sipapu near hearth in great kiva.

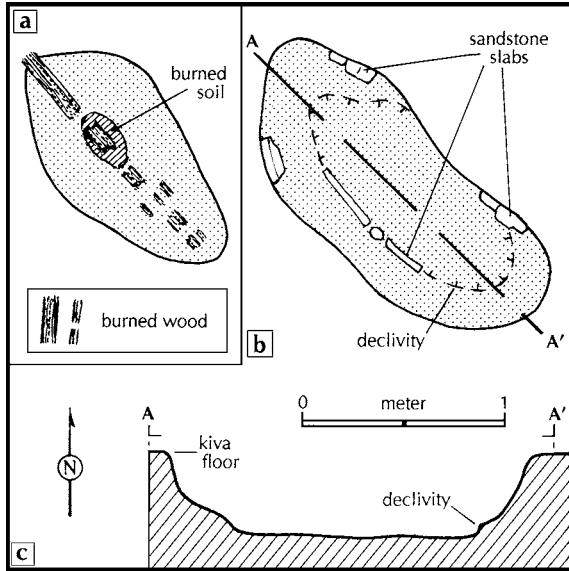


Figure 2.62. (a-b) plan view of foot drums in great kiva, (c) profile of west foot drum.

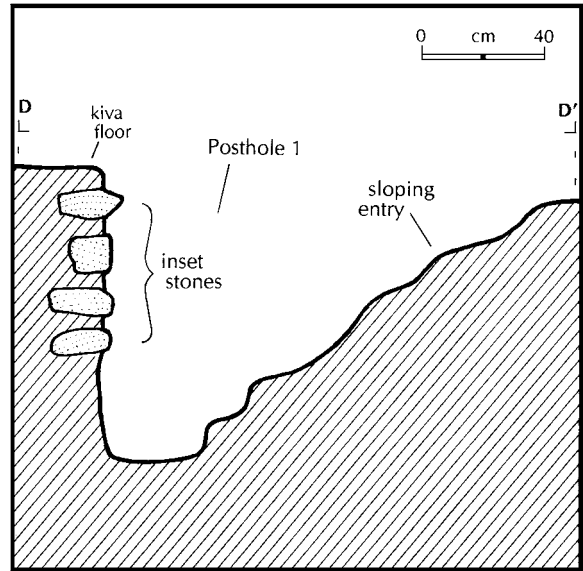


Figure 2.63. Profile of Posthole 1 showing sloped cut.



Figure 2.64. Posthole 1 in great kiva.

rimmed by four upright, sandstone slabs and situated 28 cm west of the hearth (Fig. 2.61). It measures 26- by-32 cm by 21 cm deep. The slabs extend up to 18 cm above the floor. In the small hole was much charcoal, two sherds, and a lithic flake. It was first thought to represent

a small posthole as in Room 6. However, it is much smaller than the other postholes within the kiva and could hardly have supported or shored up a massive kiva roof. Rather, it may represent a sipapu, although there are few excavated kivas within the Mogollon Highlands



Figure 2.65. Ramp entry into kiva, facing north.



Figure 2.66. Ramp entry, close up of wall.

with which to make comparisons. However, at a Reserve-Tularosa transitional site, the DZ site (LA 70185, AR-03-06-03-00285, this volume), a suspected sipapu was located to the west of the hearth, so there may be a precedent for west-of-hearth placement of sipapus in this region.

Foot Drums. Two corresponding foot drums were located on east and west sides of the hearth, both at a 1.6 m distance (see Figs. 2.57 and 2.62). The west foot drum measured 1.5-by-.8 m and was .8 m deep. Two charred wood beams were found in the fill extending for the length of the pit. The fill consisted of a clumped clay soil containing pieces of charcoal. An antler tine and a ceramic jar of Snowflake Black-on-white were recovered from the pit fill.

The east foot drum measured 2.0-by-.95 m and was .5 m deep. Several sandstone slabs rimmed the east edge but did not extend above the floor surface. Both ends of the foot drum had been disturbed by rodent activity. The fill of the foot drum was similar to the west feature, with pieces of charcoal and a small amount of burned wood. Some ash was also present. No artifacts were found.

Both contained small crude ledges at either end to support the wooden covers. Almost identical foot drums were uncovered in the great kiva at the Sawmill site dating to the earlier Reserve phase (Bluhm 1957).

Postholes. Five postholes were found within the great kiva. Three are very large and align east-west through the center of the kiva (see Fig. 2.55). These are the main roof supports for the kiva roof. Two smaller postholes flank the entryway and no doubt were for the purpose of extending the kiva roof to cover the ramp entry.

Of the main roof supports, Posthole 1, on the east side of the kiva, is large, measuring 60 cm in diameter and 95 cm deep. A sloping entry into the posthole lies on the southwest side beginning at an 85 cm distance and ending at the bottom of the posthole (Fig. 2.63). Most of the pit was rock-lined, including the bottom. The fill was a sandy, silty clay with some loose rocks. Posthole 2 was located in the center of the great kiva. It had been heavily disturbed by a large pine tree growing above it in the fill. It roughly measured 1.25-by-1.10 m with a depth of .85 m. The actual posthole opening was smaller, but disturbance made measurements impossible. Small rocks and remaining tree roots were found within the sandy clay fill. Posthole 3 lay on the west side of the great kiva. A large hole measuring 85-by-65 cm by 77 cm deep had been first dug into the floor. The hole tapered towards the bottom so that a post measuring 37 cm in diameter would fit into it. The posthole was rock-lined on the sides and bottom. Fill was a soft, mottled clay with small pieces of charcoal, numerous sherds, some lithic artifacts, and pieces of nonhuman bone.

The two postholes flanking the entryway are smaller than those for the main roof supports. Posthole 4, on the east side, measures 59-by-66 cm by 92 cm deep. It tapers, however, to 21-by-33 cm. Only the base was rock-lined. Fill within the posthole was soft, loamy dirt with pieces of decomposing wood. Posthole 5, on the west side of the great kiva, measures 40 cm in diameter, tapering to 20 cm at the bottom with a depth of 80 cm. An original sloping hole of 1.6-by-.9 m had first been opened up by site occupants before digging the actual posthole. The edges were rock-lined. The fill contained numerous sherds, lithic artifacts, and a few faunal pieces. The fill was very wet when excavated and appeared to be dark, loamy soil.

Pits. Three fairly small pits were found within the great kiva. Pit 1, in the northeast quadrant (see Fig. 2.55), was a small double pit (one pit overlapping another). The deeper one measures 35-by-26 cm and was 25 cm deep. It contained charcoal flecks and may have served as an auxiliary post support, although this is speculative. The adjacent pit measures 38-by-29 cm and was 17 cm deep with a similar fill.

Pit 2 lies 48 cm south of Pit 1 and measures 40 cm in diameter and 17 cm deep. Several rocks rimmed the north and west edges. The fill was sandy clay with only a few flecks of charcoal.

Pit 3 was somewhat rectangular, measuring 56-by-64 cm by 24 cm deep. It was rock-lined on the sides and bottom. Edges of the pit were slightly oxidized. The fill consisted of dark brown soil with charcoal-flecking and scattered ash. It also contained several ceramic and lithic fragments. This pit may have served as a heating or roasting facility.

Burial. Directly northeast of, and cutting into the pit for the central posthole was a burial pit containing the remains of an older male. He was lying on his back with knees flexed and surrounded by two nested Tularosa Fillet Rim bowls, a Reserve Corrugated jar, two shell fragments, and a small obsidian projectile point.

He was unusually tall at 170.7 cm (5 ft 7 in) and was over 65 years of age. Cause of death seems to have been from old age, and his remains indicate failing health. Because of his placement in the center of the great kiva and his age, height, and gender, he was almost certainly a person of importance within the pueblo at the time of death.

Ramp Entry. The long ramp entryway faces southeast at 145 degrees. The ramp entry is 5.85 m in length and 2.5 m wide compared to 8.2 m long and 2.1 m wide at the Sawmill site. It is veneered with cobbles. The remaining walls stand to a maximum of 1.1 m in height (Figs. 2.65, 2.66). The entry surface is hard-packed soil that slopes up gradually to meet the outside surface at an incline of 4 degrees. Vaguely visible alignments indicate

that single rooms may lie on both sides of the ramp entry near its beginning into the kiva. These were not examined.

NORTH SIDE

As mentioned earlier, no cultural features were found on the north side of U.S. 180, which consists of a low ridge immediately overlooking the pueblo structure. A total of 171 grids were hand-excavated and three backhoe trenches were dug into the ridge. No cultural features were found. However, 2,017 artifacts were recovered, including 1,165 ceramics, 835 lithic artifacts, 5 projectile points, and 12 pieces of ground stone. This area was likely used by site occupants as an overlook and outside work space.

ARTIFACTS

The 120,348 artifacts obtained from the Hough site represent probably only one-third of all artifacts present on the site. This substantial amount allows for statistical manipulation of the artifact data to produce meaningful interpretations of site dynamics.

Table 2.4 demonstrates the variation present in the artifacts by class.

Table 2.4. Artifact Classes on the Hough Site

Classes	Total	Percent of Total
Ceramics	100,316	83.3
Lithic Artifacts	13,772	11.4
Projectile Points	116	0.1
Ground Stone	392	.3
Fauna	5,462	4.5
Bone Tools	121	0.1
Miscellaneous	167	0.1
TOTAL	120,348	100.0

Ceramics

Table 2.5 presents the ceramic types on the site by individual rooms and also the trash midden, north side, and general fill. Over 45 percent of all ceramics were found in the fill of the great kiva with the next highest frequency (7.7 percent) from general fill on the site. Lowest frequencies are from incomplete Room 12, partially disturbed Rooms 2 and 5, and the smallest unit, Room 10.

Most of the ceramics from LA 3279 (AR-03-06-03-00159)(65.3 percent) consist of the ubiquitous brown wares found on Mogollon sites of all time periods.

However, in order to isolate potential changes in ceramic use through time at the pueblo and to determine if several periods of occupation may be represented, it was decided to examine distributional variations between decorated, corrugated, and selected brown wares within the excavated units. First, all sherds were assigned an early, middle, or late ceramic grouping derived from dates used by the analysis team. The early ceramic group included the various embellished Alma Brown Wares (but not Alma Plain and Rough, which are present up to A.D. 1300), and early gray and white wares, all with an end date no later than A.D. 1050. This group of sherds would be found most likely on Pithouse period sites.

The middle ceramic group consisted of sherds dating between A.D. 1000 and 1150 and are of the Early Pueblo period extending into the transition between Early and Late Pueblo. This would include Reserve Black-on-white, Wingate Black-on-red, Puerco Black-on-red, Snowflake Black-on-white, and incised corrugated sherds along with some lesser types. However, Reserve Black-on-white and the eastern Arizona decorated wares often carry into the Late Pueblo period. Comparisons between ceramic groups take this into account in the following discussion of these units. Incised corrugated sherds are the most common ceramic type in this grouping at 77.5 percent and are somewhat problematic. They had been assigned an A.D. 1200 end date although all other corrugated wares continue to A.D. 1300 and are part of the late ceramic group. Dropping this type from the middle ceramic group and placing it in the late group causes a slight difference in interpretation of the middle ceramic presence on the site as discussed later.

The late ceramic group contains the most differentiation in ceramic types and includes most of the corrugated wares, Tularosa Black-on-white, Klagetoy Black-on-white, St. Johns Black-on-red, and other late white and gray wares. Dates assigned to this group roughly extend to A.D. 1300-1400, or during the Late Pueblo period.

The results of dividing the ceramic assemblage into three temporal groups are presented in Figure 2.67. The data show that from 83.9 to 99.6 percent (mean = 96.1 percent) of ceramics within each excavation unit fall within the late ceramic group. This leaves little doubt that all units on the site date to the late Tularosa phase. Early ceramic sherds, corresponding to the Pithouse period, are negligible at 0.1 percent of the total assemblage.

The middle ceramic group would also seem to have minimal representation at 2.0 percent; however, Reserve Black-on-white and incised corrugated strongly influence this total and both can be argued to be included with the late ceramic group. The fact that almost all investigated Tularosa phase sites have Reserve Black-on-white on them along with the separation of incised corrugated

Table 2.5. Ceramics from LA 3279 (AR-03-06-03-00159)

Cells: Count Row Pct Column Pct	Provenience													Row Total	
	General Fill	Trash Middle	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva		North Side
Alma Plain	2195	1256	790	384	1630	2061	1679	1289	859	1185	325	1047	9148	124	23972
	92	5.2	3.3	1.6	6.8	8.6	7.0	5.4	3.6	4.9	1.4	4.4	38.2	.5	100.0
	283	19.1	20.0	26.2	24.9	31.0	31.6	30.4	32.1	27.0	37.2	30.6	20.2	10.6	23.9
Alma Rough	494	150	69	11	334	42	181	52	56	94	163	284	1103	261	3294
	15.0	4.6	2.1	.3	10.1	1.3	5.5	1.6	1.7	2.9	4.9	8.6	33.5	7.9	100.0
	64	2.3	1.7	.7	5.1	.6	3.4	1.2	2.1	2.1	18.7	8.3	2.4	22.4	3.3
Alma Scored	2	1	1		4	1			1			2	10		22
	91	4.5	4.5		18.2	4.5			4.5			9.1	45.5		100.0
	.0	.0	.0		.1	.0			.0			.1	.0		.0
Alma Incised	5				2	1	2			2		2	22		36
	139				5.6	2.8	5.6			5.6		5.6	61.1		100.0
	.1				.0	.0	.0			.0		.1	.0		.0
Alma Punched	5				1	1	1			5		2	10		25
	20.0				4.0	4.0	4.0			22.0		8.0	40.0		100.0
	.1				.0	.0	.0			.1		.1	.0		.0
Alma Pinched					4		3						2		9
					44.4		33.3						22.2		100.0
					.1		.1						.0		.0
Alma Neckbanded	2	4	1	1	6		3								17
	11.8	23.5	5.9	5.9	35.3		17.6								100.0
	.0	.1	.0	.1	.1		.1								.0
Three Circle Neckbanded	2			10						2					14
				71.4						14.3					100.0
				.7						.0					.0
Plain corrugated	841	690	496	146	699	911	689	374	398	339	125	468	5352	118	11646
	7.2	5.9	4.3	1.3	6.0	7.8	5.9	3.2	3.4	2.9	1.1	4.0	46.0	1.0	100.0
	10.8	10.5	12.5	10.0	10.7	13.7	13.0	8.8	14.9	7.7	14.3	13.7	11.8	10.1	11.6
Indented corrugated	1406	1855	919	360	1100	975	730	873	378	762	59	476	9333	235	19461
	7.2	9.5	4.7	1.8	5.7	5.0	3.8	4.5	1.9	3.9	.3	2.4	48.0	1.2	100.0
	18.1	28.2	23.2	24.5	16.8	14.7	13.8	20.6	14.1	17.4	6.8	13.9	20.6	20.2	19.4
Incised corrugated	114	35	48	11	76	179	117	53	43	138	61	93	556	2	1526
	7.5	2.3	3.1	.7	5.0	11.7	7.7	3.5	2.8	9.0	4.0	6.1	36.4	.1	100.0
	1.5	.5	1.2	.7	1.2	2.7	2.2	1.3	1.6	3.1	7.0	2.7	1.2	.2	1.5
Patterned corrugated	80	138	63	18	90	121	68	32	47	24		27	1225	32	1965
	4.1	7.0	3.2	.9	4.6	6.2	3.5	1.6	2.4	1.2		1.4	62.3	1.6	100.0
	1.0	2.1	1.6	1.2	1.4	1.8	1.3	.8	1.8	.5		.8	2.7	2.7	2.0
Indeterminate corrugated	316	205	124	43	179	188	133	135	88	243	9	92	1705	63	3523
	9.0	5.8	3.5	1.2	5.1	5.3	3.8	3.8	2.5	6.9	.3	2.6	48.4	1.8	100.0
	4.1	3.1	3.1	2.9	2.7	2.8	2.5	3.2	3.3	5.5	1.0	2.7	3.8	5.4	3.5

Table 2.5. Continued.

Row/Pct Column/Pct	Provenience													Row Total	
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva		North Side
Filet rim snudged	86 1.1	79 1.2	18 2.1	10 1.2	46 5.3	32 3.7	37 4.3	38 4.4	10 1.2	29 3.4	10 1.2	10 1.2	443 51.3	25 2.9	863 100.0
Plain snudged	1709 6.7	1597 6.3	1109 4.4	380 1.7	1971 7.7	1648 6.5	1368 5.4	1219 4.8	600 2.4	1294 5.1	65 .3	663 2.6	11618 45.6	216 .8	25457 100.0
Starkweather snudged painted	3 4.6	4.6 0	1.5 0	1 0	1.5 0	21.5 .2	9.2 .1	10 .2	5 .2	2 3.1	3 4.6	3 4.6	17 26.2	17 26.2	65 100.0
San Francisco Red	135 6.8	11 5.6	25 1.3	14 1.0	68 3.5	51 2.6	25 1.3	31 1.6	42 2.1	41 2.1	14 1.6	41 2.1	1348 68.4	26 1.3	1971 100.0
Mogollon Red-on-brown	1 100.0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 100.0
Mimbres indeterminate white	9 8.4	4 3.7	4 3.7	1 1	8 7.5	3 2.8	5 4.7	1 1	4 3.7	10 9.3	5 4.7	5 4.7	53 49.5	107 100.0	107 100.0
Mangus (Bold face) Black- on-white	1 20.0	1 20.0	0	0	0	0	0	0	0	0	0	0	3 60.0	5 100.0	5 100.0
Transitional black-on-white	1 13.0	0	3 13.0	6 26.1	6 26.1	0	1 4.3	0	0	0	0	0	13 56.5	23 100.0	23 100.0
Mimbres Classic Black- on-white	1 10.0	1 10.0	1 10.0	0	1 10.0	3 30.0	3 30.0	0	0	0	0	4 40.0	1 10.0	10 100.0	10 100.0
Early polished gray ware	1 25.0	0	1 25.0	0	1 25.0	1 20.0	0	2 40.0	2 40.0	1 20.0	0	0	1 20.0	5 100.0	5 100.0
Plain gray ware	1 25.0	0	1 25.0	0	1 25.0	0	0	0	0	0	0	0	1 100.0	1 100.0	1 100.0
Kana'a Gray	1 100.0	0	1 100.0	0	1 100.0	0	0	0	0	0	0	0	1 100.0	1 100.0	1 100.0
Corrugated gray ware	1 25.0	0	1 25.0	0	1 25.0	0	1 25.0	0	0	0	0	0	1 25.0	4 100.0	4 100.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.5. Continued.

Cells: Count Row/Pct Column Pct	Provenience													Row Total	
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva		North Side
Early white ware					1 100.0 .0										1 100.0 .0
Late white ware	244 6.7 3.1	259 7.1 3.9	201 5.5 5.1	34 .9 2.3	197 5.4 3.0	222 6.1 3.3	152 4.2 2.9	87 2.4 2.1	85 2.3 3.2	126 3.5 2.9	43 1.2 4.9	157 4.3 4.6	1778 48.8 3.9	55 1.5 4.7	3640 100.0 3.6
La Plata Black-on- white													6 100.0 .0		6 100.0 .0
Red Mesa Black-on- white			3 75.0 .1								1 25.0 .1				4 100.0 .0
Puerto Black on-white				1 9.1 .0		1 9.1 .0						1 9.1 .0	8 72.7 .0		11 100.0 .0
Reserve Black-on- white	17 12.4 .2	6 4.4 .1	12 8.8 .3	7 5.1 .5	14 10.2 .2	6 4.4 .1	26 19.0 .5	2 1.5 .0		1 7 .0		5 3.6 .1	41 29.9 .1		137 100.0 .1
Tularosa Black-on- white	65 3.9 .8	146 8.8 2.2	41 2.5 1.0	29 1.8 2.0	74 4.5 1.1	155 9.4 2.3	63 3.8 1.2	31 1.9 .7	39 2.4 1.5	42 2.5 1.0	2 .1 .2	36 2.2 1.1	930 56.2 2.1	3 .2 .3	1656 100.0 1.7
Klaget Black- on-white	11 2.9 .1	28 7.4 .4	11 2.9 .3	2 .5 .1	16 4.2 .2	19 5.0 .3	6 1.6 .1	1 .3 .0	6 1.6 .2	35 9.2 .8	1 .3 .1	1 .0 .0	243 63.9 .5		380 100.0 .4
Hachure black-on-white	1 5 .0	1 5 .0	7 3.3 .2		11 5.2 .2		1 .5 .0	7 3.3 .2	10 4.7 .4				174 81.7 .4	1 .5 .1	213 100.0 .2
Snow Flake Black-on- white	1 2.3 .0	1 2.3 .0	1 2.3 .0			4 9.1 .1						1 2.3 .0	36 81.8 .1		44 100.0 .0
Indeterminate White Mountain Redware	8 12.1 .1	8 12.1 .1	1 1.5 .0		4 6.1 .1	1 1.5 .0	2 3.0 .0	2 3.0 .0		3 4.5 .1		1 1.5 .0	33 50.0 .1	3 4.5 .3	66 100.0 .1
Wingate Black-on- white			1 9.1 .0	1 9.1 .1	2 18.2 .0	4 36.4 .1	1 9.1 .0	1 9.1 .0					1 9.1 .0		11 100.0 .0
Puerto Black on-red							1 25.0 .0						2 50.0 .0		4 100.0 .0
St Johns Black-on-red	10 8.3 .1	2 1.7 .0	4 3.3 .1	3 2.5 .2	11 9.2 .2	12 10.0 .2	2 1.7 .0	2 1.7 .0	2 1.7 .1	9 7.5 .2		4 3.3 .1	60 50.0 .1	1 .8 .1	120 100.0 .1
Column Total	7762 100.0	6581 100.0	3953 100.0	1467 100.0	6557 100.0	6650 100.0	5308 100.0	4240 100.0	2675 100.0	4388 100.0	873 100.0	3420 100.0	45277 100.0	1165 100.0	100316 100.0

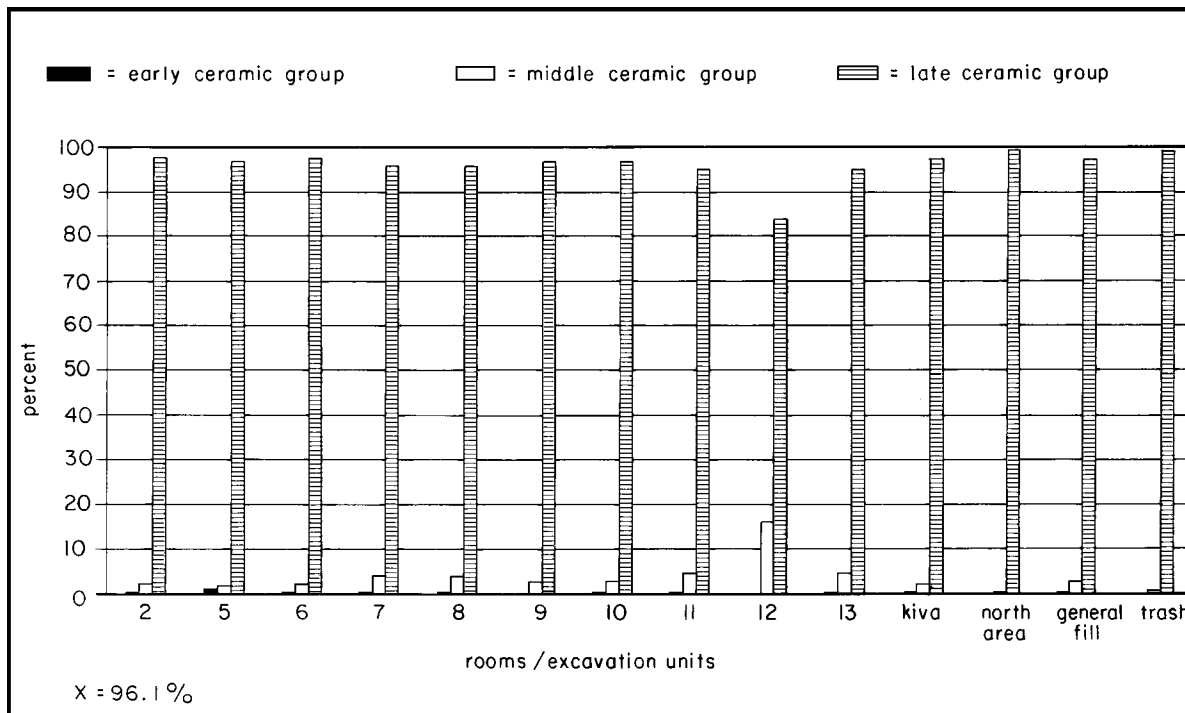


Figure 2.67. Percentage of ceramic groups within rooms and excavation units.

from all other corrugated wares speaks for their inclusion in the late ceramic group. If this is done, sherds of the middle group now make up only 0.3 percent of the assemblage as opposed to 2.0 percent. This is important because 2.0 percent of the Hough site ceramics represents 1,968 sherds and, although very low, suggests a possible short-term Reserve phase occupation of the site in the vicinity of Room 12, which has the highest count of middle ceramics (16.1 percent). It is also an unfinished room on the easternmost edge of the pueblo, built on trash, possibly from the prehistoric excavation of the kiva area. The middle group sherds could potentially derive from a prior occupation of this area. However, removing Reserve Black-on-white and incised corrugated from the mix drops the percentage to 0.3, as stated, and may indicate that middle ceramic group sherds were previously deposited from repeated ephemeral use of this prime river and valley area by Reserve phase peoples. This later scenario is favored because no indications of an earlier Reserve phase occupation were seen on the site.

Having confirmed that the Hough site ceramics corroborate a late Tularosa phase occupation, variation in types of late ceramic sherds was examined in order to look for possible subtle temporal changes between units. The three latest-dating ceramic types, White Mountain Redwares, indented corrugated, and Klagetto Black-on-white were selected and their ubiquity plotted across the site. White Mountain Redware appears in 11 of 14 excavation

units spread evenly across the site. The highest frequency was in the great kiva at 50.0 percent of the site assemblage. Within rooms, it ranged from 1.5 to 12.1 percent. The two areas with the higher 12.1 percent are the trash midden and the general fill. Both of these could logically contain the most recently used and discarded items on the site.

Indented corrugated, a much more commonly found ceramic type, was present in all 14 units, ranging from .3 percent in unfinished Room 12 to 9.5 percent in the trash midden to 48.0 percent in the great kiva. Klagetto Black-on-white is tightly dated between A.D. 1250 and 1300 and was found in all units except on the north side of U.S. 180. It ranged in ubiquity from 0.5 percent in partially excavated Room 5 to 9.2 percent in Room 11 to 63.9 percent in the great kiva. The high percentages of these three late types in the great kiva confirm that the structure was in use during the very latest occupation of the site.

The possible use of specialized ceramics in the great kiva was also of interest to the research. Percentages and types of decorated versus utility wares were examined for the unit as well as the use of bowls as opposed to jars. Table 2.6 shows the types and frequencies of ceramic types with at least a 50.0 percent representation in the great kiva.

It was seen that 11 of 15 decorated types, or 73.3 percent, were found predominantly (over 50.0 percent) in the great kiva. Another, Reserve Black-on-white, was

Table 2.6. Jar and Bowl Counts by Selected Ceramic Types within the Great Kiva

Decorated Wares	Kiva Percent	Jar Sherds	Bowl Sherds	Utility Wares	Kiva Percent	Jar Sherds	Bowl Sherds
La Plata Black-on-white	100.0	0	6	San Francisco Red	68.4	1154	126
Snowflake Black-on-white	81.8	24	12	Patterned corrugated	62.3	1107	57
Hachure black-on-white	81.7	73	101	Alma Incised	61.1	14	6
Puerco Black-on-white	72.7	5	3	Fillet rim smudged	51.3	0	418
Klageto Black-on-white	63.9	225	13				
Mangus Black-on-white	60.0	3	3				
Transitional black-on-white	56.6	0	13				
Tularosa Black-on-white	56.5	642	36				
White Mountain Redwares	50.0	0	84				

mostly recovered from the great kiva also, but at only 29.9 percent. In other units, Red Mesa Black-on-white, Wingate Black-on-red, and Mimbres Black-on-white predominated. The decorated wares from the great kiva in Table 2.6 range from the early through late ceramic groups. This could suggest curation of some earlier types.

However, the great kiva had 60.0 percent of all non-local decorated sherds (all from Arizona, including all red wares and Klageto Black-on-white and Snowflake Black-on-white). The rest were generally found in every unit across the site with Room 11 having the next highest amount at 7.6 percent. The preponderance of nonlocal decorated sherds in the kiva would suggest to some researchers the presence of ritual activity possibly involving some type of exchange system (Upham et al. 1981). In southwestern Colorado, red wares seem to have been preferred for ceremonial activities in high-ranked kivas or pit structures (Blinman 1989). Red wares in the great kiva at the Hough site comprise 32.1 percent of the total of nonlocal wares on the site. In sum, there does appear to be a focus of nonlocal decorated wares in the great kiva, including red wares. Whether the inclusion of red wares in this assemblage is related to the express importation of this type into the site specifically for ceremonial use cannot be determined.

The presence of utility wares with over 50.0 percent representation in the great kiva includes only one type from the Alma Brown Ware series, Alma Incised, and one from the variety of corrugated wares, patterned corrugated. Also, fillet rim smudged is prevalent as opposed to plain smudged. All of these choices seem to represent some of the most labor-intensive, and decorative, of their types. This may be fortuitous; however, it also could well be selective.

Table 2.6 also shows the percentage of jar versus

bowl sherds in the dominant great kiva ceramic types. For the site as a whole, jar sherds outnumber bowls by almost 2 to 1 (1.7:1). It must be remembered though that jar sherds almost always outnumber bowls because of their usually larger size, based on the inclusion of cooking jars in the totals. Therefore, there could be a fairly even distribution of jars and bowls on the Hough site with an identical ratio site-wide of 1.7:1. However, some decorated wares are exclusively represented by bowls. These include La Plata Black-on-white (from the early ceramic group), transitional black-on-white, White Mountain Redwares, and fillet rim smudged. Although all but La Plata Black-on-white are found in other units on the site, there appears to be selection for these particular bowl types within the great kiva.

Lithic Artifacts

Almost one-half of all lithic artifacts at the Hough site are core flakes (49.1 percent) followed closely by angular debris (45.0 percent). Although few in terms of percent, cores, bifaces, and biface flakes are fairly common (Table 2.7). All artifacts, with the exception of low occurrences of unifaces and bipolar cores, had their highest percentages within the fill of the great kiva, but were otherwise dispersed fairly evenly across the site. For example, angular debris was concentrated in the great kiva at 30.6 percent but was consistently found in all other excavated units on the site as well.

Table 2.8 presents the variety of lithic material types present on the site. Luna blue agate is the overwhelming material of choice at 77.7 percent. It is also the most locally common material in the site area. Chert leads the other materials selected for use by site inhabitants, also fairly easily available within the area with the exception of obsidian. The closest obsidian source is found at Red

Table 2.7. Lithic Artifacts from LA 3279 (AR-03-06-03-00-159)

Cats/count Row/Pct Column/Pct	Provenience													Row Total		
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva		North Side	Wendorf Assemblage
Angular debris	968 15.6 53.1	327 5.3 47.8	383 6.2 55.2	142 2.3 62.6	357 5.8 44.2	393 6.3 42.4	374 6.0 53.6	229 3.7 41.0	291 4.7 44.7	171 2.8 36.1	71 1.1 30.6	274 4.4 37.0	1897 30.6 42.7	315 5.1 37.7	3 .0 2.14	6195 1000 450
Core flake	777 11.5 42.6	332 4.9 48.5	249 3.7 37.8	68 1.0 30.0	396 5.9 49.1	481 7.1 51.9	289 4.3 41.4	292 4.3 52.3	326 4.8 50.1	274 4.1 57.8	146 2.2 62.9	423 6.3 57.2	2226 32.9 50.1	472 7.0 56.5	7 1 50.0	6793 1000 491
Biface/flake	29 17.7 1.6	3 18 4	5 30 8		7 4.3 .9	10 6.1 1.1	7 4.3 1.0	9 5.5 1.6	9 5.5 1.4	6 3.7 1.3	2 1.2 .9	8 4.9 1.1	54 32.9 1.2	15 9.1 1.8		164 1000 1.2
Notching flake													1 100.0 .0			1 1000 .0
Bipolar flake	1 5.6 .0						2 11.1 .3	1 5.6 .2	1 5.6 .2				13 72.2 .3			18 1000 .1
Tested cobble	3 25.0 .1		1 8.3 2		1 8.3 .1	1 8.3 .1	1 8.3 .1	1 8.3 .2		1 8.3 2			3 25.0 .1			12 1000 .1
Core	20 5.8 1.1	8 2.3 1.2	8 2.3 1.2	9 2.6 4.0	20 5.8 2.5	24 6.9 2.6	14 4.0 2.0	18 5.2 3.2	15 4.3 2.3	11 3.2 2.3	6 1.7 2.6	16 4.6 2.2	158 45.7 3.6	18 5.2 2.2	1 3 7.1	346 1000 2.5
Bipolar core							1 50.0 .1									2 1000 .0
Cobble/tod													1 100.0 .0			1 1000 .0
Uniface	1 50.0 .0											1 50.0 .1				2 1000 .0
Biface	24 8.8 1.3	13 48 19	12 44 18	8 2.9 3.5	26 9.5 3.2	18 6.6 1.9	10 3.7 1.4	8 2.9 1.4	9 3.3 1.4	11 4.0 2.3	7 2.6 3.0	18 6.6 2.4	91 33.3 2.0	15 5.5 1.8	3 1.1 2.14	273 1000 2.0
Column Total	1823 13.2 100.0	684 5.0 1000	668 4.8 1000	227 1.6 100.0	807 8.5 1000	927 6.7 100.0	698 5.1 100.0	558 4.1 100.0	651 4.7 100.0	474 3.4 100.0	232 1.7 100.0	740 5.4 100.0	4444 32.3 100.0	885 6.1 100.0	14 .1 1000	13772 1000 1000

Table 2.8. Lithic Artifact Material Types from LA 3279 (AR-03-06-03-00159)

Cels: Count Row Pct Column Pct	Provenience											Row Total				
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12		Room 13	Kiiva	North Side	Wendorf Assemblage
Chert	225 17.0 12.3	57 4.3 8.3	80 6.0 12.2	16 1.2 7.0	75 5.7 9.3	83 6.3 9.0	47 3.5 6.7	50 3.8 9.0	47 3.5 7.2	43 3.2 9.1	34 2.6 14.7	67 5.1 9.1	358 27.0 8.1	142 1.7 17.0	1 .1 7.1	1325 1000 9.6
Chalcedony						1 9.1 .1		1 9.1 .2					6 54.5 .1	3 27.3 .4		11 1000 .1
Luna blue agate	1370 12.8 75.2	546 5.1 79.8	507 4.7 77.1	192 1.8 84.6	646 6.0 80.0	708 6.6 76.4	588 5.5 84.2	453 4.2 81.2	546 5.1 83.9	365 3.4 77.0	169 1.6 72.8	569 5.3 76.9	3438 32.1 77.4	594 5.6 71.1	9 1 64.3	10700 1000 77.7
Silicified wood												3 60.0 .4	1 20.0 .0			5 1000 .0
Obsidian	48 10.8 2.6	19 4.3 2.8	21 4.7 3.2	14 3.1 6.2	33 7.4 4.1	39 8.7 4.2	16 3.6 2.3	19 4.3 3.4	28 6.3 4.3	19 4.3 4.0	6 1.4 2.6	33 7.4 4.5	122 27.4 2.7	27 6.1 3.2	2 .4 14.3	466 1000 3.2
Igneous	4 9.8 .2	1 2.4 .1	2 4.9 .3			1 2.4 .1	3 7.3 .4	5 12.2 .9		7 17.1 1.5			18 43.9 .4			41 1000 .3
Basalt	56 13.1 3.1	22 5.2 3.2	15 3.5 2.3	18 4.2 2.2	18 4.2 2.2	32 7.5 3.5	7 1.6 1.0	13 3.1 2.3	12 2.8 1.8	8 1.9 1.7	7 1.7 3.0	34 8.0 4.6	188 44.1 4.2	12 2.8 1.4	2 .5 14.3	426 1000 3.1
Rhyolite	88 17.6 4.8	28 5.6 4.1	21 4.2 3.2	3 .6 1.3	16 3.2 2.0	38 7.6 4.1	20 4.0 2.9	9 1.8 1.6	11 2.2 1.7	19 3.8 4.0	7 1.4 3.0	11 2.2 1.5	195 38.9 4.4	35 7.0 4.2		501 1000 3.6
Silicified rhyolitic tuff													2 100.0 .0			2 1000 .0
Sedimentary	2 12.5 .1	1 6.3 .1	2 12.5 .3		4 25.0 .5	1 6.3 .1				1 6.3 .2		1 6.3 .1	4 25.0 .1			16 1000 .1
Siltstone	2 8.0 .1		2 8.0 .3		3 12.0 .4			1 4.0 .2	1 4.0 .2	3 12.0 .6	2 8.0 .9	2 8.0 .3	6 24.0 .1	3 12.0 .4		25 1000 .2
Metamorphic	2 15.4 .1	1 7.7 .1	1 7.7 .4			3 23.1 .3	2 15.4 .3						4 30.8 .1			13 1000 .1
Quartzite	11 14.9 6	4 5.4 6	4 5.4 6		6 8.1 7	11 14.9 1.2	9 12.2 1.3	3 4.1 5	2 2.7 3	2 2.7 3		3 4.1 4	18 24.3 4	3 4.1 4		74 1000 5

Table 2.9. LA 3279 (AR-03-06-03-00159) Projectile Points

Point Type	Chert		Luna Blue		Obsidian		Basalt		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Unidentified	1	4.5	15	68.2	27	22.3	.	.	22	18.9
Medium corner-notched	.	.	.	.	1	100.0	.	.	1	.9
Cienega	.	.	2	100.0	.	.	.	.	2	1.7
Medium lateral-notched	2	28.6	1	14.3	2	28.6	2	28.6	7	6.0
Small corner-notched	.	.	1	20.0	4	80.0	.	.	5	4.3
Small side-notched	4	11.8	4	11.8	30	88.2	1	3.3	34	29.3
Small lateral-notched	.	.	1	100.0	.	.	.	.	1	.9
Unnotched	.	.	7	35.0	13	65.0	.	.	20	17.2
Flake Point	.	.	4	80.0	1	20.0	.	.	5	4.3
Preform	1	25.0	1	25.0	2	50.0	.	.	4	3.4
Knife	1	100.0	.	.	.	.	.	.	1	.9
Chiricahua	.	.	.	2	100.0	.	.	.	2	1.7
San Pedro	3	30.0	5	50.0	1	10.0	1	10.0	10	8.6
Total	12	10.3	40	34.5	59	50.9	5	4.3	116	100.0

Table 2.10. Ground Stone Artifacts from LA 3279 (AR-03-06-03-00159)

Cells: Count Row/Pct Column/Pct	Provenience																Row Total
	General Fill	Trash Midden	Room 2	Room 3	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	North Side	Wendornf Assemblage	
Fragment	3 5.4 10.7	6 10.7 42.8	3 5.4 7.5	1 1.8 12.5	1 1.8 12.5	5 8.9 11.4	2 3.6 3.8	2 1.8 2.9	1 1.8 3.4	1 1.8 7.7	11 19.6 28.2	1 1.8 16.7	3 5.4 17.6	10 17.9 19.2	8 14.3 61.5	1 2.5 25.0	56 100.0 14.2
Polishing stone						3 60.0 5.8	1 20.0 2.9	1 20.0 2.9	1 20.0 3.4								5 100.0 1.3
Abraiding stone		2 4.8 14.2	5 12.5 12.5	1 2.5 12.5	1 2.5 12.5	2 5.0 4.5	4 10.0 7.7	4 10.0 11.4	2 5.0 6.9	3 7.5 50.0	6 15.0 15.4	3 7.5 50.0	3 7.5 17.6	7 17.5 13.5	1 2.5 7.7	1 2.5 25.0	41 100.0 10.4
Lapidary stone	3 8.6 10.3	2 5.7 14.2	6 17.1 15.0	3 8.6 11.4	2 5.7 11.4	3 8.6 6.8	8 22.8 15.4	4 11.4 11.4	2 5.7 6.9	2 5.7 11.8	4 11.4 10.3	2 5.7 11.8	2 5.7 11.8	2 5.7 3.8			35 100.0 8.8
Mortar				1 50.0 12.5	1 50.0 12.5				1 50.0 3.4								2 100.0 .5
Mano	7 25.9 25.0					6 22.2 13.6	4 14.8 7.7	4 14.8 11.4					2 7.4 11.8	3 11.1 5.8		1 3.7 25.0	27 100.0 6.9
One-hand mano	3 15.0 10.7		2 10.0 5.0	1 5.0 12.5	1 5.0 12.5	2 10.0 4.5	2 10.0 5.7	2 10.0 5.7	1 5.0 3.4					3 15.0 5.8	2 10.0 15.3	1 5.0 25.0	20 100.0 5.1
Two-Hand mano	4 2.9 14.3	1 7.1 7.1	12 8.8 30.0	3 2.2 37.5	3 2.2 37.5	21 15.4 47.7	24 17.6 46.2	14 10.3 40.0	11 8.1 37.9	8 5.9 53.3	16 11.8 41.0	1 7.1 16.7	6 4.4 35.3	14 10.3 26.9	1 7.1 25.0	1 7.1 25.0	136 100.0 34.7
Metate	4 26.7 14.3		2 13.3 5.0	2 13.3 4.5	2 13.3 4.5	2 13.3 4.5	2 13.3 5.7	2 13.3 5.7	3 20.0 10.3				1 6.7 5.9	1 6.7 1.9			15 100.0 3.8
Trough metate	2 8.0 7.1		6 24.0 15.0	1 4.0 12.5	1 4.0 12.5	1 4.0 2.3	1 4.0 1.9	2 8.0 5.7	3 12.0 10.3	1 4.0 7.7	1 4.0 2.6	1 4.0 16.7		6 24.0 11.5			25 100.0 6.3
Slab metate	3 13.0 10.7	1 4.3 7.1	4 17.4 10.0	4 17.4 12.5	4 17.4 12.5	4 17.4 2.3	4 17.4 7.7	1 4.3 2.9	3 13.0 10.3	2 8.7 15.4	1 4.3 2.6	1 4.3 16.7		4 17.4 7.7			23 100.0 5.8
Basin metate						1 100.0 2.3											1 100.0 .3
Axe									1 100.0 3.4								1 100.0 .3
Grooved axe															2 100.0 15.3		2 100.0 5.5

Table 2.10. Continued.

Cells: Count RowPct Column Pct	Provenience														Row Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	North Side		Wendorf Assemblage
Stone bowl						1			1				1		3
						33.3			33.3				33.3		100.0
						1.9			7.7				1.9		.8
Pestle			1												2
			50.0												100.0
			2.3												.5
Medicine stone													1		1
													100.0		100.0
													1.9		.3
Column Total	29	14	40	8	44	52	35	29	13	39	6	17	52	13	394
	7.1	3.5	10.2	2.0	11.2	13.3	8.9	7.4	8.9	9.9	1.5	4.3	13.3	3.1	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 2.11. Ground Stone Material Types from LA 3279 (AR-03-06-03-00159)

Cells:count RowPct Column Pct	Provenience														Row Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	North Side		Wendorf Assemblage
Basalt	8	2	8		14	13	4	12	2	6	1	2	3	4	79
	10.1	2.5	10.1		17.7	16.5	5.1	15.2	2.5	7.6	1.3	2.5	3.8	5.1	100.0
	28.6	14.3	20.0		31.8	25.0	11.4	41.4	13.3	15.4	16.7	11.8	5.8	30.7	200
Rhyolite	15	5	16	4	13	17	14	10	5	13	2	4	25	6	150
	10.0	3.3	10.6	2.6	8.6	11.3	9.3	6.6	3.3	8.6	1.3	2.6	16.6	4.0	100.0
	53.6	35.7	40.0	50.0	29.5	32.7	40.0	34.5	38.5	33.3	33.3	23.5	48.1	38.5	381
Tuff													3		3
													100.0		100.0
													5.8		.8
Andesite			1				1								3
			33.3				33.3								100.0
			7.1				2.9								.8
Rhyolitic tuff			1		5		1	1	1	5		1	2	17	100.0
			5.9		29.4		5.9	5.9	5.9	29.4		5.9	11.8	5.1	100.0
			2.5		9.6		2.9	3.4	7.7	12.8		5.9	3.8	4.3	4.3
Pumice			1				1	1							3
			33.3				33.3	33.3							100.0
			1.9				2.9	3.4							.8
Limestone			1		1	2				1					5
			20.0		20.0	40.0				20.0					100.0
			2.5		2.3	3.8				2.6					1.3
Sandstone	4	3	10	4	11	14	12	4	4	13	2	8	17	1	109
	3.7	2.8	9.2	3.7	10.1	12.8	11.0	3.7	3.7	11.9	1.8	7.3	15.6	.9	100.0
	14.3	21.4	25.0	50.0	25.0	26.9	34.3	13.8	30.8	33.3	33.3	47.1	32.7	7.6	27.6

Table 2.11. Continued.

Cells count Row/Pct Column/Pct	Provenience																Row Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Room	Kiva	North Side	Wendorf Assemblage	
Siltstone		1 16.7 7.1			5 83.3 11.4												6 100.0 1.5
Calcilite														1 100.0 1.9			1 100.0 .3
Quartzite		1 16.7 7.1						1 16.7 3.4	1 16.7 7.7					1 16.7 5.9	1 16.7 1.9		6 100.0 1.5
Quartzitic Sandstone	1 9.1 3.6	1 27.3 7.1	3 7.5				2 18.2 5.7			1 9.1 2.6				1 9.1 5.9	2 18.2 15.4		11 100.0 2.7
Column Total	28 7.1 100.0	14 3.5 100.0	40 10.2 100.0	8 2.0 100.0	44 11.2 100.0	52 13.3 100.0	35 8.9 100.0	29 7.4 100.0	13 3.3 100.0	39 9.9 100.0	6 1.5 100.0	17 4.3 100.0	52 13.3 100.0	13 3.1 100.0	13 3.1 100.0	4 1.0 100.0	394 100.0 100.0

Table 2.12. Miscellaneous Artifacts from LA 3279 (AR-03-06-03-00159)

Cells: Count Row/Pct Column/Pct	Provenience													Row Total	
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva		
Indeterminate						1 28.0 5.1	1 25.0 11.1			1 25.0 4.8				1 25.0 2.5	4 100.0 2.4
Pendant										1 50.0 10.0				1 50.0 2.5	2 100.0 1.2
Pendant blank	1 100.0 5.0														1 100.0 .6
Bone bead										1 50.0 10.0					2 100.0 1.2
Discoidal bead				2 13.3 16.7	4 26.7 21.0									7 46.7 17.5	15 100.0 8.9
Other bead				1 50.0 8.3										1 50.0 2.5	2 100.0 1.2

Table 2.12. Continued.

Cells: Count Row Pct Column Pct	Provenience													Row Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	
Bracelet	1 50.0 5.0						1 50.0 11.1		1 50.0 4.8	1 50.0 10.0				2 100.0 1.2
Ornament								2 100.0 9.5						2 100.0 1.2
Ring	5 1.5 5.0	2 3.0 50.0	3 4.6 25.0	11 16.9 57.9	13 20.0 72.2	5 7.7 55.5			16 24.7 76.2	5 7.7 50.0	1 1.5 50.0	1 1.5 50.0	4 6.0 10.0^	65 100.0 40.1
Effigy	3 16.0 15.0	1 5.0 25.0		1 5.0 5.3	1 5.0 5.5					2 10.0 20.0		1 5.0 50.0	11 55.0 27.5	20 100.0 11.9
Concretions/nodules	3 27.3 15.0		1 9.1 16.1	2 18.2 10.5	2 18.2 11.1				1 9.1 4.8				1 9.1 2.5	11 100.0 6.6
Quartz crystals	11 29.8 55.0	2 5.4 38.8	5 13.3 83.3	1 2.8 5.3	1 2.8 5.5			3 8.1 75.0					14 37.9 32.5	37 100.0 22.1
Gaming piece						1 100.0 11.1								1 100.0 .6
Clay ball						1 100.0 11.1								1 100.0 .6
Column Total	20 11.9 100.0	4 2.4 100.0	6 3.6 100.0	12 7.2 100.0	19 11.4 100.0	9 5.4 100.0	9 5.4 100.0	4 2.4 100.0	21 12.6 100.0	10 5.9 100.0	2 1.2 100.0	2 1.2 100.0	40 23.9 100.0	167 100.0 100.0

Table 2.13. Miscellaneous Artifact Material Types from LA 3279 (AR-03-06-03-00159)

Cells: Count Row Pct Column Pct	Provenience													Row Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	
Obsidian														2 100.0 1.2
				1 50.0 8.3					1 50.0 4.8					2 100.0 1.2

Table 2.13. Continued.

Cells: Count RowPct Column Pct	Provenience													Row Total			
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva				
Rhyolite	1 100.0 5.0																1 100.0 .6
Sandstone	2 222 10.0		1 11.1 16.1		2 22.2 10.5	2 22.2 11.1	1 11.1 1.1							1 111 2.5			9 100.05 5.4
Siltstone														1 1000 2.5			1 100.0 .6
Pipe stone									1 50.0 4.8								2 100.0 1.2
Metamorphic				1 14.3 8.3	2 28.6 10.5			1 14.3 25.0						3 42.9 7.5			7 100.0 4.2
Chrysocolla		2 3.9 50.0	3 5.9 50.0	1 1.9 8.3	11 21.6 57.9	8 15.7 44.4	4 7.8 44.4		14 27.4 66.7	4 7.8 40.0	1 1.9 50.0			3 5.9 7.5			51 100.0 30.5
Turquoise										1 50.0 10.0				1 50.0 2.5			2 100.0 1.2
Azurite	1 20.0 5.0			2 40.0 16.7						1 20.0 10.0			1 20.0 50.0				5 100.0 3.0
Malachite																	5 100.0 3.0
Azurite/malachite																	1 100.0 .6
Quartz crystals	11 298 55.0		2 5.4 33.3	5 13.5 41.7	1 2.8 5.3	1 2.8 5.5		3 6.1 7.5						14 37.9 35.0			37 100.0 22.1
Mica														1 1000 2.5			1 100.0 .6
Limonite									2 100.0 9.5								2 100.0 1.2

Table 2.13. Continued.

Cells: Count RowPct ColumnPct	Provenience													Row Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	
Jet					2 66.7 10.5								3 33.4 7.5	2 100.0 3.0
Clay			1 50.0 8.3			1 50.0 11.1								2 100.0 1.2
Igneous	1 100.0 5.0													1 100.0 .6
Alma Brown	3 15.8 13.0			1 5.3 5.3		1 5.3 5.5				2 10.5 20.0		1 5.3 50.0	10 52.7 25.0	19 100.0 11.4
Tularosa Black- on-white													1 100.0 2.5	1 100.0 .6
Mammal bone	1 25.0 5.0						2 50.0 10.5			1 25.0 10.0				4 100.0 2.4
Turkey														1 100.0 .6
Shell			1 16.6 8.3						3 50.0 14.3	1 16.6 10.0			1 16.6 2.5	6 100.0 3.6
Indeterminate											1 50.0 50.0		1 50.0 2.5	2 100.0 1.2
Column Total	20 1.19 100.0	4 2.4 100.0	6 3.6 100.0	12 7.2 100.0	19 11.4 100.0	18 10.8 100.0	9 5.4 100.0	4 2.4 100.0	21 12.6 100.0	10 5.9 100.0	2 1.2 100.0	2 1.2 100.0	40 23.9 100.0	167 100.0 100.0

Hill, 35 km to the north. A total of 466 obsidian artifacts were recovered from the site.

A total of 116 projectile points were found on the Hough site (Table 2.9). Most (27.6 percent) are from the great kiva; however, they were also dispersed over all units on the site. Obsidian is the most commonly used material type at 50.9 percent. Projectile points are generally of the small, side-notched variety, typically found on Pueblo period sites. Fourteen points with definite Archaic styling were also recovered and may indicate curation of these items.

Ground Stone

A wide variety of ground stone was present on the Hough site (Table 2.10). Over 77 percent are related specifically to grinding activities. There were 183 manos; 74.3 percent of these were two-handed and only 10.9 percent were one-hand implements. The presence of both types implies that a mixture of substances was being processed on the site, requiring different sized manos. The 64 metates also exhibit differentiation in that three varieties were found. The majority was evenly divided between trough and slab types, again implying substance variation. Manos outnumber metates almost 3 to 1. Lapidary and abrading stones are the other major ground stone artifact classes. Most material types for ground stone at LA 3279 are rhyolite, sandstone, and basalt (Table 2.11).

The occurrences of ground stone were mostly divided between the great kiva and Room 7. Both had the highest frequencies of two-hand manos and higher amounts of other classes. Room 7 is one of the larger habitation rooms with an adjoining smaller room, Room 8, probably a storage facility. It would appear from the frequency and variety of ground stone types in Room 7 that grinding tasks were prime activities in this room. However, all rooms except unfinished Room 12 and partially excavated Room 5 had enough ground stone to suggest grinding activities were carried out in them or grinding implements were stored there. Only Room 8 had areas that were identified as probable former meal-ing bins, however. No other significant patterning was found in the distribution of ground stone on the site except for that noted above.

Miscellaneous Artifacts

Table 2.12 shows that 167 miscellaneous items were recovered from the Hough site. Most (23.9 percent) were from the great kiva, but artifacts were actually dispersed over the entire site. Mineral fragments and unmodified quartz crystals were the largest categories; however, animal effigies were fairly common; 55.0 percent (N=11) of

them were from the great kiva. Ornaments on the site comprise only 1.2 percent of miscellaneous items. Most of these, 65.5 percent, were beads of different materials. From the great kiva, only 8 beads and 1 pendant were found, making up 31.0 percent of all ornaments on the site. Beads from the kiva were mostly associated with the single burial in the structure.

Mineral fragments include 51 pieces of chrysocolla, 2 of turquoise, 5 of azurite, 5 of malachite, and 1 of indeterminate azurite or malachite (Table 2.13). Most of these were from the smaller Room 10, which may have originally served as a storage facility for Room 9 prior to being blocked off for possible use as a needed habitation area.

Bone Tools

A number of miscellaneous bone tools (N=127) were recovered from LA 3279 (Table 2.14). Most are awls (39.4 percent) and pieces of polished bone waste (possible awls at 24.4 percent). These were found in all areas of the site except the unfinished Room 12. The great kiva contained most of the bone artifacts, 31.5 percent, but not overwhelmingly. Gaming pieces are the only artifacts almost exclusively found in the great kiva. Most items were made from medium and large-sized mammals.

ANCILLARY STUDIES

Faunal Remains

A total of 5,462 faunal remains were recovered from the Hough site (Table 2.15). Most frequently occurring species are indeterminate small, medium, and large mammals with lesser amounts of identifiable deer, turkey, desert cottontail, and birds. From the table, it can be seen that site occupants relied on a wide variety of animals for subsistence. The large mammal category, when added to the artiodactyls, bear, and bison counts, amounts to 34.3 percent of all fauna recovered. Medium-sized mammals constitute only 15.7 percent of the assemblage and small mammals, 26.5 percent. It appears from the table that there was minimal shortage of large mammals in the Luna area in this Late Pueblo period. There is also no real indication that rabbit populations were heavily exploited at this time, as might be expected in times of resource depletion (Shaffer and Schick 1995:118). However, it is interesting that elk are notably missing, while today they are more common than deer in the area. Turkey remains account for 4.8 percent of the fauna from the site and are dispersed fairly evenly among all units, except for higher counts in the great kiva. No turkey pens were found during excavations, however,

Table 2.14. Bone Tools from LA 3279 (AR-03-06-03-00159)

Artifacts	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	Total	
			Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent
Awl	3	1	2	2	1	11	5	8	5	1	1	1	10	50	39.3
Indeterminate tools, fragments	4					1	4	1	2	1		1	7	21	16.5
Polished bone waste	3	1	1	1	1	3	4	3	2	2		4	6	31	24.4
Polished, striated													1	1	.8
Drilled bone					2			1					1	4	3.1
Bone tube						1				1			1	3	2.4
Shuffle													1	1	.8
Spatula													1	1	.8
Gaming piece								1					8	9	7.1
Tool preform						1							2	3	2.4
Knife handle										1				1	.8
Needle preform													2	2	1.6
Total	10	2	3	3	3	17	13	12	12	6	6	6	40	127	100.0

Table 2.15. Faunal Remains from LA 3279 (AR-03-06-03-00159)

Taxon	Provenience														Total
	General Fill	Trash Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva		
Small Mammal	31 7.2%	68 19.0%	33 21.3%	11 11.1%	62 22.3%	94 16.0%	35 15.0%	40 16.9%	33 14.2%	29 13.9%	1 1.0%	82 22.9%	154 69.5%	663 12.1%	
Medium Mammal	98 27%	61 20.0%	23 14.8%	19 19.2%	46 16.5%	126 21.5%	35 15.0%	32 13.6%	40 17.2%	29 13.9%	12 12.9%	30 8.2%	212 9.5%	763 14.0%	
Large Mammal	94 21.8%	34 11.1%	29 18.7%	4 4.0%	15 5.4%	42 7.2%	44 18.9%	27 11.4%	69 29.7%	53 25.4%	26 27.1%	95 26.1%	817 36.5%	1349 24.7%	
Indeterminate Mammal	32 7.4%	48 15.7%	8 5.2%	24 24.2%	30 10.8%	95 16.2%	23 9.9%	29 12.3%	17 7.3%	9 4.3%	35 36.9%	12 3.3%	169 7.1%	631 9.5%	

Table 2.15. Continued.

Taxon	Provenience											Total			
	Callis Court Column Percent	General Fill	Trash/Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11		Room 12	Room 13	Kiva
Robot					1 1.0%	1 .4%	16 2.7%		2 .9%					2 .1%	22 .4%
Squirrel	5 1.1%	1 .3%	3 1.9%	1 1.0%			1 .2%		2 .8%	2 .9%				5 .1%	19 .2%
Prairie Dog	10 2.3%	17 5.6%	8 5.2%	4 4.0%	4 1.4%		23 3.9%	6 2.6%	11 4.7%	6 2.6%	3 1.4%	1 1.0%	9 2.5%	30 1.3%	134 2.4%
Pocket Gopher	7 1.6%	1 .3%		2 2.0%		2 .8%	10 1.7%	7 3.0%	7 2.9%	1 .4%	4 1.9%		7 1.9%	12 .5%	60 1.1%
Mice							29 4.9%	3 1.3%	1 .4%						33 .6%
Woodrats					1 .4%	1 .4%	2 .3%		1 .4%		2 1.0%			3 .1%	9 .2%
Vole															1 .0%
Muskrat	2 5%	1 .3%						1 .4%	2 .8%					2 .1%	8 .1%
Rat						2 .7%									2 .0%
Porcupine															1 .0%
Weasel															2 .0%
Rabbit	1 2%	1 .3%	1 .6%	1 1.0%	25 9.0%		5 .9%	2 .9%	1 .4%					32 1.4%	35 .6%
Cottontail	24 5.6%	22 7.2%	10 6.5%	1 1.0%	28 10.1%		43 7.3%	15 6.4%	34 14.4%	22 9.5%	13 6.2%	1 1.0%	17 4.7%	87 3.3%	317 5.8%
Jack Rabbit	5 1.2%	4 1.3%	13 8.4%	2 2.0%	6 2.2%		33 5.6%	11 4.7%	8 3.4%	6 2.6%	12 5.7%		9 2.6%	36 1.6%	145 2.7%
Carnivores								1 .4%							1 .0%
Dog/Coyote	2 .5%	1 .3%			25 9.0%		5 .9%	2 .9%	1 .4%	1 .4%			3 .8%	9 .4%	21 .4%
Gray Wolf														2 .1%	2 .0%
Fox													2 .6%	5 .2%	7 .1%
Bear								2 .9%	1 .4%			4 4.2%		4 .2%	12 .2%
Raccoon									1 .4%					2 .0%	2 .0%

Table 2.15. Continued.

Taxon	Provenience													Total
	General Fill	Trash/Midden	Room 2	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11	Room 12	Room 13	Kiva	
Badger				1 1.0%										1 .0%
Bobcat													3 .1%	3 .1%
Antilocapri	15 3.5%	6 2.0%	2 1.3%	4 4.0%	12 4.3%	9 1.5%	8 3.4%	4 1.7%	4 1.7%	6 2.9%	5 5.2%	15 4.1%	81 3.6%	171 3.1%
Deer	23 5.3%	4 1.3%	4 2.6%	3 3.0%	4 1.4%	26 4.4%	9 3.9%	8 3.4%	9 3.9%	14 6.7%	4 4.1%	13 3.6%	188 8.4%	309 5.6%
Pronghorn	5 1.2%	1 .3%	2 1.3%	1 1.0%	3 1.1%	1 .2%	2 .9%	4 1.7%		1 .5%		2 .5%	6 .3%	28 .5%
Beard														1 .0%
Bighorned Sheep		2 .7%			3 1.1%					2 1.0%				7 .1%
Bison													1 .0%	1 .0%
Bison/Cattle	1 .2%												2 .1%	3 .1%
Bird	53 12.3%	27 8.9%	10 6.5%	18 18.2%	16 5.8%	14 2.4%	11 4.7%	11 4.6%	9 3.9%	12 5.7%		32 8.8%	226 10.0%	439 8.0%
Duck/Mallard		2 .6%				1 .2%	1 .4%						2 .0%	6 .1%
Hawks			1 .3%				3 1.3%		2 .9%	1 .5%			7 .2%	14 .2%
Quail						2 .4%							3 .1%	4 .0%
Turkey	22 5.1%	11 3.6%	8 5.2%	3 3.0%	14 5.0%	10 1.7%	11 4.7%	10 4.2%	9 3.9%	19 9.1%	4 4.2%	26 7.1%	116 5.2%	283 4.8%
Turtle					1 .4%			1 .4%						2 .0%
Lizard/Snake	1 .2%						1 .4%							2 .0%
Amphibians														2 .0%
Frogs/Toad						2 .3%						1 .3%	1 .0%	4 .1%
Suckers						2 .3%							2 .1%	5 .1%
Total	431 100.0%	3.5 100.0%	1.55 100.0%	99 100.0%	278 100.0%	586 100.0%	233 100.0%	236 100.0%	232 100.0%	209 100.0%	96 100.0%	364 100.0%	2298 100.0%	5462 100.0%

Table 2.16. Faunal Species Dominant in the Great Kiva

Species	Percent
Gray Wolves	100.0
Bobcat	100.0
Rabbits	91.4
Bison/Bovoid	80.0
Quail	75.0
Foxes	71.4
Deer	60.8
Large Mammals	60.5
Birds	51.4

they may have been located in the unexcavated portion of the Hough site.

A number of faunal species dominate in the great kiva. Table 2.16 shows those species that were found mostly in the kiva (over 50 percent) rather than elsewhere on the site. The numbers of rabbits and birds seem unusually high.

Skeletal Remains

The Hough site produced only one burial. However, Hough (1907) describes a burial ground located south of the great kiva. This area was not investigated by OAS. Within the great kiva, however, a centrally situated burial pit slightly overlapped the central posthole. An aged male of unusually tall height (170.7 cm) was found lying on his back with knees flexed in the pit. Grave goods included two nested fillet rim bowls, a Reserve Corrugated jar, two shell fragments, and a small obsidian projectile point. Cause of death appears to have been generally failing health.

Macrobotanical Remains

Eighty flotation samples were examined from LA 3279. Charred seeds of weedy annuals dominated the plant assemblage, including pigweed, winged pigweed, goose-foot, sunflowers, stickleaf, and purslane. Maize was the only positively identified cultigen. A strong dietary dependence on maize is indicated by the ubiquity of charred cob fragments (found in nearly every flotation sample), a ubiquity approached only by cheno-ams and purslane. Kernel fragments were rare, found only in one pit and two thermal features. Fragments of gourds were recovered from six proveniences, but it cannot be determined if these were from buffalo gourds or a domesticated squash. Tobacco remains were found in two great

kiva samples. One sample from Room 7, Pit 3, contained an unusually high number of charred sunflower seeds and could indicate that the seeds had been stored in the pit or processed nearby.

Perennial plant remains were restricted to coniferous duff such as pine needles, cone fragments, and juniper leaves. These are probably present as a result of using conifer woods for fuel. Uncharred contaminants were abundant and included prickly poppy seeds and mullein, a European transplant.

Wood charcoal specimens were predominantly coniferous, including juniper, piñon, and ponderosa. Oak was the most abundant nonconiferous wood identified, with mountain mahogany, rose family, and cottonwood/willow also occurring. These woods would have been available locally for use as firewood or construction material.

Pollen Remains

Forty-five pollen samples were submitted for analysis from the Hough site (Table 2.17). The samples were obtained from all but Rooms 2 and 12. Pine and chenopod pollen was ubiquitous throughout the units and composites were present in all but the trash midden. There is neither a large nor exotic variety of plant material present in the sample. Evening primrose is likely the least common item. Corn pollen was recovered from six of the ten sampled units. It was missing in Rooms 8, 11, 13, and the great kiva. Moderate-sized amounts were recorded for half of the samples, indicating possibly somewhat of a moderate use of the agricultural product. Much of it was from door, pit, and posthole contexts within rooms, but corn was also found on two metates and in two ceramic vessels.

DATING METHODS

Thirty-seven dates were obtained for all of the rooms and the great kiva at the Hough site. Four of these were archeomagnetic dates. Three other archeomagnetic and one dendrochronological sample produced no dates. All chronometric results are shown in Table 2.18. Radiocarbon dates were run by Beta Analytic, Inc. and are expressed at the 2-sigma calibrated range with the intercept also displayed. Archeomagnetic dates exhibit a midpoint date within their range. Only two hearth dates were obtained because of the complete burning of hearth fuel into white ash in most rooms.

Because the ceramic data unequivocally established a Late Pueblo period occupation for the site, it was expected that absolute dating methods would do the same; however, site chronometrics were somewhat

Table 2.17. Pollen Types Recovered from LA 3279 (AR-03-06-03-00159)

Location	Pine	Oak	Chenop-ams	Grasses	Composites	Chamisa	Cholla	Prickly Pear	Mormon Tea	Evening Primrose	Corn
Trash Midden	X										X +
Room 5	X +	X	X	X ++	X ++	X	X +				X
Room 6	X		X	X +	X					X ++	X +
Room 7	X	X	X	X +	X ++	X +	X	X			X +
Room 8	X		X	X +	X +	X +	X				
Room 9	X	X	X	X +	X +	X	X +		X		X
Room 10	X		X	X ++	X +	X +					X
Room 11	X		X	X	X						
Room 13	X		X	X	X						
Kiva	X	X	X +	X ++	X ++	X					

+ Moderate; ++ High Amounts

Table 2.18. C-14 and Archaeomagnetic Dates for LA 3279 (AR-03-06-03-00159)

Unit	Beta No.	Conventional Age B.P.	Calibrated 1-sigma Date	Calibrated 2-sigma Date	Calibrated Date	Context
Room 2	93490	107±50	A.D. 960-1015	A.D. 885-1035	A.D. 990	Fill (10-30 cm)
Room 5	93491	890±80	A.D. 1035-1245	A.D. 1000-1285	A.D. 1175	Fill (10-40 cm)
Room 6	93492	580±90	A.D. 1300-1430	A.D. 1275-1470	A.D. 1400	Ash Pit
	93493	1170±60	A.D. 790-970	A.D. 705-1000	A.D. 885	Roasting Pit
	93494	1050±50	A.D. 975-1020	A.D. 890-1040	A.D. 1000	Pit 2
	93495	1240±100	A.D. 675-895	A.D. 635-1005	A.D. 785	Pit 4
	93496	1080±90	A.D. 885-1025	A.D. 775-1170	A.D. 985	Pit 4
	93497	1010±80	A.D. 980-1055 A.D. 1090-1150	A.D. 885-1215	A.D. 1020	Pit 3
	93499	1210±50	A.D. 775-885	A.D. 690-970	A.D. 855	Storage bin
	93500	1180±50	A.D. 790-905 A.D. 920-950	A.D. 720-735 A.D. 760-985	A.D. 880	Pit 1
Room 7	93498	1230±90	A.D. 685-895	A.D. 650-1000	A.D. 790	Stone Bowl in Fill
	93501	750±90	A.D. 1220-1300	A.D. 1055-1090 A.D. 1150-1405	A.D. 1275	Vessel in Pit 1
	93503	900±60	A.D. 1035-1220	A.D. 1015-1265	A.D. 1170	Posthole 1
	93506	970±70	A.D. 1005-1170	A.D. 970-1225	A.D. 1035	Pit 2

Table 2.18. Continued.

Unit	Beta No.	Conventional Age B.P.	Calibrated 1-sigma Date	Calibrated 2-sigma Date	Calibrated Date	Context
Room 8	93502	1040±70	A.D. 970-1035	A.D. 880-1170	A.D. 1005	Ash Pit 3
	93507	750±90	A.D. 1220-1300	A.D. 1055-1090 A.D. 1150-1405	A.D. 1275	Upper Hearth
Room 9	93511	860±60	A.D. 1065-1075 A.D. 1155-1250	A.D. 1030-1280	A.D. 1205	Vent 1
Room 10	93513	1030±70	A.D. 975-1035	A.D. 885-1175	A.D. 1010	Pit 4
	93514	1180±70	A.D. 780-970	A.D. 685-1005	A.D. 880	Pit 4
	93515	1020±80	A.D. 975-1045 A.D. 1105-1115	A.D. 880-1205	A.D. 1015	Pit 3
Room 11	93510	1070±60	A.D. 905-920 A.D. 950-1020	A.D. 875-1040	A.D. 990	Fill (57-76 cm)
	93516	1020±80	A.D. 975-1045 A.D. 1105-1115	A.D. 880-1205	A.D. 1015	Fill (57-76 cm)
Room 12	93520	790±60	A.D. 1215-1285	A.D. 1165-1300	A.D. 1260	Floor
Room 13	93518	1260±80	A.D. 675-880	A.D. 645-975	A.D. 775	Ash Pit
Great Kiva	93529	1180±50	A.D. 790-905 A.D. 920-950	A.D. 720-735 A.D. 760-985	A.D. 880	West Footdrum
	93525	1080±60	A.D. 895-1015	A.D. 865-1035	A.D. 985	Posthole 1
	93521	1050±60	A.D. 970-1025	A.D. 885-1055 A.D. 1090-1150	A.D. 1000	Pit 1
	93526	840±60	1170-1265	A.D. 1035-1285	A.D. 1220	Possible Sipapu
	93528	790±80	A.D. 1195-1290	A.D. 1040-1310 A.D. 1355-1385	A.D. 1260	Posthole 5
	93527	780±50	A.D. 1225-1285	A.D. 1180-1295	A.D. 1265	East Footdrum
	93522	770±50	A.D. 1235-1285	A.D. 1195-1300	A.D. 1270	Possible Sipapu
	95324	730±50	A.D. 1260-1300	A.D. 1215-1325 A.D. 1340-1390	A.D. 1285	Possible Sipapu

Table 2.18. Continued.

Unit	Beta No.	Conventional Age B.P.	Calibrated 1-sigma Date	Calibrated 2-sigma Date	Calibrated Date	Context
	93523	670±60	A.D. 1285-1325 A.D. 1340-1390	A.D. 1260-1410	A.D. 1300	Possible Sipapu
ARCHAEOMAGNETIC DATES						
UNIT		RANGE			MIDPOINT	CONTEXT
Room 6		A.D. 1250-1350			A.D. 1300	Pot Rest2
		A.D. 1110-1230			A.D. 1170	Pit 4
		A.D. 1245-1355			A.D. 1300	Floor
KIVA		A.D. 105-1215			A.D. 1135	Hearth

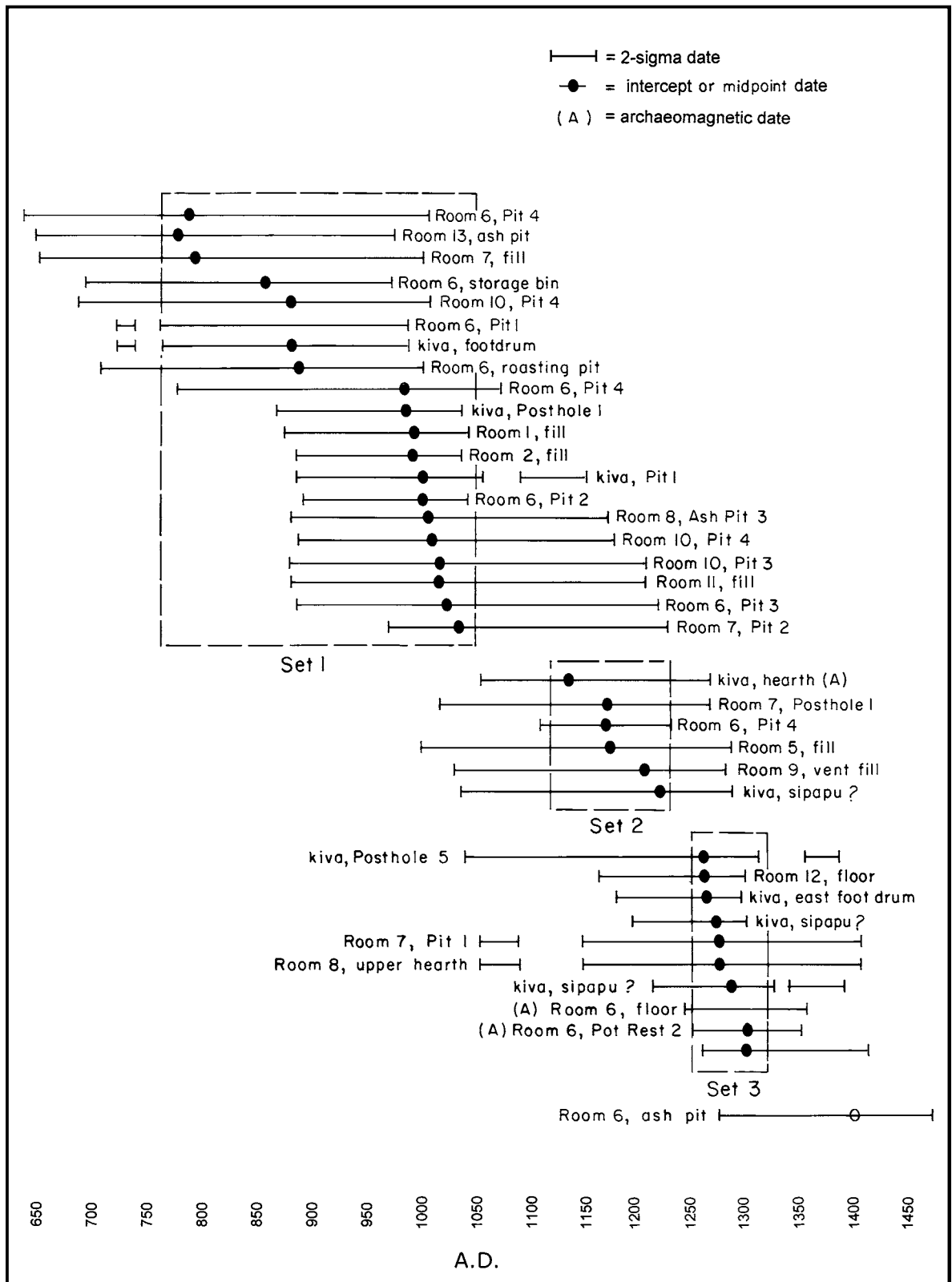


Figure 2.68. Sequential ordering of LA 3279 dates.

ambiguous. From Figure 2.68, it would appear that there was a Late Pithouse through Early Pueblo occupation on the site also, and yet the supporting artifact data are not present. Set 1 data are therefore rejected as being too early and likely the result of the prehistoric use of old wood, perhaps culled from the several nearby Reserve phase sites as well as the Late Pithouse site at Luna Village, 1.7 km to the east. Set 2 consists of scattered dates between A.D. 1100 and 1200. But these are too few and not tightly clustered enough to suggest major construction activity at this time. Again, these may be evidence of the use of old wood. Set 3 does cluster between approximately A.D. 1255 and 1320. It also meshes well with the ceramic data, particularly the late decorated wares on the site. A single calibrated date of ca. A.D. 1400 appears to be an outlier. A manipulation of the calibrated dates in Set 3 produced a mean calibrated date of A.D. 1278.5 for the site.

Most of the rooms examined (7 of 11) produced dates in the A.D. 1260-1300 range. Four rooms, however, yielded poor results. These include Rooms 2, 10, 11, and 13. This may be due to the fewer number of samples from these rooms.

SITE INTERPRETATION

With the excavation of ten rooms and a great kiva and the possibility of 30 more rooms and perhaps a smaller kiva, the Hough site is one of the largest Late Pueblo period sites north of the San Francisco Mountains. The presence of a great kiva signifies that it was also an important socioeconomic entity in prehistoric times.

The site consists of a single roomblock that has seen accretional growth toward the east and perhaps to the north. Rooms 1, 2, 6, 7, 8, 9, and 10 were the first units constructed that were excavated. Rooms 11, 12, and 13 were later additions, built on a trash midden. Because the great kiva stands independently from the rooms, its position in the building sequence is unknown. All units, however, date to the very end of the Tularosa phase at ca. A.D. 1260-1320.

Room sizes on the pueblo are generally larger than those encountered on earlier excavated sites. The two significantly smaller rooms (Rooms 8 and 10) were accessed by connecting doorways to much larger rooms and were probably used for storage, although both may have been converted to habitation rooms at a later time. The two were averaged separately from the others and yielded a mean size of 10.3 sq m. The remaining rooms had a mean size of 20.7 sq m, double the capacity of the two smaller rooms. The largest, Room 5, had a floor space of 27.5 sq m. In contrast, the smaller and earlier Tularosa phase site, LA 70185, also in the Luna area,

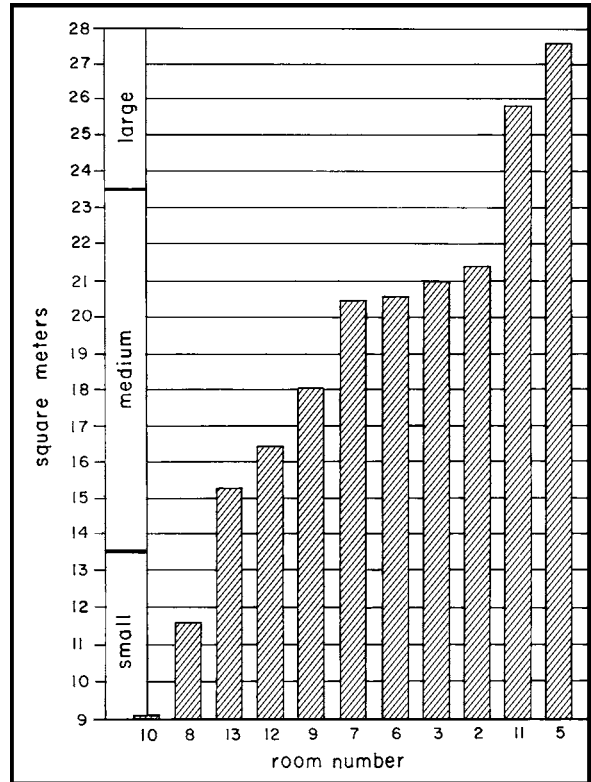


Figure 2.69. Room size at LA 3279.

averaged 15.2 sq m in room size. In areas to the west of Luna, in Arizona, rooms of over 6.3-6.7 sq m qualified as large (Bagley-Baumgartner 1984:48). Thus, even the smallest of LA 3279's rooms at 9.03 sq m would be considered large by other researchers.

Figure 2.69 shows the various room sizes at the Hough site. Rooms 8 and 10 are classified as small (up to 15.1 sq m), while Rooms 2, 3, 6, 7, 9, 12, and 13 are medium-sized (up to 25.8 sq m), and Rooms 5 and 11 are large. The initial use of Rooms 8 and 10 as very large storage rooms may have been due to an increase in surplus goods at this time, particularly agricultural products as suggested by Hill and Trierweiler (1986:33). The two very large rooms (Rooms 5 and 11) were different from the others in that they had minimal floor features. Neither Wendorf et al. (1963) nor OAS found features in the partially excavated Room 5, and Room 11 had only a single hearth. The function of these rooms, therefore, may be quite different than the others on the site.

It was mentioned earlier that the great kiva was strikingly similar to that at the Reserve phase Sawmill site (Bluhm 1957) west of Reserve. There are at least 19 other great kivas in the Mogollon Highlands with the possibility of 3 other nonexcavated units being great kivas, including several in the Tularosa Valley and on the Blue River in Arizona.

Ceramic analyses did not indicate a strong influx of nonlocal vessels into the great kiva, although those present were mostly from the White Mountain area of Arizona. Most items in the kiva, and on the site in general, were locally available or obtainable at not great distances. In the Mogollon Highlands, particularly at the Hough site, ceramic ties with other areas certainly were evident but perhaps not well-established or strongly defined.

Unification of the existing population in the various Mogollon areas was probably an important role of great kivas. Another suggested function of these structures was that of a redistribution center (Lightfoot 1979:331). Stafford (1980:63) points out that if great kivas were redistribution centers, then rooms for storage of surplus goods should be associated with them. Rectangular, surface rooms have been found associated with great kivas and there are probably two such rooms flanking the ramp entry to the Hough site kiva. Lekson (1983) believes that after A.D. 1000, this was a common trait, although some suggest these rooms were for storage of ritual paraphernalia rather than surplus goods (Stafford 1980). OAS did not excavate the two rooms; however, the large size of the potential storage facilities, Rooms 8 and 10, may indicate stockpiling of surpluses for redistribution.

The two foot drums, or vaults, in the great kiva are typical of those found aligned adjacent to hearths. Similar ones have been recorded at the Sawmill site and at Higgins Flat Pueblo (Martin et al. 1961:58). Their function, as the name implies, is believed to be as foot resonators, although Wilshusen (1988:657) notes that jars have been found in them, indicating they may also have served as storage for ritual items. In the Hough site great kiva, a Snowflake Black-on-white jar and an antler tine were discovered within the west foot drum. Shelves dug into the soil are frequently found at the ends of foot drums to support a wooden roof (Smiley 1952:39). Rudimentary shelves were uncovered at the Hough site in addition to long fragments of wood beams running perpendicular to them.

Hearths were found in 8 of 10 rooms and the great kiva on the Hough site. Exceptions included unfinished Room 12 and the partially excavated Room 5. This high occurrence of hearths indicates at least wintering-over periods at the pueblo and probably year-round occupa-

tion. Locations within the rooms included four in the south half, three in the north, and one almost in the center. All hearths were rectangular, slab fireboxes extending above the floor surface. This type was not common prior to the Late Pithouse period, or Three Circle phase, ca. A.D. 900 (Anyon and LeBlanc 1984:312). Several slab hearths were found by OAS in nearby Luna Village pit structures dating to the Three Circle phase.

Agricultural intensification at the Hough site is not an obvious phenomenon. The large diversity and array of faunal remains indicate the usage of substantial amounts of a variety of large and medium-sized mammals in the diet of the population. The lack of heavy reliance on rabbits (a stress-related subsistence item) would suggest that other faunal resources were also being utilized. Shaffer and Schick (1995:124) look at resource deterioration through the presence of small mammals in site assemblages in the Mogollon Highlands, and suggest that the lower the percentage, the less resource stress there is. Their study showed that WS Ranch contained 58 percent small animals compared with 85-99 percent from lower and drier environments. The Hough site yielded only 26.5 percent of small faunal remains (including rodents, squirrels, and gophers that account for 5.1 percent of the total assemblage and may be noncultural).

Maize, and possibly squash, was agriculturally produced at the Hough site. It was present in almost all processed botanical samples from the site and had a high ubiquity. Together with a strong faunal assemblage and wild plants of purslane and chenopods, it appears that the Hough site population had a fairly balanced mixture of subsistence items to draw upon. The very large storage rooms (Rooms 8 and 10) and the possible surplus storage rooms near the great kiva suggest that the site may have even produced a surplus of goods for redistribution or trade. This is speculative, however, without excavation of the kiva-related rooms.

As one of the last sites occupied in the Mogollon Highlands (ca. A.D. 1278-1320), the Hough site is important for evaluating causal factors such as resource depletion, climatic change, and population pressure that could have contributed to the widespread abandonment of the region including the site itself. These will be examined in detail in later chapters.

LA 3563 (AR-03-06-06-00277)

SOUTH LEGGETT PUEBLO

Dorothy A. Zamora

In 1947, Dr. John B. Rinaldo from the Chicago Natural History Museum conducted an archaeological survey in the Gila National Forest (then called the Apache National Forest) in Catron County (Martin et al. 1949). He surveyed an area between the San Francisco and the Saliz mountains known as Pine Lawn Valley. Several sites were located, one of which was LA 3563 (AR-03-06-06-00277), South Leggett Pueblo. In 1949, Paul S. Martin and John B. Rinaldo (1950a) excavated South Leggett Pueblo and two other Reserve phase sites (Wet Leggett and Three Pines Pueblo). The site contains one roomblock with five rooms, dating to the Reserve phase, and a large pithouse that dates to the Three Circle phase (Figs. 2.70, 2.71). There are 13 other sites located within a kilometer of South Leggett Pueblo, all close to the confluence of Leggett Canyon and Oak Springs Canyon.

The roomblock is outside of the highway right-of-way, 37.5 m east of the right-of-way fence. It has loosely coursed walls built of unshaped boulders of different sizes with thin flat slabs sometimes separating the courses. The floors are a compact clay and gravel with plaster present in some areas (Martin and Rinaldo 1950a:440). No entrances to the outside were found, but one doorway between two interior rooms was present. Only two post-holes, one in Room B, and another in Room D were found. One room contained a ventilator in the south wall. A possible mealing bin was found in Room A. Martin and Rinaldo (1950a:440) believe that this roomblock represents the early stage of Pueblo development in the Pine Lawn Valley.

SITE SETTING

South Leggett Pueblo is a multicomponent Mogollon site .16 km south of the Oak Springs Bridge along U.S. 180. It is on the crest of a low hill and occupies both sides of the highway (Fig. 2.70). The site is bounded by the Saliz Mountains to the east and the San Francisco Mountains to the northwest and sits at an elevation of 1,887 m (6,190 ft). The vegetation consists of yellow pine, juniper, oak, and different types of grasses. Material such as basalt, rhyolite, andesite, and tuff are locally available in the area because of former volcanic activity to the southeast, not far from Pine Lawn Valley.

RESEARCH OBJECTIVES

Our research goal for LA 3563 (AR-03-06-06-00277), South Leggett Pueblo, was to find any pithouses, storage pits, or other cultural features in the highway right-of-way that could provide data from floral and faunal remains and the artifact assemblage in order to determine the subsistence adaptation of pithouse populations. Methods of food preparation, storage, and use were to be examined to assist in this assessment. The layout of the site, the amount and types of features, and evidence of reconstruction also were to be used for comparisons with other sites to evaluate residential mobility.

EXCAVATION PROCEDURES

Several mechanically dug trenches were excavated on the site (Fig. 2.70) to enable us to find the subsurface features. A 1-by-1-m grid system was placed over the site through the use of a transit and stadia rod. Elevations from each northwest grid corner were recorded and surface collections were made before any hand-excavation began. The pithouse was found by a mechanically dug trench (Trench 4). The other trenches were culturally sterile. The fill, removed by hand tools within the pithouse, was screened using ¼-inch hardware mesh. The pithouse was excavated in stratigraphic levels; however, only one-half of the pithouse was excavated because of its prior study by Martin and Rinaldo (1950a). All cultural fill within the structure was obviously placed there after Martin and Rinaldo completed excavations on the roomblock and was therefore a secondary deposit. The artifacts were bagged by level and grid location.

The site within the highway right-of-way covered an area of 1,164 sq m (112 m north-south by 52 m east-west). Approximately another 580 sq m are outside of the right-of-way. A total of 229 grids were excavated, 85 grids surface collected. Mean depth of excavations on the site was 68.3 cm with a total of 64.3 cu m dug by hand and another 80 cu m removed by mechanical means for a total dirt removal of 144.3 cu m. The seven mechanically dug trenches were taken down to culturally sterile soil that ranged from 34 cm to 65 cm in depth, with the exception of Trench 4, which stopped at 34 cm so the remainder of the pithouse fill would not be dis-

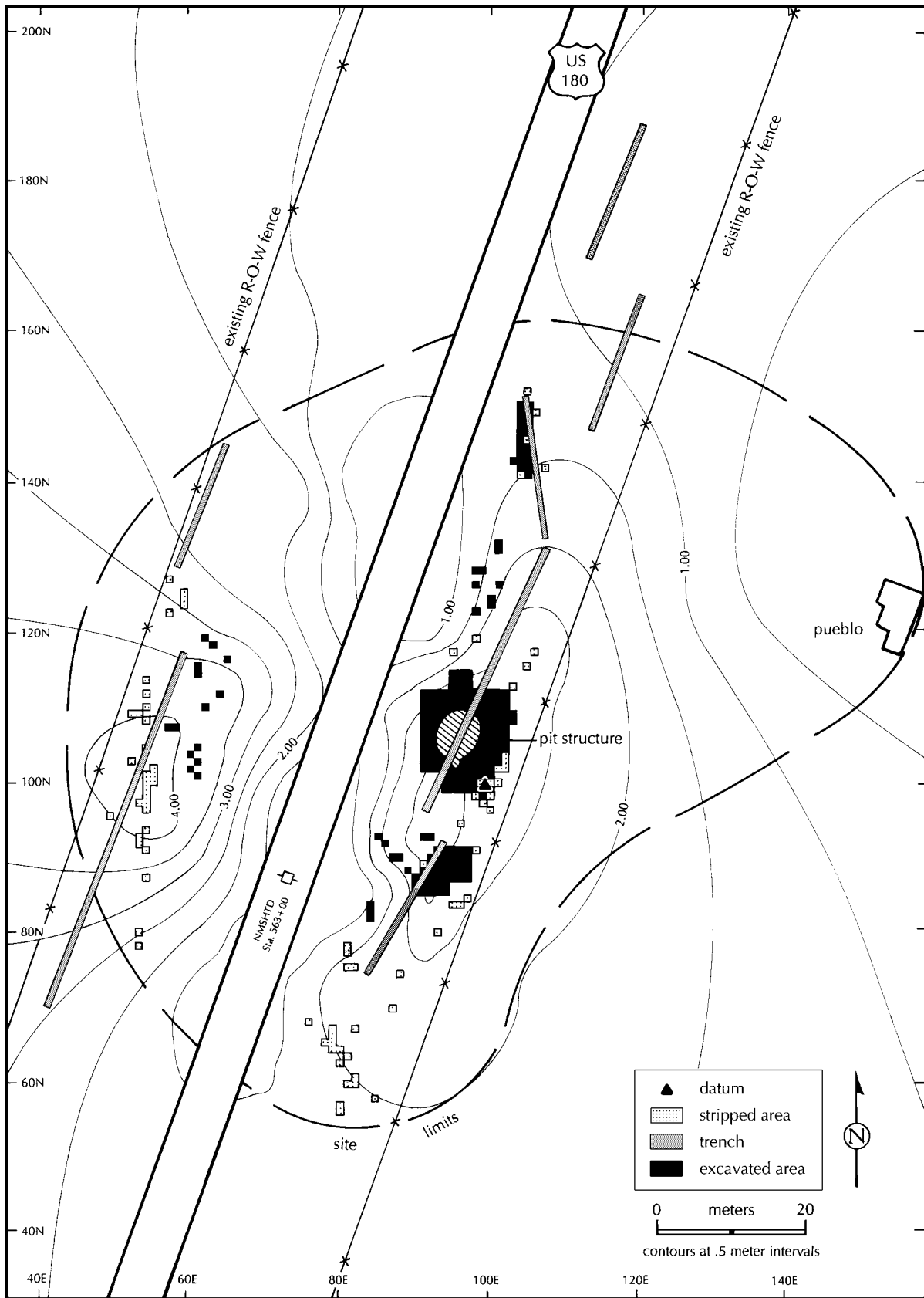


Figure 2.70. LA 3563, South Leggett Pueblo.



Figure 2.71. LA 3563 prior to excavation. Pithouse depression visible in center of photograph, facing northwest.

turbed. Trench 4 was 34 m long and it bisected the top of the ridge where the main part of the site was located.

The stratigraphic levels for the site were as follows:

Level 1: Tree duff and the modern top soil, 20- cm thick; Munsell 5YR 4/2 dark reddish brown.

Level 2: General fill, includes mechanically removed clay, 22 cm thick; 5YR 3/3 reddish brown on the Munsell color chart.

Level 3: Pithouse fill, 5YR 3/2 dark reddish brown clay, 2.18 m thick.

Level 8: Culturally sterile red clay, underlies the fill; 5YR yellowish red.

The fill from the pithouse was generally a reddish brown clay containing some rocks ranging from small to very large boulders. There was no charcoal flecking; however, there was modern trash left from Martin's work on the site.

CULTURAL UNITS

Pithouse

South Leggett Pueblo had one pithouse in the right-of-way that was dug by Martin and Rinaldo in 1949. One-half of the pithouse was reexcavated by the Office of

Archaeological Studies (Figs. 2.72, 2.73). An outside utilized surface was also found 10 cm below the present ground surface; however, it contained no features. Some grids (N=14) were surface stripped on the west side of U.S. 180; no cultural surface was found, even though artifacts were sparsely scattered in this area. With permission from the U.S.D.A. Forest Service, Reserve Ranger Station, a few diagnostic ceramics were collected from outside of the right-of-way to assist in dating the site.

Description: The pithouse is 7.3 m north-south by 5.6 m east-west by 2.18 m deep (Figs. 2.73-2.75). It was dug into the culturally sterile clay and gravel that underlies the site. A bench or ledge was encountered at 1.18 m and it measured 45 cm in width and continued down another meter to the floor. To the south, there was an irregular-shaped feature extending beyond the wall. Martin speculates that this feature was a lateral entrance into the pithouse (Martin and Rinaldo 1950a:446). One posthole was located during excavation of the floor. No other features were present. Martin also states that the pithouse was probably not finished and had been open for many years after abandonment. He also believes that the pithouse was used as a refuse dump during the Reserve phase (Martin and Rinaldo 1950a:446). After excavating only the east half of the pithouse, we agree with Martin that the pithouse was not finished by site



Figure 2.72. LA 3563, partially excavated pit structure with outline visible, facing north.



Figure 2.73. South half of excavated pit structure with unprepared floor and possible entryway. Collapsed bench is along west wall.

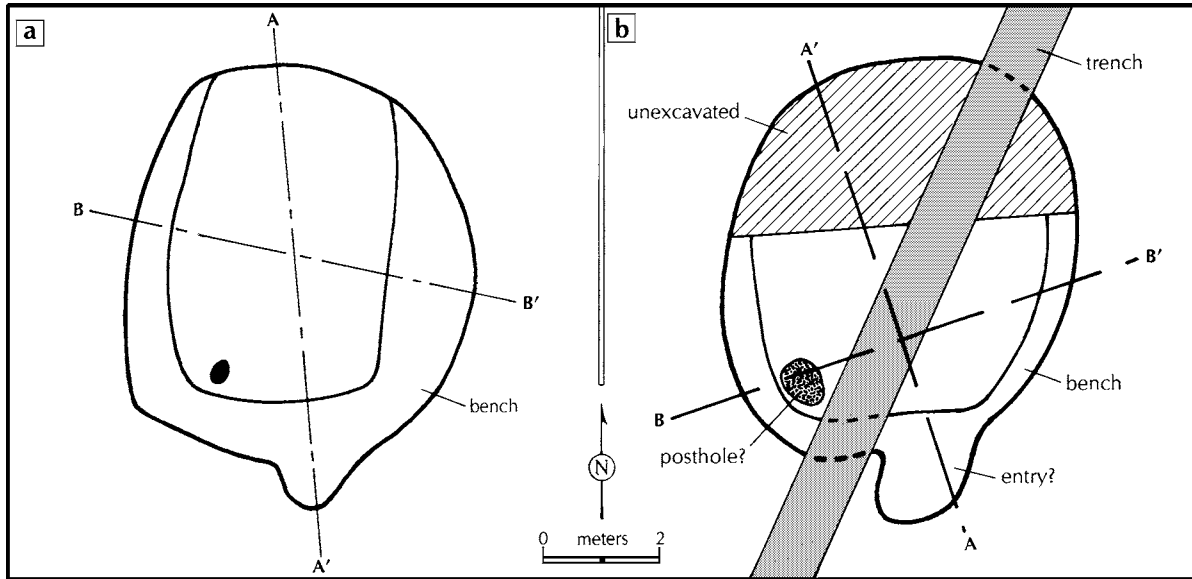


Figure 2.74. Plan views of pit structure at South Leggett Pueblo: (a) 1949 excavation (Martin and Rinaldo 1950a:447), (b) OAS excavation.

occupants. And, from his description of the material found in the pithouse and redeposited there by him, it was obviously used as a refuse dump during the Reserve phase.

Stratigraphy: There were two stratigraphic levels identified in the pithouse (Level 1 and Level 3). Level 1 consisted of the surface soil and debris. Level 3, the fill of the pithouse, was a reddish brown clay that contained large to boulder-sized rocks. A few artifacts were found within this level consisting of lithic artifacts and some sherds.

Dimensions: Outside dimensions of the pithouse are 7.3 m north-south by 5.6 m east-west and 2.18 m deep. The floor area is 5.50 m north-south by 4.70 m east-west for a total of 25.85 sq m.

Walls: The walls of the pithouse were formed from the natural red clay and gravel. They were not smoothed or plastered suggesting that the pithouse may not have been completed.

Entrance: The feature on the south side of the pithouse is 1.30 m long by 1.20 m wide and 1.0 m deep. Neither the floor nor the walls of the feature exhibited any type of preparation. If this were an entry, the first step into the pithouse would have been a meter drop down onto the bench/ledge, and the step onto the floor would have been another 1.18 m. These two steps would have been too deep of a drop into the pithouse; therefore, we question whether this is actually an entrance. No steps or ladder holes were noted on the floor or bench, and Martin does not mention any in his report.

Bench: This feature encompasses most of the interior of the pithouse. Martin's map shows that, on the north wall, the bench stopped and did not continue entirely

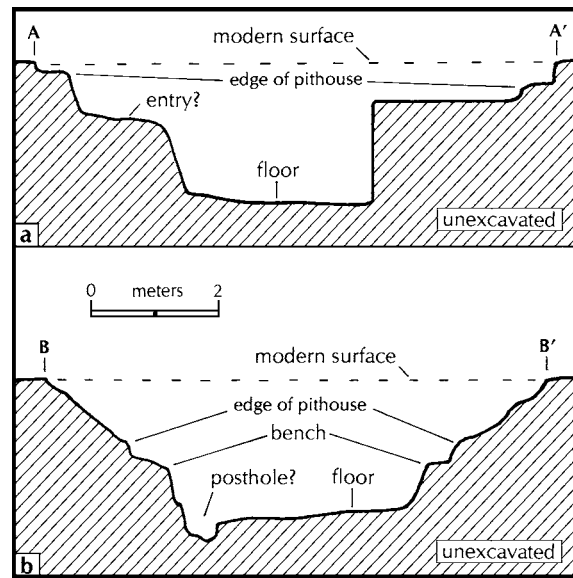


Figure 2.75. Profile of pithouse at South Leggett Pueblo.

around the pithouse. He states that it ranges between 1.0 and 1.5 m in width (Martin and Rinaldo 1950a:447) and 1.0 m in height. However, we measured the bench again and it measured only 60 cm to 70 cm wide.

Posthole: The one posthole was dug into the floor in the southwest corner of the pithouse (see Fig. 2.74). It measured 85 cm north-south by 60 cm east-west and 20 cm deep. Again, the posthole was slightly different than the description given by Martin who states that the posthole was 30 cm in diameter (Martin and Rinaldo 1950a:446). Perhaps, after excavation by Martin, the

hole was made larger to ensure that the feature was completely excavated.

ARTIFACTS

The artifacts recovered by the Office of Archaeo-logical Studies from South Leggett Pueblo include 1,659 lithic artifacts, 2,544 ceramics, 9 pieces of ground stone, 3 projectile points, and 75 fragments of faunal remains, for a total of 4,290 items. Most of it proved to be trash from the nearby Reserve phase roomblock.

Ceramics

All ceramics from South Leggett Pueblo, including Martin's assemblage, total 4,399 and consist of mostly Alma Plain Brown Wares (53.15 percent). Table 2.19 compares the types of ceramics collected from OAS's excavation of the pithouse and Martin and Rinaldo's (1950a) collection from the same structure. There is a high percentage of textured brown wares (19.77 percent) in the assemblage that date to the Three Circle phase. According to Martin et al. (1949:198), the use of textured wares reached a climax during this phase. Along with the textured wares, some painted wares also peaked during the Three Circle phase such as Three Circle Red-on-white and Mimbres Bold Face. Reserve Black-on-white came into use during the later portion of the Three Circle phase (Martin et al. 1949:198).

Lithic Artifacts

The lithic artifacts collected from South Leggett Pueblo were mostly made of rhyolite (74.4 percent). Of the 1,659 artifacts from the assemblage, 75.9 percent were flakes and 14.0 percent were tools (Table 2.20). Three indeterminate projectile points, too fragmentary to identify, were also collected from the site. Martin's lithic artifact assemblage consisted of two scrapers and one chopper. He also recovered at least four projectile points from the entire site. The lithic assemblage from Martin's excavation and the excavation done by OAS cannot be compared because Martin did not collect any of the lithic debitage except for the three formal tools and projectile points.

One projectile point found during the excavation of the pithouse consisted of a large side-notched obsidian projectile point base and mid-section; the other is an obsidian projectile point mid-section with corner notching present. The third point is made of Luna blue agate consisting of the tip and edge with side-notching along the one edge. Martin recovered at least four points on the site but does not mention where they came from. He

describes one of them as a small corner-notched point with an expanding stem narrower than the shoulder, and a straight base, with slightly convex lateral edges. Another is a small triangular side-notched point with straight edges and a straight base. Two are roughly leaf-shaped in outline, with a concave base and broad stem (Martin and Rinaldo 1950a:482). The small points would seem appropriate for a Reserve phase occupation.

The tool category (N=310) of the lithic assemblage from South Leggett Pueblo consists of 71.6 percent utilized flakes, mostly made of rhyolite (72.1 percent). The cores comprise 24 percent of the tool assemblage with 71.4 percent rhyolite and 9.1 percent basalt. Four bifaces (1.3 percent) were also recovered. Two were rhyolite, one was obsidian, and another was chert.

Ground Stone

The ground stone assemblage at South Leggett Pueblo is small, totaling 17 artifacts; eight were from Martin and Rinaldo's excavation and eight were from the OAS excavation (Table 2.21). The two assemblages are almost identical, except for the rubbing and polishing stones that are absent from our assemblage. The biggest discrepancy is that there are 62.5 percent of worked slabs in the OAS collection, while Martin and Rinaldo's collection has 12.5 percent. All the ground stone from our collection is fragmented. There is a question of whether the ground stone is associated with the pithouse because the structure was used as a refuse dump by roomblock occupants.

Miscellaneous Artifacts

A total of four miscellaneous artifacts were recovered from South Leggett Pueblo. These artifacts were from the fill of the pithouse and include one pendant blank of chrysocolla (a material commonly found in the Mogollon district), one effigy pendant of indeterminate metamorphic material, one quartz crystal, and one small specimen of raw hematite.

ANCILLARY STUDIES

Faunal Remains

The fauna found at South Leggett Pueblo consisted of 75 bone fragments (Table 2.22). Most of the assemblage was composed of large mammals (80.1 percent) including elk, antelope, and deer. There is no way of determining, however, if these are from the Reserve or Three Circle phase occupation of the site.

Table 2.19. Ceramic Comparisons from OAS's and Martin's Pithouse Excavations, South Leggett Pueblo

Ceramic Type	Martin's Excavation		OAS's Excavation		Total	
	Total	Percent	Total	Percent	Total	Percent
Alma Plain	885	47.71	1453	57.11	2338	53.15
Alma Rough			113	4.44	113	2.57
Alma Scored	1	.05	4	.16	5	.11
Alma Incised			4	.16	4	.09
Alma Punched	2	.11			2	.04
Alma Neckbanded			1	.04	1	.02
Lino Gray	5	.27			5	.11
San Francisco Red	23	1.24	42	1.65	65	1.48
Three Circle Neckbanded			4	.16	4	.09
Three Circle Red-on-white	6	.32	8	.31	14	.32
Mangus Black-on-white			11	.43	11	.25
Reserve Black-on-white	80	4.31	6	.24	86	1.96
Reserve Indented Corrugated	30	1.62			30	.70
Reserve Fillet Rim	1	.05			1	.02
Reserve Smudged	362	19.52			362	8.23
Mimbres Bold Face	18	.97			18	.41
Mimbres indeterminate whiteware			64	2.51	64	1.45
Puerco Black-on-white			1	.04	1	.02
Wingate Corrugated	1	.05			1	.02
Wingate Black-on-red	13	.70	2	.08	15	.34
Tularosa Black-on-white			14	.55	14	.32
Hachure black-on-white			8	.31	8	.20
Plain corrugated	256	13.80	252	9.91	508	11.55
Plain and indented corrugated	31	1.67			31	.70
Plain corrugated smudged	27	1.46			27	.61
Incised corrugated	75	4.04	63	2.48	138	3.14
Incised corrugated smudged	4	.22			4	.09
Patterned corrugated			14	.55	14	.32
Indented corrugated			55	2.16	55	1.25
Indeterminate corrugated			45	1.77	45	1.02
Plain smudged			286	11.24	286	6.50
Smudged decorated	5	.27			5	.11
Indeterminate red	3	.16			3	.07

Table 2.19. Continued.

Ceramic Type	Martin's Excavation		OAS's Excavation		Total	
	Total	Percent	Total	Percent	Total	Percent
Indeterminate White Mountain Redware			5	.20	5	.11
Early white ware			1	.04	1	.02
Late white ware			88	3.46	88	2.00
Indeterminate black-on-white	27	1.46			27	.61
Total	1,855	100.00	2544	100.00	4399	100.00

Table 2.20. Chipped Stone and Raw Material Types, South Leggett Pueblo

Count Row Percent Column Percent	Angular Debris	Core Flake	Biface Flake	Tested Cobble	Core	Uniface	Biface	Row Total
Chert	9 8.7% 9.6%	79 76.9% 5.6%	9 8.7% 13.0%	3 2.9% 42.9%	2 1.9% 2.9%		1 1.0% 14.3%	103 100.0% 6.2%
Chalcedony		8 100.0% .6^						8 100.0% .5%
Luna Blue Agate	19 14.5% 20.2%	104 79.4% 7.3%	2 1.5% 2.9%	1 .8% 14.3%	5 3.8% 7.2%			131 100.0% 7.9%
Silicified Wood		2 66.7% .1%	1 33.3% 1.4%					3 100.0% .2%
Obsidian	2 8.0% 2.1%	16 64.0% 1.1%	4 16.0% 5.8%				3 12.0% 42.9%	25 100.0% 1.5%
Basalt	5 6.7% 5.3%	61 81.3% 4.3%	2 2.7% 2.9%		6 8.0% 8.7%	1 1.3% 100.0%		75 100.0% 4.5%
Rhydite	56 4.5% 59.6%	1073 86.9% 75.8%	50 4.0% 72.5%	2 .2% 28.6%	51 4.1% 73.9%		3 2% 42.9%	1235 100.0% 74.3%
Sedimentary		1 100.0% .1%						1 100.0% .1%
Limestone		3 100.0% 2%						3 100.0% .2%
Siltstone	1 50.0% 1.1%	1 50.0% .1%						2 100.0% .1%
Metamorphic		5 100.0% .4%						5 100.0% .3%
Quartzite	1 2.4% 1.1%	36 85.7% 2.5%	1 2.4% 1.4%	1 2.4% 14.3%	3 7.1% 4.3%			42 100.0% 2.5%
Quartzitic sandstone	1 6.3% 1.1%	14 87.5% 1.0%			1 6.3% 1.4%			16 100.0% 1.0%
Massive quartz		1 100.0% .1%						1 100.0% .1%
Column Total	94 5.7% 100.0%	1415 85.1% 100.0%	69 4.2% 100.0%	7 .4% 100.0%	69 4.2% 100.0%	1 .1% 100.0%	7 4% 100.0%	1662 100.0% 100.0%

Table 2.21. Ground Stone from South Leggett Pueblo Including Martin's Assemblage

Ground Stone Type	Martin's Assemblage		OAS's Assemblage		Total	
	Total	Percent	Total	Percent	Total	Percent
Mano	3	37.5	2	25.0	5	31.3
Metate	1	12.5	1	12.5	2	12.5
Shaped Slabs	1	12.5	5	62.5	6	37.5
Rubbing Stones	2	25.0			2	12.5
Polishing Stones	1	12.5			1	6.2
Total	8	100.0	8	100.0	16	100.0

Table 2.22. Faunal Remains from South Leggett Pueblo

Species	Number	Percent
Mammal	6	8.0
Medium Mammal	6	8.0
Large Mammal	45	60.0
Cottontail Rabbit	1	1.3
Jackrabbit	1	1.3
Hoofed animals (include deer and elk)	8	10.7
Deer	5	6.7
Antelope	2	2.7
Mexican Jay	1	1.3
Total	75	100.0

DATING METHODS

The only means of dating the pithouse at South Leggett Pueblo was from the ceramics recovered from both excavations. Although there apparently was an abundant amount of charcoal in the pithouse when Martin excavated it, no samples were collected for dating. When we excavated the pithouse again there was little charcoal remaining in the fill for sampling. One pinch sample yielded poor dates, suggesting contamination by old wood (Table 2.23).

The sherds mostly date to the Three Circle phase (A.D. 900 to 1000) of the Mogollon Culture. There is a high percentage of broadly dated Alma Plain Brown Wares; however, there are a great many textured and painted wares, which are generally associated with the Three Circle phase. Included in the assemblage is Reserve Black-on-white, which was being made during

the later part of the phase. During Martin and Rinaldo's (1950a) excavations, a burial was recovered from the upper fill of the pithouse that Martin states was associated with the Reserve phase. He also hypothesizes that below the burial was the stratigraphic break between the Reserve phase and the Three Circle phase.

SITE INTERPRETATION

The South Leggett Pueblo pithouse was first excavated by Martin and Rinaldo in 1950. This large structure was dug into the natural red clay and gravel stratum with unfinished walls, a bench, and an unprepared floor suggesting that possibly it was never occupied.

Martin has given this a pithouse a Three Circle date based on the ceramics that were found on the floor of the pit structure. However, he also states that the pithouse was used by the Reserve phase people for a refuse dump after it was abandoned (Martin and Rinaldo 1950a). He supports this hypothesis by stating that the stratigraphic layers found in the pithouse resulted from it being left open and filled by water deposited sediments until the site area was reoccupied by people of the Reserve phase (Martin and Rinaldo 1950a:446). Martin speculates that a burial found in the trash of the upper fill was from the Reserve phase because it was resting on the highest stratigraphic break and Reserve phase artifacts were also associated with it.

It is very difficult to compare the South Leggett Pueblo pithouse with other Three Circle pithouses in the immediate area, since it was not completed. The ones most comparable are Pithouse 5 at Turkey Foot Ridge and the pithouse at Twin Bridges. These have unplastered walls, smooth floors, a bench encompassing the interior of the structure, central hearths, several post-holes, lateral entrances, and they are 1 to 2 m deep. Since we and Martin believe the pithouse at South Leggett Pueblo was not completed, it would explain why the smoothed floors, the central hearth, and the postholes

Table 2.23. C-14 Dates for LA 3563 (AR-03-06-06-00277)

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
107N/101E	57448	1650±130	A.D. 250-560	A.D. 100-660	A.D. 410	Pithouse fill

were missing.

There were no other means of establishing a good chronological date for the site except through the ceramic assemblage, since only one unusable radiocarbon date was available. The ceramics recovered from the pit-house at South Leggett Pueblo confirm Martin's hypothesis that the structure dates to the Three Circle phase

(Martin and Rinaldo 1950a). The ground stone indicates that food processing took place on the site. Heavy reliance on large game is also indicated by the faunal remains. During our excavations, no flotation or pollen samples were collected since the feature had already been dug and cultural levels had been mixed. The season of occupation was not determined.

LA 9721 (AR-03-06-06-00824)
TWIN PINES PUEBLO

Yvonne R. Oakes

Twin Pines Pueblo was originally recorded by Paul Martin in 1947 as Site 71, part of an areal survey conducted in the Reserve area. The site is listed as a Reserve phase structure of one to two rooms (dating ca. A.D. 1000) with an associated surface depression suggesting a possible subterranean unit. No excavation was conducted at the site. Twin Pines Pueblo was relocated in 1989 as part of an archaeological survey within the U.S. 180 right-of-way (Oakes 1989). It was recorded as LA 70197 until Martin's survey notes and maps were examined in detail and it became evident that this was a duplicate site number. That designation has subsequently been dropped from usage and the original, LA 9721 (AR-03-06-06-00824), assigned to the site.

Normally, the site would have been subjected to testing to determine its cultural depth and content as part of the archaeological clearance procedures for the widening of U.S. 180 by the NMSHTD. But because it had been previously recorded by Martin as a small pueblo, there was a strong possibility of intact cultural features within the proposed right-of-way. Therefore, it was the wish of the NMSHTD to proceed directly to data recovery for the site (Fig. 2.76).

The potential extent of the site was difficult to determine prior to excavation procedures. An out-cropping of basalt boulders and rocks covered the ridge and it seemed that the outline of a small roomblock could be traced within these strewn boulders (Fig. 2.77). Site size was initially estimated at 1,700 sq m with 40 percent within the right-of-way. However, excavations revealed that the ridge top within the project area contained no roomblock; the basalt was not aligned into units of rooms nor was there any depth to the thin layer of cultural material that occurred on the site surface. A possible one-room cobble structure lies outside of the right-of-way and may be the cause of the sparse artifact scatter (Fig. 2.78).

Numerous other pueblos and pithouse sites are located nearby on the various ridges surrounding the Leggett Canyon drainage. These include South Leggett Pueblo (LA 3563, AR -03-06-06-00277), Turkey Foot Ridge (LA 9710), Oak Springs Pueblo (LA 9725), Downslope site (LA 43786, AR-03-06-06-00416), Fence Corner site (LA 70196, AR-03-06-06-00832), and Ladybug Junction (LA 75791, AR-03-06-06-00834).

These sites range in date from the Early Pithouse period, ca. A.D. 500, to the Early Pueblo period at about A.D. 1000-1100.

SITE SETTING

Twin Pines Pueblo sits within the Pine Lawn Valley on the crest of a low ridge overlooking the Leggett Canyon drainage .11 km to the east at an elevation of 1,890 m (6,200 ft). Immediately bordering the drainage are level benches and a narrow floodplain where it may have been possible for prehistoric peoples to have practiced agriculture. The site is within the Gila National Forest and surrounded by yellow pine and oak on low hills and ridges within Leggett Canyon. Wild game is plentiful in the area today. Soils on the ridge are thin and rock-filled with basalt outcroppings common. However, a variety of plant resources would have been available within the area prehistorically because of the changing topography and soils within the canyon.

RESEARCH OBJECTIVES

Twin Pines Pueblo was thought to represent a small pueblo unit of several rooms or possibly a fieldhouse. It was suggested in the data recovery plan (Oakes 1990) that small sites such as this would evidence a limited range of activities that would be amenable to archaeological study.

From Martin's field records, we believed this site would contain intact rooms which could yield important information on the use of such features for storage, food preparation, and long-term site planning. Subsistence items were expected to be recovered. Degree of labor intensity involved in site construction and evidence of reuse was to be determined from the recording of architectural data. We also expected to recover cooking vessels and ground stone useful for data comparison with other sites regarding the preparation of dried food and the use of manos.

A small depression, measuring 2-by-2 m, at the south end of the site was thought possibly to be a pit structure. If so, this would allow us to draw comparisons between it and the possible surface rooms in terms of site

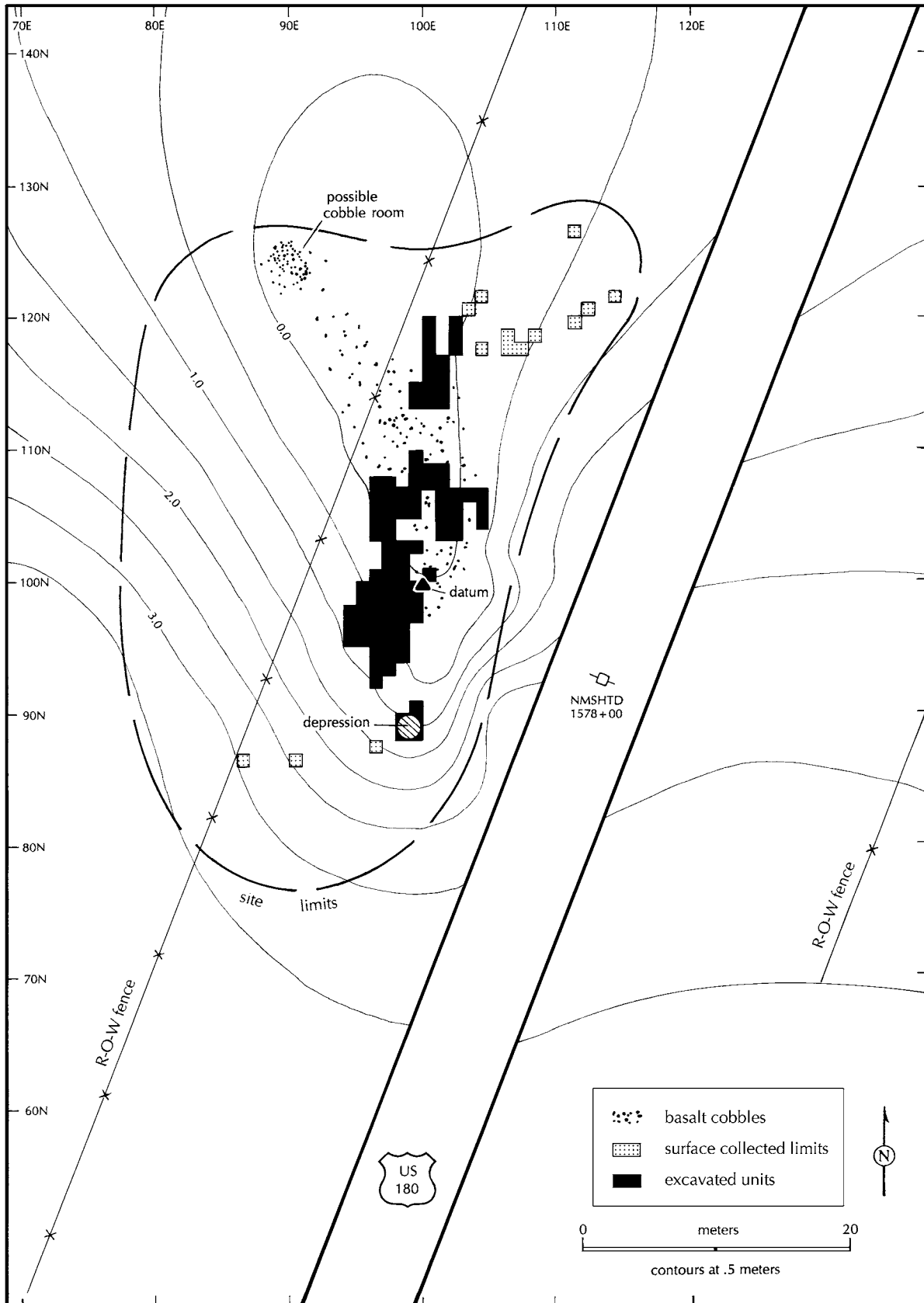




Figure 2.77. Rocks on the surface of LA 9721, facing north.



Figure 2.78. Rocks along ridge, facing northwest.

function and subsistence strategies of site occupants.

However, at most, there is a single room on the site, probably a fieldhouse, lying outside of the proposed right-of-way limits. Artifacts are scarce (N=27), precluding any interpretation of site function or comparison with other sites in the project area.

EXCAVATION PROCEDURES

The area of investigation extended from the top of the ridge and down both slopes to the north and south where surface artifacts were washing down, a distance of 49 m. Width of the area extended from the right-of-way fence on the west side of U.S. 180 to the previous road cut, a distance of about 13 m. A single datum was established for the site near the top of the ridge. A 1-by-1-m grid system was laid out on a north-south axis over the excavation area with a transit and stadia rod.

The entire site surface, except for the lower slopes of the ridge, was covered with basalt rocks (see Fig. 2.77) and a heavy layer of pine duff. On the top, and more level portion of the ridge, the potential rock alignments could be vaguely seen. Excavation proceeded in 1-by-1-m grid units. All loose, small rocks were discarded; embedded and larger rocks were left in situ. Preliminary examination of the soil matrix on the site suggested that the depth of cultural fill was minimal with a yellowish-red sterile clay less than 45 cm, and usually less than 15 cm, below the site surface. Excavation areas were initially defined on the basis of having potential for rock wall alignments or levelness of site surface. Therefore, initial recovery efforts focused on the top of the ridge, expanding downslope as warranted. The exploration of the small depression was also part of initial excavation plans.

Two strategies were employed in excavating the site. First, all loose soils, grasses, and remaining small rocks were stripped from each grid surface with hand tools. Then, excavation below this varying layer consisted of removing all cultural fill to the depth of the sterile substrate. This unit was designated Level 1 and varied from 3 to 41 cm in depth. The fill in each grid consistently included pine needles, rotted organic material, and numerous rocks which created a loose soil matrix. Soil color on the Munsell Color Chart was generally 10YR 3/2, a very dark grayish brown, but visually appeared to be a light brown. Level 2 was present in some grids and was a mixture of slightly more compacted soil which was lacking pine duff but contained fragments and bits of the sterile clay. It ranged in depth from 26 to 38 cm below the ground surface where present. No artifacts were recovered from this level. No charcoal flecks or pieces were found in any of the excavated grids at any level.

A close examination of the rocks left in place over

the site revealed that no wall alignments or patterns were present. Also, in several grids near the top of the ridge, individual boulders and rocks gave way to small blocks of basalt outcroppings, indicating the rock debris visible on the surface derived from this source. The small depression was completely opened up and was found not to be of prehistoric origin. It may have resulted from a tree removal during the original highway construction. No artifacts were recovered within it.

A possible single room, measuring 2-by-1.5 m and formed from basalt rocks, was noted 14 m west of the excavation area outside of the proposed right-of-way. Again, this could be a natural piling of basalt rocks and not a cultural feature. However, because there were a few artifacts present in the area, a fieldhouse could have once existed here and, therefore, we have retained a site designation (LA 9721) for this locale. Site limits, as defined by the spread of artifacts and the possible fieldhouse, are 44 m from north to south and 24 to 32 m wide from west to east with a site area of 988 sq m. Within the right-of-way, a total of 106 sq m was examined and excavated to a mean depth of 10.37 cm with 9.54 cu m of soil removed.

CULTURAL UNITS

No cultural features were present within the project right-of-way. A possible one-room fieldhouse exists outside of project limits.

ARTIFACTS

The 27 artifacts were collected by grid provenience and level; 19 were recovered from the site surface and 8 below. Artifacts did not cluster anywhere on the site; two were the most recovered from any single grid. Forty percent were found on the lower slopes of the ridge.

Twenty-six of the artifacts are lithic artifacts and one is a sherd. Table 2.24 presents a frequency of lithic artifact classifications by material type. Because the total is minimal and site affiliation is questionable, these artifacts will be excluded from any further analyses and comparisons with other sites in the project. A variety of lithic material types are present on the site, all commonly found in the surrounding area, except for obsidian. There is also variety in the type of artifacts recovered including flakes, a projectile point, angular debris, and debitage. The obsidian projectile point (Fig. 2.79) is small but thick for its size. It measures 22 mm in length by 12 mm wide by 5 mm thick. Breakage along its base and one tang prevents its classification into a particular type, although its smallness seems to preclude it being an Archaic period point.

Table 2.24. Summary of Lithic Artifacts, LA 9721(AR-03-06-06-00824)

CELL: Count Row Percent Column Percent	ARTIFACT MORPHOLOGY				ROW TOTAL
	ANGULAR DEBRIS	CORE FLAKE	CORE	BIFACE	
Chert		1 100.0% 4.8%			1 100.0% 3.8%
Chalcedony		2 100.0% 9.5%			2 100.0% 7.7%
Luna Blue Agate	1 25.0% 50.0%	3 75.0% 14.3%			4 100.0% 15.4%
Obsidian				1 100.0% 100.0%	1 100.0% 3.8%
Rhyolite	1 5.6% 50.0%	15 83.3% 71.4%	2 11.1% 100.0%		18 100.0% 69.2%
Column Total	2 7.7% 100.0%	21 80.8% 100.0%	2 7.7% 100.0%	1 3.8% 100.0%	26 100.0% 100.0%

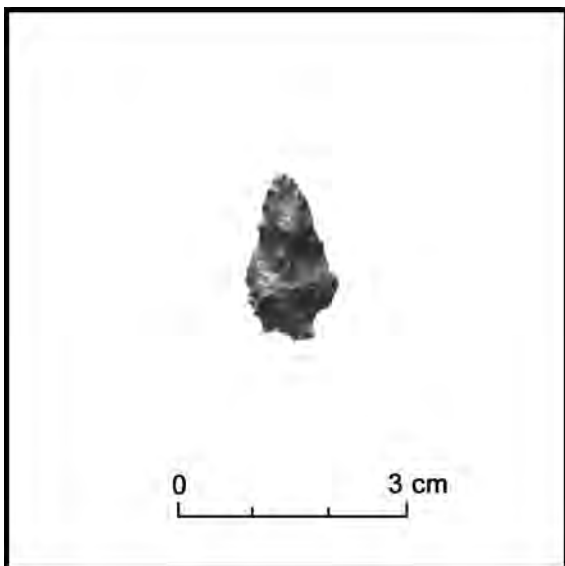


Figure 2.79. Obsidian projectile point from LA 9721.

This assemblage variability and its small size could suggest temporary occupation of the area by a very small group of people. However, there was no charcoal present on the site and no subsurface indications of any ground disturbance or rearranging of rocks for perhaps a hearth. There is still the possibility that the rectangular cobble

outline outside of the right-of-way may actually be a fieldhouse and these artifacts derived from sporadic use of the structure. Another possibility is that the site is in an area surrounded by numerous other sites and the few artifacts may represent transient use of the ridge by nearby local residents.

The single sherd is an Alma Rough Brown Ware, which is broadly dated between approximately A.D. 250 and A.D. 1300. No conclusions about period of site occupation or function can be drawn from this artifact.

SITE INTERPRETATION

To summarize the results of the data recovery program at Twin Pines Pueblo, we conclude that no cultural features or occupation period could be identified for the portion of the site lying within the proposed right-of-way. Basalt rocks and boulders were strewn over the site and surface stripping of this area revealed no wall alignments. Excavation of the cultural fill also determined that no features were present. A minimal number of artifacts were recovered from the excavation; however, no associated site use was evident. A possible cobble-outlined room exists outside of the highway right-of-way and its use may have created the scant artifact scatter.

LA 37917 (AR-03-06-06-00825)
ROCKY HILL

Yvonne R. Oakes

Rocky Hill was first recorded by the NMSHTD (Koczan 1982) during an initial survey of highway right-of-way along U.S. 180. The site was subsequently rerecorded and mapped by Oakes (1989). It was identified as a heavy scatter of unknown affiliation with almost 1,000 lithic artifacts extending along a ridge on both sides of U.S. 180. Numerous flakes of chert, chalcedony, and Luna blue agate were visible on the site surface. Tertiary and secondary flakes of obsidian were also present. Koczan (1982) notes that all stages of lithic reduction seemed to occur on the site.

Before excavation, the site was tested (Oakes 1990) to evaluate the depth and extent of cultural material within the proposed right-of-way including an additional 12 m of TCP (temporary construction permit area) along the north side of the highway. Eight test pits were hand-excavated on the site and as a result, it was determined that the lithics were to be found both on and below the site surface. In addition, the presence of charcoal-flecked soil in several of the test pits suggested that the site had cultural integrity. The recovery of four probably Middle to Late Archaic period projectile points and lack of ceramic artifacts indicated that the site might be of the Archaic period, dating possibly between 4500 B.C. and A.D. 200.

Subsequent excavations uncovered several more Archaic points but the C-14 dates obtained suggest a range of dates from the late 1400s to the early 1800s for the site, possibly representative of repeated Athabaskan occupations. Several concentrations of lithic artifacts were isolated, some in association with small pits containing burned dirt. Only one sherd was found, on the southern edge of the site and on the surface. It is likely not related to the extensive lithic scatter.

Site size based on visible surface artifacts was originally estimated at 9,300 sq m (Oakes 1989). After the testing program, it was reduced to 5,880 sq m (Oakes 1990). Site size was adjusted upward after excavation to produce a boundary of 112 m (north-south) by 76 m (east-west) with a site area of 6,810 sq m (Fig. 2.80).

Nearby sites include LA 70188 (AR-03-06-06-00830) and LA 78439 (AR-03-06-06-00835) on adjacent ridges to the west. These are also lithic artifact scatters with components dating to both the Archaic and the pro-

tohistoric periods. Downslope, along U.S. 180 to the east, are LA 37919 (AR-03-06-06-00826) and LA 70189. The first is another lithic artifact site of probable Athabaskan affiliation and the other is a small Reserve phase roomblock with a later Athabaskan occupation.

SITE SETTING

Rocky Hill is situated on a south-west facing ridge within the Gila National Forest (Fig. 2.81) and overlooks the Pine Lawn Valley in the distance. The ridge is directly adjacent to the southern base of the San Francisco Mountains. Dry Leggett Canyon runs .4 km to the southwest as an intermittent stream, but can produce substantial flows during rainy periods. Elevation of the site is 2,036 m (6,680 ft). The ridge is densely populated with low oak, piñon, yellow pine, some alligator juniper, juniper, and scattered prickly pear. However, there are small open areas between clusters of trees or shrubs.

The ground surface is covered with heavy duff and small rocks. Site surface is gently sloping to the east with steeper elevation changes outside of the site boundaries. Wild game, including deer, bear, elk, mountain lion, coyote, and javelina are common in the surrounding forest. Small oak and pinyon trees are concentrated in this area and their products would have been available prehistorically as a source of potential food. The topographic setting of the site is not conducive to agricultural pursuits.

RESEARCH OBJECTIVES

Research goals set forth in the data recovery plan (Oakes 1990) were based on the premise that Rocky Hill was a Middle to Late Archaic campsite because of the recovery, during testing, of four Archaic projectile points with no associated pottery. The site was to be examined in terms of biface manufacture and maintenance by Archaic populations. Subsistence strategies were to be addressed through an analysis of stone tools. The potential recovery of subsistence items, such as floral and faunal remains, from the small pits found during testing were to provide important information on resource use, seasonality of acquisition, and whether or not long-range storage or caching was involved.

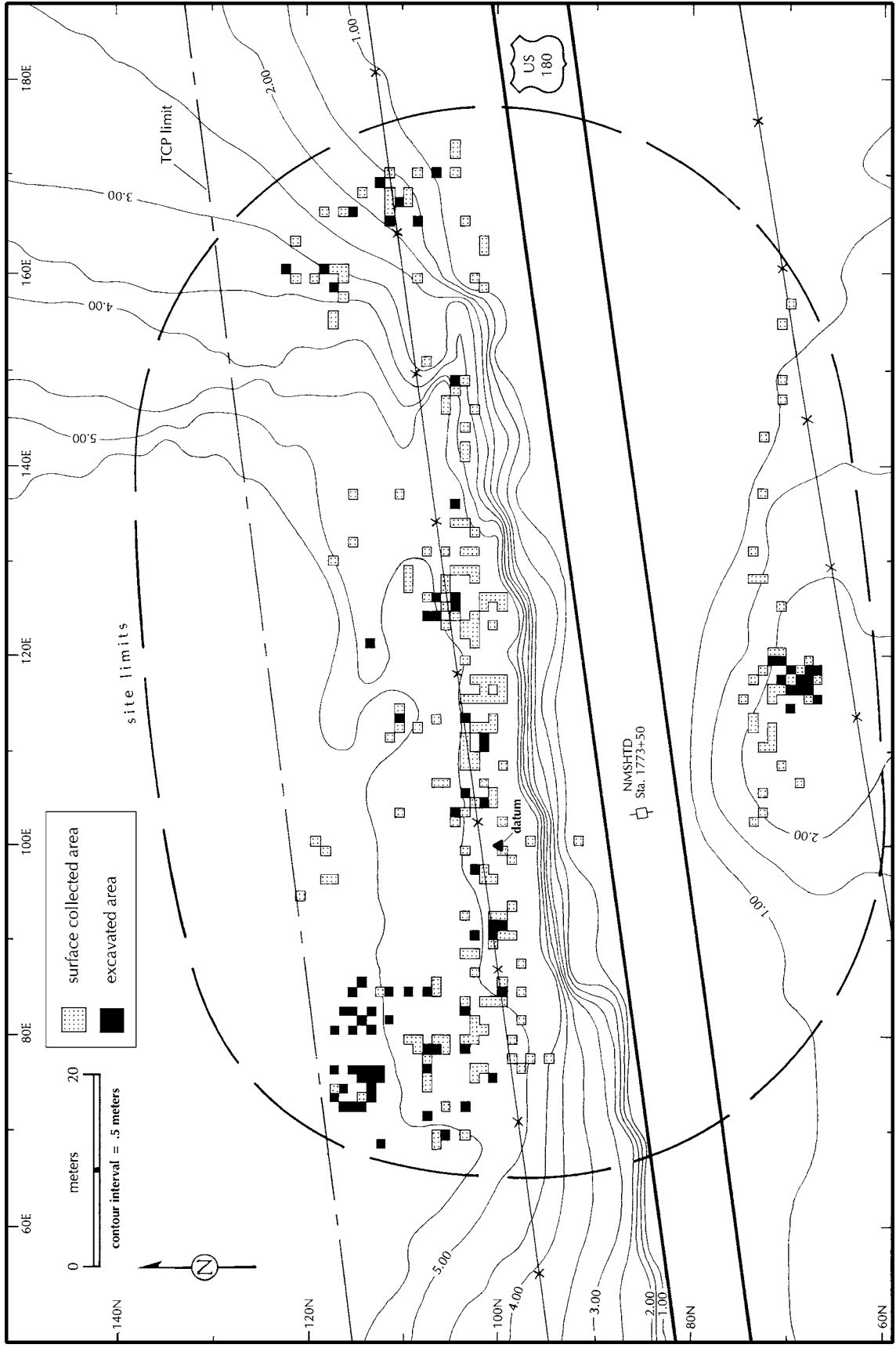


Figure 2.80. IA 37917, plan view of Rocky Hill.



Figure 2.81. Rocky Hill environs. Note large numbers of rocks on the ground, facing northwest.

As it turns out, the site proved to have an Athabaskan occupation based on the three radiocarbon dates obtained. Early Athabaskan peoples, prior to employing the horse to enhance mobility, were extremely similar in their subsistence strategies to Archaic populations, with both moving frequently over the landscape and relying heavily on hunting, foraging, and collecting for sustenance needs. Therefore, the data recovery plan for LA 37927 is as appropriate for studying Athabaskan adaptations as it is Archaic. Even less is known about early Athabaskan settlement patterns and resource utilization in the Mogollon Highlands. Thus, we addressed the same research questions as stated above with Athabaskan adaptations in mind.

EXCAVATION PROCEDURES

Surface artifacts were scattered along the gently sloping ridge for a distance of 112 m on the north side of U.S. 180. A small portion of the site is also on the south side of the highway. Approximately 30 percent of the site contains fairly heavy underbrush and the remaining open areas frequently are covered with heavy pine duff. However, concentrations of lithic artifacts were visible across the site. A testing program was implemented to determine the depth and extent of cultural materials

(Oakes 1990).

Eight 1-by-1-m test pits were placed at various locations on the site in areas of artifact concentrations, and one (Grid 104N/105E) was placed within a small depression. They extended from 20 to 40 cm (average of 31.1 cm) below the present ground surface. Auger tests were also conducted at the bottom of each test pit to confirm the presence of culturally sterile soil, which is a very dense, plastic, reddish brown to dark brown clay (Munsell color 7.5YR 3/2 to 10YR 5/3). The fill above this sterile substrate is a hard-packed sandy loam with gravels and small cobbles often present.

Five of the test pits (1, 2, 6, 8, and 9) produced small amounts of charcoal in the upper 20 cm of fill. Two of the pits (6 and 8) had possible compacted surfaces at 27 and 16 cm respectively. Because of the limited nature of the testing it was not possible to determine if these were the bottoms of small pits, hearths, or former utilized extramural surfaces. The site was recommended for further archaeological investigation.

During the testing program, 51 lithic artifacts were collected from eight test pits and the site surface. Included in this count were four projectile points, two biface fragments, and a uniface. The points include one partial basalt corner-notched point of probable Archaic affiliation, one rhyolite San Pedro point, and two basalt

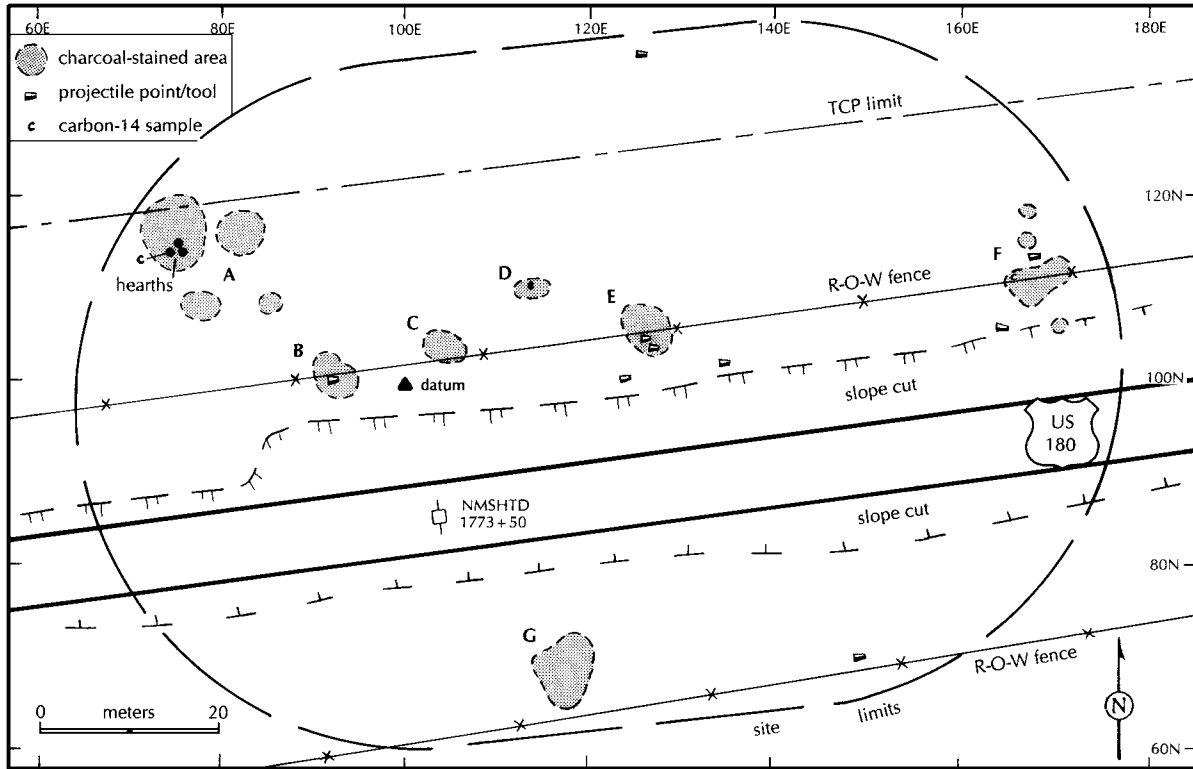


Figure 2.82. LA 37917, charcoal-stained areas, A-G.

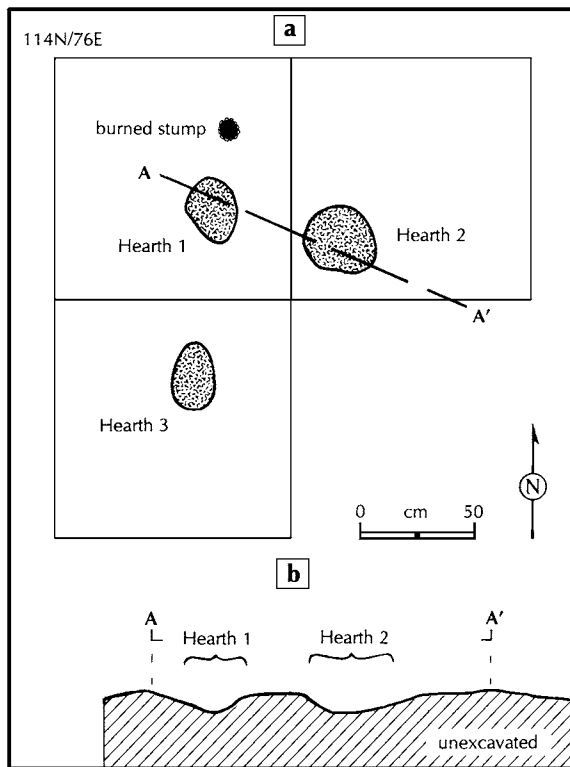


Figure 2.83. Charcoal-filled pits and hearths in Area A.

Augustin points. These four types are thought to have been made during the Middle to Late Archaic period from ca. 4500 B.C. to A.D. 200.

Excavation procedures at LA 37917 were conducted in 1990. First, using a transit and stadia rod stationed at a main datum (Grid 100N/100E), a series of 1-by-1-m grids aligned north-south were laid out over the site. During the course of fieldwork, two additional subdatums were also established. Then, all surface artifacts were pinflagged. Selection of areas for further investigation was based on an evaluation of the testing program and the clustering of the remaining surface artifacts. Those units which produced charcoal flecking, possible pits, and higher numbers of artifacts were expanded through hand-excavation.

Testing previously determined that the soil became culturally sterile after the very plastic, reddish brown clay was reached. This level was easy to follow over the entire site. Soil matrix above the sterile reddish brown clay was consistently a sandy loam grading to a dark brown clay. All cultural fill was removed with hand tools to the depth of this substrate. No definite stratigraphic breaks were observed. Where fill was over 10 cm in depth, arbitrary levels 1 (0-10 cm) and 2 (10+ cm) were used to separate cultural materials. All fill was screened through ¼-inch mesh.

As a result of testing and excavation procedures

within the right-of-way and TCP areas, 275 sq m (81 grid squares excavated and 194 collected) were examined with excavations reaching a mean depth of 22.8 cm; 18.5 cu m of soil were removed from the site.

CULTURAL UNITS

Seven discrete areas of subsurface charcoal-flecked soil were isolated through the excavations at Rocky Hill (Fig. 2.82). From three of these (Areas A, D, and F) radiocarbon samples were obtained for dating the site. These charcoal areas seem to represent cultural features such as former hearths or locales for expediently built fires because of the definite association of artifacts with them.

Area A consisted of four tightly grouped charcoal-stained areas. The largest contained three closely associated, charcoal-filled hearths (Fig. 2.83). All are small depressions, irregular in shape, and all produced charcoal. A radiocarbon and a macrobotanical sample were taken from Hearth 1. Another macrobotanical sample was obtained from Hearth 3. Dimensions of the three hearths are:

- Hearth 1: 26 by 20 by 7 cm
- Hearth 2: 30 by 31 by 6 cm
- Hearth 3: 28 by 16 by 7 cm

Their small size and shallowness suggest a single use in each case. No artifacts were found within the hearths; however, they did cluster around them.

Area B had several grids with fist-sized rocks mixed with the charcoal flecking in the fill. Maximum depth of excavations in this area was 26 cm but no hearth or pit was found. Artifacts in Area B were concentrated near the grids containing charcoal.

Area C was another locus of charcoal-flecked soil containing small, unburned rocks. Stained soil in this area extended to 41 cm below the surface, one of the deepest areas on the site. Artifacts were recovered from throughout the fill. No compacted surfaces, hearths, or pits could be found, however.

Area D is a small area that contained only three artifacts but charcoal-flecked soil was present to a depth of 40 cm where numerous unburned rocks were concentrated. No cultural features were evident. This is the only charcoal concentration that did not have higher frequencies of artifacts clustered around it. Because of the density of charcoal, however, a C-14 sample was taken and used to assist in dating the site.

Area F contained four closely clustered charcoal-stained areas. The largest had a fairly large charcoal stain surrounded by numerous artifacts. Several fist-sized rocks were present in the fill, which reached a depth of

38 cm. Artifacts were also found within this fill; however, no cultural surfaces were found. A C-14 sample was taken from this fill.

Area G was a large charcoal scatter located on the south edge of the site. Two test pits in this area uncovered a possible surface at 29 cm below the ground level that consisted of a very thin (2 cm) layer of sand at the bottom of the sparse charcoal-flecked fill and the beginning of a red clay level. Another sand lens was found 2 cm below the first one. These surfaces disappeared when attempts to trace them were made. Within the fill, few artifacts and a small number of rocks were encountered. However, the four faunal fragments recovered from the site were from the fill of Area G. All were burned. A bone awl was also found here. While no cultural features were identified, this area most likely once contained a hearth or roasting pit because of the possible surfaces and the presence of burned faunal remains and charcoal.

ARTIFACTS

A total of 671 artifacts were recovered from Rocky Hill. Most (99.1 percent) are lithic artifacts with an additional four faunal fragments, one bone awl, and a single sherd.

Ceramics

The single sherd is an Alma Plain Ware and indicates a Mogollon association from A.D. 250 to 1300. Because it was the only ceramic found, and it was located on the edge of the site, it is considered intrusive and not relevant to the main site occupation.

Lithic Artifacts

The lithic artifacts as sorted by morphological type and material are listed in Table 2.25. Luna blue agate and chert are available within site boundaries and account for 55.2 percent of the material types. The high number of core flakes from these two materials implies that quarrying was a primary activity on the site.

Of the eleven bifaces recovered, seven are projectile points (Table 2.26). Five of the seven, plus a bifacial tool, have an association with charcoal-stained areas (see Fig. 2.82). Another five of the seven points (71.4 percent) could be considered to date from the Middle to Late Archaic periods. Two basalt points are Augustin points, which usually have a Middle Archaic date range from about 3500 B.C. to 1500 B.C. Three other points are similar to San Pedro types, which date to the Late Archaic period generally between 1500 B.C. and A.D. 250. One point is too fragmentary and cannot be classified. Another small, crudely made, unnotched obsidian point

Table 2.25. Summary of Lithic Artifacts, LA 37917

Cells: Count Row Percent Column Percent	Artifact Morphology							Row Total
	Angular Debris	Core Flake	Biface Flake	Tested Cobble	Core	Uniface	Biface	
Chert	40 24.0% 31.0%	117 70.1% 23.8%	2 1.2% 11.1%	2 1.2% 11.1%	2 1.2% 11.1%		4 2.4% 36.4%	167 100.0% 25.1%
Chalcedony	3 37.5% 2.3%	5 62.5% 1.0%						8 100.0% 1.2%
Luna Blue Agate	62 31.0% 48.1%	131 65.5% 26.7%		2 1.0% 59.0%	5 2.5% 50.0%			200 100.0% 30.1%
Obsidian	5 5.3% 3.9%	74 77.9% 15.1%	14 14.7% 77.8%				2 2.1% 18.2%	95 100.0% 14.3%
Igneous	2 25.0% 1.6%	5 62.5% 1.0%				1 12.5% 50.0%		8 100.0% 1.2%
Basalt	3 5.4% 2.3%	48 85.7% 9.8%				1 1.8% 50.0%	4 7.1% 36.4%	56 100.0% 8.4%
Rhyolite	14 12.3% 10.9%	96 84.2% 19.6%	2 1.8% 11.1%		1 .9% 10.0%		1 .9% 9.1%	114 100.0% 17.1%
Metamorphic		5 71.4% 1.0%			2 28.6% 20.0%			7 100.0% 1.1%
Quartzite		6 100.0% 1.2%						6 100.0% .9%
Quartzitic sandstone		4 100.0% .8%						4 100.0% .6%
Column Total	129 19.4% 100.0%	491 73.8% 100.0%	18 2.7% 100.0%	4 .6% 100.0%	10 1.5% 100.0%	2 3% 100.0%	11 1.7% 100.0%	665 100.0% 100.0%

Table 2.26. Projectile Points, LA 37917

Cells: Count Row Percent Column Percent	Material Type				Row Total
	Chert	Obsidian	Basalt	Rhyolite	
Unidentified projectile point	1 50.0% 50.0%	1 50.0% 100.0%			2 100.0% 28.6%
Medium lateral notched	1 33.3% 50.0%		1 33.3% 33.3%	1 33.3% 100.0%	3 100.0% 42.8%
Augustin point			2 10.0% 66.7%		2 100.0% 28.6%
Column Total	2 28.6% 100.0%	1 14.3% 100.0%	3 42.9% 100.0%	1 14.3% 100.0%	7 100.0% 100.0%

is clearly not an Archaic point and we speculate that it may be associated with the Athabaskan occupation of the site. An almost identical, but broken, obsidian point was seen on the initial survey of the site (Koczan 1982) but was not relocated during excavations. Curation of Archaic projectile points by Athabaskan peoples may be a pattern of Athabaskan lithic utilization within the

Mogollon Highlands, as this seems to have occurred on other excavated sites on this project, such as the Old Peralta site, LA 43766.

Bone Tools

A single bone awl was found in Area G associated with

a concentration of artifacts and charcoal-stained soil.

ANCILLARY STUDIES

Faunal Remains

Four faunal fragments were recovered from the southern portion of the site. These consist of mid-to-large-sized mammal bones, one of which can be identified as deer. All were located in the fill within the single charcoal-stained area south of the highway. All were burned. Hunting of these larger mammals by site occupants is implied.

Macrobotanical Remains

Two flotation samples were examined from Rocky Hill. Only uncharred plant remains were recovered from Hearths 1 and 3 of Area A, including poverty weed and portulaca seeds, juniper leaves, and pine needles. These are most likely modern contaminants. Wood charcoal identified from LA 37917 was predominantly juniper with small amounts of piñon and undetermined conifer. These taxa would have been locally available.

DATING METHODS

Three radiocarbon dates were obtained for Rocky Hill (Table 2.27). All three C-14 dates strongly indicate an Athabaskan presence at three discrete localities on the site. Also, five pieces of obsidian from the site were submitted to the Obsidian Hydration Laboratory at UCLA for dating. Four of the five pieces produced dates ranging between 13,694 B.C. and 2392 B.C. Only one date, at A.D. 1372, comes fairly close to matching the radiocarbon dates obtained.

To summarize these radiocarbon data, Area A has a strong 2-sigma calibrated date between A.D. 1640 and 1950. The intercept dates range from 1700 to 1920. The conventional date of 1830 ± 100 seems to fall in the middle of this range. Area D has a 2-sigma calibrated range

of A.D. 1400 to 1950 with intercept dates between 1530 and 1630. Area F has a strong 2-sigma calibrated range of A.D. 1400 to 1530 with an intercept date of 1440. While the problem of using old wood in these burned areas may exist, creating the reading of earlier dates, the resultant later time frames would still likely indicate an Athabaskan occupation. However, given the above dates, there seems to be multiple Athabaskan occupations with statistical manipulation finding no significant overlap between the three dates at the 95 percent confidence level. Area D does statistically overlap slightly with each of the other two dates, but because of its spatial separation from the other areas, it likely represents a separate occupation.

While most of the lithic material on the site is non-diagnostic, five of the seven projectile points suggest an Archaic presence on the site or curation of Archaic points by Athabaskans. These points are scattered over the ridge and range in time from Middle to Late Archaic. They vary quite a bit stylistically and include Augustin, San Pedro, and a large, corner-notched type.

SITE INTERPRETATION

Rocky Hill would seem to have a history of repeated use during both the Athabaskan and Archaic periods. The specific environmental attributes of the site may have attracted populations from both periods even though the ridge and the surrounding area are densely covered with shrubs and brush, open patches are few, the ground is covered with rocks, and agriculture is not a viable pursuit. However, the presence of abundant wild game and the availability of piñon nuts and acorns from the vicinity would be most attractive to both Athabaskan and Archaic hunters and gathers.

Occupation during either period was apparently of short duration. The three hearths in Area A are very small, single-use facilities, and the combination of erosion and repeated use of the ridge seems to have blurred the visibility of any remaining hearths or roasting pits that likely were present. Artifacts cluster into discrete

Table 2.27. C-14 Dates for LA 37917

Unit	Beta No.	Age B.P.	Calibrated 1 Sigma Date	Calibrated 2 Sigma Date	Intercept Date	Context
114N/76E	57449	120±100	A.D. 1670-1950	A.D. 1530-1550 1640-1950	A.D. 1700, 1720, 1820, 1850, 1860, 1920	Area A
111N/113E	57450	330±130	A.D. 1440-1670 1780-1790 1950-1950	A.D. 1400-1950	A.D. 1530, 1560 1630	Area D
112N/164E	64061	460±70	A.D. 1420-1480	A.D. 1400-1530 1550-1640	A.D. 1440	Area F

areas around these potential hearth areas.

While there are a variety of Archaic projectile points on the site, there were no C-14 dates to match an Archaic occupation. Because both populations primarily used ground surfaces only, the later Athabaskan use of the ridge may have obliterated all trace of any earlier Archaic occupation. Or it may be that Archaic peoples used the area very minimally, for hunting or expedient gathering, and left only a few projectile points. Therefore, while Athabaskan groups seem to have definitely had short-term campsites on the ridge, we cannot be as positive about Archaic peoples utilizing the area.

The recovery of three radiocarbon dates placing the site occupation into the Athabaskan period sporadically from about A.D. 1490 to 1830 is extremely important. Rocky Hill is only one of a very few sites in the Mogollon Highlands that have been identified as

Athabaskan. While 13 percent of the lithic artifacts show burning, these artifacts do not cluster into particular areas or into the charcoal localities on the site. The presence of burned and unburned materials together in the same depositional levels argues for purposeful heat-treating of those 81 artifacts by site occupants.

In summary, we conclude that Rocky Hill, as an attractive resource location for hunter-gatherer groups, was occupied repeatedly during the protohistoric period by Athabaskan populations— never for very long periods or by very many people. The area was probably used as a short-term campsite with activities definitely including hunting, quarrying of Luna blue agate and cherts, and very likely subsistence gathering of acorns and piñon nuts. The hunting and gathering resources suggest that there probably was a fall seasonal pattern to these occupations.

LA 37919 (AR-03-06-06-00826)
APACHE WOODS

Yvonne R. Oakes

Apache Woods was initially recorded by the NMSHTD (Koczan 1982) as a potential cobble mound and lithic artifact scatter occupying opposite sides of U.S. 180. The OAS conducted a testing program to determine the depth of the lithic materials and the extent of the cobble mound which was thought to represent a small Pueblo roomblock. Test pits were dug on the site and auger tests were placed within the major lithic artifact concentrations. Five of the test pits were situated within the potential cobble mound.

After testing was completed, it was evident that the cobbles had mounded as a result of roadbed clearing for the original highway. However, lithic artifacts were present on both sides of the highway to an approximate depth of 15 cm. One San Jose-like projectile point (short-barbed type) dating from the Middle to Late Archaic period (Irwin-Williams 1973) was recovered from the site surface. A few Alma Brown Ware sherds were also within the right-of-way.

Excavations by OAS isolated several areas of lithic concentrations, a possible hearth, and an area of charcoal-flecked soil (Fig. 2.84). Again, only a few Alma series sherds were recovered. No structural features were encountered. Two C-14 samples produced a date in the 1400s for the site, placing it into a likely Athabaskan period occupation, considering the almost exclusive presence of lithic artifacts. Site size is 115 m northwest-southeast by 70 m northeast-southwest and 8,050 sq m in area. About 65 percent of the site lies within the highway right-of-way.

Apache Woods sits diagonally across the road from LA 70189, Lightning Strike. This is a five or six-room pueblo of the Reserve phase located just outside of the right-of-way to the southwest. Numerous sherds lie within the highway corridor; however, the site does not seem to be associated with the lithic artifact scatter at Apache Woods. An Athabaskan-dated roasting pit was identified at Lightning Strike (see site description) and this may be part of the larger Apache occupation of the area.

Two other Athabaskan sites are located nearby, but at a higher elevation in the foothills of the San Francisco Mountains at .6 km and 1.0 km distance to the northwest. LA 37917 and LA 70188 both have Athabaskan components and are in a similar environmental setting, although

situated on sloping ridges rather than on flat terrain as is Apache Woods.

SITE SETTING

Apache Woods sits on level ground directly at the base of the mountain foothills of Prairie Point Peak at an elevation of 1,987.2 m (6,520 ft). The site is covered with yellow pine, pinyon, juniper, and scrub oak in fairly dense stands which are, however, interspersed with open areas (Fig. 2.85). Dry Leggett Canyon runs .6 km to the southwest of the site. It is intermittent, but can produce heavy flows during wet periods.

The ground surface is covered with heavy duff under trees and in bushy areas. Open areas are not covered and a modern car pull-out on the site is also open, although the surface there has been heavily compacted.

Wild game is plentiful in the area and resources such as piñon nuts and acorns are readily available. Agriculture could be pursued by site occupants if forest clearing was first implemented.

RESEARCH OBJECTIVES

Based on the almost exclusive presence of lithic artifacts, including a possible San Jose type projectile point, the site was expected to be a Late Archaic campsite with several hearths or pits. Comparison with several other Archaic sites on the project was anticipated to yield data on changing or differing mobility patterns of Archaic peoples through analyses of the various chipped stone assemblages. Kelly's (1988) biface reduction model was to be implemented. Tool use was to be examined for evidence of a variety of subsistence strategies. Floral and faunal remains should be recovered from the hearths or pits on the site providing important data on types of subsistence items utilized, seasonality of acquisition, and whether or not storage or long-range planning was evident.

Excavations have indicated that Apache Woods is an Athabaskan rather than Archaic occupation.

The C-14 dates suggest an early Athabaskan date in the 1400s for the site. Other lithic artifact sites in the surrounding area have also proven to have Athabaskan

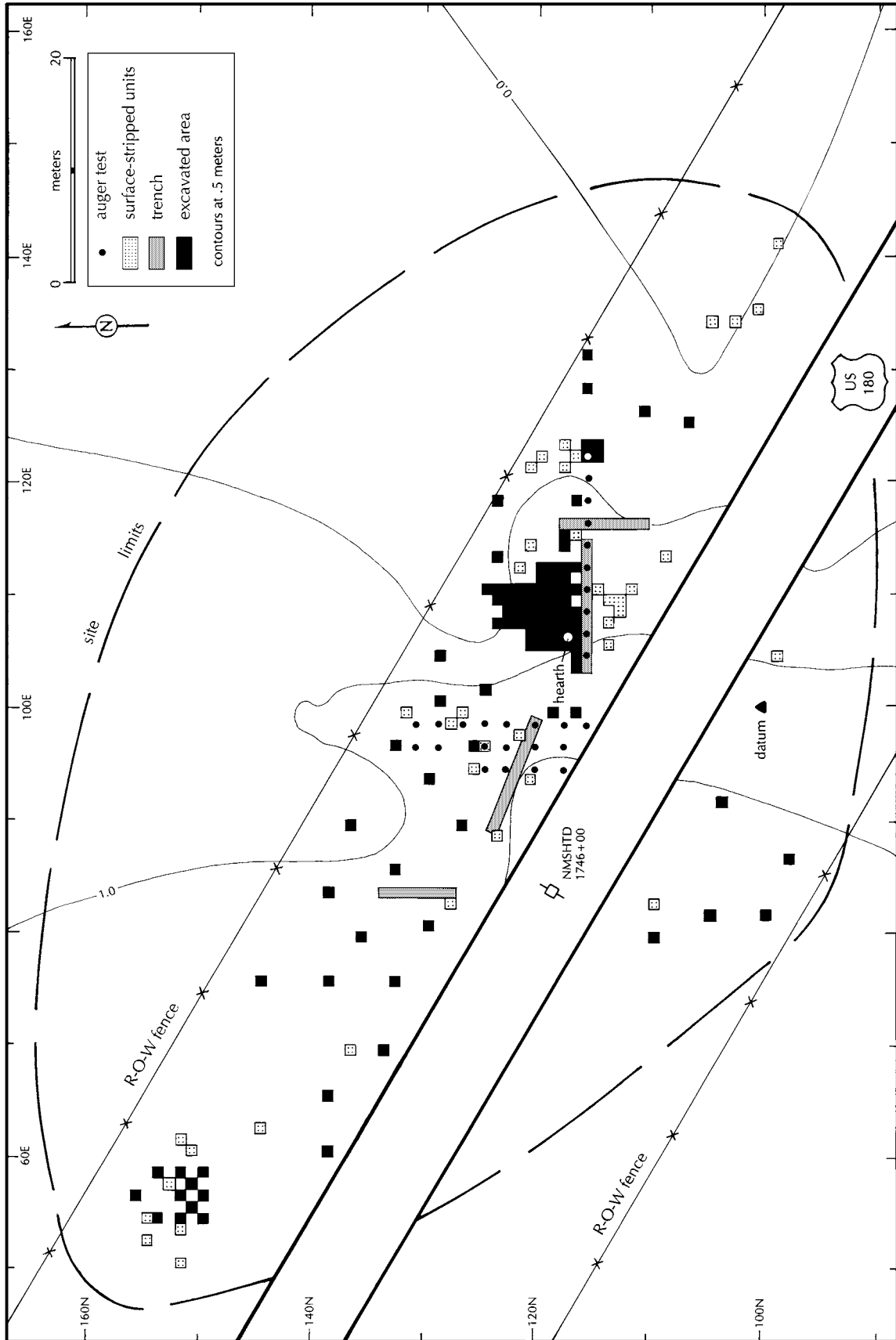


Figure 2.84. LA 37919, Apache Woods.



Figure 2.85. Apache Woods, within an open clearing, facing northeast.

components. This later date does not, however, negate the original research objectives. As stated for LA 37917 (Rocky Hill), Athabaskan and Archaic peoples had surprisingly similar subsistence adaptations, making the data recovery plan appropriate for either group.

EXCAVATION PROCEDURES

Ten 1-by-1-m test pits were placed over the site during the testing program, five on each side of U.S. 180 in areas of artifact concentrations and the potential cobble mound. Type of soil matrix, depth of cultural fill, and presence or absence of charcoal were noted. The average depth of the tests was 27 cm before reaching sterile soil. In addition, 31 auger tests were placed systematically within the highest density artifact scatters. A total of 74 artifacts were recovered from the test pits (70 lithic artifacts and 4 Alma Brown Wares). As a result of the testing program, several areas of lithic concentrations were identified and a possible hearth or pit was isolated at 10 cm in depth.

For the excavation of the site, datum was set at 100N/100E, using the same north-south and east-west baselines that were established during testing with a transit and stadia rod. Excavations began with 1-by-1-m grid units placed in the open areas between vegetative stands where artifacts were most visible. They were also con-

centrated in the area of charcoal staining observed during testing. Soil was excavated in natural levels until a non-cultural, sterile clay substrate was reached, usually a 5YR 4/4 (reddish brown) on the Munsell color chart. All dirt was screened through ¼-inch mesh.

The upper 30 cm of soil was consistently a dark brown loam (7.5YR 3/2) with some rock and much root disturbance, which frequently created a mottled effect. All cultural material was found in this level. Soil, after this level, gradually changed to a compact reddish clay, which was culturally sterile. Four subsequent backhoe trenches were dug at the completion of the hand-dug excavations to insure that no cultural features were present, and revealed this same pattern of soil deposition. No subsurface features were found.

The testing and excavation programs within the highway right-of-way excavated 100 grids and surface collected 41 more. A total of 14.7 cu m of dirt was removed through hand-digging and another 17.9 cu m through mechanical removal for a site total of 32.6 cu m. Mean depth of excavation units was 13.8 cm.

CULTURAL UNITS

Excavations uncovered no structural features at Apache Woods, with the exception of a single hearth area. Subsurface charcoal flecking was sparse and occurred

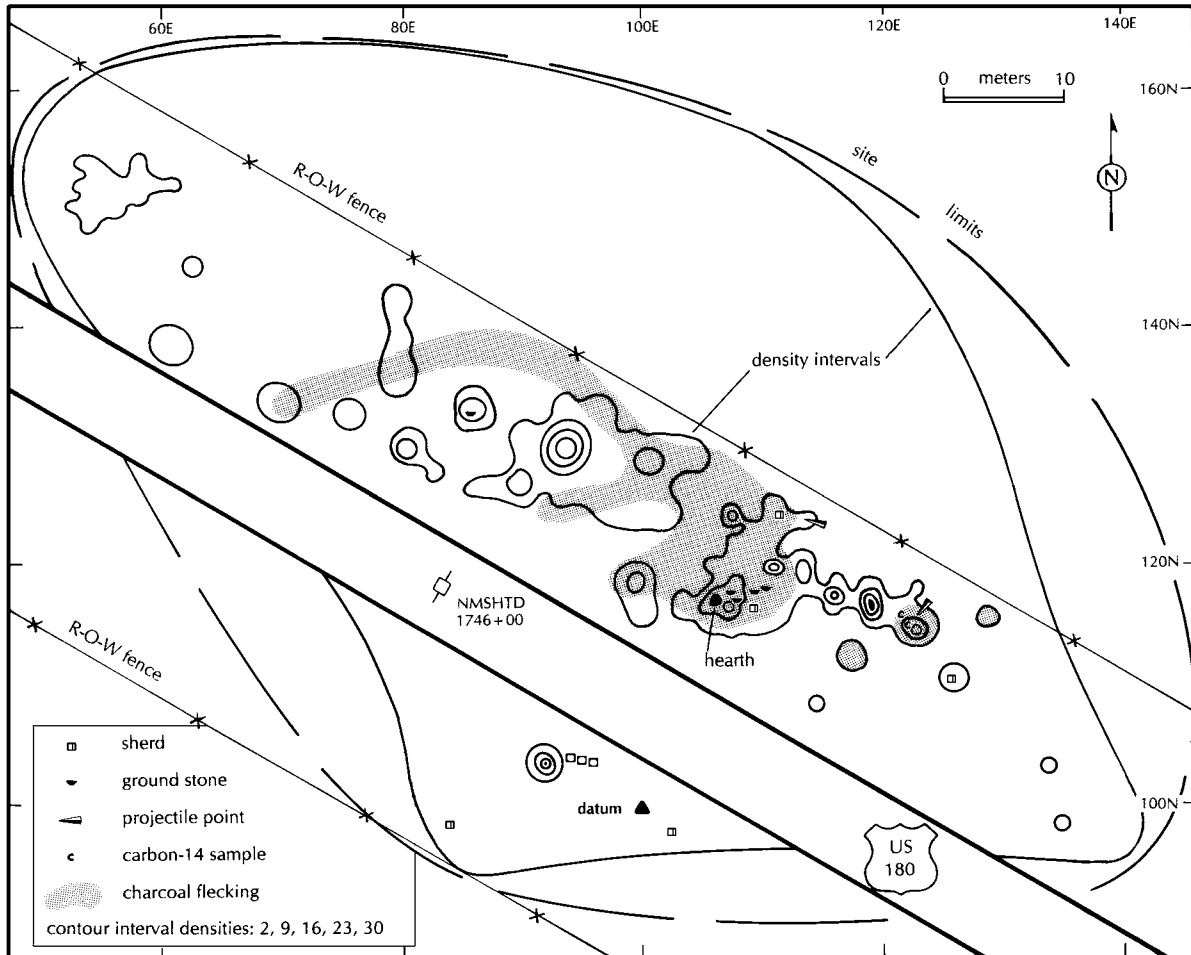


Figure 2.86. Artifact densities, LA 37919.

mostly at the southeastern end of the site. Two radiocarbon samples were obtained from this area (Fig. 2.86). A trace of charcoal tracks to the west from this charcoal concentration. The two C-14 samples were retrieved from the deepest part of the site, where excavations reached up to 55 cm below ground surface. However, no hearths or pits could be discerned in this area.

A possible hearth area was first identified during the testing program. It was located in a pull-out zone near the southeast end of the site (Fig. 2.86). The ground surface had been heavily compacted in this area and darkened soil and charcoal flecking occurred at only 6 cm below the surface. During excavations, no definitive hearth edging was found, as charcoal staining blurred into the surrounding soil. The stain measured approximately 28 by 23 cm. It had 4 cm of depth remaining and originally may have had more. Charcoal was not present in sufficient amounts to retrieve a radiocarbon sample.

Most artifacts were recovered from this southeastern area near the possible hearth and charcoal flecking. This suggests that site activities were focused in this section

but left little physical evidence other than scattered lithic artifacts. Small clusters of artifacts do occur in other areas of the site, but are not associated with charcoal staining or cultural features. Better preserved portions of the site may lie outside of the highway right-of-way to the north.

ARTIFACTS

A total of 711 artifacts were recovered from testing and excavations at Apache Woods. These include 698 lithic artifacts, 8 sherds, and 5 pieces of ground stone.

Ceramics

All eight sherds collected from Apache Woods were Alma Brown Wares: five were plain and three were rough. These sherds have very broad temporal spans ranging between A.D. 200 and A.D. 1350 and as such are poor cultural markers. All but one were recovered from surface and topsoil contexts on the southeast edge of the

Table 2.28. Lithic Artifacts from Apache Woods, LA 37919

Cells: Count Row Percent Column Percent	ARTIFACT MORPHOLOGY								ROW TOTAL
	Angular Debris	Core Flake	Biface Flake	Bipolar Flake	Tested Cobble	Core	Uniface	Biface	
Chert	45 12.4 40.2	301 83.1 54.7	12 3.3 46.2			2 .6 66.7		2 .6 50.0	362 100.0 51.9
Chalcedony	2 66.7 1.8	1 33.3 .2							3 100.0 .4
Luna blue agate	45 41.7 40.2	61 56.5 11.1		1 .9 100.0	1 .9 100.0				108 100.0 15.5
Obsidian	5 10.2 4.5	37 75.5 6.7	6 12.2 23.1					1 2.0 25.0	49 100.0 7.0
Igneous		2 100.0 .4							2 100.0 .3
Basalt	4 4.8 3.6	74 89.2 13.5	3 3.6 11.5			1 1.2 100.0	1 1.2 100.0		83 100.0 11.9
Rhyolite	10 13.7 8.9	57 78.1 10.4	5 6.8 19.2					1 1.4 25.0	73 100.0 10.5
Quartzite	1 7.1 .9	13 92.9 2.4							14 100.0 2.0
Quartzitic sandstone		4 100.0 .7							4 100.0 .6
Total	112 16.0 100.0	550 78.8 100.0	26 3.7 100.0	1 .1 100.0	1 .1 100.0	3 .4 100.0	1 .1 100.0	4 .6 100.0	698 100.0 100.0

site. One sherd was found at 20-30 cm below the surface across the highway from the main body of the site in a deeper area of fill (Grid 104N/91E). This fill may be redeposited material from original highway construction activities similar to the potential cobble mound in this area. Or, because a Reserve phase roomblock (LA 70189) is only 0.1 km to the northwest, all of the sherds may easily have derived from this source.

Lithic Artifacts

The lithic artifacts comprise 98.1 percent of the total artifact assemblage (Table 2.28). Most material is locally available chert with Luna blue agate, basalt, and rhyolite also present. Core flakes are highly represented (78.8 percent) with much less angular debris (16.0 percent), suggesting that quarrying activities were carried out in fairly close proximity to the site.

One unidentifiable projectile point of chert was recovered from the site surface. Only the upper portion

remains. One other chert point was collected but subsequently misplaced. It was classified as a San Jose type (short-barbed) point dating from the Middle to Late Archaic period (Irwin-Williams 1973). Upon reexamination of the point in light of the Athabaskan period dates, it was apparent that it also could have been classified as either a Western Apache (Wills 1988:19) or a Chiricahua point dating from the Middle to Late Archaic. Because the point is not available for photo documentation, its cultural derivation remains in question.

Ground Stone

Five pieces of ground stone were retrieved—two slab metate fragments and three pieces with an indeterminate function. The two slab metate fragments may be from the same artifact; both were found in the same grid (117N/106E). Two of the remaining three indeterminate pieces were from nearby grids. This area is immediately adjacent to the potential hearth and charcoal flecking,

strengthening the argument that this is an activity area. One piece of indeterminate ground stone was recovered in the middle of the site in Grid 130N/93E, away from artifact and charcoal concentrations.

ANCILLARY STUDIES

Macrobotanical Remains

One flotation sample from a test pit yielded charred poppy family seeds and one unidentified charred seed. At least one member of the poppy family has documented medicinal uses: to remove warts, reduce swelling and pain of sunburn, or as an antispasmodic (Moore 1989:93). However, such a small number of seeds could be present as a result of accidental charring, unassociated with any cultural use of the plants. Ponderosa pine and piñon were identified during the wood analysis. These woods would have been available locally for use as fuelwood by site occupants.

Pollen Remains

A pollen wash from a slab metate fragment found in Grid 117N/106E produced grains of pine, grass, and sunflower pollen.

DATING METHODS

The few ceramics recovered from Apache Woods are most likely not related to the main site occupation. They could easily derive from the nearby pueblo site of Lightning Strike. However, two C-14 dates were obtained from charcoal-flecked fill at the southeastern

end of the site. The two dates place the site into a 1400s time period with intercept dates at A.D. 1420 and 1490. The calibrated 1-sigma dates are A.D. 1390-1470 and A.D. 1440-1650. Three pieces of obsidian were also dated. All produced dates with a range between 870 and 300 B.C., considered too early for the site. Given the presence of about 700 lithic artifacts, a possible Western Apache point, and the C-14 dates, an Athabaskan occupation is indicated.

SITE INTERPRETATION

Apache Woods is somewhat of an enigmatic site. It had enough lithic material from which to draw conclusions about tool manufacture and artifact function; however, it did not have well-preserved cultural features that allowed for an interpretation of site structure. The possible hearth and charcoal-burned areas suggest a temporary campsite. The presence of ground stone indicates that at least minimal processing of subsistence items occurred on the site.

The C-14 dates in the 1400s together with the possible Western Apache projectile point strongly infer that this was an Athabaskan campsite, perhaps for the gathering of quarried stone material, piñon nuts, acorns, or the hunting of the abundant wild game in the area. There is not enough evidence, however, to support the conclusion that hunting was a major site activity. Seasonal use of the site is suggested by the presence of ground stone which, at campsites, is often used in the processing of seasonally available wild food items, such as piñon nuts and acorns. The lack of more hearth areas also confirms short-term usage, although other cultural features may lie outside of the right-of-way.

LA 39968 (AR-03-06-06-00827)
SPURGEON DRAW

Dorothy A. Zamora

Spurgeon Draw was recorded in 1980 by Pool and Logan during a survey for Western New Mexico Telephone Company (NMCRIS files). The site consists of remains from two small roomblocks (only one was within the highway right-of-way), one large pit structure (possibly used for both domestic and ceremonial activities), a large jacal-type structure to the west, and a water retention basin to the east (Fig. 2.87). The dates of ca. A.D. 1200 for the pit structure are from archaeomagnetic samples taken from the hearth, placing it in the Late Pueblo period (Tularosa phase).

Several sites are located within a 6.4 km area of this site, nine are also from the Late Pueblo period. These include two large pueblo sites that were recorded by Oakes and Kimmelman (1995) and one pueblo recorded by Janes (1981) for the Gila National Forest. LA 85442 has 15 rooms and a possible pit structure at a distance of .32 km (.2 mi) to the north. LA 83409 is a pueblo that contains a roomblock, kiva, and midden (Janes 1981), and is .32 km (.2 mi) to the south. LA 83410 is .40 km (.25 mi) to the northeast and is a pueblo that consists of two roomblocks, one with at least nine rooms and a kiva, and another is a single-room structure.

SITE SETTING

Spurgeon Draw is on the southeast side of NM 12 within the Pine Lawn Valley. It is located on a low knoll with an electrical substation across the road to the north and the Reserve air strip to the southwest. It is bound by the San Francisco Mountains to the north and the Saliz Mountains to the south. Spurgeon Draw is 4 km (2.5 mi) to the north. The draw is known to produce a good flow of water in modern times. Potential agricultural fields lie immediately to the south. The vegetation consists of juniper, piñon, oak, ponderosa pine, and various grasses. Some of the most common fauna that were noted include cottontail rabbit and elk.

RESEARCH OBJECTIVES

There are not many small Late Pueblo sites that have been excavated within the Mogollon Highlands. The research objectives were to examine the site layout, rela-

tionship of the pits and pit structure to above-ground dwelling units, and the use of various facilities. We hoped to implement Schlanger's (1990) and Kelly's (1988) models to document site function and determine the amount of dependence on cultigens. Ground stone and cooking vessel analyses will contribute to these studies. Seasonality of site use should be determined from pollen and macrobotanical analysis.

EXCAVATION PROCEDURES

Before excavation began, a main datum was established with a transit and stadia rod. North-south and east-west baselines were situated to incorporate the north side of the site across NM 12. A 1-by-1-m grid system was placed over the entire site, with each unit being assigned a north and east designation. A total of 464 grids were excavated producing a total of 126.92 cu m of soil removed at a mean depth of 27.35 cm; however, it should be mentioned that the pit structure was over 2.0 m in depth and most of the fill was from there.

Each unit was first surface stripped. In areas where rocks were present, the rocks were left in place until it was determined if they were part of the wall alignment to the roomblock. Once the outside wall was defined, the interior of the room was excavated. The small rocks were 10 cm and smaller, medium were 11 cm to 29 cm, and large were any rocks over 30 cm. The pit structure was excavated by following the visible wall outline. All soils were screened through a ¼-inch wire mesh. The artifacts were bagged by type and proveniencing information. When cataloging, a field specimen was assigned to each bag. Depths were taken from subdatums placed on the site using a line level.

Seven stratigraphic levels were defined on the site. The levels are as follows:

Level 1: Surface, 7YR 3/2 dark brown on the Munsell color chart.

Level 2: Surface stripping and excavated units outside of the structures. Munsell color 7YR 3/2 dark brown. This ranges from 0 to 27 cm in thickness.

Level 3: Fill of the structures; 10YR 3/2, dark brown on the Munsell color chart.

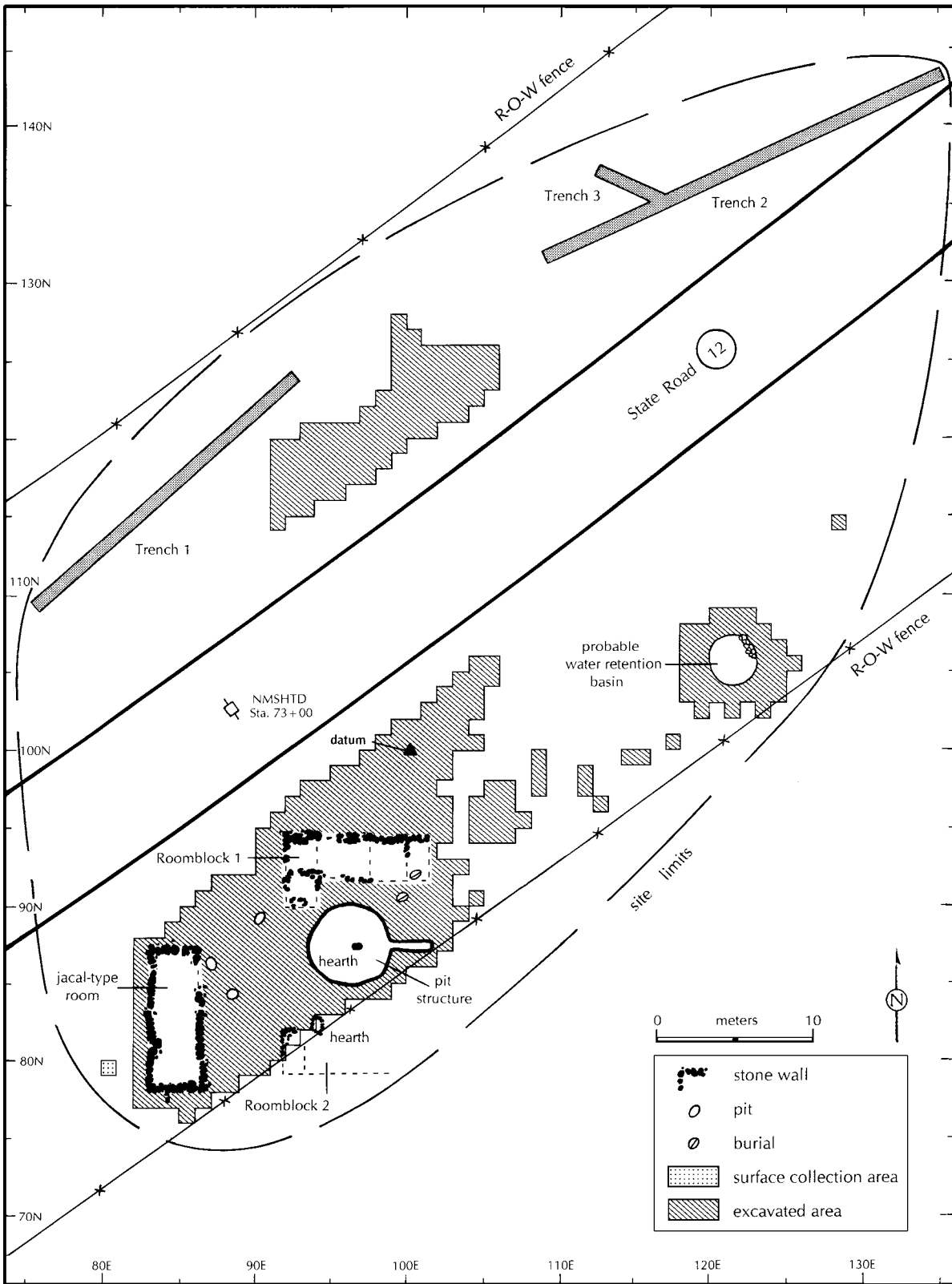


Figure 2.87. LA 39968, Spurgeon Draw.

Level 4: Roof fall. Present only in the pit structure; 20 cm thick consisting of burned roofing material.

Level 5: Floor within the structures, includes both prepared and unprepared. The prepared floors were 1 cm to 2 cm in thickness.

Level 5.1: Second prepared floor of the structure (only used in the pit structure) and was 1 cm thick.

Level 6: Subfloor fill of features in the structures and outside activity area.

Level 7: Outside activity surface, 5YR 3/2 dark red-dish brown.

CULTURAL UNITS

LA 39968, Spurgeon Draw, consists of two roomblocks (only one was excavated), a pit structure (possibly with some ceremonial use), a jacal-type structure, and a water retention basin. Roomblock 1, located just north of the pit structure, had only remnants of wall foundations left, with at least three definable room areas and a floor area of 38.0 sq m. The jacal is 8 m to the west and has a floor area of 23.8 sq m. The water retention basin is 28 m northeast of the pit structure and has an area of 8 sq m. The pit structure has a floor area of 16.2 sq m and an east ramp entrance. The second roomblock is outside of the highway right-of-way and was not excavated except for a small portion of the northwest corner.

Roomblock 1

Description. The roomblock is located north of the pit unit and consists of three defined room areas (Fig. 2.88). The rocks were apparently scavenged or scattered after abandonment and therefore a large amount of the rock is missing from the site. Room 1 has a large floor space, and it is possible that there could have been up to four rooms present in the roomblock, but the room dividing walls are missing.

Stratigraphy. The modern surface was covered with tree duff. The soils below the duff consisted of sandy clay and clay. The fill of the roomblock was a dark brown (7.5YR 3/2, dark brown on the Munsell scale) a sandy clay that turned to a dense clay in areas where trees were present. The structure floor was a sterile red-dish brown clay (5YR 4/2). At the time of excavation the ground was very dry, making the soil extremely compact.

Room 1

Dimensions. Room 1 is 2.0 m north-south and 8.0 m east-west (Fig. 2.88). No features were found; however, this may be because of the root activity that was present throughout the room area. There was no evidence of a hearth; however there is a break in the north wall that could have been a doorway.

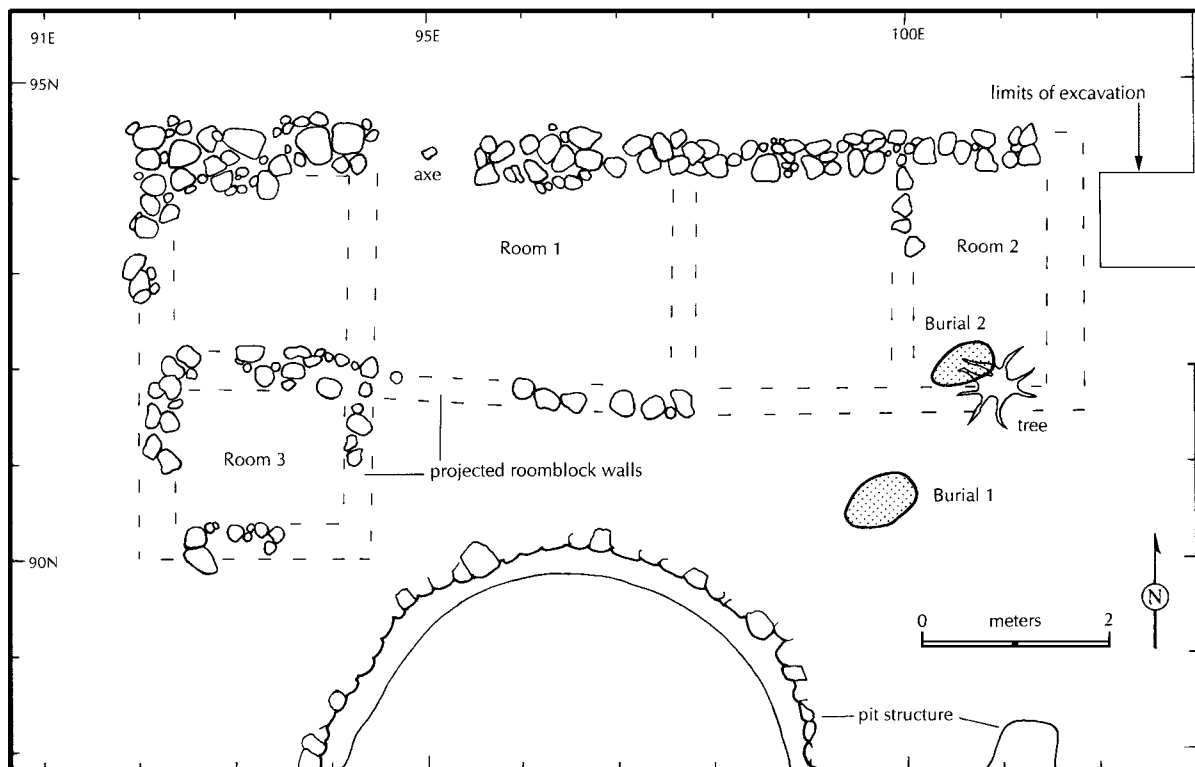


Figure 2.88. Roomblock 1.

Walls. The current walls consist of a single row or foundation of basalt and rhyolite cobbles. A possible door measuring 1.20 m across was found offset from the center of the north wall. A metamorphic schist axe, also referred to as green stone in the Mimbres area (LeBlanc and Whalen 1980:191; Anyon and LeBlanc 1984:276), was found on the floor in the center of the doorway. The east wall was constructed of medium-sized basalt cobbles with a few small cobbles placed between the larger ones. Both the south and the west walls are sporadically present and in some areas are completely missing. The measurements, which include the missing portions of the walls, are below.

North wall: 8.0 m (l), 30-40 cm (w), 10-30 cm (h)
South wall: 6.0 m (l), 10-20 cm (w), 8-10 cm (h)
East wall: 1.0 m (l), 10-15 cm (w), 10-15 cm (h)
West wall: 3.5 m (l), 10-20 cm (w), 8-10 cm (h)

Floor: No prepared floor was found in Room 1, probably because of the root and rodent disturbance, or perhaps there was no formal floor preparation. The excavations stopped at the red sterile clay, which was also where wall rocks stopped. There was a break between the top fill and the dark reddish brown clay suggesting the presence of the floor. The floor area for Room 1 is 16.0 sq m. Again, we must consider that this may be more than one room.

Room 2

Dimensions. The dimensions of this room are not complete and what remains measures 1.0 m north-south by 1.40 m east-west. If we approximate the width by using the measurement of Room 3 and the remains of the south wall of Room 1, the likely dimensions are 2.2 m north-south by 1.80 m east-west.

Walls. The walls consist of remains of the foundation of basalt rock cobbles ranging in size from small to large with a few medium cobbles between the larger ones. The wall measurements for Room 2 are shown below.

North wall: 1.40 m (l), 25 cm (w), 20-40 cm (h)
South wall: missing
East wall: missing
West wall: 1.0 m (l), 15 cm (w), 20 cm (h)

Floor: There was not a prepared floor present. An approximate floor space of 3.96 sq m was calculated using the estimated room size above. It is a possibility that Burial 2 is in a subfloor pit within this room. The pit is very shallow (10 cm) and the edges were barely visi-

ble in some areas.

Floor Features. A human burial pit was found in the southwest quarter of the room's estimated boundaries. It is 40 cm north-south by 40 cm east-west and is 10 cm deep. The fill was a loose, dark reddish brown sandy clay. The pit was dug into the sterile clay. No other floor features were encountered.

Room 3

Dimensions. This room is small with the walls only partially present. The room measures 1.60 m north-south by 1.80 m east-west.

Walls. The remains of the walls consist of a basalt cobble foundation. The rocks range from small to large in size, and in one instance, there are only the small cobbles left. The height of the walls range from 10 to 15 cm.

North wall: 2.25 m (l), 40 cm (w), 10-12 cm (h)
South wall: 1.00 m (l), 20-40 cm (w), 10-11 cm (h)
East wall: .80 m (l), 20-25 cm (w), 10 cm (h)
West wall: 1.00 m (l), 20-40 cm (w), 12-15 cm (h)

Floor: There was no prepared floor in Room 3. The floor level was the sterile, dark reddish brown clay that lies beneath the site. Rodent and root disturbance was prevalent throughout the room. The floor area is 2.85 sq m.

Floor Features. No features were found in Room 3.

Jacal-Type Structure

Description. The jacal-type structure is 8 m southwest of Roomblock 1 and 5 m west of Roomblock 2 (Figs. 2.89-2.91). It is a large rectangular-shaped unit with no interior features. It is associated with two extramural pits (10 and 11) to the east. Tree root action has moved the west wall alignment somewhat. When the east alignment was first encountered we thought that it was a buried extension of Roomblock 2. After complete excavation, it was obvious there were no connections to Roomblock 2. There was no evidence of room dividers. This structure is similar to the jacal feature found at LA 39969; however, it is longer in length, but the width is similar, and they are both located in the same areas of the sites. The rocks from this structure seem to also have been scavenged.

Stratigraphy. Level 1 consisted mostly of pine tree duff. Level 2 was the surface stripped areas that removed the tree duff and the soil outside the feature. After the surface was stripped the rocks were visible. Once the rocks were exposed, the exterior was excavated to the clay level. Level 3 was the fill inside the feature, which

was taken down to the reddish brown clay or floor area. Since there was no stratigraphic breaks inside or outside of the structure, the fill was taken out as one level.

Dimensions. The structure is rectangular in shape and measures 9.5 m north-south by 4.1 m east-west and covers an area of 38.9 sq m. No features were found in the structure; however, there are two exterior pits (10 and 11) to the east. Interior walls are also missing; and we do not know if any were ever present.

Walls. The walls consist of only the bottom layer or foundation of the structure. They are small to large basalt rocks placed randomly to form a rectangular shape. The rocks seemed to have been dry-laid since there was no evidence of mortar. They sit 10 to 25 cm above the reddish brown clay. There is a 2-m gap in the wall at the northeast corner. This could be a doorway or the rocks may have been scavenged in this area.

North wall: 3.7 m (l), 35-40 cm (w), 15 cm (h)
South wall: 4.1 m (l), 35-40 cm (w), 10 cm (h)
East wall: 9.3 m (l), 35-40 cm (w), 25 cm (h)
West wall: 9.5 m (l), 35-40 cm (w), 25 cm (h)

Floor. The floor was a reddish brown clay. It was not prepared, and, because of the root and rodent activity throughout the feature, it was difficult to determine if it had been smoothed. In some areas the roots were above the reddish clay.

Floor Features. As stated earlier, there were no floor features present in the structure.

Extramural Features. Two outside pits were encountered during excavations around the jacal-type structure. Pits 10 and 11 lie to the east of the structure and are likely related (Figs. 2.92, 2.93) to it.

Pit 10 is a small, generally circular roasting pit. It measures 60 cm north-south by 70 cm east-west and is 30 cm deep. The bottom of the pit had 30 fist-sized burned basalt and rhyolite cobbles (Figs. 2.94, 2.95). The fill consisted of reddish orange oxidized soil with charcoal and artifacts. A total of 50 ceramics, 1 lithic artifact, and some pieces of turquoise were recovered from the fill. The ceramics consisted of Alma Plain, plain corrugated, incised corrugated, patterned corrugated, plain smudged, late white wares, Reserve Black-on-white, and Tularosa Black-on-white. Flotation and C-14 samples were also collected from the fill. The C-14 samples evidenced an old wood problem, creating a date that was too early. However, the ceramics agree with the archeomagnetic dates from the site.

Pit 11 is an oval pit that is 50 cm from the northeast corner of the jacal-type structure (Fig. 2.93). It measures 80 by 60 cm and is 12 cm deep. The pit fill was a soft, sandy dark brown loam. Minute charcoal flecks were encountered; however, there was not enough for a C-14

sample. The artifacts in the pit consisted mostly of Alma Plain ceramics with a few corrugated, smudged, and black-on-whites. The lithic artifacts were few. The ceramics date this pit to the Tularosa phase.

Pit Structure

Description. Determining whether this feature was ceremonially used was difficult. The floor had five metates resting on it and one propped-up with an adobe support. The hearth exhibited three different use periods and was structurally remodeled two times. A large pit full of ash and a deflector, which was placed between the hearth and the ash pit, were aligned with the ramp entry. The ramp entry was narrow and sloped down into the structure with a small step at the entrance. There was no bench; however, there was a narrow ledge that had several features in it that seemed to possibly be niches for poles. Was this a pithouse that had later been used as a kiva (Figs. 2.96, 2.97)? The three archeomagnetic dates that were taken from the remodeled hearths focus around A.D. 1200, which would make it an anomaly in the area with such a late date for a pithouse. The time period would suggest a kiva, but the features and artifacts also suggest it was used as a habitation unit.

Stratigraphy. The fill of the structure was over 2 m deep (Figs. 2.98, 2.99). The first level (Level 1) consisted of tree duff and 2 cm of the present ground surface (Munsell color 5YR 3/1, very dark gray). Level 3 consisted of a dark reddish brown soil (5YR 4/2) with some rock wall fall and was 1.90 m thick. Level 4, roof fall, consisted of a sandy loam with some charred roof beams and had a thickness of 40 cm. Level 5, Floor 1, was a prepared, well-hardened smooth clay surface that, in areas, had some charcoal staining, especially around the hearth and ash pit, and was .5 cm thick. Several features were encountered on the first floor.

Level 5.1 was a second floor that had also been prepared. The remodeling was the same as in Floor 1. Some floor features were also present and the thickness of the plastered floor was .3 cm. Although the hearth was remodeled two times, the floor was remodeled once.

The structure was dug into the reddish brown sterile clay that underlies the site. It is circular in shape, 1.9 m deep, and has a ramp entry to the east. The walls were cobble-lined on the upper half and plastered on the lower half. A 30-cm wide ledge encircled the entire structure 1 m below the present ground surface.

Dimensions. The structure is 4.8 m in diameter and 1.9 m deep, with a floor area of 19 sq m. The entryway is 3.0 m long and slopes from 0.50 m to 1.50 m in depth. The width is fairly narrow at 48 cm. It enters the structure directly from the east. There is a step down into the

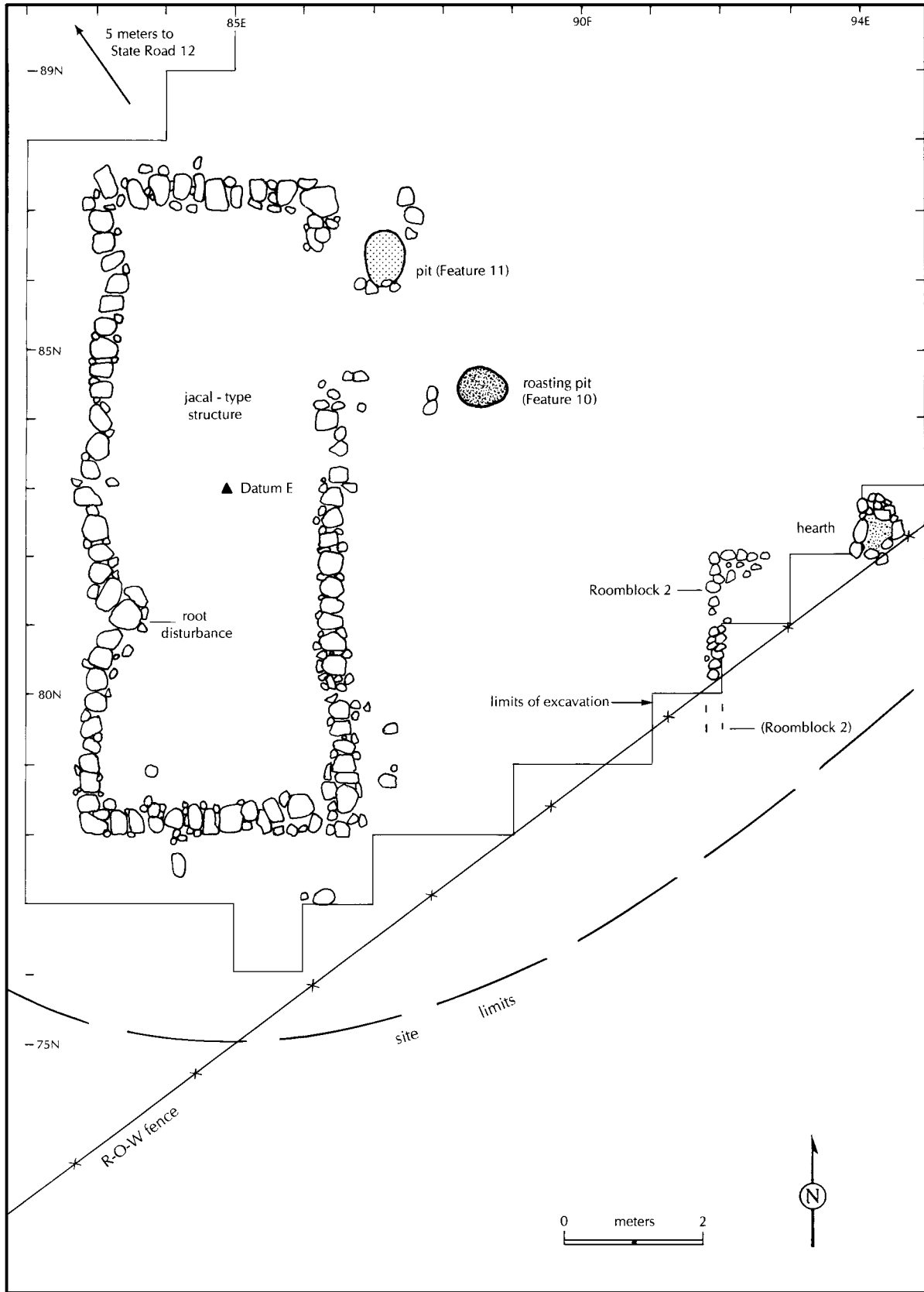


Figure 2.89. Jacal-type structure and exterior area.



Figure 2.90. Jacal-type structure; note Pit 10 to the left of the structure.



Figure 2.91. Jacal-type structure, facing east.



Figure 2.92. Pits 10 and 11, looking south. Note jacal structure on right.



Figure 2.93. Pit 11, facing west.

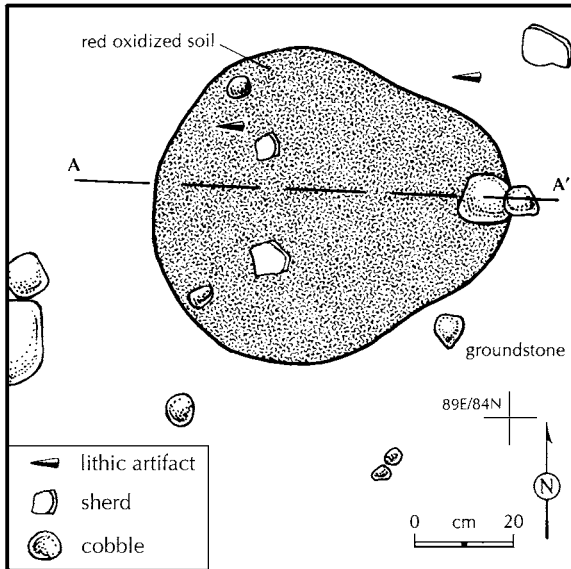


Figure 2.94. Plan view of roasting pit, east of jacal (Pit 10).

ramp from the outside surface, from which it gently slopes down toward the structure. There is also a 20 cm step down onto the floor.

Walls. The walls to the structure consist of two different types of construction. The upper portion is a basalt cobble veneer. The basalt cobbles have been placed in front of the reddish brown clay from the top of the structure down to the ledge at a distance of 1.0 m. The upper 30 cm of the cobbled wall consists of large cobbles, with a 28-cm-wide band of medium cobbles. The remainder, 42 cm down to the ledge, are small cobbles (Fig. 2.100). One area had basalt chinking stones. No plaster was noticed on the cobbles. The bottom portion of the walls was plastered with a reddish brown clay that had been smoothed over the original sterile clay. The plaster was 2 cm thick and did not exhibit any remodeling.

The ledge encircled the entire structure and was constructed out of the sterile reddish brown clay. It was 30 cm wide and had a total of three post support features. The ledge rings the structure .80 m above the floor.

Wall Features. The wall features of the structure consist of the three small postholes that have been dug into the wall below the ledge and three possible roof support postholes that were placed on the ledge. Table 2.29 shows the dimensions of these features and their locations.

Floor. There were two floor levels present in the structure. The first floor was a smooth, hard clay. Some charcoal staining was present along with some oxidization around the hearth. The first surface was 0.5cm thick and many features and artifacts were found on it (Fig. 2.101). Five large trough metates were sitting on the floor or resting against the wall. Metate 1 had an adobe

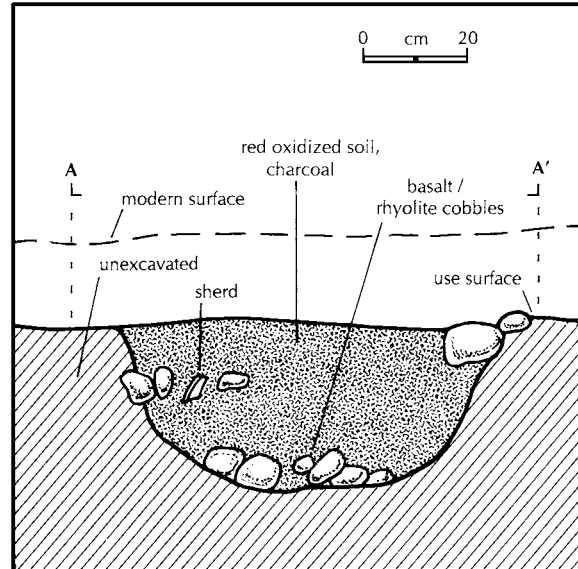


Figure 2.95. Roasting pit, south half profile.

pedestal and was 20 cm from the wall.

Floor 2 was also a well prepared, hard reddish brown clay. At least five features were found on this floor (Fig. 2.102). The rodent activity was heavier on this floor than the upper suggesting a reason for its remodeling. Heavy rodent activity was noted particularly around the hearth.

Floor Features. Eight floor features were found on Floor 1 (Fig. 2.101). These features consisted of a hearth, ash pit, large pit, postholes, and pot rests. Table 2.30 gives the dimensions and type of fill of the features. They are described in the following paragraphs.

Floor 2 had five floor features. They consisted of the first and second remodeling of the hearth, an ash pit, and three pot rests. Table 2.31 presents the feature measurements.

Hearths. The three distinct hearths found in the structure produced three sequential archaeomagnetic dates. The upper hearth was mud-lined, had an adobe collar, and was oval in shape. At the bottom of the hearth was a mixture of baked mud and ash (Fig. 2.103). Hearth 2 (or the middle hearth) was also mud-lined with an adobe collar; however, it was wider than the upper hearth (Fig. 2.104). The hearth was rectangular in shape and the bottom was baked mud and ash. Hearth 3 (lower hearth) was circular in shape, had a small adobe collar, and was dug into the red sterile clay (Fig. 2.105). The sides were not prepared and the bottom contained a few cobbles. The fill of all three hearths consisted of ash and charcoal.

Ventilators. None found.

Postholes. One post was submitted for dendrochronological dating, but too many rings were missing. Only two postholes were found on the floor (Fig. 2.106).



Figure 2.96. Bipod photograph of pit structure, LA 39968 (photo by Richard W. Lord).



Figure 2.97. Pit structure fill, facing south.



Figure 2.98. Pit structure during excavation, facing south.

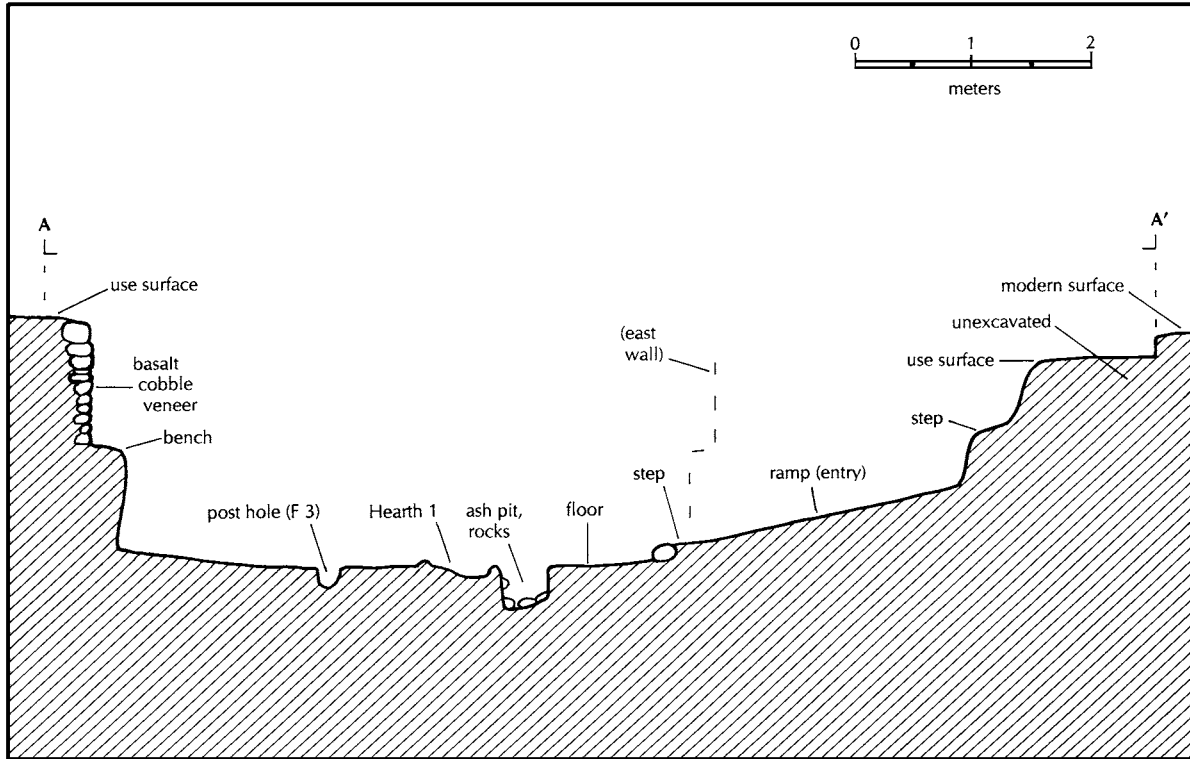


Figure 2.99. Profile of pit structure.



Figure 2.100. Pit structure wall construction, facing east.

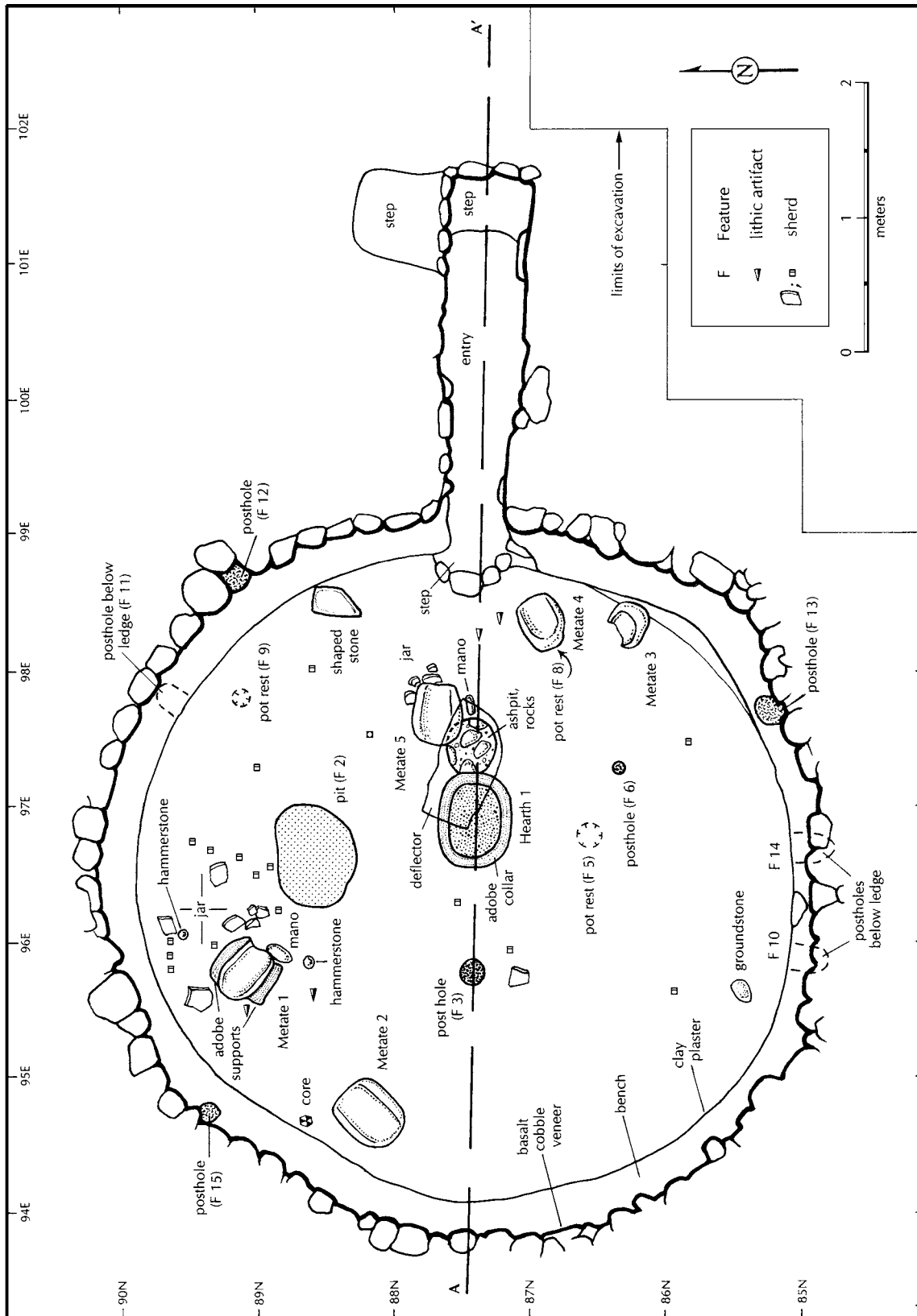


Figure 2.101. Upper floor of pit structure.

Table 2.29. Posthole Dimensions

LOCATION		OPENING MEASUREMENTS	DEPTH INTO WALL
On Ledge	Below Ledge		
	Feature 10	16 cm by 20 cm	25 cm
	Feature 11	15 cm by 15 cm	16 cm
Feature 12		24 cm by 50 cm	20 cm
Feature 13		16 cm by 18 cm	12 cm
	Feature 14	15 cm by 36 cm	13 cm
Feature 15		10 cm by 12 cm	13 cm

Table 2.30. Floor Features from Floor 1

FEATURE	MEASUREMENTS		DEPTH	FILL
	NORTH/SOUTH	EAST/WEST		
Hearth	50 cm	72 cm	7 cm	ash, charcoal, silty sandy clay.
Ash Pit	35 cm	34 cm	39 cm	ash with cobble-lined bottom.
Large Pit	66 cm	80 cm	30 cm	dark brown sandy loam with a small ash lens, charcoal, and gravel bottom.
Post Hole (F 3)	20 cm	20 cm	22 cm	loose dark brown sandy clay, minute charcoal flecks.
Post Hole (F 6)	12 cm	10 cm	12 cm	dark brown sandy clay with charcoal and rock
Pot Rest (F 9)	10 cm	10 cm	7 cm	dark brown sandy clay.
Pot Rest (F 5)	15 cm	15 cm	3 cm	dark brown sandy clay.
Post Rest (F 8)	10 cm	10 cm	4 cm	dark brown sandy clay.

Table 2.31. Floor Features from Floor 2

FEATURE	MEASUREMENTS		DEPTH	FILL
	NORTH/SOUTH	EAST/WEST		
Hearth 2	40 cm	50 cm	9 cm	ash and charcoal.
Hearth 3	54 cm	54 cm	10 cm	ash and charcoal.
Pot Rest (F 20)	26 cm	24 cm	6 cm	dark brown sandy clay.
Pot Rest (F 21)	17 cm	17 cm	2 cm	dark brown sandy clay.
Pot Rest (F 22)	12 cm	12 cm	3 cm	dark brown sandy clay.

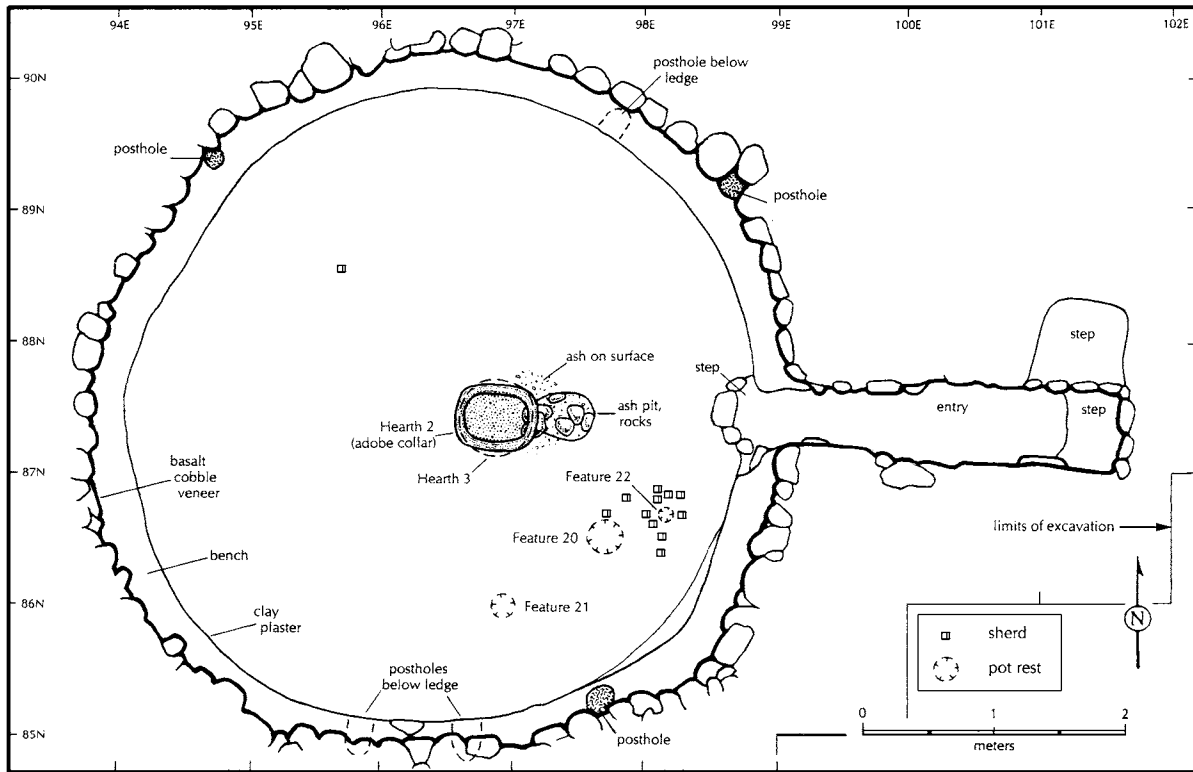


Figure 2.102. Lower floor of pit structure.

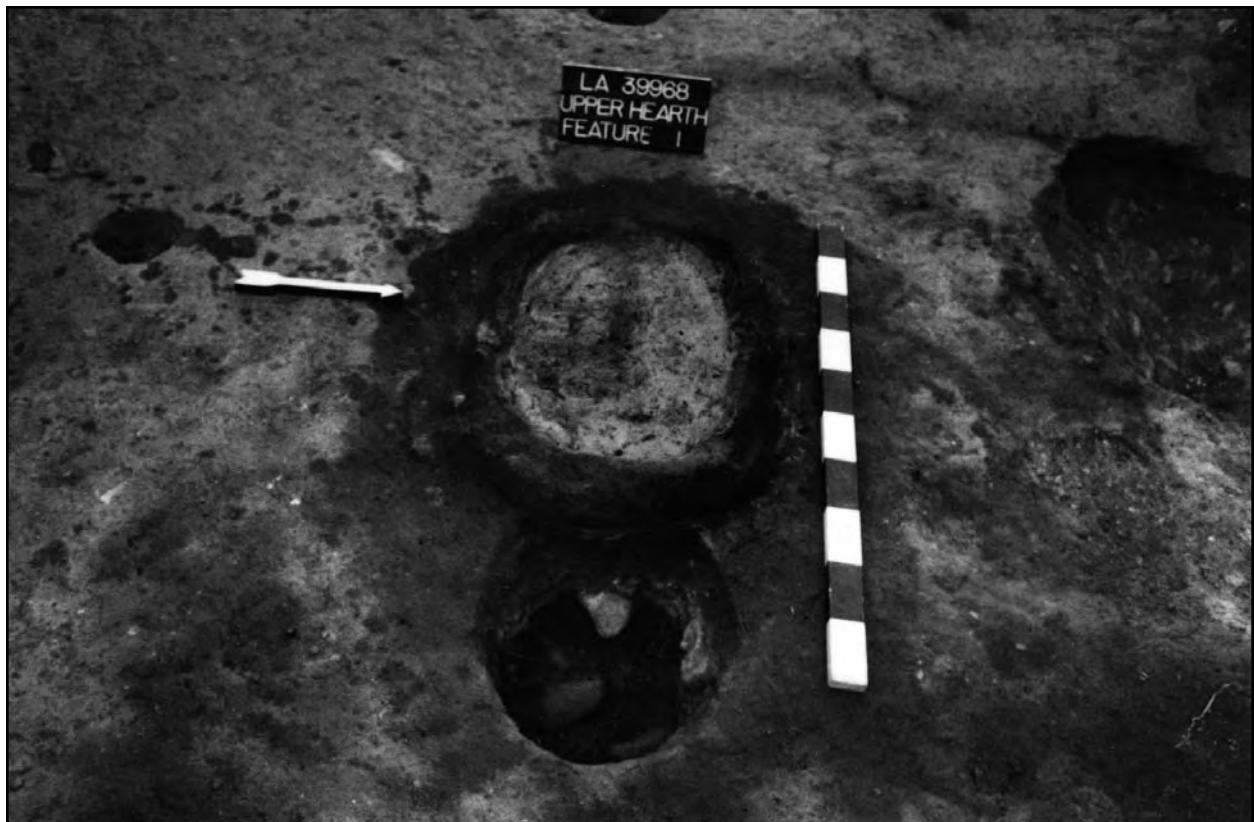


Figure 2.103. Hearth 1 on upper floor of pit structure.



Figure 2.104. Hearth 2, Floor 2 in pit structure.

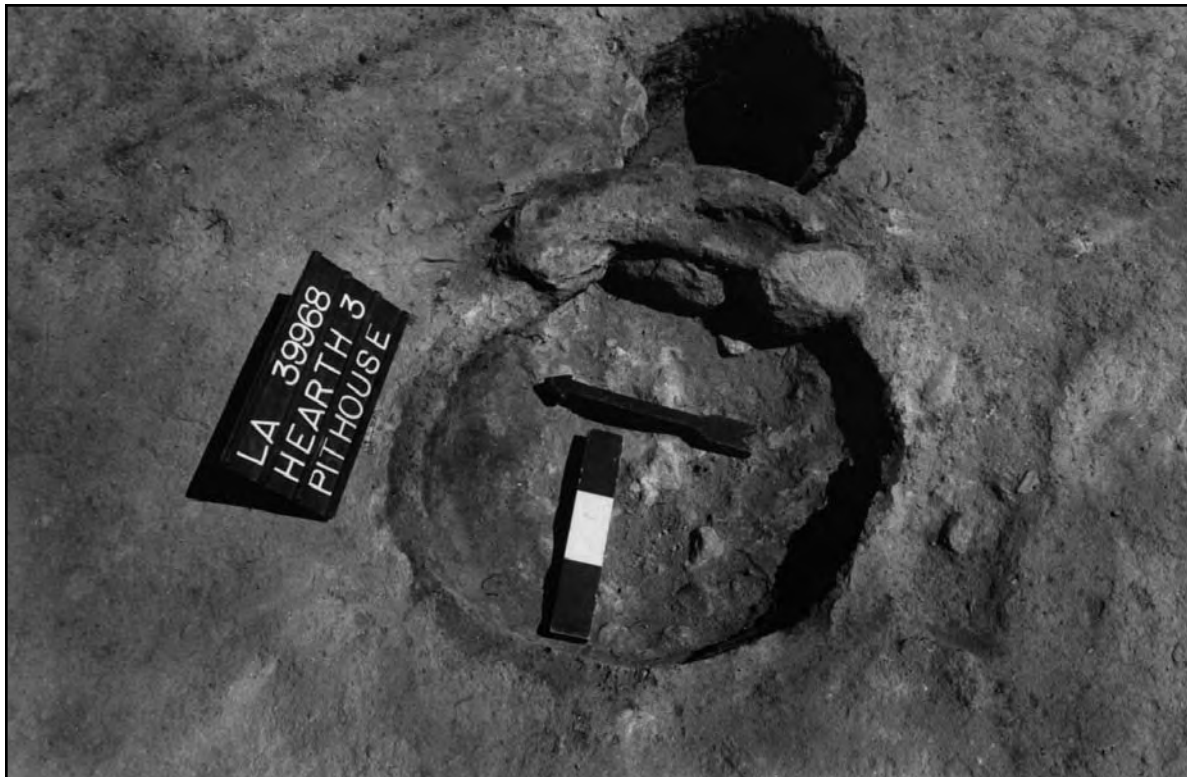


Figure 2.105. Hearth 3, Floor 2 in pit structure.



Figure 2.106. Posthole, Feature 3, with post in situ, looking southwest.



Figure 2.107. Posthole below ledge of pit structure.



Figure 2.108. Posthole on ledge of pit structure (Feature 12).

One posthole (F3) was centrally located and was probably the main support for the roof. The second posthole (F6) was a small, possible secondary support post. The postholes in the wall on the ledge seem to make a distinctive pattern. Features 12 and 13 are on either side of the entryway and Feature 15 is on the west side. All are inset into the wall. These three postholes are probable roof supports. Features 12 and 13 are roof supports for the entryway. The smaller postholes below the ledge are on the north and south side of the structure (Figs. 2.107-2.108). The function of these postholes is unknown; however, it is likely that their function was not as construction supports. Perhaps they were used for hanging objects (i.e., hides, canteens).

The fill of the support holes was a dark brown, silty sandy clay. No artifacts or charcoal were found in the fill. Some of the fill was collected for flotation and pollen samples.

Roof. Several roof beam fragments were found mixed in with the fill and ranged from 20 to 60 cm in size. Most were found at a depth of 1.07 m to 1.53 m and were burned; however, some were not. Several samples were submitted for dendrochronological dating; however, none of the samples contained enough outer rings for processing.

Water Retention Basin

Twenty-eight meters northeast of the structure was a roundish pit that measured 3.16 m north-south by 3.0 m east-west and had a depth of 1.28 m (Fig. 2.109) with an area of 9.5 sq m. The pit was dug into the red sterile clay with basalt cobbles and rhyolite slabs lining an area measuring 2.60 sq m on the northeast side (Fig. 2.110). The fill of the pit contained dense clay with charcoal and artifacts. These include ceramics (1,149), lithic artifacts (120), and ground stone (3). The function of this pit may have been as a water retention feature because the sides were too sloped for a habitation unit. The pit fits Crown's (1987) description for water retention basins. It is situated in level terrain and not in an incised channel and could be filled only by rainfall. No features were found around the pit, but an outside surface was traceable for 2.0 m around the edge.

ARTIFACTS

There were a total of 25,426 artifacts recovered from LA 39968. The assemblage consists of 4,306 lithic artifacts, 19,438 ceramics, 210 pieces of ground stone, 14 projectile points, 51 miscellaneous items, 20 bone tools, and 1,387 nonhuman bones.



Figure 2.109. Water retention basin, facing east.

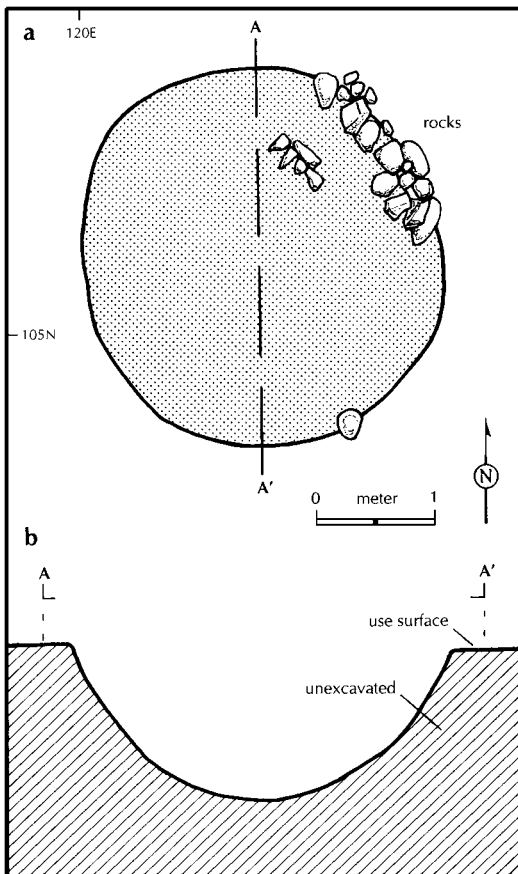


Figure 2.110. Water retention basin, plan and profile.

Ceramics

Of the 19,438 ceramics, 43.7 percent are from general fill and 34.2 percent are from the structure. The most dominant types are Alma Plain, Alma Scored, plain smudged, and plain corrugated (Table 2.32). Alma Plain is widely distributed throughout all phases in the Mogollon region, as is Alma Scored. The ceramics indicative of the Tularosa phase are Tularosa Black-on-white, Reserve Black-on-white, White Mountain Redwares, and indented corrugated.

The whole vessels from the site consisted of Alma Polished (2), Alma Neckbanded (2), and incised corrugated, which were all small jars. One Reserve Smudged bowl with a kill hole was also found as was a small pinch pot. Most of the whole vessels were associated with the burials. Four reconstructible vessels were found in the fill of the structure, and one Reserve Smudged bowl was on the floor. These vessels included a Reserve Plain Corrugated bowl, a large neckbanded brown ware jar, a Reserve Black-on-white jar, and a large overlapping neckbanded jar.

Lithic Artifacts

Fewer lithic artifacts were found on the site than ceramics. This seems to hold true for all Pueblo sites excavated during the Luna Project. The dominant artifacts are

Table 2.32. Ceramics from LA 39968

Cells: Count Row Pct Column Pct	Proveniences									Row Total
	General Fill	Roasting Pit (Pit 10)	Pit 11	Pit 12	Water Retention (Pit 6)	Burial 1	Burial 2	Kiva	Room Block	
Alma Plain	3566 42.9% 42.0%	22 .3% 44.0%	43 .5% 46.7%	122 1.5% 40.4%	256 3.1% 22.3%		1 .0% 2.6%	3129 37.6% 47.1%	1171 14.1% 44.0%	8313 100.0% 42.8%
Alma Rough	1125 52.9% 13.3%			6 .3% 2.0%	257 12.1% 22.4%			346 16.3% 5.2%	392 18.4% 14.7%	2126 100.0% 10.9%
Alma Scored								1 100.0% .0%		1 100.0% .0%
Alma Incised	3 75.0% .0%							1 25.0% .0%		4 100.0% .0%
Alma Punched	1 16.7% .0%							4 66.7% .1%	1 16.7% .0%	6 100.0% .0%
Alma Pinched	5 26.3% .1%				2 10.5% .2%			5 26.3% .1%	7 36.8% .3%	19 100.0% .1%
Alma Neckbanded								3 100.0% .0%		3 100.0% .0%
Three Circle Neckbanded	10 40.0% .1%				4 16.0% .3%			6 240.0% .1%	5 20.0% .2%	25 100.0% .1%
Plain Corrugated	936 43.9% 11.0%	3 .1% 6.0%	14 .7% 15.2%	37 1.7% 12.3%	129 6.1% 11.2%	1 .0% 100.0%		719 33.8% 10.8%	291 13.7% 10.9%	2130 100.0% 11.0%
Indented Corrugated	195 42.4% 2.3%	1 .2% 2.0%	1 .2% 1.1%	8 1.7% 2.6%	41 8.9% 3.6%			143 31.1% 2.2%	71 15.4% 2.7%	460 100.0% 2.4%
Incised Corrugated	492 51.4% 5.8%	3 .3% 6.0%	4 .4% 4.3%	23 2.4% 7.6%	38 4.0% 3.3%		9 .9% 23.1%	246 25.7% 3.7%	143 14.9% 5.4%	958 100.0% 4.9%
Patterned Corrugated	20 31.7% .2%	1 1.6% 2.0%	6 9.5% 6.5%		8 12.7% .7%			17 27.0% .3%	11 17.5% .4%	63 100.0% .3%
Indeterminate Corrugated	123 37.2% 1.4%			14 4.2% 4.6%	21 6.3% 1.8%			138 41.7% 2.1%	35 10.6% 1.3%	331 100.0% 1.7%
Fillet rim smudged	1 16.7% .0%							5 83.3% .1%		6 100.0% .0%
Plain smudged	1362 39.8% 16.0%	15 .4% 30.0%	17 .5% 18.5%	78 2.3% 25.8%	253 7.4% 22.0%		29 .8% 74.4%	1329 38.8% 20.0%	341 10.0% 12.8%	3424 100.0% 17.6%
Starkweather smudged painted	2 28.6% .0%							5 71.4% .1%		7 100.0% .0%
San Francisco Red	86 55.1% 1.0%			3 1.9% 1.0%	7 4.5% .6%			30 19.2% .5%	30 19.2% 1.1%	156 100.0% .8%
Mimbres indeterminate white ware	15 45.5% .2%							13 39.4% .2%	5 15.2% .2%	33 100.0% .2%
Transitional Black-on-white	1 100.0% .0%									1 100.0% .0%

Table 2.32. Continued.

Cells: Count Row Pct Column Pct	Proveniences									Row Total
	General Fill	Roasting Pit (Pit 10)	Pit 11	Pit 12	Water Retention (Pit 6)	Burial 1	Burial 2	Kiva	Room Block	
Mimbres	14							14	1	29
Classic Black-on-white	48.3% .2%							48.3% .2%	3.4% .0%	100.0% .1%
Nedcoiled gray					1 100.0% .1%					1 100.0% .0%
Early white ware	1 100.0% .0%									1 100.0% .0%
Late white ware	292 42.4% 3.4%	4 .6% 8.0%	3 .4% 3.3%	3 .4% 1.0%	69 10.0% 6.0%			233 33.8% 3.5%	85 12.3% 3.2%	689 100.0% 3.5%
Red Mesa Black-on-white				1 25.0% .3%				3 75.0% .0%		4 100.0% .0%
Puerco Black-on-white	1 33.3% .0%								2 66.7% .1%	3 100.0% .0%
Reserve Black-on-white	108 40.1% 1.3%	1 .4% 2.0%	2 .7% 2.2%	6 2.2% 2.0%	22 8.2% 1.9%			104 38.7% 1.6%	26 9.7% 1.0%	269 100.0% 1.7%
Tularosa Black-on-white	109 33.3% 1.3%		2 .6% 2.2%		30 9.2% 2.6%			146 44.6% 2.2%	40 12.2% 1.5%	327 100.0% 1.7%
Hachure black-on-white	3 75.0% .0%							1 25.0% .0%		4 100.0% .0%
Indeterminate red ware	1 50.0% .0%							1 50.0% .0%		2 100.0% .0%
White Mountain Redware	11 32.4% .1%			1 2.9% .3%	9 26.5% .8%			5 14.7% .1%	8 23.5% .3%	34 100.0% .2%
Wingate Black-on-red	4 66.7% .0%				2 33.3% .2%					6 100.0% .0%
Puerco Black-on-red								3 100.0% .0%		3 100.0% .0%
Column Total	8487 43.7% 100.0%	50 .3% 100.0%	92 .5% 100.0%	302 1.6% 100.0%	1149 5.9% 100.0%	1 .0% 100.0%	39 .2% 100.0%	6650 34.2% 100.0%	2668 13.7% 100.0%	19438 100.0% 100.0%

core flakes and angular debris (Table 2.33). However, there are quite a few cores and biface flakes suggesting tool manufacturing. The most common materials are chert, Luna blue agate, basalt, rhyolite, and andesite, which are found in the area in outcrops or in river cobbles.

Fourteen projectile points were found (Table 2.34). Three are Late Archaic points consisting of two Cienega and one San Pedro projectile. Others are small, typically Pueblo period points. Most points are obsidian, which is commonly used by later groups. One chert knife was also recovered.

Ground Stone

There were 210 ground stone artifacts on the Spurgeon Draw site, of which 50.2 percent are from the structure, 23 percent are from the roomblocks, and 23 percent from general fill. There is a large amount of indeterminate fragments (25.4 percent) in the assemblage that cannot be placed into any functional category.

The ground stone assemblage contains a wide variety of items (Table 2.35). Manos, metates, and abrading stones make up much of the assemblage. The lapidary stones would suggest jewelry making or hide processing. There were four axes found on the site. Two were three-

Table 2.33. Lithic Artifacts from LA 39968

Cells: Count Row Pct Column Pct	Provenience						Row Total
	General Fill	Roasting Pit (Pit 10)	Water Retention Basin (Pit 6)	Burial 1	Kiva	Roomblock	
Angular Debris	698 46.5% 34.2%	1 .1% 100.0%	36 2.4% 30.0%		478 31.9% 38.0%	287 19.1% 32.4%	1500 100.0% 34.8%
Core Flake	1231 48.7% 60.4%		63 2.5% 52.5%	3 .1% 100.0%	716 28.3% 57.0%	515 20.4% 58.1%	2528 100.0% 58.7%
Biface Flake	14 46.7% .7%				11 36.7% .9%	5 16.7% .6%	30 100.0% .7%
Resharpener Flake	1 100.0% .0%						1 100.0% .0%
Bipolar Flake	1 33.3% .0%					2 66.7% .2%	3 100.0% .1%
Blade	4 57.1% .2%				1 14.3% .1%	2 28.6% .2%	7 100.0% .2%
Hammerstone Flake					1 50.0% .0%	1 50.0% .1%	2 100.0% .0%
Pottid	2 100.0% .1%						2 100.0% .0%
Tested Cobble	8 33.3% .4%				5 20.8% .4%	11 45.8% 1.2%	24 100.0% .6%
Core	60 38.2% 2.9%		20 12.7% 16.7%		26 16.6% 2.1%	51 32.5% 5.7%	157 100.0% 3.6%
Cobble Tool	7 46.7% .3%		1 6.7% .8%		3 20.0% .2%	4 26.7% .5%	15 100.0% .3%
Uniface	2 40.0% .1%				1 20.0% .1%	2 40.0% .2%	5 100.0% .1%
Biface	10 31.3% .5%				15 46.9% 1.2%	7 21.9% .8%	32 100.0% .7%
Column Total	2038 47.3% 100.0%	1 .0% 100.0%	120 2.8% 100.0%	3 .1% 100.0%	1257 29.2% 100.0%	887 20.6% 100.0%	4306 100.0% 100.0%

quarter grooved axes, one of which was highly polished metamorphic schist, sometimes referred to as green stone. The other two are three-quarter grooved fragments made of basalt and one is a rhyolitic tuff fragment from the bit end.

All of the whole metates (N=11, 15.3 percent) came from the structure. Six were found on the floor. Both the two-hand and one-hand manos are about equally represented as are the slab and trough metates (Table 2.36).

Miscellaneous Artifacts

Miscellaneous artifacts total 51 (Table 2.37). Minerals and quartz crystals constitute more than half of the assemblage. There are a few jewelry items (14.4 percent)

such as beads, pendants, and a bracelet.

Bone Tools

Twenty whole or partial bone tools were recovered from the site. Most are bone awls (60.0 percent). Others are indeterminate fragmentary pieces.

ANCILLARY STUDIES

Faunal Remains

There was a variety of faunal species recovered from the Spurgeon Draw site (Table 2.38). A total of 1,387 bone fragments were recovered. Small mammals make up a

Table 2.34. Projectile Points From LA 39968

Cells: Count Row Percent	Material Type			Row Total
	Chert	Luna Blue Agate	Obsidian	
Unidentified	2 100.0%			2 100.0%
Cienega	1 50.0%		1 50.0%	2 100.0%
Small Side-Notched			5 100.0%	5 100.0%
Unnotched			2 100.0%	2 100.0%
Flake Point		1 100.0%		1 100.0%
Knife	1 100.0%			1 100.0%
San Pedro	1 100.0%			1 100.0%
Column Total	5 35.7%	1 7.1%	8 57.1%	14 100.0%

Table 2.35. Ground Stone from LA 39968

Cells: Count Row Pct Column Pct	Provenience						Row Total
	General Fill	Water Retention Basin	Structure	Room Block 1	Jacal Structure	Room Block 2	
Indeterminate	19	1	21	9	2	2	54
	35.2% 37.3%	1.9% 33.3%	38.9% 20.0%	16.7% 25.7%	3.7% 28.6%	3.7% 25.0%	100.0% 25.8%
Polishing Stone			2				2
			100.0% 1.9%				100.0% 1.0%
Abrading Stone	7		5	6			18
	38.9% 13.7%		27.8% 4.8%	33.3% 17.1%			100.0% 8.6%
Shaped Slab			8			1	9
			88.9% 7.65			11.1% 12.5%	100.0% 4.3%
Anvil			1				1
			100.0% 1.0%				100.0% .5%
Pounding Stone				1			1
				100.0% 2.9%			100.0% .5%
Palette	2						2
	100.0% 3.9%						100.0% 1.0%
Lapidary Stone	3		5	3	1		12
	25.0% 5.9%		41.7% 4.8%	25.0% 8.6%	8.3% 14.3%		100.0% 5.7%
Mortar			2				2
			100.0% 1.9%				100.0% 1.0%

Table 2.35. Continued.

Cells: Count Row Pct Column Pct	Provenience					Row Total	
	General Fill	Water Retention Basin	Structure	Room Block 1	Jacal Structure		Room Block 2
Mano	3 25.0% 5.9%		5 41.7% 4.8%	3 25.0% 8.6%		1 8.3% 12.5%	12 100.0% 5.7%
One-hand Mano	6 22.2% 11.8%	2 7.4% 66.7%	15 55.6% 14.3%	2 7.4% 5.7%	2 7.4% 28.6%		27 100.0% 12.9%
Two-hand Mano	5 17.9% 9.8%		12 42.9% 11.4%	8 28.6% 22.9%	1 3.6% 14.3%	2 7.1% 25.0%	28 100.0% 13.4%
Metate	1 7.1% 2.0%		12 85.7% 11.4%	1 7.1% 2.9%			14 100.0% 6.7%
Trough Metate	1 11.1% 2.0%		8 88.9% 7.6%				9 100.0% 4.3%
Slab Metate	2 18.2% 3.9%		7 63.6% 6.7%	1 9.1% 2.9%		1 9.1% 12.5%	11 100.0% 5.3%
Cylindrical Tool						1 100.0% 12.5%	1 100.0% .5%
Pestle	1 100.0% 2.0%						1 100.0% .5%
Axe					1 100.0% 14.3%		1 100.0% .5%
Axe, Three- quarter Grooved	1 33.3% 2.0%		1 33.3% 1.0%	1 33.3% 2.9%			3 100.0% 1.4%
Shaped Stone			1 100.0% .9%				1 100.0% .5%
Column Total	12 24.4% 100.0%	3 1.4% 100.0%	105 50.2% 100.0%	35 16.7% 100.0%	7 3.3% 100.0%	8 3.8% 100.0%	209 100.0% 100.0%

large portion of the assemblage (49.9 percent). Large mammals, including deer, pronghorn, and elk represent 12.3 percent. There are several other species that have not appeared in other sites along NM 12, such as gray fox, kingsnake, toads, frogs, skunks, and bear to name a few. More than half of the bone from the site came from the structure fill; a few came from the floor of the structure.

Skeletal Remains

Three burials were found at LA 39968. Two burials were found on the east side of Roomblock 1 at depths ranging from 20 to 25 cm. Burial 1 consisted of several skeletal

fragments found in a shallow depression measuring 40 cm north-south by 40 cm east-west, 25 cm below the ground surface. Burial 2 was found under a medium size piñon tree entangled among the roots. It was found 20 cm below the present ground surface in a 5-cm-deep depression. Both depressions were very shallow and the edges of the Burial 1 pit were almost nonexistent.

Burial 1 is a juvenile approximately nine to ten years of age. Several small whole vessels were associated with the child, which consisted of two Alma Polished jars, one of which had a square mouth, one Alma Neckbanded jar, one incised corrugated jar with rim handles, and one Reserve Smudged bowl with a kill hole.

Burial 2 was 1 m northeast of Burial 1 and possibly

Table 2.36. Ground Stone Material Types from LA 39968

Cells: Count Row/Pct Column/Pct	Provenience											Row Total			
	Chert	Basalt	Rhyolite	Tuff	Andesite	Rhyolitic Tuff	Purice	Lime- stone	Sand- stone	Silt- stone	Quartzite		Quartzitic Sand-stone	Meta- morphitic Schist	Schist
Indeterminate		1 1.9% 6.7%	28 51.0% 32.6%		1 1.9% 10.0%	7 13.0% 18.9%	1 1.9% 100.0%		9 16.7% 45.0%	2 3.7% 66.7%	2 3.7% 15.4%	3 5.6% 75.0%			54 100.0% 25.8%
Polishing Stone	1 50.0% 100.0%														2 100.0% 1.0%
Abraiding Stone		1 5.6% 6.7%	7 38.9% 8.1%			2 11.1% 5.4%		5 27.8% 31.3%	1 5.6% 5.0%	1 5.6% 33.3%		1 5.6% 25.0%			18 100.0% 8.6%
StrapedSlab			8 88.9% 9.3%			1 11.1% 2.7%									9 100.0% 4.3%
Anvil					1 100.0% 10.0%										1 100.0% .9%
Rounding Stone									1 100.0% 5.0%						1 100.0% .9%
Palette									2 100.0% 10.0%						2 100.0% 1.0%
Lapidary Stone			4 33.3% 4.7%		2 16.7% 20.0%	2 16.7% 5.4%			3 25.0% 15.0%		1 8.3% 7.7%				12 100.0% 5.7%
Mortar			1 50.0% 1.2%			1 50.0% 2.7%									2 100.0% 1.0%
Mano		1 8.3% 6.7%	3 25.0% 3.5%			2 16.7% 5.4%		2 16.7% 12.5%	3 25.0% 15.0%		1 8.3% 7.7%				12 100.0% 5.7%
One-hand Mano		2 7.4% 13.3%	4 14.8% 4.7%		1 3.7% 10.0%	6 22.2% 16.2%		5 18.5% 31.3%			7 25.9% 53.8%			1 3.7% 100.0%	27 100.0% 12.9%
Two-hand Mano		5 17.9% 33.3%	13 46.4% 15.1%			7 25.0% 18.9%		2 7.4% 12.5%	1 3.6% 5.0%						28 100.0% 13.4%
Metate			6 42.9% 7.0%		1 7.1% 10.0%	5 35.7% 13.8%					2 14.3% 15.4%				14 100.0% 6.7%

Table 2.36. Continued.

Cells: Count RowPct Column Pct	Provenience											Row Total			
	Chert	Basalt	Rhyolite	Tuff	Andesite	Rhyolitic Tuff	Pumice	Lime- stone	Sand- stone	Silt- stone	Quartzite		Quartzitic Sand-stone	Meta- morphitic Schist	Schist
Trough Metate	1 11.1% 6.7%	1 44.4% 4.7%	4 72.7% 9.3%	1 11.1% 10.0%	3 33.3% 8.1%	1 10.0% 6.3%								9 100.0% 4.3%	
Slab Metate		8 27.3% 30.0%												11 100.0% 5.3%	
Cylindrical Tool	1 100.0% 6.7%													1 100.0% .5%	
Peslle						1 100.0% 6.3%								1 100.0% .5%	
Axe						1 100.0% 2.7%								1 100.0% .5%	
Axe, three- quarter grooved		2 66.7% 13.3%											1 33.3% 100.0%	3 100.0% 1.4%	
Shaped Stone							1 100.0% 6.3%							1 100.0% .5%	
Column Total	1 5% 100.0%	16 7.2% 100.0%	86 41.1% 100.0%	1 5% 100.0%	10 4.8% 100.0%	37 17.7% 100.0%	1 5% 100.0%	16 7.7% 100.0%	20 9.6% 100.0%	3 1.4% 100.0%	13 6.2% 100.0%	4 1.9% 100.0%	1 5% 100.0%	1 5% 100.0%	209 100.0% 100.0%

Table 2.37. Miscellaneous Artifacts from LA 39968

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Pit Structure	Jacal Structure	
Pendant Blank		2 100.0% 7.4%		2 100.0% 4.8%
Bracelet		1 100.0% 3.7%		1 100.0% 2.4%
Geode	1 100.0% 12.5%			1 100.0% 2.4%
Mineral	4 23.5% 50.0%	11 64.7% 40.7%	2 11.8% 33.3%	17 100.0% 40.5%
Pigment		2 100.0% 7.4%		2 100.0% 4.8%
Fetish/Effigy	1 100.0% 12.5%			1 100.0% 2.4%
Manuport		1 100.0% 3.7%		1 100.0% 2.4%
Unmodified quartz		9 69.2% 33.3%	4 30.8% 66.7%	13 100.0% 31.0%
Culturally Modified quartz	1 100.0% 12.5%			1 100.0% 2.4%
Discoidal bead	1 100.0% 12.5%			1 100.0% 2.4%
Other bead		2 100.0% 7.4%		2 100.0% 4.8%
Column Total	8 19.0% 100.0%	27 64.3% 100.0%	1 2.4% 100.0%	42 100.0% 100.0%

in poorly preserved Room 2. A six- to nine-month-old infant occupied a 25 cm by 30 cm shallow depression. A piñon tree was growing on top of the remains and the roots intertwined among the bones. One small Alma Neckbanded jar was associated with the infant.

The third burial was the remains of a probable male of 40+ years. The individual was found in the fill of the structure entryway at about 10 to 20 cm above the ramp. The remains (vertebrae) were very fragmented and disarticulated. No artifacts were found with the remains. Several other disarticulated human bone fragments were found in the structure fill and 5 m northeast of Burials 1 and 2.

Macrobotanical Remains

Eighteen flotation samples were analyzed from Spurgeon Draw. Samples were taken from two successive floors of the structure encountered during excavation. Nine samples examined from the upper floor proveniences yielded a limited array of plant remains. Those recovered from the hearth, a Reserve Smudged bowl, two post-holes, and from behind and under two metates were limited to uncharred goosefoot, pigweed, tobacco, and stick-leaf seeds, as well as uncharred pine needles, juniper leaflets, and grass family plant parts. Cultural plant remains were restricted to the samples examined from the Reserve Smudged bowl (charred goosefoot seed),

Table 2.38. Faunal Remains from LA 39968

Taxon	No.	Pct
Mammal	98	7.1
Small Mammal	554	40.3
Medium Mammal	45	3.3
Large Mammal	73	5.3
Vagrant Shrew	1	.1
Rodent	20	1.4
Prairie Dog	61	4.4
Squirrel	2	.1
Pocket Gopher	4	.3
Rat	21	1.5
White-footed Mouse	1	.1
Woodrat	25	1.8
Muskrat	1	.1
Cottontail	205	14.9
Jack Rabbit	115	8.4
Dog, coyote, wolf	4	.3
Fox	4	.3
Bear	2	.1
Weasels and allies	1	.1
Skunks	2	.1
Artiodactyl	49	3.6
Deer	26	1.9
Pronghorn	12	.9
Birds	8	.6
Mallard	1	.1
Quail	1	.1
Turkey	5	.4
Kingsnake	14	1.0
Frogs and Toads	21	1.5
Suckers	1	.1
TOTAL	1386	100.0

general floor fill (charred pine bark), and Pit 2, which yielded the only evidence of cultigens from Floor 1, including charred maize cupules and a kernel fragment. Charred pine bark and a goosefoot seed were also recovered from Pit 2.

Samples analyzed from the lower floor were more productive. Both Hearths 2 and 3 produced evidence of

maize as well as charred goosefoot and pigweed seeds, and pine bark. Hearth 2 may have been used more extensively for cooking or was not cleaned out as thoroughly before its disuse because, in addition to the four taxa mentioned, charred purslane, seepweed, patata, and yucca seeds were recovered.

From a roof fall sample from the structure, a partially charred scorpionweed seed and charred goosefoot and pigweed comprised the cultural remains.

Three samples were examined from the roomblock. An uncharred prickly pear embryo was the only plant remain recovered from a vessel associated with Burial 2 from Room 1. Uncharred juniper leaflets were the only plant remains recovered from two rodent burrows thought at first to be postholes from Room 1.

Three extramural features were sampled for plant remains. Noncultural uncharred goosefoot, tansy mustard, marsh elder, and purslane seeds were recovered from Pit 11, and the extramural hearth. Pit 12 produced the only cultural plant remains, including charred purslane seeds and maize cupules.

Twenty-nine C-14 wood samples were examined from LA 39968. Coniferous taxa dominated the wood charcoal assemblage including juniper, ponderosa, fir, Douglas fir, pine, and piñon. Small amounts of oak were also identified. Juniper, piñon, ponderosa, and oak comprise the arboreal species that grow on the site today suggesting that, prehistorically, these taxa would have been readily available for fuelwood or construction material. Douglas fir and fir could have been brought to the site from the higher elevations of the San Francisco Mountains to the north.

Maize was the only cultigen recovered from LA 39968. Low frequencies of charred weedy annuals were also present and could indicate use of these plants for food. Evidence of perennial use was restricted to a single yucca seed. Pine bark recovered from four proveniences probably represents firewood residue.

Pollen Remains

Of the 44 pollen samples collected for analyses, 40 samples had pollen present. Table 2.39 shows the different types of pollen found on the site. Maize is present in the structure: on two metates, in a jar that came from the fill, and a metate on the floor. Postholes 6 and 8, and Pot Rest 5 also had maize pollen present. A control sample that was taken between Pits 10 and 12 also contained maize pollen. Although maize is present, it does not dominate the assemblage. Pine, grasses and cheno-ams have higher counts. Abundant land is suitable for the growing of cultigens nearby.

Table 2.39. Pollen Recovered from LA 39968

Locus	Pine	Grasses	Cheno-ams	Sunflower Sp.	Corn Pollen	Oak	Segebrush	Knotweed	Juniper	Barrel Cactus	Nightshade Sp	Globe Mallow
Control	X	X*	X	X	X	X	X					
Outside Area												
Surface (Metate)	X		X									
Pit 2	X		X				X					
Pit 4	X	X*	X				X					
Burials												
Burial 1-vessel 5	X	X										
Burial 1-vessel 3	X	X	X									
Burial 1-vessel 6			X									
Burial 1-vessel 6	X	X*	X	X	X			X				
Burial 2-vessel	X	X*	X		X	X						
Pitthouse Fill												
Jar	X	X		X	X							
Bowl		X	X									
Metate	X	X	X	X								
Mortar	X	X	X		X	X						
Stone Bowl	X	X	X	X								
Sherd	X	X*	X	X			X					
Metate	X	X	X	X							X	
Bowl	X	X	X	X		X						
Metate	X	X*	X	X	X		X*					
Metate	X		X									
Pitthouse Floor												
Stone Bowl			X									
Metate	X	X	X	X		X						
Metate	X		X	X								
Floor	X	X	X	X								
Sherds	X	X	X	X						X		

Table 2.39. Continued.

	Locus	Pine	Grasses	Cheno-ams	Sunflower Sp	Corn Pollen	Oak	Sagebrush	Knotweed	Juniper	Barrel Cactus	Nighthade Sp	Globe Mallow
	Vessel 2	X	X*	X	X								
	Metate	X	X	X	X					X	X		
	Metate	X	X	X		X							
	Below Metate	X		X							X*		
	Metate	X	X	X	X	X							
	Metate	X	X	X		X							
	Metate	X	X	X	X								
	Metate	X	X	X	X								
	Posthole 2	X		X	X			X					
	Posthole 6	X	X	X	X	X							
	Posthole 8	X		X	X	X							X
	Potrest 5	X	X	X	X			X					
Floor 2													
	Floor	X	X*	X	X					X			
	Floor	X	X*	X	X			X					
	Potrest 20	X	X*	X	X								
	Potrest 22	X	X*	X	X								

*High Counts

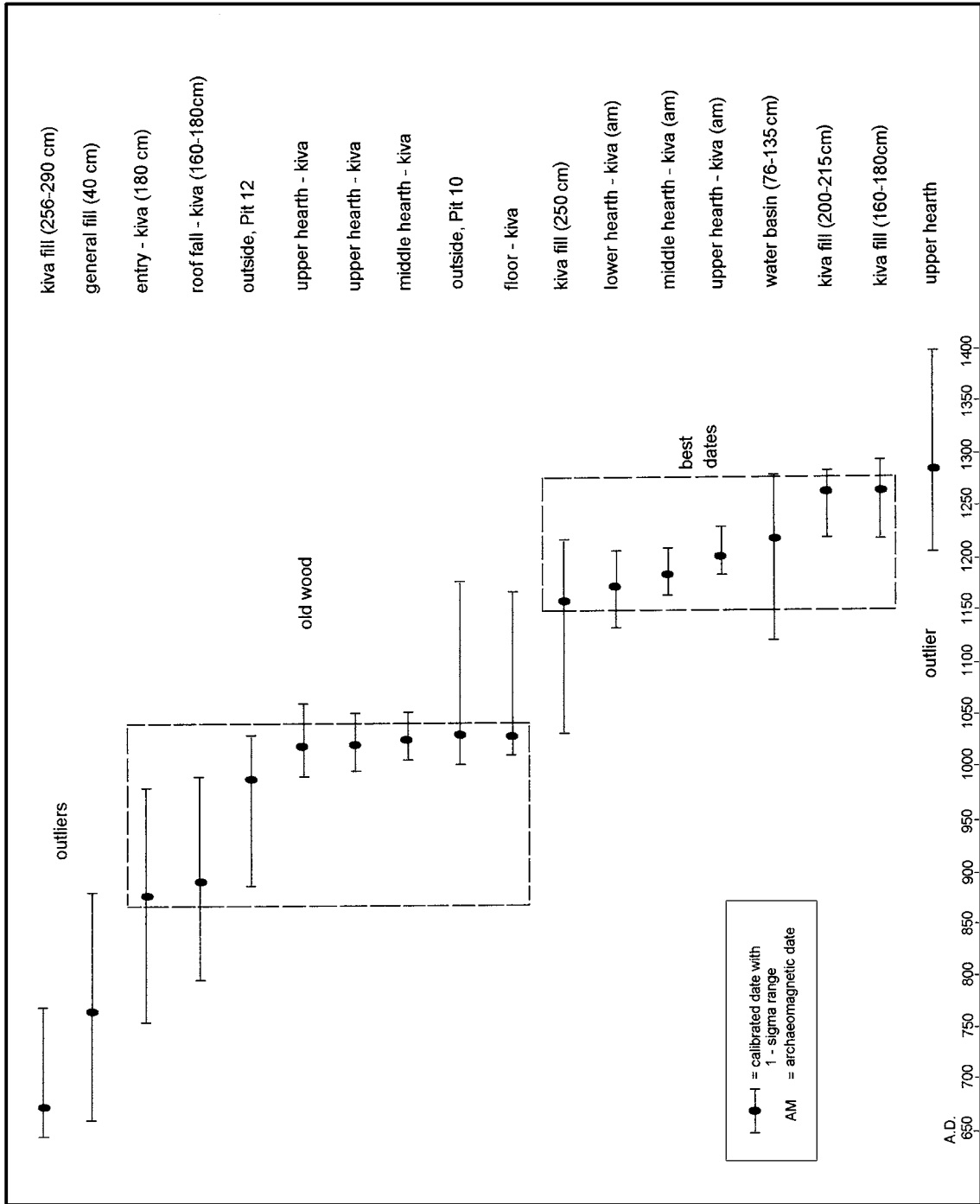


Figure 2.111. Stratification of ¹⁴C dates, LA 3998.

Table 2.40. C-14 Dates for LA 39968

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
87N/97E	77875	990±60	A.D. 1000-1055 1090-1150	A.D. 970-1195	A.D. 1025	Pithouse Upper Hearth
87N/96E	77876	980±50	A.D. 1010-1055 1090-1150	A.D. 985-1180	A.D. 1030	Pithouse Hearth 2
86N/96E	76339	900±60	A.D. 1035-1220	A.D. 1015-1265	A.D. 1170	Pithouse Fill (250 cm)
87N/99E	76345	960±60	A.D. 1015-1170	A.D. 985-1220	A.D. 1035	Pithouse (floor) Metate #4
87N/97E	76332	760±80	A.D. 1220-1295	A.D. 1065-1075 1155-1395	A.D. 1275	Pithouse Fill (160-180 cm)
88N/96E	76333	990±70	A.D. 995-1065 1075-1155	A.D. 905-920 950-1215	A.D. 1025	Pithouse Roof Fall (170 cm)
88N/96E	76334	1140±80	A.D. 800-995	A.D. 695-1030	A.D. 895	Pithouse Roof Fall (160-180 cm)
88N/96E	76335	780±60	A.D. 1220-1285	A.D. 1170-1300	A.D. 1265	Pithouse Fill (200-215 cm)
105N/121E	76336	840±100	A.D. 1045-1105 1115-1280	A.D. 1005-1310 1365-1375	A.D. 1220	Water Retention Basin (76-134 cm)
89N/89E	76337	1060±90	A.D. 890-1035	A.D. 785-1180	A.D. 995	Outside Pit #12 (22-35 cm)
85N/88E	76338	960±80	A.D. 1005-1180	A.D. 960-1250	A.D. 1035	Roasting Pit #10 (L3)
87N/100E	76341	1180±100	A.D. 720-735 760-985	A.D. 660-1030	A.D. 880	Pithouse Entryway (180 cm)
82N/88E	76342	1270±100	A.D. 665-885	A.D. 615-990	A.D. 770	General Fill (40 cm)
87N/96E	76343	720±140	A.D. 1205-1400	A.D. 1020-1450	A.D. 1285	Pithouse Upper Hearth (251-255 cm)
87N/97E	76344	1330±70	A.D. 650-775	A.D. 615-875	A.D. 680	Pithouse (256-290 cm)

DATING METHODS

Several dating methods were used at the Spurgeon Draw site: C-14 dating, archaeomagnetic dating, obsidian hydration, and ceramics. C-14 samples were taken from all areas of the site and from the water retention basin (Table 2.40). The C-14, obsidian hydration, and the archaeomagnetic results are given in Figure 2.111.

The two earliest dates represented are outliers—they are too early for the site. The most recent date is also not consistent with the ceramic data. The old wood problem is strong; almost half of the dates read about 200 years too early. The best dates are the three archeomagnetic dates for the three hearths in the structure. These suggest small overlaps of time between hearth uses at A.D. 1172.5, A.D. 1187.5, and A.D. 1207.5. The date for the water retention basin at A.D. 1220 fits statistically with the archaeomagnetic dates from the structure. Site occupation would, therefore, seem to fall between A.D. 1172 and A.D. 1220. All statistically similar dates produced a mean of A.D. 1196, rounded to A.D. 1200.

Of the five pieces of obsidian submitted for dating, only one with a date of A.D. 1372 fell anywhere close to the date ranges obtained from radiocarbon and archaeomagnetic samples. All others fell between 840 B.C. and

A.D. 278, extremely early for this Late Pueblo site. No evidence of an earlier Archaic occupation was present on the site.

SITE INTERPRETATION

The Spurgeon Draw site is a small pueblo that dates to the Tularosa phase (ca. A.D. 1200). The site consists of two roomblocks, one jacal-type structure, and a pit structure. Roomblock 1 is just north of the pit structure. The excavated roomblock (Roomblock 1) was L-shaped and had a minimum of three rooms and possibly up to six units. Room 1 is large and could have once been two separate units. The size would suggest a habitation room; however, there was no prepared floor nor any floor features. Room 2 was mostly missing; there was a north wall and a partial west wall. If we project alignments to Room 2, Burial 2 would be in the room. Room 3 has remnants of the north, west, east, and south foundations. None of the rooms have prepared floors, or any floor features, with the exception of Room 2 where Burial 2 is located. With what is left of the roomblock, it is difficult to speculate whether the rooms were used as habitation or for storage. The high number of sherds in this area might suggest a storage function.

The pit structure was circular in shape with a narrow ledge around the entire structure. Walls of the unit were masonry veneer cobbles above the ledge. Below the ledge the wall had been plastered down to the floor. The floors, of which there were two, were prepared with a smooth clay, and the hearth had two episodes of remodeling. The floor features consisted of a hearth, an ashpit, two postholes, one with the post in situ, several pot rests, a deflector, and an east ramp entryway. Several small postholes were found in the wall just below the ledge and their functions are unknown. Three postholes found on the ledge are inset into the wall. Two are on the east side and are probably roof supports for the entryway. A single posthole, which possibly served as a roof support, was found on the west side of the structure.

The hearth, ashpit, and deflector are slightly off-set from the center and the entryway. No sipapu nor ventilator was found. Floor 1 had many artifacts on it, including five metates, of which all were trough-type except for one slab implement. Metate 1 was on an adobe stand, while the rest were on the floor. Maize pollen was found on and below Metate 5. Posthole 6 and Pot Rest 8 also had corn pollen. It is possible that Posthole 6 may have served as a sipapu; however, it is not in the center, but to the south, 80 cm from the ashpit.

The water retention basin probably served to insure water availability even though Spurgeon Draw is nearby. Crown (1987) suggests that water storage features may have made occupation and farming more feasible during periods of dryness or drought. Dean et al. (1978) state that water storage devices may have been constructed in response to environmental deterioration during the later Prehistoric period. Whether this feature was used for farming or because of drought is unknown. It was noted that during the excavations, rainfall filled the water basin and would hold it for a long period of time.

The structure may not only have been used for domestic activities, but for a combination of domestic and ritual functions, as per Wilshusen (1988:642). The

encircling ledge and deflector are commonly found in ceremonial units. It is known that food processing is one of the activities that is often performed in a kiva and could explain the high number of pieces of ground stone on the floor. It is also possible that the above-ground rooms were used as storage facilities and not living areas. As Wilshusen (1988) states when discussing a similar site, "whether or not the pit structure and surface structures are both serving as domestic loci, it is clear that there is not enough space in the pit structures to serve as domestic centers." This seems to hold true for this structure. Although the floor area is large, there are so many features and pieces of ground stone on the floor, not much room is left for living space.

The question of maize reliance is a major issue in our study of the Mogollon Highlands. The palynological studies did find corn pollen on the site; however, there are higher counts of pine, grasses, and chenopods present. It is possible that at LA 39968, corn was a supplement to the main diet. The ground stone found on the site does not have the characteristics on the grinding surfaces, as described by Zier (1981), that would suggest a high reliance on corn. There was one metate and one mano that did have corn pollen, however the surfaces of these two artifacts were fine grained and the striations were not deep. Polishing on the surfaces was also noted.

Spurgeon Draw represents a Late Pueblo occupation of the Pinelawn Valley at ca. A.D. 1200. Comparisons with other sites in the valley from earlier periods indicate, although not conclusively, that there may have been climatic or population stress at this time in the area. The very high frequency of small versus large mammals utilized, the high proportion of various species used, the variety of possible economic pollen would all suggest that resource depletion of favored varieties was occurring and that, as a result, a broad-based economy was being employed by site occupants. This will be discussed in a later chapter.

LA 39969 (AR-03-06-06-00828)
HAURY'S SITE

Yvonne R. Oakes

This small pueblo was first recorded by Emil Haury in 1931 as part of a Gila Pueblo survey out of Arizona. He identified it as Reserve Site 5:15 with fallen walls, 2 ft of cultural fill, and an unknown number of rooms. His aluminum tag, marking the site (Fig. 2.112) was retrieved by OAS crews from the surface of the pueblo. The sherd collections made by Haury are now stored at the Arizona State Museum, University of Arizona, Tucson. Haury's site was next recorded by Pool and Howard (1980) as a seven-room Reserve phase pueblo with three associated one-room structures. In 1992, OAS personnel examined the site (Figs. 2.113, 2.114) and included it in a data recovery program for sites to be affected by NMSHTD road construction along NM 12 (Oakes and Wiseman 1993). They determined that the three associated structures were natural rock outcroppings, and estimated that the pueblo contained three or four rooms.



Figure 2.112. Aluminum tag left by Emil Haury in 1931 at LA 39969.

Excavations by OAS began in June 1993, and uncovered a three-room Reserve phase pueblo, an associated jacal-like structure, numerous extramural pits, and two infant burials (Fig. 2.115). The roomblock is situated entirely within the highway right-of-way on a sloping hillside with artifacts eroding downslope to the south and east. A series of radiocarbon dates place the site occupation at a calibrated, weighted date of A.D. 1043 \pm 20 and a possible minor use of small outside pits and the upper

fill of Room 1 at a weighted date of A.D. 1097 \pm 31.

Site size is 22 by 25 m with a site area of 550 sq m. Some additional artifacts have eroded far downslope to the northeast of the roomblock, and this area is not included in the site measurement. All of the roomblock and associated architectural features are within the highway right-of-way (Fig. 2.116).

Numerous other Reserve phase sites lie to the west-southwest and to the northeast of Haury's site. Later Tularosa phase sites are fewer in this region and cluster approximately 3 km to the west. Earlier pithouse sites are also not common. The 41 recorded Reserve phase sites stretch for 8 km within the narrow extension of the Pine Lawn Valley along NM 12. At 1.6 km to the northeast is the well-known Starkweather Ruin (Nesbitt 1938) with an approximate 12-room Reserve phase occupation. On the western edge of the valley, at 6.4 km, are the Sawmill and Powerline sites of the Reserve phase. The Sawmill site has a rectangular great kiva in association with 10 masonry rooms (Bluhm 1957). The Powerline site has probably 8 rooms. Other Reserve phase sites in the area have fewer rooms. While these sites are fairly evenly spread throughout this area, it is interesting that the later Tularosa phase sites concentrate only in the Spurgeon Draw drainage to the west.

SITE SETTING

Haury's site is within a fairly narrow northeast extension of the Pine Lawn Valley. Steep slopes of the Saliz and San Francisco mountains rise to the southeast and northwest. The site sits on a small, mostly level area near the top of an east-facing, steeply sloping hillside. A minor drainage lies downslope 20 m to the northeast while the larger SU Canyon is .35 km to the southeast. This drainage carries heavy flows during mountain thunderstorms. The site is within the Gila National Forest at an elevation of 1,873 m (6,145 ft). The hillslope is wooded with yellow pine, Ponderosa pine, piñon, and some oak. Pine duff is heavy in areas. Wild game is plentiful in the surrounding valley and mountains. Areas immediately to the east and south-east, near the several drainages, would be suitable for growing crops.



Figure 2.113. Haury's site, looking northeast from NM 12. Figure in background is standing on roomblock.



Figure 2.114. Haury's site prior to excavation, close-up of roomblock.

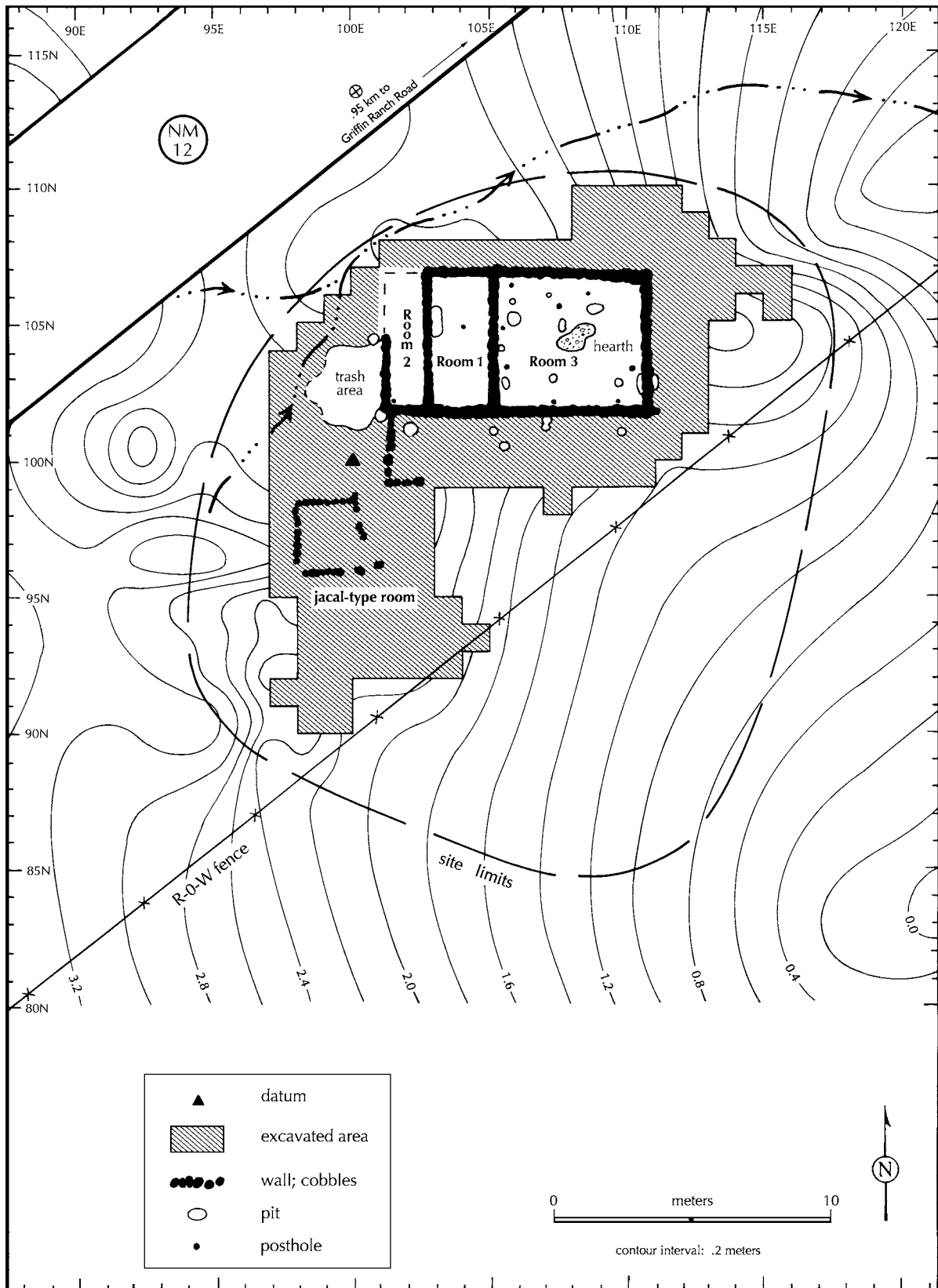


Figure 2.115. LA 39969, Haury's site.

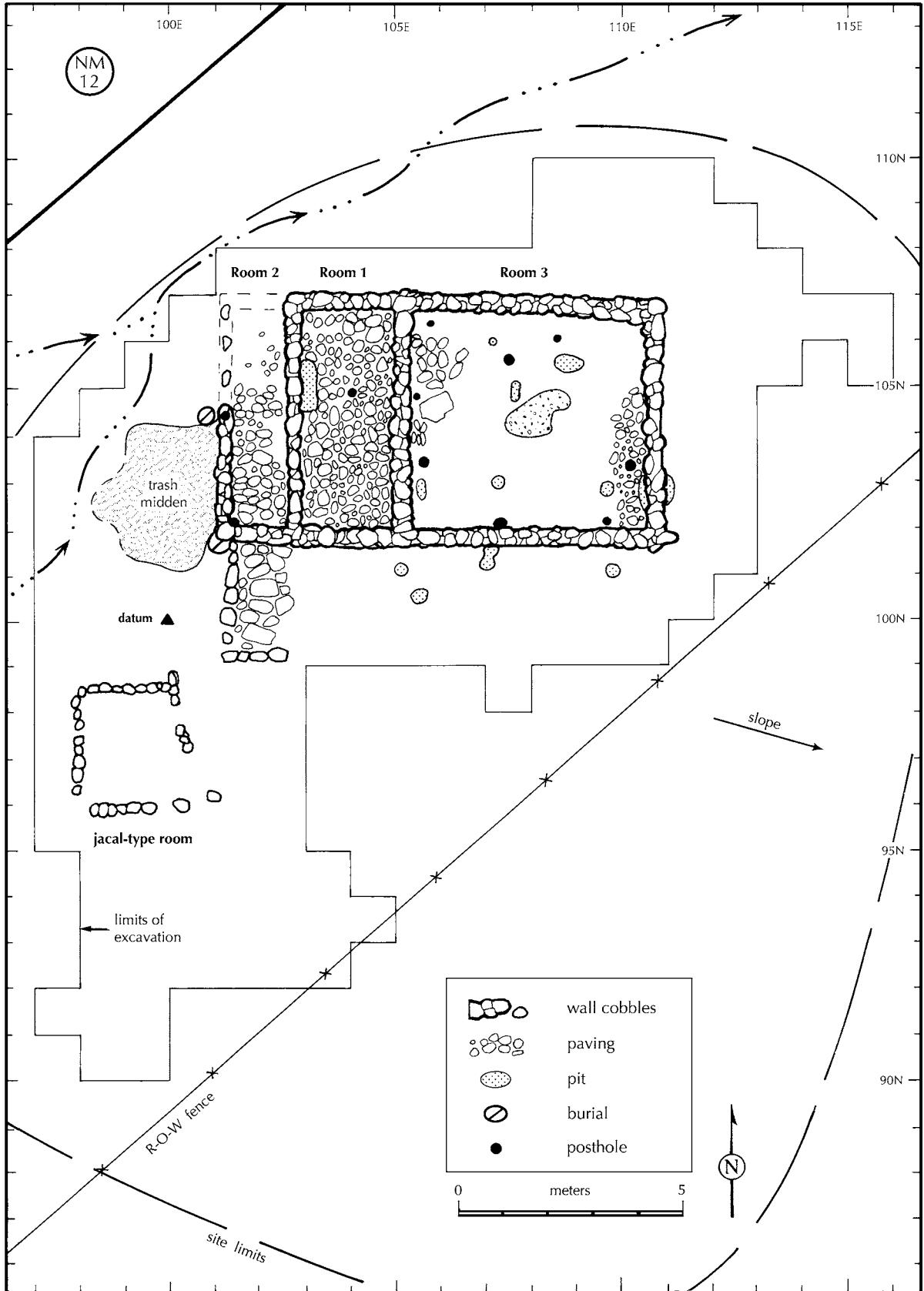


Figure 2.116. Haury's site, plan view.

RESEARCH OBJECTIVES

Site structure for small Reserve phase sites in the Mogollon Highlands is not well known. The layout of these sites, their function as permanent residences or seasonal occupations, the types of features found on them, and the potential for them to contain ceremonial units is poorly documented because of lack of excavation of this type of site. These are the concerns we addressed with the Haury's site data.

Artifact analysis was used to test Kelly's (1988) and Hard's (1990) models to document site function. Ground stone and cooking vessel analysis were important parts of the study. Degree of dependence on cultigens, as tied to site mobility, was of importance to the research team, given the concern over prehistoric site sedentism, even during the Reserve and Tularosa phases. Flotation and palynological samples were critical to approximating seasonality or length of site use. Finally, Haury's site was compared to other sites of varying time periods to assess temporal variations in site use and cultigen dependency.

EXCAVATION PROCEDURES

Prior to excavation, numerous cobbles were observed strewn across the surface of the pueblo, and room divisions could not be isolated. Heavy duff surrounded the roomblock, covering much of the associated artifact scatter. The site was not subjected to testing procedures because of the obvious presence of the roomblock mound.

For the excavation, a datum (1) was established southwest of the roomblock area at an arbitrary Grid 100N/100E, and a north-south and east-west baseline were laid out with a transit and stadia rod at this junction. A series of 1-by-1-m grids were then set up over the site area. Excavations began with surface stripping the area outside of the roomblock, working towards the pueblo to find the outer walls. Excavation units were expanded as cultural features were uncovered. All grids were hand-excavated to a sterile substrate (unless features or surfaces were encountered).

Levels were stratigraphically determined and include:

- Level 1:* Surface stripping
- Level 2 :* General fill
- Level 3 :* Room fill
- Level 5 :* Floor contact
- Level 6 :* Subfloor feature fill

No roof fall was encountered within these rooms; thus, no Level 4 (roof fall) was recorded.

Over the site surface was a 2-10 cm layer of pine duff and loose, silty brown soil (Munsell color 10YR 3/3, dark brown). Once this layer was removed, soil became hard-packed (except in areas of feature fill). It continued to be dark brown in color but had a more ashy appearance (10YR 3/2, very dark grayish brown) Artifacts, as well as a thin scattering of charcoal flecks, were present in this and the above layer. Some gravels were present along with small pieces of caliche. Root disturbance was fairly moderate.

At the higher elevations on the site, close to the NM 12 roadbed, cultural fill continued below surface until reaching an exfoliating sandstone bed. At lower, sloping elevations, soil turned into a sterile, chunky clay, gummy and reddish in color (5YR 5/4, reddish brown), at an approximate depth of 40 cm below surface.

All fill was screened through ¼-inch mesh. Individual rooms and features were documented with a specific feature number, photographed, and a plan view and profile drawn. The mean depth of excavation reached 39.4 cm below ground surface. The number of excavated grids was 193 and total amount of dirt removed on the site, by hand, was 75.6 cu m.

CULTURAL UNITS

Haury's site consists of a three-room pueblo of the Reserve phase in association with the remains of a jacal-like structure, numerous pits, a large depressed area with cultural fill, and two infant burials (Fig. 2.117). A structure may exist approximately 20 m to the east of the pueblo, outside of the right-of-way, based on darkened cultural fill observed in an arroyo cut.

Roomblock

The roomblock is oriented in a linear alignment east-west. Remains consist of partially standing masonry walls, cobbled flooring, and numerous floor features in Room 3 (Figs. 2.118, 2.119). No other roomblocks are present on the site.

Original prehistoric site occupants did not dig the pueblo rooms down into the sterile clay; rather, Rooms 1 and 2 were built on cultural fill (trash) while the floor of Room 3 was laid just above the red clay horizon. Within the rooms, there were no stratigraphic levels evident. Room fill was homogeneous and lacked any indication of roofing material.

Room 1

Dimensions. This rectangular masonry room measures 4.5 m north-south by 2.0 m east-west with an area



Figure 2.117. Overview of Haury's site, facing southwest. Looking from Room 3 to Rooms 1 and 2.

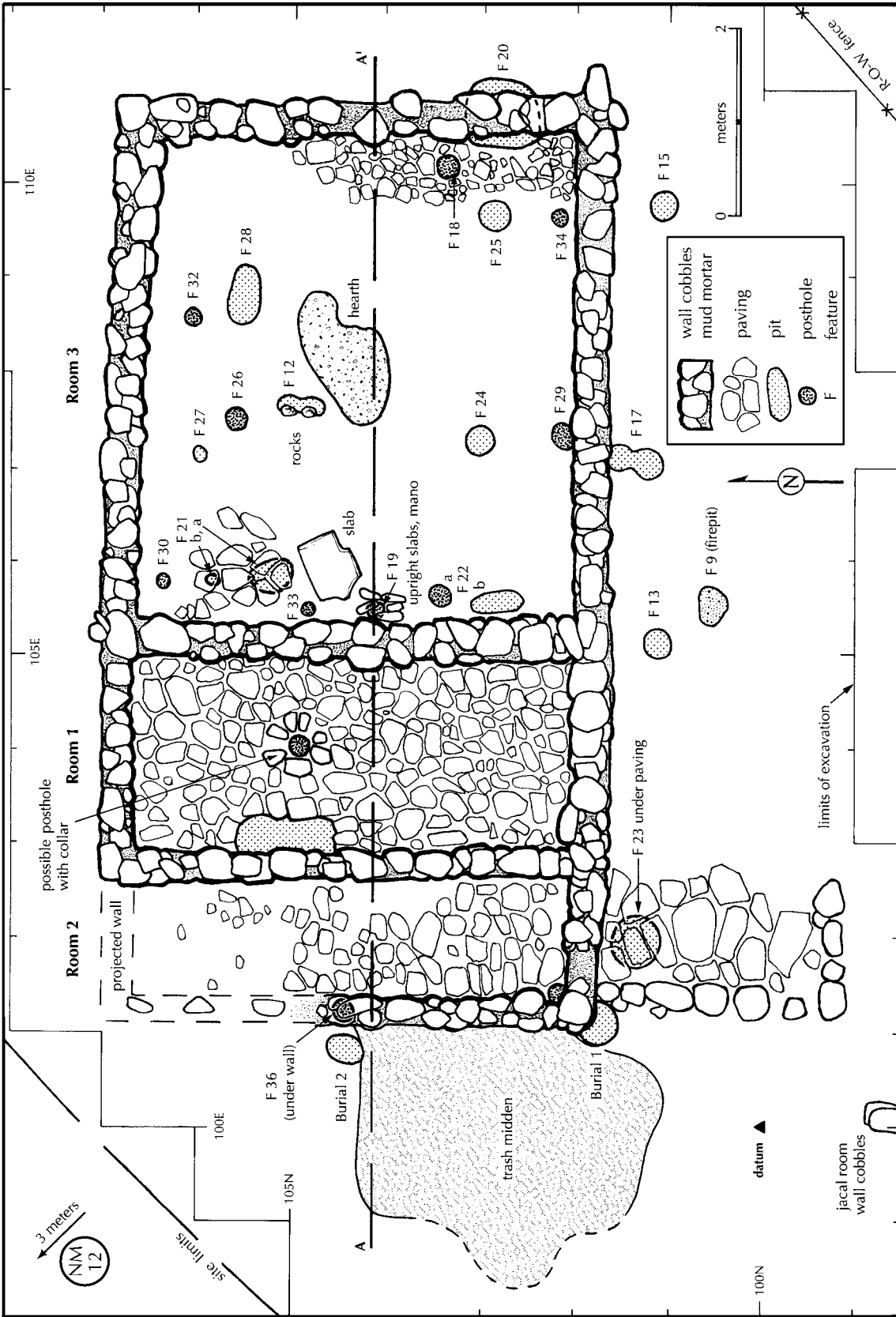


Figure 2.118. Plan view of roomblock and nearby features.

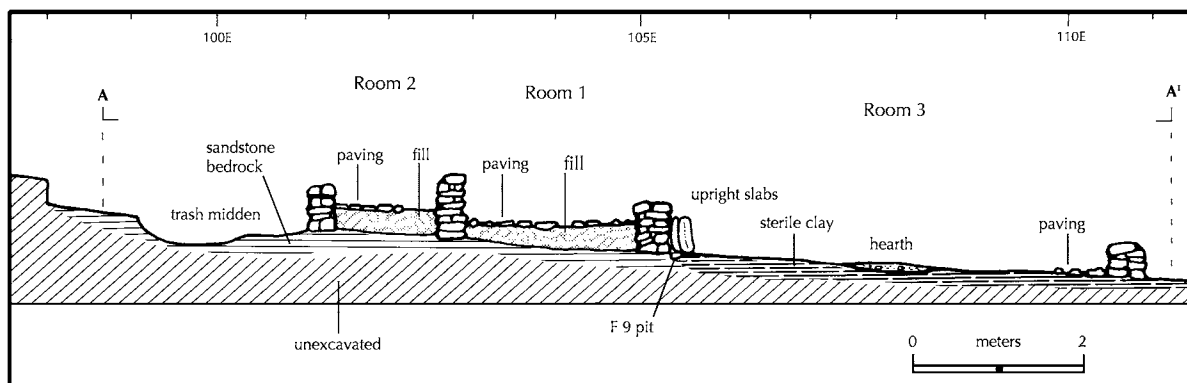


Figure 2.119. Profile of roomblock, west to east.

of 9.0 sq m.

Walls. Walls are constructed of unshaped, uncoursed, medium to large rhyolite rocks. A mud mortar holds the wall together. The mortar is made from local soils and has some caliche and small gravels mixed with it. Some chinking with smaller rocks is present. No plastering was evident on interior walls. Wall heights and thicknesses are variable.

North wall: 50 by 40 cm
 South wall: 60 by 42 cm
 West wall: 66 by 30 cm
 East wall: 53 by 35 cm

Floor. The floor of Room 1 has been built on top of approximately 40 cm of cultural fill. It consists of smooth rhyolite cobbles laid flat on this fill matrix. Spacing of the cobbles is fairly close but not tightly packed. Excavations beneath this cobble flooring revealed no compact surface at a lower depth, only the sandstone bedrock. The raised floor is unusual in this area (Fig. 2.120) and comparisons can only be found with a few sites in the region (see Site Interpretation).

Floor Features. Two features were excavated within Room 1. An oblong pit (Feature 3) was found along the west wall. It measured 1.1 m north-south by 45 cm east-west and extended 40 cm below the cobble floor. It had been dug into the fill and evidenced some packing of clay to form an uneven surface. The base of the pit was just above bedrock. Within the fill of the pit were several ceramic fragments, a lithic artifact, and a partial jar of Alma Polished Brown Ware. Flotation and pollen samples were taken from the pit.

An anomalous ring of rhyolitic rocks (Feature 4) was located on the cobble floor in the north-central part of the room (see Fig. 2.118). It measures 40 cm north-south by 55 cm east-west and projects above the floor for an average of 30 cm. The center of the ring was void of rocks. Within the fill of this area, 37 cm deep, was a flat rock. It is possible that this ring of rocks is a collar for a

post support, which extended down into the fill below the floor. It also may be a collection of rocks fallen from the walls of the room into a fortuitous circular pattern.

Hearth. No hearth was present within the room.

Postholes. The ring of rocks above the cobbled floor may have been a post collar, but no other post supports were present.

Roof. No evidence of roofing material was recovered from the fill of Room 1. There was no sign of burning within the room that would have preserved such evidence.

Room 2

Dimensions. This masonry-walled room is rectangular but the measurements are somewhat approximate because the north third of the room has apparently eroded away. By projecting wall lines from both the adjacent room and remaining walls of Room 2, a close estimation of 4.5 m north-south by 1.1 m east-west is obtained. The projected floor area is 4.95 sq m.

Walls. Remaining walls were poorly laid masonry without coursing. Abundant mortar was used in the wall construction of this room, more so than in Room 1. The north wall, and a portion of the west wall, was missing. The south wall was definable but only a few base rocks remained. Heights and widths of the remaining walls are:

North wall: missing
 South wall: 22 by ? cm
 West wall: 30 by 30 cm
 East wall: 66 by 30 cm

Floor. Like Room 1, the floor was paved with rhyolite cobbles that extend for 3.1 m from the south wall (Fig. 2.121). In the northern third of the room, some form of disturbance has removed the remaining flooring. However, unlike Room 1, the cobbles do not create a raised floor, but are approximately 26 cm above the bedrock. There is cultural fill below the cobbles and



Figure 2.120. Haury site, Room 1, raised cobble floor; looking south, pit against wall on the right and the possible post collar is in the center. Room 2 to the west is unfinished. Note the drop in level to Room 2 on the left.



Figure 2.121. Room 2, partially excavated, facing south. Cobble floor is disturbed at north end.

above the bedrock, however. Thus, both Rooms 1 and 2 seem to have been constructed on top of this fill. Room 1 has a deeper fill deposit (40 cm). The variation in fill beneath the floors may purposely have been planned to level out the eastward sloping hillside.

Floor Features. The only feature found in Room 2 was a posthole. Also, a possible pit or posthole (Feature 36) was uncovered 30 cm below the cobble floor along the west wall. It looked like a posthole that had been dug into the underlying bedrock prior to room construction. It measured 20 cm in diameter and reached 26 cm in depth. The fill was soft and loamy with some gravels, but no artifacts. This may also have been rodent-dug prior to the building of the roomblock. If not, its position beneath the floor is problematic.

Hearth. No hearth was uncovered in Room 2.

Postholes. A single posthole (Feature 5) was located in the southwest corner of Room 2. Beginning at floor level, it measured 18 cm in diameter and extended below the floor for 17 cm. Embedded in the wall of the posthole were thin remnants of wood with the grains running vertically within the hole. The fill of the posthole was a loose, sandy clay and several pieces of charcoal. These were submitted for radiocarbon dating. Several lithic and ceramic fragments were also recovered from the posthole.

Room 3

Dimensions. This room lies at the eastern end of the roomblock, is squarish in shape, and measured 4.5 m north-south by 5.10 m east-west for a floor area of 22.95 sq m. The room is large, measuring twice the interior space as that of Room 1 adjoining it (Fig. 2.122).

Walls. All masonry walls bounding the room are intact. The uncoursed wall stones are rhyolitic with some chinking and less mud mortar present than in the other rooms. No plastering was evident within the room.

The remaining heights and thicknesses of the walls are:

North wall: 45 by 30-40 cm
South wall: 60 by 30 cm
West wall: 74 by 35-45 cm
East wall: 30 by 35 cm

Floor: Room 3 was not built on cultural fill. The floor level was an uneven, compacted clay (10YR 4/3, brown). It lies 35 cm below the cobbled floor of Room 1 and is laid directly over bedrock.

Two portions of the floor are paved with small rhyolitic cobbles. These occur in the southeast and northeast corners. The paving in the southeast quadrant covers an

area of 2.95 m north-south and .70 m east-west for a total of 2.06 sq m. Paving extends to portions of the east and south walls (Fig. 2.123).

The cobble paving in the northwest corner of the room is similar, measuring 1.45 m north-south by .78 m east-west with an area of 1.16 sq m. These pavings may have served to keep perishable items off the dirt floor where there may have been some dampness.

Floor Features. Numerous features were found on the floor in Room 3. These include a hearth, 8 probable postholes, and 9 pits. The two cobble-paved corners of the room both contained features within the paved areas. The southeast corner had a posthole (Feature 18) dug from the paving level into the decomposing bedrock for 15 cm. It measured 24 cm in diameter. The fill was a brown, sandy clay with some root activity. A ground stone fragment was the only artifact recovered. A flotation sample was taken.

Also in this same paved area was a shallow pit found along the east wall (Feature 20). It was located under the paving and extended under the wall (Fig. 2.124). It was 76 cm north-south by 66 cm east-west and 17 cm deep. The fill was a loamy, dark soil with some flecks of charcoal and contained several lithic and ceramic artifacts and one ground stone fragment. It is likely that this is an earlier pit over which the east wall of the room was built.

The cobble-paved area in the northwest corner of the room also contained two features. Feature 21 consisted of two pits in close association (Fig. 2.125). Both are dug into the clay and bedrock substrate. The first (a) is roughly circular and extends directly below the paving for 33 cm with a maximum diameter of 39 cm. The sides slope inward so that the bottom is only 10 cm wide. The other pit (b) is smaller and lies 20 cm to the northeast, also below the paving, measuring 10 cm in diameter and 15 cm deep. The fill in both is a dark, loamy fill with one lithic artifact recovered. Their presence directly below the paving is interesting, indicating purposeful covering or their construction by earlier site occupants. A flotation and pollen sample were taken.

Within this northwest paved area, in the room corner, was a probable posthole (Feature 30) measuring 16 cm in diameter and 10 cm deep. One small bone fragment was recovered. The fill was dark, loamy soil (10YR 4/3, brown/dark brown).

Slightly south of the center of the room was a hearth area (Feature 11) consisting of a large, amorphous ash stain measuring .80 m north-south by 1.38 m east-west (Fig. 2. 126). The white ash was 7-11 cm thick, indicating repeated use of the hearth area. Directly to the northwest of the hearth was a small, oblong pit (Feature 12) measuring 40 cm north-south by 16 cm east-west and 17 cm deep. The sides are pinched slightly in the center and two rocks are embedded in the pit on the west side at the



Figure 2.122. Haury's site, Room 3, facing south. Removal of some paving on east side has occurred.



Figure 2.123. Close-up of cobble paving in Room 3, facing south.



Figure 2.124. Pit in Room 3, extending under east wall.



Figure 2.125. Northwest area of Room 3. Note remains of cobble paving. Pits 21a and 21b (unexcavated) and the five upright stones against wall.

surface. No artifacts were present, but a piece of burned wood was recovered.

Eight probable postholes were excavated within Room 3. The two within the cobble-paved areas have been discussed above. Measurements on these and all remaining postholes are presented in Table 2.41.

The average diameter of the postholes is 20 cm, indicating that fairly good-sized roof supports were used within this large room. There seems to be a peripheral pattern to posthole placement whereby the posts were placed around the edges of the room near the walls and also in the corners (see Fig. 2.118). There is only one exception, possible Posthole 26, the widest and deepest of the group, with straight sides. This is not aligned along the wall with the other postholes and therefore may not be one. The number of artifacts (N=6) recovered from its fill is also higher than in the other postholes. A posthole was not found in the southwest corner of the room, but because of the uneven nature of the floor, it may have been missed during excavations.

Room 3 also contained nine pits of various dimensions. These are detailed in Table 2.42.

The variety in shape and dimension of the pits does not allow for easy functional classification. None of the pits are burned or have burned rock within them, indicating that none were utilized as roasting pits. None are particularly large and many may, in fact, be small storage

facilities. Two that deserve additional comment are Pits 19 and 20. Pit 20 has been discussed in the preceding paragraphs. Pit 19 had been placed centrally along the west wall of the structure. It is unusual in that, around and overlying the pit, there were five tabular stones, one of which was a mano. All were placed in a vertical position (see Fig. 2.125). This placement is purposeful and has the appearance of some type of household altar. A large, irregularly shaped flat slab, measuring 75 by 55 cm, was lying on the floor directly northeast of this grouping. No other similar features have been noted in the literature of the region.

Roof. There was no roofing debris present in the fill of Room 3.

Possible Jacal Structure

Only basal rocks remained as a possible foundation for a rock-based jacal or brush structure, possibly used as a storage facility or a walled, and probably roofed, outside work area, much like a ramada (Figs. 2.127, 2.128).

Dimensions. The rock alignment measures 2.87 m north-south by 2.65 m east-west with a total area of 5.52 sq m.

Walls. Remaining walls consist of only a broken outline of foundation stones. The southwest corner and almost all of the east wall are missing. An entry would

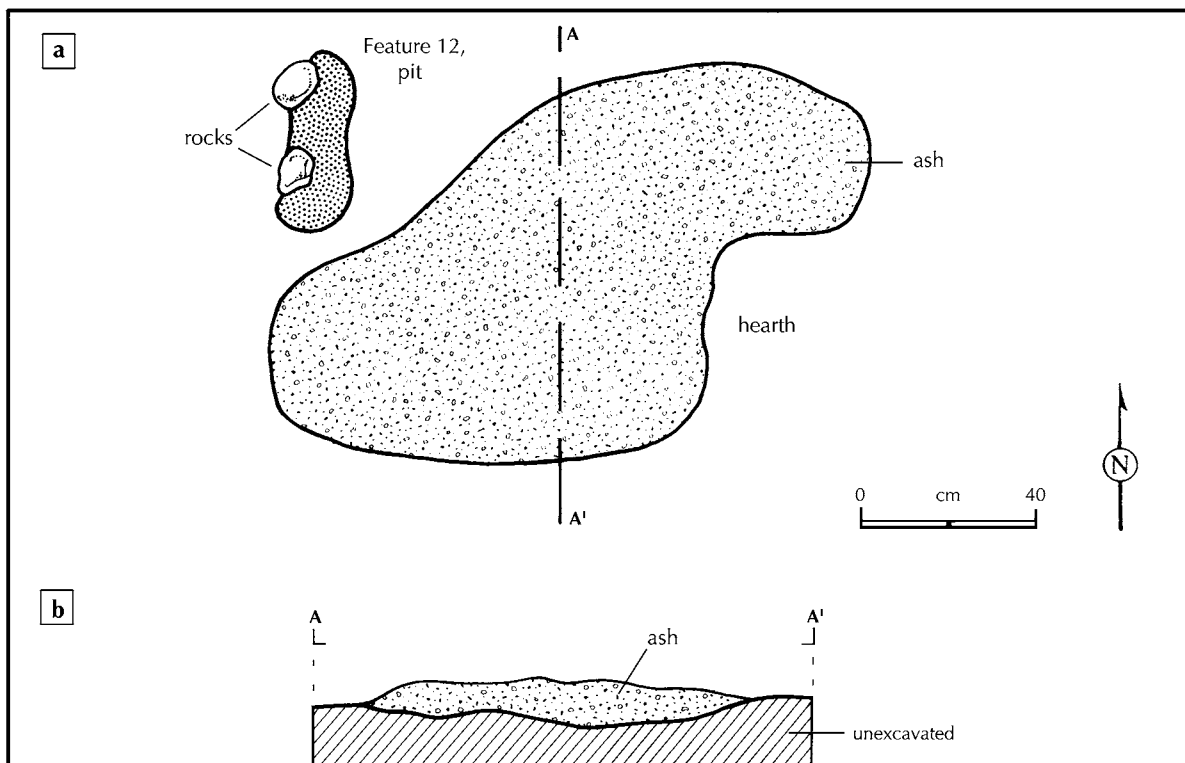


Figure 2.126. Room 3, hearth, Feature 11, plan view and profile, and plan view of oblong pit, Feature 12.

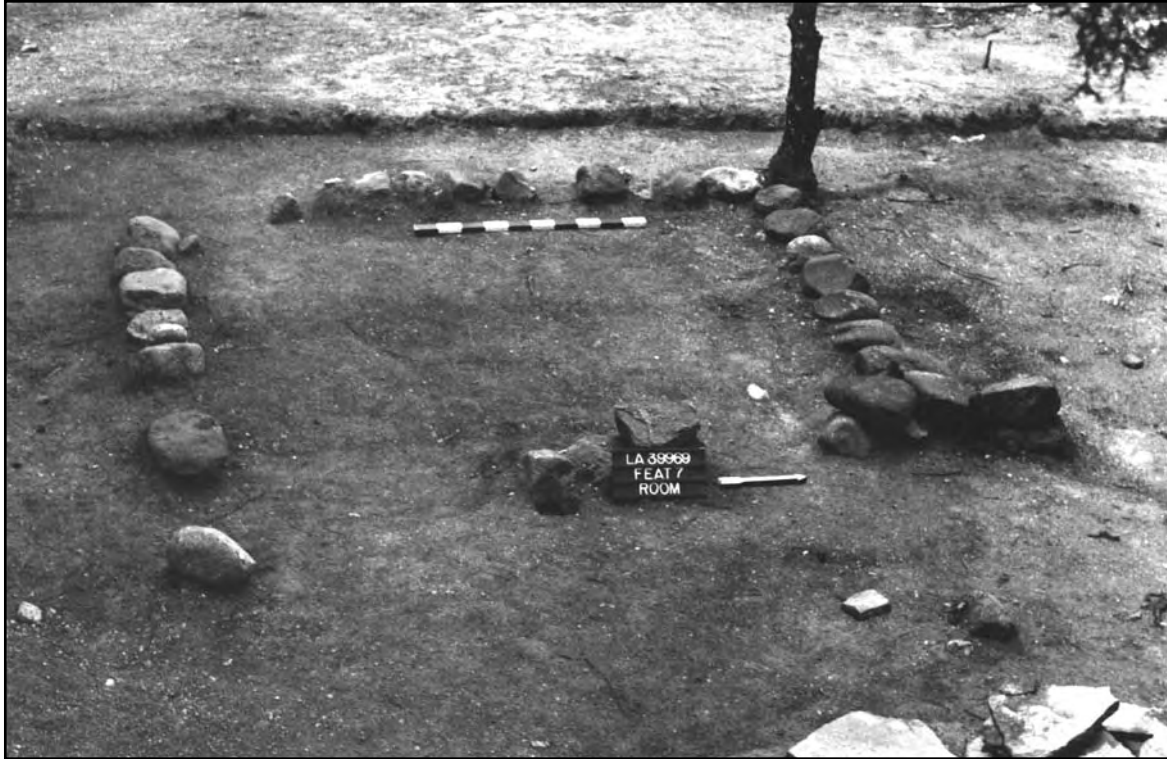


Figure 2.127. Possible jacal structure, Haury's site.

Table 2.41. Posthole Dimensions for Room 3

Posthole #	Diameter (cm)	Depth (cm)	Artifacts
18	24	15	Ground Stone Fragment
22a	23	22	-
26	28	38	3 Lithic Artifacts, 3 Sherds
29	21	31	Wood Fragments
30	16	10	Bone Fragment
32	18	16	-
33	13	26	-
34	17	22	-

have had to have been located in this east wall, based on the rock alignment. The rocks are placed side by side with one area of stacking in the northeast corner. The rocks scattered around the structure and in the fill would not account for more than two or three courses of rocks, at best. Therefore, it would have probably had either a jacal or brush superstructure.

Floor: The rocks had been laid directly on a hard-packed use-surface immediately above the sterile clay substrate. Prehistoric site occupants had not dug out a floor or brought in clay or soil to level the surface. Cultural fill in this area was very shallow. Within the fill

of the feature were 125 lithic artifacts, 145 ceramics, 3 pieces of faunal remains, and a projectile point.

Floor Features. No features were present on the floor of this structure.

Hearth. There was no hearth within this structure.

Postholes. No postholes were found.

Roof. No evidence of roofing material recovered.

Extramural Features

Features outside of the roomblock, except for the possible jacal structure, are focused immediately outside of

Table 2.42. Pit Dimensions for Room 3

Pit #	Shape	Width (cm)	Depth (cm)	Artifacts
12	Oblong	40 by 16	17	Bumedwood
19	Circular	21	9	5 slabs (1 mano)
20	Oval	76 by 66	17	3 lithic artifacts, 6 sherds, and 1 piece ground stone
21a	Oval	39 by 30	33	1 lithic artifact
21b	Circular	10	15	-
24	Circular	32 by 30	39	2 lithic artifacts
25	Circular	30	30	1 sherd
27	Circular	12	12	-
28	Irregular	60	26	4 lithic artifacts and 2 sherds

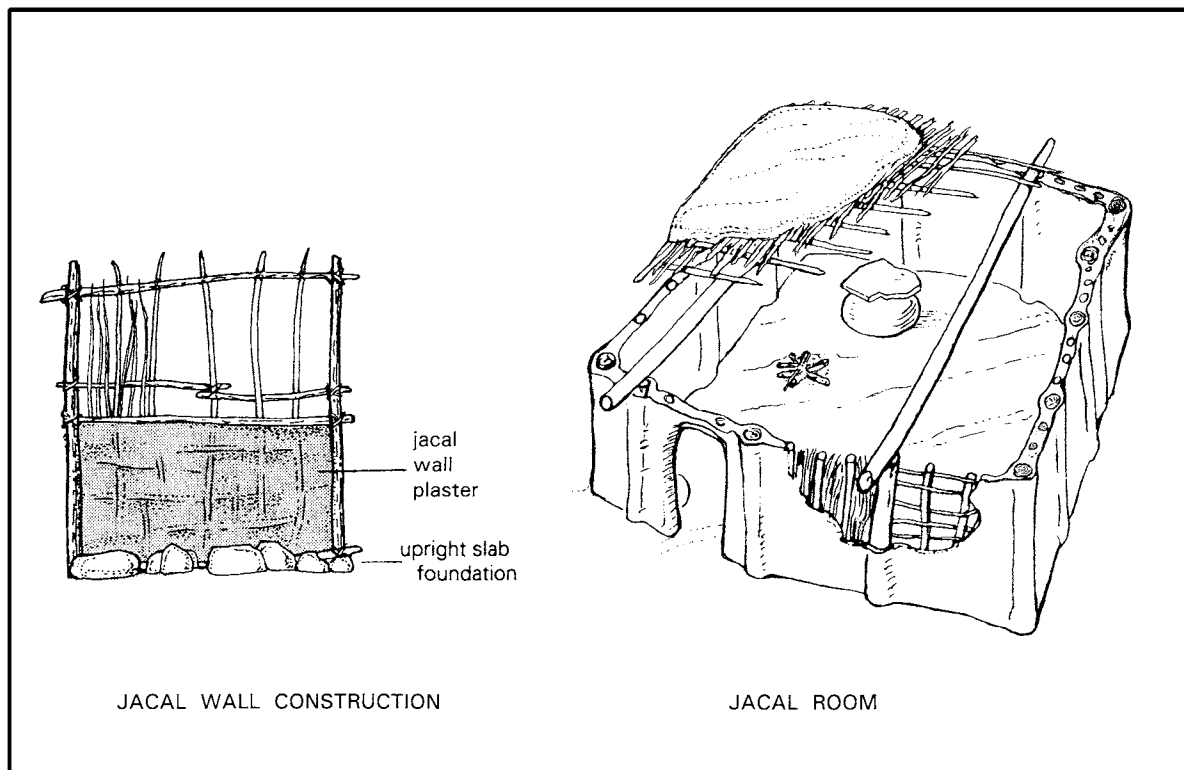


Figure 2.128. Artist's rendering of jacal construction.

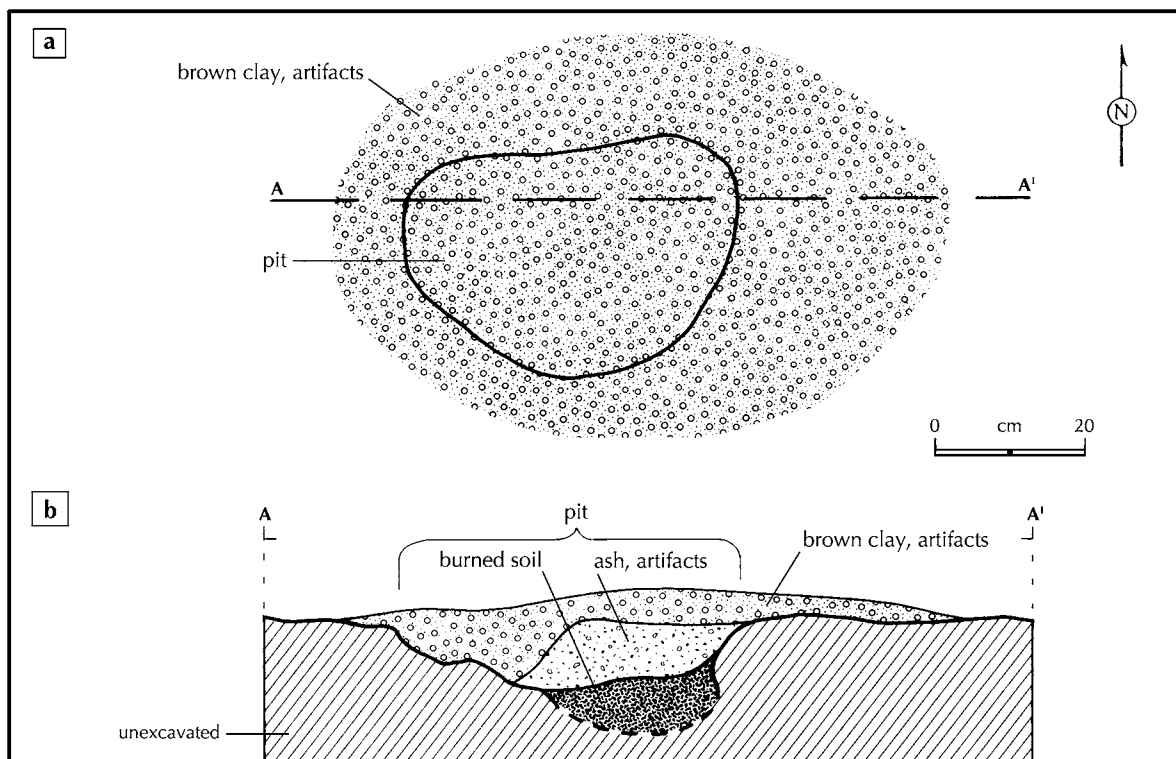


Figure 2.129. Exterior hearth, Feature 9, plan and profile.

the rooms to the west and south. These include a large pit, a paved area, three smaller pits, two burial pits, and a firepit.

Large Pit. Feature 2 is an extensive, amorphous-shaped pit lying directly west of Room 2. It had been excavated prehistorically into the decomposing sandstone bedrock. Edges of the pit are eroding and therefore poorly defined. The pit has a general measurement of 3.4 m north-south by 2.5 m east-west by 30-45 cm deep for an approximate area of 3.4 cu m.

The fill within the pit was relatively loose and loamy with some clay. Charcoal was present throughout and a radiocarbon sample was taken. Some small gravel was also encountered. Root and rodent disturbance was heavy. Artifacts were moderately present in the fill. It is postulated that the loamy fill lying over the site in this area was prehistorically excavated to create a level base for Rooms 1 and 2 of the roomblock.

Burials. Two burials bordered the large pit area. Burial 1 (Feature 10) was immediately adjacent to the southeast edge of the pit and just outside of Room 2. It consisted of an infant burial placed within the fill of the large pit. This burial will be described in a later chapter. Three ceramic vessels were in association with the burial. These included a Reserve Smudged bowl, an unpolished Alma Plain bowl, and a small neck corrugated jar. A quartz crystal was also present.

Burial 2 (Feature 14) was found along the north

edge of the large pit. It also was an infant burial placed within the loamy general fill of the site with six ceramic containers associated with it. These vessels consisted of two Reserve Smudged bowls, one Alma Plain jar, an Alma Rough bowl and jar, and one miniature Alma Punched jar.

The Reserve Smudged bowls found with both burials indicate that the burials were interred some time during the Reserve phase, presumably during the occupation of the roomblock.

Firepit. A small, roughly circular firepit (Feature 9) was located 75 cm south of Rooms 1 and 3 (Fig. 2.129). It measured 42 cm by 30 cm and was 20 cm deep. The bottom of the pit had been oxidized from burning (5YR 5/6, yellowish red). The fill was distinguished by two distinct layers. The uppermost layer was a dark brown, silty clay with small gravel inclusions that had probably washed in from the surrounding surface. It extended unevenly for 2-12 cm into the pit. The lower fill was an ashy, grayish brown (10YR 5/2). Within the firepit were 30 lithic artifacts, 56 ceramics, a bone awl, and a projectile point. Flotation, pollen, and a C-14 sample were taken.

Small Pits. A small circular pit (Feature 13) was found 50 cm northwest of the firepit (Fig. 2.130). It measured 40 cm in diameter and was 21 cm deep, cutting through the underlying bedrock. The fill was a loamy, sandy clay and was not discolored from burning; howev-



Figure 2.130. Small pit south of roomblock.



Figure 2.131. Figure-eight pit against south wall of roomblock.

er, charcoal flecks were present throughout. One lithic artifact and five sherds were recovered from the pit and a flotation sample was taken. The function of the pit is unknown.

Also just south of the roomblock was another small circular pit (Feature 15). It measured 30 cm in diameter and 53 cm deep, and was dug into the underlying bedrock. The fill of the pit was a loamy, sandy clay with five artifacts. A flotation and pollen sample were taken.

One more pit (Feature 17) was found south of the roomblock. This one consisted of two adjoining circular depressions built against the south wall of Room 3 (Fig. 2.131). The northernmost is 23 cm in diameter and the southern one is 32 cm wide. Both extend 40 cm below the ground surface. The fill was a very dark loam, flecked with charcoal. Artifacts were scarce; only one lithic and two ceramic artifacts were present.

Paved Area with Pit. An area directly south of and adjacent to Room 2 was paved with flat "flagstone-type" slabs (Feature 37). It measured 2.6 m north-south by 1.6 m east-west for a paved area of 4.16 sq m (Fig. 2.132). The area is outlined on the west and south sides by large cobbles. The flat slabs composing the paving are different from the rounded cobbles used to pave portions of Room 3. The function of this paving is unknown.

Beneath the slab paving, was a circular pit (Feature 23) measuring 60 cm in diameter by 23 cm deep. It had been dug into the hard, sterile substrate. Bedrock appears at the base of the pit. The fill consisted of dark, loamy soil (10YR 4/3, dark brown). No artifacts were recovered from the pit. Again, the presence of the pit beneath the paving suggests earlier occupation of the site.

ARTIFACTS

From Haury's site, a total of 7,931 artifacts were retrieved. Probably another 600-800 were outside of the project boundaries. Artifacts include 4,550 ceramics, 3,035 lithic artifacts, 14 projectile points, 121 ground stone materials, 30 miscellaneous items, and 12 bone tools.

Ceramics

Of the almost 5,000 ceramic artifacts (Table 2.44), half (50.4 percent) are Alma Brown Ware sherds, mostly Alma Plain. The variety of corrugated wares and white wares, however, support a Reserve phase occupation. Most white ware sherds are Reserve Black-on-white (4.5 percent of the total assemblage). Only minor



Figure 2.132. Cobble-paved area south of roomblock. Room 2 is directly behind paving. Note the difference in floor level from Room 1 to the right rear.

Table 2.43. Ceramics from LA 39969

CELLS:Count Row Pct Column Pct	Provenience				Row Total
	General Fill	Room 1	Room 2	Room 3	
Alma Plain	1238 59.8% 44.6%	101 4.9% 43.3%	236 11.4% 47.7%	496 23.9% 47.1%	2071 100.0% 45.5%
Alma Rough	208 69.1% 7.5%	10 3.3% 4.5%	38 12.6% 7.7%	45 15.0% 4.3%	301 100.0% 6.6%
Alma Scored	5 62.5% .2%			3 37.5% .3%	8 100.0% .2%
Alma Incised	3 75.0% .1%	1 25.0% .4%			4 100.0% .1%
Alma Punched			1 50.0% .2%	1 50.0% .1%	2 100.0% .0%
Three Circle Neckbanded				1 100.0% .1%	1 100.0% .0%
Plain corrugated	250 61.9% 9.0%	20 5.0% 9.0%	42 10.4% 8.5%	92 22.8% 8.7%	404 100.0% 8.9%
Indented corrugated	138 72.6% 5.0%	8 4.2% 3.6%	18 9.5% 3.6%	26 13.7% 2.5%	190 100.0% 4.2%
Incised corrugated	69 56.1% 2.5%	4 3.3% 1.8%	12 9.8% 2.4%	38 30.9% 3.6%	123 100.0% 2.7%
Patterned corrugated	22 73.3% .8%	3 10.0% 1.3%	2 6.7% .4%	3 10.0% .3%	30 100.0% .7%
Indeterminate corrugated	31 63.3% 1.1%	5 10.2% 2.2%	3 6.1% .6%	10 20.4% .9%	49 100.0% 1.1%
Fillet rim smudged	3 75.0% .1%		1 25.0% .2%		4 100.0% .1%
Plain smudged	586 59.6% 21.1%	52 5.3% 23.3%	106 10.8% 21.4%	239 24.3% 22.7%	983 100.0% 21.6%
Starkweather smudged painted	2 100.0% .1%				2 100.0% .0%
San Francisco Red	15 50.0% .5%		2 6.7% .4%	13 43.3% 1.2%	30 100.0% .7%
Mimbres indeterminate white ware	8 53.3% .3%	1 6.7% .4%		6 40.0% .6%	15 100.0% .3%
Mangus Black-on-white				1 100.0% .1%	1 100.0% .0%
Transitional black-on-white				1 100.0% .1%	1 100.0% .0%

Table 2.43. Continued.

CELLS:Count Row Pct Column Pct	Provenience				Row Total
	General Fill	Room 1	Room 2	Room 3	
Mimbres Classic Black-on-white	3 60.0% .1%			2 40.0% .2%	5 100.0% .1%
Early polished gray				1 100.0% .1%	1 100.0% .0%
Early white wares	1 50.0% .0%			1 50.0% .1%	2 100.0% .0%
Late white wares	54 54.1% 1.9%	6 6.1% 2.7%	14 14.3% 2.8%	25 25.5% 2.4%	98 100.0% 2.2%
Polished white ware	1 100.0% .0%				1 100.0% .0%
Red Mesa Black-on-white	2 100.0% .1%				2 100.0% .0%
Gallup Black-on-white	5 100.0% 2%				5 100.0% .1%
Puerco Black-on-white	3 100.0% .1%				3 100.0% .1%
Reserve Black-on-white	130 62.8% 4.7%	12 5.8% 5.4%	18 8.7% 3.6%	47 22.7% 4.5%	207 100.0% 4.5%
Tularosa Black-on-white	1 20.0% .0%		1 20.0% .2%	3 60.0% .3%	5 100.0% .1%
Hachure black-on-white	1 100.0% .0%				1 100.0% .0%
Wingate Black-on-red			1 100.0% .2%		1 100.0% .0%
Column Total	2778 61.1% 100.0%	223 4.9% 100.0%	495 10.9% 100.0%	1054 23.2% 100.0%	4550 100.0% 100.0%

amounts of other varieties, such as Red Mesa Black-on-white and Mimbres Classic Black-on-white, occur. A few later sherds, Tularosa Black-on-white and nonlocal, Wingate Black-on-red, probably indicate pot drops by later peoples passing through the area.

Lithic Artifacts

Lithic artifacts from the site (Table 2.44) are mostly core flakes (66.3 percent) with a fair number of cores also present (N=98, or 3.2 percent). Usable on-site lithic materials are evident from this core count. Material types selected by site residents are mostly chert and basalt,

making up 70.4 percent of the assemblage. Obsidian is not common with only a 2.0 percent representation. Nonlocal materials were not identified within the assemblage. Only 13 formal tools were recovered: 11 bifaces and 2 unifaces.

The 14 projectile points recovered from Haury's site are comprised of a variety of styles (Table 2.45). All are from general fill or surface stripping of the site, except for one found in a subfloor pit in Room 2. Most are made from obsidian (64.3 percent). They range from unnotched, unidentifiable types to three possible San Pedro Late Archaic points to several small Mogollon-Pueblo points to larger, corner-notched types. We must

Table 2.44. Lithic Artifacts from LA 39969

CELLS: Count Row Pct Column Pct	Artifact Morphology										Row Total
	Angular Debris	Core Flake	Biface Flake	Bipolar Flake	Hammerstone Flake	Tested Cobble	Core	Cobble Tool	Uniface	Biface	
Chert	305 25.8% 34.8%	822 69.6% 40.9%	4 .3% 33.3%		1 .1% 33.3%	7 .6% 63.6%	35 3.0% 35.7%			7 .6% 63.6%	1181 100.0% 38.9%
Pedernal Chert		4 100.0% .2%									4 100.0% .1%
Teolote Chert		1 1.01% .0%									1 100.0% .0%
Chalcedony	12 46.2% 1.4%	12 46.2% .6%	1 3.85 8.35							1 3.8% 10.0%	26 100.0% .9%
Luna Blue Agate	210 48.5% 23.9%	210 48.5% 10.4%	4 .9% 33.3%	1 .2% 100.0%			5 1.2% 5.1%	1 .2% 12.5%	2 .5% 20.0%	433 100.0% 14.3%	
Silicified Wood		3 100.0% .1%									3 100.0% .1%
Obsidian	14 22.6% 1.6%	44 71.0% 2.2%	3 4.8% 25.0%							1 1.6% 10.0%	62 100.0% 2.0%
Igneous		5 100.0% .2%									5 100.0% .2%
Basalt	238 25.0% 27.1%	666 70.0% 33.1%			1 .1% 33.3%	2 .2% 18.2%	40 4.2% 40.8%	4 .4% 50.0%			951 100.0% 31.3%
Rhyolite	35 23.3% 4.0%	105 70.0% 5.2%			1 .7% 33.3%	1 .7% 9.1%	7 4.7% 7.1%		1 .7% 50.0%		150 100.0% 4.9%
Sedimentary	1 100.0% .1%										1 100.0% .0%
Limestone		2 100.0% .1%									2 100.0% .0%

Table 2.44. Continued.

CELLS: Count Row Pct Column Pct	Artifact Morphology										Row Total
	Angular Debris	Core Flake	Biface Flake	Bipolar Flake	Hammerstone Flake	Tested Cobble	Core	Cobble Tool	Uniface	Biface	
Siltstone	1 10.0% .1%	7 70.0% .3%					2 20.0% 2.0%				10 100.0% .3%
Metamorphic		1 100.0% .0%									1 100.0% .0%
Quartzite	56 31.3% 6.4%	114 63.7% 5.7%				1 .6% 9.1%	6 3.4% 6.1%	2 1.1% 25.0%			179 100.0% 5.9%
Quartzitic Sandstone		7 77.8% .3%					1 11.1% 1.0%		1 11.1% 50.0%		9 100.0% .3%
Schist								1 100.0% 12.5%			1 100.0% .0%
Massive quartz	4 28.6% .5%	8 57.1% .4%					2 14.3% 2.0%				14 100.0% .5%
Galena	1 100.0% .1%										1 100.0% .0%
Column Total	877 28.9% 100.0%	2011 66.3% 100.0%	12 .4% 100.0%	1 .0% 100.0%	3 .1% 100.0%	11 .4% 100.0%	98 3.2% 100.0%	8 .3% 100.0%	2 .1% 100.0%	11 .4% 100.0%	3034 100.0% 100.0%

Table 2.45. Projectile Points from LA 39969

Cells: Count Row Percent	Material Type				Row Total
	Chert	Luna Blue Agate	Obsidian	Basalt	
Medium Lateral-Notched	1 25.0%		2 50.0%	1 25.0%	4 100.0%
Small Side-Notched			5 100.0%		5 100.0%
Unnotched	1 50.0%		1 50.0%		2 100.0%
San Pedro		1 33.3%	1 33.3%	1 33.3%	3 100.0%
Column Total	2 14.3%	1 7.1%	9 64.3%	2 14.3%	14 100.0%

Table 2.46. Ground Stone from LA 39969

Cells: Count Row Percent Column Percent	Proveniences						Row Total
	General Fill	Large Pit	Jacal	Room 1	Room 2	Room 3	
Indeterminate	6 46.2% 16.7%	1 7.1% 7.1%	1 7.1% 25.0%	1 7.7% 7.1%		5 35.7% 13.9%	14 100.0% 11.6%
Polishing Stone		1 33.3% 7.1%				2 100.0% 5.6%	3 100.0% 2.5%
Abrading Stone					1 50.0% 5.9%	1 50.0% 2.8%	2 100.0% 1.7%
Shaft Straightener		1 100.0% 7.1%					1 100.0% .8%
Shaped Slab		1 20.0% 7.1%		3 60.0% 21.4%		1 20.0% 2.8%	5 100.0% 4.3%
Anvil						1 100.0% 2.8%	1 100.0% .8%
Pounding Stone					1 100.0% 5.9%		1 100.0% .8%
Palette	1 50.0% 2.8%					1 50.0% 2.8%	2 100.0% 1.7%
Lapidary Stone	7 30.4% 19.4%	3 13.0% 21.4%		2 8.7% 14.3%	2 8.7% 11.8%	9 39.1% 25.0%	23 100.0% 19.0%
Mano		2 33.3% 14.3%	1 16.7% 25.0%		1 16.7% 5.9%	2 33.3% 5.6%	6 100.0% 5.0%
One-hand Mano	2 28.6% 5.6%	1 14.3% 7.1%			2 28.6% 11.8%	2 28.6% 5.6%	7 100.0% 5.8%
Two-hand Mano	11 31.4% 30.6%	2 5.7% 14.3%	2 5.7% 50.0%	6 17.1% 42.9%	5 14.3% 29.4%	9 25.7% 25.0%	35 100.0% 28.9%

Table 2.46. Continued.

Cells: Count Row Percent Column Percent	Proveniences						Row Total
	General Fill	Large Pit	Jacal	Room 1	Room 2	Room 3	
Metate	2 50.0% 5.6%				2 50.0% 11.8%		4 100.0% 3.3%
Trough Metate	4 66.7% 11.1%	1 16.7% 7.1%		1 16.7% 7.1%			6 100.0% 5.0%
Slab Metate	3 30.0% 8.3%	1 10.0% 7.1%		1 10.0% 7.1%	3 30.0% 17.6%	2 20.0% 5.6%	10 100.0% 8.3%
Axe, three-quarter grooved						1 100.0% 2.8%	1 100.0% .8%
Column Total	36 29.8% 100.0%	14 11.6% 100.0%	4 3.3% 100.0%	14 11.6% 100.0%	17 14.0% 100.0%	36 29.8% 100.0%	121 100.0% 100.0%

Table 2.47. Ground Stone Material from LA 39969

Cells: Count Row Pct Column Pct	Material									Row Total
	Basalt	Rhyolite	Andesite	Rhyolitic Tuff	Lime-stone	Sand-stone	Clay-stone	Quartzite	Quartzitic Sand-stone	
Indeterminate	1 7.1% 7.1%	10 71.4% 13.9%				1 7.1% 9.1%			2 14.3% 66.7%	14 100.0% 11.6%
Polishing Stone					2 66.7% 22.2%			1 33.3% 25.0%		3 100.0% 2.5%
Abrading Stone		1 50.0% 1.4%			1 50.0% 11.1%					2 100.0% 1.7%
Shaft Straightener					1 100.0% 11.1%					1 100.0% .8%
Shaped Slab		4 80.0% 5.6%				1 20.0% 9.1%				5 100.0% 4.1%
Anvil						1 100.0% 9.1%				1 100.0% .8%
Pounding Stone					1 100.0% 11.1%					1 100.0% .8%
Palatte		1 50.0% 1.4%					1 50.0% 100.0%			2 100.0% 1.7%
Lapidary Stone	4 17.4% 28.6%	16 69.9% 22.2%	1 4.3% 50.0%			2 8.7% 18.2%				23 100.0% 19.0%
Mano		2 33.3% 2.8%		2 33.3% 40.0%	1 16.7% 11.1%	1 16.7% 9.1%				6 100.0% 5.0%
One-hand Mano		4 57.1% 5.6%			2 28.6% 22.2%				1 14.3% 33.3%	7 100.0% 5.8%
Two-hand Mano	8 22.9% 57.1%	16 45.7% 22.2%	1 2.9% 50.0%	3 8.6% 60.0%	1 2.9% 11.1%	4 11.4% 36.4%		2 5.7% 50.0%		35 100.0% 28.9%

Table 2.47. Continued.

Cells: Count Row Pct Column Pct	Material									Row Total
	Basalt	Rhyolite	Andesite	Rhyolitic Tuff	Lime- stone	Sand- stone	Clay- stone	Quartzite	Quartzitic Sand-stone	
Metate		4 100.0% 5.6%								4 100.0% 3.3%
Trough Metate	1 16.7% 7.1%	4 66.7% 5.6%				1 16.7% 9.1%				6 100.0% 5.0%
Slab Metate		10 100.0% 13.9%								10 100.0% 8.3%
Axe, three- quarter grooved								1 100.0% 25.0%		1 100.0% .8%
Column Total	14 11.6% 100.0%	72 59.5% 100.0%	2 1.7% 100.0%	5 4.1% 100.0%	9 7.4% 100.0%	11 9.1% 100.0%	1 .8% 100.0%	4 3.3% 100.0%	3 2.5% 100.0%	121 100.0% 100.0%

Table 2.48. Miscellaneous Artifacts from LA 39969

Cells: Count Row Pct Column Pct	Material Type										Row Total
	Chert	Pipestone	Chrysocolla	Turquoise	Azurite	Quartz Crystal	Hematite	Marine Shell	Plastic	Limo- nite	
Indetermi- nate									1 100.0 100.0		1 100.0 3.8
Inlay/ Mosaic				1 100.0 33.3							1 100.0 3.8
Pendant Blank	1 100.0 100.0										1 100.0 3.8
Broken Ornament				1 100.0 33.3							1 100.0 3.8
Debris (from ornament manufacture)			1 100.0 8.3								1 100.0 3.8
Mineral			10 90.9 90.9		1 9.1 100.0						11 100.0 42.3
Pigment		2 33.3 100.0					3 50.0 100.0			1 16.7 100.0	6 100.0 23.1
Unmodified Quartz						2 100.0 100.0					2 100.0 7.7
Domed Bead				1 100.0 33.3							1 100.0 3.8
Pendant								1 100.0 100.0			1 100.0 3.8
Column Total	1 3.8 100.0	2 7.7 100.0	11 42.3 100.0	3 11.5 100.0	1 3.8 100.0	2 7.7 100.0	3 11.5 100.0	1 3.8 100.0	1 3.8 100.0	1 3.8 100.0	26 100.0 100.0

consider that the San Pedro points may have been curated by the Pueblo occupants of the site. And it is possible that the other, larger corner-notched points may have served a different function than the smaller Mogollon points characteristic of this time period. The number of points retrieved is not large and could suggest less dependence on hunting of game by these people. However, other factors need to be examined along these lines.

Ground Stone

The ground stone assemblage totals 121 pieces (Table 2.46). Rhyolite is, by far, the most commonly used material at 59.5 percent (Table 2.47). Manos are the largest category (39.7 percent). These include both one and two-hand stones with five times as many two-hand manos. Two-hand manos are usually thought to be indicative of maize use. The presence of trough metates might also suggest processing of maize. However, there are also one-hand manos and slab metates in the ground stone

assemblage that indicate that a variety of other subsistence items were utilized.

A high frequency of lap stones are present (N=23). These are large, flattened cobbles that usually exhibit a polish over their entire surface. One suggested function is for use during hide-working (Hayes and Lancaster 1975:159).

An interesting ground stone artifact recovered from Room 3 at Haury's site is a palette made from a small slab of andesite and welded tuff. It is subrectangular and measures 7 cm in length by 5.8 cm in width. A shallow basin has been ground into one surface, covering most of the face. Incising occurs on one end of the palette, which is characteristic of the type of decoration found on Hohokam palettes (Haury 1976). No substance was found adhering to the surface of the palette.

Most ground stone was recovered from the cultural fill around the perimeter of the roomblock, mostly to the south. The jacal structure contained four pieces and was probably a focus of outside grinding activity. Room 3 contained the highest number of ground stone among the three rooms and included 13 manos and two metates.

Table 2.49. Modified Bone from LA 39969

Cells: Count Row Percent Column Percent	Proveniences				Row Total
	General Fill	Room 1	Room 2	Room 3	
MEDIUM MAMMAL Indeterminate Tool		1 50.0% 50.0%	1 50.05 100.05		2 100.05 16.75
Awl	1 100.0% 33.3%				1 100.0% 8.3%
LARGE MAMMAL Indeterminate Tool	1 50.0% 33.3%			1 50.0% 16.7%	2 100.0% 16.7%
Awl	1 50.0% 33.3%			1 50.0% 16.7%	2 100.0% 16.7%
ARTIODACTYL Indeterminate Tool				1 100.0% 16.7%	1 100.0% 8.3%
Awl				1 100.0% 16.7%	1 100.0% 8.3%
DEER Antler Tine Flaker				1 100.0% 16.7%	1 100.0% 8.3%
Awl		1 100.0% 50.0%			1 100.0% 8.3%
INDETERMINATE MAMMAL Indeterminate Tool				1 100.0% 16.7%	1 100.0% 8.3%
Column Total	3 25.0% 100.0%	2 16.7% 100.0%	1 8.35 100.05	6 50.0% 100.0%	12 100.0% 100.0%

Lapidary stones, an anvil, and several polishing stones, also in the room, suggest a variety of processing and production activities occurred in Room 3.

Miscellaneous Artifacts

The striking observation about the miscellaneous artifacts at Haury's site is the large percentage (66.7 percent of the miscellaneous assemblage) of minerals and pigment material present (Table 2.48). Add to this count the several ornaments and the number of goods potentially related to the production or use of ornamental items, and the percentage rises to 85.4. This is not to say, for example, that the pendant of marine shell (see *Miscellaneous Artifacts*) was made on the site, but it is obvious that the chrysocola, hematite, pipestone, and azurite were materials that likely were present for use in ornament production or the preparation of pigment. Some fragments were extremely small, suggesting waste debris.

Most of these items were either in the fill or on the floor of Room 3, or close by. Room 3 is the very large unit on the east end of the roomblock. It has cobbled floor areas and vertical slabs against the middle of the west wall. One of the possible uses of this room is as a small, ornamental workshop area in addition to being a habitation area.

Bone Tools

Twelve bone tools or modified bone fragments were recovered from the site (Table 2.49). Large mammals, such as deer or antelope, account for two-thirds of the animals represented. Most are indeterminate pieces; however 41 percent are bone awls from various locations on the site. The only other formal tool was an antler tine flaker recovered from Room 3. These two tool types indicate that, at minimum, the differing activities of reducing lithic, or possibly mineral, materials and preparing hides or other soft goods were carried out on the site.

ANCILLARY STUDIES

Faunal Remains

Haury's site contained 169 faunal remains with a wide variety of species noted (Table 2.50). Within the species represented, 46.9 percent are large mammals, which includes deer, antelope, artiodactyl family, big-horned sheep, and indeterminate large mammal. The presence of antelope and big-horned sheep suggests traveling approximately 50 km to the plains and 20-25 km to higher mountain areas for the respective game. While a few

turkey remains are present, there is no architectural evidence for their domestication. This is also the only site on the project that contains catfish remains (N=2). The San Francisco River lies 4.0 km to the east as the closest source for the fish.

The disposition of the fauna over the site reveals three areas of concentration: general fill, Room 1, and Room 3. Combining the general fill fauna with the material from the large pit (Feature 2), we see that all of the small rodents, the canis species, and the red fox come from these disposal areas, with the exception of the single pocket gopher element in the poorly preserved Room 2.

Room 2 has only a minimal amount of remains; however, Rooms 1 and 3 are definite areas of faunal storage or utilization. Room 1 has the raised cobble floor with no hearth and no other features except two post-holes and a pit. Given the lack of evidence of habitation in this room and the highest frequency per unit of recovered fauna, including the highest count of large mammal remains, we suggest that this cobbled room was possibly a meat storage area.

The adjoining Room 3 has a large hearth area and many pits. A variety of activities seems to have been carried out here. From the faunal remains, meat consumption was also a common occurrence; however, utilization of faunal parts in the making of tools is also possible. The turkey, antelope, big-horned sheep, and the catfish were recovered exclusively from this room.

Skeletal Remains

Three human burials were found at Haury's site. Two were infant remains and one was a small child recovered within the fill of the large, outside pit (Feature 2). Grave goods were retrieved from both infant interments. The small child had only cranial fragments scattered in an area of the fill. Burial 1 contained a Reserve Smudged bowl, an unpolished Alma Plain bowl, a small neck corrugated jar, and a quartz crystal. Burial 2 possessed two Reserve Smudged bowls, one Alma Plain jar, an Alma Rough jar and bowl, and one miniature Alma Punched jar. As stated earlier, the grave goods indicate Reserve phase burials. Both sets of remains and their associated goods have been reinterred according to Zuni burial policy.

Macrobotanical Remains

Eighteen flotation samples were examined from LA 39969, 12 were full-sorted and 6 were scanned. The fill of an extramural hearth yielded one charred goosefoot embryo. An extramural pit under a slab paving produced

Table 2.50. Faunal Remains from LA 39969

Cells: Count Row Percent Column Percent	Provenience								Row Total
	General Fill	Large Pit	Jacal	Hearth 9	Room 1	Room 2	Room 3	Outside Pit	
Indeterminate Mammal		1 6.3% 6.3%			10 62.5% 16.9%		5 31.1% 11.1%		16 100.0% 9.7%
Small Mammal	3 25.0% 10.0%	1 8.3% 6.3%		1 8.3% 5.0%	1 8.3% 1.7%	2 16.7% 28.6%	3 25.0% 6.7%	1 8.3% 100.0%	12 100.0% 7.3%
Medium Mammal	10 45.4% 33.3%	8 36.4% 50.0%		1 4.5% 50.0%	1 4.5% 1.7%	2 9.1% 28.6%			22 100.0% 13.4%
Large Mammal	3 7.1% 10.0%				33 78.6% 55.9%		6 14.3% 13.3%		42 100.0% 25.6%
Prairie Dog	1 100.0% 3.3%								1 100.0% .6%
Squirrel		1 100.0% 6.3%							1 400.0% .6%
Pocket Gopher	1 50.0% 3.3%					1 50.0% 14.3%			2 100.0% 1.2%
Cotton Tail	2 15.4% 6.7%		3 23.1% 75.0%		3 23.1% 5.1%		5 38.5% 11.12%		13 100.0% 7.9%
Jack Rabbit	2 28.6% 6.7%		1 14.3% 2.5%		2 28.6% 3.4%	1 14.3% 14.3%	1 14.3% 2.2%		7 100.0% 4.3%
Dog/Coyote	4 44.4% 13.3%	5 55.5% 31.3%							9 100.0% 5.5%
Red Fox	1 100.0% 3.3%								1 100.0% .6%
Artiodactyl					2 2.0% 3.4%		8 80.0% 17.8%		10 100.0% 6.1%
Deer	3 13.6% 10.0%				7 31.8% 11.9%	1 4.5% 14.3%	11 50.0% 24.4%		22 100.0% 13.4%
Pronghorn							2 100.0% 2.2%		2 100.0% 1.2%
Big-Horned Sheep							1 100.0% 2.2%		1 100.0% .6%
Turkey							3 100.0% 6.7%		3 100.0% 1.8%
Column Totals	30 18.3% 100.0%	16 9.8% 100.0%	4 2.4% 100.0%	2 1.2% 100.0%	59 36.0% 100.0%	7 4.3% 100.0%	45 37.4% 100.0%	1 .6% 100.0%	164 100.0% 100.0%

Table 2.51. Pollen Remains from LA 39969

Feature	Location	Pine	Juniper	Oak	Sunflower	Grasses	Sage	Mormon Tea	Cheno-Ams	Cholla	Rose Family	Com Pollen
ROOM 1												
Floor	Soil	X							X			X
Fill	Ground Stone	X			X*	X*	X		X			X
ROOM 2												
Fill	Ground Stone, Soil	X				X						
ROOM 3												
Floor	Ground Stone, Soil	X			X				X			
Fill	Ground Stone, Soil	X		X	X	X*	X		X			
LARGE PIT (F2)												
Fill	Ground Stone, Soil	X		X	X	X			X			X
HEARTH (F9)												
Fill	Soil	X	X	X	X	X		X	X		X	
BURIALS												
1	Ceramics	X			X	X			X	X		
2	Ceramics	X		X	X*	X*	X	X	X	X		X
OUTSIDE PITS												
15	Soil	X			X	X			X			
17	Soil	X							X			
GENERAL FILL												
Vessel	Ceramics	X	X		X	X*	X		X	X		X

*High Counts

the only evidence of cultigens from the site (charred corn cupules), a charred goosefoot seed and an uncharred hedgehog cactus seed. A charred unidentifiable seed and a charred grass seed were recovered from Room 3 hearth fill, and a sample from a posthole in Room 2 produced charred and uncharred goosefoot seeds and a charred purslane seed.

Six vessel contents were sampled from the outside pit. A Reserve Smudged bowl associated with Burial 1 contained one charred unidentifiable seed. A Reserve Smudged bowl from Burial 2 produced charred goosefoot and winged pigweed seeds, and uncharred purslane seeds, while an Alma Plain jar yielded charred goosefoot seeds and an Alma Rough jar produced winged pigweed seeds. Although there are documented economic uses of winged pigweed seeds, Stevenson (1915:51) records the use of *Cycloloma* blossoms in Zuni stories. When chewed and rubbed between the hands of the Gods of War, the world would become enshrouded with a yellow light, preventing the enemy from seeing where to aim their arrows. There is no documented use of the seeds of winged pigweed for ceremonial purposes, so the recovery of these seeds in the burial vessels may be either offerings of food or were part of the surrounding fill.

Plant remains from all other proveniences were restricted to noncultural, uncharred plant remains. Archaeobotanical evidence from the site suggests that weedy annuals were exploited and maize could have been cultivated in areas near drainages to the east and southeast.

Twenty-four C-14 samples were examined from LA 39969. Coniferous woods dominated the assemblage including juniper, ponderosa, piñon, and fir. Small amounts of oak and indeterminate conifer were also present. Ponderosa, piñon, and oak grow on the site today, suggesting these taxa would have been readily available prehistorically for use as fuelwood or construction material, while juniper could have been gathered at lower elevations and fir gathered in the higher elevations of the San Francisco and Saliz mountains.

Pollen Remains

Thirty-six pollen washes and soil samples were submitted for analysis from Haury's site (Table 2.51). These included 10 samples from ceramic vessels, 13 from ground stone, 11 from cultural features, and 2 control samples. A variety of economic species were represented but the most common palynological remains were pine, grasses, cheno-ams, and members of the sunflower family, all prevalent in the area today.

Corn pollen was only found in Room 1. This room has possibly been used for meat storage, and corn may

have been stored here also. Corn pollen also appears in one of the infant burials and in a vessel found outside of the roomblock. Its presence in the large trash-filled pit (Feature 2) as well as in these other areas on the site indicates that corn was a utilized economic species, even if not to a great extent. The lack of corn pollen in Room 3 is interesting, given the probable domestic function of the room.

The cholla pollen in both of the burials is thought to indicate that the flowers of the cactus were placed with the remains at interment (see Pollen Analysis, this report). The high frequency of grass pollen within the burials, especially in Burial 2, could be suggestive of the placement of a bed of grass within the shallow graves immediately prior to burial.

DATING METHODS

Eighteen samples were submitted for radiocarbon analysis to Beta Analytic, Inc. All were from wood charcoal obtained from cultural contexts and general fill (Table 2.52). Statistical manipulation of the dates revealed that anything falling between A.D. 950 and 1205 was statistically from the same population, and a weighted average of A.D. 1043.3 ± 20 for the site was produced. This date is within an acceptable range for the ceramics from the site. However, we wanted to address the problem of dating the cultural fill underneath Rooms 1 and 2. We also believed that any dates falling after A.D. 1100 were definitely too late for the site, again based on the type and frequency of recovered ceramics.

Therefore, we sorted the 18 C-14 samples sequentially by their dates taken from calibrated 1-sigma and 2-sigma ranges provided by Beta Analytic, Inc. This sorting (Fig. 2.133) provides a much clearer picture of the potential chronological scheme for the site. First, the A.D. 405 date is clearly an outlier and was discarded. The three outlying dates at the other end of the chart (A.D. 1205-1290) are not that easily dismissed. We could suggest that these fit acceptable dates for the site (Set 3); however, this stretches the acceptable dates to the very upper limits of the range. In the case of the wood recovered from under the paving at the south edge of the roomblock, however, there is no archaeological evidence to support subsequent paving of this area in the 1200s. We therefore suggest that this particular date may stretch back to the mid-1000s. The late hearth date of A.D. 1290 may represent a late use of the site or it may be an outlier date because it rests on the same use surface as surrounding earlier cultural features.

All other dates (N=14) are divided into categories or sets by sequential dates. The dates in Set 1 are clearly out of line for a Reserve phase site and are most likely the

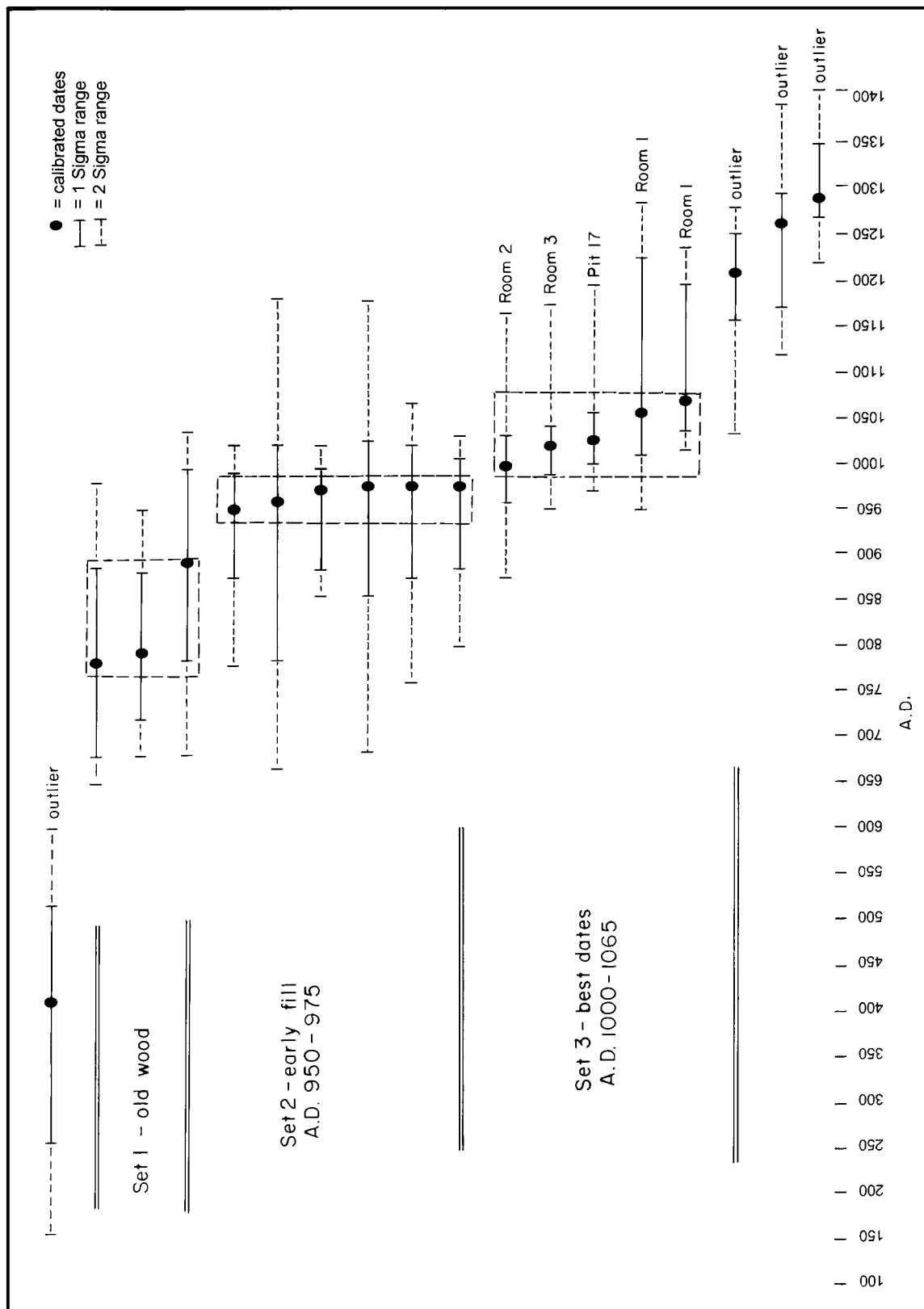


Figure 2.133. Sorting of ¹⁴C dates from LA 39969.

Table 2.52. C-14 Dates for LA 39969

Unit	Beta No.	Age B.P.	Calibrated 1 Sigma Date	Calibrated 2 Sigma Date	Intercept Date	Context
105N/107E	77881	1230±50	A.D. 720-735 760-880	A.D. 680-905 920-950	A.D. 790	Room 3, Hearth
104N/109E	77877	790±110	A.D. 1170-1295	A.D. 1020-1405	A.D. 1260	Outside E Wall
100N/102E	77879	860±60	A.D. 1065-1075 1155-1250	A.D. 1030-1280	A.D. 1205	Under Flagstone
105N/100E	77878	1110±50	A.D. 885-995	A.D. 855-1020	A.D. 970	Burial 2
106N/107E	77880	1010±60	A.D. 990-1040	A.D. 905-920 950-1175	A.D. 1020	Room 3 Pit (F 26)
102N/106E	76356	990±60	A.D. 1000-1055 1090-1150	A.D. 970-1195	A.D. 1025	Outside Pit (F 17)
106N/104E	76346	1100±110	A.D. 855-1025	A.D. 685-1180	A.D. 975	Room 1 (Fill)
105N/103E	76347	1250±80	A.D. 680-885	A.D. 650-980	A.D. 780	Room 1 (Fill)
105N/104E	76348	920±50	A.D. 1035-1195	A.D. 1015-1235	A.D. 1065, 1075, 1155	Room 1 (Fill)
104N/100E	76349	1100±90	A.D. 875-1020	A.D. 720-735 760-1065 1075-1155	A.D. 975	Room 2 (Fill)
106N/101E	76350	1050±70	A.D. 960-1030	A.D. 875-1165	A.D. 1000	Room 2 Posthole (F5)
106N/100E	76351	1670±90	A.D. 260-465 475-515	A.D. 160-600	A.D. 405	Room 2 (Fill)
102N/104E	76352	700±70	A.D. 1270-1310 1355-1385	A.D. 1220-1410	A.D. 1290	Outside Hearth (F9)
108N/101E	76353	1150±90	A.D. 785-995	A.D. 680-1035	A.D. 890	General Fill N.W. of Room 2
106N/104E	76354	1120±120	A.D. 785-1020	A.D. 665-1180	A.D. 960	Room 1 (Posthole)
103N/103E	76355	930±100	A.D. 1010-1225	A.D. 905-920 950-1285	A.D. 1055, 1090, 1150	Room 1 (Fill)
109N/111E	76357	1100±60	A.D. 885-1005	A.D. 800-1030	A.D. 975	General Fill, NE of Room 3
106N/100E	76358	1130±60	A.D. 875-990	A.D. 780-1020	A.D. 905, 920, 950	Room 2 (Subfloor)

result of the use of old wood. One date from the general fill at A.D. 890 could be extended within its range to the A.D. 1000s, but since it is not culturally tied to a specific feature, we have left it within this set.

Set 2 sequentially follows Set 1 and includes all those dates that are the earliest usable dates for the rooms within the roomblock and also Burial 2. The dates fall between A.D. 950 and 975. Later dates for the three rooms and an outside pit are grouped into Set 3.

The data within Set 2 are very tightly grouped and, more importantly, happen to include only the areas where the underlying cultural fill was found—under Rooms 1 and 2, north of Room 2 in general fill, and in Feature 2 as an interment medium for Burial 2. Therefore, we propose that this cultural fill dates between A.D. 950 and 975. A prior occupation of the site

area, possibly to the west under previous road construction or out of the right-of-way to the east, is indicated during the Late Pithouse period. The several pits found under pavings in Room 3 likely relate to this period. No evidence of a pithouse was found within the project limits, however.

Set 3 contains the latest dates obtained for all rooms within the roomblock and a nearby pit (F 17). They are statistically from the same population. Therefore, these should be the "best fit" dates for the site. Indeed, they group between A.D. 1000 and 1065 with a calibrated mean of A.D. 1033, a good date. This date is very close to the statistically derived A.D. 1043 ± 20 for the entire site, but the sorting technique has the benefit of separating the earlier cultural fill from later use dates and eliminating possible, but questionable readings.

If we had stretched the upper limits for the 2-sigma range to their fullest (for at least four of the six dates) within Set 2 (Fig. 2.52), it would have placed all of Set 2 and 3 dates within the acceptable range of dates for the site. However, we knew that earlier cultural fill was present and must have predated the roomblock; therefore, we rejected the probability of the two data sets (Sets 2 and 3) being from the same cultural context.

Six pieces of obsidian were also submitted for dating from the site. Five of the dates ranged from 17,550 B.C. to A.D. 219, much too early for a Pueblo site. One sample produced a date of A.D. 1264 from under the floor level in Room 2. This is not a usable date because of the A.D. 1000s radiocarbon dates from features above it.

SITE INTERPRETATION

Haury's site is a small, three-room pueblo dating to the Reserve phase at ca. A.D. 1033. We expected to find masonry-walled rooms, evidence of habitation, and a diversity of ceramics, lithic artifacts, and ground stone. We did not expect the several architectural variations revealed through our excavations.

One variation concerns the presence of two rooms and portions of another with cobble-paved floors, plus paving in an adjacent outside area. Also, one of the paved rooms is elevated above those surrounding it. Cobble paving does not seem to be prevalent in the Mogollon Highlands, although Smiley (1952:28) states that paving kiva floors is common in the Western Pueblo area. Partial paving was present at another project site in Room 13 at the Hough site, a Tularosa phase roomblock near Luna (see LA 3279). Wendorf (1957) reports several paved floors at a 20-room Reserve site near Glenwood. Barnett (1974) notes that some of the rooms at Sandstone Hill Pueblo, north of Quemado, were also paved during the Tularosa phase. Further to the north, near Ramah, Saitta (1991:392) records several paved pueblo habitation rooms at the Pettit site. To the south, Cosgrove and Cosgrove (1932) consider paved floors a Mimbres attribute and Anyon and LeBlanc (1980, 1984) confirm this for excavations at the Galaz and Mattocks ruins. Far to the south, 50 km west of Durango, Mexico, Foster (1986) found that some pueblo-style rooms, post-dating A.D. 1150, had cobble-paved floors. He also notes that sometimes one floor is at an different level than an adjoining one. This is the only reference to multilevel roomblocks that we have found for this part of the Southwest, although they have recently been discovered along the San Pedro River in southeastern Arizona (Altschul et al. 1996).

From the above observations, we can surmise that

cobbled floors do occur in the Mogollon Highlands (although perhaps sparingly), in the Mimbres area, and also to the north and south of these areas. They do not seem to occur only in kivas as Smiley (1952) suggests, but we cannot rule out a ritual function for some of the paving at Haury's site. More probably, they are related to storage areas where keeping out dampness and rodents is important.

The size of Room 3 at Haury's site is also somewhat unusual. It is large at 22.95 sq m, as opposed to Rooms 1 and 2, which are long and narrow and have no hearths, suggesting they are storage rooms. Room 3 is a habitation room, but several findings lead to the possibility of the room also serving a ritual function. These findings include its large size, upright slabs against the west wall (Feature 19), perhaps the partial paving, lack of evidence of corn use, and the recovery of many ornamental artifacts. Not enough small Reserve phase pueblos have been excavated in the Mogollon Highlands to determine if these differences in rooms are singular to Haury's site or if they are within the typical range of variability that can be expected from such small sites.

The use of habitation units for household rituals is probably part of the evolutionary process toward true kivas (Lekson 1988a; Lipe and Hegmon 1989). However, we also see the practicality of people in a small roomblock using a habitation room also for ceremonial functions rather than constructing a labor-intensive pit structure or surface room to accommodate the small population. We do not suggest calling such rooms kivas.

Another jacal structure was also found at a Tularosa phase roomblock on the project, Spurgeon Draw (see LA 39968). Berman (1979:48) states that only one had been recorded, at Three Pines Pueblo, in the Gila National Forest up to 1979. We suspect that, again, lack of extensive excavation of small roomblocks has precluded the reporting of such structures. Both jacal units on the Luna project were large, single-room features with unprepared floors and no interior features, although Bagley-Baumgartner (1984:48) notes that at Black Mesa, Arizona, many had hearths but low artifact counts. This is consistent with a suggested function as outside cooking or work areas.

The use of a variety of economic species is apparent from the pollen analysis results. The utilization of corn products is evident but is not ubiquitous. Maize pollen was present in several ceramic fragments and in Room 1, suggesting storage of the product, but heavy usage is not indicated by the data. Corn cupules were present in a single sealed extramural pit. Rather, a broad range of plants is being used. The cholla pollen in the burials suggests a late spring or early summer interment. But an assumption of longer site utilization is warranted from the extensive and varied number of artifacts, numerous storage

pits, the spectrum of plant species, the high percentage (46.9) and varied types of large mammals in the faunal assemblage, and the construction labor invested in the site.

While a permanent settlement at Haury's site may be

implied from the data, the constancy or length of that settlement cannot be determined. The expedient hearth in Room 3 may suggest only three-season usage. However, at least some degree of residential sedentism is proposed for the site.

LA 39972 SU TANKS

Joan K. Gaunt and Yvonne R. Oakes

LA 39972 was originally defined as containing two small roomblocks and several isolated rooms encompassing 19,000 sq m (Neely and Logan 1980). The core area of the site supposedly extends 70 m to the south overlooking Spurgeon Draw. Wiseman (1993) tested SU Tanks in preparation for NMSHTD road construction activities and recorded a dispersed sherd and lithic artifact scatter extending for 76 m along the south side of NM 12 within the proposed right-of-way. Based on auger tests, he suggested that a possible pit structure with Reserve phase ceramics was present on the site. However, subsequent excavations by OAS staff revealed a multicomponent site.

The distribution of Reserve phase ceramics suggests that a single-family unit or fieldhouse might have existed within the current NM 12 corridor prior to original construction of the road. The presence of another component at the northeast end of the site was indicated by ceramics consisting primarily of early brown wares. This would suggest that a possible early pithouse may have existed within the highway corridor also. A C-14 date from the area confirms this date of occupation.

The artifacts from the Reserve phase roomblocks to the south of the project area, recorded by Neely and Logan (1980), do not actually extend into the area of proposed work. Therefore, site limits for LA 39972, based on excavation data, have been amended to extend generally for 90 m north-south by 64 m east-west, an area totaling 4,600 sq m (Fig. 2.134).

Nearby sites include the 10-12 room and the 2-3 room Reserve phase roomblocks with possibly four isolated rooms 70 m to the south (Neely and Logan 1980). Upslope 300 m to the north are several Pinelawn phase pit structures at the crest of the gradually sloping hill. In this part of the Pine Lawn Valley, a few Late Pithouse sites are also sparsely scattered throughout. However, numerous Reserve phase sites cluster less than 1 km to the north on the lower finger ridges of the rising San Francisco Mountains.

A small group of Reserve phase sites is 3 km to the northeast in the Hudson Ranch area. In a larger area, 5 km west of SU Tanks, there are also many Reserve phase sites. From site distribution maps, it is obvious that the entire Pine Lawn Valley has one of the higher frequencies of Reserve phase sites in the Gila National Forest.

Several later Tularosa phase sites focus immediately to the west of SU Tanks along Spurgeon Draw and also in the Hudson Ranch area to the northeast. However, there is not the density nor ubiquity of Tularosa sites for this area as there is in the earlier Reserve phase.

SITE SETTING

SU Tanks is located on a low knoll that overlooks Spurgeon Draw to the south and a small drainage leading into the draw to the west. The drainage contains aquatic plant forms such as bullrushes and reeds, indicating the presence of a seep or spring. Site location was therefore ideally situated in terms of accessibility to water. The low rise is at an elevation of 1,890 m (6,200 ft) and is covered with only scattered clusters of piñon, juniper, and a few ponderosa pines. Modern ranching activities in the vicinity seem to have denuded the area somewhat. The wide floodplain of Spurgeon Draw to the south and southeast would have provided ample area for the cultivation of crops. The mountains and hills rising to the northwest and southeast, plus the availability of a fairly consistent water source, would have provided excellent habitat for wild game.

RESEARCH OBJECTIVES

Based on lithic and ceramic densities on the site, it was believed that SU Tanks contained a Late Pithouse structure within the proposed highway right-of-way (Wiseman 1993). It was hoped that valuable site structure data, such as seasonality of use, evidence of remodeling, and the role of storage facilities in site layout would be obtained. Subsistence adaptations should have been evident from analyses of the various artifacts and the presence of floral and faunal data. Testing several models, such as Hard's (1990) model of agricultural dependency as determined from ground stone length and Schlanger's model (1993) of degree of site use as determined from artifact assemblages, was to be implemented. SU Tanks would also have been compared to other Late Pithouse sites excavated by OAS in the vicinity.

Because no structures were present within the right-of-way, the research objectives, as stated, could not be

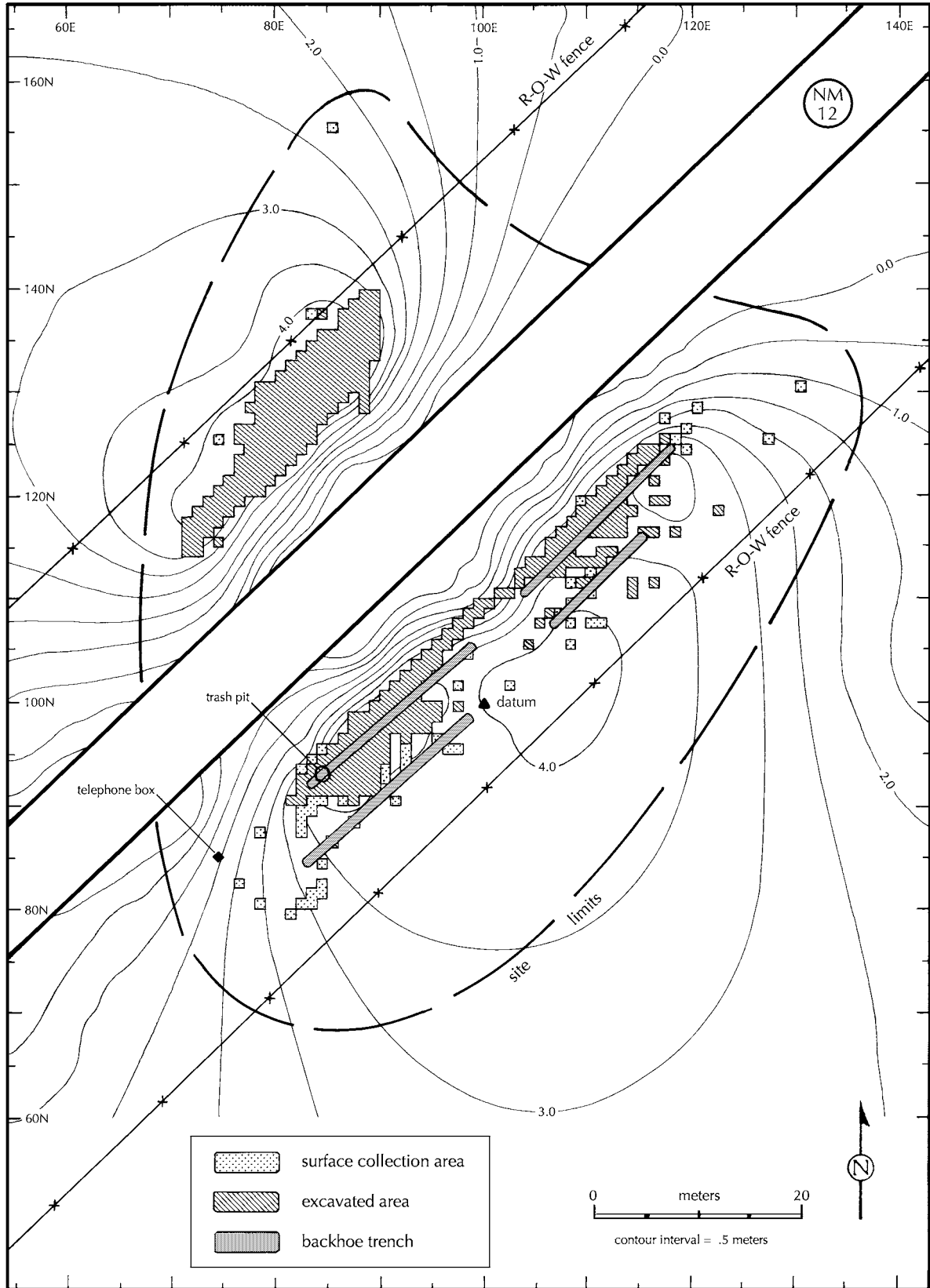


Figure 2.134. LA 39972, SU Tanks.

met. However, a single trash pit was uncovered and numerous artifacts were present on the site. The artifacts do provide valuable information regarding the various periods of occupation at the site, types of artifacts being produced by the multiple occupancies, and some indication of activities pursued by the two groups represented. Artifacts can also be compared with those from sites of similar time periods to further address the questions of site function, trade and exchange, and diagnostic attributes of a phase.

EXCAVATION PROCEDURES

Testing procedures by Wiseman (1993) isolated a depression suggestive of a potential pit structure near the road cut for NM 12. Artifacts were also heavily concentrated in this area along the cut bank.

During subsequent excavation of the site, a main datum was established on the south side of the highway. From this datum, a system of 1-by-1-m grids was laid out across the site with a transit and stadia rod to provide horizontal proveniencing. Initially, the site was surface stripped and all artifacts were collected by grid unit. Excavation of 1-by-1-m grids occurred where there was a potential for cultural features or where artifacts were the densest. Digging began in arbitrary 10-cm levels until the natural stratigraphy could be defined. Any potential cultural features were excavated as individual units and assigned a separate feature number.

Levels were stratigraphically determined as:

Level 1: Surface stripping

Level 2: General fill

Level 3: Fill of pit

Depths of the different levels varied by grids. Generally, surface stripping consisted of removing, by shovel, all loose soils, grasses, and rocks from the site surface. The cultural fill on the site, below the stripping, extended to a maximum depth of 57 cm below the ground surface. The soil consisted of a dark brown (7.5YR 4/3) loam with small gravel inclusions. Excavations stopped when a reddish sterile clay (7.5YR 4/6, strong brown) with caliche inclusions was reached. An auger test in each grid insured that a sterile substrate had been reached.

All soil was screened through ¼-inch mesh. Any cultural features found were excavated, photographed, mapped, and recorded on excavation forms. All artifacts were collected by grid provenience and level.

After all areas potentially containing cultural remains had been investigated, a series of four mechanically dug trenches were excavated within the project area along the south side of NM 12. These extended for a

combined total of 75.5 m in length with an average depth of 1.25 m. Hand excavations reached a mean depth of 13.4 cm below ground surface with some grids reaching up to a meter in depth. The number of grids investigated by OAS was 377 with 53 additional grids surface collected within the right-of-way. The total amount of dirt removed on site was 125.5 cu m.

CULTURAL UNITS

Testing results led OAS excavators to expect Reserve phase structures or a late pithouse to be found within the highway right-of-way. However, no habitation units were present within the project area; in fact, a single trash pit was the only cultural feature recorded on the site. But two distinct periods of occupation are represented by the artifact assemblages from two areas at SU Tanks (Fig. 2.135).

Areas A and B (Figs. 2.135-2.136) were delineated on the basis of a statistical determination of the separation of the temporally varying types of ceramics present and the retrieval of several C-14 dates.

Area A was defined by the presence of 96.1 percent of the Reserve phase ceramics in a tight concentration at the south end of the site overlooking the small drainage. Some Reserve phase artifacts extend superficially to the northeast and slightly overlap with an earlier ceramic component. A chi-square test confirmed that the Reserve phase ceramic distribution was highly localized on the site with a value of $p < .000$.

Area A encompassed 550 sq m. Within this area was a trash pit with Reserve phase debris and nearby partial turkey remains. The heaviest concentration of artifacts in Area A clustered along the road cut. Because of this fact and the presence of the Reserve phase trash pit in the same locale, we believe that a small Reserve habitation unit or fieldhouse was once located immediately to the northwest, within the area of the current highway.

The trash pit, roughly circular, measured 1.45 m north-south by 1.30 m east-west by .23 m deep (Figs. 2.137-2.138) and contained 155 sherds, 92 lithic artifacts, and 3 pieces of ground stone. Small to medium-sized rocks were present on the surface and within the fill of the pit. The nearby partial turkey remains were found disarticulated at 20 cm below ground surface in general fill and appear to be part of site debris. Dating this area of the site to the Reserve phase is based on the large concentration of Reserve ceramics recorded within this unit.

Area B is distinct from Area A because of an artifact discontinuance in Reserve phase ceramics and a spatial shift to the dominance of early Alma brown wares, particularly Alma Rough and San Francisco Red ceramics. A probable Pinelawn phase occupation is indicated by

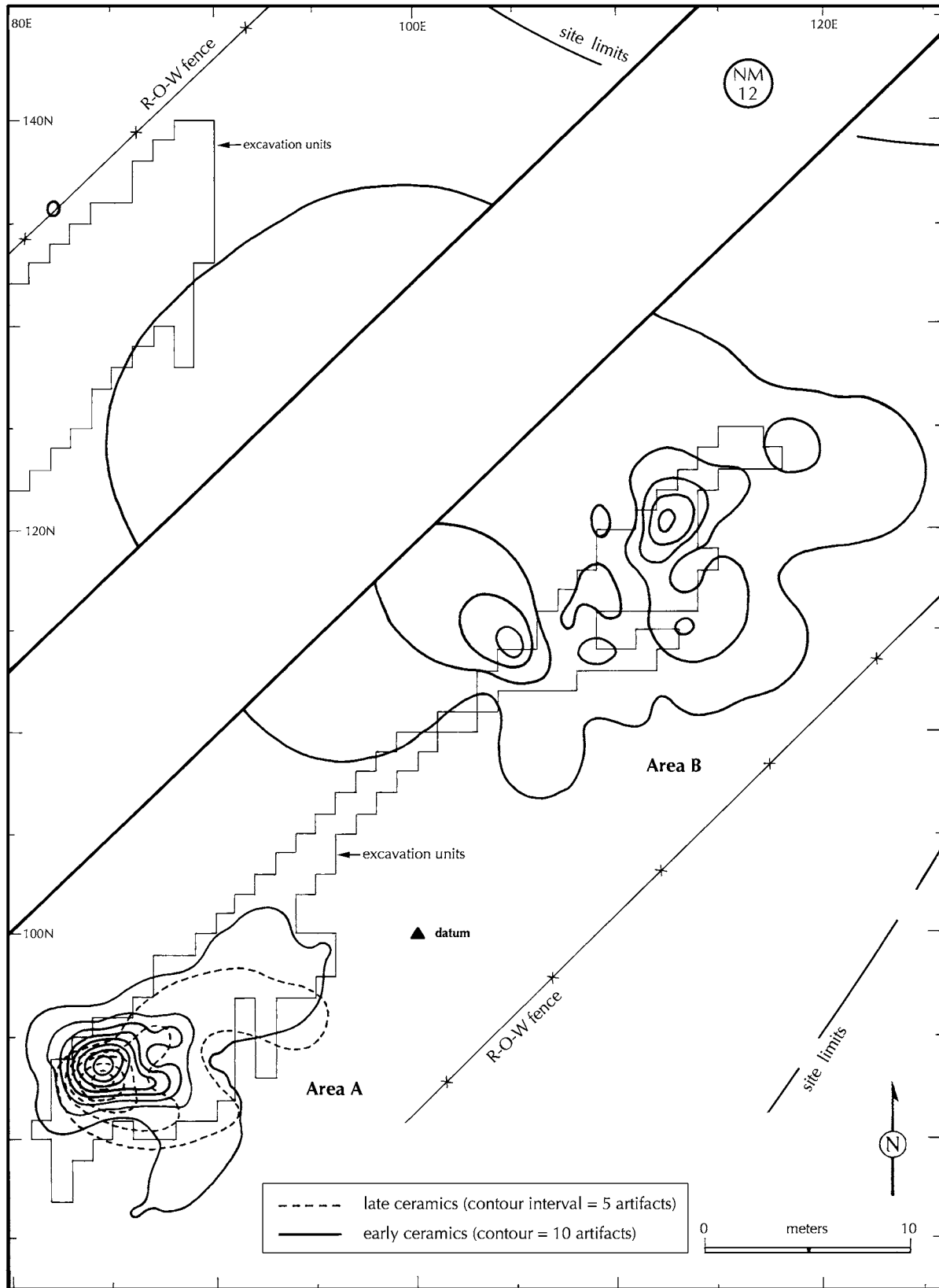


Figure 2.135. Early and late components at LA 39972 based on ceramic distributions.



Figure 2.136. LA 39972, Area B on north side of NM 12; Area A is in foreground.

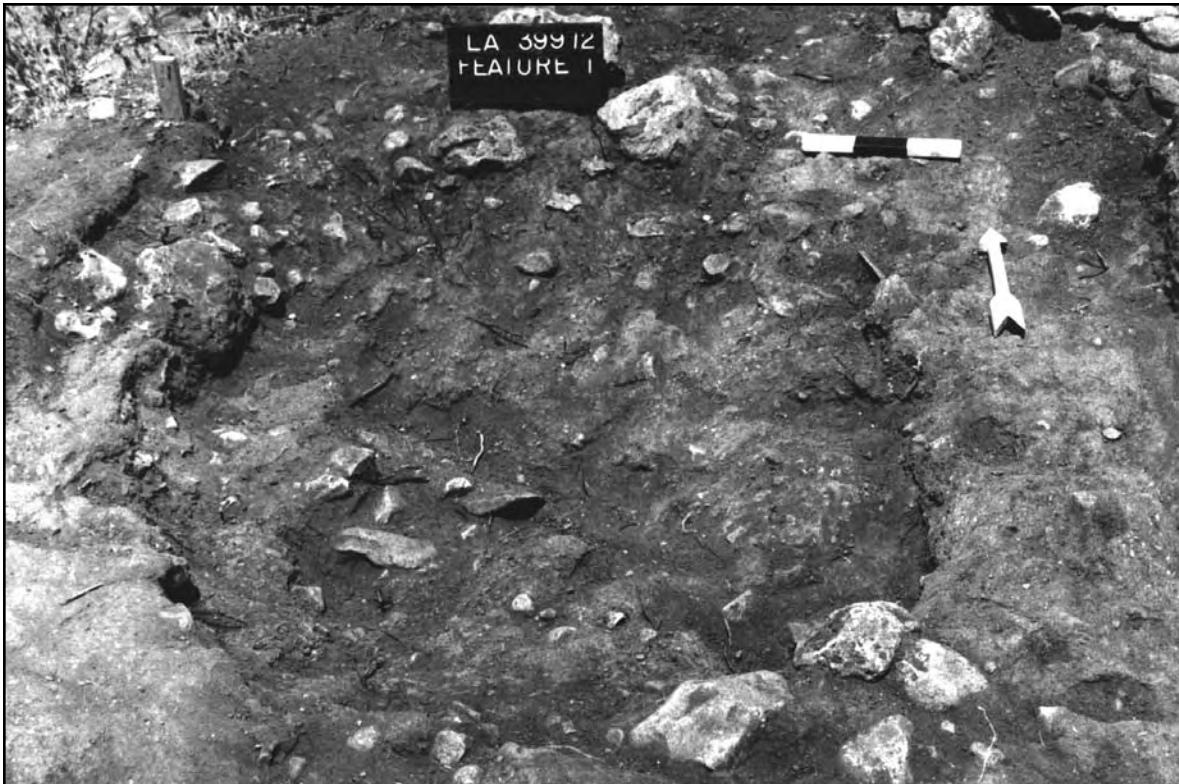


Figure 2.137. Trash pit in Area A.

ARTIFACTS

A total of 3,388 artifacts were recovered from SU Tanks. These include 2,037 ceramics, 1,229 lithic artifacts, 8 projectile points, 29 pieces of ground stone, 3 miscellaneous items, 4 bone tool fragments, and 77 pieces of faunal remains.

Ceramics

The great majority of ceramics are from Area A at 65.1 percent of the total assemblage (Table 2.54). This is the Reserve phase component of the site and all but 24 of these Pueblo period sherds are within this unit. The trash pit within this area contained 155 sherds associated with the Reserve phase. Brown wares are ubiquitous throughout Areas A and B; however, brown wares and San Francisco Red strongly dominate in Area B at 96.7 percent. This is the Early Pithouse portion of the site.

Lithic Artifacts

Over half of the lithic artifacts occur in Area A on the Pueblo period portion of the site (Table 2.54). However, 62.5 percent of the bifaces, all but one of the eight projectile points, and the single uniface are within Area B, the Early Pithouse component.

Lithic material types on the site are dominated by chert, basalt, and Luna blue agate (Table 2.55). In the Reserve area of the site, Luna blue agate, basalt, and rhyolite have their strongest presence. Area B has no highly dominant materials, but does have the highest percentage of chert and obsidian. However, many of the materials are present, to some degree, on all areas of the site, indicating that use of similar materials was undertaken by both groups.

Eight projectile points were recovered from SU Tanks (Table 2.56). Seven of the eight appear to be Archaic in style ranging from a San Pedro to two Augustin, two San Jose, one Bajada/San Jose, and one medium-sized laterally notched point. These all occur within Area B. Material type is predominantly basalt (37.5 percent of the assemblage), followed by equal amounts of chert and obsidian.

Eight bifaces were also retrieved from LA 39972. These include a finely crafted chert drill with a bifurcated base and two possible knife portions made of basalt.

Ground Stone

The ground stone assemblage is small (29 artifacts; Table 2.57). Metates constitute the majority of the ground stone (59.2 percent). Manos comprise 25.9 percent of the

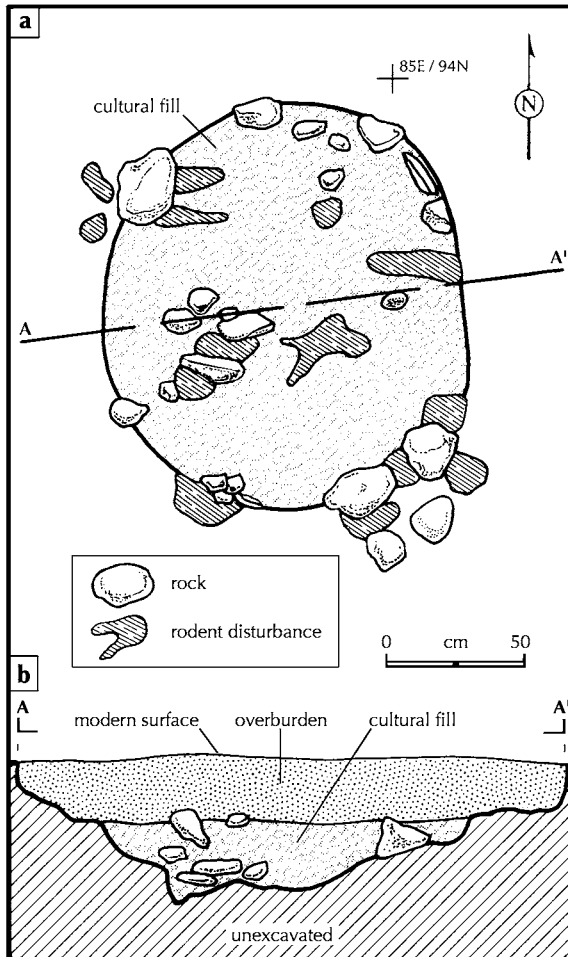


Figure 2.138. Trash pit in Area A, SU Tanks; (a) plan, (b) profile.

this assemblage of 289 sherds. The presence of 24 Reserve phase ceramics within this area, representing 22 plain smudged and 2 plain corrugated sherds, is minor and may be the result of a few pot drops. Most artifacts cluster along the cut bank of the right-of-way and suggest that a possible early structure may have once existed in the highway corridor.

Also, 29 sherds extend to the north side of NM 12 and seem to be a part of this early pithouse component. Cultural fill was very shallow in this area, extending generally to less than 10 cm below ground before sterile red clay was encountered. The total area of this component is projected at 1,250 sq m.

No cultural features were found within Area B. A possible "use" surface was uncovered within Grids 119 and 120N to 112-114 E at 17 cm in depth, but it could not be followed beyond these grids. Charcoal flecks were present in the area. Dating this area to the Pinelawn phase is based on the presence of early brown ware pottery and the recovery of two C-14 samples from the charcoal-flecked general fill.

Table 2.53. Ceramics from LA 39972

CELLS: Count Row Percent Column Percent	Provenience		Row Total
	Area A	Area B	
Alma Plain	651 62.1% 49.1%	397 37.9% 55.9%	1048 100.0% 51.4%
Alma Rough	91 29.2% 6.9%	221 70.8% 31.1%	312 100.0% 15.3%
Alma Scored	2 100.0% .2%		2 100.0% .1%
Alma Incised	1 100.0% .1%		1 100.0% .0%
Three Circle Neckbanded	1 100.0% .1%		1 100.0% .0%
Plain Corrugated	137 98.6% 10.3%	2 1.4% .3%	139 100.0% 6.8%
Indented Corrugated	29 100.0% 2.2%		29 100.0% 1.4%
Incised Corrugated	62 100.0% 4.7%		62 100.0% 3.0%
Patterned Corrugated	4 100.0% .3%		4 100.0% .2%
Indeterminate Corrugated	15 100.0% 1.1%		15 100.0% .7%
Plain Smudged	288 92.9% 21.7%	22 7.1% 3.1%	310 100.0% 15.2%
San Francisco Red	2 2.9% .2%	68 97.1% 9.6%	70 100.0% 3.4%
Mimbres White ware	1 100.0% .1%		1 100.0% .0%
Mangus Black-on- white (Bold Face)	1 100.0% .1%		1 100.0% .0%
Late Whiteware	7 100.0% .5%		7 100.0% .3%
Reserve Black-on- white	33 100.0%		33 100.0% 1.6%
Tularosa Black-on- white	2 100.0% .2%		2 100.0% .1%
Column Total	1327 65.1% 100.0%	710 34.9% 100.0%	2037 100.0% 100.0%

Table 2.54. Lithic Artifacts from LA 39972

CELLS: Count Row Pct Column Pct	Provenience		Row Total
	Area A	Area B	
Angular Debris	223 54.4% 31.2%	187 45.6% 36.3%	410 100.0% 33.4%
Core Flake	456 61.1% 63.9%	290 38.9% 56.3%	746 100.0% 60.7%
Bface Flake	16 57.1% 2.2%	12 42.9% 2.3%	28 100.0% 2.3%
Tested Cobble	1 33.3% .1%	23 66.7% .4%	3 100.0% 2%
Core	14 46.7% 2.0%	16 53.3% 3.1%	30 100.0% 2.4%
Cobble Tool	1 33.3% .1%	2 66.7% .4%	3 100.0% 2%
Uniface		1 100.0 .2%	1 100.0% .1%
Bface	3 37.5% 4%	5 62.5% 1.0%	8 100.0% .7%
Column Total	714 58.1% 100.0%	515 41.9% 100.0%	1229 100.0% 100.0%

assemblage. The only other ground stone artifacts are three lapidary stones and a shaft straightener. Most ground stone was recovered from Area B (51.8 percent).

Manos are almost evenly divided between one and two-hand stones. Two-hand manos are usually associated with slab or trough metates. Many of the metates are of indeterminate morphology because they are fragmentary; however, 50 percent are slab or slab combinations.

Rhyolite and basalt are the dominant ground stone material types (Table 2.58).

Miscellaneous Artifacts

Only three miscellaneous items were recovered from SU Tanks—an effigy, an effigy handle, and a piece of ground hematite. The hematite is pyramid-shaped and was probably used as a pigment source. It was found on the Early Pithouse portion of the site, Area B. The effigy is somewhat unusual in that it is carved from quartzite. Only the head remains; it has two drilled eye holes. It, too, was within Area B. The effigy handle is from a Reserve Black-on-white vessel and was found within Area A.

Table 2.55. Lithic Material Types from LA 39972

CELLS: Count Row Pct Column Pct	Proveniences		Row Total
	Area A	Area B	
Chert	260 44.7% 36.4%	322 55.3% 62.5%	582 100.0% 47.4%
Chalcedony	6 66.7% .8%	3 33.3% .6%	9 100.0% .7%
Luna Blue Agate	108 78.8% 15.5%	29 21.2% 5.6%	137 100.0% 11.1%
Silicified Wood		1 100.0% .2%	1 100.0% .1%
Obsidian	14 42.4% 2.0%	19 57.6% 3.7%	33 100.0% 2.7%
Igneous	3 27.3% 4%	8 72.7% 1.6%	11 100.0% 9%
Basalt	256 70.5% 35.9%	107 29.5% 20.8%	363 100.0% 29.5%
Rhyolite	44 74.6% 6.2%	15 25.4% 2.9%	59 100.0% 4.8%
Limestone	2 100.0% .3%		2 100.0% .2%
Siltstone	5 71.4% .7%	2 28.6% .4%	7 100.0% 6%
Metamorphic		1 100.0% .2%	1 100.0% .1%
Quartzite	13 65.0% 1.8%	7 35.0% 1.4%	20 100.0% 1.6%
Quartzitic Sandstone	1 50.0% .1%	1 50.0% .2%	2 100.0% 2%
Quartz	2 100.0% .3%		1 100.0% 2%
Column Total	714 58.1% 100.0%	515 41.9% 100.0%	1229 100.0% 100.0%

Bone Tools

Four fragments of utilized bone were recovered from SU Tanks. All were from Area B. Two are fragments from a medium-sized mammal that have multiple striations. The other two are from a large mammal and are pieces from a bone tool of indeterminate function.

Table 2.56. LA 39972 Projectile Points

Cells: Count Row Percent	Material Type				Row Total
	Chert	Luna Blue Agate	Obsidian	Basalt	
Unidentified	1 100.0%				1 100.0%
Medium Lateral- Notched			1 100.0%		1 100.0%
Bajada/San Jose			1 100.0%		1 100.0%
San Jose				2 100.0%	2 100.0%
Augustin	1 50.0%	1 50.0%			2 100.0%
San Pedro				1 100.0%	1 100.0%
Total	2 25.0%	1 12.5%	2 25.0%	3 37.5%	8 100.0%

Table 2.57. Ground Stone from LA 39972

CELLS: Count Row Percent Column Percent	Provenience		Row Total
	Area A	Area B	
Polishing Stone	1 100.0%		1 100.0%
	6.7%		3.4%
Shaft Straightener	1 100.0%		1 100.0%
	6.7%		3.4%
Lapidary Stone		3 100.0%	3 100.0%
		21.4%	10.3%
One-hand mano	2 66.7%	1 33.3%	3 100.0%
	13.3%	7.1%	10.3%
Two-hand mano	3 75.0%	1 25.0%	4 100.0%
	20.0%	7.1%	13.8%
Metate	3 42.9%	4 57.1%	7 100.0%
	20.0%	28.6%	24.1%
Slab Metate	4 40.0%	6 60.0%	9 100.0%
	26.7%	35.7%	31.0%
Maul Preform	1 100.0%		1 100.0%
	6.7%		3.4%
Column Total	15 51.7%	14 48.3%	29 100.0%
	100.0%	100.0%	100.0%

Table 2.58. Ground Stone Material Type from LA 39972

Cells: Count Row Pct Column Pct	Provenience		Row Total
	Area A	Area B	
Chert	1 100.0% 6.7%		1 100.0% 3.4%
Igneous	1 100.0% 6.7%		1 100.0% 3.4%
Basalt	4 66.7% 26.7%	2 33.3% 14.3%	6 100.0% 20.7%
Rhyolite	8 47.1% 53.3%	9 52.9% 64.3%	17 100.0% 58.6%
Andesite		1 100.0% 7.1%	1 100.0% 3.4%
Sandstone		1 100.0% 7.1%	1 100.0% 3.4%
Quartzite	1 100.0% 6.7%		1 100.0% 3.4%
Quartzitic Sandstone		1 100.0% 7.1%	1 100.0% 3.4%
Column Total	15 51.7% 100.0%	14 48.8% 100.0%	29 100.0% 100.0%

ANCILLARY STUDIES

Faunal Remains

Seventy-eight pieces of animal bone were found at SU Tanks. Species diversity is limited; however, there are some interesting patterns present (Table 2.59). Most of the material is from Area A (83.2 percent) and includes all of the small mammal, turkey, bird, rabbit, and prairie dog remains. In contrast, Area B contained all but one piece of the medium and large-sized mammal bones.

The count for Area A, the Pueblo period occupation, is somewhat inflated by the high frequency of turkey/bird remains. Even so, all of the smaller animal bones are from this area. The overall faunal assemblage is not large enough to support the conclusion that by Pueblo times, site occupants were restricted to small mammals and birds for their meat provisions for whatever reasons, but it is a possibility. The Early Pithouse area, Area B, has a markedly different faunal assemblage that is restricted to medium and large-sized mammals. Again, with the small assemblage size, it is difficult to make

Table 2.59. Faunal Remains from LA 39972

Species	Area A	Area B	Total
Small Mammal	12		12
Medium Mammal		3	3
Large Mammal	1	10	11
Prairie Dog	10		10
Cottontail Rabbit	3		3
Jack Rabbit	2		2
Bird	19		19
Turkey	18		18
Total	65	13	78

valid inferences about subsistence differences between the two components.

The turkey remains are probably from a single fowl and were found in the general fill near the trash pit in Area A, suggesting they were also discard items. The bird remains are from this same area but are too fragmented to determine species; however, they are likely turkey remains also.

Macrobotanical Remains

Three flotation samples were examined from the trash pit, the possible use surface, and a charcoal concentration in the use surface area. The Reserve phase trash pit was the only feature encountered on the site. A single charred goosefoot seed was recovered from the charcoal concentration, representing the only potentially cultural plant remain recovered from the site. Oak, piñon, ponderosa, and juniper were identified in two C-14 samples submitted for wood species identification. The modern vegetation indicated that these taxa would have been locally available for use as fuelwood.

Pollen Remains

Six pollen washes and three soil samples were taken from SU Tanks. There is not much diversity in species of plants recovered from the pollen analysis (Table 2.60). Pine, cheno-ams, and grasses are found on all areas of the site and may have been utilized during the two occupations of the site. Pueblo occupants in Area A, however, seem to have exploited a broader variety of plants with grasses and sunflower products being the most commonly recovered items. It is of interest that no corn pollen was found, particularly from the Pueblo component. Although the pollen remains are sparse, they could indicate a greater reliance on plant foods during the later

Table 2.60. Pollen for LA 39972

SOURCES	Area A	Area B
	Trash Pit 2 Ground Stone, Shaft Straightner	Soil Samples
Pine	X	X
Cheno-Am	X	X
Oak	X	
Grasses	X*	X
Nightshade	X	
Sunflower	X*	

*=Moderate

Pueblo occupation than during the earlier pithouse phase. The lack of corn is problematic but may be a function of small sample size or poor preservation.

DATING METHODS

Because SU Tanks is basically a very shallow deposit with only a single subsurface feature, it did not yield a large array of ancillary data or datable materials. Only two datable radiocarbon samples were obtained from charcoal-flecked soil in Area B (Table 2.61). Seven obsidian hydration dates were either too early for the more reliable C-14 dates, ranging between 18,426 B.C. and 537 B.C., or too late at A.D. 804 and 1799.

Beta No. 76359 produced a calibrated intercept date of 20 B.C. This date and its broader 2-sigma range extending back to 355 B.C. seems too early for the Alma Brown Wares that came from this site. Useful "begin" dates for Alma Plain Wares have not been firmly established in the Mogollon Highlands, and we hesitate to use this sample date of 20 B.C. as a marker because of the shallowness of the soil from which it came, its lack of context within a cultural feature, and the possibility that it may represent burning of old wood.

The calibrated second intercept date at A.D. 380, also within Area B, is much more appropriate for the Early Pithouse assemblage in this locale, and we believe it is a good fit. This would make SU Tanks one of the earliest dated Pinelawn phase sites in the Mogollon area.

The location of SU Tanks on a low knoll above a seep and a good drainage seems to have been a strong drawing card for various prehistoric populations through time. Two different occupations have been recorded for this locale: Early Pithouse and Early Pueblo. Definite areas of settlement have been isolated for the two cultural groups; however, there has been slight overlapping of debris from all of the site activities. What remains from the Early Pueblo period (Reserve phase) is the best defined, being concentrated in the southwest portion of the site.

From the amount of sherd and lithic material and the variety of items recovered, it seems warranted to assume that a small, perhaps single room, Reserve phase field-house and one or two Pinelawn phase pithouses once were located within the former highway right-of-way. In fact, a site visitor stated that Paul Martin excavated a pithouse in the vicinity along the southeast edge of the right-of-way in 1946. He also said that the work was not included in any report. While these statements cannot be verified, they do bolster our supposition that perhaps a Pinelawn phase pithouse was once present in this locale. The radiocarbon date for the Pinelawn occupation (A.D. 380) makes this one of the earliest such sites in the Mogollon Highlands.

Both projectile points and numerous large mammal remains on the Early Pithouse portion indicate that hunting was carried out from the site and that processing faunal remains also occurred here. Early Pueblo residents seem more geared to the utilization of small mammals, mainly rabbits. Whether or not this indicates a dietary change through time, perhaps because of climatic degradation or overutilization of faunal resources, is impossible to determine given the small assemblage size.

The belief that SU Tanks served as a residential base through all time periods is borne out not only by the apparent processing of faunal remains, but by the presence of ground stone and the processing of various plant products. A large variety of ceramics and lithic materials also implies residential occupation. Length of the site occupations is difficult to assess. The probable presence of former structures on the Pithouse and Pueblo portions

Table 2.61. C-14 Dates for LA 39972

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Intercept Date	Context
114N/108E	76359	2030±100	B.C. 165-A.D. 85	B.C. 355-290 B.C. 230-A.D. 220	B.C. 20	Fill (L1)
124N/117E	76360	1700±70	A.D. 250-425	A.D. 210-535	A.D. 380	Fill (L3)

suggests several months of occupation, possibly on a seasonal basis.

The location is very well suited for maize agriculture, although no corn remains were found. Lack of cultural features, except for a trash pit, may explain this absence of maize. The ground stone assemblage, with both one and two-hand manos, suggests processing of a variety of subsistence items. Grasses, sunflower parts, and cheno-ams were found on ground stone surfaces and were some of the plant resources utilized.

While remains of the two site occupations are slightly overlapping, producing a palimpsest effect, SU Tanks, nevertheless, has been found to verify the presence of a Pinelawn phase occupation in this portion of the Pine Lawn Valley. In contrast, Reserve phase sites are fairly common in this area. Our investigations on this, and other valley sites seem to indicate that the Pine Lawn Valley has a strong history of extensive occupations dating back to the Archaic period.

LA 39975 (AR-03-06-06-00372)

LAZY MEADOWS

Dorothy A. Zamora

LA 39975, Lazy Meadows, also known as LA 3337 (Luna Junction), was first recorded by Peckham in 1956 and later by Oakes (1989). The site has two LA numbers because of some confusion over its placement on the USGS topographic map in the NMCRIS files. Peckham (1963) originally excavated LA 3337 because of proposed highway improvements. The site contained a shallow pithouse (Fig. 2.139), which he suggested dated to the Pinelawn phase, probably predating A.D. 600. This date was derived from the type of architecture and the ceramics present on the site. The portion of the site excavated by Peckham no longer exists. The part designated as LA 39975 and excavated by OAS contained three pit structures, a roasting pit, and a small extramural pit. Radiocarbon dates indicate two occupations, one during the Late Pinelawn and the other in the Georgetown phase.

There are numerous sites nearby, most of them recorded by Paul S. Martin in the 1930s. There are several large sites, including two well-known ones excavated by Martin and Rinaldo (1947) and Bluhm (1957)—the SU site and the Sawmill site.

The SU site (LA 64931) lies 1 km north of Lazy Meadows on a ridge overlooking the Pine Lawn Valley to the south. It is a large multicomponent site excavated by Paul S. Martin in the 1930s (Martin and Rinaldo 1947) and reexamined by Wills through the University of New Mexico field school in 1988. Martin and Rinaldo (1947) describe it as a large pithouse village containing 24 pithouses belonging to the Pinelawn phase and 3 pithouses and 1 kiva associated with the Three Circle phase. After further recent excavations, Wills (1996) has determined that 28 pithouses are present and belong only to the Pinelawn phase. One later surface room is also present.

The Sawmill site (LA 9657) is 1.28 km (.8 mi) southwest of Lazy Meadows and was recorded by Brigham Arnold in 1940 and recorded again by Martin in 1942. Bluhm then excavated the site in 1951 (Bluhm 1957). The Sawmill site contains a Three Circle phase pithouse and a Reserve phase roomblock with a large rectangular great kiva.

Lazy Meadows lies on both sides of U.S. 180. Three shallow pit structures and a roasting pit are on the east side of the highway and a utilized surface is on the west

side. The site covers an area of at least 5,538 sq m and extends to the east outside the right-of-way for approximately 22 m.

Peckham's pithouse (LA 3337) was located in the middle of what is now U.S. 180 (formerly U.S. 260). The pithouse measured 4.5 m north-south by 5.0 m east-west with a floor area of 22.5 sq m. It contained a stepped entryway, facing the southeast, and floor features, including a central hearth with a raised clay rim, a deflector slot, subfloor pits, and several postholes. Peckham (1963:43) indicates that there was a four or five posthole pattern with smaller posts clustering around the larger posts, possibly as additional supports.

The ceramics found at the site by Peckham were mostly Alma Brown Wares and a few San Francisco Red sherds. Peckham (1963) argues that the ceramics are compatible with Martin's chronology for the Pinelawn phase, and that the assemblage for LA 3337 fits best with the middle to late time period of the phase. The artifact assemblage lacked projectile points and other diagnostic artifacts to help determine a time frame for the site. However, Peckham (1963) suggests that floor ridges are indicative of the Pinelawn phase, and should be considered an important feature in chronological placement of the site.

Chronometric dating for the Mogollon area is still difficult today, even with the help of specialized analyses such as Carbon-14, dendrochronology, and archaeomagnetic dating. However, by incorporating Peckham's information with the data from the Lazy Meadows site, a much better temporal placement has been obtained for the site.

SITE SETTING

Lazy Meadows is 0.32 km south of the NM 12 junction with U.S. 180 within the Pine Lawn Valley. The site is on a low knoll on both sides of the highway, surrounded by yellow pine, juniper, oak, and various grasses. It is bounded by the Saliz Mountains on the east and the San Francisco Mountains to the north. The Quaternary alluvium on which the site is situated forms a divide between the small drainages of Starkweather Canyon, which flow into the San Francisco River near Reserve (Peckham 1963).

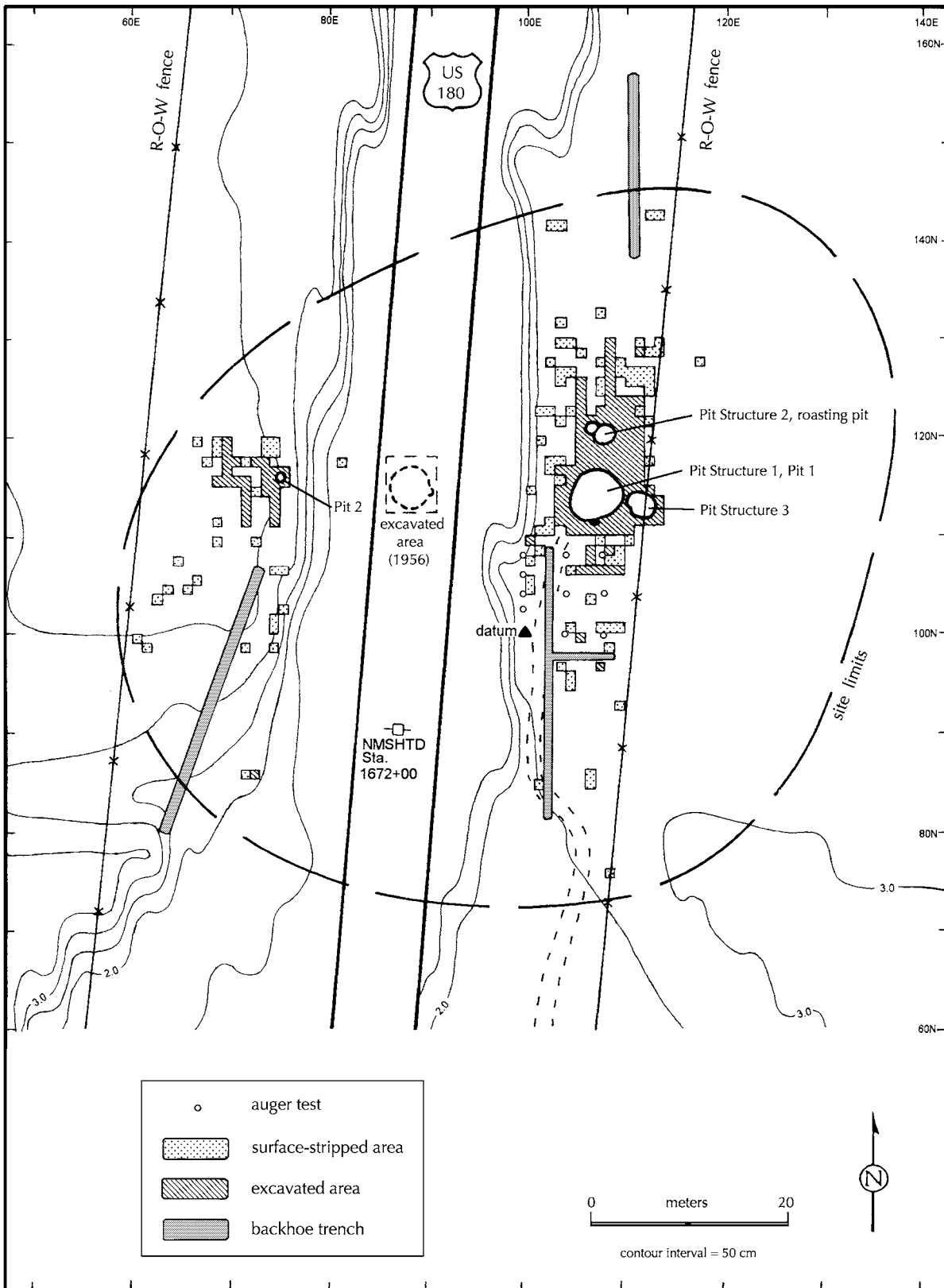


Figure 2.139. LA 39975, plan view of Lazy Meadows.

RESEARCH OBJECTIVES

Our goal for LA 39975 was to study the patterns of Early Pithouse period site use as they relate to subsistence activities. An examination of the pit structures was to provide site structure data in terms of long-range planning, seasonality of use, evidence of reuse or additional construction, and ratio of storage units to dwellings.

Subsistence strategies can also be perceived from the numerous artifact types present. Tool use was to be evaluated and used to determine the ratio of floral and faunal use together with actual subsistence items that should be present on the site. Storage units as well as the interior of cooking vessels was expected to yield food remains. The number and layout of storage facilities is important for assessing long-term planning and mobility strategies. The ground stone was used to test Hard's (1990) model of agricultural dependency.

The artifact assemblage was used to test Schlanger's model (1990) of long-term site use and propositions by J. Moore (1989) that biface production on such sites should be highly specialized.

The site is less than 1 km from another early pithouse site, the SU site. Data from Lazy Meadows is compared to this larger pithouse complex in terms of subsistence variations, long-term planning, and site function.

EXCAVATION PROCEDURES

Two baselines were first established running north-south and east-west. A 1-by-1-m grid system was placed over the site with a transit and stadia rod before excavation began. The soil ranged from a brown, sticky, sandy clay to a dense clay, which was very difficult to excavate. Stratigraphically, the soil on the site was defined by four substrates.

Level 1 is the modern top soil, a loose silty loam up to 12 cm thick (7.5YR 4/4, brown to dark brown).

Level 2 is general fill from the site area (5YR 3/3, dark reddish brown), and includes the overburden from mechanically removed areas. This level was found mostly in the exploratory units.

Level 3 was defined as pit fill from the structures. It is a silty, compacted clay. Charcoal flecking occurs in the fill along with some large rocks and it is 5YR 3/4 dark reddish brown on the Munsell color chart. The thickness of this level ranges from 14 to 16 cm.

The pit fill (Level 3) is completely different from the other levels. It is a reddish brown sandy clay with root and rodent disturbance. It becomes a mottled clay 25 cm below the present ground surface. Below this level was a reddish brown clay. Some artifacts were found lying on the bottom of this level.

Levels 4, 5, and 6 were not present.

In Level 8 the soil is culturally sterile and composed of a pure red clay, which underlies the entire site (5YR 4/6, yellowish red).

The site was excavated by natural stratigraphic levels. All artifacts were bagged by stratigraphic level and grid location. Each floor artifact from the structures was piece-plotted on a feature map and numbered separately from the fill artifacts. A total of 168 grids were completely excavated, 6 were surface stripped only, and 96 were surface collected. Several auger tests (N=10) were also placed on the east side of U.S. 180 and 9 test pits were previously dug during the testing phase. After excavation was completed, four trenches, made by mechanical equipment, were placed in areas where fewer artifacts were present to insure that all cultural manifestations were found. The trenches were shallow, ranging between 30 and 35 cm in depth before reaching a culturally sterile substrate. Profiles were taken of these trenches but no cultural levels were observed. A total of 82.4 cu m with a mean depth of 35.0 cm per grid was excavated on the site. It is believed that all cultural features within the right-of-way were located.

CULTURAL UNITS

At the Lazy Meadows site a total of three pit structures were excavated. They ranged in size from small to large but all were shallow structures. Also found outside of Pit Structure 2, to the northwest, was a roasting pit, and a small pit was uncovered outside Pit Structure 1. A utilized surface, in which there was a small pit, was located on the west side of U.S. 180.

Pit Structure 1

Pit Structure 1 is a subterranean oval-shaped feature that was first found 4 cm below the present ground surface (Fig. 2.140). The pit was dug into the natural, reddish clay that underlies the site. Because of the shallow nature of the site and the extensive root and rodent disturbance, walls and floors of this pit structure were not easily defined.

Stratigraphically, the soils of the pit structure contained three levels:

Level 1: the top modern soil

Level 3: pit fill

Level 8: culturally sterile soil.

Dimensions. Pit Structure 1 is an oval-shaped, probable habitation unit that is 4.96 m north-south by 5.06 m east-west by .56 m deep, covering 25.09 sq m.

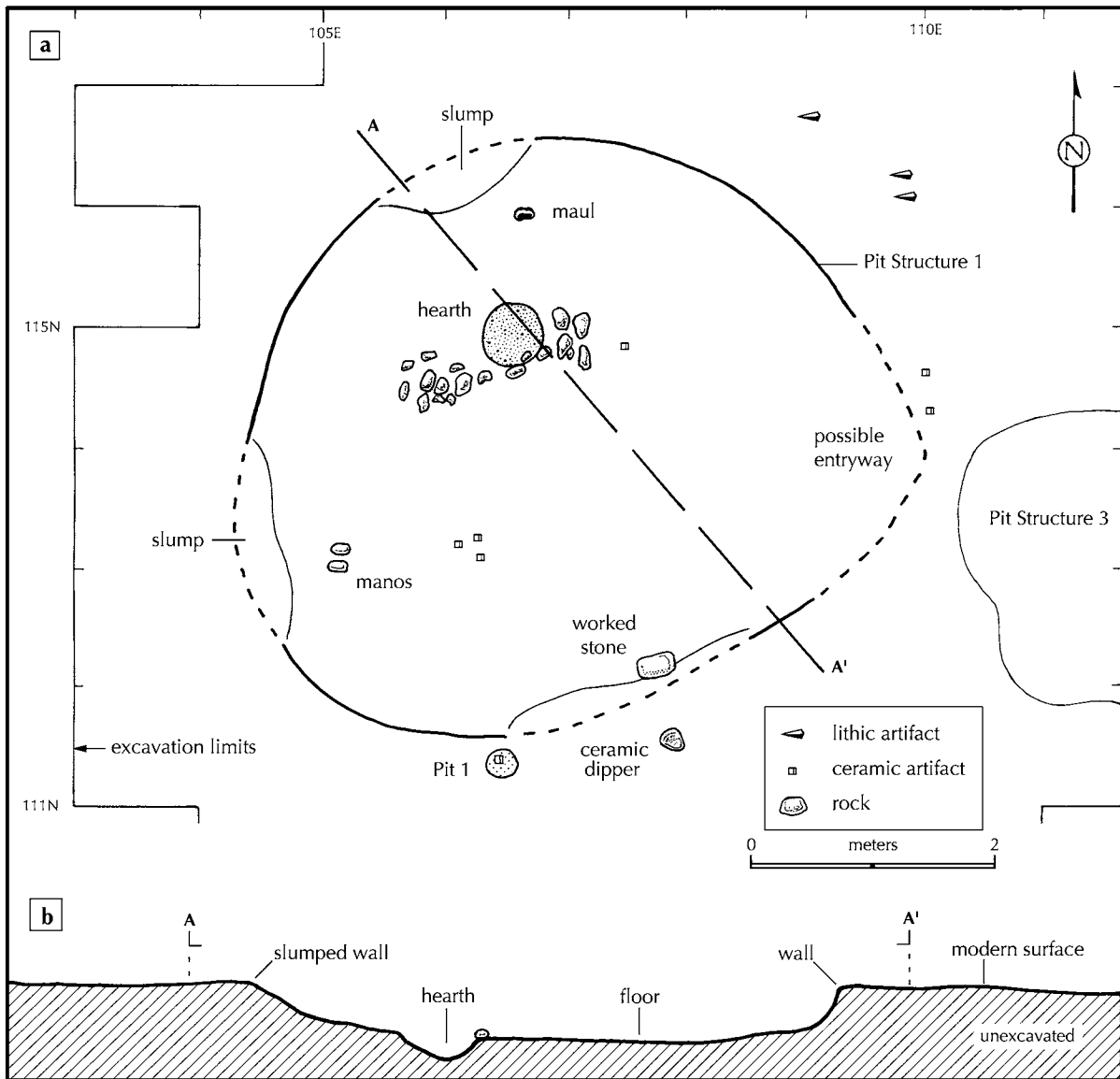


Figure 2.140. Pit Structure 1, plan view and profile.

Walls. The walls of the pit structure were dug into the natural underlying clay. The walls to the north and west are still intact; however, the south and east walls are badly eroded and slumping of these walls has occurred in several spots. The highest wall height was 48 cm on the west side and 36 cm on the southeast. There were no areas along the standing wall that were plastered.

Floor. There was no prepared floor noted; however, this does not mean that there could not have been a prepared floor. Root and rodent activity were very heavy within the structure. The floor was distinguished by the color change, compactness of the fill, and artifacts lying horizontally on it. However, not many artifacts were found on the floor. These included two manos, one large shaped stone, four sherds, and one maul (Fig. 2.140).

Several pollen and flotation samples were taken from the artifacts on the floor.

Hearth. A possible hearth was found on the floor in Pit Structure 1. The hearth was a shallow, round basin-like pit, that was 50 cm in diameter and 20 cm deep. It is possible that it was deeper; however, root activity destroyed the inside of the pit and the area around it, leaving only the upper portion of the pit. Also, in this heavily eroded area the floor was completely missing. Most of the fill from the hearth was collected as a flotation sample.

Ventilator. None.

Postholes. No postholes were found; however, the disturbance from roots and rodents could have obliterated them.

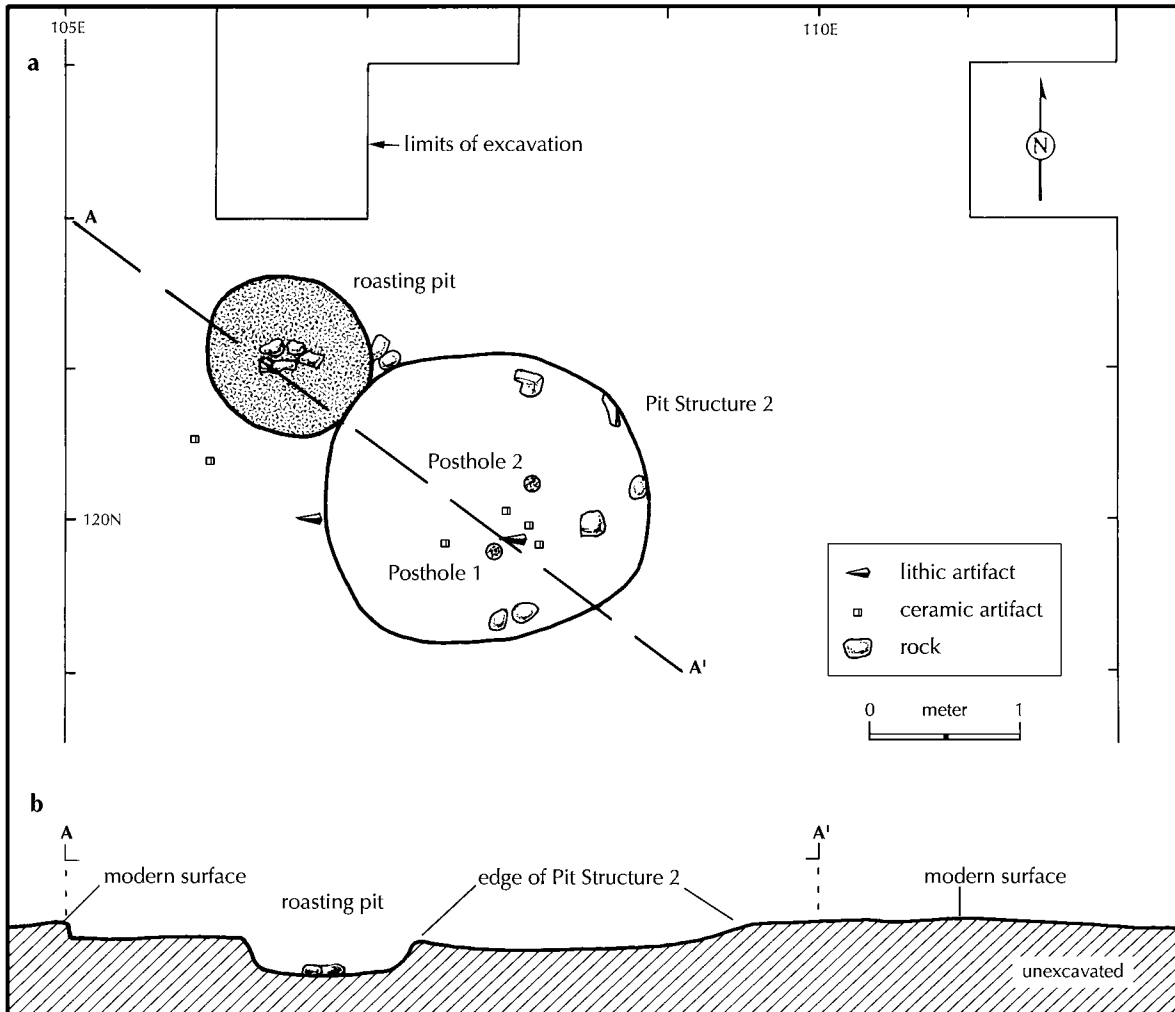


Figure 2.141. Plan view and profile of Pit Structure 2 and roasting pit.

Roof. Evidence missing.

Possible Entryway. On the east side of the pit structure, an entry may have been located. The walls of the pit structure bulge out, become very shallow, and slope up to meet the outside surface. If it was an entry, it was not discernable; however, the wall follows the same line of construction as Peckham's pithouse. The measurements for the entryway are 40 cm wide and 20 cm deep. In some areas there was still some of the original floor visible.

Pit Structure 2

This feature is 3 m north of Pit Structure 1. Associated with this structure is a roasting pit lying to the northeast (Fig 2.141). Two postholes were found in the structure along with some floor artifacts and large rocks. The unit was a very shallow, round, shallow saucer-like pit, possibly a summer shelter, with two small postholes located near the center of the structure.

There was no stratigraphic layering in the pit fill; all of the soil was a semicompact, dark, sandy clay with charcoal flecking.

Dimensions. Pithouse 2 measures 2.12 m east-west by 2.0 m north-south by .15 m deep for an area of 4.24 sq m.

Walls. The low walls sloped down to the shallow floor area. There was no plastering or smoothing evident.

Floor. The floor of this structure was a compact, reddish mottled clay with charcoal embedded in it, making it very easy to trace. Four Alma Plain ceramics were found on the floor of the pit structure clustered around the two postholes.

Hearth. None.

Ventilator. None.

Postholes. The two postholes were the only features present in this structure. Postholes 1 and 2 are identical, both are 10 cm in diameter and 10 cm deep. They are 47 cm apart and are slightly off-center toward the east half

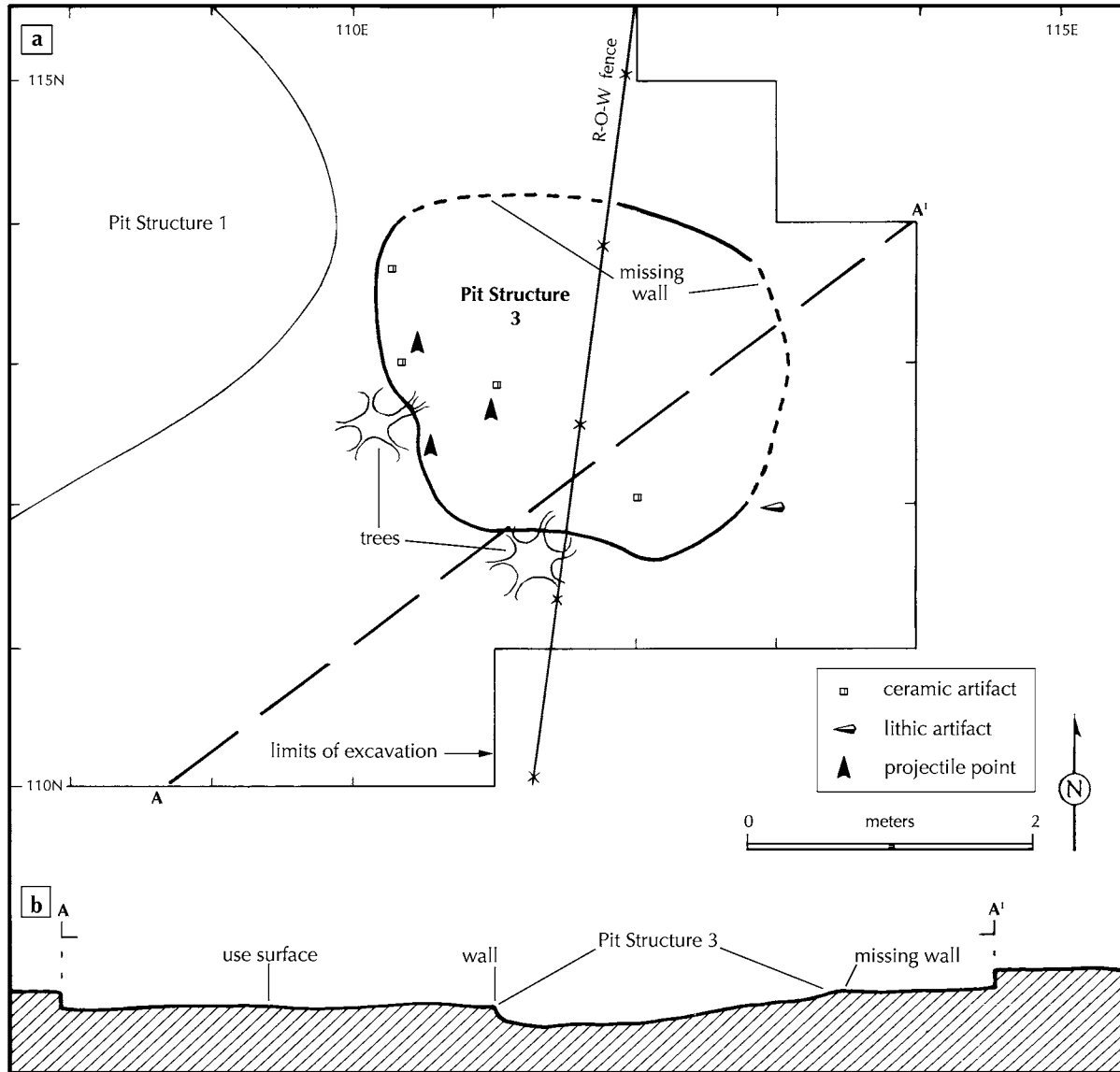


Figure 2.142. Pit Structure 3, plan and profile.

of the pit structure. The function of these two postholes is problematic. Some possibilities include a support for a loom, possibly a drying rack, or some type of a central roof support.

Roof. Evidence missing.

Pit Structure 3

Pit Structure 3 is another shallow, irregularly shaped pit that is 2.51 m north-south by 2.84 m east-west and .4 m deep (Fig. 2.142) for an area of 7.12 sq m. This feature was first located at 6 cm below the present ground surface and was found during the surface stripping around Pit Structure 1. Only a portion of the pit structure was located inside the right of way; however, the feature was

completely excavated with permission from the New Mexico State Highway and Transportation Department and the Gila National Forest, Reserve Ranger District.

No outside features were found in the area excavated around Pit Structure 3. Some rocks were uncovered during the surface stripping, but they were scattered and not aligned. However, there may be more features present outside the right-of-way, since the artifact density there is very high.

There was no stratigraphy present in the fill of the pit structure. The modern top soil was 2 to 3 cm thick and the feature fill was a dark, reddish brown with small gravels present. The feature fill ranged from 13 to 15 cm in thickness. Several artifacts were found in the fill of the pit structure.

Dimensions. The measurements for the pit structure are 2.51 m by 2.84 m by .4 m deep.

Walls. The walls were gently sloping, made of a compact clay, and were 40 cm high. In two areas the walls were missing due to soil erosion.

Floor. There was no prepared floor in this pit structure. The floor was an uneven compact clay with three lithic artifacts and four brown ware ceramics resting on it. There was root activity in most areas of the pit structure causing unevenness and disturbance throughout the feature.

Hearth. None.

Ventilator. None.

Postholes. None.

Roof. Evidence missing.

Activity Area

There were three features (a roasting pit and two storage pits) found on utilized surfaces encountered outside of the pit structures. The traceable use-surfaces covered an area of 92 m on the east side and 8 m on the west side of the site. The surface was a compact reddish clay with artifacts resting on it. There was charcoal flecking present in some areas, but it was heaviest around the roasting pit near Pit Structure 2.

Roasting Pit. One roasting pit was found northwest of Pit Structure 2 (see Fig. 2.141). It measured 1.4 m north-south by 1.12 m east-west by 0.21 m deep. The fill was an ashy sandy soil with some charcoal. A few small rocks were present at the bottom of the pit, but did not line the pit. Flotation and Carbon-14 samples were collected from this feature. There were two Alma Plain Brown Wares associated with the pit.

Pit 1. This small pit is located south of Pit Structure 1 (see Fig. 2.140). It is 20 cm in diameter and 3 cm deep. The fill was a dark, mottled sandy clay with a small Alma Plain sherd and a ground stone fragment at the bottom of the pit. There was no evidence of burning; however, rocks were found scattered through it. The lack of burning would suggest that the pit was probably used for purposes other than a hearth or for roasting; possibly some sort of storage unit.

Pit 2. On the use-surface on the west side of the site there was a small pit measuring .75 m by .90 m and ranging from 9 to 15 cm in depth. The fill was a dark sandy clay with some charcoal present. The sides of the pit did not show any burning, suggesting that the pit may have been used for storage.

ARTIFACTS

The 4,008 artifacts recovered from Lazy Meadows consisted of 2,305 ceramics, 1,542 lithic artifacts, 6 projec-

tile points, 31 ground stone artifacts, 24 miscellaneous items, and 100 fragments of faunal remains. They are detailed below.

Ceramics

These consist of mostly Alma Plain Brown Wares, which make up more than half (56.1 percent) of the assemblage (Table 2.62). There are only a few textured brown ware ceramics and some with interior smudging; however, neck banding is absent from the assemblage. One corrugated red slipped sherd is probably a later variant of San Francisco Red. These ceramic types are commonly present during the middle to late Pinelawn phase except for the early smudged ceramic sherds, which appear later in the Mogollon sequence.

Peckham's artifact assemblage (Table 2.63) from Luna Junction contains mostly Alma Plain ceramics (87.5 percent) and is very similar to the assemblage from our excavations.

Lithic Artifacts

The lithic artifacts from Lazy Meadows are primarily core flakes (75.8 percent) with some angular debris (14.2 percent). Table 2.64 shows that the material most commonly used is Luna blue agate (34.4 percent), which is prevalent in the area. Twenty-six percent of the lithic artifacts are from cherts that may be found in locally obtained river cobbles. Rhyolite (20.6 percent) is also readily available but some of the material quality is not as good as the agate and chert. Chert comprises 44.4 percent of the tool assemblage and Luna blue agate, 35.5 percent of the cores.

Peckham, in his earlier excavation of the site, recovered a different complex of tools than the OAS excavations. His site map (Peckham 1963) indicates a much larger, deeper, and more complex pit dwelling and it may have been the primary habitation in this area. This might account for the greater number of knives and scrapers present (Table 2.65). Most of the tools he recovered were reanalyzed in order to be comparable with the analysis for Lazy Meadows. However, all of the artifacts from Peckham's collections were not available.

Table 2.66 presents the results from the reanalysis of the materials from Peckham's excavations. The table indicates that most of the lithic assemblage are flakes (72 percent) and the most common material is rhyolite (38.6 percent). OAS recovered only 20.6 percent of this material.

The six projectile points found by OAS at Lazy Meadows came from Pit Structure 1 fill, the floor of Pit Structure 3, and near Pit Structure 2. One projectile point was collected from Grid 163N/111E, 19 m north of the

Table 2.62. LA 39975 Ceramic Types from Features

Cells: Count Row Percent Column Percent	Features						Row Total
	General Fill	Roasting Pit	Pit 1	Pit Structure 1	Pit Structure 2	Pit Structure 3	
Alma Plain	302 30.2% 36.0%	24 2.4% 39.3%	5 .5% 35.7%	476 47.6% 49.4%	78 7.8% 58.6%	115 11.5% 39.2%	1000 100.0% 43.4%
Alma Rough	406 42.6% 48.3%	33 3.5% 54.1%	8 .8% 57.1%	351 36.8% 36.4%	26 2.7% 19.5%	130 13.6% 44.4%	954 100.0% 41.4%
Alma Scored	27 87.1% 3.2%			3 9.7% .3%		1 3.2% .3%	31 100.0% 1.3%
Plain Corrugated				1 100.0% .1%			1 100.0% .0%
Plain Smudged	3 37.5% .4%					5 62.5% 1.7%	8 100.0% .3%
San Francisco Red	102 32.8% 12.1%	4 1.3% 6.6%	1 .3% 7.1%	133 42.8% 13.8%	29 9.3% 21.8%	42 13.5% 14.3%	311 100.0% 13.5%
Column Total	840 36.4% 100.0%	61 2.6% 100.0%	14 .6% 100.0%	964 41.8% 100.0%	133 5.8% 100.0%	293 12.7% 100.0%	2305 100.0% 100.0%

Table 2.63. Ceramics Collected by Peckham

Type	Site Total	Percent
Alma Plain	746	65.96
Alma Rough	244	21.57
San Francisco Red	113	9.99
Indeterminate Alma	28	2.48
Totals	1131	100.00

Table 2.64. LA 39975, Lithic Artifacts and Raw Material Types

Cell: Count Row Percent Column Percent	Artifact Type				Row Total
	Angular Debris	Flakes	Cores and Tested Cobbles	Tools	
Chert	48 12.1% 22.3%	326 82.1% 26.5%	19 4.8% 26.0%	4 1.0% 44.4%	397 100.0% 26.0%
Chalcedony	7 31.8% 3.3%	15 68.2% 1.2%			22 100.0% 1.4%
Luna Agate	118 22.3% 54.9%	381 71.9% 31.0%	30 5.7% 41.1%	1 .2% 11.1%	530 100.0% 34.7%

Table 2.64. Continued.

Cell: Count Row Percent Column Percent	Artifact Type				Row Total
	Angular Debris	Flakes	Cores and Tested Cobbles	Tools	
Silficed Wood	1 25.0% .5%	3 75.0% .2%			4 100.0% .3%
Obsidian	4 16.7% 1.9%	20 83.3% 1.6%			24 100.0% 1.6%
Basalt	5 4.3% 2.3%	102 88.7% 8.3%	6 5.2% 8.2%	2 1.7% 22.2%	115 100.0% 7.5%
Rhyolite	27 8.6% 12.6%	276 87.9% 22.4%	10 3.2% 13.7%	1 .3% 11.1%	314 100.0% 20.6%
Siltstone	3 9.7% 1.4%	23 74.2% 1.9%	4 12.9% 5.5%	1 3.2% 11.1%	31 100.0% 2.0%
Quartzite	2 2.2% .9%	84 93.3% 6.8%	4 4.4% 5.5%		90 100.0% 5.9%
Column Total	215 14.1% 100.0%	1230 80.6% 100.0%	73 4.8% 100.0%	9 .6% 100.0%	1527 100.0% 100.0%

Table 2.65. Tool Comparison for Lazy Meadows, Peckham's LA 3337, and the SU Site

Artifacts	Lazy Meadows		Peckham's LA 3337		SU Site	
	Number	Percent	Number	Percent	Number	Percent
Hammerstone	1		26	32.5	27	26.0
Cores			4	5.0	-	-
Full-grooved mauls	-	-	3	3.7	15	14.4
Choppers	-	-	6	7.5	12	11.5
Knives	-	-	15	18.8	9	8.7
Scrapers	-	-	21	26.3	19	18.3
Scraper-graver	-	-	2	2.5	-	-
Graver	-	-	3	3.7	-	-
Drills	1	-	-	-	2	2.8
Pot covers*	-	-	-	-	4	3.8
Hoes	-	-	-	-	2	2.0
Projectile points	5	-	-	-	14	13.4
Undifferentiated uniface	1	-	-	-	-	-
Undifferentiated biface	5	-	-	-	-	-
Total	86	100.0	80	100.0	104	100.0

*Pot covers - Roughly circular disks with chipped edges, surfaces parallel, occasionally smooth on one surface, and unworked (Martin 1943:348).

Table 2.66. Reanalyzed Artifacts from LA 3337 (Peckham 1963)

Cells: Count Row Percent Column Percent	Artifact Morphology					Row Total
	Angular Debris	Core Flake	Core	Cobble Tool	Biface	
Chert	2 14.3% 22.2%	11 78.6% 34.4%			1 7.1% 100.0%	14 100.0% 31.8%
Luna Blue Agate	2 66.7% 22.2%	1 33.3% 3.1%				3 100.0% 6.8%
Igneous	1 33.3% 11.1%	1 33.3% 3.1%		1 33.3% 3.1%		3 100.0% 6.8%
Basalt	2 28.6% 22.2%	5 71.5% 15.6%				7 100.0% 15.9%
Rhyolite	2 11.8% 22.2%	14 82.4% 43.8%	1 5.9% 100.0%			17 100.0% 38.6%
Column Total	9 20.5% 100.0%	32 72.7% 100.0%	1 2.3% 100.0%	1 2.3% 100.0%	1 2.3% 100.0%	44 100.0% 100.0%

Table 2.67. Projectile Points from LA 39975

Cell: Count Row Percent	Material Type				Row Total
	Chert	Chalcedony	Luna Blue Agate	Obsidian	
Unidentified	1 100.0%				1 100.0%
Medium Lateral-Notched			1 100.0%		1 100.0%
Small Lateral-Notched		1 100.0%			1 100.0%
Flake Point	1 100.0%				1 100.0%
San Pedro				2 100.0%	2 100.0%
Column Total	2 33.3%	1 16.7%	1 16.7%	2 33.3%	6 100.0%

site limits. Table 2.67 gives the projectile point types found on the site. Two of these are Archaic points (San Pedro) that date to the Late Archaic period (1500 B.C. to 250 B.C.). Another is a medium-sized, lateral-notched point that is also San Pedro-like. One other is a small, lateral-notched and the other projectile points are too fragmentary to identify.

The presence of Archaic points on the site suggests that this Archaic style may have continued into the Pinelawn phase. Further attention will be given to this issue in following chapters.

Ground Stone

The ground stone artifacts recovered from LA 39975 consisted of manos, metates, polishing stones, and a maul. Table 2.68 lists the ground stone artifacts from the Lazy Meadows site. According to Peckham's report, there was one metate, ground on both sides, five manos, one indeterminate grinding stone, and one polishing stone in his assemblage. These are included in Table 2.68. Most ground stone (74.2 percent) is made from rhyolite (Table 2.69).

In comparing the ground stone with the SU site

Table 2.68. Ground Stone from LA 39975, Lazy Meadows

Cells: Count Row Percent Column Percent	Provenience					Row Total
	General Fill	Pit 1	Pit Structure 1	Pit Structure 2	Pit Structure 3	
Indeterminate Fragment	1 33.3% 10.0%	33.3% 100.0%			1 33.3% 12.5%	3 100.0% 9.7%
Abrading Stone	1 50.0% 10.0%		1 50.0% 9.1%			2 100.0% 6.5%
Shaped Slab			1 100.0% 9.1%			1 100.0% 3.2%
Pounding Stone	1 100.0% 10.0%					1 100.0% 3.2%
Lapidary Stone	3 30.0% 30.0%		1 10.0% 9.1%	1 10.0% 100.0%	5 50.0% 62.5%	10 100.0% 32.3%
Two-hand Mano	2 22.2% 20.0%		1 25.0% 9.1%		1 25.0% 12.5%	4 100.0% 12.9%
Metate	2 50.0% 20.0%		1 25.0% 9.1%		1 25.0% 12.5%	4 100.0% 12.9%
Maul			1 100.0% 9.1%			1 100.0% 3.2%
Column Total	10 32.3% 100.0%	1 3.2% 100.0%	11 35.5% 100.0%	1 3.2% 100.0%	8 25.8% 100.0%	31 100.0% 100.0%

Table 2.69. Ground Stone Material Types from LA 39975, Lazy Meadows

Cells: Count Row Percent Column Percent	Provenience					Row Total
	General Fill	Pit 1	Pit Structure 1	Pit Structure 2	Pit Structure 3	
Basalt	2 66.7% 20.0%		1 33.3% 9.1%			3 100.0% 9.7%
Rhyolite	6 26.1% 60.0%		8 34.8% 72.7%	1 4.3% 100.0%	8 34.8% 100.0%	23 100.0% 74.2%
Limestone			1 100.0% 9.1%			1 100.0% 3.2%
Sandstone	2 50.0% 20.0%	1 25.0% 100.0%	1 25.0% 9.1%			4 100.0% 12.9%
Column Total	10 32.3% 100.0%	1 3.2% 100.0%	11 35.3% 100.0%	1 3.2% 100.0%	8 25.8% 100.0%	31 100.0% 100.0%

Table 2.70. Ground Stone from SU Site

Artifact Type	Number	Percent
Manos	110	40.4
Rubbing Stones	24	8.8
Metates	40	14.7
Indeterminate grinding stones	38	13.9
Mortars	23	8.5
Pestals	16	5.9
Polishing stones	26	5.9
Paint Palette	1	.4
Paint grinding	4	1.5
Total	272	100.0

(Table 2.70), there is a higher percentage of some types at the SU site with a 7.1 percent increase of manos and 7.2 percent increase in indeterminate ground stone at SU; however, there are 26.0 percent more metates and 4.1 percent more polishing stones (includes both small and large) at the Lazy Meadows site. Both sites indicate that grinding subsistence materials was a regular activity.

The manos from both LA 39975 are mainly one-hand and vary in shape from oval to rectangular. The metates from the SU site are slab, basin, and trough types. The metates from LA 39975 are only basin and slab types. Trough metates are usually not associated with early sites; however, Martin (1943), at the SU site, also identified trough metates that were associated with the Pinelawn phase pithouses. Correlations between shape and function of the ground stone assemblage will be made in a later chapter.

Miscellaneous Artifacts

Numerous crystals (N=20), three pieces of limonite, and one bone ornament were found on the site. Most of the crystals were found in the fill of the pit structures (85 percent), suggesting their procurement by site occupants. The minerals are possibly occurring naturally, but were also found in the fill of Pit Structure 1. The bone ornament recovered from the site was a triangular bone fragment that has been carved and serrated along one edge (see Volume 4).

ANCILLARY STUDIES

Faunal Remains

The fauna found at LA 39975 (N=100) consists mostly of small fragments of bone. Much of it could not be

Table 2.71. Fauna from LA 39975

Taxon	NISP	Percent
Mammals	34	34.0
Small mammals	1	1.0
Large mammals	59	59.0
Pocket squirrel	2	2.0
Indeterminate deer	3	3.0
Elk or Deer species	1	1.0
Total	100	100.0

placed within a specific species category and, therefore, was lumped under broad classifications. Large mammals were the major type of animal remains found on the site. Some of these were identified as deer, and indeterminate, possibly deer (Table 2.71). Although the assemblage is small, there are a relatively high number of large mammals (63 percent) being utilized on the site.

Macrobotanical Remains

A total of four flotation samples were collected from LA 39975. The samples were taken from the roasting pit, the hearth of Pit Structure 1, and from underneath and around a partial vessel on the floor of Pit Structure 1.

Excavated proveniences at this site are generally shallow and in poor condition. The flotation samples from the fill of Pit Structure 1 and a possible storage pit, for instance, contained only unburned purslane seeds, probably intrusive. A roasting pit near Pit Structure 2 produced several carbonized economic taxa, on the other hand. Abundant corn cupules confirm a farming adaptation. Pigweed, goosefoot, and purslane seeds (all in low frequency) point to utilization of some weedy annuals found widely in a broad array of prehistoric food assemblages.

The flotation samples from the nearby SU site of the same time period produced maize, agave, yucca, grasses, sunflower, and cacti. Wills (1994:14) hypothesizes that corn was harvested green and roasted on the cob instead of processed into flour because of the short growing season in the area, at 120 days.

Juniper was the dominant conifer identified in C-14 samples submitted for analysis. Piñon, ponderosa, and undetermined conifer were also present. Small amounts of oak were identified as well. These taxa would have been readily available for use by site occupants as fuel-wood or construction materials.

Table 2.72. Pollen Retrieved from LA 39975

Feature	Location	Pine	Juniper	Oak	Sunflower	Grasses	Sage	Mormon Tea	Cheno-am	Pickley Pear	Corn Pollen	Corn Starch	Gobe Mallow	Milk Wort	
Fl Structure 1															
Floor	Ceramics and Ground Stone	X	X		X	X	X		X*	X	X	X			
Fill	Ground Stone	X			X*	X*	X		X*	X	X		X	X	
Nearby	Ceramics and Ground Stone	X	X		X	X	X		X		X	X	X		
Fl Structure 3															
Fill	Ground Stone	X		X	X			X	X						

*Higher Amounts

Table 2.73. C-14 Dates for LA 39975

Unit	Beta No.	Age B.P.	Calibrated 1 Sigma Date	Calibrated 2 Sigma Date	Intercept Date	Context
115N/107E	76771	1270 ± 120	A.D. 655-890	A.D. 575-1010	A.D. 770	Pit House 1 (L2)
115N/110E	76772	1710 ± 50	A.D. 260-410	A.D. 235-435	A.D. 370	Pit House 3
122N/106E	69806	1710 ± 90	A.D. 240-430	A.D. 120-550	A.D. 370	Roasting Pit
112N/104E	57452	1300 ± 90	A.D. 660-820 830-860	A.D. 610-960	A.D. 700	Pit House 1 (Fill)
122N/106E	57453	1530 ± 100	A.D. 420-640	A.D. 340-680	A.D. 550	Roasting Pit (22-31 cm)
114N/105E	64063	1830 ± 70	A.D. 110-260	A.D. 60-390	A.D. 220	Pit House 1 (33 cm)
115N/107E	64064	1470 ± 80	A.D. 540-660	A.D. 420-690	A.D. 620	Pit House 1 (L2)
120N/107E	64065	1740 ± 120	A.D. 140-430	A.D. 40-590	A.D. 330	Pit House 2 (10-25 cm)

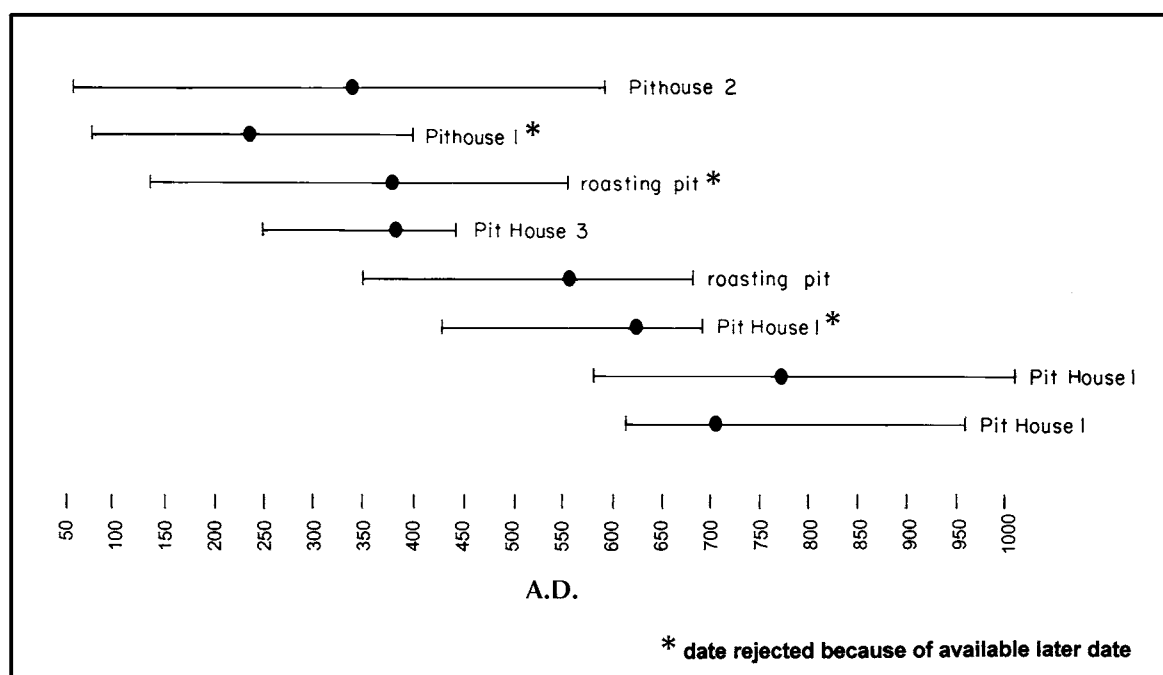


Figure 2.143. Calibrated C-14 dates for LA 39975. Two-sigma range and intercept dates displayed.

Pollen Remains

A total of eight pollen samples and six pollen washes were submitted for analysis from Pithouses 1 and 3. Table 2.71 presents the results of the analysis. Pit Structure 1 apparently dates to the A.D. 700s, while Pit Structure 3 dates around A.D. 300-400. Maize remains were not present in the pollen retrieved from the earlier Pit Structure 3, although they were found in Pit Structure 1. A ceramic dipper found near Pit Structure 1 contained grass and corn starch grains. It is evident that processing of corn was carried out on the site, at least near Pit Structure 1. Also, Pit Structure 1 had a much greater

variety of plant items within its structure than did Pit Structure 3.

Pollen collected from the SU site during the University of New Mexico field school seasons contained pine, juniper, cheno-ams, elm, goosefoot, pigweed, mallow, grasses, and sunflowers (Murphy 1988). Pollen was extracted from several reexcavated features including the floors, walls, pits, and pit fill. The palynological remains recovered by the field school at SU and the remains from Lazy Meadows are somewhat different with the addition of prickly pear, Mormon tea, and maize at Lazy Meadows.

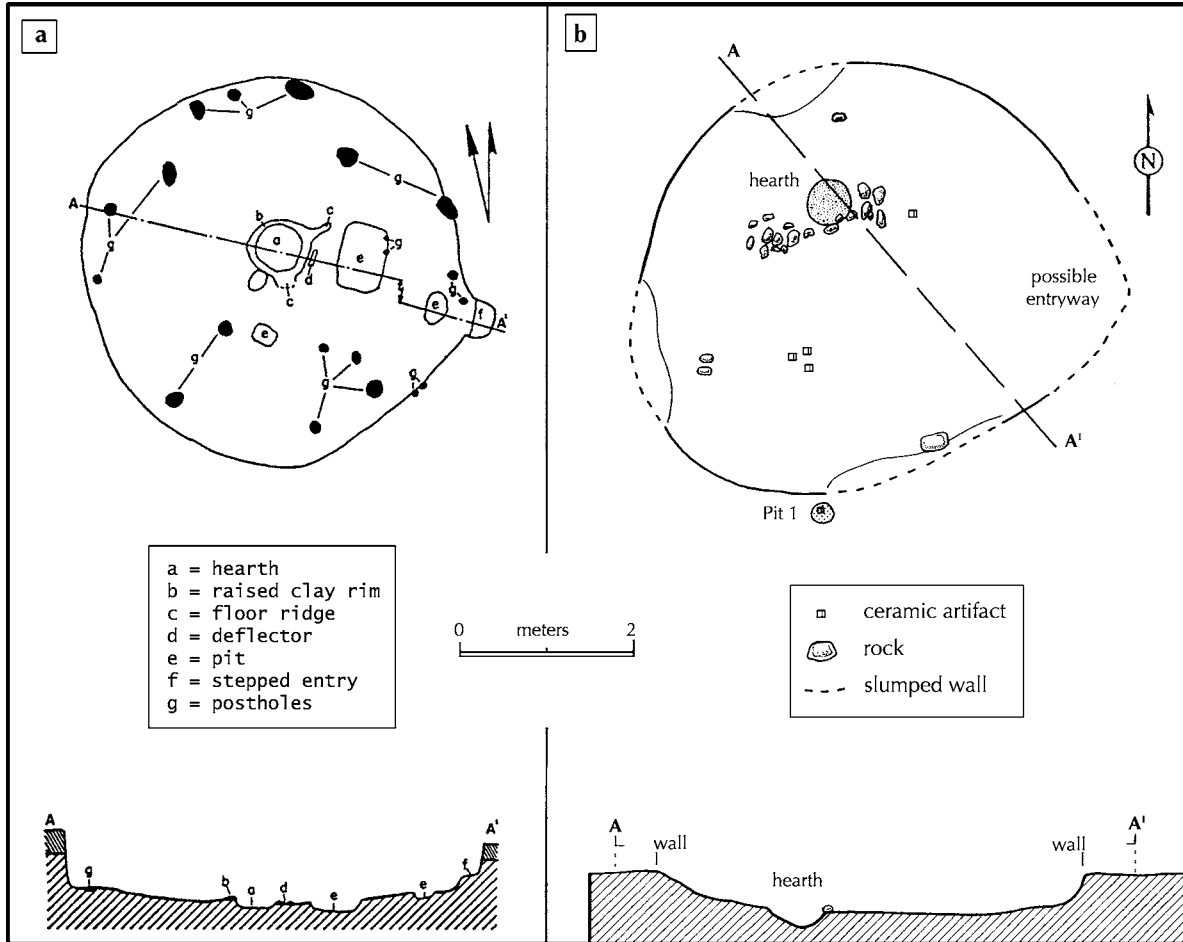


Figure 2.144. Comparison of Pit Structure 1 and Peckham's pithouse (LA 3337).

DATING METHODS

The ceramics found at LA 39975 place the site within the Pinelawn and Georgetown phases. As stated earlier, the ceramics are mostly Alma Plain with only a few textured brown wares. San Francisco Red is also present and there is an absence of painted ceramics.

Eight radiocarbon samples from the site (Table 2.73) were submitted to Beta Analytic, Inc. for dating analysis. All dates used have been corrected and calibrated. The dates suggest that there may have been two Early Pithouse period occupations at the site. Three of the dates are supplemented by later readings from the same features (Fig. 2.143) and are rejected as being too early (probably an old wood problem).

Pit Structure 1, the largest structure excavated, is also the best dated. Radiocarbon intercept dates of A.D. 700 and 770, with a weighted average of A.D. 730, are reasonable expectations for the feature. These would place the pit structure within the mid-Georgetown phase. Pit Structures 2 and 3 are smaller and date to an earlier

time period. Intercept dates occur at A.D. 330 and 370, indicating an early Pinelawn phase occupation. However, the roasting pit is adjacent to Pit Structure 2 and is probably contemporary, but produced an A.D. 550 intercept date, which would make it a late Pinelawn facility. It would seem, then, that Pit Structures 2 and 3 and the adjacent roasting pit, if contemporary, exhibit an old wood problem and should also align with the A.D. 550 date.

Three pieces of obsidian were also submitted for dating to the Obsidian Hydration Laboratory. One date, 4230 B.C., is definitely too early and another, A.D. 990, is too late for the early ceramics on the site. One other date, A.D. 482, for Pit Structure 1 falls within the range of acceptable dates for the structure, but later C-14 dates for the unit would indicate this date is slightly too early.

SITE INTERPRETATION

The Lazy Meadows site is part of the Luna Junction site excavated by Peckham in 1956. Both areas date to the

Pinelawn and Georgetown phases of the Mogollon Culture. The calibrated C-14 dates from Lazy Meadows, taken from Pit Structures 2 and 3 plus the roasting pit, suggest that the site was occupied during the late Pinelawn phase ca. A.D. 550, with a later Georgetown occupation in the A.D. 700s. Peckham (1963) states that the Luna Junction pithouse fits within the late Pinelawn cultural association; however, Peckham did not have any absolute means of dating the pithouse, only ceramics and architecture. We believe that because of its extreme similarity to Pit Structure 1, it corresponds in time to the same period, the Georgetown phase.

Wills (1994) argues that the Pinelawn phase, or ceramic period, did not begin until A.D. 450 and ended at A.D. 550. He derives these dates from dendro-chronological samples from the SU site. Wills's dates (from A.D. 450 to A.D. 550) and the dates from Lazy Meadows may show temporal correlation, both falling within the chronological range for the Pinelawn phase.

We noted that the projectile points from LA 39975 seem to be Late Archaic period types. But projectile points are not the best mechanisms for dating the site because of their potentially broad time frame. It is possible that the points were reused by the Pinelawn people, or that Archaic projectile point styles continued into the Pinelawn phase.

Architecturally, the pit structures at LA 39975 are shallow and circular. Earlier Pinelawn Pit Structures 2 and 3 are smaller than the later Georgetown Pit Structure 1. Pit Structure 1 is almost identical to Peckham's except for the size; Pit Structure 1 is slightly larger, and lacks postholes (Fig. 2.144). A hearth is located near the center of both pit structures, although the raised rim is missing from Pit Structure 1, perhaps because of the extensive root disturbance.

Peckham's pithouse had a stepped entry on the east side, while in Pit Structure 1 no entry was defined; however, the wall does bulge in this same area suggesting an entry may have been present. Root disturbance that was prevalent throughout the pit structure may have obliterated a possible step.

The C-14 samples collected from Pit Structures 2 and 3 and the roasting pit place them within the late Pinelawn phase. No features were found in either pit structure. Martin's Pithouse C at the Promontory site, another Pinelawn phase pithouse village, 5.9 km (3.7 mi) to the south, is close in description to the saucer-shaped Pit Structure 2; however, the walls are higher and it is 5.8 m in diameter compared to 2.1 m for Pit Structure 2 (Martin and Rinaldo 1947).

The length of occupation at Lazy Meadows is thought to have been short-term and seasonal. The low usage of the hearth in Pit Structure 1 and no hearths in Pit Structures 2 and 3 would suggest this conclusion. Utilization of the roasting pit, outside of Pit Structure 2, also indicates seasonal use possibly during harvesting time. The period of availability of the ethnobotanical remains suggests the site was occupied during the summer and fall. The presence of only a few storage pits also supports short occupation periods for the site.

In comparison to the earliest dates for the SU site at A.D. 450 to A.D. 550 (Wills 1994), we see that a portion of Lazy Meadows may have been occupied during the end of this same general time period. The dates derived from the C-14 samples place the occupation at Lazy Meadows near the end of the Pinelawn phase with a later Georgetown phase occupation around A.D. 700. Lazy Meadows is a much smaller site than the SU site and very likely represents a different component of early pithouse settlement systems in the Mogollon Highlands.

LA 43766 (AR-03-06-06-00829)
OLD PERALTA SITE

Yvonne R. Oakes

LA 43766 was first recorded by Logan (1980) as WNMT Site #55 as part of the WS Ranch Site Archaeological Project. It was classified as a Late Pithouse site (Three Circle phase) based on the observation of two possible depressions just outside of the project area and several sherds. As part of clearance procedures for the reconstruction of NM 12, Wiseman (1993) tested the Old Peralta site. He noted the presence of numerous basalt lithic artifacts but could not confirm the presence of cultural depressions. However, he recorded a possible one-room fieldhouse at the eastern edge of the site. Augering revealed artifacts to a depth of 50 cm. Therefore, he suggested that a Pueblo period fieldhouse and a possible Archaic lithic deposit occupied the site.

Excavations by OAS at LA 46766 were conducted in 1993 and uncovered a stratified Archaic site with two discrete levels of occupation, each with cultural features. Both horizons date to the end of the Middle Archaic period. Excavation in the area of the possible fieldhouse revealed no architectural features. The few sherds on the site are from a one-room Reserve phase fieldhouse located .2 km upstream to the northwest in the floodplain of SU Canyon. Site dimensions are 42 m northeast-southwest by 27 m northwest-southeast with a site area of 1,134 sq m (Fig. 2.145).

The Old Peralta site is one of only five Archaic sites recorded in the north Pine Lawn Valley. The closest one is 2.4 km to the northwest. The earlier-dated, but controversial, Wet Leggett Arroyo site (Antevs 1949; Wills 1988a:14-15) lies 8 km to the southwest.

SITE SETTING

The Old Peralta site occupies an unusual setting, located in the middle of the floodplain of SU Canyon (Fig. 2.146). A small Reserve phase fieldhouse also sits in this same environment. The floodplain is now entrenched while grasses and a few bushes grow on the alluviated soils. However, on one occasion at least, during a heavy thunderstorm, we observed the normally dry drainage overflow its banks considerably. The SU Canyon channel is approximately .3 km wide in the vicinity of the site and meets the Spurgeon Draw drainage .7 km downstream where a spring is located.

Alluviation at the site has currently reached a depth of at least 50 cm. Any heavy flooding, however, would remove a good percentage of this with the result that the soil deposition process would have to begin anew. It would, therefore, seem that LA 43766 was situated in a precarious position. However, extensive flooding apparently has not occurred for quite some time, judging by the recent construction of a new home on the floodplain .6 km downstream. However, for prehistoric site occupants, the length of time present on the floodplain was probably not for more than one or two weeks at a time. No substantial prehistoric residential features were present to have been jeopardized.

Two finger ridges extend along both sides of SU Canyon. Several sites of later time periods are situated on these ridges. Scattered piñon, juniper, and oak are present on the ridge to the west while the eastern one is almost void of shrub or tree growth.

The Saliz Mountains are close, lifting to the south behind Spurgeon Draw; to the north, low ridges and hills gradually rise to the foothills of the San Francisco Mountains. Wild game is plentiful in these areas today, which may be partially due to the presence of a nearby spring.

RESEARCH OBJECTIVES

The Old Peralta site presented an excellent opportunity to examine one of the few open-air Archaic sites in the Mogollon Highlands. Most studies have focused on cave sites such as Tularosa, Bat, Cordova, and O Block. We wanted to look at site structure, type of lithic artifact manufacture, and tool function and maintenance in an open-air site. Determination of the adaptive strategies used by site occupants to meet their economic needs was also important. We wanted to examine the types of resources used, seasonality of acquisition, and evidence of long-range subsistence planning (Oakes 1993a).

EXCAVATION PROCEDURES

Surface artifacts at LA 43766 were first flagged before excavations began to determine limits of the site. A datum was established and grid units of 1-by-1 m in size

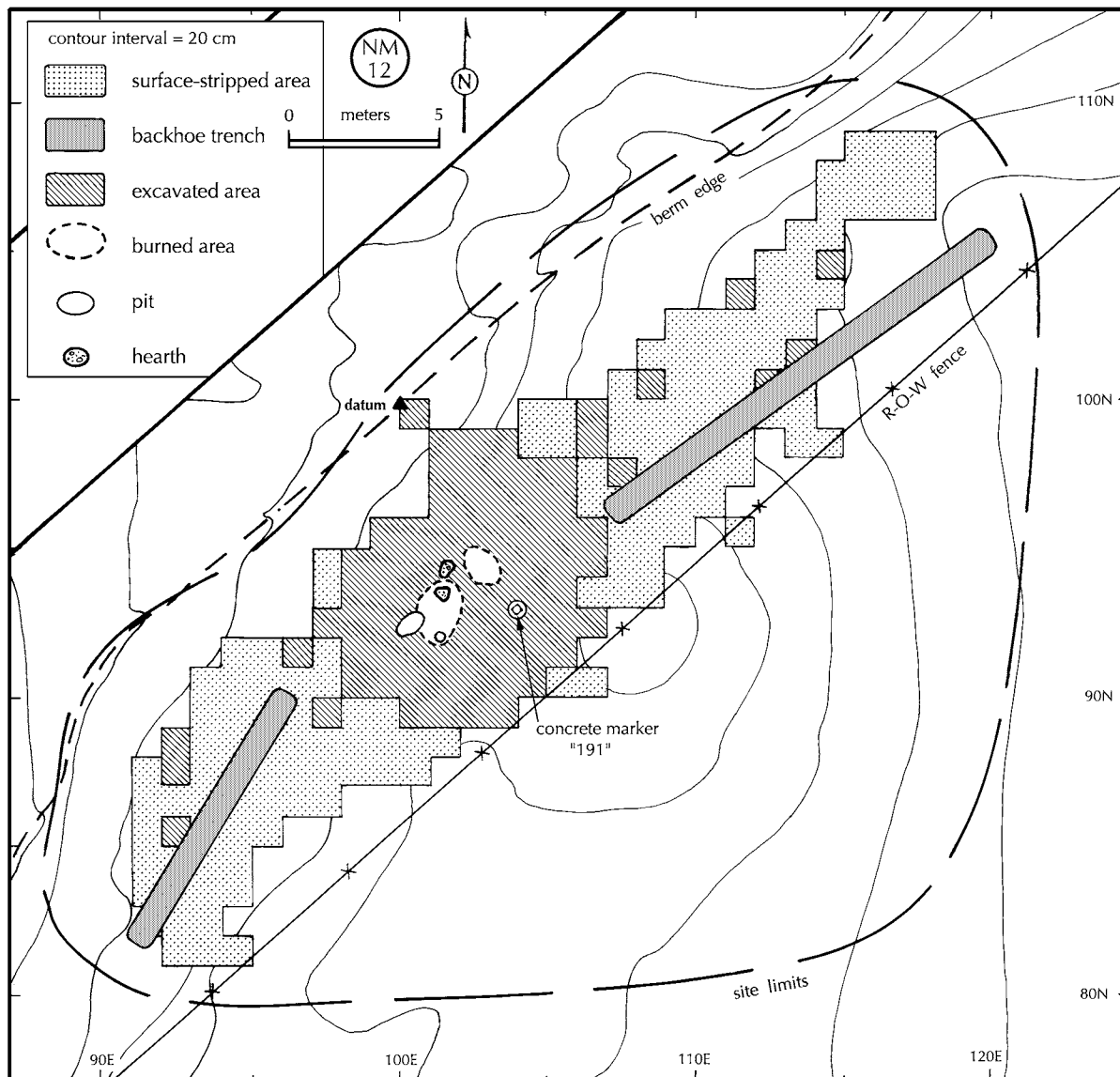


Figure 2.145. LA 43766, plan view of Old Peralta site.

were laid out with a transit and stadia rod. Grids were initially selected for study on the basis of the amount of artifacts present; the remaining excavation grids were then spaced 2-4 m apart to cover the length of the site. Several grids were also excavated in the area of the potential fieldhouse. Units on the northeast and southwest edges of the site were culturally sterile as was the fieldhouse area. Higher frequencies of artifacts and charcoal flecking were concentrated in the center of the site and excavation units were ultimately focused here.

Excavation levels used for the site were:

Level 1.0: Loose, surface soil, somewhat clumped, some clay (10YR 5/3, brown). Sometimes overlain by former road construction material. Artifacts pres-

ent. Maximum thickness is 14 cm.

Level 2.0: Cultural fill, soil more consolidated, some rocks (10YR 4/3, brown-dark brown). Numerous artifacts. Maximum thickness is 42 cm.

Level 2.1: Gravel lens. Artifacts present. Maximum thickness is 8 cm.

Level 2.2: Pinkish silt, very fine-grained, almost greasy to the touch (5YR 4/3, reddish brown). Sometimes has large boulders at base. Artifacts present. Maximum thickness is 30 cm.

Level 2.3: Cultural fill between Surfaces 1 and 3. Artifacts present.

Level 3.0: Fill of cultural features (hearths, roasting pit).

Level 7.0: Cultural surface 1.

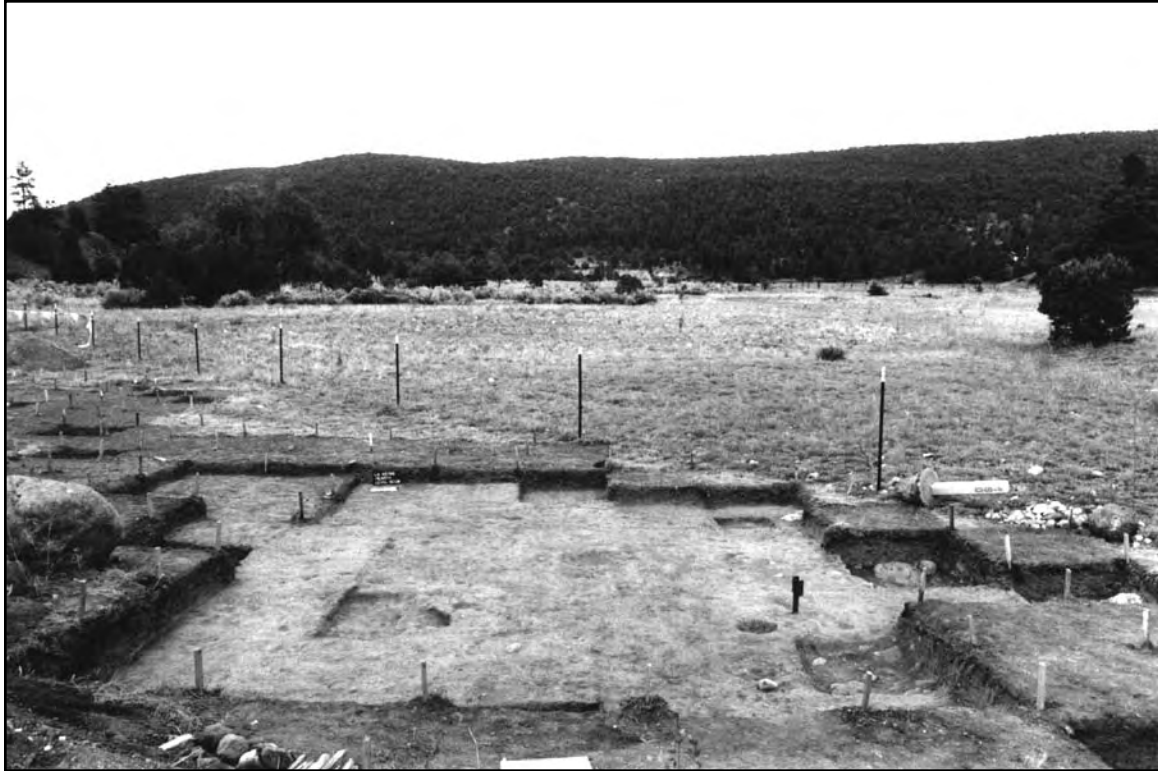


Figure 2.146. Setting of LA 43766 on floodplain of SU Canyon. Stream channel is in background in front of the line of trees. Main excavation is in foreground, facing east.

Level 7.1: Cultural surface 2.

Some grids on the periphery of the site were not excavated below the gravel lens (Level 2.1) because of a lack of artifacts present. However, in all grids, the sequential ordering of levels as given above was the same throughout; only the thicknesses changed slightly over the site (Fig. 2.147). Road material was recovered on the site surface in those grids immediately adjacent to the roadbed but it did not impact lower cultural levels. Generally, cultural material did not occur below the gravel lens. But in the main portion of the site, artifacts did occur below the gravel and extended into the silt (Level 2.2). Excavations found the silt layer only in the center of the site where cultural features were concentrated. Usually excavations ceased when culturally sterile soil was encountered. In several instances, however, exploratory work continued until numerous large river cobbles appeared, mostly in the northeast end of the site, indicating that a former stream channel once ran through this portion of the site.

A gradual sloping of the different soil levels can be seen in Figure 2.147. All surfaces slope to the east, suggesting that the site was located on slightly higher ground than the actual stream channel running to the east and north. Cultural features were found between 38 and

52 cm in depth, which suggests that it took approximately 3,000 years of both aggradation and degradation to accumulate this deposition. This is upheld by the presence of intact cultural features and concentration of artifacts indicating that the cultural deposits were securely covered by alluvium and that no flooding episodes in this area of the floodplain disturbed the site.

All soil was screened through ¼-inch mesh. All cultural features were mapped, photographed, and recorded. Artifacts surrounding cultural features were plotted in situ. All cultural material was collected by grid provenience and level.

At the completion of hand excavations, two mechanically dug trenches were placed to the northeast and southwest of the main site area to check for remaining cultural features and to insure that sterile soil had been reached. Trench 1, to the northeast, was 13.75 m in length by .75 m wide, and averaged 0.86 m deep. Three artifacts were recovered. Trench 2, on the southwest, was 10 m in length, 0.75 m wide, with an average depth of 1.32 m. No artifacts were found.

A total of 207 grids were examined with hand excavations reaching a mean depth of 26.6 cm; however, several grids extended 90 cm below ground surface. The total amount of dirt removed on the site was 68.2 cu m.

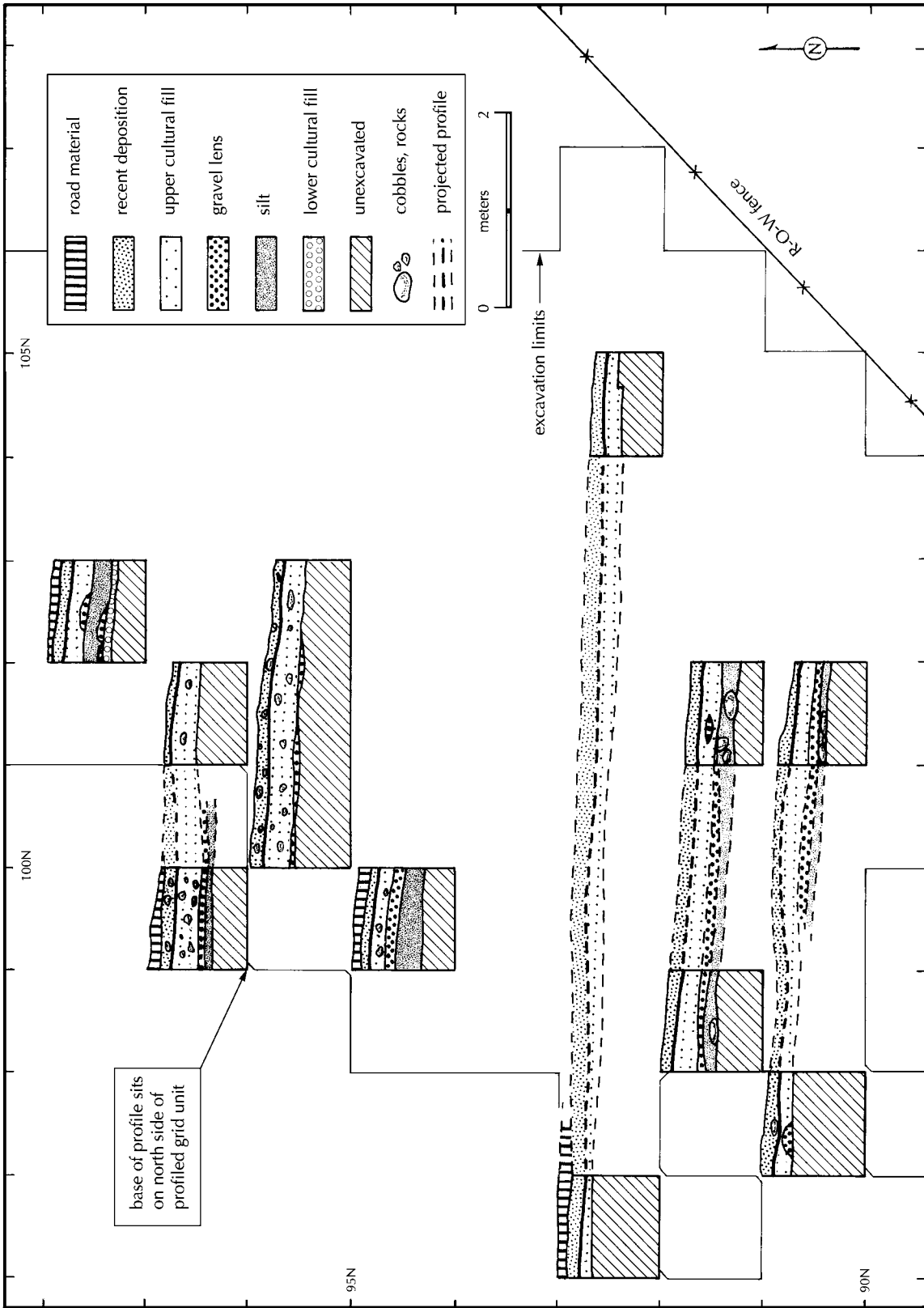


Figure 2.147. Profiles of north face of various grids showing general slope of surface towards the east.

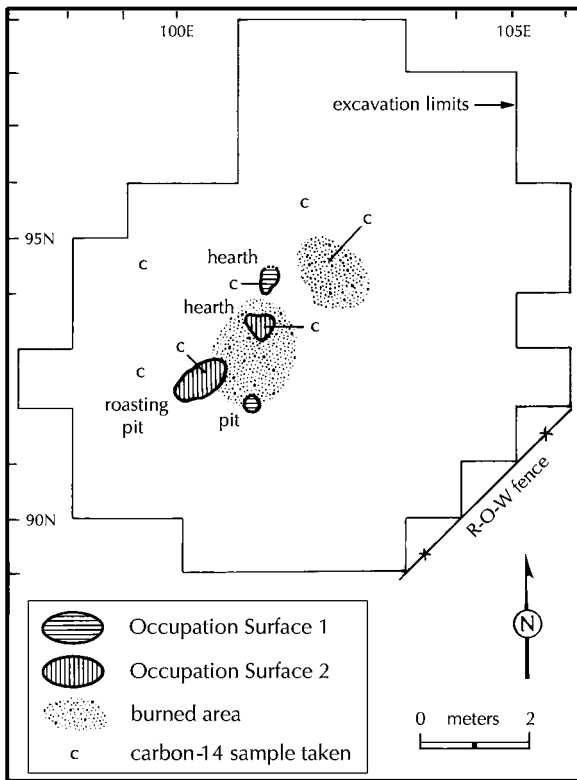


Figure 2.148. Cultural features at LA 43766.

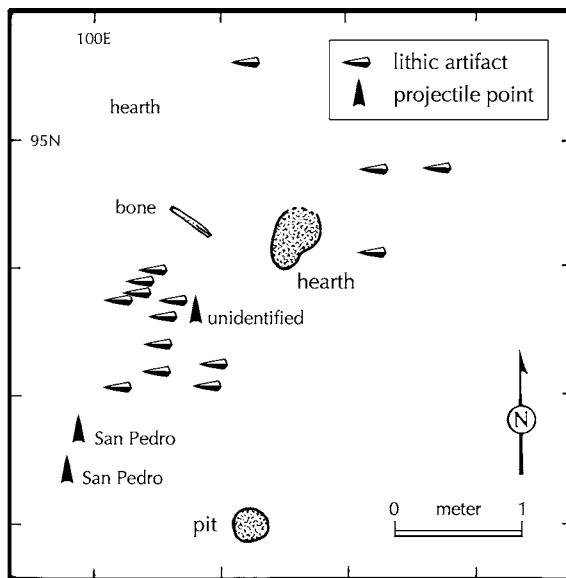


Figure 2.149. Artifacts associated with Surface 1 near Hearth 1 and pit.

CULTURAL UNITS

Two discrete levels of Archaic occupation were uncovered at the Old Peralta site. Two cultural surfaces were isolated and both contained features (Fig. 2.148). Artifacts were heavily concentrated in this area near the

cultural units. Stratigraphically, the general fill above the surfaces consisted of clumped dirt with charcoal flecking and contained some rocks and numerous artifacts. Some Early Pueblo period ceramics (Reserve phase) were mixed with Archaic materials in the upper levels of fill.

Occupation Surface 1 was encountered at depths between 38 and 42 cm below ground surface. Two features were found on this surface: a hearth (Feature 1) and a small pit (Feature 2). The cultural surface was slightly undulating and charcoal staining extended to the east of the features in two areas. This surface could be traced to the east for approximately 3.5 m but only for 1 m to the west and 1-2 m to the north and south. Fifteen lithic artifacts, three projectile points, and one piece of faunal bone were recovered from this surface (Fig. 2.149).

Hearth (Feature 1)

This feature first appeared as an amorphous charcoal stain on Occupation Surface 1. Excavation revealed a slightly elongated hearth filled with dark gray soil and pieces of charcoal (Fig. 2.150). Its measurements were 48 cm north-south by 29 cm east-west and 9 cm deep. The northern edge gradually sloped up to the cultural surface and its exact limit here was not possible to determine. Several charcoal-stained rocks bordered the western edge. An Archaic Pelona projectile point, one core flake, and a biface were recovered from the hearth. A small pocket of ash (8 by 2 by 2 cm) lay 32 cm west of the hearth on the cultural surface.

Pit (Feature 2)

Also on Surface 1 was a small circular pit at 1.8 m south of the hearth (Fig. 2.150). It was straight sided with an uneven bottom and filled with dark, ashy soil and small pieces of charcoal. The pit measured 26 cm in diameter and up to 12 cm in depth. Soil around the perimeter of the pit was slightly burned, suggesting cooking may have taken place within the feature. Three core flakes were found within the pit.

Occupation Surface 2 (Fig. 2.151) was uncovered at 49 to 52 cm depth below ground surface and 10 to 13 cm below Surface 1. Between the two surfaces was a 5-6-cm-thick gravel lens and beneath this, the beginning of a very fine silt layer, both containing artifacts, but to a lesser extent than found above Surface 1. Surface 2 also contained two cultural features: a roasting pit (Feature 3) and a hearth (Feature 4). The surface was easier to follow than the above Surface 1 because of more extensive burning of the level. One San Pedro projectile point was also found lying on the surface. A large charcoal-burned

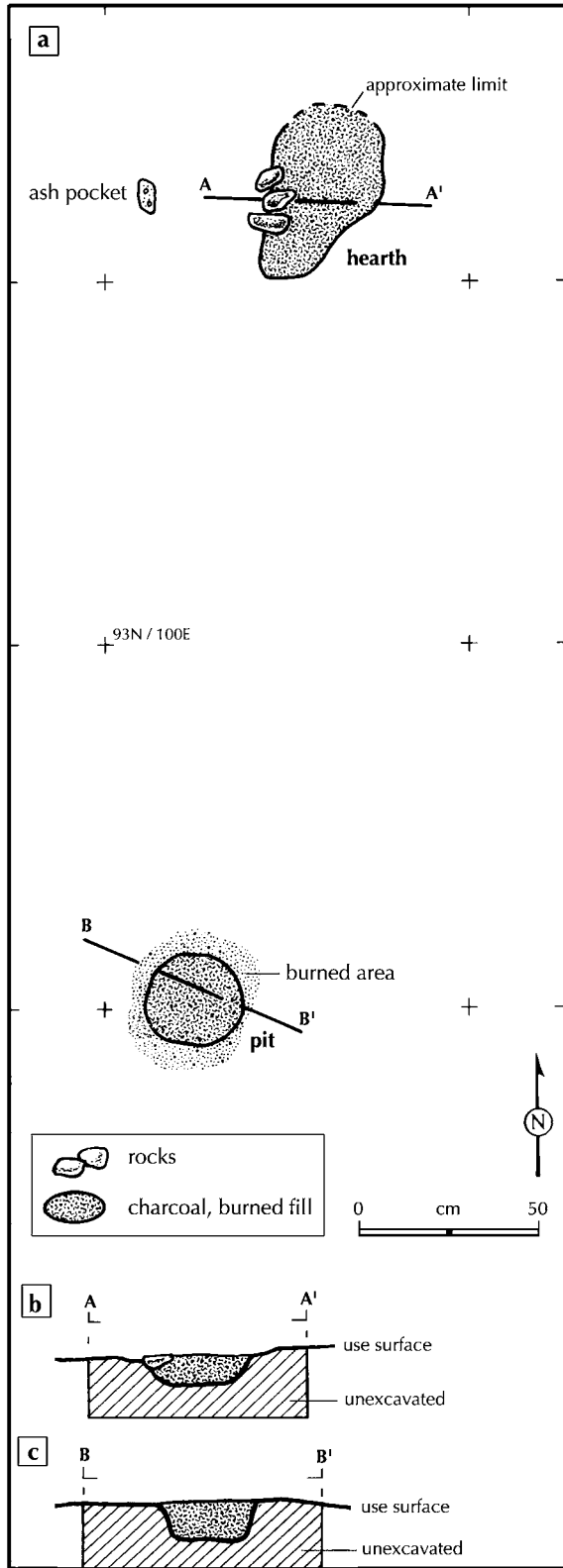


Figure 2.150. Plan view and profile of Hearth 1 and pit on Occupation Surface 1, LA 43766.

stain surrounded the two cultural features. Another burned area was found 50 cm northeast of this one with no associated cultural features.

Roasting Pit (Feature 3)

This is a shallow, well-defined pit that appeared first as a dark charcoal stain, containing several burned rocks, on Surface 2. Excavation revealed a roughly oval pit measuring 1.07 m by .57 m by .09 m deep (Fig. 2.152). The interior of the pit contained numerous burned rocks and dirt, and large chunks of charcoal. Four lithic artifacts, a large, unidentifiable projectile point, and several faunal remains were found in the roasting pit. Charcoal staining was heavy on the surface to the east and northeast of the feature.

Hearth (Feature 4)

A hearth was also located on Surface 2 85 cm northeast of the roasting pit (Fig. 2.152). It was a shallow basin type hearth, although somewhat amorphous in shape, and measured 52 cm by 54 cm by 7 cm deep. Dark, charcoal-stained soil filled the hearth. An Archaic Pelona projectile point and five small pieces of rabbit bone were recovered from the fill.

ARTIFACTS

There were 6,746 artifacts recovered from the Old Peralta site. These include 150 ceramics, 6,220 lithic artifacts, 54 projectile points, 6 pieces of ground stone, and 316 faunal remains.

Ceramics

All 150 ceramics on the site are thought to have derived from a small Early Pueblo period fieldhouse (Reserve phase) .2 km upstream from the site. Over 95 percent were recovered from the general fill overlying the Archaic features (Table 2.74). The two sherds from within cultural features were within auger holes dug systematically over the site during the testing program. Most ceramics are from the Alma Brown Ware series (85.3 percent), ubiquitously found throughout all Mogollon time periods. The corrugated and late white wares indicate a Pueblo date for the sherds.

Lithic Artifacts

A sizable number of lithic artifacts (N = 6,220) were found at the Old Peralta site. Most were recovered from the approximately 40 cm of mixed general fill overlying the site (Table 2.75). Over 31 percent were within cul-



Figure 2.151. Features on Cultural Surface 2. Roasting pit is 1 m to right of sign board. Hearth 2 is in front of board. Features from Surface 1 may be seen behind board (pit) and a trace of Hearth 1 is in front of Hearth 2.

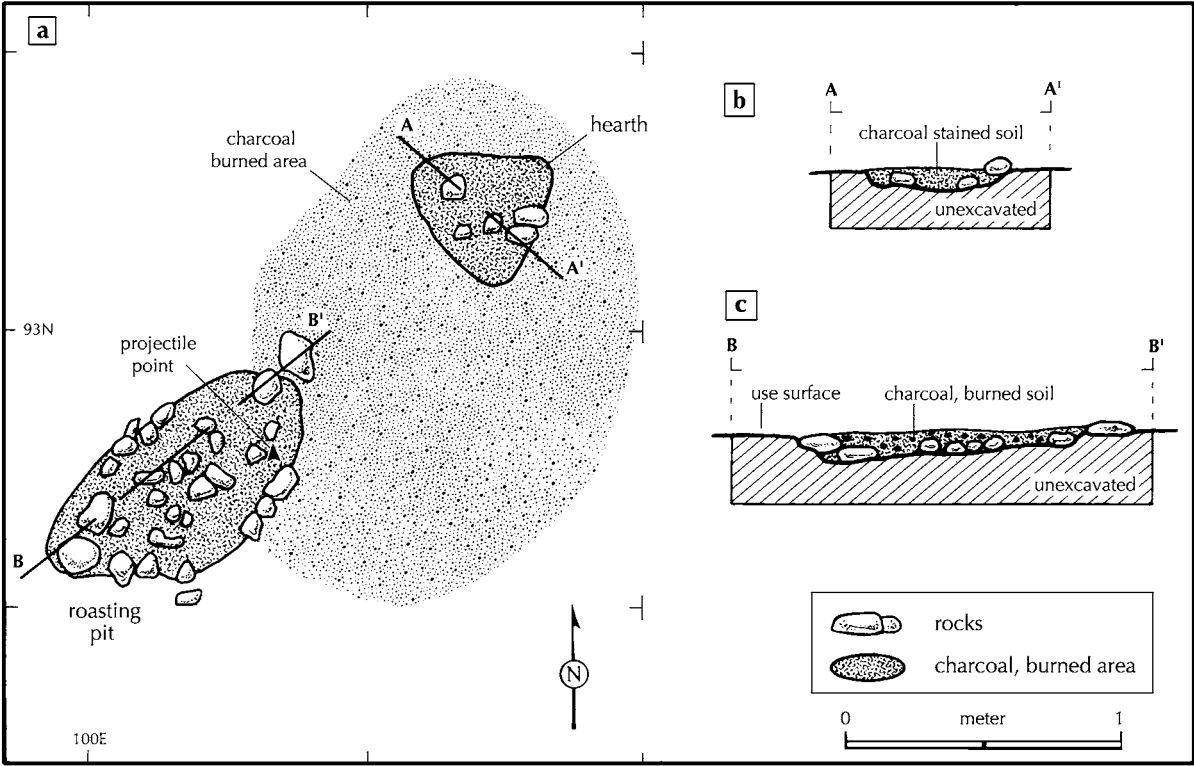


Figure 2.152. Plan view and profiles of roasting pit and Hearth 2 on Occupation Surface 2.

Table 2.74. Ceramics from LA 43766

Cells: Count Row Percent Column Percent	Level					Row Total
	General Fill	Gravel Lens	Silt Stratum	Feature Fill	Cultural Surface	
Alma Plain	110 94.8% 76.9%	3 2.6% 100.0%	1 .9% 100.0%	1 .9% 50.0%	1 .9% 100.0%	116 100.0% 77.3%
Alma Rough	11 100.0% 7.7%					11 100.0% 7.3%
Alma Scored	1 100.0% .7%					1 100.0% .7%
Plain Corrugated	5 100.0% 3.5%					5 100.0% 3.3%
Incised Corrugated	2 100.0% 1.4%					2 100.0% 1.3%
Plain Smudged	4 100.0% 2.8%					4 100.0% 2.7%
San Francisco Red	1 100.0% .7%					1 100.0% .7%
Mimbres White	1 50.0% .7%			1 50.0% 100.0%		2 100.0% 1.3%
Late White	8 100.0% 5.6%					8 100.0% 5.3%
Column Total	143 95.3% 100.0%	3 2.0% 100.0%	1 .7% 100.0%	2 1.3% 100.0%	1 .7% 100.0%	150 100.0% 100.0%

Table 2.75. Lithic Artifacts from LA 43766

Cells: Count Row Percent Column Percent	Level						Row Total
	General Fill	Gravel Lens	Silt Stratum	Feature Fill	Surface 1	Intersurface Fill	
Angular Debris	787 75.2% 18.4%	50 4.8% 10.3%	177 16.9% 14.3%		3 .3% 20.0%	30 2.9% 16.0%	1047 100.0% 16.8%
Core Flake	2298 67.4% 53.6%	285 8.4% 58.8%	716 21.0% 57.9%	7 .2% 77.8%	10 .3% 66.7%	92 2.7% 49.2%	3408 100.0% 54.8%
Biface Flake	1132 67.9% 26.4%	139 8.3% 28.7%	334 20.0% 27.0%	1 .1% 11.1%	2 .1% 13.3%	60 3.6% 32.1%	1668 100.0% 26.8%
Notching Flake			1 50.0% .1%			1 50.0% .5%	2 100.0% .0%
Core	16 76.2% 4%	2 9.5% .4%	3 14.3% .2%				21 100.0% .3%

Table 2.75. Continued.

Cells: Count Row Percent Column Percent	Level						Row Total
	General Fill	Gravel Lens	Silt Stratum	Feature Fill	Surface 1	Intersurface Fill	
Uniface	4 80.0% .1%		1 20.0% .1%				5 100.0% .1%
Bface	51 73.9% 1.2%	9 13.0% 1.9%	4 5.8% .3%	1 1.4% 11.1%		4 5.8% 2.1%	69 100.0% 1.1%
Column Total	4288 68.9% 100.0%	485 7.8% 100.0%	1236 19.9% 100.0%	9 .1% 100.0%	15 .2% 100.0%	187 3.0% 100.0%	6220 100.0% 100.0%

Table 2.76. Lithic Materials from LA 43766

Cells: Count Row Percent Column Percent	Level						Row Total
	General Fill	Gravel Lens	Silt Stratum	Feature Fill	Surface 1	Intersurface Fill	
Chert	2170 69.3% 50.6%	245 7.8% 50.5%	587 18.7% 55.6%	5 .2% 55.6%	9 .3% 60.0%	115 3.7% 61.5%	3131 100.0% 50.3%
Chalcedony	19 79.2% .4%		5 20.8% .4%				24 100.0% .4%
Luna Blue Agate	19 79.2% .4%		3 12.5% .2%	1 4.2% 11.1%		1 4.2% .5%	24 100.0% .4%
Silicified Wood	5 71.4% .1%	2 28.6% .4%					7 100.0% .1%
Obsidian	10 100.0% 2%						10 100.0% 2%
Igneous	68 72.3% 1.6%	16 17.0% 1.6%	8 8.5% .6%			2 2.1% 1.1%	94 100.0% 1.5%
Basalt	1933 68.0% 45.1%	217 7.6% 44.7%	616 21 7% 49.8%	3 .1% 33.3%	6 .2% 40.0%	66 6.3% 35.3%	2841 100.0% 45.7%
Rhyolite	29 70.7% .7%	2 4.9% .4%	8 19.5% .6%			2 4.9% 1.1%	41 100.0% .7%
Sedimentary	3 100.0% .1%						3 100.0% .0%
Limestone	4 100.0% .1%						4 100.0% .1%
Sandstone	1 100.0% .0%						1 100.0% .0%
Siltstone	3 75.0% .1%		1 25.0% .1%				4 100.0% .1%
Metamorphic	6 60.0% .1%	2 20.0% .4%	2 20.0% .2%				10 100.0% .2%

Table 2.76. Continued.

Cells: Count Row Percent Column Percent	Level						Row Total
	General Fill	Gravel Lens	Silt Stratum	Feature Fill	Surface 1	Intersurface Fill	
Quartzite	15 78.9% .3%		3 15.8% .5%			1 5.3% .5%	19 100.0% .3%
Quartzitic Sandstone	2 33.3% .0%	1 16.7% .2%	3 50.0% .2%				6 100.0% .1%
Quartz	1 100.0% .0%						1 100.0% .0%
Column Total	4288 68.9% 100.0%	485 7.8% 100.0%	1236 19.9% 100.0%	9 .1% 100.0%	15 .2% 100.0%	187 3.0% 100.0%	6220 100.0% 100.0%

Table 2.77. LA 43766 Projectile Points

Cells: Count Row Percent	Material Type				Row Total
	Chert	Obsidian	Basalt	Rhyolite	
Unidentified	4 40.0%		6 60.0%		10 100.0%
Medium Lateral-Notched	5 71.4%		1 14.3%	1 14.3%	7 100.0%
Small Corner-Notched		1 100.0%			1 100.0%
Preform	1 50.0%		1 50.0%		2 100.0%
Pelona			2 100.0%		2 100.0%
San Pedro	13 40.6%		17 53.1%	2 6.3%	22 100.0%
Column Total	23 42.6%	1 1.9%	27 50.0%	3 5.6%	54 100.0%

Table 2.78. Ground Stone Artifacts from LA 43766

Cells: Count Row Pct Column Pct	Level		Row Total
	General Fill	Silt Stratum	
Fragment	1 100.0% 20.0%		1 100.0% 16.7%
One-hand Mano		1 100.0% 100.0%	1 100.0% 16.7%
Metate	3 100.0% 60.0%		3 100.0% 50.0%
Slab Metate	1 100.0% 20.0%		1 100.0% 16.7%
Column Total	5 83.3% 100.0%	1 16.7% 100.0%	6 100.0% 100.0%

tural features, on surfaces, or in the gravel and silt layers at the Archaic level. Three of the four cultural features contained lithic artifacts in their fill: Hearth 1 (N=2), roasting pit (N=4), and pit (N=3). Fifteen lithic items and 3 projectile points were recovered from Surface 1 and plotted in Figure 2.149. Only one projectile point was found on Surface 2, near the roasting pit.

Core and biface flakes are highly represented at 54.8 and 26.8 percent respectively, with 69 bifaces recovered, indicating a definite biface technology. Chert and basalt are the dominant material types (Table 2.76). These were found throughout all cultural levels on the site and are, commonly, materials of choice for Archaic populations (Wills 1988a:82). The few obsidian artifacts occur only in the general fill and may be indicative of Pueblo period use of this material. The sedimentary materials are also mostly from the general fill.

Table 2.79. LA 43766 Ground Stone Materials

Cells: Count Row Pct Column Pct	Level				Row Total
	Fragment	One-hand Mano	Metate	Slab Metate	
Rhyolite	1 20.0% 100.0%		3 60.0% 100.0%	1 20.0% 100.0%	5 100.0% 83.3%
Quartzite		1 100.0% 100.0%			1 100.0% 16.7%
Column Total	1 16.7% 100.0%	1 16.7% 100.0%	3 50.0% 100.0%	1 16.7% 100.0%	6 100.0% 100.0%

All but one of the 54 projectile points (a small, corner-notched type) are probably Archaic. Identifiable points are San Pedro and Pelona (Table 2.77). San Pedro points are found typically on Late Archaic sites in the Mogollon Highlands, but may date as early as 3000 B.P. (Roth and Huckell 1992). Pelona points are associated with the Chiricahua stage of the Middle Archaic. Two Pelona points were recovered within the two hearths on the site. Another large point was from the roasting pit. Two San Pedro points and an unknown type were found on Surface 1. Another San Pedro point was lying on Surface 2 and another between Surfaces 1 and 2.

Material types for projectile points from the Old Peralta site follow the pattern of material choices in the general lithic assemblage, with chert and basalt accounting for 92.6 percent of the points (Table 2.77). The large number of projectile points and bifaces present on the site indicates a strong focus on hunting at this short-term locale.

Ground Stone

Only six pieces of ground stone were recovered from the Old Peralta site (Table 2.78). Of these, all but one are from general fill and possibly may not be associated with the site. The exception is a one-hand mano found in the silt layer at the base of the cultural features. We may infer an Archaic use for this grinding stone. Two varieties of materials are represented in this assemblage; rhyolite dominates and the one-hand quartzite mano again is the exception (Table 2.79).

ANCILLARY STUDIES

Faunal Remains

Three-hundred-sixteen pieces of bone were recovered from the Old Peralta site (Table 2.80). Interestingly, most are from large mammals (56.3 percent) and include mule

Table 2.80. Faunal Remains from LA 43766

Species	General Fill	Gravel Lens	Silt Stratum	Roasting Pit	Hearth 2	Surface 1	Surface 2	Total	Percent
Jack Rabbit		1	1		3	1		6	1.8
Cottontail		1						1	.4
Indeterminate Rabbit					1			1	.4
Small Mammal		9	1	2				12	3.7
Medium Mammal	44	1						45	14.2
Large Mammal	32	9	10				6	147	46.6
Indeterminate Mammal		51	17				3	72	22.8
Mule Deer	7	11		1			1	20	6.3
Pronghorn		1						1	.4
Bighorn Sheep	11							11	3.4
Total	94	174	29	3	5	1	10	316	100.0

Table 2.81. Pollen Recovered from LA 43766

Locus	Pine	Grasses	Cheno-ams	Sunflower Species	Oak
General Fill (Metate)	X	X	X	X	X
(Metate)	X	X	X	X	X

deer, pronghorn, and bighorn sheep. This is only one of a few sites excavated by OAS that contained bighorn sheep. Only 6.3 percent are from small mammals such as rabbits. This preponderance of large-sized animals could indicate a preference for such meat and be the result of one or more hunting episodes in which large game were specifically sought or it could be the result of random encounters. Actual faunal counts, as represented by the minimum number of individuals present, bring the faunal population down to a much smaller figure, indicating at least some of the fauna were cooked or roasted on the site, but length of site occupation is not believed to have been long.

Macrobotanical Remains

This site had two distinct occupation levels. Flotation samples from the upper hearth and small associated pit yielded charred goosefoot and juniper seeds, an indeterminate plant part, and several uncharred species of non-cultural seeds. Three samples were examined from different areas of the lower occupation surface, and charred pigweed and goosefoot seeds and three indeterminate plant parts were recovered. Charred goosefoot seeds were recovered from the lower hearth, while the roasting pit on this level produced charred juniper seeds and uncharred goosefoot seeds. The presence of charred weedy annual seeds suggests the economic use of these

ubiquitous plants in prehistoric assemblages. The charred juniper seeds could represent residue from using the wood for fuel or processing the mealy cones for emergency food or seasoning.

Ponderosa, juniper, piñon, fir, and oak were identified in wood charcoal samples submitted for analysis. LA 43766 is on the floodplain of SU Canyon where vegetation is sparse, but piñon, juniper, and oak grow on the western ridge of SU Canyon. Fir could have been collected in the higher elevations of the Saliz and San Francisco mountains.

Pollen Remains

Five pollen samples were submitted for scientific analysis. Only two samples produced limited results (Table 2.81). Both were from metate pieces recovered from the general fill. Locally available plant foods are represented. No corn pollen was found on the site.

DATING METHODS

Eight radiocarbon samples were submitted for analysis from LA 43766. All produced calibrated dates no more recent than 825 B.C (Table 2.82). However, four of the dates are not useful for dating the sites. The three earliest dates between 2310 B.C. and 1440 B.C. do not corroborate later readings for the same features and are con-

Table 2.82. C-14 Dates for LA 43766

Unit	Beta No.	Age B.P.	Calibrated 1 Sigma Date	Calibrated 2 Sigma Date	Calibrated Date	Context
95N/101E	76361	2790±130	B.C. 1110-815	B.C. 1295-775	B.C. 915	Upper hearth
93N/100E	76362	3370±110	B.C. 1760-1515	B.C. 1920-1415	B.C. 1660	Roasting Pit (60 cm)
95N/99E	76363	2930±260	B.C. 1435-815	B.C. 1745-415	B.C. 1120	Silt (70 cm)
93N/101E	76364	3200±100	B.C. 1535-1390	B.C. 1685-1250	B.C. 1440	Roasting Pit (57 cm)
94N/101E	76365	2930±80	B.C. 1260-1000	B.C. 1385-905	B.C. 1120	Lower Hearth
95N/104E	76366	2910±120	B.C. 1275-915	B.C. 1415-815	B.C. 1065	Fill above Surface 1 (34-35 cm)
93N/101E	76367	2700±80	B.C. 910-800	B.C. 1005-780	B.C. 825	Roasting Pit (50-56 cm)
96N/104E	76368	3660±200	B.C. 2310-1750	B.C. 2580-1515	B.C. 2015	General Fill (15-31 cm)

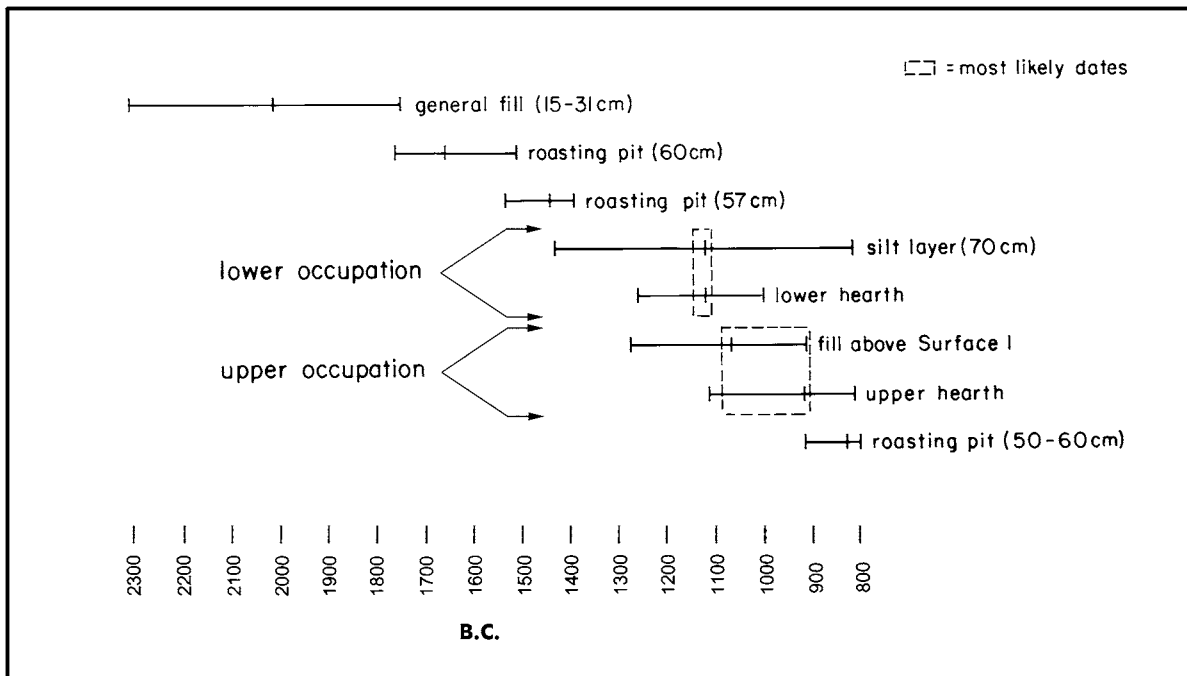


Figure 2.153. Seriation of ¹⁴C dates, LA 43766.

sidered outliers. The calibrated date of 815 B.C. for the roasting pit is too recent for the other cultural features whose radiocarbon dates cluster somewhat earlier than 815 B.C. (Fig. 2.153).

We therefore have four C-14 dates that are acceptable for the site. The lower, earlier occupation of the site is represented by the lower hearth, the silt layer, and the roasting pit. Roasting pit readings produced three widely variant dates and all were rejected. Two radiocarbon dates for the lower hearth and the silt layer yielded two identical calibrated dates of 1120 B.C. The overlapping calibrated 1-sigma ranges are between 1260 B.C. and 1000 B.C.

The more recent upper hearth and fill directly above Occupation Surface 1 produced two statistically compatible dates of 1065 B.C. (fill) and 915 B.C. (hearth). These yielded a mean of 990 B.C. with a 1-sigma range of 1096 B.C. to 884 B.C. This 990 B.C. date suggests a possible 130-year span between the two Archaic occupations at Old Peralta, which is reasonable given the slight change in projectile point size noted between occupations and the 8-10 cm of fill between the two levels.

Four pieces of obsidian were also submitted for dating. Three dates fall outside of the Archaic period at A.D. 626 to A.D. 850. One other date, at 1986 B.C., from general fill corresponds with a calibrated C-14 intercept date of 2015 B.C. Both of these dates are not as reliable, however, as several obtained directly from cultural features.

The two calibrated dates of 1120 B.C. and 990 B.C.

place the site temporally toward the end of the Middle Archaic period in the Mogollon Highlands. Few sites, other than cave locales, of this time period have been excavated within the region.

SITE INTERPRETATION

The Old Peralta site is a late Middle Archaic period open-air campsite exhibiting two discrete occupations, one at 1120 B.C. and another with a pooled date of 990 B.C. Almost all of the known earlier Archaic sites in the Mogollon Highlands are cave sites, such as Bat Cave, Tularosa Cave, Cordova Cave, and O Block Cave.

The only other previously documented open-air Archaic site of this early time period is the controversial Wet Leggett Site 8 km to the west of Old Peralta. It was recorded by Quimby (1949) and had ground stone, axes, and scrapers eroding out of the arroyo banks and on the surface. A Chiricahua Cochise (Early Archaic) cultural affiliation was assigned to the site on the basis of the supposedly early milling stones. However, Antevs (1949) states that most of the artifact material actually came from the site surface and post-dates the Archaic. An uncorrected radiocarbon date of 2556 B.C. ± 680 (Martin et al. 1952:483) was obtained from charcoal in the arroyo bank. The controversy over whether the surface material can be assigned to this date has not been resolved.

The Old Peralta site contained over 6,200 lithic materials, 54 projectile points, 314 faunal remains, 2

hearths, a roasting pit, and a pit of unknown function, allowing for an in-depth study of this site. Procurement and processing of large-sized faunal resources, including mule deer, pronghorn, and bighorn sheep, seem to have been major site functions. The two hearths and roasting pit contained faunal and lithic materials. The presence of only one definitely site-associated mano, in comparison with the lithic items, indicates a greater focus on animal hunting. Pollen results were inconclusive as to season of occupation, but the two small hearths suggest only a temporary campsite.

Projectile point styles present are predominantly San Pedro (44.4 percent) but a difference in their size was noted between the two occupation levels. This size differentiation in San Pedro points could be significant when determining site chronology on undated sites.

The Old Peralta site was buried under 40-50 cm of alluvium. Two other open-air Archaic sites excavated on this project were likewise covered by alluvial deposits. This depositional pattern begs the question of how many more open-air Archaic sites actually exist in the Mogollon Highlands.

LA 43786 (AR-03-06-06-00416)

DOWNSLOPE SITE

Dorothy A. Zamora

The Downslope site was recorded by Chris Nightengale in 1980 for Western New Mexico Telephone and Telegraph. It is a habitation site that covers 1,386 sq m; only one-quarter of the site is within the right-of-way. The site consists of a possible pithouse area, and a small, possible two-room fieldhouse in the southeast part of the site that measures 3-by-3 m (Fig. 2.154). The pithouse area is located at the top of a small rise that has natural rock scattered around the area, making it appear as if it were a cobble mound (Fig. 2.155). Artifacts are scattered along the sides of the rise. The ceramics that are present confer a Three Circle phase date on the site. The features, the possible pithouse area, and the fieldhouse are located outside the right-of-way, and only the extramural use area is within the project area.

LA 43786 is located in an area where seven other prehistoric sites cluster along Leggett Canyon. These sites were recorded on the initial project survey (Oakes 1990) and some will be included in this report. Three of these sites are outside of the existing right-of-way and include LA 4428, a possible Reserve phase roomblock, LA 43787, a cobble mound recorded by Nightengale (1980) that has Reserve ceramics present, and LA 70198 (Oakes 1989), a possible water control device that is outside the boundaries of the proposed road work.

SITE SETTING

The Downslope site is located on a low rise overlooking South Leggett Creek to the east and is on the east side of U.S. 180. Elevation of the site is 1,877 m (6,160 ft). The site sits below the road bed in an area of dense pine and oak. The ground is covered with basalt cobbles, which outcrop in the hills surrounding the area and on the low rise. Besides basalt there are other igneous materials that are readily available, such as rhyolite and andesite. Sufficient area for growing crops lies immediately to the east along South Leggett Creek. Available game is plentiful in the area and includes wild turkey.

RESEARCH OBJECTIVES

Expecting a portion of the habitation site to be within the right-of-way, the research objectives for this site were to

collect information for testing Hard's (1990) and Schlanger's (1990) models from manos, cooking vessels, and specialized tools to determine an approximate length of site use. Floral and faunal remains were to provide clues to the nature of the dependency on cultigens.

Unfortunately there were no storage pits or hearths found on the use-surface within the right-of-way. Ground stone artifacts were not present within this area, and we were unable to implement Hard's or Schlanger's models.

EXCAVATION PROCEDURES

The excavation procedures began with placing a main datum (100N/100E) on the site and extending a north-south and east-west baseline from it. A 1-by- 1-m grid system was then placed over the site. All collected artifacts were bagged by grid and labeled with provenience information, such as the LA number, project number, grid number, level, artifact type, count, date, and collector's initials. The artifacts were then catalogued and a field specimen number was assigned to each collection bag.

Each grid was excavated in 10-cm arbitrary levels. A total of 66 grids were excavated (including the test pits), 15 grids were surface collected, and 13 auger tests were placed throughout the site. The excavation was concentrated near the right-of-way fence where stained soil and charcoal flecking was encountered during the testing phase. Approximately 2/3 of the site lies outside of the right-of-way. A mean depth of 15.7 cm was dug by hand with a total of 10.34 cu m of dirt removed. The excavation levels were defined as follows:

Level 1: tree duff and the modern top soil, 5 cm thick.

Level 2: dark reddish brown (7.5YR) sandy clay containing cultural material, including charcoal flecking, a small amount of ash, and artifacts.

Level 7: the cultural surface.

CULTURAL UNITS

A cultural use surface ranging from 5 cm to 30 cm below the present ground surface was found; unfortunately, no

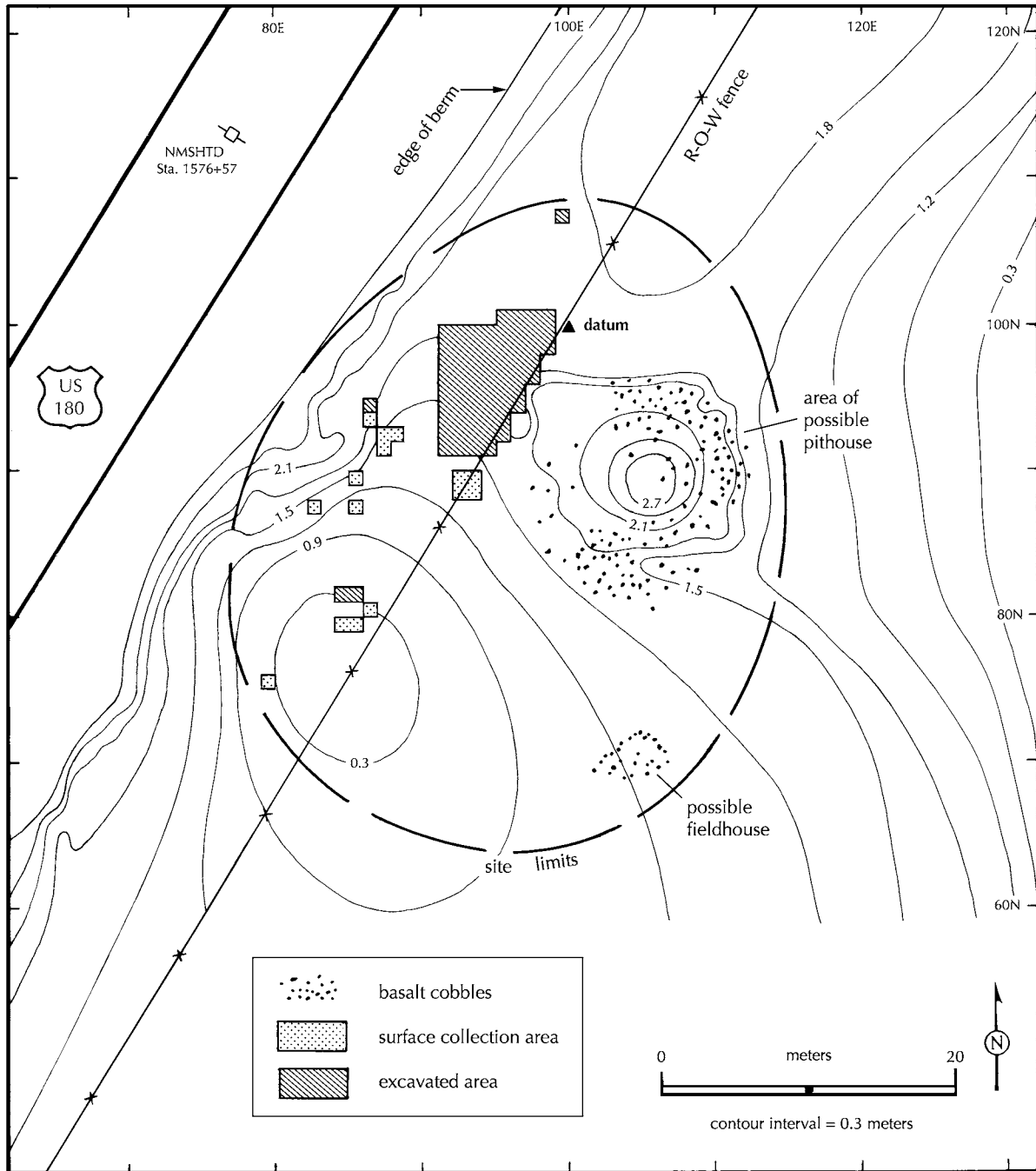


Figure 2.154. LA 43786, plan view of the Downslope site.

features were encountered on it. The fill above the cultural surface was a reddish brown sandy clay that fell away from the surface when troweled. The fill contained some charcoal flecking, caliche, and a few artifacts. The use surface was a compact, reddish brown, sticky clay with embedded charcoal flecks and artifacts resting on it. In several grids, near the right-of-way fence and closest to the pithouse area, several rocks were present but they did not appear to be culturally placed. This surface was

followed to the west until it disappeared. Generally, the soil was shallow, ranging from 5 cm to 10 cm deep. However, on the east side near the right-of-way fence, the soils were deeper and the use surface continued on the other side of the fence.

The grids excavated during the testing phase were taken down to culturally sterile soil. Test Pits 5 and 6 were located within a concentration of cultural materials and this is where most of the excavations were concen-



Figure 2.155. Downslope site, LA 43786, looking south.

Table 2.83. Ceramics from the Downslope Site

Cells: Count Row Percent Column Percent	Standardized Level		Row Total
	Surface	General Fill	
Alma Plain	11 40.7% 30.6%	16 59.3% 41.0%	27 100.0% 36.0%
Alma Rough	17 54.8% 47.2%	14 45.2% 35.9%	31 100.0% 41.3%
Alma Neckbanded		4 100.0% 10.0%	4 100.0% 5.3%
Plain Corrugated	1 50.0% 2.8%	1 50.0% 2.6%	2 100.0% 2.7%
Plain Smudged	3 100.0%		3 100.0% 4.0%
San Francisco Red	2 50.0% 5.6%	2 50.0% 5.1%	4 100.0% 5.3%
Mimbres Indeterminate White Ware	2 50.0% 5.6%	2 50.0% 5.1%	4 100.0% 5.3%
Total	36 48.0% 100.0%	39 52.0% 100.0%	75 100.0% 100.0%

Table 2.84. Lithic Artifacts from the Downslope Site

Cells: Count Row Percent Column Percent	Artifact Morphology						Row Total
	Angular Debris	Core Flake	Biface Flake	Core	Biface	Projectile Point	
Chert		3 750.0% 3.7%	1 25.0% 100.0%				4 100.0% 4.3%
Chalcedony						1 100.0% 100.0%	1 100.0% 1.1%
Luna Blue Agate	2 12.5% 28.6%	14 87.5% 17.1%					16 100.0% 17.2%
Igneous		2 100.0% 2.4%					2 100.0% 2.2%
Basalt	1 20.0% 14.3%	3 60.0% 3.7%			1 20.0% 100.0%		5 100.0% 5.4%
Rhyolite	2 3.4% 28.6%	55 94.8% 67.1%		1 1.7% 100.0%			58 100.0% 62.4%
Metamorphic	1 100.0% 14.3%						1 100.0% 1.1%
Quartzite	1 16.7% 14.3%	5 83.3% 6.1%					6 100.0% 6.5%
Total	7 7.5% 100.0%	82 88.2% 100.0%	1 1.1% 100.0%	1 1.1% 100.0%	1 1.1% 100.0%	1 1.1% 100.0%	93 100.0% 100.0%

trated. Test Pits 4 and 8 were culturally sterile throughout. Although artifacts were sparsely scattered within the right-of-way, the main part of the site lies just outside of it to the east. The surface artifact concentrations outside of the project area are heavier and not as sparsely scattered as they are within the right-of-way.

recovered from the site. A single faunal fragment was found on the perimeter of the use surface. No ground stone was recovered although it is present on the site surface outside of the right-of-way. A shell bracelet fragment and a modified quartz crystal were found in the surface stripping.

ARTIFACTS

A total of 171 artifacts were recovered from the Downslope site. This includes 75 ceramics, 92 lithic artifacts, 1 projectile point, 1 shell bracelet, 1 modified quartz crystal, and 1 nonhuman bone. The ceramics from the site are mostly Alma Brown Wares (Table 2.83), which make up 44.4 percent of the assemblage. There are other types, such as Reserve and Tularosa variants, along with some indeterminate ceramics. San Francisco Red was also recovered (5.3 percent). The lithic artifacts (55.0 percent) consist of mostly core flakes (Table 2.84). Of the 82 core flakes, the most common materials are rhyolite and Luna blue agate. Both of these materials are locally found throughout the area. One Archaic San Pedro projectile point made from chalcedony was also

ANCILLARY STUDIES

Faunal Remains

The number of faunal remains was extremely low on the Downslope site. One artiodactyl (indeterminate toe and hoofed mammal) bone fragment was recovered from the site on the use surface in Grid 93N/91E, 3 m west of the right-of-way fence.

Pollen Remains

A pollen sample taken from the general fill of the site produced pine, juniper, chenopods, grasses, sunflower varieties, artemisia, prickly pear, and a small amount of maize pollen.

DATING METHODS

The only method of dating the Downslope site was through the ceramics that were present on the site. Alma Brown Wares are the dominant type; however, there are also Alma Neckbanded sherds, which were produced during the Three Circle phase, along with Reserve Smudged. Thus, it is possible that there is a late Three Circle phase pithouse on the site. There are very few Reserve and Tularosa ceramics and they make up a small percentage of the ceramic assemblage. These are usually found during the Late Pithouse period in small quantities. The one San Pedro projectile point found on the site

could have been a curated artifact from the Late Archaic or Early Pithouse period. No C-14 samples were collected because of a lack of adequate charcoal.

SITE INTERPRETATION

This is a probable Three Circle phase habitation site with a possible pithouse and a possible later fieldhouse. The ceramics recovered from the excavation suggest this conclusion. Most of the site is located outside of the highway right-of-way except for the use surface found 5 cm to 30 cm below the present ground surface. No features were present on this surface.

LA 45507
LUNA VILLAGE

Yvonne R. Oakes and Dorothy A. Zamora

Another pit ruin of great extent was observed in the environs of Luna. The surface of the site is smooth, giving no indication of the dwellings beneath. A burial was uncovered here during the cutting of a ditch and subsequent examination by the writer determined the presence of pit dwellings. The surface soil of the site contains innumerable small fragments of coarse brown undecorated pottery . . . and almost no chips or masses of stone [Hough 1907:18].

Thus, Walter Hough describes Luna Village, one of the first recorded sites in the northern Mogollon Highlands. He identified it as Site No. 66 and conducted test excavations there in 1905. Later, in 1916, Hough did more extensive excavations at Luna Village through the Smithsonian Institution and noted that there were perhaps 100 or more pithouses present up to 5½ ft in depth. Their location was only evident by the presence of high grasses in circular patterns distributed across the site. He apparently excavated (Hough 1919) seven structures, two meal rooms, a small burial ground, and what he referred to as a Great Dance Pit (ceremonial structures had not been identified as such at this time). He notes that it was 84 ft (25.6 m) across with a 4 ft (1.2 m) bench and was circular (Hough 1919:410-415).

Hough did not assign a temporal designation to Luna Village, only saying that it was of great antiquity, predating nearby stone ruins. Later, Gladwin (1948:144-145) gave the site a Pinelawn phase association (Early Pithouse period), probably based on the extensive number of brown wares observed on the site surface by Hough. However, Hough (1919:59-60) also noted the presence of a cream-colored ware with wavy lines of brown pigment (what is today the Mogollon Red-on-brown and Three Circle Red-on-white sequence). The site was subsequently considered to date to the San Francisco or Three Circle phase (Late Pithouse period) by Wheat (1955:100) and Danson (1957:39). By 1960, it was firmly established as a Three Circle phase site (Wasley 1960:600). Currently, we concur that it is a Three Circle phase village; however, occupation does not seem to be continuous, but possibly spaced over a 160-year period.

Not until 75 years later, in 1991, when OAS under-

took excavations within the highway right-of-way, was Luna Village reexamined. Disturbances to the site during this time include the construction of two homes, a shed, and a gas station along U.S. 180. Earlier disturbances already present by the time of Hough's visits were an irrigation ditch and a dirt road to Springerville, Arizona (now U.S. 180), cutting through the site.

Prior to the preliminary testing of the site by OAS, it appeared that the site did not extend south into the roadway. However, test pits yielded many artifacts and charcoal-stained soil. Within the 230- by-42-m highway corridor, however, no pit structures could be located until mechanical trenches opened up areas of heavy deposits (Fig. 2.156). Four pit structures were uncovered. Subsequent hand-trenching revealed a portion of one more structure within the right-of-way. Four of the five pit structures have tight, contemporary dates in the early Three Circle phase, while the other dates to late in the period. LA 45507 remains the largest site of this phase within the Mogollon Highlands.

Hough (1919:409) estimated site size at 30 acres. After OAS excavations and site reconnaissance, we assigned a 44-acre size, or 18 ha (Fig. 2.157). The number of pit structures present was thought by Hough to extend to possibly 100 units. We estimate that the site contains at least 50 pit structures and very possibly up to 100. The site axis runs northwest-southeast.

SITE SETTING

Luna Village is located on the second terrace above the San Francisco River within Luna Valley at an elevation of 2,158 m (7,080 ft). The head of the valley disappears into rough mountain terrain 2.3 km to the west. To the east, Luna Valley extends for approximately 7.2 km and is about 1.6 km at its widest. Within and surrounding the valley are numerous sites of various cultural periods. Most notable is the Hough site (LA 3279), a late Tularosa phase roomblock of up to 40 rooms lying 1.7 km to the west. This is one of seven Tularosa sites situated immediately adjacent to the San Francisco River in this portion of the Luna Valley. Earlier Reserve phase sites are mostly set back from the river in the surrounding lower hills. Few pithouse sites of any time period are

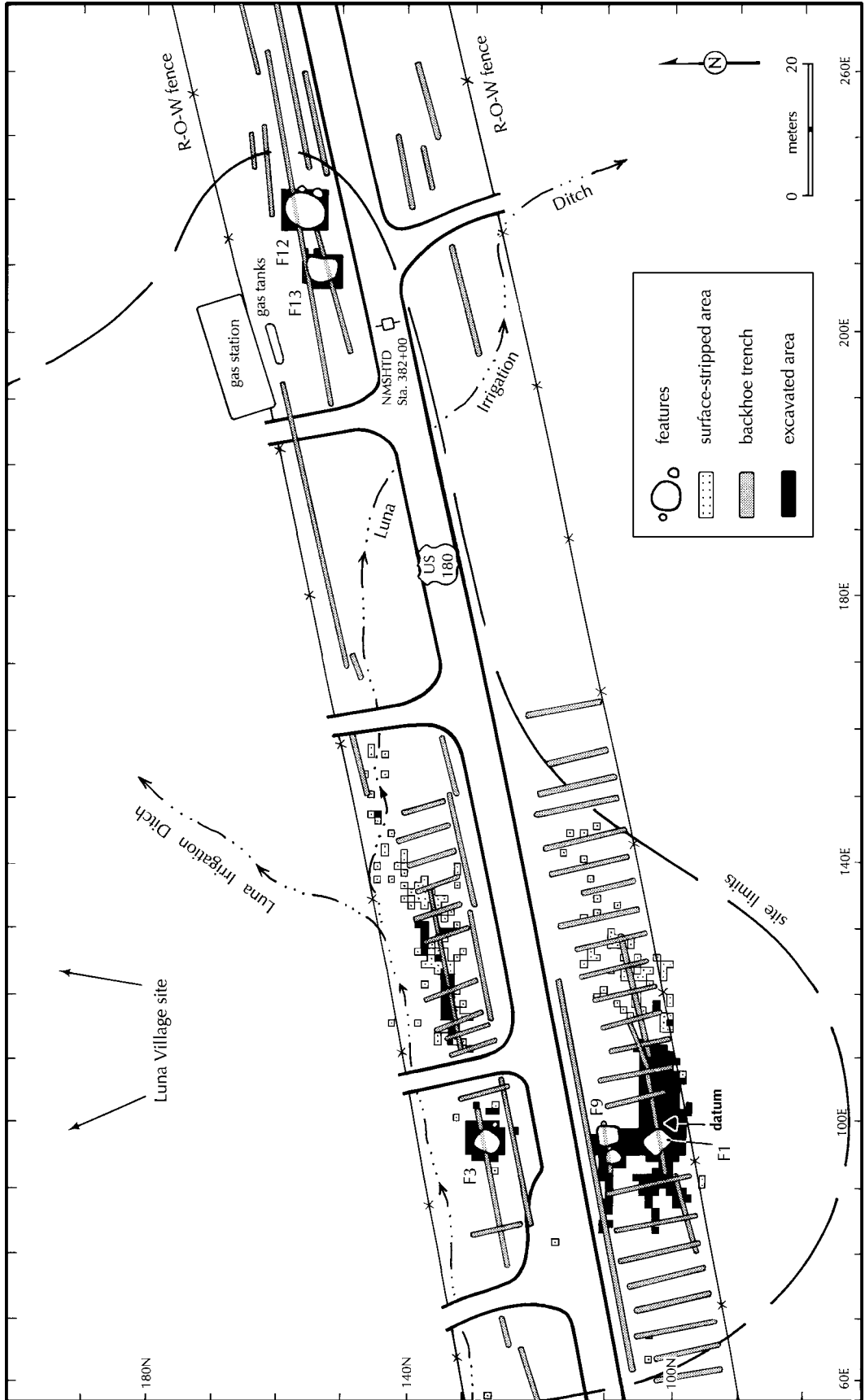


Figure 2.156. LA 45507, Luna Village.

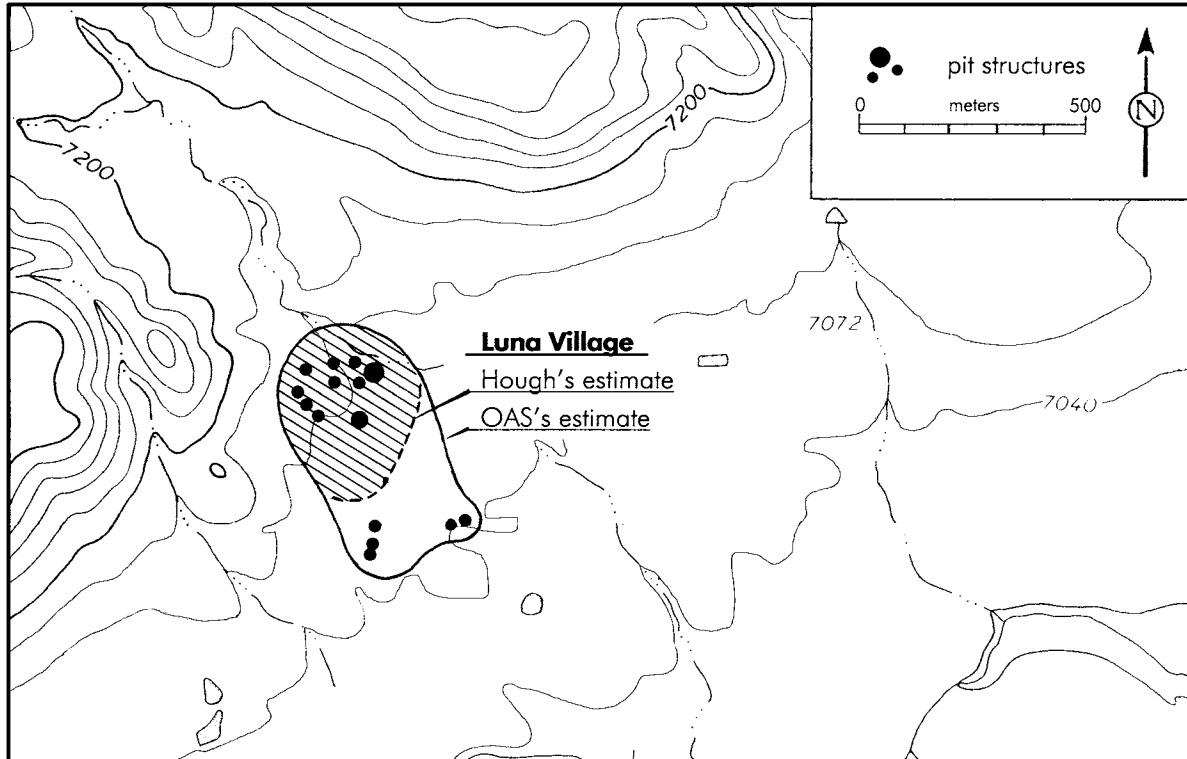


Figure 2.157. Size of Luna Village, LA 45507.



Figure 2.158. Luna Village, looking north from right-of-way. The site encompasses all land in view up to the base of the knoll on the far left.

present in or around Luna Valley. One other Three Circle phase site lies 1.6 km to the west on a high ridge above the valley.

The terrace on which Luna Village sits lies above the floodplain of the San Francisco River, a perennial flow. A now-dry streambed cuts through the northeast corner of the site. The site lies in an open, exposed position (Fig. 2.158) with extensive views south across the valley to the river. Numerous large pine trees dot the site area. Directly to the north rise the rugged hills of the Mogollon Highlands. Wild game, piñon, and oak resources are plentiful in the area. The lower terraces of Luna Valley and portions of the floodplain are suitable for growing domesticated crops. However, at this high elevation, the propagation of crops is limited by the 87-day growing season. Today, most land in the valley is used for pasturing cattle as opposed to growing crops.

RESEARCH OBJECTIVES

The presence of five pithouses at LA 45507 presented an excellent opportunity to examine site structure for the Late Pithouse period in the Mogollon Highlands. We were particularly interested in mobility among pithouse dwellers and their dependence on agricultural crops. To look at the problem of mobility, we studied site layout and labor investment. We asked if there were numerous ancillary features within the structures. Was there a plan to site layout? Were the hearths formally constructed or were they expediently prepared? Were hearths and storage facilities both inside and outside of features? Were there specific work areas? Also, evidence of reconstruction or remodeling would help to determine if pit structures were seasonally or repeatedly used, such as hearth remodeling, layering of floors, or the presence of overlapping features.

A dependence on cultigens is traditionally assumed for pithouse sites. However, this assumption may not necessarily be correct and is tested with Hard's model (1990) employing ground stone morphology, and through palynological and macrobotanical analyses. Adequate storage facilities for overwintering of crop food could also indicate agricultural dependence.

Comparison with other pithouse sites in the Pine Lawn Valley to the south should provide data on any varying patterns of subsistence adaptations between the two valleys and their differing elevations.

EXCAVATION PROCEDURES

As described by Hough in 1907, the surface of the land within the boundaries of Luna Village gave no indication of the presence of pit structures. However, artifacts were

observed in the right-of-way on the initial OAS survey (Oakes 1989), and a testing program was implemented for the site. Seven test pits were placed at various locations along the terrace. A total of 853 artifacts were recovered and charcoal-stained soil was present to depths of 95 cm. But no pit structures were uncovered. Mechanical equipment was then used to open ten trenches across the area (see Fig. 2.156) extending east to directly in front of the Luna Gas Station pumps because of a continuance of artifacts in this direction. Four pit structures were uncovered, two directly in front of the gas pumps and covered by gravel and asphalt and two on the higher terrace west of the station.

Excavation of the four pit structures began in 1991. A central datum was established and 1-by-1-m grids were projected onto the landscape with a transit and stadia rod. Areas around the pit structures on the terrace were surface stripped by grid to a potential prehistoric cultural surface revealing the outlines of the pit units. In front of the gas station, removal of overlying asphalt and gravel was a somewhat slower process. Excavation proceeded in 10-cm arbitrary levels until it was established that we were in pithouse fill, then 20-cm levels were used until reaching depths of 10 cm above floors. Floor artifacts were piece-plotted and pit structures were mapped and photographed. At the conclusion of excavations, mechanical equipment was again brought in to check for further cultural features. Fifty-two trenches were opened and as a result one more pithouse, a large trash pit, and a small isolated pit were uncovered.

Several other potential pit structures were also investigated and proved to be the result of scouring by a buried stream channel on the south side of U.S. 180, traceable in the subsequent backhoe trenches. This channel was also responsible for the destruction of a portion of Pit Structure 1. An old cattleguard was uncovered that had once spanned the channel just north of the pit structure.

Levels maintained throughout excavations consisted of:

Level 1: Surface stripping to maximum depths of 4 to 26 cm. Soil loose and loamy, sometimes clumped (7.5YR 3/2, dark brown). Numerous artifacts.

Level 2: General fill on site, not within cultural features. Soil was loamy, sometimes sandy, with patches of clay (7.5YR 5/4, brown).

Level 3: Cultural fill of pit structures and other pits.

Level 4: Fill below any roof fall present within structures.

Level 5: Floor.

Level 5.2: Second floor, where applicable.

Level 6: Fill of subfloor features within pit structures.

Level 7: Outside surfaces.

A total of 343 1-by-1-m grids were examined at Luna Village through surface stripping and hand excavation. This removed 244.2 cu m of dirt and mechanical trenching removed another 575.0 cu m for a total dirt removal of 819.2 cu m. Mean depth of excavations on the site was 71.2 cm through the use of hand tools.

CULTURAL UNITS

LA 45507 is a very large Three Circle phase (Late Pithouse) village. Investigations by OAS were restricted to the highway right-of-way in which five pit structures, one large trash pit, one burial pit, one extramural roasting pit, and an isolated pit were excavated. Pit structures and other cultural units were assigned a feature number, used in this section also as an identifying number.

Pit Structure 1

Pit Structure 1 is located on the western edge of Luna Village, on the south side of U.S. 180. The pit structure was found 23 cm below the present ground surface by mechanical trenching during the testing phase (Fig. 2.159). An outside use surface was also located during the excavation phase at the same depth. Pit Structure 1 had burned and the charred roof collapsed onto the floor of the structure. The features in the pit structure consisted of one central slab-lined hearth and four corner postholes. There was an absence of storage pits in the pit structure, but the hearth was well used. The floor of the pit structure was a smooth clay that had been baked during the burning of the structure (Fig. 2.160).

Prior to excavation of the pit structure, the initial test trench was reopened and the pit structure profile was exposed again. Before excavation of the pit structure began, a soil profile from the south face of the trench of the structure fill was drawn (Fig. 2.161). A total of 42.17 cu m of soil was removed from the pit structure and outside area around it. A mean depth of 40.1 cm was calculated for the area. The trench, which was mechanically dug, removed 6.9 cu m and hand excavation removed 35.25 cu m.

Pit Structure 1 is subrectangular in shape and had a central rock-lined hearth and four postholes, one at each corner. Postholes 1 and 2 had remains of burned posts in them. In two instances there was evidence that the posts were inset into the wall (Postholes 1 and 2). It was evident that the pit structure burned as determined from the charred roof fall that was present just above the floor,

especially in the south half of the structure where the floor had been oxidized.

Dimensions. The pit structure measured 4.0 m north-south by 4.25 m east-west, covering a 17.5 sq m floor area. It was 45 to 50 cm in depth from the outside use surface and 68 cm below the present ground surface.

Walls. The walls of the pit structure were dug into the natural reddish brown clay and were not plastered but had been smoothed. The north wall in the area of Posthole 4 and portions of the east and west walls where the trenching cut through it were missing. The north wall is mostly missing because of erosion from a natural drainage. The walls are 50 cm high except for the east wall around Posthole 3 where it is only 25 cm high. There are indentations in the wall where Posts 1 and 2 had been recessed into it.

Floor. The floor of the pit structure consisted of a smooth plastered surface. On the south half of the pit structure, the floor had been oxidized. Rodent burrows were present throughout the floor and in places the surface had been obliterated. The floor was .5 cm thick and had no signs of remodeling. Several artifacts were found on the floor.

Hearth. The hearth was a round basalt and rhyolite slab-lined feature with the slabs set upright along the edges (Figs. 2.162-2.164). Three are broken pieces of ground stone. It was 64 cm north-south by 80 cm east-west and 26 cm deep. The fill of the hearth was blackened soil with charcoal and burned wood mixed with ash. Much of the fill was collected for flotation samples and the charcoal for radiocarbon dating. There was no evidence of remodeling of the hearth.

Postholes. Four postholes were found in Pit Structure 1 in the four corners of the structure. Posthole 1 was at the south corner of the pit structure and had the remains of a large burned post still in situ (Fig. 2.165). The posthole measured 45 cm in diameter and 34 cm in depth.

Posthole 2 was located at the west corner of the pit structure with remains of a post that was 17.5 cm in diameter and 20 cm long. The posthole measured 28 cm in diameter and 55 cm deep, and was plastered along the upper 15 cm near the opening (Fig. 2.166). Posthole 3 was located at the east corner of the pit structure and had been cut slightly by the mechanical trench. It was 35 cm in diameter and 40 cm deep and the bottom of it was rock-lined (Fig. 2.167). Posthole 4 was at the north corner of the pit structure and was 35 cm in diameter and 40 cm deep. Present at the bottom of the posthole was a small rhyolite slab.

Roof. The roof fall contained beams that were 20 cm to 30 cm in diameter, which could have served as main roof supports. Smaller roofing beams were also present that were 10 cm to 15 cm in diameter (Fig. 2.168). The



Figure 2.159. Pit Structure 1, showing trench cut through the central hearth, and posthole. The north wall of the pit structure has been eliminated by a buried stream channel.

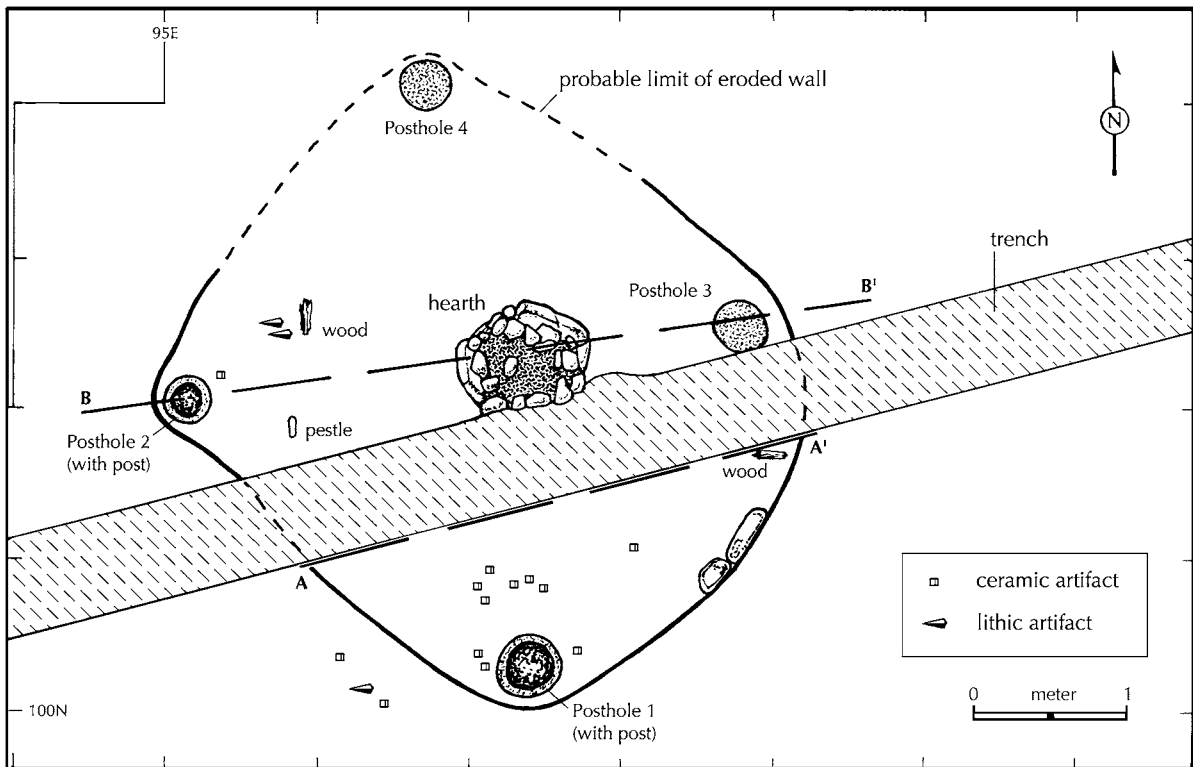


Figure 2.160. Pit Structure 1.

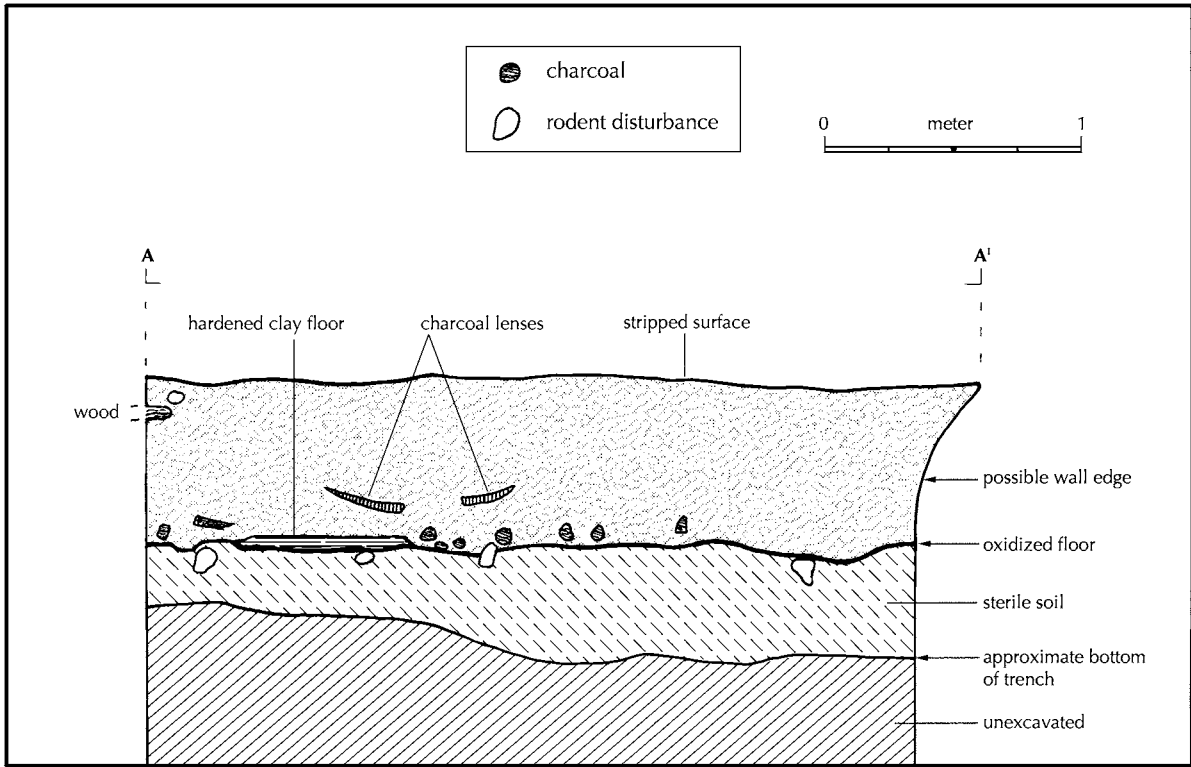


Figure 2.161. Profile of Pit Structure 1.

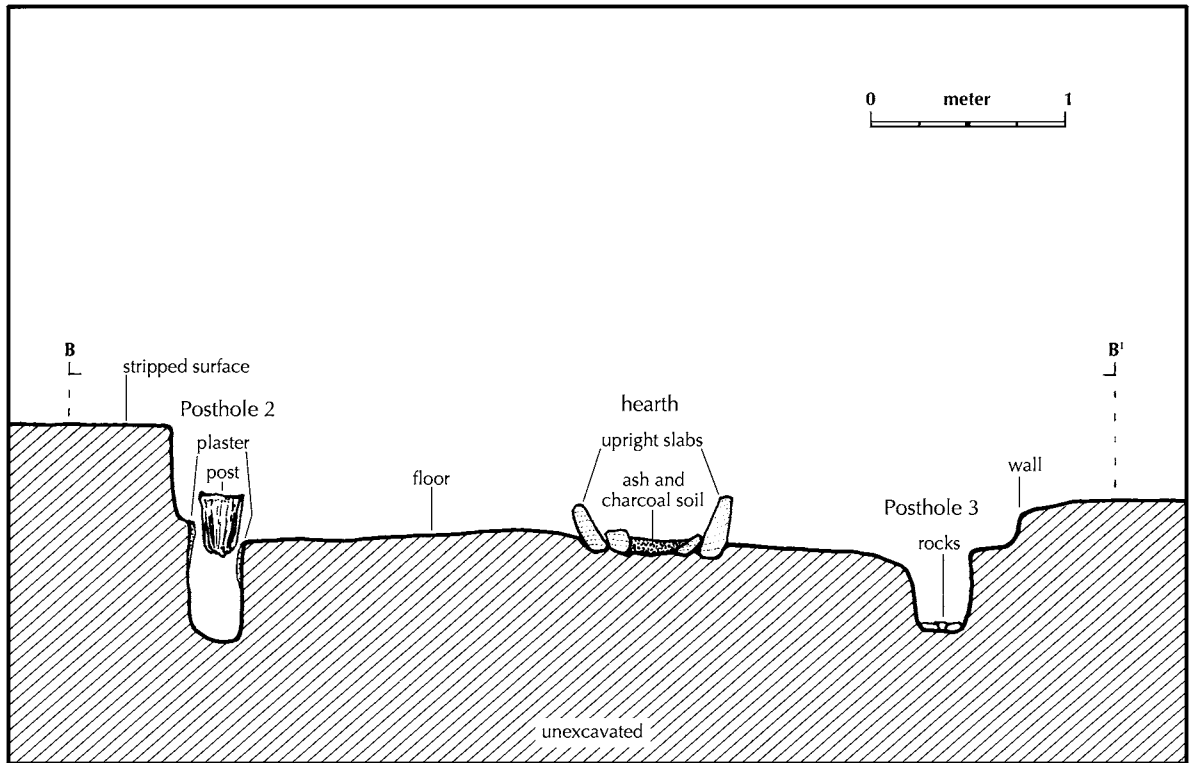


Figure 2.162. Pit Structure 1 profile after excavation.

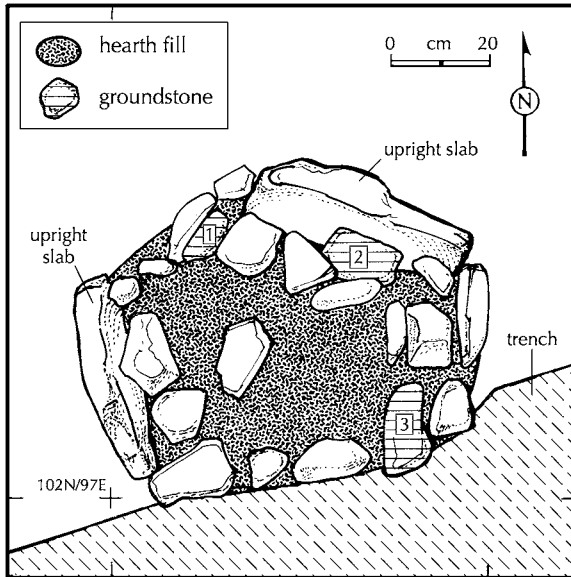


Figure 2.163. Plan view of excavated hearth, Pit Structure 1.

roofing beams do not make an obvious pattern; however, the larger beams are lying in a north-south direction with two running northeast. The smaller ones are mostly scattered with some of them running in an east-west direction.

Entry. No ramp entry was present in the portion of the pit structure that remained. We assume a roof entry.

Pit Structure 3

Pit Structure 3 is situated on the north side of U.S. 180, directly across the road from Pit Structures 1 and 9. Mechanical trenching during the testing program uncovered the subrectangular structure. A poorly preserved outside use area was also traceable in some areas around the unit, approximately 24 cm below present ground surface. The pithouse was in good condition, with intact floor features consisting of a collared hearth, roasting pit, floor pit, five postholes, and numerous sherds and partial vessels on the floor (Figs. 2.169-2.170). The fill within the backfilled trench was first reopened and excavations proceeded from the exposed portion of the feature. The trench had not cut the floor or walls of the pit structure.

Dimensions. The subrectangular pit structure measured 3.25 m north-south by 3.0 m east-west with a floor area of 9.75 sq m. Depth of the structure ranged from 1.31 to 1.33 m below the prehistoric use surface with an additional 24-38 cm of modern soil covering it. The structure had not burned. In general, this is a small pithouse with habitation room for a single family.

Walls. Walls varied from 82 to 96 cm in height. The pit structure had been dug into the native soil, which in this location was very sandy with several rodent holes burrowed into the wall. Portions of approximately 2 cm of mud plaster were visible along lower wall levels.



Figure 2.164. Pit Structure 1, hearth.



Figure 2.165. Posthole 1 with burned post in situ. Metate found leaning on wall to left.



Figure 2.166. Posthole 2.



Figure 2.167. Posthole 3 with rock-lined bottom.



Figure 2.168. Charred roof beams just above the floor.

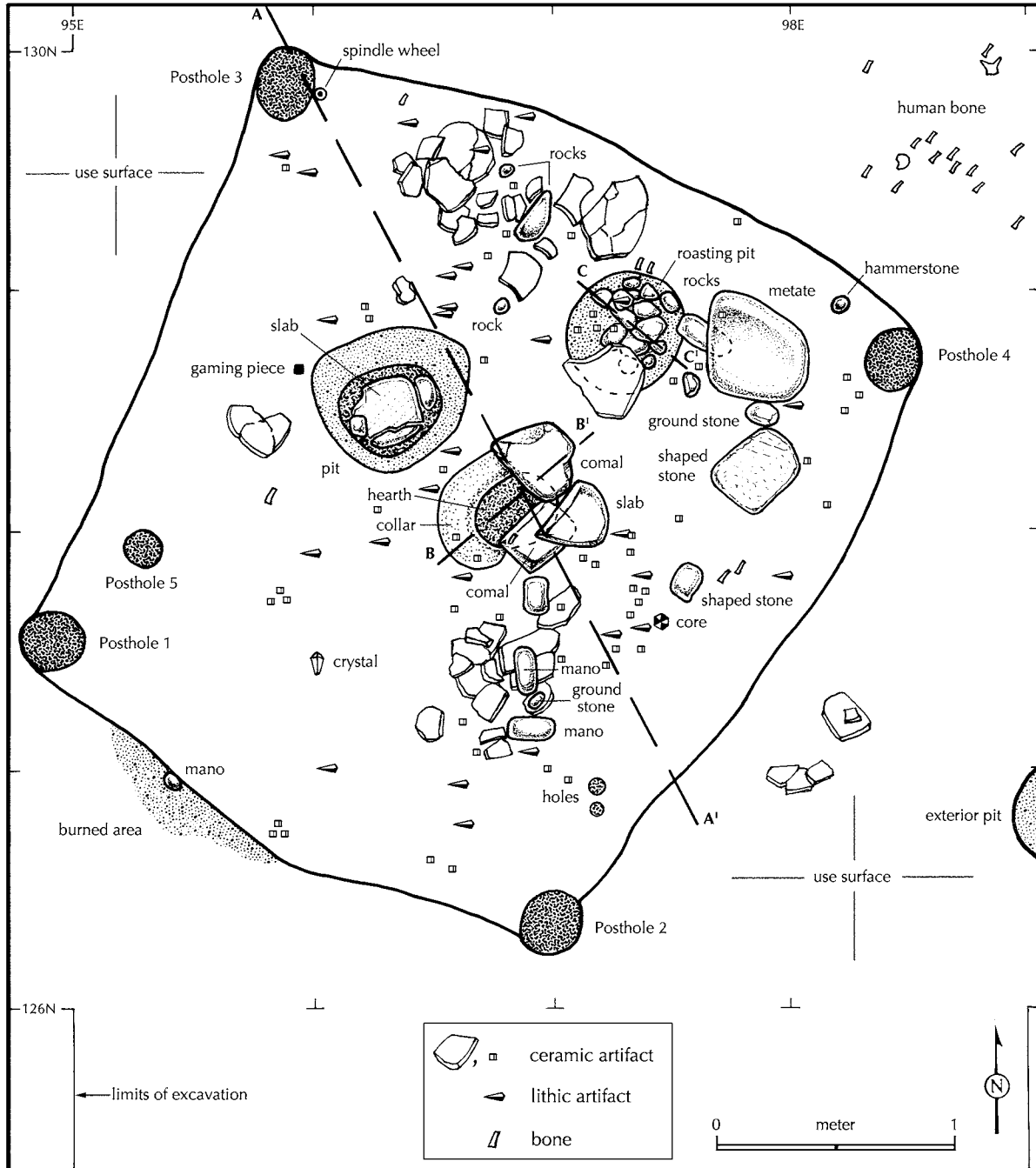


Figure 2.169. Pit Structure 3, floor features and artifacts.

Floor. The pit structure floor was packed dirt over a sandy sterile substrate. It was not plastered and there was no evidence of remodeling. In the southwest corner, the packing was very thin and the sand was exposed. Burning of the floor had occurred only near the hearth. Numerous partial vessels, sherds, and lithic artifacts were found on the floor. Depth below ground surface to the floor was 1.55 to 1.57 m.

Hearth. The hearth was located slightly off-center to the east within the pit structure. It had a shallow basin form with a mud collar extending around the western half (Fig. 2.171). The basin measured 33 cm north-south by 36 cm east-west by 9 cm deep. The upper 5-6 cm was filled with charcoal and dirt; the lower 3-4 cm was a lens of white ash. The collar was 5-6 cm high and averaged 19 cm wide. Some charcoal staining was evident on the collar.

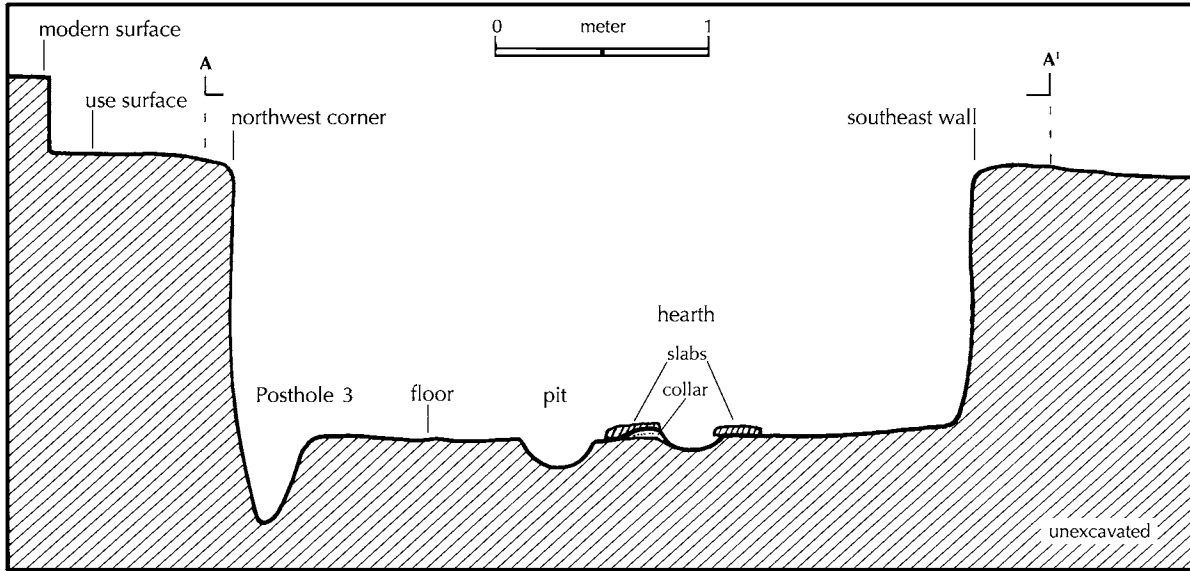


Figure 2.170. Profile of Pit Structure 3.

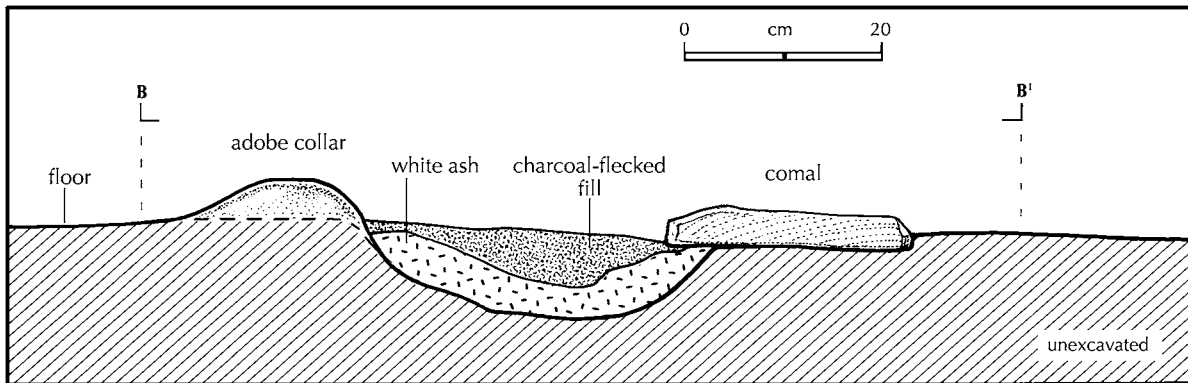


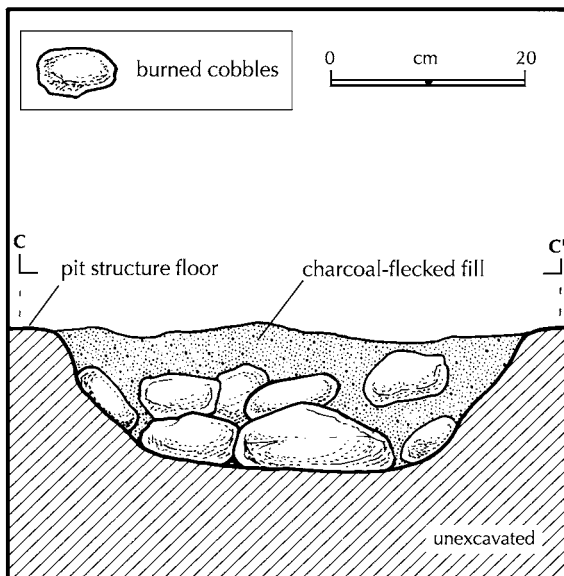
Figure 2.171. Hearth and profile, Pit Structure 3. Hearth is shown prior to excavation of fill. Note the beginning of the adobe collar to the lower left of hearth. Floor artifacts are shown in situ.

Table 2.85. Posthole Dimensions, Pit Structure 3

Number	Locus	Size (Cm)	Fill	Comments
1	SW	25 by 28 by 23	charcoal, 3 lithic artifacts	Tapers to 14 by 16 cm
2	SE	24 by 23 by 34	charcoal	Angles in to center
3	NW	30 by 25 by 40	1 sherd, charcoal, wood	Angles in to center
4	NE	24 by 21 by 38	charcoal	
5	SW	16 by 18 by 9	1 sherd, 4 lithic artifacts	



Figure 2.172a. Roasting pit, Pit Structure 3.



Adjacent, and slightly overlapping the eastern half of the hearth were two flat slabs, which probably served as griddles or warming stones. They exhibited burning and extended up to 16 cm over the edge of the hearth. One other flat slab was lying on the floor 65 cm northeast of the hearth. Its function is unknown.

Roasting Pit. In the north-central area of the pit structure was a circular, basin-shaped roasting pit (Fig. 2.172). It measured 48 cm north-south by 57 cm east-west by 15 cm deep. The pit contained 18 burned cobbles of granite and basalt. Three of these were ground stone fragments. The soil was darkened and charcoal-flecked.

Postholes. The pit structure contained four substantial postholes. Each was embedded into the corner of the room with some mud plaster extending over the juncture of where the wall and the post met. Small pieces of char-

Figure 2.172b. Roasting pit, Pit Structure 3.

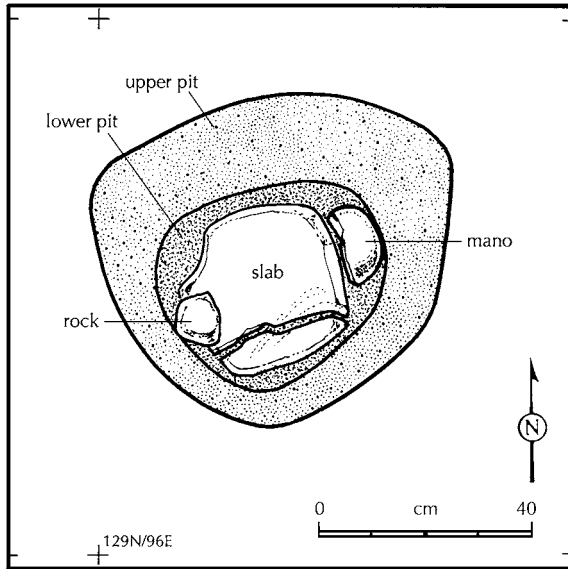


Figure 2.173. Interior pit, Pit Structure 3.

coal and some wood fragments remained in the postholes. Table 2.85 gives the characteristics of each posthole.

A four-post roof support is indicated by the posthole placement (see Fig. 2.169). Postholes 2 and 3, in opposite corners, angle in toward the center of the room. Posthole 5 seems to represent the shoring up of this corner of the structure. The walls and floor in the area had been dug into almost pure sand and the area was obviously unstable. There is no evidence of rebuilding of the pit structure except for the shoring up of the roof.

Interior Pit. A pit of unknown usage was found directly east-northeast of the hearth. It consisted of one large pit with another cavity dug into the bottom of it (Fig. 2.173). The larger opening measured 62 cm north-south by 66 cm east-west by 39 cm deep. The smaller interior pit measured 37 by 40 by 36 cm. A stone slab, a partial mano, and a small rock were embedded in the bottom of the smaller pit. A single sherd and two lithic artifacts were recovered from the charcoal-flecked soil.

Roof. The four corner roof supports suggest the structure was flat-roofed. The structure had not burned and there was no roof fall present in the room fill.

Entry. There were no steps, ramp, or openings in the walls to indicate a side entry into the structure. Access had to have been by way of the roof. Any of several large, flat slabs found in the central portion of the floor could have served as a hatch cover.

Exterior Pit. A generally circular basin-shaped pit was located 1.25 m east of Pit Structure 3 (see Fig. 2.169). It measured 56 cm north-south by 78 cm east-west by 24 cm deep (Fig. 2.174). The darkened soil was charcoal-flecked. No stones, such as those used in a roasting pit, were found. It did, however, contain nine

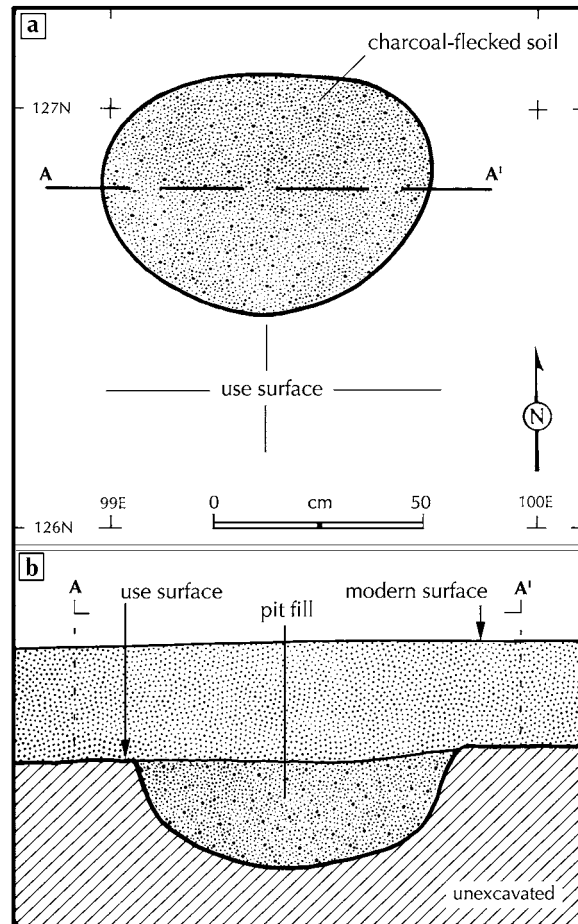


Figure 2.174. Exterior pit near Pit Structure 3.

sherds and four lithic artifacts.

Outside Surface. We were able to follow the original exterior surface of Pit Structure 3 for slightly over a meter in all directions. It was found about 24-38 cm below the ground surface. The exterior pit, a scattering of partial human remains, ash stains, a burned area, a broken ceramic vessel, and a mano were found on this surface. The human remains are described later.

Pit Structure 9

Pit Structure 9 is on the south side of U.S. 180, approximately 4 m north of Pit Structure 1. It is immediately adjacent to U.S. 180 and has been partially destroyed by construction equipment prior to building the current highway (Figs. 2.175, 2.176). Also, it has been cut in several places by an erosional channel running through this portion of the site. In addition, the pit structure is much more shallow than all of the others on the site and we suspect that it may have once been situated on a low rise (within the present right-of-way), which was subsequently bladed lower during original highway construction. To add to the disturbance of the structure, mechan-



Figure 2.175. Pit Structure 9 showing excavated features and backhoe trench.



Figure 2.176. Close-up of lower hearth, unexcavated ash pit, and fire-cracked metate in situ.

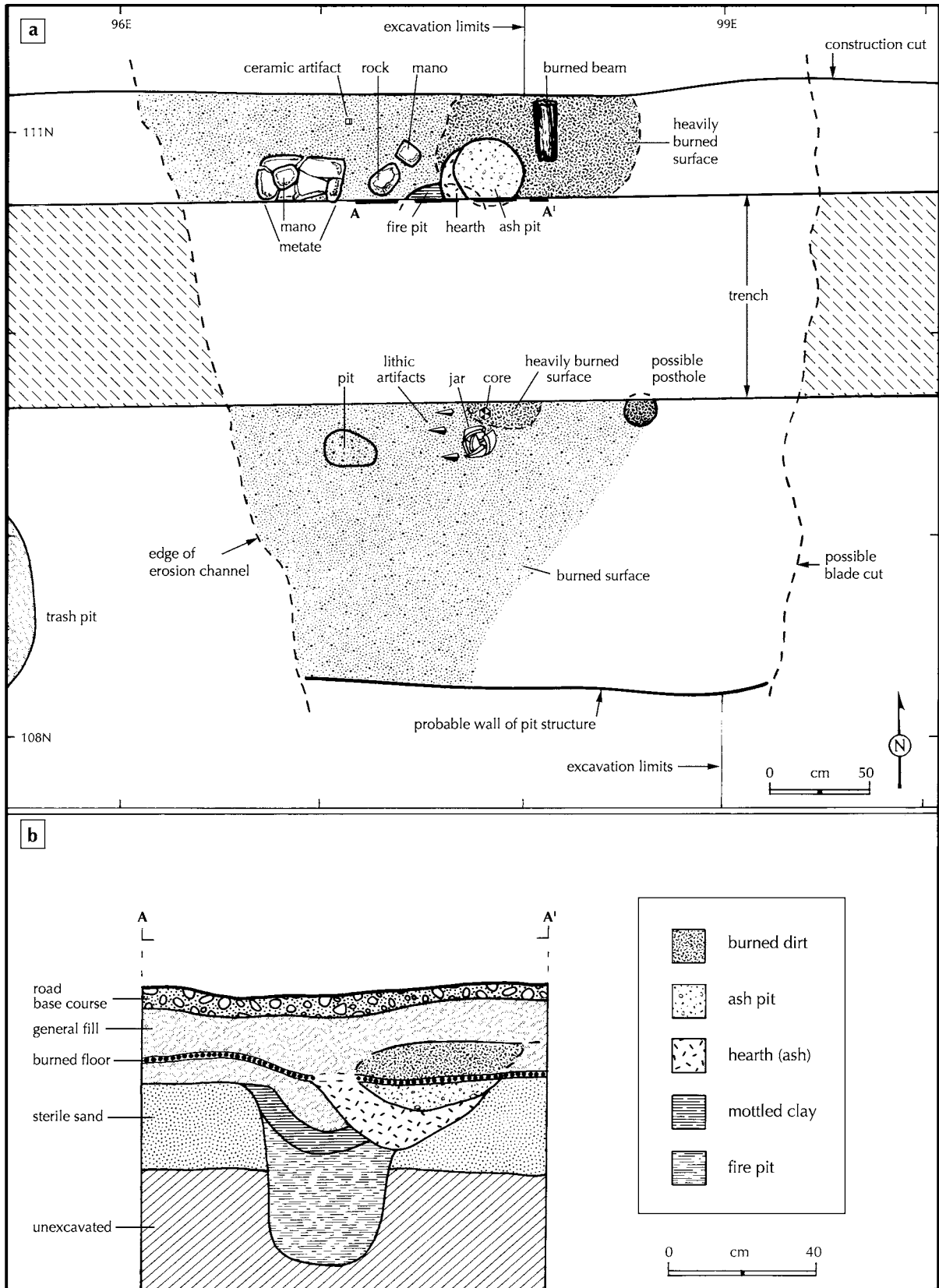


Figure 2.177. Plan of Pit Structure 9 and profile of hearth.

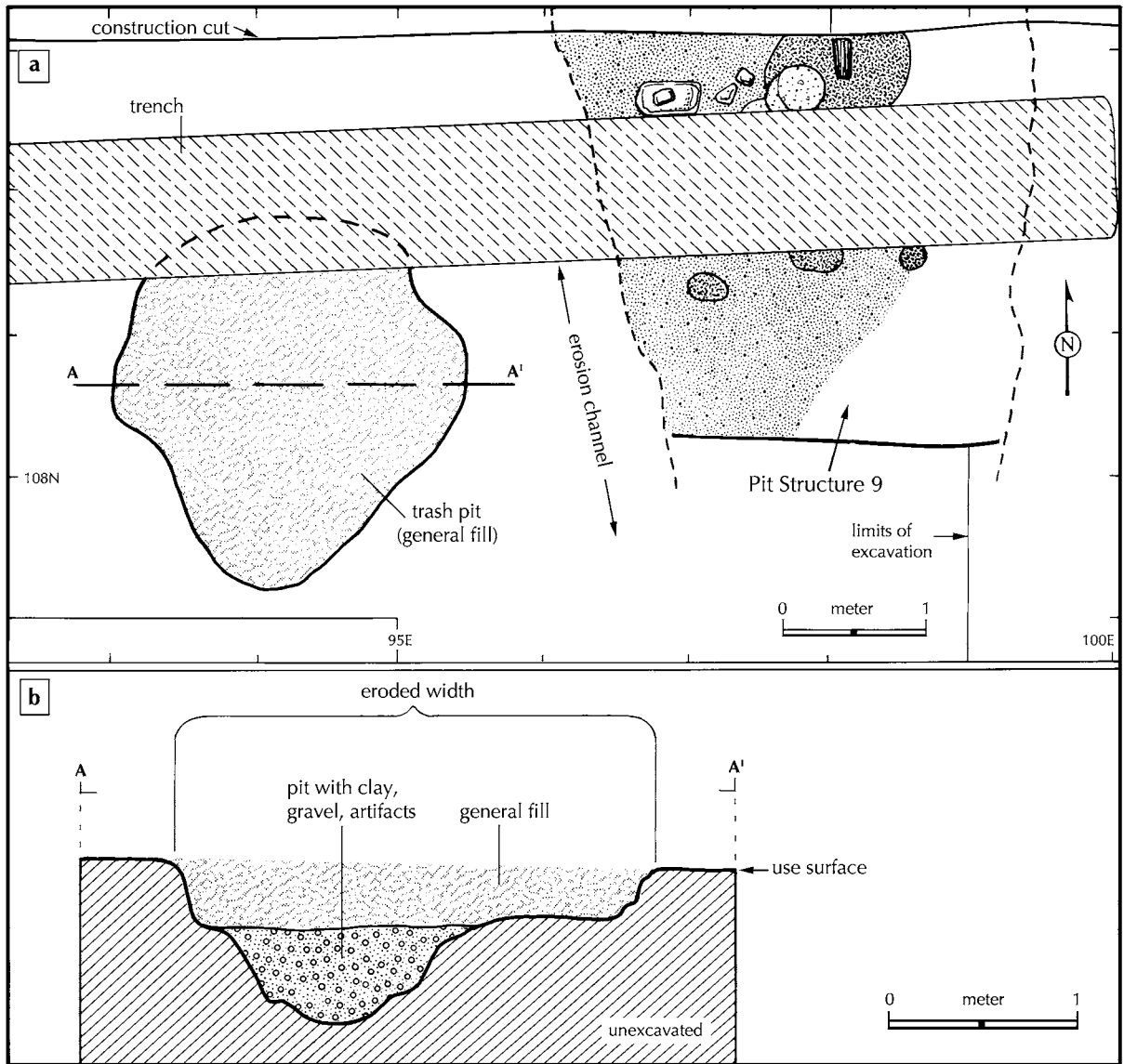


Figure 2.178. Plan and profile of trash pit near Pit Structure 9.

ical trenching by OAS along the highway right-of-way cut a swath through the remaining floor. All of these events contributed to the fact that only a portion of Pit Structure 9 remained intact prior to excavation.

Near Pit Structure 9, to the west, is a large trash pit that was initially thought to be part of the structure. It had also been affected by the erosional channel. It contained numerous discarded artifacts, likely from Pit Structure 9.

Dimensions. Original dimensions of Pit Structure 9 are impossible to determine given that all structural edges with the exception of possibly the south wall are missing. The unit is at least 3.0 m north-south by 2.25 m east-west for a minimum area of 6.75 sq m. Depth of the pit structure was approximately 20 cm below the present ground surface.

Walls. Only portions of a possible south wall remain. In this area, the surface sloped gradually upwards for a maximum vertical height of 16 cm. All other walls had been obliterated by mechanical or erosional means.

Floor. One floor was present in the pit structure. It exhibited various degrees of burning. A moderately burned surface occurred in the western half of the excavated portion and a heavily burned area was in the north-central portion. The eastern half was unburned. It was difficult to determine floor limits in this area because walls were missing. The heavy burning occurred near the loci of the hearth, ash pit, and burned beam. This burning may have been from a fire within the structure.

The floor was a smooth, hard-packed clay. No plastering was evident. Artifacts remaining on the surface

include two manos and a metate, a jar, a core, three lithic artifacts, and a sherd. Features on the floor consist of a remodeled hearth, ash pit, a small pit, and a possible posthole (Fig. 2.177).

Hearths. Two superimposed hearths were constructed in Pit Structure 9 (Fig. 2.177). The first, and lower, hearth is actually a fire pit measuring 33 cm in diameter by 44 cm deep and dug into sterile sand. Ash and charcoal were present throughout a clay matrix as well as some sherds and lithics. A 7.5-cm lens of mottled clay was found in the upper half and was covered by general fill. This hearth apparently sat open for a while before the second one was built. The second is a shallow basin feature superimposed over half of the lower hearth. The fill was very ashy (5YR 6/1, gray) and contained several pieces of burned adobe. This hearth measured 42 cm diameter and was 17 cm deep.

Ash Pit. Overlaying the upper hearth was an ash pit measuring 35 cm in diameter by 7 cm deep. It was separated from the burned fill above it by a 2-cm lens of darker ash (7.5YR N4, dark gray). The 10 cm of burned dirt above the ash pit and burned adobe from the adjacent hearth support the conclusion that at least a portion of the pit structure had burned in this area.

Small Pit. A shallow, irregular-shaped pit was located on the south side of the backhoe cut on the floor. It measured 15 cm north-south by 25 cm east-west by 6 cm deep. The fill consisted of darkened soil with charcoal flecking. Its function is unknown.

Posthole. One possible posthole was found in the eastern portion of the pit structure. Moderate burning extended from the west side up to the posthole but did not go beyond it. Therefore, the posthole may represent the eastern limits of the structure but this is not determinable given the nature of the remains. The possible posthole measured 18 cm north-south by 20 cm east-west and was 20 cm deep.

Roof. One burned beam, measuring 13 cm wide by 28 cm long, was recovered from the floor, which suggests burning of the structure. No other roof fall was found.

Entry. No evidence of an entry was found within the portion of the pit structure excavated.

Trash Pit. A large, irregular-shaped pit was located about 1.25 m west of Pit Structure 9 (Fig. 2.178). The feature had been cut by an erosional flow and edges were somewhat obscure. The pit measured 2.65 m north-south by 2.62 m east-west (sloping inward to approximately 80 cm east-west by .84 m deep (1.34 m below ground surface) and had been cut on the north edge by Backhoe Trench 152. The upper sides, above pit fill, had been scoured smooth by an erosional force. The trash pit itself was not disturbed.

Within the clay and fine-gravel fill (10YR 4/4, dark

yellowish brown) of the pit were numerous artifacts including four broken and one complete metate, seven manos, large sherds, a few lithic artifacts, and some burned adobe. Most were found in the lower 30 cm of fill.

Pit Structure 12

Pit Structure 12 is located at the east end of the site directly in front of the pumps at the Luna Gas Station (Figs. 2.179-2.180). Mechanical trenching during the testing program uncovered the structure just underneath the asphalt and gravel parking area for the gas pumps. The structure is the largest of the excavated pit units at LA 45507 and contained a partial bench, elaborate ventilator shaft, a rebuilt hearth, deflector, several floor pits, and four primary postholes set into the rounded corners. The large size of the structure and the presence of a bench, ventilator shaft, and deflector suggest it may have been used for ritual as well as domestic activities. A fire pit and burial from a later occupation were immediately adjacent to the pit structure.

Excavations began with the reopening of the back-filled trench. Work proceeded from the exposed portion of pit structure fill; fortunately, the trench had not cut into the floor of the pit unit. The overlying 15-20 cm of asphalt and gravel were removed by pick from above the structure. The feature lay directly beneath this covering.

Dimensions. Pit Structure 12 (Fig. 2.181) is generally circular measuring 5.9 m north-south by 5.2 m east-west with a depth of 1.5 to 1.6 m below the exposed ground surface. It had an interior area of 25.5 sq m, including a bench. The pit structure had not burned. This is a fairly large structure and because of the several additional features not found in the other excavated units, combined with its size, it is possible that it may have also served both a ritual and a domestic function.

Walls. The height of the straight-sided walls extended .70 to 1.00 m below the ground surface to the top of a bench within the interior of the structure. They had been dug into the native sand and clay soil matrix with no plastering evident. There was no slumping of the walls.

Bench. A three-quarter bench surrounded the interior of Pit Structure 12 except along the northeast area. It was 0.60 to 0.70 m high with a vertical face and level platform that measured .55 to .80 m in width. It was constructed from the native soil and showed no plastering or veneer. No features were found on the bench; however, a canid coprolite was recovered from the bench surface. It was submitted for specialized analysis and produced a variety of floral items. It is likely, however, that the coprolite deposit was a post-abandonment event.

Floor. The floor surface was generally hard-packed



Figure 2.179. Opening of Pit Structure 12 in front of Luna Service Station.



Figure 2.180. Pit Structure 12, showing hearth, deflector; two floor pits, four postholes, bench, exterior fire pit in upper left, and ventilator opening in left center. Steps are in backhoe trench.

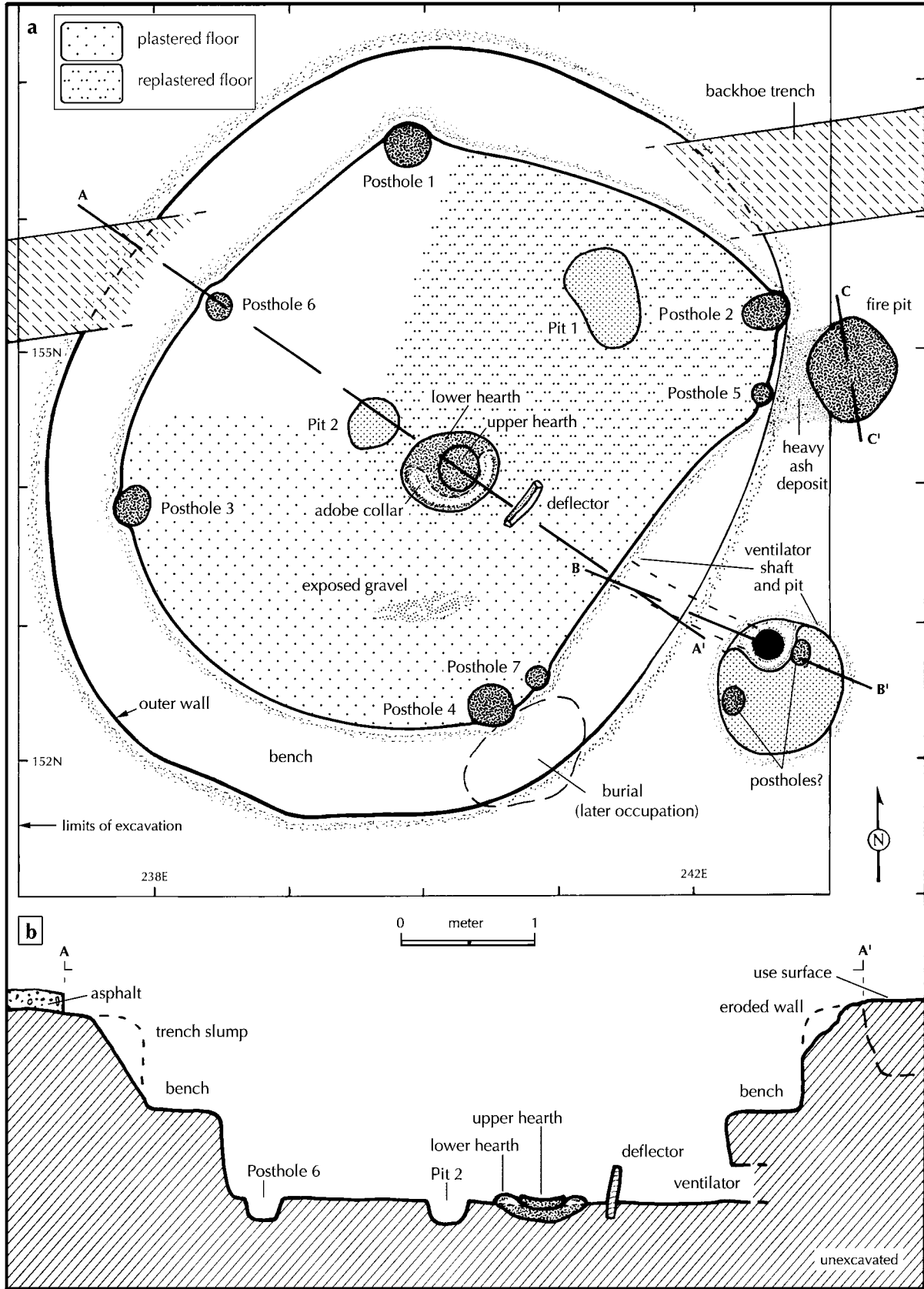


Figure 2.181. Pit Structure 12, plan view and profile.

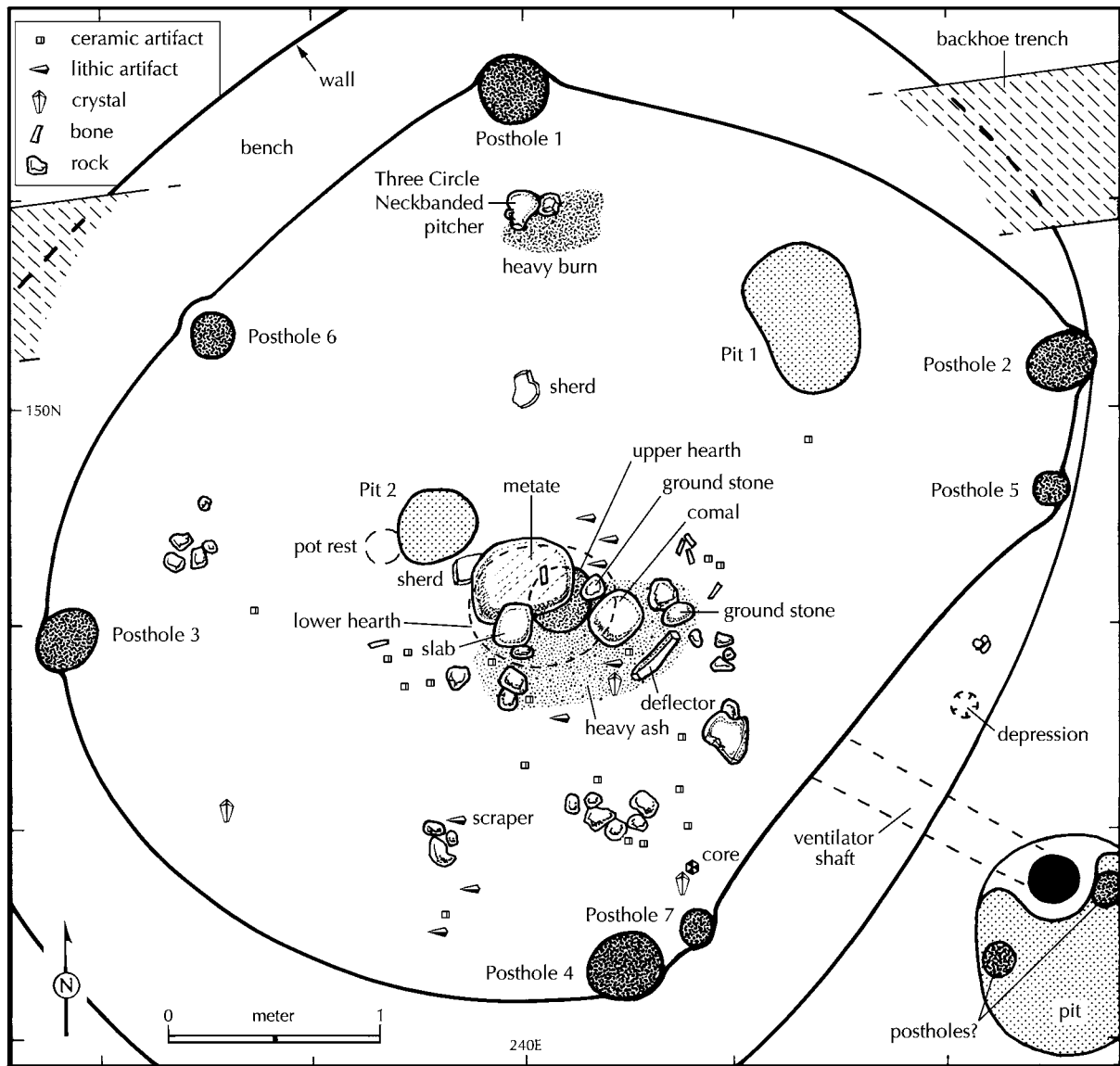


Figure 2.182. Pit Structure 12, floor assemblage.

except in the northeast quadrant where native sand was exposed. In the south half of the pit structure, a mud plastered floor of 1.5 cm thickness was present. Small pieces of gravel were protruding through the plaster. In several areas, the plaster extended for 4-5 cm up the side of the bench. The sandy northeast quadrant evidenced reflooring. This probably occurred because of the unstable underlying matrix. Several features and numerous artifacts, including a Three Circle Neckbanded pitcher, were found on the floor (Fig. 2.182).

Hearth. Two hearths were present in the central portion of the pit structure, one constructed over the other. The upper hearth is a shallow basin measuring 29 cm north-south by 21 cm east-west by 8 cm deep. Overlying half of the hearth was a complete slab metate; another flat slab lay on top of it. Immediately to the east was a

fragment of unidentified ground stone. Ten centimeters southeast of the hearth was a comal. At 2-5 cm directly below the upper hearth was a second, larger basin hearth (Fig. 2.183). This one had a 22-cm-wide adobe collar around three-quarters of the edge. Some slumping may have occurred. The hearth measured 50 cm north-south by 61 cm east-west and was 12 cm deep. The fill of both hearths contained burned soil that had baked to a very hard consistency.

Deflector. Situated 38 cm east-southeast of the hearth was a stone deflector that was also aligned with a ventilator opening at 96 cm distance. The flat stone, set into the floor, was 24 cm wide and protruded above the floor for 22 cm. Seven centimeters southwest of the deflector, buried 5 cm beneath the floor, was a large quartz crystal. No pit could be found associated with it.

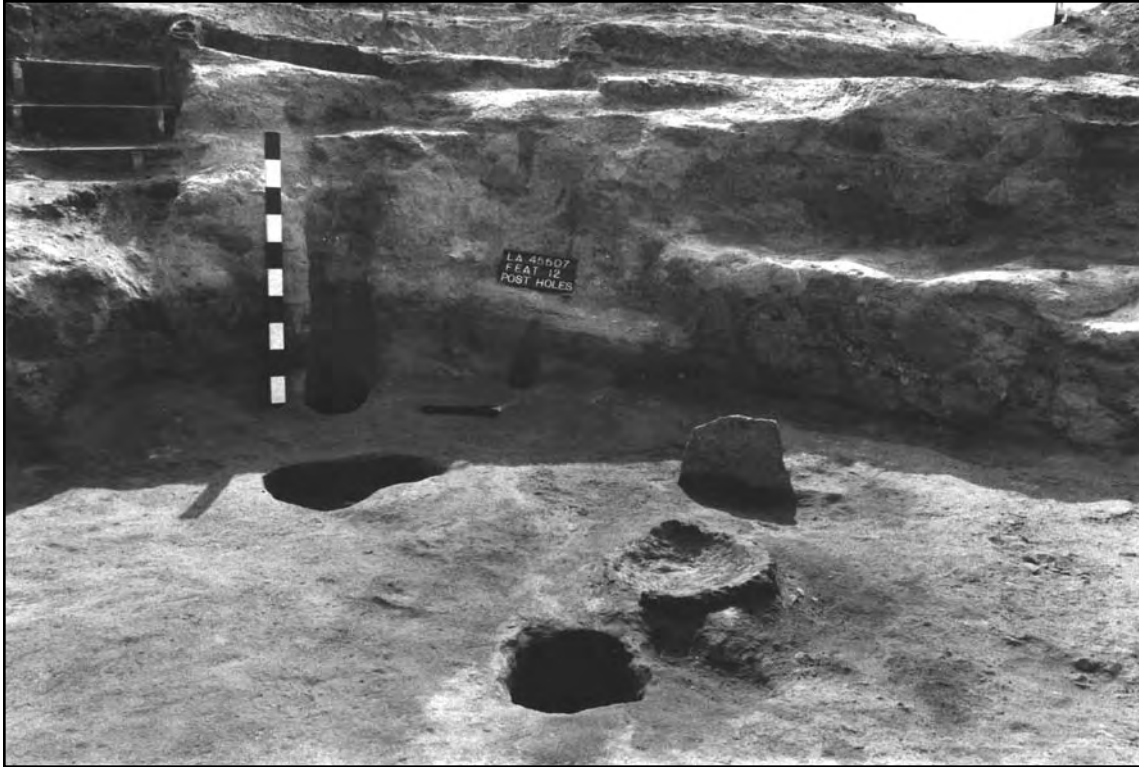


Figure 2.183. Close-up of Pit Structure 12 floor features: deflector; lower hearth, interior pit aligned southeast. Ventilator opening behind deflector in bench has not yet been excavated. An additional pit is to the left of the hearth. Inset posthole and smaller posthole (right) are against the bench.

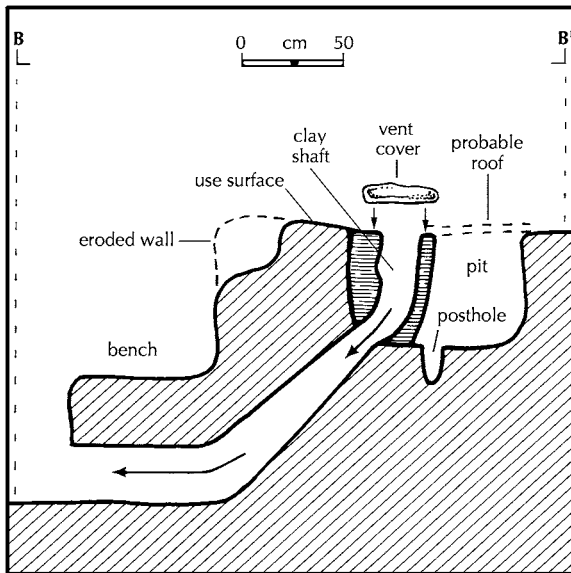


Figure 2.184. Diagram of ventilator shaft in Pit Structure 12.

Ventilator Shaft. A complex ventilator shaft was located directly behind the deflector; the opening was 124 degrees to the southeast (Fig. 2.184). The rounded vent opening was 30 cm high and 27 cm wide and had been dug through the bench at floor level, extending horizon-

Table 2.86. Posthole Measurements for Pit Structure 12, LA 45507

Posthole Number	Diameter (cm)	Fill
1	30 by 31 by 48	Loose soil, wood fragment
2	23 by 32 by 60	Wood fragments, 1 flake
3	27 by 25 by 52	Sandy, charcoal flecks
4	34 by 34 by 80	Loose soil, wood fragments
5	10 by 10 by 12	Loose soil
6	21 by 19 by 19	Loose soil
7	14 by 14 by 17	Loose soil

tally for .80 m before taking a 30 degree angle upwards for 1.25 m and narrowing to approximately 15 cm. It then connected to a vertical clay shaft of 0.47 m in length leading up to the prehistoric ground surface. This shaft had a diameter of 20 cm and had a lipped edge over which had been placed a flat stone to cover the opening. This entire upper portion of the ventilator shaft was encased within a pit of 0.92 m diameter, leaving the clay shaft standing partially free within the pit (Fig. 2.185).

Two probable postholes were set into the bottom of the pit near the ventilator shaft. These may have sup-



Figure 2.185. Ventilator opening with clay shaft inside of pit. Two postholes are in the bottom of the pit. The stone vent cover lies to the left of the pit.

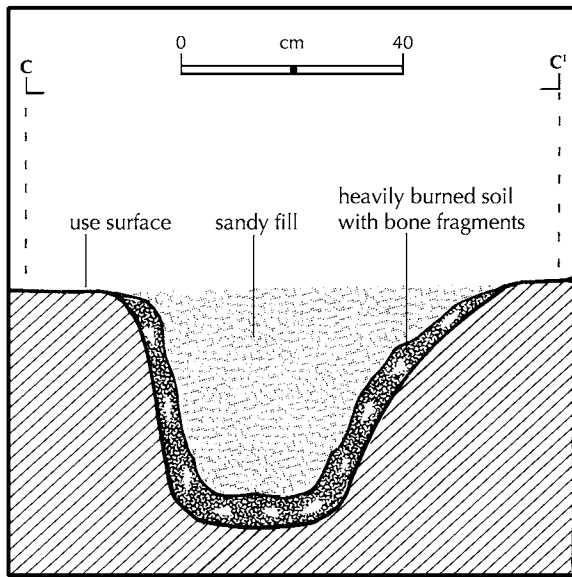


Figure 2.186. Profile of fire pit, LA 45507.

ported a small roof over the ventilator pit. One was 12 cm in diameter, the other was 16 cm.

Postholes. The pit structure contained a basic four-post pattern of roof support with the posts recessed into the bench at floor level. Two smaller auxiliary posts had been placed in front of the bench, in the floor, to shore up the roof supports. Measurements for the posts are given

in Table 2.86.

Interior Pits. Pit 1 had an irregular oval shape and measured 72 by 49 by 19 cm deep. The fill contained darkened soil and no artifacts.

Pit 2 was small and almost D-shaped, measuring 38 by 27 by 15 cm deep. Gravel protruded through the clay at the bottom of the pit. The fill was a slightly darkened sandy clay. No artifacts were recovered. The function of both pits is unknown.

Roof. A flat roof is presumed for the pit structure based on the four-post pattern.

Entry. Entry must have been gained by way of the roof.

Exterior Fire Pit. Only 14 cm east-northeast of Pit Structure 12 was a fire pit dug into a prehistoric surface (Fig. 2.186). The pit measured 73 by 62 cm and was 41 cm deep with heavy burning on the bottom and along the sloping sides. The pit contained mostly clean, sandy fill except for the bottom 4-6 cm. Cultural material consisted primarily of small pieces of burned bone. Several sherds and a lithic artifact were also recovered from the fill. No burned rock was recovered from the pit.

The fire pit was thought, at first, to be associated with the adjacent pit structure. However, earlier excavations within the pit structure fill uncovered a 6-cm-thick lens of burned charcoal extending from the northeast edge and sloping down into the middle of the pit fill to

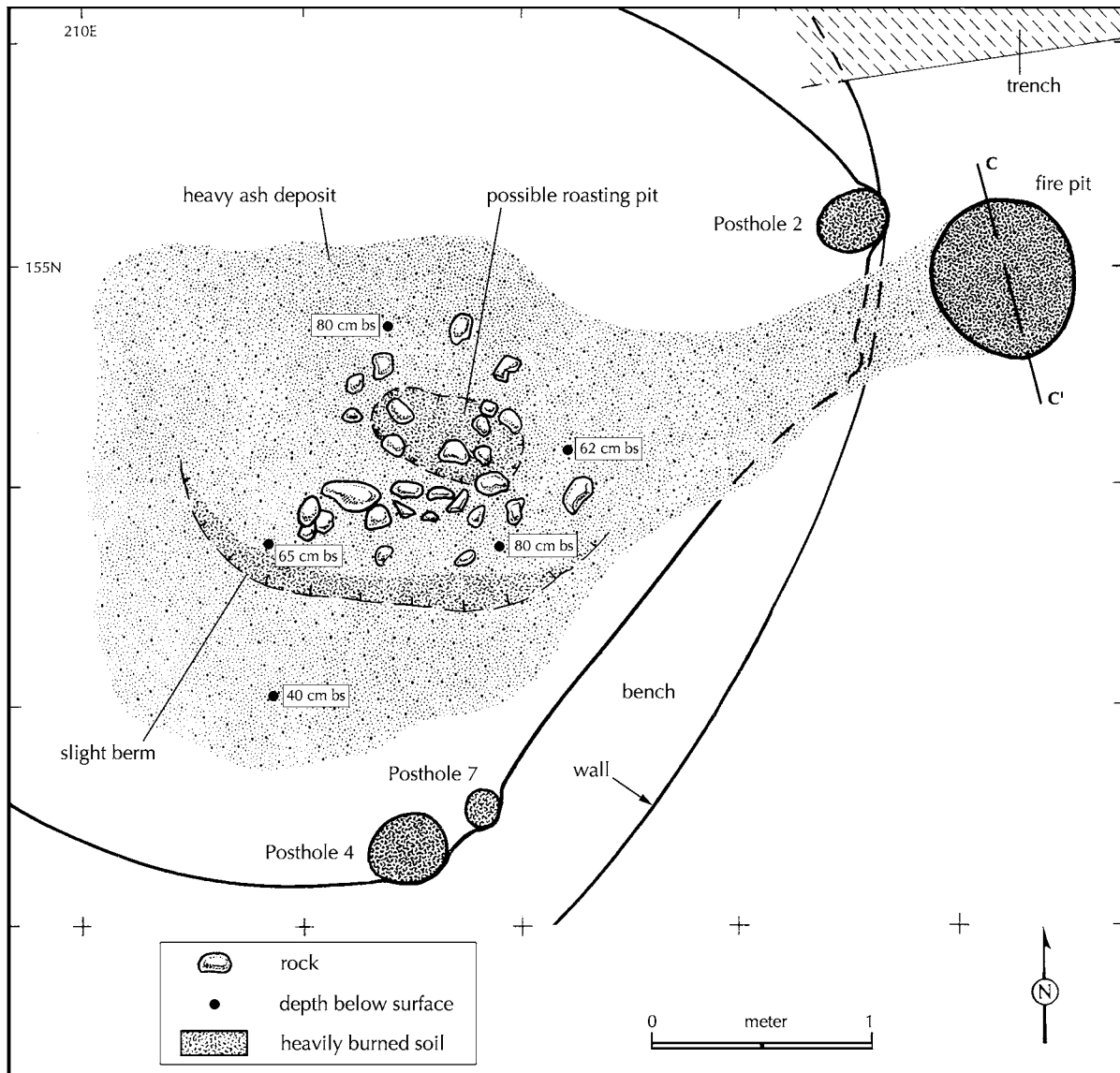


Figure 2.187. Plan view of heavy ash deposit from fire pit.

approximately 80 cm in depth. This was interpreted initially as burned roof fall. However, when the surface surrounding the firepit was uncovered, it was discovered that heavy burning extended continuously from the edge of the firepit to the edge of the pit structure where the presumed roof fall had been uncovered (Fig. 2.187). It was therefore evident that the fire pit had been constructed after Pit Structure 12 had been abandoned and 70 percent filled in. A C-14 date from the fire pit produced an aberrant date prior to pit structure construction, suggesting the use of scavenged wood.

Burial Pit. On the same surface as the fire pit was a burial pit containing a young child approximately four years old. The pit was oval-shaped measuring 1.03 m long by .60 m wide by .44 m deep. It was located over

a portion of the southeast pit structure wall and interior fill (Fig. 2.188). A C-14 sample retrieved from the charcoal-flecked soil produced the same early aberrant date as the nearby fire pit, confirming suspicions that the two features were probably contemporary. The child was lying on its back with its knees flexed; the modern smoothing and graveling of the gas pump area had removed one of the kneecaps.

Because the bottom of the burial pit was situated over pit structure fill, the soil at the bottom of the pit was very loose with some rodent activity present. The few sherds and lithics within the pit may actually be associated with Pit Structure 12. However, a quartz crystal and small awl found near the torso may belong to the burial.



Figure 2.188. Unexcavated burial pit on southeast edge of Pit Structure 12, LA 45507. Pit is in front of meter stick.



Figure 2.189. Pit Structure 13, facing south. Note bench or ledge on left and backhoe trench cutting through central hearth.

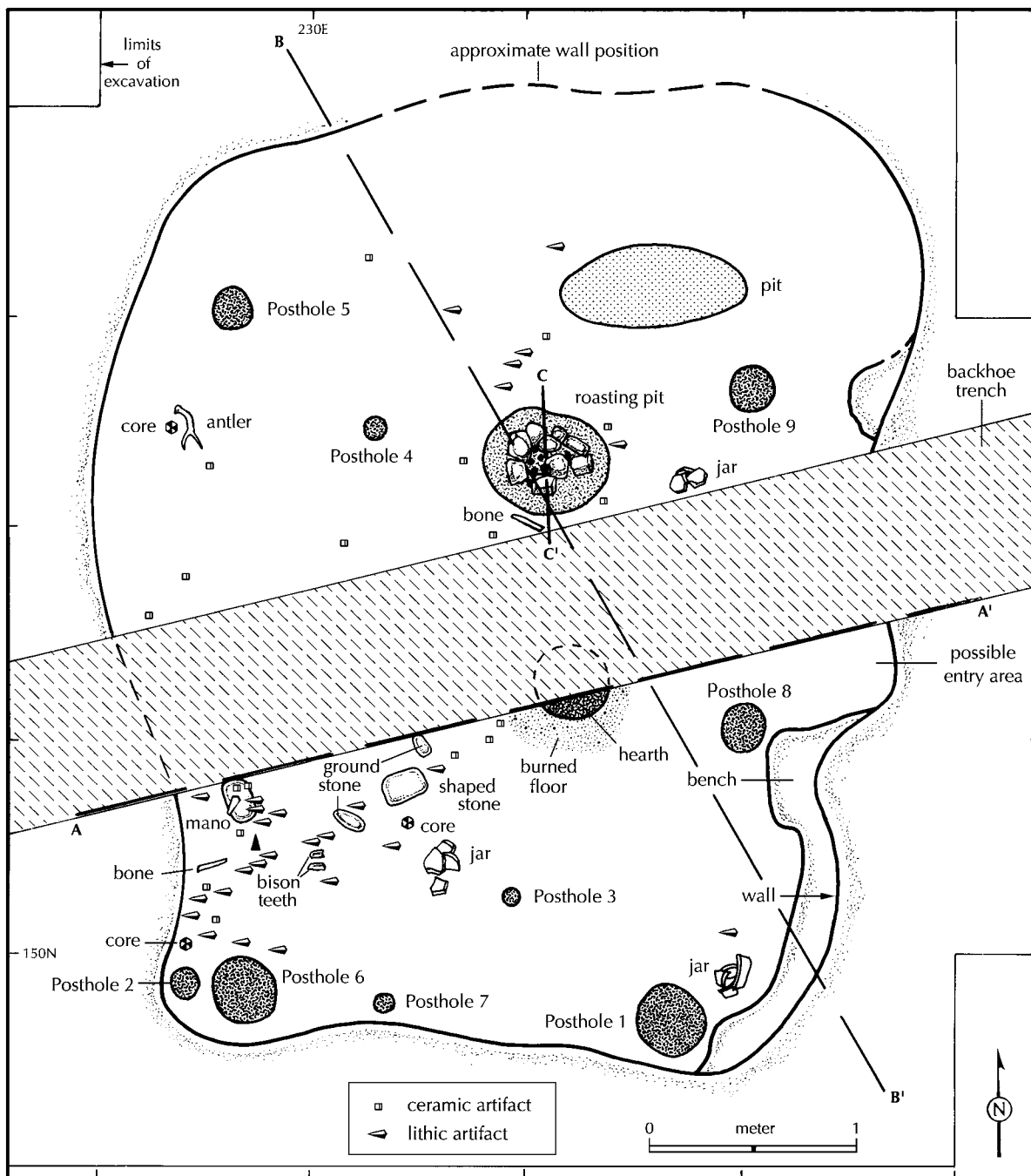


Figure 2.190. Plan view of Pit Structure 13.

Pit Structure 13

The pit structure (Fig. 2.189) is 4.5 m west of Pit Structure 12 and in front of the Luna Gas Station. Pit Structure 13 is smaller and not as deep as Pit Structure 12, but the artifact assemblage indicates it is from the same general time period, if not contemporary. This unit was also uncovered by mechanical trenching during the testing program, which unfortunately went through the

floor. Pit Structure 13 contained a hearth, roasting pit, one interior pit, a partial bench on the east, five primary and two auxiliary postholes, a burial in the fill, and artifacts on the floor (Figs. 2.190-2.192). The pit structure is believed to have served as a domestic residence. There was no evidence of any remodeling of interior features or the floor.

Dimensions. The pit structure is subrectangular, measuring 4.55 m north-south by 3.75 m east-west with

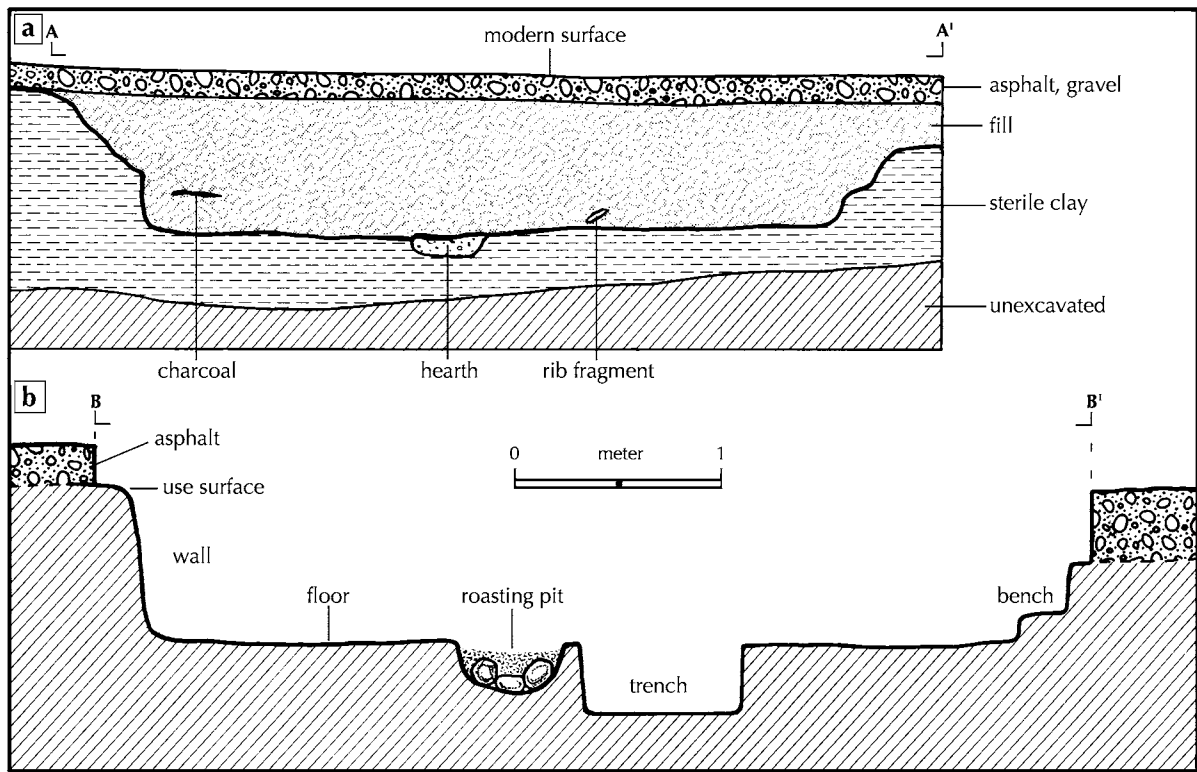


Figure 2.191. (a) Profile of south wall of backhoe trench through Pit Structure 13, (b) profile of excavated pit structure.

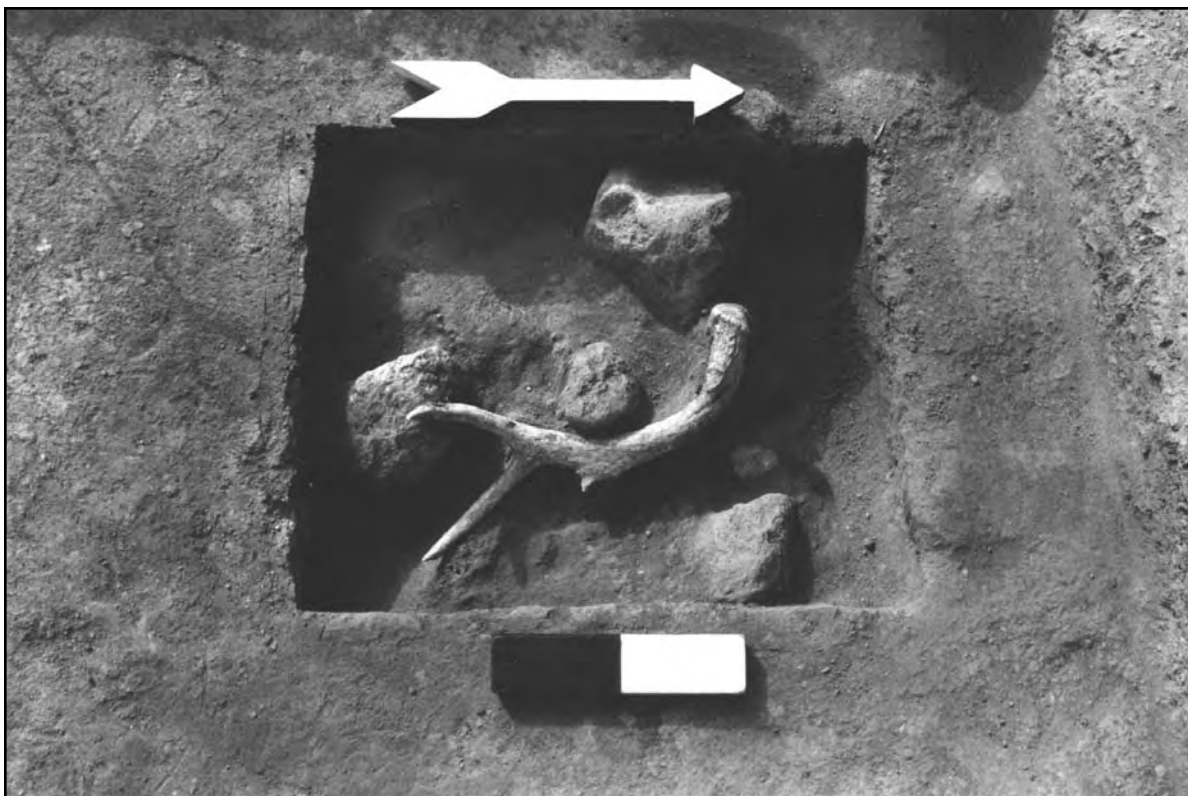


Figure 2.192. Antler, a core, and basalt cobbles on floor, Pit Structure 13.

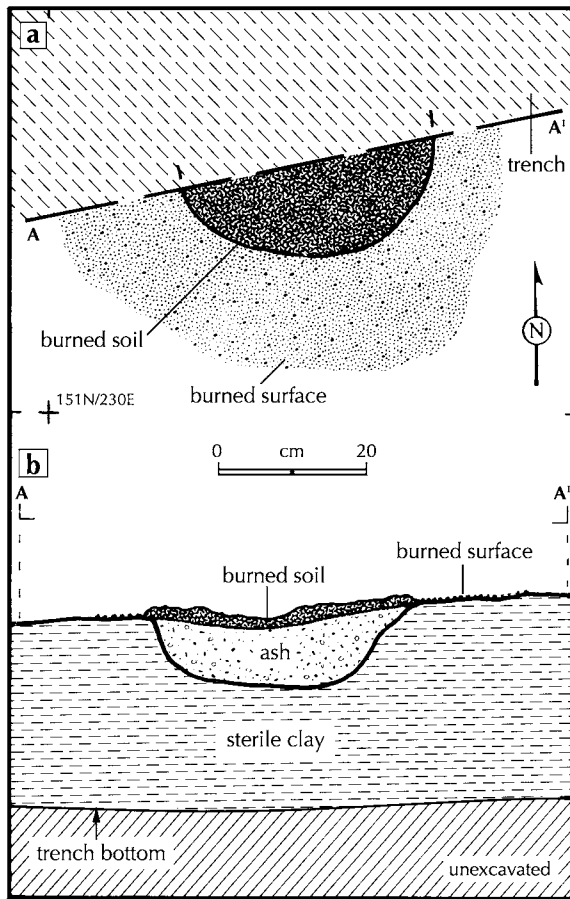


Figure 2.193. Plan and profile of hearth, Pit Structure 13.

a below-surface depth of .78-80 m and an area of 17.06 sq m. Between 30 and 45 cm of asphalt and gravel covered the unit and was removed by pick. The structure had not burned.

Walls. The walls of Pit Structure 13 were basically straight-sided and not plastered, dug directly into the native clay matrix. The backhoe trench had cut the pit structure on both the east and west sides, otherwise walls stood to a maximum of 80 cm. Walls were difficult to follow along the north edge because of slumping and an eroded floor in this area.

Floor: The floor was a hard-packed clay surface and not plastered. It was badly eroded on the north edge along the wall. In this area there was also evidence of rodent disturbance and a layering of fine gravel that had washed into the structure. The south half of the floor was much better preserved and was charcoal-stained. Numerous artifacts were found on the floor (see Fig. 2.190) including several ceramic vessels, three cores, many lithic and sherd fragments, a projectile point, a deer antler (Fig. 2.192), and two bison teeth. Hough (1919) also recovered several deer tines and bison

remains from his excavations at the site. Most material was concentrated in the southwest corner of the room.

Hearth. The backhoe trench had removed approximately two-thirds of the hearth. The remaining portion indicated it was a shallow pit feature measuring probably 34 cm in diameter and 9 cm deep, located slightly to the southeast of the center of Pit Structure 13. The hearth was generally straight-sided (Fig. 2.193) with a fill of ash. Overlying the ash was a 2.5 cm layer of burned soil. Heavy floor burning was evident along the remaining south edge of the hearth.

Roasting Pit. In the north-central portion of Pit Structure 13 was a generally circular roasting pit measuring 48 by 58 by 23 cm deep (Fig. 2.194). The fill was softened, charcoal-flecked soil containing 12 large burned cobbles. Walls of the roasting pit sloped inward and were only slightly burned. Within the roasting pit were small fragments of faunal remains, an obsidian projectile point, and several ceramic and lithic artifacts.

Interior Pit. A pit of unknown function was located in the northeast quadrant of the pit structure. It was oval-shaped, measuring 88 by 38 by 9 cm deep. The interior had not burned and no artifacts were recovered from it.

Postholes. Although five large and three auxiliary postholes are shown in Figure 2.190, another post was probably located in the disturbed northeast corner of the room, which would have created a conventional Mogollon four-post pattern. Postholes 8 and 9 may actually have flanked a trench-disturbed entryway. None of the postholes are set into the walls as in the other four excavated structures; rather, the wall behind Postholes 1 and 2 curves slightly outward behind them.

Two small postholes adjacent to Posthole 6 in the southwest corner of the structure probably served to shore up this corner of the room. An additional two small postholes (3 and 4) are located more toward the interior of the pit structure and cannot be assigned a roof support function.

Bench/Ledge. The backhoe trench had cut the eastern wall of Pit Structure 13 but the remains of an irregular, lobed bench or ledge was found in this area (see Fig. 2.190) flanking the cut area. However, on both sides of the trench, the low bench tapers into the wall leaving an area where an entry may have been. The bench was only 13 cm high with a maximum width of 16 cm, lobing to 25 cm in portions.

Roof. It is suggested that a flat roof covered the pit structure, based on the probable four-post pattern of postholes.

Entry. We speculate that an entryway existed on the east side of Pit Structure 13 because of the presence of two potentially flanking, medium-sized postholes and a flanking bench in this area. No entry area could be found during stripping of the outside surface, indicating it

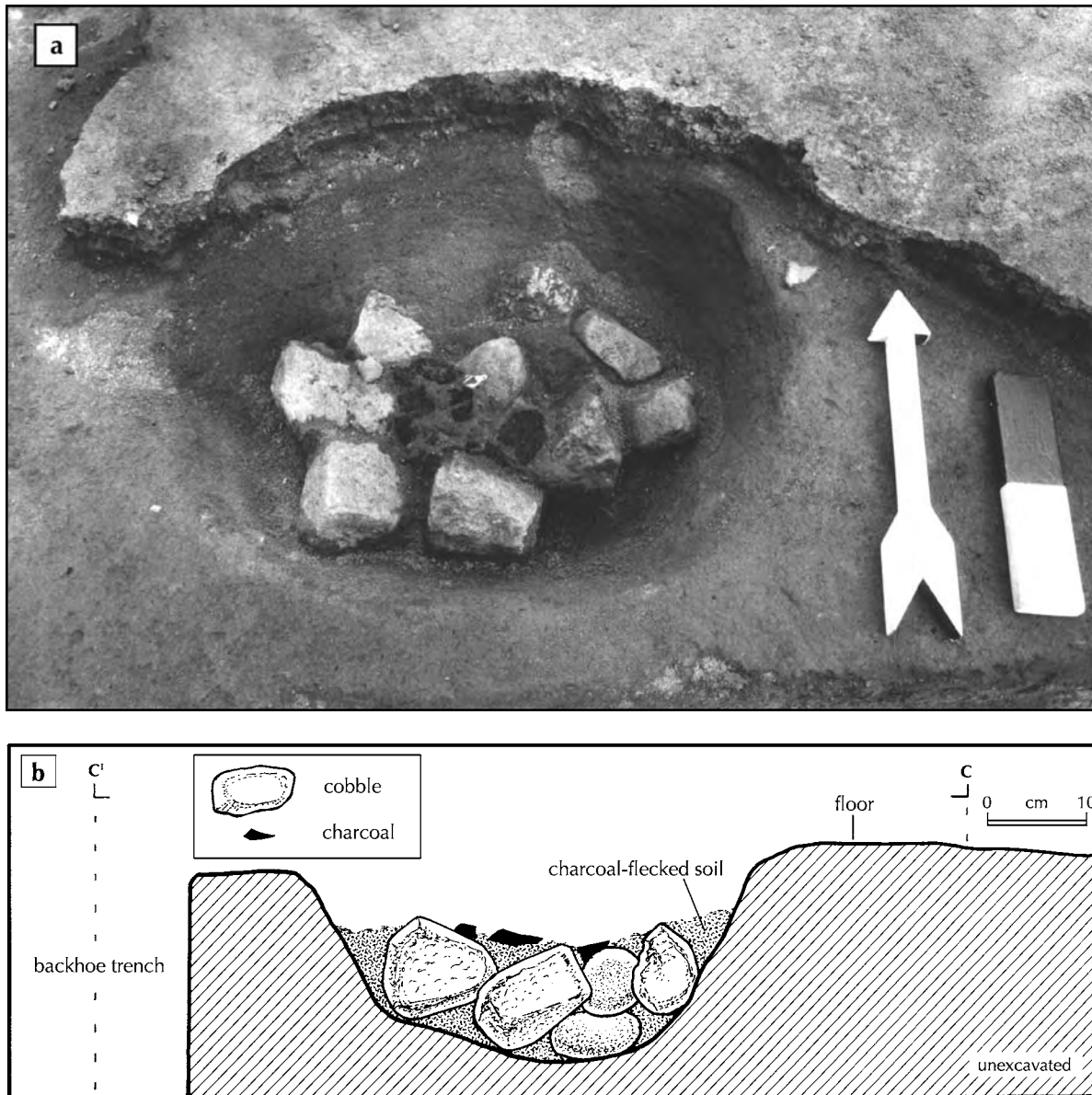


Figure 2.194. Plan and profile of roasting pit, Pit Structure 13.

would have been fairly short, perhaps only a one or two-step entry.

Burial. Lying in the pithouse fill at a depth of 58 cm, was the partial remains of a young adult female. The skeleton was lying on its side on a flat, unprepared surface, probably the bottom of a pit dug into the pit structure fill. Only the upper half was present, including an articulated left arm. Portions of disarticulated human remains were later found at lower depths in the pit structure fill and are assumed to be part of the female burial, disturbed by rodent activity. No grave goods were found with the remains.

ARTIFACTS

A total of 22,313 artifacts were recovered from Luna Village. These include 17,136 ceramics, 2,197 lithic artifacts, 21 projectile points, 273 pieces of ground stone, 28 bone tools, 50 miscellaneous items, and 2,608 nonhuman bones.

Ceramics

Table 2.87 presents the distribution of the ceramic assemblage for the major excavation units. However, looking at the assemblage as a whole, it is obvious that

Table 2.87. Ceramics from LA 45507, Luna Village

Cells: Count Row Pct Column Pct	Proveniences									Row Total
	General Fill	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Burial 1 (Feat 14)	Fire Pit	Pit Structure 13	
Alma Plain	1139 22.3% 48.1%	312 6.1% 63.2%	1247 24.4% 63.7%	127 2.5% 78.4%	387 7.6% 71.1%	1578 30.9% 62.7%	20 .4% 64.5%	52 1.0% 61.2%	249 4.9% 61.0%	5111 100.0% 59.7%
Alma Rough	716 73.6% 30.2%	47 4.8% 9.5%	61 6.3% 3.1%	12 1.2% 7.4%	84 8.6% 15.4%	44 4.5% 1.7%		3 .3% 3.5%	6 .6% 1.5%	973 100.0% 11.4%
Alma Scored	36 48.0% 1.5%	9 12.0% 1.8%	7 9.3% .4%		1 1.3% .25	20 26.7% .8%			2 2.7% .5%	75 100.0% .9%
Alma Incised	4 21.1% .2%				1 5.3% .2%	4 21.1% .2%			10 52.6% 2.5%	19 100.0% .2%
Alma Neckbanded	12 18.2% 5%	2 3.0% 4%	30 45.5% 1.5%		2 3.0% .4%	18 27.3% .7%			2 3.0% .5%	66 100.0% .8%
Three Circle Neckbanded	51 15.1% 2.2%	34 10.1% 6.3%	46 13.6% 2.3%	11 3.3% 6.8%	34 10.0% 6.3%	135 39.9% 5.4%	2 .6% 6.5%5	5 1.5% 5.9%	21 6.2% 5.1%	338 100.0% 3.9%
Plain corrugated	25 51.0% 1.1%	2 4.1% 4%	13 26.5% .7%			7 14.3% .3%			2 4.1% .5%	49 100.0% .6%
Indented corrugated			2 66.7% .1%						1 33.3% .2%	3 100.0% .0%
Incised corrugated	1 50.0% .0%		1 50.0% .1%							2 100.0% .0%
Indeterminate corrugated	17 20.7% .7%	2 2.4% 4%	14 17.1% .7%	1 1.2% .6%		41 50.0% 1.6%		3 3.7% 3.5%	4 4.9% 1.0%	82 100.0% 1.0%
Plain smudged	155 12.8% 6.5%	58 4.8% 11.7%	391 32.2% 20.0%	5 .4% 3.1%	12 1.0% 2.2%	493 40.6% 19.6%	6 .5% 19.4%	15 1.2% 17.6%	79 6.5% 19.4%	1214 100.0% 14.2%
San Francisco Red	13 61.9% .5%		3 14.3% .2%			5 23.8% .2%				21 100.0% .2%
Mogollon Red-on-brown	2 40.0% .1%		3 60.0% .2%							5 100.0% .1%
Mimbres Indeterminate white ware	57 56.4% 2.4%	3 3.0% 6%	20 19.8% 1.0%		2 2.0% .4%	13 12.9% .5%		4 4.0% 4.7%	2 2.0% .5%	101 100.0% 1.2%
Three Circle Red-on-white	1 50.0% .0%		1 50.0% .1%							2 100.0% .0%
Mangus (Bold Face) Black-on-white	111 3.06% 4.7%	19 5.2% 3.8%	103 28.4% 5.3%		8 2.2% 1.5%	97 26.7% 3.9%	1 .3% 3.2%	3 .8% 3.5%	21 5.8% 5.1%	363 100.0% 4.2%
Early polished gray	9 10.7% .4%		9 10.7% .5%	5 6.0% 3.1%	11 13.1% 23.0%	45 53.6% 1.8%	2 2.4% 6.5%		3 3.6% .7%	84 100.0% 1.0%
Plain gray				1 25.0% .6%		2 50.0% .1%			1 25.0% .2%	4 100.0% .0%
Early white ware	12 41.4% .5%	6 20.7% 1.2%	4 13.8% .2%		2 6.9% .4%	5 17.2% .2%				29 100.0% .3%

Table 2.87. Continued.

Cells: Count Row Pct Column Pct	Proveniences									Row Total
	General Fill	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Burial 1 (Feat 14)	Fire Pit	Pit Structure 13	
Late white ware	2 33.3% .1%		1 16.7% .1%			2 33.3% .1%			1 16.7% .2%	6 100.0% .1%
White Mound Black-on-white	3 50.0% .1%		3 50.0% .2%							6 100.0% .1%
Red Mesa Black-on-white	2 13.3% .1%	1 6.7% .2%				8 53.3% .3%			4 26.7% 1.0%	15 100.0% .2%
Column Total	2368 27.6% 100.0%	494 5.8% 100.0%	1959 22.9% 100.0%	162 1.9% 100.0%	544 6.3% 100.0%	2517 29.4% 100.0%	31 .4% 100.0%	85 1.0% 100.0%	408 4.8% 100.0%	8568 100.0% 100.0%

Table 2.88. Comparison of Floor/ Subfloor Ceramics among Pit Structures (N=609)

Ceramic Types	Pit Structure 1	Pit Structure 3	Pit Structure 12	Pit Structure 13	Dates
Alma Brown	61.7%	81.3%	72.0%	54.7%	All Periods
Indeterminate Mimbres White Ware	0%	0%	1.8%	0%	A.D. 775-1200
Plain smudged	14.8%	11.5%	13.5%	29.4%	Early/A.D. 800-1000
Three Circle Neckbanded/Mangus Black-on-white	19.1%	5.9%	5.4%	9.4%	A.D. 800-1000
Red Mesa	2.1%	0%	4.5%	4.2%	A.D. 875-1050
Plain corrugated/late white ware	0%	.2%	0%	1.0%	A.D. 900/950-1300
Various corrugated	0%	.2%	.9%	1.0%	A.D. 1000-1300

Table 2.89. Comparison of Sherds in Fire Pit and Burial Pit near Pit Structure 12

Ceramic Types	Fire Pit	Burial Pit	Dates
Alma Brown	64.7%	64.5%	All Periods
Indeterminate Mimbres white ware	4.7%	0%	A.D. 775-1200
Three Circle Neckbanded/Mangus Black-on-white	8.6%	9.7%	A.D. 800-1000
Plain smudged	17.6%	19.4%	Early/A.D. 800-1000
Various corrugated	3.5%	0%	A.D. 1000-1300

the broadly dated Alma Brown Wares constitute the majority of recovered sherds (12,488, or 72.8 percent), which is not atypical for pithouse sites. Perhaps more interesting are the other dominant sherds, including Mangus Black-on-white, Three Circle Neckbanded, and plain smudged wares, which in combination with the lesser amounts of Mogollon Red-on-brown, Three Circle Red-on-white, White Mound Black-on-white, and Red Mesa Black-on-white, strongly confirm a Three Circle phase occupation for the site.

When comparing ceramic frequencies and type distributions by individual pit structures, some variation appears. Pit Structure 12, the largest unit, has 45.4 percent of the sherds from the five structures. However, 82.1 percent of the sherds from the structure are from the fill above the burned surface and are dated to a slightly later time period. This would indicate that Pit Structure 12 was filled with trash above this level. Pit Structure 3 also has an unusually high number of ceramics and this unit may also have been trash-filled from a pit structure

known to have been present approximately 20 m away on a low knoll to the north. Pit Structure 9 has a very low frequency (324 sherds) because only a portion of the unit remained.

Two ceramic pipes were found in the fill of Pit Structures 3 and 9. Grass phytoliths were recovered from both pipes; however, the pipe from Pit Structure 9 also contained evidence of tobacco.

Floor and subfloor ceramic assemblages within the pit structures were compared, looking for any temporal variation that might be present. Pit Structure 9 was eliminated from comparison because it contained only two floor or subfloor sherds. The variation among these assemblages, expressed in percentages, is shown in Table 2.88. A chi-square test was run for the three contemporary units, Pit Structures 3, 12, and 13 and it showed significant ceramic variation between assemblages in the three units. This may speak to the function of the units as the architecture among the three is somewhat different. However, because Pit Structures 12 and 13 were close in proximity, a Monte Carlo Estimate was also run at the 99.0 percent confidence level to test for similarities. It was found that the two assemblages were similar (significant value of .11750).

A comparison was also made between the firepit and burial pit adjacent to Pit Structure 12. They were believed to be contemporary because of a shared use surface and corresponding depth below surface. The burial overlaps the pit structure indicating a post-Pit Structure 12 occupation for the two features. Ceramic comparison between them is presented in Table 2.89. A chi-square test indicated the two features were statistically comparable in their artifact assemblages at the .05 level of confidence.

Percentages of Alma Brown Wares, Three Circle Neckbanded, Mangus Black-on-white, and Plain smudged are very similar for the two features. However, the burial pit lacks the indeterminate Mimbres White Wares and corrugated sherds. Because of traditional or ritual reasons, several ceramic types may have been excluded from burial with the human remains. Dating of the ceramics, especially from the firepit, suggests a date of use just before or after A.D. 1000. However, the dated stain around the nearby firepit indicates a date between A.D. 900 and 950. This is approximately 100 years later than the occupation of Pit Structure 12. We know that the pit structure was not completely filled in prior to this secondary use because of the burned surface extending into the pit structure fill to an 80 cm depth.

During Hough's (1919) excavations, he noted the same preponderance of brown ware sherds. However, he commented on the cream-colored decorated sherds (Mogollon Red-on-brown) and presented photographs of what are probably Mimbres Bold Face vessels and sev-

eral Three Circle Neckbanded jars. He notes there were no overall corrugated sherds nor did there seem to be any Reserve wares present. Three sherds recovered by him had figures of a man, a deer, and a mountain sheep. In several child burials, a Three Circle Neckbanded jar with a lug handle and knobs (bosses) encircling the shoulder, an unknown bowl with a stepped rim, an Alma Incised jar, and a Mimbres Bold Face duck effigy jar were found.

Lithic Artifacts

Of the 2,197 lithic artifacts, the majority are core flakes (67.1 percent) and angular debris (21.3 percent) (Table 2.90). The dominant material types are Luna blue agate and chert (Table 2.91), also noted by Hough (1919). A comparison of artifact types in the various pit structures revealed comparable percentages of morphological types; however, there were some differences. Pit Structure 12 contained the highest percentage of every category of lithic artifacts. Pit Structure 13 is lower in angular debris and cores than the other units. It would seem that the least amount of lithic reduction activities were carried out in Pit Structure 13. Material type selection by individual pit structures reveals that (excluding the low counts in Pit Structure 9), Pit Structure 12 has twice the occurrences of Luna blue agate, obsidian, basalt, quartzite, and sandstone of any of the other units. Pit Structure 1 contained the highest amount of chalcedony, with only a few samples represented. Obsidian seems to be the only nonlocal material present at LA 45507.

Most of the projectile points (42.9 percent) were found in Pit Structure 12; the fewest were found in Pit Structure 1 (Table 2.92). As expected, the majority of points are small, notched Mogollon points from this time period. Several late Archaic projectile points were also recovered from Pit Structure 12 and may be curated items. Hough (1919) recovered all small projectile points, mostly made of obsidian and a few of chalcedony, during his explorations on the site. On the OAS project, 90.5 percent are obsidian.

Ground Stone Artifacts

A wide variety of ground stone was recovered from Luna Village. Of the 273 pieces found, most are manos (N = 102) and metates (N = 64) (Table 2.93). Both one and two-hand manos are strongly represented, indicating that the different manos were used for a variety of tasks other than corn processing, as generally indicated by the presence of two-hand manos. Differences in metate types also suggest the grinding of a variety of substances.

The single palette and polishing stone were recov-

Table 2.90. Lithic Artifacts from LA 45507

Cells: Count Row Pct Column Pct	Provenience									Row Total
	General Fill	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Burial 1 (Feat 14)	Fire Pit	Pit Structure 13	
Angular debris	75 16.0% 19.5%	40 8.5% 20.1%	91 19.4% 19.6%	8 1.7% 27.6%	29 6.2% 30.2%	200 42.6% 24.5%	1 .2% 8.3%	4 .9% 28.6%	22 4.7% 12.0%	470 100.0% 21.4%
Core flake	275 18.6% 71.6%	127 8.6% 63.8%	330 22.4% 71.1%	20 1.4% 69.0%	57 3.9% 59.4%	521 35.3% 63.8%	8 .5% 66.7%	7 .5% 50.0%	131 8.9% 71.6%	1476 100.0% 67.2%
Biface flake	15 10.0% 3.9%	24 16.0% 12.1%	30 20.0% 6.5%		2 1.3% 2.1%	56 37.3% 6.9%	3 2.0% 25.0%		20 13.3% 10.9%	150 100.0% 6.8%
Tested cobble						2 66.7% .2%			1 33.3% .5%	3 100.0% .1%
Core	18 29.5% 4.7%	5 8.2% 2.5%	4 6.6% .9%	1 1.6% 3.4%	8 13.1% 8.3%	21 34.4% 2.6%		1 1.6% 7.1%	3 4.9% 1.6%	61 100.0% 2.8%
Cobble tool		1 6.7% .5%	4 26.7% .9%			7 46.7% .9%			3 20.0% 1.6%	15 100.0% .7%
Biface	1 4.5% .3%	2 9.1% 1.0%	5 22.7% 1.1%			9 40.9% 1.1%		2 9.1% 14.3%	3 13.6% 1.6%	22 100.0% 1.0%
Column Total	384 17.5% 100.0%	199 9.1% 100.0%	464 21.1% 100.0%	29 1.3% 100.0%	96 4.4% 100.0%	816 37.1% 100.0%	12 .5% 100.0%	14 .6% 100.0%	183 8.3% 100.0%	2197 100.0% 100.0%

Table 2.91. Lithic Artifact Material Types by Feature

Cells: Count Row Pct Column Pct	Provenience									Row Total
	General Fill	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Burial 1 (Feat 14)	Fire Pit	Pit Structure 13	
Chert	164 22.0% 42.7%	127 17.0% 63.8%	141 18.9% 30.4%	9 1.2% 31.0%	19 2.5% 19.8%	236 31.6% 28.9%	1 .1% 8.3%	3 .4% 21.4%	47 6.3% 25.7%	747 100.0% 34.0%
Chalcedony		5 62.5% 2.5%	1 12.5% .2%			1 12.5% .1%			1 12.5% .6%	8 100.0% .4%
Luna blue agate	166 14.8% 43.2%	55 4.9% 27.6%	241 21.5% 51.9%	17 1.5% 58.6%	62 5.5% 64.6%	459 41.0% 56.3%	9 .8% 75.0%	8 .7% 57.1%	103 9.2% 56.3%	1120 100.0% 51.0%
Obsidian	15 11.7% 3.9%	2 1.6% 1.0%	46 35.9% 9.9%			39 30.5% 4.8%			24 18.8% 13.1%	128 100.0% 5.8%
Basalt	9 30.0% 2.3%		7 23.3% 1.5%		2 6.7% 2.1%	10 33.3% 1.2%	1 3.3% 8.3%		1 3.3% 5%	30 100.0% 1.4%
Andesite				1 20.0% 3.4%	1 20.0% 1.0%	3 60.0% 4%				5 100.0% 2%
Rhyolite	20 22.5% 5.2%	8 9.0% 4.0%	14 15.7% 3.0%	1 1.1% 3.4%	6 6.7% 6.3%	37 41.6% 4.5%	1 1.1% 8.3%		2 2.2% 1.1%	89 100.0% 4.1%
Silicified rhyolitic tuff		1 14.3% .5%	1 14.3% .2%		1 14.3% 1.0%	4 57.1% .5%				7 100.0% .3%
Sedimentary						1 50.0% 1%			1 50.0% 5%	2 100.0% 1%

Table 2.91. Continued.

Cells: Count Row Pct Column Pct	Provenience									Row Total
	General Fill	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Burial 1 (Feat 14)	Fire Pit	Pit Structure 13	
Quartzite	5 12.5% 1.3%	1 2.5% .5%	9 22.5% 1.9%	1 2.5% 3.4%	4 10.0% 4.2%	17 42.5% 2.1%		1 2.5% 7.1%	2 5.0% 1.1%	40 100.0% 1.8%
Sandstone	5 26.3% 1.3%		3 15.8% .6%		1 5.3% 1.0%	8 42.1% 1.0%			2 10.5% 1.1%	19 100.0% .9%
Quartz			1 50.0% .2%			1 50.0% .1%				2 100.0% .1%
Column Total	384 17.5% 100.0%	199 9.1% 100.0%	464 21.1% 100.0%	29 1.3% 100.0%	96 4.4% 100.0%	816 37.1% 100.0%	12 .5% 100.0%	14 .6% 100.0%	183 8.3% 100.0%	2197 100.0% 100.0%

Table 2.92. Projectile Points from LA 45507

Cells: Count Row Percent	Luna Blue Agate	Obsidian	Row Total
Unidentified	1 33.3%	2 66.7%	3 100.0%
Small Corner-Notched		13 100.0%	13 100.0%
Small Side-Notched		1 100.0%	1 100.0%
Flake Point		1 100.0%	1 100.0%
Chiricahua		1 100.0%	1 100.0%
San Pedro	1 50.0%	1 50.0%	2 100.0%
Column Total	2 9.5%	19 90.5%	21 100.0%

ered from Pit Structure 12. A small, oval palette with a circular concavity was also noted by Hough (1919) in his excavations. Pit Structure 13 contained a disproportionate percentage of the one-hand manos and the least number of two-hand manos. It also yielded only one metate, an indeterminate fragment. A single ¾-grooved axe of rhyolite was recovered from the general fill near Pit Structure 1.

Ground stone artifacts are dominated by those made from rhyolite (52.6 percent, Table 2.94) followed by a lesser amount of andesite and basalt. Differences in material types for the same morphological artifact may likely be attributable to the varying degrees of crushing desired as well as variation in substances to be ground (Zier 1981).

Miscellaneous Artifacts

A number of miscellaneous items (N=50) were found at

Luna Village (Table 2.95). The most, by far, are 31 quartz crystals, of which 68.8 percent are from Pit Structure 12. Mineral specimens, including chrysocolla, azurite, and limonite were also represented.

Pit Structure 12 contained the highest frequency of items (62.5 percent). Most were quartz crystals and ornaments. Only Pit Structure 3 had an additional broken bracelet piece. Two cloud-blower pipes were found on the site, one in Pit Structure 3 and the other in the trash pit near Pit Structure 9. It is of interest that no effigies were recovered from the site. However, Hough (1919) recovered a single bear effigy, but no pipes. The effigy was drilled biconically.

Two bracelets from Pit Structure 12 are made from glycymeris shell; another ornament from this unit is of unknown shell as is one from Pit Structure 3. Hough (1919) also found three fragments of a shell bracelet and a tubular shell bead. A jet and a tubular bead from a deer bone were also recovered. Hough (1919) recovered an

Table 2.93. Ground Stone from LA 45507

Cells: Count Row Percent Column Percent	Provenience										Row Total
	General Fill	Outside Surface	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Pit Structure 13			
Indeterminate Fragment	16	4	2	6	4	4	4	4	2	42	
	38.1% 18.8%	9.5% 15.4%	4.8% 100.0%	14.3% 16.7%	9.5% 40.0%	9.5% 10.0%	9.5% 9.1%	9.5% 9.1%	4.8% 6.7%	100.0% 15.4%	
Polishing Stone							2	2		2	
							100.0% 4.5%			100.0% .0%	
Abrading Stone	6	2					4			12	
	50.0% 7.1%	16.7% 7.7%					33.3% 9.1%			100.0% 4.4%	
Shaped Slab				2				2		4	
				50.0% 5.6%				50.0% 6.7%		100.0% 1.5%	
Palette				2			2			4	
				50.0% 5.6%			50.0% 4.5%			100.0% 1.5%	
Lapidary Stone	18	4					8	6		38	
	47.4% 21.2%	10.5% 15.4%					21.1% 18.2%	15.8% 20.0%		100.0% 13.9%	
Mortar	2									1	
	100.0% 2.4%									100.0% .7%	
Pestle	2									2	
	100.0% 2.4%									100.0% .7%	
Mano	4					4				16	
	25.0% 4.7%			12.5% 5.6%		25.0% 10.0%	12.5% 4.5%			100.0% 5.9%	
One-hand Mano	6	8		6			8	12		40	
	15.0% 7.1%	20.0% 30.8%		15.0% 16.7%			20.0% 18.2%	30.0% 40.0%		100.0% 14.7%	
Two-hand Mano	6	4		10	6		8	2		46	
	34.8% 18.8%	8.7% 15.4%		21.7% 27.8%	13.0% 60.0%		17.4% 18.2%	4.3% 6.7%		100.0% 16.8%	
Metate	4					2				8	
	50.0% 4.7%					25.0% 5.0%				100.0% 2.9%	
Trough Metate	6	2		2		26	6			42	
	15.8% 7.1%	5.3% 7.7%		5.3% 5.6%		61.90% 65.0%	14.2% 13.6%			100.0% 15.3%	

Table 2.93. Continued.

Cells: Count Row Percent Column Percent	Provenience								Row Total
	General Fill	Outside Surface	Pit Structure 1	Pit Structure 3	Pit Structure 9	Trash Pit	Pit Structure 12	Pit Structure 13	
Trough Metate	6 15.8% 7.1%	2 5.3% 7.7%		2 5.3% 5.6%		26 61.90% 65.0%	6 14.2% 13.6%		42 100.0% 15.3%
Slab Metate	4 28.6% 4.7%	2 14.3% 7.7%		6 42.9% 16.7%		2 14.3% 5.0%			14 100.0% 5.1%
Axe	1 100.0% 1.2%								1 100.0% .7%
Column Total	85 31.1% 100.0%	26 9.5% 100.0%	2 .7% 100.0%	36 13.2% 100.0%	10 3.7% 100.0%	40 14.7% 100.0%	44 16.1% 100.0%	30 11.0% 100.0%	273 100.0% 100.0%

Table 2.94. Ground Stone Material Types from LA 45507

Cells: Count Row Percent Column Percent	Material Type								Row Total
	Basalt	Rhyolite	Tuff	Andesite	Rhyolitic Tuff	Sandstone	Quartzite	Quartzitic Sandstone	
Fragment	2 9.5% 9.5%	10 47.6% 13.9%	1 4.8% 25.0%	3 14.3% 13.6%	3 14.3% 37.5%	2 9.5% 25.0%			21 100.0% 15.3%
Polishing Stone	1 100.0% 4.8%								1 100.0% .7%
Abrading Stone	4 66.7% 19.0%	1 16.7% 1.4%			1 16.7% 12.5%				6 100.0% 4.4%
Shaped Slab			1 50.0% 25.0%			1 50.0% 12.5%			2 100.0% 1.5%
Palette	1 50.0% 40.8%			1 50.0% 4.5%					2 100.0% 1.5%
Lapidary Stone	2 10.5% 9.5%	15 78.9% 20.8%		2 10.5% 9.1%					19 100.0% 13.9%
Mortar					1 100.0% 12.5%				1 100.0% .7%
Mano		3 37.5% 4.2%		3 37.5% 13.6%		2 28.0% 25.0%			8 100.0% 5.8%
One-hand Mano	3 15.0% 14.3%	6 30.0% 8.3%		8 40.0% 36.4%		1 5.0% 12.5%	1 5.0% 100.0%	1 5.0% 100.0%	20 100.0% 14.6%

Table 2.94. Continued.

Cels: Count Row Percent Column Percent	Material Type							Row Total
	Basalt	Rhyolite	Tuff	Andesite	Rhyolitic Tuff	Sandstone	Quartzite		Quartzitic Sandstone
Two-hand Mano	4 17.4% 19.0%	12 52.2% 16.7%	1 4.3% 25.0%	3 13.0% 13.6%	2 8.7% 25.0%	1 4.3% 12.5%	1 4.3% 12.5%	23 100.0% 16.8%
Metate	4 100.0% 5.6%							4 100.0% 2.9%
Trough Metate	1 5.3% 4.8%	15 78.9% 20.8%	1 5.3% 25.0%	2 10.5% 9.1%				19 100.0% 13.9%
Slab Metate	2 28.6% 9.5%	3 42.9% 4.2%			1 14.3% 12.5%	1 14.3% 12.5%		7 100.0% 5.1%
Slab/Basin Metate	1 50.0% 4.8%	1 50.0% 1.4%						2 100.0% 1.5%
3/4 Grooved Axe		1 100.0% 1.4%						1 100.0% .7%
Pestle		1 100.0% 1.4%						1 100.0% .7%
Column Total	21 15.3% 100.0%	72 52.6% 100.0%	4 2.9% 100.0%	22 16.1% 100.0%	8 5.8% 100.0%	8 5.8% 100.0%	1 .7% 100.0%	137 100.0% 100.0%

Table 2.95. Miscellaneous Artifacts from LA 45507

Cels: Count Row Percent Column Percent	Provenience							Row Total	
	General Fill	Pit Structure	Pit Structure	Trash Pit	Pit Structure	Burial 1 (Feat 14)	Fire Pit		Pit Structure
Pendant Blank	1 100.0% 33.3%		3 100.0% 9.1%		12 100.0% 36.4%	14 100.0% 36.4%		13 100.0% 36.4%	1 100.0% 2.1%
Bone Tube (bead)					1 100.0% 3.3%				1 100.0% 2.1%
Bracelet					2 100.0% 6.7%				2 100.0% 4.2%
Pipe			1 50.0% 20.0%	1 50.0% 50.0%					2 100.0% 4.2%

Table 2.95. Continued.

Cells: Count Row/Percent Column Percent	Provenience													Row Total
	General Fill	Pit Structure 1	Pit Structure 3	Pit Structure 12	Burial 1 (Feat. 14)	Fire Pit	Pit Structure 13	Row Total						
Broken Ornament		1 50.0%	1 20.0%	1 50.0%	1 3.3%		2 100.0%	2 100.0%						
Mineral	1 14.3%	1 20.0%	1 20.0%	4 57.1%	1 13.3%		1 14.3%	7 100.0%						
Pigment		1 50.0%	1 20.0%				1 50.0%	2 100.0%						
Unmodified Quartz		2 7.1%		1 3.6%	1 3.6%	1 3.6%	1 3.6%	28 100.0%						
Culturally Modified Quartz	1 3.3%		1 20.0%		22 78.6%		1 3.6%	28 100.0%						
Column Total	3 6.3%	2 4.2%	5 10.4%	30 62.5%	1 2.1%	1 2.1%	4 8.3%	48 100.0%						

Table 2.96. Fauna Recovered from Luna Village

Fauna	General Fill	Trash Pit	Burial (Feat. 14)	Fire Pit	Pit Structure 1	Pit Structure 3	Pit Structure 9	Pit Structure 12		Pit Structure 13	Total
								Pit Eill	Vent		
Mammal		7	1	49		26		266	202	41	592
Small Mammal				88	4	10		139	110	37	388
Medium Mammal	6			80	2	9	3	118	54	8	280
Large Mammal	73			174	9	56	8	282	30	80	712
Rodent			1				1	4	3	1	10
Squirrel					1			4		1	6
Prairie Dog	1	1						19		9	30
Pocket Gopher	4			2	11	11	1	53	9	31	122
Kangaroo Rat			2					3			5
Mouse				2				27	1	1	31
Rat			1	1	1	6		52	2	5	68
Rabbit						1					1
Cottontail	3		1	2		2		66	1	16	91

Table 2.96. Continued.

Fauna	General Fill	Trash Pit	Burial (Feet. 14)	Fire Pit	Pit Structure 1	Pit Structure 3	Pit Structure 9	Pit Structure 12		Pit Structure 13	Total
								Pit Fill	Vent		
Jack Rabbit				1		1		19	1	22	44
Canid					1			2			3
Fox				1							1
Raccoon	10										10
Artiodactyl	4					3	2	20		19	48
Elk					1						1
Deer	3		1	1				17	1	16	40
Pronghorn					1			2			3
Bison								2			2
Cattle	1										1
Big-horned sheep					1			1			2
Birds				4	1	3		20	1	6	35
Grebe										1	1
Hawk						1		1			2
Falcon								10			10
Bobwhite								9		4	13
Quail	1					2		7		1	11
Turkey								4			4
Mourning Dove								18			18
Jays/crows								1			1
Mexican jay								12		1	13
Crow										1	1
Meadowlarks										6	6
Frogs/toads										1	1
Toads								1			1
Total	102	8	7	405	32	133	15	1178	415	310	2608

ovoid pendant of fine-grained stone with multiple vertical grooves on one side and two holes drilled at the top. It measured 4.7 cm long. The shell and jet are nonlocal materials as well as two mineral samples of chrysocolla and one of azurite. Hough (1919) also found several caches of brilliant yellow ochre and several limestone rocks that had been planed smooth.

Bone Tools

Twenty-eight bone tools were recovered from LA 45507. Most are indeterminate fragments (75 percent). However, six bone awls and one bone tube were recovered from the site.

ANCILLARY STUDIES

Faunal Remains

A large number of faunal remains (N=2,608) were recovered from LA 45507 (Table 2.96). There were also a fair number of rodent species present (N=271, 10.4 percent), most in Pit Structure 12. However, it is possible that some of these may have been used as subsistence items. Large mammals total 814 while medium-sized mammals are represented by 283 bones and small mammals account for 523 pieces. Deer and indeterminate artiodactyl make up most of the identifiable large mammal remains; there is a minor presence of elk, pronghorn, bison, and big-horned sheep. Bear was also recovered by Hough (1919). The majority of medium-sized mammals are indeterminate. There is only a low representation of canid and gray fox. A canid coprolite was recovered from the bench in Pit Structure 12. Identifiable small mammals include cottontail and jackrabbit; cottontail bones are more than double that of jackrabbit. A variety of bird species are represented; a few turkey remains were recovered from Pit Structures 3 and 12. Hough (1919) also found several turkey remains.

Pit Structure 12 contained 61.3 percent of all faunal species found on the site. This includes 415 pieces recovered from the large ventilator shaft leading into the structure. The variety of species in the vent is puzzling and includes large mammal as well as a mixture of smaller animals. The vent may have served as a trash container by the group using the nearby firepit. Fifty-eight sherds were also recovered from the vent. In addition, the several rodent types also found in the vent may have found it an attractive burrowing space. Pit Structure 12 is the largest structure on the site; however, the high frequency of faunal remains found here suggest the partially filled pit structure may also have been used as a trash repository. The fill above the burned surface spilling over from

the firepit (Levels 1-3) is undoubtedly debris from the users of the firepit.

Skeletal Remains

One adult and one child burial were recovered from LA 45507. Also, many small fragments of human remains were found in the upper general fill north of Pit Structure 3. They likely were unearthened by the excavation of a modern house foundation 20 m to the north. Local residents recall a prehistoric burial being found here. Several more scattered human bones were recovered near Pit Structure 1.

The adult, a young woman, was found in the fill of Pit Structure 13 at 58 cm depth, apparently laid in a pit dug into the fill. No burial goods were associated with her. The child burial had been placed in an oval-shaped pit superimposed over Pit Structure 12. The burial was possibly wrapped in grass matting. Few items were found with the remains and these included a bone awl, quartz crystal, a few sherds, and lithic artifacts. Hough (1919) recorded a burial area with five children, buried usually with a single ceramic vessel (one had a chert scraper and a few deer bones), at his excavations near the Dance Pit to the north.

Macrobotanical Remains

Thirty-three flotation samples were analyzed from LA 45507. Charred seeds of the weedy annual plants pigweed and goosefoot dominate the assemblage from the seven samples from Pit Structure 1. Charred bugseed and purslane, two other weedy annuals, were recovered from hearth samples and Posthole 1. Charred patata seeds were also recovered from Posthole 1. Contamination by uncharred, noncultural plant remains was minimal, limited to goosefoot and purslane seeds recovered in two samples from the hearth.

Flotation samples from Pit Structure 9 include those from two superimposed hearths, an ash pit, a possible posthole, and an extramural trash pit nearby. Charred goosefoot was recovered from the possible posthole and the hearths, while purslane from the posthole and pigweed from the ash pit were restricted to single contexts. The trash pit yielded the only charred prickly pear seeds from LA 45507. The only other nonwood perennial consisted of nonreproductive pine parts like bark. Evidence of maize was restricted to the upper hearth and trash pit. Uncharred plant remains include the seeds of bugseed, buckwheat family, goosefoot, purslane, spurge, groundcherry, and seepweed.

The archaeobotanical remains associated with Pit Structure 3 include fill from the hearth, a bowl and bro-

ken vessel on the floor, two metates, a subfloor pit, trash fill from a nearby arroyo, and a roasting pit. One of three samples analyzed from the hearth yielded the only evidence of maize from the structure. Other economic plant remains included charred goosefoot, purslane, and pigweed seeds and nonreproductive pine plant parts such as bark. Uncharred contaminants included bugseed, grass family, pigweed, goosefoot, purslane, spurge, and groundcherry seeds.

Samples from Pit Structure 12 were from two floor pits, general fill near a vessel, fill from the ventilator shaft, general fill, and roof fall as well as a burial pit adjacent to the structure. The burial pit and fill of the ventilator shaft are associated with a later occupation of the site. All of the roof fall and general fill samples produced evidence of maize, consisting of cupules, kernels, and embryos. Weedy annual seeds make up the remainder of charred plant parts recovered, including goosefoot, pigweed, and purslane. The trash fill from the ventilator shaft was most productive with the recovery of charred bugseed, cheno-ams, goosefoot, unidentifiable, pigweed, and purslane seeds and nonreproductive pine plant parts. Pit 2 within the structure yielded only winged pigweed. The nonreproductive pine plant parts from the burial pit were probably introduced into the pit at the time of interment. The only remains from the exterior roasting pit are charred weedy annuals, nonreproductive pine specimens and unidentifiable seeds.

From Pit Structure 13, samples were examined from the hearth, burned roof fall, a vessel, and Posthole 1. Charred pigweed, goosefoot, cheno-ams, and purslane seeds were recovered along with charred pine barkscales. A single uncharred cheno-am seed from a hearth sample was the only noncultural plant remain recovered.

Sixteen of 19 full-sort samples contained pine bark or other nonreproductive parts, probably representing fuelwood residue. Conifer is the dominant wood type from LA 45507. Trace amounts of oak, ash, and indeterminate nonconifer taxa were also present. Archaeobotanical remains indicate a minimal dependence on maize agriculture and the use of locally available resources for fuel and subsistence items.

Pollen Remains

Twelve pollen washes and 18 soil samples were submitted for pollen analysis. Most were retrieved from ground stone and ceramics on the floors and in the fill of the five pithouses. Tables 2.97 and 2.98 present a tabulation of pollen recovered from the features at this site. It may be noted that either corn pollen or corn starch grains are present in all pithouses. The most heavily represented pollen comes from pine, sunflower varieties, grasses, and

cheno-ams. The higher amount of grasses in the burial pit near Pithouse 12 may indicate the use of grass matting to wrap the human remains for burial.

The data are presented in two tables to demonstrate the differences obtained between pollen retrieved from soil samples and that recovered from pollen washes taken from pit structure artifacts. Table 2.98 reveals that many flowering plants were retrieved from pollen washes that were not obtained from soil samples. Also, maize pollen was found to be present within all structures via pollen washing and not from soil sampling.

Pit Structure 12 stands out from the others with the sole occurrences of oak, elm, nightshade varieties (possibly tobacco), milkwort, greasewood, buttercup family, and bellflower. However, maize representation in the structure is minimal. This is also the largest pit structure and the only one with a bench and ventilator shaft. The addition of these pollen types may indicate specialized activities were carried out here, possibly of a ceremonial nature.

Seasonality of use for the variety of taxa represented would minimally seem to be spring through late fall because of the presence of corn pollen, grasses, flowering plants, and oak (possibly from acorn gathering). Evidence for winter use through the presence of extensive storage facilities is not apparent; however, we cannot rule out year-round occupation based solely on the pollen.

Coprolite Analysis

A canid coprolite was recovered from the dirt bench in Pit Structure 12. Two canid bones were also found in the structure. The coprolite produced two types of grasses, pine, rose species, sagebrush, wild parsley, mountain mahogany, spirea, plum/cherry, oak, cheno-ams, globe mallow, and members of the ragweed, rabbitbrush, snakeweed, and sunflower family. Cummings and Puseman (Volume 5) suggest deposition of the coprolite occurred in late spring or early summer.

Because the coprolite was in direct contact with the surface of the bench and was well below the later burned surface, we suggest the dating of the deposit is likely right after abandonment of the structure.

DATING METHODS

From Luna Village, 25 radiocarbon, 24 tree-ring (from which only four dates were obtained), 4 obsidian, and 4 archaeomagnetic samples were submitted from the five pithouses, a burial pit, and a firepit. The radiocarbon data are presented in Table 2.99 and a graphic representation of all dates is given in Figure 2.195.

Table 2.97. Pollen Samples from LA 45507

	Pit Structure 1	Pit Structure 3	Pit Structure 9	Pit Structure 12	Pit Structure 13	Burial
Pine	Floor, Metate	Comal, olla, sherd, groundstone	Mano	Sherd, metate, comal, ground stone, olla	Comal	Soil
Cheno-arn	Floor, metate	Comal, olla, sherd, groundstone	Mano	Sherd, metate, comal, ground stone, olla	Comal	Soil
Sunflower	Floor, metate	Comal, olla, sherd, groundstone		Sherd, metate, comal, ground stone	Comal	Soil
Grasses	Metate	Groundstone	Mano	sherd, metate, comal, olla	Comal*	Soil*
Sagebrush	Metate					
Corn	Metate		Mano	Sherd		
Gobe Mallow	Metate					
Evening Primrose		Comal				
Mormon Tea		Olla, groundstone		Sherd		
Rickly Pear		Groundstone	Mano		Comal	
Rose Family		Sherd				
Juniper				Comal		
Oak				Comal, olla		

Table 2.98. Pollen Washes from LA 45507

	Pit Structure 3	Pit Structure 9	Pit Structure 12	Pit Structure 13
Pine	Metate	Mano	Metate	Mano
Cheno-arns	Metate	Mano	Metate	Mano*
Sunflower	Metate	Mano	Metate	Mano
Grasses	Metate	Mano	Metate	Mano*
Sagebrush	Metate	Mano	Metate	Mano
Corn	Metate	Mano	Metate	Mano
Mormon Tea			Metate	Mano
Rose Family			Metate	
Juniper			Metate	Mano
Oak			Metate	
Elm			Metate	
Nightshade			Metate	
Milkwort			Metate	
Greasewood			Metate	
Buttercup			Metate	
Bellflower			Metate	

*High Concentrations

The most striking aspect of Figure 2.195 is the close contemporaneity of the four archaeomagnetic samples from hearths in four of the five pit structures. The stone slab hearth in Pit Structure 1 did not allow for archaeomagnetic sampling. The four mid-point dates cluster between A.D. 795 and A.D. 805. Five radiocarbon dates

and one tree-ring sample also align with these dates. Pit Structures 9 and 12 each have a single C-14 date that runs approximately 100 years later than the A.D. 800 date. In each case, it is a date from structural fill and likely represents trash from later Three Circle occupations.

Pit Structure 1 was dated to ca. A.D. 960-970 based

Table 2.99. C-14 Dates for LA 45507

Unit	Beta No.	Age B.P.	Calibrated 1- Sigma Date	Calibrated 2- Sigma Date	Intercept Date	Context
155N/239E	71 718	1 140±70	A.D. 820-830 860-990	A.D. 720-740 760-1020	A.D. 900	P12 Fill (40-60 cm)
155N/240E	71 719	1 250±70	A.D. 680-880	A.D. 660-970	A.D. 780	P12 Hearth Area (155 cm)
111N/97E	76 724	1 160±50	A.D. 855-970	A.D. 775-995	A.D. 885	P9 Fill (74-117 cm)
156N/238E	76 725	1 250±90	A.D. 675-885	A.D. 640-990	A.D. 780	P12 Near Floor (153 cm)
101N/96E	69 420	1 100±60	A.D. 890-1010	A.D. 800-1030	A.D. 970	P1 Near Floor (80 cm)
101N/98E	69 421	1 410±90	A.D. 590-680	A.D. 450-790	A.D. 650	P1 Roof Fall (73 cm)
102N/98E	69 422	1 160±80	A.D. 780-990	A.D. 680-1020	A.D. 890	P1 Roof Fall (73 cm)
101N/97E	69 423	1 100±70	A.D. 880-1010	A.D. 780-1040	A.D. 970	P1 Posthole (116 cm)
102N/95E	69 424	1 160±60	A.D. 800-970	A.D. 720-740 760-1010	A.D. 890	P1 Posthole (143 cm)
103N/97E	69 425	1 160±80	A.D. 780-990	A.D. 680-1020	A.D. 890	P1 Hearth (108 cm)
128N/95E	69 426	1 390±80	A.D. 620-690	A.D. 540-790	A.D. 660	P3 Posthole (162 cm)
104N/96E	69 427	11 20±120	A.D. 780-1020	A.D. 670-1180	A.D. 960	P1 Floor (77 cm)
129N/96E	69 428	1 400±70	A.D. 620-680	A.D. 550-770	A.D. 650	P3 Floor (157 cm)
127N/97E	69 429	1 420±60	A.D. 610-670	A.D. 550-700	A.D. 640	P3 Posthole (155-189 cm)
130N/95E	69 430	1 240±70	A.D. 690-880	A.D. 660-970	A.D. 780	P3 Post (160-203 cm)
129N/97E	69 431	15 20±150	A.D. 400-660	A.D. 230-800	A.D. 560	P3 Roasting Pit (171-178 cm)
111N/98E	69 432	1 400±70	A.D. 620-680	A.D. 550-770	A.D. 650	P9 Floor (50 cm)
110N/98E	69 433	16 50±160	A.D. 230-600	A.D. 60-680	A.D. 410	P9 Posthole (L2)
155N/242E	69 434	1 610±60	A.D. 400-540	A.D. 340-600	A.D. 430	Outside Pit (15-20 cm)
153N/241E	69 435	16 30±110	A.D. 330-560	A.D. 160-650	A.D. 420	P14 Burial Pit
155N/240E	69 436	1 290±90	A.D. 660-870	A.D. 620-970	A.D. 710	P12 Hearth (150-160 cm)
153N/230E	69 440	1 220±50	A.D. 770-880	A.D. 680-960	A.D. 800	P13 Roasting Pit (81-104 cm)
155N/240E	69 441	15 00±100	A.D. 440-650	A.D. 380-700	A.D. 590	P12 Hearth (155-162 cm)
156N/240E	78 274	12 50±120	A.D. 665-905 920-950	A.D. 600-1020	A.D. 780	P12 Fill (40-60 cm)
154N/239E	78 275	1 300±50	A.D. 670-780	A.D. 650-865	A.D. 695	P12 Floor (150)

on three radiocarbon samples, placing it late in the Three Circle phase. The burial pit and firepit near Pit Structure 12 have unusable aberrant C-14 dates; however, dating of the firepit stain allowed for the temporal assignment of ca. A.D. 900 to them.

Of the 33 charted dates, 15 appear to represent valid assessments. The use of old wood by prehistoric villagers is apparent in most of the pit structures. Seven of the ten dates from posthole wood and roof fall beams have dates ranging up to 125 years too early for the ceramic assemblage. Several obviously aberrant dates are also evident in the chart. While the four tree-ring dates are all missing unknown numbers of rings, one in Pit Structure 12 correlated with site occupation dates. The dating results from the Tree-Ring Laboratory are:

Pit Structure 1: 731p-827++vv
745p-837vv
791p-837vv
Pit Structure 12: 728-789vv

While an examination of floor and subfloor ceramics could not distinguish the pit structures temporally, the archaeomagnetic and other associated dates seem to clearly place four of the units at around A.D. 800 and another, Pit Structure 1, near A.D. 960-970. The Three Circle phase has been historically dated A.D. 900-1000 (Haury 1936a; Wheat 1955; Danson 1957; Wasley 1960; and Bullard 1962). However, more recent endeavors have pushed the beginning of the phase back in time while leaving A.D. 1000 as the terminal date. LeBlanc

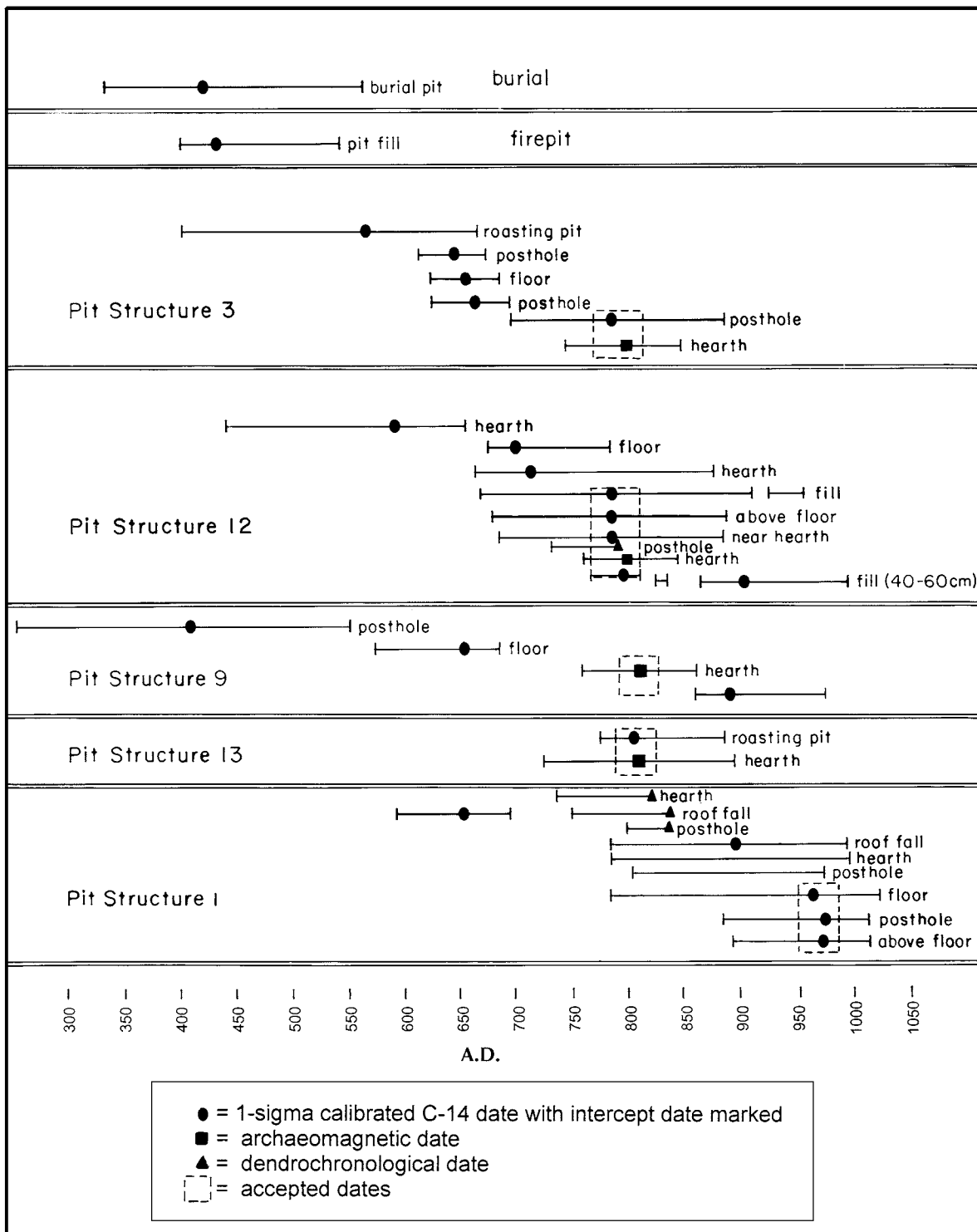


Figure 2.195. Structural dates for Luna Village in order of increasing age.

(1980) and Anyon et al. (1981) believe it extends as far back as A.D. 750. Graybill (1973) places the beginning date at A.D. 850 based on cutting dates from the Mimbres Valley clustering between A.D. 858 and 898 and Cordell (1984a, 1984b) agrees with him. But all of the later researchers have based their dates on Mimbres area results.

Four obsidian samples from the site were submitted to the Obsidian Hydration Laboratory for dating. Two of the dates were aberrant at 668 and 252 B.C. Another, from Pit Structure 13 within the hearth, dated to A.D. 1109, too late for the Three Circle phase ceramics and radiocarbon dates. Its location within a hearth may have affected the dating of this sample. One other obsidian date at A.D. 710 was from a deep unit in general fill. Several C-14 dates correspond to this same time period, but it seems too early for a Three Circle occupation.

Fine-tuning of the northern Mogollon Three Circle phase has never been attempted. However, based on the solid archaeomagnetic and radiocarbon dates for Luna Village and the presence of associated Three Circle phase ceramics, we support a beginning date of ca. A.D. 800 as valid for the Mogollon Highlands.

Because of the presence of a number of late Three Circle sherds in the fill of all the pit structures and because we know at least one probable late pithouse is 20 m upslope with possibly over 50 more structures in the adjacent surroundings, we believe there is a much larger, later Three Circle component at Luna Village than is indicated by our excavations.

SITE INTERPRETATION

Based on archaeomagnetic, radiocarbon, and dendrochronological dating results as well as ceramic dating, we conclude that Luna Village was occupied during the Three Circle phase. However, occupation seems to have occurred at various times during the period. Four of the five pit structures date to early in the phase at ca. A.D. 800, while another dates late in the period at about A.D. 970. Because the site possibly consists of up to 100 pit structures, we do not know if occupation was continuous throughout the phase or if there were major gaps in settlement over the site, as indicated by our limited pithouse dates.

Pushing the beginning date for the Three Circle phase back to A.D. 800 seems warranted by our absolute dates and by the presence of Three Circle ceramics at this time. The end date of A.D. 1000 does not appear to change. It is interesting that no Reserve sherds were found on this site. However, Red Mesa Black-on-white makes a minor appearance at this time. These sherds are thought to derive from the north in the Cibola area. A

lesser amount of Mimbres Bold Face associated with the Mimbres area is present (4.2 vs. 0.2 percent of the ceramic assemblage). We may be observing the beginning of shifts or subtle variations in political or economic alignments from the southern Mimbres area to the northern Cibola area.

Architecturally, there are several construction methods for the pit structures that seem to vary little from the preceding San Francisco phase through the Three Circle period. Most pit structures are subrectangular with support posts set into the four corners. All have roof entries with the possible exception of Pit Structure 13. Hearths are basically centrally located with a roasting pit or other pit also possibly present. The presence of benches seems to vary the most, as two of the five pit structures contained either a partial or full encircling bench. Three of the seven pit structures excavated by Hough (1919) in the northern part of the site also contained benches. We do not know, at this point, whether benches are part of ceremonial accouterments or not (Lekson 1988a; Saitta 1991). The full bench was located in Pit Structure 12, the largest feature excavated—a 25.5 sq m floor area compared to an average of 13.3 sq m for the other four structures. This was also the only unit with a ventilator system. The pit structure may have served a ceremonial as well as domestic function because of these features and its greater size.

Other than Pit Structure 12, size does not seem to vary among pit structures regardless of whether they date early or late in the phase. Pit Structure 1, the latest dated structure found, had a floor area of 17.5 sq m, while the three earlier ones (Pit Structures 3, 9, and 13) had areas of 9.75, about 9.0, and 17.06 sq m, respectively. Hough (1919) listed the size on five of his seven excavated units and these range from 12.9 sq m to 19.3 sq m (average of 15.4 sq m), approximately the same size as those at our units on the southern edge of the site.

Depth of pit structures may not vary much among the units. The deepest is Pit Structure 12 at 1.6 m. Depths of the other units ranged from .20 and .50 for Pit Structures 9 and 1 to .80 and 1.3 m for Pit Structures 13 and 3. However, Pit Structures 1 and 9 are on the south side of the highway and there has been much previous disturbance here, including the cutting of a dirt road in the early twentieth century, a cattleguard crossing south through the area, and development of a major erosional channel that erased parts of Pit Structures 1 and 9. Because of the very shallow depth of Pit Structure 9, the southern right-of-way may have been prehistorically at a higher elevation and was bladed down at some point, rendering any estimation of depths here invalid. Hough (1919) gives depths for three of his excavated structures at an average of 1.26 m which would, when added to our data, give an average depth of 1.25 m for all excavated

units on the site.

While depth of intact pit structures across the entire site seems to hold statistically constant, there is some variation in structural shape and other attributes. Pit structures in the highway right-of-way are all subrectangular with the exception of Pit Structure 13. In Hough's north area, the pit units are all circular. In at least one case, the hearth is not centrally located. His Pit 5 hearth (Hough 1919) was built against the wall and flanked by clay jambs. All others are shallow basin features with two exceptions. Pit Structure 1 had an upright slab-lined hearth while Pit 6 (Hough 1919) had a flat, paved area upon which ash was found. Upright slab hearths are common at the Hough site (Tularosa phase), 1.7 km to the west. Pit Structure 1 dates later in the Three Circle phase than the other OAS units and may be evidence of the beginning of this trend.

Post patterns in the northern part of the site seem to range from a central post to several peripheral ones. Units here are much smaller and would logically function well with a single post. Those in the south area excavated by OAS are all four corner insets with occasional shoring by smaller posts.

Hough (1919) records two units that he describes as mealing houses. These units are rectangular with one measurement given at 12.9 sq m. However, this is comparable to his pit structure size at 15.4 sq m and we wonder at the distinction. Mealing House 1 is the best described and has four corner posts, numerous metates (some on stone andirons), ceramic vessels, and a "hearth" formed from two thick rolls of clay joined to form a 50-90 degree angle with a knob at the junction and the two ends. These mealing units sound similar to our pit structures, although smaller and containing clay "hearths."

Unique to the north portion of Luna Village was the finding of a Great Dance Pit (Hough 1919) near the smaller pit units. It was first seen as a large circular depression measuring 25.6 m across. The unit was trenched and found to have a width of 15.2 m by about 3 m deep with a floor area of 231 sq m. A bench, 1.2 m wide was presumed to have encircled the entire structure. No other features were apparently found in the trenching, hence the suggestion it was a dance pit. Today, we would probably call a structure of this magnitude a great kiva, assuming there were auxiliary features such as a ventilator system with an associated deflector, and possible wall

niches and foot drums.

The differences between the two areas, separated by 200 m, are not of major importance. These consist of minor variations in structures, post placement, and types and location of hearths. Ceramics, as far as we can compare them, appear to be comparable in each area. No Reserve wares were present in either portion. It is not possible to assign an early or late Three Circle phase to this northern component without obtaining datable material from a sample of the structures. There is, therefore, no way to support the contemporaneity of the approximate 100 pit structures on the site. There is some variation present architecturally, although it is not seen in the ceramics. Function seems to guide the variation, given the minor disparities, excluding the possible kiva units. The ages among the units may also be causing some of the differences, although our data manipulations could not determine this.

For the portion of the site excavated by OAS, the floral spectrum indicates occupation at least from spring through late fall. Maize was present in all pit structures, but heavy reliance is not indicated. Charred seeds of the weedy annual plants of goosefoot, purslane, and pigweed dominate the plant assemblage from LA 45507. Subsistence seems to have been balanced between the hunting of a variety of large and small mammals and the gathering of wild plant foods. The lack of stored foods and adequate storage facilities does not allow us to assume a winter settlement: however, the heavy labor investment in large, deep structures, the presence of hearths in each one, the variety and quantity of artifacts and subsistence items, suggests overwintering. Duration of occupation in terms of years or seasons is not clear, given that there is a generalized lack of remodeling evident throughout the site. Only the hearth and a portion of the floor in Pit Structure 12 show any signs of repair.

Luna Village is the largest Three Circle phase village recorded in the northern Mogollon area. It has provided important information on the broad variation of pit structure architecture found in the Three Circle phase, the possible shifting of ceramic trade patterns, and subsistence adaptations including the dietary regimen of balanced meat and plant foods with a lack of heavy reliance on maize. Abandonment of the village occurred before Reserve wares appeared regionally around A.D. 1000.

LA 45508

HUMMING WIRE SITE

Yvonne R. Oakes

LA 45508 was first recorded on a NMSHTD right-of-way survey (Koczan 1982) along U.S. 180 just south of the village of Luna. It was described as an Archaic lithic scatter based on the finding of a Jay-like projectile point and numerous biface flakes. The projectile point was not relocated during OAS testing procedures. The scatter extends along both sides of the highway and measures 48 m north-south by 45 m east-west for an area of 2,100 sq m, most of it within the proposed right-of-way (Fig. 2.196). A powerline transmission station cuts into the southwest corner of the site and the current highway bisects the artifact scatter.

Also included in the site description were two small, cobbled Reserve phase roomblocks on knolls on both sides of the highway well outside of the right-of-way. These should be designated as separate sites. However, some cultural material from the western rooms has eroded downslope into the lithic artifact scatter.

OAS conducted a testing program on the site in 1990 (Oakes 1991). Seven test pits were excavated, varying in depth from 20 to 50 cm until a clayey, sterile soil was reached. Auger probes in each test unit confirmed that cultural fill had ceased. In addition, 21 auger tests were placed systematically at 2 m intervals over portions of the site containing the densest artifacts. These reached an average depth of 47 cm.

In Test Pit 2, a compacted surface was found at 38 cm below the present ground surface. Artifacts were present throughout the fill. Found on the compaction was a core, a one-hand mano, and a large sherd of Alma Plain Brown Ware. It was thought this feature might be a pit. No other cultural features were uncovered; however, dark, charcoal-flecked soil appeared in three other test pits on this west side of the site. A total of 219 lithic artifacts and 29 sherds were recovered during testing including five Archaic-like projectile points. The sherds consisted of Reserve Black-on-white, Alma Plain, and San Francisco Red. Several pieces of ground stone were also recovered. As a result of the testing, the site was still considered to be Archaic with the possible presence of an early Pithouse period component, based on the sherds. Site limits were increased to 3,300 sq m.

A data recovery plan was submitted for the site and excavations began in 1992. After excavation, the site was considered to be multicomponent, containing an Early

Pithouse period occupation dating to ca. A.D. 600 and an Archaic occupation with two shallow pithouses. Site dimensions were again adjusted to 5,500 sq m. A total of 293 sq m were excavated on the site with 57.6 cu m removed by hand. Excavation depths ranged from 8 to 94 cm with a mean depth of 18.7 cm. Another 28.8 cu m was removed by mechanical trenching; overall dirt removal was 86.4 cu m for the site.

SITE SETTING

LA 45508 extends along the low north slope of a small ridge overlooking the San Francisco River at Luna. The site is approximately 130 m south of the river at an elevation of 2,145 m (7,040 ft). The ridge contains sparse ponderosa at lower elevations; however, the density increases as the ridge gets higher. The site sits in a low saddle between two hills on the ridge (Fig. 2.197). Two small Pueblo roomblocks occupy the tops of both hills.

The Luna Valley opens up to the north from the site and the San Francisco River trends its way through the open country. The low ridge extends westward along the south valley edge while foothills flank the northern edge. There are numerous small Reserve phase roomblocks along all of this southern ridge. However, the two largest sites in the vicinity are Luna Village (Three Circle phase) and the Hough site (Tularosa phase), both several kilometers upstream to the west.

While the area within the valley proper has been stripped of much tree cover for grazing purposes, the surrounding hills and ridges support a large, wild-game population. Elk, deer, and bear are common today and the Luna vicinity is considered as part of the traditional Zuni hunting area (Ferguson and Hart 1985:42). Some agricultural crops are grown along the lower terraces of the San Francisco River and could have been grown there prehistorically as well, although there is a short frost-free season of less than 120 days.

RESEARCH OBJECTIVES

As an Archaic occupation, the site structure was expected to reflect short-term occupation of the area. There should be an accompanying expedient investment of

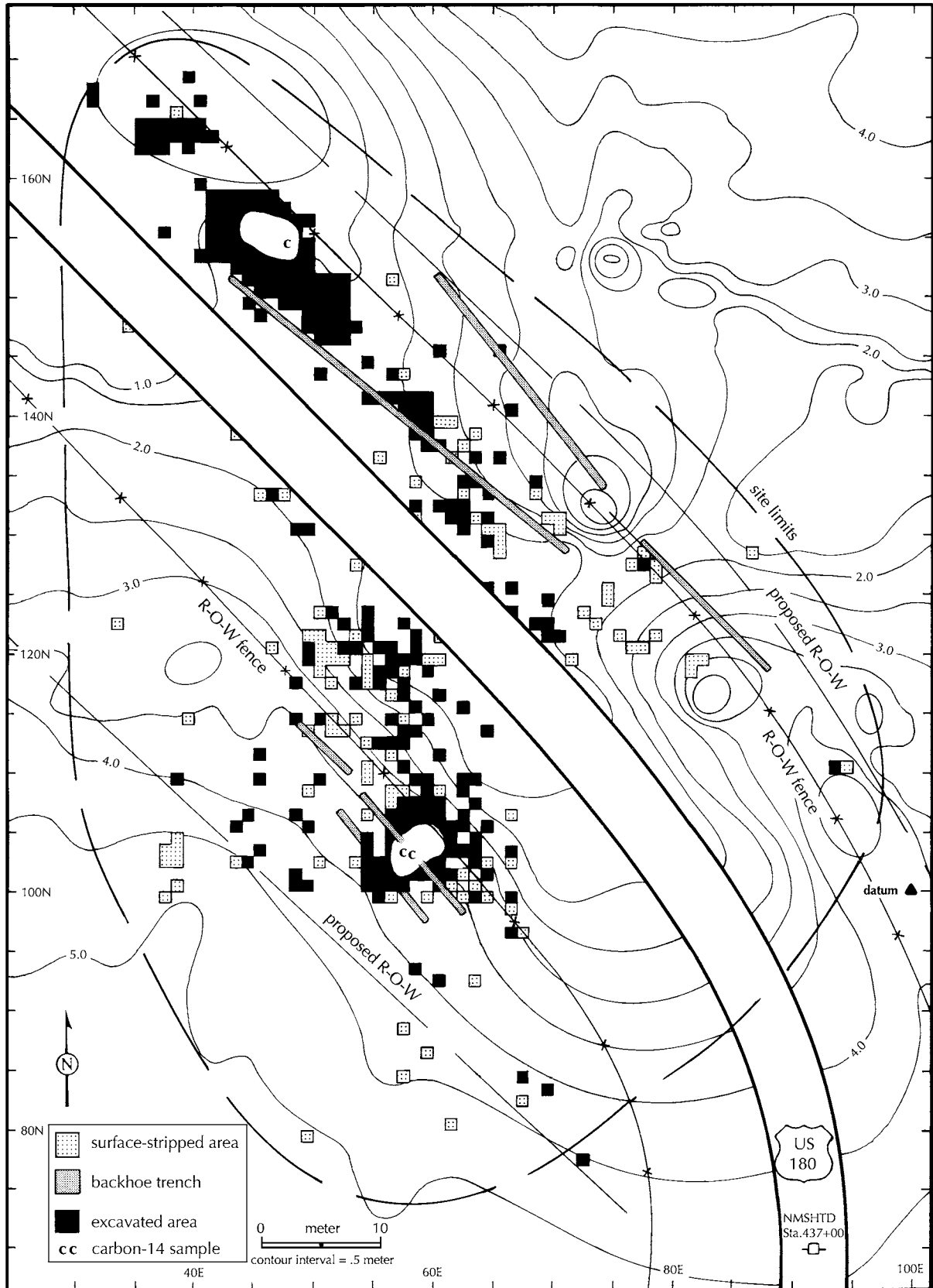


Figure 2.196. LA 45508, plan view of the Humming Wire site.



Figure 2.197. Setting of LA 45508 in low saddle. San Francisco River in background.

labor in dwellings, hearths, and storage facilities. The presence of cultigens was not expected, although possible. Seasonal resources indicating seasonal acquisition should be evident in the archaeological record. Seasonality can be observed through depth of dwellings, presence of interior hearths, storage facilities, labor investment, and types of resources recovered.

If the population at Humming Wire were fully mobile, then we expected subsistence activities to represent only the range of resources readily available or easily transported from the immediate environment. Such a population would tend to prepare items for immediate consumption or use, while those less mobile might be expected to cache or store resources. If ground stone is present, it might retain some of the materials that were ground and suggest whether immediate or future use was intended.

We looked specifically at variation in biface production between this and other sites of the period, examining the mixture of bifaces, projectile points, and biface flakes present on the site. Tool function, as related to hunting, foraging, or collecting strategies, can be addressed with this assemblage.

If the site also contains an Early Pithouse period component, there was expected to be an excellent opportunity to compare adaptations, asking the same research questions from the perspective of, potentially, a less mobile group.

EXCAVATION PROCEDURES

We first reestablished the datum at 100N/100E and the 1-by-1-m grid alignments set up during the testing program. Because of the potential for a possible pithouse in Test Pit 2, we began excavations in this area on the west side of U.S. 180. Additionally, because numerous artifacts were also present on the east side of the site, we simultaneously surface stripped there in areas of higher density scatters. A second pithouse was found in the east area.

Levels were stratigraphically excavated and those maintained throughout excavations included:

Level 1: Surface stripping to a general depth of 8 cm. Surface collected. Numerous artifacts. Soil color was 5YR 3/4, dark reddish brown on Munsell scale.

Level 2: General fill, outside of pit features to a maximum depth of 70 cm. Artifacts in upper depths as well as charcoal flecking. 5YR 3/2, dark reddish brown on Munsell scale.

Level 3: Fill within pit features, to a maximum depth of 94 cm. Artifacts present and soil is charcoal flecked. 7.5YR 4/4, brown on the Munsell scale.

Level 5: Floor contact inside of features. A few artifacts were present.

Through excavation procedures, two structures were uncovered, one on each side of the highway. Pithouse 1 had no interior features. Pithouse 2 was fairly shallow and had a minimum of internal features. Walls and floors of both had been dug into the native soil and were difficult to follow, particularly in Pithouse 1 where slumping had occurred.

Excavation test units, taken down to the sterile substrate, were placed at numerous locales on the remainder of the site, but no other features were found. A backhoe was also employed to insure that no further cultural remains were present. Eight trenches were excavated and nothing more was located. All soil was screened through ¼-inch screen. Artifacts were bagged by type and convenience. Profiles and plan views were drawn of the features, photographs were taken, and a topographic map of the site was produced with a transit and stadia rod.

CULTURAL UNITS

Two cultural features were found at the Humming Wire site consisting of two structures. A broad scattering of Archaic lithic materials was also present, as well as sherds from the upslope roomblock and one of the structures.

Pithouse 1

Located on the west side of the site, Pithouse 1 was first found during the testing program. It was generally D-shaped with inward sloping walls and an unprepared, uneven floor with no cultural features (Fig. 2.198). The fill was a fine, sandy loam with numerous artifacts, principally in the upper fill, and charcoal flecking. Rodent activity was evident in the fill.

Dimensions. The structure measured 3.1 m north-south by 4.8 m east-west with a floor area of 14.8 sq m. It ranged from 84 to 90 cm deep. In-sloping walls made the actual living area seem less than it actually was. The structure was D-shaped with the south side slightly less curved than the north area (Fig. 2.198). There may have been slight lobing on the northwest side but a mechanical trench eliminated the wall here.

Walls. The in-sloping walls of the structure were smoothed but not plastered. Slumping had occurred on the upslope west side. There was no break or change in wall angle on the west side to mark where the walls met the floor, giving the impression that inhabitants had dug one seamless, large pit during construction. Walls stood to 72 cm high on the west side and 43 cm on the east.

Floor. The floor was an uneven surface marred by slumping of the west wall area. It was hard-packed with charcoal flecking and was immediately above the sterile substrate. No cultural features were present on the floor,

including no evidence of a hearth. A 4-15 cm layer of clean soil lay directly above the floor. Five artifacts were recovered from the floor surface: an Alma Rough sherd, a core, and three lithic flakes.

Hearth. None was present.

Postholes. None was present.

Roof. No roof fall was present.

Entry. No evidence of a lateral entrance was found.

Pithouse 2

Pithouse 2 is located on the east side of the site, 45 m downslope from Pithouse 1 at the bottom of the ridge. It was found during the surface stripping of this area. The structure is slightly larger, but shallower, than Pithouse 1. It had sloping walls, an interior rock pile, and several small postholes (Fig. 2.199). The fill was loamy (10YR 3/4, dark yellowish brown on the Munsell scale) with some charcoal flecking.

Dimensions. Pithouse 2 measured 3.5 m north-south by 5.0 m east-west with a floor area of 17.5 sq m. This is slightly larger than Pithouse 1; however, the depth ranged from 18 to 35 cm compared to 90 cm for Pithouse 1. The structure was generally oval in shape.

Walls. The walls of the structure were smoothed but not plastered. The walls slope inward as if the unit had been dug as a single pit. The curvature of the walls is somewhat irregular in areas. Wall height varies from 18 cm on the east to 35 cm on the west, following the natural slope of the land.

Floor. The floor was hard-packed, but somewhat irregular. A series of small postholes were found in the floor near the wall and one in the center of the structure. Three large rocks were uncovered on the floor in the west portion of the feature; their function is unknown. Also, a small unburned rock pile measuring 60-by-50 cm was found near the center of the floor. One mano fragment was in the pile. The lack of burning on the rocks and floor precludes these being hearth stones. Two lithic artifacts were recovered from the floor.

Hearth. No evidence of a hearth was found.

Postholes. Five small postholes were uncovered in and around Pithouse 2 (see Fig. 2.199). One was located 20 cm south of the unit, two were against the south and west walls, another was set in from the wall by 75 cm, and the last was centrally located. It would seem that others may have been present in the shallower east end of the structure. Sizes for the postholes are:

Posthole 1. 9 by 3 by 5 cm deep

Posthole 2. 7 by 7 by 3 cm deep

Posthole 3. 10 by 9 by 7 cm deep

Posthole 4. 6 by 6 by 4 cm deep

Posthole 5. 6 by 6 by 6 cm deep

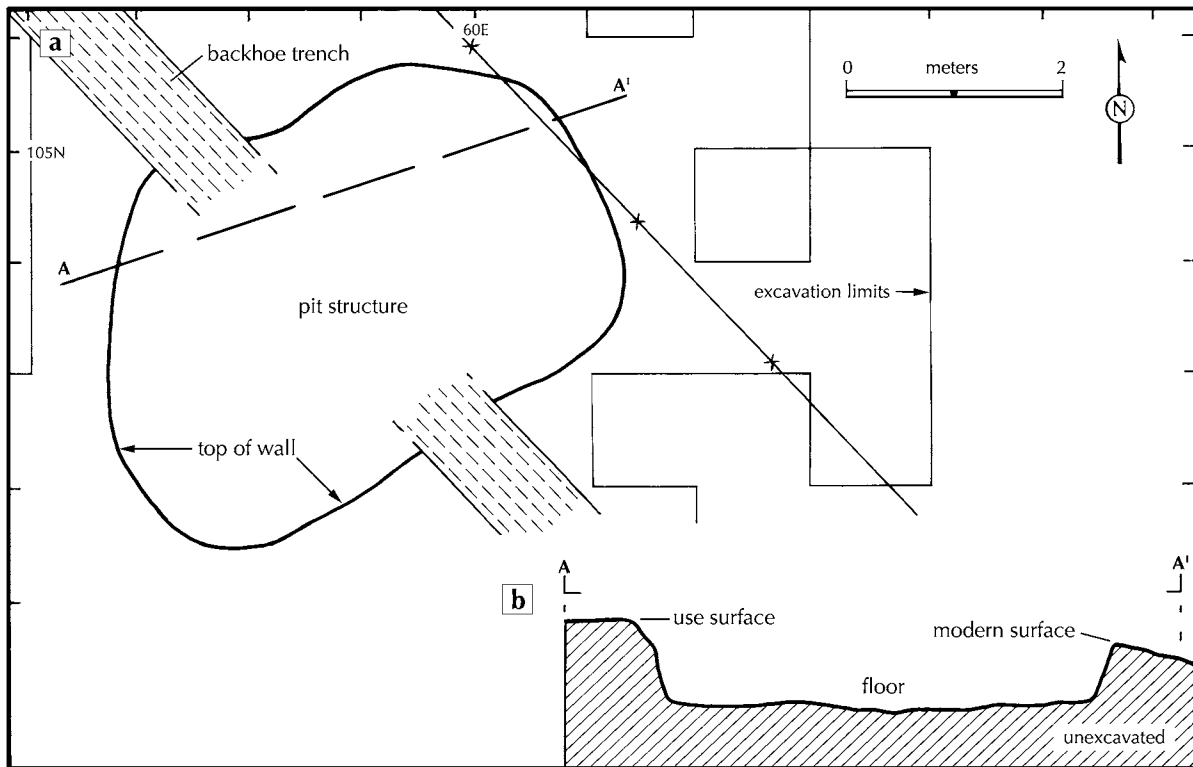


Figure 2.198. Pithouse 1, LA 45508; (upper) excavated, looking east-southeast, (lower) plan view and profile.

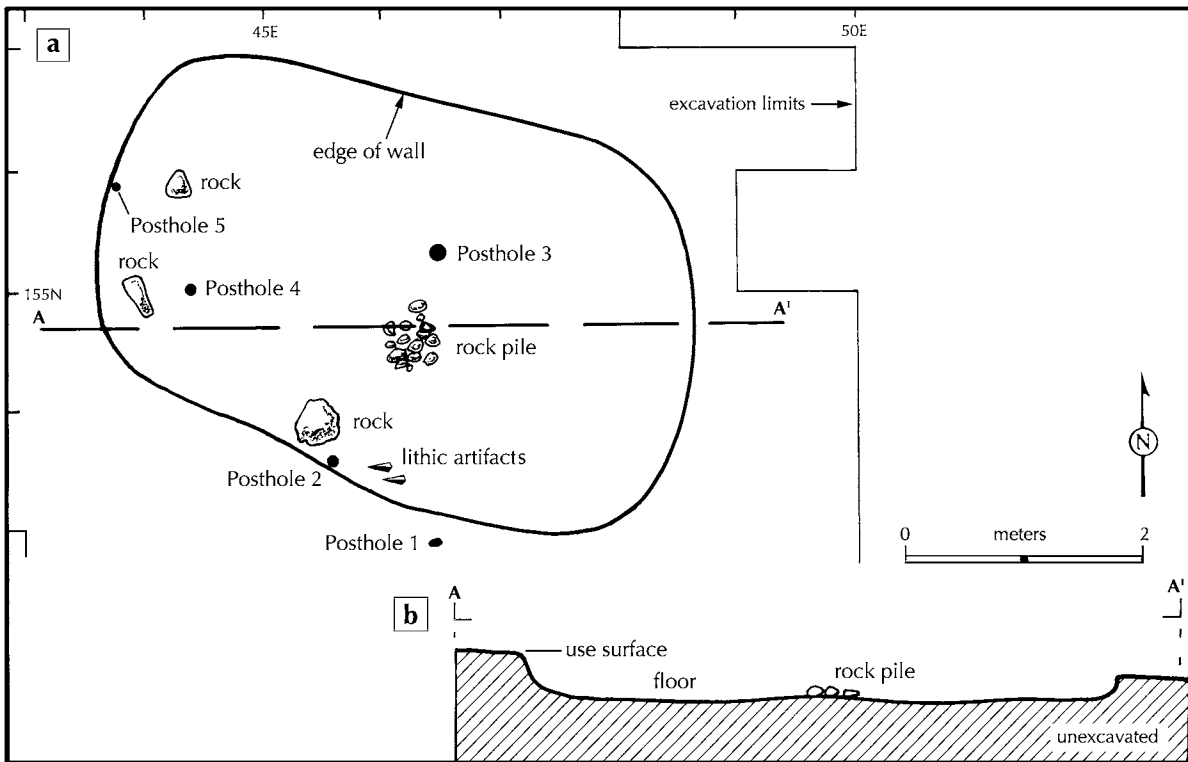


Figure 2.199. Pithouse 2, LA 45508; (upper) excavated, looking west, (lower) plan and profile.

From these measurements, it is obvious that if these are support posts, they would not have been large. The structure may have been an expediently constructed unit such as brush-covered shelter, rather than a true pithouse. The one posthole in the center area may represent a central support post against which other posts or poles rested.

Roof. It was possibly brush-covered based on the small postholes found.

Entry. No entryway was uncovered.

ARTIFACTS

The site assemblage at Humming Wire totaled 2,832 artifacts including 253 ceramics, 2,506 lithic artifacts, 18 projectile points, 36 pieces of ground stone, 6 miscellaneous items, and 13 faunal remains.

Ceramics

Ceramics represent only 8.1 percent of the artifact assemblage at LA 45508. While the percentage is small, it is still high for a supposedly Archaic site. Ceramics were observed eroding downslope from a small roomblock on the west in the vicinity of Pithouse 1. However, looking at Table 2.100, there are only three sherds that can definitely be attributed to the later Pueblo period—two late white ware sherds from the site surface and an indeterminate corrugated ware from the fill of Pithouse 2. The Alma Brown Wares and San Francisco Red could be either early or late. However, when comparing sherds in Pithouses 1 and 2, we see that the fill of

Pithouse 1 has 67.6 percent of the total sherds on the site, while Pithouse 2 has only 4.3 percent, or 11 sherds. An additional 68 sherds, or 26.8 percent of the assemblage, clusters either around or directly downslope from Pithouse 1, giving this vicinity 94.4 percent of all sherds on the site. A plot of ceramic distribution over the site illustrates this pattern (Fig. 2.200).

Attributing 171 Alma Brown Wares (and no late wares) from Pithouse 1 to the upslope roomblock is not reasonable and we must conclude that they were, indeed, part of the occupation of Pithouse 1. One large Alma Rough sherd was also found on the floor of Pithouse 2. However, there is no statistical ceramic correlation between the two structures. The ceramics indicate an Early Pithouse period occupation for Pithouse 1, while Pithouse 2 has a notable lack of associated sherds. However, the shallowness of the pithouse may not have allowed for retention of artifacts within the structure over time.

Lithic Artifacts

Over 80 percent of the artifacts at LA 45508 are lithic items, including projectile points. Distribution is fairly even between the two structures, but most artifacts were recovered from the surface stripping on the site (Table 2.101). Differences in lithic assemblages are indicated by more cores and tested cobbles near Pithouse 1; other variations are minimal. It is of interest that bifaces (including points) and biface flakes make up 29.3 percent of the lithic assemblage. Luna blue agate and chert are the materials of choice for site occupants (Table 2.102). Most of the obsidian on the site occurs on the

Table 2.100. Ceramics from LA 45508

Cells: Count Row Pct Column Pct	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Alma Plain	44 28.8% 62.0%	100 65.4% 58.5%	9 5.9% 81.8%	153 100.0% 60.5%
Alma Rough	22 25.6% 31.0%	63 73.3% 36.8%	1 1.2% 9.1%	86 100.0% 34.0%
Indeterminate corrugated			1 100.0% 9.1%	1 100.0% .4%
San Francisco Red	3 27.3% 4.2%	8 72.7% 4.7%		11 100.0% 4.3%
Late white	2 100.0% 2.8%			2 100.0% .8%
Column Total	71 28.1% 100.0%	171 67.6% 100.0%	11 4.3% 100.0%	253 100.0% 100.0%

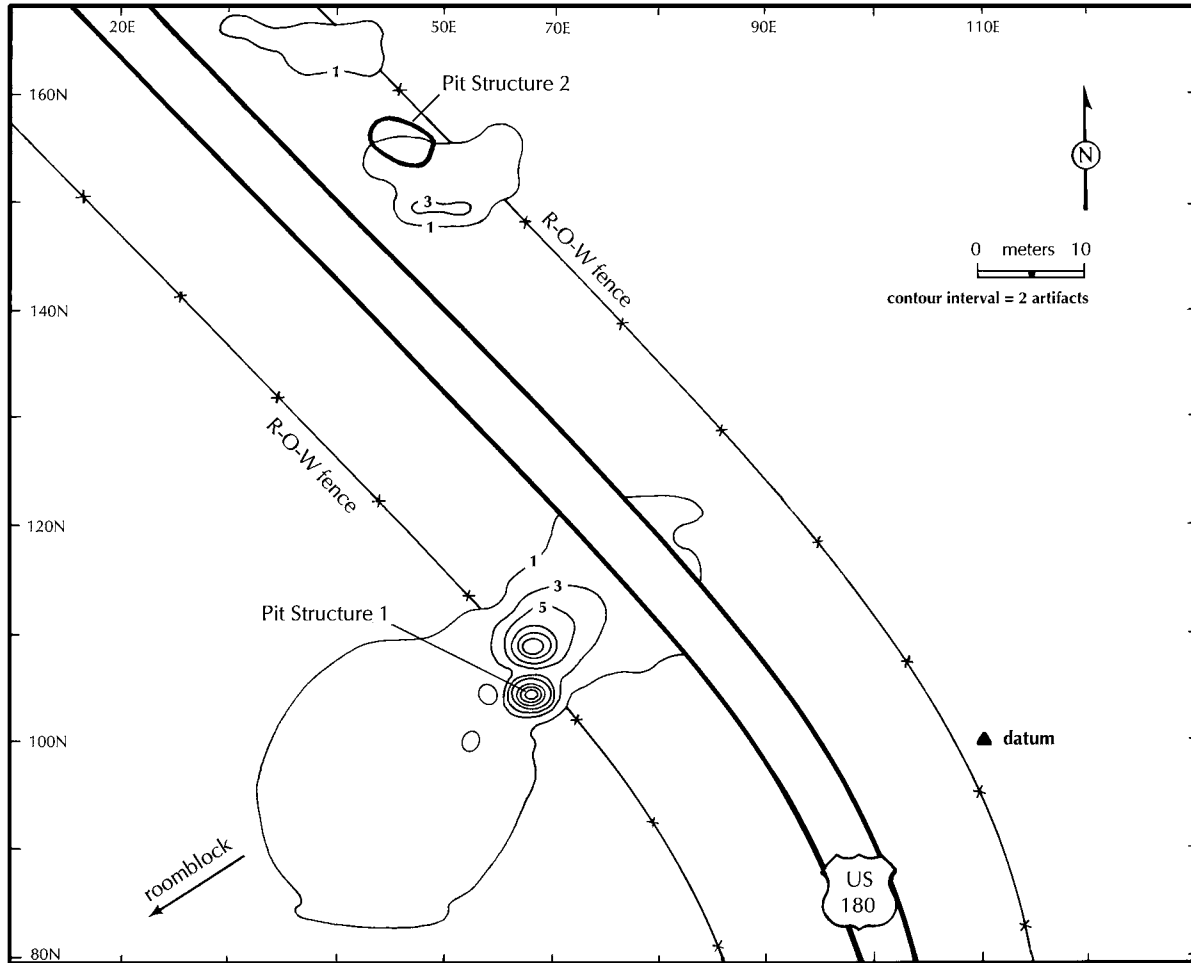


Figure 2.200. Ceramic density plot, LA 45508.

west side near Pithouse 1.

Six of the eighteen projectile points were recovered from the fill of Pithouse 2 and may have washed in from upslope. Others were surface finds or in shallow fill. Types seem to be all Archaic and range from two San Pedro and a San Jose to unidentifiable medium-sized points (Table 2.103). Luna blue agate and obsidian are the most common materials used. One other andesite projectile point was a Jay-like type found on the initial survey on the east side of the site but not relocated.

The high frequency of biface flakes and bifaces and the number of Archaic projectile points indicate a strong Archaic presence on the site. Further examination of this Archaic assemblage will be discussed in the chapters on lithic artifacts.

Ground Stone Artifacts

A total of 36 pieces of ground stone were recovered from LA 45508 (Table 2.104). Of these, only 6 (or 16.6 percent) were found near Pithouse 2 (only two within the

unit); all others were on the west side of the highway, with 22 in Pithouse 1. Eleven manos were found, both one and two-handed; however, all of the two-handed manos were recovered from within Pithouse 1. Of the six metate fragments, none could be morphologically identified. Most (47.2 percent) are rhyolite (Table 2.105). Grinding activities using one-hand manos seem to have been carried out at Pithouse 2, while activities requiring both one and two-hand manos were pursued near Pithouse 1.

Miscellaneous Artifacts

Few miscellaneous artifacts were recovered from LA 45508 (Table 2.106). These include two unmodified quartz crystals, three sandstone concretions, and one piece of hematite. Pithouse 1 contained the mineral specimen and one of the quartz crystals, while Pithouse 2 had a concretion and a quartz crystal in the fill. Two other concretions found in the general fill may or may not be culturally related to the site.

Table 2.101. Lithic Artifacts from LA 45508

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Angular Debris	287 61.2% 20.1%	103 22.3% 16.0%	79 16.8% 18.2%	469 100.0% 18.7%
Core Flake	731 56.5% 51.2%	344 26.6% 53.4%	219 16.9% 50.6%	1294 100.0% 51.6%
Biface Flake	362 54.8% 25.3%	174 26.3% 27.0%	125 18.9% 28.9%	661 100.0% 26.4%
Resharpener Flake	1 33.3% .1%	1 33.3% .2%	1 33.3% .2%	3 100.0% .1%
Bipolar Flake	1 100.0% .1%			1 100.0% .0%
Tested Cobble	2 50.0% .1%	2 50.0% .3%		4 100.0% .2%
Core	19 65.5% 1.3%	9 31.0% 1.4%	1 3.4% .2%	29 100.0% 1.2%
Biface	26 57.8% 1.8%	11 24.4% 1.7%	8 17.7% 1.8%	45 100.0% 1.8%
Column Total	1429 57.0% 100.0%	644 25.7% 100.0%	433 17.3% 100.0%	2566 100.0% 100.0%

Table 2.102. Lithic Artifact Material Types from 45508

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Chert	476 51.1% 33.3%	260 27.9% 40.4%	195 20.9% 45.0%	931 100.0% 37.2%
Chalcedony	29 46.8% 2.0%	17 27.4% 2.6%	16 25.8% 3.7%	62 100.0% 2.5%
Luna Blue Agate	786 62.5% 55.0%	294 23.4% 45.7%	177 14.4% 40.9%	1257 100.0% 50.2%
Silicified Wood		1 50.0% .2%	1 50.0% .2%	2 100.0% .1%
Obsidian	52 59.8% 3.6%	27 31.0% 4.2%	8 9.2% 1.8%	87 100.0% 3.5%
Basalt	31 50.0% 2.2%	19 30.6% 3.0%	12 19.4% 2.8%	62 100.0% 2.5%
Andesite	1 100.0% .1%			1 100.0% .0%

Table 2.102. Continued.

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Rhyolite	44 50.0% 3.1%	21 23.9% 3.3%	23 26.1% 5.3%	88 100.0% 3.5%
Rhyolitic Tuff	2 50.0% .1%	1 25.0% .2%	1 25.0% .2%	4 100.0% .2%
Sedimentary		1 100.0% .2%		1 100.0% .0%
Sandstone	2 66.7% .1%	1 33.3% .2%		3 100.0% .1%
Siltstone	2 66.7% .1%	1 33.3% .2%		3 100.0% .1%
Quartzite	4 100.0% .3%			4 100.0% .2%
Quartzitic Sandstone		1 100.0% .2%		1 100.0% .0%
Column Total	1429 57.0% 100.0%	644 25.7% 100.0%	433 17.3% 100.0%	2506 100.0% 100.0%

Table 2.103. LA 45508 Projectile Points

Cells: Count Row Percent	Material Type					Row Total
	Chert	Luna Blue Agate	Obsidian	Basalt	Rhyolite	
Medium Corner-Notched			1 100.0%			1 100.0%
Medium Lateral-Notched				2 66.7%	1 33.3%	3 100.0%
San Jose					1 100.0%	1 100.0%
San Pedro	1 50.0%		1 50.0%			2 100.0%
Column Total	3 16.7%	6 33.3%	5 27.8%	2 11.1%	2 11.1%	18 100.0%

Table 2.104. Ground Stone from LA 45508

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Indeterminate	4 36.4% 33.3%	6 54.5% 27.3%	1 9.1% 50.0%	11 100.0% 30.6%
Mano	1 12.5% 8.3%	6 75.0% 27.3%	1 12.5% 50.0%	8 100.0% 22.2%
One-hand Mano	4 57.1% 33.3%	3 42.9% 13.6%		7 100.0% 19.4%
Two-hand Mano		4 100.0% 18.2%		4 100.0% 11.0%
Metate	3 50.0% 25.0%	3 50.0% 13.6%		6 100.0% 16.7%
Column Total	12 33.3% 100.0%	22 61.1% 100.0%	2 5.6% 100.0%	36 100.0% 100.0%

Table 2.105. Ground Stone Material Types from LA 45508

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Basalt	2 40.0% 16.7%	3 60.0% 13.6%		5 100.0% 13.9%
Rhyolite	9 52.9% 75.0%	7 41.2% 31.8%	1 5.9% 50.0%	17 100.0% 47.2%
Tuff		3 100.0% 13.6%		3 100.0% 8.3%
Andesite		5 100.0% 22.7%		5 100.0% 13.9%
Rhyolitic Tuff		2 66.7% 9.1%	1 33.3% 50.0%	3 100.0% 8.3%
Sandstone	1 33.3% 8.3%	2 66.7% 9.1%		3 100.0% 8.3%
Column Total	12 33.3% 100.0%	22 61.1% 100.0%	2 5.6% 100.0%	36 100.0% 100.0%

Table 2.106. Miscellaneous Artifacts from LA 45508

Cells: Count Row Pct Column Pct	Provenience			Row Total
	General Fill	Pithouse 1	Pithouse 2	
Mineral (Hematite)		1 100.0 50.0		1 100.0 16.7
Concretion	2 66.7 100.0		1 33.3 50.0	3 100.0 50.0
Unmodified Quartz		1 50.0 50.0	1 50.0 50.0	2 100.0 33.3
Column Total	2 33.3 100.0	2 33.3 100.0	2 33.3 100.0	6 100.0 100.0

ANCILLARY STUDIES

Faunal Remains

Only 13 faunal remains were recovered from this shallow site (Table 2.107). The majority (76.9 percent) came from within Pithouse 1; none were from Pithouse 2. Large mammals are dominant at 53.8 percent. Because the assemblage is so small, however, no conclusions about the importance of faunal resource use for site residents can be made.

Table 2.107. Fauna from LA 45508

Taxon	General Fill	Pithouse 1	Total	Pct
Indeterminate Mammal	1		1	7.7
Medium Mammal	1	1	2	15.3
Large Mammal	1	6	7	53.9
Prairie Dog		1	1	7.7
Pocket Gopher		1	1	7.7
Artiodactyl		1	1	7.7
Total	3	9	13	100.0

Macrobotanical Remains

Flotation samples examined from the fill near Pithouse 1 and the floor of the structure produced only uncharred noncultural seed taxa including goosefoot, scordi-

onweed, buckwheat family, purslane, mustard, pigweed, spurge, prickly pear, dropseed grass, and composite family. Although the majority of these plants have documented ethnobotanical uses, they likely represent noncultural intrusives.

Coniferous taxa dominate the wood assemblage from LA 45508. Juniper, piñon, ponderosa, fir, and spruce were among the conifers present in the three samples examined. A trace amount of sage wood charcoal was also present.

Pollen Remains

Six ground stone artifacts were submitted for evidence of palynological remains. All were from within or near the structures (Table 2.108).

The results indicate that an array of vegetal materials were used by site occupants. A greater variety is present on ground stone within and around Pithouse 2, although the birch and olive specimens would seem to be modern contaminants. Corn starch grains were found on five of the six analyzed items (from both structures), revealing that both were involved in the grinding of corn products. In addition, Pithouse 2 peoples utilized a greater variety of floral goods from the nearby environment.

DATING METHODS

Datable materials, such as charcoal, were very sparse on the site. Charcoal remains were found scattered thinly throughout the fill of Pithouses 1 and 2. Two radiocarbon samples, taken as "grab" samples from the entire fill, were obtained from Pithouse 1 and one from Pithouse 2. Results were poor (Table 2.109). Five obsidian hydration dates were also obtained from the Obsidian Hydration Laboratory. However, four of the dates fell between 23,564 and 4482 B.C. These are too early for the Late Archaic assemblage present on the site.

Calibrated radiocarbon dates for Pithouse 1 ranged from A.D. 1430 to 1950. Selecting the earliest possible dates would suggest an Athabaskan presence which is highly implausible. The numerous ceramics within the fill of the structure are early in the Mogollon sequence and would not have been used by Athabaskan peoples. We consider the two dates to be contaminated.

The dates for Pithouse 2 at ca. A.D. 600 for the calibrated C-14 date and A.D. 566 for the obsidian indicate an early Georgetown occupation for the structure. Because of the shallowness of the unit and the presence of several Archaic projectile points within Pithouse 2, it is possible that these may have washed down from up-slope Archaic areas on the site.

Table 2.108. Pollen Recovered from LA 45508

Locus	Fine	Grasses	Cheno-ams	Sage	Sunflower	Oak	Night-shade	Feabane Daisy	Prickly Pear	Com	Birch	Olive
Pitthouse 1												
Mano	x	x	x	x						x		
Mano	x	x	x	x	x							
Pitthouse 2												
Mano	x			x								
Ground Stone			x						x	x		
Near Pitthouse 2												
Shaped Stone		x	x		x					x		
Metate Fragment	x	x	x	x	x	x	x	x		x	x	x

* High Counts

Table 2.109. C-14 Dates for LA 45508

Units	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
104N/57E	76726	490 ± 100	A.D. 1400-1475	A.D. 1295-1645	A.D. 1430	Pitthouse 1 (24-79 cm)
105N/58E	69445	210 ± 140	A.D. 1510-1590	A.D. 1430-1950	A.D. 1670, 1950	Pitthouse 1 (27-86 cm)
165N/37E	69446	1490 ± 50	A.D. 550-630	A.D. 450-660	A.D. 600	Pitthouse 2 (32 cm)

In effect, two of the C-14 dates and four of the five obsidian dates are generally unreliable. The ceramic assemblage, however, does point to a use of Pithouses 1 and 2 in the Early Pithouse period during the Georgetown phase. An additional Archaic assignment for the site is based on the comparative lack of ceramics and presence of numerous Archaic lithic materials, specifically projectile points and biface flakes, found mostly on the slope above Pithouse 2.

SITE INTERPRETATION

LA 45508 is a multicomponent site with two pithouses and an artifact assemblage that represents two discrete occupational episodes. Pithouse 1, with numerous early Mogollon ceramics, probably dates to the Georgetown phase in the Early Pithouse period, assuming a contemporaneity with Pithouse 2. The structure, although fairly large, had no internal features, suggesting a spring through summer occupation. No exterior hearths were found; however, they could be present outside of the project limits. Corn remains were retrieved from ground stone in the fill. Occupation length for the structure is, therefore, probably short-term or seasonal, at best. Movement to another area during the fall and winter months is implied.

Pithouse 2 is a shallow structure and, based on the small postholes within it, likely a brush-covered shelter.

No hearth was present within the structure. It is dated to the Georgetown phase at ca. A.D. 600. Short-term occupation is probably indicated because of the lack of a substantial superstructure and a hearth. Winter and cold weather use would be precluded. In addition to numerous vegetal resources, occupants were also processing corn. The alluvial terraces of the nearby San Francisco River would be ideal for the growing of crops in years with adequate frost-free periods. Hunting was also a part of the subsistence efforts based on the projectile points found.

Humming Wire was a site with minimal depth (about 18-20 cm) except for the two structures. The Pithouse period occupation was apparently short-term, possibly seasonal. Habitation units exhibited minimal labor investment, storage facilities are lacking and mobility for these Early Pithouse peoples during cold weather months is certainly indicated. The confirmation of the processing of corn during this occupation is an important contribution to our expanding data base of Early Mogollon subsistence strategies in the Mogollon Highlands. Were perhaps these people here for the maintenance and harvesting of corn crops that would be best grown specifically along the banks and terraces of the San Francisco River at this high elevation?

The Archaic occupation consists of a surface scatter only. No cultural features could be associated with it and we assume a short-term occupation also.

LA 45510 (AR-03-06-06-00056)
SAK SITE

Yvonne R. Oakes

LA 45510 was initially recorded on a U.S. 180 highway right-of-way survey (Koczan 1982) as a possible pithouse village based on the presence of 11 small depressions (2 to 4 m in diameter) within the proposed right-of-way. Brown ware and San Francisco Red sherds were observed on the site as well as lithic artifacts. It was noted that no black-on-white sherds were present although a Reserve phase roomblock is located approximately 140 m to the west and another is about 180 m to the east along the same ridge. The site was broadly estimated to cover 150-by-150 m (22,500 sq m), which included the western roomblock. We believe the roomblock and its assemblage are discrete, and therefore should have a separate LA number.

OAS personnel tested the site in 1990 (Oakes 1991). Twelve small depressions were noted. Thirteen 1-by-1-m test pits were hand excavated on the site and placed within and outside a number of the small depressions. They ranged in depth from 19 cm to 56 cm below ground surface with an average depth of 35 cm. Soil color ranged from yellowish red (5YR 4/6) to dark brown (7.5YR 3/4) on the Munsell scale. Cultural material generally extended 20 cm in depth. All of the test pits within depressions on both sides of the highway were sterile. After consultation with the U.S. Forest Service archaeologist, it was determined that the depressions represented areas where trees had been removed by Forest Service personnel. Site limits were adjusted to 140 m by 60 m (8,400 sq m).

In other test pits, the presence of slight soil burning, numerous artifacts, and several compact surfaces warranted the development of a data recovery plan for the site. Based on the presence of Three Circle Neck Banded, a variety of corrugated ceramic, and brown wares, the site was thought to represent the Late Pithouse period, or Three Circle phase of the Mogollon sequence.

Excavations were undertaken in 1992. Test pits in the artifact concentrations were reopened and excavations began in these locales. After not finding any pit structures, a general checkerboard excavation pattern was implemented to search for pit units (Fig. 2.201). None was found. Charcoal flecking, small areas of compaction, and artifacts were most numerous along the western edge of the proposed right-of-way. Permission was granted by the U.S. Forest Service archaeologist to shovel test the immediately adjacent area for the pres-

ence of a pit structure. A probable structure was isolated 2 m outside of the right-of-way limits. It was not excavated.

A total of 231 grids were excavated at the SAK site to an average depth of 23.0 cm, with some grids reaching 1.0 m. Total dirt removal by hand was 52.9 cu m. Site dimensions were revised to 50 m by 40 m for a total site area of 2,000 sq m. Some of the site apparently once extended into the current highway corridor.

SITE SETTING

LA 45510 sits on top of a broad, almost level, low ridge (Fig. 2.202) with an eastern overview of a southern offshoot of the Luna Valley. Two pueblo roomblocks also occupy the ridge. The San Francisco River flows 1.7 km to the north and an intermittent drainage lies in the valley 250 m to the east. Elevation is 2,158 m (7,080 ft). Ponderosa pine dominates the ridge, although the forest is open—the floor is covered with low grasses rather than densely packed with trees. This, however, could be the result of modern tree harvesting.

Wild game and piñon are plentiful in the region. Hunting in the area is prevalent today. Agricultural crops could be grown in the valley to the east; however, a shortened growing season at this elevation must be taken into account.

RESEARCH OBJECTIVES

The SAK site was thought to represent a pithouse site. We expected to address questions of mobility among pithouse dwellers by looking at site layout, labor investment, and presence of internal hearths and storage features. The finding of reconstruction within structures, reflooring, and overlapping features would all suggest either repeated reuse or long-term single use.

Dependency on cultigens has been traditionally assumed for pithouse sites. However, we need to verify or modify this assumption through the data recovered. Assessing Hard's model (1990) was to be undertaken by data from this and other excavated sites. We hoped to identify floral and faunal resources as part of this assessment and to determine season of use and types of food

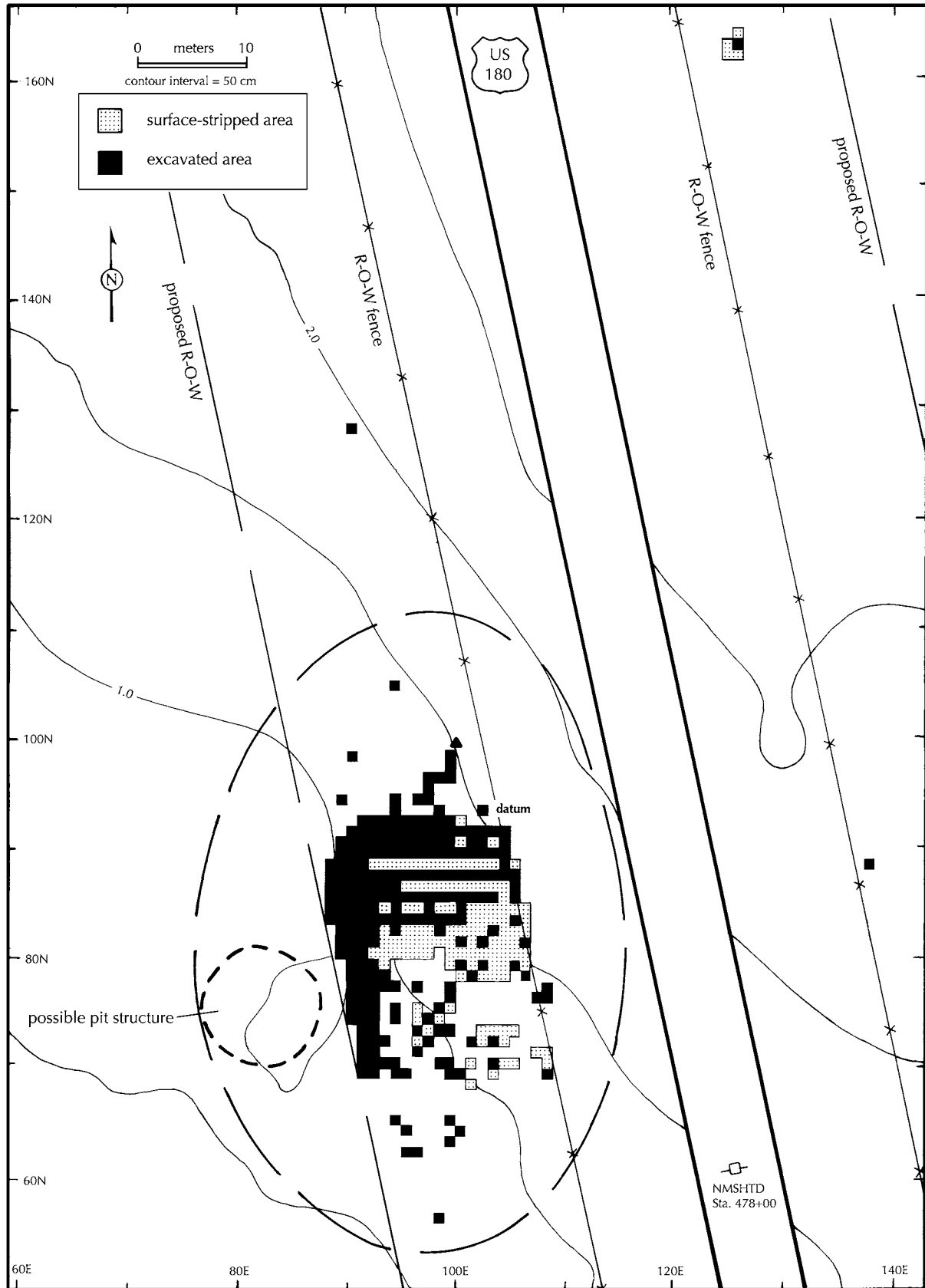


Figure 2.101. LA 45510, plan view of the SAK site.

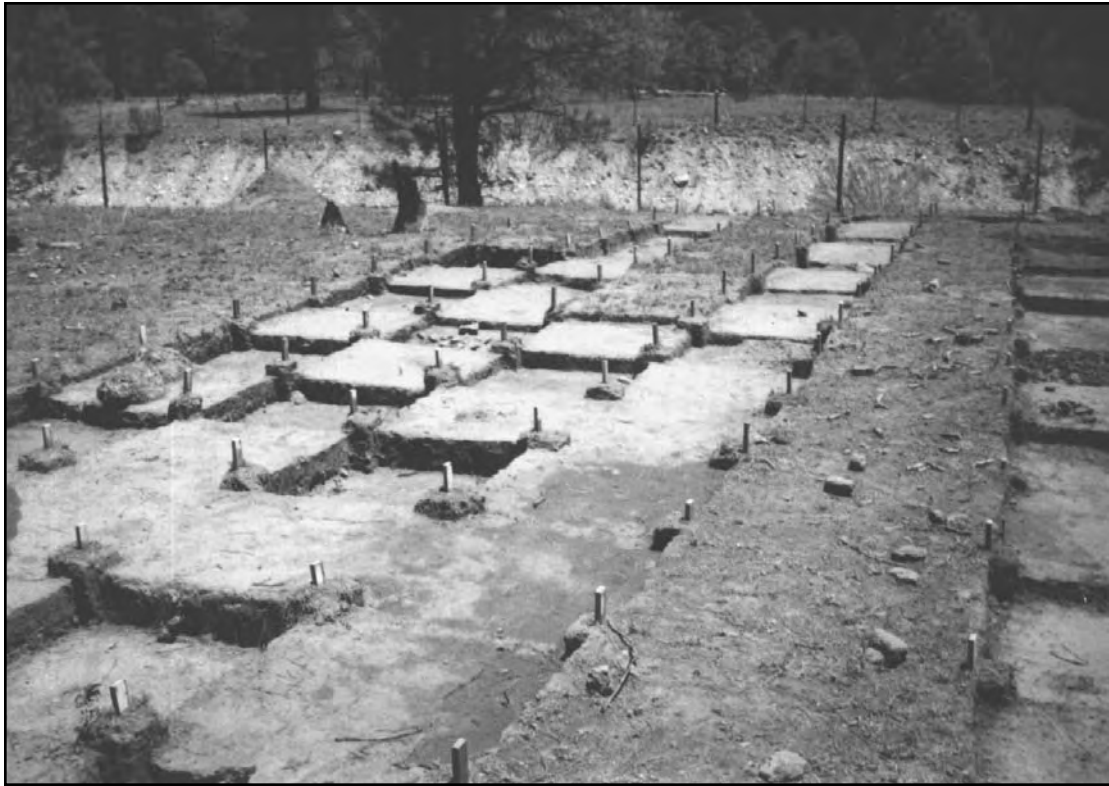


Figure 2.202. Excavation units at LA 45510, on top of level ridge; facing east toward road cut.

preparation. The site could then be compared to Luna Village, another late pithouse site within the Luna Valley.

LA 45510 does represent a pithouse occupation on the ridge. However, the pit structure is outside of the project limits; therefore, site interpretation is limited. Lack of structural features precludes studies of site structure, labor investment, seasonality of use, and degree of agricultural dependency. However, we have been able to compare the site artifacts with those from other project sites on a temporal and typological basis.

EXCAVATION PROCEDURES

Main datum was reestablished from the testing program at 100N/100E and a 1-by-1-m grid system was laid over the site with a transit and stadia rod. Test pits within the heavy artifact concentrations were reopened and grid units were expanded out from these areas. Excavations continued below ground surface until a reddish brown substrate was reached. Cultural fill consisted of a dark brown (10YR 4/3) soil.

Stratigraphic levels maintained throughout excavations included:

Level 1: Surface stripping to a general depth of 6-8 cm. Surface collecting. Numerous artifacts.

Level 2: General fill, below surface stripping.

Extended to a maximum depth of 1.0 m. Artifacts mostly in upper 20-30 cm of fill. Some charcoal flecking present.

Because no pit structures or intact cultural features were found, no further stratigraphic designations were used.

Heaviest artifact concentrations occurred along the western edge of the proposed right-of-way. Subsequent shovel testing here, with U.S. Forest Service permission, revealed a pit structure 2 m outside of the project limits. Excavation efforts were concentrated in this western area and a few charcoal stains and compact surfaces were found.

All soil was screened through ¼-inch mesh. Artifacts were bagged by grid, level, and type. Grids with remnants of cultural features were mapped and photographed. A topographic map of the site was produced using a transit and stadia rod.

CULTURAL UNITS

Exploratory shovel-testing determined the location of a pit structure outside of the proposed right-of-way on the west end of the site. It may measure up to 10 m in diameter, which would indicate a large structure. Depth is a minimum of 67 cm and the fill contained burned wood, soil, adobe casts, and numerous artifacts. All were left in

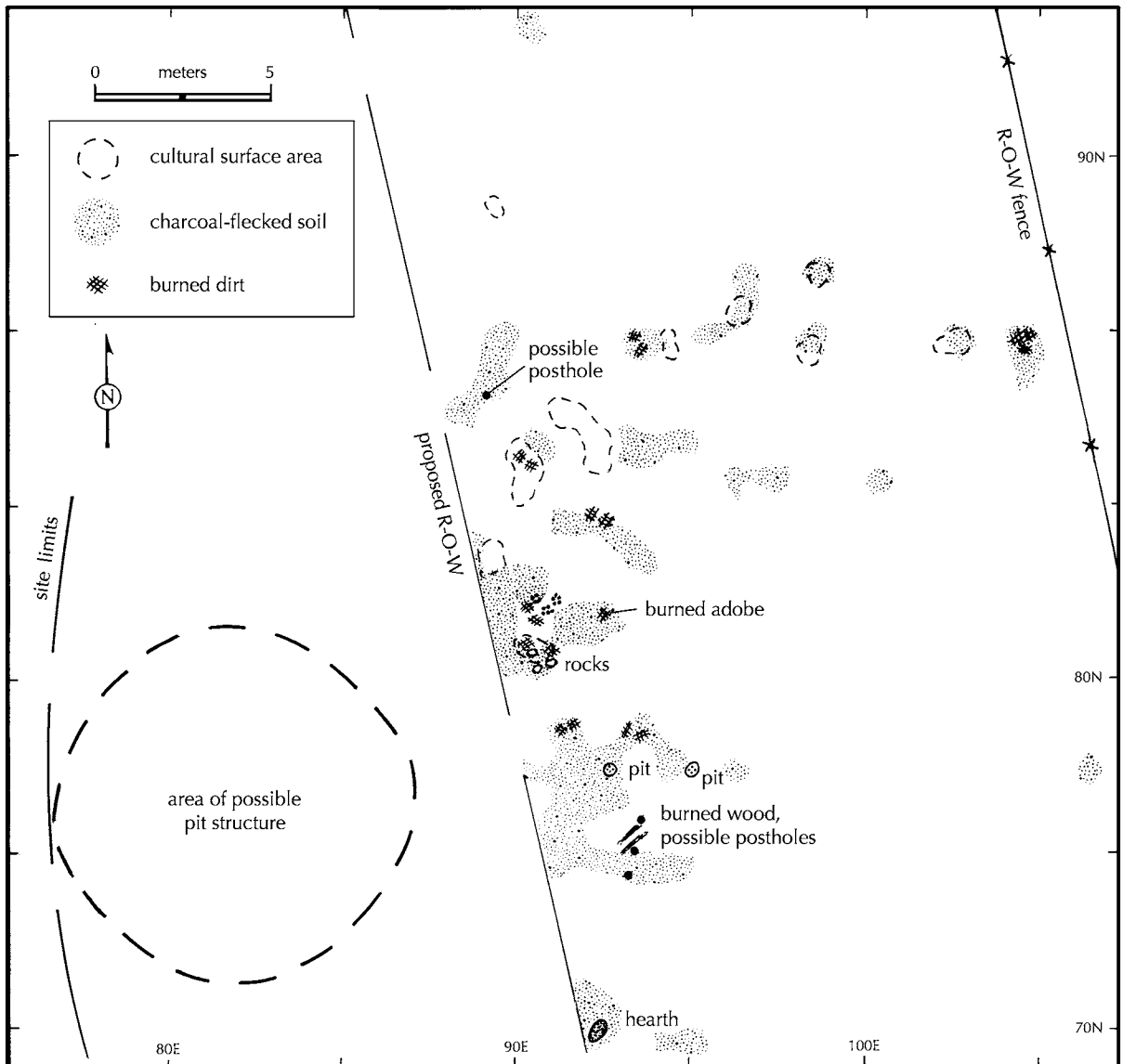


Figure 2.203. Cultural surfaces and stains, LA 45510.

place. Within the right-of-way, no structural features were found. However, near the pit structure, a hearth, several pits, compact surfaces, and charcoal-stained areas were uncovered. These were mapped and recorded (Fig. 2.203).

Hearth

A probable hearth is situated 7.5 m southeast of the structure. It consisted of an oval pit measuring 64 cm by 38 cm by 20 cm deep and contained charcoal pieces and burned dirt. No artifacts were present. The soil around the hearth was also charcoal-flecked.

Pits

Several small pits were scattered along the western edge of the proposed right-of-way. These range from 8-by-6 cm to 41 cm in diameter and up to 12 cm deep. The small pit in Grid 88N/89E, measuring 8-by-6-by-5 cm deep, may be a small posthole as may be the three that were associated with burned wood in Grids 74-76N. The several possible postholes, associated pits, burned wood, and charcoal scatter in this locale may indicate the former presence of a ramada or outdoor work area. All other pits served an unknown purpose. The pits were found between 16 to 25 cm below ground surface, the same depth as the preserved cultural surfaces in various areas on the site.

Cultural Surfaces

Extending northeast from the structure were patches of the prehistoric cultural surface. These surfaces were compact, had charcoal staining, and contained several artifacts lying directly upon them. Depths of the surfaces ranged from 15 to 24 cm below the ground level, corresponding to the level at which the small pits were uncovered. We speculate that an entry to the pit structure may have been oriented to the northeast with the resulting traffic in this area creating the more compacted surface.

Burned Soil/Stains

Charcoal-stained soil was located mostly along the western edge of the project area. It was frequently associated with the prehistoric cultural surfaces. Burned dirt was also uncovered on the site but not always associated with cultural surfaces. Burned adobe was found in Grid 83N/89E along with burned dirt. The burning suggests that numerous outdoor activities occurred in this area east of the pit structure. More than the one uncovered hearth was likely present as well as a probable ramada.

ARTIFACTS

A total of 9,285 artifacts were recovered from the SAK site. These include 8,020 ceramics, 1,233 lithic artifacts, 20 projectile points, 7 pieces of ground stone, and 5 miscellaneous items.

Ceramics

Over 70 percent of the ceramic assemblage is Alma Brown Ware and San Francisco Red, which occur throughout all phases of the Mogollon cultural sequence (Table 2.110). Late Pithouse period sherds are represented by Three Circle Neckbanded, Three Circle Red-on-white, Mangus Black-on-white, plain corrugated, and indeterminate hachure and white wares (12.0 percent of the assemblage). However, Pueblo period sherds, including Reserve Black-on-white, White Mountain Redware, and various corrugated sherds, are present at 18.4 percent. Most sherds were concentrated along the western edge of the site near the pit structure.

The number of varieties and high percentage of Early Pueblo period sherds is most interesting. While this is definitely a pithouse site, early Reserve phase wares are represented along with the characteristic Late Pithouse assemblage. Questions of cultural continuance between the Three Circle and Reserve phases have been raised (Reid et al. 1995; Wills et al. 1997); however, the presence of a few Reserve Black-on-white sherds cannot

Table 2.110. Ceramics from LA 45510

Cells: Count Row Percent Column Percent	Provenience
	General Fill
Alma Plain	2778 100.0% 34.6%
Alma Rough	2973 100.0% 37.1%
Alma Scored	1 100.0% .0%
Alma Incised	4 100.0% .0%
Alma Punched	1 100.0% .0%
Alma Pinched	1 100.0% .0%
Alma Neckbanded	5 100.0% .1%
Three Circle Neckbanded	2 100.0% .0%
Plain Corrugated	933 100.0% 11.6%
Indented Corrugated	38 100.0% .5%
Incised Corrugated	80 100.0% 1.0%
Patterned Corrugated	16 100.0% .2%
Indeterminate Corrugated	145 100.0% 1.8%
Plain Smudged	569 100.0% 7.1%
San Francisco Red	159 100.0% 2.0%
Indeterminate Mimbres White	21 100.0% .3%
Three Circles Red-on-white	1 100.0% .0%
Mangus (Bold Face) Black-on-white	4 100.0% 0%

Table 2.110. Continued.

Cells: Count Row Percent Column Percent	Provenience	
	General Fill	
Mimbres Classic Black-on-white	3 100.0% .0%	
Early Polished Gray	1 100.0% .0%	
Early White	1 100.0% .0%	
Late White	257 100.0% 3.2%	
Reserve Black-on- white	18 100.0% .2%	
Hachure Black-on- white	3 100.0% .0%	
Smudged Interior Red	1 100.0% .0%	
Indeterminate White Mountain Redware	5 100.0% .1%	
Column Total	8020 100.0% 100.0%	

definitely be attributed to the pit structure and may, in fact, be related to the Reserve phase roomblock to the west.

Lithic Artifacts

The lithic artifact assemblage is broadly scattered over the site and contains mostly core flakes and angular debris (90.4 percent; Table 2.111). However, there are 8.2 percent undifferentiated bifaces and biface flakes also present. The three major material types are Luna blue agate, chert, and rhyolite. All are abundant in the local environment. There is a 6.1 percent occurrence of nonlocal obsidian.

Twenty projectile points were also recovered from the site (Table 2.112). Most of these are obsidian (85.0 percent); the majority (55.0 percent) are small side-notched points, typical of later Mogollon sites. One Jay and one San Pedro type belonging to the Archaic period were also retrieved during excavations.

Ground Stone Artifacts

Only seven pieces of ground stone were recovered from

the SAK site (Table 2.113). Most were indeterminate fragments. Others included a single two-hand mano and two metate fragments. At least one other mano was observed in the shovel tests in the pit structure fill. The material of choice seems to be rhyolite.

Miscellaneous Artifacts

A limited number of miscellaneous objects was found at the SAK site (Table 2.114). These include three mineral samples, a discoidal bead, and a clay animal fetich.

ANCILLARY STUDIES

Faunal Remains

No faunal remains were recovered from this shallow site.

Macrobotanical Remains

A single flotation sample was analyzed from the probable hearth at LA 45510. Only one charred unidentifiable seed was recovered along with several noncultural genera including uncharred pine needles. The feature was only 20 cm deep, so the results are not surprising. Evidence of wood use is solely coniferous, including fir, ponderosa, pine, and juniper.

Pollen Remains

Two pollen samples were submitted for analysis, from a metate fragment and a large bowl remnant recovered from the general fill on the site (Table 2.115). The metate verified the processing of corn on the site.

DATING METHODS

Three radiocarbon samples, taken from the general fill of LA 45510, produced poor results (Table 2.116). Beta Analytic samples 69448 and 69449 yielded dates that were too late to be associated with any phase of the Mogollon culture. One is probably from a burned modern fence post and the other is likely modern also. Beta 69447 came from general fill close to the pit structure but is more than 300 years too early for the ceramic assemblage. This date falls within the realm of being an old wood problem.

Ceramics, therefore, are the best means for dating the SAK site. Sufficient quantities of Three Circle phase (Late Pithouse period) and early Reserve phase ceramics were recovered to place the site between A.D. 950 and the early 1000s.

Table 2.111. Lithic Artifacts from LA 45510

Cells: Count Row Percent Column Percent	Artifact Morphology						Row Total	
	Angular Debris	Core Flake	Biface Flake	Bipolar Flake	Tested Cobble	Core		Biface
Chert	82 26.0% 20.2%	213 67.6% 30.0%	14 4.4% 20.3			5 1.6% 41.7%	1 .3% 3.1%	315 100.0% 25.5%
Chalcedony	2 15.5% .5%	11 84.6% 1.6%						13 100.0% 1.1%
Luna Blue Agate	153 32.6% 37.7%	273 58.2% 38.5%	33 7.0% 47.8%	3 6% 75.0%	1 .2% 100.0%	4 .9% 3.3%	2 .4% 6.3%	469 100.0% 38.0%
Obsidian	6 8.0% 1.5%	27 36.0% 3.8%	15 20.0% 21.7%				27 36.0% 84.4%	75 100.0% 6.1%
Igneous		1 100.0% .1%						1 100.0% .1%
Basalt	6 12.2% 1.5%	36 73.5% 5.1%	4 8.2% 5.8%	1 2.0% 25.0%			2 4.1% 6.3%	49 100.0% 4.0%
Rhyolite	156 51.7% 38.4%	140 46.4% 19.7%	3 1.0% 4.3%			3 1.0% 25.0%		302 100.0% 24.5%
Silicified Rhyolitic Tuff	1 25.0% .2%	3 75.0% .4%						4 100.0% .3%
Sedimentary		1 100.0% .1%						1 100.0% .1%
Sandstone	2 100.0% .3%							2 100.0% .2%
Quartzite	1 100.0% .1%							1 100.0% .1%
Quartzitic Sandstone		1 100.0% .1%						1 100.0% .1%
Column Total	406 32.9% 100.0%	709 57.5% 100.0%	69 5.6% 100.0%	4 .3% 100.0%	1 .1% 100.0%	12 1.0% 100.0%	32 2.6% 100.0%	1233 100.0% 100.0%

Table 2.112. LA 45510 Projectile Points

Cells: Count Row Percent	Material Type			Row Total
	Chert	Obsidian	Basalt	
Unidentified		5 83.3%	1 16.7%	6 100.0%
Medium Lateral-Notched		1 100.0%		1 100.0%
Small Corner-Notched		1 100.0%		1 100.0%
Small Side-Notched		8 100.0%		8 100.0%

Table 2.112. Continued.

Cells: Count Row Percent	Material Type			Row Total
	Chert	Obsidian	Basalt	
Flake Point		2 100.0%		2 100.0%
Jay			1 100.0%	1 100.0%
San Pedro	1 100.0%			1 100.0%
Column Total	1 5.0%	17 85.0%	2 10.0%	20 100.0%

Table 2.113. Ground Stone from LA 45510

Cells: Count Row Percent Column Percent	Material Type				Row Total
	Basalt	Rhyolite	Andesite	Sandstone	
Fragment		3 75.0% 75.0%	1 25.0% 100.0%		4 100.0% 57.1%
Two-hand Mano				1 100.0% 100.0%	1 100.0% 14.5%
Metate	1 50.0% 100.0%	1 50.0% 100.0%			2 100.0% 28.6%
Column Total	1 14.3% 100.0%	4 57.1% 100.0%	1 14.3% 100.0%	1 14.3% 100.0%	7 100.0% 100.0%

Table 2.114. Miscellaneous Artifacts from LA 45510

Cells: Count Row Percent Column Percent	Ornament Morphology			Row Total
	Mineral	Fetish/effigy	Discoidal Bead	
Metamorphic			1 100.0% 100.0%	1 100.0% 20.0%
Chrysacolla	2 100.0% 66.7%			2 100.0% 40.0%
Hematite	1 100.0% 33.3%			1 100.0% 20.0%
Clay (Alma Rough body)		1 100.0% 100.0%		1 100.0% 20.0%
Column Total	3 60.0% 100.0%	1 20.0% 100.0%	1 20.0% 100.0%	5 100.0% 100.0%

Table 2.115. Pollen Recovered from LA 45510

Artifact	Pine	Cheno-am	Grasses	Sunflower	Prickly Pear	Corn
Bowl	X	X	X	X	X	
Metate Fragment	X*	X		X		X

*Higher Count

Table 2.116. C-14 Dates for LA 45510

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
81N/89E	69447	1540 ± 80	A.D. 430-620	A.D. 380-660	A.D. 550	Fill
89N/104E	69448	170 ± 70	A.D. 1660-1890	A.D. 1640-1950	A.D. 1680, 1760 1800, 1940	Fill
92N/94E	69449	40 ± 50	None	A.D. 1690-1730 1810-1930	No intercepts	-

Site Interpretation

We have been able to ascertain, through ceramic dating, that the SAK site dates to the late Three Circle phase of the Mogollon cultural sequence between A.D. 950 and early 1000s. However, the pit structure was located outside of the proposed highway right-of-way. Remaining within the project limits were portions of the prehistoric use surface, several burned areas, a hearth, and the former location of a possible ramada.

It is evident that activities such as roasting or cooking took place outside of the pit structure. A ramada was also likely present, suggesting at least a summer occupation for the site. The high frequency and variety of artifacts indicates some length to the occupation, although it is not possible to determine if it was year-round. The lack of structural features precludes an assessment of the mobility pattern of pithouse dwellers with the data from

this site. Corn pollen and starch grains were present on a metate fragment, indicating the processing of corn on the site. The degree of dependency, however, is not determinable. The lack of faunal remains is best explained by the shallowness (an average of 23 cm depth) of the site.

The site is significant in that the ceramics indicate an incipient early Reserve phase ceramic assemblage may have been part of a Late Pithouse period occupation. This is the first site where we have not seen an attendant Reserve phase roomblock accompanying the presence of Pueblo sherds. This could suggest that Reserve Black-on-white sherds were introduced earlier in this area, in the late A.D. 900s, and preceded the occurrence of cobble-walled roomblocks. Or, occupants of LA 45510 may have accepted the new ceramic intrusives, but rejected the accompanying architectural change. The lack of good chronometric data is regrettable in this regard.

LA 70185 (AR-03-06-03-00285)
DZ SITE

Dorothy A. Zamora

The DZ site, LA 70185, was recorded by the OAS during a resurvey of U.S. 180 (Oakes 1989). It is a small pueblo that covers 1,777 sq m. More than 70 percent of the site is within the proposed right-of-way (Fig. 2.204). The site consists of four excavated rooms and possibly one or two more that were not excavated because they were outside of the right-of-way. The artifacts are scattered 22 m downslope to the north and the west into the road cut due to erosion. The radiocarbon dates and the ceramics suggest the site was occupied during the mid-Tularosa phase.

Within a 2-sq-km area around the DZ site, 57 archaeological sites are present. Of these sites, two are Three Circle phase, 26 Reserve phase, and 29 are Tularosa phase. At approximately 2.4 km northwest of the DZ site is a large pithouse settlement, LA 45507, Luna Village, recorded by Walter Hough in 1907. It covers 43,840 sq m and dates to the Three Circle phase.

SITE SETTING

The DZ site sits on top of a small finger ridge on the east side of U.S. 180 overlooking Mail Hollow Canyon to the west. The site is surrounded mostly by ponderosa pine with a few alligator juniper and oak trees. Some scrub oak is also present along the edges of the ridge and various grasses cover the site (Fig. 2.205). Basalt and rhyolite outcrops are also present in the area. Elk were commonly seen in the vicinity and evidence of their presence was found on the site. Other fauna seen in the area include mountain lion and bear. Agricultural pursuits may have been possible in the narrow Mail Hollow Canyon.

RESEARCH OBJECTIVES

The information that we wanted to collect from the DZ site mainly concerned site structure. Site structure for Late Pueblo sites in this part of the Mogollon Highlands is not well known. The site provided the opportunity to examine site layout, architectural variation, relationship of pithouses to above-ground dwelling units, and the use of various facilities. The degree of dependence on agricultural products was also a research issue, employing

Hard's (1990) ground stone model.

EXCAVATION PROCEDURES

Before excavation began a main datum was established and a 1-by-1-m grid system was placed over the site. Each grid was assigned a grid number, designated as north and east from main datum. A total of 228 grids were excavated and 70 were surface collected. A total of 96.71 cu m was removed from the site at a mean depth of 42.4 cm. Four exploratory units were also placed in areas of heavy artifact concentrations. With these grids, we were able to determine that there were no other subsurface manifestations present. The depth of the grids ranged from .10 m to 1.00 m with excavations stopping at bedrock. Excavation levels were identified stratigraphically and each level was dug in natural layers.

Level 1: Surface; 5YR 3/2, dark reddish brown.

Level 2: Surface stripping or general fill; 5YR 3/2, dark reddish brown, 2-5 cm thick.

Level 3: Room fill that consisted of wall fall ranging from 33 to 44 cm in depth and containing mostly rock with some sandy clay soil; 7.5YR 3/2, dark brown.

Level 5: Floor; 5YR 3/2, dark reddish brown.

Level 6: Subfloor features.

Level 7: Outside activity surface; 5YR 3/2, dark reddish brown.

Each 1-by-1-m grid was first surface stripped to expose the rock wall of the roomblock and determine the extent of the rubble (Fig. 2.206). Each rock was initially left in place. If rocks were not aligned, the unit was excavated until a color or soil change occurred. After determining the extent of the rubble mound, grids were dug beginning on the outside of the rubble until wall alignments were defined (Fig. 2.207). Once the walls were uncovered on the outside, then the removal of the interior rubble began. Each rock was removed carefully and the soil was screened through ¼-inch wire mesh. When the floor was excavated the soil was screened through ½-inch screen. The artifacts were bagged by type and proveniencing information. The LA number, project number, grid num-

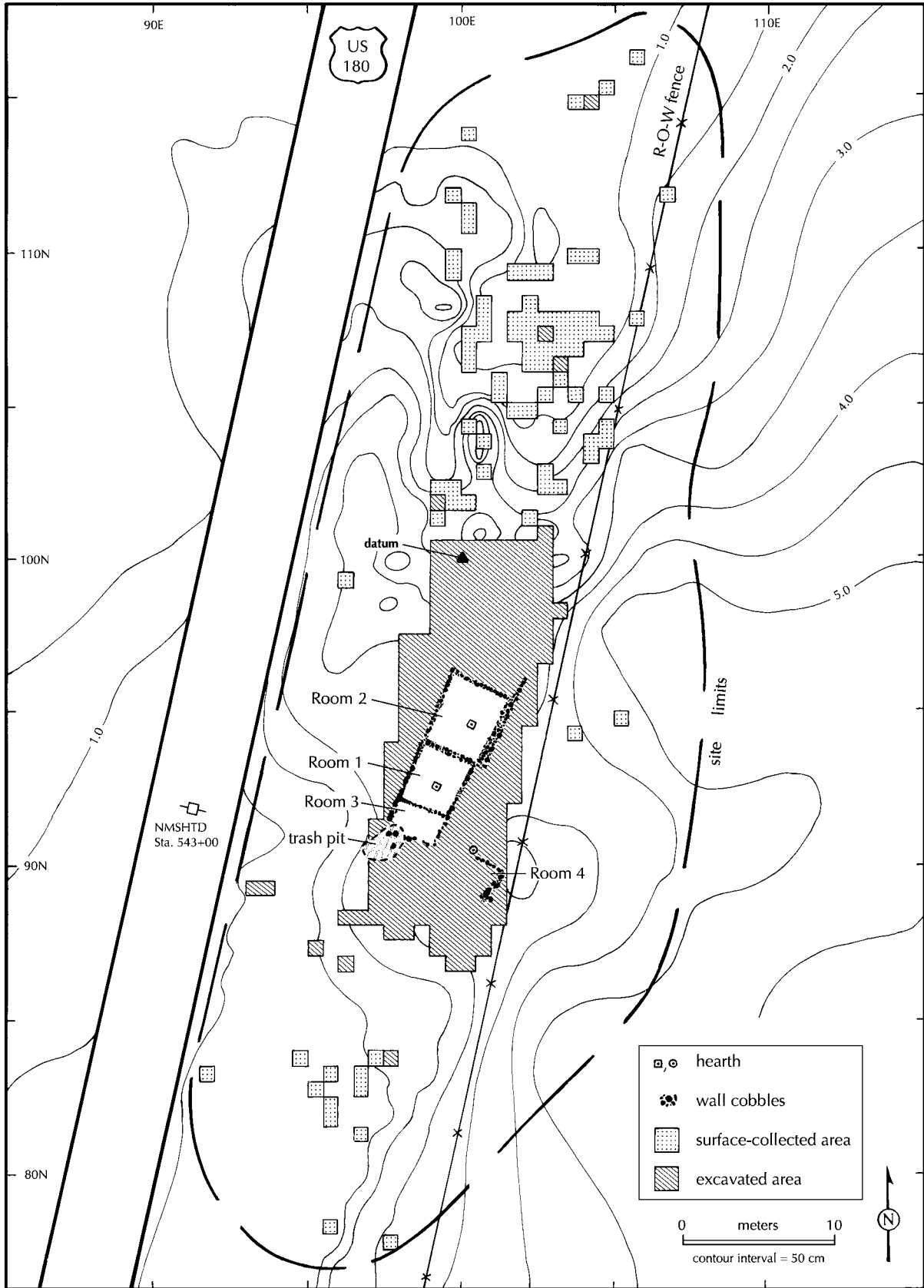


Figure 2.204. LA 70185, DZ site plan.



Figure 2.205. LA 70185, DZ site unexcavated, facing south.



Figure 2.206. Surface stripping, facing south.



Figure 2.207. Exterior walls defined and interior rooms being excavated.

ber, depth, field specimen number, date, and excavator initials were included on the bag. The depths were taken from the northwest corner of the grid in centimeters. The room depths were taken from the main datum by using a line level.

When features were found, a plan view map and a profile were drawn, and each feature was photographed. Several samples for ancillary analysis were taken from the features. These included C-14, pollen, flotation, and macrobotanical samples. Pollen samples were taken from the floor, floor features, and interior of artifacts, such as ceramic vessels.

CULTURAL UNITS

Roomblock

The site consisted of a small, possibly four-room Tularosa phase roomblock. Two complete rooms (Rooms 1 and 2) were excavated on the DZ site. Room 3 had only the east and west walls remaining and Room 4 had only a portion of the north and west walls present. Both rooms had evidence of a floor; however, there were no floor features to suggest that they were used for anything other than storage. Rooms 1, 2, and 3 cover 108.1 sq m and are aligned in a northeast-southwest direction (Figs. 2.208, 2.209).

Room 1

Dimensions. Room 1 is almost rectangular and measures 3.75 m north-south by 3.30 m east-west comprising 12.37 sq m (Figs. 2.210, 2.211). It is smaller than Room 2, located to the northwest. A total of 11 pits was found in Room 1 along with a slab-lined hearth, a deflector, two pot rests, and a ventilator (Fig. 2.208).

Walls. The walls of Room 1 are made of stacked, large rhyolite and basalt boulders with some small cobbles. These range from 30 cm to 63 cm in height. Small cobbles and rhyolite slabs were used for chinking material. A mud mortar was placed between the rocks for cohesion (Fig. 2.212a). Although large boulders were used for wall construction, walls were not particularly thick. The thickness ranged from as narrow as 23 cm to as thick as 43 cm. The interior wall lengths were 3.75 m for the east and 3.30 m for the north and south walls. The corners to the room are bonded.

North wall: 42-62 cm (h) by 43 cm (t)

East wall: 30-55 cm (h) by 33 cm (t)

South wall: 40-63 cm (h) by 24 cm (t)

West wall: 34-58 cm (h) by 40 cm (t)

Floor. The floor consisted of a compact uneven charcoal-stained clay base that appears to have been smoothed. It was in good condition along the wall edges

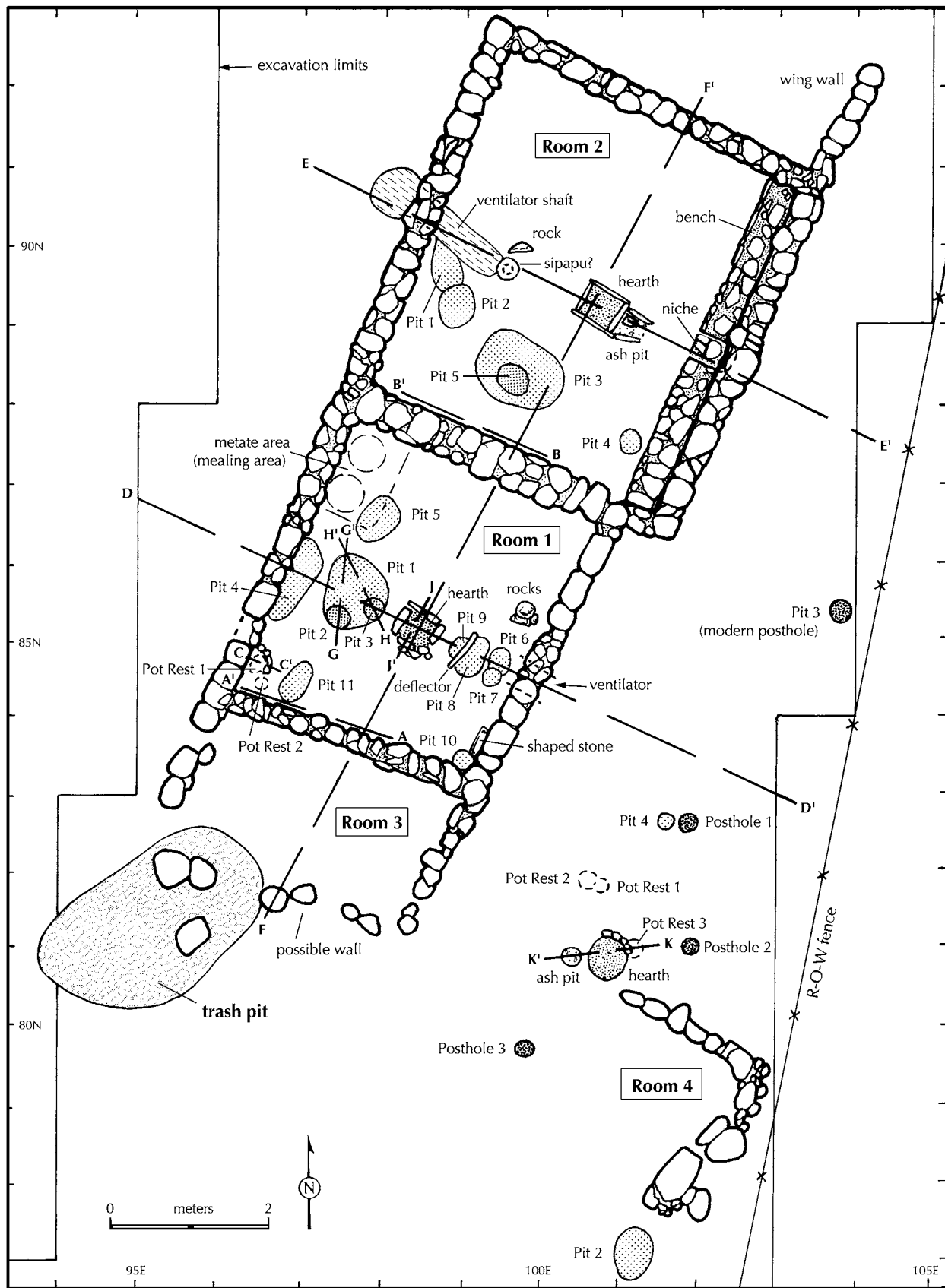


Figure 2.208. Plan view of rooms and features, LA 70185, DZ site.

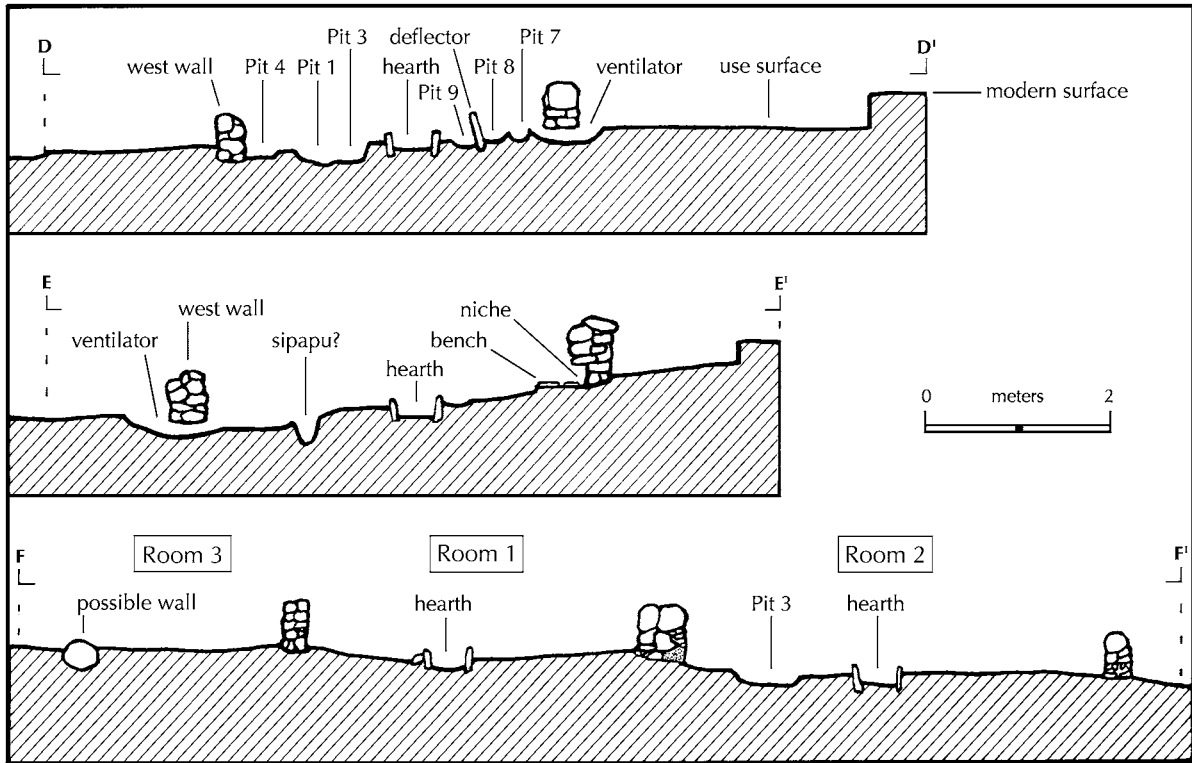


Figure 2.209. Profiles of roomblock (see Figure 2.208).



Figure 2.210. Room 1, excavated, facing north; Room 2 in background.

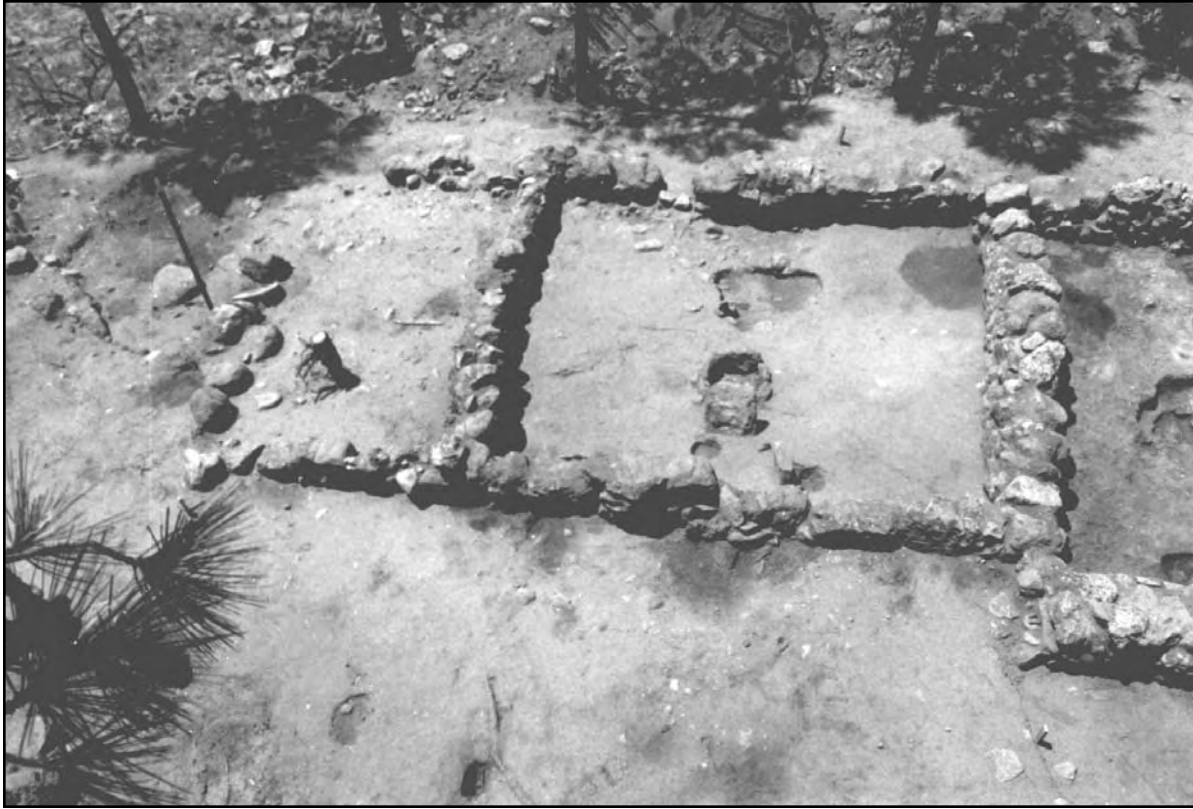


Figure 2.211. Looking down at Room 1; Room 3 to the left and Room 2 to the right.

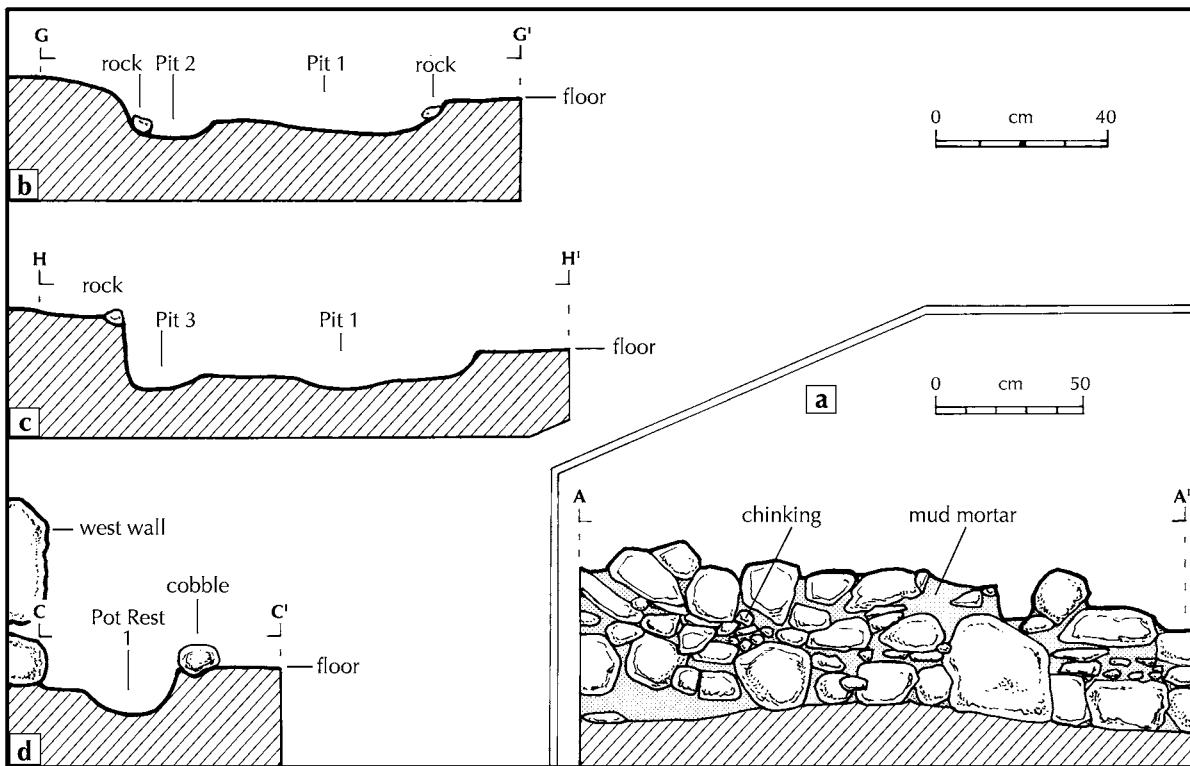


Figure 2.212. Room 1, profiles; (a) south wall, (b) Pits 1 and 2, (c) Pits 1 and 3, (d) Pot Rest 1.

and in some areas of the room. Toward the center of the room, however, it was deteriorated because of root activity, rodent burrows, and damage from wall fall. There was no evidence of remodeling. The subsequent floor trenching revealed that the floor thickness ranged from 0.5 cm to 1.0 cm. The floor artifacts recovered from Room 1 consisted of 234 ceramics, 25 lithic artifacts, and 9 pieces of ground stone. Several floor features were present in Room 1.

Floor Features. There were a total of 15 features in Room 1; 11 of them were floor pits (Fig. 2.208).

Pit 1 was located on the west side of the hearth and was 60-by-80-by-15 cm. The fill of this irregularly circular pit contained fist-sized cobbles with some rhyolite slabs along the east edge. The sides were smoothed, but not plastered, and there was no evidence of burning. A one-hand mano was found at the bottom of the pit. Within Pit 1 were two smaller depressions or ancillary pits (Pits 2 and 3). The fill of all of the pits was a dark loose sandy clay with some charcoal.

Pit 2 was within the southwestern portion of Pit 1. This circular pit was made after construction of Pit 1. The fill consisted of a dark loose sandy clay. It measured 28-by-25 cm and was 4 cm deep (Fig. 2.212c). The function of this pit is unknown; however, it may have been used for holding a vessel upright. The pit does not have

any evidence of plastering, but the sides and bottom have been smoothed.

Pit 3 was on the southeastern portion of Pit 1 and was 25-by-29-by-3 cm. This circular pit was also dug into the bottom of Pit 1. The fill was a dark loose sandy clay. Pit 2 and 3 are almost identical. The diameter and the depth differ only slightly. The sides and bottom have been smoothed. Again, its function is unknown (Fig. 2.212d).

Pit 4 was located along the west wall of Room 1 next to Pit 1. The pit measured 1.14 m by 43 cm by 11 cm. This oblong-shaped pit had a mano fragment in the fill. The fill consisted of a dark sandy clay with flecks of charcoal. Some lithic artifacts and a few ceramics were recovered. This pit may have been used for storage.

Pit 5 was a rectangular pit that was 65-by-50-by-26 cm. It is located in the northwest corner of the room within the mealing area. Metates 1 and 2 and Vessels 2 and 3 along with two manos were next to the pit (Fig. 2.213). It is possible that this feature was used for storage. The fill consisted of a dark sandy clay with minute charcoal flecks. The pit had been dug into the red sterile clay and the edges and bottom had been smoothed.

Pit 6 was a circular pit that was 30 cm in diameter and 7 cm deep and is 25 cm east of the deflector. The shallow pit was next to two large rhyolite rocks that were



Figure 2.213. Mealing area in Room 1, Metate 1 removed, vessel in situ under metate.

intentionally placed into the floor. The fill of the pit was a sandy, silty clay. No artifacts were associated with the feature.

Pit 7 was on the south side of Pit 6. It also measured 30 cm in diameter; however, it was 17 cm deep. The circular pit may have functioned as a posthole. Some charcoal fragments were found in the feature; however, a C-14 sample was not collected because of the lack of sufficient charcoal.

Pit 8 was an oblong-shaped pit on the east side of the room, behind the deflector. It was 45-by-27-by-10 cm. The fill of the pit was the same as the room fill and consisted of a sandy clay.

Pit 9 was on the west side, against the deflector; it was 46-by-20-by-15 cm. The soil was a loose, silty sandy clay. At the bottom of this pit was a small chrysocolla fragment. The pit could possibly have been a sipapu because of its placement near the deflector and given other room features, such as a bench, wall niche, and a ventilator.

Pit 10 was a circular pit that was 8 cm in diameter and 19 cm deep. It was located in the northeast corner of the room. The fill of the feature was a dark sandy clay. The pit had been dug into the red clay and smoothed. The function of this pit may have been as a posthole for roof

support.

Pit 11 was an irregular pit measuring 70-by-40 cm and 20 cm in depth. The pit was located in the southwest quarter of the room along the south wall. The fill was a dark sandy clay with some charcoal flecking. The pit was dug into the red clay and smoothed.

Two pot rests with vessel fragments were also found on the floor of Room 1. Pot Rest 1 was rock-lined and was against the west wall near the southwest corner (Fig. 2.212b). This feature contained a partially reconstructible vessel. It measured 32-by-23 cm and was 10 cm deep. Pot Rest 2 is in the southwest corner next to Pit 11. The feature is 20 cm in diameter and 5 cm deep. A fragmented sherd was lying in the feature.

A mealing area was also found in the northwest corner of Room 1. The area covered an area of 1.2 m north-south by .75 m east-west. The mealing area had two trough metates resting on the floor, both with one edge propped up with rhyolite rocks. Alma Plain bowls were recovered in situ at the open end of each metate (Fig. 2.213).

Hearth. The hearth was slab lined and slightly offset from the center of the room. It was square in shape and lined with rhyolite slabs. It measured 53 cm north-south by 55 cm east-west and was 15 cm deep (Fig.



Figure 2.214. Room 1, hearth, deflector, and Pits 1, 2, 3, looking south.

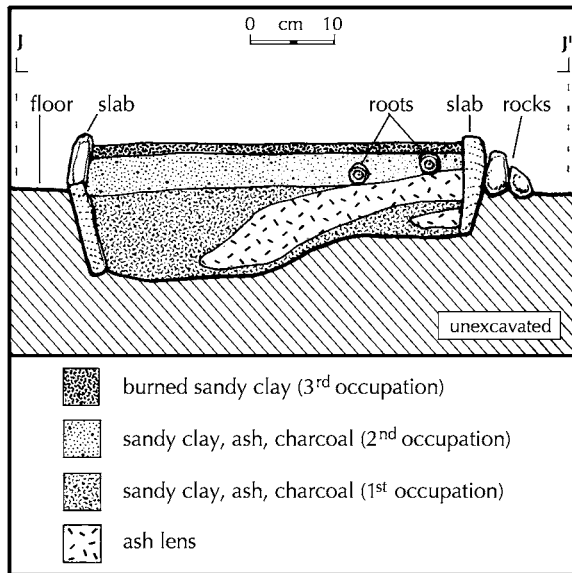


Figure 2.215. Room 1 north-south hearth profile.

2.214) and showed evidence of three separate uses based on the stratigraphy (Fig. 2.215). The latest, or uppermost level, consists of 15 cm of burned sandy clay, ending at a hard compact surface. Below the compaction was a second layer of sandy clay with ash and charcoal. An aberrant C-14 date of A.D. 600 was obtained from this level of use. This 5-cm-thick layer also stopped at a soil compaction. The final layer was a sandy clay with ash, charcoal and oxidation. At the bottom of this layer the soil had been heavily oxidized. In addition to C-14 samples, flotation samples were also collected from the hearth. There was an attempt to obtain an archaeomagnetic date, but we were not able to date the sample that was collected.

Ventilator. A ventilator opening was found in the bottom center of the east wall (see Fig. 2.208). This feature was aligned with the hearth and deflector. The opening measured 37 cm in width and 21 cm in height. It vents to the outside where the activity area was found.

Deflector. The deflector was a large, shaped rhyolite slab that was 41 cm high by 38 cm wide. The deflector was set 10 cm into the floor and is located 13 cm to the east of the hearth and 78 cm from the ventilator. There was no evidence of burning present on the stone.

Postholes. Possibly one was present, Pit 10.

Roof. Missing, no roof beams were present.

Room 2

Dimensions. Room 2 is larger than Room 1 and was built later, based on wall abutments. It is an almost square room that is 4.5 m north-south by 4.0 m east-west and covers 18.0 sq m (Figs. 2.216, 2.217). On the east side of the room against the wall was a stone-lined

bench; along the bench in the center of the east wall was a niche. Directly west of the niche, on the floor, are an ash pit, a hearth, possible sipapu, ventilator shaft, and ventilator. Other floor features consisted of five floor pits.

Walls. The walls of the room were constructed of basalt and rhyolite rocks. The first course was large boulders with a mud mortar between the rocks. Smaller rhyolite slabs and small basalt cobbles were used for chinking purposes (Fig. 2.218). The wall heights ranged from 30 to 81 cm. The south corner jogs west and abuts the northeast corner of Room 1 (see Fig. 2.208). The other corners are bonded.

The wall thickness ranged from 32 to 43 cm. Sometimes large boulders were used for the first course and smaller rocks were placed above them. In some cases, smaller cobbles were placed between the large, round boulders. The size of the boulders ranged from 33 to 43 cm in length. The wall lengths are 4.55 m for the east and west walls and 4.0 m for the north and south walls. A wing wall was also attached at the outside northeast corner. It was 1.68 m long, 32 cm wide, and 20 to 25 cm high.

North wall: 38-55 cm (h) by 32 cm (t)

East wall: 42-81 cm (h) by 32 cm (t)

South wall: 49-73 cm (h) by 43 cm (t)

West wall: 30-56 cm (h) by 38 cm (t)

Floor. The floor of Room 2 was very difficult to follow. It was badly eroded and only present in a few areas. It consisted of a smoothed red clay mud and was 1 cm thick. The floor artifacts found included 57 ceramics, 11 lithic artifacts, and 6 pieces of ground stone.

Floor Features. A total of 11 features were encountered during the excavation of Room 2. The features include 5 pits, a central hearth with ash pit, a sipapu, a ventilator, ventilator shaft, a bench, and a wall niche on the bench.

Pit 1 was located on the south side of the ventilator shaft and was 30-by-40-by-20 cm. The soil of the pit was a dark charcoal-stained, sandy clay. Eight ceramics were recovered from this pit: four Alma Brown Wares, three corrugated, and one plain smudged. One unmodified crystal was also found in the pit.

Pit 2 was southeast of Pit 1 and was 50 cm in diameter and 30 cm deep. The pit was filled with charcoal-stained sandy clay and was dug into the floor of Room 2. In the fill of the pit there was one Reserve Plain Corrugated and one Reserve Indented Corrugated sherd.

Pit 3 was a large pit that was 90-by-92-by-15 cm. The pit contained oxidized red clay at the bottom. A large, shaped rhyolite slab was embedded in it. The slab measured 20 cm wide, 39 cm long, and 3 cm thick. Two



Figure 2.216. Room 2. Note the alignment of the niche, ash pit, hearth, sipapu, vent shaft, and vent.

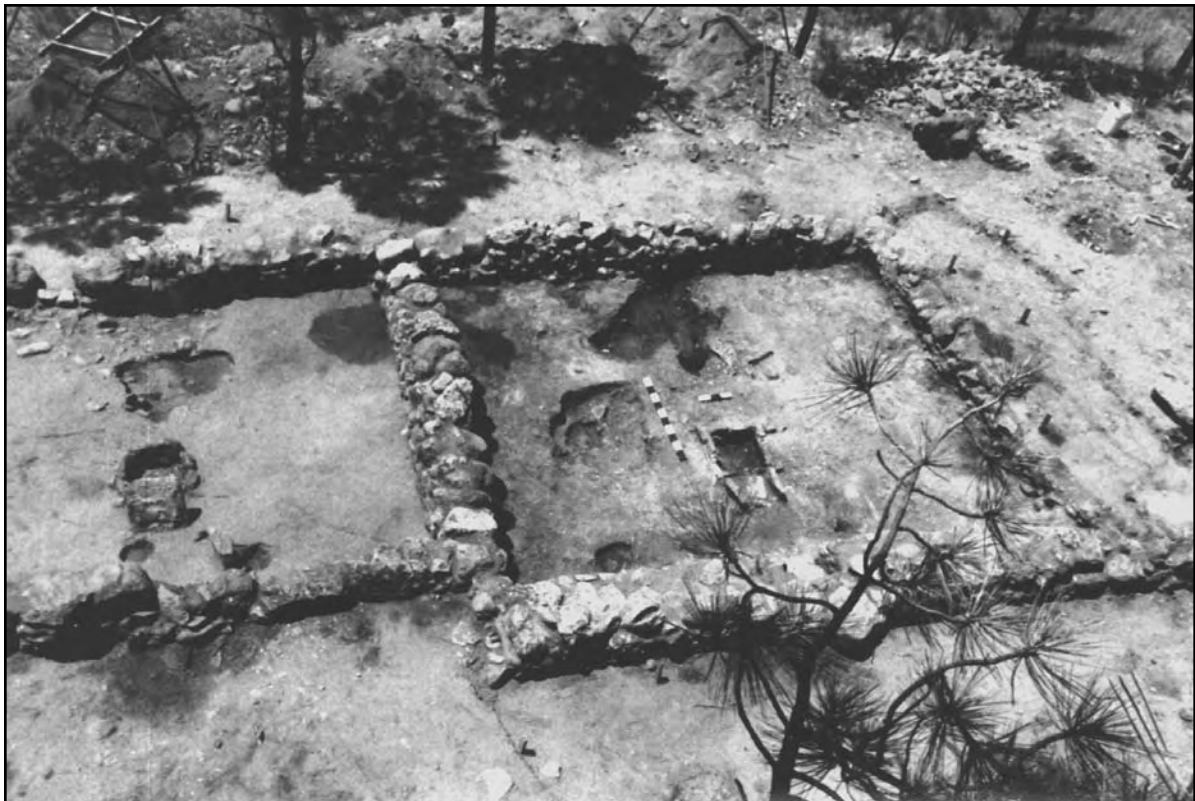


Figure 2.217. Room 2; Room 1 to the left.

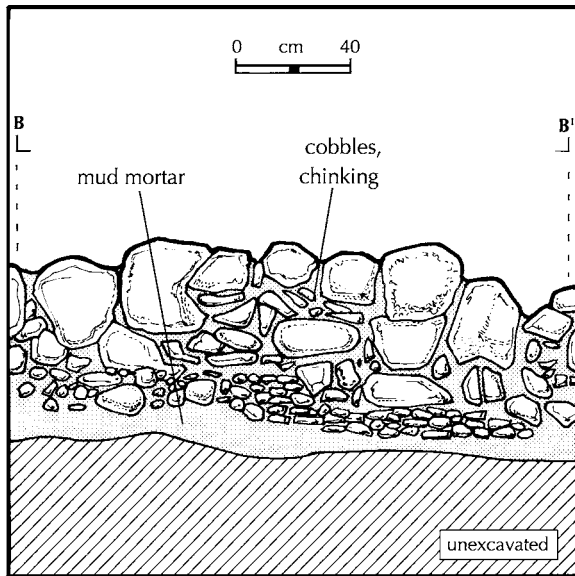


Figure 2.218. Room 2, south wall profile.

sherds were collected from the fill of the pit. It is possible that this might have been a warming pit.

Pit 4 was 30 cm in diameter and 5 cm deep. The fill was a dark sandy clay with no associated artifacts. The pit may have served as a pot rest, based on its shallowness.

Pit 5 was located under the rhyolite slab in Pit 3. It was 34 cm by 35 cm and 3 cm deep. The fill was a burned clay. Associated ceramics were one Alma Plain, one Alma Rough, one Reserve Plain Corrugated, one incised corrugated, and three Tularosa Black-on-white sherds. The sides of the pit were red clay and the bottom was loose sand. It is probable that the bottom was disturbed by root action or rodent activity. A calibrated date of A.D. 670 was obtained from this pit, but it is too early for the ceramic artifacts.

Hearth. The hearth was located slightly off-center to the east toward the bench (Fig. 2.219). It is constructed of rhyolite and sandstone slabs placed along the sides and bottom. The interior of the hearth measured 49 cm north-south by 43 cm east-west and was 22 cm deep. The fill consisted of mostly ash with some sandy clay. Several artifacts were recovered from the hearth including 5 ceramics, 20 lithic artifacts, and 1 ground stone fragment. In areas, the sandstone had been oxidized from the fire. However, we were not able to obtain an archaeomagnetic date from the sample taken on the sandstone.

Ash Pit. Immediately to the east of the hearth was a slab-lined ash pit, built with upright slabs and a large slab at the bottom. It measured 34 cm north-south by 28 cm east-west and 10 cm deep. The fill consisted of a fine gray ash with minute flecks of charcoal.

Ventilator. The ventilator was found in the bottom of the west wall and the opening measured 23 cm high and

30 cm wide. The vertical walls of the opening consisted of large cobbles with smaller chinking stones and the top had a large cobble producing a rounded opening. The fill was soft sandy clay with charcoal; however, no artifacts were associated with this feature.

Ventilator Shaft. The interior length of the shaft measured 1.43 m. The shaft began at the possible sipapu and went through the ventilator opening in the wall and continued another 35 cm to the outside (Fig. 2.220). On the outside it opened into a semicircular pit that was 25 cm deep. The shaft inside the room was 35 cm wide and 32 cm deep. The fill in the feature was a charcoal-stained sandy clay with charcoal, rocks, and artifacts. The several artifacts recovered from the fill of the shaft included 15 ceramics, 2 lithic artifacts, and 1 two-hand mano.

Sipapu. This feature was at first thought to have been a posthole. It was 22-by-20-by-35 cm and was located at the end of the ventilator shaft. To the north of the feature was a shaped rhyolite slab resting on the floor. This slab may have been a fragment of the deflector. The fill was a dark sandy clay with a few flecks of charcoal. At the bottom of the hole, a piece of chrysocolla was found. No other artifacts were associated with this feature.

Bench. The bench extended along the entire east wall of the room. It was 43 cm wide and was raised 30 cm above the floor (Fig. 2.219). The bench was constructed of large rhyolite slabs averaging 70 cm in size. The slabs had been impressed into the top of a dirt bench creating a rock facing. The front of the bench has been coursed with basalt and rhyolite cobbles; a mud mortar was placed between the cobbles near the floor. The rest of the bench had randomly placed slabs. In one area, near the northeast corner, the slabs were missing.

Niche. This feature was located in the center of the east wall in Room 2 (Fig. 2.221). It was set 50 cm into the slab-lined bench and built with small cobbles placed in red clay along the sides. Small rhyolite slabs and clay mortar were used for the top and bottom. The opening was 23 cm high, 38 cm wide, and 50 cm deep. It was completely intact except for a small portion on the north where a root has disturbed it. Five Alma Brown Wares and 1 Reserve Smudged sherd were found in the niche.

Postholes. None present.

Roof. Missing, no evidence found.

Room 3

Room 3 may have been a storage room instead of living quarters. Some of the room was missing; however, it had one complete wall (north) and two partial walls (east and west). Only remnants of the south wall were found (see Fig. 2.208).



Figure 2.219. Hearth, ash pit, bench, and niche in Room, facing east.



Figure 2.220. Vent shaft through the west wall. Sipapu east of the shaft. Pits 1 and 2 to the left.



Figure 2.221. Niche in the east wall, Room 2.

Dimensions. The dimensions for the room are not complete; however, what remains measured 3.26 east-west by 1.20 m to 1.30 m north-south (3.9 sq m).

Walls. The only complete wall was on the north edge. It separated Rooms 1 and 3, and was 3.26 m in length, 24 cm wide, and 40 to 63 cm high. The east wall was 1.30 m long, 24 cm wide, and 35 cm high. The west wall was 1.20 m long, 40 cm wide, and 25 cm high. The south wall was missing; however there were a few rocks that may be the basal remains of the wall. The northwest and northeast corners were bonded with Room 1 suggesting that this room was built at the same time as Room 1.

Floor. Although the room was disturbed, the floor was still intact in most of the north portion and was a smooth compacted clay. It was .5 cm to .8 cm in thickness. The floor artifacts consisted of one piece of angular debris.

Floor Features. There were no floor features in Room 3, again suggesting that it may have been used for storage although there was an absence of storage pits. However, it must be kept in mind that the room was not complete and more than half of the floor had been obliterated by tree roots.

Hearth. None.

Ventilator. None.

Postholes. None.

Roof. Missing, no evidence found.

Room 4

Room 4 is another partial room. It consisted of partial north and east walls (see Fig. 2.208).

Dimensions. There were no complete walls present, so room dimensions are unknown. It measures at least 2.1 m by 2.0 m (4.2 sq m).

Walls. The north wall of Room 4 was 2.1 m long, 12 cm to 30 cm high, and 30 cm wide. The east wall was 2.0 m in length, 50 cm wide, and 20 cm to 50 cm high. The only corner of the room was bonded.

Floor. It consisted of a compact gray clay on top of the natural red clay and was .5 cm thick. No floor features or artifacts were encountered.

Floor Features. None.

Hearth. None.

Ventilator. None.

Postholes. None present.

Roof. Missing, no evidence found.

Extramural Features

To the east of Rooms 1, 2, and 3 there was an outside activity area. The surface in this area was a compact, red, charcoal-stained clay. A total of 13 features were found on the surface (Fig. 2.208). They consisted of three postholes, three pot rests, one hearth and ash pit, one large

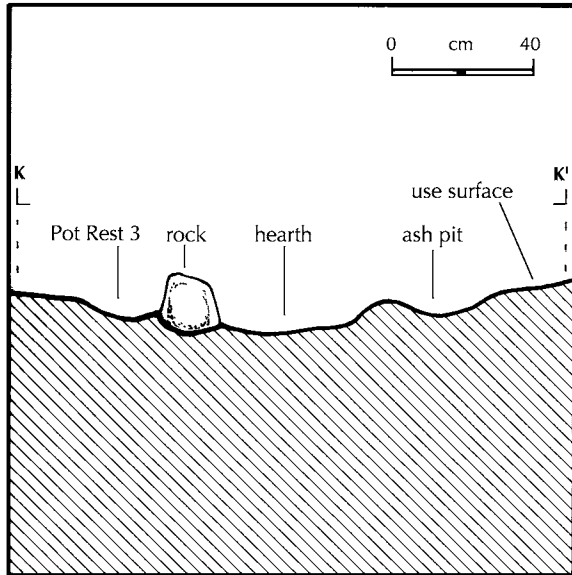


Figure 2.222. East-west profile of hearth, ash pit, and pot rest in exterior activity area.

trash pit, and four pits.

Hearth. The outside use surface produced a shallow basin hearth that was dug into the red sterile clay and lined with a few cobbles on the north side. It was 36 cm north-south by 38 cm east-west and 12 cm deep (Fig. 2.222). The fill consisted of sandy charcoal-stained soil. A C-14 sample was not collected because there was an absence of adequate charcoal fragments. An archaeomagnetic sample was taken, but no date was produced.

Ash Pit. The ash pit was west of the hearth and was 24-by-28 cm and 10 cm deep. The fill content consisted entirely of ash, which was collected as a flotation sample.

Postholes. A total of three postholes were found on the east side of the roomblock in the activity area around the hearth. The postholes could have been for a ramadatype shelter (Fig. 2.208).

Posthole 1 was 24 cm in diameter at the surface and narrowed to 11 cm in diameter at 30 cm depth. The posthole had been dug into the sterile red clay and had a sandy clay fill with charcoal flecks. It was located 1.5 m northeast of the hearth.

Posthole 2 was 90 cm east of the hearth. It was 24 cm in diameter and 32 cm deep. It had been dug into the red sterile clay and contained a dark sandy soil that had some charcoal flecking. No artifacts were associated with it.

Posthole 3 was 1 m southwest of the hearth. It was 4 cm smaller than Postholes 1 and 2 and measured 20 cm in diameter and 20 cm deep. This posthole was also dug into the red sterile clay. The fill was a dark sandy soil with small charcoal flecks present.

Pot Rests. Three pot rests were found in the activity

area and are clustered around the hearth (Fig. 2.208). Pot Rests 1 and 2 are two contiguous depressions making a figure-eight shape. Pot Rest 2 was larger and was 25 cm in diameter and 8 cm deep. The fill was a dark, sandy, charcoal-stained clay. Pot Rest 3, by the hearth, is 20 cm in diameter and 8 cm deep with the same type of fill. Artifacts associated with these features consisted of four Alma Plain Brown Wares and one alternating corrugated sherd.

Pits. Four pits were found on the exterior surface. Pit 1 was a large trash pit next to Room 3, Pit 2 was found on the south side of Room 4, Pit 3 was east of Room 2 near the existing right-of-way fence, and Pit 4 was next to Posthole 1.

Pit 1 was 4.0 m north-south by 2.2 m east-west and 40 cm deep. The pit was dug into the red clay. The bottom of the pit was very rocky. The artifact density was relatively high for this feature since all other pits were almost sterile. Material consisted of 184 ceramics, 27 lithic artifacts, 1 two-hand mano fragment, 3 chert projectile points, and 1 quartz crystal. Because of the size of the pit and the number of artifacts found, we believe it is a place where trash was discarded.

Pit 2 was 40 cm north-south by 30 cm east-west and 16 cm deep. The fill was a dark, almost black, compact sandy clay. The pit had been dug into the red sterile clay; however, root activity has disturbed the edges. Three ceramics were associated with this pit.

Pit 3 was a small pit, 40 cm in diameter and 30 cm in depth, that proved to be a modern posthole. The fill of the posthole consisted of a reddish sandy clay with wood, several fence staples, and some small fragments of clear glass.

Pit 4 was 20 cm in diameter and 10 cm deep, dug into the red clay. The interior of the feature was nicely smoothed. The fill was a dark, charcoal-stained, sandy clay. Soil samples were collected from the feature.

ARTIFACTS

The total artifact assemblage from the DZ site includes 16,697 items, of which 14,248 are ceramics, 2,214 are lithic artifacts, 119 ground stone, 33 miscellaneous artifacts, 29 projectile points, 4 bone awl fragments, and 49 faunal fragments.

Ceramics

The ceramics recovered from the DZ site consisted of mostly Alma Brown Wares (58.6 percent), plain corrugated, and plain smudged (Table 2.117). However, the several late ceramics place the site into the early to mid-Tularosa phase. In this assemblage we see corrugated,

Table 2.117. Ceramics by Level at the DZ Site

Cell:count Row Percent Column Percent	General Fill	Room 1	Room 2	Room 3	Room 4	Row Total
Alma Plain	4139 82.1% 37.2%	217 4.3% 25.9%	460 9.1% 27.0%	5 .1% 12.8%	222 4.4% 40.2%	5043 100.0% 35.4%
Alma Rough	2675 81.8% 24.1%	114 3.5% 13.6%	358 10.9% 21.0%	3 .1% 7.7%	122 3.7% 22.1%	3272 100.0% 23.0%
Alma Scored	8 88.9% .1%		1 11.1% .1%			9 100.0% .1%
Alma Incised	6 75.0% .1%		2 25.0% .1%			8 100.0% .1%
Alma Punched	3 75.0% .0%		1 25.0% .1%			4 100.0% .0%
Alma Pinched	4 100.0% .0%					4 100.0% .0%
Three Circle Neckbanded	1 100.0% .0%					1 100.0% .0%
Plain corrugated	98 71.0% 12.6%	60 3.4% 7.2%	222 12.8% 13.0%	4 .2% 10.3%	50 2.9% 9.1%	1740 100.0% 12.2%
Indented Corrugated	209 75.7% 1.9%	13 4.7% 1.5%	45 16.3% 2.6%	6 2.2% 15.4%	3 1.1% .5%	276 100.0% 1.9%
Incised corrugated	392 76.0% 3.5%	28 5.4% 3.3%	72 14.0% 4.2%	2 .4% 5.1%	22 4.3% 4.0%	516 100.0% 3.6%
Patterned corrugated	98 71.0% .9%	11 8.0% 1.3%	17 12.3% 1.0%	1 .7% 2.6%	11 8.0% 2.0%	138 100.0% 1.0%
Indeterminate corrugated	162 81.8% 1.5%	8 4.0% 1.0%	21 10.6% 1.2%	2 1.0% 5.1%	5 2.5% .9%	198 100.0% 1.4%
Fillet rim smudged	3 75.0% .0%		1 25.0% .1%			4 100.0% .0%
Plain smudged	1614 64.4% 14.5%	359 14.3% 42.5%	415 16.6% 24.3%	14 .6% 35.9%	103 4.1% 18.7%	2505 100.0% 17.6%
Starkweather Smudged Painted	5 62.0% .0%	3 37.5% .4%				8 100.0% .1%
San Francisco Red	51 78.5% .5%	5 7.7% .6%	4 6.2% .2%		5 7.7% .9%	65 100.0% .5%
Early polished gray	13 72.2% .1%	3 16.7% .4%	2 11.1% .1%			18 100.0% .1%
Plain gray	2 66.7% .0%		1 33.3% .1%			3 100.0% .0%
Late white	199 77.1% 1.8%	15 5.8% 1.8%	35 13.6% 2.1%	2 .8% 5.1%	7 2.7% 1.3%	258 100.0% 1.8%
Reserve Black-on-white	92 71.9% .8%	2 1.6% .2%	33 25.8% 1.9%		1 .8% .2%	128 100.0% .9%

Table 2.117. Continued.

Cell: count Row Percent Column Percent	General Fill	Room 1	Room 2	Room 3	Room 4	Row Total
Tularosa Black-on-white	17 68.0% .2%	1 4.0% .1%	7 28.0% .4%			25 100.0% .2%
Hachure black-on-white	2 100.0% .0%					2 100.0% .0%
Snowflake Black-on-white	2 100.0%					2 100.0% .0%
Indeterminate White Mountain Redware	9 47.4% .1%		9 47.4% .5%		1 5.3% .2%	19 100.0% .1%
Wingate Black-on-red	1 100.0% .0%					1 100.0% .0%
Showlow Black-on-red	1 100.0% .0%					1 100.0% .0%
Column Total	111 12 78.0% 100.0%	839 5.9% 100.0%	1706 12.0% 100.0%	39 .3% 100.0%	552 3.69% 100.0%	14248 100.0% 100.0%

smudged, and gray wares. Also, there are a few nonlocal sherds such as Snowflake Black-on-white, White Mountain Redwares, Wingate Black-on-red, and Showlow Black-on-red that are usually part of a Tularosa phase occupation.

Lithic Artifacts

The 2,214 lithic artifacts consisted of mostly core flakes (69.9 percent) and angular debris (17.4 percent). There are a fair amount of biface flakes also present on the site (9.4 percent). The most common material type is Luna blue agate (42.5 percent). This is not uncommon since the material is readily available in outcrops throughout the area. Cherts are also high in frequency, and can be found in arroyo cuts or drainages in the area (Table 2.118).

The 29 projectile points are almost evenly distributed between the general fill and the roomblock. Many of the projectile points are unidentifiable; however, there were 4 San Pedro and 14 small, narrow Mogollon notched types. Obsidian is the most popular material for the projectile points (72.4 percent; Table 2.119).

Ground Stone

The total amount of ground stone retrieved from the site was 119 specimens. It consisted mostly of manos (52.6 percent) and metates (20.1 percent). Table 2.120 presents the ground stone assemblage for the DZ site. The most common material is rhyolite, which is readily available everywhere in the area. Also included are four axe frag-

ments from Rooms 1 and 2, of which three are three-quarter grooved.

Bone Tools

Four bone awl point fragments were recovered from the fill of Room 1, Room 2, and the outside area. Two fragments were found in Room 1, one from the fill of the southwest corner above Pit 4 and the other from the general room fill. In Room 2, one fragment was recovered from the surface stripping. The fourth fragment was found in the surface stripping east of Room 2.

Miscellaneous Artifacts

There were 33 miscellaneous artifacts (Table 2.121). Quartz crystals are the dominant artifact. Chrysocola and hematite are the most commonly used materials other than quartz. Two ceramic fetishes or effigies were recovered from the general fill outside the roomblock.

ANCILLARY STUDIES

Faunal Remains

Forty-nine pieces of bone were recovered from the site. Table 2.122 shows that the fauna was fairly evenly divided between rabbit species and large mammals, suggesting a diverse hunting economy. Antelope was also present, common on the Plains of San Augustin, which is approximately 75 km to the east, but not in the Mogollon

Table 2.118. Lithic Artifacts from the DZ Site

Cells:count Row Percent Column Percent	Artifact Function											Row Total	
	Angular Debris	Core Flake	Biface Flake	Notching Flake	Bipolar Flake	Blade	Tested Cobble	Core	Cobble Tool	Cobble Tool Bidirectional	Uniface		Biface
Chert	88 17.6% 22.9%	327 66.3% 21.1%	72 14.4% 34.4%		1 .2% 50.0%	3 .6% 23.1%	1 .2% 50.0%	6 1.2% 15.8%				3 .6% 25.0%	501 100.0% 22.6%
Chalcedony	4 33.3% 1.0%	4 33.3% 1.9%	4 33.3% 1.9%										12 100.0% .5%
Luna Blue Agate	193 20.5% 50.1%	647 68.6% 41.8%	80 8.5% 38.3%		1 .1% 50.0%	7 .7% 53.8%	1 .1% 33.3%	12 1.3% 31.6%	1 .1% 33.3%		1 .1% 8.3%	1 .1% 8.3%	943 100.0% 42.6%
Silicified Wood	1 100.0% .1%												1 100.0% .0%
Obsidian	13 23.2% 3.4%	26 46.4% 1.7%	10 17.9% 4.8%									7 12.5% 56.3%	56 100.0% 2.5%
Andesite	13 10.8% 3.4%	93 77.5% 6.0%	8 6.7% 3.8%		1 .8% 7.7%			4 3.3% 10.5%				1 .8% 8.3%	120 100.0% 5.4%
Basalt	23 12.2% 6.0%	146 77.7% 9.4%	13 6.9% 6.2%	1 .5% 100.0%				4 2.1% 10.5%	1 .5% 33.3%				188 100.0% 8.5%
Rhyolite	33 10.9% 8.6%	237 78.0% 15.3%	18 5.9% 8.6%		2 .7% 15.4%		1 .3% 50.0%	11 3.6% 28.9%	1 .3% 33.3%		1 .3% 100.0%		304 100.0% 13.7%
Sedimentary	1 100.0% .3%												1 100.0% .0%
Quartzite	9 23.7% 2.3%	26 68.4% 1.7%	3 7.9% 1.4%										38 100.0% 1.7%
Quartzitic Sandstone	8 16.0% 2.1%	40 80.0% 2.6%	1 2.0% .5%										50 100.0% 2.3%
Column Total	385 17.4% 100.0%	1547 69.9% 100.0%	209 9.4% 100.0%	1 .0% 100.0%	1 .1% 100.0%	13 .6% 100.0%	2 .1% 100.0%	38 1.7% 100.0%	3 .1% 100.0%	1 .0% 100.0%	1 .0% 100.0%	12 .5% 100.0%	2214 100.0% 100.0%

Table 2.119. Projectile Point Assemblage

Cell: Count Row Percent	Material Type			Row Total
	Chert	Luna Blue Agate	Obsidian	
Unidentified	1 16.7%	1 16.7%	4 66.7%	6 100.0%
Medium Lateral-Notched	1 50.0%		1 50.0%	2 100.0%
Small Corner-Notched			1 100.0%	1 100.0%
Small Side-Notched	1 8.0%	1 8.0%	11 84.0%	13 100.0%
Unnotched			3 100.0%	3 100.0%
San Pedro		3 75.0%	1 25.0%	4 100.0%
Column Total	3 10.0%	5 17.2%	21 72.4%	29 100.0%

Table 2.120. Ground Stone Materials from the DZ Site, LA 70185

Cells: count Row Percent Column Percent	Basalt	Rhyolite	Andesite	Rhyolitic Tuff	Sandstone	Metamorphic Schist	Hematite	Row Total
Indeterminate	1 6.7% 4.3%	4 2.6% 8.9%		7 46.7% 46.7%	3 20.0% 9.7%			15 100.0% 12.6%
Polishing Stone							1 100.0% 100.0%	1 100.0% .8%
Abrading Stone	1 25.0% 4.3%			1 25.0% 6.7%	2 50.0% 6.5%			4 100.0% 3.4%
Shaft Straightener					1 100.0% 3.2%			1 100.0% .8%
Shaped Slab	1 25.0% 4.3%	3 75.0% 6.7%						4 100.0% 3.4%
Lapidary Stone		5 71.4% 11.1%	1 14.3% 33.3%		1 14.3% 3.2%			7 100.0% 5.9%
Mortar					1 100.0% 3.2%			1 100.0% .9%
Mano	2 10.0% 8.7%	8 40.0% 17.8%		2 10.0% 13.3%	8 40.0% 25.8%			20 100.0% 16.8%
One-hand Mano	1 16.7% 4.3%	1 16.7% 2.2%		1 16.7% 6.7%	3 50.0% 9.7%			6 100.0% 5.0%
Two-hand Mano	6 18.2% 26.1%	15 45.5% 33.3%	1 3.0% 33.3%	2 6.1% 13.3%	9 27.3% 29.0%			33 100.0% 27.7%
Metate	4 57.1% 17.4%	3 42.9% 6.7%						7 100.0% 5.9%
Basin Metate			1 100.0% 2.2%					1 100.0% .8%

Table 2.120. Continued.

Cells: count Row Percent Column Percent	Basalt	Rhyolite	Andesite	Rhyolitic Tuff	Sandstone	Metamorphic Schist	Hematite	Row Total
Metate, Trough	4 36.4% 17.4%	3 27.3% 6.7%	1 9.1% 33.3%		3 27.3% 9.7%			11 100.0% 9.2%
Slab Metate	1 25.0% 4.3%	1 25.0% 2.2%		2 50.0% 13.3%				4 100.0% 3.4%
Axe							1 100.0% 100.0%	1 100.0% .8%
Axe, three-quarter grooved	2 66.7% 8.7%	1 33.3% 2.2%						3 100.0% 2.5%
Column Total	23 19.3% 100.0%	45 37.8% 100.0%	3 2.5% 100.0%	15 12.6% 100.0%	31 26.1% 100.0%	1 .8% 100.0%	1 .8% 100.0%	119 100.0% 100.0%

Table 2.121. Miscellaneous Artifact Material Type from the DZ Site

Cell: Count Row Percent Column Percent	Artifact Function							Row Total
	Inlay/mosaic	Pendant Bank	Mineral	Fetish/eff igy	Manuport	Unmodified Quartz Crystals	Pendant	
Chert		1 100.0% 20.0%						1 100.0% 3.2%
Sedimentary, Undifferentiated							1 100.0% 100.0%	1 100.0% 3.2%
Chrysocolla		1 16.7% 20.0%	5 83.3% 83.3%					6 100.0% 19.4%
Luna Blue Agate	1 100.0% 100.0%							1 100.0% 3.2%
Quartz Crystal						14 100.0% 93.3%		14 100.0% 45.2%
Hematite		3 75.0% 60.0%	1 25.0% 16.7%					4 100.0% 12.9%
Concretion, Sandstone					1 100.0% 100.0%			1 100.0% 3.2%
Alma Plain				1 100.0% 33.3%				1 100.0% 3.2%
Alma Rough				2 100.0% 66.7%				2 100.0% 6.5%
Column Total	1 3.2% 100.0%	5 16.1% 100.0%	6 19.4% 100.0%	3 9.7% 100.0%	1 3.2% 100.0%	14 45.2% 100.0%	1 3.2% 100.0%	31 100.0% 100.0%

Table 2.122. Faunal Remains from the DZ Site

Taxa	Frequency	Percent
Mammal (indeterminate)	5	10.4
Small Mammal	8	16.6
Medium Mammal	3	6.3
Large Mammal	8	16.6
Pocket Gopher	4	8.3
Muskrat	2	4.2
Rabbit Family	1	2.1
Cottontail Rabbit	9	18.7
Jack Rabbit	2	4.2
Toe and hoofed Mammals	2	4.2
Deer	2	4.2
Pronghorn Antelope	1	2.1
Bighorn Sheep	1	2.1
Turkey	1	2.1
TOTAL	49	100.0

Highlands themselves. Also of interest is the presence of turkey bone found in the general fill (54 cm below present ground surface) north of Room 2. No evidence of domestication of this species was present.

Macrobotanical Remains

Four flotation samples were analyzed from Room 2 and ten from Room 1. Thus, the unsatisfactory recovery of nonreproductive pine parts as the only representatives of cultural debris from Room 1 is not too surprising. These remains most likely represent fuelwood residue. Despite the increase in the number of samples analyzed from Room 2, the number of taxa recovered is still not remarkable. Charred goosefoot, pigweed, and unidentified seeds along with corn cupules were recovered in low frequency and abundance.

On the other hand, seven taxa were identified in only two samples from extramural features, the most productive of which was the outside hearth east of Room 3. Charred pigweed, goosefoot, purslane, and unidentified seeds along with corn cupules were recovered from the hearth while charred goosefoot seeds, corn cupules, and nonreproductive pine parts were recovered from the ash pit southwest of Room 1. These findings could indicate that food preparation took place primarily in the outside activity area or that interior features were cleaned out periodically. Samples collected from general fill contexts were either devoid of cultural plant remains or produced

charred fuelwood debris.

The greatest number of charred seeds was recovered from the posthole that may possibly be associated with Room 4 and from the extramural hearth. These offer convincing evidence that purslane was used as a food source. Other weedy annuals were found in such low abundance and frequency that their interpretation is difficult. The archaeobotanical assemblage does indicate that corn and weedy annuals were both part of the diet of site occupants. Evidence of fuel wood is predominantly coniferous, including Douglas fir, fir, juniper, piñon, and ponderosa pine. A minute amount of oak was also recovered from a single provenience.

Pollen Remains

Eighteen pollen samples and twelve pollen washes were submitted for analysis from the DZ site. These were retrieved from the two rooms and extramural areas. We were particularly looking for any differences in pollen results that might contribute to an understanding of the function of the rooms. As Table 2.123 indicates, the results from the two rooms are alike, with only a few exceptions. For example, Mormon tea was recovered only outside of the rooms and only Room 1 had juniper, elm, and evening primrose. Corn remains, both pollen and starch grains, are more prevalent in Room 1. This is logical because this room contained a mealing bin, which would account for the increase. However, the lower amounts of corn in Room 2 may contribute to the interpretation of Room 2 as having more of a ceremonial rather than domestic function, as suggested in this chapter.

DATING METHODS

The combination of ceramics and radiocarbon dates gave us the best chronology for the site. An attempt to have oxidized soil and burned sandstone from the interior room hearths dated through archaeomagnetism was unsuccessful, although there have been some dates obtained from burned sandstone (D. Wolfman, pers. comm. 1993). The ceramics place the site within the Tularosa phase.

Seven radiocarbon samples were submitted for analysis from the DZ site (Table 2.124 and Fig. 2.223). Three of the seven are extremely early and likely represent an old wood problem. Site occupants apparently used pieces of dead wood in the two room hearths. The two calibrated intercept dates of A.D. 1160 and 1170 for the ventilator and associated pit in Room 2 match the ceramic assemblage and seem to present the best fit for the site.

Table 2.123. Pollen Retrieved from LA 70185

Feature	Location	Pine	Juniper	Elm	Sunflower	Grasses	Sage	Mormon Tea	Cheno-am	Com Pollen	Com Starch	Evening Primrose
Room 1												
Floor	Ceramics and Ground Stone	X	X	X	X	X*	X		X	X	X	X
Fill	Ceramics and Ground Stone	X		X	X	X	X		X			
Nearby	Ground Stone	X			X	X			X			
Room 2												
Floor	Ground Stone	X			X	X	X		X		X	
Fill	Ground Stone	X			X	X*			X			
Nearby	Ceramics and Ground Stone	X			X	X	X	X	X	X		

*Higher Amounts

Table 2.124. C-14 Dates for LA 70185

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
87N/99E	71720	1060 ± 70	A.D. 910-920 950-1030	A.D. 870-1060 1070-1160	A.D. 1000	Room 1 (Floor)
86N/99E	71721	1090 ± 70	A.D. 890-1020	A.D. 790-1040	A.D. 980	Room 1 (Floor)
90N/99E	69450	910 ± 100	A.D. 1020-1240	A.D. 970-1290	A.D. 1160	Room 2 (Vent)
86N/99E	69451	1390 ± 90	A.D. 610-700	A.D. 530-820 830-860	A.D. 660	Room 1 (Hearth)
88N/99E	69452	900 ± 60	A.D. 1040-1220	A.D. 1020-1260	A.D. 1170	Room 2 (Pit 3)
88N/99E	69453	1360 ± 80	A.D. 630-720 740-760	A.D. 560-870	A.D. 670	Room 2 (Pit 5)
90N/100E	78276	1270 ± 60	A.D. 680-855	A.D. 655-890	A.D. 770	Room 2 (Hearth)

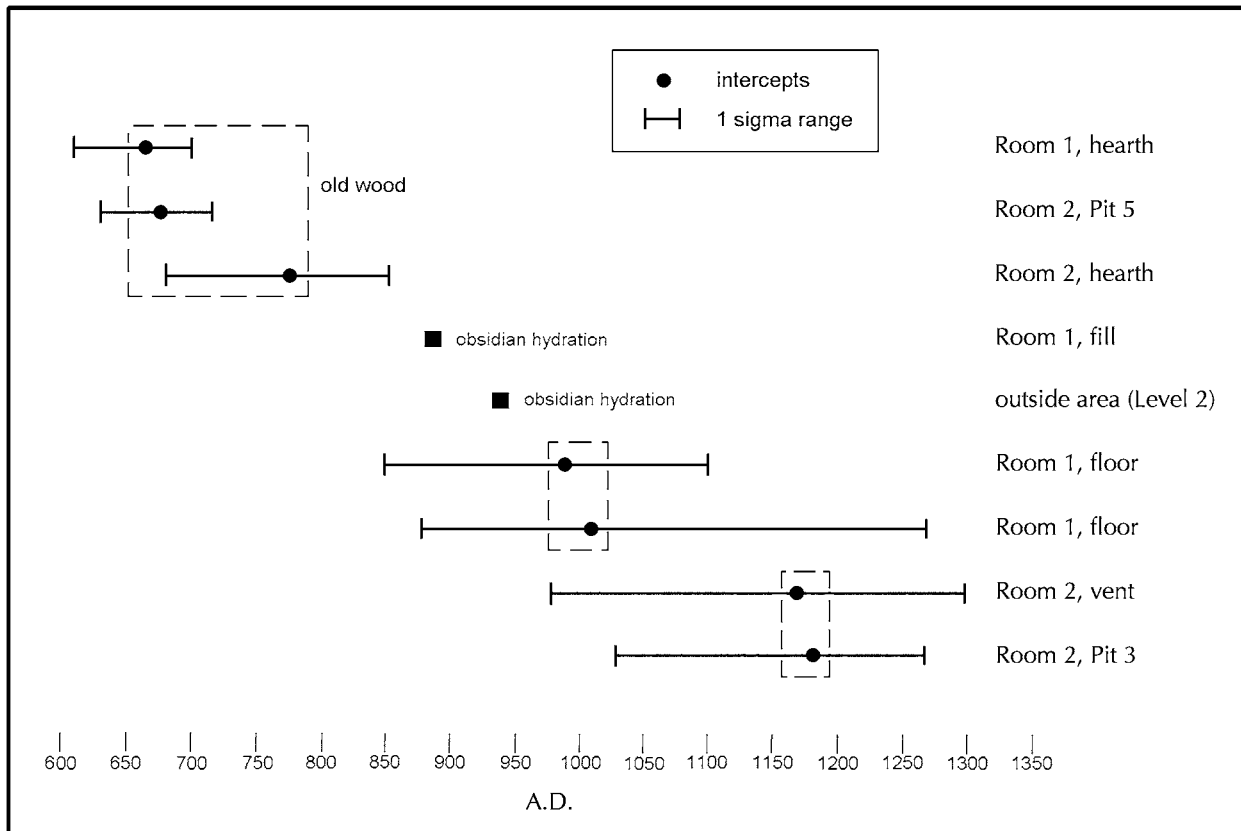


Figure 2.223. Seriation of dates, LA 70185.

The ceramic assemblage although mostly Alma Brown Wares, contains many corrugated wares, white wares, and painted wares. Most of these types become prevalent during the mid-to-late Reserve phase and continue into the Tularosa phase. Besides the Reserve Black-on-white and Tularosa Black-on-white, there are also other ceramics that occur during this time such as Starkweather Smudged Painted, Snow Flake Black-on-white, Showlow Black-on-red, and White Mountain

Redwares.

The projectile points from the site range from Late Archaic (San Pedro points) to Pueblo (Mogollon side-notched points). Therefore the projectile points were not a good source for arriving at a site chronology. It is possible that the Archaic points were being curated by the people from the DZ site.

Although several archaeomagnetic samples were taken, none produced a date for the site. The obsidian

hydration results from four submitted samples produced unusable dates. Two, at 2811 and 435 B.C., were clearly too early for the site. Two others at A.D. 886 and A.D. 966 fall within the range of obtained C-14 dates, but are too early for a Pueblo period site.

SITE INTERPRETATION

The DZ site, LA 70185, contains at least two habitation rooms and two storage rooms with perhaps one or two more rooms present outside of the highway right-of-way. The ceramics found on the site place the site in the Tularosa phase.

Room 1 is a habitation unit that was built on the sterile red clay that underlies the site. It contained a slab-lined hearth, a deflector, and a ventilator, which align east-west. In the northwest corner of the room there were two large trough metates with bowls at their base. One metate and mano had corn pollen present on them and three of the vessels also produced corn pollen. However, the ground stone does not exhibit the type of wear that would be expected if occupants were heavily relying on corn for their main source of nutrition (see Ground Stone section). The room also had many floor pits, of which some were used for storage. Several pot rests were also found in the floor.

Room 2 was constructed at the same time but is larger than the other room. The interior of the room contained a bench along the east wall, a niche in the wall above the bench, a hearth, an ash pit, ventilator, ventilator shaft, and possible sipapu. A large slab found next to the sipapu and ventilator shaft may have been the deflector. The hearth, vent, vent shaft, bench, and niche all align east-west. Judging by the additional features in Room 2, the room may not have functioned strictly as a domestic habitation room, but also as a place for ritual activity. In comparing the two rooms, Room 2 is missing the storage pits, many grinding implements, and the high number of ceramic fragments that were present in Room 1. No whole metates were found; however, a slab metate fragment, a mortar, and three two-hand slab manos were

on the floor. The other features such as the bench, niche, and ventilator shaft were not present in Room 1.

Comparing the room's features to those from other regional excavations, Room 2 could fit into the ceremonial category, based strictly on architectural attributes. Smiley's (1952:22-23) definition of a kiva for the Western Pueblos is that it should have a fire pit, hatchway over the fire pit, and one or more of the following features: a deflector, ash pit, sipapu, bench, platform, and wall niche. Wilshusen (1989) states that at the Dolores sites in Colorado the simple sipapus are well-made cylindrical pit features that are located in the northern part of the pit structure in a north-south line with the hearth, ventilator, and antechamber. In looking at the features in Room 2, we find a fire pit, ash pit, bench, a well-made sipapu, wall niche, and a possible deflector all aligned. Smiley (1952:52) states that ventilators are not uncommon in prehistoric kivas and we found them in both Room 1 and Room 2. One difference between Room 2 and Smiley's kivas and Wilshusen's pit structures are that the ventilator, ventilator shaft, hearth, ash pit, bench, and niche are aligned east-west rather than north-south. Martin and Rinaldo (1960b) found two rooms at Table Rock Pueblo in Arizona where he was not sure whether they were kivas or habitation rooms. He labeled them Kiva I and Kiva II. Kiva I had a ventilator, ventilator shaft, slab-lined platform, fire pit, ash pit, and deflector. Kiva II had a fire pit, ash pit, deflector, niche, platform, and bench, ventilator, ventilator shaft, and hatchway cover.

Artifacts that were recovered from the fill of Rooms 1 and 2 differ significantly in frequencies. Not only were there more ceramics in Room 1 fill, there were no projectile points. Almost half of the projectile points (46.4 percent) found on the site were in the fill of Room 2, the others were found outside the roomblock.

The data, therefore, indicate definite differences between Rooms 1 and 2. The probability that Room 2 served a ceremonial function is strong. If so, this may be one of the few examples of a rectangular pueblo room in the Mogollon Highlands that has been identified as such.

LA 70188 (AR-03-06-06-00830)
RAVEN'S ROOST

Yvonne R. Oakes

Raven's Roost is a multicomponent site with a terminal Archaic and a later Athabaskan occupation. The site was first recorded as an extensive lithic artifact scatter extending over two ridges for 165 m along U.S. 180 (Oakes 1989). Because of the numerous lithic materials, it was recommended for testing. During the testing program, it became obvious that the high frequency of concentrated artifacts in the western area of the site was spatially separated from the ridge-top artifacts to the east, warranting two site numbers—LA 70188 and LA 78439. The site described here is LA 70188, the westernmost designation.

Therefore, site limits during testing were reduced from 165 m in length to 50-by-16 m for a site area of 800 sq m. Two test pits on the site revealed considerable cultural depth to at least 70 cm. Sixteen auger tests found varying depths of up to 1.07 m of cultural fill. A total of 325 artifacts were recovered from the test units, including 3 projectile points, 2 bifaces, 4 sherds, and 20 pieces of burned large mammal bones. We concluded that there were probably pit structures on the site with the ceramics suggesting a late Pinelawn phase occupation of the Early Pithouse period. A data recovery plan was prepared for the site.

Excavations began in 1990. The cultural features were concentrated in a small area of 7-by-6 m on the eastern edge of the site (Fig. 2.224). Here were located one pit structure, three associated pits, a small stone ring, and a pile of burned rock. Artifacts were densely packed within and around these features and extended for a short distance to the west. The recovery of over 100 Late Archaic period San Pedro-style projectile points and the return of Late Archaic radiocarbon dates caused us to adjust our designation of the site to Late Archaic from late Pinelawn with a nominal amount of ceramics actually present. There is still a minor Athabaskan presence on the western edge of the site. Site limits were adjusted to 60-by-23 m with an area of 1,380 sq m.

A total of 215 grids were excavated on the site with 89.2 cu m of dirt removed. Excavation units ranged from .15 m to 1.07 m depth with an average depth of 34.8 cm. Included in the total dirt removal was soil from three backhoe trenches.

SITE SETTING

LA 70188 is situated in a protected, small rincon at the base of Prairie Point Peak in the San Francisco Mountains. It is surrounded on the north and west by steep slopes and on the east by a low ridge (Figs. 2.225, 2.226). Site elevation is 2,054 m (6,740 ft) dropping off sharply to the south toward the Leggett Canyon drainage at .2 km distance. The area is heavily forested and vegetation on the site consists of ponderosa pine, large alligator junipers, oak, piñon, a few yucca, and short grasses. It is a somewhat unusual location for a site as it is tucked into a small area at the base of steep hills. There are no other sites further upslope within the area; however, Archaic and Athabaskan sites do occupy the ridges to the east as elevation drops and useable areas level out.

The large number of projectile points and biface flakes suggests that hunting was a primary activity on the site, and elk and deer are plentiful in the area today. In addition, gathering acorns and piñon nuts from nearby stands would also have been attractive. Agriculture would not have been feasible in the immediate environs given the dense forest cover and steeply sloping terrain. However, there are small areas along the Wet Leggett drainage that would have provided crop land.

RESEARCH OBJECTIVES

The data recovery plan focused research toward an understanding of the Early Pithouse period thought to be represented by the presence of a pit structure and several early brown ware sherds recovered during testing. The emphasis of the study was on the extent of residential mobility of early pithouse populations. Expedient use of flakes, minimal labor investment, and few storage facilities on the site should be indicative of more mobile populations. A less mobile group should invest more in construction of dwellings, cooking units, and storage facilities.

Seasonality of occupation could be suggested by depth of dwellings, presence of interior hearths, storage facilities, and season of availability of flora and faunal resources recovered. Traditionally, pithouse populations are characterized as generally sedentary with occupation

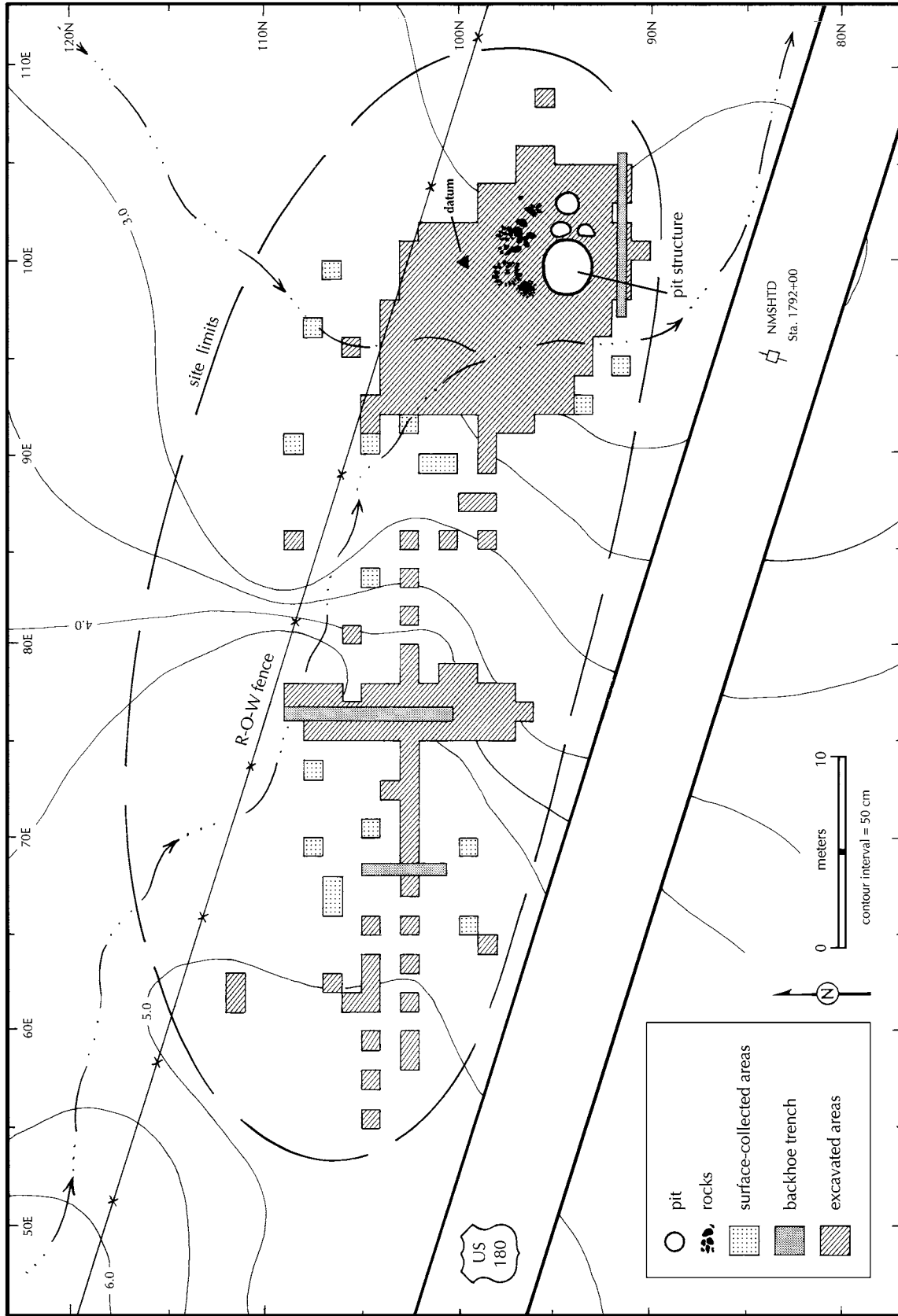


Figure 2.224. LA 70188, plan view of Raven's Roost.



Figure 2.226. Terrain at LA 70188.

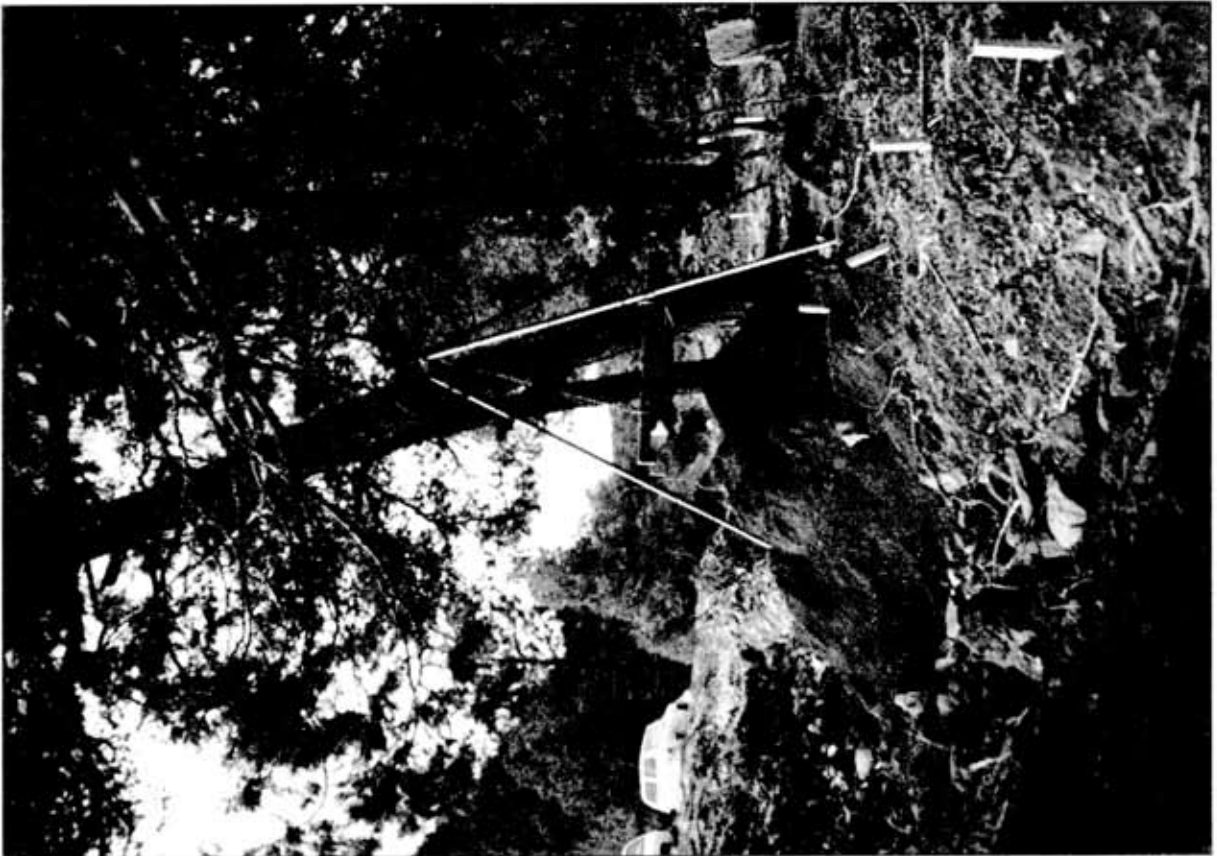


Figure 2.225. Mountainous environment at LA 70188.

lengths varying from seasonal to annual or more. Seasonal or repeated use of structures might be evidenced by reconstruction within features, remaking of floors, and overlapping features.

Dependence on cultigens is generally assumed for pithouse sites. However, this may not be true for the earlier Pithouse period. Utilizing Hard's model (1990) for quantifying the degree of agricultural dependence through mano length indices will assist in evaluating agricultural investment. Ground stone implements and hearths should provide data for addressing this question.

As it now appears, the site extends from the Late Archaic period into the historic Athabaskan period. Questions of mobility and seasonality of use are still pertinent. The later Athabaskan occupation may also be addressed from the standpoint of mobility patterns and seasonality of use.

EXCAVATION PROCEDURES

Datum was reestablished at 100N/100E and a 1-by-1-m grid system was set up with a transit and stadia rod. The surface of the site around the deep cultural deposits found during testing was surface stripped first. Those units with darkened soil, charcoal flecking, and numerous artifacts were then excavated to the yellowish red sterile clay underlying the site. Generally, a hard-packed cultural surface was located at 30 to 45 cm below ground

level throughout this area. As a result of excavations, all of the cultural features on the site were located in this eastern area. Excavation of numerous grids, mostly by random selection, to the west revealed no further features.

During excavations, no stratigraphic levels were encountered because the site was situated on top of alluvial deposits from the surrounding hills. Units outside of cultural features were taken down to the sterile clay substrate underlying the site. Levels used during excavations were:

Level 1: Surface collecting and surface stripping to a maximum depth of 20 cm. Numerous artifacts were recovered. Soil color was 7.5YR 3/2, dark brown. In the eastern portion of the site along the south edge, near the road, a red-orange clay lens was encountered, overlaying cultural features (Fig. 2.227). This was obviously laid down in modern times.

Level 2: General fill, outside of cultural features, to a maximum depth of 72 cm. Artifacts and charcoal flecking were present in most grids. Same soil color as Level 1: 7.5YR 3/2, dark brown.

Level 3: Fill within cultural features to a maximum depth of 1.07 m. Artifacts were present, soil is more charcoal-flecked and darker; 10YR 3/2, very dark grayish brown.

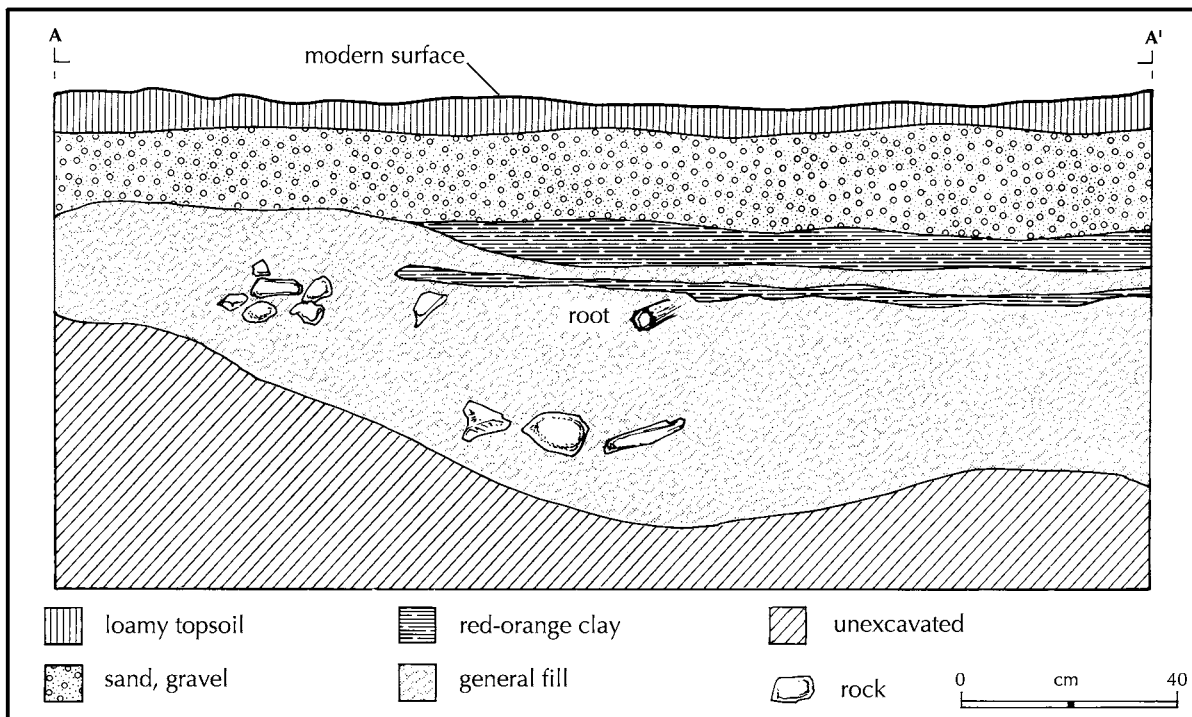


Figure 2.227. Profile of cultural levels, facing south.

After a number of subsequent excavation units were placed outside of the main occupation area of the site, three backhoe trenches were dug to insure that no other cultural features were present (see Fig. 2.224). All soil on the site was screened through ¼-inch screen except in the fill of pit features where 1/8-inch screen was used to recover small biface thinning flakes. Artifacts were bagged by grid and level. Profiles and plan views were drawn of all cultural features. Photographs documented the work and a topographic map was produced using a transit and stadia rod.

CULTURAL UNITS

All of the cultural features at Raven's Roost were focused in the eastern portion of the site. These include a small pit structure, three ancillary pits, a stone ring, a rock pile, and a possible rock-paved surface (Figs. 2.228, 2.229).

Pit Structure

The pit structure was found because of darkened charcoal-stained soil in the area and the presence of a number of artifacts on the surface. The oval-shaped structure had gently sloping sides and no internal features. The fill of the unit contained a high frequency of artifacts (N=1,993) and charcoal-flecked soil; however, the fill contained no recognizable stratigraphic levels. Some rodent activity was evident in the fill.

Dimensions. The pit structure was fairly small, measuring 2.30-by-2.85 m, with a floor area of 6.55 sq m (Fig. 2.230). Depth of the unit was 1.07 m below ground surface and .85 m below the prehistoric surface.

Walls. Walls of the pit structure sloped gently inward. The structure has been dug into the surrounding alluvium and clay substrate. The walls were not prepared.

Floor. The floor of the pit structure was generally level with a few undulations. It was unprepared and consisted basically of a packed-down surface. Small gravels and caliche-flecked clay lay directly beneath the floor. Small charcoal flecks were embedded within it. No artifacts were recovered from the floor surface.

Hearth. None present.

Postholes. None present.

Roof. No roof fall present.

Entry. No evidence of an entry was found.

Pits

Three pits were located directly east of the pit structure, all sharing the same prehistoric surface and therefore presumed contemporary with it (see Fig. 2.228). Pit 1

measured 1.08-by-0.84-by-0.40 m depth (.76 m below ground surface). The fill was loamy with numerous artifacts. No burning had occurred within the pit. Its function may have been as a storage unit.

Pit 2 was slightly smaller, measuring 0.94-by-0.74-by-0.78 m deep. The fill was also loamy and contained numerous pieces of burned bone (N=63), several fragments of ground stone, and some projectile points. This may have served as a roasting pit.

Pit 3 had dimensions of 1.16-by-1.04-by-0.72 m. Within the charcoal-flecked fill were numerous pieces of burned and fire-cracked rock. Burned faunal remains (N=62) were also present. This was also apparently a roasting pit. Several burning episodes are suggested by the presence of three compaction levels at the bottom of the pit. An unusual feature within the pit was the occurrence of three possible postholes on the bottom surface. They averaged 8 cm in size and all were 6 cm deep. A small flat rock was found in the bottom of each posthole. If these were indeed postholes, the posts may have been part of a roasting rack, keeping the meat up off of the heated rocks.

Rock Pile

Extending to the edge of the pit structure on the northwest side, was an intentionally piled stack of rocks on the prehistoric surface, contemporary with the pit structure (Figs. 2.232-2.234). The pile measured 1.0-by-1.0-by-.36 m high. The bottom layer of rocks rested on the use surface and contained the largest of the rocks at 15-20 cm in width. As the pile rose, rocks got somewhat smaller (10-15 cm) in size. In the middle of the layering was a lens of burned rocks and charcoal-flecked soil. Smaller rocks were on top of the pile and some were wedged between the medium-sized rocks that were lower in the pile. Several artifacts were recovered within the rock pile.

The function of this pile is problematic. At first, the rocks were thought to have come from a roasting pit, but this does not explain the obvious sorting by size and why a burned dirt lens appears in the middle of the stack. We then expected a burial to be under the rocks as a plausible explanation for the pile. None was found.

Stone Ring

Another anomalous feature was immediately northeast of the rock feature, a carefully laid-out circle made from selected tabular rocks with the long axes placed outward from the center, similar to spokes of a wheel (Figs. 2.232, 2.235, 2.236). This feature was not contemporary with the other ones. It did not rest on the prehistoric surface,

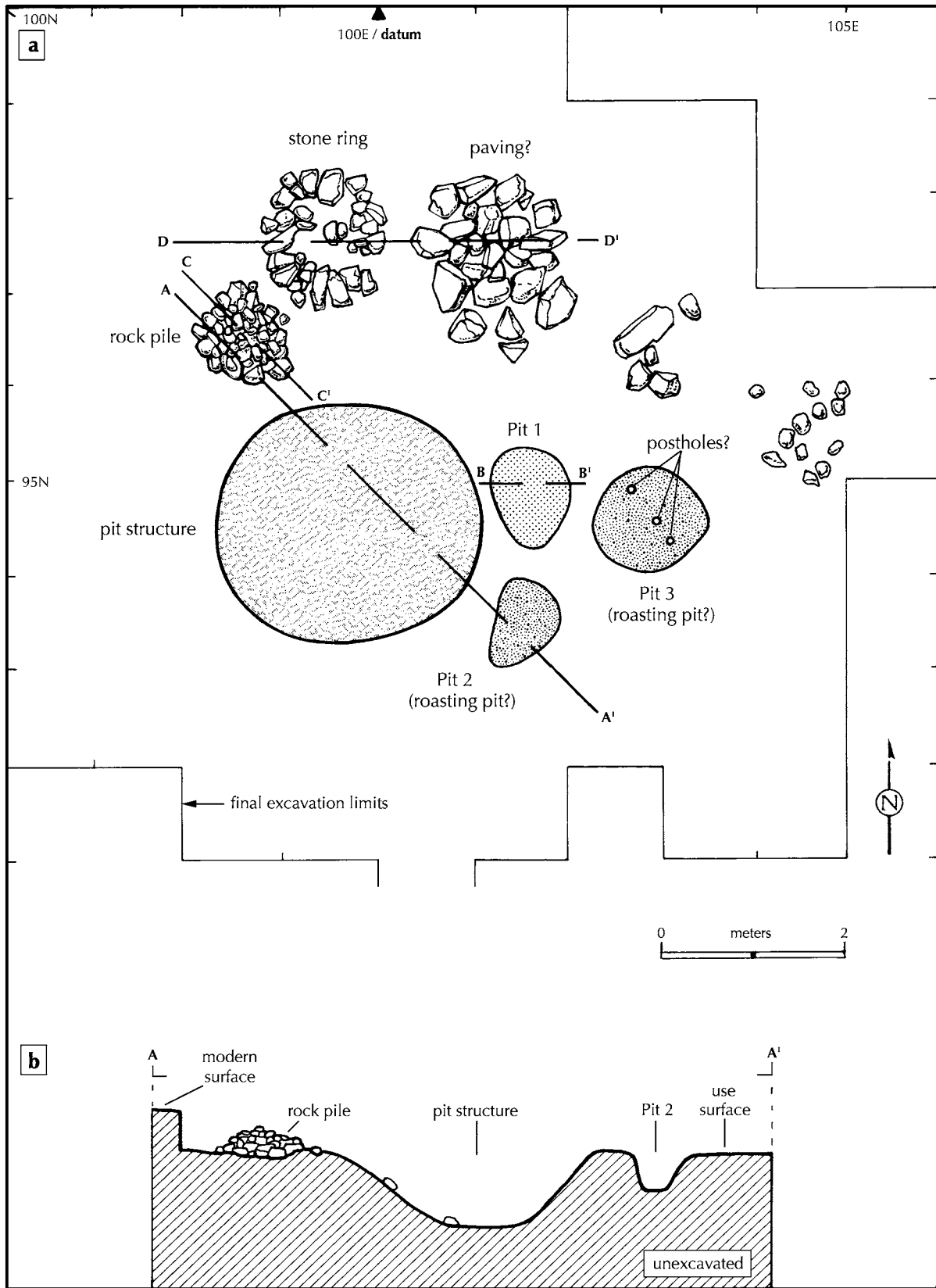


Figure 2.228. Plan view and profile of cultural features at LA 70188.



Figure 2.229. Cultural features at LA 70188. Pit structure in foreground, pits are on right, and base of rock pile, stone ring, and possible stone paving are on upper left of structure.



Figure 2.230. Pit 1, adjacent to the pit structure.

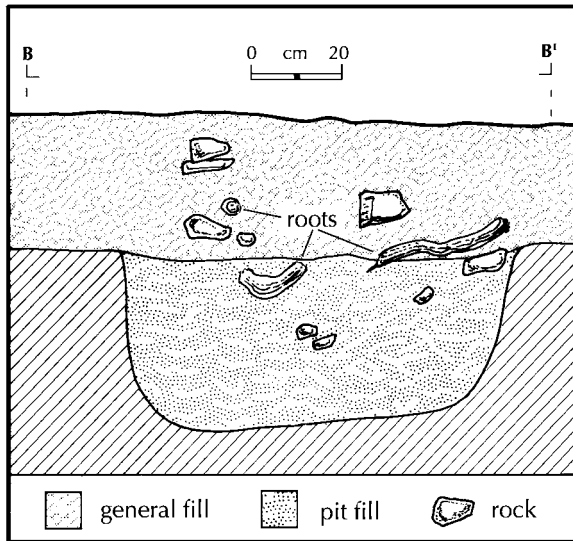


Figure 2.231. Profile of Pit 1, facing north.

but on the alluvial fill 15 cm above the prehistoric surface. The stone ring is 1.0-by-1.5 m in diameter. Excavation of the interior of the ring yielded no interior pit. Fill was loamy with a few artifacts and it continued down to the hard-packed prehistoric surface. It was defi-

nately not a hearth and it does not appear that it would have served any practical function. It may be purely esoteric. The feature was constructed sometime after the pit structure occupation.

Stone Paving

An amorphous layering of rocks occurred just east of the stone ring (Fig. 2.236). All were found at the same depth as the ring and they generally formed a circle measuring 1.8-by-1.6 m. However, as opposed to the stone ring, the rocks were flat and they fill in the entire circle. It is possible that this may be a fortuitous collection of rocks. No artifacts were recovered between them.

ARTIFACTS

Raven's Roost is primarily an Archaic site with a minor deposit of Mogollon ceramics and a later Athabaskan presence. For the site, there were 57 sherds, 16,062 lithic artifacts, 106 projectile points, 29 pieces of ground stone, 37 miscellaneous items, and 663 faunal remains for a site total of 16,954 artifacts.



Figure 2.232. Stone features near pit structure. Stone paving on left, stone ring in center, and rock pile in upper right.



Figure 2.233. Rock pile near pit structure.

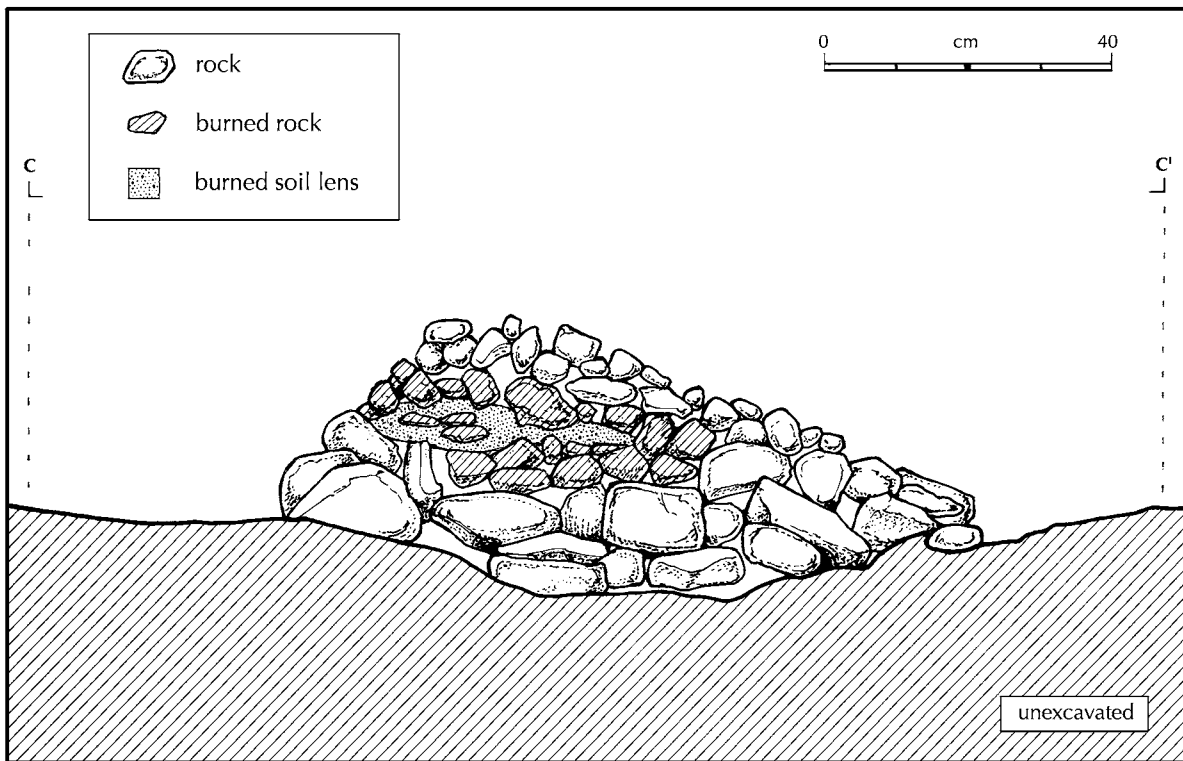


Figure 2.234. Cross section of rock pile, from northwest to southeast.

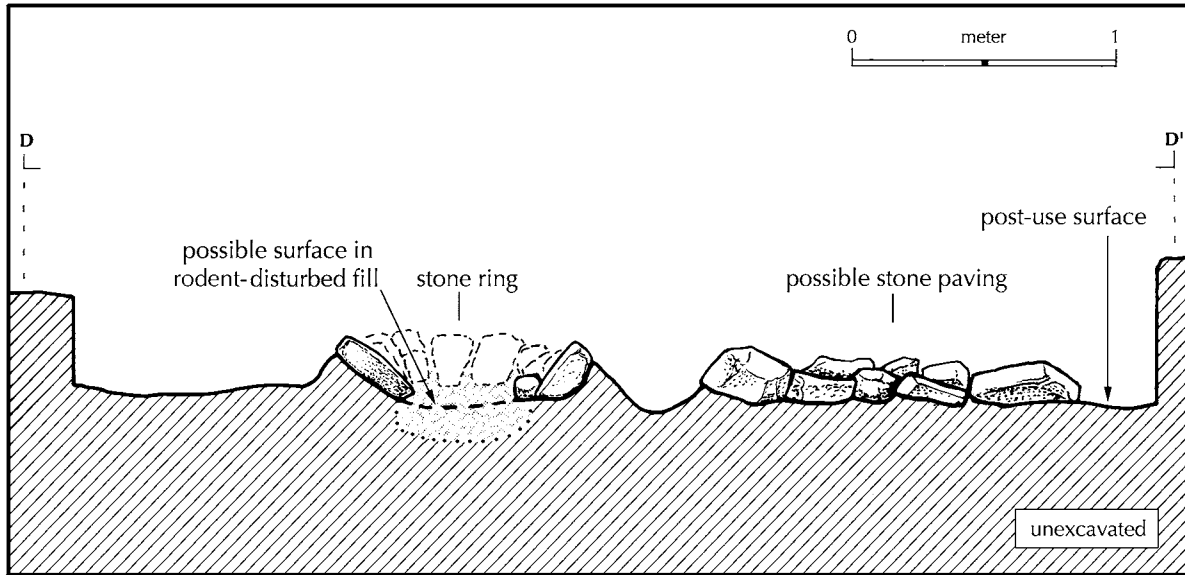


Figure 2.235. Profile of stone circle and stone paving.

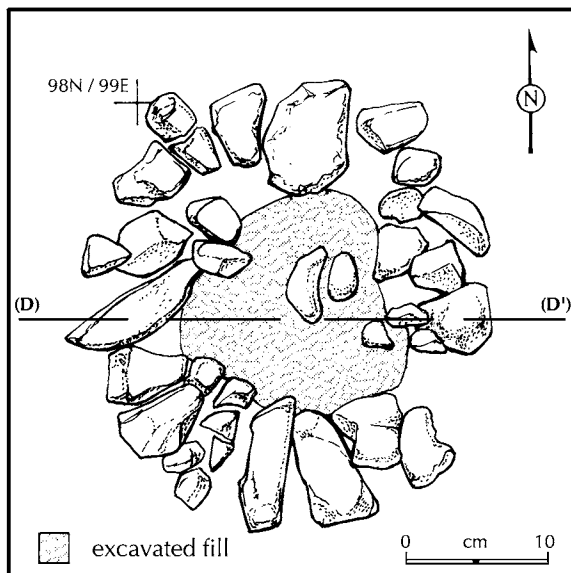


Figure 2.236. Plan view of stone circle near pit structure.

Ceramics

Sherds constitute only 0.3 percent of the total artifact assemblage. Of these, 91.2 percent are early Mogollon varieties—Alma Brown Wares and San Francisco Red (Table 2.125). Only five sherds represent a later Mogollon presence. It was, at first, considered that these 52 early sherds might correlate with the Late Archaic occupation and represent the transition from the Archaic to the early ceramic period in the Mogollon Highlands.

However, sherds were plotted by their location and depth on the site and 90.5 percent came from either the

surface, the upper 20 cm (Level 1), or general fill (not associated with any cultural feature). Only five sherds were found at varying depths in cultural structures, either within the pit structure (N=4) or Pit 3 (N=1). None was more than 20 cm deep and two within the pit structure represented the early Mogollon sequence and two were late. No correlation could be found between the early sherds and the Late Archaic structures. They did, however, cluster more in the eastern portion of the site. This site locale seems to have been favored through time as a short-term stop through the surrounding mountains and early ceramic users may simple have passed through this moderately level area at varying times.

Lithic Artifacts

A large quantity of lithic artifacts were recovered from LA 70188 (N=16,062). Most of these are core flakes (53.5 percent of the assemblage, Table 2.126), followed by a high recovery of biface flakes (26.0 percent, or 4,181 flakes). Another 232 bifaces were found, not including projectile points. One of these was a probable agave knife recovered from the Athabaskan area of the site (Fig. 2.237). Cores and angular debris are somewhat low suggesting that primary reduction of material did not occur on this site. The large number of bifaces and biface flakes are characteristic of Archaic assemblages and the radiocarbon dates for the site verify this pattern.

Over 55 percent of the material types are chert, distantly followed by Luna blue agate, rhyolite, and basalt (Table 2.127). Obsidian represents only 1.4 percent of the assemblage. Only the obsidian, silicified wood, and palm wood may be considered potentially not available

Table 2.125. Ceramics from LA 70188

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Rocks	Pit Structure	
Alma Plain	16 84.2% 32.0%	2 10.5% 100.0%	1 5.3% 20.0%	19 100.0% 33.3%
Alma Rough	15 93.8% 30.0%		1 6.3% 20.0%	16 100.0% 28.1%
San Francisco Red	16 94.1% 32.0%		1 5.9% 20.0%	17 100.0% 29.8%
Late Whiteware	2 66.7% 4.0%		1 33.3% 20.0%	3 100.0% 5.3%
Tularosa Black-on-white	1 100.0% 2.0%			1 100.0% 1.8%
Hachure Black-on-white			1 100.0% 20.0%	1 100.0% 1.8%
Column Total	50 87.7% 100.0%	2 3.5% 100.0%	5 8.8% 100.0%	57 100.0% 100.0%

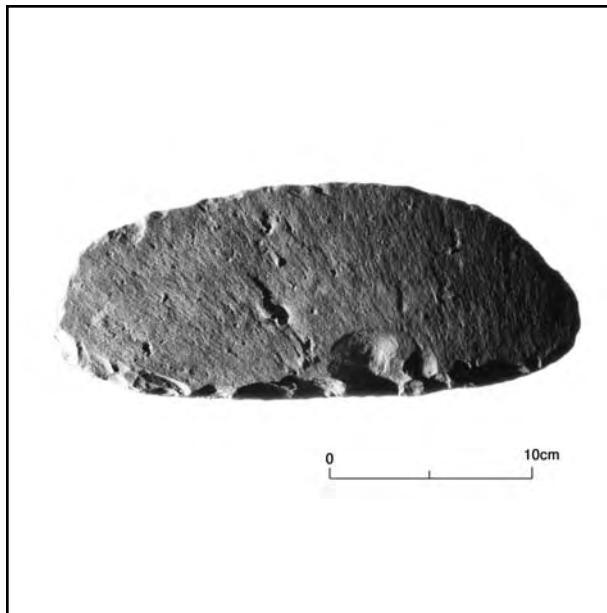


Figure 2.237. Probable agave knife related to the Athabaskan occupation of the site.

in the site vicinity.

The projectile points (N=106), separated according to size, include 36 large dart points (San Pedro), 41 medium-sized points (including both dart and arrow points), 3 small projectile points, 1 Bajada, 1 Bajada-San Jose, and 2 Chiricahua (Table 2.128). Material types for points follow those types generally preferred on the site;

chert dominates at 49.1 percent, followed by basalt, Luna blue agate, and obsidian. The obsidian shows a 12.3 percent ranking among projectile points, but is only 1.4 percent of all material types on the site.

Ground Stone

A limited number of ground stone (N=28) artifacts were recovered at Raven's Roost. Most of these, 46.4 percent, are metate fragments, of which three are slab metates. Less than half that number of one-hand manos were found. While 68 percent were from general fill, nine pieces were associated with cultural features. Pit 3 contained the most and the stones may have served as roasting stones after grinding usage; other features had one each. Correlating the ground stone with the Archaic occupation was a matter of concern. An examination of the proveniences for these artifacts revealed that most (67.9 percent) were from general fill, leaving nine that may be considered culturally related to the Late Archaic occupation. These include three metates (one slab and two indeterminate), two manos (one one-hand and one indeterminate), three lapidary stones, and one indeterminate piece of ground stone.

Rhyolite dominates the material type used for the manufacture of ground stone (Table 2.130). This is a commonly preferred and easily available material for sites of all periods in the project area.

Table 2.126. Lithic Artifacts from LA 70188

Cells: Count Row Percent Column Percent	Provenience							Row Total	
	General Fill	Pit 1	Pit 2	Pit 3	Rock Pile	Stone Circle	Rocks		Pit Structure
Angular Debris	1994 68.5% 19.3%	95 3.3% 19.6%	105 3.6% 15.4%	237 8.1% 18.0%	23 .8% 10.5%	11 .4% 11.6%	88 3.05 8.7%	360 12.4% 18.8%	2913 100.0% 18.1%
Core Flake	5617 65.4% 54.3%	218 2.5% 45.0%	271 3.2% 39.7%	726 8.5% 55.1%	111 1.3% 50.75	60 .7% 63.2%	388 4.5% 38.2%	1196 13.9% 62.5%	8587 100.0% 53.5%
Bface Flake	2439 58.3% 23.6%	164 3.9% 33.9%	285 6.8% 41.8%	345 8.3% 26.2%	79 1.9% 36.1%	17 .4% 17.9%	517 12.4% 50.9%	335 8.0% 17.5%	4181 100.0% 26.0%
Resharpening Flake							1 100.0% .1%		1 100.0% .0%
Notching Flake	5 71.4% .0%		1 14.3% .1%					1 14.3% .1%	7 100.0% .0%
Tested Cobble	8 100.0% .1%								8 100.0% .0%
Core	104 83.2% 1.0%	1 .8% .2%	2 1.6% .3%	5 4.0% .4%	2 1.6% 9%		4 3.2% .4%	7 5.6% .4%	125 100.0% .8%
Cobble Tool	3 60.0% .0%						2 40.0% .2%		5 100.0% .0%
Uniface	2 100.0% .0%								2 100.0% .0%
Bface	162 69.8% 1.6%	6 2.6% 1.2%	18 7.8% 2.6%	5 2.2% .4%	4 1.7% 1.8%	7 3.0% 7.4%	15 6.5% 1.5%	15 6.5% .8%	232 100.0% 1.4%
Agave Knife	1 100.0% .0%								1 100.0% .0%
Column Total	10335 64.3% 100.0%	484 3.0% 100.0%	682 4.2% 100.0%	1318 8.2% 100.0%	219 1.4% 100.0%	95 .6% 100.0%	1015 6.3% 100.0%	1914 11.9% 100.0%	16062 100.0% 100.0%

Table 2.127. Lithic Artifacts Material Types, LA 70188

Cells: Count Row Percent Column Percent	Provenience							Row Total	
	General Fill	Pit 1	Pit 2	Pit 3	Rock Pile	Stone Circle	Rocks		Pit Structure
Chert	5490 61.3% 53.1%	283 3.2% 58.5%	404 4.5% 59.2%	816 9.1% 61.9%	140 1.6% 63.9%	52 .6% 63.9%	619 6.9% 61.0%	1154 12.9% 60.3%	8868 100.0% 55.8%
Chalcedony	181 61.8% 1.8%	5 1.7% 1.0%	5 1.7% .7%	31 10.6% 2.4%	2 .7% .9%		30 10.2% 3.0%	39 13.3% 2.0%	293 100.0% 1.8%
Luna Blue Agate	2475 72.5% 23.9%	112 3.3% 23.1%	115 3.4% 16.9%	212 6.2% 16.1%	30 .9% 13.7%	19 .6% 20.0%	125 3.7% 12.3%	328 9.6% 17.1%	3416 100.0% 21.3%
Palm Wood	1 100.0% .0%	1 100.0% .1%							1 100.0% .0%
Obsidian	160 72.1% 1.5%	6 2.7% 1.2%	13 5.9% 1.9%	10 4.5% .8%	3 1.4% 1.4%		14 6.3% 1.4%	16 7.2% .8%	222 100.0% 1.4%
Silicified Wood	1 100.0% .0%								1 100.0% .0%
Igneous		1 100.0% .2%							1 100.0% .0%
Basalt	693 55.9% 6.7%	42 3.4% 8.7%	81 6.5% 11.9%	91 7.3% 6.9%	20 1.6% 9.1%	8 .6% 8.4%	102 8.2% 10.0%	202 16.5% 10.6%	1239 100.0% 7.7%
Silicified Andesite	4 57.1% .0%	2 28.6% .4%					1 14.3% .1%		7 100.0% .0%
Rhyolite	1033 68.4% 10.0%	30 2.0% 6.2%	43 2.8% 6.3%	129 8.5% 9.8%	20 1.6% 9.1%	15 1.0% 15.8%	98 6.5% 9.7%	142 9.4% 7.4%	1510 100.0% 9.4%
Silicified Rhyolitic Chert	16 84.2% .2%			1 5.3% .1%				2 10.5% .1%	19 100.0% .1%
Sedimentary	24 80.0% .2%	1 3.3% .2%	1 3.3% .1%	2 6.7% .2%				2 6.7% .1%	30 100.0% .2%
Limestone	1 100.0% .0%								1 100.0% .0%
Sandstone	2 100.0% .0%								2 100.0% .0%

Table 2.127. Continued.

Cells: Count Row Percent Column Percent	Provenience										Row Total	
	General Fill	Pit 1	Pit 2	Pit 3	Rock Pile	Stone Circle	Rocks	Pit Structure				
Siltstone	1 100.0% .0%											1 100.0% .0%
Metamorphic	1 100.0% .0%											1 100.0% .0%
Quartzite	195 73.9% 1.9%	1 .4%	11 4.2% 1.6%	19 7.2% 1.4%	3 1.1% 1.4%		12 4.5% 1.2%	23 8.7% 1.2%				264 100.0% 1.6%
Quartzitic Sandstone	57 60.6%	1 1.1% .2%	8 8.5% 1.2%	6 6.4% .5%	1 1.1% .5%		14 14.9% 1.4%	6 6.4% .3%				94 100.0% .6%
Quartz Crystal												1 100.0% .0%
Massive Quartz	1 100.0% .0%											1 100.0% .0%
Column Total	10335 64.3% 100.0%	484 3.0% 100.0%	682 4.2% 100.0%	1318 1.4% 100.0%	219 1.4% 100.0%	95 .6% 100.0%	1015 6.3% 100.0%	1914 1.9% 100.0%				16062 100.0% 100.0%

Table 2.128. Projectile Points from LA 70188

Cells: Count Row Percent	Material Type						Row Total	
	Chert	Chalcedony	Luna Blue Agate	Silicified Wood	Obsidian	Basalt		Rhyolite
Unidentified	23 53.5%		6 14.0%	1 2.3%	1 4.7%	9 20.9%	2 4.7%	43 100.0%
Medium Lateral- Notched	5 35.7%				5 35.7%	2 14.3%	2 14.3%	14 100.0%
Medium Lateral- Eccentric	2 100.0%							2 100.0%
Small Side- Notched						1 100.0%		1 100.0%
Unnotched			2 100.0%					2 100.0%
Flake Point	1 100.0%							1 100.0%
Preform	1 100.0%							1 100.0%
Bajada	1 100.0%							1 100.0%
Bajada/San Jose	1 100.0%							1 100.0%
Chiricahua	1 50.0%				1 50.0%			2 100.0%
San Pedro	18 50.0%	1 2.8%	4 11.1%		4 11.1%	7 19.4%	2 5.6%	36 100.0%
Column Total	52 49.1%	1 .9%	12 12.3%	1 .9%	13 12.3%	20 18.9%	6 5.7%	106 100.0%

Table 2.129. Ground Stone from LA 70188

Cells: Count Row Percent Column Percent	Provenience					Row Total
	General Fill	Pit 1	Pit 2	Pit 3	Pit Structure	
Indeterminate Fragment	4 80.0% 20.0%			1 20.0% 20.0%		5 100.0% 17.9%
Lapidary Stone	2 50.0% 10.0%			2 50.0% 40.0%		4 100.0% 14.3%
Mano	1 50.0% 5.0%			1 50.0% 20.0%		2 100.0% 7.1%
One-hand Mano	3 75.0% 15.0%			1 25.0% 20.0%		4 100.0% 14.3%
Metate	8 80.0% 40.0%		1 10.0% 100.0%		1 10.0% 100.0%	10 100.0% 10.7%
Slab Metate	2 66.7% 10.0%	1 33.3% 100.0%				3 100.0% 10.7%
Column Total	20 71.4% 100.0%	1 3.6% 100.0%	1 3.6% 100.0%	5 17.9% 100.0%	1 3.6% 100.0%	28 100.0% 100.0%

Table 2.130. Ground Stone Material Type from LA 70188

Cells: Count Row Percent Column Percent	Provenience					Row Total
	General Fill	Pit 1	Pit 2	Pit 3	Pit Structure	
Basalt	1 50.0% 5.0%			1 50.0% 20.0%		2 100.0% 7.1%
Rhyolite	17 73.9% 85.0%	1 4.3% 100.0%	1 4.3% 100.0%	3 13.0% 60.0^	1 4.3% 100.0%	23 100.0% 82.1%
Andesite	1 100.0% 5.0%					1 100.0% 3.6%
Sandstone				1 100.0% 20.0%		1 100.0% 3.6%
Quartzite	1 100.0% 5.0%					1 100.0% 3.6%
Column Total	20 71.4% 100.0%	1 3.6% 100.0%	1 3.6% 100.0%	5 17.9% 100.0%	1 3.6% 100.0%	28 100.0% 100.0%

Table 2.131. Miscellaneous Artifacts from LA 70188

Cells: Count Row Percent Column Percent	Provenience				Row Total
	General Fill	Pit 1	Pit 3	Pit Structure	
Pendant Blank	1 100.0% 5.6%				21 100.0% 2.7%
Quartz Crystals	17 47.2% 94.4%	3 8.3% 100.0%	9 25.0% 100.0%	7 19.4% 100.0%	36 100.0% 97.3%
Column Total	18 48.6% 100.0%	3 8.1% 100.0%	9 24.3% 100.0%	7 18.9% 100.0%	37 100.0% 100.0%

Miscellaneous Artifacts

All but one of the 37 miscellaneous items were quartz crystals (Table 2.131). Many came from general fill and thus their cultural association could be suspect. However, 51.3 percent came from within cultural features, primarily the pit structure and Pit 3, suggesting their collection by prehistoric peoples (Sayles 1945; Bluhm 1957; Lekson 1990). Seven of the crystals from the pit structure came from the floor fill or lower fill of the unit. The single other item was a pendant blank made from sedimentary material recovered from general fill. It cannot be associated with a particular cultural occupation at the site.

ANCILLARY STUDIES

Faunal Remains

Burial beneath accumulations of alluvial materials allowed for good preservation of faunal bone; 663 pieces were recovered (Table 2.132). Most were in general fill (57.4 percent), but the pit structure and Pits 2 and 3 were well represented. The fauna recovered were predominantly large mammals (58.9 percent), including indeterminate artiodactyl, deer, and elk. Medium-sized mammals, including dog, made up 16.4 percent of the assemblage; only 4.9 percent were small mammals, including rabbits.

Large mammal remains were found within every

Table 2.132. Faunal Remains from LA 70188

	Provenience														Total			
	General Fill		Pit 1		Pit 2		Pit 3		Rock Pile		Stone Circle		Rocks		Pit Structure		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.		
Indeterminate Mammal	49	12.9	7	31.8	22	34.9	23	37.1	7	58.3	4	19.0	6	16.7	11	16.7	129	19.5
Small Mammal	12	3.1	1	4.5	4	6.3	5	8.1	4	33.3	5	23.8	1	2.8	2	3.0	30	4.5
Medium Mammal	67	17.6			6	9.5	1	1.6	4		1	4.8	5	13.9	24	36.4	108	16.3
Large Mammal	216	56.7	8	36.4	21	33.3	24	38.7			11	52.4	21	56.3	25	37.9	326	49.2
Cottontail					1	1.6											1	.2
Jack Rabbit	1	.3			1	1.6											2	.3
Dog Family															1	1.5	1	.2
Artiodactyl	16	4.2			8	12.7	4	6.5	1	8.3			3	8.3	2	3.0	34	5.1
Elk	1	.3															1	.2
Deer	19	5.0	6	27.3			5	8.1									30	4.5
Birds															1	1.5	1	.2
Total	381	100	22	100	63	100	62	100	12	100	21	100	36	100	66	100	663	100

Table 2.133. Pollen Recovered from LA 70188

Provenience	Pine	Cheno-am	Composites	Grasses	Sagebrush	Mormon Tea	Prickly Pear	Nightshade	Com
Pit Structure 1									
Fill	X	X	X	X	X			X	X
Floor Fill	X	X				X			X
Floor	X	X	X	X					X
Pit 3	X	X	X						
Fill	X	X	X	X	X	X			X

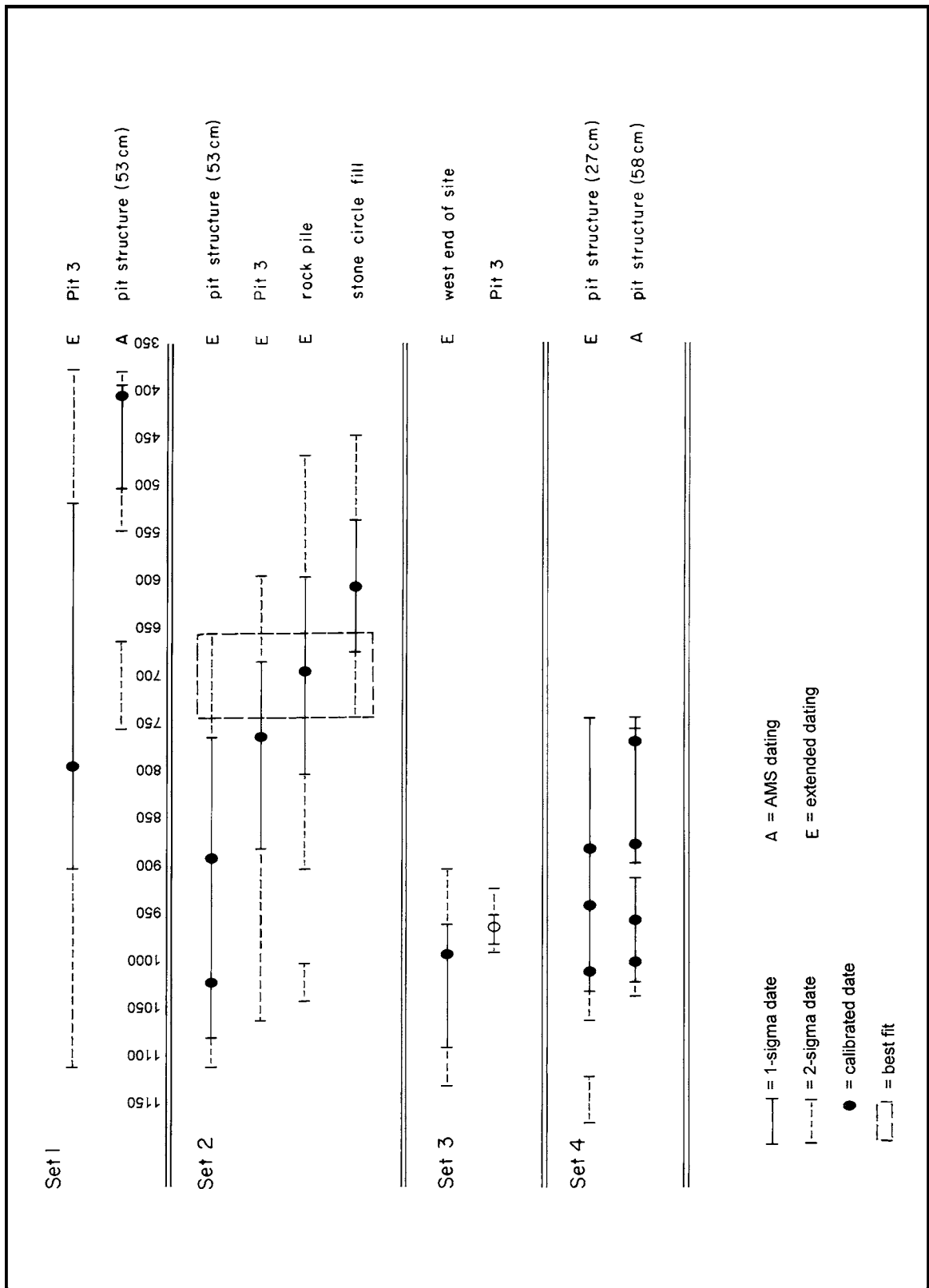


Figure 2.238. Stratigraphic profile of C-14 dates, LA 70188.

Table 2.134. C-14 Dates for LA 70188

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
95N/101E	76773	2390±50	B.C. 505-395	B.C. 760-670 550-380	B.C. 405	Pithouse (53 cm)
96N/103E	69807	2090±90	B.C. 190-A.D. 10	B.C. 370-A.D. 100	B.C. 70	Pit 3
94N/99E	69808	160±90	A.D. 1660-1950	A.D. 1520-1570 1630-1950	A.D. 1680, 1750, 1810, 1930	Pithouse (27 cm)
94N/99E	69809	2200±110	B.C. 390-70	B.C. 420-A.D. 40	B.C. 330, 330, 200	Pithouse (53 cm)
95N/102E	69810	2610±160	B.C. 910-520	B.C. 1120-380	B.C. 800	Pit 3
103N/71E	69811	580±100	A.D. 1300-1430	A.D. 1260-1490	A.D. 1400	Far Area Fill
98N/99E	69812	2010±100	B.C. 110-A.D. 100	B.C. 350-310 B.C. 210-A.D. 230	B.C. 0	Interior of Rock Pile
97N/99E	69813	3430±160	B.C. 1920-1520	B.C. 2140-1400	B.C. 1730	Pithouse (58 cm)
94N/99E	57455	1950±80	B.C. 20-A.D. 140	B.C. 110-A.D. 240	A.D. 70	Pithouse (53 cm)
98N/99E	57456	1920±70	A.D. 20-160	B.C. 50-A.D. 250	A.D. 90	Stone Circle
98N/99E	57458	1740±100	A.D. 210-420	A.D. 80-550	A.D. 330	Interior of Rock Pile
97N/99E	78271	140±60	A.D. 1670-1780 1795-1945	A.D. 1655-1950	A.D. 1690, 1735, 1815, 1923	Pithouse (58 cm)
94N/99E	64066	220±80	A.D. 1640-1690 1730-1810 1930-1950	A.D. 1490-1950	A.D. 1670	Pithouse (27 cm)
95N/103E	64067	500±50	A.D. 1410-1440	A.D. 1400-1470	A.D. 1430	Pit 3

cultural feature on the site. Pits 2 and 3, in particular, are thought to have been roasting pits for cooking meat because of the larger numbers of mammals and the charcoal-stained soil present in these features. Given the high number of large-sized mammals (N=391) on the site and the corresponding high number of projectile points and biface fragments, it is evident that hunting activities were a primary concern when selecting site location. Raven's Roost is well suited for the pursuit of game, being a slight distance uphill from a flowing stream and surrounded by heavy forest cover in the foothills of Prairie Point Peak. Wild game is prevalent in the area today.

Macrobotanical Remains

Five macrobotanical samples were examined from the pit structure, two from extramural pits, and one from the stone ring. Although maize pollen was identified from several contexts, evidence of maize is absent from the macrobotanical record at this site. Cultural plant remains consisted of charred pigweed and seepweed seeds, along with juniper leaves and nonreproductive pine plant parts. Pigweed was widely used as a potherb and the seeds were ground into a meal. Seepweed grows in saline and alkaline soils and was used by the Pima to flavor foods (Curtin 1949:71). The juniper leaves and pine plant parts are probably related to firewood use. Evidence of fuel-

wood use is predominately coniferous, including piñon, ponderosa pine, and juniper. Small quantities of oak and box elder were also recovered.

Intrusive uncharred plant remains were minimal, consisting of evening primrose seeds and unidentified seeds and embryos.

Pollen Remains

Fifteen pollen samples or washes from the site were submitted for detailed analysis (Table 2.133). Proveniences sampled include the pit structure, Pit 3, and the general fill around the pit structure.

Of most interest is the presence of corn pollen and starch grains from the fill, floor fill, and floor of the pit structure and in an adjacent grid in the general fill. This is the only area on the site where corn was recovered. The dense forest cover, sloping terrain, and high elevation of the site environs are not suited for corn agriculture. The closest potential agricultural land would have been .5 km away along the Wet Leggett drainage. Prickly pear cactus and sagebrush were also found in the floor fill and floor of the pit structure and, given the environmental conditions of the site, it would seem that these two items, plus corn, were brought into the site from lower, more open areas. Other items from Table 2.133 could have been retrieved from the nearby stream area.

Pine, cheno-ams, composites, and grasses are commonly found in most pollen samples taken from sites in the Mogollon Highlands. Pollen from the nightshade family found in the pit structure is less common and may represent the use of the plant for tobacco.

In sum, a mixture of plants were exploited by the occupants of Raven's Roost, including corn during the Late Archaic period at ca. 50 B.C.-A.D. 40. While some items probably were imported, a wide variety was still probably obtained from the immediate environment.

DATING METHODS

Fourteen radiocarbon samples from Raven's Roost were submitted to Beta Analytic, Inc. Four received extended counting times and four others were rerun with either extended counting or accelerator mass spectrometry. The remaining ten dates were varied and indicated that there were several cultural occupations of the site (Table 2.134). Results were separated into four sets of dates representing four discrete dating episodes (Fig. 2.238).

Set 1 includes aberrant dates that are incompatible with the main body of C-14 dates. They may be a result of the use of old wood.

Set 2 contains a cluster of four dates and seems to represent the main occupation of the site. Using the 2-sigma range, there is good correspondence between 50 B.C. and A.D. 40 with a mean at ca. 5 B.C. This range of dates associates well with the Late Archaic lithic assemblage, particularly the projectile point styles at Raven's Roost. Included in this set of dates are the pit structure, Pit 3, rock pile, and the fill beneath the stone ring. Pits 1 and 2 could not be dated for lack of sufficient charcoal, but would seem to be contemporary with the other features because of their close proximity and similar depths. Also, because the stone circle rested on fill, a date for the placement of that configuration is not possible.

Set 3 comprised two tight dates between A.D. 1400 and 1470. One derives from a burned area 27 m west of the pit structure and the other comes from Pit 3, a roasting pit with an earlier Late Archaic date. Numerous artifacts were recovered in the upper 30 cm of fill over the site and these 1400s dates may represent an early Athabaskan presence overlying the Late Archaic occupation. It is possible that the stone ring associates with this later use of the site. None of the sherds from the site corresponds with these later dates; all were too early. Admittedly, an Athabaskan occupation is a tenuous conclusion, but there is a precedent for it in that two other sites that are very close by that have early Athabaskan occupations, LA 37917 and LA 37919.

Set 4 has several dates from the late 1600s, mid-1700s, early 1800s, and mid-1900s. All but one (from

general fill near the pit structure) are from the upper levels of the pit structure. There are several possibilities for these dates. The 1600, 1700, and 1800 dates could represent repeated late Athabaskan use of the site area. The mid-1900s dates are undoubtedly from the original construction of the adjacent highway. A reddish clay lens from that activity was found overlying the pit structure and surrounding area.

An additional sample of eight pieces of obsidian was submitted for dating. Five are clearly too early, ranging from 4762 to 1570 B.C. Two others, at 1029 and 716 B.C., correspond to early dates obtained through radiocarbon analyses, but were rejected in favor of later C-14 dates. One other date at A.D. 1784 matches two 1700-1800s dates and may verify an Athabaskan presence on the site.

The ceramics on the site are somewhat problematic. We believe they do not correspond to the Late Archaic dates of 50 B.C.-A.D. 40. These dates seem too early for the presence of ceramics; however, it is not impossible. We simply cannot make a supported case for this correlation of sherds and the Late Archaic dates, particularly since the sherds do not associate with any features on the site. The few later decorated and corrugated sherds do not correspond at all to any of the recovered radiocarbon dates and are probably representative of pot drops.

In order to best explain the wide range of dates for the site, we believe we are looking at a site that has had multiple occupations from the Late Archaic up to the recent past. The large number of Archaic projectile points, biface fragments, and comparative lack of ceramics indicate the main occupation of Raven's Roost was during the Late Archaic period, likely between 50 B.C. and A.D. 40. Architectural features also date to this time. Based on a small ceramic presence, an apparent minor use of the site occurred throughout the Mogollon Pithouse period. An Athabaskan occupation may have occurred around A.D. 1430 and possibly between 1660 and the early 1800s.

SITE INTERPRETATION

LA 70188, Raven's Roost, is an important site for several reasons. The recovery of a large number of Late Archaic projectile points from the site has allowed for a rare opportunity to examine projectile point function and technology within the Mogollon Highlands for this time period in particular (see Chipped Stone Analysis). The small pit structure (probably used for shelter), several adjacent pits, and several anomalous features such as a rock pile, and a small area of rock paving, all associated with an open-air Archaic occupation are the first Archaic structures recovered for the Mogollon region. Recently,

several Late Archaic sites in southeastern Arizona have been uncovered that contain shallow pit structures similar to that at Raven's Roost (Thompson 1987; Roth and Huckell 1992; Mabry and Clark 1994). We are apparently beginning to find this same pattern in southwestern New Mexico, although dates are currently somewhat earlier in Arizona.

Raven's Roost was buried beneath 30 cm of alluvium and this may be a pattern for many Archaic sites within the Mogollon Highlands. Two other Archaic sites (LA 43766 and LA 89846) excavated on this project were found beneath soil deposits of up to a meter in depth. In all cases, only a handful of Archaic material was found on the surface; and in fact, all had later ceramic period occupations overlying them, masking their presence.

Utilization of a broad variety of plant material is evident at Raven's Roost. The presence of corn within several features dating to the Late Archaic period is signifi-

cant. Transport of this economic item (as well as several others) to the site from lower, more open areas is indicated. This, therefore, implies the employment of a seasonal round between highlands and lowlands by the Archaic occupants of the site. This form of subsistence strategy has been previously suggested for early inhabitants of the Mogollon Highlands (Minnis 1985; Hunter-Anderson 1986; Wills 1988a, 1994).

The possibility of an Athabaskan occupation of the site and of others nearby, forces us to consider how widespread the Athabaskan use of this portion of the Mogollon Highlands may have been. While seemingly ephemeral, we have found hearths, roasting pits, and shallow basin structures. Athabaskan sites may be more ubiquitous than previously thought and they may be present at a much earlier time than previously thought. There is a huge untapped opportunity for future archaeological investigations to determine the nature of the Athabaskan occupation of the region.

LA 70189 (AR-03-06-06-00442)
LIGHTNING STRIKE

Yvonne R. Oakes

The site consists of a pueblo roomblock and a probable Athabaskan encampment superimposed on a portion of it. Only the surface scatter of artifacts from the roomblock and several probable Athabaskan features lie within the highway right-of-way. The roomblock is 7.5 m outside of project limits (Fig. 2.239).

The site was tested in 1990 (Oakes 1990) and site limits were established at 38-by-30 m for an area of 1,140 sq m. Only 35 percent of this area is within the right-of-way. Four test pits revealed that most cultural material was generally no deeper than 10-15 cm below ground level, consistent with the site being an outside activity area related to the roomblock. Fifteen auger tests revealed the same depositional pattern as the test pits. Eighty-eight artifacts were recovered, including Reserve phase ceramics, lithic artifacts, and one small mano. The roomblock cobble mound measures 11.0-by-10.9 m and contains possibly six rooms. Cobble debris prevented a clear definition of wall alignments. The recovered sherds place the roomblock within the late Reserve phase at ca. A.D. 1100.

Excavation of the site occurred in 1991. Most of the site consisted of artifact debris from the pueblo roomblock. However, backhoe trenching revealed a shallow pit structure. Further excavations in this area also uncovered a roasting pit. Both of these yielded radiocarbon samples and produced post-pueblo occupation dates of A.D. 1430-1680 that are thought to be Athabaskan. Site limits were subsequently adjusted to 46 m north-south by 47 m east-west with a site area of 2,163 sq m.

A total of 90 1-by-1-m grids were excavated at Lightning Strike with 28.2 cu m of dirt removed. Cultural material ranged in depth from 4 to 69 cm below the surface. Mean excavation depth was 22.8 cm. Two backhoe trenches of 15.6 and 14.4 m in length were also excavated to insure that no further cultural features existed on the site.

SITE SETTING

Lightning Strike sits at the southeast base of the San Francisco Mountains at the point where the foothills level out and the land slopes gradually down into the Pine Lawn Valley. Site elevation is 1,987 m (6,520 ft)

within a forest setting of yellow pine, a few alligator juniper, piñon, and scrub oak. Because of the height of the pine trees here, the forest is more open than further upslope in the foothills, but a heavy duff layer covers the ground (Fig. 2.240). The closest stream flow is the Wet Leggett drainage 600 m to the southwest.

The area is not well suited for the pursuit of agriculture, although an opening could be cleared within the forest and water transported from the Wet Leggett. Only a few sites from various time periods sit higher on the southeast flanks of the San Francisco Mountains. Those subsistence items available in the immediate environment include acorns, piñon nuts, and wild game, which is plentiful.

Apache Woods, LA 37919, is diagonally across the road from Lightning Strike. It is an Athabaskan site and dates to the same general time period as the late occupation at LA 70189. The two sites may be part of a single Athabaskan occupation that was cut by original highway construction. The two sites or components indicate a repeated use of the area during the Athabaskan period. Two other Athabaskan sites lie .7 km upslope.

RESEARCH OBJECTIVES

Because the roomblock associated with this site lies outside of the highway right-of-way, we realized that only a potential activity area and isolated features might remain within the project limits. Therefore, expecting hearths and storage pits, we planned to retrieve sufficient floral and faunal samples to examine subsistence activities. The presence of numerous ceramics would also allow us to study types and sizes of cooking vessels. Activities such as food preparation, grinding of subsistence items, and tool manufacture and maintenance could all have occurred within this work area. Ground stone could also be examined using Hard's (1990) theoretical model.

The activity area from this site was to be compared with similar areas from other sites on the project in terms of length of occupation, labor investment, and activities performed in order to provide insights into Pueblo subsistence strategies. Subsequent excavations revealed that the area was primarily used for depositing sheet trash by roomblock dwellers. No cultural features were found on

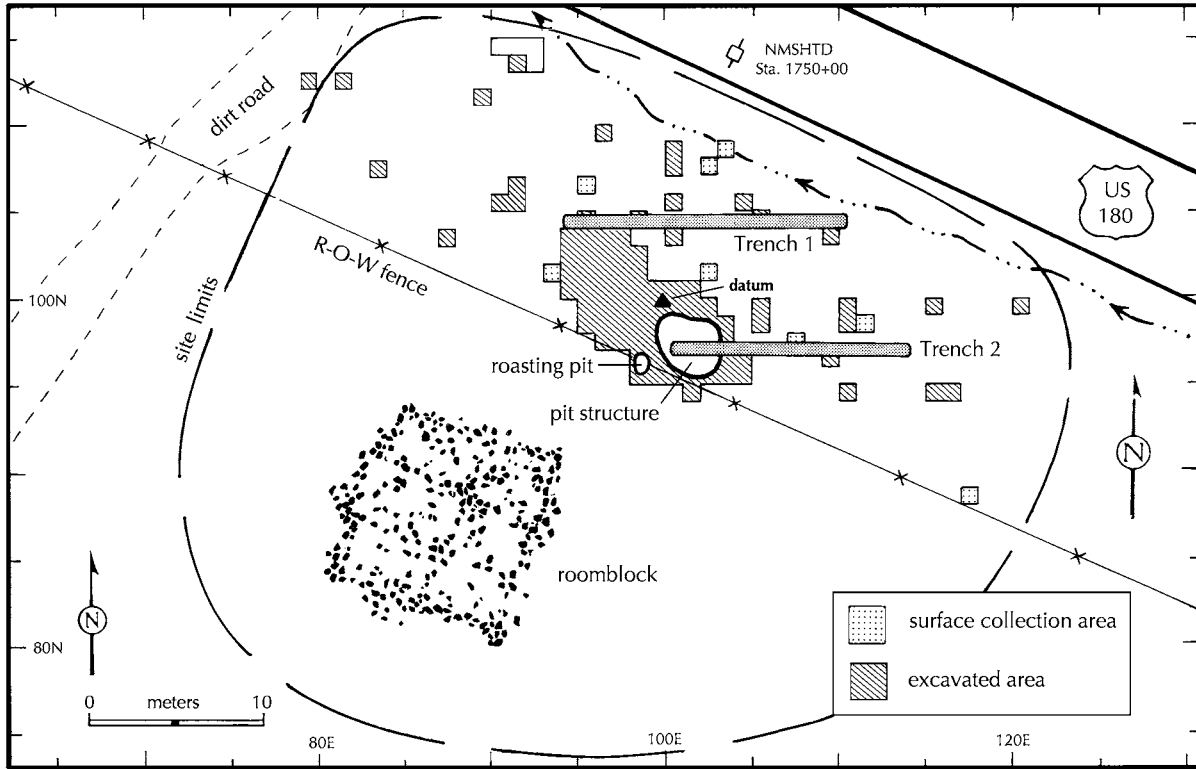


Figure 2.239. LA 70189, site plan of Lightning Strike.



Figure 2.240. Site setting at LA 70189, with cobble mound in background.

the surface that could be associated with this time period. The cultural features that were present all related to the probable Athabaskan occupation of the site. Therefore, the specific research objectives could not be met; however, the knowledge gained about Athabaskan settlement and subsistence patterns in the Mogollon Highlands is of great significance.

EXCAVATION PROCEDURES

A 1-by-1-m grid system was laid out over the site area and an arbitrary datum was reestablished at 100N/100E. The area with the highest artifact density was surface stripped first. Because a utilized surface was encountered at 10-15 cm below the ground level during the testing program, excavations proceeded in depth only until this compacted surface was revealed. The surface excavations were then expanded until the compaction could no longer be followed. In all other areas of the site, 1-by-1-m grids were taken down to the underlying caliche substrate to a maximum depth of 69 cm. When cultural features were encountered they were completely excavated along with the surrounding surfaces associated with them.

Excavations revealed no stratigraphic levels except the utilized surface. Those levels maintained include:

- Level 1: Surface collecting and surface stripping to 15 cm in depth. Numerous artifacts were present. Soil was mostly loose and silty with a heavy cover of duff. Soil color was 5YR 3/2, dark reddish brown.
- Level 2: General fill. Soil sometimes mottled; charcoal flecks occasionally present. Color was 5YR 4/4, reddish brown. Artifacts were present within the

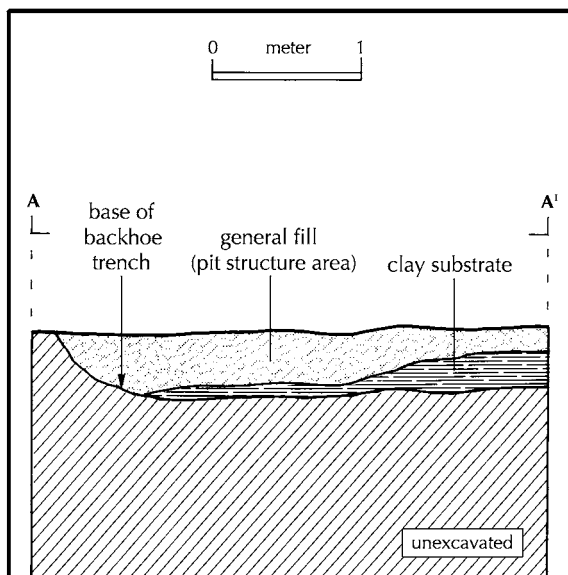


Figure 2.241. Profile of Backhoe Trench 2.

fill. Where soil reached the sterile substrate, the color changed to 10YR 3/6, dark yellowish brown. Level 3: Fill within the cultural features was darker with more charcoal. Munsell color was 10YR 3/2, very dark grayish brown. Artifacts were present.

Two backhoe trenches were dug on the site (Fig. 2.241) after excavated areas revealed no cultural features. A shallow pit structure was cut by the trench and the surrounding surface stripping uncovered a nearby roasting pit. All soil on the site was screened through ¼-inch screen. All artifacts recovered were bagged by grid and level. Profiles and plan views were drawn of all cultural features. Photographs were taken and a topographic map was produced using a transit and stadia rod.

CULTURAL UNITS

Excavations uncovered two cultural features within the proposed project limits: a shallow pit structure and a roasting pit (Fig. 2.242). Both represent a probable Athabaskan use of the site.

Pit Structure

A shallow pit structure was uncovered in a backhoe trench. It contained darker soil that was visible in the backhoe cut. Numerous artifacts had washed into the unit through time. The structure had sloping sides and no internal features. Radiocarbon samples produced dates representing a Pueblo period occupation. However, the feature may contain charcoal from old wood because we believe it to be Athabaskan in origin, associated with an Athabaskan-dated roasting pit nearby.

Dimensions. The pit structure measured 3.55 m north-south by 3.37 m east-west for an area of 11.9 sq m. It was somewhat irregular in shape and was very shallow—43 cm below the ground surface (Fig. 2.243a). Large pieces of charcoal were present in the loamy fill.

Walls. The pit structure was saucer-shaped with very gradually sloping walls (Fig. 2.243b). The unit had been dug directly into the native soil and the walls did not have prepared surfaces.

Floor. The floor was slightly uneven and was formed by simply packing down the exposed surface. Charcoal was mostly concentrated in the floor fill. Small charcoal flecks were present in the floor surface.

No artifacts were found on the floor.

Hearth. None present.

Postholes. None present.

Roof. No roof fall found.

Entry. No evidence of an entry was located.



Figure 2.242. Pit structure on left with backhoe trench visible. Roasting pit on right near fence.

Roasting Pit

A single roasting pit was located about 1 m southwest of the pit structure (Fig. 2.244). It was heavily burned and contained a few artifacts. Based on C-14 dates, it derives from the Athabaskan occupation of the site.

The roasting pit measured 1.15-by-.94-by-.35 m deep and was filled with fire-cracked rock and charcoal-filled soil (Fig. 2.243c). One small area of the pit wall had been oxidized to a reddish color. Also, a possible dirt shelf was located in the upper portion of the pit on the north side where the pit wall flattened out. A few artifacts were recovered from the pit.

ARTIFACTS

A total of 786 artifacts were recovered from the Lightning Strike right-of-way and include only a small portion of the cultural material associated with the roomblock to the west. Items found include 458 ceramics, 322 lithic artifacts, 5 pieces of ground stone, and 1 quartz crystal.

Ceramics

The recovered ceramics were part of the sheet trash from the nearby pueblo roomblock. They constitute 58.1 per-

cent of the site assemblage with most of them (69.8 percent) being the all-encompassing Alma Brown Wares (Table 2.135). Sherds that can be solely assigned to the Pueblo period represent 6.1 percent of the ceramics. The presence of a few Tularosa Black-on-white, White Mountain Redware, and Wingate Black-on-red indicates a late Reserve phase occupation, possibly ca. A.D. 1100.

Most sherds were recovered from surface stripping and general fill of the site. Nineteen percent were found within the pit structure and are presumed to have washed into this shallow unit over time. Another 1.7 percent (N=8) were from the roasting pit and could have also washed into the feature during rainy periods.

Twelve sherds and five lithic artifacts were found on the floor of the pit structure. These include Alma Plain, corrugated, smudged, and Reserve Black-on-white sherds and core flakes and angular debris. Because later-dating charcoal was retrieved from this same provenience, we assume that the artifacts were a secondary deposit as stated above.

Lithic Artifacts

Most lithic artifacts are core flakes. A small amount of angular debris also occurs (Table 2.136). Unifacial and bifacial flakes comprise only 5.2 percent of the lithic assemblage. Some material reduction occurred in this

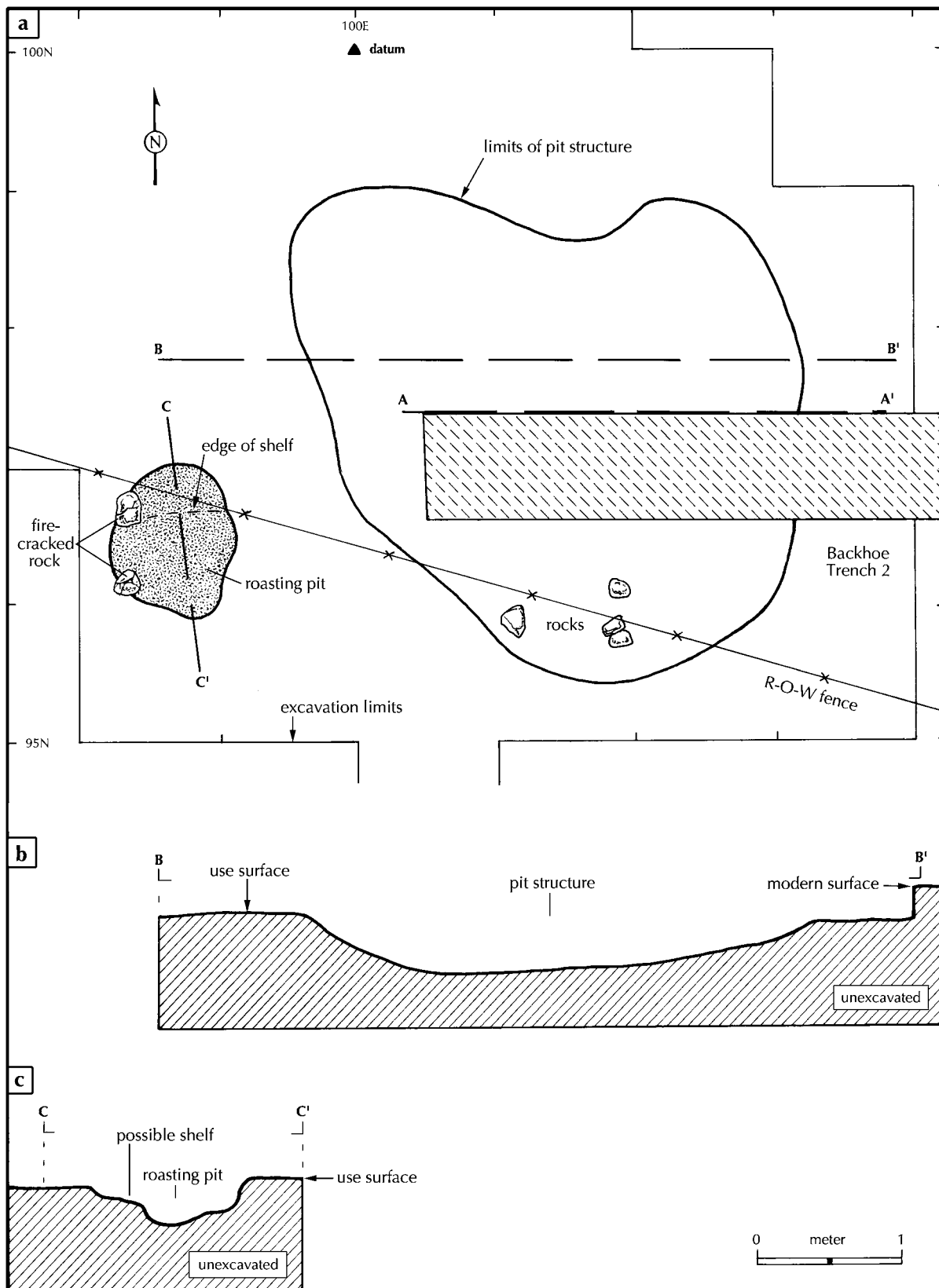


Figure 2.243. Plan and profile of pit structure and roasting pit; (a) plan view, (b) profile of pit structure, (c) profile of roasting pit.



Figure 2.244. Roasting pit, LA 70189.

area of the site; ten cores and one tested cobble were found. Some lithic material apparently washed into the pit structure and roasting pit.

Luna blue agate and chert represent 66.2 percent of the lithic materials on the site (Table 2.137). A wide variety of other materials were selected for use, including obsidian, which makes up 2.8 percent of the assemblage.

Both projectile points are Luna blue agate and are corner-notched. They may represent curated items or be associated with the Athabaskan use of the site.

Ground Stone

Only five pieces of ground stone were found at Lightning Strike (Table 2.138). Of these, only one is a milling stone, an indeterminate mano fragment. Other pieces include an abrading stone, lapidary stone, and two indeterminate fragments. Material type choices consist of four pieces of rhyolite and one of nonvesicular basalt, both typically found on most sites in the Mogollon Highlands. All were recovered from general fill except the lapidary stone, which was in the fill of the pit structure. It is not possible to determine cultural affiliation of these pieces of ground stone.

Miscellaneous Artifacts

A single modified quartz crystal was recovered from the general fill at LA 70189. Its cultural association is indeterminate.

ANCILLARY STUDIES

Faunal Remains

No faunal remains were recovered from this shallow, basically surface site.

Macrobotanical Remains

Charred nonreproductive plant parts were the only cultural remains recovered from the roasting pit along with an intrusive uncharred goosefoot seed. The charred four-wing saltbush leaves and pine bark could represent residue from using these genera for fuelwood.

The flotation sample from the pit structure produced charred maize cupules and yucca seed, indicating maize was either carried into the shallow depression or was transported there.

Wood charcoal species were predominantly coniferous including pinon, ponderosa, and juniper. Small quan-

Table 2.135. Ceramics from LA 70189

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Alma Plain	188 80.0% 51.8%	4 1.7% 50.0%	43 18.3% 49.4%	235 100.0% 51.3%
Alma Rough	70 84.4% 19.3%		12 14.6% 13.8%	82 100.0% 17.9%
Alma Punched	1 100.0% .3%			1 100.0% .2%
Alma Neckbanded	2 100.0% .6%			2 100.0% .4%
Three Circle Neckbanded	5 100.0% 1.4%			5 100.0% 1.1%
Plain Corrugated	22 84.6% 6.1%		4 15.4% 4.6%	26 100.0% 5.7%
Indented Corrugated	10 83.3% 2.8%	1 8.3% 12.5%	1 8.3% 1.1%	12 100.0% 2.6%
Incised Corrugated	14 82.4% 3.9%	1 5.9% 12.5%	2 11.8% 2.3%	17 100.0% 3.7%
Indeterminate Corrugated	7 87.5% 1.9%		1 12.5% 1.1%	8 100.0% 1.7%
Plain Smudged	22 56.4% 6.1%	1 2.6% 12.5%	16 41.0% 18.4%	39 100.0% 8.5%
San Francisco Red	1 50.0% .3%		1 50.0% 1.1%	2 100.0% .4%
Late White Ware	8 57.1% 2.2%		6 42.9% 6.9%	14 100.0% 3.1%
Red Mesa Black-on-white	6 85.7% 1.7%		1 14.3% 1.1%	7 100.0% 1.5%
Reserve Black-on-white	6 85.7% 1.7%		1 14.3% 1.1%	7 100.0% 1.5%
Tularosa Black-on-white	2 100.0% .6%			2 100.0% .4%
Indeterminate White Mountain Redware		1 100.0% 12.5%		1 100.0% .2%
Wingate Black-on-Red	4 100.0% 1.1%			4 100.0% .9%
Column Total	363 79.3% 100.0%	8 1.7% 100.0%	87 19.0% 100.0%	458 100.0% 100.0%

Table 2.136. Lithic Artifacts from LA 70189

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Angular Debris	60 89.6% 20.8%	1 1.5% 20.0%	6 9.0% 20.7%	67 400.0% 20.8%
Core Flake	204 89.9% 70.8%	3 1.3% 60.0%	20 8.8% 69.0%	227 100.0% 70.5%
Biface Flake	13 92.9% 4.5%		1 7.1% 3.4%	14 100.0% 4.3%
Tested Cobble	1 100.0% .3%			1 100.0% .3%
Core	8 80.0% 2.8%		2 20.0% 6.9%	10 100.0% 3.1%
Uniface		1 100.0% 20.0%		1 100.0% .3%
Biface	2 100.0% .7%			2 100.0% .6%
Column Total	288 89.4% 100.0%	5 1.6% 100.0%	29 9.0% 100.0%	322 100.0% 100.0%

Table 2.137. Lithic Artifact Material Types from LA 70189

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Chert	91 88.3% 31.6%	3 2.9% 60.0%	9 8.7% 31.0%	103 100.0% 32.0%
Chalcedony	11 73.3% 3.8%	1 6.7% 20.0%	3 20.0% 10.3%	15 100.0% 4.7%
Luna Blue Agate	100 90.9% 34.7%		10 9.1% 34.5%	110 100.0% 34.2%
Obsidian	9 100.0% 3.1%			9 100.0% 2.8%
Igneous	4 100.0% 1.4%			4 100.0% 1.2%
Basalt	26 86.7% 9.0%		4 13.3% 13.8%	30 100.0% 9.3%
Rhyolite	24 100.0% 8.3%			24 100.0% 7.5%
Siltstone	5 100.0% 1.7%			5 100.0% 1.6%

Table 2.137. Continued.

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Metamorphic	1 100.0% .3%			1 100.0% .3%
Quartzite	14 82.4% 4.9%	1 5.9% 20.0%	2 11.8% 6.9%	17 100.0% 5.3%
Quartzitic Sandstone	2 66.7% .7%		1 33.3% 3.4%	3 100.0% .9%
Massive Quartz	1 100.0% .3%			1 100.0% .3%
Column Total	288 89.4% 100.0%	5 1.6% 100.0%	29 9.0% 100.0%	322 100.0% 100.0%

Table 2.138. Ground Stone from LA 70189

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Indeterminate	2 100.0% 50.0%		2 100.0% 40.05
Abrading Stone	1 100.0% 25.0%		1 100.0% 20.0%
Lapidary Stone		1 100.0% 100.0%	1 100.0% 20.0%
Mano	1 100.0% 25.0%		1 100.0% 20.0%
Column Total	4 80.0% 100.0%	1 20.0% 100.0%	5 100.0% 100.0%

tities of oak were also identified. Thus, firewood and construction material, at least, consisted of locally available taxa.

Pollen Remains

Five pollen samples were analyzed from Lightning Strike. Three were from the pit structure, one from the roasting pit, and another was a control sample from off-site (Table 2.139).

Locally available woods were present in the roasting pit along with cheno-ams, composites, Mormon tea, and prickly pear, all of which are edible items. Of interest is

the maize pollen and grains that showed up in the roasting pit and from the floor of the pit structure. It would appear that the Athabaskan peoples on the site had access to corn or corn products; however, because of the shallowness of the two features and the closeness to the Pueblo roomblock, these pollen remains may have washed into the structures with Pueblo period artifacts.

DATING METHODS

Five radiocarbon samples were obtained from the site and the results beg for more site data, which we were not able to obtain. Table 2.140 presents the C-14 results and

Table 2.139. Pollen Remains from LA 70189

Location	Pine	Juniper	Oak	Cheno-am	Composite	Mammon Tea	Sagebrush	Sticky Pear	Grasses	Corn
Pit Structure										
Sherd				X						
Floor	X			X	X					X
Floor	X			X						
Roasting Pit										
Sherd	X*	X	X	X	X	X		X		X
Control										
Cf-site	X*	X	X	X	X		X		X	

*High Amounts

Table 2.140. C-14 Dates for LA 70189

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
98N/101E	69814	1040 ±90	A.D. 910-920 950-1040	A.D. 800-1200	A.D. 1010	Pit Structure (15-34 cm)
96N/98E	69815	600 ±60	A.D. 1300-1400	A.D. 1220-1430	A.D. 1400	Roasting Pit (10-30 cm)
96N/98E	57459	340 ±80	A.D. 1460-1650	A.D. 1430-1680 1770-1800 1940-1950	A.D. 1520, 1570, 1630	Roasting Pit (10-30 cm)
99N/100E	57460	1010 ±70	A.D. 990-1050 1100-1110	A.D. 890-1190	A.D. 1020	Pit Structure (2-45 cm)
98N/101E	64068	630 ±90	A.D. 1290-1410	A.D. 1240-1440	A.D. 1310, 1350 1380	Pit Structure (15-34 cm)

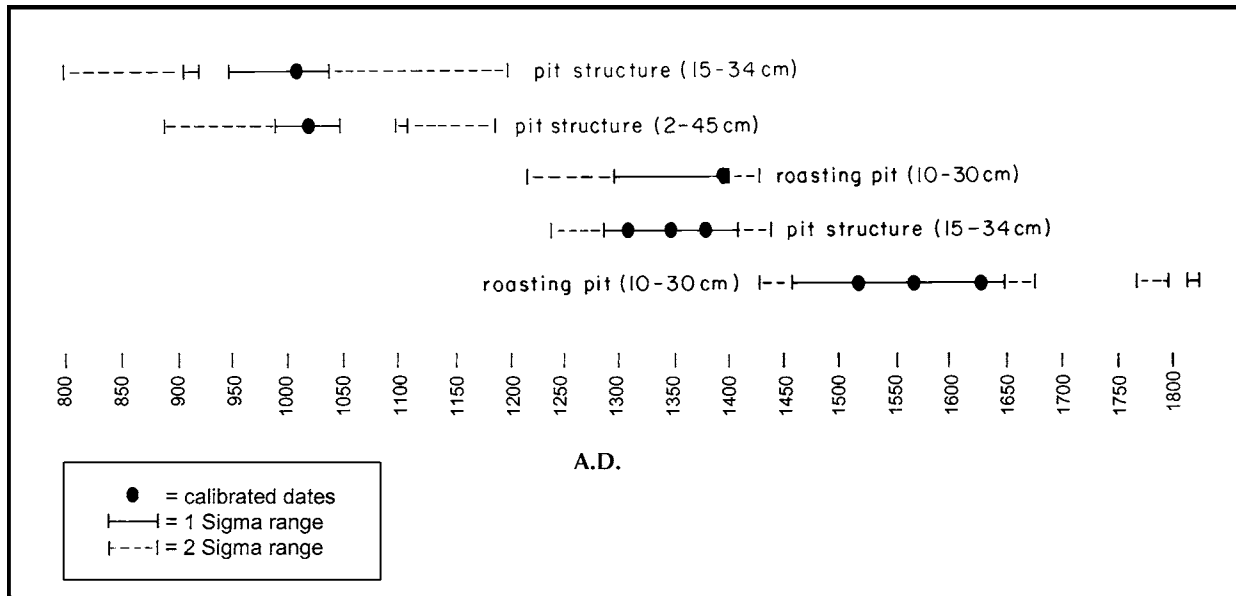


Figure 2.245. Seriation of dates, LA 70189.

Figure 2.245 graphs those results in seriated order. Three obsidian dates were also obtained and produced poor results. One date, 528 B.C., is aberrant, too early for the site. Two other dates retrieved from general fill are either too early, A.D. 509, or slightly too late, A.D. 1149, for the Reserve phase roomblock.

The first two graphed dates for the pit structure are between A.D. 950 and 1050 and probably represent an occupation date for the nearby roomblock due to charcoal from the pueblo washing into the pit structure fill. However, the sherds suggest a date closer to A.D. 1100. Another radiocarbon sample from the pit structure yielded a 2-sigma A.D. 1240-1440 date as does the roasting pit. The few late Pueblo sherds on the site—Tularosa Black-on-white, White Mountain Redware, and Wingate Black-on-red—fit into the first segment of this 2-sigma range (prior to A.D. 1350). This would mean that the shallow pit structure could be a late Tularosa phase manifestation. Shallow, expedient structures of this type are not known for the late Pueblo period, but could represent a transient occupation of the site at this time. However, we suspect, but cannot confirm, that the pit structure is contemporary with the nearby later roasting pit.

Charcoal from the late Pueblo period, at A.D. 1240-1440, was likewise present in the roasting pit. However, the roasting pit also produced a later date, probably between A.D. 1430 and 1680, and possibly as late as 1780-1800 (see Fig. 2.245). These dates indicate a probable Athabaskan use of the roasting pit.

In summary, there are probably two occupational episodes at Lightning Strike. The Pueblo roomblock is likely a Reserve phase settlement with radiocarbon samples yielding a weighted C-14 date of A.D. 1020; how-

ever, ceramics push that date closer to A.D. 1100. The use of old wood cannot be discounted.

The roasting pit seems to be clearly Athabaskan. Because of the shallowness of the pit structure and the considerable likelihood of cultural materials washing in or out of it, we cannot unequivocally state that the pit structure is related to the roasting pit, although we believe it is.

SITE INTERPRETATION

Lightning Strike has two discrete occupations. The Pueblo roomblock, outside of the project limits, dates to probably the late Reserve phase. Ceramics indicate an occupation around A.D. 1100. However, radiocarbon dates suggest an earlier A.D. 1020-1030 date, which probably represents the use of old wood. Without excavation of the roomblock, it is not possible to determine precisely when the pueblo was occupied. Based on surface sherds alone and assuming the A.D. 1020-1030 date represents old wood, we have elected to assign a late Reserve date to the rooms.

The shallow pit structure may have been associated with this occupation. The likelihood of charcoal and artifacts washing in or out of this feature is high. A nearby roasting pit dates securely after A.D. 1430 and as late as 1680 and the closely associated pit structure may derive from this same time. We have assigned an Athabaskan affinity to the roasting pit. The pit yielded numerous subsistence items available in the local environment and also produced maize remains. The presence of corn that probably was transported into the site is important to our understanding of Athabaskan subsistence choices in the

Mogollon Highlands.

LA 70191 (AR-03-06-06-00831)
THE BLACK HOLE

Yvonne R. Oakes

The site was first recorded as a light sherd and lithic artifact scatter along U.S. 180 (Oakes 1989). It was tested in 1990 to determine the depth and extent of the site. The site area measured 11.5-by-11.0 m for an area of 116.5 sq m, all within the highway right-of-way.

Two test pits were dug within the site limits to depths of 40 and 73 cm each. Four auger tests were also placed within the site. Test Pit 1 revealed ashy soil at a depth of 25 cm and a hard-packed surface that sloped to the north. Some artifacts and charcoal flecking were also found. It was thought that a pithouse might be located in this area. Test Pit 2 also produced charcoal to a depth of

60 cm and several lithic artifacts. Cultural activity was suggested by these tests.

Twenty-three artifacts were recovered from the testing program, one of which was an Alma Plain Brown Ware sherd; the rest were lithic artifacts. We assigned a potential early Pithouse period affiliation to the site and prepared a data recovery plan.

Excavations began in 1991. Grids around the original test pits were opened to locate the possible pit structure. Charcoal and artifacts were found up to 50 cm in depth; however, historic glass was also recovered at this same level indicating that the soil in the area was obviously disturbed. Continued excavations uncovered a buried stream channel running through the site from north to south (Fig. 2.246). It derived from beyond the right-of-way fence, approximately 90 m to the northeast, where a potential pit structure was located. We believe the artifacts at the Black Hole originated from this structure, washing down into the site area.

Twelve grids were excavated at LA 70189. An additional four grids were surface collected. Excavations reached an average depth of 42.8 cm; 5.13 cu m of dirt were removed from the site by hand. Two subsequent backhoe trenches of 6.5 and 11 m each brought the total amount of soil removed on the site to 17.41 cu m.

SITE SETTING

LA 70191 is located on the gently sloping terrain between the foothills of the San Francisco Mountains and the Pine Lawn Valley. It is within the Gila National Forest in a woodlands setting among tall pine trees and some piñon and oak. Forest duff is heavy. The site elevation is 1,981 m (6,500 ft). It lies .5 km northeast of Spurgeon Draw and .6 km southwest of Dry Leggett.

RESEARCH OBJECTIVES

We believed the site to represent a single pit dwelling of the Early Pithouse period at ca. A.D. 500 or earlier. It was hoped it would provide subsistence data for the period on resources used, degree of dependency on cultigens, use of storage facilities, and length of site occupation.

However, because the Black Hole is a redeposited

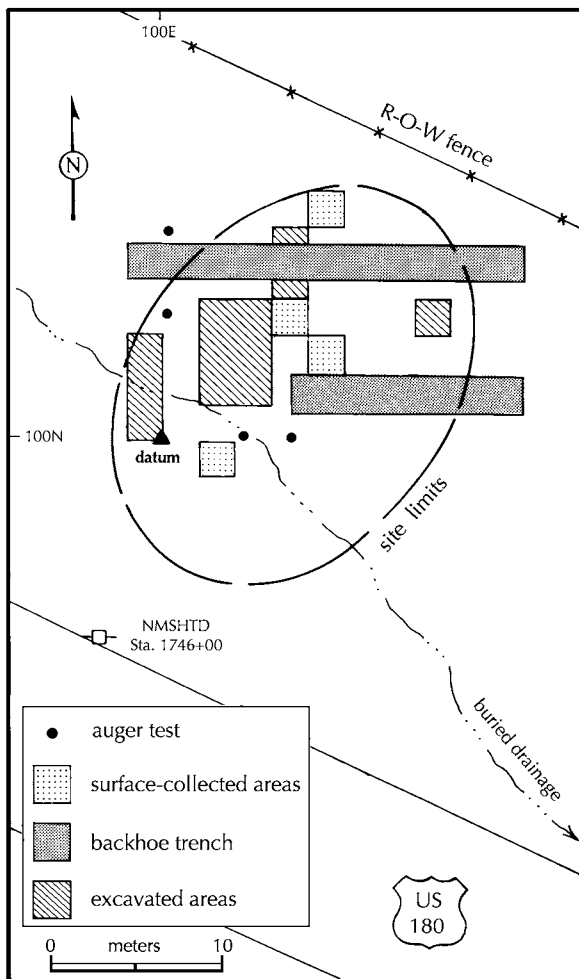


Figure 2.246. LA 70191, the Black Hole.

site via a stream channel, none of the research objectives could be met.

EXCAVATION PROCEDURES

Excavations on the site consisted of reexamining the two test pits opened during the testing program and reestablishing the 1-by-1-m grid system. Grids adjacent to the test units were then excavated in order to open up a larger area. Artifacts were recovered from below the surface and excavations proceeded in 10-cm arbitrary levels until sterile reddish clay was encountered. Stratigraphic levels used during excavation were:

- Level 1: Surface collection and stripping to 10-15 cm in depth. Soil silty and loose. Munsell color was 5YR 3/2, dark reddish brown. Artifacts present.
- Level 2: General fill to depth of 73 cm. Artifacts present. Munsell color was 5YR 4/3, reddish brown upon reaching the sterile clay substrate.

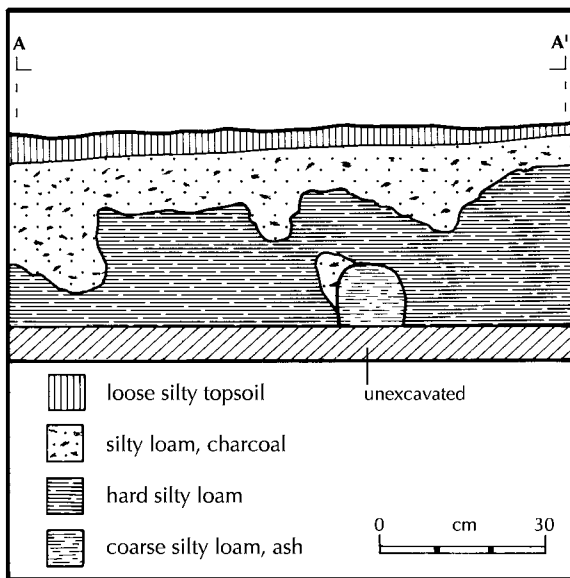


Figure 2.247. Profile of Test Pit 1.

Sloping surfaces were found at 22 to 60 cm in depth and when followed throughout the grid excavations, revealed a north-south trending stream channel (Figs. 2.246, 2.247). No pit structure or subsurface cultural features could be found. Two mechanically dug trenches were run through the site to confirm that no features were present.

All soil was screened through ¼-inch screen and recovered artifacts were bagged by provenience and level. Profiles and plan views of the excavations were drawn. Photographs were taken and a plan view map of the site was produced using a transit and stadia rod.

CULTURAL UNITS

Because all artifacts recovered from the Black Hole were redeposited from an upstream site, there were no cultural features present at the site location.

ARTIFACTS

Only 188 artifacts were retrieved from LA 70191. These include 3 ceramics, 183 lithic artifacts, and 2 projectile points.

Ceramics

The three ceramics include two Alma Plain Brown Wares and an Alma Rough sherd. They are believed to have washed into the area from an Early Pithouse period structure located upstream.

Lithic Artifacts

A variety of lithic artifact and material types were recovered from the site (Table 2.141). Most artifacts were core flakes at 63.4 percent and biface flakes at 20.2 percent. These may predominate in this assemblage because flakes of this nature tend to be smaller and lighter than angular debris, cores, and tested cobbles and, therefore, would erode downstream more easily from the pit structure. A wide variety of material types was recorded. Chert and obsidian dominate. The two projectile points are also chert and obsidian. The obsidian point is unidentifiable while the chert point suggests possible reuse of an Archaic projectile.

Ground Stone

No ground stone was found on the site.

Miscellaneous Artifacts

No miscellaneous artifacts were recovered from the site.

ANCILLARY STUDIES

Faunal Remains

No faunal remains were recovered from the site area.

Macrobotanical Remains

No botanical remains from the site were submitted for

Table 2.141. Lithic Artifacts from LA 70191

Cells: Count Row Percent Column Percent	Material Type										Row Total
	Chert	Chalcedony	Luna Blue Agate	Obsidian	Basalt	Rhyolite	Quartzite	Quartz			
Angular Debris	11 42.3% 15.1%	1 3.8% 11.1%	9 34.6% 39.1%		1 3.8% 10.0%	2 7.7% 11.8%	1 3.8% 11.1%	1 3.8% 11.1%	1 3.8% 11.1%	26 100.0% 14.2%	
Core Flake	48 41.4% 65.8%	7 6.0% 77.8%	13 11.2% 56.5%	20 17.2% 50.0%	7 6.0% 70.0%	12 10.3% 70.6%	8 6.9% 88.9%	1 .9% 50.0%	116 100.0% 63.4%		
Bface Flake	12 32.4% 16.4%	1 2.7% 11.1%		19 51.4% 47.5%	2 5.4% 20.0%	3 8.1% 17.6%			37 100.0% 20.2%		
Tested Cobble			1 100.0% 4.3%						1 100.0% .5%		
Bface	2 66.7% 2.7%			1 33.3% 2.5%					3 100.0% 1.6%		
COLUMN TOTAL	73 39.9% 100.0%	9 4.9% 100.0%	23 12.6% 100.0%	40 21.9% 100.0%	10 5.5% 100.0%	17 9.3% 100.0%	9 4.9% 100.0%	2 1.1% 100.0%	183 100.0% 100.0%		

analysis.

Pollen Remains

No palynological remains from the site were submitted for analysis.

DATING METHODS

The few ceramics present on the site within the stream

channel leading from the nearby pit structure suggest an Early Pithouse period origin for the artifacts on the site.

SITE INTERPRETATION

Little can be learned from the recovery of these redeposited artifacts without also analyzing the cultural material and site layout at the source of the deposit (the nearby pit structure). This was not possible for the project and thus we are left with no substantive data.

LA 70196 (AR-03-06-06-00832)
FENCE CORNER SITE

Yvonne R. Oakes

LA 70196 was initially recorded as a possible Pueblo period small roomblock (Oakes 1989) because of a low mound of cobbles hidden in heavy bushes and associated with a scatter of ceramics and lithic artifacts. Site area was estimated at 300 sq m (22-by-17 m). The site was recommended for further testing.

Testing at Fence Corner was carried out by Oakes in 1990. During the testing program the potential cobble mound was examined through two test pits and found not to represent a cultural feature. However, artifacts were present on the site surface and in subsurface test pits. Altogether, six test units ranged in depth from 30 to 90 cm. Charcoal and a few artifacts occurred as deep as 80 cm. In addition, 32 auger tests were systematically placed around the site. A total of 57 artifacts were collected and included sherds, lithic artifacts, and ground stone. Although no structural features were encountered at LA 70196, the depth of charcoal and type of artifacts indicated the potential presence of a late Pithouse period structure (San Francisco phase). Site area was expanded to 33-by-22 m (655 sq m) and a data recovery plan was prepared for the site.

Excavations were carried out in 1991. They began with seven exploratory mechanical trenches to locate the possible pit structure (Fig. 2.248). Trench 4 did cut the western edge of a pit unit and after all trenches were cleaned and profiled, grid units around the pit structure were surface stripped. No outside surface was present; it may have eroded away in possible flooding episodes of the nearby Leggett Canyon. Excavations revealed the pit structure extended to 1.20 m below ground surface. Artifacts and C-14 dates confirmed a San Francisco phase occupation for the site. A single other small pit was found, cut by Trench 3, 8 m southwest of the pit structure. Because of artifacts extending into an area southeast of the pit structure, we believe another pit unit may lie outside of the project limits, immediately east of the right-of-way fence.

A total of 51 grids were hand excavated on the site and another 24 grids were surface collected for a total of 28.3 cu m. Excavations ranged from .06 to 1.25 m in depth, averaging 55.7 cm depth per grid. The seven backhoe trenches opened another 59.1 cu m of the site for a total of 87.4 cu m of soil removed. Site area was determined to be 60 m north-south by 26 m east-west for

a total site area of 1,560 sq m.

SITE SETTING

LA 70196 sits immediately southeast of the junction of Leggett Canyon and Oak Springs Canyon drainages in the Pine Lawn Valley at an elevation of 1,877 m (6,160 ft). It is in a somewhat unlikely location as it is only 18 m north of the Leggett Canyon stream bed on a fairly flat floodplain. The landscape here is open with low hills of oak, juniper, and piñon in the surrounding distances. The Saliz Mountains rise 1.8 km to the southeast. The Leggett Canyon drainage frequently flows from rainfall produced at higher elevations. It is joined by the Oak Springs drainage and another minor flow from the northeast to probably yield sufficient water for crops in average years. Potential agricultural lands are plentiful immediately around the site. Wild game is common in the area today, including flocks of wild turkey frequently seen near the site.

Numerous sites dot the landscape in this area of the Pine Lawn Valley. Settlement is minimal from the Archaic through the Early Pithouse periods, but increases thereafter and peaks during the Reserve phase (Early Pueblo) with many small one- to four-room sites. The availability of agricultural land may be one of the factors driving settlement in this area.

RESEARCH OBJECTIVES

We were interested in pithouse subsistence adaptations in the Mogollon Highlands as compared to Archaic patterns. Floral and faunal resources were expected to be present in sufficient amounts to determine dependency on cultigens versus wild food hunting and gathering. Ground stone tools were expected to also provide information on resource utilization and seasonality of resource acquisition.

Construction techniques employed on the site will be compared with other pithouse sites located during the project to determine relative degrees of permanency versus mobility. The location of storage facilities, surplus resources, amount of cultural debris, and degree of labor investment should all aid in this comparison. If the site is

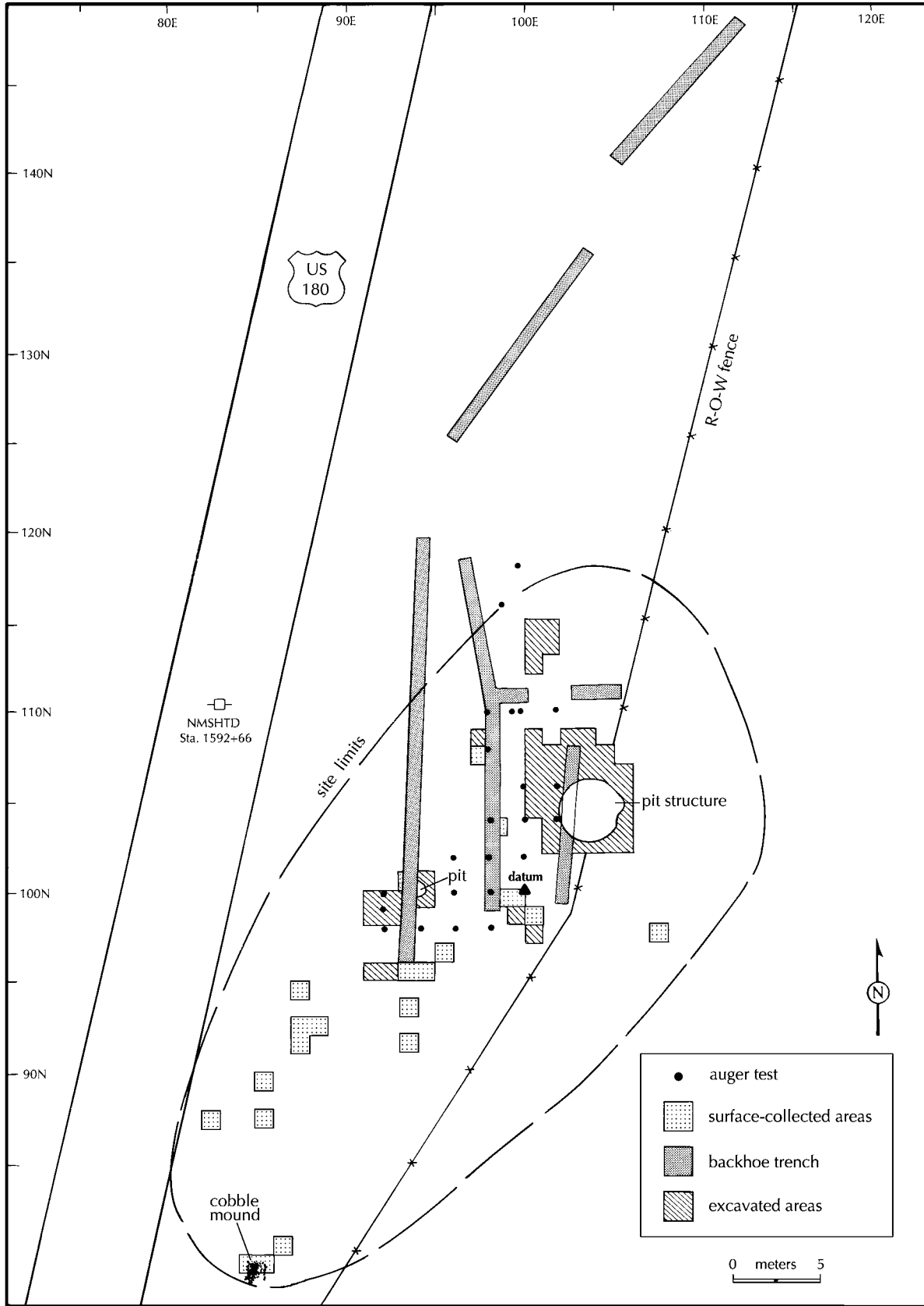


Figure 2.248. LA 70196, Fence Corner site.



Figure 2.249. View of pit structure showing upper floor. Note rocks of the shallow hearth under metate and cobbles exposed in the southeast wall.

representative of a mobile population, then site use should reflect seasonality or short-term occupation through limited types and amounts of resources accumulated and through limited artifact concentrations (Schlanger 1990).

EXCAVATION PROCEDURES

Because testing procedures indicated that a pit structure was probably located on the site, and given the fact that six test pits did not find it, we opted to use exploratory mechanical trenching to find the structure. Seven trenches were dug over the site with the result that a pit structure was uncovered in Trench 4 and a small pit in Trench 3. All trenches were straightened and cleaned and no further cultural features were observed. Backdirt was removed from the pit areas and surface stripping the cultural areas occurred first, within a 1-by-1-m grid system. Excavation of the pit structure proceeded with hand tools in 40-cm increments until 15 cm above the floor was reached. Levels maintained on the site included:

Level 1: Surface stripping and collection up to 15 cm in depth. Soil dry and silty. Artifacts were present. Munsell color was 10YR 4/2, dark grayish

brown.

Level 2: General fill on the site, up to 80 cm in depth. Charcoal and artifacts frequently present. The soil color was 10YR 3/3, dark brown on the Munsell scale.

Level 3: Fill of the pit structure and small outside pit. Soil was generally 10YR 2/2, very dark brown.

Level 4: Pit structure fill below roof fall. Heavy charcoal concentration. Artifacts present. Soil color was 7.5YR 3/4, dark brown.

Level 5: Floor of the pit structure.

Level 6: Fill of features on pit structure floor.

All soil was screened through ¼-inch mesh and artifacts were collected and bagged by grid and level. Profiles and plan views of trenches and the pit structure were drawn. Photographs of the features and a topographic map of the site were produced using a transit and stadia rod.

CULTURAL UNITS

A single Late Pithouse period pit structure was uncovered at Fence Corner site. A small outside pit was the only other cultural feature found.

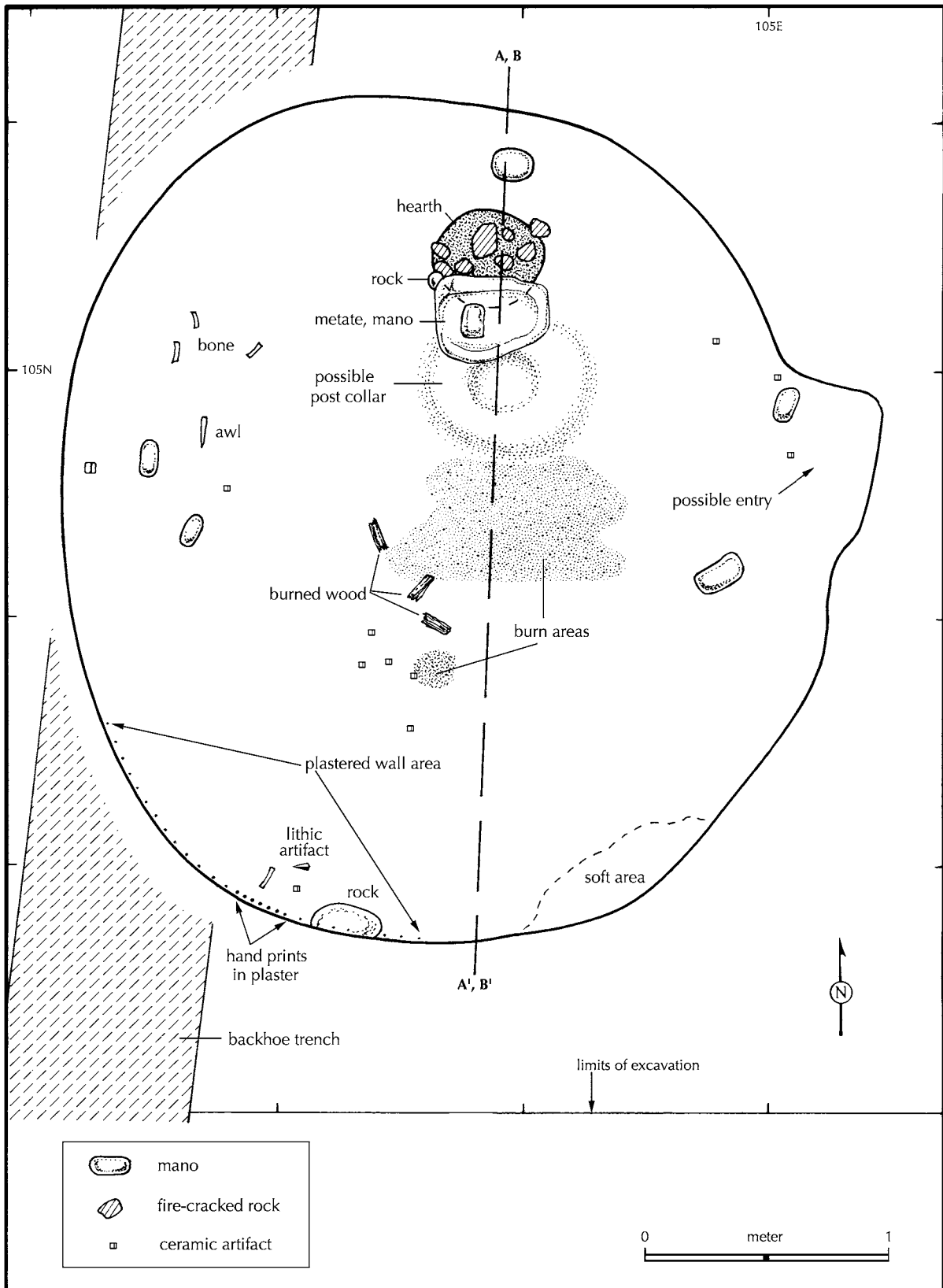


Figure 2.250. Plan view of upper floor in pit structure.

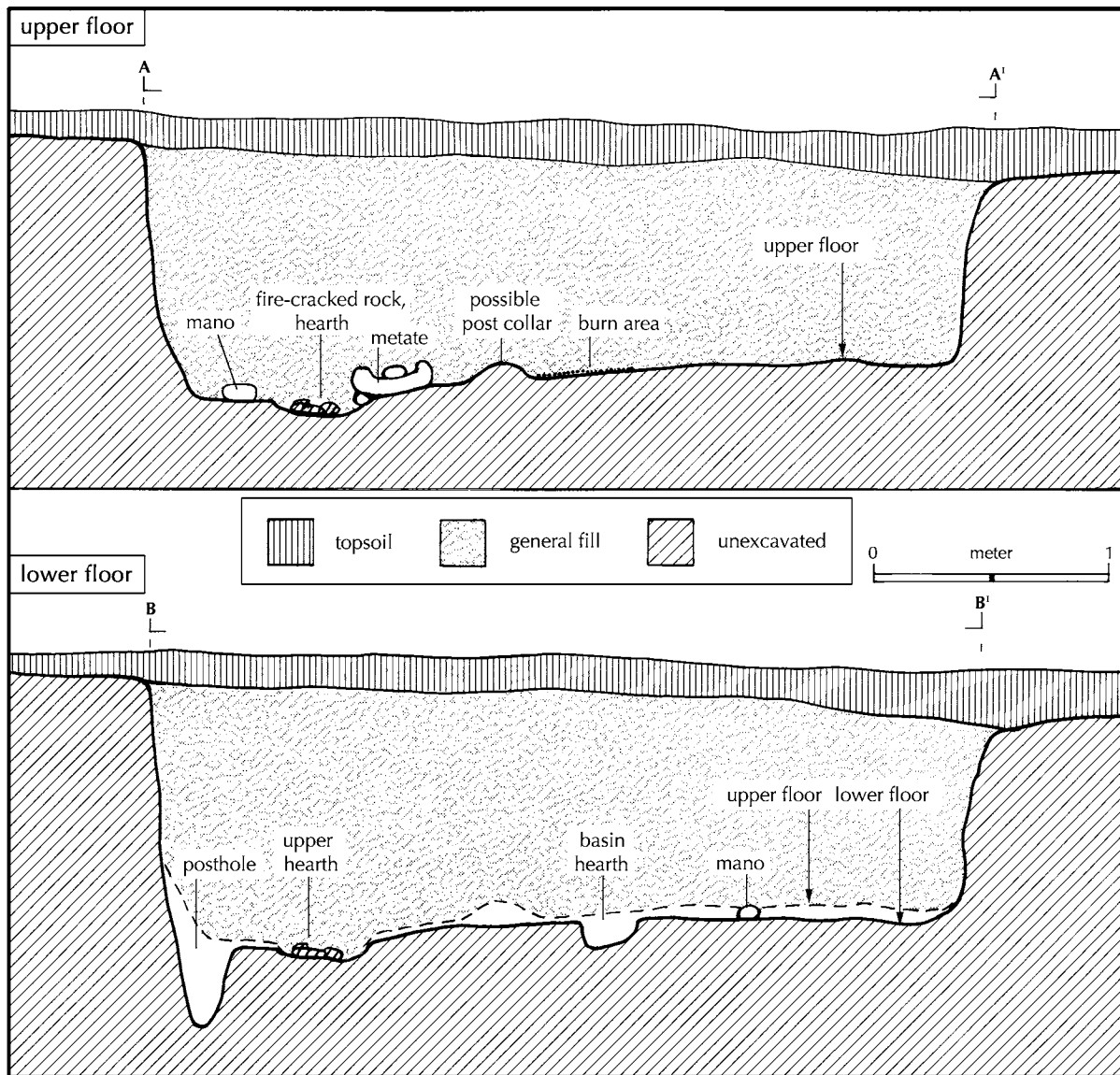


Figure 2.251. Profiles of floors in pit structure.

Pit Structure

A deep, almost circular pit structure was found in the exploratory trenching of the site (Fig. 2.249). It contained a possible posthole, charcoal-stained areas, a rock-lined hearth, and partially plastered walls. A lower floor had a hearth and two postholes. Sherds of Three Circle Red-on-white, Three Circle Neckbanded, White Mound Black-on-white, and indeterminate Mimbres Ware were some of the diagnostic ceramics present within the feature. These ceramics plus radiocarbon dating confirmed a San Francisco phase assignment for the structure. It seems to have served strictly as a habitation unit.

Dimensions. The small pit structure was almost cir-

cular, measuring 3.40 m north-south by 3.35 m east-west and 1.20-1.25 m deep. It had a floor area of 11.39 sq m. Numerous artifacts, burned roof fall, and wood-impressed adobe were present in the loose fill and on the floor.

Walls. Pit structure walls stood at 1.20-1.25 m in height below the ground surface. The pit structure was excavated into the existing native soil. Walls were generally straight-sided but sloped inward at floor level. The site lies on a floodplain, and yet the prehistoric excavators dug into an old cobble-strewn river channel that could be seen running through the south half of the structure as large and medium-sized cobbles protruding from the walls. The remainder of the walls were dug into sterile clay. Slight bulging and some slumping of the walls

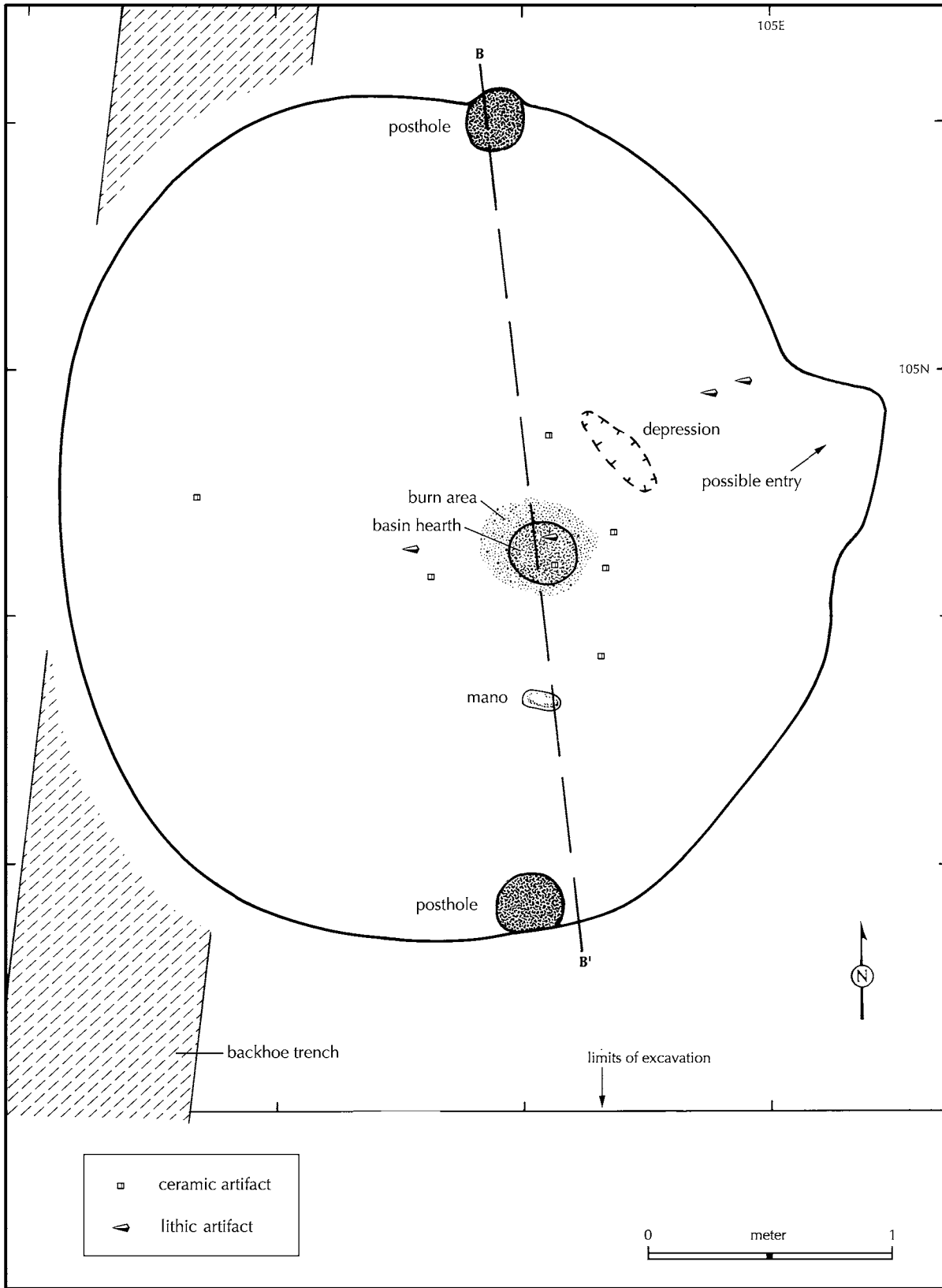


Figure 2.252. Plan view of lower floor in pit structure.



Figure 2.253. Shallow hearth on lower floor of the pit structure.

had occurred on the east side of the unit. Oxidized burning was evident along the southwest portion of the wall. An archaeomagnetic sample was taken from this burned area.

Wall plaster is present in the lower 33 cm of the southwest portion of the pit structure. It is a mud mixture, which has slightly burned, preserving it. Small portions of burned plaster are variously located along the south wall, suggesting the unit was, at one time, entirely plastered. Thickness of the mud plaster was 2 cm. Within the plastered area in the southwest quadrant of the pit structure were several impressions of hands. Photographs were taken but did not yield good results. By today's standards, the prints would have been produced by a small adult, perhaps a woman.

Floors. Two floors were found in the pit structure. The upper floor (Figs. 2.250, 2.251) consisted of hard-packed clay; it was not plastered. Charcoal staining was present throughout most of the floor. Burned adobe casts and chunks of roof fall were on the surface. A trough metate, several manos, some sherds, lithic artifacts, and one bone were also on the floor. A small hearth was also found. In the north-central portion of the floor was a bermed ring of adobe measuring 60-by-68 cm with an interior depression 23 cm wide. No postholes were found and this berming may have served as a post support collar. The post would have sat directly on the floor and

been a single central roof support.

The lower floor (Figs. 2.251, 2.252) dipped 2-9 cm below the upper one. It lay directly above the small gravels associated with the sterile substrate. It, also, was not plastered. Another hearth was located on this level. The floor surface was charcoal-stained and burned near one of two postholes and along the east wall. One mano, some sherds, and faunal remains were recovered from the floor.

Hearths. The upper floor contained a small rock-lined hearth measuring 46-by-43 cm and 14 cm in depth. It was located in the north-central part of the unit. The lower floor, however, had a hearth consisting of a basin-shaped depression measuring 64-by-55 cm and 12 cm deep (Fig. 2.253). The hearth was located slightly to the east of center within the structure.

Postholes. On the upper floor, it was previously stated that a bermed adobe collar may have surrounded a single central post support. On the lower floor two postholes were found on the north and south sides of the structure. The north one had been dug into the wall and then covered over when the upper floor was constructed. The postholes measured 28-by-26-by-40 cm deep and 26-by-24-by-40 cm deep. Their placement suggests a different roof style than the conical or wheeled shape that possibly was present during upper floor use. Those on the lower floor indicate a gabled type of roof was origi-

nally in place when the pit structure was first occupied.

Roof. Roof fall in the pit structure fill was heavily burned and was found in a layer beginning 40 cm above the floor and extending 20 cm in depth. Occasionally, some burned roof fall continued down to the floor, suggesting burning of the roof soon after abandonment. Patterning of roof beams was not discernable. Within the roof fall were pieces of burned adobe with smoothed wood impressions ranging in width from 1.0 to 2.7 cm indicating small latilla-like, bark-stripped poles were used as part of the roof construction.

Entry. The east side of the pit structure had a small extension (see Fig. 2.250), which was first thought to have been a storage pit that was bisected by construction of the pit structure. It measured 1.08-by-.71-by-.66 m deep and was .28 m above the pit structure floor. The fill was loamy and not burned and contained a few artifacts. The pit had two sloping levels; the upper one was 20 cm above the other and extending 30 cm upwards to the prehistoric surface.

It is also possible that the feature may have been a stepped entryway, although the possible "steps" slope somewhat more than would normally be expected. Therefore, we have difficulty defining this area as either an entryway or an earlier storage pit.

Small Pit

A single small pit, measuring 1.42-by-1.00-by-.40 m deep, was found in Trench 3, 8.4 m southwest of the pit structure. One sherd and three lithic artifacts (no burned rock) were present within the loamy fill of the pit. Slight charcoal flecking was evident. The pit may have served as a storage facility.

ARTIFACTS

Fence Corner produced 2,599 artifacts, mostly from the pit structure. These include 1,222 ceramics (56.8 percent of the assemblage), 852 lithic artifacts, 18 projectile points, 24 pieces of ground stone, 20 miscellaneous items, and 463 faunal remains.

Ceramics

Ceramics comprise more than half of the artifact assemblage at LA 70196 (Table 2.142). Of the total amount of sherds recovered, 86.0 percent were from within the pit structure. Utility vessels (Alma Brown Wares) make up 74.5 percent of the ceramics recovered. From the upper floor of the pit structure, ten sherds were recovered: four Alma Plain Wares, four Three Circle Red-on-white, one San Francisco Red, and one plain smudged ware.

Diagnostic sherds that allowed us to date the site include Three Circle Red-on-white, Three Circle Neck Banded, indeterminate Mimbres White Ware, Mangus Black-on-white, and White Mound Black-on-white. All are chronologically important, with "begin" dates between A.D. 775 and 800 and terminal dates at ca. A.D. 975-1050, with the exception of White Mound Black-on-white, which starts at A.D. 700. These dates mesh well with the radiocarbon dates and securely allow for an early San Francisco phase designation for the site.

Lithic Artifacts

The lithic assemblage is strongly dominated by core flakes (75.2 percent, Table 2.143). Cores and tested cobbles are present, but to a limited degree. Angular debris is not heavily present, which suggests minimal core reduction occurred on the site. However, bifaces and biface flakes comprise 14.1 percent of the lithic artifacts, indicating an emphasis on cutting activities. One flake was found on the upper floor and four on the lower, all of rhyolite.

The dominant material type is rhyolite, followed by obsidian and chert (Table 2.144). Obsidian is the only material type that would not be available in the immediate site environs. However, most of the 18 projectile points (Table 2.145) are obsidian, indicating a strong preference for that material. Two, possibly curated San Pedro points of Late Archaic affinity, occur in the assemblage.

Ground Stone

As with all other artifacts, most ground stone was from the pit structure (Table 2.146). The assemblage is heavily weighted towards manos; 15 were recovered. Types are divided between one and two-hand forms. Only one metate was recovered, a trough type, lying directly on the upper floor with a one-hand mano resting on it (see Fig. 2.249). Another two-hand and a one-hand mano were also recovered from the upper floor.

Material used for the ground stone was mostly rhyolite and andesite (Table 2.147). All materials, however, are locally available with little effort.

Miscellaneous Artifacts

A limited variety of miscellaneous items was recovered from the Fence Corner site—mostly from the pit structure. These include 12 quartz crystals, 2 possible loom weights of clay, and 6 mineral samples, mostly of limonite.

Of the 12 quartz crystals, 7 had been culturally mod-

Table 2.142. Ceramics from LA 70196

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Alma Plain	106 13.6% 62.0%	671 86.4% 63.8%	777 100.0% 63.6%
Alma Rough	23 26.7% 13.5%	63 73.3% 6.0%	86 100.0% 7.0%
Alma Scored	1 2.4% .6%	40 97.6% 3.8%	41 100.0% 3.4%
Alma Incised		5 100.0% .5%	5 100.0% .4%
Alma Neckbanded		1 100.0% .1%	1 100.0% .1%
Three Circle Neckbanded		3 100.0% .3%	3 100.0% .2%
Plain Corrugated		1 100.0% .1%	1 100.0% .1%
Plain Smudged	4 3.8% 2.3%	100 96.2% 9.5%	104 100.0% 8.5%
San Francisco Red	4 19.0% 2.3%	17 81.0% 1.6%	21 100.0% 1.7%
Mimbres Indeterminate white ware	7 26.9% 4.1%	19 73.1% 1.8%	26 100.0% 2.1%
Three Circle Red-on-white	11 9.6% 6.4%	103 90.4% 9.8%	114 100.0% 9.3%
Mangus (Bold Face) Black-on-white		1 100.0% .1%	1 100.0% .1%
Early Polished Gray		2 100.0% .2%	2 100.0% .2%
Early Whiteware	12 52.2% 7.0%	11 47.8% 1.0%	23 100.0% 1.9%
Late Whiteware	3 27.3% 1.8%	8 72.7% .8%	11 100.0% .9%
White Mound Black-on-white		6 100.0% .6%	6 100.0% .5%
Column Total	171 14.0% 100.0%	1051 86.0% 100.0%	1222 100.0% 100.0%

Table 2.143. Lithic Artifacts from LA 70196

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Angular Debris	10 12.7% 12.8%	69 87.3% 8.9%	79 100.0% 9.3%
Core Flake	59 9.2% 75.6%	582 90.8% 75.2%	641 100.0% 75.2%
Biface Flake	5 5.3% 6.4%	89 94.7% 11.5%	94 100.0% 11.0%
Tested Cobble		2 100.0% .3%	2 100.0% .2%
Core		9 100.0% 1.2%	9 100.0% 1.1%
Uniface	1 100.0% 1.3%		1 100.0% .1%
Biface	3 11.1% 3.8%	23 88.5% 3.0%	26 100.0% 3.1%
Column Total	78 9.2% 100.0%	774 90.8% 100.0%	852 100.0% 100.0%

Table 2.144. Lithic Artifact Material Types from LA 70196

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Chert	19 19.4% 24.4%	79 80.6% 10.2%	98 100.0% 11.5%
Chalcedony	2 10.0% 2.6%	18 90.0% 2.3%	20 100.0% 2.3%
Luna Blue Agate	8 9.3% 10.3%	78 90.7% 10.1%	86 100.0% 10.1%
Silicified Wood		1 100.0% .1%	1 100.0% .1%
Obsidian	7 4.2% 9.0%	161 95.8% 20.8%	168 100.0% 19.7%
Igneous		7 100.0% .9%	7 100.0% .8%
Basalt	6 12.2% 7.7%	43 87.8% 5.6%	49 100.0% 5.8%
Rhyolite	34 8.7% 43.6%	357 91.3% 46.1%	391 100.0% 45.9%

Table 2.144. Continued.

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Limestone		1 100.0% .1%	1 100.0% .1%
Quartzite	2 7.1% 2.6%	26 92.9% 3.4%	28 100.0% 3.3%
Quartzitic Sandstone		3 100.0% .4%	3 100.0% .4%
Column Total	78 9.2% 100.0%	774 90.8% 100.0%	852 100.0% 100.0%

Table 2.145. Projectile Points from LA 70196

Cells: Count Row Percent	Material Type				Row Total
	Chert	Luna Blue Agate	Obsidian	Basalt	
Unidentified	1 20.0%		3 60.0%	1 20.0%	5 100.0%
Medium Lateral-Notched			1 50.0%	1 50.0%	2 100.0%
Small Corner-Notched			3 100.0%		3 100.0%
Unnotched			1 100.0%		1 100.0%
Flake Point			3 100.0%		3 100.0%
Preform	1 50.0%		1 50.0%		2 100.0%
San Pedro		1 50.0%	1 50.0%		2 100.0%
Column Total	2 11.1%	1 5.6%	13 17.2%	2 11.1%	18 100.0%

Table 2.146. Ground Stone from LA 70196

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Indeterminate		2 100.0% 10.0%	2 100.0% 8.3%
Abrading Stone	2 66.7% 50.0%	1 33.3% 5.0%	3 100.0% 12.5%
Shaped Slab		2 100.0% 10.0%	2 100.0% 8.3%
Lapidary Stone		1 100.0% 5.0%	1 100.0% 4.2%

Table 2.146. Continued.

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Mano	1 50.0% 25.0%	1 50.0% 5.0%	2 100.0% 8.3%
One-hand Mano		5 100.0% 25.0%	5 100.0% 20.8%
Two-hand Mano	1 12.5% 25.0%	7 87.5% 35.0%	8 100.0% 33.3%
Trough Metate		1 100.0% 5.0%	1 100.0% 4.2%
Column Total	4 16.7% 100.0%	20 83.3% 100.0%	24 100.0% 100.0%

Table 2.147. Ground Stone Material Types from LA 70196

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Igneous		1 100.0% 5.0%	1 100.0% 4.2%
Basalt	1 50.0% 25.0%	1 50.0% 5.0%	2 100.0% 8.3%
Rhyolite	1 7.7% 25.0%	12 92.3% 60.0%	13 100.0% 54.2%
Andesite	2 40.0% 50.0%	3 60.0% 15.0%	5 100.0% 20.8%
Limestone		1 100.0% 5.0%	1 100.0% 4.2%
Sandstone		1 100.0% 5.0%	1 100.0% 4.2%
Quartzite		1 100.0% 5.0%	1 100.0% 4.2%
Column Total	4 16.7% 100.0%	20 83.3% 100.0%	24 100.0% 100.0%

ified and exhibited wear. Most were from the lower fill of the pit structure. Two balls of clay with holes made by reeds passing through them, were possible loom weights. The adobe casts were all burned and located in the lower pit structure fill and were probably roof fall. They contained wood impressions suggestive of latillas or small tree limbs that had been stripped of bark.

The six mineral samples include five pieces of limonite and one piece of hematite. All were from the pit structure fill. One piece of limonite may have been shaped and all the other minerals show some grinding wear. These materials could have been used to produce paint.

Table 2.148. Faunal Remains from LA 70196

	Provenience				Total	
	General Fill		Pit Structure		Number	Percent
	Count		Count			
	Number	Percent	Number	Percent		
Mammal	5	22.7	54	12.2	59	12.7
Small Mammal	2	9.1	41	9.3	43	9.3
Medium Mammal			27	6.1	27	5.8
Large Mammal	9	40.9	163	37.0	172	37.1
Rodents			1	.2	1	.2
Prairie Dog	1	4.5	1	.2	1	.2
Squirrel			2	.5	2	.4
Pocket gopher			1	.2	1	.2
Woodrat			9	2.0	9	1.9
Cottontail			4	.9	4	.9
Jack Rabbit			11	2.5	11	2.4
Artiodactyl			37	8.4	37	8.0
Deer	2	9.1	32	7.3	34	7.3
Pronghorn			3	.7	3	.6
Big-horn Sheep	1	4.5	2	.5	3	.6
Bird	2	9.1	18	4.1	20	4.3
Turkey			30	6.8	30	6.5
Mexican Jay			5	1.1	5	1.1
Total	22	100.0	441	100.0	463	100.0

ANCILLARY STUDIES

Faunal Remains

A wide variety of animals was represented in the fairly large faunal assemblage (Table 2.148). Most are mammal remains (88.2 percent of the 463 items). When broken down into small, medium, or large-sized mammals, we see that 60.8 percent of the identifiable faunal assemblage are large mammals, including deer, pronghorn, artiodactyls, and big-horn sheep. Only 6.6 percent are medium mammals, and 14.3 percent are small, such as rabbits. The high frequency of large mammals and the number of projectile points are suggestive of a focus on large-game hunting. Numerous turkey remains were also recovered, but there was no evidence of their domestication.

Five pieces of bone were recovered from the upper pit structure floor. The species included one deer (an awl), one jack rabbit, one turkey, one indeterminate

artiodactyl, and one large mammal.

Macrobotanical Remains

Macrobotanical samples from roof fall, the lower hearth, and under a mano and metate on the upper floor were examined from the pit structure. Charred pine bark was the most common cultural remain recovered. Maize kernels were recovered from under a slab in the roof fall and from a lower hearth sample. Noncultural remains were limited to one unidentifiable seed, recovered from a lower hearth. Juniper was the dominant wood charcoal identified, along with a small quantity of ponderosa pine.

Plant remains from the Fence Corner site are probably far from representing the likely wide array of plants utilized by site occupants. Maize was the only nonwood plant taxon recovered and could have been cultivated on the flat floodplain where the site is located. The two coniferous wood taxa identified would have been locally available.

Table 2.149. Pollen Recovered from LA 70196

Pithouse	Pine	Oak	Cheno- am	Sun-flower	Evening Primrose	Grasses	Mormon Tea	Sage Brush	Corn
Vessel in fill	X		X	X					
Roof Fall	X				X				
Floor	X		X	X					
Ground Stone on Floor	X		X	X		X			X
Ground Stone on Floor	X		X	X			X		X
Ground Stone on Floor	X	X	X	X					X
Ground Stone on Floor	X		X	X					
Ground Stone on Floor	X		X			X		X	X
Ground Stone on Floor	X		X	X					X
Ground Stone on Floor	X		X						X

Pollen Remains

Ten samples were submitted for palynological analysis. All were from the fill of the pit structure and most were from pollen washes from ground stone or from underneath ground stone on the floor of the structure (Table 2.149). Pine appears in every sample; cheno-ams and the sunflower family are also strongly represented. Evidence of maize processing is also strong; 75 percent of the ground stone produced corn pollen or corn starch grains.

DATING METHODS

Eight radiocarbon samples were analyzed from the site by Beta Analytic, Inc. Seven are from the pit structure and one is from the small outside pit (Table 2.151). From Figure 2.254, it can be seen that one date is clearly too early and can be rejected. The bulk of the C-14 samples cluster around the calibrated date of A.D. 650 but range

up to A.D. 800, given 2 standard deviations. However, this earlier range of dates is considered too early for the temporally diagnostic sherds recovered from the site. Two of the samples are charcoal from roof fall and the others are from floor contact, which could also represent roof fall. Therefore, we believe that these dates probably indicate the use of old wood.

In addition, two archaeomagnetic samples were taken from the burned wall plaster of the pit structure and from the lower hearth. The burned plaster dates prior to A.D. 800 (A.D. 735-800), which again seems too early for the ceramics. However, the lower hearth date of A.D. 810-910 fits well with the ceramic dates.

Looking at the ceramic data, we see that the site should date after A.D. 800 and probably prior to A.D. 900 based on the presence of White Mound Black-on-white. Given the fact that there was no Red Mesa Black-on-white (which dates after A.D. 875) on the site, a more likely date would be between A.D. 800 and A.D. 875 with a weighted mean date falling around A.D. 835.

Table 2.150. C-14 Dates for LA 70196

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
104N/103E	69816	1400 ± 70	A.D. 620-680	A.D. 550-770	A.D. 650	Roof Fall (L2)
104N/105E	69817	1520 ± 60	A.D. 460-480 520-620	A.D. 420-650	A.D. 560	Floor near Hearth
105N/104E	69818	1370 ± 70	A.D. 630-700	A.D. 570-790	A.D. 660	Roof Fall (L3)
101N/94E	57461	1110 ± 80	A.D. 870-1010	A.D. 770-1040	A.D. 970	Outside Pit (4-40 cm)
104N/103E	57462	1400 ± 70	A.D. 620-680	A.D. 550-770	A.D. 650	Roof Fall (L2)
106N/104E	57463	1790 ± 100	A.D. 120-390	A.D. 20-450	A.D. 240	On Side of Pot (L2)
106N/103E	57464	1360 ± 80	A.D. 630-720 740-760	A.D. 560-870	A.D. 670	Floor
106N/103E	64069	1320 ± 70	A.D. 660-780	A.D. 620-880	A.D. 680	Floor Fill

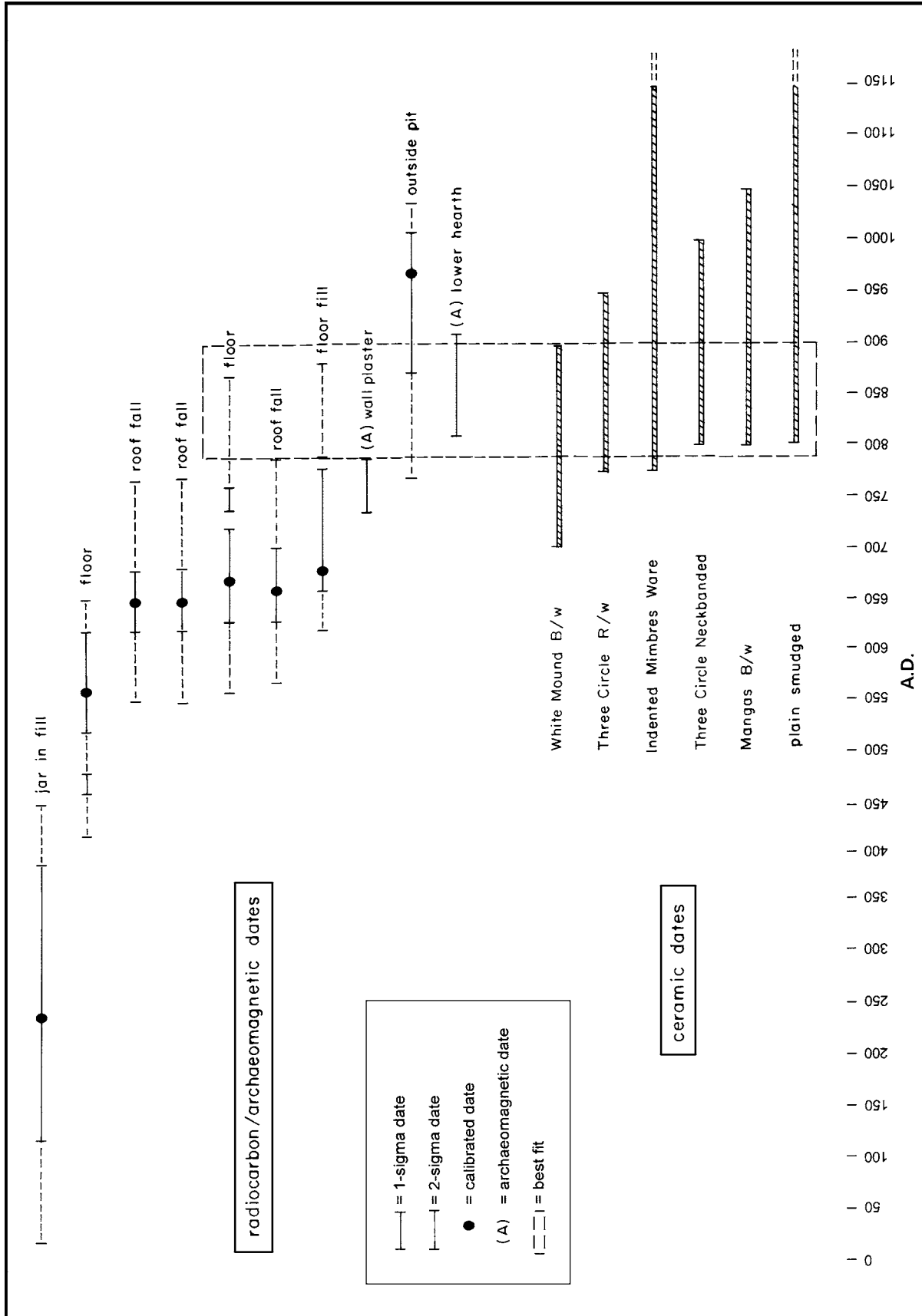


Figure 2.254. Seriation of radiocarbon, archaeomagnetic, and ceramic dates, LA 70196.

SITE INTERPRETATION

The excavated portion of LA 70196 consists of a single component pit structure and an associated outside pit. Another pit structure may lie outside of the right-of-way limits. The site dates securely in the A.D. 800s (San Francisco phase), based primarily on ceramic data. The radiocarbon dates seem slightly too early for the site and probably represent contamination from old wood.

The pit structure is fairly small and evidences domestic use only, based on architectural simplicity and artifact types. The numerous quartz crystals present may have had ritual significance for site owners, however. Interior hearths on both floors suggest at least a partial cool or cold season habitation. The fact that the floor was reconstructed, two separate hearths were built, the post support pattern changed from one central to two side posts, and the interior walls were plastered, all suggest that either the occupation was somewhat lengthy or that the structure was repeatedly reused, likely on a seasonal

basis. Ceramics do not indicate any stylistic changes during site occupation and we believe that the time period between site uses was not prolonged. Because there were wide variations in hearth types and post patterns we are of the opinion that the structure was reused on repeated occasions rather than continuously over time. This would lend support to the theory that at least some pit structures in the Mogollon Highlands were not necessarily year-round dwellings, but that some mobility was involved, perhaps on a seasonal basis. Sufficient storage facilities and outdoor hearths and work areas associated with year-round dwellings were not in evidence although they could have been located directly outside of the project limits.

Processing of corn and other subsistence items was carried out on the site along with hunting a wide variety of animal species. A conclusion that site occupants were heavily dependent on maize is not warranted, however. Rather, a mix of economic strategies seems to have been employed by site residents.

LA 70201 (AR-03-06-06-00833)
TURKEY TOES

Dorothy A. Zamora

Turkey Toes, LA 70201, was recorded during a survey by Oakes in 1989. The name originated from the site being at the base of the ridge on which the large pithouse community of Turkey Foot Ridge is located. LA 20201 is a ceramic and lithic artifact scatter dating to the Early and Late Pithouse period, and includes San Francisco and Three Circle phases with a small Georgetown phase component.

There are several sites around the area including the two large communities of Turkey Foot Ridge and the Promontory site. Turkey Foot Ridge is a multicomponent site that contains three different phases; a major San Francisco phase pithouse component, a small Georgetown phase component, and a small Three Circle component, excavated by Martin and Rinaldo (1950b). The Promontory site is a Pinelawn pithouse village also excavated by Martin et al. (1949). Turkey Foot Ridge lies .26 km south of LA 70201 and Promontory is .40 km southeast of Turkey Toes. Initial test pits indicated cultural depth of about 50 cm; however, excavations revealed that Turkey Toes has been redeposited from Turkey Foot Ridge, meaning that the artifacts found on Turkey Toes have eroded down a fairly steep hill from their place of origin and are, therefore, a secondary artifact deposit.

SITE SETTING

LA 70201, Turkey Toes, is located along U.S. 180 at the base of Turkey Foot Ridge and measures 1,657.5 sq m. The area lies .26 km north of the large San Francisco pithouse village in a small rincón in which some of the soil has been mechanically removed to create a berm or drainage control. The vegetation consists of piñon, pine, and oak with some short grasses and modern weeds. The main portion of the site is in an open area near U.S. 180 in a gravelly, sandy soil (Figs. 2.255, 2.256). Agricultural land is plentiful to the south and east in the surrounding Pine Lawn Valley. Wild game is also readily available in the area today.

RESEARCH OBJECTIVES

Because there was depth to the cultural artifacts recovered from the testing program, one or more pithouses

were expected to be present on the site. The research objectives were to collect information from pit structures that would identify types of resources used by the site occupants and allow for an assessment of the season of use and type of food preparation through floral and faunal remains. Evidence of storage was expected to have been present. The examination of manos and cooking vessels would provide data on food preparation techniques and dependency on cultigens. Studies of food resource ratios would also provide this information. The balance between expedient and curated tools was to be explored and applied to our theories on residential mobility (Oakes 1990). Site structure, the relationship between pit units, the type of construction, and any evidence of reuse, would allow for estimates of occupation length, seasonal use or reuse, and labor investment in the site.

Because the site was redeposited, we were unable to collect the information that was set forth in the research objectives.

EXCAVATION PROCEDURES

Before beginning excavation of the site, a main datum was established at an arbitrary 100N/100E. A baseline heading north and south and one east and west was extended from datum using a transit and stadia rod. Elevations for each northwest corner were also taken for mapping purposes. Each grid was first surface stripped for the purpose of locating any outlines of features before excavating the grid. After the surface stripping was completed, grids were taken down in areas where there was a high density of artifacts present in the fill and expanded until the area was completely explored. The grids were excavated in 10-cm arbitrary levels. The soil was screened using ¼-inch mesh screen, and at times a ½-inch screen, whenever small flakes were noted. When the ½-inch screen did not produce microflakes, it was abandoned. All the artifacts collected were placed in paper bags with provenience information, such as the project number, project name and number, grid, level and depth, artifact type, count, date, and excavator's initials.

Stratigraphy

A total of 53 grids were taken down to culturally sterile

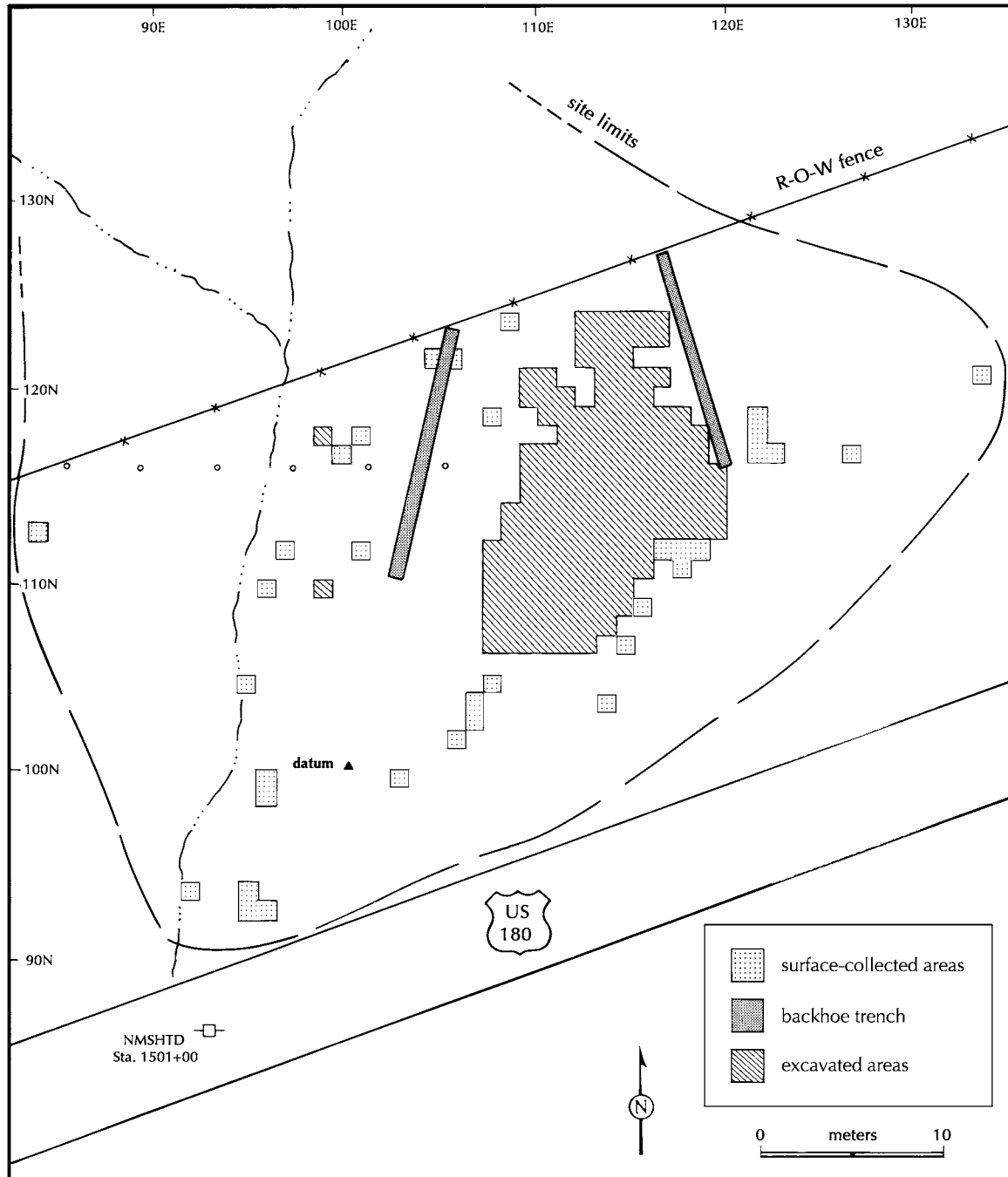


Figure 2.255. LA 70201, Turkey Toes.

levels, 89 were surface stripped, and 34 were surface collected. Five test pits were dug during the testing phase (Oakes 1990). The mean depth of excavations on the site was 47.9 cm and a total of 37.56 cu m was dug by hand and another 30.49 cu m removed by mechanical means for a total dirt removal of 68.05 cu m. When excavating the site, three soil levels were found; however, Level 2 had four stratigraphic layers within it. They are described as:

Level 1: the top modern sandy soil which includes tree duff.

Level 2: the fill down to the sterile clay with four stratigraphic layers (Fig. 2.257).

Layer 1 is fine sand, 10YR 5/2, grayish brown.

Layer 2 is sand with small pea gravel, 10YR 5/2, grayish brown.

Layer 3 consists of alternating levels of sand and sand with very small gravel, 10YR 5/2,



Figure 2.256. Turkey Toes, LA 70201, before excavation, looking north. The main site area is to the east of the drainage channel.

grayish brown.

Layer 4 is a dark gray clay with small inclusive rocks and a darker lens on the top. It is 7.5YR 3/2, dark brown.

- Level 3: the culturally sterile level that underlies the site and is 5YR 3/3, dark reddish brown.

Layer 4 in Level 2 was an area that was very suspicious because of its gray color. At first we thought that this might be a feature; however, after opening several grids (43 cm below the present ground surface) it was evident that this was a natural drainage that had filled with organic material, and artifacts had become trapped in the depression. The soil was sandy and very dark but no charcoal was present. Some small rocks were also found in the drainage.

Besides the 1-by-1-m grids, two mechanically dug trenches were excavated on the site. They were placed on the east and west sides of the excavated area. Trench 1 is 4 m west of the area and was dug to 1.70 m in depth and was culturally sterile from top to bottom. Trench 2 was placed on the east side of the excavated area and went down 1.20 m and was culturally sterile, but it located the drainage in Grid 124N/117E. After the drainage was found, several adjoining grids were excavated to ensure that this was not a cultural feature.

CULTURAL UNITS

Because the site material was redeposited from the hill-top behind it, no cultural features were present on the site.

ARTIFACTS

The artifacts recovered from Turkey Toes totaled 1,720. Of this total 1,166 are ceramics, 544 are lithic artifacts, 10 are faunal remains, and 1 is a human skull fragment. No ground stone was recovered from the site, which was expected because of the tendency of ground stone not to displace itself far from its source because of its weight.

Ceramics

More than half of the ceramic assemblage consists of Alma Brown Wares (Table 2.151). Alma Plain makes up 56 percent of the whole assemblage while 19.81 percent is Alma Rough. San Francisco Red is the next dominant ceramic type (14.75 percent), followed by Mangus Black-on-white (1.63 percent). Also on the site are Mogollon Red-on-brown, Three Circle Neckbanded, and Three Circle Red-on-white. These ceramics indicate that

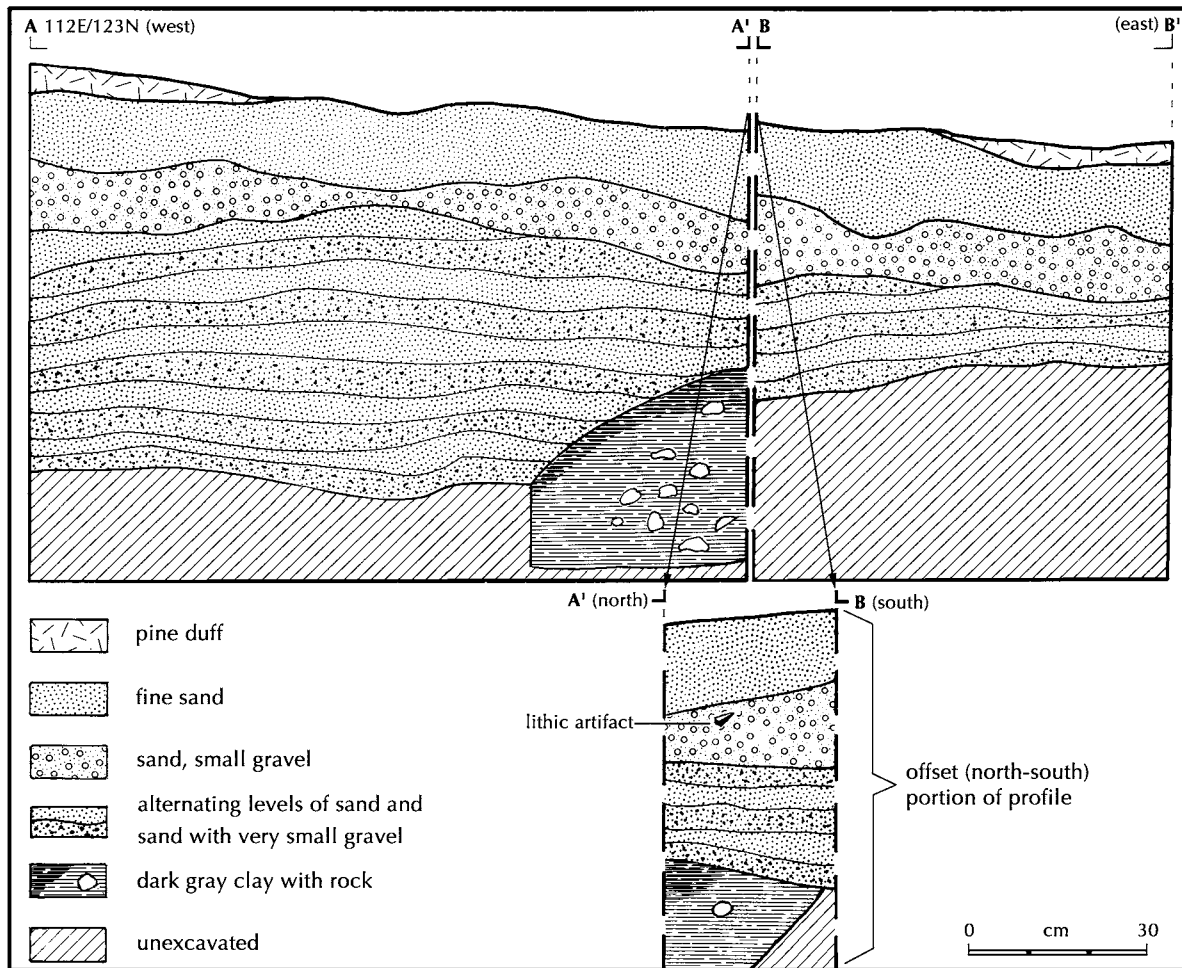


Figure 2.257. Soil profile, north wall of excavated trench.

LA 70201 is a multicomponent redeposition from the Georgetown, San Francisco, and Three Circle phases.

In comparing the ceramics from Turkey Toes and Turkey Foot Ridge we can see that the assemblages vary only slightly (Table 2.151). At Turkey Foot Ridge, Alma Brown Wares are the dominant type (68.8 percent) with a little higher percentage than Turkey Toes (56 percent), but the quantity is quite large. The biggest difference is that Turkey Toes does not have any Mimbres Black-on-white or Mimbres Boldface present, but it constitutes only 3.88 percent of the assemblage at Turkey Foot Ridge. Turkey Foot Ridge is missing some ceramic types that are present on Turkey Toes such as Mangus Black-on-white, Tularosa Corrugated, indeterminate corrugated, slip unpainted, slip painted-red, slip painted-black, slip painted-brown clay, and Cibola early and late painted. One explanation for this difference is that ceramic analyses have become more technologically advanced since Martin's time, allowing for more fine-grained differentiation. It is possible that the Cibola White Wares

found at Turkey Toes were categorized as indeterminate white wares at Turkey Foot Ridge by Martin.

Lithic Artifacts

The total lithic artifact assemblage from LA 70201, Turkey Toes, adds to 544 (Table 2.152). The dominant material type is rhyolite (82.9 percent). This material is present over the entire area and is easily available. Chert and Luna blue agate are the next most used material. These materials are found in forms of river cobbles or outcropping along exposed faces of the surrounding slopes. Of the 544 lithic artifacts recovered from the site, 88.8 percent are core flakes, 5.0 are angular debris, 3.3 are cores, 2.2 are biface flakes, and .5 are projectile points. The four projectile points, are made of obsidian (n=3) and basalt (n=1). Two obsidian projectile points are classified as small corner-notched, middle-stage, and late-stage production phases; the other is an unidentified large projectile point, and the one of basalt is a large

Table 2.151. Ceramic Types from Turkey Toes and Turkey Foot Ridge

Ceramic Types	Turkey Toes		Turkey Foot Ridge	
	Number	Percent	Number	Percent
Alma Plain	653	56.00	11,682	68.88
Alma Rough	231	19.81	310	1.83
Alma Scored	4	.34	74	.44
Alma Incised	1	.09		
Alma Punched	1	.09	2	.01
Alma Neckbanded	4	.34	134	.79
Mimbres Black-on-white			208	1.23
Mimbres Boldface			450	2.65
Mangus Black-on-white	19	1.63		
Chacoan Black-on-white			32	.19
Three Circle Red-on-white	9	.77	506	2.98
Three Circle Neckbanded	7	.60	695	4.10
Mogollon Red-on-brown	5	.43	144	.85
San Francisco Red	172	14.2	1,652	9.74
Reserve Smudged	1	.09	822	4.84
Smudged Decorated			12	.07
Reserve Fillet Rim			6	.04
Tularosa Corrugated	6	.43		
Incised Corrugated	1	.09	34	.20
Overlap Corrugated	8	.69		
Indeterminate Corrugated	10	.86		
Slip unpainted	17	1.46		
Slip painted-red	5	.43		
Slip pigment-black	2	.17		
Slip paint-brown clay	1	.09		
Cibola Early Painted	2	.17		
Cibola Late Painted	6	.51		
Indeterminate white wares			197	1.16
Indeterminate	2	.17		
Total	1,166	100.0	16,960	100.00

Table 2.152. LA 70201 Chipped Stone Artifacts

Cells: Count Row Percent Column Percent	Artifact Morphology					Row Total
	Angular Debris	Core Flake	Biface Flake	Tested Cobble	Core		Projectile Point
Chert	3 8.6% 11.1%	29 82.9% 6.0%	2 5.7% 16.7%		1 2.9% 6.3%	35 100.0% 6.4%
Chalcedony	2 33.3% 7.4%	4 66.7% .8%				6 100.0% 1.1%
Luna blue agate	4 17.4% 14.8%	18 78.3% 3.7%			1 4.3% 6.3%	23 100.0% 4.2%
Obsidian	1 8.3% 3.7%	3 25.0% .6%	6 50.0% 50.0%			3 16.7% 66.7%
Igenous		100.0% .6%				3 100.0% .6%
Basalt		4 80.0% .8%				1 20.0% 33.3%
Rhyolite	17 3.8% 63.0%	417 92.1% 86.3%	3 .7% 25.0%	2 .4% 100.0%	14 3.1% 87.5%	453 100.0% 83.4%
Metamorphic			1 100.0% 8.3%			1 100.0% .2%
Quartzite		4 100.0% .8%				4 100.0% .7%
Quartzitic sandstone		1 100.0% .2%				1 100.0% .2%
Total	27 5.0% 100.0%	483 89.0% 100.0%	12 2.2% 100.0%	2 .4% 100.0%	16 2.9% 100.0%	4 .5 100.0%

unidentified projectile point.

ANCILLARY STUDIES

Faunal Remains

There were only a few faunal remains (N=10) recovered from Turkey Toes. However, what was recovered consisted of mammal (n=1), small mammal (n=1), large mammal (n=3), artiodactyl (n=2), elk (n=2), and bird (n=1). This is the first site that has identified elk as one of the species in the assemblage. The one small mammal bone fragment exhibited polishing; however, its function is unknown because it was too small for identification.

Skeletal Remains

One human skull fragment was found in Grid 121N/113E at a depth of 35 cm. However, no other

human bones were found in the gravelly level. This is also where the drainage is present, suggesting that the bone fragment had washed down from Turkey Foot Ridge. The fragment was reburied on top of the ridge near Turkey Toes according to the human burial policy established by the Pueblo of Zuni.

DATING METHODS

No features were found at Turkey Toes nor were any C-14 samples recovered, leaving the ceramic assemblage as the only method for dating the site. The ceramics recovered from the site show that there probably is a small Georgetown occupation, a major San Francisco phase occupation, and a significant Three Circle phase occupation. These occupations correlate with the occupations from Turkey Foot Ridge, suggesting that these are artifacts that have washed down from the large site on the crest of the hill.

SITE INTERPRETATION

Turkey Toes is a redeposited site that has washed down from Turkey Foot Ridge, which is on the top of the hill to the southwest. Turkey Toes has produced a total of 544 lithic artifacts, 1,166 ceramics, 10 nonhuman bone

fragments, and 1 human skull fragment. No features were found during the excavation of the site, supporting the hypothesis that the site has been redeposited by erosional means. The ceramics that have been recovered from Turkey Toes place it into the same time periods as Turkey Foot Ridge.

LA 75791 (AR-03-06-06-00834)
LADYBUG JUNCTION

Yvonne R. Oakes

LA 75791 sits diagonally across U.S. 180 from LA 70196 and, like LA 70196, was first recorded as a Pueblo period site with a possible cobble mound and associated artifacts extending over the area (Oakes 1989). Ceramics of Alma Plain and corrugated brown wares were observed along with chipped stone of chert, chalcedony, and obsidian. The site size was estimated at 24-by-25.5 m (490 sq m), mostly within the highway right-of-way and an extended TCP unit.

A testing program was conducted at Ladybug Junction in 1990. Five test pits, 35 auger tests, and 3 backhoe trenches were excavated on the site (Oakes 1990). The test pits ranged in depth from 20 to 50 cm below ground surface. Test Pit 1 cut the edge of a small pit. Charcoal, burned adobe, and artifacts were present within the dark brown loamy matrix that continued for 40 cm below the surface. Auger tests 6 to 10 m east of Test Pit 1 revealed dark, charcoal-flecked soil in that area also.

Test Pits 2 and 3 were placed within the possible cobble roomblock. No artifacts or wall alignments were present in these test units. It was concluded that the cobbles did not represent a roomblock. Test Pits 4 and 5 were located in the southern portion of the site, near the right-of-way fence. They produced a sterile substrate with no subsurface artifacts.

Backhoe Trench 1 revealed a possible pit structure with charcoal-flecked soil and a few artifacts. Backhoe Trench 2 ran adjacent to the small pit uncovered in Test Pit 1 and no other cultural features were found. Backhoe Trench 3 was placed in the southern area of the artifact scatter within the highway right-of-way and no subsurface artifacts or features were uncovered.

A total of 41 artifacts were collected from the testing program. A variety of lithic artifact material types and sherds of Alma Plain, Alma Punched, and smudged ware were recovered. Site size was adjusted to 42-by-34-m for an area of 1,150 sq m.

It was decided that a probable pithouse complex was located here, possibly dating to the Early Pithouse period. A data recovery plan was prepared and excavations began in 1991. As a result of fieldwork, two roasting pits, four small pits, and three shallow saucer-shaped structural depressions with three associated hearths were uncovered. Two additional backhoe trenches at the com-

pletion of excavations yielded no further cultural features.

Determining the cultural association of these features was extremely difficult because not all features were datable due to their shallowness and lack of cultural fill. Also, ceramics clustered into a Pueblo period time frame that could not be definitively associated with specific features or with the available radiocarbon dates.

Radiocarbon dates place one pit structure and one roasting pit between A.D. 650 and 770 within the late Georgetown or early San Francisco phase. However, because of a possible old wood problem (very common on the entire project), the two features may actually date to a later time period. The shallow structural depressions probably represent floors of brush structures. One of these features and the second roasting pit produced a radiocarbon date of ca. A.D. 1650, of likely Athabaskan origin. A single, non-Mogollon, micaceous brown ware is also thought to be Athabaskan.

Two distinct site areas (Areas A and B) were separated by a gap of 11 m where no surface artifacts or subsurface features were found (Fig. 2.258). Including both areas, site size was enlarged to 65 m north-south by 33 m east-west for an area of 2,145 sq m. A total of 129 grids were excavated to an average depth of 30.5 cm, but ranged from 8 cm to 1.29 m; 39.3 cu m of dirt were removed. Surface collections were made from 37 grids. The five backhoe trenches removed another 40.0 cu m of fill. Total excavated dirt removed on the site was 79.3 cu m.

SITE SETTING

Like LA 70196 across the highway, Ladybug Junction is situated on a gently sloping floodplain; the main site area is about 40 m northwest of the Leggett Canyon drainage. This stream joins the Oak Springs Canyon flow approximately 50 m upstream from the site. A recent 1-m-high levee has been constructed along the Leggett drainage on the southwest edge of the site indicating that flooding of this area does occur. Because of the probably recurring inundation of this location in the past, the surface artifacts recovered from Area B at LA 75791 may well be redeposited from elsewhere on the site or possibly from another site upstream. This was later confirmed by a

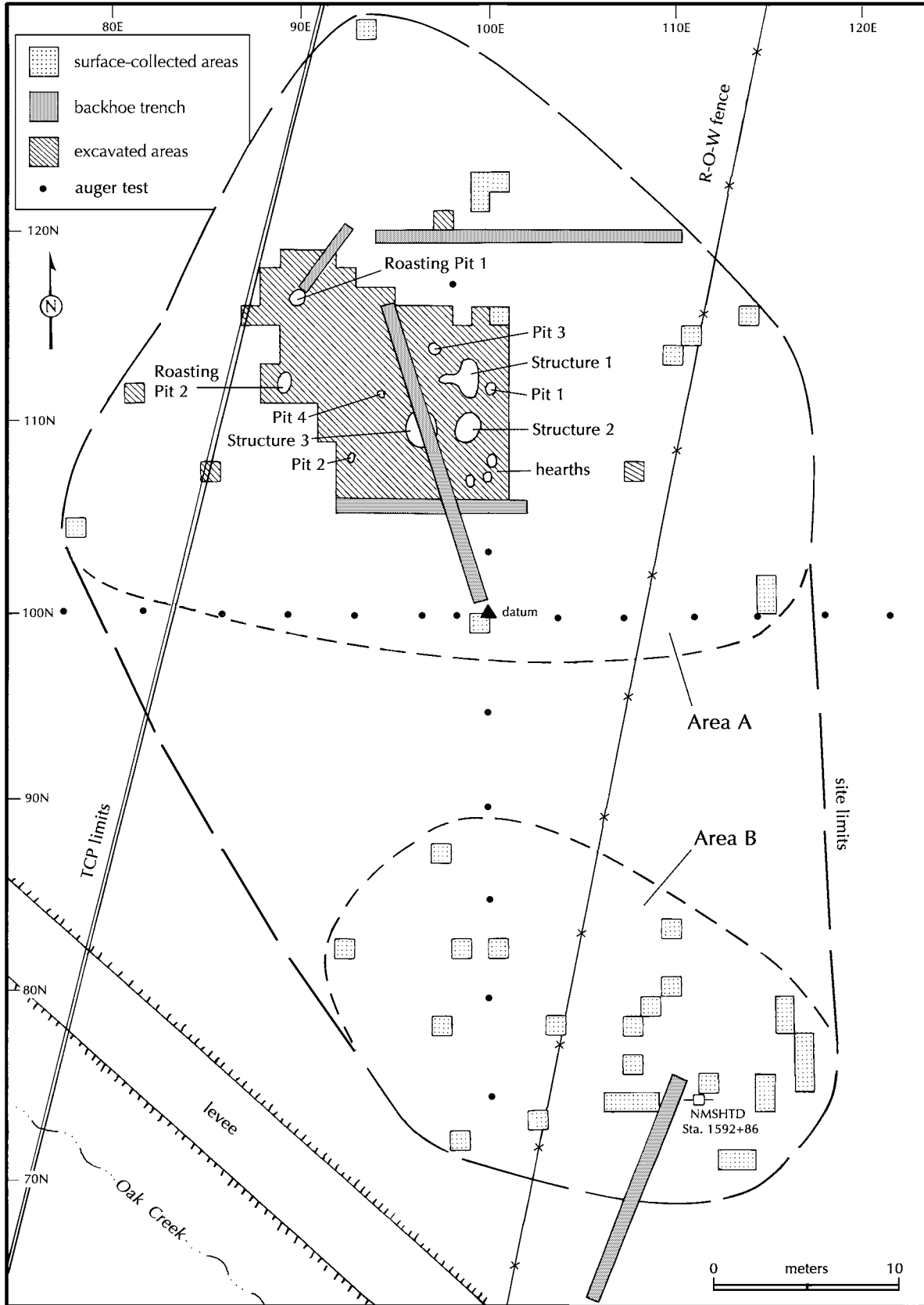


Figure 2.258. LA 75791, Ladybug Junction.



Figure 2.259. Ladybug Junction in foreground, looking west. The Leggett Canyon drainage is just beyond the line of trees.

geologist upon visiting the site. The fill in the shallow structures was also probably affected by flooding activities. We would expect, therefore, any settlement in this area to be short-term or seasonal because of the danger of water inundation.

The site itself is situated in an open area within the Pine Lawn Valley at an elevation of 1,884 m (6,180 ft). Several tall yellow pines dot the area to the north and northwest; however, the dominant vegetation consists of mid-high grasses, juniper, and a few scrub oak (Fig. 2.259).

Other sites lie along the Leggett drainage and consist mostly of small Reserve phase roomblocks. The agricultural potential of the land may have drawn prehistoric peoples to the area, if only for seasonal occupations. Wild game is plentiful in the region, as well as small stands of acorn-producing oaks.

RESEARCH OBJECTIVES

The basis of the data recovery plan was that LA 75791 was an Early Pithouse period site of the Pinelawn phase dating perhaps to A.D. 500. The site was to have been compared to other early sites excavated on the project. We specifically wanted to look at subsistence adaptations

and mobility patterns for this time period. Examination of the floral and faunal resources would allow for an assessment of the use of cultigens versus other plant and animal foods. Ground stone and ceramic cooking vessels would also address subsistence questions.

With the possibility of several pit structures being present at LA 75791, their layout and number of ancillary units would provide site structure data on the amount of labor invested in construction, the degree of reliance on stored foods, and the short-term or seasonal use of the site.

While Ladybug Junction did contain pit structures and associated pits and hearths, they did not date to the Early Pithouse period. Instead, we have a probable Athabaskan period occupation mixed with Late Pueblo sherds. Subsistence and mobility patterns can still be addressed, albeit for a different time period. Uncovering Athabaskan dwellings allows us to study these adaptations within the environmental context of the Mogollon Highlands and compare them with earlier prehistoric sites of the region.

EXCAVATION PROCEDURES

Two backhoe trenches placed on the site during the test-

ing program produced evidence of a pit structure and a small pit. After establishing a 1-by-1-m grid system with a transit and stadia rod, excavations focused first on these two features. Areas around both were surface stripped to expose any outlines, and excavations proceeded within the features in 10-cm increments. The depth of the site was generally very shallow (possibly from flooding of the area). Cultural features were no more than an average of 10 cm below the ground surface. Therefore, surface stripping of the remainder of the site was employed to locate further pits and hearths.

Levels maintained during excavations (Fig. 2.260) include:

Level 1: Surface stripping and collection from 2 to 10 cm in depth. Soil was dry and silty. Artifacts were present. Soil color was 10YR 4/2, dark grayish brown.

Level 2: General fill on the site, up to 1.29 m in depth. Charcoal flecking and artifacts present near features. Color of the soil was either 10YR 2/2, very dark brown or 10YR 3/3, dark brown.

Level 3: Fill within features. Soil loamy, frequently unburned; therefore, matches soil color of Level 2.

Level 5: Floor of pit structures.

All soil was screened through ¼-inch screen and artifacts were collected by provenience and level. Profiles and plan views of the cultural features were drawn. Photographs of the features were taken and a topographic map of the site was produced with a transit and stadia rod.

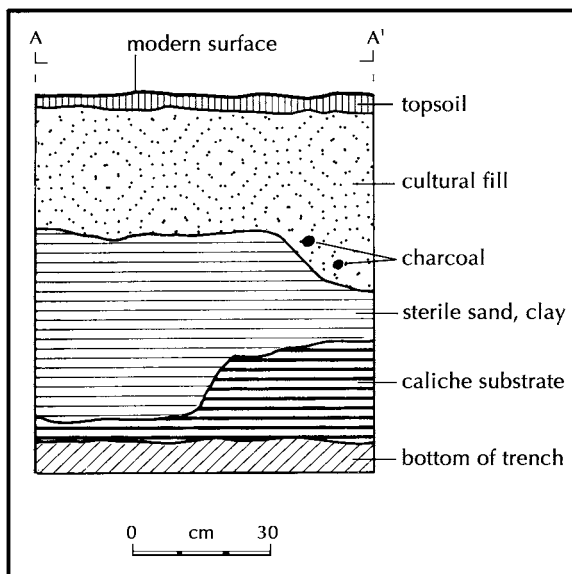


Figure 2.260. Profile of Backhoe Trench 1, facing east, Grid 109N/97E.

CULTURAL UNITS

Excavations at LA 75791 revealed several cultural features, some probably associated with an Athabaskan occupation of the site. These include three shallow pit structures, two roasting pits, three small basin hearths, and four small pits (Figs. 2.261-2.263).

Pit Structure 1

The unit is a very shallow structure, saucer-shaped with a possible entry to the west (Fig. 2.264). It extends only 23 cm below the ground surface at its deepest. No interior features were present. Charcoal, 20 sherds, and 7 lithic artifacts were recovered from the fill. The sherds include 17 Alma Brown Wares, a Reserve Corrugated Indented, an indented corrugated, and a Reserve Black-on-white. They signify a Pueblo period occupation that does not match the radiocarbon date of ca. A.D. 1650. Because of the pit structure's extreme shallowness, earlier dated sherds of the Pueblo period could easily have washed into the unit.

Six small burn stains were noted to the east of the pit structure, none measuring more than 30 cm in diameter. They did not extend below the surface. However, a slightly charcoal-stained surface was found 4-9 cm below the upper level of the pit structure and may represent an earlier use of the site, possibly during late Pueblo times.

Dimensions. The pit structure is somewhat oblong, measuring 2.35 m north-south by 1.65 m east-west by 23 cm deep for a floor area of 3.87 sq m. A possible entry may extend to the west for about 1.0 m.

Walls. Walls are basically nothing more than sloping berms and were the best on the north and east sides where they gently sloped up to the prehistoric surface. They were somewhat irregular on the south and southwest. To the west, the wall was lost but some upsloping areas may define an entry passage.

Floor. The surface was slightly packed and had some charcoal staining. The floor contained slight undulations. No interior features were present.

Hearth. None present.

Postholes. None found.

Roof. Again, the shallowness of the structure and lack of postholes suggest that the feature was brush-covered.

Entry. Walls extended to the west in a 65-cm-wide parallel alignment for 1.0 m, which probably indicates an entryway. The ground was eroded in this area and a western limit could not be found.

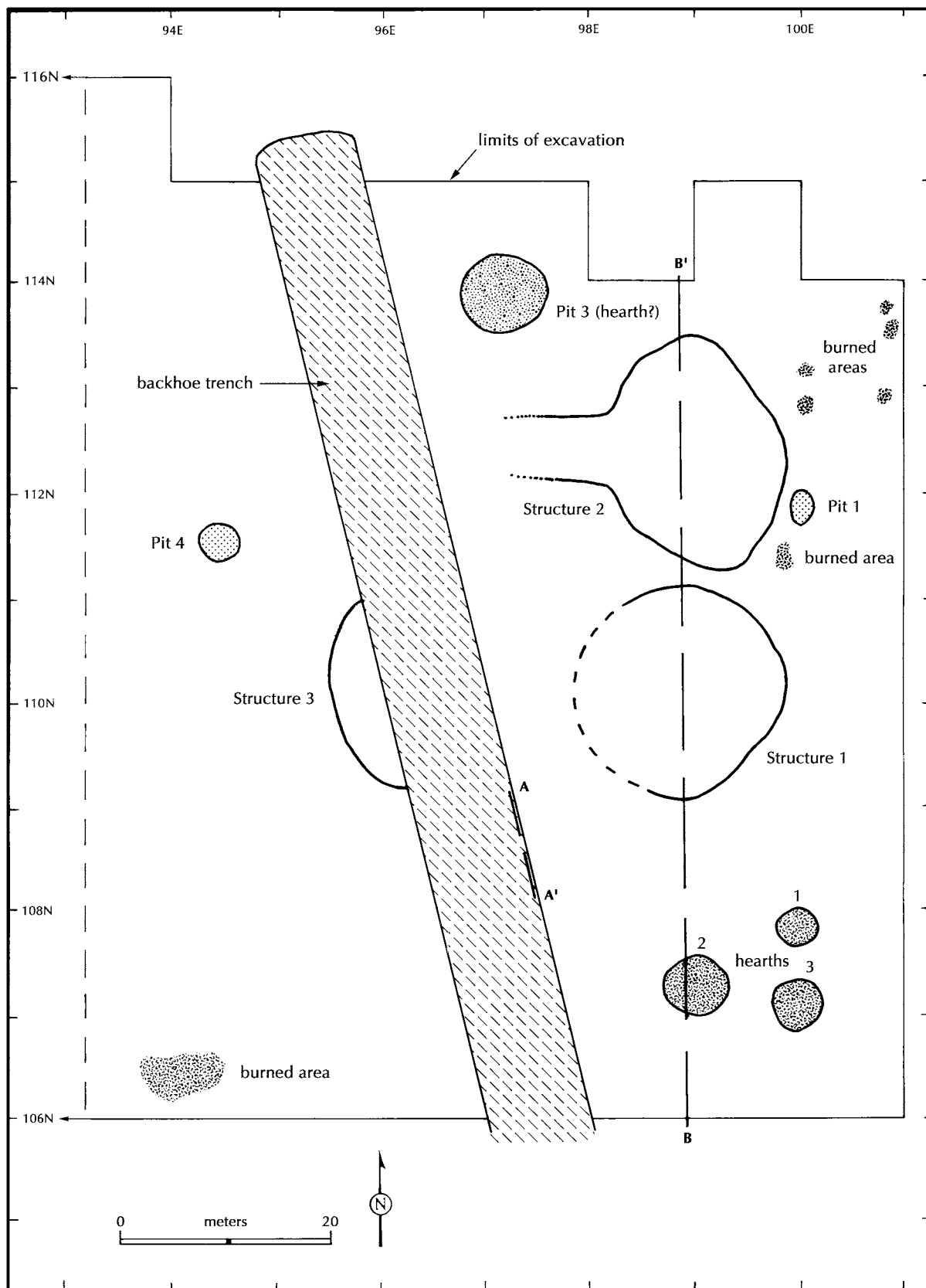


Figure 2.261. Cultural features on the site.



Figure 2.262. Excavated features in eastern portion of site, facing northeast. Backhoe trench is in foreground, Structures 1 and 2 in upper left corner; Pit 1 is behind Structure 1. Hearths 1-3 can be seen in right corner of stripped area. Another pit structure is beneath unexcavated area.

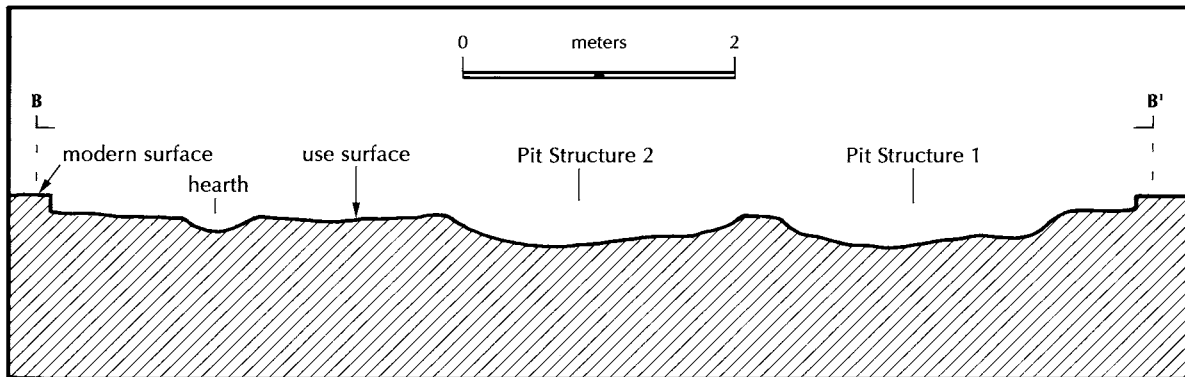


Figure 2.263. Profile of cultural features on east side of site.

Pit Structure 2

This shallow feature was 25 cm directly south of Pit Structure 1. It did not yield enough charcoal to radiocarbon date the unit; however, because of its extreme proximity to Pit Structure 1 and because it shares the same use surface, we believe it is contemporary. The fill contained some charcoal and very small pieces of burned wood, plus 23 sherds and 17 lithic artifacts. The sherds included 17 Alma Brown Wares, a red-slipped ware, and four indeterminate black-on-whites. We suggest that

these sherds washed into the shallow structure from elsewhere on the site or upstream. No interior features were found.

Dimensions. This pit structure could only be traced for the eastern half of its limits because of the soil erosion and recent disturbance in the area. It measured 2.0 m north-south by perhaps 2.0 m east-west for an estimated floor area of 4.0 sq m.

Walls. The 15-20-cm-high walls sloped gradually up to a low berm on the east side of the structure. Edges were lost on the west portion.

Floor. Like Pit Structure 1, the floor was not hard



Figure 2.264. Pit Structure 1 with entryway.



Figure 2.265. Roasting Pit 1, cut by backhoe trench, partially excavated.

packed and was slightly irregular. Some charcoal staining was visible. No interior features were present.

Hearth. None present.

Postholes. None found.

Roof. We presume the feature was a brush-covered structure because of its shallowness and lack of post-holes.

Entry. None found.

Pit Structure 3

A poorly defined depression was observed in the cut of Backhoe Trench 1 during the testing phase. Subsequent excavations found that only the west portion of a possible structure remained. No features were located within the unit. The structure had not burned but it produced a broad-ranging C-14 date from A.D. 650-1150 within a 2-sigma span. The calibrated date is A.D. 880, but nearby ceramics do not confirm this period of use. The unit is likely related to Pit Structures 1 and 2, which are of Athabaskan origin.

Dimensions. The depression was generally saucer-shaped and 38 cm at its deepest point (11 cm from the prehistoric surface). The north-south length is 2.0 m while the width has been cut by the backhoe trench and could have been no more than 1.5 m wide, giving a maximum floor area of 3.0 m. Charcoal flecking and burned wood were present within the structural fill. Three sherds of Reserve Corrugated Indented, one of Reserve Smudged, and eight of Alma Plain Brown Wares were also recovered.

Walls. Walls sloped gently up from the floor in saucer fashion, rising only 11 cm above the floor. They were not plastered and had been dug directly into the surrounding clay matrix.

Floor. The floor had not burned but was charcoal-flecked. No artifacts were recovered from the surface, which was slightly irregular and only minimally packed down. No interior features were present on the floor.

Hearth. None present.

Postholes. None found.

Roof. Because of the shallowness of the pit structure and its small size, the superstructure may have been made of brush.

Entry. None was found.

Roasting Pit 1

The roasting pit measured 72 cm by probably 70-75 cm (the east portion was cut by Backhoe Trench 2) by 40 cm deep (Figs. 2.265, 2.266). Soil was very dark and burned, and within the pit were fire-cracked rock, charcoal, burned wood, burned adobe, and a few lithic artifacts.

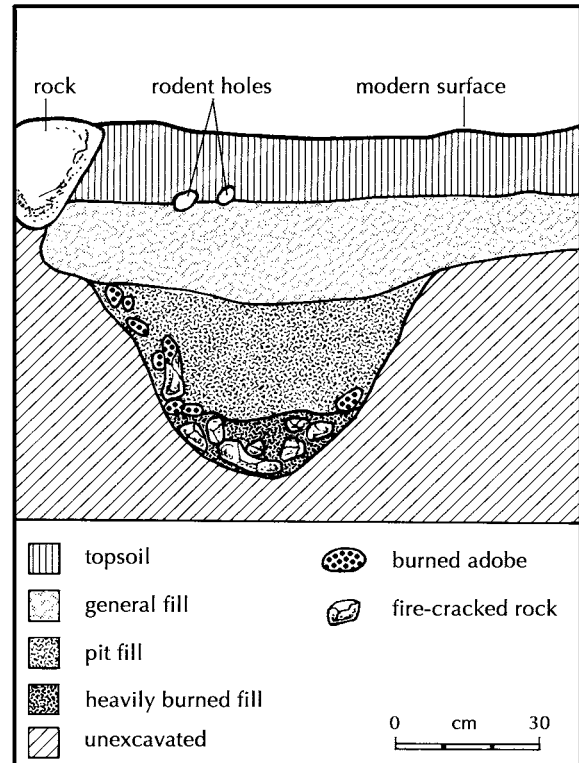


Figure 2.266. Profile of Roasting Pit 1, after excavation.

While burned rock and adobe were present throughout the fill, they particularly seemed to have lined the roasting pit.

The two radiocarbon dates from the roasting pit align between A.D. 620 and 770 with an averaged, calibrated date of A.D. 665. This seems too early for the ceramics on the site. The pit, however, corresponds in shape and construction to Roasting Pit 2, which was dated to ca. 1650. We believe Roasting Pit 1 is likely from this same period and that old wood within the pit fill caused an aberrant date.

Roasting Pit 2

Another roasting pit is 8.5 m west of Pit Structures 1 and 2. It is considered to be Athabaskan because the C-14 date recovered from its fill has the same wood signature as that retrieved from Pit Structure 1 with a calibrated date of A.D. 1650. The roasting pit measured 1.3-by-1.0 m by .41 m deep and contained fire-cracked rock (mostly on the bottom), charcoal, burned wood, and very dark soil (Fig. 2.267).

Small Hearths

Located 1.5 m south-southeast of Pit Structure 2 on the same cultural surface, were three small basin hearths

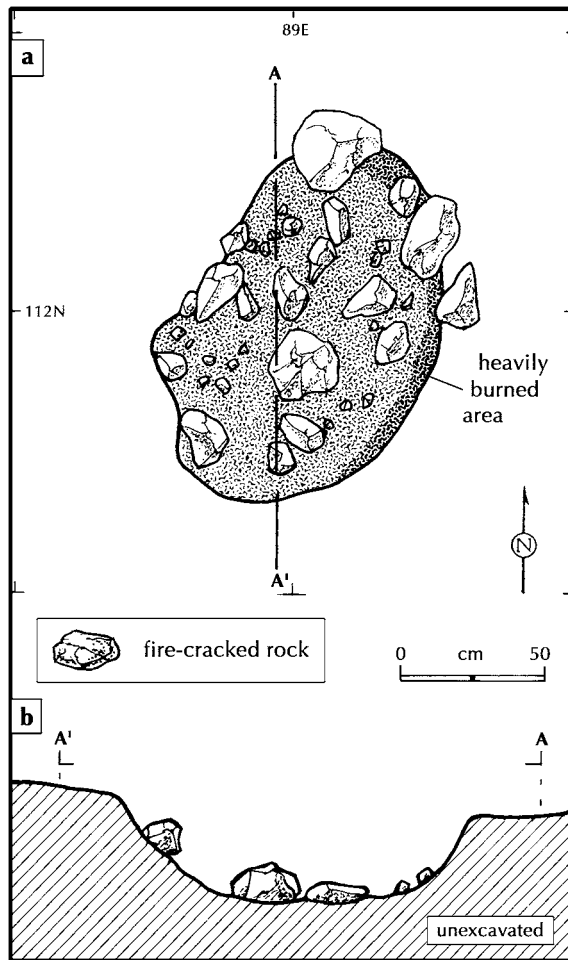


Figure 2.267. Plan and profile of Roasting Pit 2.

(Fig. 2.268). They all contained darkened soil with very little charcoal, and therefore, radiocarbon samples could not be taken. The surfaces around the hearths were hardened more than other nearby areas, but were not burned. Measurements for the hearths are:

- Hearth 1: 51 by 58 by 8 cm deep
- Hearth 2: 46 by 44 by 8 cm deep
- Hearth 3: 30 by 38 by 4 cm deep

Pit 1

A small pit was uncovered 10 cm east of Pit Structure 1. It likely associates with the Athabaskan brush structure as it was on the same cultural surface. The pit measures 34-by-20-by-6 cm deep and had darkened soil but no charcoal. It was not possible to determine if this was a basin hearth.

Pit 2

This is another pit somewhat larger than the others scattered around the site. It is located 3 m west of Pit Structure 3 and measures 90-by-41-by-9 cm deep and had a small berm along its eastern edge. It may be associated with Pit Structure 3 but the surrounding surface in this locality was badly disturbed. Again, the fill consisted of darkened soil but was not charcoal-flecked.

Pit 3

This medium-sized pit was on the same cultural level as Pit Structure 1. It measured 76-by-70-by-16 cm deep and may have served as a hearth (Fig. 2.269). The soil was very blackened, but no charcoal pieces were found.

Pit 4

Another small pit was located 1.5 m northwest of Pit Structure 3. The surface of the site was disturbed in this area and it was not possible to determine which cultural feature it was associated with. The pit measured 32-by-30-by-9 cm with a fill of dark soil, but no burning was evident.

ARTIFACTS

Only 290 artifacts were retrieved from Ladybug Junction. These include 144 ceramics, 145 lithic artifacts, and 1 projectile point. No ground stone was found. The small assemblage size is suggestive of short-term occupation of the site.

Ceramics

Almost 60 percent of the ceramics were recovered from general fill within the first 10 cm of soil deposition on the site (Table 2.153). Sherds from Area B (see Fig. 2.258) may be water-displaced artifacts from this or other sites upstream. Ceramics present within the shallow cultural features are few and may also be washed in by erosional activity. None was found on the floors of any features.

Late Pueblo period sherds on the site include Reserve Smudged, various Reserve corrugated wares, Reserve Black-on-white, Tularosa Corrugated, late painted, unpainted, and hachured, which together total 18.7 percent of the ceramic assemblage. Other ceramics present are broadly dated Alma Brown Wares.

One red-slipped protohistoric sherd was recovered from near the three small hearths in the upper 7 cm of general fill in Grid 108N/95E. It likely associates with the Athabaskan brush structure remains.



Figure 2.268. Three hearths of probable Athabaskan association. The left one has been cut by a trowel.

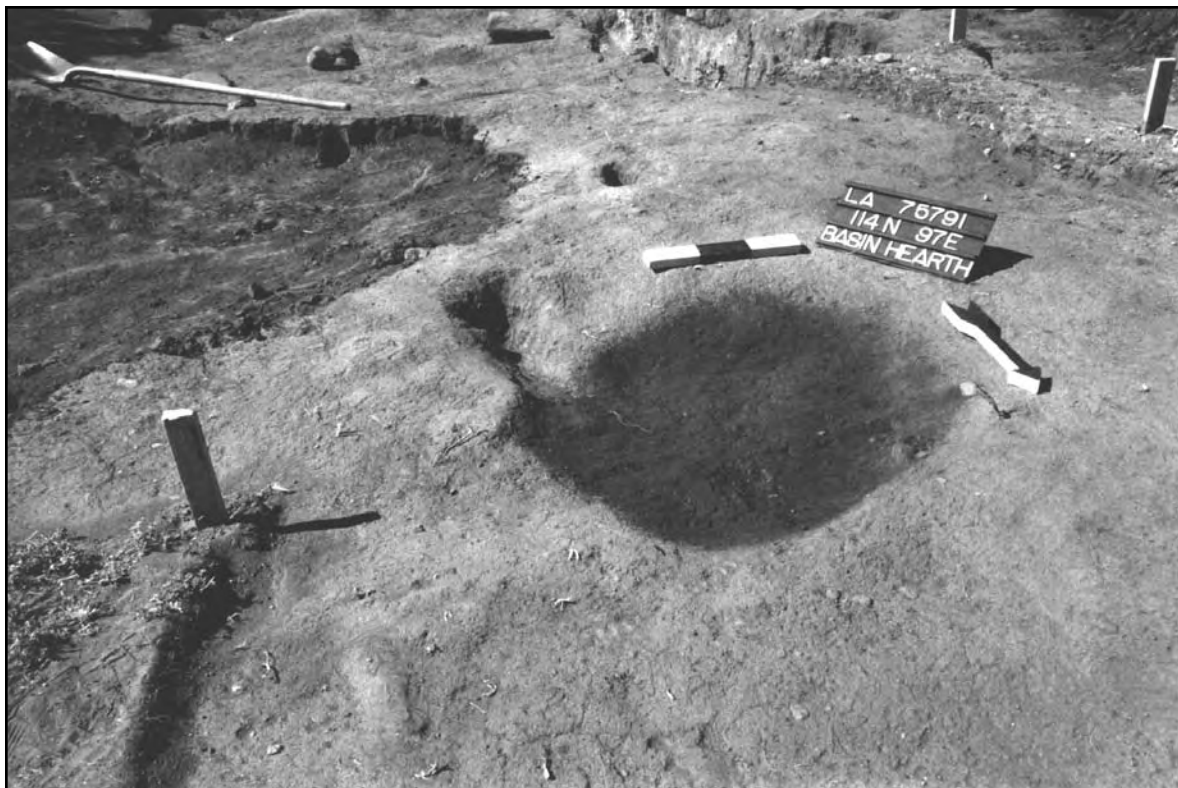


Figure 2.269. Pit 3, a possible hearth near Pit Structure 1, being excavated in the background.

Table 2.153. Ceramics from LA 75791

Cells: Count Row Pct Column Pct	Provenience							Row Total
	General Fill	Roasting Pit 1	Hearth 1	Hearth 2	Pit Structure 1	Pit Structure 2	Pit Structure 3	
Alma Plain	48 53.3% 57.8%	3 3.3% 100.0%	2 2.2% 100.0%		15 16.7% 75.0%	14 15.6% 60.9%	8 8.9% 66.7%	90 100.0% 62.5%
Alma Rough	14 73.7% 16.9%				2 10.5% 10.0%	3 15.8% 13.0%		19 100.0% 13.2%
Plain Corrugated	5 83.3% 6.0%					1 16.7% 4.3%		6 100.0% 4.2%
Indented Corrugated					1 25.0% 5.0%		3 75.0% 25.0%	4 100.0% 2.8%
Incised Corrugated	1 100.0% 1.2%							1 100.0% .7%
Patterned Corrugated	2 100.0% 2.4%							2 100.0% 1.4%
Indeterminate Corrugated	3 75.0% 3.6%				1 25.0% 5.0%			4 100.0% 2.8%
Plain Smudge	2 50.0% 2.4%			1 25.0% 100.0%			1 25.0% 8.3%	4 100.0% 2.8%
San Francisco Red	3 75.0% 3.6%					1 25.0% 4.3%		4 100.0% 2.8%
Mangus (Bold Face) Black-on-white	2 100.0% 2.4%							2 100.0% 1.4%
Transitional Black-on-white						1 100.0% 4.3%		1 100.0% .7%
Late Whiteware	1 25.0% 1.2%					3 75.0% 13.0%		4 100.0% 2.8%
Reserve Black-on-white					1 100.0% 5.0%			1 100.0% .7%
Hachure Black-on-white	1 100.0% 1.2%							1 100.0% .7%
Proto-historic	1 100.0% 1.2%							1 100.0% .7%
Column Total	83 57.6% 100.0%	3 2.1% 100.0%	2 1.4% 100.0%	1 .7% 100.0%	20 13.9% 100.0%	23 16.0% 100.0%	12 8.3% 100.0%	144 100.0% 100.0%

Table 2.154. Lithic Artifacts from LA 75791

Cells: Count Row Percent Column Pct	Provenience										Row Total	
	General Fill	Roasting Pit 1	Roasting Pit 2	Pit 3	Hearth 1	Hearth 3	Pit Structure 1	Pit Structure 2	Pit Structure 3			
Angular Debris	9 81.8% 9.1%			1 9.1% 33.3%					1 9.1% 10.0%			11 100.0% 7.6%
Core Flake	83 68.6% 83.8%	5 4.1% 100.0%	1 .8% 50.0%	1 .8% 33.3%		1 .8% 100.0%	6 5.0% 85.7%	17 14.0% 100.0%	7 5.8% 70.0%			121 100.0% 83.4%
Biface Flake	4 66.7% 4.0%				1 16.7% 100.0%		1 16.7% 14.3%					6 100.0% 4.1%
Core	3 60.0% 3.0%		1 20.0% 50.0%	1 20.0% ..3.3%								5 100.0% 3.4%
Biface											2 100.0% 20.0%	2 100.0% 1.4%
Column Total	99 68.3% 100.0%	5 3.4% 100.0%	2 1.4% 100.0%	3 2.1% 100.0%	1 .7% 100.0%	1 .7% 100.0%	7+ 4.8% 100.0%	17 11.7% 100.0%	10 6.9% 100.0%			145 100.0% 100.0%

Table 2.155. Lithic Artifact Material Types from LA 75791

Cells: Count Row Percent Column Percent	Provenience										Row Total
	General Fill	Roasting Pit 1	Roasting Pit 2	Pit 3	Hearth 1	Hearth 3	Pit Structure 1	Pit Structure 2	Pit Structure 3		
Chert	30 71.4% 30.3%	3 7.1%					1 2.4% 14.3%	4 9.5% 23.5%	4 9.5% 40.0%	42 100.0% 28.0%	
Chalcedony	5 71.4% 5.1%						1 14.3% 5.9%	1 14.3% 5.9%	1 14.3% 10.0%	7 100.0% 4.8%	
Luna Blue Agate	14 70.0% 14.1%			1 5.0% 33.3%				3 15.0% 17.6%	2 100% 20.0%	20 100.0% 13.8%	
Obsidian	3 33.3% 3.3%				1 11.1% 100.0%		2 22.2% 28.6%	1 11.1% 5.9%	2 22.2% 20.0%	9 100.0% 6.2%	
Igneous	1 50.0% 1.0%	1 50.0% 20.0%								2 100.0% 1.4%	
Basalt	8 100.0% 8.1%									8 100.0% 5.5%	
Rhyolite	29 65.9% 29.3%		1 2.3% 50.0%	2 4.5% 66.7%			4 9.1% 57.1%	7 15.9% 41.2%	1 2.3% 10.0%	44 100.0% 30.3%	
Siltstone	1 100.0% 1.0%									1 100.0% .7%	
Quartzite	6 60.0% 36.1%	1 10.0% 20.0%	1 10.0% 50.0%			1 10.0% 100.0%		1 10.0% 5.9%		10 100.0% 6.9%	
Quartzitic Sandstone	2 100.0% 2.0%									2 100.0% 1.4%	
COLUMN TOTAL	99 68.3% 100.05	5 3.4% 100.0%	2 1.4% 100.0%	3 2.1% 100.0%	1 .7% 100.0%	1 .7% 100.0%	7 4.8% 100.0%	17 11.7% 100.0%	10 6.9% 100.0%	145 100.0% 100.0%	

Table 2.156. Pollen Recovered from LA 75791

Location	Pine	Grasses	Cheno-ams	Sunflower Family	Prickly Pear Cactus
Pit Structure 1	X		X	X	X
Pit 3	X	X	X		X

Table 2.157. C-14 Dates for LA 75791

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
117N90E	69819	1360 ± 50	A.D. 650-690	A.D. 620-770	A.D. 670	Roasting Pit 1 (30-40 cm)
117N89E	57465	1390 ± 70	A.D. 620-680	A.D. 550-780	A.D. 660	Roasting Pit 1
113N97E	57466	300 ± 60	A.D. 1510-1600 1620-1660	A.D. 1460-1680 1770-1800 1940-1950	A.D. 1640	Pit house 1 (L3)
113N88E	57467	250 ± 70	A.D. 1530-1550 1640-1680 1770-1800 1940-1950	A.D. 1480-1880 1910-1950	A.D. 1660	Roasting Pit 2 (L2)
110N96E	64070	1170 ± 120	A.D. 710-1000	A.D. 650-1050 1090-1150	A.D. 880	Pit house 3 (L2)

Lithic Artifacts

Of the 145 lithic artifacts retrieved from the site, core flakes dominate the assemblage (83.4 percent, Table 2.154). The scarcity of angular debris strongly suggests that core reduction occurred minimally on the site. Biface flakes are also poorly represented and this may be evidence of flood removal of the small, light flakes rather than a true lack of the artifacts. However, only one projectile point and two bifaces were found, indicating perhaps there was an actual low incidence of hunting activities. The projectile point is chert and is a small, side-notched projectile recovered from the fill of Pit Structure 3.

Rhyolite and chert are the major material types recovered from Ladybug Junction, followed by Luna blue agate (Table 2.155). All are locally available.

Ground Stone

No artifacts of ground stone were recovered from the site.

ANCILLARY STUDIES

Faunal Remains

Thirteen indeterminate large mammal bones were found at Ladybug Junction. Seven of these were from the fill of

Pit Structure 2 and the other six from the surrounding general fill. We can only assume that site residents had pursued at least minimal hunting while encamped there.

Macrobotanical Remains

Macrobotanical samples were examined from the two roasting pits, Pit Structure 1, and from a burned stain in the southwest portion of the site. Maize kernels were recovered from Roasting Pit 1 and from the burned stain. The stain was the most productive context, yielding charred purslane, goosefoot, and globemallow seeds along with the maize kernels. Nonreproductive pine plant parts were the only other cultural remains recovered.

Wood charcoal taxa consisted primarily of juniper with small amounts of undetermined conifer and piñon also occurring.

Athabaskan people who occupied the site around 1650 could have used purslane and goosefoot seeds for food along with maize. The nonreproductive pine parts probably represent firewood residue. Wood identified from the site would have been locally available for use as firewood or construction material.

Pollen Remains

Two palynological samples were submitted from LA 75791 (Table 2.156). Regrettably, more were not taken

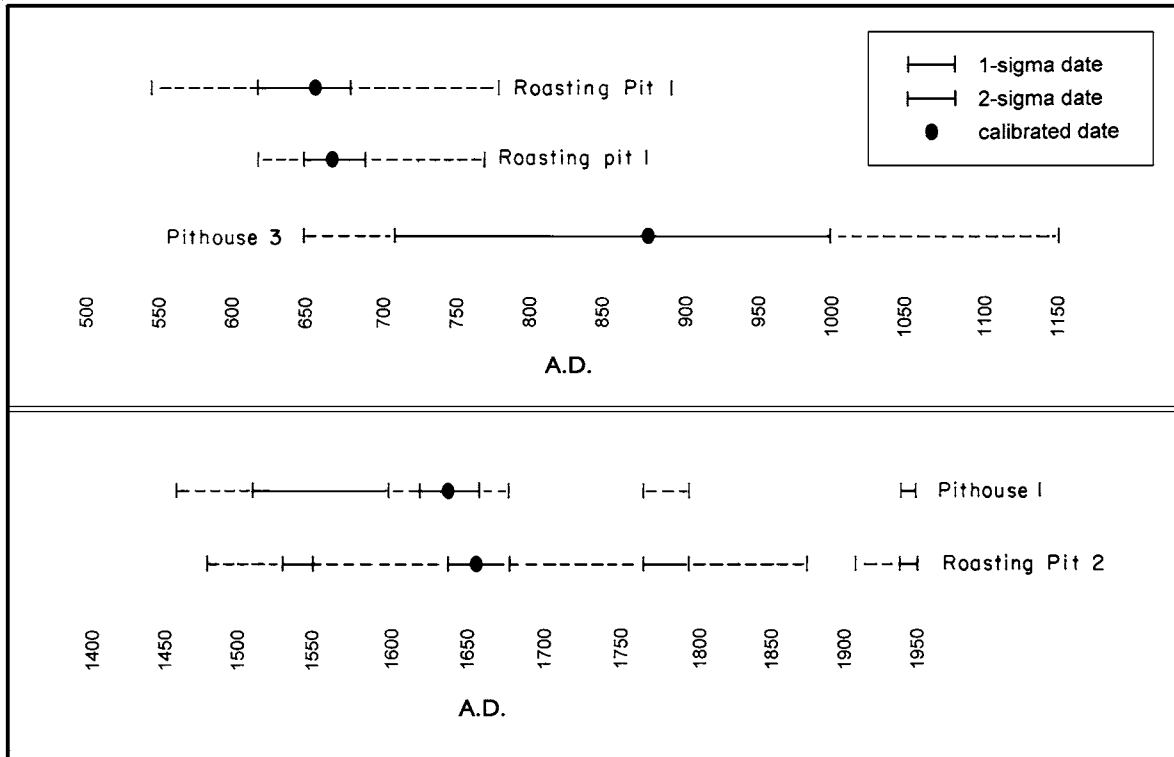


Figure 2.270. Seriation of C-14 dates, LA 75791.

because of the shallow nature of the site. However, a variety of economic species are represented in the collection. All could easily have been obtained locally. No maize was present in the samples.

DATING METHODS

Five radiocarbon and five obsidian hydration dates were obtained from Ladybug Junction (Table 2.157 and Fig. 2.270). The resulting dates created a problem in assigning time periods to some of the features.

Pit Structure 1 and Roasting Pit 2 clearly seem to date to an Athabaskan occupation probably between A.D. 1510 and 1680 with the two calibrated dates averaging at 1650. The wood from the two features has the same dating signature, so we may assume they are contemporary.

Pit Structure 3 may date as early as A.D. 1150 but its similarity and proximity to Pit Structure 1 suggest it is contemporary. Plus, a chi-square comparison of early versus late sherd assemblages from all three pit structures indicates no likely significant differences between any of them, although the sample was small. Also, while Pit Structures 1 and 2 were on the same cultural level, the backhoe trench made surficial comparison with Pit Structure 3 not possible. We, however, suggest that the three structures are probably contemporary and are all

Athabaskan in origin.

Roasting Pit 2 ties into this complex with a calibrated A.D. 1650 date. Roasting Pit 1 has a much earlier C-14 date, between A.D. 620 and 770, but there are no diagnostic sherds to associate with this date. The pit is also very similar in size and construction to Roasting Pit 2 and could be contemporary if an old wood problem exists on the site. The three small hearths and Pits 1 and 2 would also seem to be of the same time period as the pit structures because they are on the same cultural level and in close proximity. An obsidian hydration date of A.D. 1916 is clearly aberrant. Athabaskan period dates of 1718 and 1845 were obtained from general fill and may relate to the C-14 dates produced for the site from this time. Two other dates of A.D. 121 and 218 are not associated with any other dates for the site and are rejected.

Based on radiocarbon dates, the late Pueblo period sherds could associate with Pit Structure 3, but as just stated, we believe Pit Structure 3 was dated from old wood and is actually Athabaskan. Therefore, the relatively small number of sherds could be from a minor, undetected Late Pueblo occupation of the site or have washed in during one or more flooding episodes. Directly upstream to the north, the Leggett Canyon drainage has cut several wide channels, leaving some areas dry at differing times. A small Pueblo period field-house easily could have been located upstream and been

the cause of the Pueblo debris.

SITE INTERPRETATION

The best fit of the available data seems to be to consider Ladybug Junction an Athabaskan settlement mixed with artifacts from the Late Pueblo period. Site location and environmental dynamics suggest that these earlier sherds may have washed in from other sites upstream or resulted from a very ephemeral use of the site location by Pueblo peoples. This conclusion, however, is based on several assumptions we have made regarding dating old wood and flooding of the low-lying site.

Ladybug Junction definitely represents a short-term encampment based on the shallowness and expedient construction of the structures, the limited number of artifacts (particularly if some were washed in), and the lack of interior features. Warm weather occupation is indicated by the presence of outdoor hearths, roasting pits, and shallow structures.

One of the principal activities on the site seems to have related to the roasting of subsistence items probably gathered in the immediate environs. Grasses, prickly pear cactus, and sunflower varieties were a few of the potential food sources recovered from the palynological studies. Also available would have been acorns and pine nuts. Purslane, goosefoot, and maize were also present in the macrobotanical samples. Processing of food stuffs was possibly not carried out due to the lack of ground stone on the site. Consumption would therefore have been immediate. The few subsistence items recovered

suggest an Athabaskan strategy of gathering food from available natural resources as they occur on a group's seasonal or annual rounds through the Mogollon Highlands.

If flooding activities did not wash away small biface flakes and projectile points, we would have to conclude (based on the lithic assemblage) that hunting of wild game was not the primary objective of the encampment, although several large mammals were obviously consumed at the site.

The recovery of one piece of Athabaskan utility ware places pottery in the area by at least A.D. 1650, the weighted and calibrated date for the site. Athabaskan ceramics are present in several Datil area sites dating in the mid-1500s (Oakes 1998). They could likely have been present in the Mogollon Highlands at this time also.

Perhaps the most important information to come out of the excavation of Ladybug Junction is the site structural data. Athabaskan site occupants dug out shallow depressions for living quarters, removing rocks and debris, and then constructed brush superstructures over these floor depressions. The shape of the floors varies from round to oval with an average living space of 3.62 sq m. Interior features are lacking although roasting pits, small basin hearths, and small pits are part of site architecture. In one case (Pit Structure 1), an entry passage also seems to have been built. Entries may have been present in the other two structures, however, erosion and mechanical trenching disturbed the surfaces around these features.

LA 75792 (AR-03-06-06-00286)
THUNDER RIDGE

Yvonne R. Oakes

The small Pueblo period roomblock (Reserve phase) was recorded in 1989 by Oakes. The site sits in a level area along a steep ridge with artifacts eroding downhill from the site. Sherds of Alma Brown Ware, corrugated wares, and Reserve Black-on-white were noted, as well as a variety of lithic artifact material types. The site size measured 28-by-52 m for a site area of 1,165 sq m. A portion of the cobble roomblock lay within a proposed TCP along the highway right-of-way.

Testing of the area began in 1990. Six test pits were placed within project limits and ranged in depth from 20 to 60 cm below the ground surface. Soil color varied from dark brown to light reddish brown. Test Pit 1 was situated immediately adjacent to a probable masonry wall alignment. Artifacts and charcoal-flecked soil were recorded to a depth of 60 cm. Test Pit 2, 8 m southeast of the roomblock, revealed a possible utilized surface at 11.5 cm in depth. Test Pits 3-5 produced no subsurface material or utilized surfaces, although numerous rocks were recorded below the surface. Test Pit 6 was placed within a cobble pile at the base of the site slope. No cultural fill was present.

A total of 149 artifacts were recovered from the testing including 127 sherds, 18 lithic artifacts, and 4 pieces of ground stone. Ceramics included San Francisco Red, smudged wares, and a late white ware. Site size was increased to 35-by-45 m for an area of 1,575 sq m.

At the completion of testing, the TCP was adjusted by 6 m and the roomblock now fell outside of the proposed construction zone. However, the area surrounding the rooms contained cultural deposits and a data recovery plan was prepared.

Excavations at Thunder Ridge began in 1991. A large area was surface stripped and a locus of roomblock wall fall was recorded along with a ramada unit near the rooms. No other cultural features were found (Fig. 2.271). The roomblock dates to the Reserve phase, based on ceramics, and consists of probably six rooms. It was not excavated.

As a result of excavations, site size was reduced to 47-by-25 m for an area of 1,175 sq m. A total of 103 grids were excavated on the site. Depths ranged from 7 to 60 cm and averaged 20.8 cm. Surface collections were made from 85 grids downhill from the roomblock. A total of 21.4 cu m of dirt was excavated on the site.

SITE SETTING

Thunder Ridge sits on the edge of a ridge overlooking the juncture of a small stream and the narrow Saliz Canyon and its drainage (Fig. 2.272). This area is just to the south of Pine Lawn Valley, which is ringed by mountains in this area. Elevation of the site is 1,831 m (6,010 ft). The small drainage has left an approximate 18-m-deep cut through the end of the ridge where the site is located. Terrain in the area is rough and has a forest cover of pine trees interspersed with scrub oak, juniper, and piñon. Rabbitbrush and prickly pear cactus occur in minor amounts.

Agricultural potential in the area is minimal but possible along the narrow banks of the Saliz and several unnamed drainages. Collection of nuts and plant foods along with hunting were viable subsistence choices, however.

Site density is not as heavy here as in the more open Pine Lawn and Luna valleys. Most nearby sites are located 1 km to the north along the perimeters of the broad Pine Lawn Valley. Three small Reserve roomblocks are situated .75-1 km west and southeast of LA 75792. The closest Tularosa phase sites (N=2) are found 2 km to the north on the west side of the Pine Lawn Valley.

RESEARCH OBJECTIVES

It was known from the testing program that Thunder Ridge excavations would only include a probable activity area located east and southeast of the Pueblo roomblock. A utilized surface and a possible pit were encountered during testing. The site was expected to provide information on site layout, relationship of activities outside of the roomblock to the roomblock itself, and use of outdoor facilities.

A cultural surface and a ramada area were found. We recovered no ancillary pits or hearths and are therefore able to make only minimal statements about subsistence adaptations of the site residents. Another level area lies directly northwest of the roomblock, outside of project limits, and may contain a more heavily utilized outside work area.

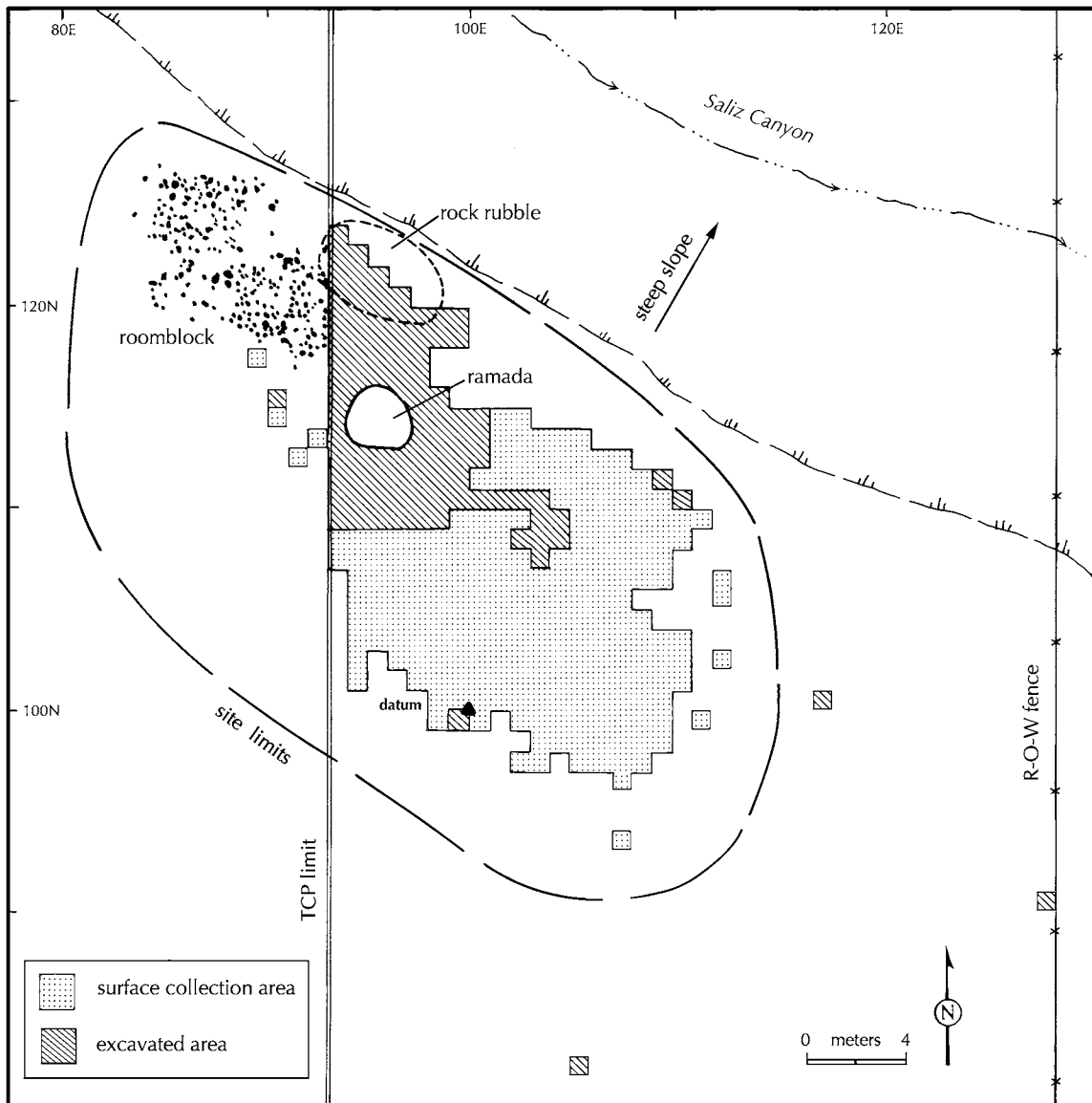


Figure 2.271. LA 75792, Thunder Ridge.

EXCAVATION PROCEDURES

Because testing revealed a probable utilized surface, excavations began with stripping the area closest to the roomblock and proceeded downslope from there. A grid system of 1-by-1-m units was first established with a transit and stadia rod. Excavations were completed in 10-cm increments, stopping when a cultural surface or the underlying bedrock was exposed. Generally, the cultural fill on the site was very shallow with an average depth of 20.8 cm (Fig. 2.273).

The levels used during excavation included:

Level 1: Surface stripping of loose top soil and collection of surface artifacts. Depth of stripping was 1-

7 cm. Soil color was 10YR 2/2, very dark brown. Artifacts were present.

Level 2: General fill on the site, up to 40 cm maximum depth, but usually 15-20 cm. Soil color was 10YR 3/3, dark brown. Artifacts were present.

Level 3: Cultural fill of the ramada area. Soil color was 5YR 4/2, dark reddish gray.

Excavated soil was screened through ¼-inch screen and artifacts were collected by provenience and level. Profiles and plan views of the cultural features were drawn. Photographs of the site were taken and a topographic map of the site was produced with a transit and stadia rod.



Figure 2.272. LA 75792, looking downslope to east from roomblock.

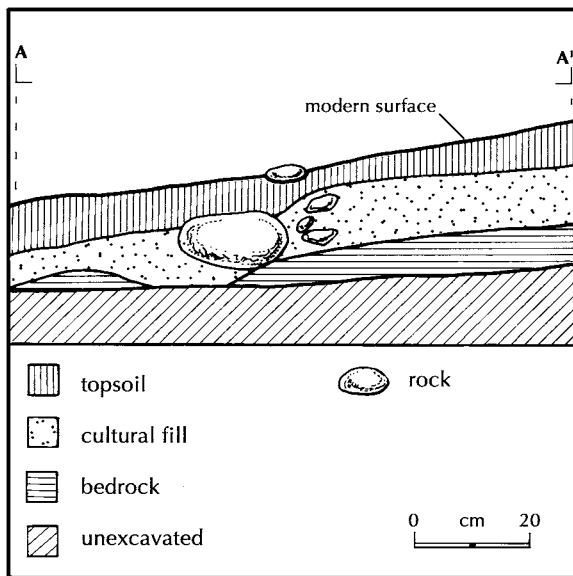


Figure 2.273. Profile of south wall of Grid 101N/117E.

CULTURAL UNITS

A utilized surface and remains of a probable ramada were uncovered during excavations (Fig. 2.274). Both were adjacent to the six-room pueblo dating to the Reserve phase.

Utilized Surface

Extending east and south from the edge of the roomblock, a utilized surface was encountered at an average depth of 11.5 cm. The surface was hard-packed and often charcoal-flecked, particularly in the southern portion. Artifacts and cobbles were frequently found directly on this surface. The surface could be traced for an area of 15 m along the edge closest to the roomblock and to the east for approximately 7 m. At the northwest corner of the stripped area, the surface was strewn with numerous cobbles assumed to be wall fall. Along the extreme northwestern edge of the project limits, the surface was heavily charcoal-stained. We believe an outside hearth or roasting pit may lie just outside of this excavated area. Towards the east, bedrock became more frequently exposed and the utilized surface gradually disappeared. A probable ramada was found 5 m south of the cobble-strewn area, also within the compacted area adjacent to the project limits and near the roomblock.

Ramada

Along the west edge of the project area near the roomblock was a subrectangular depression within the utilized surface. It measured 3.05-by-3.15 m with a floor area of 9.7 sq m and was 35 cm at its deepest (Fig.

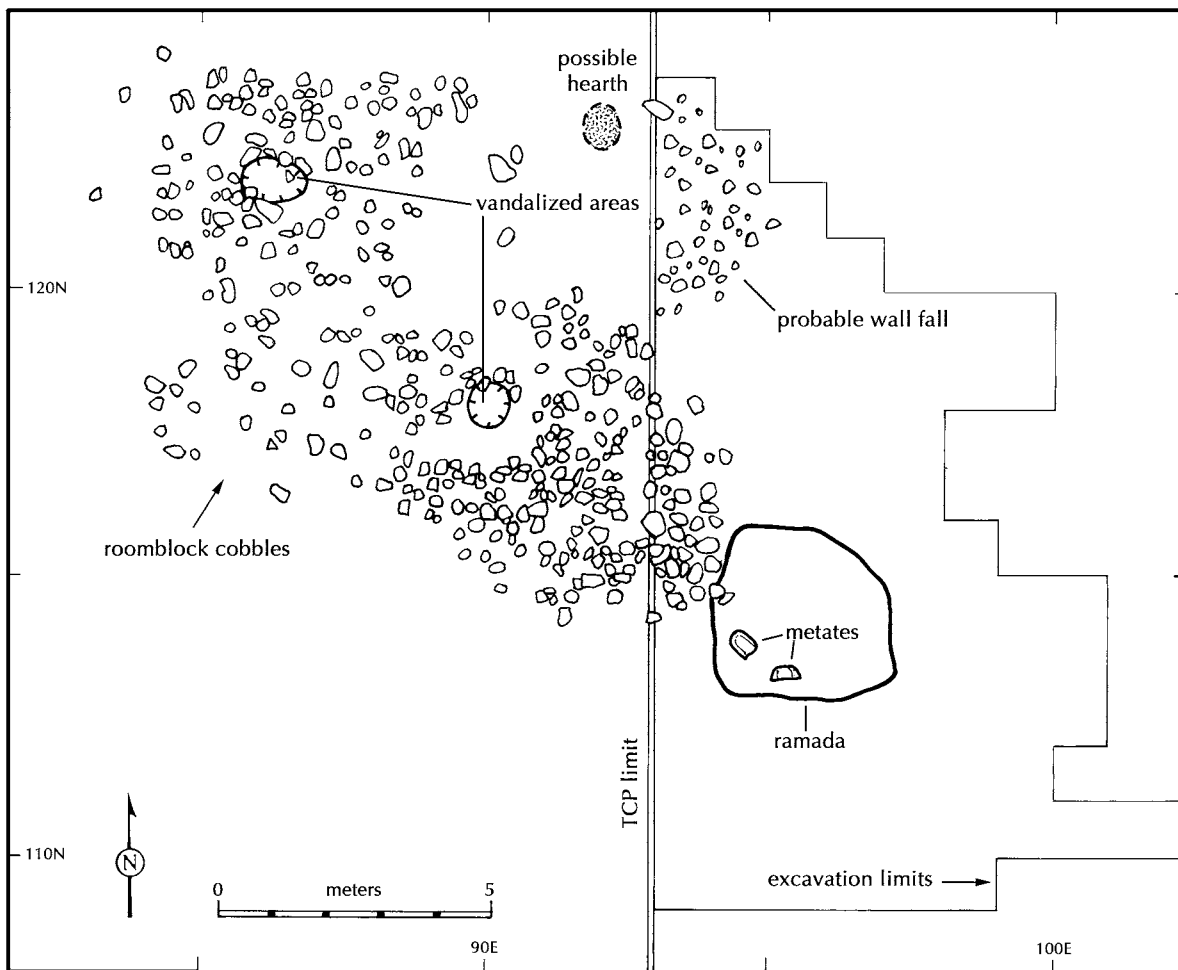


Figure 2.274. Plan view of roomblock and ramada, LA 75792.

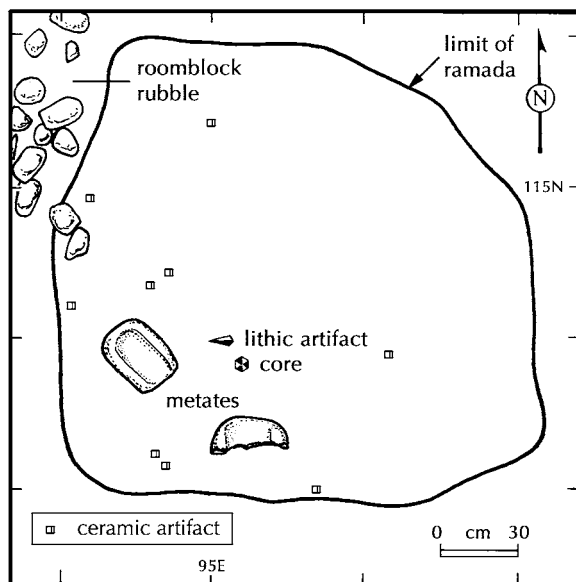


Figure 2.275. Plan view of ramada area.

2.275). The floor was hard-packed and mottled with charcoal staining. Edges sloped up gradually to meet the utilized surface. Floor artifacts included two trough metates, nine ceramics, one core, and one chipped stone flake. We believe the feature represents an outdoor work area or ramada, although no postholes were found. No adobe, suggestive of an jacal structure, was found either.

ARTIFACTS

A total of 3,675 artifacts were retrieved from the area outside of the Pueblo roomblock. These include 2,534 ceramics, 1,099 lithic artifacts, 5 projectile points, 14 pieces of ground stone, 2 pendants, 1 mineral fragment, and 20 faunal remains.

Ceramics

The ceramics were widely scattered over the area and exhibited a diversity of types, typical of a pueblo site (Table 2.158). Alma Brown Wares constitute 74.2 per-

Table 2.158. Ceramics from LA 75792

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Alma Plain	828 89.6% 35.8%	96 10.4% 43.0%	924 100.0% 36.5%
Alma Rough	885 93.8% 38.3%	59 6.3% 26.5%	944 100.0% 37.3%
Alma Scored	1 50.0% .0%	1 50.0% .4%	2 100.0% .1%
Alma Incised	7 100.0% .3%		7 100.0% .3%
Three Circle Neckbanded	2 100.0% .1%		2 100.0% .1%
Plain Corrugated	293 95.8% 12.7%	13 4.2% 5.8%	306 100.0% 12.1%
Indented Corrugated	27 87.1% 1.2%	4 12.9% 1.8%	31 100.0% 1.2%
Incised Corrugated	49 86.0% 2.1%	8 14.0% 3.6%	57 100.0% 2.2%
Patterned Corrugated	3 49.9% .1%	4 57.1% 1.8%	7 100.0% .3%
Indetermined Corrugated	43 89.6% 1.9%	5 10.4% 2.2%	48 100.0% 1.9%
Plain Smudged	32 72.7% 1.4%	12 27.3% 5.4%	44 100.0% 1.7%
San Francisco Red	28 73.7% 1.4%	10 26.3% 4.5%	38 100.0% 1.5%
Early Whiteware	2 100.0% .1%		2 100.0% .1%
Late Whiteware	90 93.8% 3.9%	6 6.3% 2.7%	96 100.0% 3.8%
Reserve Black-on-white	5 50.0% .2%	5 50.0% 2.2%	10 100.0% .4%
Hachure Black-on-white	6 100.0% .3%		6 100.0% .2%
Indeterminate Redware	5 100.0% .2%		5 100.0% .2%
Indeterminate White Mountain Redware	2 100.0% .1%		2 100.0% .1%
Wingate Black-on-red	3 100.0% .1%		3 100.0% .1%
Column Total	2311 91.2% 100.0%	223 8.8% 100.0%	2534 100.0% 100.0%

Table 2.159. Lithic Artifacts from LA 75792

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Angular Debris	115 89.1% 11.6%	14 10.9% 12.8%	129 100.0% 11.7%
Core Flake	841 90.3% 84.9%	90 9.7% 82.6%	931 100.0% 84.7%
Biface Flake	13 100.0% 1.3%		13 100.0% 1.2%
Core	13 72.2% 1.3%	5 27.8% 4.6%	18 100.0% 1.6%
Uniface	1 100.0% .1%		1 100.0% .1%
Biface	7 100.0% .7%		7 100.0% .6%
Column Total	990 90.1% 100.0%	109 9.9% 100.0%	1099 100.0% 100.0%

Table 2.160. Lithic Artifact Material Types from LA 75792

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Chert	38 84.4% 3.8%	7 15.6% 6.4	45 100.0% 4.1%
Chalcedony	20 95.2% 2.0%	1 4.8% .9%	21 100.0% 4.1%
Luna Blue Agate	35 81.4% 3.5%	8 18.6% 7.3%	43 100.0% 3.9%
Silicified Wood	1 100.0% .1%		1 100.0% .1%
Obsidian	20 95.2% 2.0%	1 4.8% .9%	21 100.0% 1.9%
Igneous	6 75.0% .6%	2 25.0% 1.8%	8 100.0% .7%
Basalt	15 71.4% 1.5%	6 28.6% 5.5%	21 100.0% 1.9%
Rhyolite	840 91.0 84.8	83 9.0 76.1	923 100.0% 84.0%
Quartzite	11 91.7% 1.1%	1 8.3% .9%	12 100.0% 1.1%
Quartzitic Sandstone	4 100.0% .4%		4 100.0% .4%
Column Total	990 90.1% 100.0%	109 9.9% 100.0%	1099 100.0% 100.0%

cent of the assemblage, while various corrugated wares make up another 15.8 percent. Decorated Pueblo sherds include Reserve Black-on-white, hachure black-on-white, Wingate Black-on-red, and indeterminate White Mountain Redware. Nine sherds were recovered from the floor of the ramada. These include three Alma Brown Wares, four San Francisco Red, and two corrugated sherds. The ceramic assemblage broadly dates the site to the Reserve phase, between A.D. 1000 and 1100. No later period Tularosa wares were present.

Lithic Artifacts

Eighty-five percent of the lithic artifacts are core flakes with a relatively small amount of angular debris (11.7 percent). Bifaces, unifaces, and biface flakes are also poorly represented (Table 2.159). The initial reduction of cores (N=18) may have been carried out in this area of the site with further tool refinement pursued elsewhere. The most frequently used material type is rhyolite (84.0 percent), followed by a wide variety of materials (Table 2.160). All raw materials except obsidian are readily available in the immediate environment.

Five projectile points were recovered from the site. One is a Bajada-San Jose type and another a San Pedro, dating to the Archaic period. The others include two small points typical of the Pueblo period and one medium-sized, corner-notched projectile. Material types consist of three chert and two obsidian points. The variety of points present could suggest curation of several of these artifacts from earlier time periods.

Ground Stone

Fourteen pieces of ground stone were found in the outdoor area near the roomblock. Of these, seven are manos, four are metates, one an abrading stone, and another an indeterminate fragment (Table 2.161). Most manos (57.1 percent) are two-handed, while one is single-handed and two others are indeterminate. Metates are mostly slab (75.0 percent) with one trough-shaped. These typological varieties indicate that several different substances were being ground on the site.

Material selected for use shows considerable variety also; rhyolite was the most frequently employed (Table 2.162), but tuffs, basalt, andesite, and sandstone were also used. These materials have different degrees of coarseness, again suggesting utilization of a wide variety of economic species by prehistoric site occupants.

Miscellaneous Items

Only three miscellaneous items were found in this por-

Table 2.161. Ground Stone from LA 75792

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Indeterminate	1 100.0% 9.1%		1 100.0% 7.1%
Abrading Stone	2 100.0% 18.2%		2 100.0% 14.3%
Mano	2 100.0% 18.2%		2 100.0% 14.3%
One-hand Mano	1 100.0% 9.1%		1 100.0% 7.1%
Two-hand Mano	4 100.0% 36.4%		4 100.0% 28.6%
Trough Metate		1 100.0% 33.3%	1 100.0% 7.1%
Slab Metate	1 33.3% 9.1%	2 66.7% 66.7%	3 100.0% 21.4%
Column Total	11 78.6% 100.0%	3 21.4% 100.0%	14 100.0% 100.0%

tion of the site. These include one pendant of chrysocola, one pendant blank of sedimentary rock, and an unutilized piece of limonite.

ANCILLARY STUDIES

Faunal Remains

Twenty pieces of animal bone were recovered from Thunder Ridge. All are mammals: 3 large and 17 indeterminate. We can only infer that processing of game animals took place on the site, but counts are too low to indicate degree of dependence on hunting.

Macrobotanical Remains

Only one macrobotanical sample from under a metate on

Table 2.162. Ground Stone Material Types from LA 75792

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Basalt		1 100.0% 33.3%	1 100.0% 7.1%
Rhyolite	6 75.0% 54.5%	2 25.0% 66.7%	8 100.0% 57.1%
Andesite	1 100.0% 9.1%		1 100.0% 7.1%
Rhyolitic Tuff	3 100.0% 27.3%		3 100.0% 21.4%
Sandstone	1 100.0% 9.1%		1 100.0% 7.1%
Column Total	11 78.6% 100.0%	3 21.4% 100.0%	14 100.0% 100.0%

the floor of the ramada produced an unidentifiable charred seed and an unknown noncultural seed. These meager plant remains do not shed light on the identity of plants that could have been processed using the manos and metates found at the site. Excavation of the roomblock and more flotation samples would have helped to further our understanding of subsistence activities at LA 75792.

Pollen Remains

Three pollen samples were analyzed from LA 75792 (Table 2.163). Two samples from metates produced evidence of maize pollen and starch grains. Other items found included grasses, cheno-ams, pine, Mormon tea, sunflower species, and sagebrush. Corn does not dominate the assemblage, cheno-ams do. The small sample size allows us to determine only that a variety of subsistence or medicinal items were being processed on the site. The different types and materials of ground stone recovered support this economic diversity.

Table 2.163. Pollen Recovered from LA 75792

Provenience	Pine	Cheno-am	Grasses	Sunflower Sp.	Mormon Tea	Sagebrush	Corn
Under Metate	X	X	X	X	X		X
Under Sherd	X	X	X	X		X	
Metate Wash	X	X					X

Table 2.164. C-14 Dates for LA 75792

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
114N/94E	69820	2150 ± 130	B.C. 380-10	B.C. 410-A.D. 120	B.C. 180	Pit Floor (35 cm)
115N/94E	69821	1570 ± 100	A.D. 400-620	A.D. 250-660	A.D. 530	Pit Fill (32 cm)

DATING METHODS

Two radiocarbon and one obsidian hydration sample were processed from the ramada floor and fill at Thunder Ridge. The C-14 samples produced aberrant dates (Table 2.164), being too early for the pueblo roomblock. The obsidian hydration date was A.D. 800, also too early for the pueblo roomblock. The site (and the ramada) has little depth and there is no indication of an earlier Archaic (except for two possibly curated projectile points) or Early Pithouse occupation. Therefore, the Reserve phase ceramics present on the site and the masonry roomblock are used to provide us with a Reserve phase designation (ca. A.D. 1000-1100) for the site.

SITE INTERPRETATION

Excavating only the outside surface of this Pueblo roomblock did not provide us with much detail about use

of space or facilities on this type of site. We found no hearths, storage pits, or living quarters. The single ramada was basically a shallow depression in which were located two metates and a few sherds and lithic artifacts. The lack of a hearth and the use of an open-air structure does, however, indicate that the pueblo was occupied at least during the summer months. Maize is present but it would seem to be to a minor degree, although this is difficult to determine given the lack of excavated rooms on the site.

The artifact data have allowed us to make comparisons with other pueblo sites excavated on this project. For example, following chapters discuss local versus nonlocal use of sherds and lithic raw materials and permit us to quantify the differences between them.

LA 78439 (AR-03-06-06-00835)
LEAPING DEER RIDGE

Yvonne R. Oakes

When first surveyed (Oakes 1989), Leaping Deer Ridge was considered part of an extensive lithic artifact scatter (LA 70188) spread over two adjoining ridges. Subsequent examinations revealed that the two areas were actually separate sites. The site was tested as LA 70188 in 1990 but immediately afterwards received its present identification of LA 78439.

Leaping Deer Ridge was recorded as an Archaic period site. The extensive artifact scatter occupies most of a single ridge in the San Francisco Mountains foothills (Fig. 2.276). Lithic artifacts, including Archaic projectile points, were recorded, as well as several isolated Alma Brown Ware sherds and corrugated sherds thought to represent a minor, later Mogollon presence on the site. Site size was estimated at 100-by-95 m for an area of 9,500 sq m.

Ten test pits were excavated on the site. Depth of the tests ranged from 5 to 30 cm, averaging 25 cm. Each test unit was also augered upon completion of the excavations to ensure that sterile soil was reached. Two areas revealed potential cultural features. On the east end of the site, Test Pit 5 uncovered a burned stain with charcoal, several lithic flakes, and small pieces of calcined bone at 5 cm in depth. A hard-packed surface and small bone fragments continued into Test Pit 10 to the south. In Test Pit 9, 9 m northwest, charcoal was also encountered at a shallow depth.

Toward the western part of the site, Test Pit 8 revealed a possible pit edge associated with several lithic artifacts and charcoal flecking at 16 cm in depth. A total of 88 artifacts were collected from the site, including two Archaic projectile points, a scraper, and one piece of ground stone. Three Alma Plain Brown Ware and one corrugated sherd were also recovered. These sherds were thought to represent a minor occupation of the site.

A data recovery plan was prepared and excavations began in 1991. Leaping Deer Ridge proved to have two surficial components, a Late Archaic roasting pit and a cluster of Late Pueblo period hearths. As a result of excavations, site size was adjusted to 76 m east-west by 36 m north-south for an area of 2,736 sq m; approximately two-thirds of the site was within the proposed extended TCP limits. A total of 89 1-by-1-m grids were excavated, ranging from 5 to 62 cm deep and averaging 24.7 cm

in depth. Ninety-one grids were surface collected. Total dirt removed on the site was 21.9 cu m.

SITE SETTING

LA 78439 sits on one of the several finger ridges extending along the southern slopes of Prairie Point Peak in the San Francisco Mountains. Underbrush, including scrub oak and small bushes, surround the site location, which is fairly open (Fig. 2.277). Piñon, pine, and alligator juniper are widely spread over the site creating heavy duff in some areas. One agave plant and one narrow-leaved yucca were also observed on the site. Site elevation is 2,048 m (6,720 ft) with an overview of the Pine Lawn Valley to the south. The Dry Leggett flows fairly consistently with mountain runoff and is located .2 km to the south. Numerous wild animals (deer, javalina, and coyote) have been seen on the site. Gathering acorns or piñon nuts is an attractive option provided by the site location. Agricultural pursuits would be difficult given the steep hills and ridges of the area.

An Archaic-Athabaskan site (LA 70188) lies directly upslope to the west from Leaping Deer Ridge. Another Archaic site, LA 37917, sits on the ridge just to the east. Heading south, as elevation drops and terrain levels out, sites of all periods become more frequent.

RESEARCH OBJECTIVES

The site, as tested, consisted of a surface scatter of artifacts with at least several cultural components, which appeared to be Archaic. The potential for pits and hearths on this type of site provided an unusual opportunity to examine the dynamics of site structure. This was an excellent chance to define subsistence modes for an Archaic population in the Mogollon Highlands. Floral and faunal resources were thought to be present and we expected to determine if there were any dependency on agricultural products. Seasonality of resource acquisition and, therefore, of site occupation could hopefully be assessed. The use of storage facilities would aid in determining length of stay and function of site.

Lithic artifacts should provide a test of Kelly's (1988) model for biface production as related to residen-

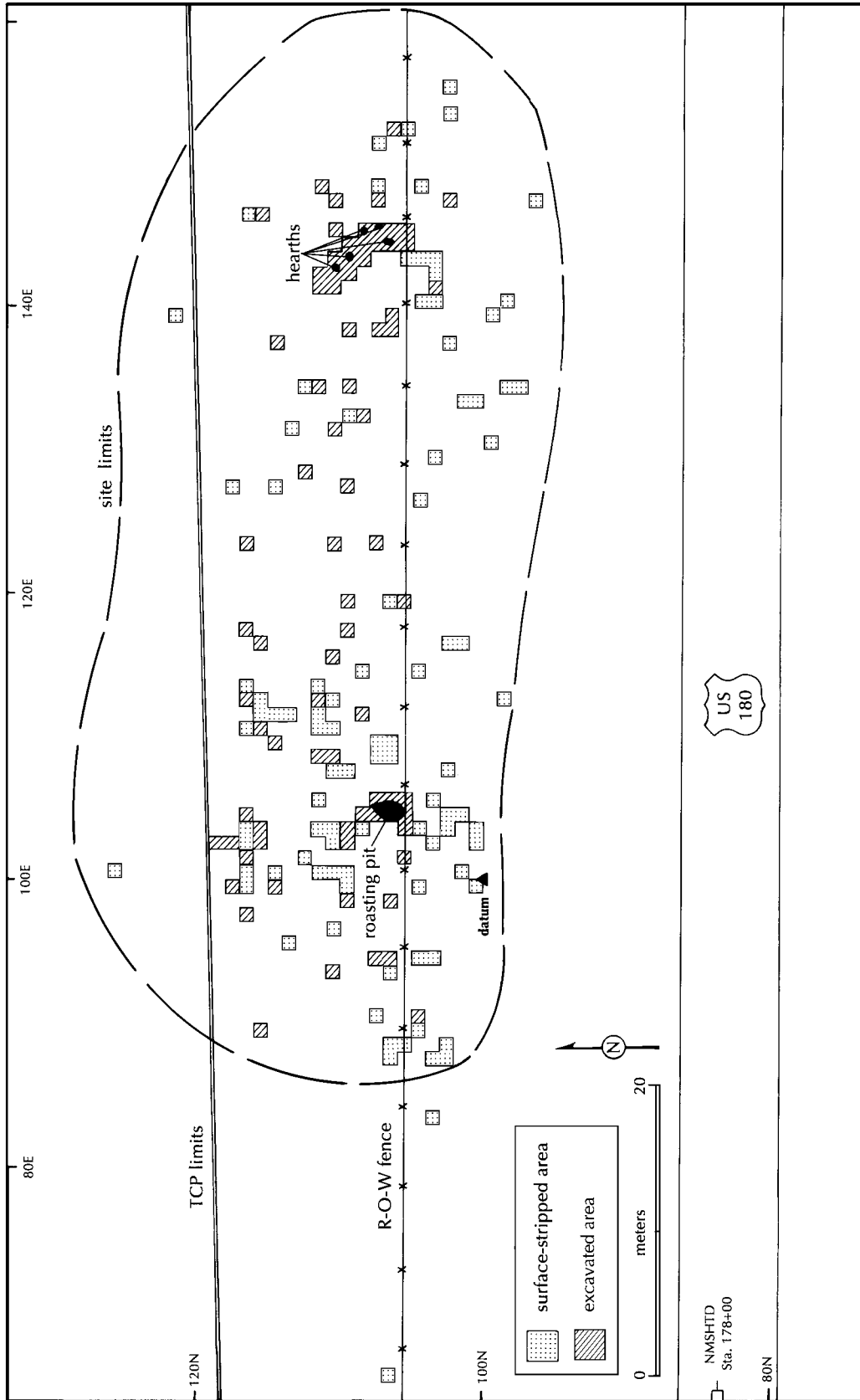


Figure 2.276. LA 78439, Leaping Deer Ridge.



Figure 2.277. Setting of LA 78439, showing surrounding dense brush.

tial mobility. Specific site activities should also be predictable from the study of the various tools on the site.

Excavation findings allowed us to fulfill research expectations for the most part. Activity areas were definable and site function and seasonality of resource acquisition determined. The presence of a Late Pueblo period campsite on the eastern edge of the site made separation of assemblages somewhat difficult, however.

EXCAVATION PROCEDURES

Grids and baselines established during the testing procedures were reset for excavation with a transit and stadia rod. Removal of overburden to a red, sterile substrate (5YR 3/3, dark reddish brown) first occurred near the possible pit area and hearth locations and expanded from there into areas of artifact concentrations until all areas of the site were investigated. Depth of the cultural material on the site generally ranged from 10 to 20 cm.

Natural levels maintained on the site included:

Level 1: Surface collection and stripping of loose topsoil on site, 10YR 3/3, dark brown. Depth of stripping up to 10 cm deep. Most artifacts were in this level.

Level 2: Dark, loamy cultural fill on site. Munsell color is 5YR 4/2, dark reddish gray. Artifacts present. Up to 46 cm maximum depth.

Level 3: Fill of roasting pit and hearths. Same color soil as in Level 2 except is charcoal flecked.

All excavated soil was screened through ¼-inch mesh and artifacts were collected by grid provenience and level. Maps, profiles, and photographs were obtained for all cultural features and a topographic map of the site was produced with a transit and stadia rod.

CULTURAL UNITS

Two areas of prehistoric activity, representing two different cultural periods, were isolated at Leaping Deer Ridge. Toward the west end of the site, an Archaic roasting pit was uncovered while at the east edge, several small Late Pueblo hearths and a utilized surface were found.

Roasting Pit

A large pit containing numerous burned rocks, several lithic artifacts, and charred dirt was discovered on the site. It was irregular in shape with sloping sides and measured 2.45 m north-south by 1.88 m east-west by 0.62 m deep (Figs. 2.278, 2.279). Most of the burned rock lay in the bottom of the pit. Soil was burned to a black color (10YR 2/1). A radiocarbon date of ca. 1950 B.C. was obtained for the roasting pit.

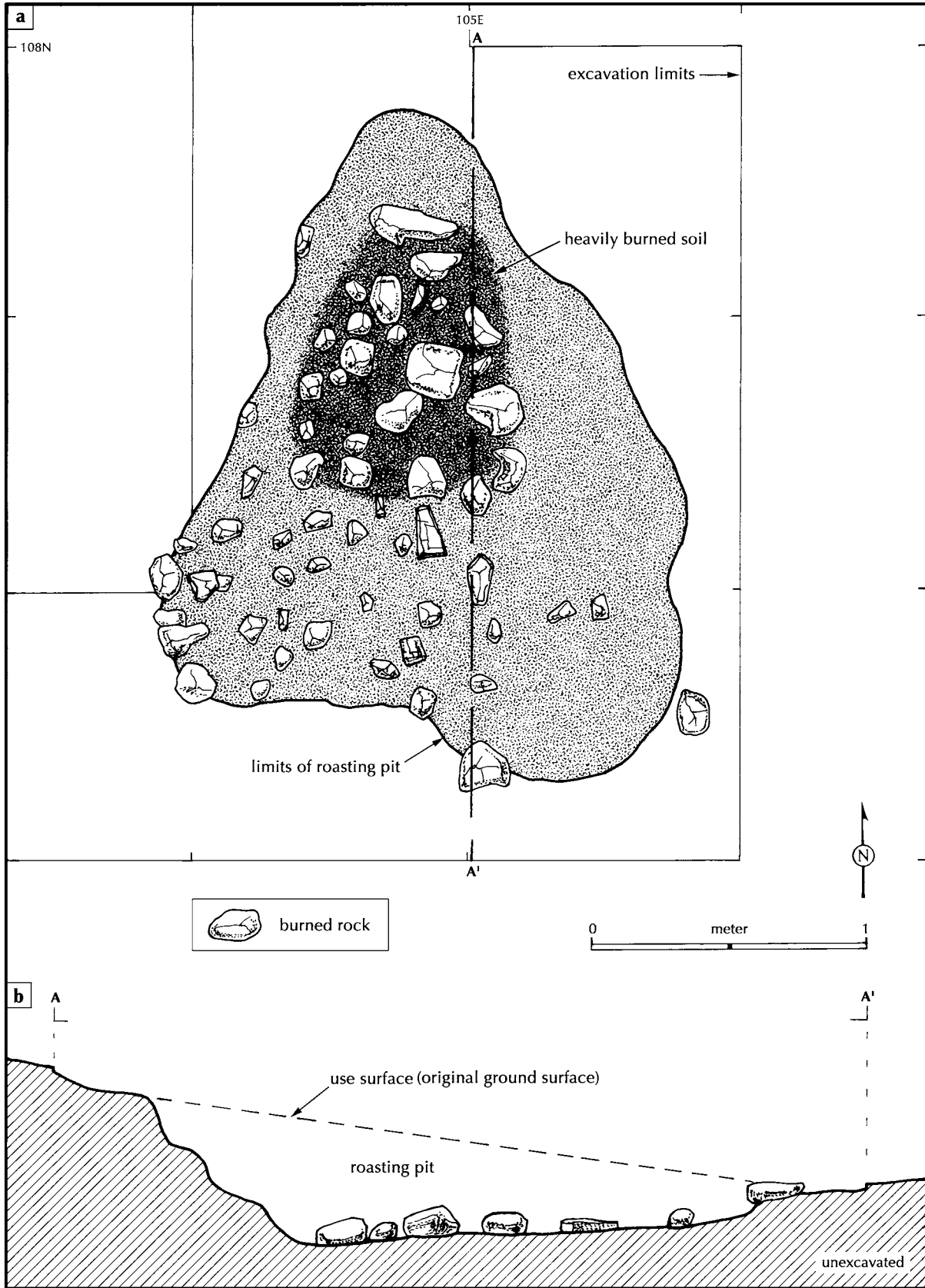


Figure 2.278. Plan and profile of roasting pit.



Figure 2.279. Roasting pit, facing south.



Figure 2.280. Overview of hearth area, LA 78439.

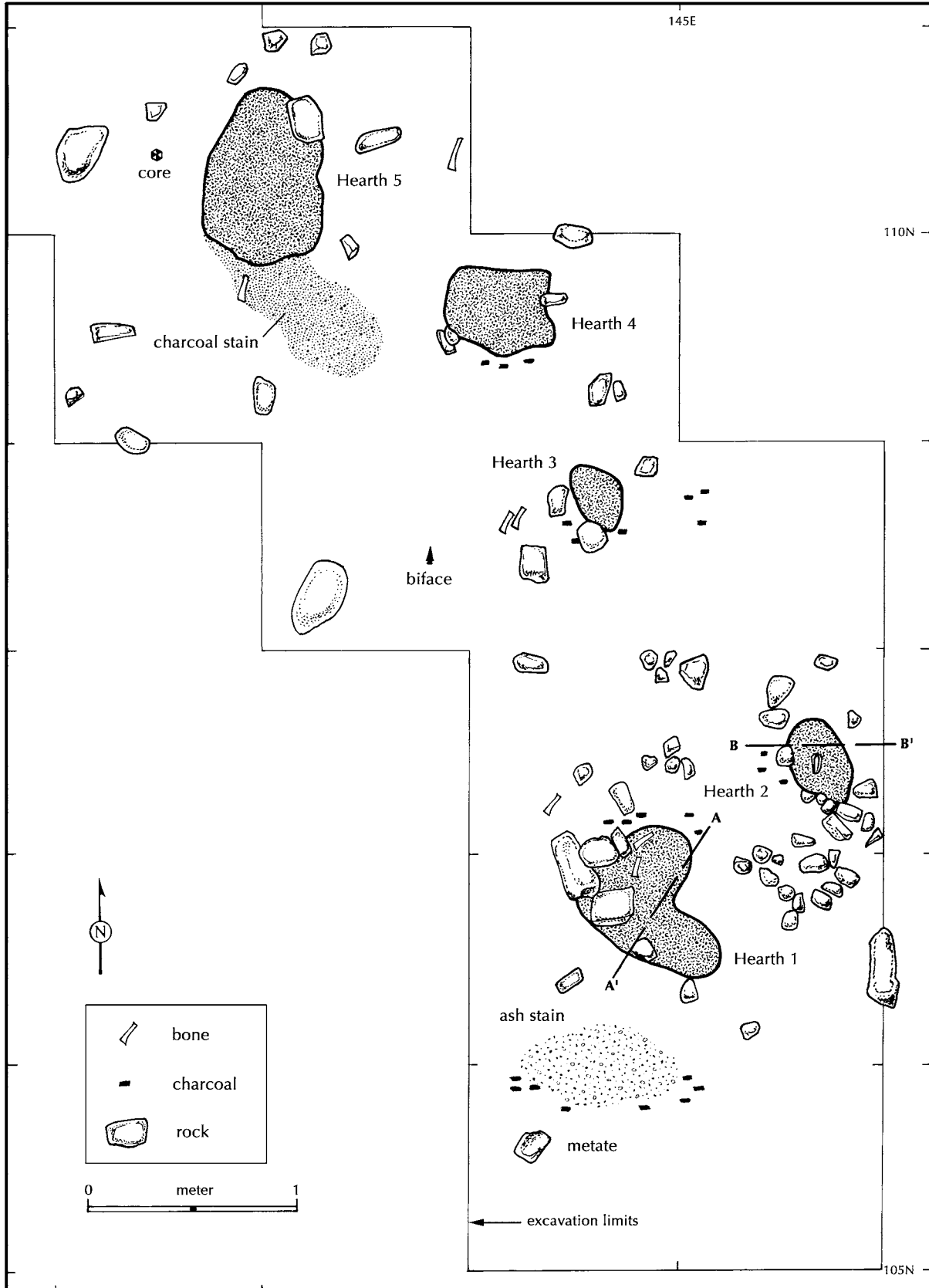


Figure 2.281. Plan of hearth area.

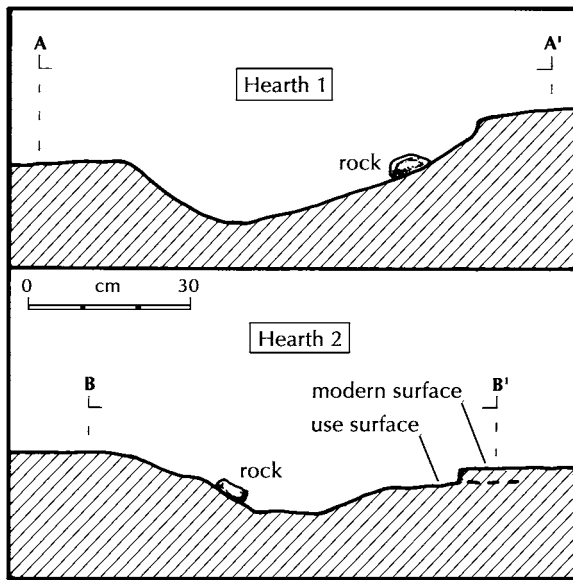


Figure 2.282. Profiles of Hearths 1 and 2.

Hearth Area

An area of 5-by-4 m on the east end of the site contained a cluster of five small hearths (Figs. 2.280, 2.281). Three are generally oval in shape while the other two are amorphous. Charcoal-stained soil remained within the features and charcoal staining surrounded the general hearth area. The largest feature, Hearth 5, also had an extensive charcoal stain extending south from its edge. An ash stain was found south of Hearth 1 also.

Surrounding the hearths were numerous pieces of unburned rock, as if they had been cleared purposely from the hearth locations. Lithic artifacts, three pieces of ground stone, and some burned bone were found in close proximity to the hearths. Hearths 1 and 5, the two largest units, had flat rocks extending over the lip of the hearth and into the fill (Figs. 2.281, 2.282). The rocks were burned on the bottoms, indicating they were in place when fires were present. They may have served as warming rocks or they could have been used to help smother the fires.

Measurements for the hearths are given in Table

Table 2.165. Hearth Measurements, LA 78439

Number	North-south*	East-west*	Depth*	Shape	Fill
1	65	60	16	Irregular	2 bones
2	42	33	10	Oval	
3	32	23	14	Oval	
4	44	50	15	Irregular	
5	84	56	21	Oval	3 lithics 1 bone

2.165.

Two of the hearths were radiocarbon dated and the results were mixed. We believe, from their close placement and form, that all were contemporary, and likely date to ca. A.D. 1200—late in the Pueblo period.

ARTIFACTS

A total of 799 artifacts were recovered from Leaping Deer Ridge. The large majority of these are lithic items (N=779, 98.1 percent), followed by 3 projectile points, 6 ceramics, 4 pieces of ground stone, 2 miscellaneous articles, 1 bone tool, and 4 faunal remains.

Ceramics

The six sherd fragments consist of four Alma Plain Wares, one plain corrugated, and another of overlapping corrugated. While the Alma Brown Wares are broadly dated, the corrugated sherds date no earlier than A.D. 1000. Four of the sherds were found within approximately 7 m of the various hearths and likely associate with these features. The remaining two sherds were recovered 3 m apart in the middle of the site with no other associations. It is probable that the few ceramics at Leaping Deer Ridge are associated with the Late Pueblo period occupation of the site that is focused in the hearth area.

Lithic Artifacts

Most of the lithic assemblage consists of core flakes with fewer amounts of angular debris (Table 2.166). However, a variety of lithic artifact types (bifaces, cores, and cobble tools) are represented, indicating the pursuit of various activities. Lithic material is dominated by chert and Luna blue agate while obsidian and rhyolite are fairly common (Table 2.167). The three projectile points are all stylistically unidentifiable and material types consist of chert, obsidian, and basalt. It was not statistically possible to separate out the two temporal components on the basis of the lithic assemblage. However, 43 lithic arti-

Table 2.166. Lithic Artifacts from LA 78439

Cells: Count Row Percent Column Percent	Provenience				Row Total
	General Fill	Roasting Pit	Hearth 1	Hearth 2	
Angular Debris	111 97.4% 15.2%	2 1.8% 4.7%		1 .9% 33.3%	114 100.0% 14.6%
Core Flake	531 94.0% 72.5%	32 5.7% 74.4%		2 .4% 66.6%	565 100.0% 72.5%
Biface Flake	46 88.5% 6.3%	5 9.6% 11.6%	1 1.9% 100.0%		52 100.0% 6.7%
Bipolar Flake	2 100.0% .3%				2 100.0% .3%
Tested Cobble	3 75.0% .4%	1 25.0% 2.3%			4 100.0% .5%
Core	19 95.0% 2.6%	1 5.0% 2.3%			20 100.0% 2.6%
Cobble Tool	4 100.0% .5%				4 100.0% .5%
Uniface	2 100.0% .3%				2 100.0% .3%
Biface	14 87.5% 1.9%	2 12.5% 4.7%			16 100.0% 2.1%
Column Total	732 94.0% 100.0%	43 5.5% 100.0%	1 .1% 100.0%	3 .4% 100.0%	779 100.0% 100.0%

facts were recovered from the roasting pit, most of them core flakes and most are made of Luna blue agate and obsidian. One obsidian flake was also found in Hearth 1 and three in Hearth 5.

Ground Stone

The four pieces of ground stone include two one-hand manos, a slab metate, and a lapidary stone of quartzite, while the others are rhyolite. All were recovered from the eastern portion of the site with a slab metate and a one-hand mano being associated with Hearth 1 and another one-hand mano 7 m to the west of Hearth 5. One lapidary stone was found at the northern edge of the site in Grid 122N/139E with no apparent association. It is likely that all of the ground stone from Leaping Deer Ridge are connected to the Late Pueblo occupation of the hearth area on the site.

Miscellaneous Artifacts

Two quartz crystals were recovered from LA 78439. Both were unmodified. One was in general site fill and may have occurred naturally on the site. However, the other was within Hearth 2.

Bone Tools

One unidentifiable fragment of a bone tool exhibiting polish was found near Hearth 4.

ANCILLARY STUDIES

Faunal Remains

Four pieces of animal bone were recovered from Leaping Deer Ridge. Of these, three were identified as large mammal, the other as unidentifiable mammal. All of the bone was recovered from immediately around the several hearths.

Table 2.167. Lithic Artifact Material Types from LA 78439

Cells: Count Row Percent Column Percent	Provenience				Row Total
	General Fill	Roasting Pit	Hearth 1	Hearth 5	
Chert	210 97.2% 28.7%	6 2.8% 14.0%			216 100.0% 27.7%
Chalcedony	7 100.0% 1.0%				7 100.0% .9%
Luna blue agate	179 92.3% 24.5%	14 7.2% 32.6%		1 .5% 33.3%	194 100.0% 24.9%
Obsidian	135 91.2% 18.4%	10 6.8% 23.3%	1 .7% 100.0%	2 1.4% 66.7%	148 100.0% 19.0%
Igenous	4 80.0% .5%	1 20.0% 2.3%			5 100.0% .6%
Basalt	66 95.7% 9.0%	3 4.3% 7.0%			69 100.0% 8.9%
Rhyolite	101 92.7% 13.8%	8 7.3% 18.6%			109 100.0% 14.0%
Sedimentary	5 100.0% .7%				5 100.0% .6%
Sandstone	1 100.0% .1%				1 100.0% .1%
Metmorphic	3 100.0% .4%				3 100.0% .4%
Quartzite	7 87.5% 1.0%	1 12.5% 2.3%			8 100.0% 1.0%
Quartzitic Sandstone	13 100.0% 1.8%				13 100.0% 1.7%
Quartz	1 100.0% .1%				1 100.0% .1%
Column Total	732 94.0% 100.0%	43 5.5% 100.0%	1 .1% 100.0%	3 .4% 100.0%	779 100.0% 100.0%

Macrobotanical Remains

Flotation samples were examined from the roasting pit, a burned area near the roasting pit, and Hearths 1, 4, and 5. A plant part that resembles a maize cupule was recovered from Hearth 1 but lacks morphological characteristics to enable positive identification. Charred juniper seeds and leaves, pine bark, and unidentifiable seeds comprise the remainder of cultural plant taxa recovered from the site. Uncharred, noncultural plant remains were numerous

and include pigweed, goosefoot, purslane, buckwheat family, seepweed, and juniper seeds along with juniper leaves and cones and piñon nutshell.

The majority of the wood charcoal identified was juniper with small amounts of piñon and undetermined conifer present as well.

The juniper leaves and seeds and pine bark probably represent residue from firewood use. Wood taxa identified could have been collected locally for use as firewood. The nonwood plant remains from LA 78439 do

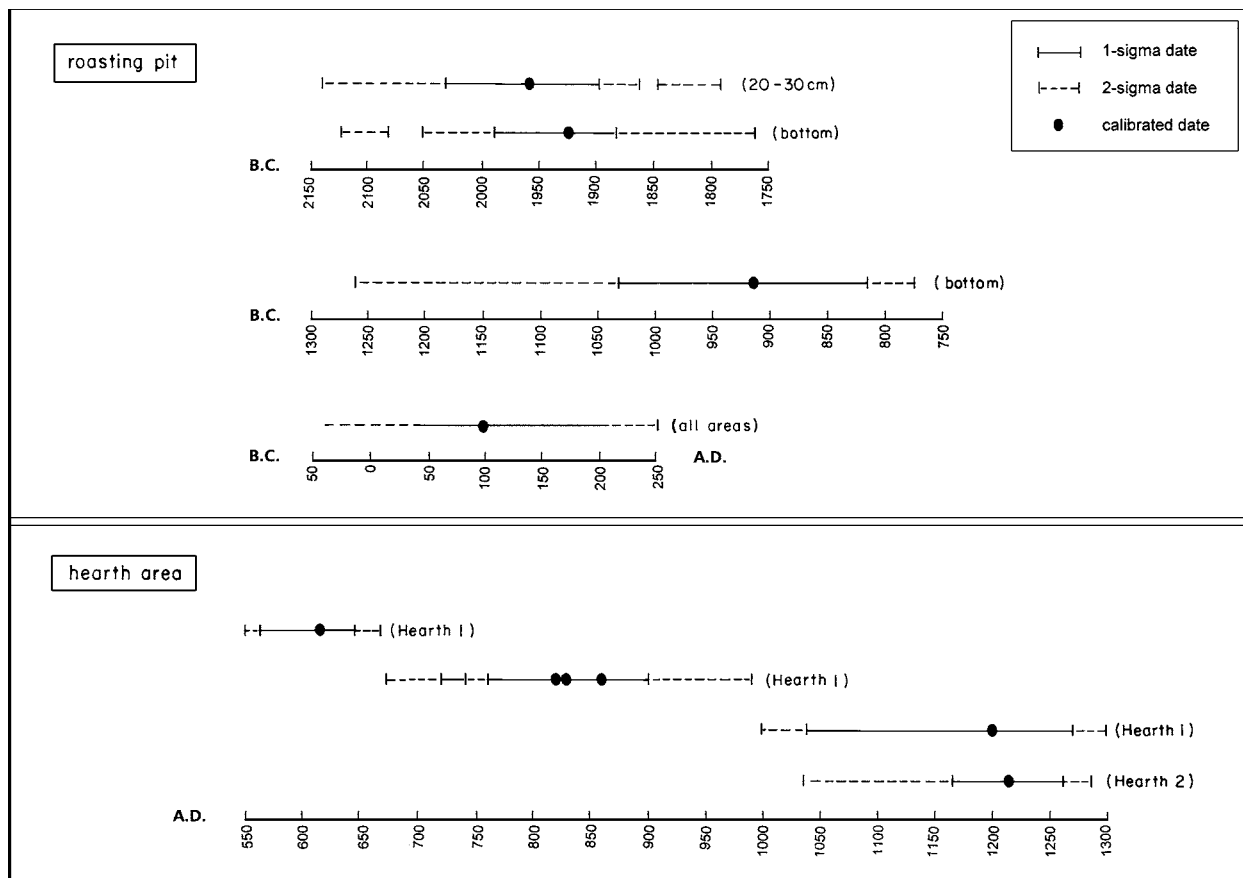


Figure 2.283. Seriation of C-14 dates, LA 78439.

Table 2.168. C-14 Dates for LA 78439

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
108N/144E	76774	1470 ± 50	A.D. 560-645	A.D. 530-665	A.D. 615	Hearth 1 (0-10 cm)
107N/105E	76775	3620 ± 60	B.C. 2030-1895	B.C. 2135-1860 1845-1775	B.C. 1955	Roasting Pit (20-30 cm)
108N/104E	69822	1910 ± 70	A.D. 40-210	B.C. 40-A.D. 250	A.D. 100	Roasting Pit (25 cm)
108N/104E	57469	2770 ± 120	B.C. 1030-810	B.C. 1260-770	B.C. 910	Roasting Pit (bottom)
108N/144E	57470	860 ± 100	A.D. 1040-1270	A.D. 1000-1300	A.D. 1200	Hearth 1
108N/145E	78272	850 ± 60	A.D. 1165-1260	A.D. 1035-1285	A.D. 1215	Hearth 2 (15-23 cm)
108N/104E	78273	3590 ± 60	B.C. 1985-1880	B.C. 2120-2080 2050-1755	B.C. 1920	Roasting Pit (bottom)
108N/144E	64071	1210 ± 70	A.D. 720-740 760-900	A.D. 670-990	A.D. 820, 830, 860	Hearth 1

not shed any light on subsistence activities that may have taken place.

Pollen Remains

Because all cultural features on Leaping Deer Ridge were thermally altered, no pollen samples were obtained from the site.

DATING METHODS

Eight radiocarbon and three obsidian samples were submitted for analysis (Table 2.168). Results were somewhat mixed and included a wide range of dates as shown when graphed (Fig. 2.283). Looking at the corrected and calibrated dates for the roasting pit, we see that the five dates represent three distinct time periods, although all

are Archaic. An assessment of these dates suggests that the most recent at CAL A.D. 100 is the least reliable because it was obtained from a "grab sample" of charcoal from throughout the pit. This leaves the possibility of the pit dating to either ca. 1950, 1279 (obsidian hydration dating), or 910 B.C., all of which indicate an Archaic use of the roasting pit. We have selected the earlier date of ca. 1950 B.C. for several reasons. First, the 910 B.C. date was derived from regular counting time in the laboratory while the two earlier ones were subjected to AMS counting. Also, there are two dates supporting this earlier occupation, one from the middle of the pit and the other from the bottom. And finally, the 2-sigma range of the 910 B.C. date is twice as large as the two earlier dates. (However, this may be a function of AMS counting versus regular counting time.) Also, the obsidian dates for the project as a whole generally tend to be not as reliable as the radiocarbon dates.

We also obtained four C-14 dates for the hearth area. Two of the dates are clearly too early for the nearby ceramics. This leaves two statistically matched dates at ca. CAL A.D. 1200 for Hearths 1 and 2, and for the others by association. This date fits well with the corrugated sherds on the site and indicates a Late Pueblo use of the area. The two obsidian dates for the hearth area were both from general fill and dated to 3553 and 1033 B.C. They were considered too early to correspond to the C-

14 hearth dates.

SITE INTERPRETATION

Leaping Deer Ridge is a multicomponent site with an Archaic period roasting pit and a cluster of Late Pueblo hearths. Although separated in time by over 3,000 years, both groups would seem to have been exploiting the ridge for its natural resources. The Archaic roasting pit, at ca. 1950 B.C., produced no economic cultural remains. The Late Pueblo period hearths, at ca. A.D. 1200, indicate that a small group of pueblo-dwelling peoples camped for a very short period of time, likely only a few days, while they gathered and processed vegetal resources, using one-hand manos and a slab metate. They also hunted and ate some type of large mammal while camped here. Numerous small pueblos lie south of Leaping Deer Ridge in the nearby Pine Lawn Valley.

LA 78439 is of importance because it represents an instance of Archaic people utilizing the area resources of the Mogollon Highlands as early as 1950 B.C. In the case of the Late Pueblo hearth area, rarely do we get datable evidence that allows us to place small campsites within a specific temporal framework. While Pueblo peoples hunted and gathered plant resources, it is often difficult to date their remains from these activities because of the generally ephemeral nature of these features.

LA 89846 (AR-03-06-03-03723)
HACA NEGRA SITE

Lloyd A. Moiola

A 89846 was recorded by OAS (Zamora and Sterling 1992) during a cultural resource survey for the NMSHTD along U.S. 180. It was identified as a small chipped stone and ceramic artifact scatter that may be associated with the San Francisco phase (A.D. 700-900) of the Mogollon culture. The observed artifacts (N = 18) consisted of Alma Plain, Alma Smudged and corrugated brown ware sherds, as well as chipped stone debitage. An unrecorded site was located 40 m upslope of LA 89846 during the survey and it was noted that the surface artifacts on LA 89846 may have washed down slope from the site above. The site is located within the Gila National Forest on the north side of U.S. 180, 2.6 km (1.6 miles) west of the town of Luna, Catron County, New Mexico.

A testing program was recommended and conducted by OAS staff during May of 1993. The purpose of testing was to determine the depth and extent of cultural materials within the proposed highway right-of-way. Three 1-by-1-m test pits were hand-excavated and twelve auger holes were used to determine the depth of subsurface cultural materials. The three test pits ranged between .40 m and 1.1 m in depth and with the exception of Test Pit 2, excavation stopped when sterile red clay was encountered. Test Pit 2 contained charcoal and artifacts to a depth of 70 cm. No artifacts were recovered; however, pieces of charcoal were found at depths of 1.1 m.

Artifacts recovered from the test pits included 15 ceramics and 15 pieces of chipped stone. The ceramic assemblage contained Alma Polished, indented corrugated, and Reserve Smudged sherds that suggested a Three Circle phase (A.D. 900-1000) Mogollon occupation of the site. Material types for the chipped stone assemblage included basalt, Luna blue agate, rhyolite, and siltstone. Although no features were located, the testing results indicated that a late Mogollon pit structure may be present due to the depths of recovered artifacts and charcoal.

Site size during the testing of LA 89846 was based on the visibility of surface artifacts and was confined to a 575 sq m area. Subsequent excavations reduced the site limits to 40 m east-west by 9 m north-south (Fig. 2.284).

Two discrete occupational episodes are supported by radiocarbon data from three thermal features that were recorded during the data recovery phase of LA 89846.

One small surface hearth on the west end of the site was excavated and provided radiocarbon samples that resulted in 2-sigma calibrated dates between A.D. 1430 and 1645. Two large slab-lined roasting pits were located at depths between 80 cm and 1.1 m and represent a Late Archaic occupation of the site. Radiocarbon samples from both features provided 2-sigma calibrated dates of 815 to 385 B.C. and 795 to 405 B.C.

The artifact assemblage contained mixed components and could not be used to distinguish a Late Archaic or protohistoric occupation of the site. It is felt that the ceramic assemblage and the majority of the chipped stone debitage was redeposited from LA 112407, which is located 40 m upslope of LA 89846. The bulk of the excavations took place below a shallow drainage, which originates from LA 112407.

LA 112407 consists of a 5-by-6-m rubble mound (possibly three to four rooms) made of shaped and unshaped rhyolitic cobbles with an associated chipped stone and ceramic artifact scatter. Core flakes and angular debris associated with all stages of expedient core reduction and tool manufacture were observed. Lithic materials consisted of local cherts (predominantly Luna blue agate), rhyolite, and basalt. Cores, a few hammerstones, a biface, and a mano were seen on the surface. The ceramic assemblage contained brown wares in the form of Alma Plain, smudged, and local corrugated, as well as white wares of Reserve and Tularosa Black-on-white. Based on diagnostic ceramic types, this site may date from the Tularosa phase of the Mogollon culture.

Sites in the vicinity of LA 89846 include LA 89847, LA 112407, and LA 3279. LA 89847 is a large chipped stone and ceramic artifact scatter northwest of the site that has Late Archaic and Late Pueblo components. LA 3279 (Hough site) is a Tularosa phase roomblock a few hundred meters to the east.

SITE SETTING

LA 89846 is located within the Gila National Forest at the base of a hill slope, between U.S. 180 and the Luna Irrigation Ditch (Fig. 2.285). It is situated inside the highway right-of-way just above the San Francisco River flood plain at an elevation of 2,168 m (7,115 ft). The surrounding terrain is characterized by heavily wooded,

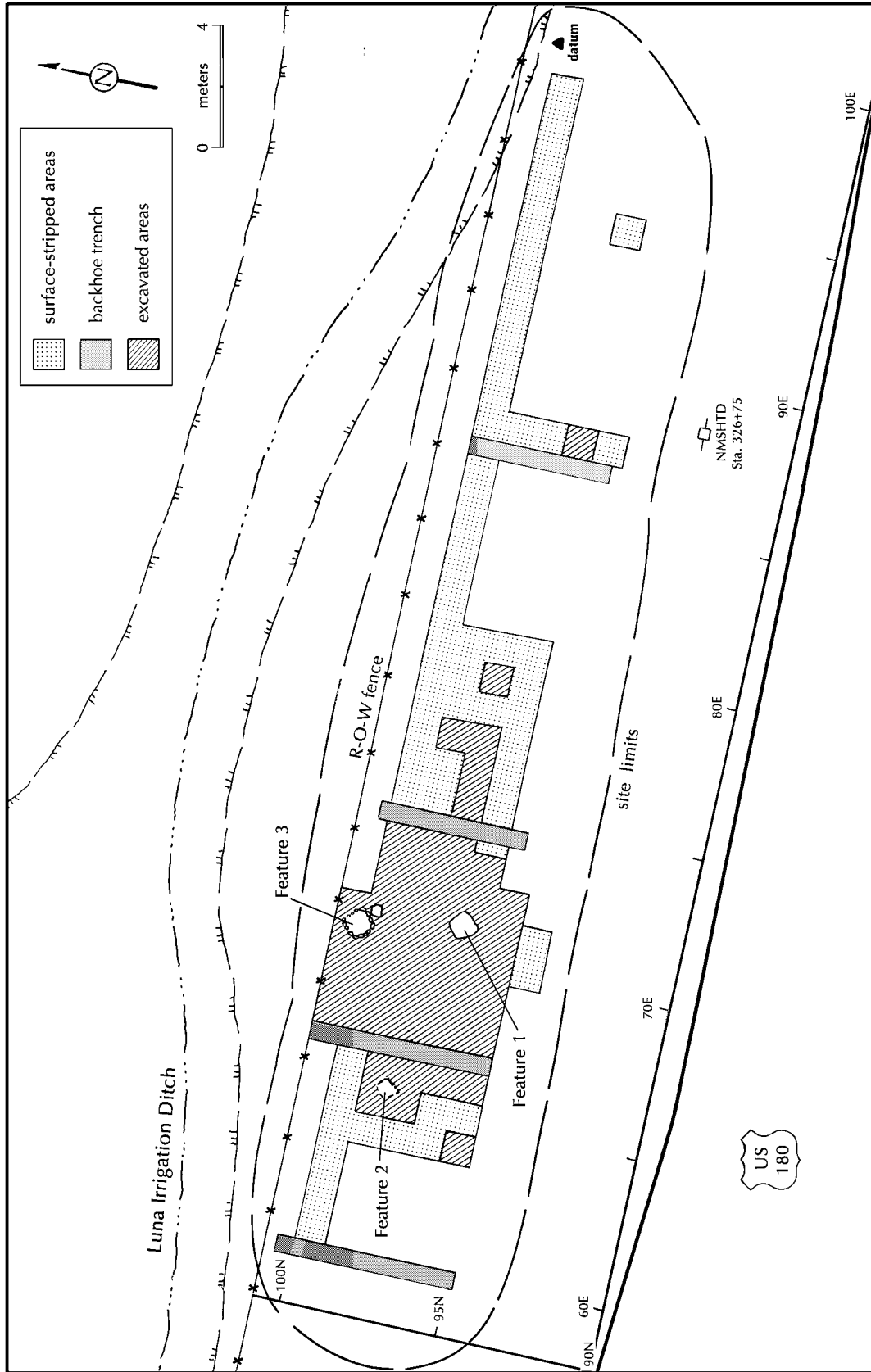


Figure 2.284. LA 89846, Haca Negra.



Figure 2.285. LA 89846, site setting at base of slope.

steep mountain slopes and ridges that drain into the San Francisco River, which is 40 m to the south.

On-site vegetation includes ponderosa pine, juniper, scrub-oak, various grasses, wildflowers, and cactus. The ground surface is covered with heavy pine duff as well as large and small cobbles that have eroded downslope. The Luna Ditch is 2 m north of the site and excavations revealed an additional thick layer of redeposited rock and soil from ditch cleaning operations.

RESEARCH OBJECTIVES

The data recovery plan for LA 89846 was based on the premise that the site represented a potential pithouse site because of the ceramics observed on the site surface and recovered during testing. The ceramic assemblage proved to derive from a small roomblock upslope from LA 89846. After excavations, a protohistoric hearth and two buried Archaic roasting pits were uncovered. Therefore, research objectives for the site were invalid. Analyses, however, followed OAS procedures for examining lithic artifact sites, looking at bifacial tool production in depth. Procurement of materials and reduction technologies were also studied. The site was then compared to other protohistoric and Archaic sites found during the project.

EXCAVATION PROCEDURES

The archaeological survey recorded a small chipped stone and ceramic artifact scatter in an open area between the Luna Irrigation Ditch and U.S. 180 (Zamora and Sterling 1992). The presence of a small roomblock with an associated ceramic and chipped stone artifact scatter upslope of this area was also noted. No features were recorded during the survey, however, the survey results stated that the artifacts may indicate the presence of a subsurface feature or might have washed downslope. A testing program was recommended in order to determine the extent of subsurface deposits and site limits.

In May of 1993, three test pits and twelve auger holes were placed in various locations across the site. Test Pit 1 was excavated to a depth of 50 cm and produced five pieces of chipped stone and one animal bone fragment. Test Pit 2 produced eight ceramics and twelve pieces of chipped stone to a depth of 70 cm. The fill contained flecks of charcoal and an auger hole placed in the base of the unit found charcoal-stained soil to a depth of 1.3 m before reaching bedrock. Test Pit 3 was excavated to a depth of 40 cm and produced one ceramic. An auger hole placed in the base of the unit reached sterile soil at 94 cm.

Twelve additional auger holes revealed charcoal at depths of 1 m across portions of the site; however, no

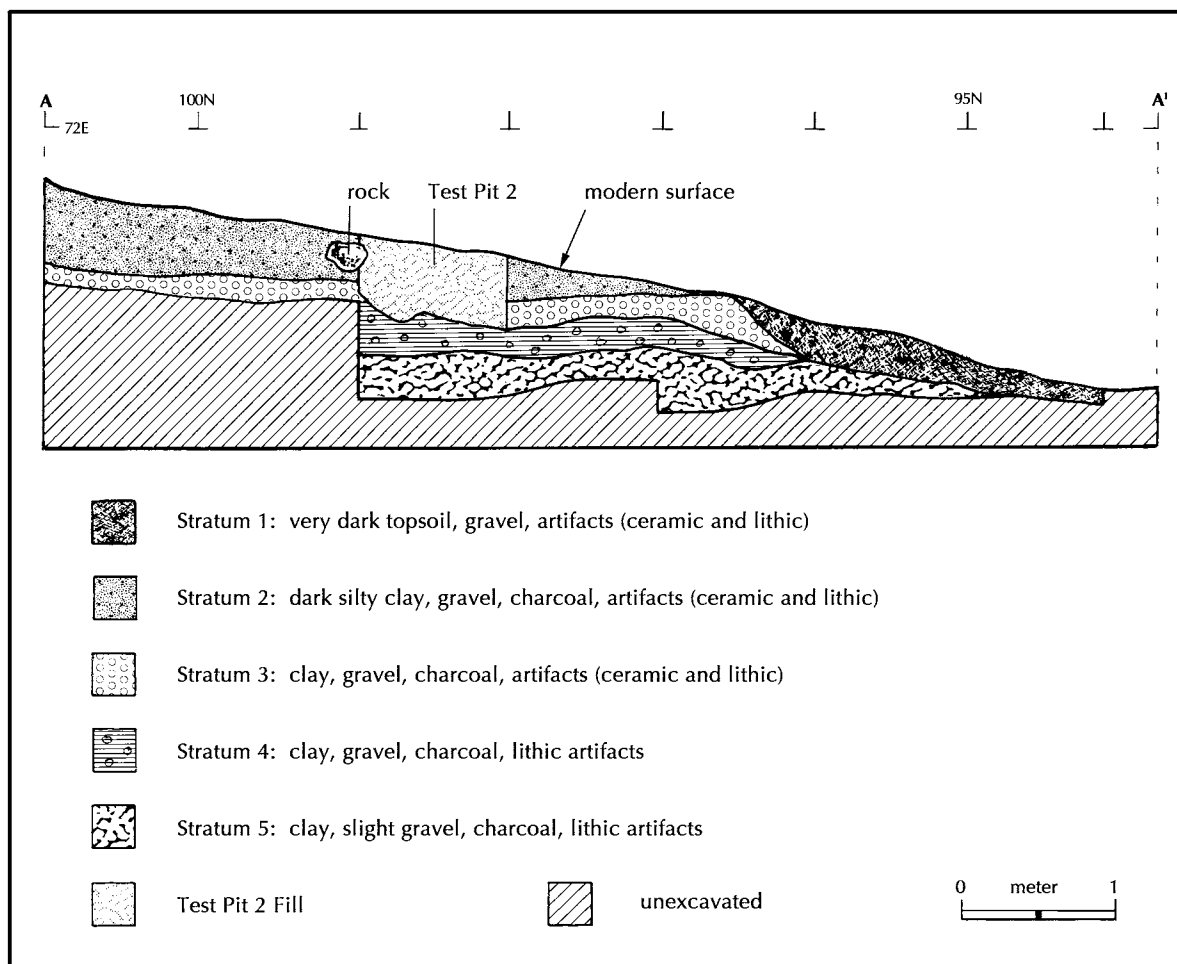


Figure 2.286. West wall profile of units, 94N/72E-101N/72E.

artifacts were located. Due to the depths of artifacts in Test Pit 2, the testing results concluded that a cultural feature may be present at this location.

A total of 15 ceramics, 15 pieces of chipped stone, and 1 animal bone was collected in testing. The ceramic assemblage suggested a possible Three Circle phase occupation. Due to the presence of a possible feature and artifact depths, further archaeological investigations were recommended.

Data recovery at LA 89846 was conducted in 1995. Prior to excavation, surface artifacts were pin-flagged in order to view concentration areas. Datum 100N/100E used in testing was reestablished as the main site datum. A 1-by-1-m grid system was imposed over the artifact concentrations and the three test pits. Base lines were laid out along a north-south and east-west axis intersecting at main datum (100N/100E). An optical transit and stadia rod were used to record the elevation of the north-west corner of each grid unit.

The selection of units to be further investigated was based on the testing results and surface artifact concentrations. Thirty-nine grid units, extending west from the

site datum, were surface stripped (excavated to a depth of 10 cm below present ground surface) and an artifact concentration area was isolated. Test Pit 2 was reexcavated due to the depths of artifacts recovered during testing. Once an artifact concentration area was isolated, individual units were further investigated.

A total of 111 units were excavated. Fifty-five of these were surface stripped only, the remaining units were taken to an average depth of 64 cm below present ground surface in arbitrary 10-cm levels. Three features were found and recorded. A plan view and profile map was drawn to scale and a photograph was taken of each feature. All fill was screened through ¼-inch mesh. The total amount of soil excavated on the site was 47.3 cu m.

Hand-excavation of individual units continued until artifacts diminished or sterile, brown clay with small gravels (Munsell color 10YR 4/3) was encountered. Four backhoe trenches were placed across the site and each revealed similar stratigraphy. One additional backhoe trench was placed on the south side of U.S. 180, 33 m southeast of the datum in an area of isolated surface artifacts. No cultural strata was exposed in the additional

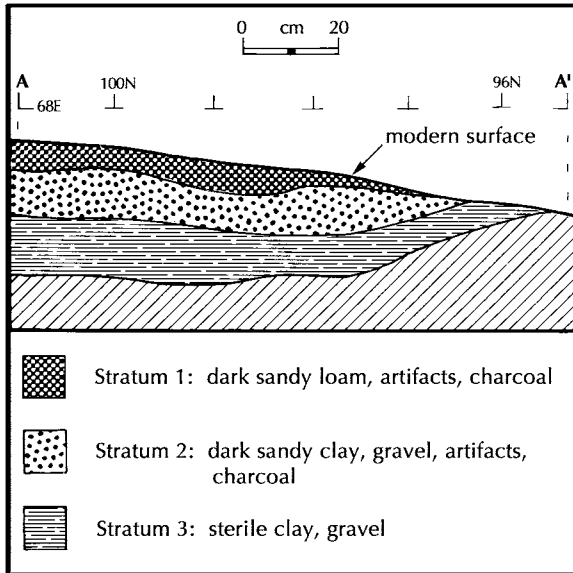


Figure 2.287. Profile of Backhoe Trench 3.

trench and it appears that the surface artifacts were redeposited from LA 89846.

CULTURAL UNITS

LA 89846 was covered by an overburden of rock, soil, and artifacts from LA 112407, which accumulated on the

site over years of erosion and ditch cleaning operations. Although most of the artifact assemblage was intrusive, three subsurface thermal features were found and recorded which provided dates for two separate occupational episodes (Late Archaic and protohistoric). A hand-cut trench on the eastern edges of Features 1 and 3 shows the relevant site stratigraphy in a profile of the west wall along units 94N/72E through 101N/72E (Fig. 2.286).

Strata 1, 2, and 3 contain a mixture of chipped stone and ceramic artifacts from the site upslope as well as the overburden from the Luna Irrigation Ditch. All of these levels could be seen in the backhoe trenches (Figs. 2.287, 2.288); however, the deposits accumulated in varying depths across the site and could rarely be followed during excavation. Roasting Pits 1 and 2 were found at depths of 0.8 m and 1 m in Strata 4 and 5 on what was determined to be a sloping use surface. They appeared to be undisturbed by ditch cleaning or other erosional processes. The hearth was found 15 cm below the ground surface in Strata 2. Excavation procedures concentrated around the three features in an effort to find an activity area or other associated features. The areas adjacent to the features were exposed and four backhoe trenches were placed in artifact concentrations across the site in order to locate other cultural units; however, no other features were found.

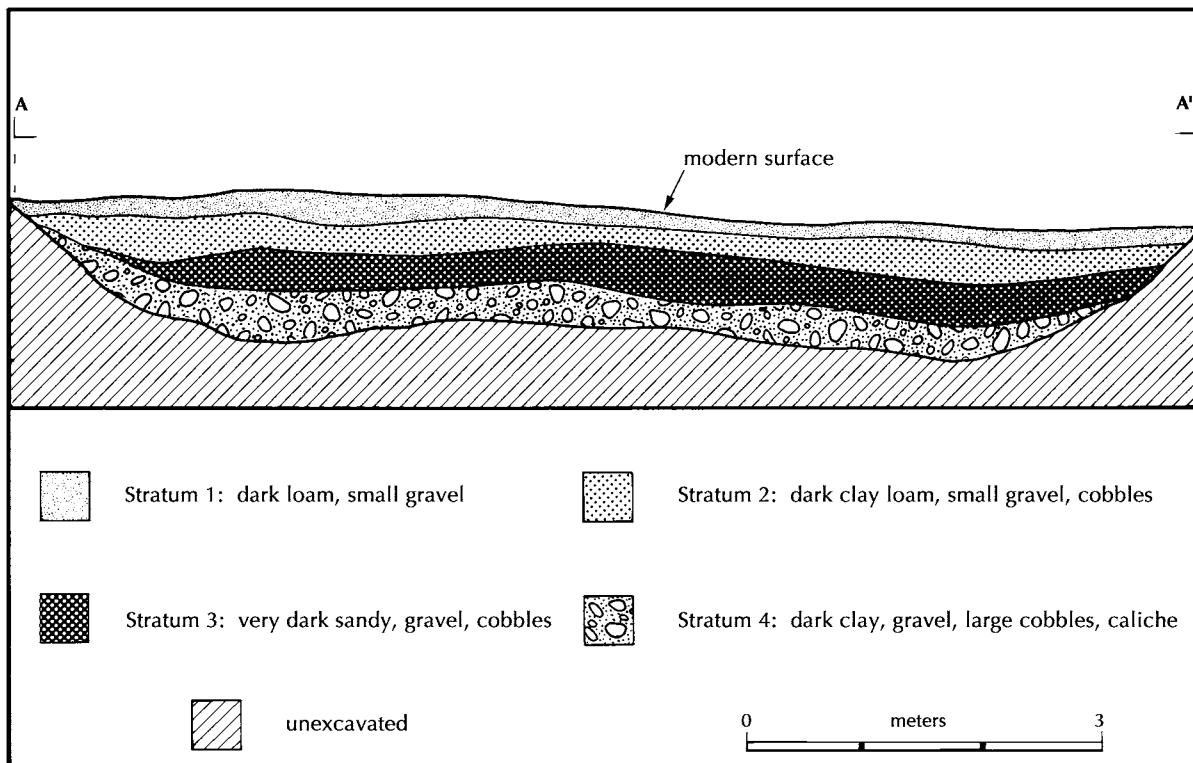


Figure 2.288. Profile of Backhoe Trench 5, south side of U.S. 180.



Figure 2.289. Roasting Pit 1 prior to excavation.

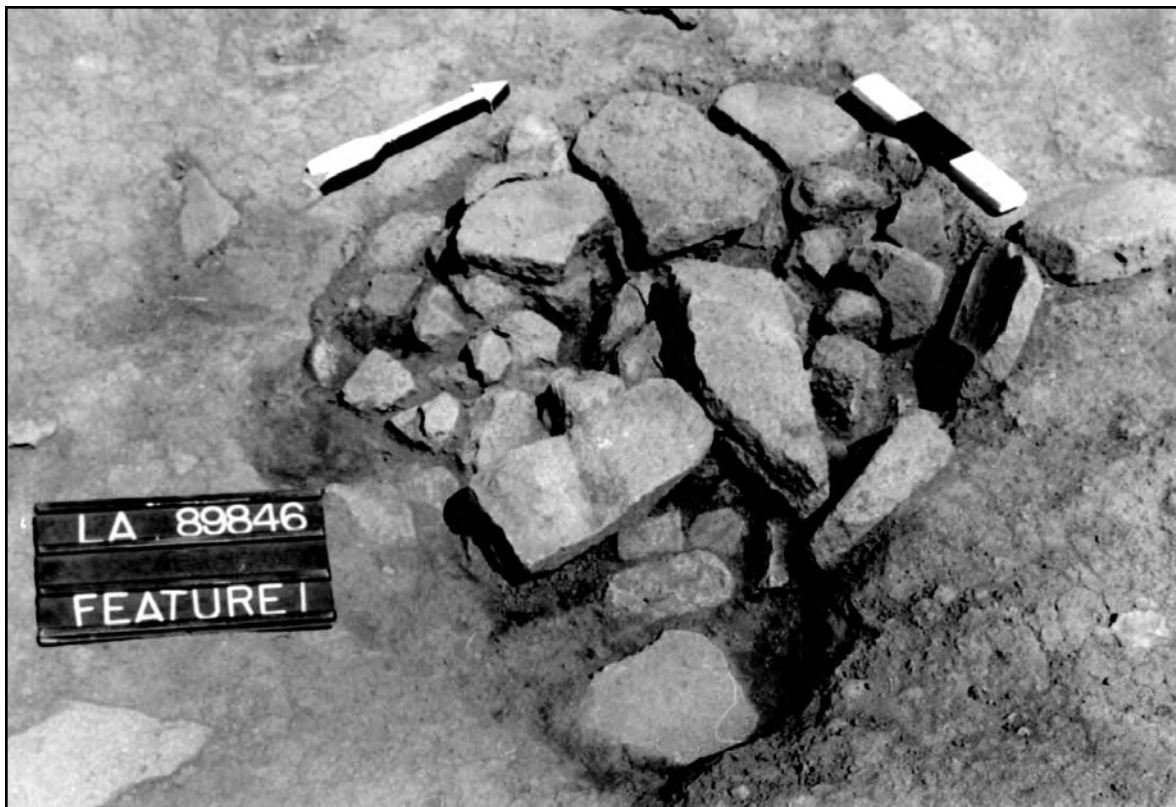


Figure 2.290. Roasting Pit 1, during excavation.

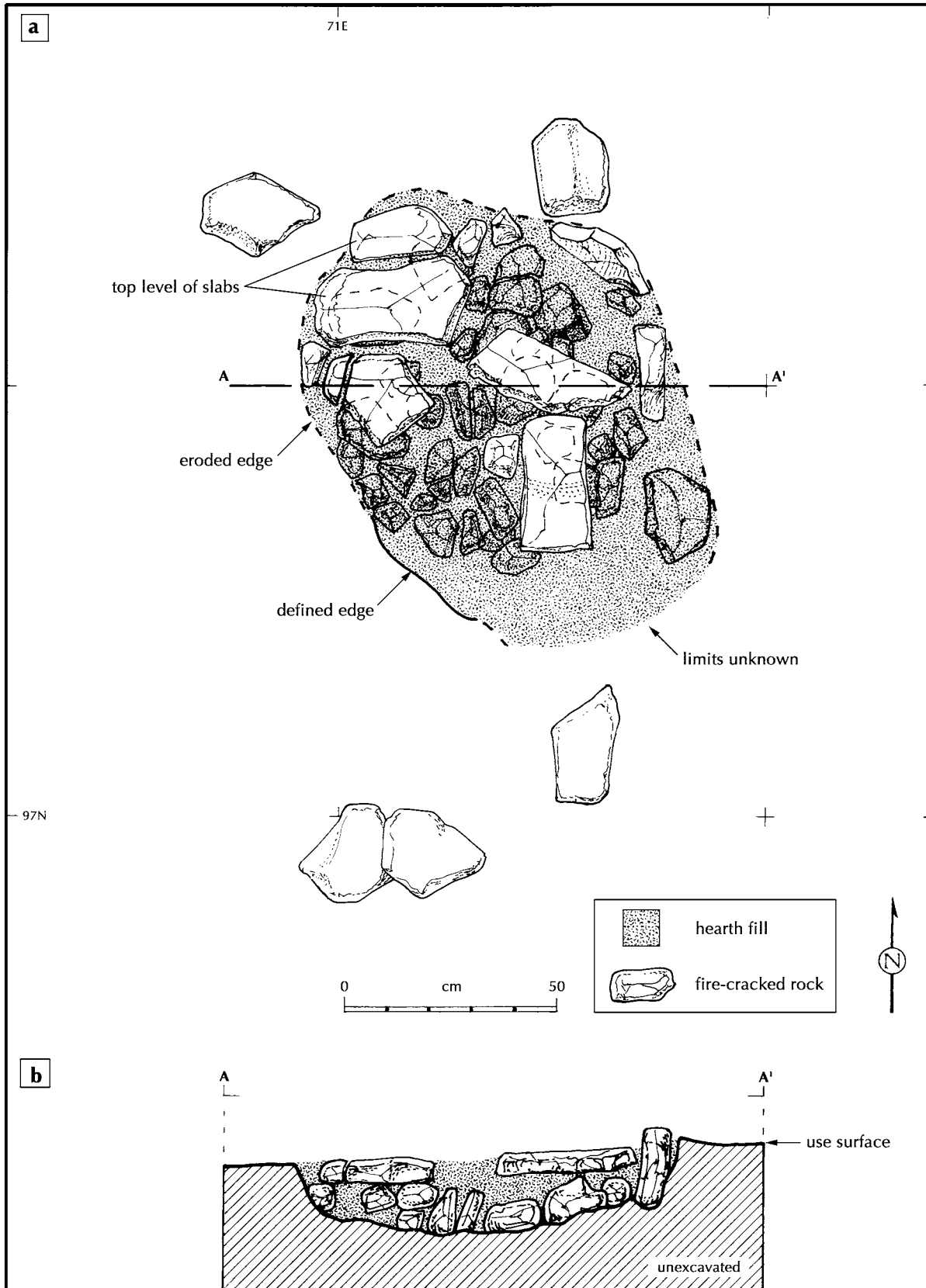


Figure 2.291. Roasting Pit 1, (a) plan, and (b) profile.

Roasting Pit 1

Feature 1 is a slab-lined, rock-filled roasting pit that was located in Grids 97-98N/71E at a depth of 0.8 m. The southern edge was deflated but its measurements were 0.95 m north-south by 0.92 m east-west with a depth of .2 m. The feature was constructed by means of a semi-circular shaped pit dug into the earth, which was then lined with flat and upright slabs, filled with cobbles, and covered by large, flat slabs (Figs. 2.289-2.291). A total of 119 rhyolite cobbles and slabs went into the feature's construction. All of the rocks were blackened or oxidized and fire-cracked. The hearth fill consisted of fist-sized cobbles and dark brown soil (Munsell color 10YR 3/3) that was interspersed with charcoal flecks, burned bone, and seven chipped stone artifacts. Once the rocks were removed, the edges and base of the feature were exposed. The pit and outer edges were heavily oxidized and brown in color (Munsell 7.5YR 5/2).

A possible use surface surrounded this feature and extended upslope to the other roasting pit. On the outside perimeters of the roasting pit were fragments of burned bone and a chert core. One radiocarbon sample was collected from lower portions of the feature fill which provided a 2-sigma calibrated date of 795 to 405 B.C. One pollen and three flotation samples were also taken from feature fill.

Hearth

This is a partially blown-out, rodent-disturbed hearth that was found 15 cm below the present ground surface in Grid 98-99N/65E. The hearth is oval-shaped and formed of loosely stacked large and small rhyolite cobbles. It is oriented southeast to northwest and measures 1.1 m in length by .6 m in width and is .1 m in depth (Fig. 2.292). The hearth fill was very dark, grayish brown (Munsell color 10YR 3/2) with flecks of charcoal and small pieces of fire-cracked rock. The base of the feature was heavily oxidized and brown in color (Munsell 7.5YR 5/2).

Three radiocarbon samples were taken from a concentration of charcoal in the northwest portion of the hearth. A 2-sigma calibrated radiocarbon sample provided a date of A.D. 1430 to 1645. Two chipped stone artifacts were found within the hearth fill and five more on the perimeter of the feature, however, due to the shallow location of the hearth, the artifacts may be intrusive. One flotation and three pollen samples were taken from the feature fill.

Roasting Pit 2

Feature 3 is a slab-lined, rock-filled roasting pit that was located in Grid 100N/70-71E and 101N/70-71E at a depth of 1.1 m. Its measurements are 1.13 m north-south

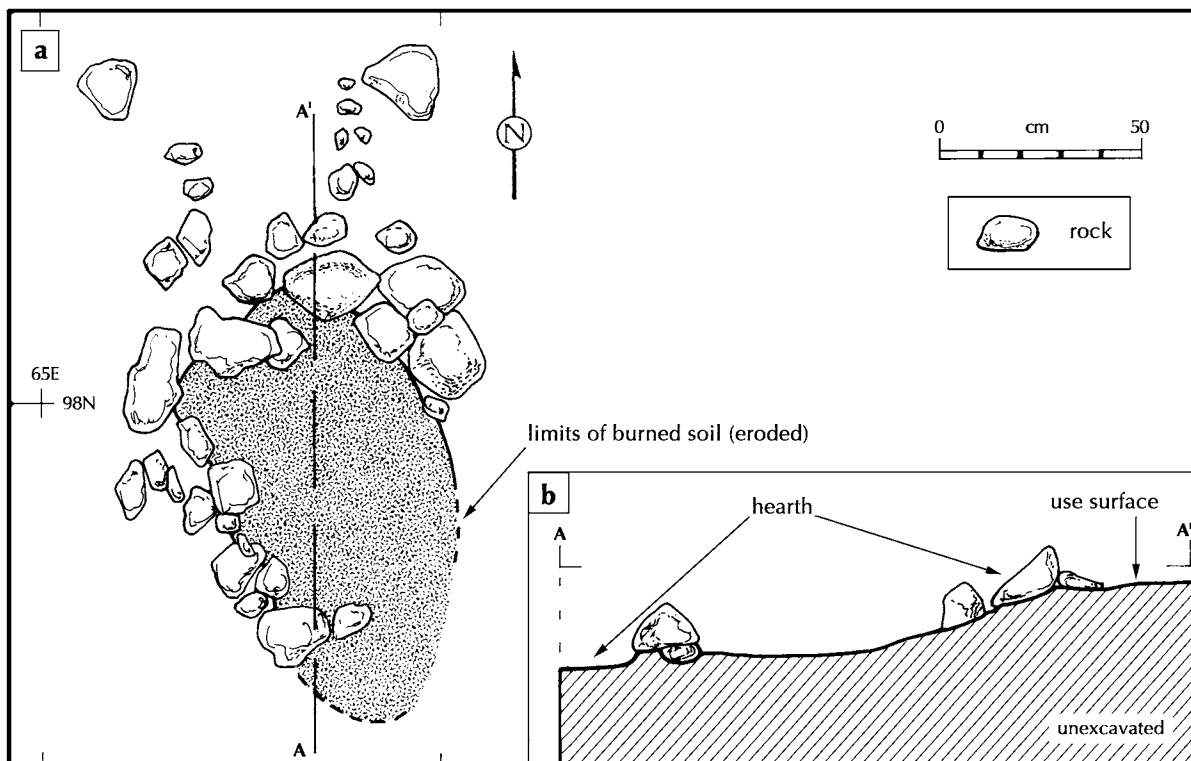


Figure 2.292. Hearth, Feature 2, LA 89846; (a) plan, and (b) profile.



Figure 2.293. Roasting Pit 2, Feature 3, LA 89846.

by 1.15 m east-west and a depth of .3 m. The feature was constructed by means of a circular pit dug into the earth, which was then lined with upright slabs, filled with cobbles, and covered by large, flat slabs (Figs. 2.293, 2.294). A total of 266 rhyolite cobbles and slabs went into the feature's construction. All of the rocks were blackened or oxidized and fire-cracked. The hearth fill consisted of fist-sized cobbles and dark brown clay (Munsell colors 10YR 4/3 and 3/3) that was mixed with charcoal flecks, burned bone, and three chipped stone artifacts. Once the rocks were removed, the edges and base of the feature were exposed. The pit and outer edges were heavily oxidized and brown in color (Munsell 7.5YR 5/2).

A few rocks on the outside of the feature were in place on top of a possible use surface that extended north and downslope to Roasting Pit 1. The northern edge of the feature was on the right-of-way fence line at the base of the Luna Irrigation Ditch, therefore no units to the north could be opened in order to follow the use surface. On the outside perimeters of the roasting pit were fragments of burned bone and a few pieces of chipped stone. Two radiocarbon samples were collected from lower portions of the feature fill, which provided a 2-sigma calibrated date of 815 to 385 B.C. Two flotation and two pollen samples were taken from the feature fill.

ARTIFACTS

The artifact assemblage consists of 1,811 artifacts including 607 ceramics, 1,096 lithic artifacts, 4 projectile points, 3 pieces of ground stone, and 101 faunal remains.

Ceramics

The ceramic assemblage consisted of 607 sherds that are representative of a Late Pueblo time period (Table 2.169). Although a large number of sherds were recovered during excavation, the assemblage is consistent with the Tularosa phase types upslope on LA 112407, and their presence on LA 89846 appears to be the result of redeposition.

Lithic Artifacts

The chipped stone assemblage contains 1,096 artifacts dominated by core flakes and angular debris made primarily of Luna blue agate and cherts (Tables 2.170, 2.171). With the exception of obsidian and nonvesicular basalt, all material types can be found in close proximity to the site.

Four of eleven bifaces are unidentifiable projectile points. All four points are proximal portions (bases);

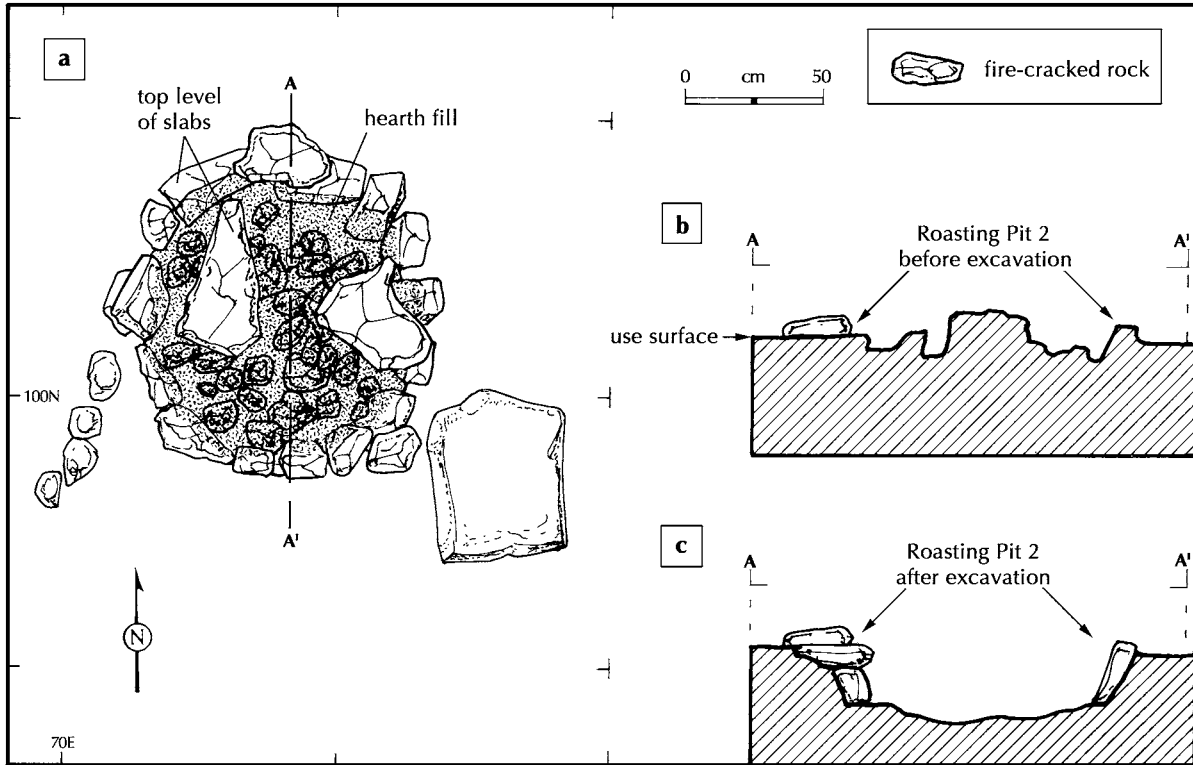


Figure 2.294. Roasting Pit 2, (a) plan, and (b) profile.

Table 2.169. Ceramics from LA 89846

Cells: Count Row Percent Column Percent	Major Provenience		Row Total
	General Fill	Hearth	
Alma Plain	153 98.1% 25.4%	3 1.9% 75.0%	156 100.0% 25.7%
Alma Rough	214 99.5% 35.5%	1 .5% 25.0%	215 100.0% 35.4%
Plain corrugated	57 100.0% 9.5%		57 100.0% 9.4%
Indented corrugated	59 100.0% 9.8%		59 100.0% 9.7%
Incised corrugated	9 100.0% 1.5%		9 100.0% 1.5%
Patterned corrugated	5 100.0% .8%		5 100.0% .8%
Indeterminate corrugated	28 100.0% 4.6%		28 100.0% 4.6%

Table 2.169. Continued.

Cells: Count Row Percent Column Percent	Major Provenience		Row Total
	General Fill	Hearth	
Fillet rim smudged	1 100.0% .2%		1 100.0% 2%
Plain smudged	44 100.0% 7.3%		44 100.0% 7.2%
Late white	26 100.0% 4.3%		26 100.0% 4.3%
Red Mesa Black-on-white	2 100.0% .3%		2 100.0% .3%
Tularosa Black-on-white	5 100.0% .8%		5 100.0% .8%
Column Total	603 99.3% 100.0%	4 .7% 100.0%	607 100.0% 100.0%

Table 2.170. Chipped Stone Artifacts for LA 89846

Cells: Count Row Percent Column Percent	Provenience				Row Total
	General Fill	Thermal Feature 1	Hearth	Thermal Feature 1	
Angular debris	513 98.7% 47.5%	1 .2% 16.7%	5 1.0% 62.5%	1 2% 50.0%	520 100.0% 47.4%
Core flake	542 98.5% 50.2%	4 .7% 66.7%	3 .5% 37.5%	1 2% 50.0%	550 100.0% 50.2%
Biface flake	6 85.7% .6%	1 14.3% 16.7%			7 100.0% .6%
Potlid	1 100.0% .1%				1 100.0% .1%
Core	6 100.0% .6%				6 100.0% .5%
Uniface	1 100.0% .1%				1 100.0% .1%
Biface	11 100.0% 1.0%				11 100.0% 1.0%
Column Total	1080 98.5% 100.0%	6 .5% 100.0%	8 .7% 100.0%	2 2% 100.0%	1096 100.0% 100.0%

Table 2.171. Chipped Stone Material Types for LA 89846

Cells: Count Row Percent Column Percent	Artifact Morphology						Row Total	
	Angular Debris	Core Flake	Biface Flake	Potlid	Core	Uniface		Biface
Chert	172 52.4% 33.1%	148 45.1% 26.9%	1 .3% 14.3%	1 .3% 100.0%		1 .3% 100.0%	5 1.5% 45.5%	328 100.0% 29.9%
Chalcedony	1 50.0% .2%	1 50.0% .2%						2 100.0% .2%
Luna blue agate	298 48.9% 57.3%	301 49.4% 54.7%	5 .8% 71.4%		2 .3% 33.3%		3 .5% 27.3%	609 100.0% 55.6%
Obsidian	1 9.1% .2%	7 63.6% 1.3%					3 27.3% 27.3%	11 100.0% 1.0%
Basalt	6 37.5% 1.2%	9 56.3% 1.6%	1 6.3% 14.3%					16 100.0% 1.5%
Rhyolite	34 31.8% 6.5%	70 65.4% 12.7%			3 2.8% 50.0%			107 100.0% 9.8%
Siltstone	5 31.3% 1.0%	10 62.5% 1.8%			1 6.3% 16.7%			16 100.0% 1.5%

Table 2.171. Continued.

Cells: Count Row Percent Column Percent	Artifact Morphology							Row Total
	Angular Debris	Core Flake	Biface Flake	Pottid	Core	Uniface	Biface	
Quartzite	1 20.0% .2%	4 80.0% .7%						5 100.0% 5%
Quartzitic sandstone	2 100.0% .4%							2 100.0% 2%
Column Total	520 47.4% 100.05	550 50.2% 100.0%	7 .6% 100.0%	1 .1% 100.0%	6 .5% 100.0%	1 .1% 100.0%	11 1.0% 100.0%	1096 100.0% 100.0%

three are unidentifiable proximal fragments and one is an Archaic San Pedro proximal fragment. Not only are the points fragmentary, thus making it difficult to assign temporal affiliation, they were recovered from levels probably deposited from the ditch cleaning overburden.

As can be seen in Table 2.171, the majority of the chipped stone debitage came from general fill (98.5 percent) while all three features had a combined total of 12 recovered artifacts. The artifacts recovered from the roasting pits may be directly associated with these features because of their depth, however, the hearth was located 15 cm below the present ground surface where the artifact assemblage is mixed.

Ground Stone

Three pieces of ground stone were recovered from general fill and none were associated with the features. All were made of rhyolite and consisted of an abrading stone, a one-hand mano, and an indeterminate fragment.

ANCILLARY STUDIES

Faunal Remains

Animal bone consisted of 101 fragments recovered from excavated portions (general fill) of the site (Table 2.172). The two roasting pits contained fragments of burned bone. Roasting Pit 1 contained 23 burned bone fragments consisting of 17 large mammals, 5 small mammals, and 1 even-toed hoofed mammal. Roasting Pit 2 contained 6 small mammal bones.

Macrobotanical Remains

The site lies next to the Luna Irrigation Ditch and years of ditch cleaning activities have contributed to the abundance of modern uncharred seeds recovered from all features. Eighteen taxa were recovered from the flotation

samples from the hearth including spurge, mullein, sunflower, borage, evening primrose, and groundcherry among others. Charred pine cone umbos were the only cultural remains recovered. Roasting Pit 1 yielded many of the same modern taxa, but no cultural plant specimens were present. Roasting Pit 2 produced charred pine bark and goosefoot seeds, representing the only possible evidence of food processing at the site. Wood charcoal remains consisted of minute amounts of juniper and unknown conifer recovered from the hearth.

Occupants of Haca Negra were utilizing locally available arboreal species and possibly exploiting goosefoot for the small seeds, which were an abundant and nutritious food resource used by many Native American groups, as documented in numerous ethnographic accounts.

Pollen Remains

Thirteen pollen samples were collected on the site; however, only one was from a cultural feature and was submitted for analysis. The sample was extracted from the base of Roasting Pit 1, beneath a burned slab. The pollen analysis identified six plant types: pine, pigweed, sun-

Table 2.172. Taxonomic Frequencies for Faunal Remains from LA 89846

Taxon	Number	Percent
Mammals	67	66.3
Small Mammals	11	10.9
Medium Mammals	12	11.9
Large Mammals	3	3.0
Plains Pocket Gopher	3	3.0
Even-toed Hoofed Mammals	5	5.0
Total	101	100.0

Table 2.173. C-14 Dates for LA 89846

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Intercept Date	Context
97N/71E 98N/71E	93531	2490 ± 50	780-505 B.C.	795-405 B.C.	760, 670, 550 B.C.	Roasting Pit 1 (Level 3)
98N/66E	93530	390 ± 50	A.D. 1450-1520 A.D. 1570-1630	A.D. 1430-1645	A.D. 1475	Hearth (Level 3)
100N/70E	93532	2490 ± 90	790-410 B.C.	815-385 B.C.	760, 670, 550 B.C.	Roasting Pit 2 (Level 3)

flower, grass, amaranth, and corn. The identification of corn and amaranth suggests that the site occupants may have relied on some form of agriculture to supplement additional food sources.

DATING METHODS

Radiocarbon samples from three thermal features provided dates for two separate occupational episodes at LA 89846 (Table 2.173). The dates provided evidence of a Late Archaic and protohistoric use of the site. Four projectile point fragments were recovered, but it is unclear what temporal affiliation they may represent.

One radiocarbon sample was collected from the lower fill of Roasting Pit 1. The sample came from the charred remains of six separate wood types: conifer, piñon, pine, cottonwood, willow, and oak. The sample size was small, but AMS dating provided a 2-sigma calibrated date between 795 and 405 B.C. with intercept dates between 760 and 550 B.C.

Three radiocarbon samples were taken from a concentration of charcoal in the northwest portion of the hearth. A radiocarbon sample from charred pieces of piñon, juniper, pine, and conifer, provided a standard 2-sigma calibrated date of A.D. 1430 to 1645 with an intercept date of A.D. 1475.

Two radiocarbon samples were collected from the lower fill of Roasting Pit 2. Burned pieces of piñon, pine, oak, conifer, and unidentified porous wood provided an extended 2-sigma calibrated date of 815 to 385 B.C. with intercepts between 760 and 550 B.C., indicating contemporaneity of the two roasting pits. The samples from the roasting pits were recovered from depths of over 1 m in undisturbed, lower feature fill. Both features represent a Late Archaic occupation of the site. Although the problems of old wood cannot be dismissed, the hearth shows evidence of a brief protohistoric or Athabaskan occupation of the site.

SITE INTERPRETATION

LA 89846 is a multicomponent site that may have been used several times between the Late Archaic and proto-

historic periods. Site use, however, has been complicated by disturbance from ditch cleaning activities and the presence of a small Tularosa phase roomblock (LA 112407) upslope. The artifact assemblage is representative of a Tularosa phase occupation, yet the site features provided dates that only support Late Archaic and protohistoric occupations. The site is located above the San Francisco River floodplain, making it viable for agricultural pursuit, and the surrounding terrain is abundant in plant and animal resources. Being near a permanent water source, it could have served as a base camp location for mobile hunter-gatherer groups or a seasonal site for groups relying on agriculture.

The majority of the artifact assemblage would indicate a Late Pueblo occupation of LA 89846; however, no features or other cultural levels were found that could support an argument for Late Pueblo use of the site. Although ceramics could be found at depths relative to the Archaic features, none were associated; their presence can be explained by extreme rodent burrowing across the site. It is felt that alluvial redeposition and bioturbation is responsible for the presence of a majority of the artifacts.

The site seems to have been occupied primarily by Late Archaic peoples repeatedly over time. Dates from the radiocarbon samples of the roasting pits support an Archaic occupation of the site. Due to feature size and the extreme oxidation of the cobbles in the fill, as well as on the soil surrounding these features, it is apparent that they were used repeatedly. Burned bone and chipped stone debitage in the feature fill and on the surface surrounding each feature, suggest hunting activities and game processing that took place during this occupation.

The Late Archaic occupants of LA 89846 may have also relied on horticulture to augment their use of available resources. Pollen analysis showed evidence of grains being processed. A pollen sample from beneath a slab at the base of Roasting Pit 1 contained a variety of wild seed-bearing grasses and also included maize. No structures were located, but if the Late Archaic peoples who occupied LA 89846 relied on agriculture to supplement additional food resources, this would suggest that the site may be representative of a shift toward a semi-

sedentary or seasonal occupation of areas.

Radiocarbon samples from the hearth provide the only evidence of a protohistoric occupation of the site. No artifacts or cultural levels were found that could be directly associated with this feature; however, the site was probably used as a short-term hunting camp during that time period.

In summary, LA 89846 is located in an area that

would attract both mobile hunter-gatherers and more sedentary groups of people who relied on agriculture. The site probably served as a base camp associated with seasonal rounds of hunting, collecting piñon, acorns, and other edible plants, as well as the practice of agriculture during the Late Archaic. It may also have served as a temporary camp for hunting or other resource procurement during the protohistoric period.

LA 89847 (AR-03-06-03-03724)
RED EAR SITE

Lloyd A. Moiola

LA 89847 was recorded by OAS (Zamora and Sterling 1992) during a cultural resource survey for the NMSHTD along U.S. 180. It was identified as a small chipped stone and ceramic artifact scatter that could be associated with the San Francisco phase (A.D. 700-900) of the Mogollon culture. The observed artifacts consisted of one corrugated brown ware and one Alma Plain sherd, as well as six pieces of chipped stone debitage (one basalt and five Luna blue flakes). The site is located within the Gila National Forest on the north side of U.S. 180, 2.6 km (1.6 miles) west of the town of Luna, Catron County, New Mexico.

A testing program was recommended and conducted by OAS staff during May of 1993 (Oakes and Zamora 1993). The purpose of testing was to determine the depth and extent of cultural materials within the proposed highway right-of-way. Three 1-by-1-m test pits were hand-excavated and 13 auger holes were used to determine the depth of subsurface cultural materials. The three test pits ranged between 30 cm and 1.20 m in depth and excavation stopped when sterile red clay and fine sand were encountered. No artifacts were recovered from the auger holes; however, pieces of charcoal were found at depths of 1.1 m. Sterile red clay and fine sand occurred in the test pits and auger holes at depths between 30 cm and 1.2 m.

Artifacts recovered from the test pits included 25 ceramics, 2 pieces of chipped stone, and 1 nonhuman bone fragment. The ceramic artifacts suggested a San Francisco to Three Circle phase (A.D. 700-1000) Mogollon occupation of the site. One basalt flake and one Luna blue agate flake were also collected. Based on the ceramic artifacts and the presence of charcoal at various depths, the testing results indicated that a late Mogollon pit structure may be present.

Although 1,017 field specimens were subsequently catalogued during data recovery, their presence did not indicate a cultural occupation at this locale. A large chipped stone and ceramic artifact scatter is located 160 m upslope from LA 89847 on a ridge top. The artifacts recovered during excavation appear to be the result of alluvial deposits from the ridge above.

The site on the ridge top was recorded after data recovery and also assigned the LA 89847 number. The

surface artifact assemblage on the ridge top was of mixed components that contained a Late Archaic projectile point, bifaces and biface flakes, as well as ceramics that reflected an Early Pithouse through Tularosa phase occupation. For the purpose of this report the site has been divided into two separate areas. Area A is the excavated portion of the site within the highway right-of-way and Area B is the site's true location (Fig. 2.295) upslope.

Site size during the testing of Area A was based on the visibility of surface artifacts and confined to a 400-sq-m area. Subsequent excavations reduced the limits of Area A to 30 m east-west by 14 m north-south. The site limits of Area B are 75 m north-south by 70 m east-west, covering 5,250 sq m.

Sites in the vicinity of LA 89847 include LA 89846, LA 112407, and LA 3279. LA 89846 had three thermal features that provided radiocarbon dates for two separate occupational episodes that include a Late Archaic and protohistoric occupation of the site. LA 112407 is a surface structure with three to four rooms that has ceramic artifacts associated with the Tularosa phase of the Mogollon culture. LA 3279 (Hough site) is a large Tularosa phase roomblock.

SITE SETTING

LA 89847 (Area B) is situated on top of a south-facing ridge within the Gila National Forest at an elevation of 2,219 m (7,280 ft). The site overlooks the San Francisco River Valley to the south and east. The surrounding terrain is characterized by heavily wooded, steep mountain slopes and ridges that drain into the San Francisco River. Area A is located at the base of the ridge (Fig. 2.296), between U.S. 180 and the Luna Irrigation Ditch. It is situated inside the highway right-of-way at an elevation of 2,170 m (7,120 ft). The San Francisco River is 45 m to the south.

On-site vegetation of Area A includes ponderosa pine, juniper, scrub oak, various grasses, wildflowers, and cactus. The ground surface is covered with heavy pine duff as well as large and small cobbles that have eroded downslope. Excavations revealed an additional thick layer of redeposited rock and soil from ditch cleaning operations.

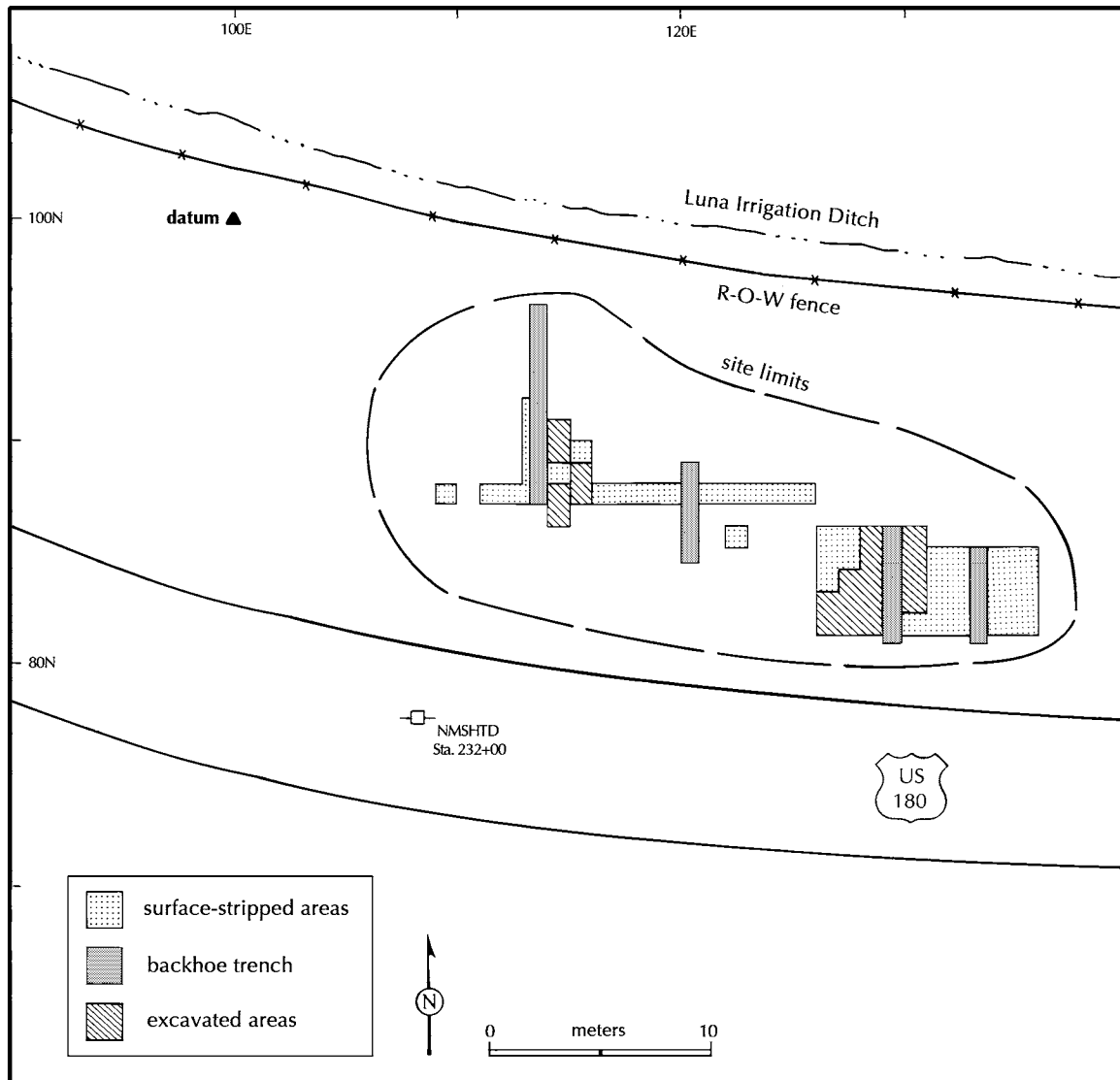


Figure 2.295. LA 89847, Red Ear site, Area A.

RESEARCH OBJECTIVES

The Red Ear site was thought to represent a small Late Pithouse period occupation with perhaps a pithouse present. It was expected to yield floral and faunal remains that would identify subsistence resources used, season of use, and type of preparation for consumption. We were also looking for evidence of reuse or length of site use through the presence of storage facilities. Degree of dependency on cultigens was to be examined through the analyses of ground stone and cooking vessels, and through the presence of domesticated foods. Residential mobility was to be addressed through the presence of seasonal resources and through the study of expedient versus curated tools. Reuse of site features was also a key to understanding site reuse and amount of labor

investment in the site.

However, LA 89847 is a redeposited accumulation of artifacts (Area A) from a main occupation (Area B) high above it, outside of the highway right-of-way. Without a thorough examination of Area B, no conclusions could be reached concerning the stated research expectations.

EXCAVATION PROCEDURES

The archaeological survey recorded a small chipped stone and ceramic artifact scatter in an open area between the Luna Irrigation Ditch and U.S. 180 (Zamora and Sterling 1992). The presence of a large ceramic and chipped stone artifact scatter upslope from this area was also noted. No features were recorded during the survey,



Figure 2.296. LA 89847, site setting at base of slope.

but many of the artifacts appeared to be concentrated near a phone box in an area of mechanically disturbed soil. The survey results stated that the artifacts may have been exposed as a consequence of the phone line installation or may have washed downslope. A testing program was recommended in order to determine the extent of subsurface deposits and site limits.

In May of 1993, 3 test pits and 13 auger holes were placed in various locations across the site (Area A). Test Pit 1 was excavated to a depth of 80 cm and produced 17 ceramics and 1 chipped stone flake. An auger hole placed in the base of the unit encountered fine, sterile sand at a depth of 1.2 m. Test Pit 2 produced 1 ceramic, 1 animal bone, and 1 piece of chipped stone before sterile red clay was encountered at 30 cm. Bedrock was hit at 1.1 m by means of an auger hole placed in the base of the unit. Test Pit 3 was excavated to a depth of 60 cm and produced 7 ceramics. An auger hole placed in the base of the unit reached sterile soil at 90 cm.

Thirteen additional auger holes revealed charcoal at depths of 1.1 m across portions of the site, however, no artifacts were located. A small depression on the east end of the site was probed to a depth of 45 cm and revealed dark, charcoal-stained soil. Testing results concluded that a cultural feature may be present at this location.

A total of 25 ceramics, 2 pieces of chipped stone, and 1 animal bone was collected in testing. The ceramic

assemblage suggested a possible San Francisco to Three Circle phase occupation of the site. Due to the presence of a possible feature and artifact depths, further archaeological investigations were recommended.

Data recovery on LA 89847 was conducted in 1995. Prior to excavation, surface artifacts were pin-flagged to view concentration areas. Datum 100N/100E used in testing was reestablished as the main site datum. A 1-by-1-m grid system was imposed over the artifact concentrations and in a depression on the east end of the site. Base lines were laid out along a north-south and east-west axis intersecting at main datum (100N/100E). One additional subdatum (87N/100E) was established to complete the grid system. An optical transit and stadia rod were used to record the elevation of the northwest corner of each grid unit.

The selection of units to be further investigated was based on the testing results and surface artifact concentrations. A total of 71 units were excavated. Forty-nine of these were surface stripped only, the remaining 22 units were taken to an average depth of 55 cm below present ground surface in arbitrary 10-cm levels. All fill was screened through ¼-inch mesh. The total amount of soil excavated on the site was 18.1 cu m.

Hand-excavation of individual units continued until artifacts diminished or sterile, reddish brown clay and sand was encountered. Four backhoe trenches were

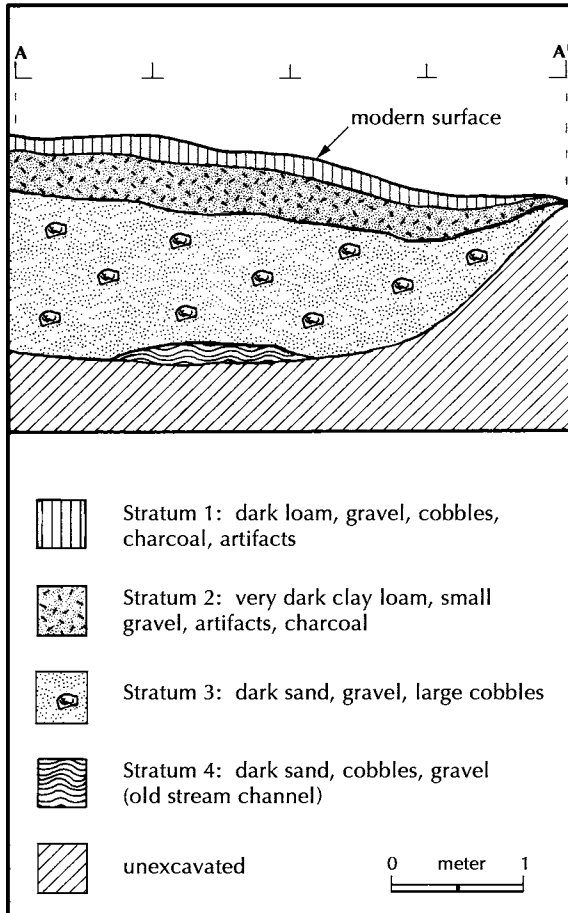


Figure 2.297. Profile of Backhoe Trench 3, LA 89847.

placed across the site and each revealed similar stratigraphy. A profile of Backhoe Trench 3 (Fig. 2.297) reveals four separate strata and shows that artifacts diminished at roughly 50 cm in depth. Stratum 3, a dark brown sand (Munsell color 10YR 4/3) with gravels and large cobbles, was easily distinguished across the site and excavation stopped when it was encountered.

CULTURAL UNITS

Although a combined total of 1,017 artifacts were catalogued at LA 89847, there was no indication of a cultural occupation. Seventy-one excavation units were surface stripped, and of these, only 22 were further investigated. Four backhoe trenches revealed a series of alluvial strata. The majority of recovered artifacts came from Stratum 1. Stratum 1 is a dark grayish brown loam (Munsell color 10YR 4/2) with gravels, large cobbles, organic material, charcoal, and artifacts. This stratum appears to be made up of cleaning deposits from the Luna Irrigation Ditch as well as materials that have eroded downslope from the ridge top.

Stratum 2 contained the remaining artifacts and con-

sisted of a very dark, grayish brown clay (Munsell color 10YR 3/2), with small gravels, charcoal, and artifacts. Both strata appear only to contain artifacts that have been redeposited by alluvial processes; therefore, no cultural occupation could be associated with the excavated site areas.

ARTIFACTS

The artifact assemblage consisted of 1,017 artifacts including 382 ceramics, 402 lithic artifacts, and 233 faunal remains.

Ceramics

The ceramic assemblage consisted of 382 sherds that are representative of Early Pithouse through Late Pueblo time periods (Table 2.174). Although a large number of sherds were recovered during excavation, the assemblage is consistent with ceramic artifact types upslope (Area B), and their presence within Area A appears to be the result of redeposition.

Table 2.174. Ceramic Types for LA 89847

Cells: Count Column Percent	General Fill	Row Total
Alma Plain	184 48.2%	184 48.2%
Alma Rough	41 10.7%	41 10.7%
Plain corrugated	33 8.6%	33 8.6%
Indented corrugated	2 .5%	2 .5%
Incised corrugated	15 3.9%	15 3.9%
Indeterminate corrugated	9 2.4%	9 2.4%
Plain smudged	81 21.2%	81 21.2%
San Francisco Red	4 1.0%	4 1.0%
Mimbres Classic Black-on-white	1 .3%	1 .3%
Late white	12 3.1%	12 3.1%
Column Total	382 100.0%	382 100.0%

Lithic Artifacts

The chipped stone assemblage contains 402 artifacts that are dominated by core flakes and angular debris made primarily of Luna blue agate (Table 2.175). With the

Table 2.175. Chipped Stone Artifacts from LA 89847

Cells: Count Row Percent Column Percent	Artifact Morphology						Row Total
	Angular Debris	Core Flake	Biface Flake	Tested Cobble	Core	Biface	
Chert	31 43.7% 15.8%	35 49.3% 18.0%	2 2.8% 25.0%	1 1.4% 100.0%	1 1.4% 100.0%	1 1.4% 50.0%	71 100.0% 17.7%
Chalcedony	2 28.6% 1.0%	4 57.1% 2.1%	1 14.3% 12.5%				7 100.0% 1.7%
Luna Blue Agate	153 57.7% 78.1%	107 40.4% 55.2%	4 1.5% 50.0%			1 4% 50.0%	265 100.0% 65.9%
Obsidian	3 13.6% 1.5%	18 81.8% 9.3%	1 4.5% 12.5%				22 100.0% 5.5%
Igneous		2 100.0% 1.0%					2 100.0% .5%
Nonvesicular Basalt		4 100.0% 2.1%					4 100.0% 1.0%
Rhyolite	6 23.1% 3.1%	20 76.9% 10.3%					26 100.0% 6.5%
Quartzite		2 100.0% 1.0%					2 100.0% .5%
Quartzitic Sandstone	1 33.3% .5%	2 66.7% 1.0%					3 100.0% .7%
Column Total	196 48.8% 100.0%	194 48.3% 100.0%	8 2.0% 100.0%	1 .2% 100.0%	1 .2% 100.0%	2 5% 100.0%	402 100.0% 100.0%

Table 2.177. Taxonomic Frequencies for Faunal Remains from LA 89847

Taxon	Number	Percent
Mammals	10	4.3
Small Mammals	11	4.7
Large Mammals	195	83.7
Gunnison's Prairie Dog	1	.4
Muskrat	2	.9
Desert Cottontail	1	.4
Dog, Wolf, Coyote	3	1.3
Even-toed Hoofed Mammals	4	1.7
Elk	2	.9
Deer	3	1.3
Bison	1	.4
Total	233	100.0

exception of obsidian and nonvesicular basalt, all material types can be found in close proximity to the site.

The majority of the lithic artifacts (core flakes and angular debris) indicates that these artifacts are likely the result of expedient core reduction that took place on the ridge top. Of the two recovered bifaces, one is a small unidentified triangular projectile point of Luna blue agate. The presence of the chipped stone debris can be attributed to the main site (Area B) upslope of the excavation area.

ANCILLARY STUDIES

Faunal Remains

Animal bone consisted of 233 fragments recovered from excavated portions of the site (Table 2.177). Large mammals (88 percent) provided the majority of the bone fragments.

SITE INTERPRETATION

LA 89847 is a mixed-component chipped stone and ceramic artifact scatter. Artifacts indicate a possible repeated occupation of the main site (Area B) from the Late Archaic through Late Pueblo time periods. Artifacts recovered from OAS excavations in Area A appear to

have been redeposited from Area B. Backhoe trench profiles revealed a series of alluvial layers that show deposits from the ridgetop and Luna Ditch cleaning activities. The remaining two lenses appear to be made up of alluvium from the San Francisco River flood plain. Results of data recovery indicated that there was no cultural occupation within Area A.