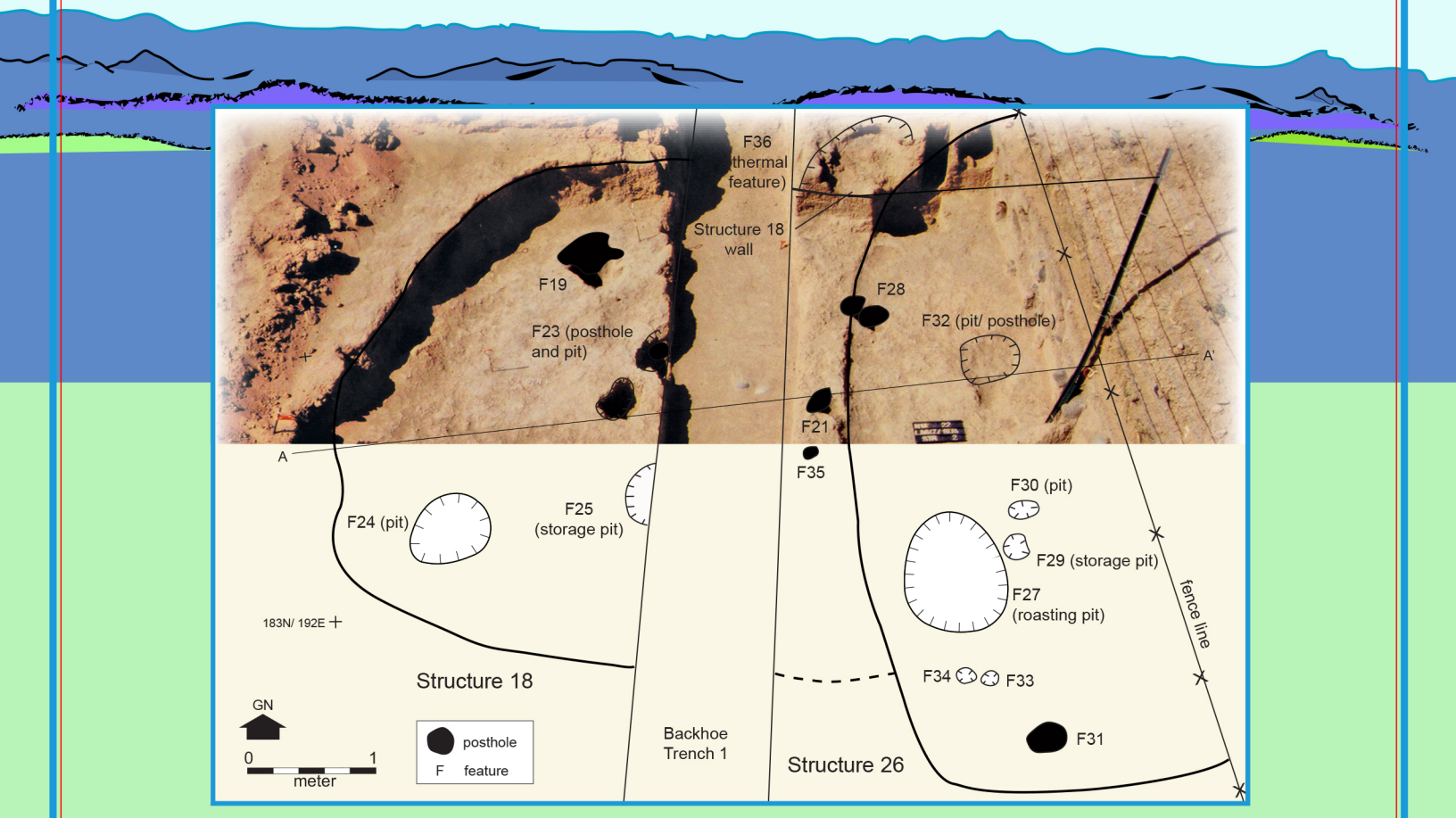
Excavations along NM 22:
Agricultural Adaptation from AD 500 to 1900 in the Northern Santo Domingo Basin, Sandoval County, New Mexico

compiled by Stephen S. Post and Richard C. Chapman

Volume 3
Major Site Excavations at LA 6170 and LA 6171

Nancy J. Akins, Jessica Badner



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EXCAVATIONS ALONG NM 22: AGRICULTURAL ADAPTATION FROM AD 500 TO 1900 IN THE NORTHERN SANTO DOMINGO BASIN, SANDOVAL COUNTY, NEW MEXICO

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Santa Fe 2012 New Mexico

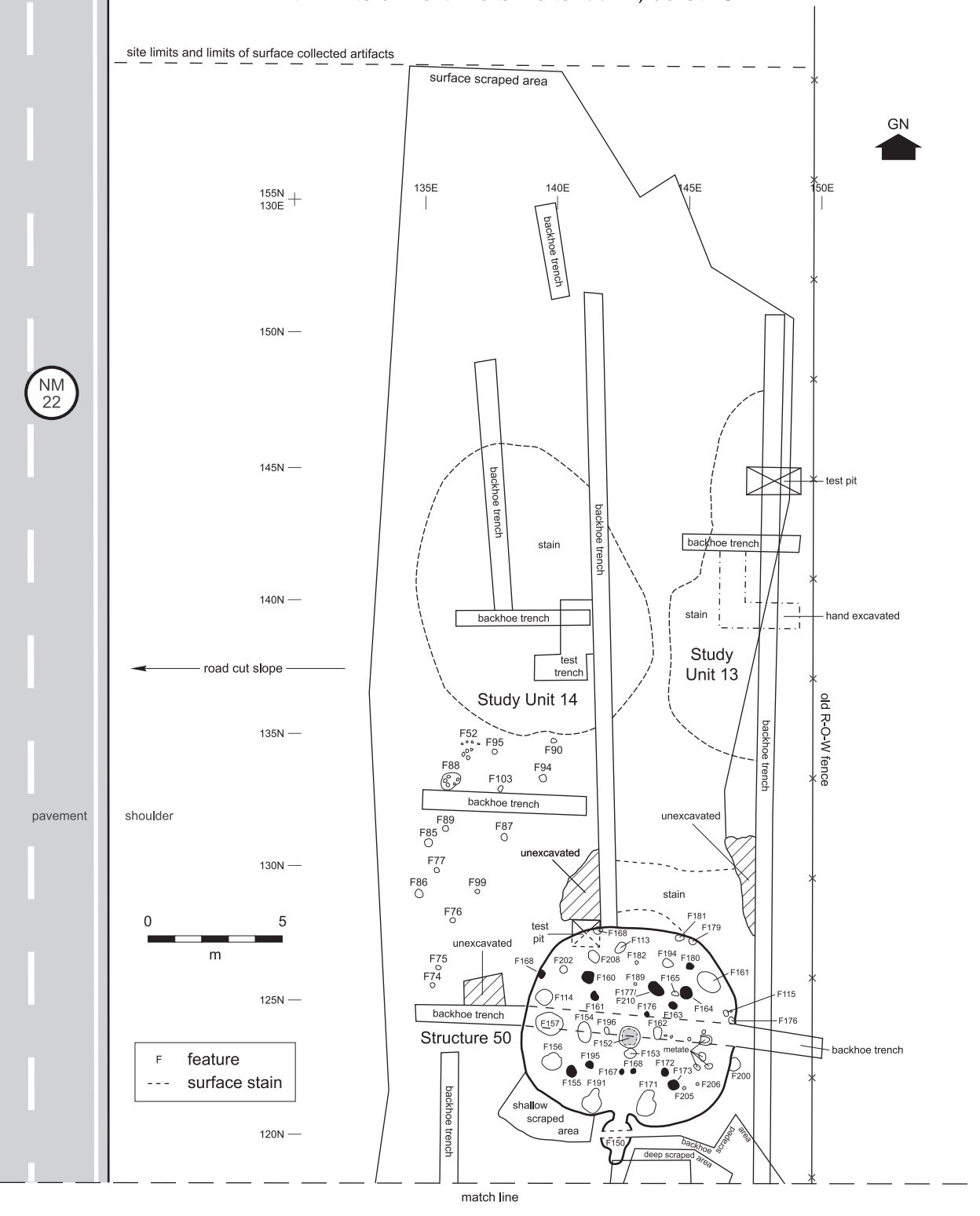

Figure 13.2. Continued, Area 2 north section.

CONTENTS

FIGURES

TABLES

Chapter 13
LA 6170

Nancy J. Akins

In December of 1961, A. E. Dittert and F. W. Eddy recorded LA 6170 as part of the Cochiti Highway Salvage project. Eddy described the site as a long L-shaped room block forming a low mound with one, possibly two, kiva depressions dating to Pueblo IV. At the north end was a well-preserved rectangular room that was plainly visible on the surface. Near the south end of the room block was the remains of a modern house foundation with a litter of cans. Dittert's sketch shows a southwest-northeast trending mound with a room appended to the east near the north end, a single kiva to the east at about the center, and an isolated room at the south end of the rubble mound. Another survey sketch is more consistent with Eddy's description showing a second possible kiva in line with and just north of the room block and the appended room east of and at the north end of the main mound.

Dittert and Eddy spent parts of two days excavating the portion of the appended room that fell within the area slated for highway construction and observing heavy equipment removing fill from the construction area. Eddy notes that two features not indicated by surface manifestations were visible in the trench cut. The first was burned construction adobe and charcoal located about 30 cm below the surface. The other was a layer of cobbles with charcoal on top. Charcoal was also observed at the north end of the cut extending off the bench crest. No efforts were made to investigate any of these.

Peckham and Wells (1967) describe the site as an L-shaped room block comprised of 10 to 12 rooms with 1 or 2 kivas and a modern farmhouse. They note that a small amount of the site was disturbed by highway construction. Dickson (1979:90), probably based on Peckham and Wells's observations, lists LA 6170 as a Coalition site with two historic structures.

In preparation for this project, NMSHTD surveyed LA 6170 in October of 1996. Marshall (1997) reports it as a Late Coalition through early Classic site comprised of an adobe and cobble structural mound, two cobble alignments, several cobble concentrations, and three to four pit structures. The modern farmhouse was no longer apparent.

After revisiting the site, Ware (1997:32) described a light artifact scatter on top of deep eolian and alluvial deposits extending on both sides of NM 22. In this context, he believed that deeply buried deposits were possible. He also concluded that the cobble alignments, most of which fell outside the project area, could represent architectural remains or agricultural grid gardens and thought the general lack of the quantities of trash that would be generated by a 10- to 12-room pueblo tended to support the latter interpretation.

Setting

LA 6170 is one of a series of prehistoric sites situated on the first Pleistocene gravel terrace above the eastern edge of the Rio Grande floodplain southeast of Cochiti Pueblo. Local vegetation observed in January included remnants of grass, snakeweed, and Russian thistle. Junipers are scattered along the terrace edge and to the east at higher elevations. NM 22 bisects the site.

Site Description

At the start of this project, LA 6170 was a large ceramic and lithic artifact scatter with a low rubble mound, several stone alignments, and a few clusters of cobbles. Site boundaries were defined as the edge of the terrace to the north and west and by artifact density to the south and east. NM 22 is cut into the terrace (Fig. 13.1) with steeply cut banks at the center of the site. Beyond the right-of-way fence to the east is an old drainage ditch or eroded road bed.

Another old road bed cuts into the terrace edge to the north, beyond the site boundaries.

Excavation Strategy

After establishing a permanent datum west of NM 22 and outside the area to be impacted, a main west subdatum was placed in the center of the cobble foundation (Structure 1) and given the coordinates 100N/100E, elevation 100.50 mbd (meters below site datum). Baselines were laid out parallel to NM 22 at the 85E line and perpendicular at 70N and 80N using the total station. Grid north is 12 degrees west of magnetic north. Stakes were placed every 5 m and elevations recorded on each one. A similar line was established east of the highway at 135E.

To determine the distribution of surface artifacts and choose areas for further investigation based on artifact densities, surface artifacts were collected from the project area in 1-by-1-m grid units, or in areas at the periphery where material was sparse, point-plotted using the total station. All total, the collected area west of NM 22 (Area 1) consisted of 2,175 grid units, and that to the east (Area 2) consisted of 2,310 grid units.

Site stratigraphy was examined through a series of hand-excavated 1-by-1-m units (Table 13.1) in Area 1. All but one of these were outside the final project area, which NMSHTD reduced by about 6.0 m on the west and less than a meter on the east side of NM 22 after the surface collection and tests had been completed. Once the basic stratigraphy was determined, a series of backhoe trenches examined subsurface deposits throughout Area 1, avoiding the area of Structure 1, the historic foundation. Ultimately, backhoe trenches in Area 1 (Table 13.2) completely missed the second structure (Feature 2 or Structure 2) and barely nicked the third (Structure 5). All of the Area 1 backhoe trenches

Table 13.1. Initial Hand-Excavated Test Pits at LA 6170

Location (SW Corner)	Top and Bottom Elevations (mbd)	Stratigraphy	Comments
69N 91E	98.61-98.21; auger to 97.51	D (eolian duff) 2-4 cm; BP (sandy clay loam and pumice but no cultural material) 10-19 cm BCACO (consolidated silty clay loam with carbonates) 1-75+ cm	Within an area previously identified as a structural depression; outside eventual project boundary; auger test 70 cm below pit base
79N 94E; 79N 95E	99.50-98.91; auger to 97.83	D (eolian duff) 2-8 cm; BP (sandy loam with cultural material) 10-16 cm; BCACO (consolidated silty loam with carbonates) 11-81 cm; DC (dark, compact calcareous clay) 45+ cm	East of rubble mound; outside of eventual project boundary; duff removed from adjacent grid; auger test 108 cm below pit base
114N 91E	99.89-99.41	D (eolian duff) 3 cm; BP (sandy loam with pumice and cultural material) 29 cm; BGR (sand and gravel) 1+ cm	Outside of eventual project boundary
150N 100E	97.60-97.19; auger to 96.64	D (eolian sand and duff) 30 cm; BCS (compact sandy clay with no cultural material) 11 cm; BCACO (consolidated silty loam with carbonates) 30+ cm	North of backhoe trenches; much rodent disturbance; 1 plain gray sherd with Middle Rio Grande temper was recovered

Figure 13.1. NM 22 cutting through LA 6170.

were profiled and the fill described.

On the east side, artifact density maps were used to determine the location of the initial backhoe trenches. The main north-south backhoe trench (Table 13.2) bisected the only structure found in Area 2 (Structure 50). Most trenches were profiled and the fill described. Those that were not either lacked cultural fill or were close to other described features and contributed no additional information on soil deposition. Stains that could have been features were investigated by placing 1-by-1-m grids adjacent to the trench and exposing the feature or, in a few instances when the top of the feature was visible, excavating only the feature. Hand-excavated fill was screened through 1/4- or 1/8-inch mesh. Larger midden stains were investigated by hand-excavated units, additional backhoe trenches, and/or repeated mechanical scrapes.

Excavation strategies varied slightly for each structure and are described with the structure accounts. Extramural features were usually revealed by scraping. Areas around the structures and nonstructural stains in the profiles were hand scraped and mechanically scraped in up to three episodes. Once a scrape revealed a feature or series of features, these were excavated and recorded before the next scrape commenced.

Features that were large enough to observe a profile were bisected and fill from the remaining half profiled and described. Deeper features were excavated in levels or by natural stratigraphic unit. Extramural feature descriptions are presented by study unit and those within structures in the structure descriptions.

Following project protocol, the site was divided into two areas designating the west (Area 1) or east (Area 2) side of NM 22 (Fig. 13.2). Study Unit (SU) numbers (Table 13.3) were assigned to areas such as structures or middens or to groups of features that appeared to be spatially or temporally related. Architectural units were assigned a sequential feature number regardless of whether it was a posthole or a pit structure. Some project sites deviated from the initial policy by assigning SU numbers to structures, but since two or three structures had already been fully recorded as features, the original policy was followed here. For ease in recognition, structures are called structures but retain

Table 13.2. LA 6170 Backhoe Trench Information

Area	NE Corner Grid	SW Corner Grid	Trench Length (m)	Minimum and Maximum Depth (bd)	Strata Present	Range of Thickness (cm) in Profiles	Comments
1	96N	57N	39	N: 100.28	D	2-14	N-S trench, south of Structure 1; west wall
	98E	98E		98.99	BP	11-50	Gravel filled channel south end
				S: 98.82	BGR	0-60	Sand pocket about 89N
				98.0	BCACO	22-55+	Rodent burrows and pumic pockets
					BCS	45+	N-S trench, north of Structure 1; west wall
1	144N	104N	42	N: 98.75	D	0-11	Base extremely undulating (Fig. XX)
	98E	99E		98.01	BP	4-117	Rodent burrows and pumic pockets common
				S: 100.41	BCS/	95+	BCS grades into BCACO south to north
				98.9	BCACO		
1	122N	122N	4.5	100.15	D	0-3	East-west trench, north wall
	99E	103E		98.95	BP	5-85	
					BCACO	92+	
1	113N	112N	4		D	2-21	East-west trench, north wall extends into hand excavated grids 112N 97-98E
	99E	103E			BP	10-95	Very irregular base east of n-s trench; heavy charcoal staining just west of n-s trench
					BCS	95+	
1	107N	107N	3.5	100.5	D	1-10	East-west tranch, south wall
	99E	103E		99.12	BP	22-110	Structure 5B fill at east end
					BCS	0-90	
1	88N	88N	4		D	2-3	East-west trench, south wall
	99E	103E			BP	1-11	
					BCACO	23-52	
					BCS	60+	
1	82N	82N	4		D	2-10	East-west trench, south wall
	99E	103E			BP	0-18	
					BCACO	20-60	
					BCS	40+	
1	65N	65N	4.5	99.28	D	0-6	East-west trench, south wall
				98.45	BP	16-35	
					BGR	23-44	Silty sand with gravel
					BGR	24+	Coarse-grained sand and gravel
1	57N	58N	4.5		D	0-14	East-west trench, south wall
	98E	192E			BP	0-22	
					BCACO	0-18	
					BCS	45+	
2	154N	151N	3.5	99.5			North-south trench; no cultural fill; not profiled
	138E	140E					
2	151N	88N	63	N: 99.94	D	0-7	North-south trench, west wall
	140E	138E		98.86	MDC	0-34	Bisects Structure 50 and SU12, 14, 15, 17
				S: 99.14	DC	10-115	
				98.48	RSC	95+	
					SG	40+	SG filled channel at south edge of Structure 50
					SG2	0-57	SG2 in SU14 beneath DC north of trench anomaly
2	150N	102N	48.5	100.74			North-south trench along r-o-w; max 75 cm deep; not profiled
	147E	148E					
2	148N	139N	9.5	99.53			North-south trench though SU 14; not profiled
	136N	138E		99.14			
2	142N	141N	4.5	100.35	DC	20-80	East-west trench, south face; surface bladed
	144E	148E		100.13	RSC	80+	East edge of r-o-w; bisects SU 13
2	139N	139N	4.5	100.14	DC	15-66	East-west trench, south face

Table 13.2. Continued.

Area	NE Corner Grid	SW Corner Grid	Trench Length (m)	Minimum and Maximum Depth (bd)	Strata Present	Range of Thickness (cm) in Profiles	Comments
	144E	148E		100.13	RSC	80+	East edge of r-o-w; bisects SU 13
2	139N	139N	4.5	100.14	DC	15-66	East-west trench, south face
	136E	141E		99.34	SG	0-44	Bisects SU14; SG in pockets in RSC
					RSC	110+	
2	132N	131N	6.0	100.48			Not profiled
	134N	141E					
2	124N	122N	15.5	100.93	D	0-8	East-west trench, south face
					DC	0-34	Bisects Structure 50 and the south end SU17; DC west end only
					SG	0-10	SG mostly sand, lens east end only
					RSC	35+	
2	123N	105N	18.5	99.9			North-south trench; not profiled
	135E	136N		99.08			
2	114N	113N	5.5	.38+	D	0-24	East-west trench, south face
	135E	140E		.64-	DC	0-20	Feature 51 area; bisects SU 15
					MDC	0-50	
					SG	0-65	SG in channel at east end
					RRC	0-12	
					RSC	25+	
2	104N	103N	4.5	100.14	DC	26-85+	East-west trench, south face bisects SU 15
	134E	139E		99.1	RRC	20-45	
					RSC	30+	
2	101N	100N	9	99.73			East-west trench; about 30 cm deep
	138E	147E		99.12			

Table 13.3. Study Unit Designations for LA 6170

Area	Study Unit No.	Description	General Parameters of Excavated Area or Extent of Stain
1	1	Area around and including Structure 1	96-104N/95-103E
1	2	Area of and defining Structure 2	91-94N/99-104E
1	3	Disturbed area at 112N, adjacent of backhoe trench	112N/97-99E
1	4	Area of and defining Structure 5	99-106N/99-105E
2	10	Area of and defining Structure 50	119-127N/138-146E (includes area searching for vent shaft)
2	11	Area of stain at 108N	Subsumed by SU 15
2	12	Feature area southwest of Structure 50	101-111N/141-148E
2	13	Trash midden northeast of Structure 50	134-149N/144-148E
2	14	Trash midden northwest of Structure 50	135-146N/134-143E
2	15	Feature area and midden southwest of Structure 50	89-116N/132-143E
2	16	Feature area later included with SU 17	
2	17	Feature area northwest of Structure 50	125-135N/134-141E

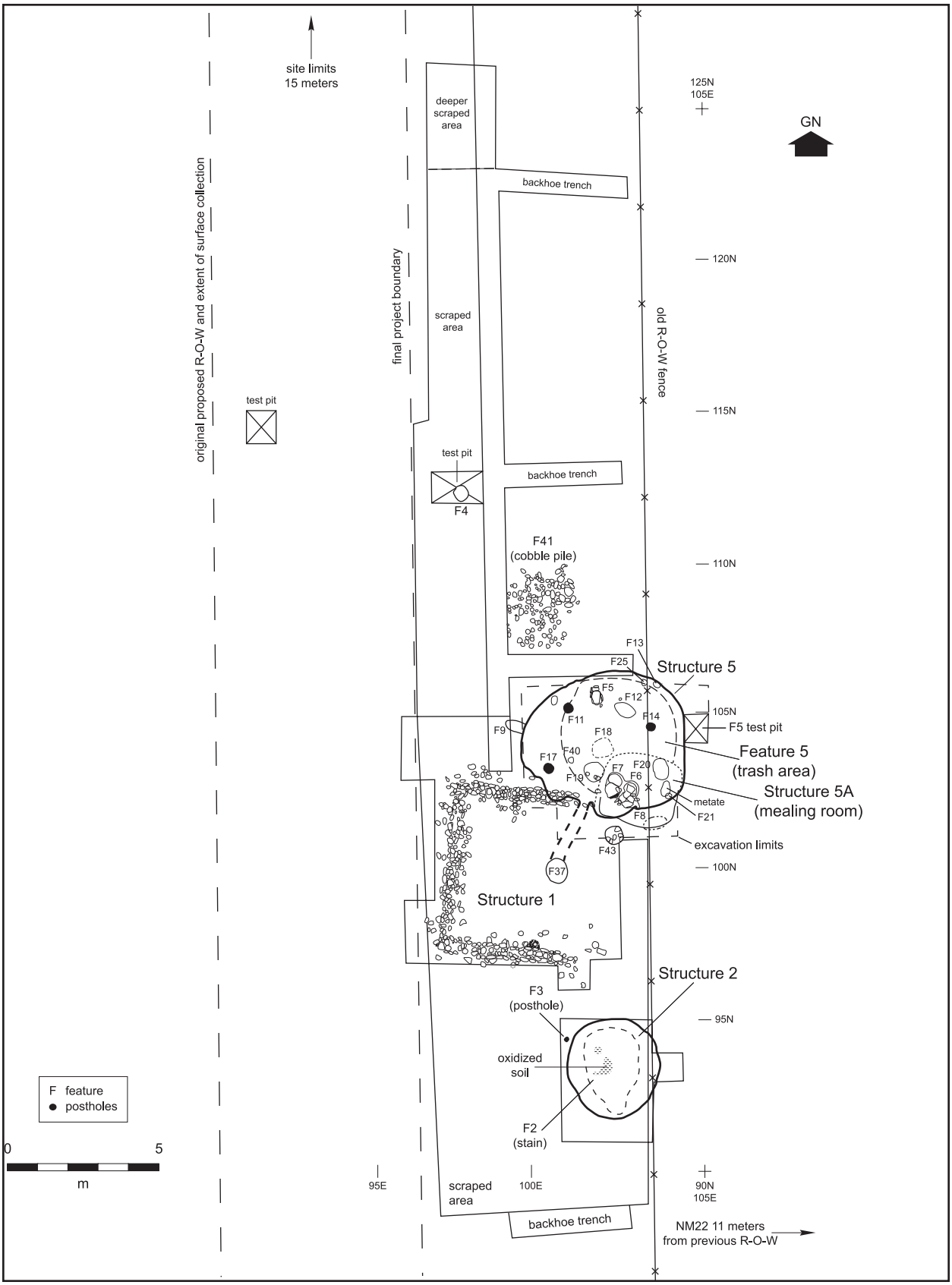

Figure 13.2. Plan of LA 6170, Area 1, west half.

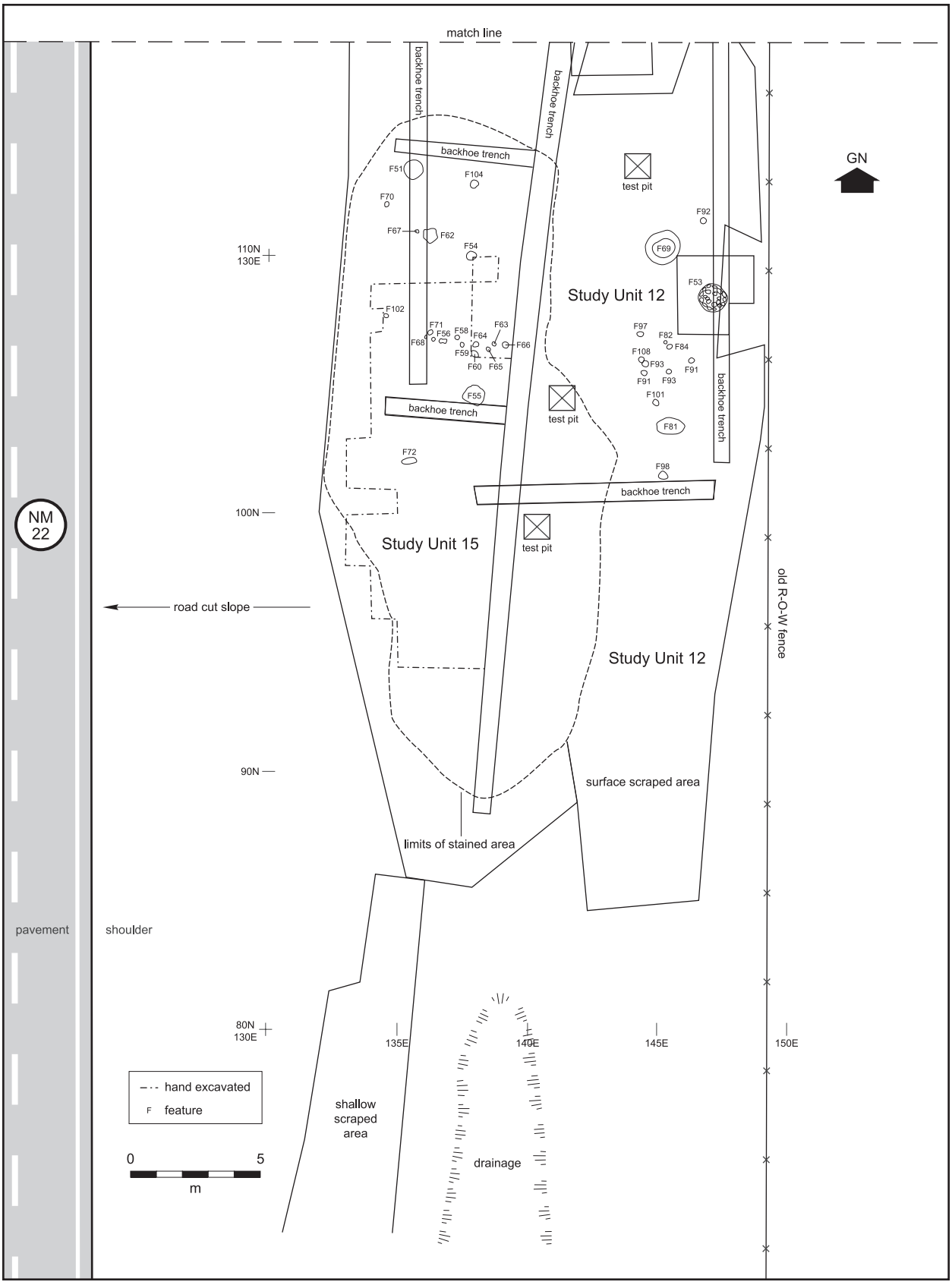

Figure 13.2. Continued, Area 2, east half.

the original feature designation throughout this report (i.e., Feature 1 is Structure 1, Feature 2 is Structure 2, Feature 5 is Structures 5 and 5A, and Feature 50 is Structure 50). A limited number of terms are used to designate feature types (see Appendix 8 for feature definitions). These include an array of thermal feature designations, specialized features when the function is apparent, and other designations that are descriptive.

Analytic Structure

To provide a framework for analyzing and describing artifact assemblages, each FS number was assigned to a site component. Components were defined on the basis of both horizontal and vertical site structure. Horizontal site structure usually consists of a structure or a SU for extramural areas. Vertical structure was based on stratigraphic assignments determined by examining fill profiles and excavation forms. For example, Structure 2 has five components ranging from the unassociated overburden to the floor contact material.

Once the components were defined, the ceramic data was examined for each component. C. Dean Wilson then assigned a ceramic date to each component based on the sherd assemblage. Finally, minor adjustments were made based on stratigraphic relationships. Table 13.4 gives each of the components and the ceramic date.

Site Stratigraphy

Overall, site stratigraphy is relatively simple

Table 13.4. Analytic Components and Ceramic Dates for LA 6170

	Early Developmental	Early Developmental and Some Late Developmental	Late Developmental	Late Developmental and Coalition	Indeterminate
Area 1 misc.		X			
Structure 1		X			
SU 3		X			
Structure 2 overburden		X			
Feature 2	X				
St. 2 wind/water deposits	X				
St. 2 roof/trash deposits	X				
St. 2 floor fill & contact	X				
Structure 5 overburden			X		
Feature 5				X	
St. 5 wind/water deposits		X			
St. 5A fill			X		
St. 5A floor and features			X		
St. 5 roof & closing		X			
St. 5 floor fill & contact	X				
St. 5 pits w. occup. fill	X				
St. 5 vent shaft					X
Area 2 miscellaneous	X				
Structure 50 overburden	X				
St 50 wind/water deposits	X				
St. 50 roof & closing	X				
St. 50 floor fill & contact	X				
St. 50 open pits	X				
St. 50 sealed pits	X				
St. 50 vent shaft	X				
SU 12	X				
SU 13	X				
SU 14	X				
SU 15	X				
SU 17	X				

(Table 13.5). In Area 1, a surface layer of duff (D) consists of eolian sandy clay loam with roots and various surface contaminants ranging from essentially absent to about 20 cm thick. Beneath this is culturally disturbed soil (BP) comprised of wind and water deposits mixed with soils that are often charcoal stained and contain cultural material. This layer ranges from nonexistent or indiscernible to quite thick with an often wildly undulating lower base due to a combination of natural processes, human modifications, and extensive rodent disturbance (Figs.13.3–13.4). What best characterizes this unit is the pumice content, which is visible only when the soil is dry. Since these soils result primarily from eolian processes depositing pumice from the Jemez Mountains into the eroding parent soils, these soils can be difficult to differentiate from the underlying matrix when there is little or no charcoal staining or when the soil is wet and the pumice cannot be seen.

The underlying soil (BCS) is fairly old and varies from a compact to very compact fine silt to silty clay with smooth to blocky textures. Carbonates are present in some areas (BCACO), including some that are relatively recent—such as the fill above Structure 2. At the south end of Area 1, the east-west profile (65N) revealed an old channel where the uppermost fill (30 cm) was silty sand with gravel (BGR), overlying a lighter colored silty sand with gravel (30 cm), and the lower was coarse-grained sand (25+ cm).

The fill sequence in Area 2 is more complex (Figs. 13.5–13.6) but retains the same general sequence (Table 13.6). Duff is similar but can be somewhat darker than found in Area 1 due to more charcoal in the soil. The DC layer is largely eolian silt with abundant charcoal powder and chunks. The MDC stratum is the equivalent of BP in Area 1. SG can be either sand and gravel filled channels or lenses within RSC. RSC is the equivalent of BCACO and BCS, generally blocky and hard and not as distinct as in Area 1. RRC is a sterile silt with pumice that has no equivalent in Area 1.

Historic Component

Other than the foundation partially excavated by Dittert and Eddy (Structure 1), no other feature

Table 13.5. LA 6170, Area 1 General Stratigraphic Descriptions

Designation	Description	Munsel Color Range (Dry or Moist)	Comments
D	Duff; sandy clay loam; not sticky; slightly plastic	10YR 6/4D 10YR 5/4M	Loose eolian silt with occasional surface gravel and cobbles
BP	Clay loam with subangular pumice pieces; not sticky; slightly plastic	10YR 5/4, 6/4D, 10YR 4/3-4/4M	Consolidated granular looking with enough charcoal to give it a slightly gray cast; contains cobbles and cultural material
BCACO	Silty clay with carbonate pieces and wash; blocky to smooth; plastic and sticky	10YR 6/3- 6/4D, 10YR 5/4-5/6M	Hard and consolidated to loose but chunky; probably 5,000- to 6,000-year-old soil
BCS	Silty clay; blocky and very hard with some banding of looser material to smooth; not sticky; plastic	10YR 6/4D 10YR 5/4M	Mostly very consolidated; indistinct boundary with BCACO but lacks carbonates and has a chunky texture
BGR	Sand or silt and gravel channel deposits	10YR 6/4D 10YR 6/6M	Varies from small gravel and coarse multicolored sand to larger and denser gravel (85%)

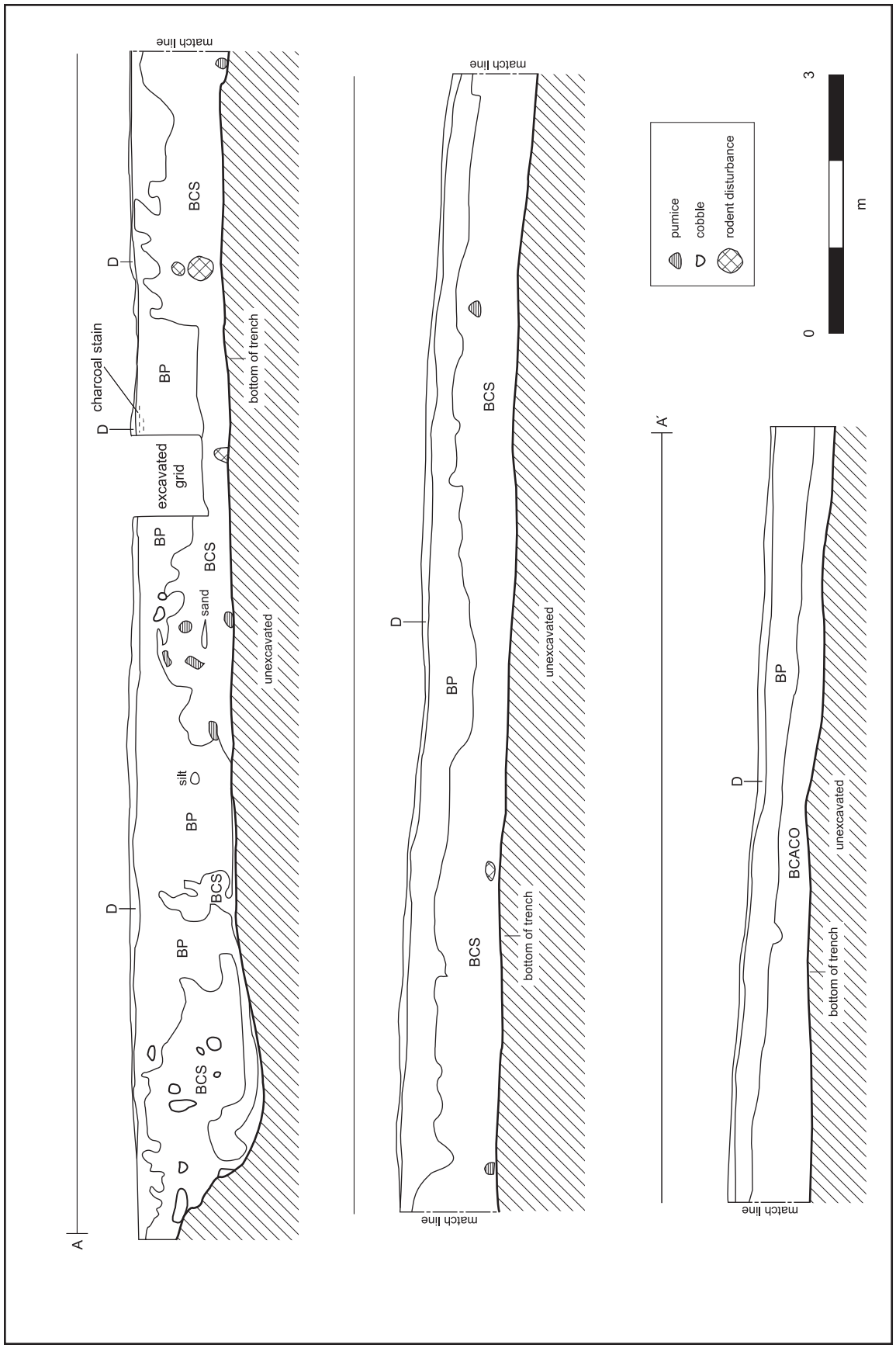

Figure 13.3. LA 6170, Area 1, north-south backhoe trench, north of Structure 1.

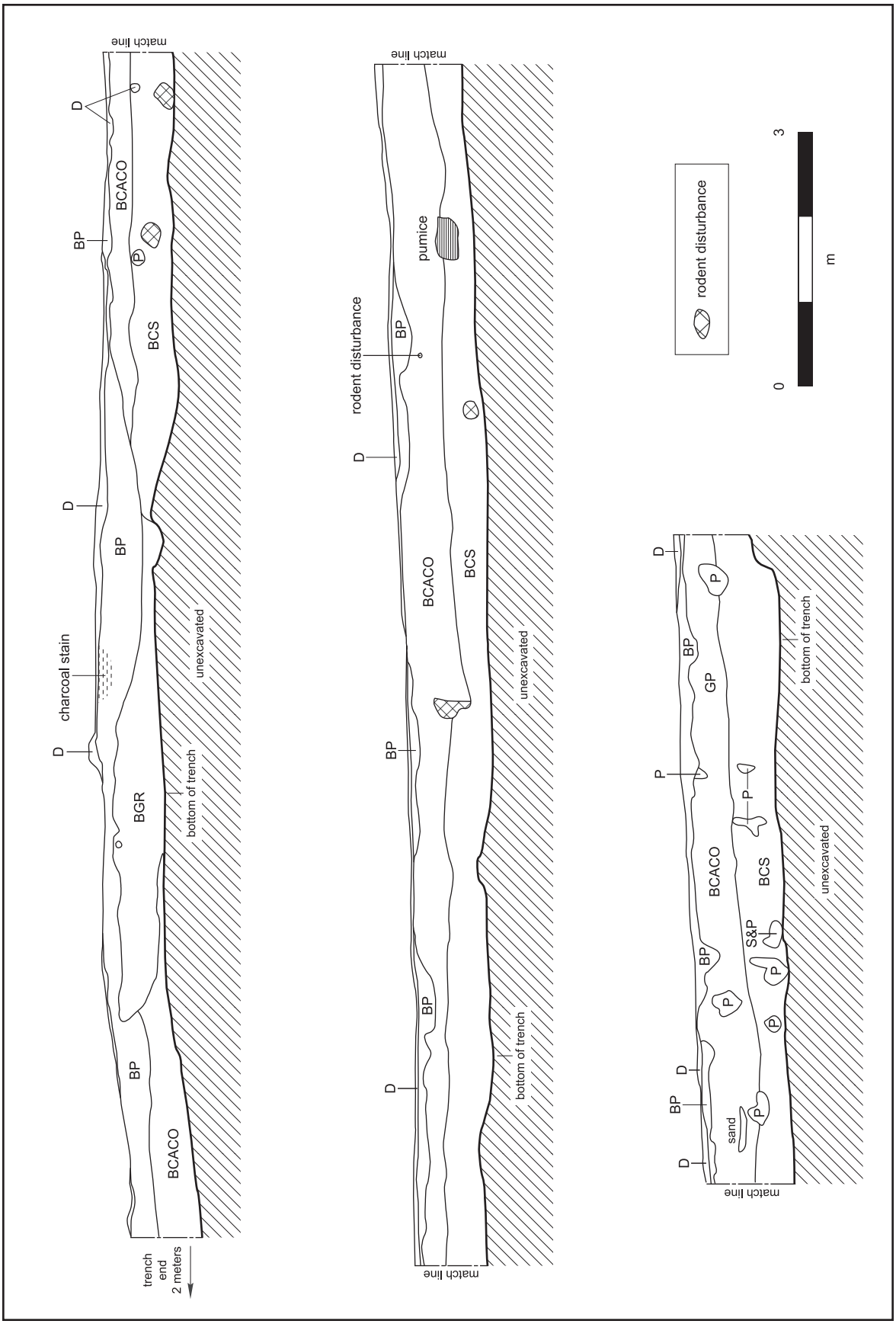

Figure 13.3. Continued.

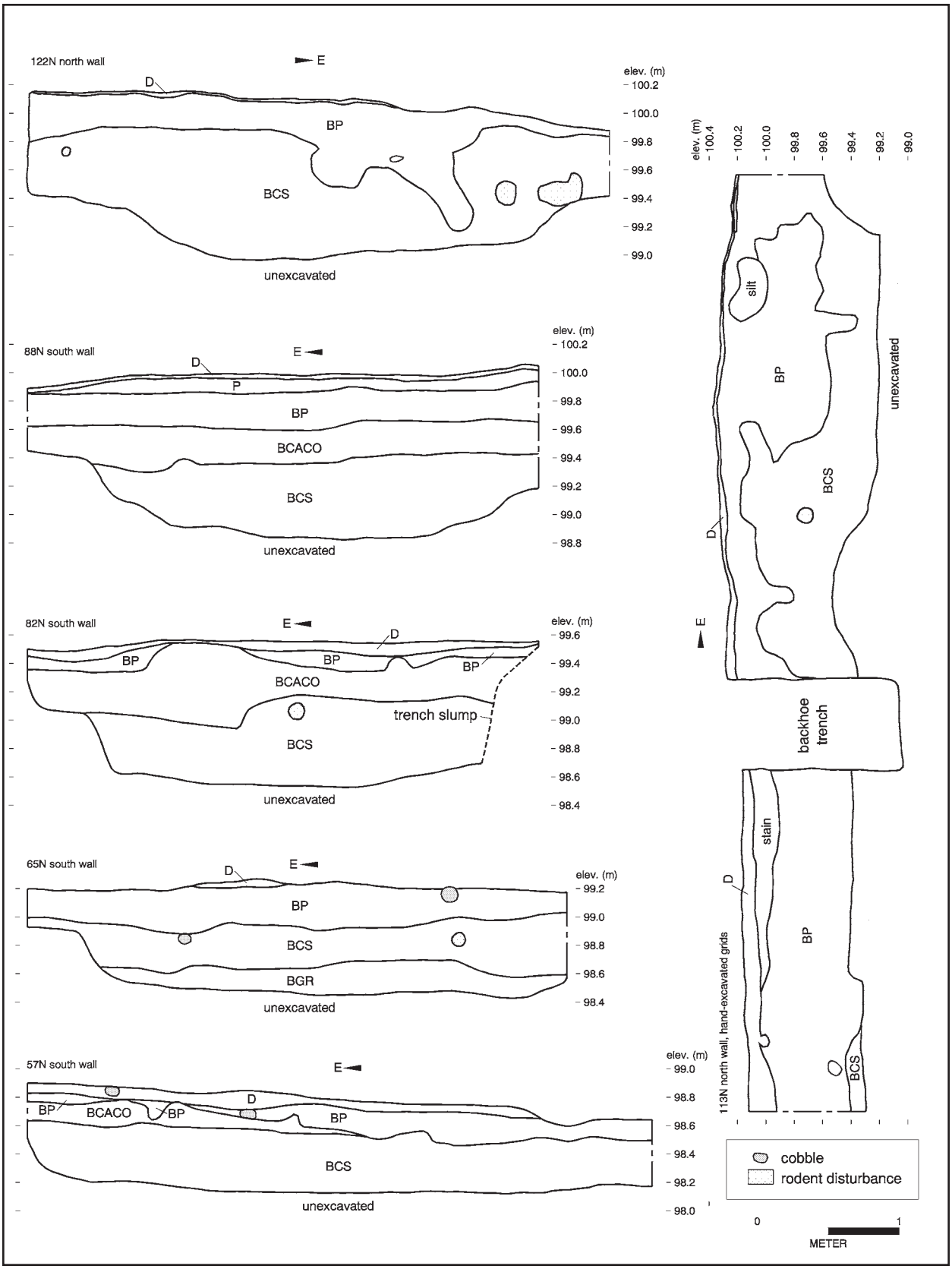

Figure 13.4. LA 6170, Area 1 east-west backhoe trench profiles.

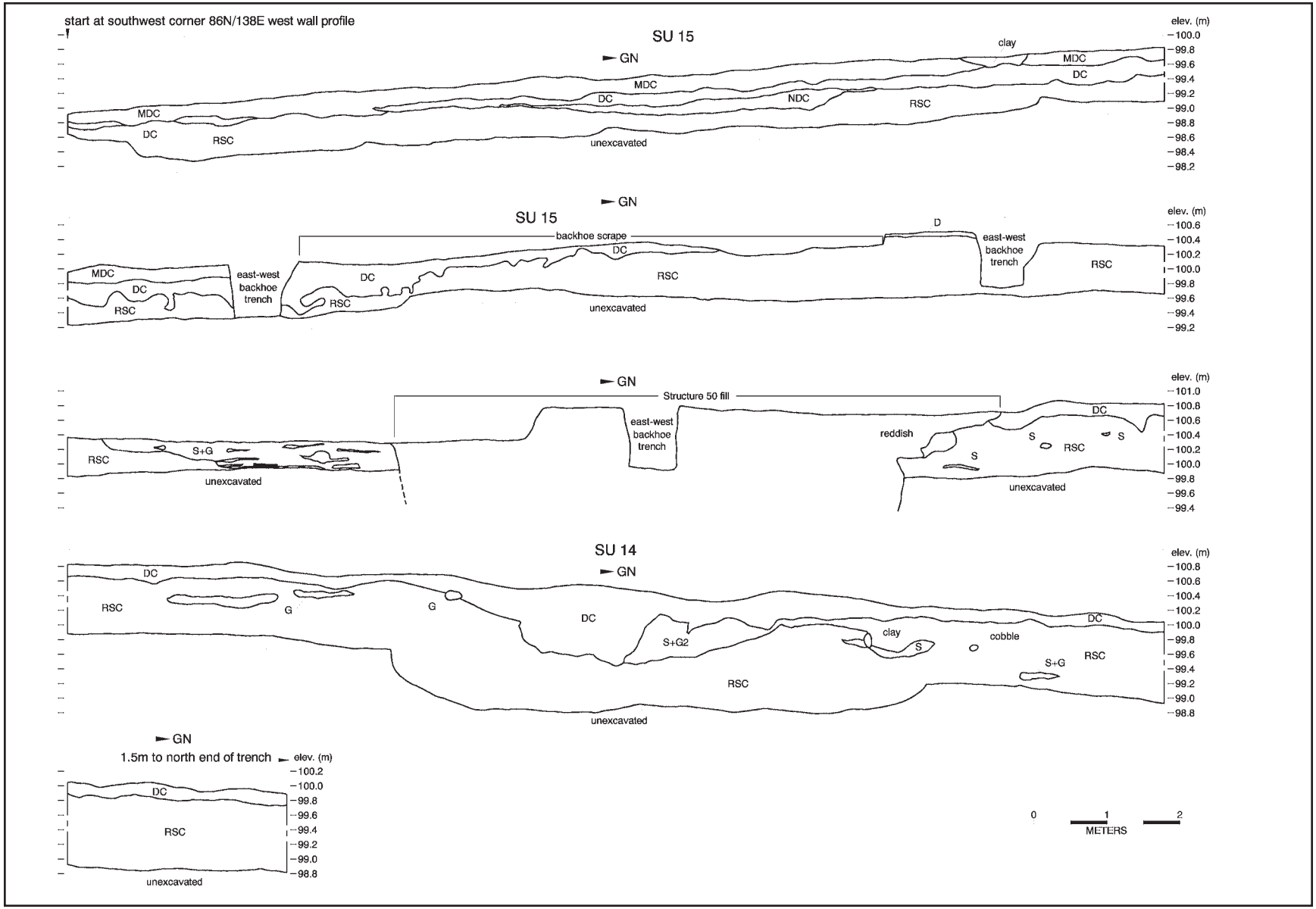

Figure 13.5. LA 6170, Area 2, profile of north-south backhoe trench at 135E.

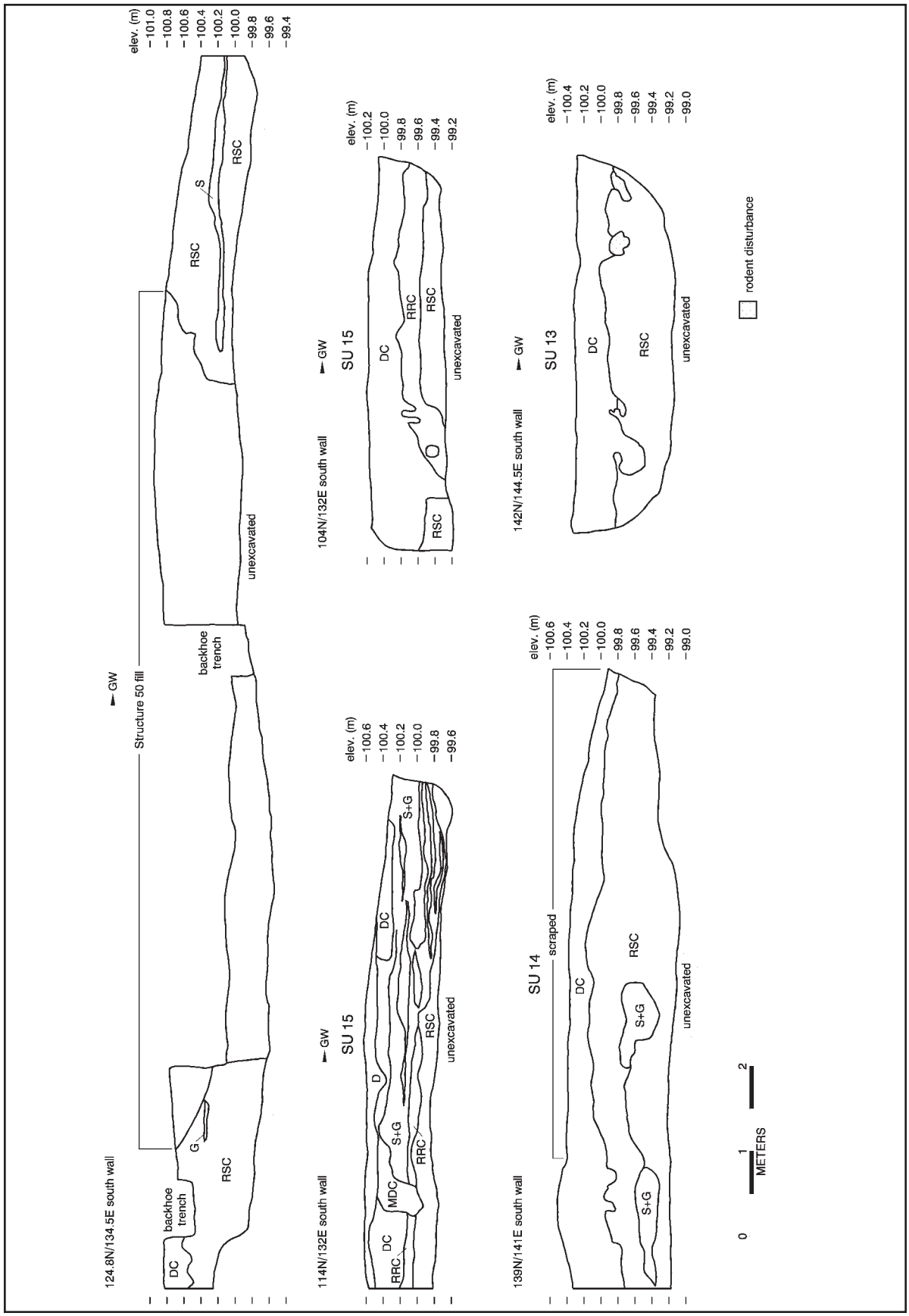

Figure 13.6. LA 6170, Area 2, east-west backhoe trench profiles.

Table 13.6. LA 6170, Area 2 General Stratigraphic Descriptions

Desig-nation	Description	Munsel Color Range	Comments
D	Duff	Same as Area 1	
DC	Silt with pumice pieces	10YR 5/2D 10YR 4/2M	Eolian, stained by charcoal powder and occasional hunks of charcoal; sparse gravel
MDC	DC silt with pumice plus clean eolian soil	10YR 5/4D 10YR 4/4M	Lighter in color
SG	Sand and gravel lenses alternating with compact lenses of sandy silt that is slightly sticky and plastic	10YR 6/4D 10YR 4/4M	Alluvial and colluvial
SG2	Silt with some pumice and abundant sand and gravel lenses	10YR 6/4D 10YR 4/4M	Distinctive pink color; found only in SU 14
RSC	Silty clay with carbonate flecks and wash; compact and blocky to soft (south end)	10YR 6/4D 10YR 6/6M	Similar to BCS and BCACO; occasional sand and gravel lenses
RRC	Silt with pumice; compact	10YR 6/4D 10YR M	Redder than RSC

within the project area is unquestionably historic. Feature 41, a cobble pile about 5 m north of the foundation, could be historic but this is unlikely since there was no historic material associated with it and it was about 20 cm below the surface. The south end of the rubble mound to the west and outside the project area appears to be the source of most of the historic ceramics on the site surface. Since our surface collection area did not extend as far as the rubble mound, which is probably the isolated room mentioned by Dittert and Eddy, it remains difficult to assign a date to the historic use of this site.

Very few historic ceramics were found. These include an undifferentiated Tewa Buff sherd from 102N/104E, Level 1, above the southeast corner of Structure 5, and a Kapo Gray sherd from 103N/101E, Level 1, within Structure 1. Tewa Polychrome and other historic ceramics were observed outside of the project area, closer to the rubble mound to the west.

Structure 1

Dittert and Eddy Excavations

The eastern portion of Structure 1 was excavated by Dittert and Eddy on December 7–8, 1961, while construction crews removed fill from the NM 22 right-of-way. Their excavations cleared a 1.5 m strip about 18 cm deep around the exterior of the cobble wall alignment and much of the interior, leaving a large balk at the center of the room (approximately 50 percent of the fill in that portion of the room fill). Interior fill was removed in two arbitrary levels to a depth of 21 cm below the ground surface. Fill was described as similar except for more cobbles in the lower level. The floor, slightly recessed below the base of the foundation wall and neither plastered nor trampled hard, was defined as the contact of a tan silty sand with a few flecks of fine charcoal and a whitish pink clay. A single circular, straight or slightly sloped-sided pit was found 30 cm from the north wall near the right-of-way fence and was 73 cm in diameter and 24 cm deep. Eddy notes that artifacts were few with slightly more lithic than ceramic artifacts. Ceramic types included Kwahe'e Black-on-white and Tewa Polychrome. Dittert and Eddy suggest mixing occurred, probably when barrow adobe was brought in from an earlier portion of the site. Other than late ceramics, no other historic materials were found in the structure fill.

Structure 1 was considered historic because of its size and construction methods. Dimensions, apparently taken on the outside of the walls, are given as 9.7 by 5.5 m. The walls, actually wall foundations, were 36 to 47 cm wide and constructed of parallel lines of upright cobbles with flat-lying cobbles and fill forming the core. Dittert and Eddy suggest the superstructure was of adobe or perishable material since they recovered insufficient cobbles to imply stone walls. Evidence for adobe melt was generally absent, yet the ceramics in the fill were considered barrow material.

General Methods

Structure 1 walls were defined by removing a level of fill in 1-by-1-m grid units from outside and above the cobble foundation walls (Fig. 13.7). Ultimately, a surface level (10 cm) was removed from the area between 96N and 105N and from 96E to103E plus grids 96N/101E, 97–98N/96E, 101–103N/103E, and 103–104/95E (Fig.13.8). Additional levels of fill were removed from within the foundation walls to a uniform depth of about 100.25 bd. Profiles record the fill along the 100N and 100E grid lines.

Structure Stratigraphy

Upper fill (A1) was recent eolian silty loam that became increasingly compact after the first 2 cm (Fig.13.9). Pumice was sparse throughout, and occasionally found in pockets. Color varied from 10YR 5/6–6/6D to 10YR 4/6M. Essentially absent in the portion of the structure cut by the slope to the east and to the north, the duff layer was up to 14 cm thick in other areas. This was distinguished from the site duff layer (D) by small pebbles that probably were trapped by the cobble foundation.

The second layer (BP) was the same as that found in the backhoe trenches, a sandy clay loam with fine eolian/alluvial laminations and moderate to abundant pumice nodules ranging from 0.5 to 2.0 mm in size. This layer ranges from a few centimeters thick along the south wall to 24 cm at the north. Sparse artifacts, all prehistoric (93 ceramics, approximately 308 pieces of chipped stone), and very occasional flecks of charcoal were found in this layer.

At the base was the BCS layer. This is a smooth silty clay with occasional pumice, charcoal, and artifact inclusions. Color was 10YR 5/6D and 10YR 4/3M. The boundary between this and the BP layer is probably what Dittert and Eddy identified as a floor. Neither profile intersected the fill of the pit structure that underlies the northeast portion of Structure 1. A few artifacts

Figure 13.7. LA 6170, Structure 1, after excavation.

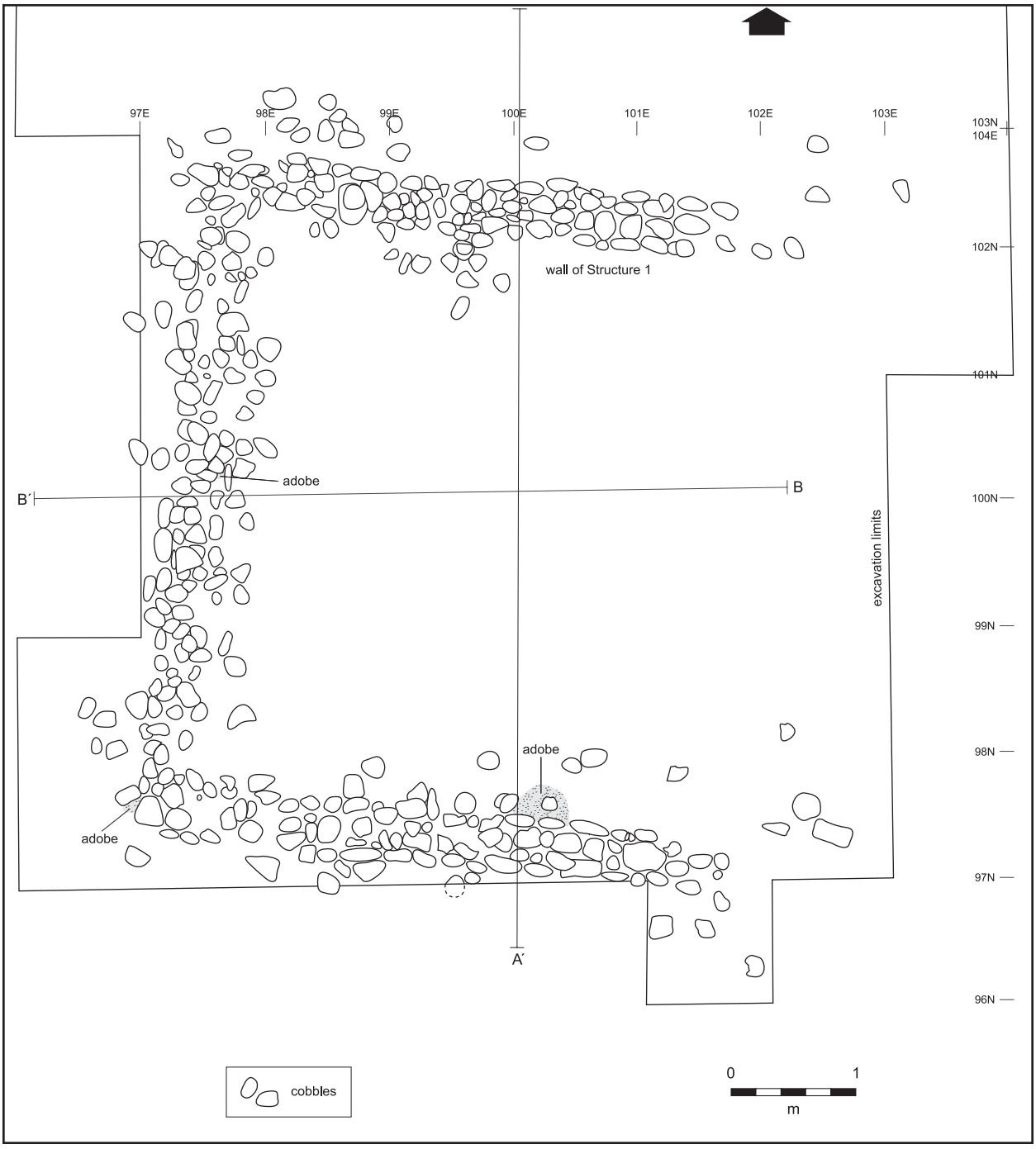

Figure 13.8. LA 6170, Structure 1, plan view.

were attributed to levels that included this layer. These include 10 ceramics and 20 lithic artifacts.

Structure Description

The foundation that comprises the west portion of Structure 1 was constructed of vesicular basalt, rhyolite, igneous, and quartzite cobbles that were probably collected from the sides of the gravel terrace. Most cobbles were at least 20 cm long and flattened rather than round, indicating selection of appropriate cobbles for construction (Fig. 13.10). A cross section of the north wall at the profile line revealed a shallow trench (about 8-cm deep) but the rock does not extend to the base of this trench in the area pro-

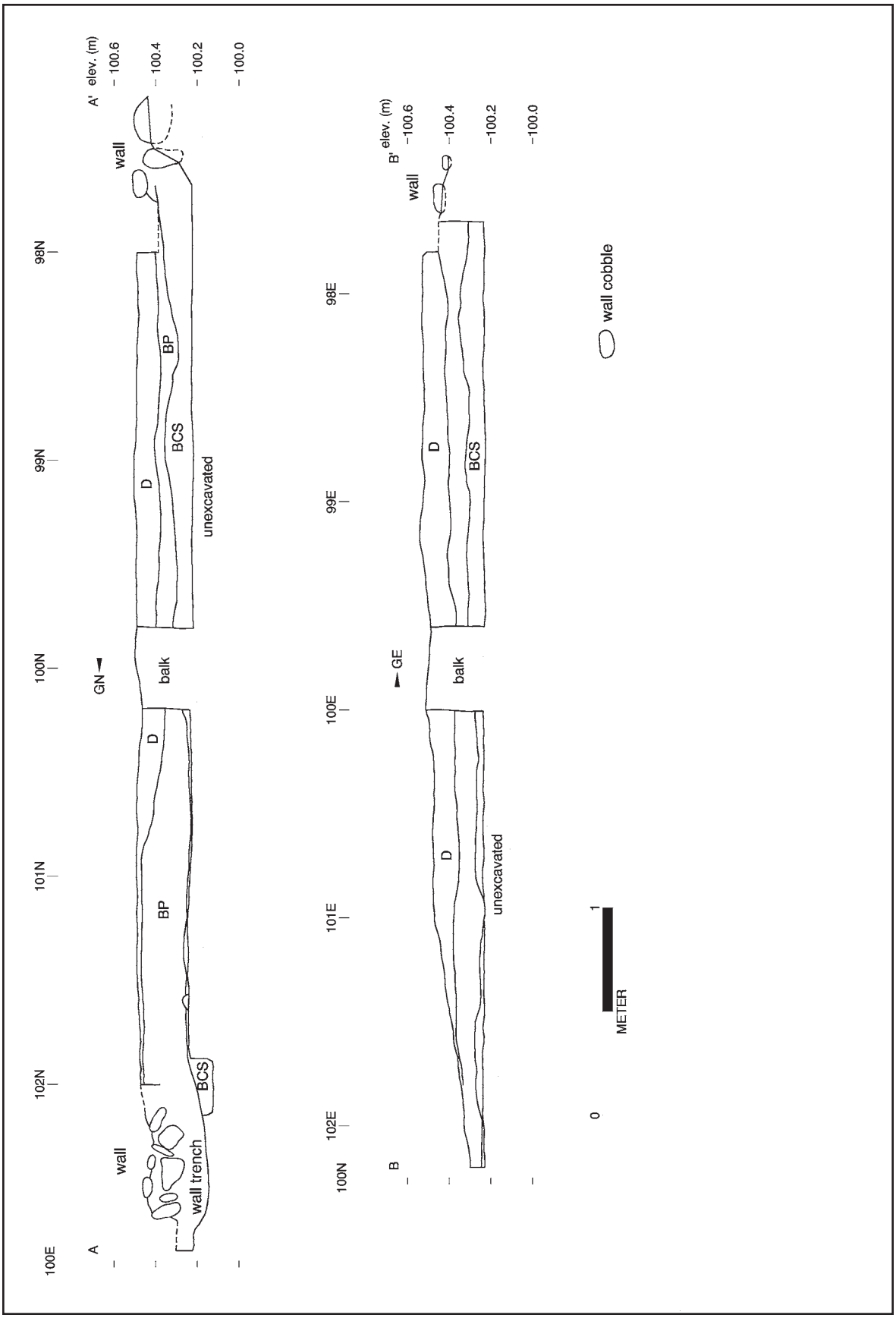

Figure 13.9. LA 6170, Structure 1, profiles.

filed. Rows of more or less upright cobbles form the interior and exterior edges with one to three courses of flat-lying cobbles, BP-like fill, and small spalls (less than 2 cm) between the upright cobbles. The foundation was generally about 45 cm wide and was 20 cm high in the profile. In a few areas, especially the southwest corner, the fill had more clay content and could have included some adobe wall melt or mortar.

Judging from Dittert and Eddy's figures, which appear to be exterior measurements, the enclosed space was on the order of 4.5 by 8.7 m. No dividing walls were found and the only possible pit was the one described by Dittert and Eddy. If there was a floor, it must have been at the level now occupied by the duff layer and was completely eroded away before the earlier excavation. The lack of wall fall, adobe melt, and cultural material associated with an historical occupation, suggests the structure was never completed or occupied. However, the size itself does suggest it dates to the historic period (Chapter 7).

Artifacts

Relatively few artifacts were found in the fill removed when defining this structure. The ceramics were analyzed to see if any date from the historic component; none does. Rather, these indicate a mix of Early and Late Developmental period wares, consistent with an interpretation of the structure lacking a floor and the excavated deposits representing an existing layer of fill into which the foundation trench was excavated. Since these deposits are mixed, the other artifact types were not analyzed. Lithic artifacts were fairly abundant (approximately 338 according to the field counts) with the majority coming from the upper 10 cm of fill (n =144), fewer from Level 2 (n = 151), and very few from Level 3 (n = 33). Most (n = 276 or 84.1 percent) are from grids that included walls or were within the enclosed area. The rest were from outside the foundation. A single piece of ground stone, a rhyolite grinding stone, was found among the south wall stones.

Figure 13.10. Detail of foundation, Structure 1.

Table 13.7. Ceramic Types and Vessel Forms Recovered from LA 6170, Structure 1 by Arbitrary Level

	Level 1	Level 2	Level 3	Total	% of Site Total for That Ware
Northern Rio Grande	-	6	2	6	
Unpainted undifferentiated	-	8.2%	14.3%	5.8%	22.2
Mineral paint	-	1	-	1	
undifferentiated	-	1.4%	-	1.0%	16.7
Santa Fe Black/white	1	-	-	1	
	6.2%	-	-	1.0%	33.3
Plain	5	12	-	19	
	31.2%	16.4%	-	18.4%	10.3
Indented Corrugated	2	11	1	14	
	12.5%	15.1%	7.1%	13.6%	28
Plain Corrugated	-	5	3	8	
	-	6.8%	21.4%	7.8%	13.6
Smeared Plain Corrugated	-	1	-	1	
	-	1.4%	-	1.0%	3.2
Neck Corrugated	-	1	-	1	
	-	1.4%	-	1.0%	50.0
Middle Rio Grande	8	30	5	43	
Plain	50.0%	41.1%	38.5%	41.7%	1.6
Wide Neckbanded	-	1	1	1	
	-	1.4%	7.1%	1.0%	100.0
Indented Corrugated	-	-	1	1	
	-	-	7.1%	1.0%	50.0
Unpainted undifferentiated	-	-	1	2	
	-	-	7.1%	1.9%	3.7
Gallup Black/white	-	1	-	1	
	-	1.4%	-	1.0%	100.0
White Mountain Red	-	2	-	2	
undifferentiated	-	2.7%	-	1.9%	100.0
Unpainted slipped	-	1	-	1	
	-	1.4%	-	1.0%	100.0
Reserve Smudged	-	1	-	1	
	-	1.4%	-	1.0%	100.0
Bowl	1	7	-	8	-
	6.3%	9.6%	-	7.8%	-
Jar	15	66	14	95	-
	93.7%	90.4%	100.0%	92.2%	-
Totals	16	73	14	103	-
	15.5%	70.9%	13.6%	100.0%	3.1

As indicated in Table 13.7, the ceramic assemblage from Structure 1 has a number of wares and proportions of wares that are fairly unique for the excavated portion of this site. Several ceramic types occur only or disproportionately in this assemblage (which comprises 3.1 percent of the site sample) and indicate a component that is not well represented in our sample. Since Late Developmental period wares also fill Structure 5, occupation of that structure predates these deposits. The rubble mound to the west is the most likely source.

Although the lithic artifacts from this structure were not analyzed, due to the lack of direct

association with any feature, the counts provide some information. Unlike the ceramics, Level 1 produced the largest number of lithic artifacts (144 or 43.9 percent compared to 16 ceramics or 15.5 percent). The second level contained 151 (46.0 percent) lithic and 73 (70.9 percent) ceramic artifacts while both were relatively rare (33 or 10.1 percent of the lithics and 14 or 13.6 percent of the ceramics) in the lowest level.

Late Developmental Period

Appreciable numbers of Late Developmental period ceramics were found in the Structure 5 overburden, the Structure 5A fill and floor, and Feature 5. Feature 5 is an activity area or midden deposit above an Early Developmental period structure (Structure 5) and is the only one that has a mix of Late Developmental and Coalition ceramics. Proveniences best described as mainly Early Developmental with some Late Developmental include the Structure 1 area, SU 3, the Structure 2 overburden, and upper wind and water deposits and the closing material in Structure 5. All of these are in Area 1, indicating this portion of the site continued to be occupied after Area 2 was abandoned. Late Developmental proveniences are the Structure 5 overburden and Structure 5A fill and floor. An archeomagnetic date (AM 1103) from the burned wall above the corner hearth in Structure 5A dates to AD1035–1080.

Stain at 106N (Feature 5). Excavations in Feature 5 were initiated to investigate structure-like deposits revealed by the east-west backhoe trench at 106N. Removal of a complete grid plus 37 cm of the adjacent grid up to the backhoe trench, encountered a cache of ground stone in the second level of fill. The cache included three complete slab metates made of vesicular basalt, fine-grained rhyolite, and fine-grained sandstone, five complete two-hand manos made of a medium-grained quartite, vesicular basalt, vesicular rhyolite, and fine- and medium-grained sandstone, and a vesicular basalt hafted pounder (Figs. 13.11–13.12). A bifacial metate overlay a second metate with the manos lying flat at one end of the metates or standing upright along the long axis of the metate and the pounder upright just south of the stacked metates. The uppermost metate was at about 100.00 mbd with the base of the lowest mano at a depth of 99.87 mbd. No pit for the cache was evident, rather the material was within a trash layer designated as Feature 5. Also in Feature 5, but not directly associated with the cache and not in the formal analysis sample, were an igneous unifacial chopper, a fragment of an igneous bifacial chopper, and a complete igneous anvil.

The Feature 5 fill layer (FMS in the Structure 5 description) began at about 105.75N and extended beyond the excavated grids to the south at 102N. In the Structure 5 profile at 104N it ends by 101.70E to the west and disappeared into the bank cut disturbance to the east. Traced by expanding grid excavations, it was a bowl-shaped deposit resting in the depression formed by the filling of Structure 5. Like much of the fill at this site, it was silty loam with a high pumice content and grayish cast from a high charcoal content.

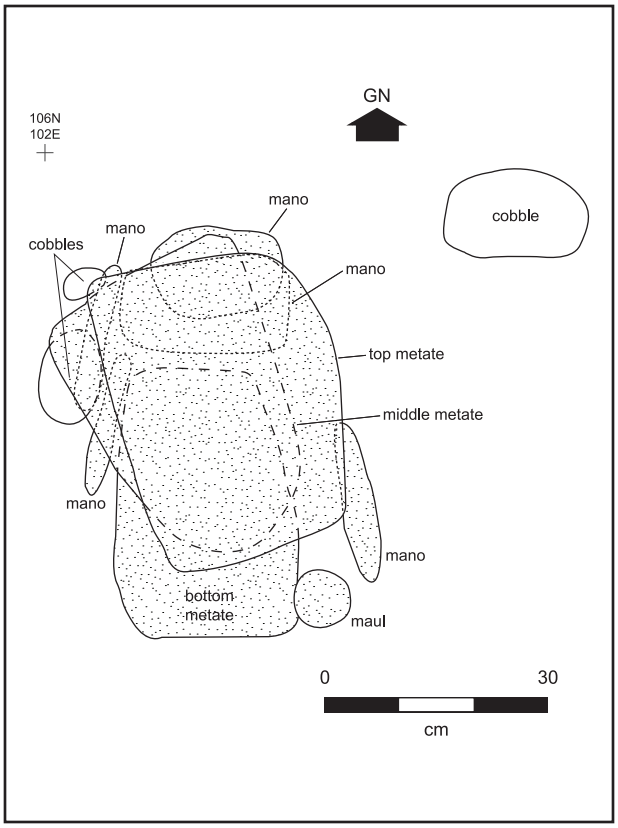

Figure 13.11. LA 6170, Feature 5, ground stone cache, plan view.

Figure 13.12. Ground stone cache in Feature 5 at LA 6170.

Cultural material was relatively abundant in this feature. Ceramics (n = 99) are nearly all plain wares with only two identified painted wares, both Socorro Black-on-white. In addition to the ground stone cache, a single piece of indeterminate ground stone and a good sample of flaked lithics (n = 200) including a hammerstone, a chopper, bifaces, and projectile points (Table 13.8) were recovered. Lithic materials are largely igneous rocks and chalcedony with an emphasis on later stages of core reduction as 77 percent of the flakes have dorsal cortex. Both expedient and formal tool manufacture are indicated by the debris in this feature. Two nonvesicular igneous flake tools have use wear typical of scraping on a hard material such as bone or wood with one exhibiting multiple scraping edges. Another chert flake exhibits rounding and striations perpendicular to the edge, wear that is more typical of scraping a soft medium such as hides. In addition, three bifaces and two projectile points were found. The obsidian biface is incomplete and lacks evidence of utilization. One nonvesicular igneous biface is a fragment of a broken and discarded tool that was bidirectionally used. Little fauna was recovered but a diverse range of animals includes rodents, rabbits, dog, deer, turkey, and frog or toad. Flotation samples from this layer contained burned amaranth, corn cupules, greasewood, cottonwood/willow, and juniper wood. The two pollen samples, one from under a mano, contained pollen from a variety of economic taxa including corn, cholla, wild dock or *Polygonum,* wild buckweat or *Erigonum,* and globe mallow as well as pine, cheno-am, *Ephedra,* sagebrush, composite, grass, and mesquite pollen.

Structure 5A. Structure 5A is a small mealing room excavated into the southeast corner of an Early Developmental pit structure (Structure 5). Neither of the stratigraphic profiles for Structure 5 intersected this pit room and it was encountered removing the fill from the southeast quadrant of that structure.

General Methods. Methods for excavation in

Table 13.8. Lithic Type and Material Groups for Feature 5 at LA 6170

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicu-lar Igneous		Vesicular Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	7	26.9	4	15.4	1	3.8	2	7.7	12	46.2	-	-	-	-	-	-	26	12.0
Flake	46	28.9	25	15.7	8	5.0	7	4.4	72	45.3	-	-	-	-	1	0.6	159	75.0
Flake, bifacial thin	1	50.0	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	2	<1
Flake, sharpening	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Core, multiplatform	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Chopper, unifacial	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Flake, utilized	-	-	1	33.3	-	-	-	-	2	66.7	-	-	-	-	-	-	3	1.0
Flake, marg. retouch	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Projectile point	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	2	<1
Biface	-	-	-	-	-	-	1	33.3	2	66.7	-	-	-	-	-	-	3	1.0
Unknown ground stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Mano, two-hand	-	-	-	-	1	20.0	-	-	-	-	2	40.0	2	40.0	-	-	5	2.0
Metate, slab	-	-	-	-	-	-	-	-	1	33.3	1	33.3	1	33.3	-	-	3	1.0
Grooved maul	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Total	56	26.7	30	14.3	11	5.2	14	6.7	91	43.3	4	1.9	3	1.4	1	0.5	210	100.0

this area are described with Structure 5. Structure 5A remained undetected until removing fill in the southeast quad revealed the adobe rims of two mealing bins. Alerted to the presence of the structure, the remaining fill was treated as floor fill down to the level of bins. Trowel excavation failed to define a floor in much of the area. The underlying soil (roof fall from Structure 5) was too soft and fragile to preserve a use surface in much of Structure 5A.

Structure Stratigraphy. Fill in the southeast quadrant was somewhat different from that of Structure 5 in general. At the same level, fill in the northeast quad was alternating lenses of eolian silty clay and alluvial wash with roof fall material starting in the 99.57 to 99.45 mbd level. In the northwest quad, roof fall material began in the 99.75 to 99.63 level. In the southeast quad (above Structure 5A), the slope caused by the road cut to the east obliterated all but about 23 cm of the east wall (99.59 to 99.36 mbd) while only 12 to 14 cm of the south wall was preserved along the 103E grid line (99.46 to 99.38 mbd). Levels 6–7 in this quadrant include the remaining fill from Structure 5A, as well as some fill from Structure 5 proper. One or two of the upper levels (Levels 4 and 5) contain fill from Feature 5, an activity area with a ground stone cache that overlies both Structure 5 and Structure 5A.

Fill in Levels 6 and 7 of the southeast quadrant is described as slightly compacted silty sand with pumice. A pocket of gray fine-grained sand was present in the northeast corner, probably just outside of Structure 5A. A considerable number of cobbles, pieces of ground stone, and burned and unburned adobe chunks were found between 99.44 and 99.31 mbd (Fig. 13.13). Those in the northwest corner could be outside the structure. There were no distinct breaks in fill to indicate the north or west walls as the soft fill of Structure 5 did not preserve these walls. Rather, the walls and the floor slumped and mixed with surrounding fill. The south wall and portions of the east wall and floor that were excavated

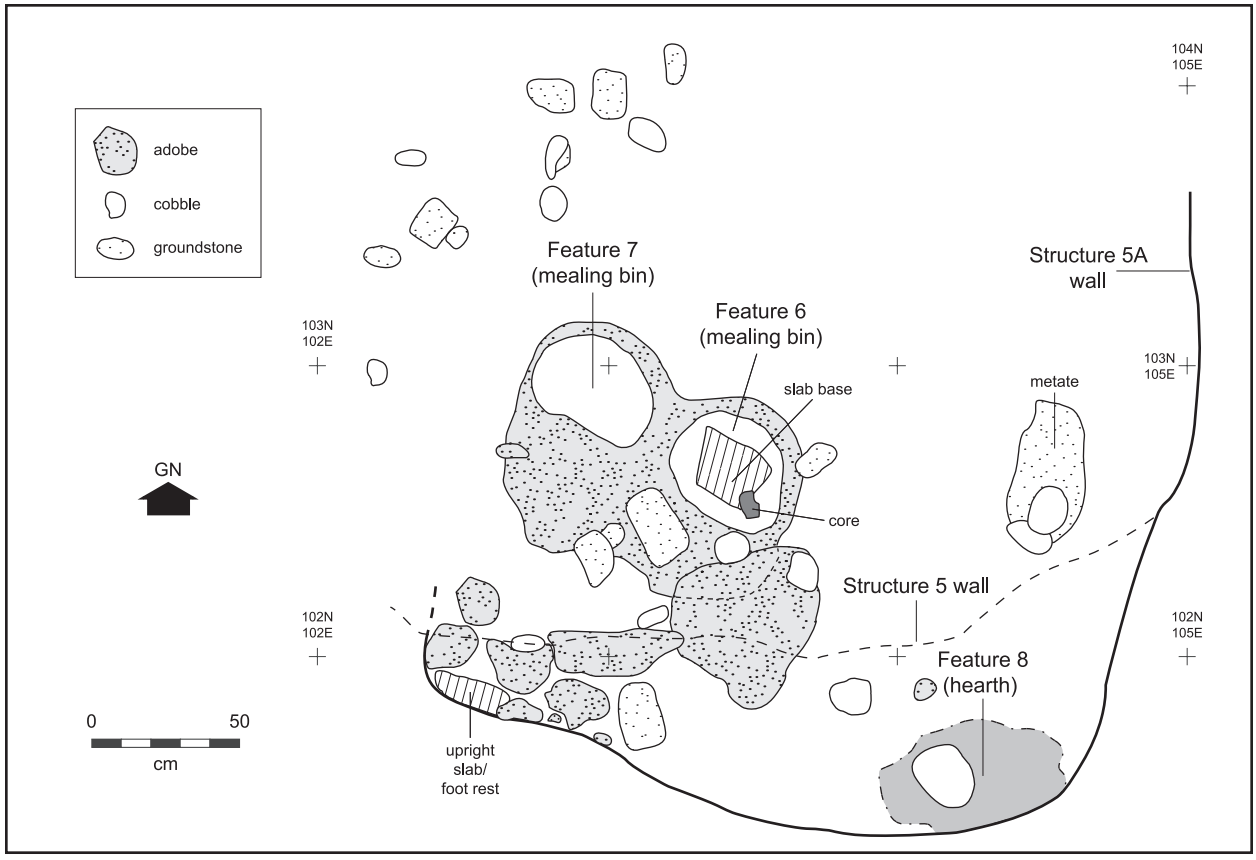

Figure 13.13. LA 6170, Structure 5A, floor contact point-plotted artifacts.

Table 13.9. LA 6170, Structure 5A Seeds and Fruits (frequency per liter)

	Structure Fill	Floor Fill	Feature 6	Feature 7
		Cultural		
Perennials				
Atriplex	-	-	1.1	-
Pinus edulis	.	0.5	-	-
Platyopuntia	1	1	-	-
Cultivars				
Zea mays	-	-	-	0.5
		Non-cultural		
Annuals				
Amaranthus	-	2.5	-	-
Chenopodium	7	9.5	11.2	0.5
Euphorbia	20.5	20.5	-	-
Grasses				
Sporobolus	65.5	131	-	1

Table 13.10. LA 6170, Structure 5A Other Plant Parts (abundance per liter)

	Plant Part	Structure Fill	Floor Fill	Feature 6	Feature 7
			Cultural		
Perennials					
Pinus edulis	Needle	-	-	-	+
Grasses					
Gramineae	Stem	+	+	-	-
Monocot	Stem	-	-	-	+
Phragmites	Stem	+	+	-	-
Cultivars					
Zea mays	Cupule	+	+	++	+
	Glume	-	-	+	-
			Non-cultural		
Grasses					
Sporobolus	*Caryopsis*	-	-	-	+

+ less than 10, ++ 11-25, +++ 25-100

Table 13.11. LA 6170, Structure 5A Wood from Flotation Samples by Weight

	Structure Fill	Feature 6
	Cultural	
Perennials		
Juniperus	0.5g	0.50g
Salicaceae *(Populus/Salix)*	0.04g	0.60g
Sarco/Atriplex	0.04g	0.20g

into sterile residual soil were preserved. Flotation samples from the fill and floor fill (Tables 13.9–13.11) contained plants (cactus seeds and piñon nut shells) not found in the fill or roof fall of Structure 5, another indication that much of the fill in the southeast quadrant was distinct from that in the main structure.

Structure Description. This small pit room was used primarily, if not exclusively, for grinding. Two mealing bins with the metates removed and a large vesicular basalt slab metate (22.7 cm thick) at floor level, and probably recessed into the floor, occupied much of the space within the room (Fig.13.14). The only other feature was a small corner hearth. The basins for the mealing bins were probably near or against the west wall giving the structure a 2.33 m east-west dimension. North to south it was at least 1.6 m and no more than 2.2 m since it does not appear in the stratigraphic profile at 103N.

None of the remaining walls or floor were plastered or prepared beyond removal of soil to a uniform level. As noted, these were preserved only where the pit room walls were excavated into the soil outside of Structure 5. Little of the walls remain but it is unlikely that the structure was any deeper than 30 cm, given that the base of Feature 5 is at 99.65 mbd in both the 103N and 102E profiles and the floor of Structure 5A at about 99.30 mbd.

No postholes were identified inside or at the margin of Structure 5A. Scant roofing material, mainly in the form of beam impressions, differ from that found in Structure 5, but are not very informative. Of the two from Level 6 of the southeast quad that could be associated with this structure, one has a smooth flattened surface that could have been made by a large beam or a cobble. Adjacent to that surface at a right angle is a flat surface roughly 3 by 14 cm. The second impression has reed-like impressions on opposite surfaces with the reed direction horizontal on one and transverse on the other. Two other impressions are definitely associated with this structure as they are point-plotted items found between the mealing bins and the south wall. One has a cobble impression on one side with the opposite side hand smoothed into an irregular surface. The other is almost like a brick, completely flat on one surface with hand smoothed clumps of clay on the other three sides. None are burned. A few cobbles were present but not nearly the quantity found in the roof fall layer of Structure 5. In addition to the impressions, a single wood sample was collected from the quadrant of fill above this structure. It is of juniper and 2.7 cm in diameter and is the small-

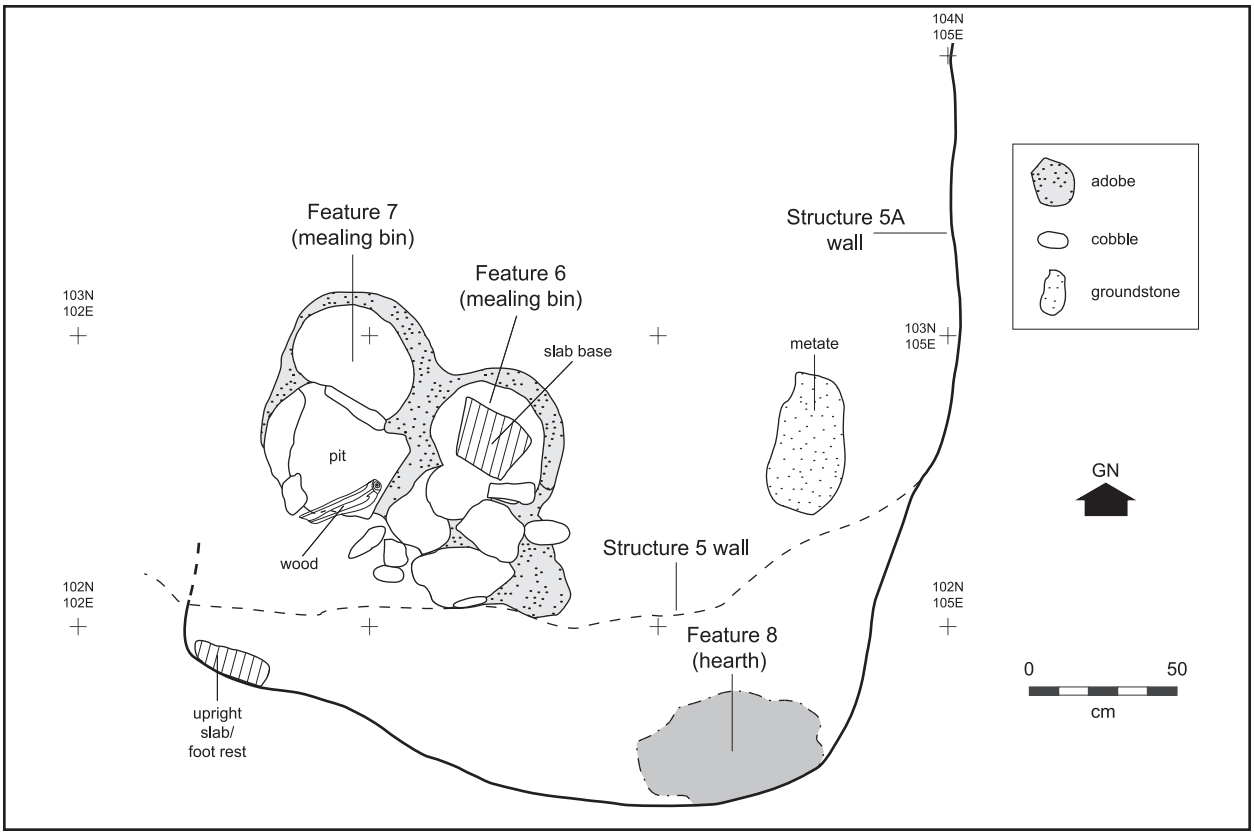

Figure 13.14. Plan of Structure 5A at LA 6170.

Table 13.12. LA 6170, Structure 5A Features

Feature No.	Feature Type	Center Point	Top/Bottom Elevation	Dimensions (LWT in cm)	Fill	Comments
6	Mealing bin	102.50N, 103.62E	99.32/99.15	85 x 45 x 17	Silty sand with much pumice 10YR 5/4; charcoal stained at base 10YR 4/2	Adobe collar, slab base; adobe chunk in fill; metate removed
7	Mealing bin	102.75N, 102.90E	99.32/99/16	80 x 50 x 16	Silty sand with much pumice 10YR 5/4	Adobe collar; metate removed
8	Hearth	101.56N, 104.20E	99.32/99.27	85 x 35 x 5	Silty sand with pumice	Corner hearth; oxidized area 25 x 25 cm; wall burned

est diameter of burned beams collected.

Associated Features. Three features are part of this structure, the two mealing bins (Features 6 and 7) and a corner hearth (Feature 8). Table 13.12 gives the basic information for these features.

The mealing bins were side-by-side and probably against or within a few centimeters of the west wall of the structure (Figs. 13.15–13.16). While it is difficult to determine how close the metates would have been to the south wall since the metates were removed, the distance was probably less than 60 cm. Grinders would have placed their feet against the wall for support as they knelt over the metate. A 4-cm-thick stone slab placed against the wall behind Feature 7 suggests the distance was too great and the grinder compensated by adding the stone.

Construction methods were similar for the two bins. Both have bowl-shaped basins to catch the meal. The basins were simply scooped out of the Structure 5 fill then lined and rimmed with adobe. Adjacent portions of the rims are similar, if not contiguous, suggesting these were constructed in a single episode. Feature 6 has a slab plastered into its base.

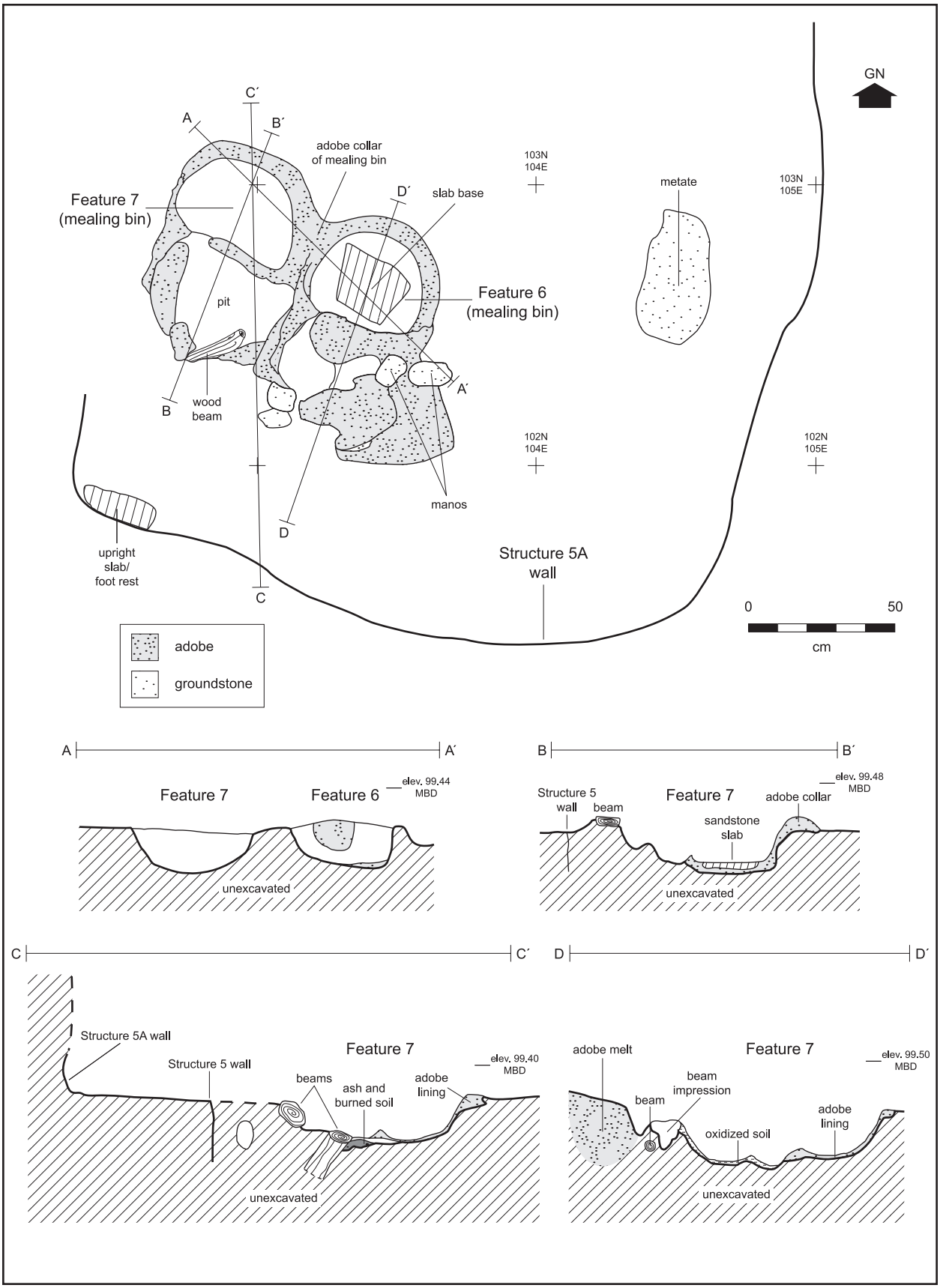

Figure 13.15. LA 6170, plan and profile of Structure 5A mealing bins (Features 6 and 7).

Figure 13.16. Structure 5A, mealing bins.

Chunks of adobe and cobbles were used to raise the near end of the metate to the appropriate level. This effort was much more haphazard than the bowl preparation as the chunks have no order and there was no attempt to secure this material or the metate with adobe.

Except for a thin lens of charcoal-stained silty sand at the base of Feature 6, fill in both bins was the same silty sand with pumice found in Levels 6 and 7. The adobe collar was a trashy pumice-laden silty clay (10YR 6/3D) that was grayer than the pit structure fill. At floor level, the rim was up to 6 cm thick while in the Feature 7 basin it was only about 2 cm. The Feature 6 slab was set in 3 to 4 cm of adobe with 2 cm beneath the slab. A single sherd was found in Feature 6, a plain jar sherd with sand temper. Flotation samples from the bases of basins produced burned saltbush seeds, corn cupules, glumes, and a kernel, monocot stems, a burned piñon needle, and wood from juniper, *Populus/Salix,* and greasewood/saltbush (Tables 13.9–13.11). A sample from the base of Feature 6 contained pine, cheno-am, composite, wild buckwheat, grass, corn, globe mallow, and cholla pollen, suggesting that a variety of plants were processed in this feature.

A large slab metate was found 75 cm east of Feature 6. The grinding surface was horizontal and essentially at the same level as where the Structure 5A floor should have been. Given its flat position and elevation, it is unlikely, but not impossible, that it was used for grinding as it was found. It is also unlikely that it was removed from one of the bins since its surface was at about the level of the floor.

Feature 8 (Fig. 13.17), the corner hearth, was no more than a shallow (10 to 16 cm) depression where a fire was built and oxidized parts of the floor (25-by-25 cm) and wall (60 cm long and 45 cm high). Fill was the same as the floor fill level, silty sand with pumice. Any ash and charcoal were cleaned out before it was abandoned. The archaeomagnetic date (AM 1103) places the occupation at either AD 1035–1080 or AD 1190–1240. A single Kwahe'e Black-on-white sherd from the structure floor

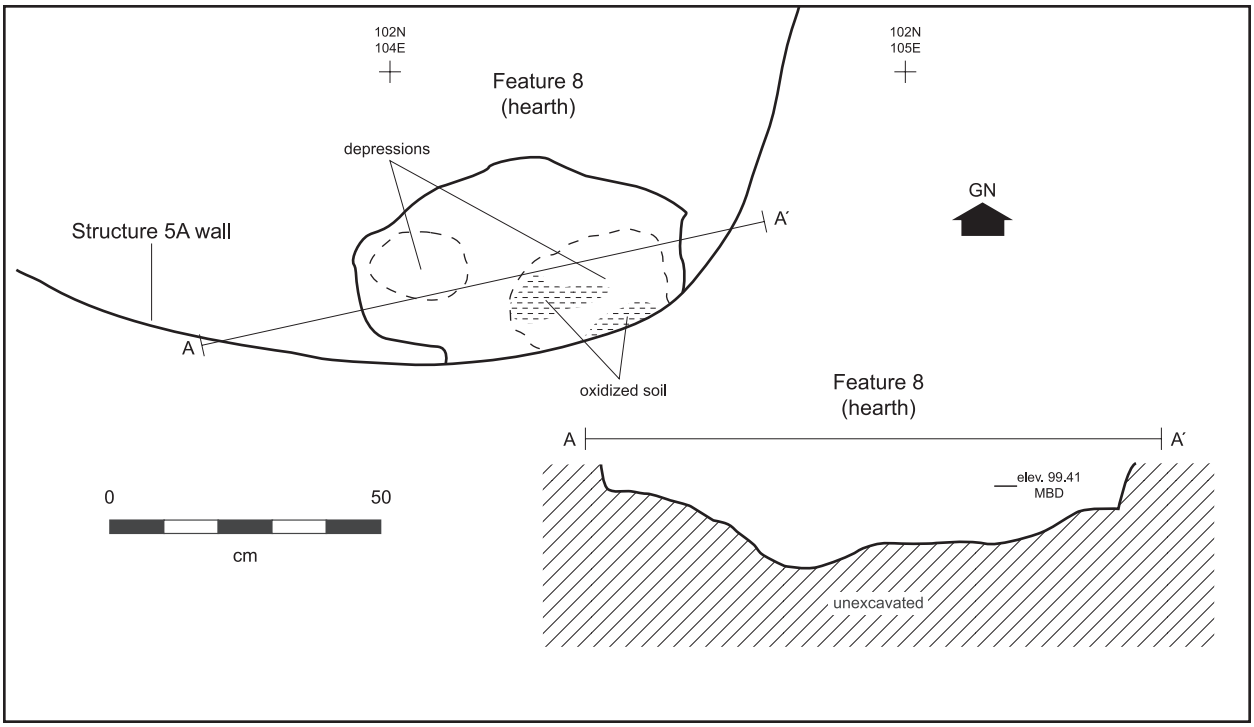

Figure 13.17. Feature 8, hearth, Structure 5A, plan view.

Table 13.13. Lithic Type and Material for LA 6170, Structure 5A, Fill

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Basalt		Vesicular Basalt		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	9	47.4	3	15.8	1	5.3	-	-	4	21.1	-	-	2	10.5	19	12.0
Flake	31	26.1	18	15.1	-	-	14	11.8	50	42.0	-	-	6	5.0	119	77.0
Flake from ground stone	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Core, multiplatform	1	25.0	2	50.0	-	-	-	-	1	25.0	-	-	-	-	4	2.0
Hammerstone	-	-	1	20.0	4	80.0	-	-	-	-	-	-	-	-	5	3.0
Chopper, bifacial	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Flake, utilized	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Flake, marg. retouch	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Unknown ground stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Mano, unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	41	26.8	25	16.3	5	3.3	15	9.8	58	37.9	1	0.7	8	5.2	153	100.0

suggest the earlier date is more likely.

Abandonment. With the possible exception of the large metate set in the floor and two hammerstones, most material associated with the use of the pit room was removed before it was abandoned. Metates were removed from the two bin complexes and no complete manos were among the floor fill items. All three features contained the same fill as that just above the floor.

Artifacts. Ceramic artifact summaries are included with the Structure 5 description. Relatively few sherds could be positively assigned to this structure (n = 42). All but one are jar sherds and Middle Rio Grande (sand-tempered) wares only slightly outnumber those with Northern Rio Grande temper (granite). A single Kwahe'e Black-on-white sherd is the only painted ware recovered.

Lithic artifacts from the Structure 5A fill (Table 13.13) are mainly from the later stages of secondary core reduction as 72 percent of the nonvesicular igneous basalt and 66 percent of the chalcedony flakes lack cortex. One unusual aspect of the debitage is the large percent of collapsed platforms (31 percent), which are found

on nonvesicular igneous (29 percent) and obsidian (75 percent). Cores and hammerstones are common. Tools are few but indicate a variety of activities. A discarded utilized flake tool and a marginally retouched flake indicate expedient tool use for cutting and scraping. A bifacial chopper reflects tool manufacture and use. Both ground stone objects are fragmentary. Only seven stone items were found on the floor: two hammerstones, the slab metate, and four flakes of rhyolite and basalt. In addition, an igneous unifacial chopper and an igneous expedient handstone were recovered from the fill but were not part of the ground stone analysis.

Fauna was sparse (n = 13) and was largely cottontail rabbit, jackrabbit, dog, and elk. The dog could be from the Structure 5 roof fall closing layer since most of the dog specimens were concentrated in the area in front of the vent and adjacent to the west wall of Structure 5A.

Flotation and macrobotanical material is similar in the fill and floor fill. Corn cupules and glumes are found in all samples with a variety of other plants represented (Tables 13.9–13.10). Pollen recovered from Feature 6 and two floor samples are fairly consistent. All contained pine, cheno-am, composite, grass, and corn pollen. Both floor samples have sagebrush, and cholla was found in the western floor and Feature 6 samples. The floor sample from along the south wall, the only area with a good floor surface, contained the only bean or mesquite, juniper, and buffaloberry pollen from the structure. Wild buckwheat was found only in Feature 6 and globe mallow was present in the southern floor and Feature 6 samples.

Discussion. Structure 5A strongly resembles the specialized semisubterranean grinding rooms more common in the northern Southwest. Dating to the Pueblo II transition (AD 1000–1150), specialized grinding rooms may have played an integrating role within a community. These pit rooms are roughly rectangular and generally associated with room blocks and kivas. Structure 5A falls close to the reported average size of 2.4-by-2.1 m and in the number of metate bins, which range from two to five. It is unusual in that it has a hearth: only one in a sample of 30 has a hearth. Metates were removed from most and manos and hammerstones are commonly left behind (Mobley-Tanaka 1997:439–441).

Early Developmental Period

Most of the features and structures at the site date to the Early Developmental period. The precise sequence of occupation is uncertain but similarities in the form and features of Structure 5 and the final configuration of Structure 50 suggest these were sequential or contemporaneous. The radiocarbon dates suggest that Structure 5 is the earliest with a conventional date of AD 580 and calibrated date of AD 610 to 720 or AD 740–760 (Beta 149027), followed by Structure 2 dating AD 830 ± 50 or cal AD 790 to 1010 (Beta 149026) 810 ± 50, then Structure 50 at AD 780 ± 60 or cal AD 700 to 1000 (Beta 149028). The archaeomagnetic dates also suggest Structure 5 may be the earliest with a sealed floor pit dating to AD 720–780 (AM 1106) and a burned wall date of AD 825–875 (AM 1152). The floor burn in Structure 2 dates AD 815–845 (AM 1102) as does the hearth beneath the clay collar in Structure 50 (AM 1153). Unfortunately, the more recent or collar burn from the same hearth dates earlier, AD 755 to 830 (AM 1125). The only other date from Structure 50 is from a wall burn that dates at either AD 700–755 or AD 900–950 (AM 1151).

Structure 2. Structure 2 (Fig. 13.18) was the most elusive of the LA 6170 structures. It could have been constructed during or just after the occupation of Structure 5 and filled during its use. Sparse to moderate numbers of artifacts were found throughout the upper fill, which was mostly wind and water deposited. Walls were indistinct and unfinished suggesting it may not have been completed. Floor features, other than burned patches, are absent. An abundance of cobbles, burned and unburned clay, ground stone objects, and general trash lay on and above the floor in a layer that ranged from about 25 cm in the east to 55 cm in the west.

Figure 13.18. Structure 2, after excavation.

General Methods. A charcoal stain, which became increasingly apparent as foot traffic along the right-of-way fence loosened the surface soil, was the first indication of a feature in this area. A test pit at 93N/102E confirmed the presence of a substantial stain and grid excavations were expanded until the entire stain was exposed. This upper stain was treated like a feature (Feature 2), that is, the outline defined, fill removed by grid in levels, profiles drawn, and a feature form completed. The stain, which measured 2.82 m north to south and 1.85 m east to west with a maximum thickness of about 10 cm, ranged from just below to 30 cm below the modern surface due to a substantial surface slope from west to east (38 cm in 3 m) as well as from north to south (16 cm over 3 m). Feature 2 was ovoid and essentially a shallow depression within the BP soil horizon and entirely within Structure 2 (Fig.13.19). Fill was a distinct grayish brown mottled soil that was either a sparse midden in a slight depression or an area where cultural material and charcoal collected naturally in a depression. Ceramics collected from Feature 2 (n = 30) suggest an Early Developmental period date.

After the fill was removed from Feature 2 and the exposed soil dried, it was obvious that the cultural or BP layer continued beneath the stain. Excavation was continued in two grids to determine why the BP layer was so thick in this area when it was relatively thin in the backhoe trenches to the south (5–10 cm) and west (5–20 cm). Charcoal and artifacts continued, and when dry, the fill revealed puddled clay lenses and sloping stratigraphy suggesting a structure. Additional grids were opened to locate the walls. While no actual walls were found, fill differences were evident at around 99.40 to 99.45 mbd to the south and east, 99.70 mbd to the west, and 99.05 to 98.90 mbd to the north.

Not completely convinced this was a structure since there were no walls, excavations were expanded to other grids with the fill removed in levels ranging from about 5 to 15 cm thick, depending on the soil. Once the fill difference suggesting walls was reached, only the potential structure fill was removed. This

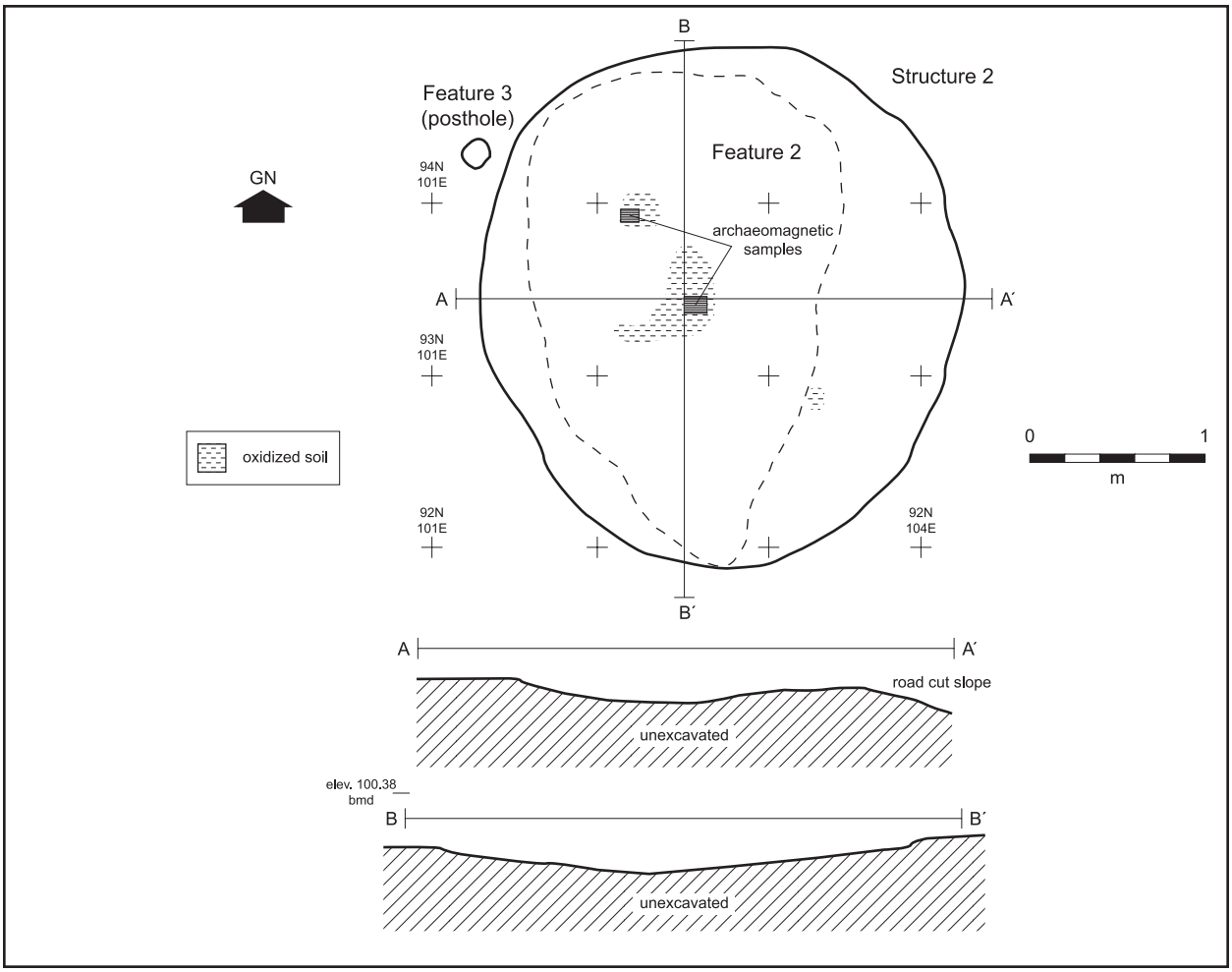

Figure 13.19. Plan and profile of Feature 2 superimposed in Structure 2 at LA 6170.

procedure was followed down to the level of the floor. Once the floor was defined, the pit walls were again examined to look for structure walls but none was found.

Soils were profiled along the 93N line, portions of the 102 and 103E lines, and just outside the structure along the 95N line. Adobe, cobbles, and point-plotted artifacts from the lower fill were mapped (Fig. 13.20).

Structure Stratigraphy. Resting on the floor was a loose silty clay with abundant cobbles, burned adobe pieces, unburned impressions, and a fair amount of cultural material (PC4) (Table 13.14). Dump-like pockets of ash occurred occasionally, some on the floor. This layer (Fig. 13.21) was thickest to the northwest and west and thinned to the south and east. Above this in most grids was a layer of thin laminates of eolian silt alternating with puddled deposits of silt and clay (W2). Along the south edge, banked up against the south wall (up to 20 cm thick), was a layer of clean laminated silt (S2) that was distinct from the W2 that washed up against it. W2 or a slightly gritty clay (CL3) separated PC4 from PC3. PC3 was distinguished by the sparse charcoal compared to PC4 and PC2, both of which had abundant charcoal, and all of which contain cultural material. Another wind and wash layer (W1) capped PC2. Over the PC2 was a smooth clay layer (CL2) with virtually no pumice and few artifacts. To the west was another cultural deposit (PC1), this one primarily wind and water deposits rather than trash dumps, topped by an upper eolian deposit (BP1) that contains some ash and moderate charcoal and finally, a small amount of duff (D) that was indistinguishable from BPI when wet. Within this layer was a smooth alluvial silty clay deposit (CL1). Feature 2 fill (MCH) lay in a slight depres-

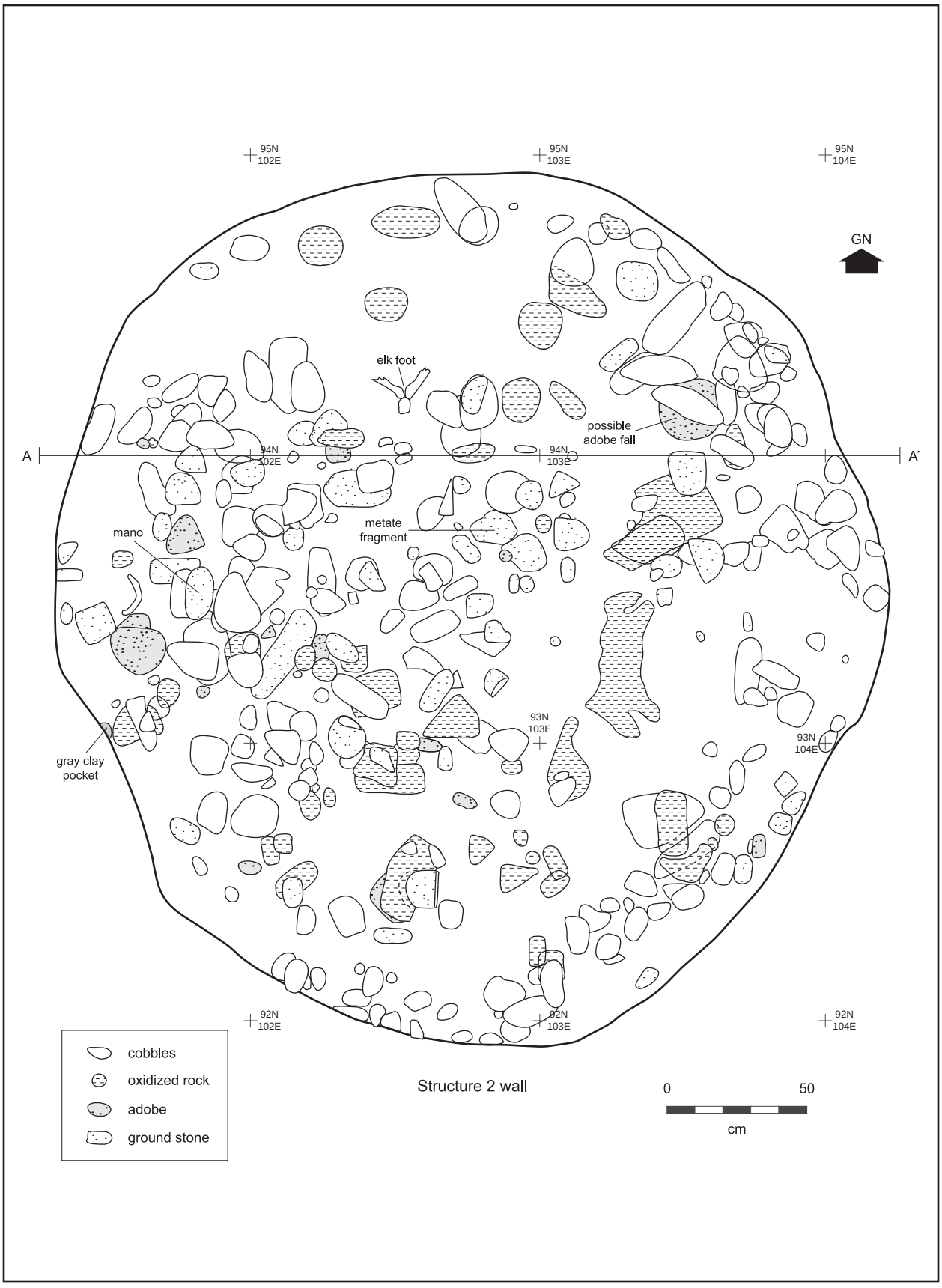

Figure 13.20. Plan of Structure 2 showing cobbles, fire-cracked rock, adobe, and point-plotted artifacts.

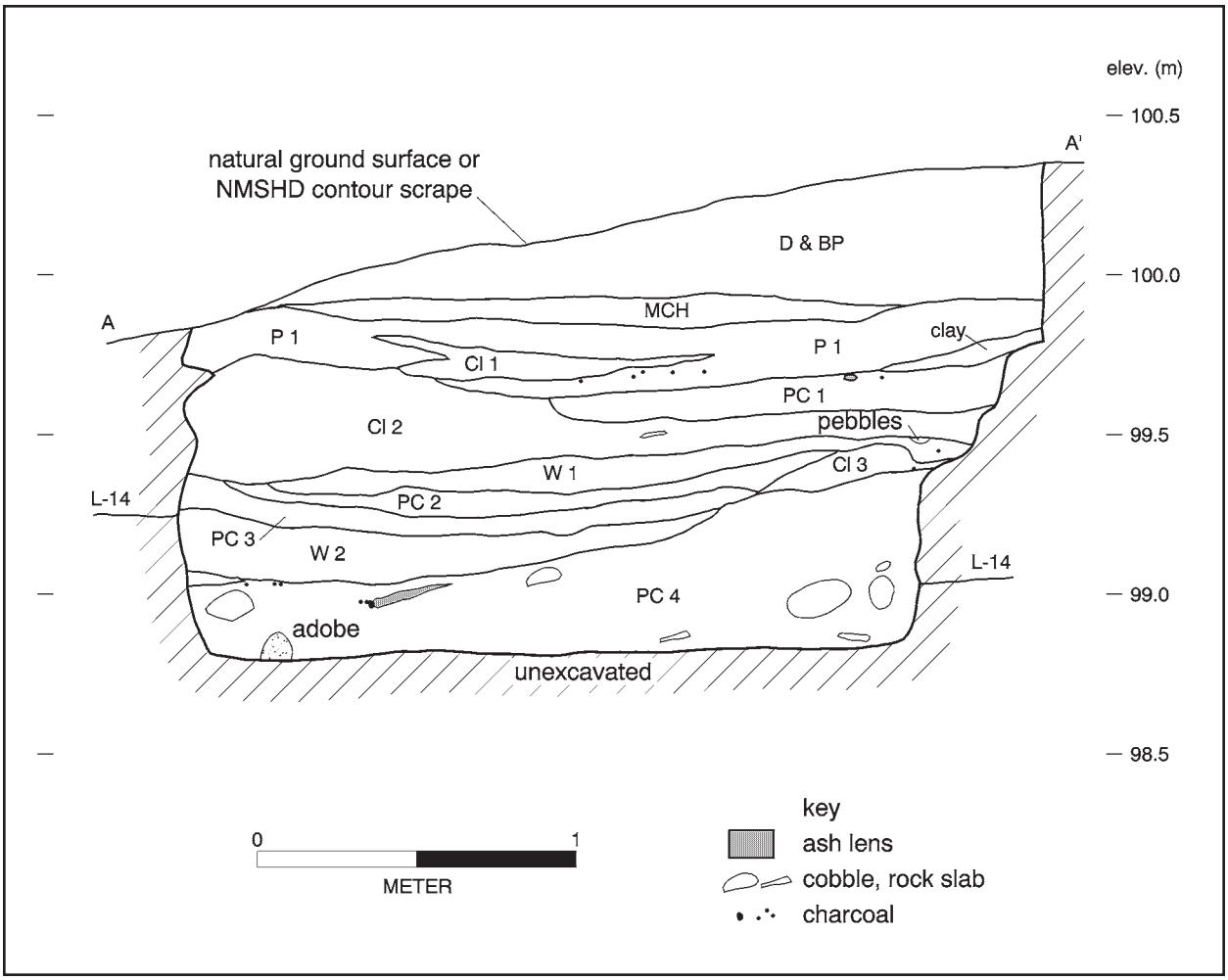

Figure 13.21. East-west profile of Structure 2 at 94N.

sion in the BP1 layer.

In sum, after an initial period of structural deterioration or dumping of trash and structural debris (cobbles and adobe) into the abandoned and possibly unfinished structure, it filled more or less naturally through eolian and alluvial processes. Some deposits had considerably more ash and cultural material suggesting varying intensities of activities occurred near the structure. Finally, when the structure was almost completely filled, a shallow depression (Feature 2) was filled with trashy material by dumping or accumulated through natural processes.

A subfloor test and augering in 93N/102E revealed consolidated, blocky BCS soil with a slight carbonate wash extending to 98.45 mbd. Beneath this was a similar soil that was very blocky and a slightly different color extending to at least 98.00 mbd.

Structure Description. At floor level, Structure 2 was not quite circular, measuring 3.07 m north to south and 2.73 m east to west. Floor depths varied from 98.75 at the edges to 98.83 bd at the center, for a sightly cupped surface. The floor was simply where the structure excavation stopped within a compact silty clay with a carbonate wash. In areas, a thin layer of ash-stained fill lay just above and stained the floor. Burned areas (Fig. 13.20) were spots where the native soil was reddened from oxidization. An archaeomagnetic date from the burns in 93N/102E (AM 1102) dated at AD 815 to 845 and cottonwood/willow wood from just above the floor gave a standard radiocarbon date of AD 830 ± 50, cal AD 790 to 1010 (Beta 149026).

Table 13.14. LA 6170, Structure 2 and Feature 2 Stratigraphic Descriptions (top to bottom)

Desig-nation	Description	Munsel Color Range	Comments
D & BP	D sandy clay loam duff; BP clay loam with pumice		Same as general site; eolian
MCH	Mottled, charcoal stained silty loam with abundant pumice	10 YR 6/4D 10YR 5/2M	Feature 2 fill; moderately consolidated with pea gravel, cobbles, dispersed charcoal flecks
BP1	Silty clay loam with occasional chunks of clay; nonstiky, slightly plastic, abundant pumice	10 YR 5/4D 10YR 6/3M	BP general site soil below Feature 2; ash pockets; moderate charcoal; eolian
CL1	Smooth silty clay, sticky, moderately plastic; moderate pumice	10 YR 5/4D 10YR 6/3M	Alluvial; center of depression only; moderate charcoal
PC1	Blocky silty clay; sticky, plastic, abundant pumice in bands and pockets	10YR 5/4D 10 YR 4/3M	Eolian and alluvial; charcoal and disperse pebbles
CL2	Smooth clay; sticky; plastic; sparse pumice	10 YR 6/4, 6/6D 10 YR 4/3-4M	Virtually no pumice except for the south part which has a lens with pumice and sparse charcoal
W1	Laminated bands of clay, silt, and pumice		Dispersed charcoal in aeolian silt; 8 distinct wash lines and 4 pumice lenses in a 10 cm section
CL3	Slightly gritty clay; sticky, moderately plastic; slight pumice content	10 YR 6/4D 10 YR 4/4M	Dispersed charcoal; 1 slight pumice band
PC2	Blocky silty clay; sticky, highly plastic, moderate pumice	10 YR 5/4D 10 YR 4/4M	Abundant charcoal
PC3	Coarse, blocky silty clay; sticky, plastic, moderate pumice	10 YR 5/4D 10 YR 4/4M	Sparse charcoal
W2	Laminated clay and silt; moderately sticky, slightly plastic	10 YR 5/4D 10 YR 4/4M	Thin laminates of eolian silt and puddle deposited silt and clay; some charcoal
S2	Smooth fine silt	10 YR 6/4D 10 YR 5/6M	Laminate; found along the south edge only
PC4	Loose silty clay with little pumice; sticky, slightly plastic	10YR 5/4D 10 YR 4/4M	Abundant cobbles, adobe, and cultural material; ash in pockets; much thicker to west

No features were found within the structure, however, Feature 3, a posthole adjacent to the structure, could be related to Structure 2.

As previously noted, there were no walls, simply a stratigraphic difference that was somewhat mottled and not a clear distinct break. Since this contact line was inside the area of the floor, there was probably some slumping of the original excavation leaving an irregular and less than vertical contact. Extensive tests back from the floor for about 60 percent of the perimeter failed to disclose any evidence of walls. Fill caved away in irregular blocky sheets with carbonate stains rather than in cleavage planes suggesting walls.

Whether it was roofed and the roofing material found in the structure is from that roof is an open question. Of the 12 adobe samples collected, only 1 has the impression of a large beam and 2 have pole impressions. At least 10 have impressions of plants that could have served as binders in the clay in some or were an actual layer of material in others. Surfaces range from fairly flat to concave to irregular. None of the pieces collected are burned. As a whole, the impressions suggest a far less substantive roof than for Structures 5 or 50. If roofed, as opposed to material deposited from another location, the manner was different. The impressions may be more consistent with

daub walls than with roofing material. However, the abundance of cobbles in this layer is similar to the roofing layer found in the other two structures.

Unfinished Developmental period structures are not unique to LA 6170. The Cochiti Dam site of North Bank also had structures described as incomplete. Pit House 1 in Unit 2 was described as incomplete because it lacked a vent, even though it had a hearth, three postholes, and two smaller pits. Pit House 2 in the same unit had irregular sloping soil walls and a rough and uneven floor with no evidence of occupation. Fill in both structures contained Kwahe'e ceramics (Late Developmental period). A third pithouse in this unit, Pit House 4, was not excavated once it was discovered that it was an uncompleted house. Fill near the bottom of the excavation had Red Mesa ceramics (Middle Developmental period) (Bussey 1968b:19–23).

Abandonment. Given the lack of features and unambiguous evidence of a roof, it is possible that this structure was never completed or fully used. Some use is indicated by the burns on the floor but there is no evidence of other activities, other than the dumping that occurred soon after the burning. Alternatively, the presence of some unique animal parts (see below) could indicate some form of closing ritual for this structure and that the roofing material was from this structure rather than material dumped into an empty structure.

Artifacts. Relatively few artifacts were recovered from Feature 2 and Structure 2: 179 ceramics, about 371 pieces of chipped stone, 22 of ground stone, 54 faunal specimens, and corn cupules and glumes. The ceramic assemblage indicates all but the Structure 2 overburden (D and some BP) are Early Developmental period deposits. The overburden contains corrugated ceramics indicating a mix of Early and Late Developmental deposits.

Most of the ceramics (Table 13.15) were found in the layer of roof fall or trash dumped into the structure. The overburden layer is distinctive in its assemblage, as is Feature 2 to a lesser extent. Not only does the overburden layer have all of the corrugated ceramics but it also has by far the largest proportion of Northern Rio Grande (granite tempered) wares (36 percent) for this structure. A few were also found in Feature 2 (10 percent) while the fill beneath Feature 2 has all Middle Rio Grande (sand-tempered) ceramics. Vessel forms are overwhelmingly jars in all fill units.

None of the flaked stone from the Structure 2 (n = 120) overburden was analyzed. Feature 2 (Table 13.16) flaked stone (n = 61) was mainly nonvesicular igneous and chalcedony with a few pieces of Jemez obsidian, chert, and quartzite. Secondary reduction is emphasized with most (51 percent) of the whole flakes lacking cortex and slightly fewer (41 percent) having partial cortex. Manufacture of bifacial tools is indicated by two flakes with retouched platforms. No formal tools were recovered and most of the lithic artifacts were unutilized flakes (75 percent) and unutilized small angular debris (22 percent). A single mano fragment, manufactured from fine-grained sandstone, is the only piece of ground stone recovered.

The wind and water deposits (Table 13.17) lithic artifacts are mainly nonvesicular igneous and chalcedony and represent the later stages of secondary core reduction (76 percent of the flakes lack cortex). Expedient tool manufacture is indicated by an unused bidirectionally retouched piece of angular debris and a biface with no utilization. One utilized flake exhibits the unidirectional wear typical of scraping on hard material such as bone or wood. Ground stone consists of a complete nonvesicular igneous grinding slab and a sandstone metate fragment.

The lower fill produced a larger sample of lithic artifacts (Table 13.18). Again, much is of nonvesicular igneous material and the emphasis is on the later stages of secondary core reduction with most of the flakes lacking dorsal cortex (80 percent). Several tools were recovered and represent a number of activities. Three nonvesicular igneous flakes are marginally retouched, two exhibiting both bidirectional cutting and unidirectional scraping wear on a hard material like bone or wood. Both appear to have been discarded when the edges were no longer functional. The third has unidi-

Table 13.15. Ceramic Types and Vessel Forms Recovered from Feature 2 and Structure 2 by Component at LA 6170

	Overburden	Feature 2	Wind/Water Deposits	Roof Fall/Trash	Floor Fill and Contact	Totals
	Mainly Early, Some Late Developmental	Early Developmental	Early Developmental	Early Developmental	Early Developmental	
Northern Rio Grande						
Unpainted undifferentiated	1	-	-	-	-	1
	2.8%	-	-	-	-	0.6%
Mineral paint (undifferentiated)	1	-	-	-	-	1
	2.8%	-	-	-	-	0.6%
Plain	5	1	-	-	-	6
	13.9%	3.3%	-	-	-	3.4%
Plain Corrugated	5	-	-	-	-	5
	13.9%	-	-	-	-	2.8%
Smeared Plain Corrugated	1	-	-	-	-	1
	2.8%	-	-	-	-	0.6%
Mudware	-	2	-	-	-	2
	-	6.7%	-	-	-	1.1%
Total Northern Rio Grande	13	3	0	0	0	16
	36.1%	10.0%				8.9%
Middle Rio Grande	21	25	21	61	13	141
Plain	58.3%	83.3%	80.8%	87.1%	76.5%	78.8%
Unpainted undifferentiated	-	-	1	2	-	3
	-	-	3.8%	2.9%	-	1.7%
Mineral paint (undifferentiated)	2	-	-	3	-	5
	5.6%	-	-	4.3%	-	2.8%
San Marcial B/w	-	-	3	4	2	9
	-	-	11.5%	5.7%	11.8%	5.0%
Tallahogan-like	-	1	1	-	2	4
	-	3.3%	3.8%	-	11.8%	2.2%
Total Middle Rio Grande	23	26	26	70	17	162
	63.9%	86.7%	100.0%	100.0%	100.0%	90.5%
Socorro B/W	-	1	-	-	-	1
	-	3.3%	-	-	-	0.6%
Bowl sherds	1	1	-	1	-	3
	2.8%	3.3%	-	1.4%	-	1.7%
Jar sherds	29	27	26	68	17	167
	80.5%	90.0%	100.0%	97.1%	100.0%	93.3%
Indeterminate form	6	2	-	1	-	9
	8.3%	6.7%	-	1.4%	-	5.0%
Totals	36	30	26	70	17	179
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13.16. Lithic Type and Material for LA 6170, Feature 2

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonves-icular Igneous		Sand-stone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	4	28.6	1	7.1	-	-	-	-	9	64.3	-	-	14	22.0
Flake	23	50.0	-	-	1	2.2	2	4.3	20	43.5	-	-	46	75.0
Mano, unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Total	27	44.3	1	1.6	1	1.6	2	3.3	29	47.5	1	1.6	61	100.0

Table 13.17. Lithic Type and Material for LA 6170, Structure 2, Wind and Water Deposits

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	2	50.0	1	25.0	-	-	-	-	1	25.0	-	-	-	-	4	5.0
Flake	24	35.8	15	22.4	1	1.5	2	3.0	25	37.3	-	-	-	-	67	83.0
Tested rock	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	1.0
Core, multiplatform	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Hammerstone	-	-	-	-	1	50.0	-	-	-	-	1	50.0	-	-	2	2.0
Angular debris, marg. retouch	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Flake utilized	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	1.0
Biface	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Metate, unknown	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Grinding slab	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Total	28	35.0	16	20.0	2	2.5	2	2.5	30	37.5	1	1.3	1	1.3	80	100.0

Table 13.18. Lithic Type and Material for LA 6170, Structure 2, Roof Fall/Trash Deposits

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	18.8	6	37.5	-	-	-	-	7	43.8	-	-	-	-	-	-	16	6.0
Flake	30	15.5	29	14.9	3	1.5	5	2.6	121	62.4	-	-	2	1.0	4	2.1	194	81.0
Flake, Bifacial Thin	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Tested Rock	-	-	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	1.0
Core, Multiplatform	-	-	2	50.0	-	-	-	-	2	50.0	-	-	-	-	-	-	4	1.0
Hammerstone	-	-	-	-	2	50.0	-	-	-	-	-	-	-	-	2	50.0	4	1.0
Chopper, Bifacial	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Marg Retouch	-	-	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	1.0
Unknown Ground	-	-	-	-	-	-	-	-	5	100.0	-	-	-	-	-	-	5	2.0
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Grinding slab	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	<1
Mortar	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Shaped Stone	-	-	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	1.0
Total	33	13.9	37	15.5	6	2.5	5	2.1	147	61.8	1	0.4	3	1.3	6	2.5	238	100.0

rectional retouch with no evidence of utilization. Analyzed ground stone includes two complete grinding slabs of fine-grained rhyolite, a complete scoria mortar, and fragments of other ground stone objects. Unanalyzed ground stone objects include one unifacial and two bifacial choppers of igneous material, a limestone anvil, a fragment of an igneous expedient handstone, a complete quartzite handstone, a complete quartzite polishing stone, and a fragment of an igneous shaped slab. Floor fill and contact material consists of 13 unutilized flakes of chalcedony (n = 3), chert (n = 1), basalt (n = 7), and fine-grained rhyolite (n = 2), plus a sharpening flake of fine-grained rhyolite, fragments of two ground stone objects, and a quartzite expedient handstone not included in the ground stone analysis.

Comparing artifact type by component (Table 13.19) finds that unutilized flakes are always the most common artifact type but decrease with depth. Feature 2 is markedly different in the amount of angular debris and lack of variation in artifact types. For material type, the lowest unit has considerably more nonvesicular igneous, largely at the expense of chalcedony, and Feature 2 has considerably less chert than the other components. Ground stone (Table 13.20) is mostly from the fill and many are fragments, with the exceptions of a grinding slab, the scoria mortar, the limestone anvil, the choppers, the polishing stone, and two of the three handstones.

Fauna (Table 13.21) was fairly sparse with only 54 pieces of bone recovered from the structure. The most unusual finds were in the roof fall or trash layer just above the floor. Grid 94N/101E contained much of an articulated left hind foot of an elk (distal tibia, tarsals, and the proximal third of the metatarsal) and an

Table 13.19. Summary of Flaked Lithic Artifacts from LA 6170, Structure 2 (percentages)

	Feature 2	Wind/Water Deposits	Roof Fall/ Redeposit	Floor Fill and Floor
Sample size	60	78	226	14
Artifact type				
Angular debris	23.3	5.1	7.1	-
Flake	76.7	85.9	85.8	92.9
Bifacial thinning flake	-	-	0.4	-
Sharpening flake	-	-	-	7.1
Tested rock	-	1.3	1.3	-
Multiplatform core	-	1.3	1.8	-
Hammerstone	-	2.6	1.8	-
Bifacial chopper	-	-	0.4	-
Retouched angular debris	-	1.3	-	-
Retouched flake	-	-	1.3	-
Utilized flake	-	1.3	-	-
Biface	-	1.3	-	-
Material				
Chalcedony	45.0	35.9	14.6	21.4
Chert	1.7	20.5	16.4	7.1
Quartzite	1.7	2.6	2.6	-
Obsidian	3.3	2.6	2.2	-
Nonvesicular igneous	48.3	37.2	60.6	71.4
Vesicular igneous	-	1.3	-	-
Sandstone	-	-	0.9	-
Other	-	-	2.6	-

articulated partial right rear foot of a deer (distal tibia and two tarsals). The elk was a large animal, probably older as there is lipping of the articular surfaces typical of older animals. Both the elk tibia and metatarsal have impact fractures resulting from the separation of this section from the rest of the leg and foot. The deer has no discernable signs of processing. Also in this layer were the occipital and atlas vertebra of a dog. A dog axis vertebra was found in the wind and water deposit layer and could be the same animal. The only floor contact bone was an atlas vertebra from a toad.

Less than mature animals were confined to the roof fall layer and included one jackrabbit, one medium artiodactyl, and all the mule deer. Burning is rare with only two pieces of burned bone (both heavily burned medium artiodactyl bones). Most bone is environmentally altered in some way (Table 13.21) and except for the elk and deer feet and toad part, most are fragmentary. No animal gnawing or additional evidence of processing was observed on the bone from this structure.

A single bone tool was recovered from Structure 2 roof or trash component. It is a piece of medium artiodactyl bone that has a naturally sharp end and small flakes resembling use wear along one edge.

A number of corn cobs and cupules were collected in upper and lower fill. Wood collected as radiocarbon samples was largely juniper but also included *Populus/Salix* and greasewood/saltbush. Floor samples produced the same array of wood, corn cobs, cupules, and glumes, and partially charred goosefoot (Tables 13.22–13.25). Pollen samples from along the north and west walls contained a variety of tree pollen, cheno-ams, composite, grass, sagebrush, wild buckwheat, and corn. *Ephedra* or Mormon tea pollen was very high in the north wall sample (Holloway, Chapter 24).

Structure 5. Structure 5 is an Early Developmental

Table 13.20. Summary of Analyzed and Other Ground Stone Recovered from LA 6170, Structure 2

	Feature 2	Wind/Water Deposit	Roof Fall/Trash	Floor Fill/Contact
Analyzed				
Indeterminate	-	-	5	1
	-	-	41.7%	50.0%
Mano fragment	1	-	-	-
	100.0%	-	-	-
Metate fragment	-	1	1	-
	-	50.0%	8.3%	-
Grinding slab	-	1	2	-
	-	50.0%	20.0%	-
Mortar	-	-	1	-
	-	-	8.3%	-
Shaped slab	-	-	3	1
	-	-	25.0%	50.0%
Subtotals	1	2	12	2
Other				
Unifacial chopper	-	-	1	-
	-	-	12.5%	-
Bifacial chopper	-	-	2	-
	-	-	25.0%	-
Anvil	-	-	1	-
	-	-	12.5%	-
Expedient handstone	-	-	2	1
	-	-	25.0%	100.0%
Polishing stone	-	-	1	-
	-	-	12.5%	-
Shaped slab	-	-	1	-
	-	-	12.5%	-
Subtotal	-	-	8	1
Total ground stone	1	2	20	3
	3.8%	7.7%	76.9%	11.5%

period pit structure located in the most utilized area of the site (Fig. 13.22). Overlying parts of this structure were the historic foundation (Structure 1), the Late Developmental/Early Coalition use/trash area (Feature 5), and the Late Developmental period mealing room (Structure 5A). As a result, both the stratigraphy and methods for this area are complex.

General Methods. An initial test in a trash layer exposed by a backhoe trench encountered a grayish cultural layer containing a cache of ground stone objects (Feature 5 in the Late Developmental section above). Grids south and east of the cache were excavated to determine the extent of the Feature 5 cultural layer. Edges indicating a lens-like deposit rather than an intentionally constructed feature were located to the north and eventually to the east. Definition of this deposit was discontinued once burned roof beams were found beneath the ground stone cache, indicating the presence of a pit structure. To obtain a profile and locate the structure walls, a line of grids was opened to the south then to the west and east. Fill was removed by level (generally 10 cm) and grid or adjacent grids to the level where the walls of the pit structure became clear (99.75 in the northwest quad, 99.64 in the northeast quad, 99.59 in the southeast quad, and 99.35 in the southwest quad). When our

Table 13.21. Summary of Fauna Recovered from Structure 2

	Overburden	Feature 2	Wind/Water Deposits	Roof Fall/Trash	Floor Fill/Contact	Totals
Small mammal	-	1	1	2	-	4
	-	5.9%	9.1%	9.1%	-	7.4%
Medium-large mammal	-	-	3	-	-	3
	-	-	27.3%	-	-	5.6%
Large mammal	1	12	-	-	-	13
	33.3%	70.6%	-	-	-	24.1%
White-throated woodrat	-	-	-	1	-	1
	-	-	-	4.5%	-	1.9%
Desert cottontail	-	1	1	3	-	5
	-	5.9%	9.1%	13.6%	-	9.3%
Black-tailed jackrabbit	2	-	3	2	-	7
	66.7%	-	27.3%	9.1%	-	13.0%
Dog	-	-	1	2	-	3
	-	-	9.1%	9.1%	-	5.6%
Medium artiodactyl	-	3	2	1	-	6
	-	17.6%	18.2%	4.5%	-	11.1%
Elk	-	-	-	8	-	8
	-	-	-	36.4%	-	14.8%
Mule deer	-	-	-	3	-	3
	-	-	-	13.6%	-	5.6%
True toads	-	-	-	-	1	1
	-	-	-	-	100.0%	1.9%
Totals	3	17	11	22	1	54
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Burned	-	1	1	-	-	2
	-	5.9%	9.1%	-	-	3.7%
Pitted	3	1	1	12	-	17
	100.0%	5.9%	9.1%	54.5%	-	31.5%
Checked	-	13	-	2	-	15
	-	76.5%	-	9.1%	-	27.8%
Root etched	-	1	7	4	-	12
	-	5.9%	63.6%	18.2%	-	22.2%
Complete	-	-	-	8	1	9
	-	-	-	36.4%	100.0%	16.7%
> 75% complete	-	-	-	2	-	2
	-	-	-	9.1%	-	3.7%
25-75% complete	-	1	4	3	-	8
	-	5.9%	36.4%	13.6%	-	14.8%
< 25% complete	3	16	7	9	-	35
	100.0%	94.1%	63.6%	40.9%	-	64.8%

initial estimate of the size of structure proved to be too small, the north half of the north-south profile was moved a meter east creating off-set quad lines with the west boundary of the northeast quad at 103E and the west boundary of the southeast quad at 102E. Except for grids 104N/102E and 105N/102E, which were excavated as control units, the remaining fill was removed in levels by quad.

Structure 5A, a Late Developmental period pit room, was entirely within the southeast quad. Removing parts of the south and east

Table 13.22. LA 6170, Structure 2 Seeds and Fruits (frequency per liter)

	SW quadrant Floor Fill and Contact
Possibly Cultural	
Annuals	
Chenopodium	1.8
Non-cultural	
Annuals	
Corispermum	0.9
Cycloloma	0.9

Table 13.23. LA 6170, Structure 2 Other Plant Parts (abundance per liter)

	Plant Part	Structure Fill	Floor Fill and Contact SW quadrant	Floor Fill and Contact NW quadrant
Cultural				
Grasses				
Gramineae	Stem	-	-	+
Cultivars				
Zea mays	Cupule	+	+	+
	Glume	-	-	+
Non-cultural				
Annuals				
Unidentifiable seed	Stem	-	-	+

Table 13.24. LA 6170, Structure 2 Wood from Flotation Samples by Weight

	Structure Fill	Floor Fill and Contact SW quadrant	Floor Fill and Contact NW quadrant
Cultural			
Perennials			
Juniperus	.30g	2.00g	.20g
Salicaceae *(Populus/Salix)*	-	.04g	.20g
Sarco/Atriplex	-	.60g	.04g
Nonconiferous wood	-	.10g	-

Table 13.25. LA 6170, Structure 2 C-14 and Macrobotanical Samples (count and weight)

	Plant Part	Overburden	Wind/Water Deposits	Roof Fall/ Redeposit	Floor Fill, Contact
Cultural					
Perennials					
Juniperus	Wood	-	14/1.26g	247/24.20g	27/4.05g
Pinus edulis	Wood	-	-	2/.33g	-
Salicaceae *(Populus/Salix)*	Wood	-	12/1.71g	190/19.14g	12/1.24g
Sarco/Atriplex	Wood	-	-	4/.46g	-
Non-coniferous wood	Wood	-	-	2/.13g	-
Macrowood					
Perennials					
Juniperus	Wood	4/.10g	-	-	-
Sarco/Atriplex	Wood	-	-	1/.04g	-
Possibly Cultural					
Perennials					
Juniperus	Wood	-	-	7/.20g	-
Cultivars					
Cultural					
Zea mays	Cupule	-	4/.10g	1/.04g	-
	Cob	-	18/2.20g	24/7.02g	3/.20g
	Kernel	-	-	1/.10g	-

walls of the Structure 5 in the southeast corner, the pit room was otherwise in pit structure fill. The north and west boundaries, and much of the floor of Structure 5A, could not be defined and appear to have slumped and merged into the pit structure fill.

The lower fill of Structure 5 was a mass of cobbles and burned roof beams and matting. Each level was exposed by trowel and brush, mapped, and photographed before the next

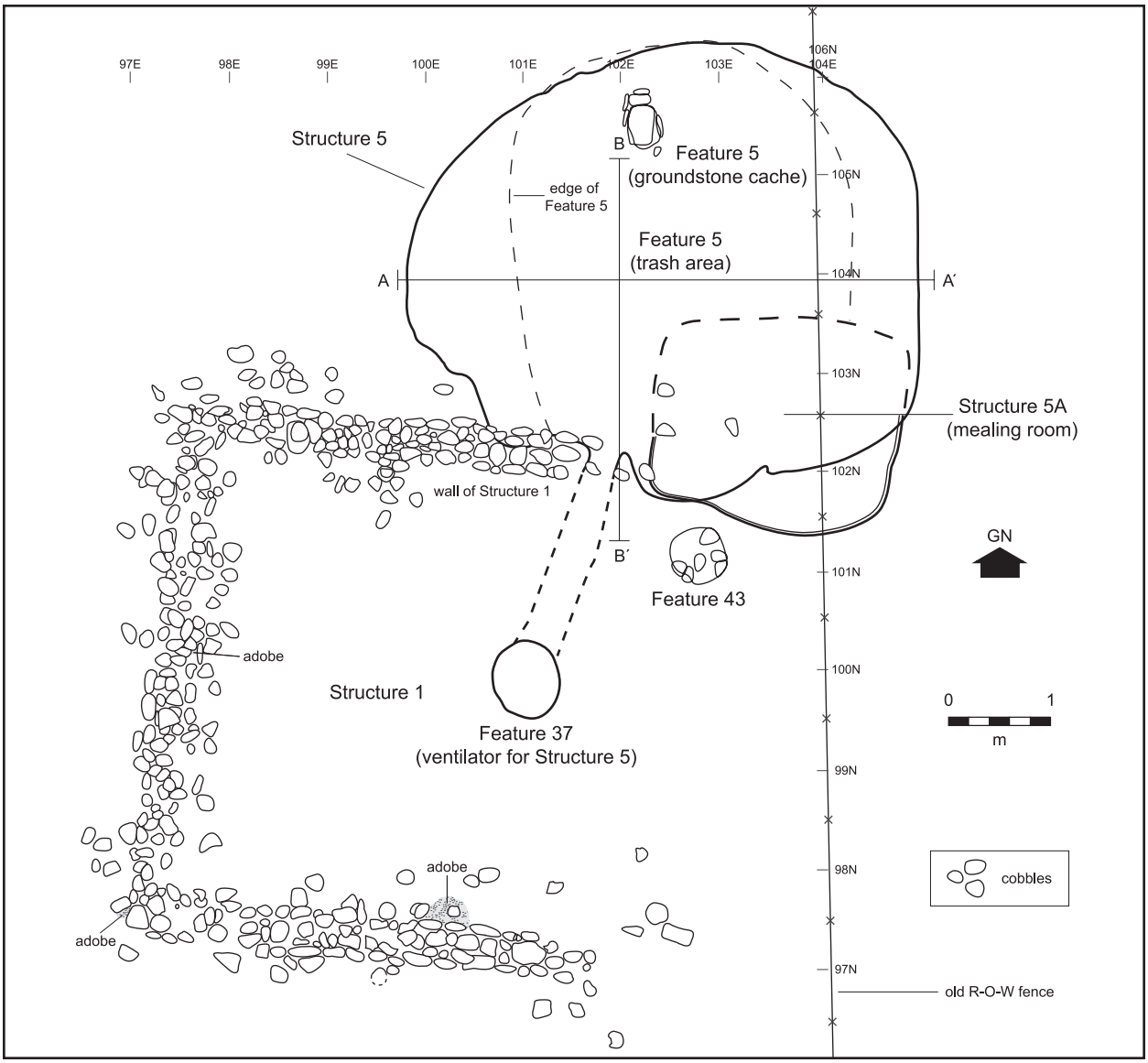

Figure 13.22. Plan showing Structures 1, 2, 5A, and 5, and Feature 5 at LA 6170.

level was excavated. Samples of beams and all ground stone were point plotted and collected. Cobbles were plotted.

Structure Stratigraphy. A variety of fill types rested on the floor (Figs.13.23–13.24). In some areas, burned beams were directly on the floor and oxidized areas of that surface. In other areas, the floor was covered by laminated silt and clay, and in still others, an ashy silt or grayish sand covered the surface. Along the south wall, just east of the vent, adobe wash and slump rested on the floor, possibly entering from the vent tunnel. The sand and laminated fill, which was discontinuous and generally ranged from 6 to 8 cm thick, indicates some time elapsed before the roof was partially dismantled and burned. The roof fall layer (FS4 in Table 13.26), comprised of a loose silty loam, contained not only burned beams and cobbles but lenses of clean sand, oxidized silty loam, and laminated silt and clay throughout. Banked along the walls, FS4 was about 110 cm thick along the west wall, 55 to 80 cm along other walls, and thinned to 25 cm at the center of the structure. Burned beams (Fig. 13.25) were found throughout with fewer at the center and along the walls. Cobbles (Fig. 13.26) were above, below, and among the beams with

many resting directly on the floor. Cobbles were more numerous in the south half of the structure, particularly in front of the vent opening. Inward collapse of the burning roof accentuated the bowl-shaped configuration of the remaining fill.

Overlying the roof fall material was a series of wind and water deposits up to 75 cm thick at the center of the structure (Table 13.26, Figs. 13.23–13.24). Most contained some charcoal and sparse cultural material. Directly overlying the roof fall layer along the east wall was a lens of fine gray sand overlaying clay, into which the footprint of a large child or small adult was impressed. The print was from a right foot and measured 18 cm in length and about 8 cm maximum width. This was at or just above the level of the floor of the pit room (Structure 5A) and probably just outside the structure (104.16N/104.48E).

Interrupting this natural fill sequence was the Feature 5 trash layer or activity area (FMS) containing the ground stone cache. Lens-like, the FMS layer conformed to the overall shape of the structural depression except to the south where it levels out somewhat and continues beyond the pit structure wall for an unknown distance. No wood or plant parts from Feature 5 were unique for the Structure 5 area. The only difference is in the larger quantity of greasewood/saltbush present in Feature 5. The usual site layers of eolian pumice-laden silt and duff overlie the FMS layer.

Structure Description. Structure 5 was a roughly ovoid pit structure measuring 5.03 m east to west and 4.14 m north to south (Figs.13.27–13.28). Walls were roughly vertical to the north and east but more complex with undercutting and twisting to the south and west. Floor level niches, a protruding ventilator sill facing north, and wall niches made these walls more complex. A portion of the vent opening and floor just in front of the vent, possibly a remodeling episode, were plastered. Walls were finished to a straight configuration and smoothed but not plastered. These rounded slightly into a floor of compact residual soil. Some plastering or refinishing was evident along the south wall. Otherwise, like the walls, the floor was smoothed soil.

Wall height was greatest to the west where it was just over a meter high (1.04 m) and least to the southeast (40 cm) where Structure 5A truncated the upper wall. Portions of the north and northwest walls are reddened from burning beams. At the 102E line (Fig. 13.28), the burn began 30 cm above the floor and wall intersection and continued for 60 cm to the top of the wall. A meter east of this, on the 103E line, the burn was at floor level extending up just over 20 cm. The burned wall was archaeomagnetic sampled (AM 1152) at the wall niche, Feature 38, producing a date of AD 825–875.

The roof was a four-post system (Features 11, 14, 17, and 39) with auxiliary posts along the wall to the northeast (Feature 13) and possibly the southeast (Feature 21). The distance between the west postholes and the north and south walls was less and probably did not require extra support. Post molds suggest the main posts ranged from 12 to 23 cm in diameter. None of the postholes contained burned wood. A lack of burned upright posts in these features suggests the posts were removed before the structure burned. Orientation of the burned beams generally agrees with that of a four-post system (see Fig. 13.25) with some suggesting tertiary beams and others more substantial beams. The central area is fairly clear, probably due to a central roof entry. The remaining timbers collapsed maintaining the general four-post configuration even after the upright posts were removed. Primary beams attached to the four uprights were probably covered by north-south trending secondary beams with an opening for smoke and entry, possibly another layer of beams again perpendicular to the secondary beams, and leaners or beams spanning the distance between this framework and the ground surface. Assuming that the collected beam samples represent the range of wood diameters used in the structures, only the main or upright beams and the primary beams were distinctive in size. The secondary, tertiary, and leaners are either poorly represented or indistinguishable based

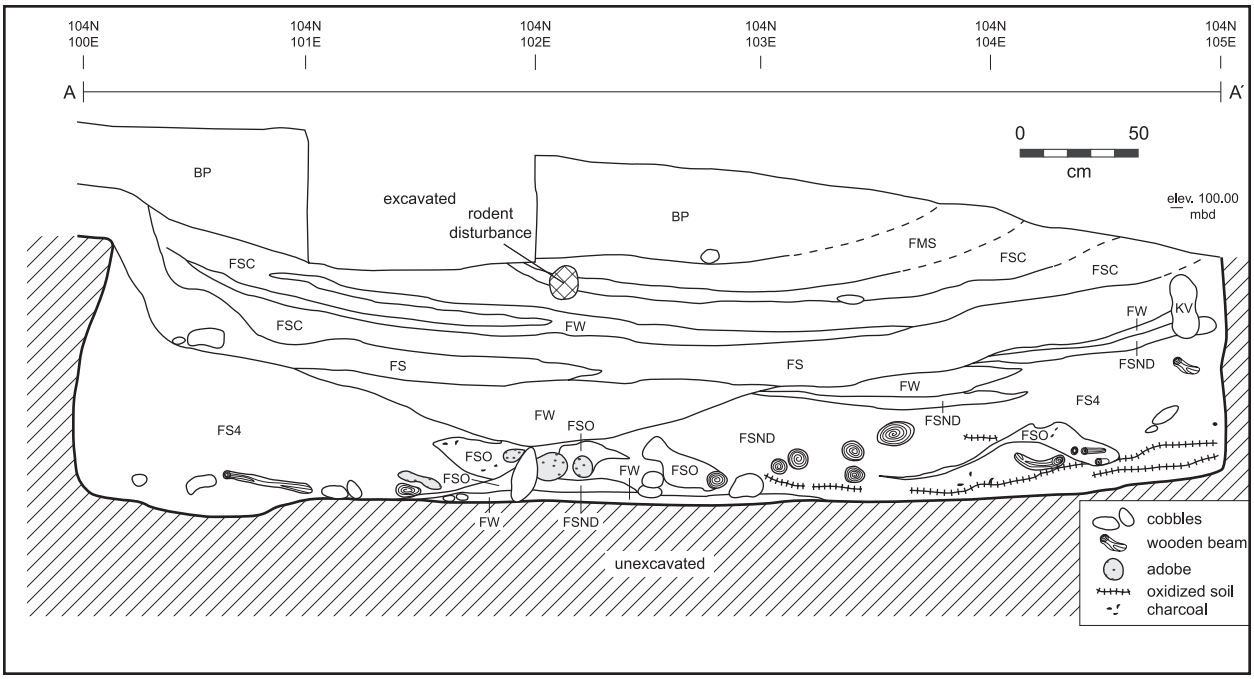

Figure 13.23. LA 6170, Structure 5, east-west profile.

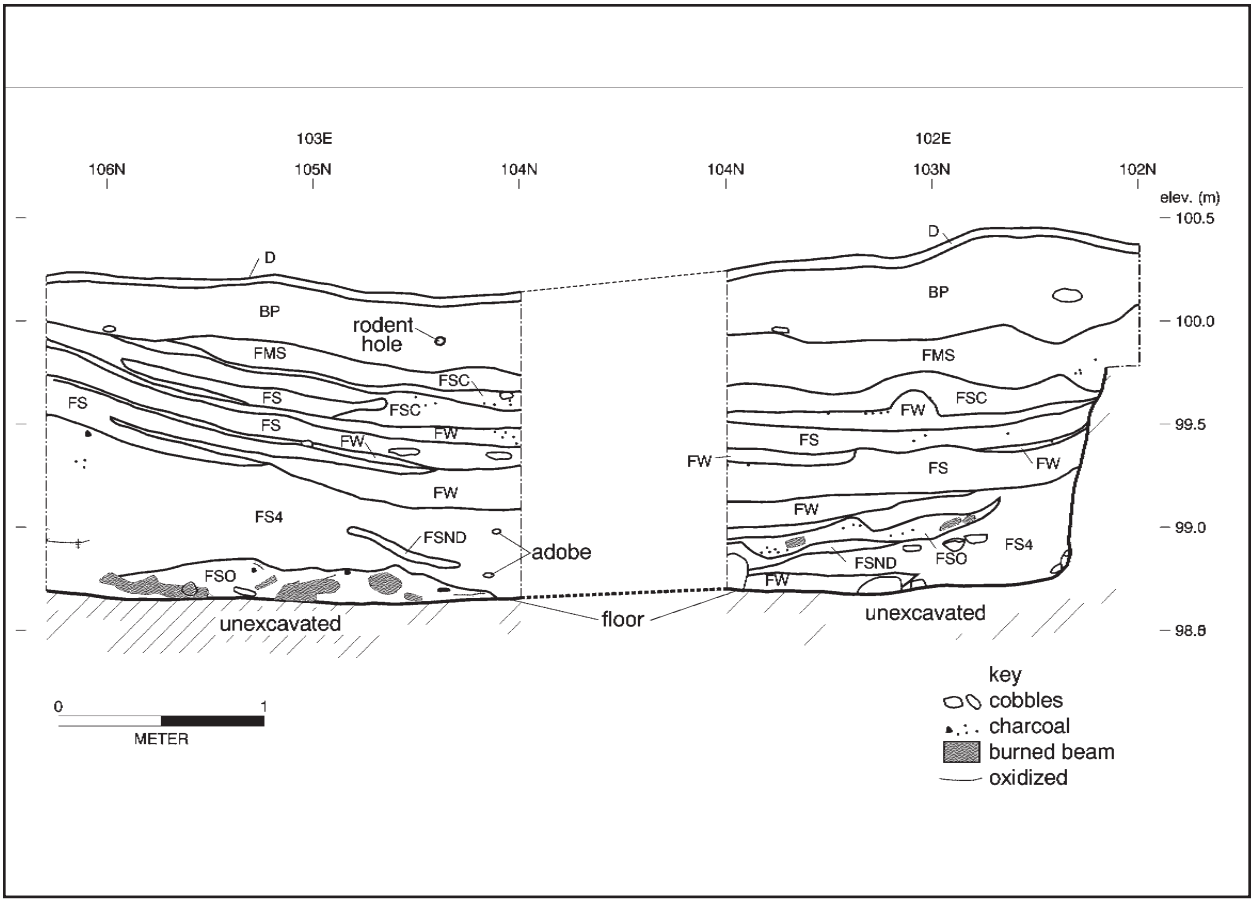

Figure 13.24. LA 6170, Structure 5, north-south profile.

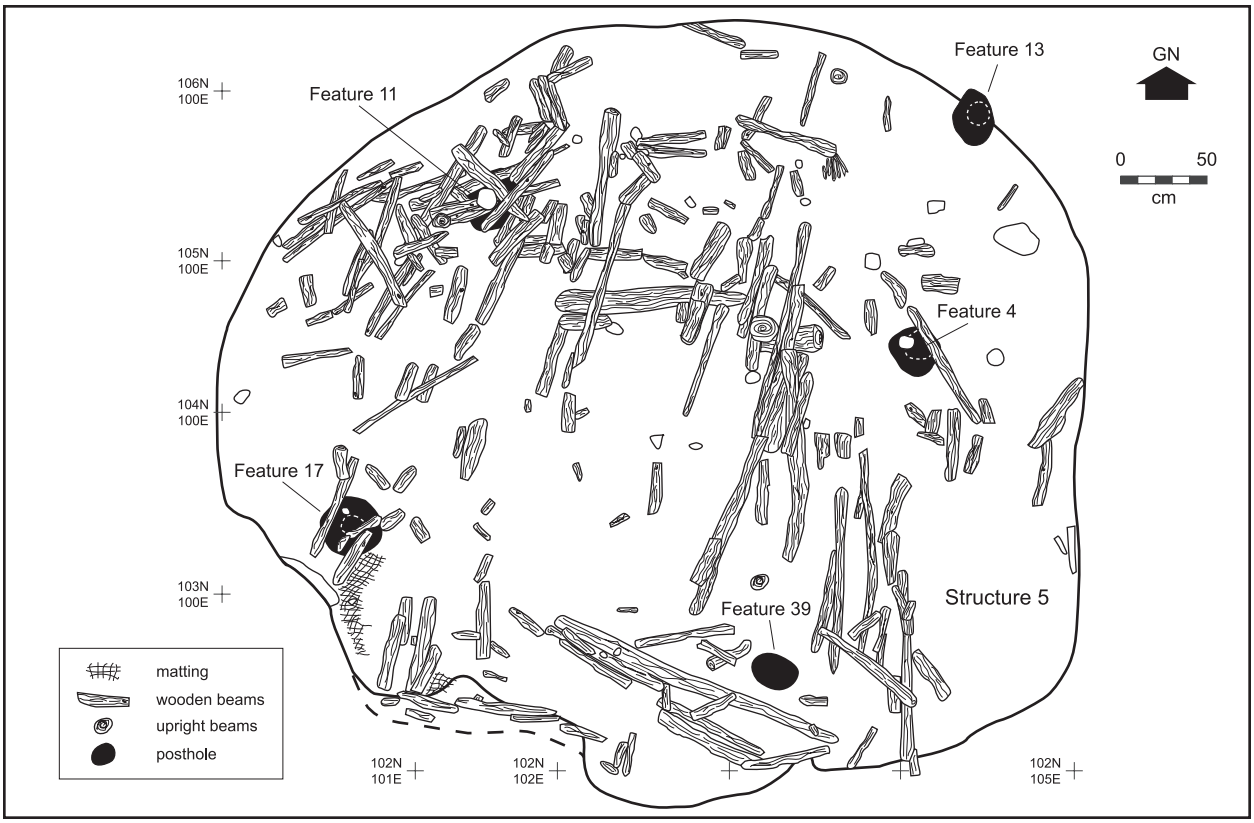

Figure 13.25. Plan of burned beams and postholes in Structure 5.

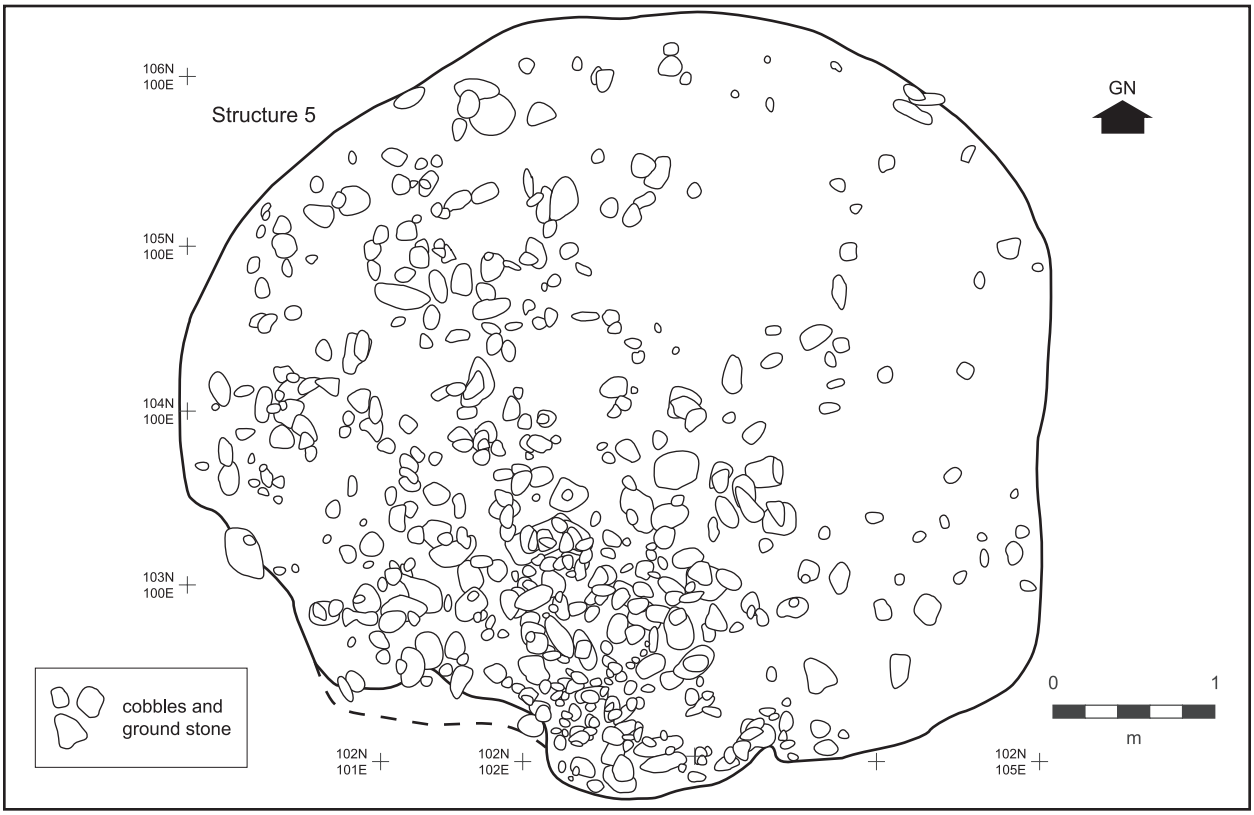

Figure 13.26. Plan of cobbles in roof fall and floor fill of Structure 5.

Table 13.26. LA 6170, Structure 5 Stratigraphic Descriptions (top to bottom)

Desig-nation	Description	Munsel Color Range	Comments
D & BP	D sandy clay loam duff; BP clay loam with pumice		Same as general site; eolian
FMS	Silty loam; slightly sticky and plastic; high pumice	10 YR 6/2D	Feature 5 activity area/ground stone cache
FSC	Silty clay loam; sometimes blocky; moderately sticky and plastic; high pumice content	10 YR 6/4D	Charcoal; mostly wind deposited
FW	Alternating silt and clay; slightly sticky and plastic; moderate pumice	10 YR 7/4, 7/6D	Fine laminations, mainly water deposited
FS	Silty loam; slightly sticky and plastic; high pumice	10 YR 6/4D	Disperse charcoal; mostly wind deposited
FS4	Loose silty loam; slightly sticky and plastic; high pumice content	10 YR 6/4D	Charcoal; mostly wind deposited
FSND	Clean sand; multicolored grains; overall graying brown	10 YR 5/2D	Probably eolian; within FS4
FSO	Oxidized silty loam; not sticky or plastic; very high pumice content	reddish	contains burned beams, cobbles, and charcoal chunks; on the floor in some areas
FW3	Laminated silt and clay; slightly sticky, moderately plastic; moderate pumice content between laminations	10 YR 7/4D	Laminations well sorted; on the floor in some areas

on size. The wooden framework was covered with adobe, a layer of common reeds and grass laid perpendicular to the beams, another layer of adobe, cobbles, and probably more adobe.

A variety of roofing impressions were collected (n = 9), no two alike. One has a series of three parallel poles 4–5 cm in diameter, another has a cobble impression with a hand-smoothed surface opposite, another has reed or twig impressions parallel with and between poles about 4 cm in diameter, another has reed impressions going the same direction as poles but under a 2 cm layer of clay. The rest are simple with a beam or pole impression or reed impressions on one side. Two of those with reeds have the reeds arranged in clumps as if they were not always a solid mat. None inform on how the various roof components articulate, however, it was probably similar to the manner indicated by the impressions found in Structure 50.

Potential dendrochronological samples were collected from the roof fall layer and from a sealed thermal feature (Feature 12) but none of those submitted produced dates. *Populus/Salix* (cottonwood or willow) was far more common than juniper with considerable overlap in diameters (Table 13.27, Fig. 13.29). The second largest beam and two of the six largest beam diameters are juniper. The two largest samples (*Salix* 12.5 cm and juniper 12.0 cm diameter) were found around the southwest posthole (Feature 17), the next largest juniper sample was from near the northeast posthole (Feature 14), and the second largest *Salix* (9.5 cm) from near the northwest posthole (Feature 11). There is a slight tendency (Fig. 13.30) for the larger diameters to occur higher in fill and for juniper to cluster around Features 14 and 17 (Fig. 13.31). Overall, the diameters form a continuum between 4 and 10 cm. Common reeds from the roof fall produced a standard radiocarbon date of AD 580 ± 50, cal AD 610 to 720 or 740 to 760 (Beta 149027).

Floor and Wall Features. Table 13.28 provides details concerning the features in Structure 5 and Tables 13.29–13.31 the flotation and macrobotanical information. A few were sealed during the last use of the structure. Except for some of the very small pits that contained sand, the hearth and ash pit, and one thermal pit, these were filled with roof fall material indicating they were empty when the structure was abandoned and burned.

Of the four main roof supports (Features 11, 14, 17, and 39), three had post molds that

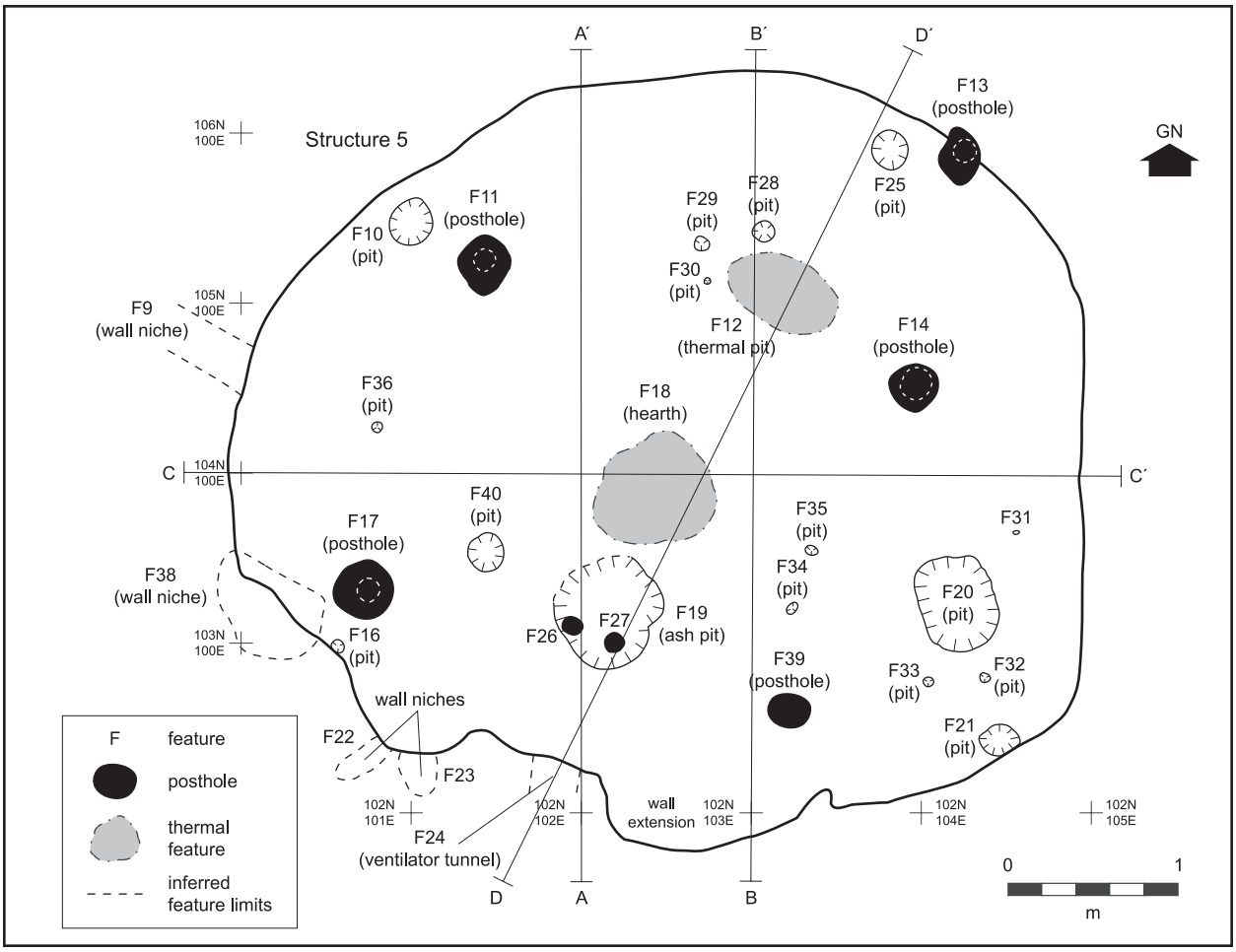

Figure 13.27. Plan view of Structure 5. Profiles are shown on Figure 13.28.

suggest the posts ranged from 10 to 18 cm in diameter and depths of 41 to 52 cm (Fig. 13.32). Feature 39, while positioned correctly, is less convincing as a main support post. This pit was 23 cm in diameter with no indication of a post mold and was only 27 cm deep. An auxiliary post, Feature 13, was set slightly into the north wall, held a substantial post 11 cm in diameter, and was 39 cm deep. The other possible posthole, Feature 21 located against the south wall, had no post mold, was 18 cm in diameter, and was shallow, only 5 cm deep.

Posthole fill varied. Only Feature 14 had any remaining wood and it was a few fragments of decayed wood. None had large burned chunks of charcoal that would suggest the posts remained standing when the roof burned. Feature 13 had a vesicular basalt anvil lying on it, another indication the posts were removed before the roof burned.

No ceramics were recovered from postholes. Feature 14 held one long bone shaft fragment from a small mammal. A pollen sample from Feature 14 contained small amounts of pollen of pine, moderate cheno-am, high composite, and very high sagebrush and grass. Such a concentration of sagebrush pollen could indicate a ritual use (Chapter 24). Corn cob fragments were recovered from Feature 11. Pollen recovered from Feature 39 was piñon pine, grass, cheno-am, sagebrush, and evening primrose. The latter two are usually used either medicinally or ceremonially (Chapter 24).

The hearth (Feature 18) was no more than a shallow scooped-out area with irregular walls from intense burning, slumping, and reuse (Figs. 13.33–13.34). Its actual base is uncertain but appears to be a layer of clean hard-packed sand that lay between powdery ash and a coarse to powdery burned soil. Burning reddened the

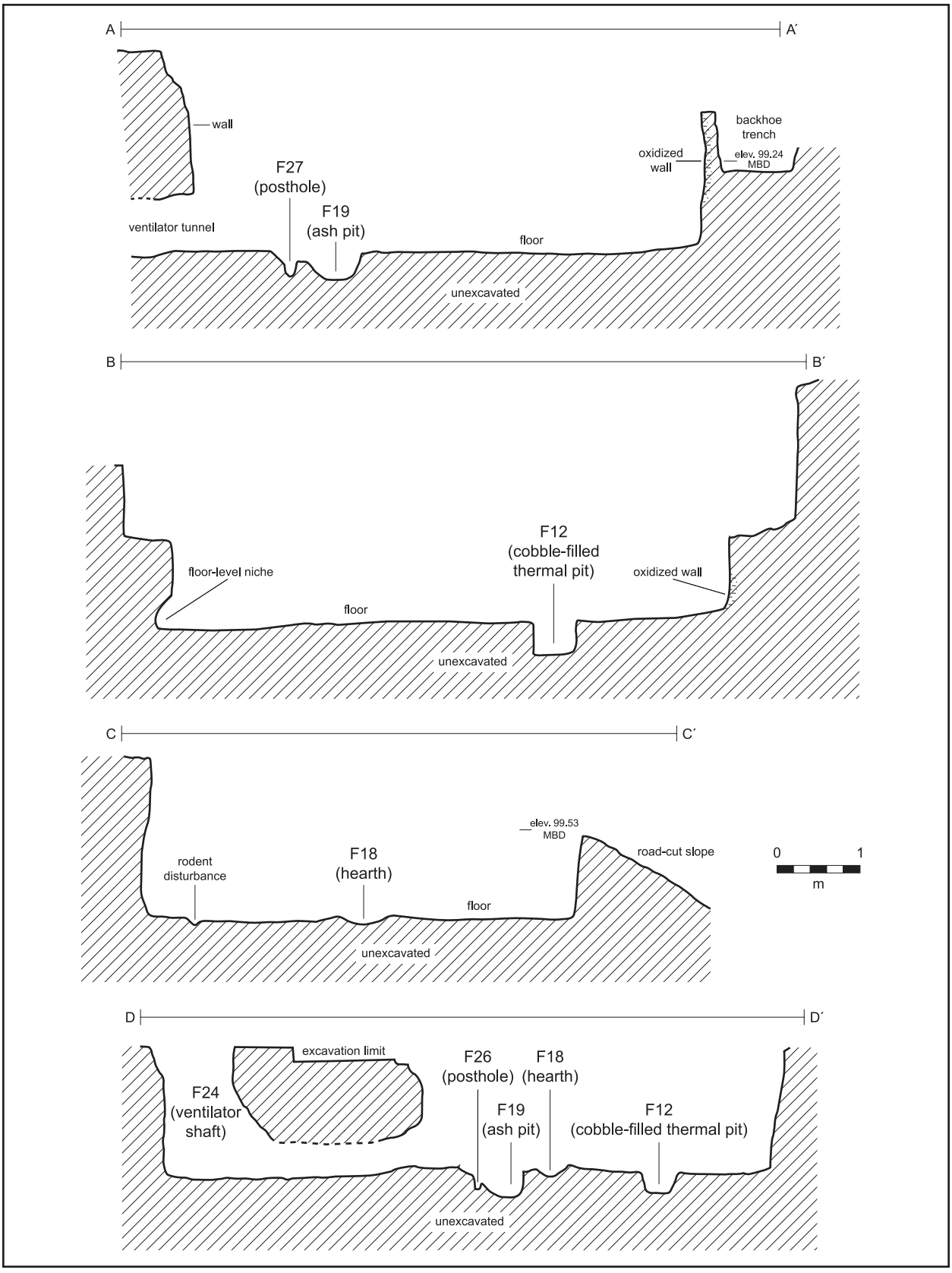

Figure 13.28. Cross sections of Structure 5.

floor for about 4 cm to the north and up to the ash pit, 20 cm to the south.

Feature 19, the adjacent ash pit, was a more formal feature with several distinct use episodes. Pit walls and floors were again unfinished and irregular but were not burned or heat damaged and retained their form better than the hearth. The first or original ash pit was a cylindrical pit 38-by-41 cm in diameter and 20- to 22-cm deep that contained loosely packed ash with abundant charcoal and a minor soil content. A second ash pit was a smaller pit offset to the west and interrupted by the final ash pit. This pit was at least 24 cm in diameter with a flat bottom and was 12- to 15-cm deep. Fill was a discrete pocket of ash. The third ash pit was offset to the east and again interrupted by the final pit. It had been cleaned out so that only a thin dusting of ash remained at the edge and base. It had a rounded base and measured at least 27 cm in diameter and was 12- to 14-cm deep. The final ash pit had a portion of a shaped sandstone slab at its base and the pit measured 34-by-37 cm with a depth of 19 to 20 cm. The slab was at an angle and continued beneath the west wall of the pit, suggesting its placement may not have been intentional. Fill was a loose powdery ash with charcoal but virtually no soil.

Few artifacts were recovered from the hearth and ash pits. Material recovered from the hearth includes three unburned small mammal long bone shaft fragments. Three Middle Rio Grande (sand-tempered) Plain jar sherds were found in the first (n = 1) and last (n = 2) uses of the ash pit along with a variety of fauna (Table 13.32). Most of the bone was found in the first pit, beneath the slab. Bone in

Table 13.27. LA 6170, Structure 5 Structural Wood Dimensions (cm diameter)

	Taxon	N	Minimum	Maximum	Mean	St. Dev.
Roof and closing	juniper	5	4	12	6.98	3.28
	salix	41	3.3	12.5	6.54	1.62
	both	46	3.3	12.5	6.59	1.82
Plugged features	juniper	2	3.8	4.7	4.25	0.64

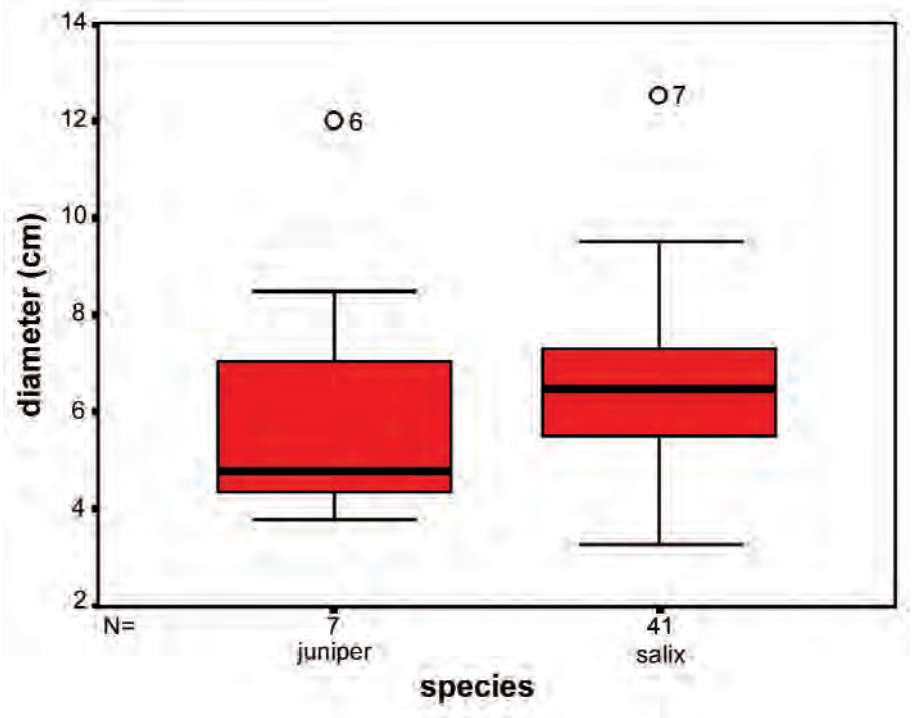

Figure 13.29. LA 6170, wood diameters for Structure 5.

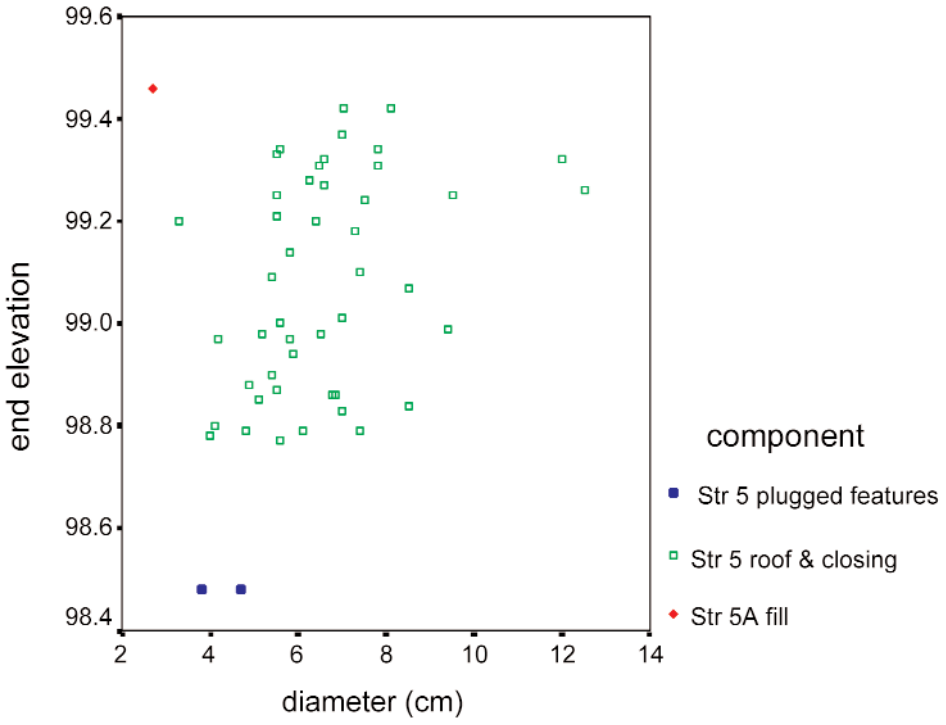

Figure 13.30. LA 6170, plot of beam diameters by end elevationfor Structure 5.

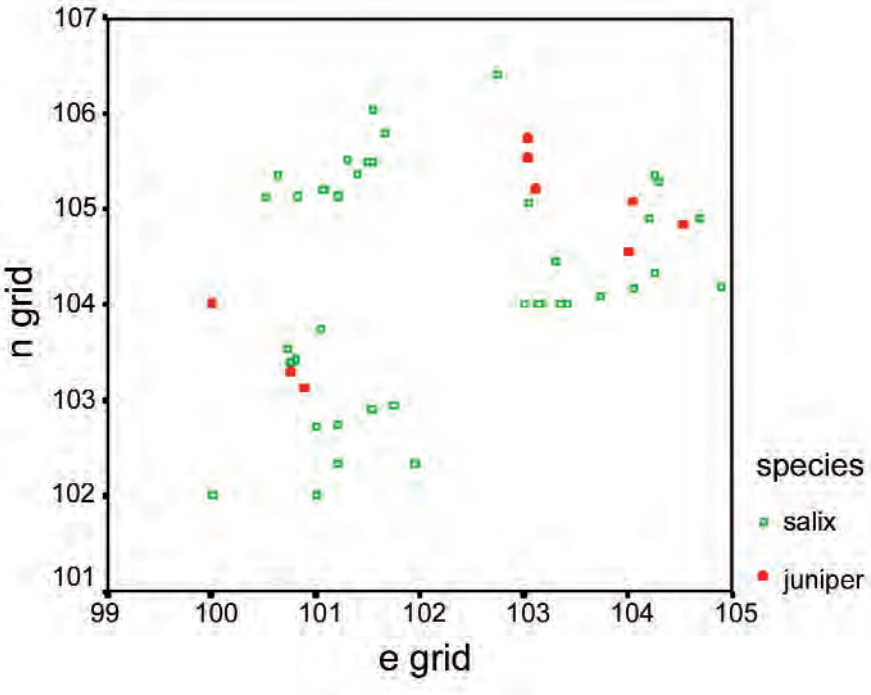

Figure 13.31. LA 6170, spatial distribution of salix *and* juniperus *for Structure 5.*

this pit was largely rabbit and much was burned, mostly heavily burned and calcined suggesting discard into the fire. Burned cottontail body parts are largely feet, cranial, and other parts that have little muscle attached and are most likely waste. The presence of an immature cottontail bone in the final pit and of hibernating species of rodent and the toads indicate warm season disposition. The spadefoot toad was most likely collected during the summer rainy season when this largely nocturnal and secretive species can be found under surface objects (Degenhardt et al. 1996:41). It is likely that this and the other toad, both partial skeletons, were deliberately placed in the ash pits when they were abandoned and suggest the ash pit remodeling, and perhaps the last use, took place during the warm season.

The flotation samples were quite productive. That from the hearth contained burned amaranth, goosefoot, cheno-am, and purselane seeds, a piñon nutshell, corn cupules and glumes, and greasewood/saltbush and *Populus/Salix* wood. Unburned tobacco seeds were also present. In the ash pit sample were a bean, goosefoot and cheno-am seeds, corn cupules, cobs, and kernels, and greasewood/saltbush, juniper, and *Populus/Salix* wood and unburned goosefoot and spurge seeds (Tables 13.29–13.31).

South of the ash pits, in a slight depression, were a pair of postholes that probably held a deflector screen. Features 26 and 42 appeared at about the same level, while a third (Feature 27) partially underlies Feature 42, indicating an episode of remodeling. Neither Feature 26 nor Feature 42 had fill that could be characterized as floor fill suggesting they were intentionally filled before the structure or, perhaps, the hearth and ash pit complex was abandoned. Feature 26 had an almost sterile fill, a silty loam with a slight ash and charcoal content while fill in Features 27 and 42 was similar but redder in color. Feature 27 had a light dusting of ash along the edges and at the base. All are cylindrical, 11 or 13 cm in diameter, and 9–10 cm deep.

The ventilator opening (Feature 24) was an inverted U-shaped or arch with plaster along the west side (Fig. 13.35). Rather than being flush with the south wall, the area of the vent opening protrudes slightly (25 to 30 cm) to the north. Floor level niches on either side of the vent add further irregularity to the south wall. The vent opening measures 33 cm wide and 43 cm tall and the tunnel extends back 2.03 m where it intersected the ventilator shaft

Table 13.28. LA 6170, Structure 5 Features

Feature No.	Feature Type	Center Point	Top and Bottom Elevation (mbd)	Dimensions (LWD in cm)	Fill	Comments
9	Wall niche	at wall: 104.47N 100.05E	99.44 - 99.04	opening: 28 x 37 x 55+	Silty loam with high pumice content; sparse charcoal and roofing material, 10YR 6/4	Rodent disturbed; back truncated by backhoe trench
10	Small pit	105.45N 101.00E	98.56 - 98.51	29 x 25 x 5	Clean compact silt 10YR 6/3	Pot rest?
11	Posthole	105.24N 101.44E	98.71 - 97.30	top: 32 x 25; mold: 10 x 12; 41	Dark silty soil with ash	One of four main supports
12	Large cobble-filled thermal pit	104.95N 102.83E	98.71 - 98.48	65 x 46 x 23	Seal: silty sand with pumice, 10YR 6/3; fill: gray sand with abundant charcoal and 12 cobbles,10YR 4/2	Sealed; walls oxidized; digging stick marks at edge
13	Posthole	105.90N 104.25E	98.56 - 98.07	top: 22 x 30; base: 11 x 11 x 49	Silty sand with sparse pumice, 10YR 5/3	Slightly into north wall; two cobbles at top–plug?
14	Posthole	104.52N 103.97E	98.74 - 98.31	top: 30 x 26; mold: 18 x 18 x 43	Top: 2 cm silty sand with artifacts 10YR 5/2; compact silty sand 10YR 4/4	One of four main supports; wood in fill
15	Rodent burrow					
16	Small pit	102.97N 100.57E	98.73 - 98.63	8 x 8 x 10	Silty loam with abundant pumice and disperse charcoal 10YR 6/4	
17	Posthole	103.30N 100.75E	98.66 - 98.14	top: 32 x 31; mold: 10 x 11; 52	Loose silty loam with abundant pumice and disperse charcoal 10YR 5/6	One of four main supports
18	Hearth	103.90N 102.45E	98.79 - 98.70	53 x 36 x 9	Top: 0-1 cm burned silt with powdered charcoal 10YR 4/1; mid: loose ash with small pieces of charcoal 10YR 7/2; base: clean silty sand; hard packed 10YR 7/3	Shallow with unprepared walls

Table 13.28. Continued.

Feature No.	Feature Type	Center Point	Top and Bottom Elevation (mbd)	Dimensions (LWD in cm)	Fill	Comments
19	Ash pit	103.25N 102.20E	98.73 - 98.41	1st: 38 x 41 x 20; 2nd 24 x 22+ x 15; 3rd: 27 x 27+ x 14; last use: 37 x 34 x 20	Last use: loose ash with small pieces of charcoal 10YR 7/2; 3rd use: ash; 2nd use: empty with ash at rim, grayer than use 3; 1st use: loose ash with abundant brush/twig charcoal 10YR 6/3	At least 4 use episodes with different pits; slab at base for last use
20	Large cobble-filled thermal pit	103.25N 104.20E	98.80 - 99.64	57 x 50 x 16	Seal: compact silty loam with abundant pumice 10YR 6/4; fill: loose sand, charcoal, and cobbles 10YR 7/3	Sealed pit with fire-cracked rock
21	Small pit	102.42N 104.47E	98.79 - 98.74	17 x 18 x 5	Loose sandy loam 10YR 6/3	Shallow posthole? against south
22	Wall niche	at wall: 102.40N 100.85E	99.43 - 99.09	28 x 34 x 90 deep	Laminated silt and silty loam with pumice and dispersed charcoal 10YR 6/4	Rodent disturbed
23	Wall niche	at wall: 102.35N 101.05E	98.87 - 98.77	24 x 10 x 19 deep	Loose silty loam with pumice and disperse charcoal 10YR 6/4	Adobe patch covered rodent disturbance in front of niche
24	Ventilator tunnel	at wall: 102.28N 101.86E	99.21 - 98.60	33 x 43 x 203 to shaft center point	Loose silty loam with pumice and disperse charcoal 10YR 6/4 over a thin wash over more consolidated silt with wash lenses, over roof fall material	Adobe collar/patch/lining exterior of east side and top
25	Small pit	105.90N 103.85E	98.71 - 98.65	25 x 22 x 6	Compact silt 10YR 6/3	
26	Posthole	103.10N 101.95E	98.67 - 98.56	13 x 13 x 11	Silty loam with slight pumice and ash/charcoal content	Deflector posthole
27	Posthole	103.05N 102.20E	98.59 - 98.50	11 x 11 x 9	Hard reddish brown silty loam with a thin layer of ash at perimeter 10YR 6/4	Deflector posthole; beneath and overlapping deflector posthole Feature 42
28	Small pit	105.42N 103.07E	98.73 - 98.68	16 x 17 x 5	Compact sandy silt	Pot rest?
29	Small pit	105.35N 102.70E	98.70 - 98.60	9 x 9 x 10	Clean gray sand	Sipapu?
30	Small pit	105.12N 102.75E	98.72 - 98.68	4 x 4 x 4	Clean gray sand	Cone-shaped
31	Small pit	103.66N 104.55E	98.79 - 98.76	1.5 x 1.5 x 3	Fine micaceous sand 10YR 6/3	
32	Small pit	102.80N 104.38E	98.82 - 98.74	6 x 6 x 8	Silt with pumice and charcoal 10YR 5/4	Edges scalloped from digging
33	Small pit	102.77N 104.05E	98.77 - 98.73	4 x 4 x 4	Fine micaceous sand 10YR 6/3	Cone-shaped
34	Small pit	103.20N 103.26E	98.78 - 98.75	7 x 5 x 3	Silty sand with charcoal flecks 10YR 5/3	Smooth sloping sides
35	Small pit	103.54N 103.35E	98.78 - 98.76	7 x 5 x 2	Silty sand with charcoal flecks 10YR 5/3	
36	Small pit	104.23N 100.82E	98.53 - 98.47	6 x 7 x 6	Clean multicolored sand 10YR 6/4	
37	Ventilator shaft	99.99N 100.94E	99.94 - 98.60	86 x 96 x 134	Loose silty loam with high pumice and disperse charcoal 10YR 6/4	2.5 m from tunnel opening; complete and partial metates, fire-cracked rock, and adobe thrown in
38	Wall niche	at wall: 103.38N 100.25E	99.65 - 99.28	45 x 48 x 37 x 40	Clayey silt with pumice and sparse charcoal 10YR 6/3 and roof fall	Rodent disturbed; 4 cores at base
39	Posthole	102.60N 103.25E	98.76 - 98.49	23 x 23 x 27	Loose silty sand with charcoal 10YR 6/3	One of four main post supports, possibly sealed
40	Small pit	103.55N 101.45E	98.70 - 98.56	23 x 22 x 14	Hard silt with large flecks of charcoal 10YR 6/4; ash at base	Plugged, 10 1 cm-sized pebbles, rounded of various materials in fill
42	Posthole	103.10N 102.20E	98.69 - 98.59	11 x 11 x 10	Reddish silty loam with slight pumice and charcoal content 10YR 6/4; ash around perimeter	Deflector or ladder hole; partially overlies abandoned deflector posthole 27

(Feature 37). At the vent opening the tunnel floor was at 98.76 mbd dipping down to 98.67 mbd at the base of the vent shaft. Orientation of the vent shaft to the vent opening is 12 degrees east of magnetic north.

Lower fill in the vent tunnel opening was roof fall without oxidization or profuse charcoal. A partial burned beam, cobbles, and ground stone (a complete sandstone two-hand mano and a fragment of indeterminate ground stone) almost plugged the opening at floor level. Above this was a thin lens of wash material followed by a layer of loose silty loam, probably natural fill (FS). This was capped by a layer of what appeared to be deteriorated adobe collar then a few centimeters of empty space. The wash lens could be traced as far back as the vent shaft where it was thicker (5 cm) and about 30 cm lower than at the vent opening. Fill in the vent tunnel contained four Middle Rio Grande plain and one Tallahogan-like jar sherds. Fauna was fairly abundant (n = 30) and largely small mammal (n = 4), cottontail (n = 7), and jackrabbit (n = 4). Relatively unusual taxa include a scaled quail wing element, a partial lizard skeleton, and two partial

Table 13.29. LA 6170, Structure 5 Features, Seeds and Fruits (frequency per liter)

	Thermal Pits		Hearth	Ash Pit 19		
Feature	12	20	18	Use 4	Use 2	Use 1
			Cultural			
Annuals						
Amaranthus	-	-	15.1	-	-	-
Chenopodium	-	-	0.5	-	1	-
Cheno-am	-	-	10.5	-	1	-
Portulaca	-	-	2.5	-	-	-
Perennials						
Pinus edulis	-	-	0.5	-	-	-
Cultivars						
Zea mays	-	-	-	-	0.5	-
			Possibly Cultural			
Annuals						
Cheno-am	1.3	-	1.2	-	-	-
			Non-cultural			
Annuals						
Amaranthus	-	-	20.9	-	0.5	-
Chenopodium	2.6	1.9	-	3	-	-
Cheno-am	82.5	-	3.5	-	-	1.1
Euphorbia	157.3	0.2	-	-	-	-
Malvaceae	1.3	-	-	-	-	-
Nicotiana attenuata	-	-	-	-	18.5	-
Portulaca	8.5	-	-	-	-	-
Perennials						
Carex	1.3	-	-	-	-	-
Grasses						
Sporobolus	-	-	-	-	2	-

Table 13.30. LA 6170, Structure 5 Features, Other Plant Parts (abundance per liter)

Feature	Plant Part	Hearth 18	Ash Pit 19, Use 4	Ash Pit 19, Use 2	Ash Pit 19, Use 1	Thermal Pit 20
			Cultural			
Perennials						
Unknown taxon	Neutral	-	-	-	+	+
Grasses						
Monocot	Stem	-	-	-	-	+
Cultivars						
Zea mays	Cupule	+	+	+	-	+
	Glume	+	-	-	-	-
	Cob	-	+	-	-	-

Great Plains toad skeletons. None of the vent tunnel bone is burned but one is rodent gnawed, another is carnivore punctured, and five are scatological or possibly scatological. The toad and lizard skeletons could represent animals that fell into the vent shaft or structure and became trapped and died or these and the quail wing element could have been deliberately placed in the tunnel.

The vent shaft opening (Feature 37), centered at 2.5 m from the vent opening and wall intersection, was roughly circular measuring 86 cm north to south and 96 cm east to west with a depth of 1.29 m. Fill was loosely packed

Table 13.31. LA 6170, Structure 5 Features, Macrobotanical Samples (count and weight)

Feature		Posthole 11	Posthole 14	Thermal Pit 12	Thermal Pit 20	Ash Pit 19
			Cultural			
Wood						
Perennials						
Juniperus	Wood	-	-	-	92/51.90g	-
Sarco/Atriplex	Wood	-	-	-	-	1/.50g
			Possibly Cultural			
Perennials						
Unknown taxon	Wood	-	2/.10g	-	-	-
			Cultural			
Cultivars						
Zea mays	Cob	12/5.30g	-	-	1/.10g	1/.10g
	Kernel	-	-	-	-	1/.04g
Phaseolus	Cotyledon	-	-	-	-	1/.04g
			Cultural			
Wild plant						
Perennials						
Unknown taxon	Bark	-	-	8/.30g	-	-

silty loam. A complete vesicular rhyolite trough metate was placed in the fill at 99.59 mbd and much of a fine-grained trough metate at 99.10 mbd. These, along with cobbles, fire-cracked rock, and chunks of adobe suggest an intentional fill episode within the shaft that began at 99.94 mbd and ended at 98.60 mbd. Ceramics, chipped stone, ground stone, corn cobs, and fauna recovered from the shaft are tabled in the artifact section of this report.

In addition to the hearth, Structure 5 has two other thermal features (Fig. 13.36). Feature 12, located in the northeast quadrant, was mostly plastered over when the west side eroded. Fill of this ovoid, basin-shaped pit was 12 cobbles in charcoal-stained sand. Some of the cobbles were upright along the edges and others lay flat (Fig. 13.37). Walls and the base of the feature were blackened and oxidized and produced an archaeomagnetic date (AM 1106) of AD 720–785. A shallow pit to the north (Feature 28) could have served as a pot rest associated with this feature. Flotation and macrobotanical samples contained burned *Populus/Salix* and juniper wood and a cheno-am seed. Unburned cheno-am, goosefoot, spurge, mallow, purselane, and sedge seeds were also recovered (Tables 13.29–13.31).

The second thermal feature (Feature 20) was also sealed by a compact silty loam and was found in the southeastern quadrant. Almost circular (50-by-57 cm and 16 cm deep), this pit was filled with sand, abundant charcoal, two complete and six fire-cracked and charcoal-stained quartzite cobbles. Some of the walls were blackened but not obviously oxidized. Nine pieces of unburned bone were found in Feature 20 (three small mammal, one medium to large mammal, two Ord's kangaroo rat, one small rodent, and two cottontail rabbit). Burned plant material includes a corn cupule and a cob, *Populus/Salix* (0.04 g) and juniper (2.9 g) wood, a monocot stem, and unburned goosefoot and spurge seeds (Tables 13.29–13.31).

The remainder of the floor features are small pits (Fig. 13.38) ranging from shallow depressions that could have served as pot rests to tiny sand-filled pits that could have held small poles, sticks, or *pahos*. None were substantial enough to suggest storage pits. Feature 29 could have served as a sipapu. This pit, 9 cm in diameter and tapering at the base, is 10 cm deep and was roughly aligned with the vent opening, ash pit,

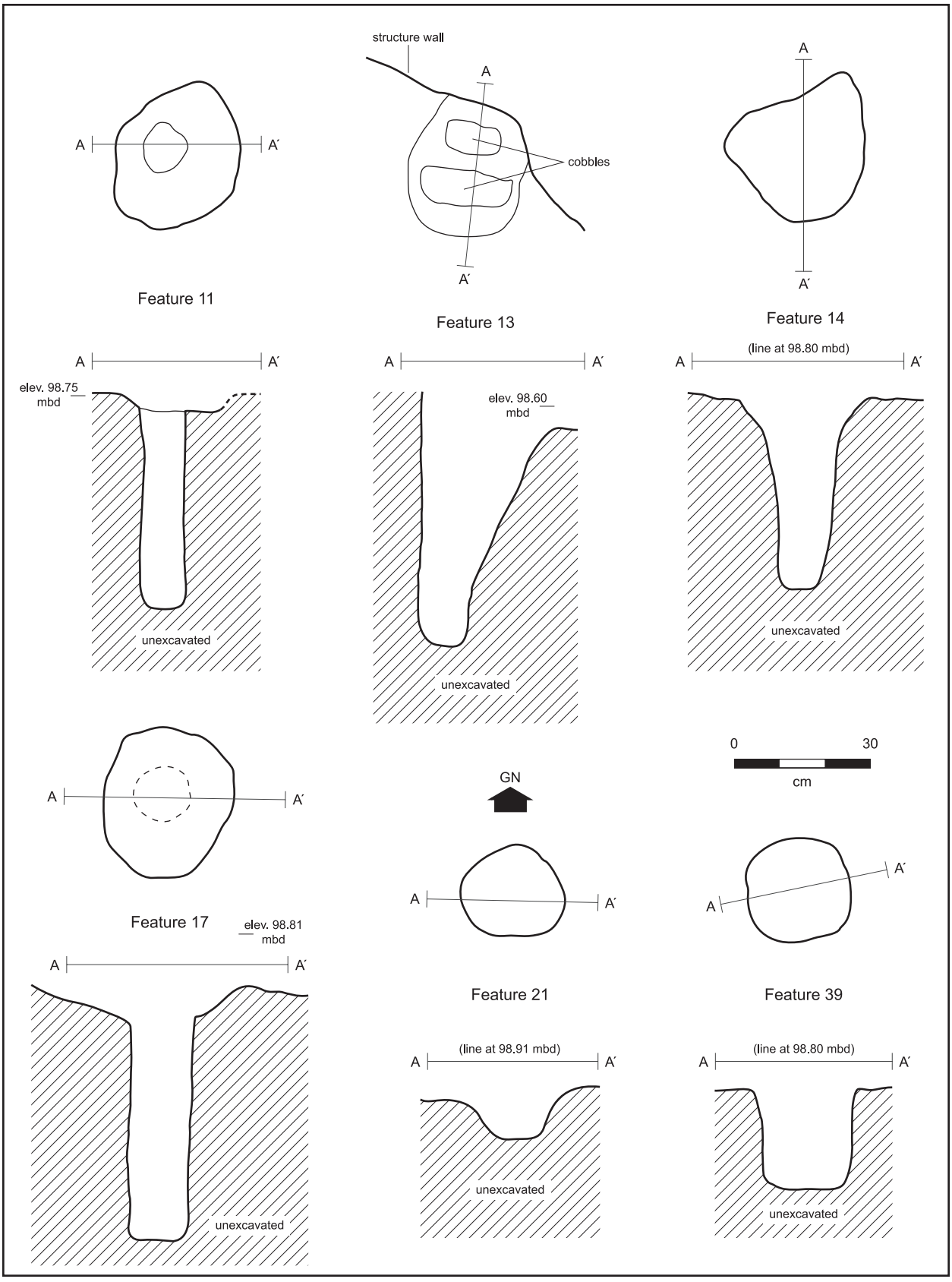

Figure 13.32. Main (Features 11, 14, 17, and 39) and auxiliary (Features 13 and 21) postholes in Structure 5.

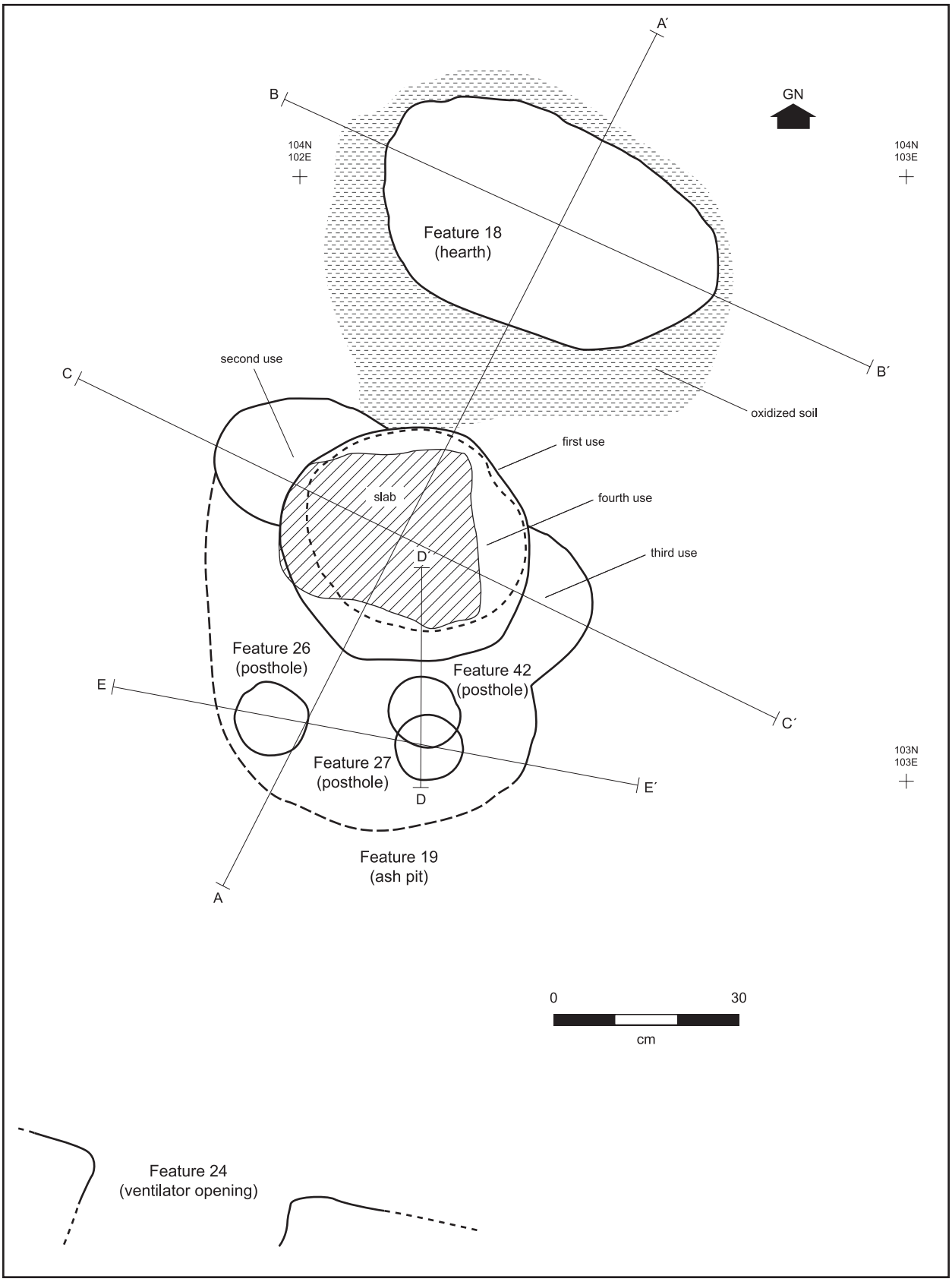

Figure 13.33. Plan of hearth, ash pit, and deflector postholes in Structure 5.

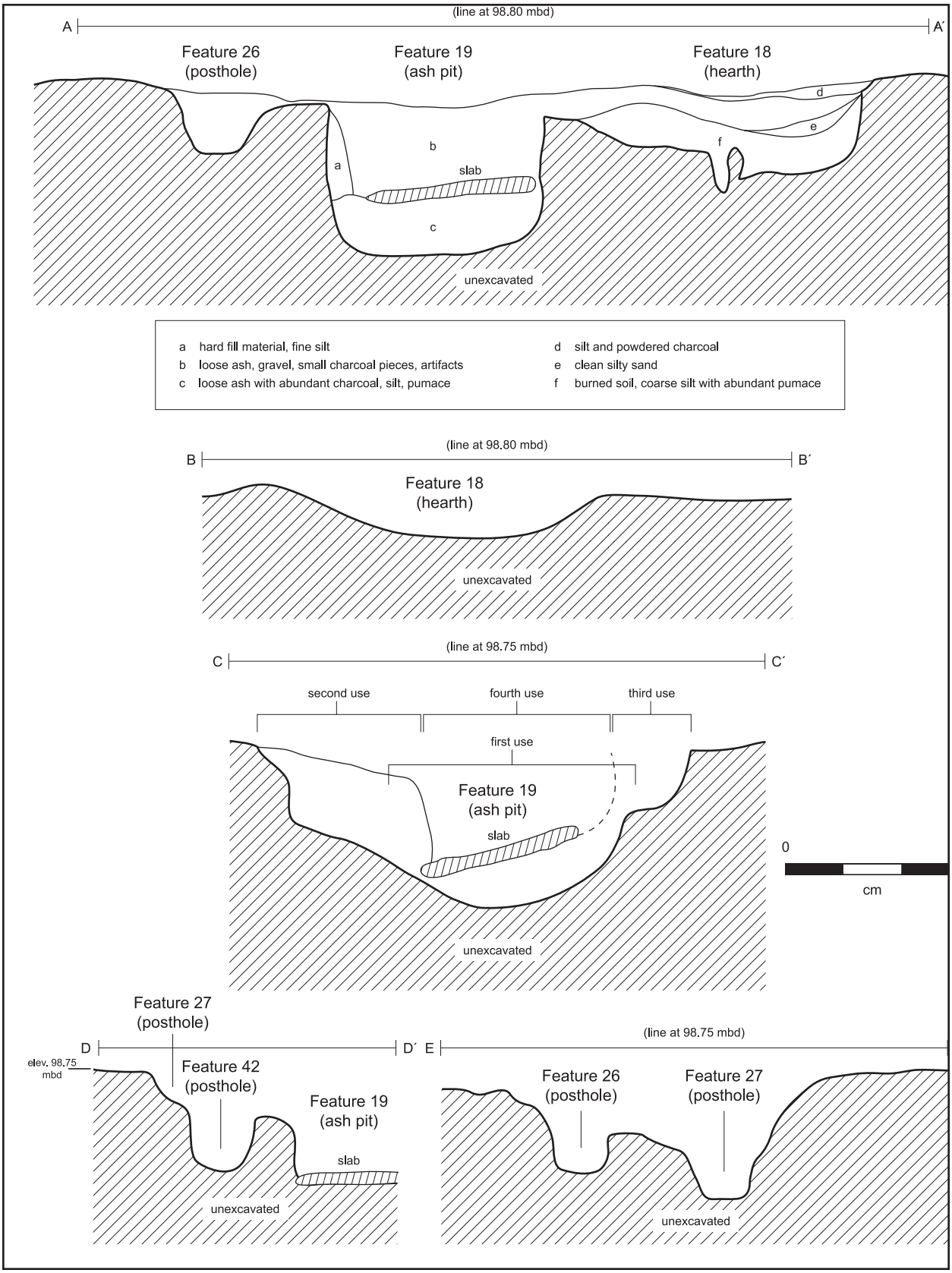

Figure 13.34. Profiles of hearth, ash pit, and deflector postholes in Structure 5.

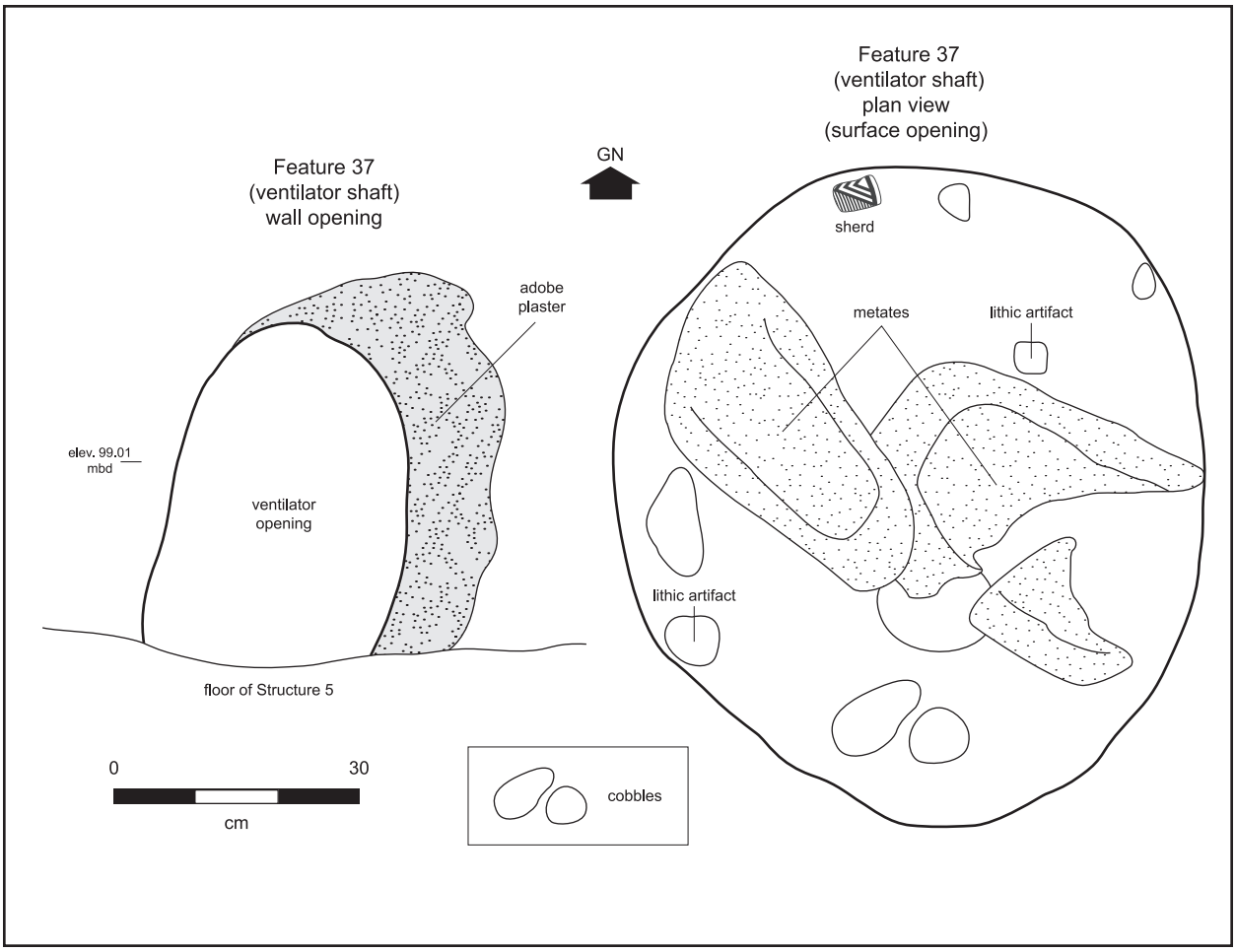

Figure 13.35. Plan and profile of vent tunnel, opening, and cache of artifacts in shaft, Structure 5.

and hearth. Fill was clean sand. A pair of similarly sized pits (Features 34 and 35) could have been ladder rests. Most of the other small sand-filled pits cluster around the cobble-filled pits, three near Feature 20 and one near Feature 12. The slightly larger Feature 36 is also filled with clean sand but is not near any other feature. Possible pot rests are located near Feature 12 and along the wall. Features 25 and 40 are good-sized pits but fairly shallow—10 and 14 cm, too shallow to suggest postholes or substantial storage features. Feature 16, a small but relatively deep pit (8-by-10 cm), could have held a small post. Feature 40 was the only small pit to contain fauna—three pieces of unburned small mammal bone.

None of the wall niches is similar (Fig. 13.39). Found only in the south and west walls, most were disturbed by rodents obscuring their original configurations. Feature 9 (Fig. 13.40) was in the west wall about 25 cm above the floor-wall intersection. Oval to round in configuration, it extended back at least 55 cm to where it was truncated by a backhoe trench. Fill was roof fall material including charcoal and burned reeds.

Feature 38 is the largest and most complex of the wall niches (Fig. 13.41). At least 35 cm above the floor-wall intersection, this feature had several chambers, two of which were rodent burrows or dens. Fill was roof fall material with a piece of burned roof beam near the opening. Three multiplatform cores (two of chalcedony and one of chert) were found at the base of the niche and a corn stem was found in the fill.

Feature 22 (Fig. 13.42), also about 35 cm above the floor-wall intersection, was oval to circular in cross section. Fill was laminated and contained a fragment of ground stone. The

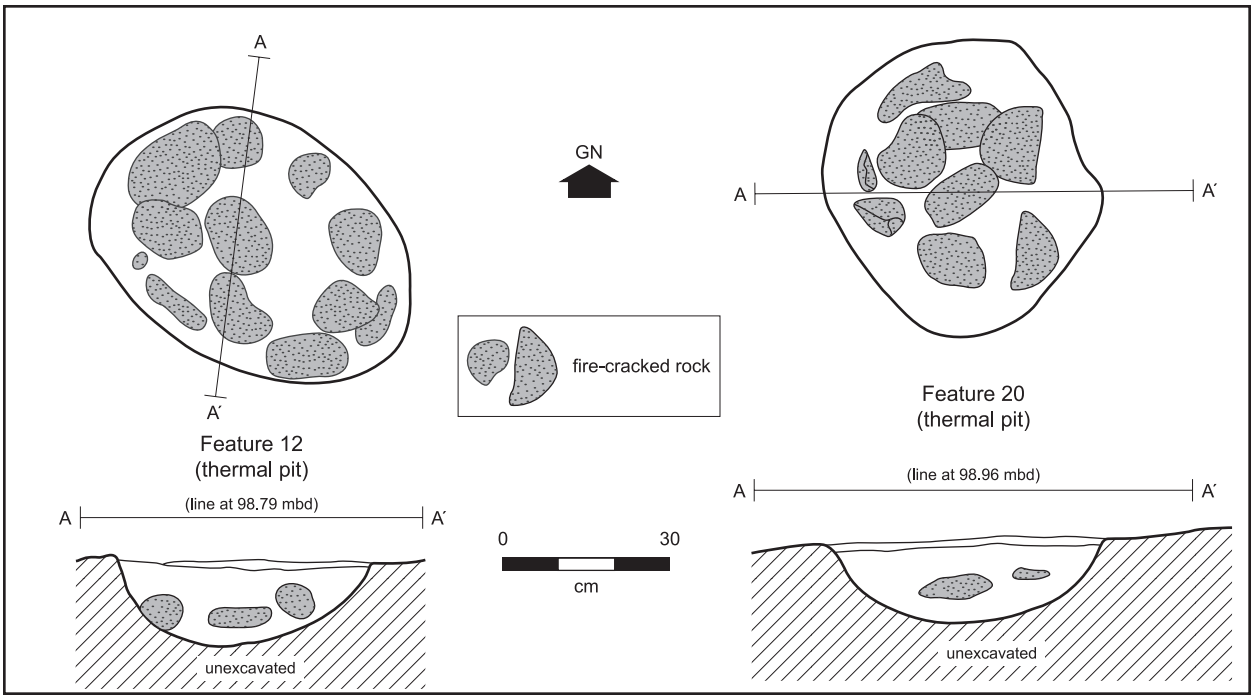

Figure 13.36. Plan and profile of thermal features (Features 12 and 20) in Structure 5.

Figure 13.37. Feature 12 in Structure 5.

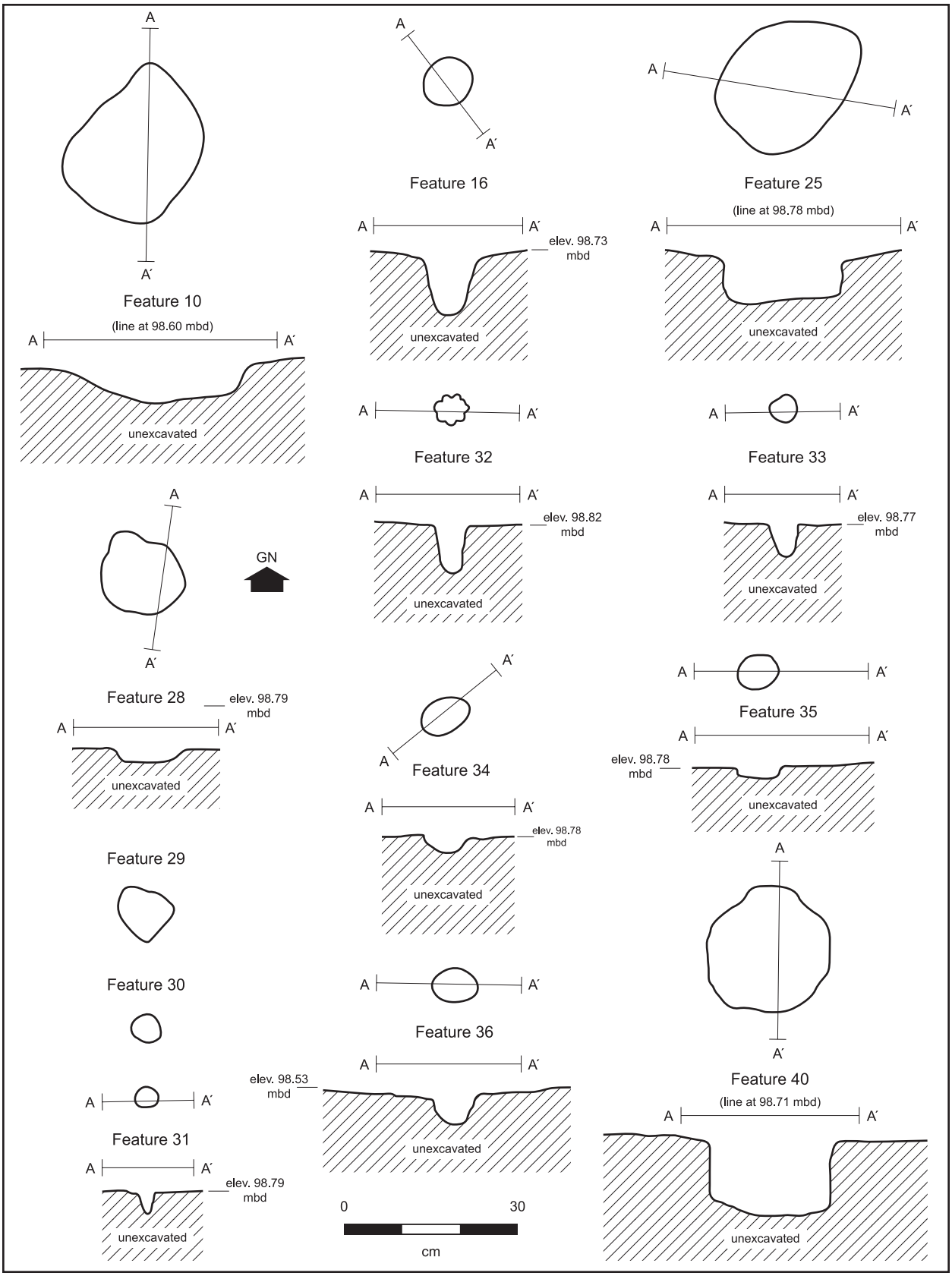

Figure 13.38. Plans and profiles of small pits in Structure 5; Features 10, 16, 25, 28, 29, 3, 31, 32, 33, 34, 35, 36, and 40.

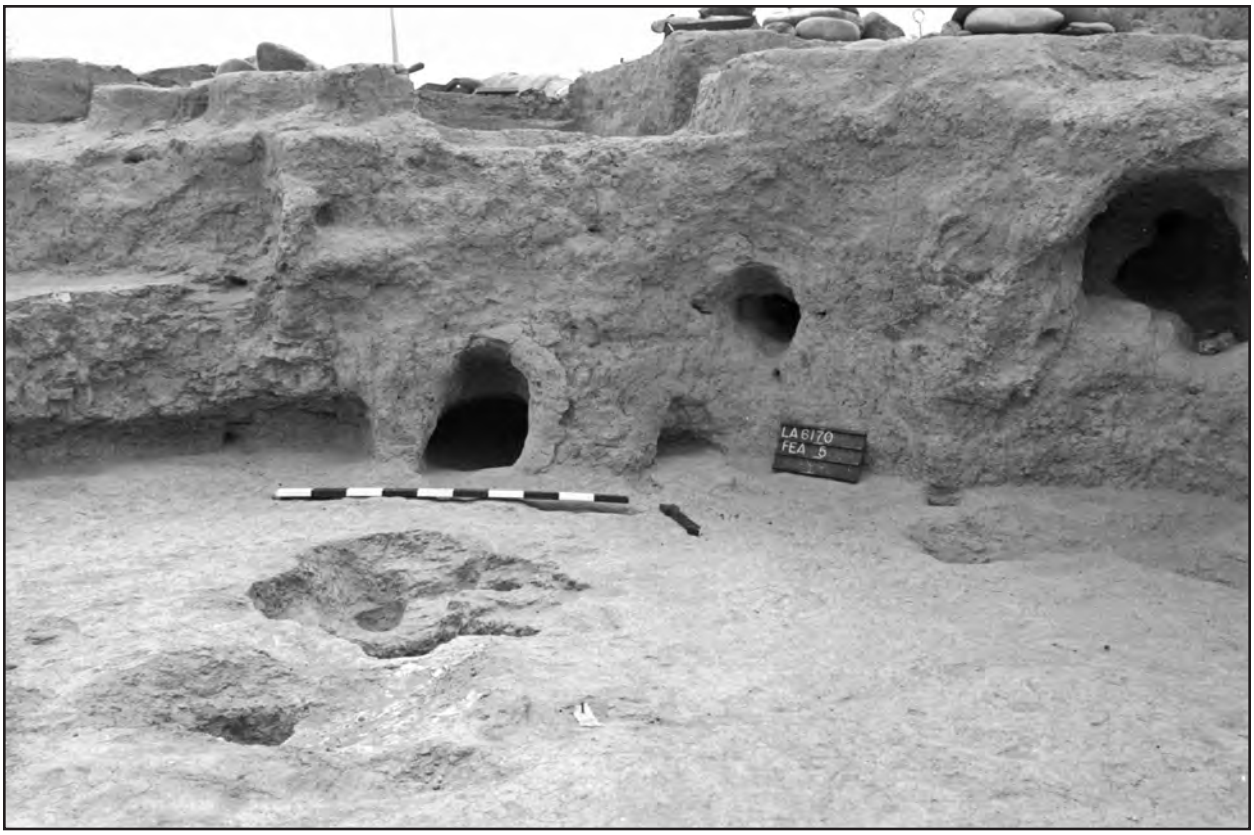

Figure 13.39. South wall of Structure 5 showing niches, vent tunnel, hearth, and ash pit.

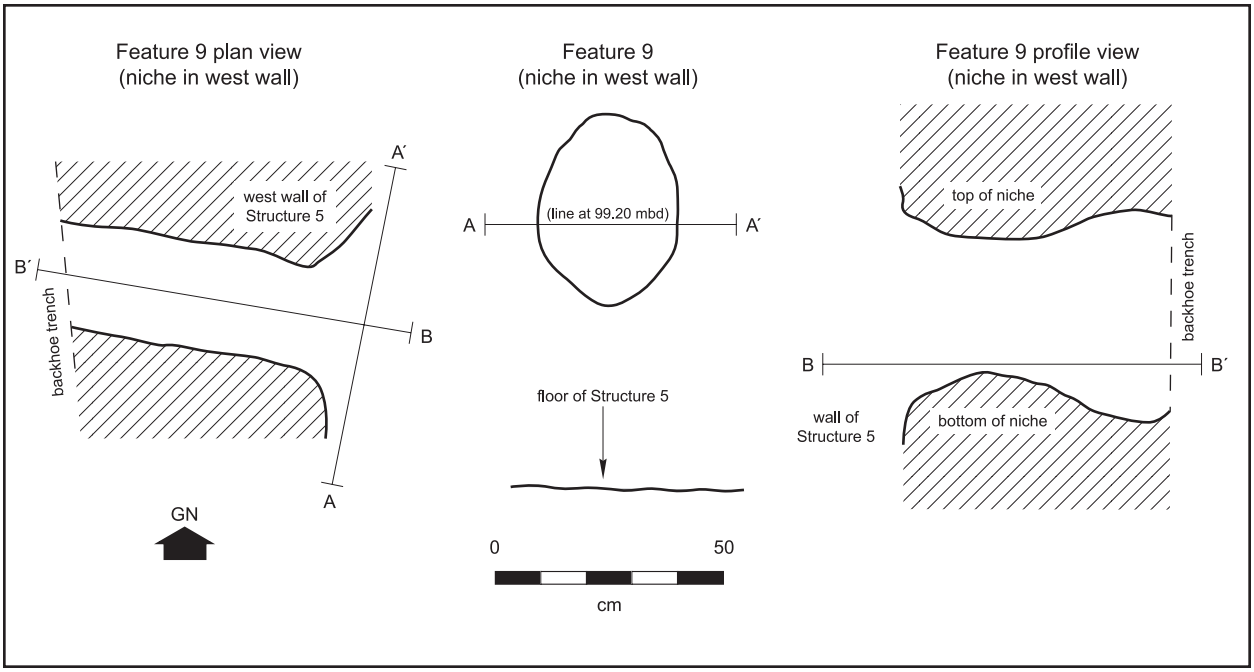

Figure 13.40. Plan and profile of niche, Feature 9, Structure 5.

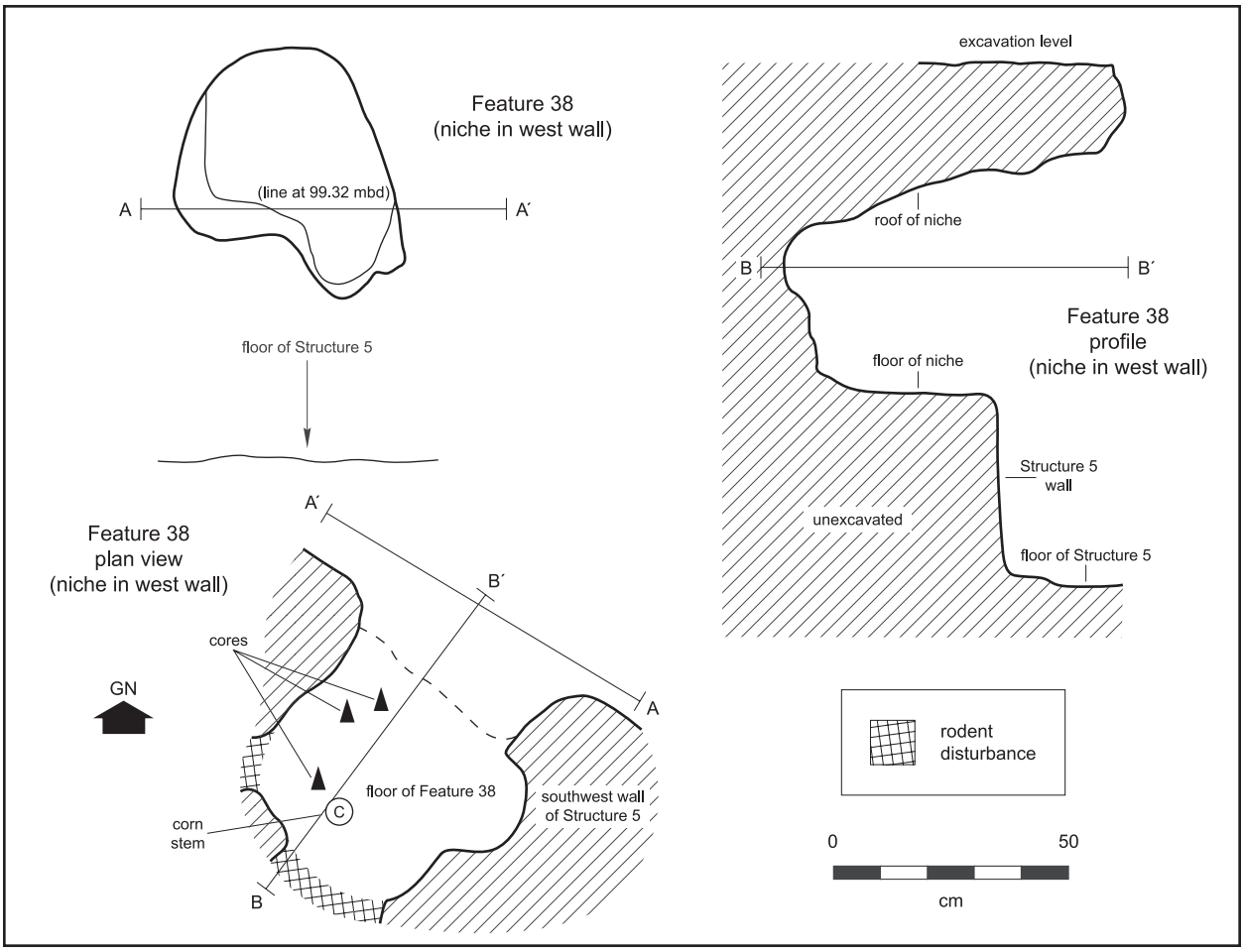

Figure 13.41. Plan and profile of niche, Feature 38, Structure 5.

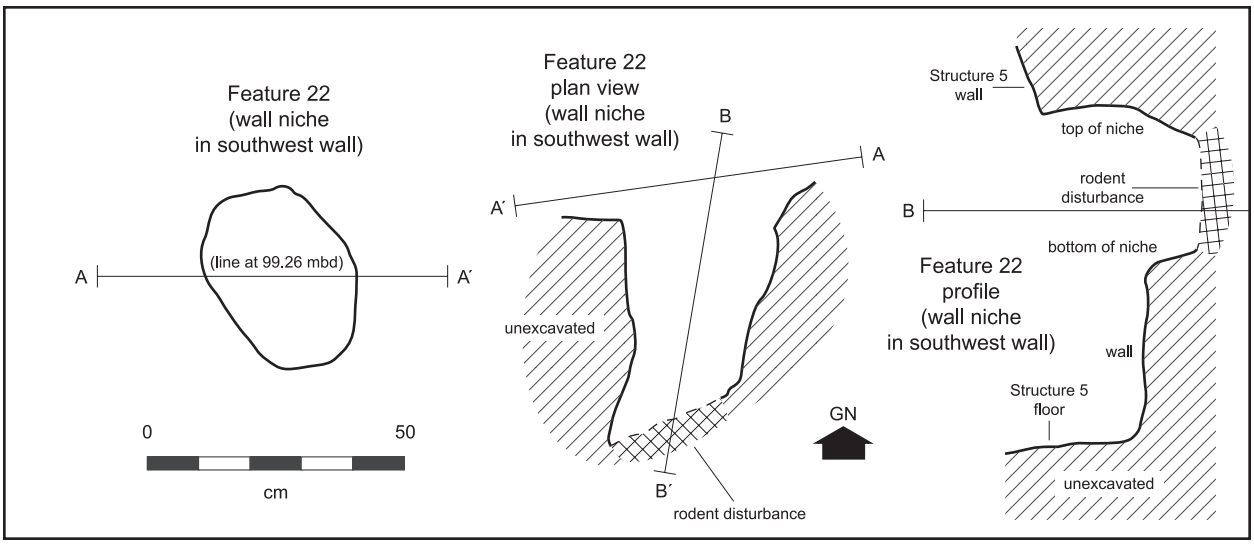

Figure 13.42. Plan and profile of niche, Feature 22, Structure 5.

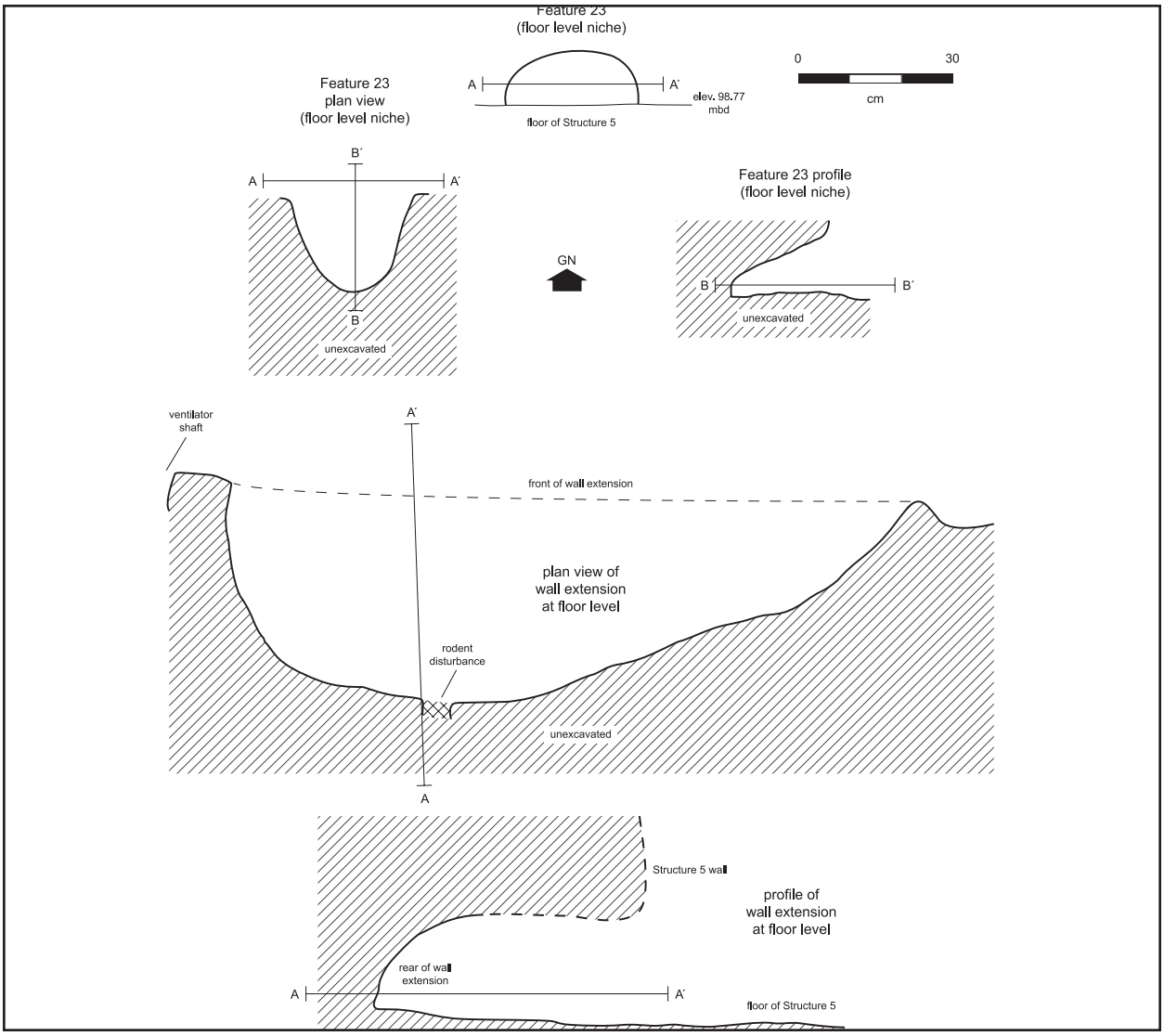

Figure 13.43. Plan and profile of floor level niche in Feature 23, Structure 5.

back was extensively disturbed by rodents so its depth is uncertain.

Feature 23 (Fig. 13.43, top) is a fairly small, dome-shaped niche at floor level. Fill was loose silty loam with charcoal. The interior floor and just in front of the niche had evidence of replastering that may have been intended to cover a rodent intrusion. A much larger floor level niche (Fig. 13.43, bottom) east of the vent opening, was treated as an extension of the floor rather than a feature. Over a meter long (1.3 m), roof fall material extended to the back of this niche. Pebbles, ground stone, chipped stone, and ceramics in this area could have been cached in the niche. Along the 103E line, it continued about 12 cm back from the wall but in areas reached a maximum depth of 50 cm. The height was generally 20 cm.

Abandonment. Structure 5 (Fig. 13.44) was not burned immediately at abandonment, however, the small amount of eolian and wash material on the floor suggests it was relatively soon afterward. Most pits, except the hearth, ash pit, and small sand-filled pits were cleaned out. Little remained on the floor surface, although the abundance of cobbles resting on the floor surface makes it difficult to distinguish roof closing material from objects left behind. None of the postholes contained burned wood suggesting the posts were removed before the roof burned. Feature 41, a large pile of cobbles located just north of the

Figure 13.44. Structure 5 with features excavated.

structure, could be the result of partially dismantling the roof to retrieve the beams.

A completely unorganized mass of rocks and cobbles mixed with burned roof beams, matting, and roof adobe lay in front of the ventilator opening. In this mass were the remains of at least four dogs. Some appear to have been placed there after the burn, but one was fairly disturbed and had enough burned bone to suggest placement during or soon after the burn. The disturbed dog was a mature but young male and was only partially articulated. Fill around this dog was loose with abundant charcoal chunks and cobbles as well as lenses of alluvial clay that filled and coated some bones. The top of the cranium was down with the mandible on top. The cervical vertebrae were folded back over the mandible with the humeri at the end of this short string of vertebrae. This position could only occur if the neck was snapped at the base of the cranium. No cuts or perimortem damage to the cervical vertebrae was found. The scapula, ribs, and thoracic vertebrae were scattered with a few lumbar vertebrae and the innominate and baculum articulated. Femurs were displaced when found and the lower left tibia, calcaneus, and upper portions of the metacarpals are burned. A small part of the right proximal tibia is burned and the right rear phalanges are scorched from heat. Obsidian flakes and a bean were found among the dog bones.

A four- to six-month-old dog was buried just west of the adult dog on a wash lens. It was largely articulated with the upper torso lying on the right side and the head back, but twisted at the waist so that the lower legs were flexed against the upper legs and above the stomach area. Beneath this dog was partial snake and rodent parts, suggesting rodent disturbance. A one- to two-month-old puppy was found in a pocket of fine sand under a slab about a meter north of the mature dog. Parts of a second puppy the same age were recovered from the general fill layer in the southwest quadrant just above the floor.

Table 13.32. Fauna Recovered from Different Uses of the LA 6170, Structure 5 Ash Pit (Feature 19)

	Last Use (Use 4)			Use 2			First Use (Use 1)		
	Count	%	% Burned	Count	%	% Burned	Count	%	% Burned
Small mammal/med-lrg bird	-	-	-	1	5.3%	-	3	3.4%	91.7%
Small mammal	1	2.7%		1	5.3%	-	12	13.6%	-
Large mammal	2	5.4%	50.0%	-	-	-	-	-	-
Black-tailed prairie dog	-	-	-	-	-	-	1	1.1%	-
Ord's kangaroo rat	1	2.7%	-	1	5.3%	100.0%	2	2.3%	50.0%
Banner-tailed kangaroo rat	1	2.7%	100.0%	-	-	-	-	-	-
Large woodrat	-	-	-	1	5.3%	-	-	-	-
Small rodent	-	-	-	-	-	-	1	1.1%	100.0%
Medium-large rodent	3	8.1%	66.7%	4	21.1%	-	2	2.3%	-
Desert cottontail	20	54.0%	40.0%	7	36.8%	42.9%	63	71.6%	25.0%
Black-tailed jackrabbit	3	8.1%	-	2	10.5%	50.0%	2	2.3%	-
Medium artiodactyl	1	2.7%	-	-	-	-	1	1.1%	-
Passeriformes	2	5.4%	-	1	5.3%	-	1	1.1%	-
Nonvenomous snakes	2	5.4%	-	-	-	-	-	-	-
New Mexico spadefoot	-	-	-	1*	5.3%	-	-	-	-
Red spotted toad	1*	2.7%	-	-	-	-	-	-	-
Total	37	100.0%	32.4	19	100.0%	26.3%	88	100.0%	39.8%
Immature (1/2-2/3 grown)	1	2.7%	-	-	-	-	-	-	-
Unburned	25	67.6%	-	14	73.7%	-	53	60.2%	-
Light/scorch	1	2.7%	-	2	10.5%	-	-	-	-
Light to heavy	-	-	-	-	-	-	1	1.1%	-
Heavy or black	1	2.7%	-	-	-	-	6	6.8%	-
Heavy to calcined	-	-	-	-	-	-	1	1.1%	-
Calcined	10	27 .0%	-	3	15.8%	-	27	30.7%	-
Complete	8	21.6%	-	1	5.3%	-	18	20.5%	-
>75% complete	5	13.5%	-	-	-	-	13	14.8%	-
50-75% complete	3	8.6%	-	6	31.6%	-	7	8.0%	-
25-50% complete	3	8.6%	-	-	-	-	5	5.7%	-
<25% complete	18	48.6%	-	12	63.2%	-	45	51.1%	-

* denotes a partial skeleton

Floor fill in the northwest quadrant contained pieces of hematite, yellow ochre, and white calcite and an expedient handstone. Also in this quadrant were a number of burned corn cobs as well as a concentration of 48 ceramics (1 Northern Rio Grande mineral paint, 4 Northern Rio Grande Plain, 39 Middle Rio Grande Plain, 3 Middle Rio Grande Plain corrugated, 1 San Marcial Black-on-white). The northeast and southwest quadrants were relatively clean. Anvil or stones with working surfaces were found in the north-central area, just above the hearth, and east of the hearth. A handstone and polisher were just east of the ash pit and another handstone was found along the wall in the southeast.

Artifacts. Although excavation in levels did not always allow for clear distinctions between the stratigraphic units, the artifact data show chronological patterning. Counts are greater in the overburden, Feature 5, and the lower fill of Structure 5. Relatively little material is associated with the intrusive pit room, Structure 5A.

Ceramics (Table 13.33) are fairly diverse with few painted wares. As in Structure 2, Northern Rio Grande (igneous temper) sherds are far more common in the upper fill and almost disappear in the Early Developmental deposits. A few corrugated sherds are found in the roof-fall closing layer, but could have been moved by rodents (of which there are abundant indications) or are from levels that also include wind and water deposits. Bowl sherds comprise more of the Late Developmental and mixed deposits and jars are almost the universal form in the Early Developmental deposits. A total of four cloud blowers were found, none of which are complete. All are plain wares, two Middle Rio Grande and two Northern Rio Grande tempered.

None of the pieces of chipped stone from the wind and water deposits (n = 154) and vent shaft (n = 42) and about 87 percent of the roof fall and closing lithic artifacts were analyzed. Other components were fully analyzed except for an occasional misplaced bag. All of the

Table 13.33. Ceramic Types and Vessel Forms Recovered from LA 6170, Feature 5, Structure 5A, and Structure 5 at LA 6170

	Overburden	Feature 5	Structure 5 Wind/Water Deposits	Structure 5A, Fill	Structure 5A Floor and Features	Structure 5 Roof and Closing	Structure 5, Floor Fill and Contact	Structure 5 Features with Occupational Fill	Vent Shaft Fill	Totals
Ceramic Date	LD	LD/C	Mainly ED some LD	LD	LD	Mainly ED some LD	ED	ED	ED	
Northern Rio Grande	10	2	1	-	-	2	-	-	-	15
Unpainted undifferentiated	6.1%	2.0%	2.1%	-	-	1.2%	-	-	-	2.2%
Mineral Paint	3	-	-	-	-	1	-	-	-	4
(undifferentiated)	1.8%	-	-	-	-	0.6%	-	-	-	0.6%
Kwahe'e Black/white	2	1	-	1	-	-	-	-	-	4
	1.2%	1.0%	-	2.4%	-	-	-	-	-	0.6%
Santa Fe Black/white	-	2	-	-	-	-	-	-	-	2
	-	2.0%	-	-	-	-	-	-	-	0.3%
Plain	33	24	1	3	-	20	1	-	-	82
	20.0%	24.2%	2.1%	7.3%	-	12.2%	0.7%	-	-	12.2%
Indented Corrugated	17	11	-	3	-	1	-	-	-	32
	10.3%	11.1%	-	7.3%	-	0.6%	-	-	-	4.7%
Incised Corrugated	-	-	-	1	-	-	-	-	-	1
	-	-	-	2.4%	-	-	-	-	-	0.1%
Plain Corrugated	31	4	-	5	-	2	-	-	-	42
	18.8%	4.0%	-	12.2%	-	1.2%	-	-	-	6.2%
Smeared Plain Corrugated	15	8	3	-	-	1	-	-	-	27
	9.1%	8.1%	6.4%	-	-	0.6%	-	-	-	4.0%
Smeared Indented	-	4	-	3	-	-	-	-	-	7
Corrugated	-	4.0%	-	7.3%	-	-	-	-	-	1.0%
Neck Corrugated	1	-	-	-	-	-	-	-	-	1
	0.6%	-	-	-	-	-	-	-	-	0.1%
Kapo Gray	1	-	-	-	-	-	-	-	-	1
	0.6%	-	-	-	-	-	-	-	-	0.1%
Total Northern Rio Grande	113	56	5	16	0	27	1	0	0	218
	68.5%	56.6%	10.6%	39.0%	-	16.5%	0.7%	-	-	32.3%
Middle Rio Grande	38	30	37	25	1	124	135	4	15	409
Plain	23.0%	30.3%	78.7%	61.0%	100.0%	75.6%	97.8%	100.0%	93.8%	60.6%
Indented Corrugated	1	-	-	-	-	-	-	-	-	1
	0.6%	-	-	-	-	-	-	-	-	0.1%
Plain Corrugated	-	-	-	-	-	3	-	-	-	3
	-	-	-	-	-	1.8%	-	-	-	0.4%
Smeared Plain Corrugated	1	2	-	-	-	1	-	-	-	4
	0.6%	2.0%	-	-	-	0.6%	-	-	-	0.6%
Polished Gray	-	-	-	-	-	1	-	-	-	1
	-	-	-	-	-	0.6%	-	-	-	0.1%
Unpainted undifferentiated	6	4	3	-	-	4	-	-	-	17
	3.6%	4.0%	6.4%	-	-	2.4%	-	-	-	2.5%
Mineral Paint	3	-	-	-	-	1	1	-	-	5
undifferentiated	1.8%	-	-	-	-	0.6%	0.7%	-	-	0.7%
San Marcial Black/white	-	-	-	-	-	3		-	-	3
	-	-	-	-	-	1.8%		-	-	0.4%
Tallahogan-like	1	5	-	-	-	-	1	-	1	8
	0.6%	5.1%	-	-	-	-	0.7%	-	1.1%	1.2%
Total Middle Rio Grande	50	41	40	25	1	137	137	4	16	451
	30.3%	41.4%	85.1%	58.5%	100.0%	83.5%	99.3%	100.0%	100.0%	66.8%
Utility ware	1	-	-	-	-	-	-	-	-	1
	0.6%	-	-	-	-	-	-	-	-	0.1%
Socorro Black/white	-	2	1	-	-	-	-	-	-	3
	-	2.0%	2.1%	-	-	-	-	-	-	0.4%
Alma Plain	1	1	-	-	-	-	-	-	-	2
	0.6%	2.1%	-	-	-	-	-	-	-	0.3%
Bowl	16	5	5	1	-	2	-	-	-	29
	9.7%	5.0%	10.6%	2.4%	-	1.2%	-	-	-	4.3%
Jar	146	90	41	40	1	160	131	4	16	628
	88.5%	90.9%	87.2%	97.6%	100.0%	97.6%	94.9%	100.0%	100.0%	93.0%
Handle	-	1	-	-	-	-	-	-	-	1
	-	1.0%	-	-	-	-	-	-	-	0.2%
Cloud Blower	-	-	1	-	-	2	1	-	-	4
	-	-	2.1%	-	-	1.2%	0.7%	-	-	0.6%
Form Unknown	3	3	-	-	-	-	6	-	-	10
	1.8%	3.0%	-	-	-	-	4.3%	-	-	1.5%
Totals	165	99	47	41	1	164	138	4	16	675
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

ED = Early Developmental, LD = Late Developmental, C = Coalition

ground stone was analyzed. Lithics recovered from the overburden (Table 13.34) are almost equally divided between nonvesicular igneous and chalcedony with an emphasis on later stages of secondary core reduction (74 percent of the flakes lack dorsal cortex). Bifacial thinning flakes indicate that formal tool manufacture is also represented. Expedient flaked tools have unidirectional scraping and bidirectional cutting wear like that found on bone or wood. A marginally retouched flake was used for scraping. Formal tools include two projectile points and three bifaces with no evidence of utilization.

The roof fall and closing material lithic assemblage (Table 13.35) has a greater proportion of nonvesicular igneous material than other fill units in this structure. Evidence of early and late stages of secondary reduction is found in the chalcedony items while the igneous rocks show an emphasis on the later stages of secondary core reduction with some formal tool manufacture. Cores and hammerstones are abundant and expedient tool manufacture is indicated by utilized and marginally retouched flakes. The majority of the utilized flakes have unidirectional scraping wear indicative of scraping on a hard material such as bone or wood. Of the marginally retouched tools, four were used for cutting and two for scraping. All were utilized and discarded when the edges were no longer functional. The bifaces and uniface indicate formal tool manufacture. One biface has bidirectional rounding and striations typical of prolonged knife use on a hard material. While some of this material may have been deliberately left as part of the closing ritual, the overall abundance and the variety of tools suggests that roof-top activities are also well represented.

The floor fill and contact lithics (Table 13.36) again are mainly nonvesicular igneous and chalcedony materials but also a good amount of obsidian. Chalcedony lithics indicate both primary and secondary reduction with 2 flakes having 100 percent dorsal cortex and 7 with partial dorsal cortex. Another 13 flakes lack dorsal cortex. The igneous material has a similar pattern while obsidian bifacial thinning flakes with retouched or prepared platforms indicate formal bifacial tool manufacture. Cores are relatively common. An obsidian expedient flake tool fragment and marginally retouched quartzite flake have unidirectional scraping wear typical of use on hard materials such as bone or wood. Neither biface has evidence of use.

Five features with occupational fill (Table

Table 13.34. Lithic Type and Material for LA 6170, Structure 5 Overburden

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	12	38.7	4	12.9	-	-	4	12.9	11	35.5	31	16.0
Flake	52	38.5	22	16.3	4	3.0	7	5.2	50	37.0	135	71.0
Flake, bifacial thin	-	-	-	-	-	-	3	100.0	-	-	3	1.0
resharp	1	100.0	-	-	-	-	-	-	-	-	1	<1
Tested Rock	-	-	-	-	-	-	-	-	1	100.0	1	<1
Core, Multiplatform	2	33.3	1	16.7	-	-	-	-	3	50.0	6	3.0
Core, Single Platform	-	-	-	-	-	-	-	-	1	100.0	1	<1
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	1	<1
Flake, Utilized	2	50.0	-	-	-	-	1	25.0	1	25.0	4	2.0
Flake, Marg Retouch	-	-	-	-	-	-	1	100.0	-	-	1	<1
Projectile Point	1	50.0	1	50.0	-	-	-	-	-	-	2	1.0
Biface	-	-	-	-	-	-	3	100.0	-	-	3	1.0
Expedient handstone	-	-	-	-	-	-	-	-	1	100.0	1	<1
Total	70	36.8	28	14.7	5	2.6	19	10.0	68	35.8	190	100.0

Table 13.35. Lithic Type and Material for LA 6170, Structure 5 Roof and Closing

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	11	33.3	4	12.1	1	3.0	3	9.1	13	39.4	-	-	1	3.0	33	10.0
Flake	51	23.8	30	14.0	10	4.7	15	7.0	107	50.0	-	-	1	0.5	214	70.0
Flake, Bifacial Thin	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Tested Rock	1	20.0	-	-	2	40.0	-	-	1	20.0	-	-	1	20.0	5	1.0
Core, Multiplatform	3	30.0	2	20.0	1	10.0	-	-	4	40.0	-	-	-	-	10	3.0
Core, Single Platform	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Hammerstone	-	-	-	-	6	75.0	-	-	-	-	-	-	2	25.0	8	2.0
Pecking Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Chopper, Bifacial	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	2	<1
Angular Deb, Marg Ret	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Flake, Utilized	1	20.0	-	-	-	-	1	20.0	3	60.0	-	-	-	-	5	1.0
Flake, Marg Retouch	-	-	2	50.0	-	-	-	-	2	50.0	-	-	-	-	4	1.0
Biface	-	-	-	-	-	-	2	66.7	1	33.3	-	-	-	-	3	<1
Uniface	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	1	33.3	-	-	1	33.3	1	33.3	-	-	3	<1
Mano, Unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Metate, Unknown	-	-	-	-	1	50.0	-	-	-	-	1	50.0	-	-	2	<1
Grinding slab	-	-	-	-	-	-	-	-	3	100.0	-	-	-	-	3	<1
Expedient handstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Pestle	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Polishing Stone	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	<1
Shaped Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Cobble with pigment	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Total	67	22.1	39	12.9	27	8.9	22	7.3	139	45.9	3	1.0	6	2.0	303	100.0

Table 13.36. Lithic Type and Material for LA 6170, Structure 5 Floor Fill and Contact

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	12	44.4	3	11.1	2	7.4	1	3.7	8	29.6	-	-	-	-	1	3.7	27	13.0
Flake	41	28.9	9	6.3	9	6.3	18	12.7	64	45.1	-	-	-	-	1	0.7	142	73.0
Flake, Bifacial Thin	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	-	-	3	1.0
Tested Rock	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Core, Multiplatform	2	28.6	4	57.1	-	-	-	-	1	14.3	-	-	-	-	-	-	7	3.0
Hammerstone	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	2	1.0
Flake, Utilized	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Flake, Marg Retouch	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Biface	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	1	33.3	-	-	1	33.3	-	-	1	33.3	-	-	3	1.0
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Metate, Basin	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Shaped Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Cobble with pigment	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Total	55	28.4	16	8.2	16	8.2	25	12.9	76	39.2	1	0.5	3	1.5	2	1	194	100.0

Table 13.37. Lithic Type and Material for LA 6170, Structure 5 Pits with Occupational Fill

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	13	61.9	5	23.8	1	4.8	-	-	2	9.5	-	-	21	17.0
Flake	31	34.8	19	21.3	1	1.1	3	3.4	35	39.3	-	-	89	74.0
Flake, Bifacial Thin	-	-	-	-	-	-	2	100.0	-	-	-	-	2	1.0
Core, Multiplatform	2	66.7	1	33.3	-	-	-	-	-	-	-	-	3	2.0
Flake, Utilized	1	33.3	-	-	-	-	2	66.7	-	-	-	-	3	2.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Shaped Stone	-	-	-	-	-	-	-	-	-	-	1	100	1	<1
Total	47	39.2	25	20.8	2	1.7	8	6.7	37	30.8	1	0.8	120	100.0

13.37) produced lithics with most (n = 99) from the ash pit. Chalcedony, closely followed by nonvesicular igneous material then chert, are the largest material types found in an assemblage that mainly reflects the later stages of secondary core reduction (83 percent of the flakes lack dorsal cortex). Formal tool manufacture is suggested by two obsidian bifacial thinning flakes and a flake with a retouched platform. Three cores were found. Expedient tool use is indicated by three flaked tools, two with unidirectional scraping edges and two with bidirectional cutting wear. These were probably used and discarded when they were no longer functional. The only formal tool is a basal fragment of a projectile point.

Only three of the plugged features (Features 12, 20, and 40) contained chipped stone. These are a chert angular debris and flakes or flake fragments of chalcedony (n = 3), fine-grain quartzite (n = 1), chert (n = 2), and basalt (n = 1). None have evidence of use and two have relatively large amounts of dorsal cortex.

The different fill units in Structure 5 (Table 13.38) are fairly uniform in the proportions of flaked artifact types and material. Overburden deposits have considerable angular debris and more chalcedony than most. The other Late Developmental period deposits, Feature 5 and Structure 5A, are similar in the proportion of flakes and in most material types, except that the structure has more cores and more hammerstones, probably reflecting its use as a grinding room. The floor fill and contact and features with occupational fill have proportionately more bifacial thinning flakes than most. Compared to Structure 2, flake and angular debris proportions are smaller and the proportions of formal tools larger. Proportions of obsidian are considerably larger for almost all of Structure 5 while Structure 2 has more nonvesicular igneous.

Relative to the masses of cobbles found in the lower fill of Structure 5, ground stone was sparse (Table 13.39). Most was found in the roof fall/closing and floor fill and contact contexts as fragments and obvious discards. Exceptions in the analyzed sample include three rhyolite grinding slabs, a quartzite handstone and pestle, a complete polishing stone, and quartzite cobble with pigment from the roof fall closing component, and a quartzite cobble with pigment, a complete coarse-grained sandstone two-hand mano, and basin metate from the floor and floor fill. The metate was placed face down on top of the ash pit. Among the unanalyzed ground stone were a complete hammerstone, two anvils, and six expedient handstones in the roof and closing deposits, and a hammerstone, a chopper, three anvils, two expedient handstones, and a polishing stone in the floor fill and contact layer.

The Structure 5 overburden fauna was not analyzed. Few elements were recovered and most are in poor condition. Otherwise, no one provenience unit has large quantities of bone (Table 13.40). The greatest diversity of taxa is found in the larger samples with the floor fill and contact component having the greatest diversity. Burned bone is relatively frequent in all of the Structure 5 components and especial-

Table 13.38. Summary of Flaked Lithics from LA 6170, Feature 5, Structure 5A and Structure 5 (percentages)

	Over-burden	Feature 5	St. 5A Fill	St. 5A Floor	St. 5 Roof and Closing	St. 5 Floor Fill and Contact	St. 5 Features wth Occupational Fill	St. 5 Plugged Features
Sample size	189	200	151	6	289	186	119	8
Artifact Type								
Angular debris	16.4	13.0	12.6	-	11.4	14.5	17.6	12.5
Flake	71.4	79.5	79.5	66.7	74.0	76.3	74.8	87.5
Bifacial thinning flake	1.6	1.0	-	-	0.3	1.6	1.7	-
Sharpening flake	-	0.5	-	-	-	-	-	-
Uniface resharp. flake	0.5	-	-	-	-	-	-	-
Tested rock	0.5	-	-	-	1.7	0.5	-	-
Multiplatform core	3.2	0.5	2.6	-	3.5	3.8	2.5	-
Single platform core	0.5	-	-	-	0.3	-	-	-
Hammerstone	0.5	0.5	3.3	33.3	2.8	1.1	-	-
Pecking stone	-	-	-	-	0.3	-	-	-
Chopper	-	0.5	0.6		0.7	-	-	-
Retouched angular deb.	-	-	-	-	0.3	-	-	-
Utilized flake	2.1	1.5	0.6	-	1.7	0.5	2.5	-
Retouched flake	0.5	0.5	0.6	-	1.4	0.5	-	-
Projectile point	1.0	1.0	-	-	-	-	0.8	-
Biface	1.6	1.5	-	-	1.0	1.1	-	-
Uniface	-	-	-	-	0.3	-	-	-
Material	-	-	-	-	-	-	-	-
Chalcedony	37.0	28.0	27.1	-	23.2	29.6	39.5	37.5
Chert	14.8	15.0	16.5	33.3	13.5	8.6	21	37.5
Quartzite	2.6	5.0	3.3	-	7.6	7.5	1.7	12.5
Obsidian	10.0	7.0	9.9	-	7.6	13.4	6.7	-
Nonvesicular igneous	35.4	44.5	37.7	66.7	46.4	39.8	31.1	12.5
Other local	-	0.5	5.3	-	1.7	1.1	-	-

ly so in the features, whether the fill was occupational or the pit was sealed. Complete and nearly complete elements are spread throughout with the largest proportion from the fill of Structure 5A. All of the turkey from this site (n = 3) is from upper deposits (Feature 5 and the wind and water deposits) and the roof fall/closing strata. Toads and frogs are diverse and include a good number of partial to complete individuals (at least five).

Evidence for warm weather deposition is found in the presence of toads. In addition, bones from young and very young jackrabbit and dog in the roof and closing unit, dog in the floor fill and contact, and cottontail in the pits with occupational fill represent animals procured or deposited during the warm season. Cold weather deposition is virtually impossible to demonstrate through the presence of certain taxa.

Bones with carnivore punctures or gnawing are rare (n = 6), one per component except for the pits, which had none. Punctures were found on small mammal/large bird, cottontail rabbit, jackrabbit, and turkey bones. Possible scatological bone (n = 8) has a more limited distribution with most (n = 5) found in the floor fill/contact component. Bones that look scatological are from cottontails, rodents, and medium to large mammals. Rodent gnawing is rare (n = 2) and confined to floor fill/contact (cottontail and jackrabbit bones).

Definite evidence of processing or butchering is also rare. Only two have cuts (a medium artiodactyl and a deer) from floor fill or contact. Ambiguous fractures (impact, spiral, and breaks), which can result from human activities such as carcass processing, from carnivores crunching on bones, and from a number of natural processes, are found in small numbers in

Table 13.39. Summary of Analyzed and Other Ground Stone Recovered from LA 6170, Feature 5, Structure 5A, and Structure 5

	Over-burden	Feature 5	Wind/Water Depostis	St. 5A Fill	St. 5A Floor	St. 5 Roof and Closing	St. 5 Floor Fill and Contact	St. 5 Features 8, 19	St. 5 Vent Shaft
Analyzed									
Indeterminate ground stone	-	1	1	1	-	3	3	-	-
	-	10.0%	50.0%	50.0%	-	21.4%	37.5%	-	-
Mano fragment	-	-	-	1	-	1	-	-	-
	-	-	-	50.0%	-	7.1%	-	-	-
Two-hand mano	-	5	-	-	-	-	1	-	-
	-	50.0%	-	-	-	-	12.5%	-	-
Metate fragment	-	-	-	-	-	2	1	-	-
	-	-	-	-	-	14.3%	12.5%	-	-
Slab metate	-	3	-	-	1	-	-	-	-
	-	30.0%	-	-	100.0%	-	-	-	-
Basin metate	-	-	-	-	-	-	1	-	-
	-	-	-	-	-	-	6.7%	-	-
Trough metate	-	-	-	-	-	-	-	-	2
	-	-	-	-	-	-	-	-	100.0%
Grinding slab	-	-	1	-	-	3	-	-	-
	-	-	50.0%	-	-	20.0%	-	-	-
Expedient handstone	1	-	-	-	-	1	-	-	-
	100.0%	-	-	-	-	7.1%	-	-	-
Maul	-	1	-	-	-	-	-	-	-
	-	10.0%	-	-	-	-	-	-	-
Pestle	-	-	-	-	-	1	-	-	-
	-	-	-	-	-	7.1%	-	-	-
Polishing stone	-	-	-	-	-	1	-	-	-
	-	-	-	-	-	7.1%	-	-	-
Shaped slab	-	-	-	-	-	1	1	1	-
	-	-	-	-	-	7.1%	12.5%	100.0%	-
Cobble with pigment	-	-	-	-	-	1	1	-	-
	-	-	-	-	-	7.1%	12.5%	-	-
Subtotals	1	10	2	2	1	14	8	1	2
Other									
Hammerstone	1	-	-	-	-	1	1	-	-
	50.0%	-	-	-	-	9.1%	8.3%	-	-
Unidirectional chopper	-	1	-	1	-	-	1	-	-
	-	33.3%	-	25.0%	-	-	8.3%	-	-
Bidirectional chopper	-	1	-	-	-	-	1	-	-
	-	33.3%	-	-	-	-	8.3%	-	-
Anvil	-	1	-	-	-	2	4	1	-
	-	33.3%	-	-	-	18.2%	33.3%	50.0%	-
Expedient handstone	-	-	-	1	-	8	3	-	-
	-	-	-	25.0%	-	72.7%	25.0%	-	-
Polishing stone	-	-	-	-	-	-	1	-	-
	-	-	-	-	-	-	8.3%	-	-
Indeterminant ground stone	-	-	-	-	-	-	1	-	-
	-	-	-	-	-	-	8.3%	-	-
Subtotal	1	3	-	2	-	11	12	1	-
Total ground stone	2	13	2	4	1	25	20	2	2
	2.8%	18.3%	2.8%	5.6%	1.4%	35.2%	28.2%	2.8%	2.8%

all components except the vent fill. These are found on small mammals, cottontail rabbits, jackrabbits, large mammals, and medium artiodactyls.

Bone tools are rare (n = 9). A heavily eroded fine point awl was found in the overburden; a bone tube in the wind and water deposits; manufacturing debris, an awl preform, an awl with no tip, and a mat-weaving tool fragment in the roof and closing layer; and a small fragment of a bone object, an awl with no tip, and a fragment of a mat weaving tool in the floor

Table 13.40. Summary of Fauna Recovered from LA 6170, Feature 5, Structure 5A, and Structure 5

	Feature 5		Str 5 Wind/Water Deposits		Str 5A Fill		Str 5 Roof and Closing		Str 5 Floor Fill and Contact		Str 5 Pits with Occupational Fill		Str 5 Plugged Features		Str 5 Vent Shaft	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal/med-lrg bird	1	2.8%	-	-	-	-	1	0.7%	3	2.7%	4	2.6%	-	-	-	-
Small mammal	-	-	-	-	-	-	6	4.2%	16	14.3%	18	11.5%	9	75.0%	2	11.8%
Small-medium mammal	-	-	-	-	-	-	1	0.7%	3	2.7%	-	-	-	-	-	-
Medium-large mammal	3	8.3%	-	-	-	-	5	3.5%	4	3.6%	1	0.6%	-	-	-	-
Large mammal	6	16.7%	-	-	1	7.7%	9	6.3%	-	-	2	1.3%	-	-	1	5.9%
Black-tailed prairie dog	-		-	-	-	-	6	4.2%	2	1.8%	1	0.6%	-	-	-	-
Botta's pocket gopher	1	2.8%	-		-	-	1	0.7%	-	-	-	-	-	-	-	-
Yellow-faced pocket gopher	2	5.6%	-	-	-	-	6	4.2%	-	-	-	-	-	-	-	-
Pocket mice	-	-	-	-	-	-	-	-	2	1.8%	-	-	-	-	-	-
Ord's kangaroo rat	-	-	-	-	-	-	-	-	3	2.7%	6	3.8%	-	-	-	-
Banner-tailed kangaroo rat	1	2.8%	-	-	-	-	1	0.7%	2	1.8%	1	0.6%	-	-	1	5.9%
Beaver	-	-	-	-	-	-	2	1.4%	-	-	-	-	-	-	-	-
Peromyscus sp.	-	-	-	-	-	-	1	0.7%	1	0.9%	-	-	-	-	-	-
Woodrats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5.9%
Large woodrat	-	-	-	-	-	-	-	-	1	0.9%	1	0.6%	-	-	-	-
Small rodent	-	-	-	-	-	-	-	-	-	-	2	1.3%	-	-	-	-
Medium-large rodent	-	-	-	-	-	-	2	1.4%	3	2.7%	9	5.8%	1	8.3%	-	-
Nuttall's cottontail	-	-	1	3.1%	-	-	-	-	-	-	-	-	-	-	-	-
Desert cottontail	14	38.9%	18	56.3%	6	46.2%	41	28.5%	28	25.0%	93	59.6%	1	8.3%	6	35.3%
Black-tailed jackrabbit	1	2.8%	9	28.1%	3	23.1%	14	9.7%	6	5.4%	7	4.5%	1	8.3%	3	17.6%
Medium carnivore	-	-	1	3.1%	-	-	-	-	-	-	-	-	-	-	-	-
Dog	1	2.8%	-	-	2	15.4%	36****	25.0%	13	11.6%	-	-	-	-	-	-
Medium artiodactyl	-	-	-	-	-	-	5	3.5%	6	5.4%	2	1.3%	-	-	1	5.9%
Medium-large artiodactyl	-	-	-	-	-	-	1	0.7%	-	-	-	-	-	-	-	-
Deer or elk	-	-	1	3.1%	-	-	-	-	-	-	-	-	-	-	-	-
Elk	-	-	-	-	1	7.7%	-	-	-	-	-	-	-	-	-	-
Mule deer	2	5.6%	-	-	-	-	-	-	1	0.9%	-	-	-	-	-	-
Small bird	-	-	-	-	-	-	-	-	1	0.9%	-	-	-	-	-	-
Very large bird	2	5.6%	1	3.1%	-	-	-	-	1	0.9%	-	-	-	-	-	-
Golden eagle	-	-	-	-	-	-	1	0.7%	-	-	-	-	-	-	-	-
Scaled quail	-	-	-	-	-	-	-	-	1	0.9%	-	-	-	-	1	5.9%
Turkey	1	2.8%	1	3.1%	-	-	1	0.7%	-	-	-	-	-	-	-	-
Passeriformes	-	-	-	-	-	-	-	-	-	-	4	2.6%	-	-	-	-
Lizards	-	-	-	-	-	-	-	-	1	0.9%	-	-	-	-	-	-
Whiptails	-	-	-	-	-	-	-	-	1*	0.9%	-	-	-	-	-	-
Snakes	-	-	-	-	-	-	2	1.4%	-	-	-	-	-	-	-	-
Nonvenomous snakes	-	-	-	-	-	-	1	0.7%	7*	6.3%	2	1.3%	-	-	-	-
Frogs and toads	1	2.8%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plains spadefoot	-	-	-	-	-	-	-	-	-	-	1*	0.6%	-	-	-	-
New Mexico spadefoot	-	-	-	-	-	-	-	-	-	-	1*	0.6%	-	-	-	-
Great plains toad	-	-	-	-	-	-	1	0.7%	6**	5.4%	-	-	-	-	1*	5.9%
Red spotted toad	-	-	-	-	-	-	-	-	-	-	1*	0.6%	-	-	-	-
Total	36	100.0%	32	100.0%	13	100.0%	144	100.0%	112	100.0%	156	100.0%	12	100.0%	17	100.0%
Fetal, neonate	-	-	-	-	-	-	1	0.7%	-	-	1	0.6%	-	-	-	-
Immature (1/2-2/3 grown)	-	-	1	3.1%	-	-	19	13.2%	12	10.7%	1	0.6%	-	-	-	-
Burned	2	5.6%	4	12.5%	1	7.7%	20	13.9%	14	12.5%	52	33.3%	4	33.3%	3	17.6%
Complete	5	13.9%	6	18.8%	2	15.4%	26	18.1%	24	21.4%	28	17.9%	-	-	2	11.8%
>75% complete	5	13.9%	4	12.5%	3	23.1%	28	19.4%	14	12.5%	19	12.2%	-	-	4	23.5%
50-75% complete	6	16.7%	2	6.3%	1	7.7%	31	21.5%	8	7.1%	16	10.3%	-	-	2	11.8%
25-50% complete	2	5.6%	3	9.4%	2	15.4%	10	6.9%	12	10.7%	10	6.4%	1	8.3%	2	11.8%
<25% complete	18	50.0%	17	53.1%	5	38.5%	49	34.0%	54	48.2%	83	53.2%	11	91.7%	7	41.2%

(* denotes a skeleton counted as 1 element)

fill and contact. Almost all were made of medium artiodactyl bone with one that was left at large mammal, another (the tube) from a small carnivore, and an awl made from a deer metatarsal.

The macrobotanical, flotation, radiocarbon, and wood samples produced a diverse array of plants (Tables 13.41–13.44). Burned yucca, reed, grass, and monocot stems comprise the roof matting. Corn is present in all forms from stems to cupules. Seeds from a variety of wild plants occur in multiple contexts. In addition to samples collected from two postholes (see above), pollen was analyzed from two floor

Table 13.41. LA 6170, Structure 5 Fill, Seeds and Fruits (frequency per liter)

	Feature 5	Roof and Closing				Floor Fill and Contact
Quadrant		SE	NE	SW	E½ of NW	NE
		Cultural				
Annuals						
Amaranthus	0.5	0.8	-	-	-	-
Chenopodium	-	-	12.2	-	-	-
Portulaca	-	-	1.5	-	-	-
Unidentifiable seed	0.5	-	-	-	-	-
Perennials						
Pinus edulis	-	-	-	-	-	0.5
Grasses						
Gramineae	-	-	-	0.3	-	-
Cultivars						
Zea mays	-	-	0.5	-	-	0.5
		Possibly Cultural				
Annuals						
Chenopodium	-	-	3.9	-	-	-
		Non-cultural				
Annuals						
Amaranthus	-	2.3	-	-	0.9	-
Chenopodium	1	4.5	0.9	-	11.9	13.5
Cheno-am	-	-	-	-	0.9	-
Euphorbia	0.5	0.8	-	-	5.1	2
Nicotiana attenuata	-	-	-	-	-	0.5
Portulaca	-	-	-	-	-	0.5
Grasses						
Sporobolus	1.5	3.8	-	-	-	1.5

Table 13.42. LA 6170, Structure 5 Fill, Other Plant Parts (abundance per liter)

		Feature 5	Roof and Closing		Floor Fill and Contact		
Quadrant	Plant Part		SE	NW	SW	E½ of NW	NE
			Cultural				
Perennials							
Yucca	Leaf	-	-	+	-	-	-
Grasses							
Gramineae	Stem	-	-	-	+	+	+
Monocot	Stem	-	+	+++	-	+	-
Phragmites	Stem	-	-	-	-	-	-
Cultivars							
Zea mays	Cupule	+	+	+	+	+	+
	Glume	-	-	+	-	-	-
	Cob	-	-	-	-	+	-

Table13.43. LA 6170, Structure 5 Fill, Wood from Flotation Samples by Weight

		Roof and Closing		Floor Fill and Contact		
Quadrant	Feature 5	SE	NE	SW	E½ of NW	NE
		Cultural				
Perennials						
Cercocarpus	-	-	-	.04g	-	-
Juniperus	.10g	.10g	.10g	.04g	1.60g	.04g
Salicaceae *(Populus/Salix)*	.10g	.10g	2.40g	3.10g	2.20g	1.50g
Sarco/Atriplex	.20g	.04g	-	-	-	-

Table 13.44. LA 6170, Structure 5 Fill, Macrobotanical Samples (count and weight)

	Plant part	Overburden	Wind/Water Deposits	Roof and Closing	Floor Fill and Contact	Feature 26	Ventilator Shaft
C-14							
			Cultural				
Perennials							
Salicaceae *(Populus/Salix)*	Wood	-	-	23/1.05g	-	-	-
			Wood, Cultural				
Perennials							
Juniperus	Wood	10/1.10g	-	-	-	-	-
Salicaceae *(Populus/Salix)*	Wood	6/.50g	-	1/10.90g	-	-	-
			Wood, Possibly cultural				
Perennials							
Salicaceae *(Populus/Salix)*	Wood	-	-	6/.40g	-	-	-
			Cultivars, Cultural				
Zea mays	Stem	-	-	1/.20g	-	-	-
	Shank	-	-	3/.25g	-	-	-
	Cupule	-	-	3/.10g	1/.04g	1/.04g	-
	Cob	-	11/.90g	15/3.31g	12/ 5.8g	38/3.60	29/3.10g
Phaseolus (male)	Cone scale	-	-	1/.10g	-	-	-
			Wild Plant, Cultural				
Perennials							
Yucca	Leaf	-	-	.08g	-	-	-
Grasses							
Monocot	Stem	-	-	1/.19g	-	-	-
Phragmites	Stem	3/.12g	-	86/4.54g	-	-	-

samples, both from the southeastern quadrant. Both have low amounts of pine pollen and one also has oak. Cheno-am pollen is moderate to high with composites and corn in both and cholla and grass in one.

Only one piece of shell, a small piece of *Anodonta californiensi* from the roof fall and closing layer, was found, and no turquoise. Numerous small pieces of yellow ochre, a sandy hematite, and a large chunk of white calcite were found in the floor fill of the northwest quadrant. This contrasts markedly with the amount and variety of material and contexts found in Structure 50.

Structure 50. The only structure found east of

NM 22 was located by the main north-south backhoe trench. Heavily burned walls were immediately apparent in the trench and an east-west trench was placed at the center to further define the walls. The largest of the LA 6170 structures, Structure 50 was heavily burned and relatively easy to define. Similarities between this and Structure 5 suggest they were contemporary or sequential and built by the same or related individuals. A complete relocation of the main support posts and the number and types of sealed features indicate that the use of this structure changed during its occupation.

General Methods. After examining the fill in the trenches and determining that the upper fill consisted of the two general site stratigraphic units, the upper fill (about 65 cm) was mechanically removed to just above the structure walls for all but the northwest quad and control grids in the southwest quad. Quadrants were defined by the backhoe trenches and the lower fill, except for two control grids (each 1 sq m). Excavation was by hand in quadrants by level or strata (southwest quad), except for about 40 cm of fill in the northwest quad, which was removed with the backhoe. Roof fall material was mapped and photographed and samples of burned wood and roof matting point-plotted and collected. Fill in all quads was removed down to just above the floor (10 to 20 cm), before the floor was exposed. Open features were excavated and recorded, and the structure photographed. The sealed pits were then excavated and recorded and final photographs taken. A subfloor test 30 cm from the west wall in 124N/139E found no lower floors, only severely compacted soil. The vent shaft opening proved to be quite elusive, due to an abundance of cobbles in the area and heavy rains that thoroughly saturated the area.

Structure Stratigraphy. The fill sequence for Structure 50 is relatively simple (Table 13.45). Above the structure walls, soils were similar to the general Area 2 soils, HCF (equivalent to general stratum DC) and HBF (general stratum MDC), but grayer from a greater charcoal content. These two units were centered on the structural depression but extended a meter or more beyond the structure walls. HCF and HBF also comprise the upper meter of fill within the structure as well as up to 40 cm of that below where the walls became clear (Figs. 13.45–13.46). The remaining 60 to 85 cm of fill was a complex interdigitation of three similar levels (LF1–LF3). All three were laminated and contained adobe melt and burned roof material and were differentiated by the amount of charcoal, clay content, number of laminations, and particle size. Major wash lenses generally defined the boundaries. Burned roof material and oxidized areas were found in all with LF3 containing more than the others. Fill immediately on the floor varied from a thin lens of medium grained sand to powered charcoal. Beams and other roofing material often rested

Table 13.45. LA 6170, Structure 50 Stratigraphic Descriptions

Designation	Description	Munsel Color Range	Comments
HCF	Silt with pumice and powdered charcoal; plastic, not sticky; rare inclusions	10YR 5/4D 10YR 4/3M	Mostly eolian
HBF	Silt with pumice and a few clay laminations; chunks of charcoal; plastic, not sticky	10YR 5/6D 10YR 4/4M	Eeolian and alluvial
LF1	Laminated clayey silt with moderate charcoal and less pumice than HBF; moderately sticky and plastic	10YR 6/4D 10YR 4/4M	Roof fall
LF2	Laminated silty clay with sparse chunks of charcoal and little pumice; sticky and plastic	10YR 6/4D 10YR 4/4M	Roof fall; at center of structure
LF3	Laminated loose clayey silt with wash lenses, more pumice and abundant burned roof material; moderately sticky and plastic	10YR 5/4D 10YR 4/4M	Dense roof fall; wash lenses - 13+ per 10 cm

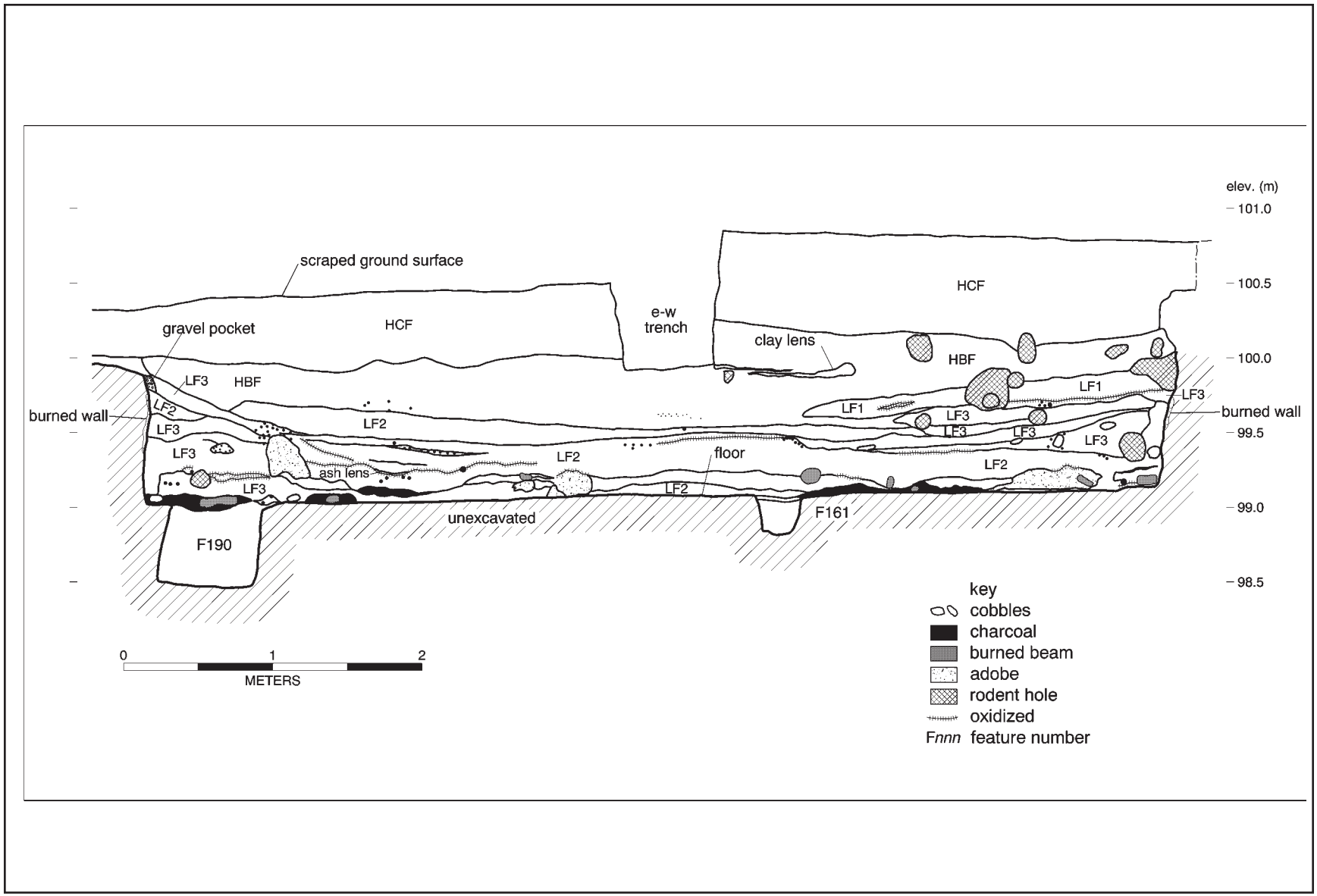

Figure 13.45. North-south stratigraphic profile of Structure 50.

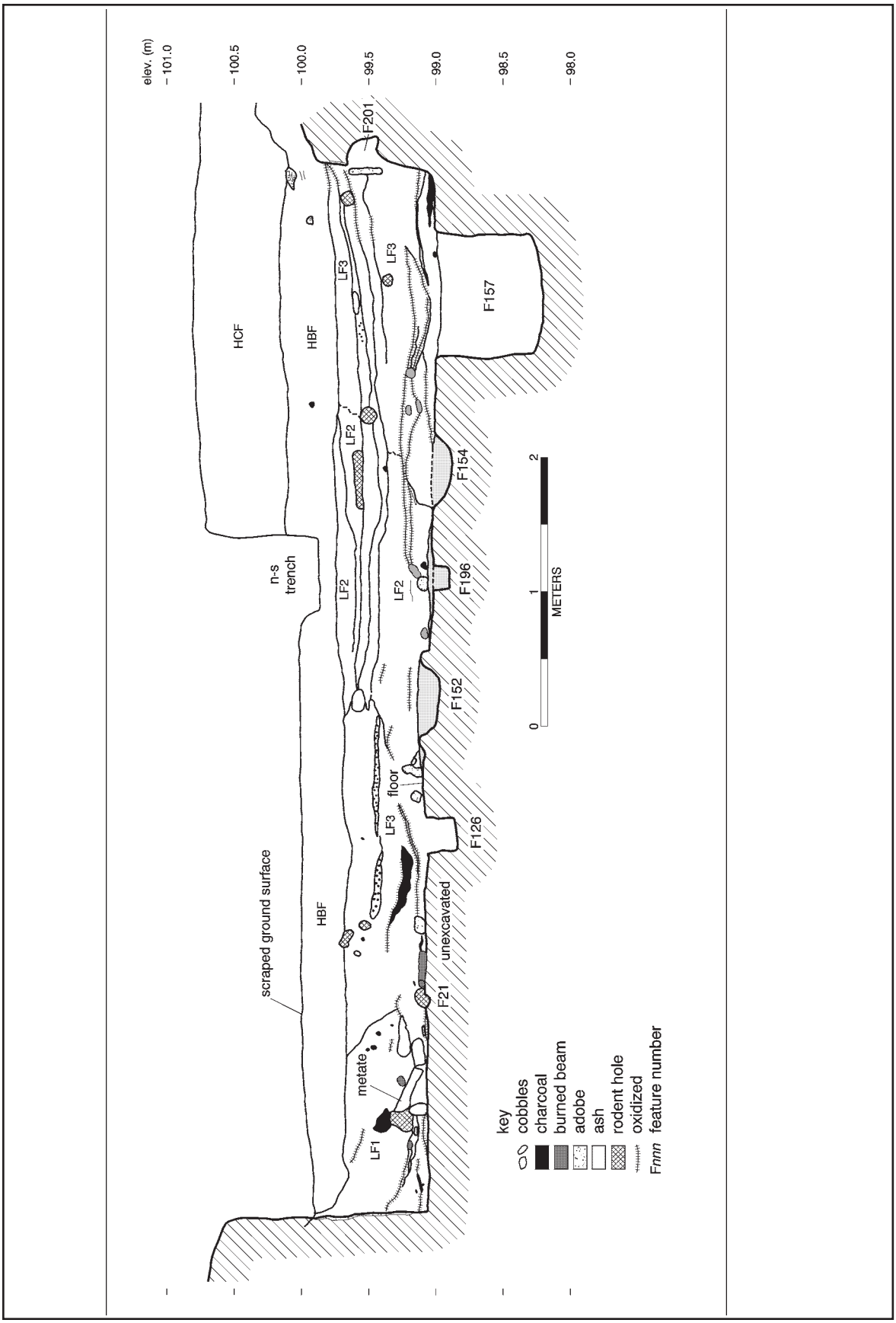

Figure 13.46. East-west stratigraphic profile of Structure 50.

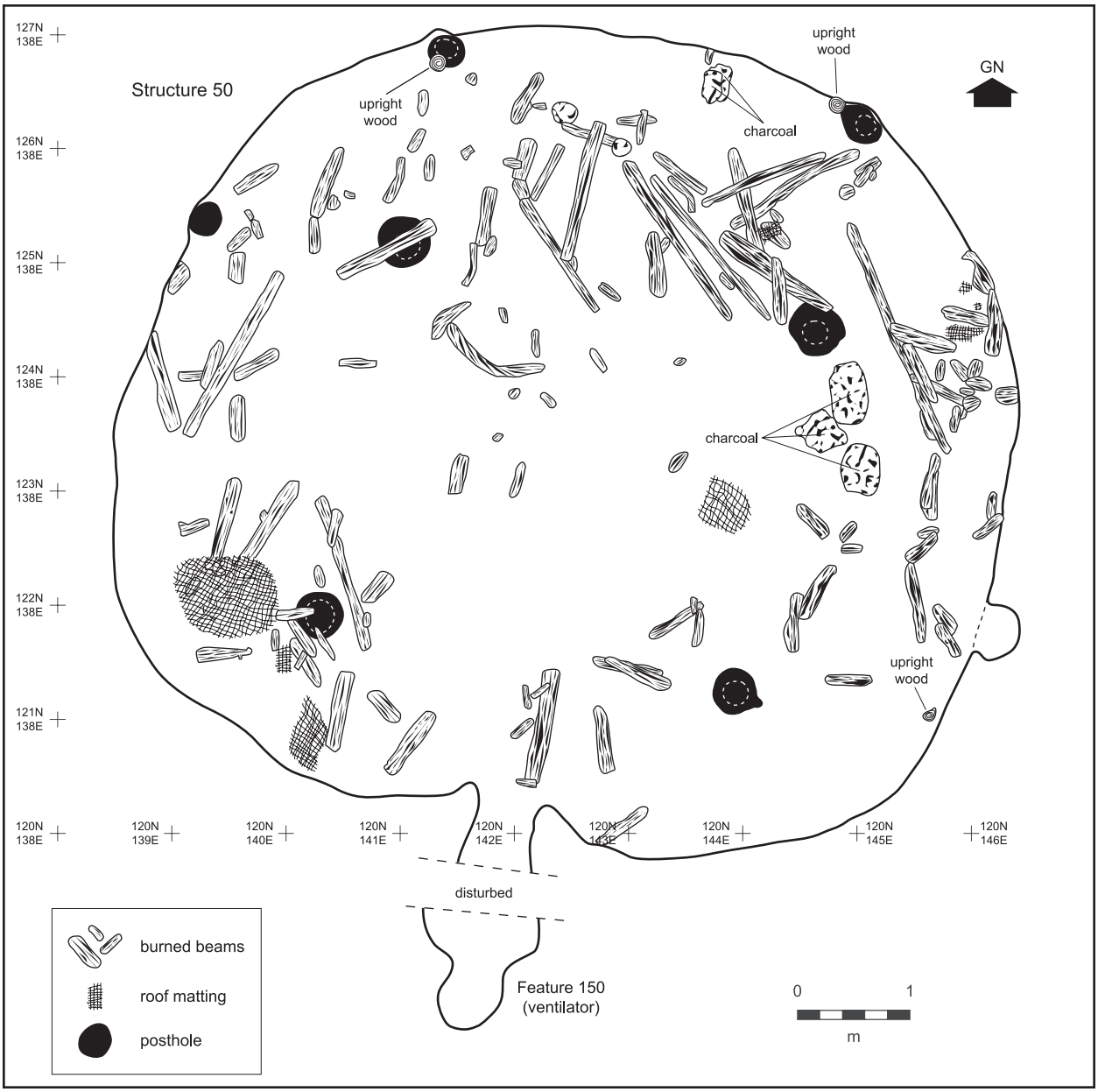

Figure 13.47. Locations of burned beams, matting, and open posholes in Structure 50.

directly on the floor as did cobbles and ground stone shattered by heat (Figs. 13.47–13.48). Soil around the beams and matting was often burned and in some areas, there was evidence of puddles forming around the burned beams. In general, the burned beams were less numerous and not as intact as in Structure 5 as many had shattered into large chunks of charcoal.

Structure Description. Structure 50 (Fig. 13.49) is an ovoid structure with a protruding vent opening in the south wall. Otherwise, it is fairly symmetrical with an east-west diameter of 7.80 m, north-south diameter of 6.90 m, and northwest-southeast diameter of 8.16 m. Walls were almost vertical (Fig. 13.50), slanting somewhat inward at the tops, and heavily burned throughout. An archaeomagnetic sample taken from the south-southwest wall section (AM 1151) dated either AD 700–755 or 900–950. Wall construction was interesting. After excavating the initial pit, the builders added fill and plaster to some areas in order to make the walls more vertical (Figs. 13.51–13.52). This fill ranged from 1–2 cm of hard porous silt with small amounts of clay and

Figure 13.48. Location of point-plotted cobbles and ground stone from roof fall and floor fill in Structure 50.

pumice applied directly to the residual soil to16 cm of trashy silt with chunks of charcoal and sparse pumice capped by hard porous silt. In other areas, the burn could only be scraped as if residual soil formed the wall. Throughout, the wall surface was knobby and rarely smooth. The only treatment was spotty floating where walls were rubbed with a wet material causing clay particles to float to the surface. The same is true of the floor surface. It was not an applied surface but was finished in some manner, probably by floating.

Remaining walls ranged from 73 to 92 cm high. The southeast wall was the lowest and the least stable as it intersects a sand- and gravel-filled channel that was less solid than the residual soils forming the other walls. Niches were present in the east and west walls along with several plugged rodent holes. The floor slopes up gradually at the walls and is more curved or coped on the west than in the rest of the structure.

Roof supports consisted of the usual four posts plus two against the north wall, a devia-

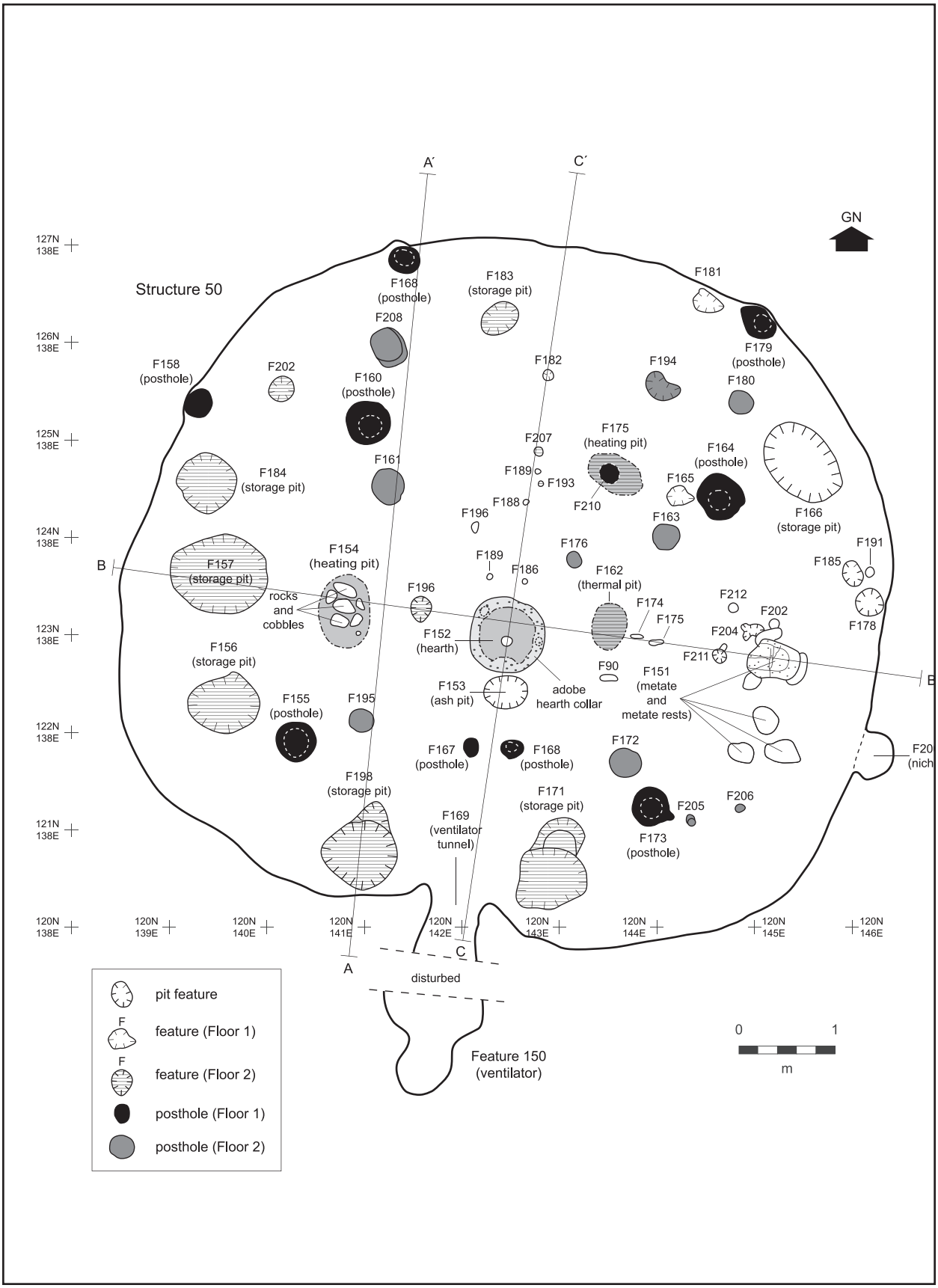

Figure 13.49. Plan of Structure 50 showing all features.

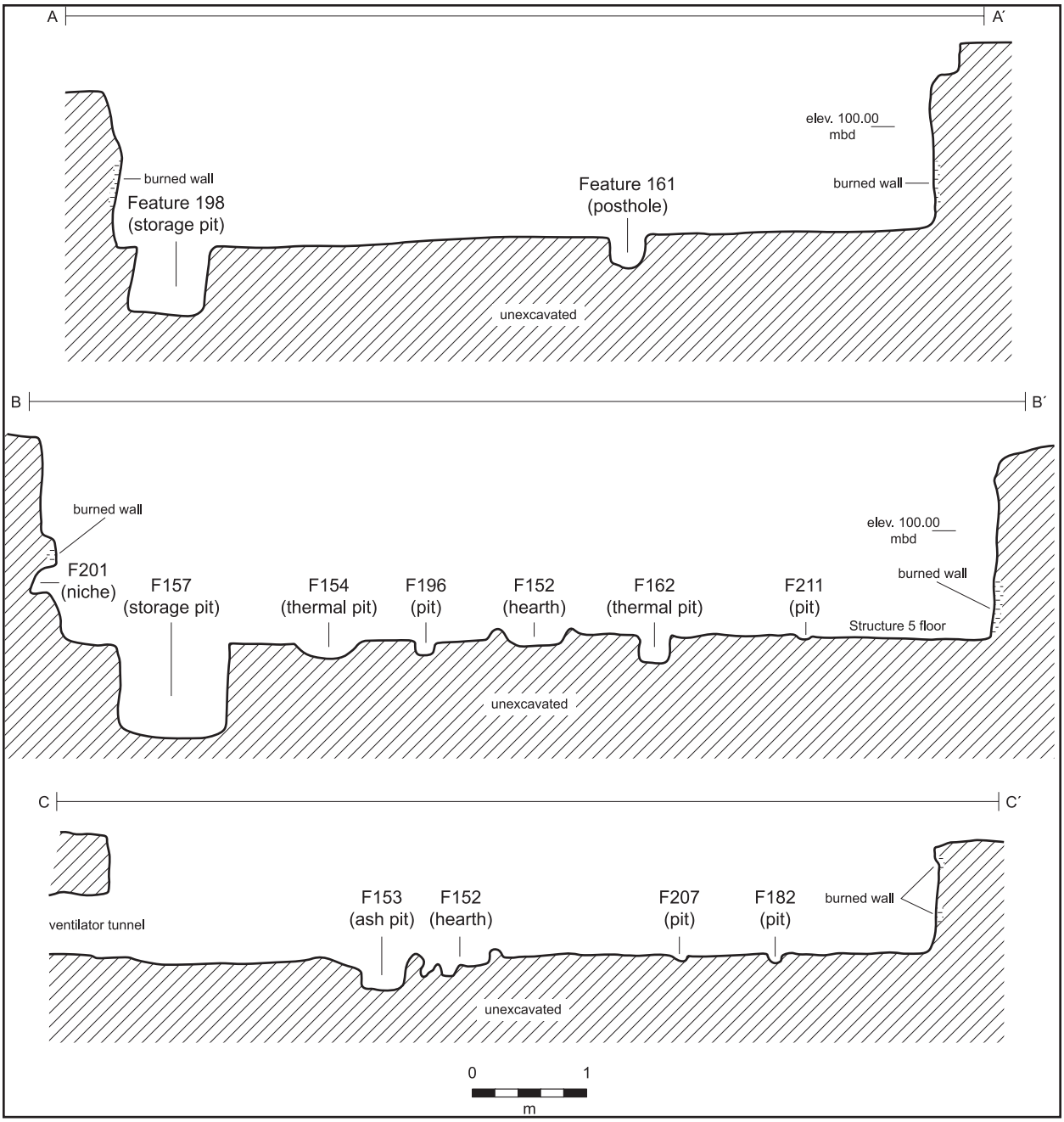

Figure 13.50. Profiles of Structure 50.

tion from the common four-post system. Seven smaller postholes, again in a four-plus-two post pattern, were sealed and replaced by the final postholes. The final post pits are larger and deeper and set closer to the walls than the original four. Auxiliary posts were originally placed out from the wall then moved to locations adjacent to the wall.

Fewer beams remained in Structure 50 suggesting this roof was dismantled to a greater extent than that in Structure 5. This is also indicated by the location of roof matting both above and below the burned beams and possibly by the scarcity of cobbles in the roof fall layer. Beams (Figs. 13.53–13.54) tended to cluster around the perimeter. Sizes were slightly larger in diameter than those in Structure 5, ranging from 8 to about 15 cm. All were highly

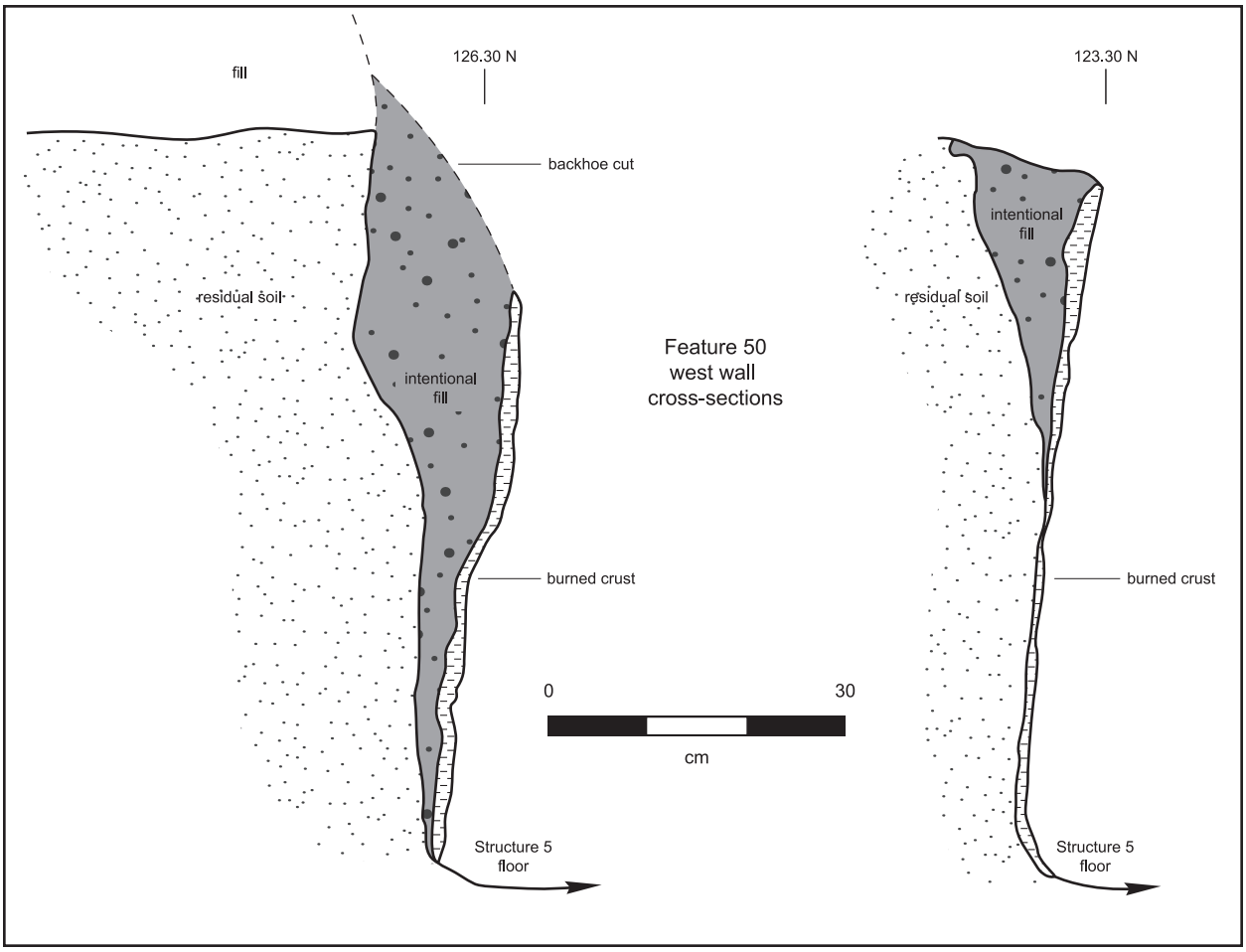

Figure 13.51. Cross sections of west wall in Structure 50.

fractured and had the wide uniform width rings characteristic of *Populus/Salix* so none were collected. Sixteen roofing impressions and a daub-like plug were collected and provide considerable information on the roof structure. Pole impressions (1.5 to 2.5 cm in diameter) are present on five and range from single poles to four parallel poles. One impression with a single pole impression has a beam impression on the opposite side and running perpendicular to the direction of the pole. Another has reed or monocot impressions, also on the opposite side and perpendicular to the direction of the poles. In addition to those, five others have beam impressions: two with adjacent parallel beams, one with a single beam impression, and two with single beam impressions and parallel arrays of reeds arranged perpendicular to the beams on the opposite side. Another has parallel flat pieces of wood about the size of the poles, four have parallel arrays of reeds, one has parallel reeds on one side and a single reed or stick on the opposite side and perpendicular to the reeds, and one is fairly flat with a single reed or monocot impression.

These impressions indicate that portions of the roof were constructed by placing a layer of adobe over a series of closely spaced secondary beams, a layer of closely spaced poles over the adobe and perpendicular to the beams, another layer of adobe, a layer of reeds and similar material perpendicular to the poles, more adobe, and possibly cobbles. This sequence differs slightly from reconstructions based on Dolores Project Pit Structure 2 at Windy Wheat Hamlet (Wilshusen 1988a:607) where there were no layers of adobe between the beams and poles and the poles and reeds, and the tertiary beams were spaced rather than tightly placed. The absence of a bench and perimeter

Figure 13.52. Cross section of west wall at 126.30N showing excavated pit, fill, and burned wall.

postholes in Feature 50 makes it difficult to determine the slope and conformation of the leaners or even whether there were leaners in the traditional sense. The six-post system could have supported an almost cribbed arrangement radiating off of the central flat portion. A radiocarbon sample comprised of roof reeds produced a standard date of AD 780 ± 60, cal AD 700 to 1000 (Beta-149028).

Open Floor and Wall Features. Features associated with the final use of the structure (Fig. 13.55) include the hearth, ash pit, deflector posts, vent complex, a large cobble-filled thermal feature, six postholes, a wall niche, and a variety of small pits (Fig. 13.56). A trough metate resting on three cobble supports and three cobble supports without a metate were also treated as a feature. Table 13.46 lists all of the Structure 50 features along with the locations, dimensions, fill, and other information.

The hearth (Feature 152), resembles that of Structure 5, a fairly shallow unfinished pit, except that a clay collar was added (Fig. 13.57). Burning and ash beneath the collar suggests it was an unfinished pit for some of its use-life. Another difference from that in Structure 5 is

Figure 13.53. Structure 50, burned beams exposed in the southwest quadrant.

Figure 13.54. Structure 50, burned beams exposed in the north half.

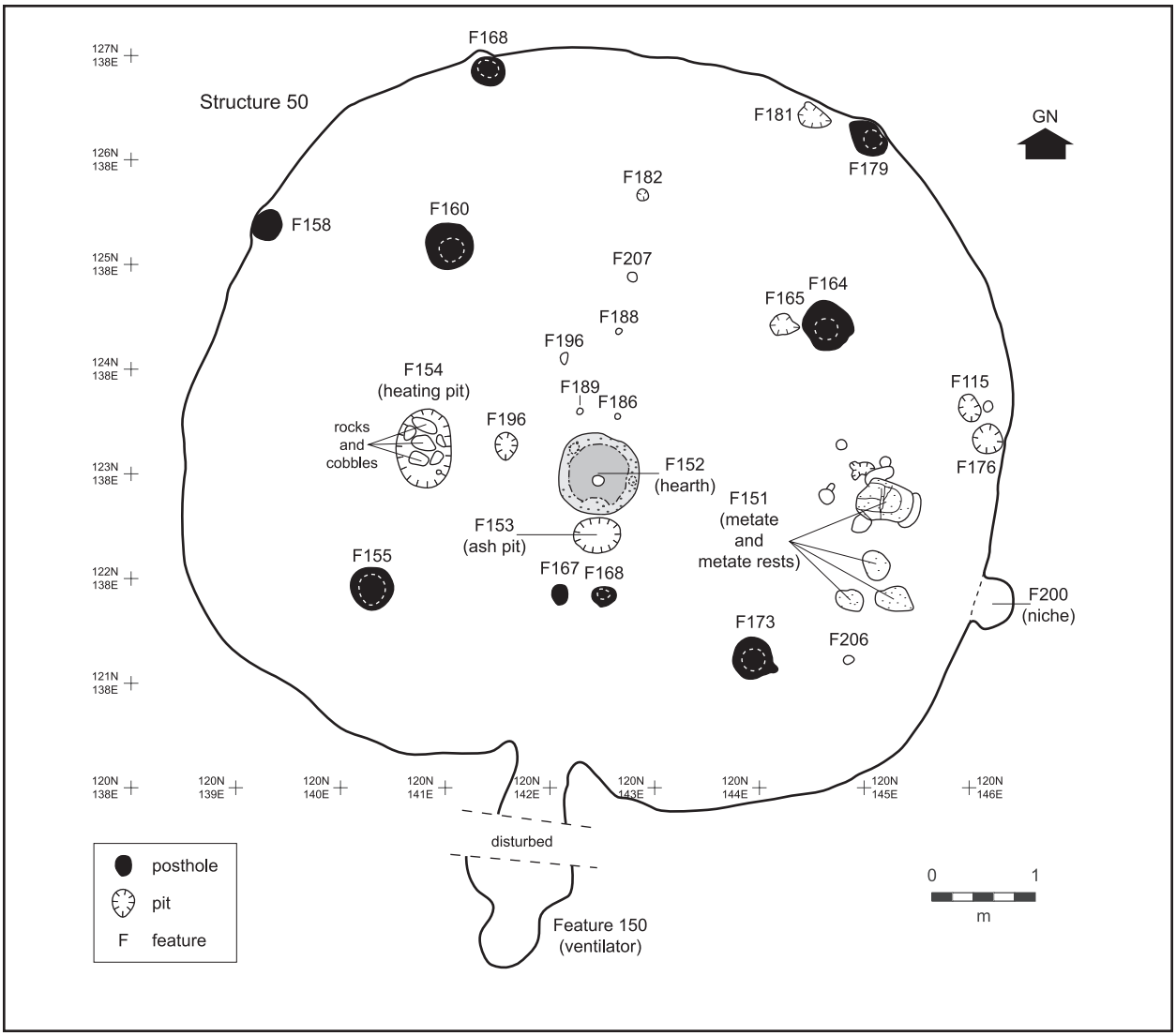

Figure 13.55. Plan of Structure 50 during its last use at LA 6170.

the presence of two small pits in the base, one near the center and the other partially under the rim at the south edge. The collar was nicely formed with a dome-shaped profile and had two small depressions in the east and west portions (Fig. 13.58) . Constructed as a single piece from a silty clay with a few large sand grains and pumice particles, very sparse charcoal, and light trash (10YR 6/3M, 10 YR 4/3D), the collar was 8 cm high and 12 cm wide. The pits in the collar were 8 to 10 cm in diameter and 1 to 2 cm deep. The east pit was round and could have been used as a rest for small pots. The west pit is more oblong with finger-like grooves in its base. Archaeomagnetic dates from the collar and from beneath the collar are reversed from the natural sequence. The collar date (AM 1125) should date later, but at AD 755–830 it could fall slightly earlier than the burn beneath the collar (AM 1153) at AD 815–845.

The pit beneath the south rim was smoothly finished and measured 24-by-12 cm and was 6 cm deep. Fill was ash, like in the main pit and it contained a large Jemez obsidian flake fragment and a burned rodent maxilla. The central pit was 10-by-12 cm in diameter and 6-cm deep. It was filled with coarse sand, burned near the top, and held a large caramel-colored chert flake.

Roofing material lay above the hearth. This included a good number of beam impressions and a series of 1.5- to 2.0-cm diameter burned sticks laying parallel to each other. Some of the

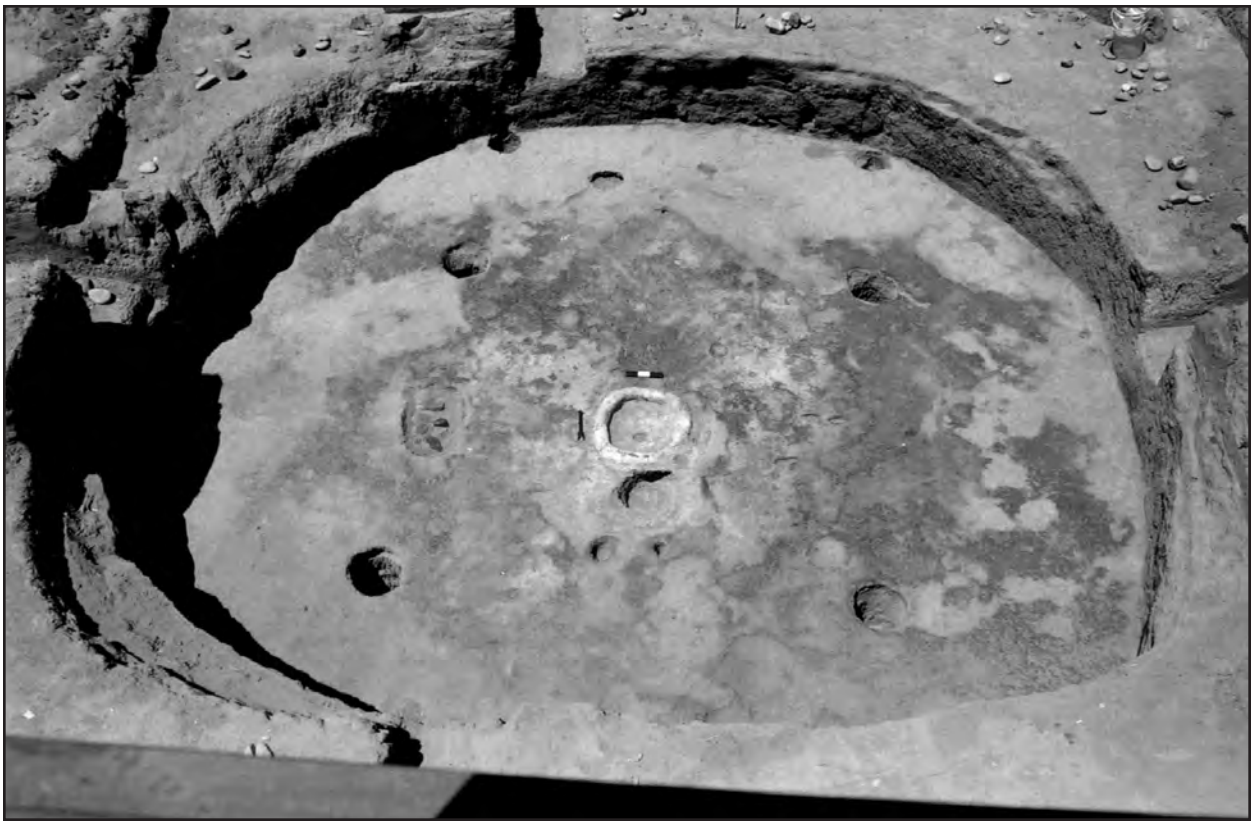

Figure 13.56. Structure 50 at LA 6170, with pits excavated.

beam impressions also indicated small parallel sticks, which could have lined the ceiling opening. Under the roof fall material was a layer of charcoal comprised of large and small chunks in a matrix of ash and silt from the layer above. Charcoal comprised between 60 and 80 percent of this layer. Beneath the charcoal was a fine white ash with laminations formed by thin lenses of fine red sand (Fig. 13.59). A piece of stone and four small heat spalls were found but no larger pieces of rock.

Only four ceramics, all Middle Rio Grande Plain jar sherds, were found in the hearth fill. Bone was similarly rare (n = 7) and included small mammal (n = 3) and single pieces of small to medium mammal, medium to large mammal, woodrat, and cottontail bone. All of the bone was burned and all but one calcined. Corn cobs, a bean, winged pigweed, and purslane seeds, and *Populus/Salix* bark and wood were recovered by flotation or in macrobotanical samples (Tables 13.47–13.49).

The ash pit (Feature 153), about 5 cm south of the hearth, was a large depressed area (56-by-60 cm) with a deep cylindrical pit at the north end. Walls were roughly finished residual soil for both the pit and the depression. When found, the pit was covered by a mound of ash that completely obscured the extent of the feature. This was capped by a small amount of powdered and chunked charcoal with little evidence of roof-fall material resting directly on the ash. Fill was three distinct layers of ash, one above the slab that partially covered the pit, and two in the cylindrical pit. Abundant flaked lithics (n = 293, Table 13.50), plus a fair numbers of bones (n = 163) and ceramics (32 Middle Rio Grande Plain jar sherds) suggest that floor sweepings were added to the ash. Other artifacts, such as the two projectile points, six bifaces, and stone ball may have been deliberately placed in the ash. While a good proportion of the fauna is burned (Table 13.51), much is only lightly scorched. Heavily burned and calcined bone were probably introduced into the ash pit by hearth cleaning. The scorched bone could have been placed on hot ashes, while the unburned bone

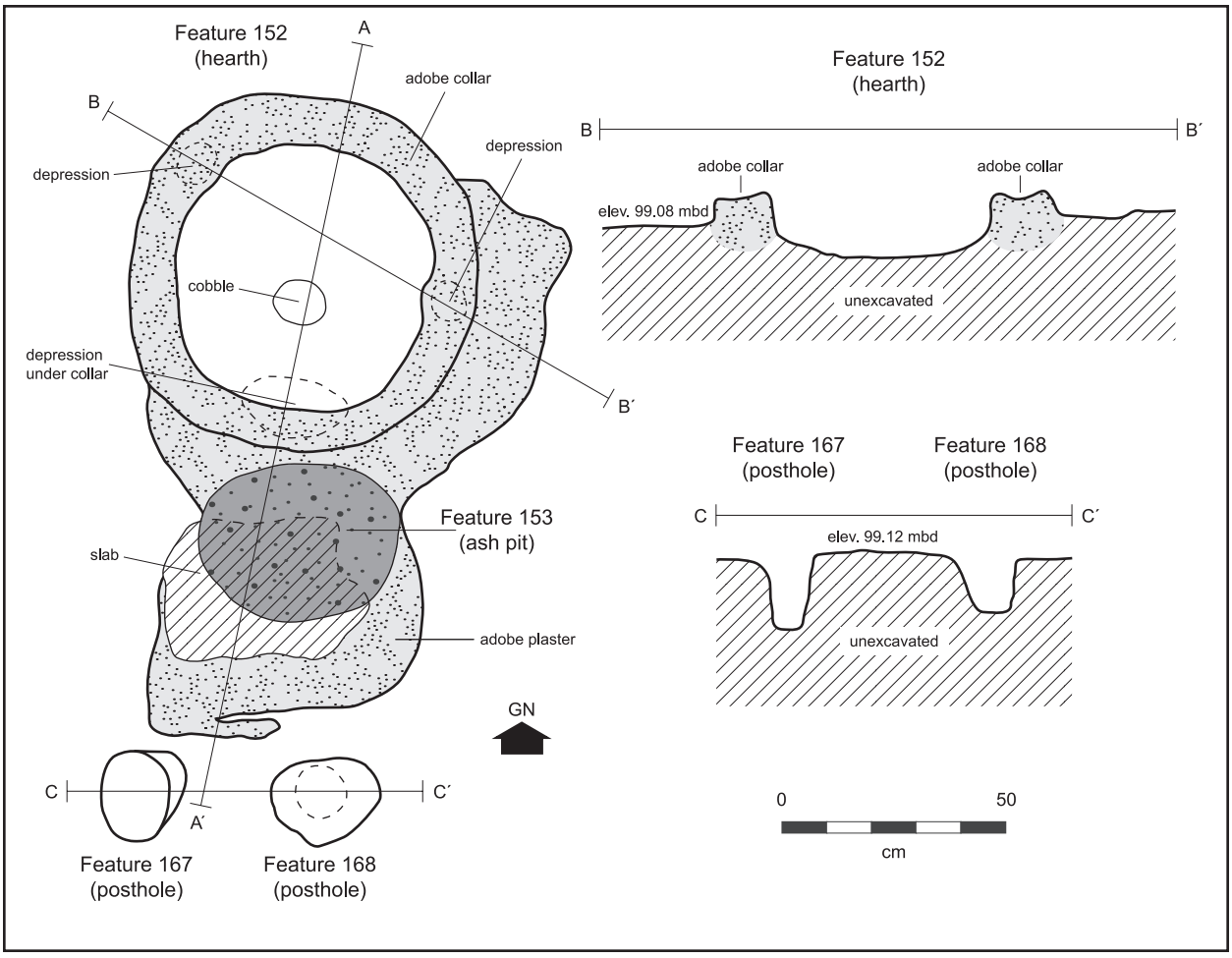

Figure 13.57. Structure 50 hearth, ash pit, and deflector posts, plan and profiles.

is probably floor debris swept into the pit. Bones from juvenile (near full size) woodrats, cottontails, and jackrabbits suggest some of this cleaning took place in summer or early fall when less than full grown animals would have been available. Also present were three ground pieces of soft turquoise, a quartzite stone ball, a piece of burned yucca fiber matting, corn cobs, a kernel, and cupules, beans, burned seeds of goosefoot and purselane, and juniper and *Populus/Salix* wood (Tables 13.47–13.49).

Like in Structure 5, two small postholes (Features 167 and 168) lay between the ash pit and vent tunnel opening. These could have held a screen or could have been used as a prop for a slab that served as a deflector. The slab found in the fill of the ash pit is large enough to span the deflector post and could have served that purpose. Both deflector postholes were cylindrical and filled with loose ashy fill that was slightly oxidized at floor level. Feature 167 contained five obsidian microflakes and Feature 168 had seven pieces of burned bivalves *(Anodonta californiensi),* three Middle Rio Grande Plain jar sherds, a lithic, and a complete pestle made of massive quartz.

As in Structure 5, the south wall of the structure protrudes about 20 cm in the area of the vent (Feature 169). The opening was bell-shaped, that is, larger at the base (52 cm) than at the top (39 cm) (Fig. 13.60). The wall was not preserved at the top of the opening so that its height is uncertain. The tunnel widens to almost 70 cm wide back from the opening. To the east, the tunnel wall is a trash layer (probably intentional fill used to stabilize the sand and gravel-filled channel) while the west wall

Table 13.46. LA 6170, Structure 50 Features

Feature No.	Feature Type	Center Point	Top and Bottom Elevation (mbd)	Dimensions (L x W x Depth cm)	Fill (Munsel Dry)	Comments
150	Vent shaft	119.00N 141.60E	99.80-99.62	57 x 60 x 18	Wet when excavated; soft and sandy with cobbles	Shaft was difficult to define due to a major rain episode; all aspects uncertain
151	Metate and metate rests	metate: 123.30N 146.30E rest: 122.30N 146.08E	99.40-99.12 99.23-99.06	70 x 60 (rest); 72 x 65	None; in floor fill, roof fall	A complete but broken metate rested on three cobbles; adjacent to the metate were three rests cobbles positioned as if it held a second metate that was removed
152	Hearth	123.54N 142.45E	99.16-98.92	75 x 74 x 24	Covered by roof fall material then a layer of charcoal with silt from roof fall material 10YR 5/5; base fine white ash with laminations 10YR 8/1	Clay collar a late addition; small sand-filled pits at base and under south edge of collar; heavily burned
153	Ash pit	122.91N 142.44E	99.10-98.82	46 x 35 x 28	4 distinct ash layers: powdered and chunked charcoal with ash and burned eolian soil 10YR 4/2; clean ash 10YR 8/1; ash and burned soil 10YR 6/3; ash and silt with charcoal 10YR 6/2	Ash mounded over pit and edge, basalt slab partially covers pit fill; artifact content resembles floor sweepings
154	Large cobble-filled thermal pit	123.74N 140.77E	99.06-98.96E	75 x 51 x 10	Loose silty loam with abundant charcoal 10YR 4/2	Contained 2 cobbles, 4 fire-cracked rocks, and 4 heat spalls; walls and base oxidized
155	Posthole	122.32N 140.30E	99.10-98.40	pit: 43 x 43 x 70 mold: 25 x 30	Mold fill: gray silty sand with much charcoal, some unburned wood, ash, and burned adobe 10YR 3/4; packing material: silty sand 10YR 5/3	One of four main supports; small fragments of unburned wood
156	Storage pit	122.70N 139.65E	99.14-98.79	72 x 64 x 35	Loose silty clay with some charcoal 10YR 6/4 over harder silty clay with charcoal and small pebbles 10YR 5/5	Sealed; rodent disturbed
157	Storage pit	124.10N 139.50E	99.14-98.38	100 x 82 x 76	Loose silty clay 10YR 6/4; slightly packed clay 10YR 5/4; loosely packed coarse clay chunks 10YR 6/4	Sealed; parts of the bottom burned; impressions of wood and reeds at base
158	Small pit	125.80N 139.36E	99.09-99.03	30 x 36 x 3	Hard-packed silty loam with flecks of charcoal 10YR 5/4	Pot rest? Set into west wall about 10 cm
159	Posthole	127.32N 141.38E	pit: 99.09 mold: 99.20-98.62	pit: 34 x 29 x 47 mold: 21 x 16	Mold fill: sandy silt with charcoal chunks 10YR 6/3; packing material: sandy clay	Set into north wall about 10 cm; rodent disturbed
160	Posthole	125.62N 141.02E	99.10-98.37	pit: 46 x 45 x 73; mold: 22 x 20	Roof fall material over silty sand to sandy loam with charcoal 10YR 4/4 packing material: compact silty sand 10YR 6/4	One of four main support posts
161	posthole	125.00N 141.20E	99.05-98.37	34 x 35 x 68	Clay 10YR 5/4; clayey chunks 10YR 5/4	
162	Small thermal pit	123.55N 143.52E	99.15-99.01	49 x 35 x 14	Chunks of clay	Burned seal
163	Posthole	124.50N 144.07E	99.08-98.46	28 x 28 x 62	Seal: burned hard silt with large sand grains 10YR 6/3; thin lens of large grained sand; clean silty clay 10YR 6/3	Sealed; digging stick marks in walls
164	Posthole	124.90N 144.60E	99.10-98.34	pit: 48 x 48 x 76; mold: 22 x 22	Roof fall material (20 cm); laminated silt with charcoal 10YR 5/4; sandy silt 10YR 4/4; ashy silt with charcoal	One of four main post supports
165	Small pit	124.90N 144.25E	99.10-99.04	28 x 20 x 6	Silt with small gravel and charcoal - floor fill material 10YR 4/2	Pot rest?
166	Storage pit	125.28N 145.50E	99.08-98.65	95 x 75 x 43	Hard silty sand with charcoal and gravel 10YR 6/3; compact silty sand with adobe and charcoal 10YR 6/3	Sealed; digging stick impressions in north wall

Table 13.46. Continued.

Feature No.	Feature Type	Center Point	Top and Bottom Elevation (mbd)	Dimensions (L x W x Depth cm)	Fill (Munsel Dry)	Comments
167	Small posthole	122.31N 142.05E	99.08-98.95	18 x 14 x 13	Silty loam, spalls, burned adobe, ash, and charcoal 10YR 5/5	Deflector posthole
168	Small posthole	122.30N 142.52E	99.10-98.98	11 x 10 x 12	Like F. 167	Deflector posthole
169	Vent tunnel	at wall: 120.74N 142.00E	99.70-99.14	39-52 wide 50+ high	Top 20 cm laminated silty clay with gravel and charcoal 10YR 6/4; base - roof fall material over ground stone cache	Ground stone stacked just inside opening
170	Not used					
171	Storage pit	121.00N 143.00E	99.05-98.28	70 x 40 x 77	3 cm seal - burned silty sand 10YR 6/4, loosely compacted clayey sit with charcoal 10YR 5/4; very compact silty sand 10YR 6/4	Sealed; step to north; burned sides and base
172	Posthole	122.12N 143.70E	99.14-98.24	34 x 32 x 90	2-3 cm seal - hard platey soil with gravel and charcoal 10YR 6/3, fill - compact silty sand 10YR 6/3	Sealed; seal burned at floor level
173	Posthole	121.67N 143.95E	99.15-98.43	pit: 40 x 40 x 72; mold: 20 x 20	20 cm of floor fill material over silt with charcoal and burned clay 10YR 5/4; clayey silt with sparse charcoal but burned clay 10YR 5/6; loose charcoal laden silt with pumice and fire spalls 10YR 4/4; ash; packing material: clean, chunky clayey silt 10YR 5/4	One of four main supports
174	Small pit	123.46N 143.78E	99.11-99.10	4 x 14 x 1	Silty loam 10YR 4/6	Slot or rodent disturbance
175	Small pit	123.40N 143.97E	99.11-99.09	5 x 15 x 2	Silty loam 10YR 4/6	
176	Small pit	124.25N 143.14E	99.09-99.05	15 x 15 x 4	Seal of hard silt 10YR 5/4; thin lens of large grained sand at base and on walls	Sealed; seal burned at surface; pot rest?
177	Large thermal pit	125.15N 143.65E	99.16-98.96	60 x 38 x 20	2 cm seal then hard chunky clay with flecks of charcoal 10YR 6/3	Sealed; edges and part of base burned; built over Feature 210 (posthole)
178	Small pit	123.85N 146.25E	99.12-99.04	28 x 25 x 8	Fine sand with charcoal 10YR 5/3	
179	Posthole	126.70N 145.04E	99.01-98.64	pit: 40 x 35 x 37; mold: 20 x 18	Silty sand with charcoal flecks and chunks of burned adobe; 10YR 4/3	Against north wall
180	Posthole	125.86N 144.87E	99.09-98.58	24 x 24 x 51	5 cm seal; chunky clay with carbonates; soft sandy fill 10YR 6/4	Sealed
181	Small pit	126.95N 144.50E	99.10-99.06	30 x 23 x 4	Eolian sand with charcoal flecks	
182	Small pit	126.14N 142.90E	99.08-99.01	11 x 10 x 7	Medium to coarse-grained sand 10YR 7/3	Sipapu?
183	Storage pit	126.68N 142.45E	99.06-98.70	41 x 33 x 36	4 cm seal - compact silty sand with charcoal 10YR 5/4; silty sand with charcoal, carbonates, and gravel 10YR 6/3; compact silty sand with charcoal 10YR 6/3	Sealed; bell shaped
184	Storage pit	125.00N 139.35E	99.17-98.82	63 x 60 x 35	4 cm seal; loose, chunky silty clay with carbonates and charcoal 10YR 5/4	Sealed
185	Small pit	124.10N 146.05E	99.10-99.06	26 x 20 x 4	Fine grained sand with charcoal flecks 10YR 5/3	Pot rest?
186	Small pit	124.03N 142.64E	99.09-99.03	5.5 x 6 x 6	Fine to medium-grained sand, ash, and light charcoal 10YR 6/3	Smooth straight walls, filled but not sealed when roof burned
187	Small pit	124.08N 142.27E	99.09-99.02	5.5 x 7 x 6	Ash with a minor amount of sand, charcoal flecks, and gravel 10YR 6/4	Eroded walls, filled but not sealed when roof burned
188	Small pit	124.86N 142.63E	99.09-99.02	5 x 5 x 7	Clean sand 10YR 6/3	Cylindrical
189	Small pit	125.16N 142.75E	99.07-99.04	6.5 x 4 x 3	Clean sand 10YR 6/3	Basin shaped

Table 13.46. Continued.

Feature No.	Feature Type	Center Point	Top and Bottom Elevation (mbd)	Dimensions (L x W x Depth cm)	Fill (Munsel Dry)	Comments
190	Small pit	123.03N 143.50E	99.10-99.07	6 x 18 x 3	Silty loam 10YR 4/6	Slot or roent disturbance
191	Small pit	124.13N 146.25E	99.08-99.00	10 x 10 x 8	Fine-grained sand with charcoal flecks 10YR 5/3	Cone-shaped
192	Small pit	124.58N 142.10E	99.12-99.08	12 x 8 x 4	Clean sand and floor material 10YR 6/3	Not sealed
193	Small pit	125.04N 142.78E	99.09-99.00	5 x 5 x 9	Burned silt seal over clean sand	Sealed; cone shaped
194	Small pit	126.03N 144.05E	99.07-98.90	35 x 23 x 17	Thick seal of compact silty clay 7.5YR 6/4; compact silty sand with charcoal 10YR 6/3	Plugged
195	Posthole	122.55N 140.98E	99.05-98.53	25 x 25 x 52	6 cm seal; compact silty clay 7.5YR 6/4	Sealed
196	Small pit	123.73N 141.55E	99.00-98.87	24 x 24 x 13	Silty loam with charcoal flecks 10YR 5/3	Plugged? Small storage pit?
197	Not a feature	124N 141E				Slight depression in floor surface
198	Storage pit	121.10N 141.00E	99.16-98.63	80 x 75 x 53	4 cm seal, large grained sand 7.5YR 6/4, compact clay 7.5YR 6/4; clay with gravel and carbonates 7.5YR 6/4; clay with pebbles	Plugged; step to north
200	Wall niche	center at wall: 122.23N 146.07E	99.88-99.58	48 x 30 x 35 deep	Compact silty loam with charcoal	Burned walls and back; base is 52 cm above floor; rodent disturbed back
201	Wall niche or plugged rodent hole?	center at wall: 123.97N 138.55E	99.79-99.47	38 x 39 x 20 deep	6 cm seal, similar to walls; hard silty loam	Plug popped out from wall; shallow niche or plugged rodent hole; some burning at top and back
202	Small pit	123.58N 145.22E	99.09-98.95	12 x 11 x 14	Loose silt with large sand grains 10YR 6/4	Irregular; partially under metate rest Feature 151
203	Small pit	125.90N 140.12E	99.12-99.06	26 x 26 x 6	4 cm seal of silty clay; compact sandy clay 7.5YR 6/4	Sealed; pot rest?
204	Small pit	123.52N 145.00E	99.09-99.03	22 x 13 x 6	Fine silt with a few large sand grains, charcoal, and gravel 10YR 4/3	Fish shaped; partially under metate rest Feature 151 – possibly rodent damage
205	Small pit	121.50N 144.38E	99.04-98.93	9 x 8 x 11	2 cm seal of hard silt with pumice and sand 10YR 4/3; silty medium-sized sand with chunks of charcoal and abundant quartz 10YR 6/3	Sealed; cylindrical
206	Small pit	121.67N 144.87E	99.05-98.93	7 x 7.5 x 12	Clean medium-grained sand and silt, mostly sand 10YR 6/3	May have been sealed; cylindrical with digging stick marks
207	Small pit	125.38N 142.80E	99.08-99.01	9.5 x 9 x 7	Hard silt with sand grains and sparse charcoal - probably a seal	Probably sealed
208	Posthole	126.40N 141.20E	99.07-98.62	34 x 28 x 45	5 cm seal - compact silty sand 10YR 6/3; silty sand with gravel, charcoal, and carbonates 10YR 6/3; compact silty sand 10YR 6/3	Sealed; stone at base
209	Not a feature	122N 141E				Circular crack in floor
210	Posthole	125.15N 143.50E	98.96-98.55	22 x 20 x 41	Loose sandy silt with abundant charcoal 10YR 6/3	Top removed by F. 177 - a sealed pit; digging stick marks
211	Small pit	123.25N 144.65E	99.08-99.04	15 x 15 x 4	Medium-grained sand	
212	Small pit	123.75N 144.80E	99.08-99.04	12 x 10 x 4	Medium-grained sand	

was clean residual fill. The tunnel floor slopes up to the rear and has a well-rounded articulation with the tunnel walls. Burning extends up to 25 cm into the tunnel while the tunnel floor was protected by a pile of ground stone placed just inside the opening (Fig. 13.61).

Fill in the tunnel opening was comprised of a pile of ground stone in a matrix of laminated silty clay (Fig. 13.60). The pile of material included a complete two-hand sandstone mano, a nearly complete igneous basin metate, an indeterminate sandstone fragment, two quartz cobbles, single platform cores of chert and basalt (1 each), 7 basalt and 1 chalcedony flakes, and 12 sherds. Flaked and ground stone from the tunnel are summarized in Table 13.52. The ceramics, all

Figure 13.58. Structure 50, hearth after excavation.

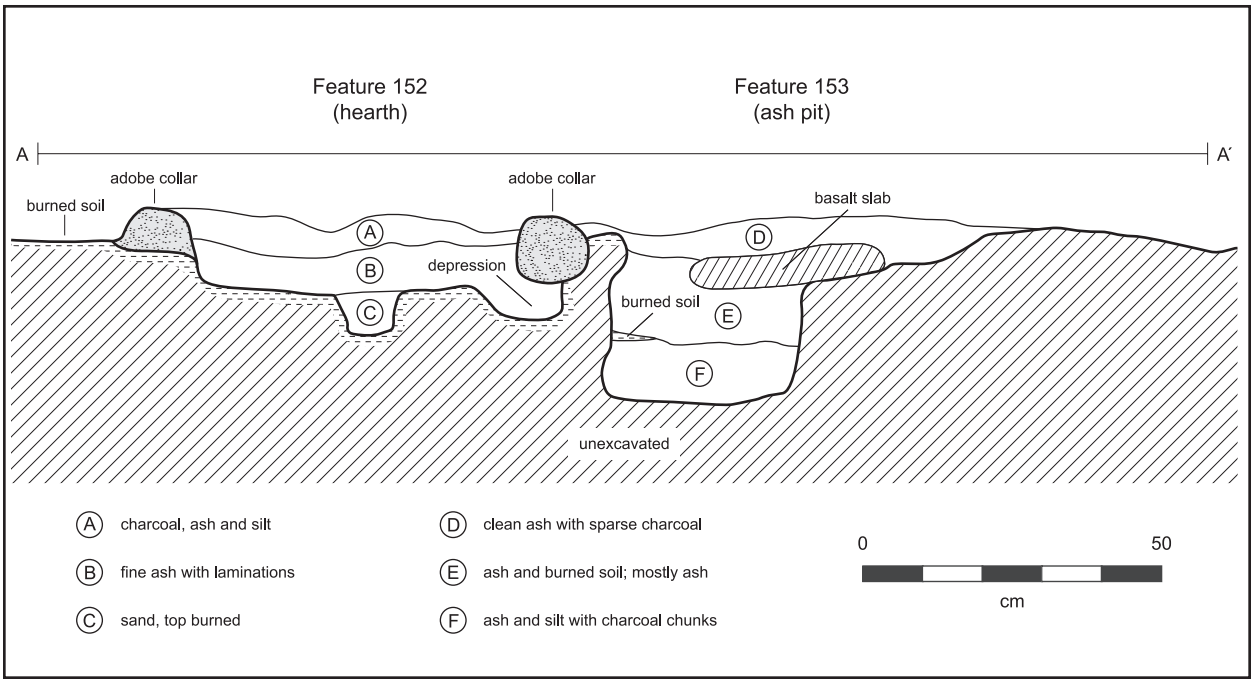

Figure 13.59. Structure 50, stratigraphic profile of the hearth and ash pit.

Table 13.47. LA 6170, Structure 50 Open Features, Seeds and Fruits (frequency per liter)

	Hearth 152	Ash Pit 153	Posthole 154	Vent Tunnel 169
		Cultural		
Annuals				
Chenopodium	-	2	2.3	4.8
Cycloloma	1	-	-	-
Portulaca	12.3	2	-	-
Perennials				
Pinus edulis	-	-	-	1
Unknown taxon	2.1	-	-	-
		Non-cultural		
Annuals				
Chenopodium	-	0.7	1.7	-
Cheno-am	-	-	0.6	-
Euphorbia	-	-	-	1

Table 13.48. LA 6170 Structure 50 Open Features, Other Plant Parts (abundance per liter)

	Plant Part	Ash Pit 153	Thermal Pit 154	Vent Tunnel 169
		Cultural		
Grasses				
Gramineae	Non-reproductive	-	+	-
Cultivars				
Zea mays	Cupule	+	++	+
	Glume	-	+	-

+ less than 10, ++ 11-25, +++ 25-100

from jars, were Middle Rio Grande tempered: Plain (n = 12), Tallahogan-like (n = 1), and brown ware (n = 1). Bone from the tunnel (n = 88) was largely cottontail (36.5 percent) but also included rodent (pocket gopher, pocket mice, kangaroo rat, at least two species of woodrat), prairie dog, jackrabbit, large mammal, deer, and pronghorn. Most of the bone was unburned, 75.0 percent, an amount that is much lower than the roof fall and floor fill components within the structure and the vent shaft fill. Macrobotanical specimens and a flotation sample (Tables 13.47–13.49) recovered burned seeds of goosefoot, corn stems, cupules, and cobs, a piñon nut shell, a reed, and juniper wood and unburned seeds of cheno-am, hackberry, goosefoot, and spurge.

Some of the cobbles and ground stone items at the north edge of the tunnel cache were fire-fractured and burned from the structure fire. Laminations in the lower fill suggest some washing occurred before the burned roofing material accumulated in the upper portion of the tunnel. Roof fall material consisted of burned adobe and loosely packed chunks of charcoal in a matrix of eolian silt. Beyond the ground stone pile, 30 cm beyond the tunnel opening, fill was an 18-cm-high mound of roof fall material (clumps of burned adobe and charcoal) covered by 6 cm of laminated fine silt, another thin lens of roof fall material, then 20 cm of laminated silt.

The vent shaft opening (Feature 150) was elusive, compounded by heavy rains that thoroughly saturated the area. Grids to the south of the ventilator tunnel opening (117–119N/141E and the east half of 119N/142E) were excavat-

Table 13.49. LA 6170, Structure 50 Open Features, Macrobotanical Samples (count and weight)

Feature	Plant Part	Hearth 152	Ash Pit 153	Posthole 164	Vent Tunnel 169
		Wood, Cultural			
Perennials					
Juniperus	Wood	-	1/.04g	-	-
Salicaceae					
(Populus/Salix)	Bark	1/.10g	-	-	-
	Wood	15/10.40g	4/.04g	-	-
		Cultivars, Cultural			
Zea mays	Stem	-	-	-	4/.90g
	Cupule	-	-	-	3/.10g
	Cob	6/1.60g	-	-	1/.10g
	Kernel	-	1/.10g	-	-
Phaseolus	Cotyledon	1/.10g	2/.10g	-	-
		Wild Plant, Cultural			
Perennials					
Yucca	Fiber	-	14/.04g	-	-
Grasses					
Phragmites	Stem	-	-	-	1/.10g
		Non-cultural			
Perennials					
Celtis	Seed	-	-	1/.04g	-

Table 13.50. Lithic Type and Material for LA 6170, Structure 50 Ashpit (Feature 153)

	Chalcedony		Chert		Quartzite		Obsidian		Basalt		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	6	27.3	8	36.4	-	-	-	-	8	35.4	22	7.5
Flake	58	25.9	50	22.3	1	0.4	14	6.2	101	45.1	224	76.5
Flake, bifacial thinning	2	5.9	-	-	-	-	32	94.1	-	-	34	11.6
Core, multiplatform	-	-	1	50.0	-	-	-	-	1	50.0	2	0.07
Flake, Marg. Retouch	-	-	2	100.0	-	-	-	-	-	-	2	0.7
Projectile point	-	-	-	-	-	-	2	100.0	-	-	2	0.7
Biface	-	-	-	-	-	-	6	100.0	-	-	6	2
Stone ball	-	-	-	-	1`	100	-	-	-	-	1	0.3
Total	66	22.5	61	20.8	2	0.7	54	18.4	110	37.5	293	100.0

ed exposing a layer of cobbles with charcoal and artifacts within a depression, probably a trench for the vent tunnel. Towards the structure, several small burned poles perpendicular to the tunnel further suggests the presence of a ventilator trench roofed with small poles. Although difficult to define, an irregular bulged or roughly figure-eight-shaped area was exposed. The bulge at the south end, presumably the base of the vent shaft, measured about 55 cm wide constricting to about 48 cm about 55 cm to the north. From the center of the vent opening to the end of tunnel measured about 220 cm. In profile, the base of the defined area slopes up from the vent opening at 99.14 mbd to 99.62 mbd.

A fine-grained sandstone trough metate resting on three stones and a similar configuration of three stones just to the south comprise Feature 151 (Fig. 13.62). The metate was broken into several pieces by the weight of the fill above (Fig. 13.63), and had a large basalt cobble and small quartzite stone used as wedges at the near end and two cobbles (basalt and

Table 13.51. Fauna Recovered from LA 6170, Structure 50 Ash Pit (Feature 153) by Burn Type

	Un-burned	Light/ Scorch	Light to Heavy	Heavy	Calcined	Total (% of Taxa)
Small mammal/large bird	-	-	-	1	-	-
	-	-	-	100.0%	-	0.6%
Small mammal	42	15	3	-	13	73
	57.5%	20.5%	4.1%	-	17.8%	44.8%
Small-medium mammal	3	-	1	1	-	5
	60.0%	-	20.0%	20.0%	-	3.1%
Large mammal	10	-	-	-	1	11
	90.9%	-	-	-	9.1%	6.7%
Yellow-faced pocket gopher	1	2	-	-	-	3
	33.3%	66.7%	-	-	-	1.8%
Pocket mice	1	-	-	-	-	1
	100.0%	-	-	-	-	0.6%
Woodrats	4	-	-	2	1	7
	57.1%	-	-	28.6%	14.3%	4.3%
Medium-large rodent	2	-	-	-	-	2
	100.0%	-	-	-	-	1.2%
Desert cottontail	19	4	2	1	2	28
	67.9%	14.3%	7.1%	3.6%	7.1%	17.2%
Black-tailed jackrabbit	9	2	2	-	4	17
	52.9%	11.8%	11.8%	-	23.5%	10.4%
Medium artiodactyl	4	5	-	4	1	11
	36.4%	45.5%	-	9.1%	9.1%	6.7%
Mule deer	1	-	-	-	-	1
	100.0%	-	-	-	-	0.6%
Horned lark	-	-	-	-	1	1
	-	-	-	-	100.0%	0.6%
Passerine	1	1	-	-	-	2
	50.0%	50.0%	-	-	-	1.2%
Total burn type	97	29	8	6	23	163
	59.5%	17.8%	4.9%	3.7%	14.0%	100.0%

Table 13.52. Lithic Type and Material for LA 6170, Structure 50 Vent Tunnel (Feature 169)

	Chalcedony		Chert		Quartzite		Obsidian		Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	6	75.0	1	12.5	-	-	1	12.5	-	-	-	-	8	70.0
Flake	40	53.3	5	6.7	3	4.0	9	12.0	18	24.0	-	-	75	65.8
Flake, bifacial thinning	2	9.5	-	-	-	-	19	90.5	-	-	-	-	21	18.4
Core, single platform	-	-	1	50.0	-	-	-	-	1	50.0	-	-	2	1.8
Flake, utilized	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.9
Flake, Marg. Retouch	-	-	-	-	-	-	1	50.0	1	50.0	-	-	2	1.8
Projectile point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	0.9
Unknown ground stone	-	-	-	-	-	-	-	-	-	-	1	100.0	1	0.9
Mano, two-hand	-	-	-	-	-	-	-	-	-	-	1	100.0	1	0.9
Metate, unknown	-	-	-	-	-	-	-	-	2	100.0	-	-	2	1.8
Total	48	42.1	7	6.1	3	2.6	31	27.2	23	20.2	2	1.8	114	100.0

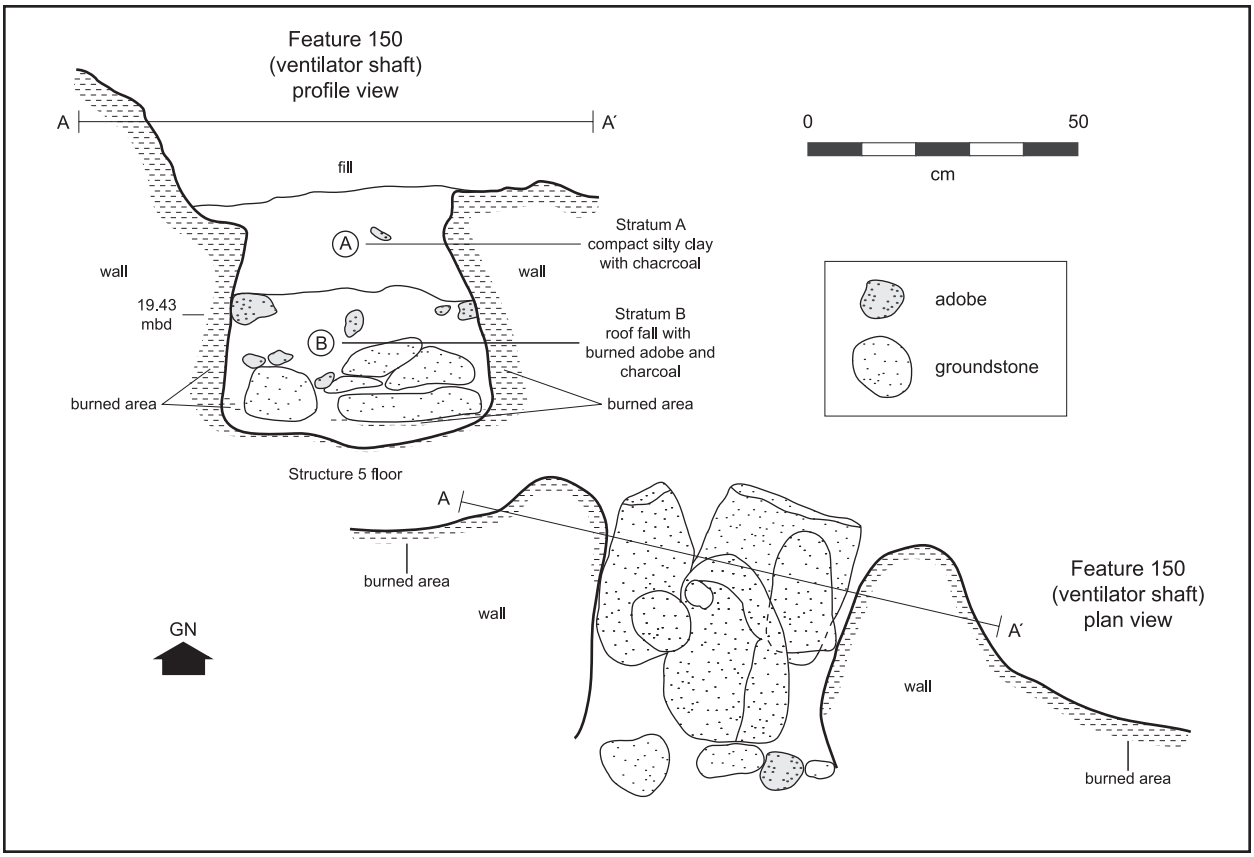

Figure 13.60. Plans of the Structure 50 vent tunnel opening showing stratigraphy and cache.

Figure 13.61. Ground stone cache in vent tunnel opening.

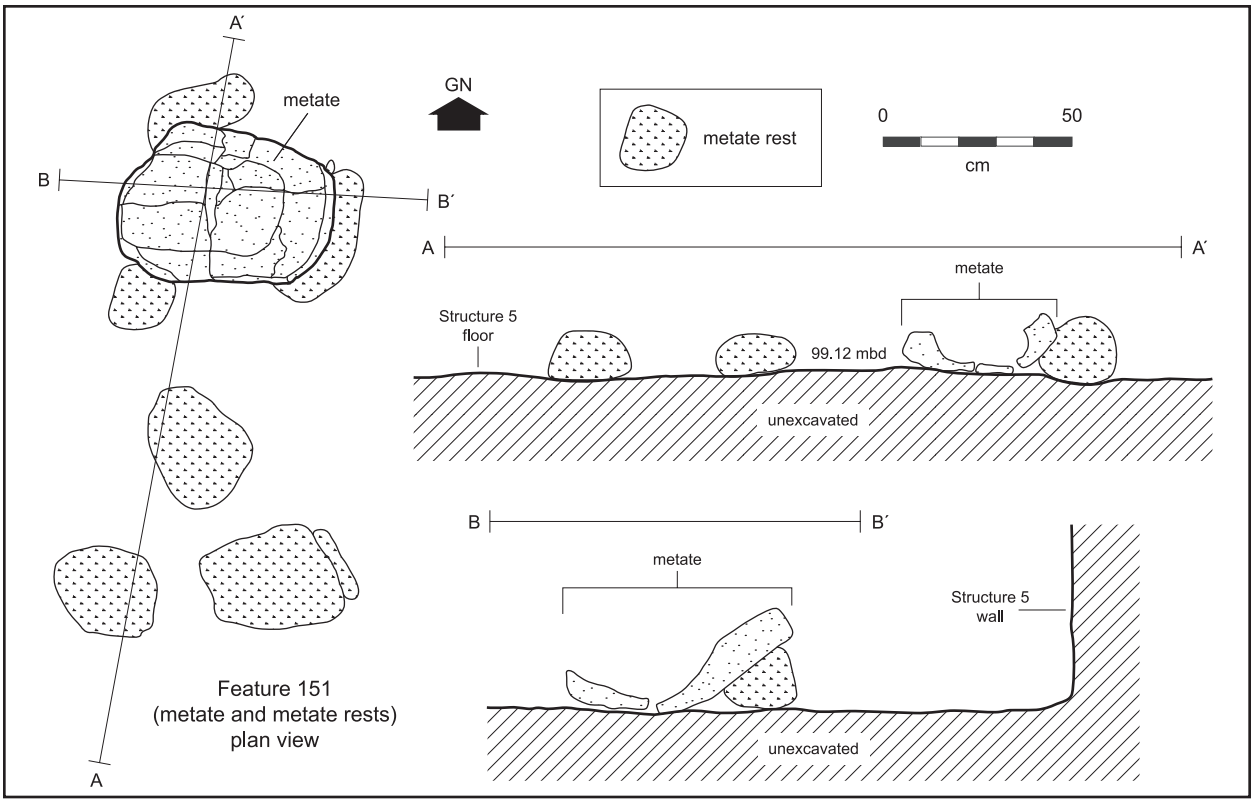

Figure 13.62. Plan and profile of Structure 50, Feature 151, metate and metate rests.

Figure 13.63. Feature 151 in Structure 50.

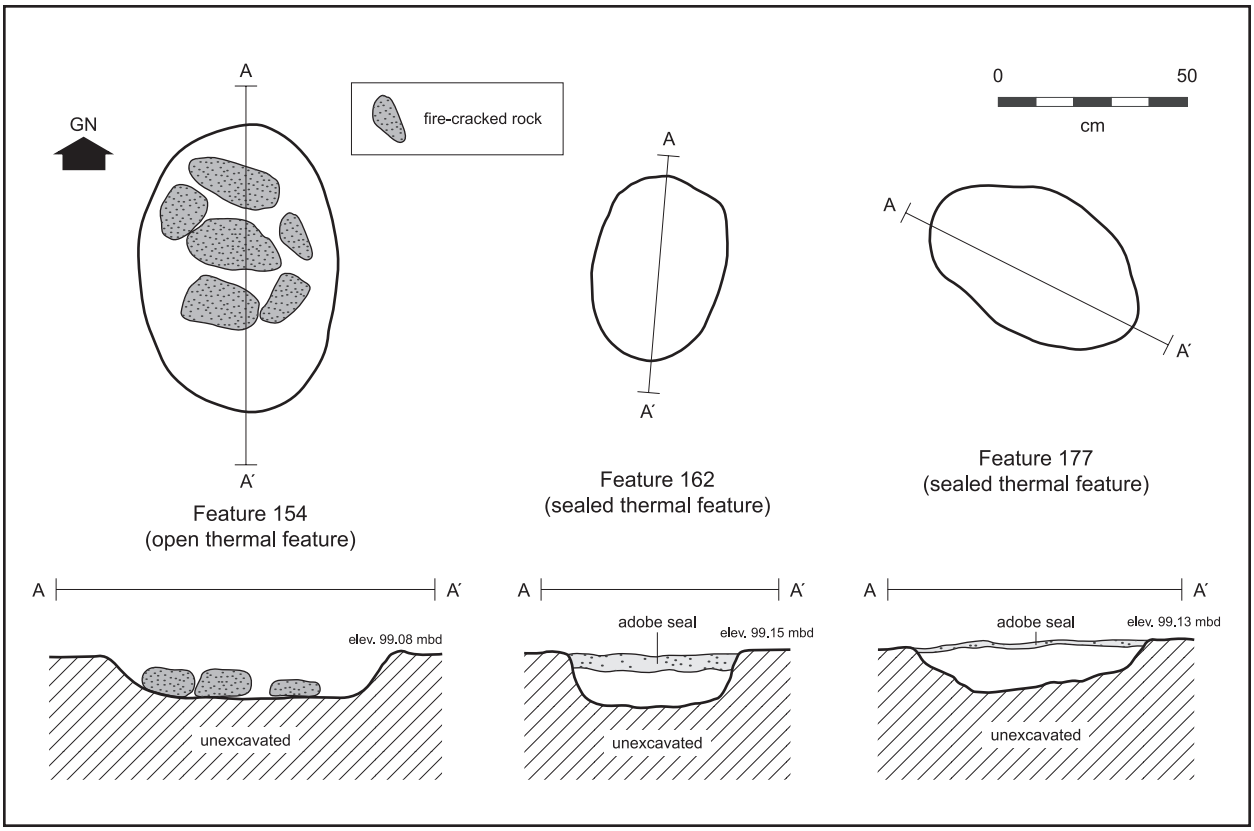

Figure 13.64. Structure 50 open (Feature 54) and seasled (Features 162 and 167) thermal pits.

quartzite) at the far end. The second prop area was three basalt cobbles with a piece of ground stone wedging the stone that would have braced the near end of a metate. A heat-shattered metate found northwest of this area could have been removed from it. The west wall of the structure was 72 cm from the near end of the metate. Fill around and beneath the near end of the metate was burned beams, matting, burned soil, and adobe roofing material with lenses of washed clay. Artifacts collected in and around the metate and props included 11 ceramics (all Middle Rio Grande Plain jar sherds).

A single open thermal pit (Feature 154) was located west of the hearth. Oval with a basin-shaped profile (Fig. 13.64), it was filled with fire-cracked quartzite and vesicular basalt cobbles and an abundance of charcoal. The sides and base were oxidized. The flotation sample contained burned goosefoot seeds, corn cupules and glumes, and juniper wood (2.7 g).

Six postholes were in use when the structure was abandoned (Fig. 13.65). These include the usual four posts (Features 155, 160, 164, and 173) supplemented by two posts set slightly into the north wall (Features 159 and 179). The two auxiliary posts were nearly as large as the main posts, and all posts are well aligned on north-south axes. Evidence of a six-posthole pattern was also found for the first configuration of Structure 50. Structure 5 had a similar pattern with five posts, one set into the north wall, suggesting it may have been more than the size of structure that caused the builders to use six rather than the usual four posts. This post arrangement could indicate that a significantly different form of roof was used at this site, or it could be just a variation on the four-post system. No other structures excavated during this project have the same conformation.

All of the posts had been placed in an upright position then wet silty clay was packed around the post. This packing was quite hard and was in place when excavated, indicating the posts were removed without damaging the mold. Minimum diameters of the posts (gauged by the minimum dimension of the post molds)

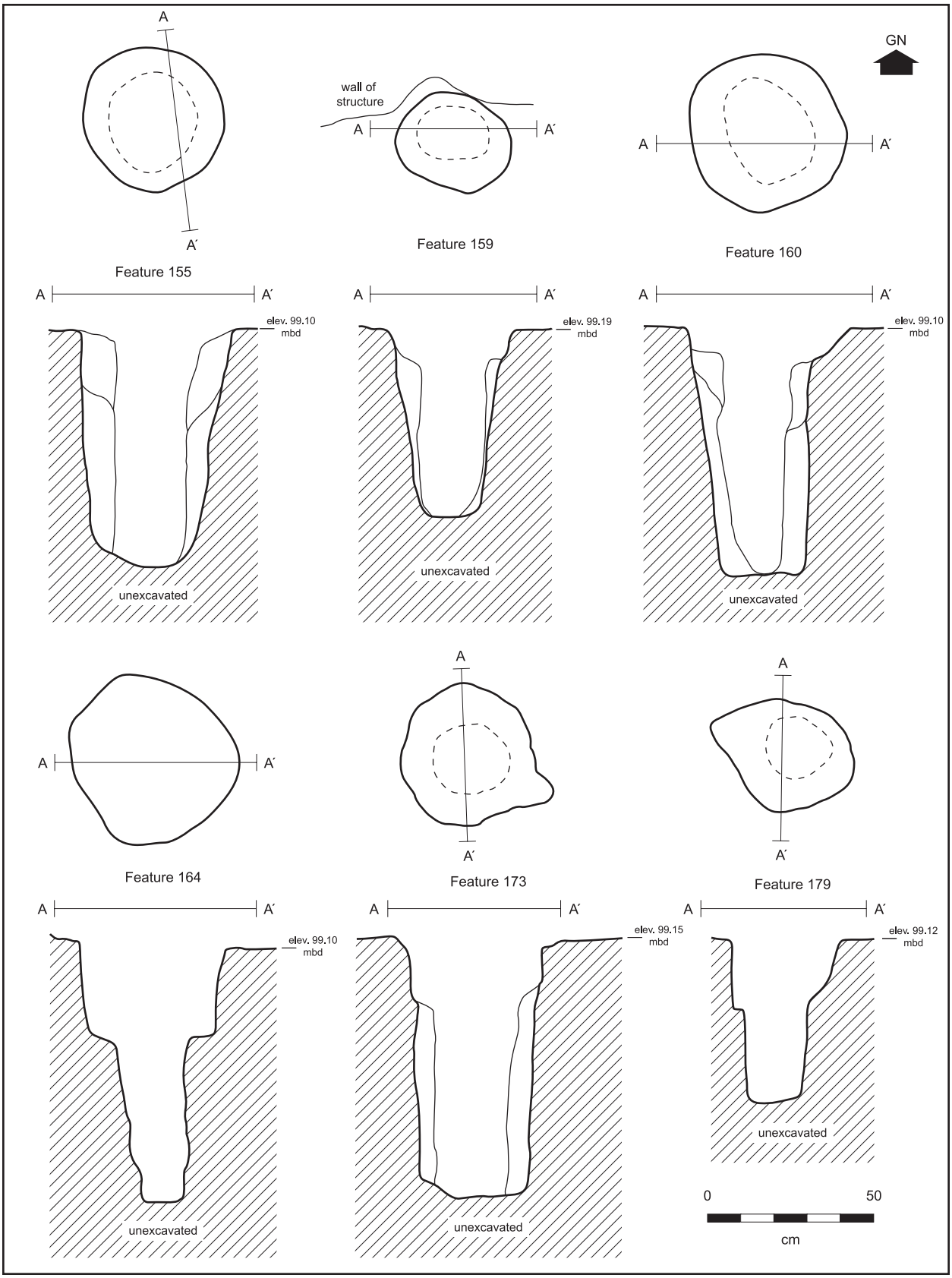

Figure 13.65. Structure 50 open main (Features 155, 160, 164, 173) and auxiliary (Features 159, 179) postholes.

ranged from 20 to 25 cm for the main supports and 16 to 18 cm for the auxiliary posts.

Few artifacts were recovered from the postholes. These include seven Middle Rio Grande Plain jar sherds from four of the postholes (Feature 155, n = 2; Feature 160, n = 3; Feature 164, n = 1; Feature 179, n = 1). Lithic artifacts were found in small numbers in all. Feature 155 held a single flake fragment of local chalcedony; Feature 160, a flake fragment of local chalcedony; Feature 173, pieces of local chert and chalcedony angular debris (1 each), flake fragments of local chalcedony (n = 2) and chert (n = 3), a complete local chert flake, and a basalt flake fragment; and Feature 179, flake fragments of local chert (n = 1) and basalt (n = 3). Bone was rare and includes a single jackrabbit bone from Feature 159, a yellow-faced pocket gopher bone from Feature 160, a large mammal, a wood rat, a medium to large rodent, and two cottontail bones from Feature 164, and a large mammal and two medium artiodactyl bones from Feature 173. Three from Feature 164 are burned as is one from Feature 173. Auxiliary posthole Feature 159 contained three pieces of worked turquoise, a ground piece of hematite, a complete Jemez obsidian projectile point, three fragments and a complete flake of local chalcedony. Feature 164 had an unburned hackberry seed, a flake and flake fragment of local chalcedony, a flake fragment of local chert, basalt flake fragments (n = 2), and a complete basalt flake. Pollen samples from Features 160 and 173 produced varying amounts and types of pollen. The Feature 160 sample has a relatively small pollen concentration including a trace of pine, moderate cheno-ams, and high amounts of composite, sagebrush, and corn pollen, possibly indicating ritual placement (Chapter 24). The Feature 173 sample has considerably more pollen including low amounts of pine and high amounts of cheno-am, grass, and composites.

With the exception of possible pot rests (Features 158, 165, 178, 181, 185) most of the pits are very small (Table 13.46). The pot rests, all relatively large, roughly finished shallow basin-shaped pits (Fig. 13.66), are either against the walls or, in one case, against a main post support. Most are widely spaced, except for a pair along the wall just north of the mealing area. The other small pits cluster suggesting possible functions and activities. North of the hearth are five very small pits (Features 186, 187, 188, 189, and 192) filled with clean sand that could have held *pahos*. Feature 182, which is slightly larger and filled with clean sand and a turquoise pendant, was probably the *sipapu*. A pollen sample from this feature had little pollen but a diverse array of taxa including piñon pine, ponderosa pine, grass, cheno-ams, composite, cholla, *Ephedra,* corn, Solanaceae (nightshade family, probably either wild potato or wild tomato, both of which were encouraged and both of which were used medicinally or ceremonially) (Chapter 24). Some combination of the slots (Features 174, 175, and 190) and small pits (Features 204, 211, and 212) lying east of the hearth could represent ladder holes. Some are irregular and shallow enough that they could be no more than scars left by rodents. Features 191 and 202 could have held small poles for a screen or other material that defined the north edge of the mealing area.

In the wall behind the mealing area is the single open wall niche, Feature 200 (Fig.13.67). The wall around and most of that in the niche was well burned. Fill was silty loam with abundant charcoal.

Sealed Floor and Wall Features. Sealed pits suggest a substantially different layout during the original use of this structure (Figs. 13.68–13.69). Six large storage pits and at least one smaller pit ring the periphery with a suspiciously clear area to the east where the metate and metate props were on the later floor. This mealing area, along with the hearth and ash pit complex and the *sipapu,* may be the only features surviving the remodeling.

Two thermal pits with burned rims (Features 162 and 177) were sealed (Fig. 13.64). Both had been cleaned out then filled with hard chunky fill. Feature 162 contained three pieces of unburned bone, two cottontail and one medium artiodactyl. Two chalcedony flake fragments and a burned piñon nutshell were also

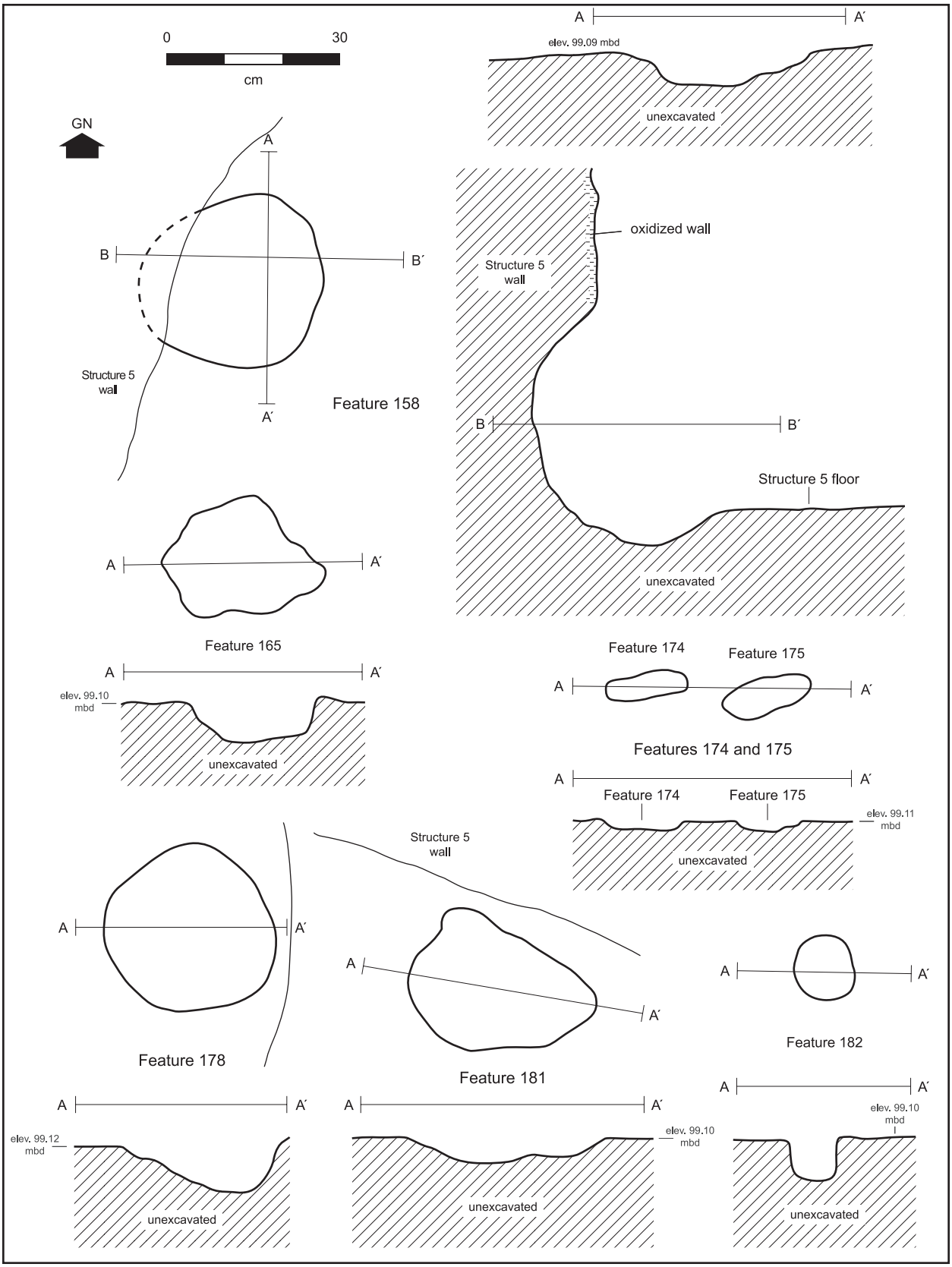

Figure 13.66. Structure 50, open small pits, plans andprofiles.

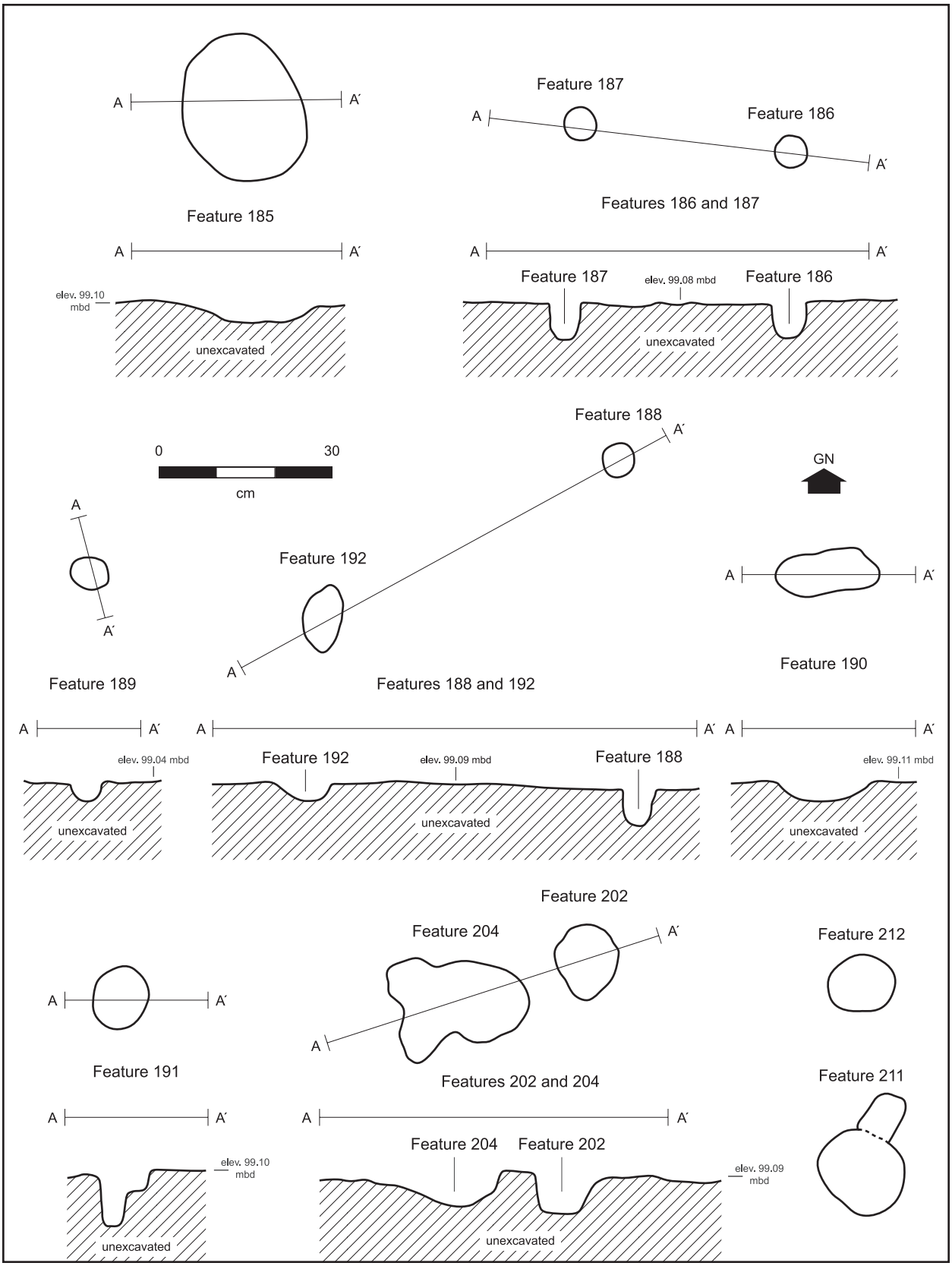

Figure 13.66. Continued.

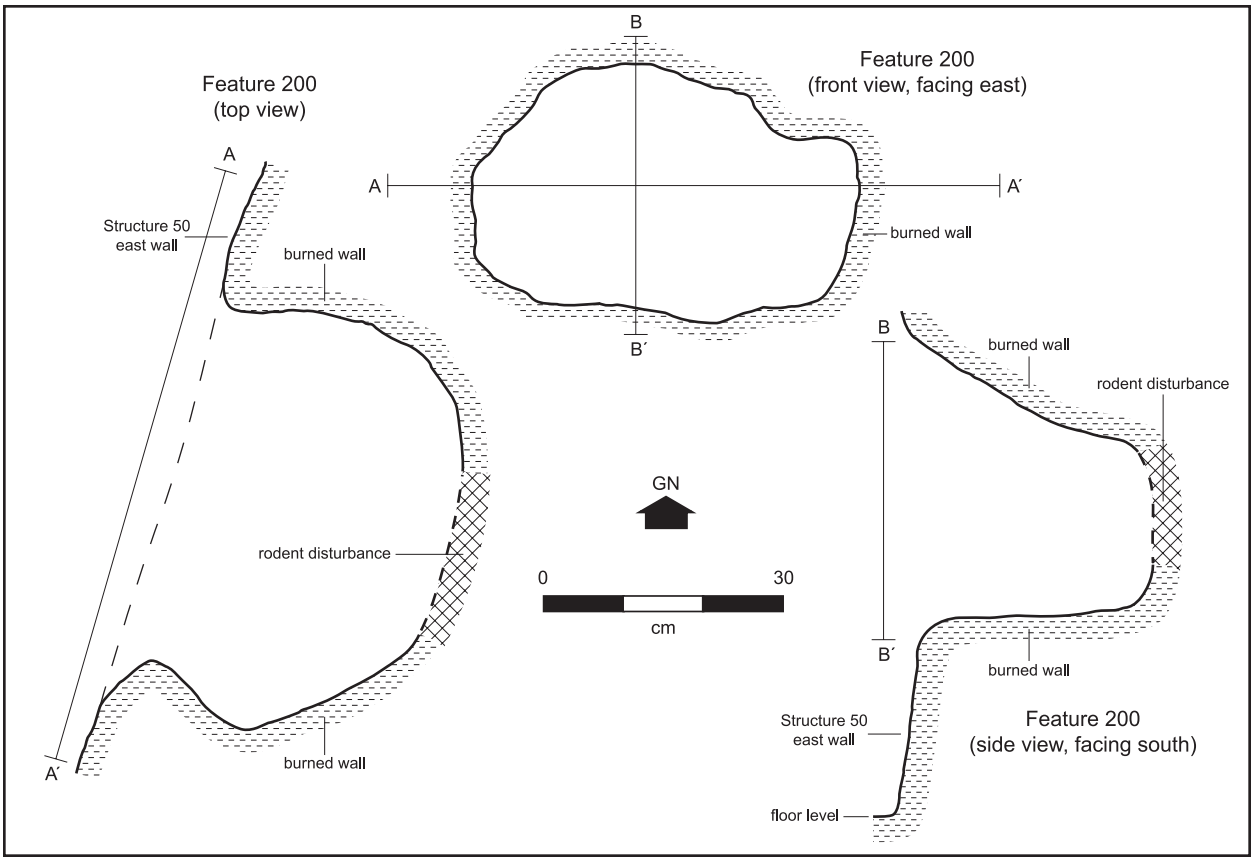

Figure 13.67. Structure 50, open wall niche (Feature 200).

present. One, Feature 177, had a posthole in its base and appears to have been excavated after this posthole was replaced by either Feature 163 or, more likely, Feature 180. Placement of these two thermal pits resembles that of the two in Structure 5, one to the northeast and the other to the east of the hearth. Flotation from Feature 162 produced a piñon nutshell (0.6 g/liter) and Feature 177, an unburned goosefoot seed (0.7 g/liter).

Like the final structure configuration, this earlier one had four main (Features 161, 163, 172, and 195) and two auxiliary postholes (Features 180, 208, and 210) (Fig. 13.70). Assuming that Feature 210 was an auxiliary posthole, it was replaced by Feature 180 located closer to the north wall. The western three postholes form a straight line while no three of the eastern posts are aligned. Unlike the final set of postholes, none of the sealed postholes retained a post mold formed by the fill placed around the post. Fill was either chunks of hard silty clay or hard silty clay, except for Feature 180 which was filled with loose sandy silt. In general, both the main and auxiliary postholes are slightly smaller in their maximum diameters than the pits for the later postholes (means 44.2 and 30.5 cm for the main and 37.0 and 26.6 cm for the auxiliary), and the main postholes were not as deep (means 72.7 and 67.7 cm) but the auxiliary postholes were deeper (42.0 and 50.3 cm). Smaller posts were used in the first configuration but the auxiliary posts were set deeper.

Few items were recovered from the plugged posthole fill. Flaked stone was recovered from all of the main postholes: Feature 161 (a local chalcedony flake); Feature 163 (a piece of basalt angular debris, a flake fragment and a complete flake of local chalcedony, and six flake fragments and a complete flake of basalt); Feature 172 (flake fragments of local chalcedony [n = 2], local chert [n = 1], and basalt [n = 6]); Feature 180 (a complete and three fragments of local chert), but none of the auxiliary. Fauna was found in Feature 163

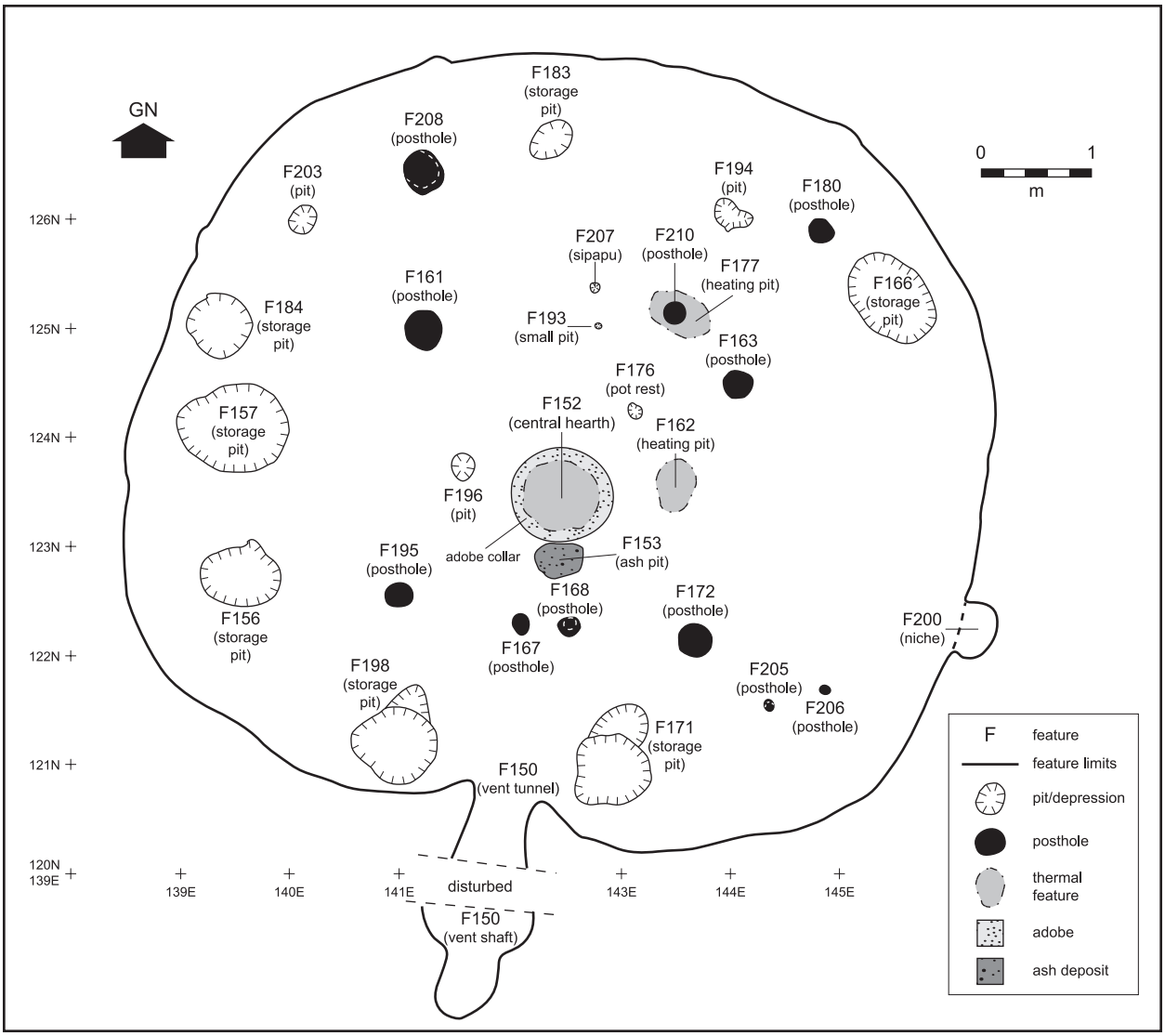

Figure 13.68. Plan of Structure 50 showing sealed features.

(four pieces of small mammal bone), Feature 172 (two medium artiodactyl bones), and Feature 210 (three small mammal and one cottontail bone). Bone was either unburned or lightly scorched (n = 4). Feature 163 held two pieces of a white mineral and Feature 180 a pendant blank made from a *Anodonta californiensi* shell and a piece of unworked shell from the same species. Feature 172 held three unburned hackberry seeds (0.10 g) and Feature 161 a piece of unidentifiable wood.

Large storage pits were found on either side of the vent opening (Features 171 and 198) and along the west (Features 156, 157, 184) and west walls (Feature 166). A smaller storage pit was out from the north wall (Feature 183). Two other pits (Features 194 and 196) could also have been used for storage. These varied in shape (Fig. 13.71) and size (Table 13.53) and represent a considerable storage capacity (1.00 cu m). The two pits that flank the vent opening have what appear to be step entries. One of the larger pits has a burned bottom and sides and another had a partially burned bottom. No plaster or attempts at finishing the walls was noted. Nor was any disturbance of the pit walls noted, possibly because the matrix was hard enough to discourage burrowing rodents.

Fill in these large pits contained amazingly few artifacts. Ceramics include two Middle Rio

Figure 13.69. Structure 50 with all features excavated.

Grande Plain jar sherds from Feature 157, one from Feature 166, and ten Middle Rio Grande Plain, one Tallahogan-like, and one brown ware jar sherds from Feature 198. Lithic artifacts were more abundant, but with the exception of Feature 171 with 68 pieces of flaked stone, sample sizes are fairly small. Feature 156 held two chert flakes and an obsidian flake with marginal retouch and Feature 157 held six flakes of chalcedony (n = 4) and chert (n = 2), a chert utilized flake, an obsidian flake with marginal retouch, and an obsidian projectile point. Feature 166 had a slightly larger sample that included chalcedony (n = 2) and chert (n = 1) angular debris, flakes of chalcedony (n = 5), chert (n = 3), and nonvesicular igneous rocks (n = 3), a nonvesicular igneous bifacial thinning flake, a multiplatform chert core, a utilized chert flake, and a chalcedony flake with marginal retouch. Most of the chipped stone from Feature 171 were flakes, including 20 chalcedony, 12 chert, 2 quartzite, 3 obsidian, and 21 nonvesicular igneous or angular debris of chalcedony (n = 2), chert (n = 2), obsidian (n = 1), and nonvesicular igneous (n = 1). Also found were bifacial thinning flakes of chalcedony (n = 1) and obsidian (n = 2) and a chalcedony biface. Feature 183 produced a single chalcedony flake and Feature 198, chalcedony (n = 2) and chert (n = 3) flakes. Most of the objects recovered from the sealed storage pits are flakes representing the later stages of secondary core reduction. Tool manufacture is indicated by a bifacial thinning flake and projectile point in Feature 157 and bifacial thinning flakes and a biface in Feature 171. Those in Features 157 and 166 indicate expedient tool use in cutting and scraping activities.

The storage pits varied in the amount and composition of fauna (Table 13.54). None has very large samples given their size. Much of that found could, and probably did, originate in the soil used to fill the pits. Feature 166 is the exception as it contained the skeletons of four toads representing at least three species. Feature 198 is also somewhat unusual in that 87.5 percent of the bones have characteristics of scatological bone.

Table 13.53. LA 6170, Summary of Structure 50 Storage Pits

Feature No.	Length x Width (cm)	Depth (cm)	Comment
156	72 x 64	35	basin-shaped
157	100 x 82	76	cylindrical; base partially burned
166	95 x 75	43	cylindrical
171	70 x 40	77	irregular; bell-shaped; step entry; burned sides and base
183	41 x 33	36	bell-shaped
184	63 x 60	35	cylindrical
198	80 x 75	53	cylindrical; step entry

Table 13.54. Fauna Recovered from the LA 6170, Structure 50 Sealed Storage Pits

	Feature 156		Feature 157		Feature 166		Feature 171		Feature 183		Feature 184		Feature 198	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal	-	-	9	30.0%	2	15.4%	16	25.4%	-	-	-	-	10	31.3%
Medium-large mammal	-	-	-	-	-	-	1	1.6%	1	100.0%	-	-	-	-
Large mammal	-	-	-	-	-	-	1	1.6%	-	-	-	-	-	-
Botta's pocket gopher	-	-	-	-	-	-	1	1.6%	-	-	-	-	-	-
Pocket mice	-	-	-	-	-	-	-	-	-	-	1	12.5%	-	-
Ord's kangaroo rat	-	-	1	3.3%	-	-	-	-	-	-	-	-	-	-
Peromyscus sp.	-	-	-	-	-	-	2	3.2%	-	-	-	-	-	-
Woodrats	-	-	1	3.3%	-	-	9	14.3%	-	-	-	-	-	-
White-throated woodrat	-	-	-	-	-	-	2	3.2%	-	-	-	-	-	-
Large woodrat	-	-	-	-	-	-	1	1.6%	-	-	-	-	-	-
Medium-large rodent	-	-	1	3.3%	-	-	1	1.6%	-	-	-	-	-	-
Desert cottontail	-	-	11	36.7%	2	15.4%	23	36.5%	-	-	6	75.0%	19	59.4%
Black-tailed jackrabbit	-	-	6	20.0%	5	38.5%	4	6.3%	-	-	1	12.5%	2	6.3%
Medium artiodactyl	-	-	1	3.3%	-	-	1	1.6%	-	-	-	-	-	-
Pronghorn	-	-	-	-	-	-	-	-	-	-	-	-	1	3.1%
Horned lark	1	100.0%	-	-	-	-	1	1.6%	-	-	-	-	-	-
Great plains toad	-	-	-	-	2**	15.4%	-	-	-	-	-	-	-	-
Red spotted toad	-	-	-	-	1*	7.7%	-	-	-	-	-	-	-	-
Northern leopard frog	-	-	-	-	1*	7.7%	-	-	-	-	-	-	-	-
Total	1	100.0%	30	100.0%	13	100.0%	63	100.0%	1	100.0%	8	100.0%	32	100.0%
Immature (1/2-2/3 grown)	-	-	-	-	-	-	-	-	-	-	2	25.0%	1	3.1%
Burned	-	-	1	3.3%	2	15.4%	2	3.2%	-	-	-	-	1	3.1%
Complete	-	-	3	10.0%	2	15.4%	2	3.2%	-	-	1	12.5%	1	3.1%
>75% complete	-	-	-	-	3	23.1%	10	15.9%	-	-	2	25.0%	-	-
50-75% complete	1	100.0%	3	10.0%	-	-	10	15.9%	-	-	1	12.5%	-	-
25-50% complete	-	-	2	6.7%	2	15.4%	4	6.3%	-	-	3	37.5%	1	3.1%
<25% complete	-	-	22	73.3%	6	46.2%	37	58.7%	1	100.0%	1	12.5%	30	93.8%

* denotes a complete or partial skeleton counted as one specimen

Few plant remains were recovered as macrobotanical samples or in flotation samples. Feature 157 had a corn cupule and unburned goosefoot seeds. Features 166 and 183 had unburned goosefoot and large numbers of unburned spurge seeds (Tables 13.55–13.56). Pollen samples from five of the storage pits generally contained little pollen (Table 13.57) with considerable diversity. Composite, chenoam, and some form of pine pollen were found in all of the pits, and pollen in at least three.

Potential pit closing items or offerings include a piece of a turquoise object in Feature 156, the toad and frog skeletons in Feature 166, three pieces of *Anodonta californiensi* shell in Feature 166, a piece of ground turquoise in Feature 171, and a fragment of *Anodonta californiensi* shell in Feature 198. Also in Feature 171 were two bone tools with characteristics suggesting use in the mat weaving process. These were not the nicely shaped weaving tools found elsewhere but do have spatulate ends that could be used in manipulating weaving elements.

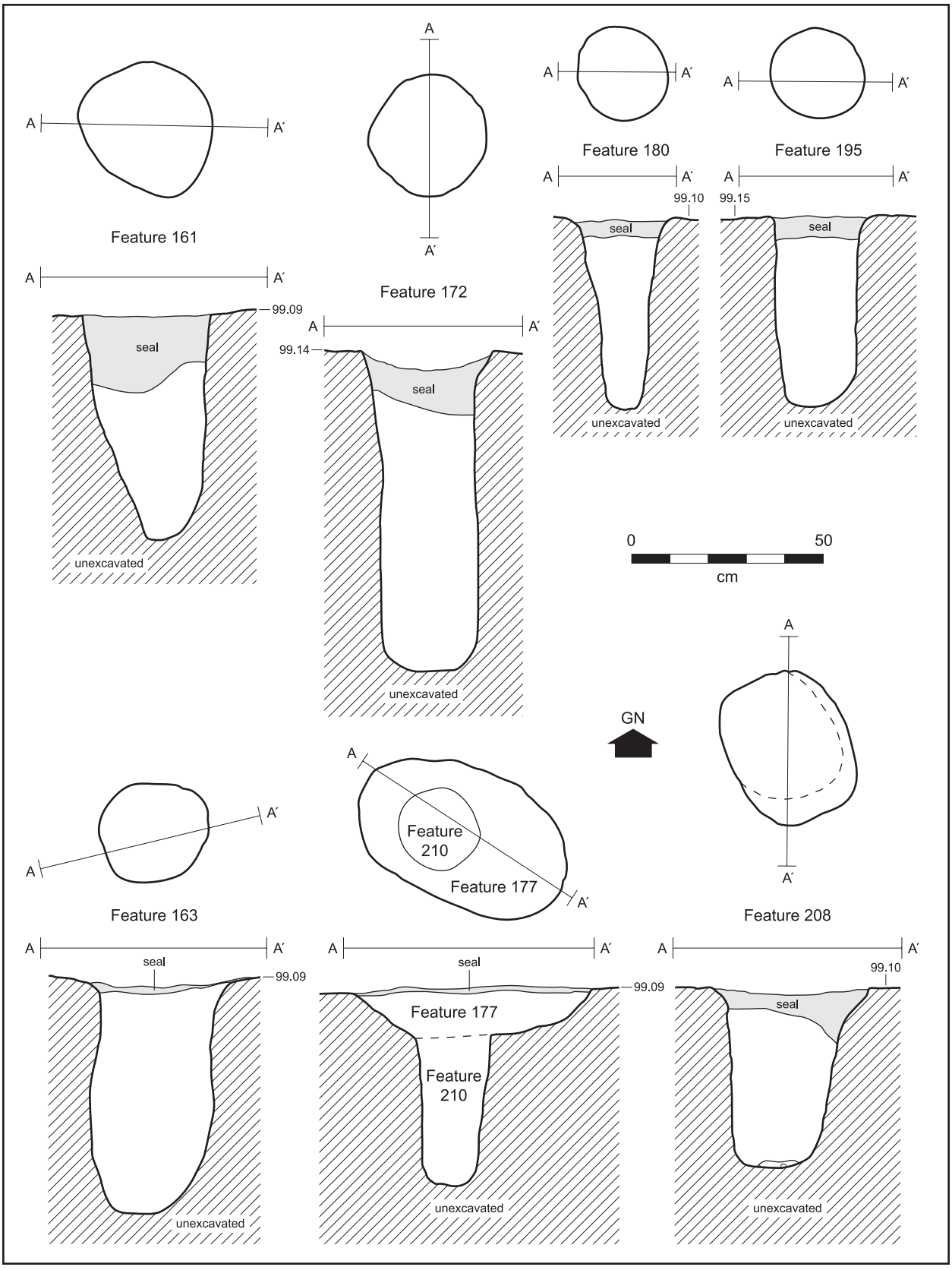

Figure 13.70. Sealed postholes in Structure 50.

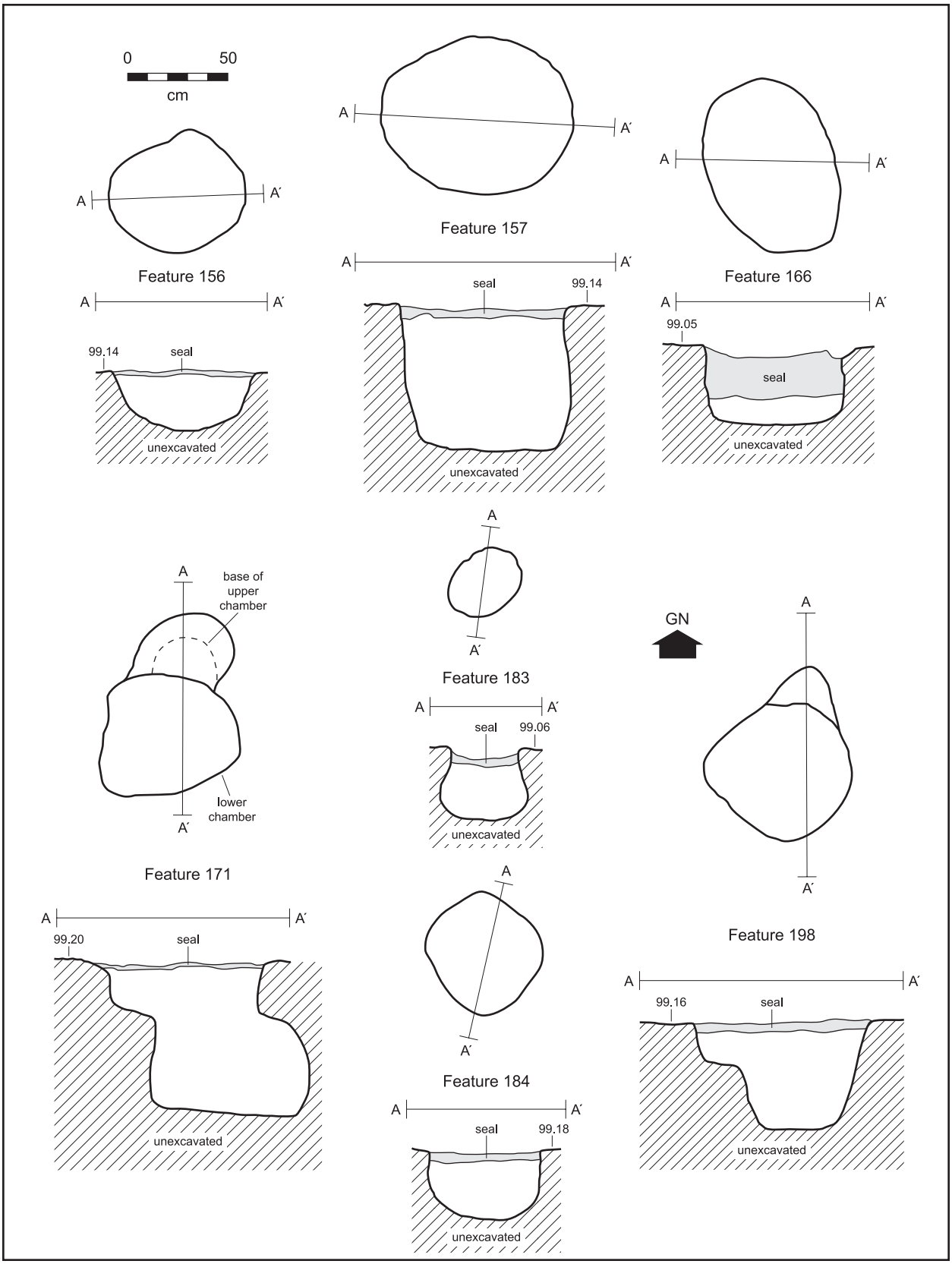

Figure 13.71. Sealed storage pits in Structure 50, plan and profiles.

Table 13.55. LA 6170, Structure 50 Large Storage Pits, Seeds and Fruits (frequency per liter)

	Feature 157	Feature 166	Feature 183
Non-cultural			
Annuals			
Chenopodium	6.4	0.5	1.1
Perennials			
Unknown taxon	0.9	-	-

Table 13.56. LA 6170, Structure 50 Large Storage Pits, Other Plant Parts (abundance per liter)

	Plant Part	Feature 157	Feature 166	Feature 183
Cultural				
Cultivars				
Zea mays	Cupule	1	-	-
Non-cultural				
Annuals				
Euphorbia	Seed	-	110	10

Table 13.57. Pollen Found in Storage Pit Samples

	Feature 156	Feature 166	Feature 171	Feature 183	Feature 184
Total count	218	312	1617	847	447
Pine	-	-	P	-	-
Piñon pine	P	P	-	-	P
Ponderosa pine	-	P	-	P	-
Juniper	-	-	P	-	-
Grass	-	P	-	-	P
Cheno-am	P	P	P	P	P
Composite	P	P	P	P	P
Wild dock	-	-	P	-	P
Nightshade	-	-	-	P	-
Evening primrose	-	-	-	**	-
Sagebrush	P	-	-	P	P
Cactus	**	-	-	-	-
Cholla	-	-	P	-	-
Corn	-	P	**	-	P

** present in low magnification scan of slide

P = present

Few small sealed pits were found (Fig. 13.72). Only two (Features 176 and 203) are shallow enough to resemble a pot rest. Two others have some depth and could have been used for storage (Features 194 and 196). Of those north of the hearth, Feature 193 was filled with clean sand and could have been a *paho* holder. Feature 207 is in a good location for a *sipapu* but is quite shallow. It was entirely filled with a clay plug. Two small pits in the southeast corner (Features 205 and 206) could have been used as ladder rests.

These, too, contained few objects. Feature 205 held a piece of *Anodonta californiensi* shell with a ground edge and complete flakes of local chalcedony and basalt. A partially burned cottontail bone was found in Feature 205 and a small rodent and a cottontail bone in Feature 206.

A plugged wall niche or efforts blocking a rodent invasion was found at the center of the west wall (Feature 201). This first appeared as a fire-hardened "slab" of plaster (6 cm thick) that had popped out from the wall (Fig. 13.73). Removing the plug revealed what could have been a fairly shallow niche. The back and much of the south wall of the niche were destroyed by rodent burrowing and the portion suggesting a niche wall could have been from an earlier rodent burrow. Burning extended partially into the niche at the top and there was a small burned patch at the back. The top burn could have occurred when the structure burned if the plaster was already separated from the wall. The small burn at the back is more difficult to explain but could be part of the attempt at rodent proofing or could have burned because

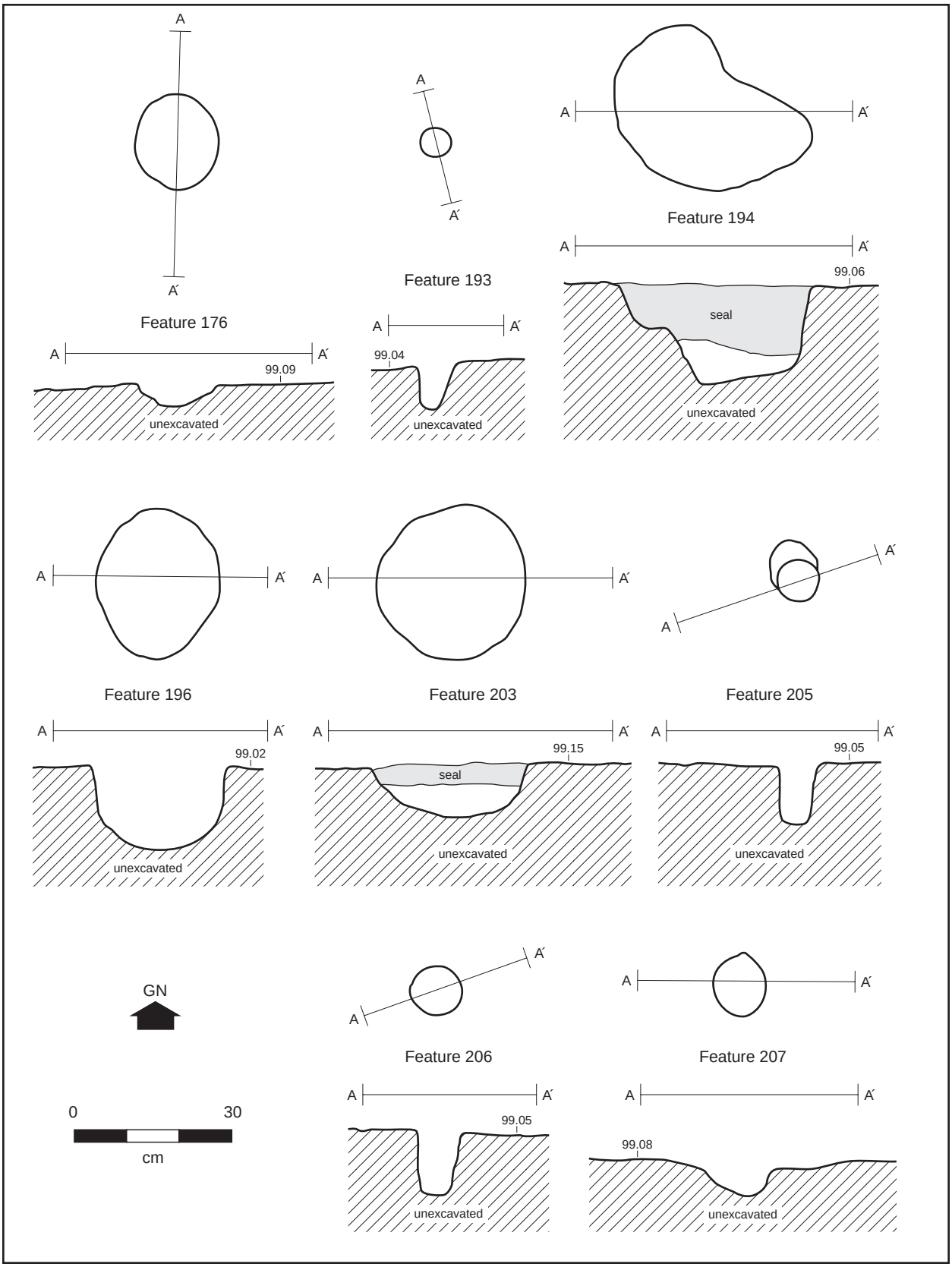

Figure 13.72. Small sealed pits in Structure 50, plans and profiles.

Figure 13.73. Plaster plug for Feature 201 in Structure 50.

of a hollow burrow.

Abandonment. Most material was removed from the structure before the roof was dismantled and burned. The hearth, ash pit, and small sand-filled pits retained their fill while the others had been cleaned out and contained roof fall. Artifacts deliberately left on the floor include a complete trough metate, still on its rests, a shattered metate, a complete vesicular basalt two-hand mano, a complete vesicular rhyolite grinding slab, several anvils, an abrader, a complete fine-grained rhyolite stone ball, and a complete fine-grained rhyolite cobble with pigment, a portion of a deer cranium with antlers attached along with broken pieces of antler, probably fractured and scattered by the heat, and many lithics including small obsidian biface flakes. A corn cob was found in the cranium with corn kernels in the general area. Fragments of ground stone, chipped stone, and ceramics were scattered throughout and could have been deliberately left, dumped in the structure, or been part of the roof fall. A cache of ground stone, including a partial metate, a complete two-hand mano, and a piece of unidentified ground stone were left just inside the entrance of the vent tunnel. Pieces of turquoise or shell were found in the hearth, ash pit, one posthole (Feature 159), and a deflector posthole, along with several of the sealed features. Patterns of burning on the floor, especially one remarkably rectangular unburned area in the northwest quadrant (see Fig. 13.56), suggests that material on the floor prevented burning in some areas. Equally sharp burn lines near the north wall in the northeast quadrant correspond with the locations of several burned beams.

Only one of the main post supports contained wood, and even then it was small unburned fragments along with ash and burned adobe. This suggests the main posts were removed before the structure burned. None had the quantity of charcoal or burning that would suggest the posts had burned in place. Much of the roof must have been dismantled as the number of burned beams is not sufficient to represent the entire roof and is far

fewer than found in Structure 5. Beams on or near the floor lay relatively flat, rather than slanting down towards the interior (see Fig. 13.54). The southeast corner and central area were remarkably clear of beam material (see Fig. 13.47). Pulling beams is also suggested by the positions of the reed matting used in the construction. Matting was found both beneath and on top of the burned beams as well as isolated from any beams as if the roof was dismantled, dumping some beams, matting, and roofing soil on the floor, then burning the remains. There is no distinct pattern to the beams and there is much burned soil around those found. Several metate fragments, a two-hand mano, a mano fragment, pieces of shaped slab, and small fragments of ground stone in the level of burned roofing could represent items used on the roof. Cobbles were present but not in the quantities found in Structures 2 or 5.

Artifacts. Ceramics from the upper fill were sampled. Of the FS numbers with ceramics, 11 of 17 (64.7 percent) from the overburden were fully analyzed and one additional was rough sorted; 14 of 18 (77.8 percent) of the FS numbers from the wind and water deposits were fully analyzed; 10 of 15 (75.0 percent) of the roof and closing FS numbers were fully analyzed and one other was rough sorted; and all of the ceramics from the floor fill and contact, pits with occupational fill, sealed features, and the vent shaft were fully analyzed.

With the notable exception of one glaze-on-red (probably Glaze A) sherd, the ceramic assemblage from Structure 50 is Early Developmental (Table 13.58). This anomalous sherd was deep in the fill (between 99.28 and 99.05 bd) and had undoubtedly been deposited by rodents or fell into a rodent burrow. Northern Rio Grande tempered wares are rare; 13 were found in the lowest fill and features. For the upper fill, the maximum total of 12.7 percent is only slightly more than found in the roof fall of Structure 5 (10.4 percent). Mogollon wares are far more common in Structure 50 than in any of the Area 1 features. An Alma Plain sherd was found in the overburden of Structure 5 and Structure 2 had none. A rough sort of a sample of the ceramics recovered from the overburden found only plain body sherds, no Mogollon or painted wares.

A near absence of ceramics in the sealed features indicates these were well cleaned out and filled with relatively sterile soil. Not one of the pits with occupational fill had an appreciable number of ceramics. Most had only a few and these were almost always plain wares.

Flaked lithic artifacts were so numerous that only a portion could be analyzed. None of those from the overburden (estimated n = 503), wind and water deposits (estimated n = 1,370), or the vent shaft (estimated n = 62) were analyzed and about 44 percent of the roof fall and closing flaked lithics were analyzed. Otherwise, with the exception of an occasional lost bag, all of those from the floor and floor fill and open and sealed features were analyzed. All of the ground stone was analyzed.

A wide variety of artifact and material types was found in the chipped and ground stone from the roof fall and closing layer (Table 13.59). Most of the chipped stone assemblage is unutilized flakes and angular debris that indicate an emphasis on the later stages of secondary core reduction along with some evidence of early stages in the form of dorsal cortex (on 18 percent of the flakes). Only two flakes have platform modifications that indicate formal, bifacial tool manufacture. Single-faceted (48 percent) and multifaceted (8 percent) platforms indicate that most decortation occurred at another locale. A good proportion (21 percent) have cortical and collapsed (23 percent) platforms. Three multiplatform cores were recovered, two of chalcedony and one from nonvesicular igneous rock. The assemblage also includes a hammerstone.

A total of 27 expedient and formal tools were recovered from the roof fall and closing deposits. Most are expedient flake tools (n = 11) or marginally retouched flakes and angular debris (n = 8). Bidirectional wear, typical of cutting on hard media like bone or wood, was observed on seven edges of expedient tools, and one has bidirectional rounding and striations consistent with cutting a deep groove in

Table 13.58. Ceramic Types and Vessel Forms Recovered from LA 6170, Structure 50

Ceramic Type/Form	Over-burden	Wind/Water Deposits	Roof Fall and Closing	Floor Fill and Contact	Features with Occupational Fill	Sealed Features	Vent Shaft	Totals
Northern Rio Grande								
Unpainted undifferentiated	1	-	1	-	-	-	-	2
	2.0%	-	0.3%	-	-	-	-	0.2%
Plain	-	35	32	-	-	-	-	65
	-	12.7%	8.5%	-	-	-	-	6.6%
Mudware	-	-	6	11	-	-	-	17
	-	-	1.6%	5.2%	-	-	-	1.7%
Brown ware	-	-	-	2	-	-	-	2
	-	-	-	0.9%	-	-	-	0.2%
Total Northern Rio Grande	1	35	39	13	-	-	-	88
	2.0%	12.7%	10.4%	6.1%	-	-	-	8.9%
Middle Rio Grande								
Plain	48	229	305	187	56	7	11	843
	96.0%	83.3%	81.3%	87.8%	96.6%	87.5%	100.0%	85.1%
Unpainted undifferentiated	-	2	6	3	-	1	-	12
	-	0.7%	1.6%	1.4%	-	12.5%	-	1.2%
Mineral paint undifferentiated	1	1	5	3	-	-	-	10
	2.0%	0.4%	1.3%	1.4%	-	-	-	1.0%
San Marcial B/w	-	2	2	-	-	-	-	4
	-	0.7%	0.5%	-	-	-	-	0.4%
Tallahogan-like	-	-	11	4	1	-	-	16
	-	-	2.9%	1.9%	1.7%	-	-	1.6%
Brown ware	-	-	-	1	1	-	-	2
	-	-	-	0.5%	1.7%	-	-	0.2%
Total Middle Rio Grande	49	234	329	198	58	8	11	887
	98.0%	85.1%	87.7%	93.0%	100.0%	100.0%	100.0%	89.6%
Glaze-on-red	-	-	-	1	-	-	-	1
	-	-	-	0.5%	-	-	-	0.1%
Jornado Brown	-	2	3	-	-	-	-	5
	-	0.7%	0.8%	-	-	-	-	0.5%
Mogollon Red-on-brown	-	1	2	1	-	-	-	4
	-	0.4%	0.5%	0.5%	-	-	-	0.4%
San Francisco Red	-	3	-	-	-	-	-	3
	-	1.1%	-	-	-	-	-	0.3%
Alma Plain	-	-	2	-	-	-	-	2
	-	-	0.5%	-	-	-	-	0.2%
Bowl	-	7	4	4	-	-	-	15
	-	2.5%	1.1%	1.9%	-	-	-	1.5%
Jar	50	264	364	195	58	8	11	948
	100.0%	96.0%	97.1%	91.5%	100.0%	100.0%	100.0%	95.8%
Miniature pinch pot	-	-	-	1	-	-	-	1
	-	-	-	0.5%	-	-	-	0.1%
Indeterminate	-	4	7	13	-	-	-	26
	-	1.4%	1.9%	6.1%	-	-	-	2.6%
Totals	50	275	375	213	58	8	11	990
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

bone (Schutt 1980:71). Of the marginally retouched items (eight flakes and one piece of angular debris), six lack evidence of use wear, three of the bidirectionally retouched and three of the unidirectionally retouched. The remaining three are bidirectionally retouched and exhibit bidirectional cutting wear. Edges that are bidirectionally retouched are usually used for cutting while those that are unidirectionally retouched have steeper edges and are used for scraping.

The roof fall and closing deposits held four

Table 13.59. Lithic Types and Material for LA 6170, Structure 50 Roof and Closing

	Chalcendony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	25	26.3	36	37.9	3	3.2	3	3.2	26	27.4	-	-	2	2.1	95	14.0
Flake	135	25.7	159	30.3	12	2.3	25	4.8	193	36.8	-	-	1	0.2	525	78.0
Flake from G S	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	2	66.7	-	-	-	-	-	-	1	33.3	-	-	-	-	3	<1
Core, Single Platform	-	-	1	50.0	-	-	-	-	1	50.0	-	-	-	-	2	<1
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Pecking Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Angular Deb, Marg Ret	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	2	18.2	4	36.4	-	-	2	18.2	3	27.3	-	-	-	-	11	1.0
Flake, Marg Retouch	-	-	3	37.5	-	-	1	12.5	4	50.0	-	-	-	-	8	1.0
Projectile Point	1	25.0	-	-	-	-	3	75.0	-	-	-	-	-	-	4	<1
Biface	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	<1
Unknown Ground Stone	-	-	-	-	1	25.0	-	-	-	-	3	75.0	-	-	4	<1
Mano, Unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	2	<1
Shaped Stone	-	-	-	-	-	-	-	-	3	75.0	1	25.0	-	-	4	<1
Total	167	25.0	203	30.4	17	2.5	37	5.5	234	35.1	6	0.9	3	0.4	667	100.0

projectile points and three bifaces. The points are of Jemez obsidian or chalcedony and the bifaces are of Jemez obsidian. None of the formal tools have evidence of use wear.

A large number of lithic artifacts was found on or near the floor (n = 764, Table 13.60). Unlike most other assemblages from LA 6170, Jemez obsidian comprises about a third of the flaked lithics with chert, nonvesicular igneous materials, and chalcedony making up much of the rest of material types. The lithic assemblage from the floor includes two manufacturing and reduction trajectories. The Jemez obsidian debitage clearly indicates bifacial tool manufacture. Virtually all of the bifacial thinning flakes are manufactured from Jemez obsidian. Most (64 percent) have retouched or prepared platforms while a significant number (29 percent) have collapsed platforms, which are often associated with tertiary reduction of highly siliceous materials. Only three of the obsidian flakes have dorsal cortex. Fragments of four obsidian projectile points were also found on the floor.

Other materials from floor context indicate an emphasis on the later stages of secondary core reduction. Flakes lacking dorsal cortex constitute 85 percent of the nonvesicular igneous materials, 82 percent of the chalcedony, and 75 percent of the chert assemblages. There is little evidence of bifacial tool manufacture in these material types, rather, tools made of these materials are more expedient.

Unutilized flakes and angular debris make up the majority of the entire assemblage. Expedient flake tools include six utilized flakes and a utilized piece of angular debris. Eight edges exhibit unidirectional wear from scraping a hard media such as bone or wood. Bidirectional wear typical of cutting a similar media was found on two additional edges. Four other flakes are marginally retouched, unidirectional retouch on three flakes and bidirectional wear on one flake. Two of the retouched flakes have unidirectional wear typical of scraping a hard media like bone or wood.

Formal tools recovered from the floor include one biface, five projectile points, and a drill. None of the four obsidian projectile points were complete and it is likely that they were manufactured in the structure and broken in the process. The drill was probably used, broken, and discarded in the structure.

Of the pits with occupational fill, only two (the ash pit with 293 and the vent tunnel with 114) contained more than a few lithic artifacts. When combined (Table 13.61), the assemblage of 459 artifacts was largely nonvesicular igneous, chalcedony, obsidian, and chert. As a whole, the emphasis is on secondary core reduction, with flakes lacking dorsal cortex (74 percent) in the majority. Both the nonvesicular igneous materials and chert clearly emphasize secondary core reduction with 79 percent of the nonvesicular igneous materials and 92 percent of the chert lacking dorsal cortex. These materials exhibit little evidence of primary decortication and there is no indication of formal tool manufacture in these features. In contrast, the obsidian assemblages indicate an emphasis on formal tool manufacture with retouched and prepared platforms on flakes composing 55 percent of the lithic assemblage. A majority (93 percent) of the obsidian artifacts are bifacial thinning flakes. Chalcedony also exhibits evidence of tertiary formal tool manufacture as four bifacial thinning flakes have three retouched and prepared platforms. A variety of formal and expedient tools were identified, primarily of obsidian (11 of 15). Expedient tools include four marginally retouched flakes and an unretouched flake tool. Wear patterns indicate that three were used for scraping and one for cutting on a hard material like bone or wood. The utilized flake tool also has unidirectional utilization typical of scraping on a hard material. None of the six obsidian biface fragments has evidence of wear. Two of the projectile points are complete.

The 12 sealed features produced fewer lithic artifacts (n = 133, Table 13.62). Again, the emphasis is on the later stages of secondary core reduction with 82 percent of the flakes lacking dorsal cortex. Formal tool manufacture is indicated by a nonvesicular igneous bifacial

Table 13.60. LA 6170 Structure 50, Floor Fill and Contact

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Other Igneous		Other Local		Other Nonlocal		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	28	36.4	33	42.9	-	-	2	2.6	14	18.2	-	-	-	-	-	-	-	-	77	10.0
Flake	107	24.5	172	39.4	3	0.7	33	7.6	117	26.8	-	-	1	0.2	1	0.2	2	0.5	436	57.0
Flake, Bifacial Thin	2	0.9	-	-	-	-	209	99.1	-	-	-	-	-	-	-	-	-	-	211	27.0
Tested Rock	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	-	-	4	50.0	-	-	-	-	4	50.0	-	-	-	-	-	-	-	-	8	1.0
Core, Single Platform	1	25.0	2	50.0	-	-	-	-	1	25.0	-	-	-	-	-	-	-	-	4	<1
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Chopper, Bifacial	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Angular Debris, Util	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	3	50.0	2	33.3	-	-	-	-	1	16.7	-	-	-	-	-	-	-	-	6	<1
Flake, Marg Retouch	1	25.0	2	50.0	-	-	-	-	1	25.0	-	-	-	-	-	-	-	-	4	<1
Projectile Point	-	-	1	20.0	-	-	4	80.0	-	-	-	-	-	-	-	-	-	-	5	<1
Biface	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Drill	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Mano, One-Hand	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	2	<1
Grinding slab	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Stone Ball	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Cobble with pigment	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Total	142	18.6	219	28.7	5	0.7	248	32.5	144	18.8	2	0.3	1	0.1	1	0.1	2	0.3	764	100.0

Table 13.61. Lithic Types and Material for LA 6170, Structure 50 Pits with Occupational Fill

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	14	38.9	11	30.6	1	2.8	2	5.6	8	22.2	-	-	-	-	-	-	36	7.0
Flake	111	32.8	67	19.8	4	1.2	26	7.7	130	38.5	-	-	-	-	-	-	338	73.0
Flake, Bifacial Thin	4	6.9	-	-	-	-	54	93.1	-	-	-	-	-	-	-	-	58	12.0
Core, Multiplatform	-	-	1	50.0	-	-	-	-	1	50.0	-	-	-	-	-	-	2	<1
Core, Single Platform	-	-	1	50.0	-	-	-	-	1	50.0	-	-	-	-	-	-	2	<1
Flake, Utilized	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Flake, Marg Retouch	-	-	2	50.0	-	-	1	25.0	1	25.0	-	-	-	-	-	-	4	<1
Projectile Point	-	-	-	-	-	-	6	100.0	-	-	-	-	-	-	-	-	6	1.0
Biface	-	-	-	-	-	-	4	100.0	-	-	-	-	-	-	-	-	4	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	2	66.7	1	33.3	-	-	3	<1
Metate, Trough	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Pestle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	<1
Stone Ball	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Total	129	28.1	82	17.9	7	1.5	93	20.3	142	30.9	2	0.4	3	0.7	1	0.2	459	100.0

Table 13.62. Lithic Types and Material for LA 6170, Structure 50 Sealed Features

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	40.0	3	30.0	-	-	1	10.0	2	20.0	10	7.0
Flake	45	40.5	23	20.7	2	1.8	3	2.7	38	34.2	111	83.0
Flake, Bifacial Thin	1	25.0	-	-	-	-	2	50.0	1	25.0	4	3.0
Core, Multiplatform	-	-	1	100.0	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	2	100.0	-	-	-	-	-	-	2	1.0
Flake, Marg Retouch	1	33.3	-	-	-	-	2	66.7	-	-	3	2.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	1	<1
Biface	1	100.0	-	-	-	-	-	-	-	-	1	<1
Total	52	39.1	29	21.8	2	1.5	9	6.8	41	30.8	133	100.0

thinning flake with a retouched or prepared platform and by bifacial thinning flakes of obsidian and chalcedony. Eight tools were recovered. Two of these are utilized chert flake fragments with unidirectional wear indicating they were used for scraping a hard material and discarded. Marginally retouched flakes, two of obsidian and one of chalcedony, have unidirectional scraping wear. Bidirectional cutting wear is evident on a marginally retouched obsidian flake. These tools were used on a hard media like bone or wood and were most likely discarded. Formal tool manufacture is represented by a chalcedony biface and a projectile point of obsidian.

When compared by component (Table 13.63), the floor fill and contact and features with occupational fill are clearly different from the other two components in the proportion of biface flakes and obsidian. This reflects the abundance of small bifacial thinning flakes on the floor and to a lesser extent in Feature 153, the ash pit. Proportionately more of the floor assemblage is comprised of obsidian thinning flakes, providing clear evidence of obsidian tool manufacture. Similarities in the proportions of both artifact and material type in roof fall and closing and sealed pit assemblages may indicate that both are predominately general rather than de facto refuse.

Ground stone (Table 13.64) is not abundant (n = 32 analyzed and 10 unanalyzed) and consists largely of grinding tools (n = 18). Fragmentary items were mainly found in the roof and closing layer where the only complete items are a two-hand mano and an anvil. Floor and feature materials are generally complete suggesting they were intentionally left behind.

Fauna is more numerous than ceramics (Table 13.65) and provide a good sample, especially considering that the bone from the overburden was not analyzed. A large number of rodent, artiodactyl, and herp specimens were found with the roof fall. Both the open and plugged feature components are especially diverse given the sample sizes. The other three proveniences are more consistent with the variety that should be found relative to sample size.

Artiodactyl remains dominate the fill to floor units, ranging from 25 to 36 percent of each assemblage. Proportions drop considerably in the feature fill and vent components. Comparing rabbit species, cottontails increase with depth and jackrabbits generally decrease, possibly reflecting a shift in species reliance. The sealed pits have considerably more cottontail bones than the open pits with occupational fill (over twice as much). Rodents are rare and triple to quadruple in the features suggesting some or most are intrusive and reflecting the smaller screen size used in excavating features. Birds are always rare, as are herps. Considerable burning is found in all components except the sealed features and much could be related to the burning of the structure. Because of the bowl-like configuration of the stratigraphic layers, some burned roofing undoubtedly is included in the wind and water deposit component. Pitted and eroded bone is

Table 13.63. Summary of Flaked Lithics from LA 6170, Structure 50 (percentages)

	Roof Fall and Closing	Floor Fill and Contact	Features with Occupational Fill	Sealed Pits
Sample size	667	757	451	133
Angular debris	14.1	10.2	8.0	7.5
Flake	78.7	57.6	74.9	83.5
Bifacial thinning flake	-	27.9	12.9	3
Tested rock	-	0.1	-	-
Multiplatform core	0.4	1.1	0.4	0.7
Single platform core	0.3	0.5	0.4	-
Hammerstone	0.1	0.1	-	-
Pecking stone	0.1	-	-	-
Bifacial chopper	-	0.1	-	-
Angular w. marginal retouch	0.1	-	-	-
Angular debris, utilized	-	0.1	-	-
Utilized flake	1.6	0.8	0.2	1.5
Flake w. marginal retouch	1.2	0.5	0.9	2.2
Projectile point	0.6	0.5	0.9	0.7
Biface	0.4	0.3	1.3	0.7
Drill	-	0.1	-	-
Material Type				
Chalcedony	25.0	18.8	28.6	39.1
Chert	30.4	28.9	18.2	21.8
Quartzite	2.5	0.5	1.1	1.5
Obsidian	5.5	32.8	20.6	6.8
Nonvesicular igneous	35.1	18.5	31.5	30.8
Other igneous	-	0.1	-	-
Other local	0.9	0.2	-	-
Other nonlocal	-	0.3	-	-

most common in the upper levels where exposure was probably greater. Also reflecting the presence of rodents and herps, complete and near complete bones are most common on or near the floor, in the sealed features, and the vent shaft. Otherwise, the amount of very small bone in the wind and water, roof and closing, and occupational features is consistent with trash or discard. The most interesting of the finds are the deer cranium and antler offering left on the floor and the array of frogs and toads left in Feature 166.

Few fill bones exhibit rodent or carnivore gnawing or carnivore tooth punctures indicating that particular kind of activity was rare when the structure filled. Potential evidence of processing is relatively common (n = 80 on 75 specimens). The upper or wind and water deposits have a variety of processing including cuts (n = 2), impact breaks (n = 6), spiral fractures (n = 2), and portions removed (n = 2), on all but three of the large mammal or artiodactyl bones. More processing was found on specimens from the roof fall closing layer (n = 29) than any other component. Roof fall specimens have cuts (n = 6), impact breaks (n = 12), spiral fractures (n = 6), portions removed (n = 3), and an abrasion, mostly on artiodactyl bones (n = 25). The floor fill and contact component had a variety of cuts (n = 2), impact breaks (n = 4), and spiral fractures (n = 4), all but three on artiodactyl bones. Features (open, n = 19; plugged, n = 8) have mainly impact breaks and spiral fractures but also portions removed, cut and snaps, and some are flakes of bone resulting from impacts.

Young animals are rare in all fill units while near-mature individuals are found throughout in good numbers. This could suggest much of the deposition took place when animals were

Table 13.64. Summary of Analyzed and Other Ground Stone Recovered from LA 6170, Structure 50

	Overburden	Wind/Water Deposits	Roof Fall and Closing	Floor Fill and Contact	Feature/ Occupational Fill	Vent Shaft
Analyzed						
Indeterminate fragment	-	-	4	-	1	-
	-	-	33.3%	-	12.5%	-
Mano fragment	1	1	1	-	-	-
	100.0%	33.3%	8.3%	-	-	-
One-hand mano	-	-	-	1	-	-
	-	-	-	14.3%	-	-
Two-hand mano	-	-	1	1	1	-
	-	-	8.3%	14.3%	12.5%	-
Metate fragment	-	-	2	2	2	-
	-	-	16.7%	26.8%	25.0%	-
Trough metate	-	-	-	-	2	-
	-	-	-	-	25.0%	-
Grinding slab	-	-	-	1	-	-
	-	-	-	14.3%	-	-
Pestle	-	-	-	-	1	-
	-	-	-	-	12.5%	-
Mortar	-	1	-	-	-	-
	-	33.3%	-	-	-	-
Shaped slab	-	-	4	-	-	-
	-	-	33.3%	-	-	-
Stone ball	-	1	-	1	1	-
	-	33.3%	-	14.3%	12.5%	-
Cobble with pigment	-	-	-	1	-	1
	-	-		14.3%	-	100.0%
Subtotals	1	3	12	7	8	1
Other						
Hammerstone	-	-	-	-	-	1
	-	-	-	-	-	33.3%
Unidirectional chopper	-	-	-	-	-	1
	-	-	-	-	-	33.3%
Bidirectional chopper	-	-	-	-	-	1
	-	-	-	-	-	33.3%
Anvil	-	-	1	5	-	-
	-		100.0%	83.3%	-	-
Abrader	-	-	-	1	-	-
	-	-	-	16.7%	-	-
Subtotal	-	-	1	6	-	3
Total ground stone	1	3	14	13	8	3
	2.4%	7.1%	33.3%	30.9%	19.0%	7.1%

Table 13.65. Summary of Structure 50 Fauna

	Wind/Water deposits		Roof and Closing		Floor Fill and Contact		Features with Occupational Fill		Sealed Features		Vent Shaft		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal/med-lrg bird	1	0.3%	5	1.3%	2	1.4%	1	0.4%	-	-	-	-	9	0.6%
Small mammal	55	14.4%	48	12.2%	27	19.3%	84	31.1%	44	26.8%	8	14.0%	266	18.9%
Small-medium mammal	3	0.8%	2	0.5%	1	0.7%	6	2.2%	-	-	-	-	12	0.9%
Medium-large mammal	17	4.4%	8	2.0%	4	2.9%	3	1.1%	2	1.2%	4	7.0%	38	2.7%
Large mammal	33	8.6%	38	9.7%	4	2.9%	24	8.9%	1	0.6%	-	-	100	7.1%
Small squirrels	-	-	1	0.2%	-	-	-	-	-	-	-	-	1	0.1%
Gunnison's prairie dog	-	-	-	-	-	-	1	0.4%	-	-	-	-	1	0.1%
Botta's pocket gopher	1	0.3%	2	0.5%	-	-	1	0.4%	1	0.6%	-	-	5	0.4%
Yellow-faced pocket gopher	4	1.0%	5	1.3%	5	3.6%	5	1.9%	-	-	-	-	19	1.4%
Pocket mice	-	-	-	-	-	-	4	1.5%	1	0.6%	-	-	5	0.4%
Ord's kangaroo rat	-	-	1	0.2%	-	-	-	-	1	0.6%	-	-	2	0.1%
Banner-tailed kangaroo rat	3	0.8%	1	0.2%	-	-	1	0.4%	-	-	-	-	5	0.4%
Peromyscus sp.	-	-	1	0.2%	1	0.7%	-	-	2	1.2%	1	1.8%	6	0.4%
Woodrats	-	-	1	0.2%	1	0.7%	10	3.7%	10	6.1%	-	-	22	1.6%
White-throated woodrat	-	-	-	-	1	0.7%	-	-	2	1.2%	-	-	3	0.2%
Mexican woodrat	-	-	-	-	-	-	2	0.7%	-	-	-	-	2	0.1%
Large woodrat	-	-	-	-	-	-	5	1.9%	1	0.6%	-	-	6	0.4%
Small rodent	-	-	-	-	-	-	-	-	1	0.6%	-	-	1	0.1%
Medium-large rodent	1	0.3%	-	-	1	0.7%	10	3.7%	2	1.2%	-	-	14	1.0%
Desert cottontail	73	19.1%	116	29.5%	44	31.4%	53	19.6%	66	40.2%	20	35.1%	372	26.4%
Black-tailed jackrabbit	50	13.1%	28	7.1%	12	8.6%	26	9.6%	18	11.0%	4	7.0%	138	9.8%
Medium artiodactyl	112	29.2%	100	25.4%	24	17.1%	25	9.3%	5	3.0%	11	19.3%	277	19.7%
Large artiodactyl	-	-	15	3.8%	1	0.7%	-	-	-	-	-	-	16	1.1%
Deer or elk	-	-	2	0.5%	-	-	-	-	-	-	-	-	2	0.1%
Mule deer	10	2.6%	7	1.8%	8	5.7%	2	0.7%	-	-	7	12.3%	34	2.4%
Pronghorn	16	4.2%	8	2.0%	1	0.7%	4	1.5%	1	0.6%	-	-	30	2.1%
Bison	-	-	-	-	1	0.7%	-	-	-	-	-	-	1	0.1%
Bighorn sheep	-	-	1	0.2%	-	-	-	-	-	-	2	3.5%	3	0.2%
Flicker	-	-	-	-	1	0.7%	-	-	-	-	-	-	1	0.1%
Horned lark	-	-	-	-	-	-	1	0.4%	2	1.2%	-	-	3	0.2%
Passeriformes	-	-	-	-	-	-	2	0.7%	-	-	-	-	2	0.1%
Nonvenomous snakes	4	1.0%	3	0.8%	-	-	-	-	-	-	-	-	7	0.5%
Great plains toad	-	-	-	-	-	-	-	-	2**	1.2%	-	-	2	0.1%
Red spotted toad	-	-	-	-	-	-	-	-	1*	0.6%	-	-	1	0.1%
Northern leopard frog	-	-	-	-	-	-	-	-	1*	0.6%	-	-	1	0.1%
Total	383	100.0%	393	100.0%	140	100.0%	270	100.0%	164	100.0%	57	100.0%	1407	100.0%
Fetal, neonate	-	-	-	-	-	-	1	0.4%	-	-	1	1.8%	2	0.1%
Immature (1/2-2/3 grown)	3	0.8%	1	0.2%	1	0.7%	-	-	3	1.8%	1	1.8%	9	0.6%
Burned	225	58.7%	215	26.1%	77	55.0%	100	37.0%	11	6.7%	30	52.6%	658	46.8%
Complete	15	3.9%	17	4.3%	11	7.9%	13	4.8%	9	5.5%	7	12.3%	72	5.1%
>75% complete	12	3.1%	10	2.5%	6	4.3%	11	4.1%	15	9.1%	1	1.8%	55	3.9%
50-75% complete	12	3.1%	20	5.1%	13	9.3%	16	5.9%	15	9.1%	6	10.5%	82	5.8%
25-50% complete	20	5.2%	22	5.6%	14	10.0%	15	5.6%	13	7.9%	6	10.5%	90	6.4%
<25% complete	324	84.6%	324	82.4%	96	58.6%	215	79.6%	112	68.3%	37	64.9%	1108	78.7%

* denotes a complete or partial skeleton counted as one element

older but still growing, late summer, fall, and into winter. The deer cranium with antler in the process of detaching left on the floor of the structure can be fairly precisely placed in regards to season. Since antler is shed in January and February, this animal was killed shortly before shedding and indicates a winter kill (Mackey et al. 1982:865). However, this part could have been curated for any amount of time before its use as a closing item. The placement of toads and a frog in a sealed pit suggest the pit was sealed during the rainy season—probably late summer. Animals that were likely to be trapped in fields, such as horned larks and jays, could suggest deposition during the growing season, as would some hibernating species.

Bone tools, fragments of tools, and manufacturing debris were found throughout (n = 33). Most were found in the upper fill (wind and water, n = 10; and roof and closing, n = 9) and fill on and just above the floor (n = 8). Small fragments of tools and manufacturing debris are the most common items. The excep-

Table 13.66. LA 6170, Structure 50 Fill, Seeds and Fruits (frequency per liter)

	Roof and Closing	Floor Fill and Contact
	NE Quadrant	SE Quadrant
Cultural		
Annuals		
Amaranthus	-	1.5
Chenopodium	-	94.8
Cheno-am	1	-
Cycloloma	-	1.5
Perennials		
Cylindropuntia	-	3
Cultivars		
Zea mays	-	103.7
Non-cultural		
Annuals		
Chenopodium	0.5	-
Euphorbia	3.5	62.2
Portulaca	1	-
Perennials		
Lithospermum	1	-
Grasses		
Sporobolus	1	-

tions are a fine and a coarse point awl from the wind and water deposits; three partial awls and two bead or tube fragments from the roof and closing component; a bead or tube fragment and a fine point awl from the floor fill and contact; four small tool fragments from open pits, and two spatulate objects that are possible weaving tools from a sealed pit.

Macrobotanical and flotation samples (Tables 13.66–13.69) consistently produced corn parts, a variety of wood, and wild plant seeds. Unique finds include burned mountain mahogany wood in the roof and closing layer, cholla seeds on the floor, and yucca fiber. A pollen sample from the floor in the northeastern quadrant contained little pollen with only piñon pine, cheno-ams, cholla, and corn represented. A sample from the southwestern quadrant contained even less pollen with only grass, cheno-am, and *Ephedra* represented. The two posthole samples had the highest concentrations of pollen. Feature 160, the main northwest post support had high amounts of corn pollen while that from the southeast post support, Feature 173, contained no corn but large amounts of cheno-am pollen. None of the storage pits contained much in the way of pollen

Table 13.67. LA 6170, Structure 50 Fill (abundance per liter)

		Wind/Water Deposits	Roof and Closing		Floor Fill and Contact	
Quadrant	Plant part	NE	SW	NE	NE	SE
		Cultural				
Perennials						
Juniperus	Twig	-	-	-	-	+
Yucca	Leaf	-	+	-	-	+
Unknown taxon	Wood	-	-	-	-	-
Grasses						
Gramineae	Stem	-	-	-	-	+
Monocot	Stem	+	+++	-	-	+++
Phragmites	Stem	-	-	+	+	-
Cultivars						
Zea mays	Cupule	+	+	+	+	+
	Glume	-	+	-	-	++
	Unknown reproductive	-	-	-	-	+++
	Cob	-	-	-	-	+

+ less than 10, ++ 11-25, +++ 25-100, ++++ more than 100

Table 13.68. LA 6170, Structure 50 Fill, Wood from Flotation Samples by Weight

	Wind/Water Deposits	Roof and Closing		Floor Fill and Contact	
Quadrant	NE	SW	NE	NE	SE
	Cultural				
Perennials					
Cercocarpus	-	.10g	-	-	-
Juniperus	.10g	-	.04g	.04g	-
Pinus edulis	.04g	-	-	-	-
Salicaceae *(Populus/Salix)*	.20g	.40g	1.10g	1.00g	4.70g
Non-coniferous wood	-	-	.04g	-	-
	Possibly Cultural				
Perennials					
Juniperus	.70g	-	-	-	-

Table 13.69. LA 6170, Structure 50 Fill, C-14 and Macrobotanical Samples (count and weight)

	Plant Part	Overburden	Wind/Water Deposits	Roof and Closing	Floor Fill and Contact	Vent Shaft Fill
			Cultural			
C-14						
Perennials						
Salicaceae *(Populus/Salix)*	Wood	-	-	1/.06g	8/.40g	-
Wood						
Perennials						
Unidentifiable		-	-	-	-	6/.50g
Salicaceae *(Populus/Salix)*	Wood	-	-	-	5/.20g	-
Cultivars						
Zea mays	Cupule	-	8/.20g	-	13/.20g	-
	Glume	-	28/.10g	-	-	-
	Cob	2/.30g	3/1.10g	4/5.00g	18/14.50g	2/.30g
	Kernel	-	-	-	91/9.90g	-
Wild plant						
Perennials						
Unknown taxon	Stem	-	-	-	2/.13g	-
Grasses						
Monocot	Leaf	-	-	-	2/.04g	-
	Stem	-	-	1/2.50g	-	-
			Non-cultural			
Perennials						
Phragmites	Stem	-	-	30/2.79g	-	-
Celtis	Seed	-	-	-	1/.04g	-

Table13.70. Distribution of Shell and Minerals in Structure 50 at LA 6170

	Overburden	Wind/Water Deposits	Roof Fall and Closing	Floor Fill and Contact	Features with Occupational Fill	Sealed Features	Vent Shaft Area
Olivella shell	1	1	-	1	1	-	-
Unworked *Anodonta californiensi*	-	1	9	-	7	5	1
Worked *Anodonta californiensi*	-	-	1	-	-	2	-
Turquoise pendant	-	-	-	-	1	-	-
Worked turquoise	-	-	2	1	3	3	1
Unworked turquoise	-	-	-	-	3	-	3
Red ochre	-	-	-	1	1	-	-
Other mineral	-	-	-	-	-	2	-
Total	1	2	12	3	16	12	5

with pine, cheno-am, composite, and corn pollen most consistently found. None occurred in large enough quantities to suggest what was stored in these pits.

Shell, turquoise, and minerals (Table 13.70) that are often considered to be offerings were more numerous than in Structure 5. Shell was found in all of the fill units with larger numbers in the roof fall and closing material and the sealed features. Turquoise was most numerous in pits with occupational fill followed by roof fall and closing and sealed feature proveniences. Unlike Structure 5, pigment minerals were relatively rare.

Extramural Areas

Excavations not involving structures are described by Area or SU. So few features were found in Area 1 that these are all considered together. The general methods, strategy, hand-excavated units, and features are described below.

SU 1 to 4 were assigned to Area 1, however, all but SU 3 (Fig. 13.74) were given to structures. East of NM 22, or Area 2, was assigned SU 10 to 17. SU 10 is Structure 50 and the immediate area. SU 11 was ultimately combined with SU 15 and SU 16 with SU 17 when it became clear there was no reason to separate these areas.

Area 1. Hand excavations in Area 1 were generally limited to the initial pits defining stratigraphy and those investigating stains (Table 13.71). Few extramural features were encountered (Table 13.72) even though the project area between 89N and 123N was thoroughly scraped twice with hand scraping and sweeping between the scrapes. Surface ceramics from Area 1 were largely Northern Rio Grande Plain and Corrugated (n = 14) and Middle Rio Grande Plain (n = 20). The only identifiable painted wares were two San Marcial Black-on-white sherds.

Feature 3. This small pit or possible posthole (Fig. 13.75) was found in a grid excavated while defining Structure 2 (see Fig. 13.19). Other grids at the periphery of the structure were excavated equally deep without finding postholes so it is difficult to speculate whether this one was associated with the structure. Fill was compact eolian fill, probably BP. No artifacts were recovered from this feature and no samples were collected.

Feature 4. This large cobble-filled thermal pit (Fig. 13.75) was found during hand excavations of grids investigating a dark stain revealed by the main north-south backhoe trench. Basin shaped, the base of the pit was lined with cobbles. Fill was black (10YR 2/1) silty loam with cobbles, fire-cracked rocks, and a heat spall. Pollen, flotation, and radiocarbon samples were collected as well as a core of heat-treated chert and possible ground stone, neither of which was included in the lithic analysis.

A total of ten ceramics were found in (n = 2) and around (n = 8) Feature 4. These include two Northern Rio Grande Plain Corrugated, one Middle Rio Grande Plain, and seven Middle Rio Grande Plain body sherds. All but one are from jars; the exception is a rim sherd from an indeterminate vessel. No fauna was recovered. The flotation sample contained a burned corn cupule and partially burned (1.7/liter) and unburned (9.7/liter) goosefoot seeds and small amounts of juniper (0.51 g) and conifer (0.37 g) wood.

Feature 41. This rock pile (Fig. 13.76), lying just north of Structure 5, was uncovered during the backhoe scrape. Once it became apparent that there was a mass of cobbles, hand excavations in 10 cm levels defined the pile. Fill in and around the cobbles was the general site BP stratum containing few artifacts. Some of the stones exhibit slight grinding and a good portion (between 15 and 20 percent) were heat spalled. Although there was no apparent selection for material or size, most cobbles were over 20 cm in size and most lay flat, as if placed. This deliberate cache of stone was high in the fill (100.36 to 100.13 mbd), slightly lower than the Structure 1 foundation top (around 100.50 mbd) and considerably higher than the preserved portion of the north wall of Structure 5 (about 99.80 mbd).

Few artifacts were recovered from Feature 41. Corrugated ceramics (Table 13.73) in the fill around the cobbles suggest a relatively late

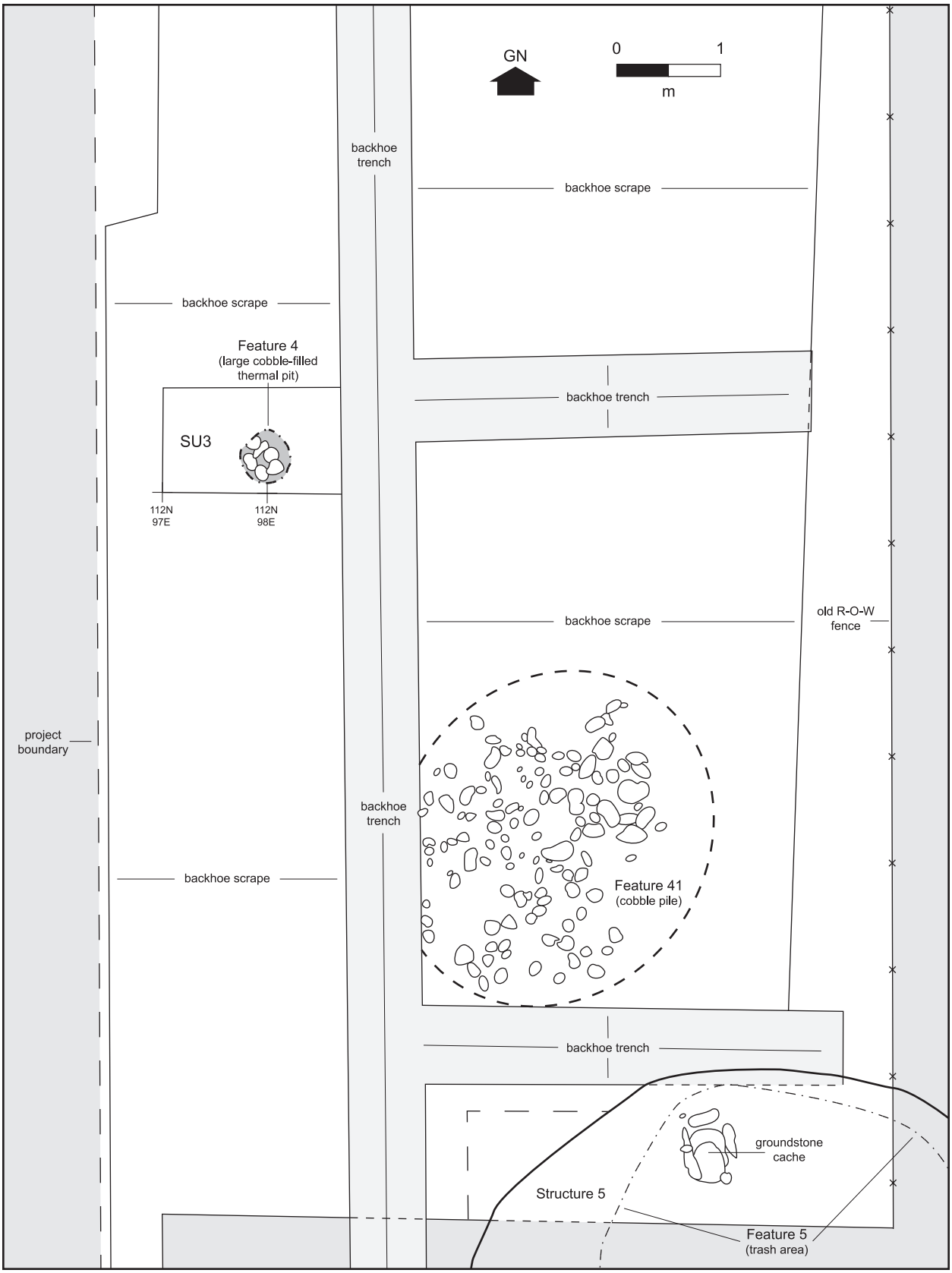

Figure 13.74. Plan of north halfof Area 1 at LA 6170 showing SU 3 and Features 4 and 41.

Table 13.71. Hand-Excavated Units in Area 1 at LA 6170

Location	No. of Levels	Beginning and Ending Elevations (mbd)	Stratum	Comments
67N/99E	1	99.26 - 99.12	BP	Investigating stain
69N/91E	4	98.61 - 98.21	D, BP, BCS	Placed in an area previously identified as the location of a structural depression; sterile at 98.30; no artifacts below Level 1; auger test to 97.51
79N/94E	6	99.50 - 98.91	D, BP, BCS	Defining site stratigraphy; sterile at 99.40; auger to 97.83
79N/95E	1	99.51 - 99.45	D, BP	
112N/97E	8	100.25 - 99.38	D, BP, BCS	SU 3; investigating stain
112N/98E	10	100.24 - 99.43	D, BP	SU 3; investigating stain; located Feature 4; yellow ochre found in Levels 7-9
114N/91E	5	99.98 - 99.41	D, BP	Defining site stratigraphy
150N/100E	5	97.60 - 97.19	sand, BCS	North end of site area; BCS at 97.20; auger to 96.64

D = duff; BP = sandy clay loam and pumice, no cultural material; BCS = compact sandy clay, no cultural material

Table 13.72. LA 6170, Area 1 Extramural Features

Feature	Center	Type	Dimensions (LWDepth in cm)	Beginning Elevation (mbd)	Comments
3	92.30N/101.25E	Small pit	18 x 17 x 22	99.54 - 99.30	Southwest edge of Structure 2; BP
4	112.35N/98.04E	Large cobble-filled thermal pit	52 x 43 x 17	99.97 - 99.80	Burned; dark silty loam with pumice; 4 cobbles, 9 fire-cracked rocks, and 2 ground stones in fill
41	108.50N/100.70E	Cobble pile	270 x 250 x 23	100.36 - 100.13	Deliberate pile of cobbles; some heat spalled
43	101.17N/102.35E	Large cobble-filled thermal pit	62 x 61 x 9	100.08 - 99.99	Just south of Structure 5

Table 13.73. Ceramic Types and Vessel Forms Recovered from Feature 41 at LA 6170

Type or Form	Count	Percent
Northern Rio Grande		
Plain	4	22.2
Indented Corrugated	2	11.1
Plain Corrugated	2	11.1
Smeared Plain Corrugated	2	11.1
Smeared Indented Corrugated	1	5.6
Middle Rio Grande		
Plain	6	33.3
Mineral paint (undifferentiated)	1	5.6
Bowl	0	-
Jar	18	100.0
Total sherds	18	100.0

date (post-AD 1000) for at least some of the fill. Proportions of Northern and Middle Rio Grande utility wares are most similar to that of the Structure 5 overburden, again indicating that it is a relatively late accumulation. Lithic artifacts were not analyzed but a small sample of 29 was recovered. No fauna was found. Two of the stones are ground stone artifacts, one a rhyolite grinding slab and the other a rhyolite handstone.

Feature 43. This large cobble-filled thermal pit (Fig. 13.75) was exposed by the backhoe-scrape south of Structure 5 (see Fig. 13.23). Just over a meter south of the structure wall, it was higher than the wall tops and may be associated with either Structure 5 or Structure 5A. It is also higher and slightly beyond Feature 5, the stain and cache of ground stone in the Structure 5 depression.

The pit was shallow, circular, and basin-shaped. Eight cobbles rimmed the walls and base with fill that was essentially BP; dispersed charcoal gave it a slight gray color. No artifacts were found and a pollen sample was collected.

SU 12. The area south of Structure 50 and east of the main north-south backhoe trench and

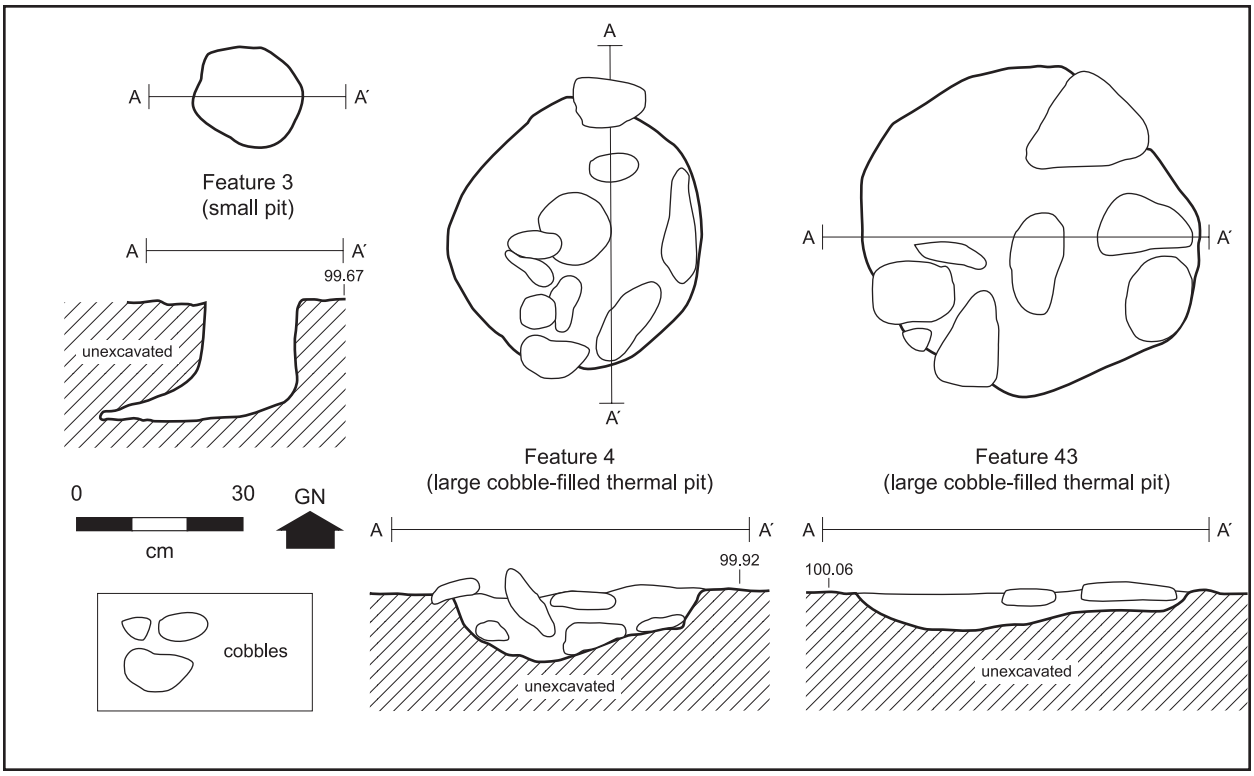

Figure 13.75. Plans and profiles of Area 1, Features 3, 4, and 43.

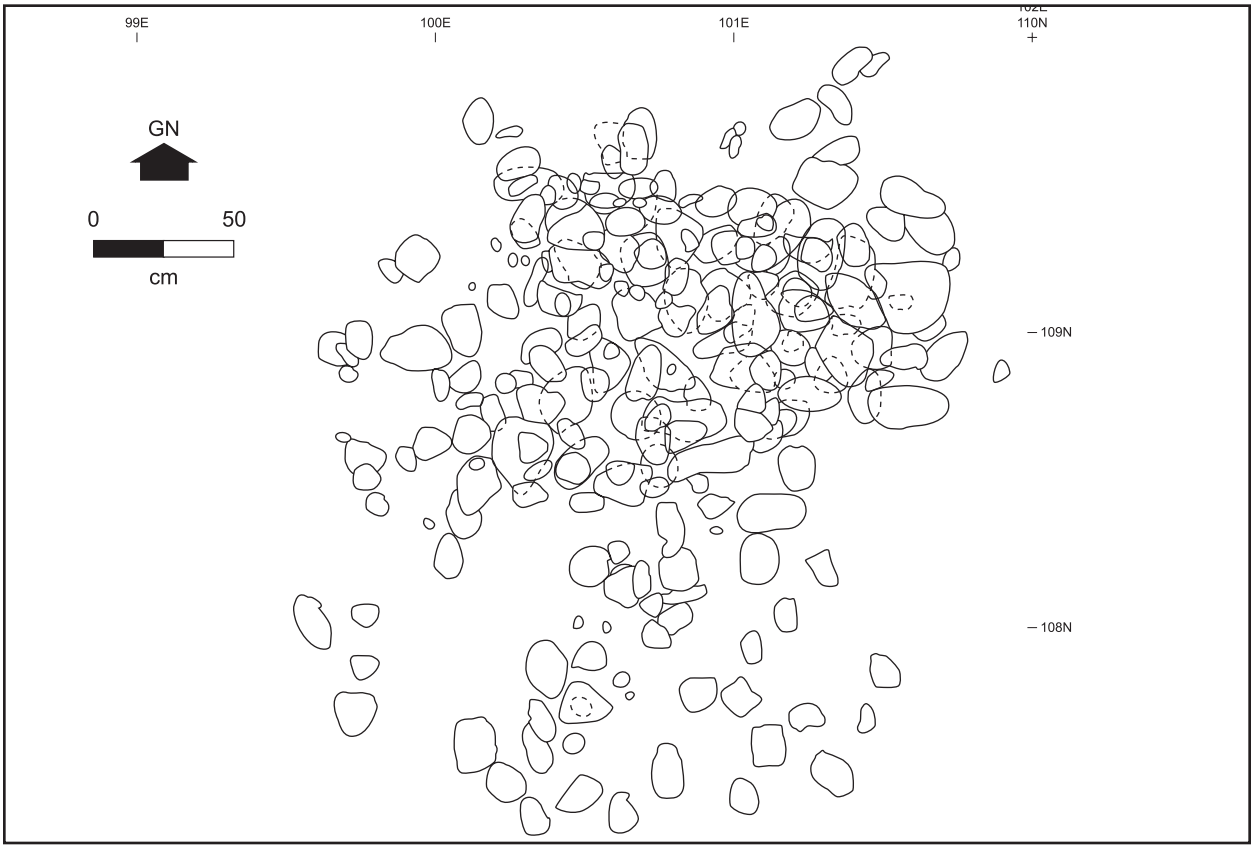

Figure 13.76. Plan of Feature 41 in Area 1, rock concentration.

Table 13.74. Hand-Excavated Units in SU 12 of Area 2 at LA 6170

Location	No. of Levels	Beginning and Ending Elevations (mbd)	Strat	Comments
107N/146E	1	100.55-100.49	D, BP	(1 x 1); defining Feature 53
107N/147E	1	100.57-100.50	D	(1 x 1); defining Feature 53
108N/146E	3	100.68-100.51	D, BP	(2 x 1); defining Feature 53
108N/147E	3	100.70-100.56	D, BP	(2 x 1); defining Feature 53
108N/148E	3	100.70-100.47	D, BP	(2 x 1); east of Feature 53

Table 13.75. LA 6170, SU 12 Features

Feature	Center	Type	Dimensions (LWDepth in cm)	Beginning and Ending Elevations (mbd)	Comments
53	108.40N/147.50E	Large cobble-lined thermal pit	117 x 110 x 18	100.40 - 100.22	Dark charcoal stained fill containing 52 cobbles and fire-cracked rocks
69	110.30N/145.5E	Storage pit	top: 72 x 80 x 1.27; base: 134 x 140	100.27 - 99.00	Bell shaped; DC to 99.63; 10 cm compact silty clay (10YR 3/6); silty loam with charcoal (10YR 3/6)
83		Small pit	19 x 16 x 6	98.05 - 97.99	Pit in base of storage pit 69; fill was the same as lower pit fill
73	105.83N/144.74E	Small pit	24 x 25 x 6	100.03 - 99.97	DC
81	103.37N/145.70E	Large stain	100 x 75 x 4	99.90 - 99.86	Dark gray charcoal laden silt
82	106.57N/145.54E	Posthole	8 x 8 x 7	99.97 - 99.90	DC and burned wood
84	106.50N/145.68E	Small pit	13 x 10 x 4	100.08 - 100.04	MDC
91	105.95N/145.54E	Small pit	20 x 17 x 5	99.85 - 99.80	MDC
92	111.40N/147.10E	Small pit	20 x 20 x 9	100.29 - 100.20	DC; rodent burrow or rodent disturbed
93	105.58N/145.70E	Small pit	18 x 17 x 7	100.00 - 99.93	MDC
96	105.55N/144.65E	Small pit	22 x 20 x 6	99.83 - 99.77	MDC
97	106.95N/144.58E	Small pit	20 x 16 x 10	99.87 - 99.77	DC
98	101.50N/145.40E	Small pit	34 x 37 x 26	99.63 - 99.37	MDC
100	106.00N/144.58E	Small pit	19 x 19 x 10	99.92 - 99.82	DC
101	104.34N/145.17E	Small pit	18 x 14 x 4	99.87 - 99.83	MDC

the SU 15 midden stain is SU 12 (Fig. 13.77). With the exception of Feature 53, which was discovered by the backhoe trench and exposed by hand-excavated grids (Table 13.74), the SU 12 features (Table 13.75) were uncovered while scraping the area with the backhoe. An initial scrape exposed a higher series of features (Features 69, 73, 81, 82, and 84), which were excavated and recorded before another scrape revealed the remaining features. All manifest as areas of dark (DC or MDC) fill without discernable use surfaces. While it is possible that these features are associated with Structure 50, there could also be additional structures just to the east, outside the project area. It is also possible that these are part of the line of postholes found in SU 15. An eroded depression from an old road or bar ditch cut between 139 and 146E in this area could have removed some of the higher elevation features.

Feature 53. Unique for this site, this large roasting pit (Figs.13.78 and 13.79) was slightly cut by a backhoe trench near the east edge of the project area. Hand-excavated grids removed 10 to 20 cm of lightly stained DC soil before exposing a dark stain and a scatter of cobbles above the pit walls. Pit fill was dark silt with abundant powdered charcoal, heat spalls, and cobbles. Walls were lined with cobbles and the fill contained two layers of cobbles as well as the scatter of cobbles and ground stone overlying the pit. Walls were well oxidized but contained too many small rocks for the archaeomagnetic sample to date.

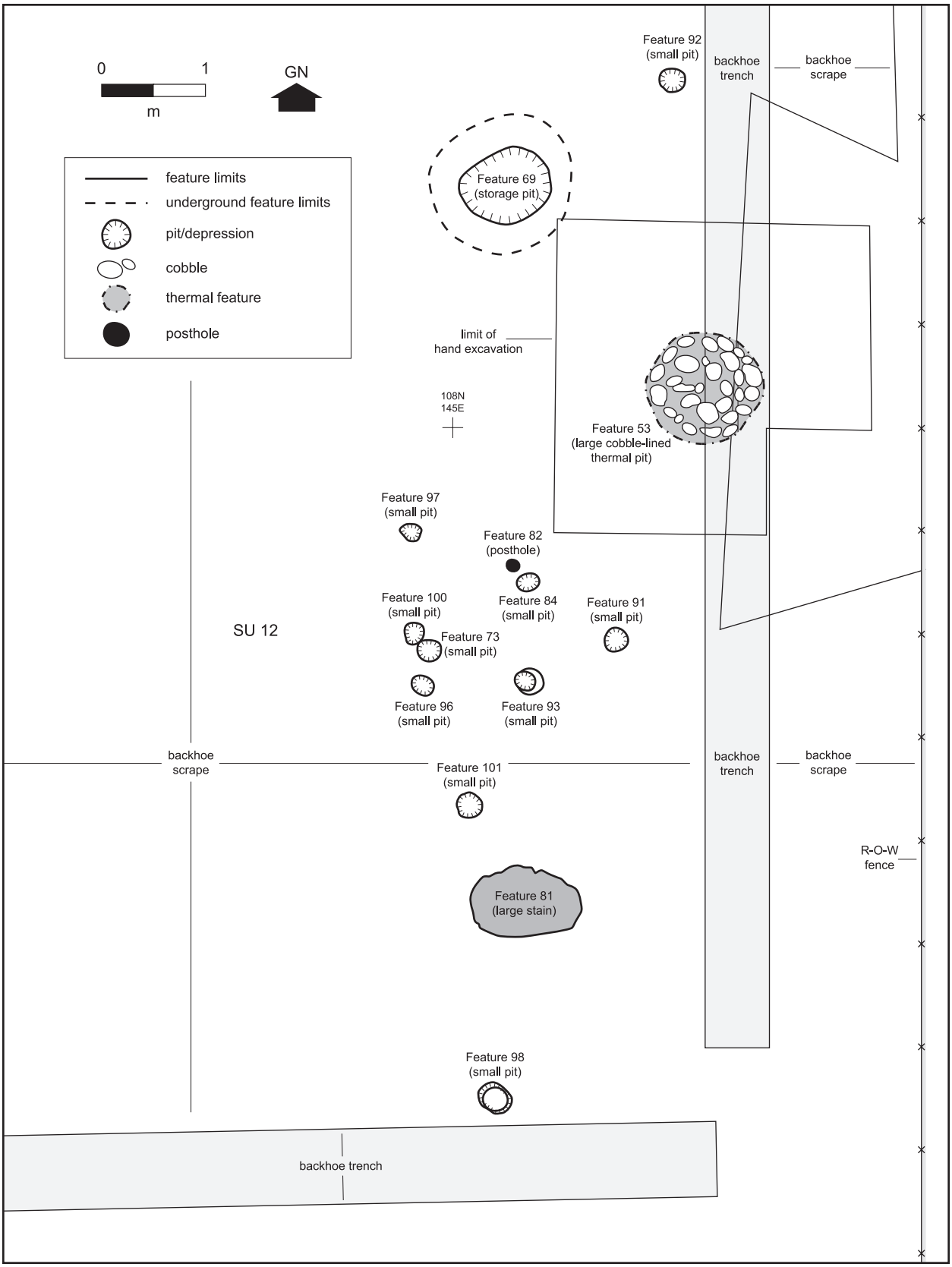

Figure 13.77. Plan of SU 12 at LA 6170.

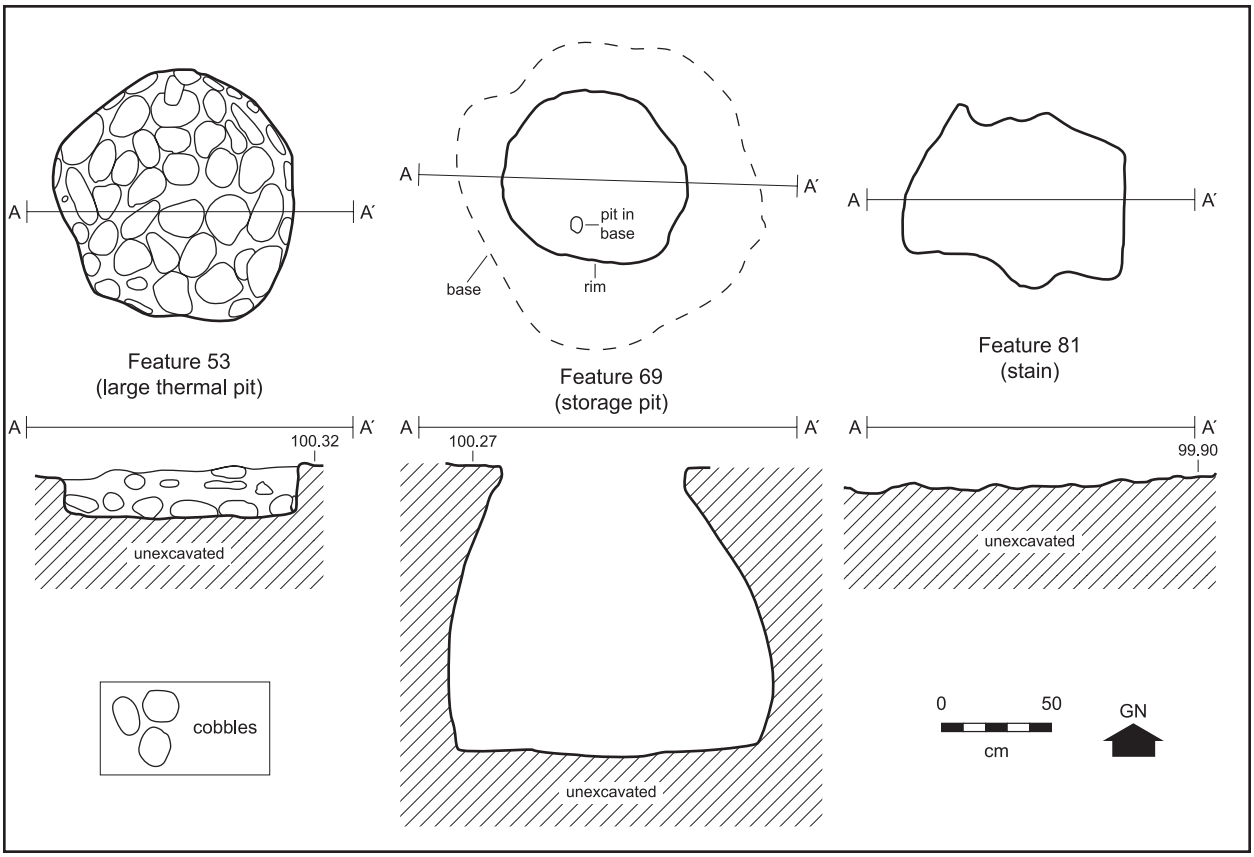

Figure 13.78. SU 12, large features, plan and profile.

Figure 13.79. SU 12, Feature 53.

Few ceramics were recovered (Table 13.76). All but one, a San Francisco Red jar sherd, are Middle Rio Grande Plain jar sherds. Lithic artifacts are largely flakes and angular debris of chalcedony and chert (Table 13.77). A single bone was found, a lightly burned long bone shaft fragment from a medium-sized artiodactyl. Flotation and macrobotanical samples (Tables 13.78–13.81) collected from between the cobble layers and at the base of the pit contained mostly juniper wood with a single piece of *Populus/Salix* wood, burned goosefoot seeds, and corn cobs and cupules.

Feature 69. Also unique for LA 6170 is this large bell-shaped pit (Fig. 13.78) located less than 2 m northwest of Feature 53. It initially appeared as a fairly small and subtle stain. The uppermost fill was 30 cm of exposure-hardened silty clay overlying 10 cm of a less compact but similar fill with less charcoal and few artifacts. Beneath this and continuing to the base of the pit was a softer trash fill. On the floor of the pit was a pile of seven cobbles with six additional cobbles and a core scattered on the bottom. A small pit in the south half of the pit floor (Feature 83) contained no artifacts.

The small artifact assemblage from this feature includes 19 ceramics, 18 Middle Rio Grande Plain jar sherds and an Alma Plain jar sherd. Lithic artifacts (n = 45) are mainly flakes with a considerable amount of nonvesicular material (Table 13.82). Edge use on the utilized flake and piece of angular debris indicates both cutting and scraping on a hard material. Fauna (Table 13.83) is equally abundant (n=45). Skeletons of two Mexican woodrats, five toads, and multiple elements from a juvenile Ord's kangaroo rat and a juvenile large woodrat are

Table 13.76. Ceramic Types Recovered from LA 6170, SU 12 Features

Ceramic type	Feature 53	Feature 69	Feature 92	Feature 100	Total
Middle Rio Grande Plain	52	18	2	3	75
	98.1%	94.7%	100.0%	100.0%	97.4%
San Francisco Red	1	-	-	-	1
	1.9%	-	-	-	1.3%
Alma Plain	-	1	-	-	1
	-	5.3%	-	-	1.3%
Jar	53	19	2	3	77
	100.0%	100.0%	100.0%	100.0%	100.0%
Totals	53	19	2	3	77
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13.77. Lithic Type and Material for LA 6170, SU 12, Feature 53

	Chalcedony		Quartzite		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	2	25.0	1	12.5	3	37.5	2	25.0	-	-	8	21.1
Flake	13	48.1	-	-	12	44.4	1	3.7	1	3.7	27	71.1
Tested Rock	-	-	-	-	-	-	-	-	1	100.0	1	2.6
Utilized Core Frag	-	-	-	-	-	-	-	-	1	100.0	1	2.6
Flake, Marg Retouch	-	-	-	-	-	-	-	-	1	100.0	1	2.6
Total	15	39.5	1	2.6	15	39.5	3	7.9	4	10.5	38	100.0

Table 13.78. LA 6170, SU 12, Fruits and Nuts (frequency per liter)

	Thermal Pit F. 53		Bell-Shaped Pit F. 69
	Between Cobbles	Base	Base
Cultural			
Annuals			
Chenopodium	-	1.3	-
Cultivars			
Zea mays	-	-	0.9
Non-cultural			
Annuals			
Chenopodium	8.5	0.6	-
Euphorbia	1	1.3	-
Portulaca	-	1.9	-
Grasses			
Sporobolus	1	-	-

Table 13.79. LA 6170, SU 12, Other Plant Parts (abundance per liter)

		Thermal Pit F. 53	Bell-Shaped Pit F. 69	
		Between Cobbles	Base	Upper Fill
Cultural				
Perennials				
Yucca	Leaf	-	+	-
Cultivars				
Zea mays	Cupule	+	++	+
	Glume	-	+	-
	Cob	-	+	-

+ less than 10, ++ 11-25, +++ 25-100

Table 13.80. LA 6170, SU 12, Wood from Flotation Samples by Weight

	Thermal Pit Feature 53		Bell-Shaped Pit Feature 69
	Between Cobbles	Base	FS 2403
Cultural			
Perennials			
Juniperus	.30g	.40g	.04g
Salicaceae *(Populus/Salix)*	-	.10g	.50g
Sarco/Atriplex	-	-	.04g

Table 13.81. LA 6170, SU 12, Macrobotanical Samples (count and weight)

		Bell-Shaped Pit F. 69	Stain Feature 81
Possibly Cultural			
Perennials			
Juniperus	Wood	-	29/10.10g
Cultivars			
Cultural			
Zea mays	Cob	4/1.40g	-
Non-cultural			
Perennials			
Celtis	Seed	3/.10g	-

Table 13.82. Lithic Type and Material for LA 6170, SU 12, Feature 69

	Chalcedony		Quartzite		Chert		Jemez Obsidian		Nonvesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular debris	-	-	-	-	1	100.0	-	-	-	-	-	-	1	2.2
Flake	10	27.8	1	2.8	7	9.4	2	5.6	16	44.4	-	-	36	80.0
Core, multiplatform	-	-	-	-	-	-	-	-	3	75.0	1	25.0	4	8.9
Angular debris, utilized	-	-	-	-	-	-	-	-	1	100.0	-	-	1	2.2
Flake, utilized	-	-	-	-	-	-	-	-	1	100.0	-	-	1	2.2
Flake, marginal retouch	1	50.0	-	-	-	-	-	-	1	50.0	-	-	2	4.4
Table Total	11	24.4	1	2.2	8	17.8	2	4.4	22	48.9	1	2.2	45	100.0

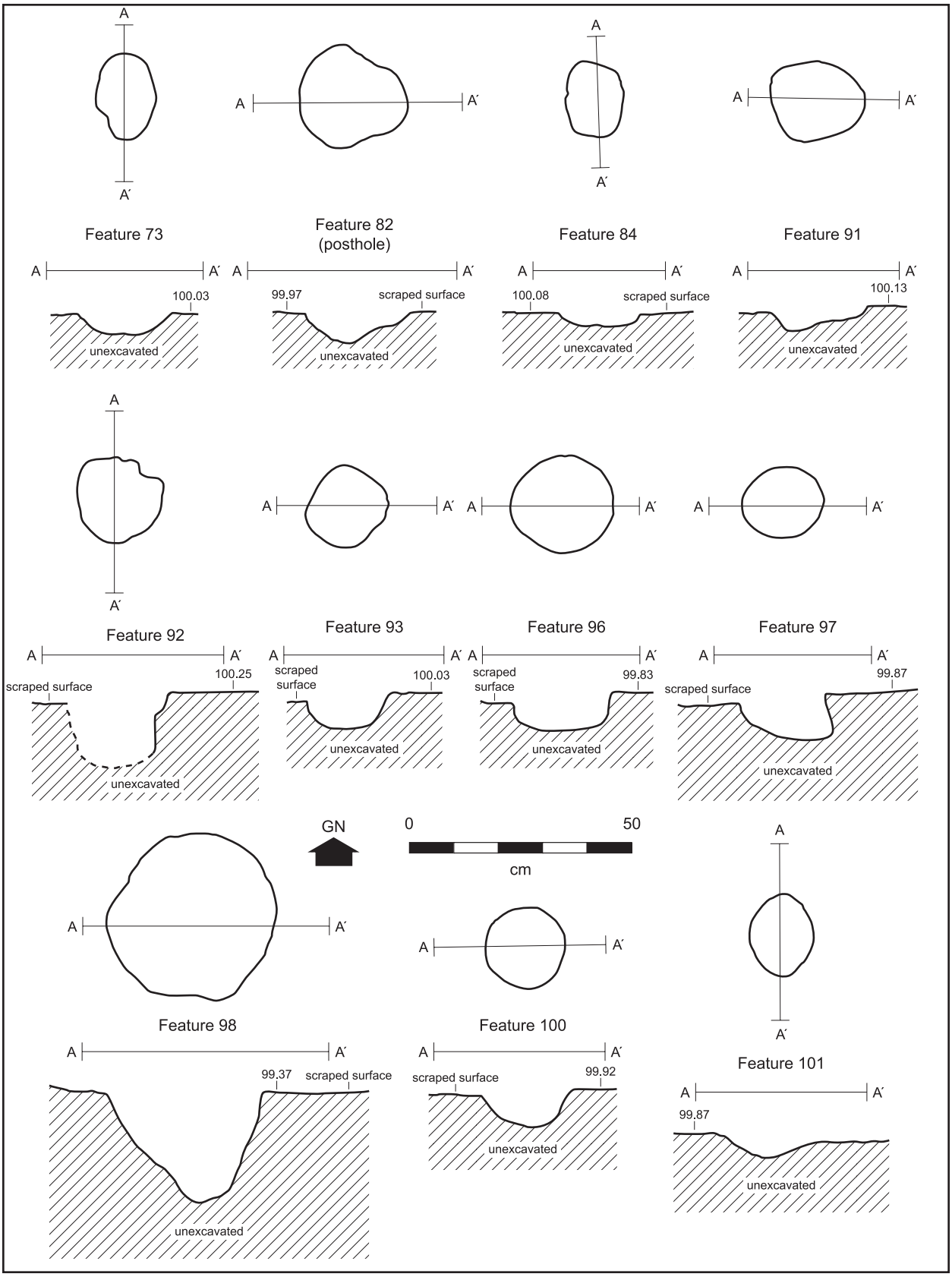

Figure 13.80. SU 12 small pits and postholes (Features 73, 82, 84, 91, 92, 93, 96, 97, 98, 100, 101).

Table 13.83. Fauna Recovered from LA 6170, SU 12 Feature 69, Bell-Shaped Storage Pit

	N	No of Skeletons	No. Burned	No. Immature/ Juvenile
Unknown small	2	-	-	0/2
Small mammal	3	-	2	-
Small-medium mam.	1	-	-	-
Large mammal	3	-	1	-
Ord's kangaroo rat	11	-	1	2/9
Mexican woodrat	2	2	-	0/2
Large woodrat	7	-	-	0/6
Small rodent	1	-	-	-
Desert cottontail	2	-	-	-
Black-tailed jackrabbit	4	-	1	-
Medium artiodactyl	1	-	-	-
Mule deer	1	-	-	0/1
Nonvenemous snake	1	-	-	1/0
Plains or Woodhouse's toad	3	1	-	0/3
Red-spotted toad	1	1	-	0/1
Woodhouse's toad	2	2	-	2/2
Totals	45	6	5	5/26

probably from animals that became trapped in or were thrown into the pit. Little of the bone was burned and unidentifiable suggesting that a minority was trash washed into or deposited in the pit. A good many of the animals were immature or juvenile indicating they became trapped in summer or early fall.

Flotation and macrobotanical samples (Tables 13.78–13.81) contained mainly corn cupules along with a variety of wood. A pollen sample from the base of the pit contained a good concentration of pollen. Pine, juniper, and spruce were present in small amounts, cheno-ams were low, grasses low, composites high, sagebrush low to moderate, corn high, and wild buckwheat, cholla, and globe mallow were present. Fir and evening primrose pollen were present at low magnification. While corn may be the primary plant stored in this pit, other plants were stored as well (Chapter 24).

Feature 81. This dark, almost black stain was no more than a stain, probably a low spot where charcoal settled producing a stain. The only material collected was pieces of juniper wood (Table 13.81).

Feature 98. The farthest south of the SU 12 features, this small pit is slightly larger than the other small pits (Fig. 13.80). Fill was the usual MDC soil with fine colluvial gravel at the base. The lower portion of the pit was excavated into a sand-filled channel and had less integrity. A lithic and a piece of ground stone were found in the fill.

Small Pits and Postholes. The rest of the features from this study unit (see Table 13.75) are small, non-descript pits. These are round to slightly ovoid in plan (Fig. 13.80) with straight to sloping sides. All could have had more depth but were exposed in backhoe scrapes that probably removed the upper portions of the pit walls. Only one (Feature 82) contained burned wood confirming it was a posthole. Since Feature 82 differs little in form or size from the other small pits, it is quite likely the rest are also postholes. Two small pits contained artifacts: Feature 92 held two lithics and two Middle Rio Grande Plain jar sherds and Feature 100 had one lithic and three Middle Rio Grande Plain jar sherds. A pollen sample from this pit had a moderate amount of pollen including that from piñon pine, grasses, cheno-ams, composites, cholla, and corn.

SU 13. This study unit consists of a midden located north of Feature 50 at the east edge of the project area (Fig. 13.81). Surface artifacts, darker fill in the eastern north-south backhoe trench, and a slight surface stain suggested a midden area. It was investigated by a series of hand-excavated grids (Table 13.84) taken to sterile soil. Scraping with the backhoe defined the extent of the stain but no features were found.

Fill was a single unit of reddish (7.5YR 5/3) eolian silt with a slight clay and pumice content, that was stained by charcoal. Deposits thickened to the east, from about 20 cm to the west to over 40 cm thick 2.0 m to the east along the 148N line. Cultural material was sparse, only 120 ceramics, 3 bones, and 174 lithic artifacts. Dividing the fill into upper (Levels 1 and 2) and lower (Levels 3–5) shows a slight difference in ceramic artifacts (Table 13.85). Proportionately more Mogollon wares are found in the lower fill while the single Northern Rio Grande tempered sherd was in the upper fill. Proportions of Middle Rio Grande tempered and Mogollon wares are consistent with those found in Structure 50. However, the proportion of bowl sherds is greater in this midden deposit. Lithic artifacts were predominantly flakes and angular debris of chert and chalcedony (Table 13.86). The assemblage indicates an emphasis on later stages of secondary core reduction for all material categories. Most (83 percent) lack dorsal cortex with virtually no evidence of primary decortation and no retouched or prepared platforms that would indicate formal tool manufacture. One of the marginally retouched flakes has bidirectional wear consistent with use on a hard media like bone or wood. The other has no wear. Both bifaces are fragments. Fauna was rare: there was three pieces of large mammal bone, all burned. The paucity and fact all specimens were burned suggests conditions in this shallow midden area were poor for bone preservation.

SU 14. This study unit appeared to be a distinct stain, also north of Structure 50. As with the area to the south, it and SU 13 could have been a single light midden that was interrupted by

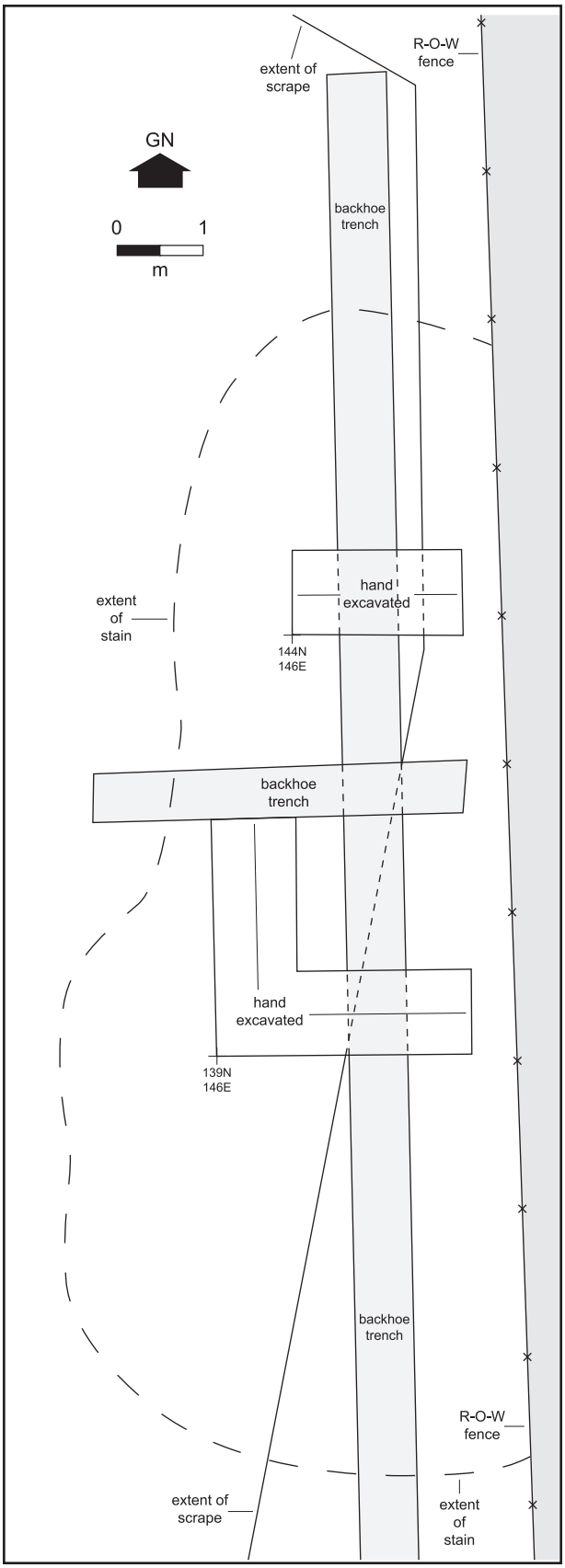

Figure 13.81. Plan of SU 13 at LA 6170.

Table 13.84. Hand-Excavated Units in SU 13 of Area 2 at LA 6170

Location	No. of Levels	Beginning and Ending Elevations (mbd)	Strat	Comments
139N/146E	4	100.44 - 100.01	D, BP	(1 x 1) midden
139N/147E	4	100.39 - 100.05	D, BP	(1 x 1) midden
139N/148E	5	100.57 - 100.03	D, BP	(1 x 1) midden
140N/146E	4	99.88 - 99.47	D, BP	(2 x 1) midden
144N/147E	2	100.14 - 99.93	D, BP	(1 x 1) midden
144N/148E	3	100.15 - 99.79	D, BP	(1 x 1) midden; at western edge of backhoe trench

Table 13.85. Ceramic Types and Forms from LA 6170, SU 13 Midden Area

	Upper Fill	Lower Fill	Totals
Northern Rio Grande Plain	1	-	1
	1.1%	-	0.8%
Middle Rio Grande Plain	77	20	97
	84.6%	68.9%	80.8%
Unpainted undifferentiated	3	1	4
	3.3%	3.4%	3.3%
Mineral paint undifferentiated	4	3	7
	4.4%	10.3%	5.8%
San Marcial B/w	2	-	2
	2.2%	-	1.7%
Tallahogan-like	1	-	1
	1.1%	-	0.8%
Slipped over red paste	1	-	1
	1.1%	-	0.8%
Total Middle Rio Grande	88	26	112
	96.7%	89.6%	93.3%
Jornado Brown	1	1	2
	1.1%	3.4%	1.7%
Mogollon Red on brown	-	2	2
	-	6.9%	1.7%
San Francisco Red	1	1	2
	1.1%	3.4%	1.7%
Bowl	5	4	9
	5.5%	3.4%	7.5%
Jar	86	24	110
	94.5%	82.8%	91.7%
Handle	-	1	1
	-	3.4%	1.7%
Totals	91	29	120
	100.0%	100.0%	100.0%

Table 13.86. Lithic Types and Material for LA 6170, SU 13

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	25.0	10	62.5	1	6.3	1	6.3	-	-	16	9.2
Flake	57	37.5	51	33.6	1	0.7	18	11.8	25	16.4	152	87.0
Core, Multiplatform	2	100.0	-	-	-	-	-	-	-	-	2	1.0
Flake, Marg Retouch	1	50.0	1	50.0	-	-	-	-	-	-	2	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	1	<1
Uniface	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	64	36.8	62	35.6	2	1.1	21	12.1	25	14.4	174	100.0

the dirt road or bar ditch depression. Bisected by the main north-south and the 139N backhoe trenches (Figs. 13.82, 13.83), the stained fill dipped into an irregular depression (see Fig. 13.5). Viewing the fill, Les McFadden, project geomorphologist, felt it was not natural as it had no signs of channeling and the shape made it an unlikely natural occurrence.

Removing the midden fill from several grids (Table 13.87) revealed an irregular base and sides scarred by rodent activity. In profile the upper fill was finely laminated eolian silt stained by charcoal (DC). This overlay a similar but lighter colored layer (LDC) riddled by rodent burrows then more fill similar to the first layer. Pockets of fine gravel, gravel and silty clay, thin wash lenses, and a distinct fine laminated silt were all recorded just above sterile in the profiles.

Once the grid excavations were complete, the area was scraped with the backhoe to define the stain and an additional backhoe trench placed to the west. No features were revealed by scraping and all indications are that this was a midden area. The depression could be the result of purposeful human activity, either a barrow pit or an abandoned excavation for a structure.

Artifacts were found throughout, but never in great numbers. Ceramics indicate an Early Developmental period date for these deposits. When broken down into three groups (Table 13.88), there is slightly more diversity in the lower fill. Middle Rio Grande Plain jar sherds comprise a majority of the wares with no Mogollon wares, suggesting that the SU 14 midden deposits are more similar to the upper levels of fill in SU 13 than the lower fill. A rough sort of an additional 28 sherds found no Mogollon or painted wares.

Just over half of the lithic artifacts were analyzed (Table 13.89). The flake assemblage reflects an emphasis on the later stages of secondary core reduction with some early stages represented. Most lack dorsal cortex (74 percent), and there is no indication of primary core reduction or tertiary formal tool manufacture. Tools consist of three utilized flake frag-

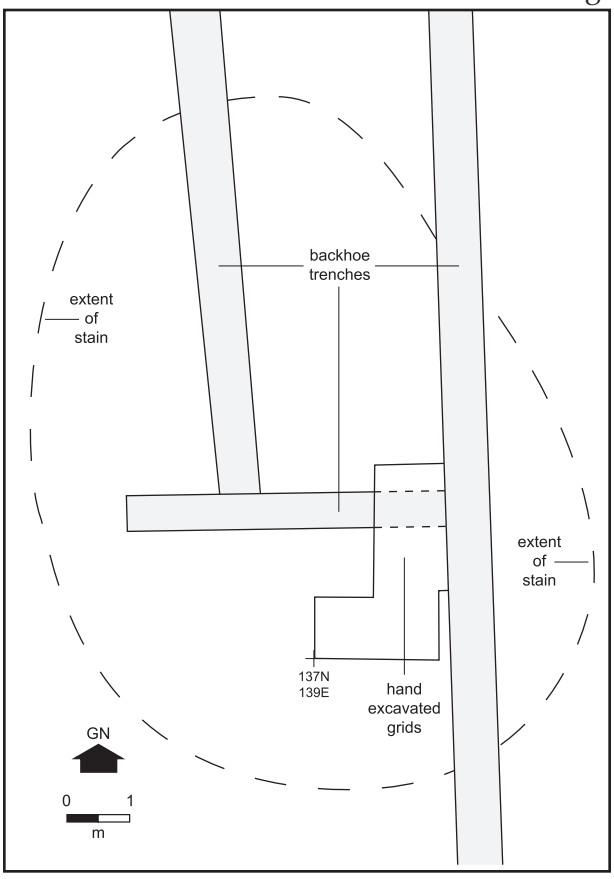

Figure 13.82. Plan of SU 14 at LA 6170.

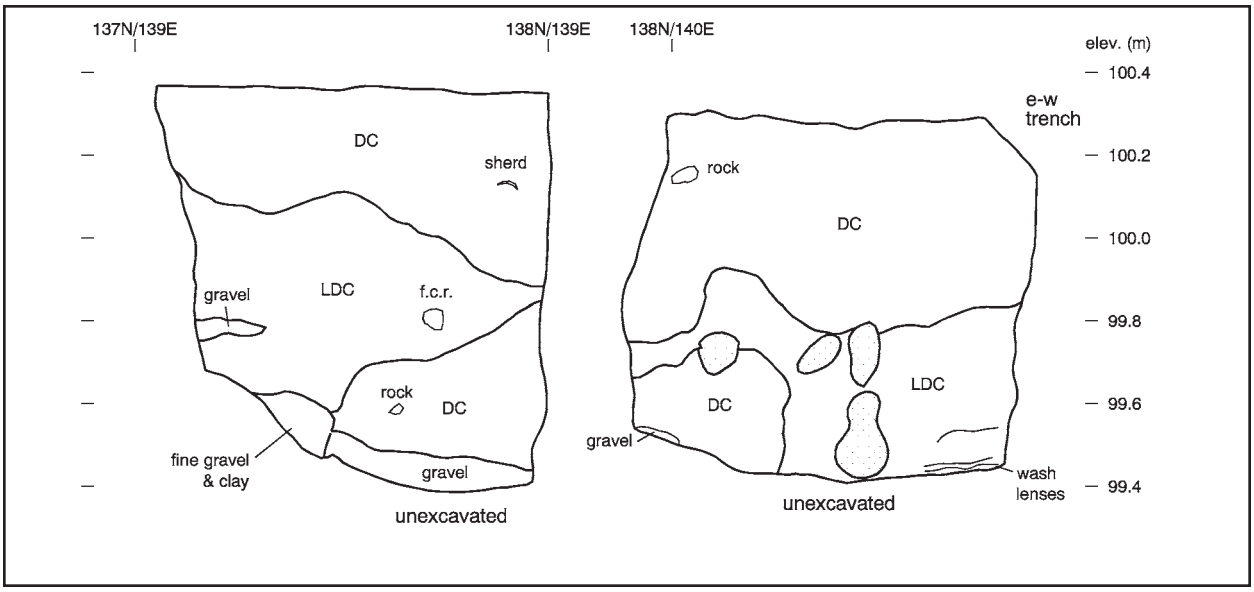

Figure 13.83. Stratigraphic profiles from SU 14.

Table 13.87. Hand Excavated Units in SU 14 of Area 2 at LA 6170

Location	No. of Levels	Beginning and Ending Elevations (mbd)	Strat	Comments
137N/139E	9	SW 100.40 NE 99.46	DC	(1 x 1) midden
137N/140E	8	SW 100.39 NW 99.59	DC	(1 x 1) midden
138N/140E	9	100.35 - 99.55	DC	(1 x 1) midden
139N/140E	10	100.68 - 99.74	DC	(1 x 1) midden

Table 13.88. Ceramic Types and Forms Recovered from LA 6170, SU 14

	Lev. 1-3	Lev. 4-5	Lev. 6-8	Totals
Middle Rio Grande Plain	43	68	19	130
	97.7%	95.8%	95.0%	96.3%
Unpainted undifferentiated	1	1	-	2
	2.3%	1.3%	-	1.5%
Mineral paint undifferentiated	-	1	-	1
	-	1.3%	-	0.7%
San Marcial B/w	-	1	-	1
	-	1.3%	-	0.7%
Tallahogan-like	-	-	1	1
	-	-	5.0%	0.7%
Bowl	-	1	-	1
	-	1.3%	-	0.7%
Jar	44	68	20	132
	100.0%	95.8%	100.0%	97.8%
Handle	-	1	-	1
	-	0.3%	-	0.7%
Indeterminate	-	1	-	1
	-	0.3%	-	0.7%
Totals	44	71	20	135
	100.0%	100.0%	100.0%	100.0%

Table 13.89. Lithic Types and Material from LA 6170, SU 14

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	42.9	2	28.6	-	-	-	-	2	28.6	7	4.0
Flake	40	29.9	29	21.6	3	2.2	9	6.7	53	39.6	134	91.0
Flake, Utilized	-	-	2	66.7	-	-	-	-	1	33.3	3	2.0
Biface	-	-	-	-	-	-	1	50.0	1	50.0	2	1.0
Total	43	29.5	33	22.6	3	2.1	10	6.8	57	39.0	146	100.0

Table 13.90. Fauna Recovered from LA 6170, SU 14 Midden

	N =	Burned	Immature/ juvenile
Small mammal	1	-	-
Medium-large mammal	1	-	1
Large mammal	5	1	-
Yellow-faced pocket gopher	1	-	1
Medium-large rodent	1	-	1
Desert cottontail	1	-	1
Black-tailed jackrabbit	1	-	-
Mule deer	1	-	-
Cow or bison	1	-	1
Scaled quail	1	-	-
Total	14	1	5

ments and two biface fragments. Two of the chert flake tools have unidirectionl scraping wear consistent with use on hard media such as bone or wood. The other flake tool, manufactured from nonvesicular igneous material, exhibits bidirectional cutting wear similar to the use wear that results from cutting bone or wood. The nonvesicular igneous biface fragment exhibits bidirectional use-wear also typical of cutting a hard material. The obsidian biface fragment lacks evidence of use.

Fauna was again sparse, but diverse (n = 14) (Table 13.90). Few are burned and a good number are from immature or juvenile animals. Most (71.4 percent) of the bone is heavily pitted from soil conditions and a few are checked or exfoliated from exposure (21.4 percent). None has evidence of processing and most are fragments that comprise less than half of the element. The cow or bison specimen is a fragment of a proximal epiphysis from a femur of a juvenile animal.

SU 15. Extensive hand-stripping was carried out within this midden stain (Fig. 13.84, Table 13.91). The effort expended in this area was not because the area merited extensive investigation. Rather, finding human burials at every other project site resulted in an influx of workers at this one. With such a large crew and few supervisors, the quality of notes and consistency of level measurements suffered considerably. Fill, removed to variable depths (Fig. 13.85), was generally a thick layer of MDC overlying DC soil. Rodent disturbance was evident throughout.

Hand-stripping produced a large artifact assemblage. A sample of nearly 1,000 ceramics was analyzed (Table 13.92), producing only three with Northern Rio Grande (granite) temper. Most are sand tempered and a few are Mogollon wares. Jars make up a majority of the forms represented. Proportions of wares did not vary with depth, either because the deposition was fairly rapid or the rodents thoroughly

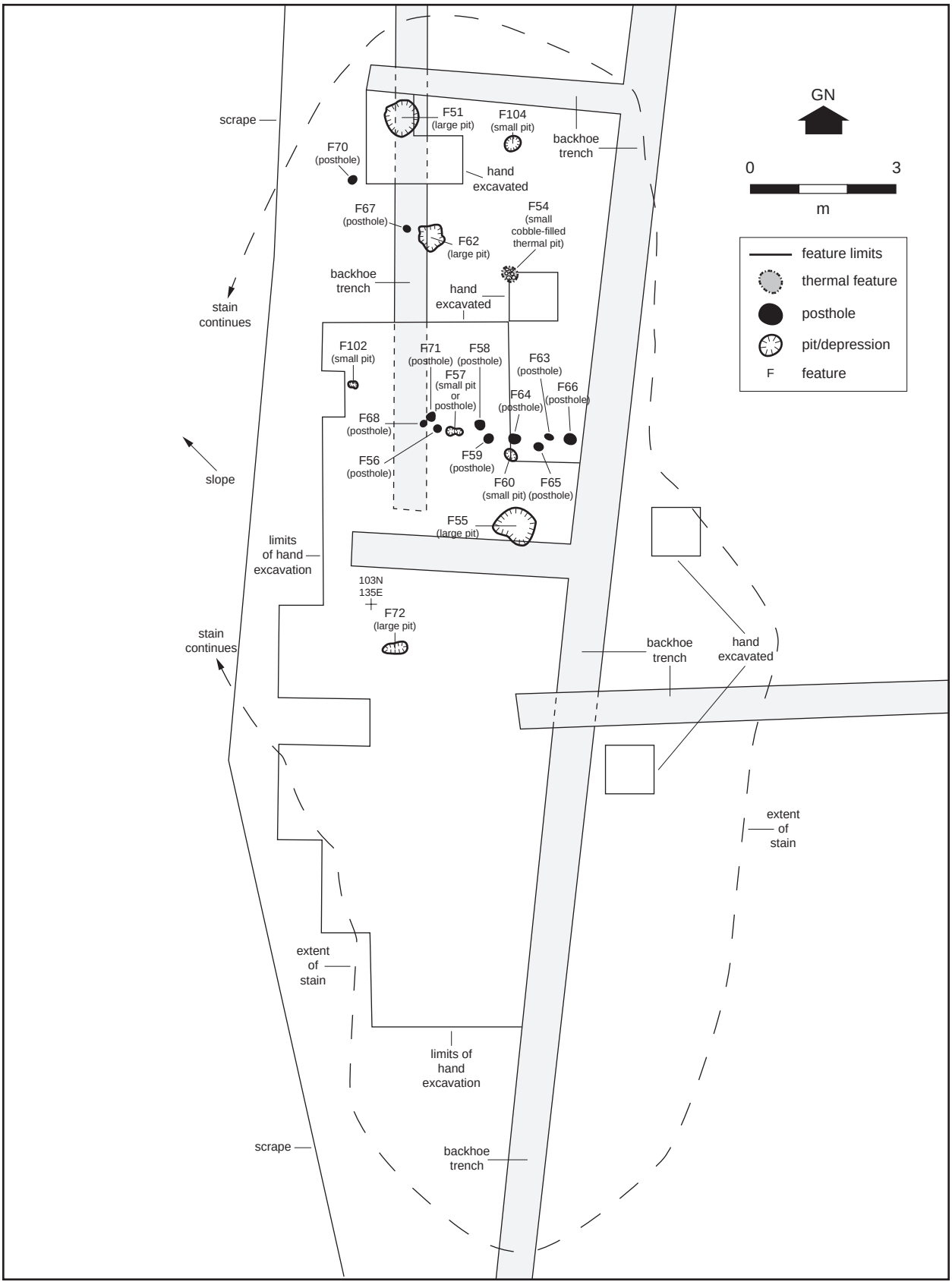

Figure 13.84. Plan of SU 15 at LA 6170.

Figure 13.85. Overview of SU 15 looking south before feature excavation.

churned the soil resulting in a uniform distribution of wares. Another 1,661 sherds from this SU were rough sorted resulting in the identification of 1,654 plain body, 2 mineral paint, 2 San Marcial Black-on-white, 2 Tallahogan-like, and 1 San Francisco Red sherd.

Lithic artifacts were especially numerous (approximately 4,829 flaked lithics) so only a sample of 608 were analyzed (Table 13.93), 66 of which are from Features 55 (n = 62), 62 (n = 2), 67 (n = 1), and 70 (n = 1). Compared to Structure 50, material proportions are fairly different. Chalcedony proportions are considerably higher than in the structure and the nonvesicular igneous much lower than all but the floor fill and contact. The flake assemblage generally reflects an emphasis on later stages of secondary core reduction along with some primary decortication early stage reduction. Most flakes lack dorsal cortex (82 percent). Retouched and prepared platforms on obsidian and nonvesicular igneous flakes provide evidence of formal tool manufacture as do bifacial thinning flakes of chalcedony, obsidian, and nonvesicular igneous materials. Two expedient flake tools exhibit unidirectional scraping ware typical of scraping hard media such as bone or wood. One marginally retouched flake tool has both unidirectional scraping and bidirectional cutting wear typical of use on bone or wood. Of the remaining marginally retouched tools, one has a bidirectionally retouched edge exhibiting polish and three have unidirectional retouch but lack evidence of use wear. Marginally retouched edge angles are all within the range for scraping activities. Other tools include a uniface, a biface, and two projectile points of obsidian. The uniface has three use edges, all exhibiting use-wear typical of scraping bone or wood.

Fauna was relatively sparse suggesting poor preservation in the sheet midden. Almost all of the small sample of bone (n = 14) is small fragments. Taxa include small mammal (n = 1), medium to large mammal (n = 3), large mammal (n = 6), Yellow-face pocket gopher (n = 1), beaver (n = 1), cottontail (n = 1), and medium artiodactyl (n = 1).

Many of the SU 15 features (Table 13.94)

Table 13.91. Hand-Excavated Units in SU 15 of Area 2 at LA 6170

Location	No. of Levels	Beginning and Ending Elevations (mbd)	Strat	Comments
94N/135E	1	99.50 - 99.44	DC	(2 X 2?) midden
94N/137E	4	99.47 - 99.04	DC	(1 X 1.5) midden
95N/137E	4	99.47 - 99.11	DC	(1 X 1.6) midden
96N/134E	1	99.42 - 99.27	DC	(2 X 1)? midden
96N/135E	2	99.56 - 99.44	DC	(2 X 2?) midden
96N/137E	1	99.56 - 99.45	DC	(1 X 1.6) midden
97N/137E	4	99.60 - 99.14	DC	(1 X 1.7) midden
98N/133E	1	99.45 - 99.40	DC	(2 X 1?) midden
98N/134E	1	99.45 - 99.33	DC	(1 X 1) midden
98N/135E	2	99.65 - 99.51	DC	(1 X 2?) midden
98N/137E	2	99.68 - 99.36	DC	(1 X 1.7) midden
99N/134E	2	99.53 - 99.42	DC	(1 X 1) midden
99N/135E	3	99.56 - 99.41	DC	(1 X 2) midden; 4 ground shell pieces *Anodonta californiensi*), Level 3
99N/137E	3	99.69 - 99.41	DC	(1 X 2) midden
99N/140E	2	99.33 - 99.18	DC	(1 X 1) midden
100N/135E	2	99.80 - 99.66	DC	(1 X 2?) midden
100N/137E	1	99.82 - 99.64	DC	(1 X 2) midden
101N/133E	1	99.57 - 99.38	DC	(1 X 1) midden
101N/134E	3	99.69 - 99.43	DC	(1 X 1) midden
101N/135E	2	99.66 - 99.38	DC	(1 X 2?) midden; *Anodonta californiensi* shell fragment, Level 3
101N/137E	4	99.91 - 99.46	DC	(2 X 2?) midden
102N/133E	1	99.72 - 99.67	DC	(1 X 2) midden
102N/135E	2	99.89-99.81	DC	(1 X 2) midden
102N/137E	5	99.94-99.48	DC	(1 X 2+?) midden
103N/134E	2	99.80 - 99.63	DC	(.70 X 1?) midden
104N/134E	2	99.91 - 99.80	DC	(1 X 1) midden
103N/135E	2	99.77 - 99.57	DC	(.60 X 2 midden
104N/136E	1	99.57 - 99.48	DC	(.50 X 1) midden
104N/135E	3	NW 99.92 - 99.65	DC	(.50 X 1) midden; north half of grid
104N/136E	2	99.94 - 99.77	DC	(.50 X 1) midden; north half of grid
104N/137E	2	99.96 - 99.74	DC	(1 X 1) midden
104N/138E	6	100.01 - 99.31	DC	(.70 X 1.70) midden; Feature 55
104N/141E	1	99.57 - 99.47	DC	(1 X 1) midden
105N/134E	3	99.62 - 99.77	DC	(2 X 2) midden
105N/136E	2	99.77 - 99.53	DC	(2 X 2) midden; *Anodonta californiensi* shell fragment, Level 1
105N/138E	4	99.76 - 99.31	DC	(2 X 2) midden
107N/134E	4	99.71 - 99.48	DC	(2 X 2) midden
107N/135E	1	99.48 - 99.38	DC	(1 X 1 deeper test within 2 X 2) midden
107N/136E	2	99.85 - 98.48	DC	(2 X 2) midden
109N/138E	1	99.91 - 99.83	DC	(1 X 1) defining Feature 54
112N/135E	6	100.32 - 99.80	DC	(1 X 1) Investigating stain, disappeared by Level 3
112N/136E	3	100.38 - 100.18	DC	(1 X 1) midden
113N/135E	3	SW 100.46 SE 100.28	DC	Investigating stain

Table 13.92. Ceramic Types and Forms for Grid Excavations in SU 15 at LA 6170

	Lev. 1	Lev. 2	Lev. 3-4	Totals
Northern Rio Grande Plain	2	1	-	3
	0.3%	0.4%	-	0.3%
Middle Rio Grande Plain	612	216	80	908
	94.3%	89.3%	94.1%	93.0%
Unpainted undifferentiated	6	6	-	12
	0.9%	2.5%	-	1.2%
Mineral paint undifferentiated	8	4	-	12
	1.2%	1.7%	-	1.2%
San Marcial B/w	4	1	-	5
	0.6%	0.4%	-	0.5%
Tallahogan-like	8	4	2	14
	1.2%	1.7%	2.3%	1.4%
Total Middle Rio Grande	638	231	82	951
	98.3%	95.4%	96.5%	97.4%
Jornado Brown	8	9	3	20
	1.2%	3.7%	3.5%	2.0%
Mogollon Red-on-brown	-	1	-	1
	-	0.4%	-	0.1%
San Francisco Red	1	-	-	1
	0.2%	-	-	0.1%
Bowl	8	7	-	15
	1.2%	2.9%	-	1.5%
Jar	633	234	84	951
	97.5%	96.7%	98.8%	97.4%
Handle	1	-	-	1
	0.2%	-	-	0.1%
Indeterminate form	7	1	1	9
	1.1%	0.4%	1.2%	0.9%
Totals	649	242	85	976
	100.0%	100.0%	100.0%	100.0%

were exposed by the hand-stripping. The rest were uncovered by backhoe scraping, which identified the stain boundaries and removed fill to a relatively uniform depth. Hand-excavated grids were placed around Features 54 and 51/61 and east of the backhoe trench. Additional backhoe scraping removed the remaining midden fill and found two additional pits along with a maze of rodent runs filled with stained soil. Finally, a north-south backhoe trench from 105 to 123N bisected a relatively clear area between the midden and the structure, finding no evidence of another structure or features.

Most of the SU features are small pits or postholes. The exceptions are three large pits and a cobble-filled thermal pit. Many of the postholes and small pits form a roughly east-west line suggesting either a wind break or divider of some kind.

Large Pits. Feature 51 (and its base, Feature 61) was first observed as a dark surface stain. Removing fill from the surrounding grids uncovered an irregular circular stain that was basin-shaped in profile (Fig. 13.86). A few fire-cracked rocks and sparse artifacts were recovered. After over a month had passed and the area was scraped by the backhoe, a shallow burned pit (Feature 61) was noted. Fill was a clay plug, probably fill pushed into the pit during the scrape. Beneath the plug was oxidized fill and a lumpy irregular bottom that was also

Table 13.93. Lithic Types and Materials for LA 6170, SU 15

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	26	48.1	23	42.6	-	-	-	-	5	9.3	-	-	-	-	-	-	54	8.0
Flake	244	45.9	168	31.6	8	1.5	24	4.5	78	14.7	1	0.2	-	-[	9	1.7	532	87.0
Flake, Bifacial Thin	2	33.3	-	-	-	-	2	33.3	2	33.3	-	-	-	-	-	-	6	<1
Core, Multiplatform	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	2	<1
Flake, Utilized	1	50.0	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	2	<1
Flake, Marg Retouch	3	60.0	2	40.0	-	-	-	-	-	-	-	-	-	-	-	-	5	<1
Projectile Point	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	2	<1
Biface	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Uniface	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	1	50.0	-	-	-	-	-	-	1	50.0	-	-	2	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	276	45.4	195	32.1	9	1.5	31	5.1	85	14.0	1	0.2	2	0.3	9	1.5	608	100.0

Table 13.94. LA 6170, SU 15 Features

Feature	Center	Type	Dimensions (LWDepth in cm)	Beginning and Ending Elevations (mbd)	Comments
51	113.50N/135.50E	Large pit	110 x 87 x 28	100.46 - 100.18	Darkly stained soil with pumice lenses; 3 fire-cracked rocks; burne bottom
54	109.95N/138.15E	Small cobble-filled thermal pit	48 x 45 x 27	99.99 - 99.72	Compact charcoal stained fill; oxidized walls; 20 cobbles
55	104.60N/138.10E	Large pit	80 x 90 x 37	99.31 - 98.94	Rodent disturbed
56	106.75N/136.50E	Posthole	16 x 16 x 6	99.78 - 99.72	DC, wood and charcoal
57	106.70N/136.80E	Small pit or posthole	46 x 24 x 9	99.82 - 99.73	Figure-8 shaped; DC
58	106.80N/137.40E	Posthole?	18 x 16 x 10	99.83 - 99.73	DC
59	106.50N/137.60E	Posthole?	18 x 16 x 19	99.74 - 99.55	DC
60	106.15N/138.05E	Small pit	24 x 23 x 2	99.79 - 99.77	DC; bottom partially burned
61	113.50N/135.50E				Base of Feature 51 after scrape
62	110.80N/136.40E	Large pit	82 x 62 x 15	100.28 - 100.13	DC; slight burning on bottom
63	106.55N/138.85E	Posthole?	26 x 20 x 9	99.73 - 99.64	DC
64	106.50N/138.10E	Posthole?	30 x 24 x 11	99.76 - 99.65	DC
65	106.35N/138.60E	Posthole?	20 x 20 x 11	99.73 - 99.62	DC
66	106.50N/139.25E	Posthole	15 x 13 x 21	99.74 - 99.53	DC and burned post
67	111.10N/135.80E	Posthole?	20 x 20 x 13	100.15 - 100.02	DC
68	106.85N/136.20E	Posthole?	21 x 17 x 12	99.74 - 99.62	DC
70	112.05N/134.64E	Posthole	17 x 17 x 8	100.19 - 100.11	DC and wood fragments
71	107.00N/136.35E	Posthole?	15 x 15 x 12	99.79 - 99.73	DC
72	102.10N/135.50E	Large pit?	62 x 30 x 14	99.38 - 99.24	DC; rodent disturbed
102	107.64N/134.28E	Small pit	14 x 12 x 6	99.72 - 99.66	DC
104	112.87N/137.08E	Small pit	24 x 24 x 4	100.33 - 100.29	DC

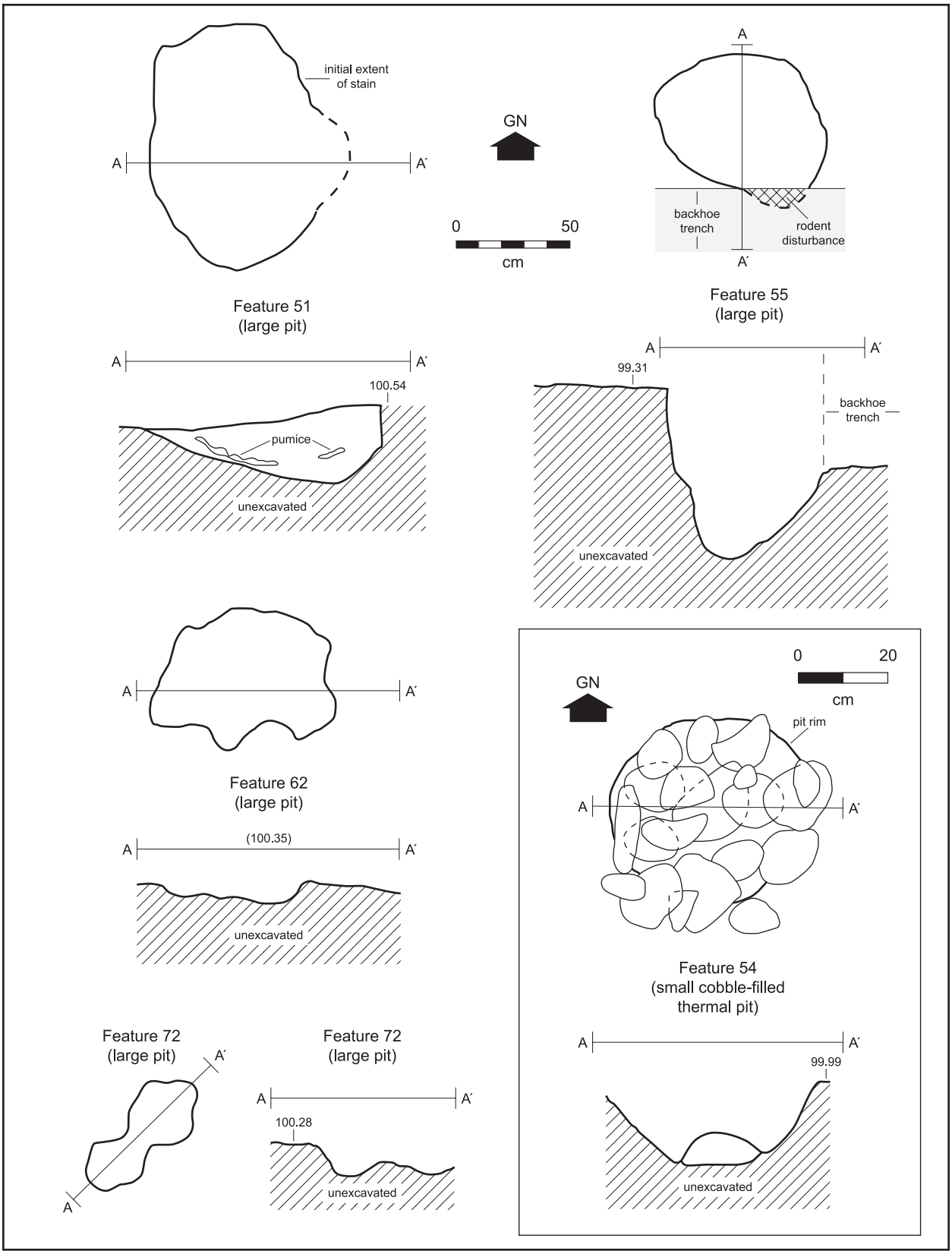

Figure 13.86. SU 15, large pits and thermal pit (Feature 54), plans and profiles.

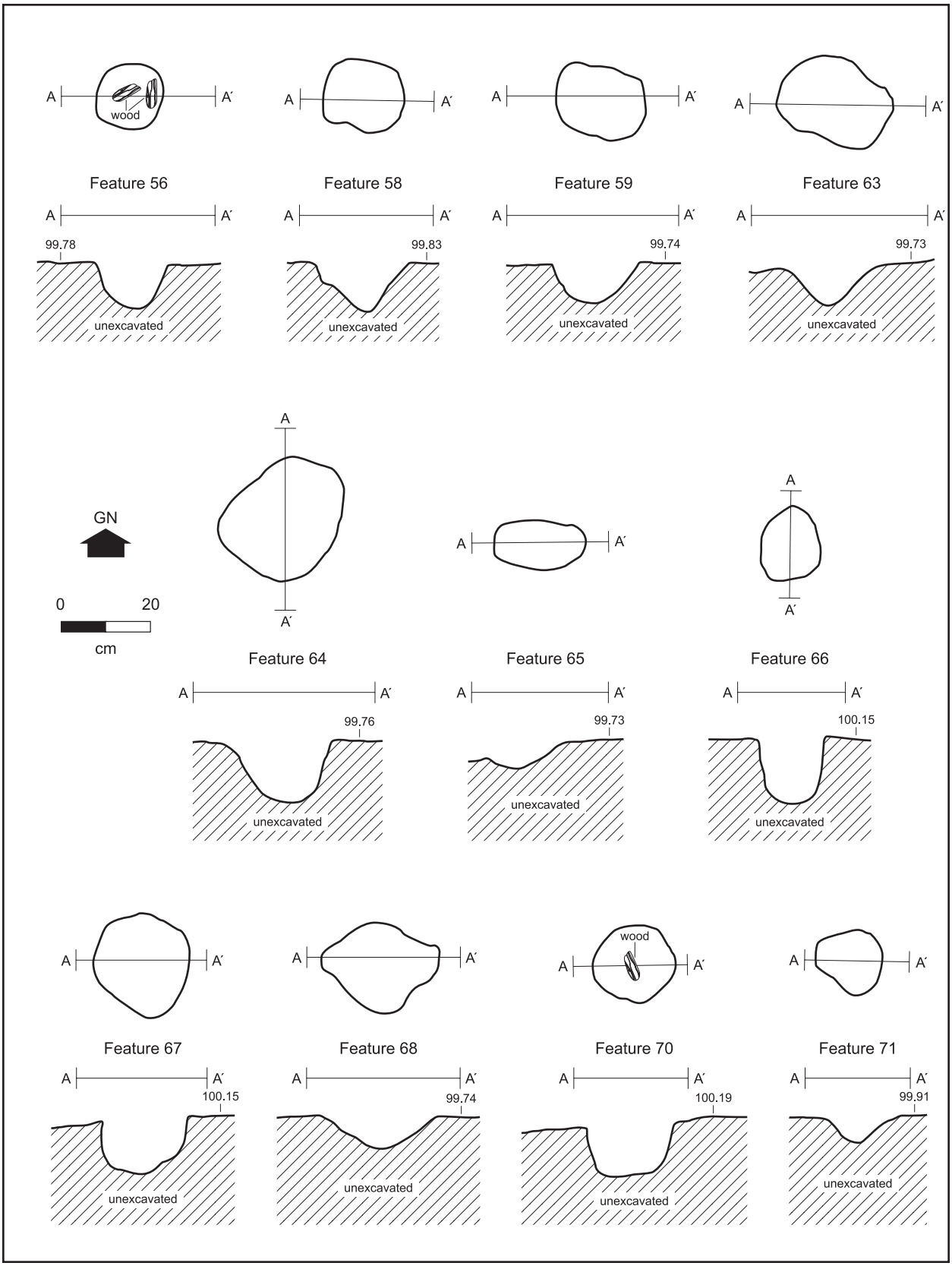

Figure 13.87. SU 15, postholes and possible postholes, plans and profiles.

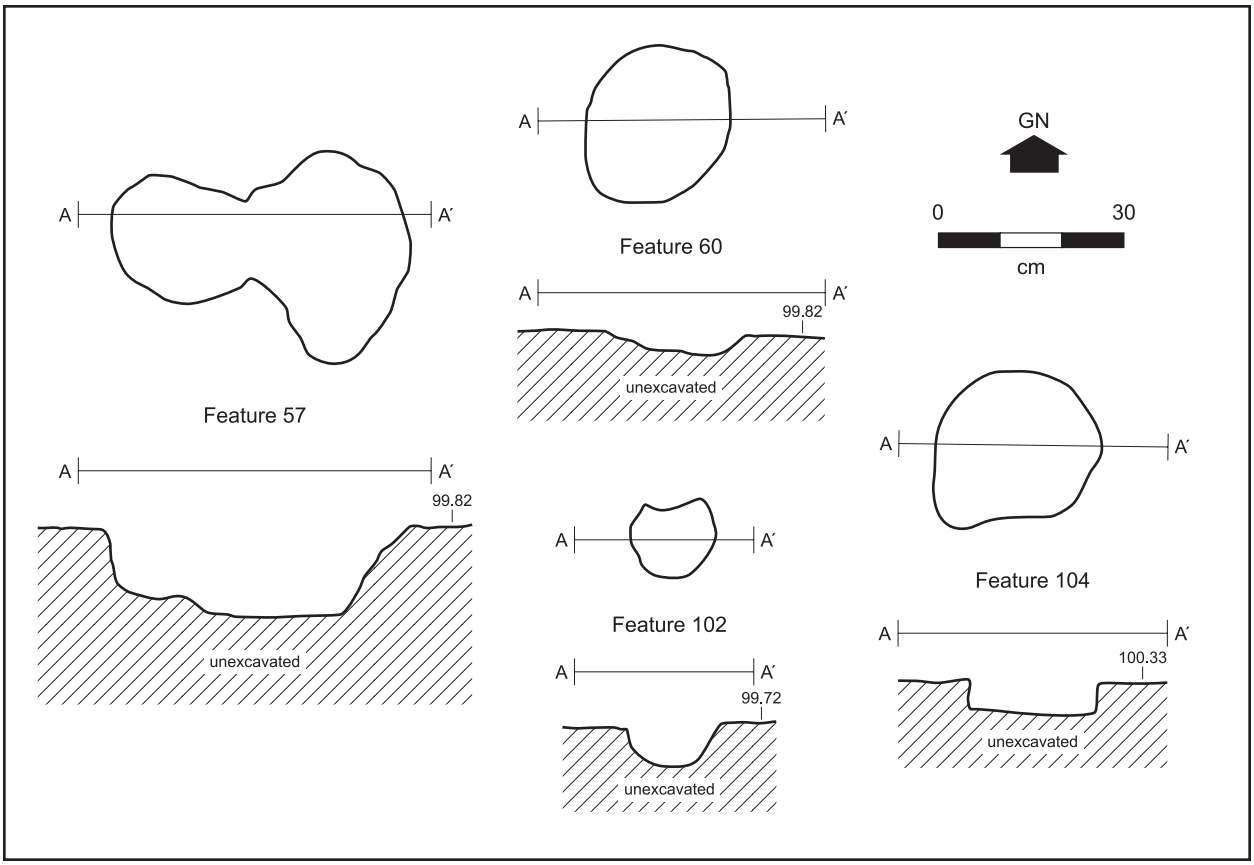

Figure 13.88. SU 15, small pits, plans and profiles.

oxidized. Comparing locations made it clear this was the same pit, however, the first excavator apparently did not remove the lowest fill or expose the burned bottom. An archaeomagnetic sample (AM 1144) from the pit base dates at either AD 710–775 or AD 810–915.

Fill of Feature 51 produced few artifacts. Of the 11 ceramics (Table 13.95), all but one are Middle Rio Grande tempered plain wares. The exception is an unpainted jar sherd. None of the 23 lithic artifacts was analyzed.

Feature 55 (Fig. 13.86) was discovered at a relatively deep level during hand excavations of Grid 104N/138E. When first exposed it was a faint outline that looked like a large rodent burrow filled with loose dark soil and cultural material. Sides were hard RSC soil except where rodents destroyed the south edge of the pit. Artifacts recovered from the fill include 35 ceramics, 6 pieces of bone, and 62 pieces of chipped stone, 7 angular debris, 48 flake fragments, 6 complete flakes, and a complete bifacial thinning flake. Most are local chalcedony (n = 24) or chert (n = 12), but also basalt (n = 8), quartz (n = 1), chert (n = 6), and Jemez obsidian (n = 1). The ceramics (Table 13.95) are varied and mostly from jars. Half of the fauna is yellow-faced pocket gopher—probably the remains of a burrowing rodent, two small mammals, and one large mammal bone. The large mammal bone is burned.

Feature 62 was a large rather amorphous pit (Fig. 13.86). Fill was severely compacted DC with the edges disturbed by rodent burrowing. This feature produced two Middle Rio Grande Plain jar sherds and about 45 lithic artifacts, two of which were analyzed and are local chert and a basalt flakes.

Feature 72 (Fig.13.86) was a large fairly shallow depression south of the other SU 15 features. Fill was the usual DC and it is entirely possible that it was no more than the base of a rodent burrow revealed by scraping. Ceramics recovered from Feature 72 include a San Marical bowl sherd and a Tallahogan-like jar sherd. The single lithic artifact was not analyzed.

Table 13.95. Ceramic Types and Forms Recovered from LA 6170, SU 15 Features

	F. 51	F. 55	F. 57	F. 62	F. 70	F. 72
Middle Rio Grande	10	28	2	2	1	-
Plain	90.9%	80.0%	100.0%	66.7%	100.0%	-
Unpainted undifferentiated	1	-	-	-	-	-
	9.1%	-	-	-	-	-
Mineral paint undifferentiated	-	1	-	-	-	-
	-	2.9%	-	-	-	-
San Marcial B/w	-	2	-	1	-	1
	-	5.7%	-	33.3%	-	50.0%
Tallahogan-like	-	2	-	-	-	1
	-	5.7%	-	-	-	50.0%
Total Middle Rio Grande	11	33	2	3	1	2
	100.0%	94.3%	100.0%	100.0%	100.0%	100.0%
Jornado Brown	-	1	-	-	-	-
	-	2.9%	-	-	-	-
Alma Plain	-	1	-	-	-	-
	-	2.9%	-	-	-	-
Bowl	-	2	-	-	-	1
	-	5.7%	-	-	-	50.0%
Jar	11	33	2	3	1	1
	100.0%	94.3%	100.0%	100.0%	100.0%	50.0%
Totals	11	35	2	3	1	2
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Small cobble-filled thermal pit. A single grid unit was excavated to investigate a stain. At the base of a level of fill, the stain and cobbles were distinct enough to define the feature without excavating the other three grids that contained Feature 54. This round, basin-shaped pit was lined and filled with cobbles (Fig.13.86). None of the four lithic artifacts found in the fill were analyzed. A flotation sample recovered unburned cheno-ams (25.2/liter) and stickleaf (1.3 g).

Small pits and postholes. Most of the small pits and postholes in SU 15 are found in an east-west alignment revealed through a combination of hand excavating and backhoe stripping (Figs. 13.87, 13.88). Enough had wood in the fill (Features 56, 66, 70) to suggest a line of posts. The pits are fairly similar in size and shape (Table 13.94). None of the pits are deep and probably were not that much deeper, unless the upper fill had eroded away. A few could be the bases of rodent burrows but the formation suggests otherwise. A Middle Rio Grande Plain jar sherd and a lithic were found in Feature 70.

The more isolated pits (Fig.13.88) are more variable in size and form. Some of these, too, could be the bases of rodent burrows. Few artifacts were found in these features. Feature 57 had two Middle Rio Grande Plain jar sherds, lithics (n = 2), and bone; Features 67 and 70 each held a single basalt flake fragment, and Feature 104 contained a lithic and a piece of ground stone. No pollen or flotation was processed from these features.

SU 17. This study unit is comprised of the extramural features located northeast of Structure 50 (Table 13.96, Fig. 13.89). All were discovered during a series of backhoe scrapes that revealed dark patches of fill. Features 74, 75, 76, 99, 87, 94, and 90 form a diagonal line across the grid system. The other features are beyond this arc and could form two additional alignments (Features 86, 77, and 103 and Features 85, 89, and 95). Some sort of ramada or work area is suggested by the location and configuration. No evidence of use surface was visible in the two backhoe

Table 13.96. LA 6170, SU 17 Features

Feature	Center	Type	Dimensions (LWDepth in cm)	Beginning and Ending Elevations (mbd)	Comments
52	134.80N/136.55E	Large cobble-filled thermal pit	80 x 75 x 28	100.57 - 100.29	Amorphous stain with cobbles; rodent disturbed
74	125.50N/135.15E	Posthole	19 x 16 x 4	100.04 - 100.00	DC and burned wood; sides oxidized
75	126.20N/135.45E	Small pit	23 x 22 x 14	100.12 - 99.98	DC
76	127.90N/135.90E	Small pit	14 x 14 x 5	100.13 - 100.07	DC
77	129.80N/135.35E	Posthole	20 x 18 x 14	100.39- 100.25	DC and wood fragments
85	130.85N/135.10E	Small pit	27 x 20 x 16	100.32 - 100.16	DC; rodent disturbed
86	128.90N/134.70E	Small pit	34 x 32 x 8	100.27 - 100.19	DC; worked unknown marine shell
87	131.10N/137.90E	Small pit	33 x 21 x 6	100.45 - 100.39	DC
88	133.20N/135.80E	Large cobble-filled thermal pit	61 x 45 x 7	100.54 - 100.47	Dark charcoal-stained sandy clay and 11 cobbles
89	131.40N/135.65E	Small pit	27 x 23 x 6	100.45 - 100.39	DC
90	134.60N/139.65E	Small pit	21 x 19 x 5	100.51 - 100.46	DC
94	133.30N/139.35E	Small pit	23 x 21 x 3	100.51 - 100.48	DC
95	134.25N/137.55E	Posthole	14 x 14 x 41	100.01 - 99.60	Burned post
99	129.05N/136.80E	Posthole	28 x 17 x 8	100.30 - 100.22	DC and wood fragments
103	132.90N/137.70E	Small pit	23 x 18 x 6	99.85 - 99.79	DC

trenches through this area.

Large cobble-filled thermal pits. These two features (Fig. 13.90) are more accurately shallow stains with cobbles suggesting deflated cobble-filled pits. Feature 52 appeared as a concentration of cobbles and amorphous stain after a backhoe scrape. Walls and floors were irregular and heavily disturbed by rodents. Fill was extremely hard with small gravel, cobbles, fire-cracked rock, and dispersed charcoal. Lithics, ceramics, bone, and ground stone were collected. The ceramics were all Middle Rio Grande Plain jar sherds (n = 19). The ground stone includes a rhyolite indeterminate fragment and a complete rhyolite expedient handstone.

The other thermal pit, Feature 88, also appeared as an amorphous stain with cobbles. Very little fill remained (about 2 cm) and only small areas were oxidized. Ceramics (three Middle Rio Grande Plain jar sherds) and seven lithics were recovered but not analyzed.

Postholes and small pits. Only four of the pits contained wood fragments verifying these are postholes (Figs. 13.91, 13.92). Several of the small pits are similar in size and form (Features 75, 76, 90, 94, and 103) and are most likely postholes. The remaining few pits are only slightly larger and could also be postholes. Feature 86 was the only one that contained artifacts, a piece of marine shell (species unknown), a lithic, and a lightly burned medium to large mammal bone. None of the pollen or flotation samples from these pits were analyzed.

Only 33 lithic artifacts were analyzed from this area (Table 13.97). Most are of chalcedony (52 percent) or nonvesicular igneous rocks (39 percent). Low frequencies of Jemez obsidian (n = 2) and chert (n = 1) were also found. The emphasis was on secondary core reduction as 36 percent lack dorsal cortex and 54 percent have partial dorsal cortex. Tool manufacture is indicated by a single obsidian bifacial thinning flake. Unutilized flakes (45 percent) and unutilized small angular debris (39 percent) make up most of the assemblage. In addition, a marginally retouched flake fragment and a uniface with unidirectional scraping wear typical of scraping a hard material like bone or wood were both broken suggesting they were discarded. An expedient handstone and an indeterminate fragment, both of fine-grained sandstone, are the only pieces of ground stone recovered from SU

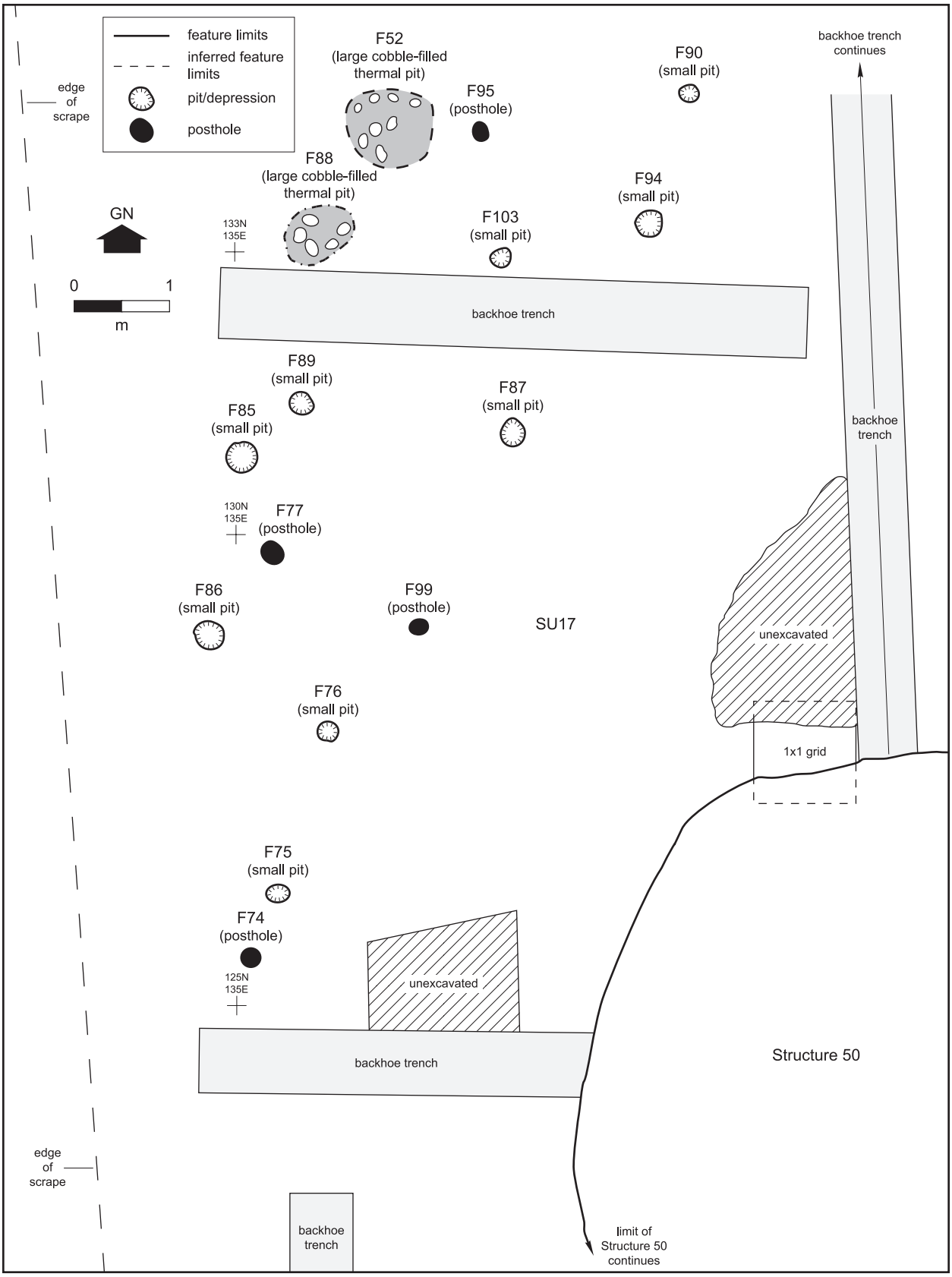

Figure 13.89. SU 17 at LA 6170.

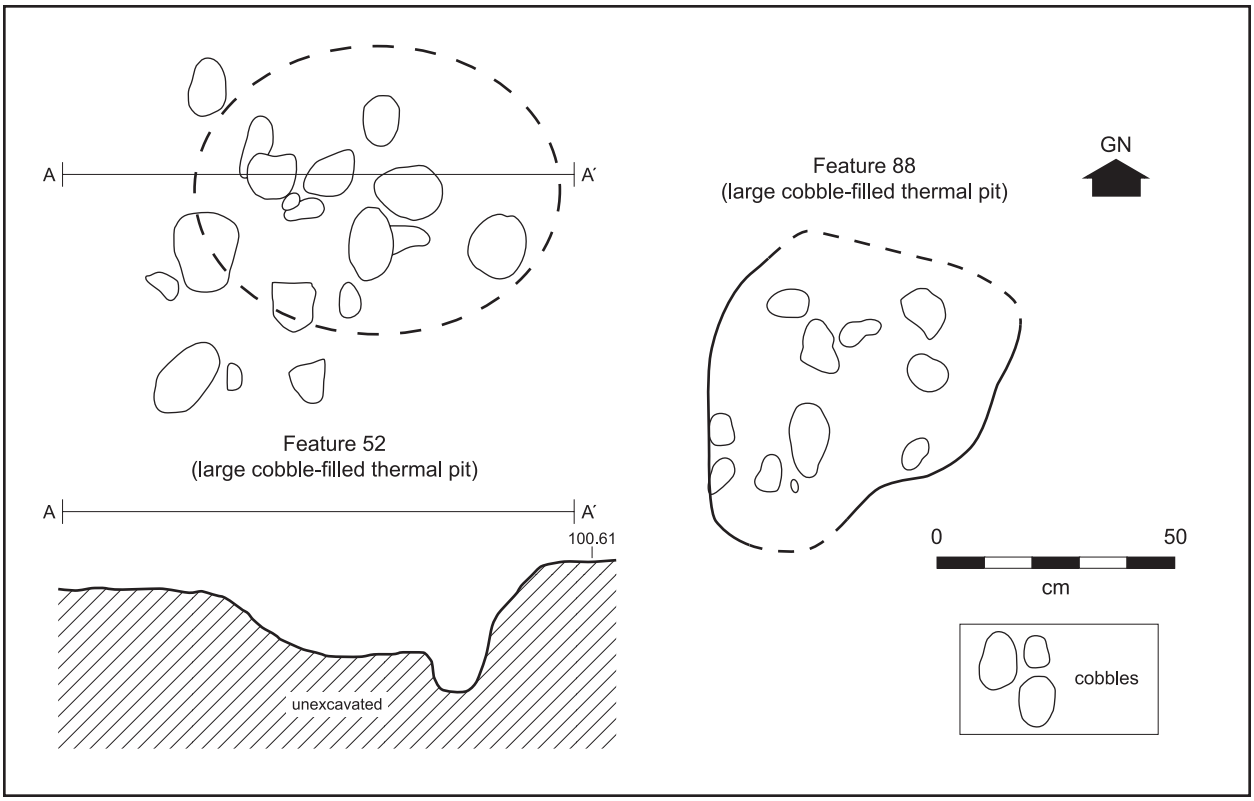

Figure 13.90. SU 17, large thermal pits, plans and profiles.

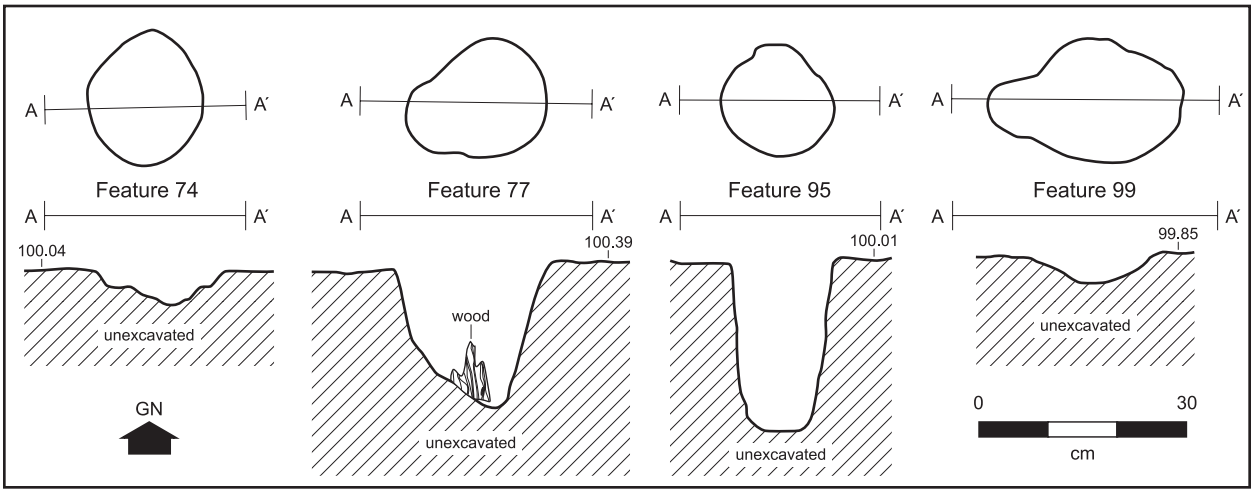

Figure 13.91. SU 17, postholes, plans and profiles.

17. The only fauna recovered and analyzed was a single medium to large mammal flat bone fragment that was scorched from Feature 86.

Conclusions

Like the surface indications at LA 6170, the data recovery plan for this site was vague. Surface ceramics ranged from Early Developmental wares to Tewa Polychrome and the cobble features are open to a number of interpretations. Where Dittert and Eddy saw an L-shaped row of surface rooms with one or two kivas depressions, an adobe room, and a modern farmhouse, Peckham and Wells saw a ten- to twelve-room room block with one or two kivas, and a modern farmhouse, Marshall saw at least seven cobble concentrations and three possible structural

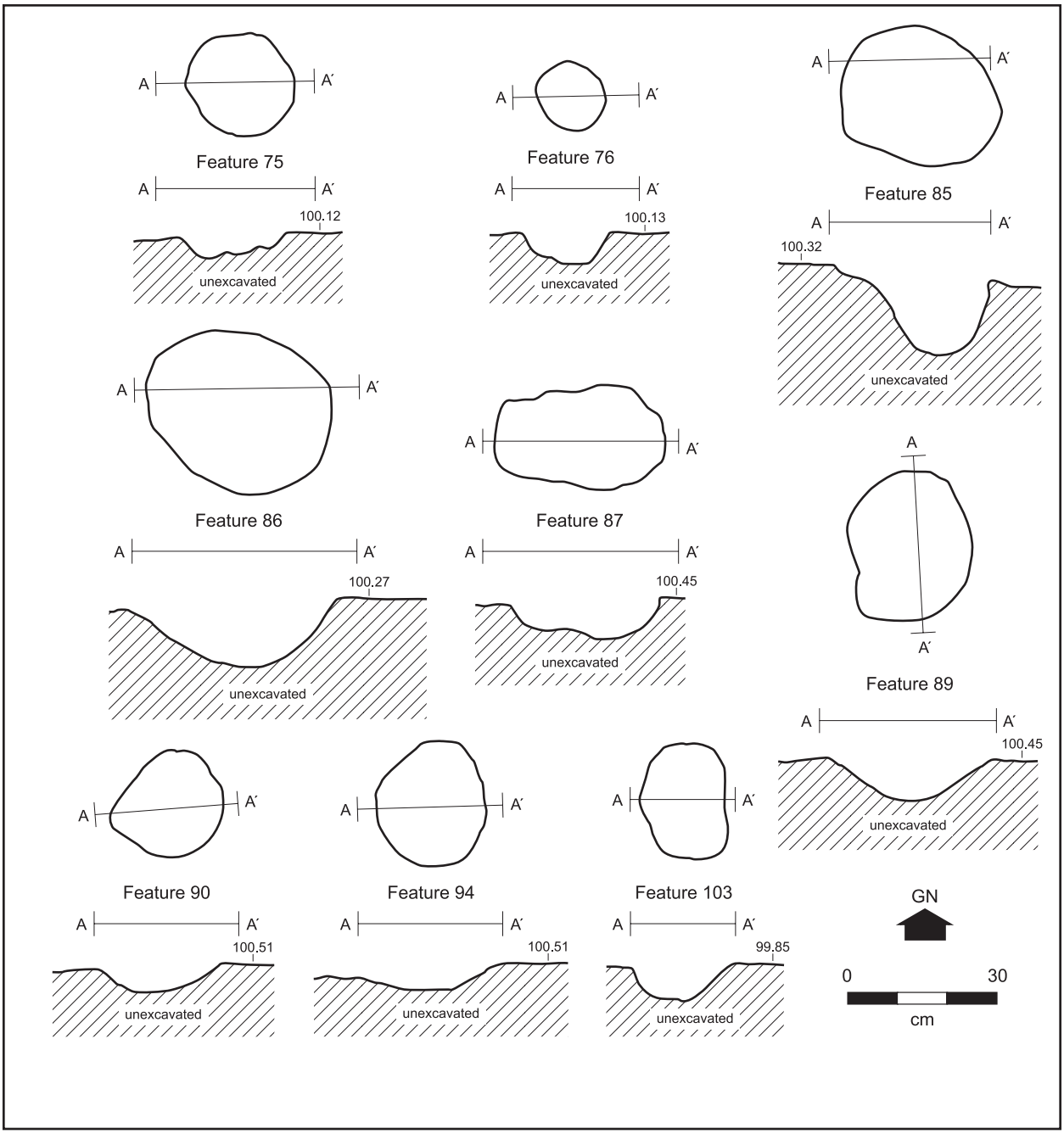

Figure 13.92. SU 17 small pits, plans and profiles.

depressions, and Ware the possibility of agricultural grid gardens and deeply buried deposits (Ware 1997:29–32). Since much of the potential surface architecture was outside the project area, the plan for this site called for a detailed surface survey, controlled test excavations, mechanical stripping, and excavation of any features located (Ware 1997:33).

Excavations revealed far more of the early component than was expected and only a hint that the potential room block dates to the Late Developmental or Coalition periods. Starting with the latest and moving to the earliest structures and deposits, Structure 1 is clearly the latest architectural component investigated. However, virtually no cultural material associ-

Table 13.97. Lithic Types and Material from LA 6170, SU 17

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
Angular Debris	9	69.2	-	-	-	-	4	30.8	13	39.0
Flake	6	40.0	1	6.7	1	6.7	7	46.7	15	45.0
Flake, Bifacial Thin	-	-	-	-	1	100.0	-	-	1	3.0
Flake, Marg Retouch	1	100.0	-	-	-	-	-	-	1	3.0
Uniface	1	100.0	-	-	-	-	-	-	1	3.0
Unknown Ground Stone	-	-	-	-	-	-	1	100.0	1	3.0
Expedient handstone	-	-	-	-	-	-	1	100.0	1	3.0
Total	17	51.5	1	3.0	2	6.1	13	39.4	33	100.0

ated with its construction or occupation was found in either this or the Dittert and Eddy excavations. The earlier excavations did recover an unspecified amount of Tewa Polychrome. A single Kapo Gray was recovered from the overburden of Structure 5 just outside the north wall of Structure 1 (103N/101E, Level 1). Fill around the foundation, and probably beneath the actual occupation, contained ceramics best described as mainly Early Developmental with some Late Developmental period wares. A nearly complete lack of material from the historic period precludes assigning a more specific date to this foundation. Frank Eddy's field journal (reproduced in Marshall 1997) indicates that the structure probably dates in or before the 1800s as the wall foundation is narrower than found in current housing. The Cochiti Pueblo Lieutenant Governor at the time stated that up until about 1950 similar farm houses on the edge of the terrace were occupied during the summer in order to be near fields but with the advent of motor transportation and shift to wage labor, few of these seasonal houses were still in use.

The most diagnostic Coalition ceramic ware, Santa Fe Black-on-white, is rare at LA 6170 and was recovered in the first layer of fill in Structure 1 (n = 1) and in a context that also has Late Developmental period wares (Feature 5 [n = 2]). These proveniences, along with the Structure 5 overburden, have the highest percentages of Northern Rio Grande (NRG) plain and corrugated wares and low percentages of Middle Rio Grande (MRG) utility wares (Table 13.98). No absolute dates can be assigned to Feature 5, yet the presence of this activity area and cache of ground stone (three slab metates, five two-hand manos, and a hafted pounder) has significant implications regarding the function of this site at that time, whether it was during the Late Developmental or Coalition periods. Caching behavior, such as this, is more typical of mobile groups or seasonally occupied sites than of permanent residences, suggesting that one of the latest prehistoric uses of LA 6170 was as a seasonally occupied farmstead.

Structure 5A probably dates to the Middle or Late Developmental period. Of the two intercepts suggested by the archaeomagnetic sample (Table 13.98), the earlier range (AD 1035 to 1080) is supported by the presence of a Kwahe'e Black-on-white sherd near the floor of the structure. The presence of this structure, which served as a specialized mealing or grinding room, has implications for site function during this period. It is unlikely that such a specialized structure would be associated with a seasonal occupation suggesting the presence of residential structures outside of the project area. Ceramics from this period are found in the upper fill of Structure 5 and are mixed with Early Developmental ceramics in the Structure 2 overburden and from beneath the upper fill through the roof fall layer of Structure 5. This, along with the superposition of Structure 5A within Structure 5, indicates that Structure 5 must have filled before about AD 1000.

Table13.98. Summary of Ceramic Utility Wares and Absolute Dates for LA 6170

		Utility Wares							
	Sample Size	% NRG		% MRG		% Mogollon Wares	Archaeomag. Dates (A.D.)	Radiocarbon Conventional (A.D.)	Radiocarbon Calibrated (2-sigma A.D.)
		Plain	Corrugated	Plain	Corrugated				
Structure 1	103	18.4	23.4	41.7	2.0	1.0	-	-	-
Structure 2 overburden	36	13.9	16.7	58.3	-	-	-	-	-
Feature 2	30	10.0	-	83.3	-	-	-	-	-
Structure 2 roof/trash	70	-	-	87.1	-	-	-	830 ± 50	790-1010
Structure 2 floor fill, contact	17	-	-	76.5	-	-	Floor 815-845	-	-
Structure 5 overburden	165	20.0	38.8	23.0	-	0.6	-	-	-
Feature 5	99	24.2	27.2	30.3	2.0	-	-	-	-
Structure 5 wind/water	47	2.1	6.4	78.7	-	-	-	-	-
Structure 5A	41	7.3	29.2	61.0	-	-	Hearth 1035-1080 or 1190-1240	-	-
Structure 5 roof & closing	164	12.2	2.4	75.6	2.4	-	-	580 ± 50	610-720 or 740-760
Structure 5 floor fill, contact	138	0.7	-	99.3	-	-	Sealed pit 720-785; wall 825-875	-	-
Structure 50 overburden	50	-	-	96.0	-	-	-	-	-
Structure 50 wind/water	264	12.7	-	83.3	-	2.2	-	-	-
Structure 50 roof & closing	375	10.4	-	87.7	-	1.9	-	780 ± 60	700-1000
Structure 50 floor fill, contact	213	6.1	-	93.0	-	0.5	Wall burn 700-755 or 900-950	-	-
Structure 50 occupational	58	-	-	96.6	-	-	Hearth 755-830	-	-
Structure 50 sealed features	8	-	-	87.5	-	-	Hearth 815-845	-	-
SU 12	77	-	-	97.4	-	2.6	-	-	-
SU 13	120	0.8	-	80.8	-	5.1	-	-	-
SU 14	135	-	-	96.3	-	-	-	-	-
SU 15 features	54	-	-	79.6	-	3.7	F51/61 710-775 or 810-915	-	-
SU 15 general fill	976	0.3	-	93.0	-	2.2	-	-	-

Neither the building nor the abandonment sequence is clear for the Early Developmental period structures (Table 13.99). If the proportions of Northern Rio Grande and corrugated wares increase through time, then a simple seriation (Table 13.98) suggests that all three structures were occupied at roughly the same time: Structure 2 was abandoned or filled first, Structure 50 next, and Structure 5 last. A simplistic interpretation of the stratigraphy and greater amount of cultural material recovered from the upper and middle fill of Structure 50 argues that it filled before Structure 5, which accumulated little trash until at least the Late Developmental period. If we rely on the earliest or only date ranges, then either Structure 50 or 5 was built first and Structure 2 last. Under this scenario, Structure 50 was abandoned first, probably followed by Structure 2, then Structure 5. When the later dates are factored in, Structure 5 becomes the earliest built and Structures 2 and 50 followed. Structure 50 was soon remodeled, Structure 5 was abandoned, and finally, Structure 50 was abandoned.

The following sequence seems to fit best given the ceramic distribution, architectural features, and the chronometric dates. Structure 50 was probably the first built. Architecturally, it is unique for this and the other project sites in that it is large and had a number of large storage pits in the floor of the structure. The only other project site with considerable internal storage is Structure 47 at LA 6169 with an intercept date of AD 770, and a calibrated date between AD 660 and 900 from Feature 121. Few ceramics were found in the sealed features of Structure 50 but all are Middle Rio Grande wares. The single archaeomagnetic date is from an early version of the hearth that could be associated with this early arrangement. However, this date is probably too late as it is later than the dates for the upper hearth, wall

Table 13.99. LA 6170, Summary of Structure Sequence Scenarios (Earliest to Latest)

Ceramic	Early or Only Date	Late or Only Date
Structure floors: 2, 5, and 50--first use	Structure 50 built (pre AD 755-830); Structure 5 built (610-785)	Structure 5 built (AD 720-785)
Structure 2 roof fall/trash	Structure 50 remodeled (around AD 755-830)	Structures 2 and 50 built (AD 815-845)
Structure 50--second use, Feature 2	Structure 50 abandoned and burned (AD 700-755)	Structure 50 remodeled (AD 755-830)
Structure 50 roof fall; Structure 5 roof fall	Structure 2 built and abandoned (AD 815-845)	Structure 5 abandoned and burned (AD 825-875)
Structure 5A; Feature 5	Structure 5 abandoned and burned (AD 825-875)	Structure 50 abandoned and burned (AD 900-950)

burn, and burned roof fall material. After some time, Structure 50 was completely remodeled. The roof was removed, the postholes filled, and all of the storage features and heating pits filled and sealed. A new set of larger postholes were placed closer to the walls and an adobe coping was added to the hearth. Structure 5 could have been built before or after Structure 50 was remodeled. Radiocarbon dates on burned reeds used in the roof construction suggest that the Structure 5 roof was earlier (AD 580 ± 50, 610–760) than that of Structure 50 (AD 780 ± 60, 700–1000). The arrangement of features and roof types are similar between these two structures, suggesting they were either contemporary or closely sequential, not 200 years apart as suggested by the radiocarbon dates.

By most dating, Structure 2 was the last of the structures built and used. Dates for the floor burn (AD 815–845) and a conventional radiocarbon date on cottonwood/willow from the fill of the structure are essentially the same, AD 830 ± 50, and suggest this small featureless structure was constructed and abandoned within a relatively short period of time. It may also have been the first of the three structures abandoned and filled as no Northern Rio Grande ceramics were found beneath the depression or activity area that capped this structure.

The abandonment sequence for the two remaining structures is not straightforward. When wall burns associated with closing the structures are considered, the Structure 5 archaeomagnetic sample (AD 825–875) dates in between the two ranges suggested for the sample from Structure 50 (AD 700–755 or 900–950). The Structure 50 floor fill layer has more Northern Rio Grande ceramics but the fill assemblage from Structure 5 is definitely later. This could mean that it filled later, or simply that the main site occupation was to the east so that little Early Developmental period trash was deposited in Structure 5. That same structure (Structure 5 or an unexcavated structure removed by the initial construction of NM 22 or located just outside of the project area) continued to be occupied is indicated by the relatively large artifact counts for the upper fill of Structure 50 and by the removal of the roof support posts in both structures before they were burned. Another somewhat speculative indication that Structure 5 was abandoned first is in the closing ritual material. Based on a small sample of structures excavated during this project, earlier structures tend to have dogs associated with the closing deposits. Later structures have artiodactyl crania.

Regardless of the sequence, the presence of at least two substantial residential structures (Structures 5 and 50), an unfinished, short-lived, or seasonal structure (Structure 2), potential ramada areas (SU 15 and 17), and extramural activity areas suggest a substantial Early Developmental period occupation. Nothing in the stratigraphy or artifact assemblage suggests it was seasonally occupied. Rather, it is one of a series of permanent residences on terraces overlooking the Rio Grande.

Chapter 14
LA 6171

Jessica A. Badner

LA 6171 was first recorded by Dittert and Eddy in December 1961 during highway salvage work on NM 22. Their field notes describe two Pueblo III house blocks, associated kiva or pit-house depressions, and a scatter of prehistoric refuse dominated by Santa Fe Black-on-white ceramics. No field excavations were done at that time because the primary cultural features noted were outside the projected highway right-of-way. In the mid-1960s the site was revisited by Peckham and Wells (1967) who recorded two room blocks with 20–30 rooms, two to three kivas, and a prehistoric artifact assemblage associated with the Coalition period (Ware 1997:33). In his discussion of LA 6171, Dickson (1979:90) follows the site description provided by Peckham and Wells.

In October 1996, a preliminary survey was conducted by Sandra Marshall of the NMSHTD for the present project and at that time the site description for LA 6171 was substantially revised. In addition to the two cobble mounds (house blocks) and two possible structural depressions, Marshall (1996) noted two depressions north of the mound designated Feature 1 and several small cobble concentrations southwest of Feature 1 (Fig. 14.1). Ceramic types dating to the Pueblo Classic and historic periods were also added to the artifact inventory of the site (Ware 1997:33).

Setting

LA 6171 lies at the eastern edge of the Rio Grande floodplain southeast of Cochiti Pueblo. The excavated portion of the site had a slight western exposure and was located at 5,280 ft in altitude. The NM 22 roadcut clipped the site on its western side. Local vegetation includes juniper, snakeweed, and various grasses. Figure 14.2 provides a site overview.

Site Description

LA 6171 consisted of a large ceramic and lithic scatter located along the top of a high, west-facing terrace slope with a room block eroding into the middle of the eastern right-of-way. Site boundaries were defined by the edge of the NM 22 roadcut on the west, an extensive artifact scatter extending 50 m east of the right-of-way fence, and the artifact distribution to the south and north. Although the right-of-way fence bounded excavation, the site continues east along the terrace for at least 50 m. The excavation area was 80 m north-south and 30 m east-west, for a total of 2,400 sq m. Cow trails parallel the right-of-way fence. Field work at LA 6171 began on January 26, 1998, under the direction of Stephen Lentz, with a crew of three field assistants and six laborers.

Initial Excavation Strategy

A north-south oriented baseline anchored a coordinate grid system that maintained horizontal control during surface collection and excavation. Designated as 200 East, this baseline was located within the estimated project right-of-way at the time it was established. A 5-m reduction in the width of the right-of-way in early February 1998 placed the baseline out of the project limit, however it was still used to assign grid coordinates. To aid surface collection, a second parallel baseline was established along the 180E line. Before artifact collection began, pinflags were placed next to surface artifacts to indicate areas of concentration. Surface collection was conducted systematically in 1-by-1-m grid units across the entire site. Diagnostic artifacts were point-plotted using a transit and collected separately. Artifact concentrations eroding out of the roadcut along the

western site limit were noted, but not collected.

A main site datum at 200N/200E was established at the top of the western cobble mound that Marshall recorded during the 1996 NMSHD survey, and was given an arbitrary elevation of 100 m. To maintain vertical control, subdatums were established as needed.

Excavation began with 14, 1-by-1-m, hand-excavated exploratory units located in areas of high artifact density and, in the case of Study Unit 1 (177N/175E), to investigate an exposed cultural deposit. Exploratory units 200N/183E, 200N/184E, and 202N/184E were located in what became Study Unit 7. These three units were chosen based on the presence of cultural material found in auger hole tests. Grid 191N/176E was located in what became Study Unit 6. Exploratory pits 230N/173E, 230N/174E, and 230N/175E were placed in what became Study Unit 3, forming the hand trench that located Structure 9. Other exploratory units included 192N/192E, 193N/192E, 194N/194E, 210N/194E, 224N/173E, and 224N/175E. With the exception of exploratory units located in Study Units 1 and 3, none of the exploratory units exposed cultural surfaces or features. To more completely explore cultural deposits, a series of nine backhoe trenches were excavated. Portions of Trenches 2, 4, 5, and 9 (Fig. 14.1) were profiled to record site stratigraphy, exposed features, and cultural deposits. Excavation summaries and stratigraphic information are provided under the appropriate study unit heading.

Site Stratigraphy

General site stratigraphy consisted of five layers of natural strata that are summarized in Table 14.1. For detailed descriptions of these strata see the geomorphology section of this report. Backhoe Trench 4 profile is typical of site stratigraphy (Fig. 14.3).

Stratum 1 was a surface layer of light yellowish brown (10YR 6/4), well sorted, medium-grained eolian/colluvial sand. This stratum covered the entire site and contained a large number of Coalition period ceramics. Stratum 1 ranged in thickness from 15 to 30 cm.

Stratum 2 was consolidated, light yellowish brown (10YR 6/4), well-sorted silt loam with 20 percent carbonate flecking. This stratum was located below Strata 1 and 3, ranged in thickness from 25 to 50 cm, and was present at the southern end of the site.

Stratum 3 was a layer of cultural deposit covering the site as defined in backhoe trenches, study units, and feature fill. This stratum was characterized as slope wash or sheet midden from a later Coalition period occupation to the east, and a mixture of artifacts from activity areas associated with Early Developmental structures and thermal features excavated into naturally occurring strata. Although it was generally located beneath Stratum 1, Stratum 3 differed in thickness (from 10 cm in Study Unit 6 to 70 cm in Study Unit 8) and temporal component from study unit to study unit. Ceramic assemblages from mainly Coalition mixed with Early Developmental components were recovered from Study Units 1, 4, and 6. Ceramic assemblages from the Coalition period were recovered from Study Units 5, 7, and 8. The ceramic sample from Study Unit 3 surface stratum was not analyzed, but pit structure fill consisted mainly of Early Developmental with some Coalition ceramic types. Study Unit 2, Stratum 3F ceramic component dated to the Classic period and was given a letter designation to distinguish it from the rest of the cultural deposit covering the site.

Stratum 4 was extremely consolidated yellowish brown (10YR 5/4) loam with 30 to 40 percent carbonate inclusions and 10 percent pebbles. In the south end of the site this stratum was below Stratum 3 and was more than 60 cm deep.

Stratum 5 consisted of terrace cobbles mixed with calcium carbonate and brown (7.5YR 5/4) alluvial sand. This stratum was located beneath all other strata and was exposed in Study Units 3 and 8.

Excavation Results

Excavation of LA 6171 revealed five Developmental pit structures with a total of 54 intramural features. Two activity areas, one Developmental and one earliest Developmental contained a total of 12 associated features. Seventeen features were large earliest Developmental storage/roasting pits and associat-

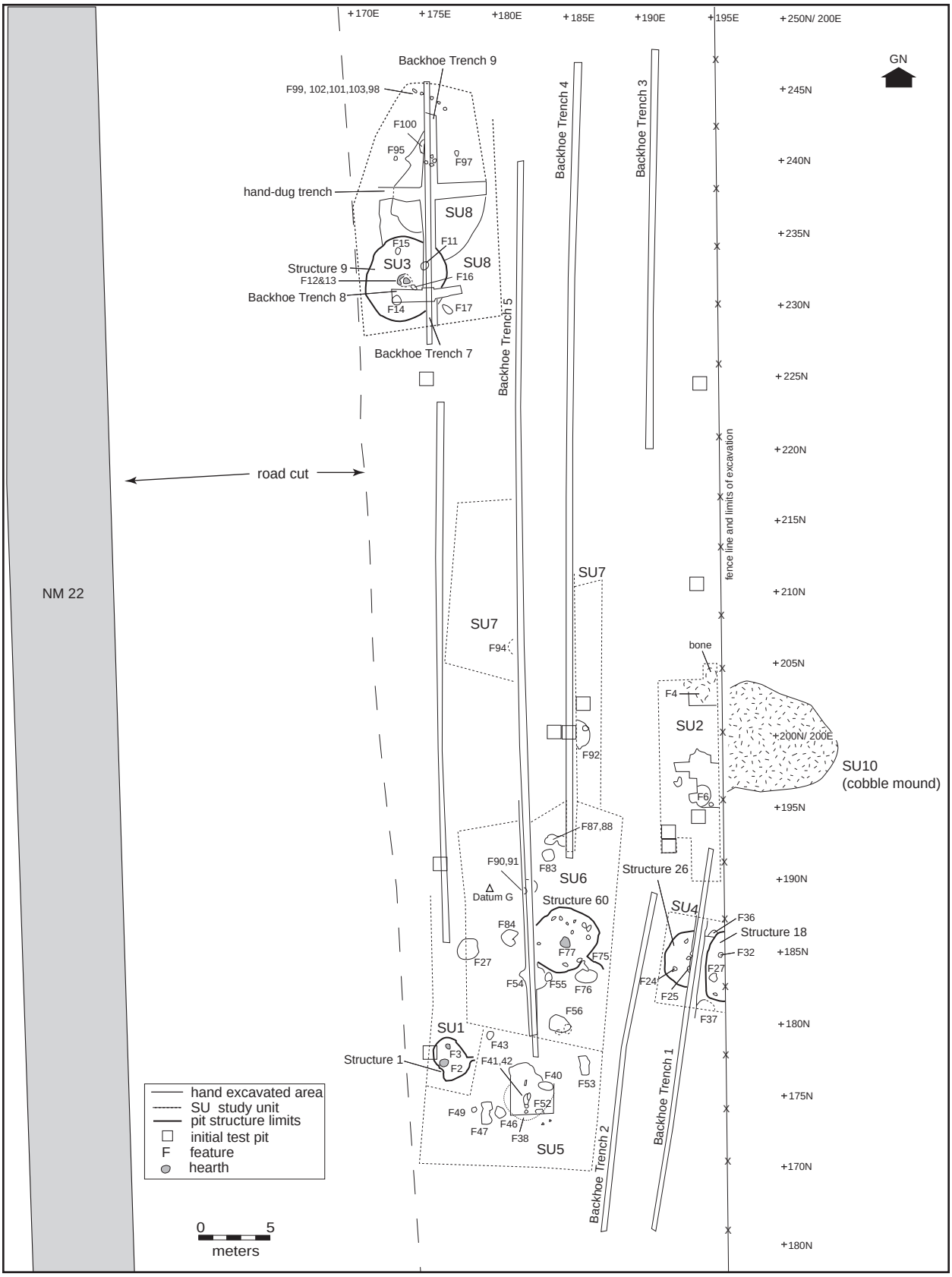

Figure 14.1. LA 6171, site map with test pits, study units, and trenches.

Figure 14.2. LA 6171 site overview, Study Units 1 through 3, and 5 through 9.

ed small pits excavated into them. One feature was a burial, and 23 were Developmental and Coalition extramural pits.

Earliest Developmental

The earliest Developmental component at LA 6171 was located in Study Units 5, 6, and 7. Earliest Developmental feature descriptions, dates, and dating methods are summarized by feature class in Table 14.2 and feature illustrations are provided in Figures 14.4 through 14.12.

The earliest Developmental features are the first excavated evidence of formative agricultural populations in the Upper Middle Rio Grande Valley. These features and associated artifacts are evidence of recurrent population movement, which was likely part of the seasonal round of a semi-nomadic people who were partially dependent on agriculture. The 17 earliest Developmental features exhibit functional and morphological variability.

Feature 38 was a shallow pit with an activity area containing Feature 41 (a cobble concentration) and Features 40 and 42 (small pits). Feature 43 was a large oxidized storage pit. Large, oxidized, bell-shaped features contained from one to three small pits excavated into the base of the larger feature. Feature 53, a large oxidized bell-shaped pit, contained Features 54 and 55. Feature 56, a large oxidized bell-shaped pit, contained Features 57, 58, and 59. Feature 83, a large but shallow burned pit, contained Feature 104. Features 87 and 88 were shallow pits located side by side. Feature 88 contained Feature 89. Feature 90, a large bell-shaped oxidized pit, contained Feature 91, a small pit. Feature 92 was a large bell-shaped oxidized pit that contained Feature 93.

Dates were obtained from archaeomagnetic samples and supported by a carbon-14 assay of corn taken from the lower strata of Feature 54. Overall, the dates range from AD 435 to 665. Archaeomagnetic ranges for all the features overlap, indicating occupation sometime between AD 500 and 640. Date ranges for Feature 91 (AD 435 to 525) contrast with Feature 88 (AD 610 to 630) and 93 (AD 605 to

Table 14.1. LA 6171, Site Stratigraphy

Designation	Description	Munsell Soil Color	Comments
1	Well-sorted, medium-grained eolian sand	10YR 6/4	Natural stratum covers the site and ranges from 15 to 30 cm thick
2	Well-sorted silt loam with 20 percent carbonate flecking	10YR 6/4	Located below Strata 1 and 3 at the south end of the site, from 25 to 50 cm thick
3	General cultural stratum designation	Variable	Strata containing charcoal flecking are separately designated within features and study units
AL	Alluvial deposition		
4	Extremely consolidated loam with 30 to 40 percent inclusions and 10 percent pebbles	10YR 5/4	At the north end of the site this stratum was under Stratum 3
5	Terrace cobbles mixed with calcium carbonate and alluvial sand	7.5YR 5/4	Stratum underlays all other site strata and is exposed in Study Units 3 and 8

665) and suggest that the time frame was likely broader and that there were at least two distinct uses of the site during this early period.

Large Burned Pits

Large bell-shaped pits (Figs. 14.4-14.7) had heavily oxidized walls and floors and from one to three subfloor cists excavated into the base of the features along the side walls. These pits probably served multiple functions including food roasting, storage, and possibly as temporary shelters.

Oxidized floors and side walls indicate that the pits were exposed to enough heat to bake naturally occurring clays. This suggests that roasting at a high temperature for a prolonged period of time could have taken place. Roasting would have been ideal for processing foods high in complex carbohydrates such as roots and tubers. Pit cooking would have also been useful for processing other foods, such as large pieces of fatty meat, or to help preserve corn and piñon (Wandsnider 1997:12, 16–17). Although thermal alteration of these pits does imply food processing, this may not have been their primary function. Features could have been burned to harden them, making them useful for storage.

The purpose of small pits dug into side walls is unknown. They may have been used to process delicate materials during roasting or as specialized storage areas in larger features, if these were used as temporary shelter. Maybe small pits were simply added to enlarge storage capacity. Although sizes of large and small pits are variable, and the number of small features excavated into the base differs, overall feature morphology is similar enough to suggest that large pits were used for similar purposes.

Of the four large bell-shaped pits, three were in Study Unit 6 (Features 54, 56, and 90) and one (Feature 92) was in Study Unit 7. Largest diameters ranged from 1.00 to 2.40 m and maximum depths from 60 to 70 cm. Oval subfloor cists (Feature 55 in Feature 54; Features 57, 58, 59 in Feature 56; and Feature 91 in Feature 90) ranged in depth from 15 to 34 cm below thermal feature floor and from 40 to 70 cm in their maximum dimensions. Archaeomagnetic samples from Features 54 and 90 dated AD 515 to 655 and AD 435 to 525, respectively. Corn fragments from Feature 54 had a two-sigma calibrated date range of AD 440 to 640. Although Feature 56 was not dated, structural and stratigraphic similarity with Feature 54 suggests that it may have been constructed during the same time period.

Because the top layer of fill was typically clean colluvial fill, these pits were extremely difficult to locate and, as in the case of Feature 92, some were only evident in cross section

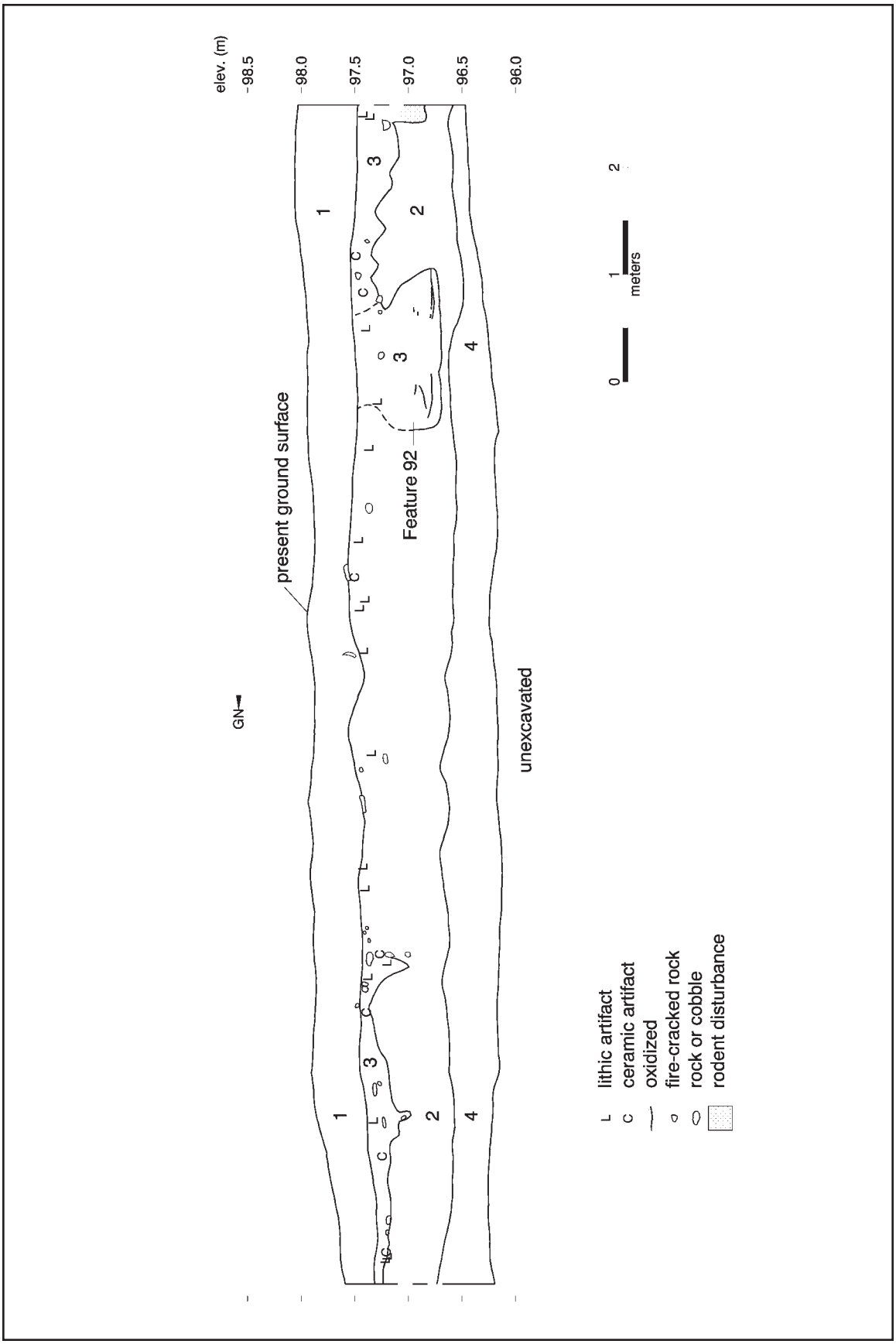

Figure 14.3. Site stratigraphy, Backhoe Trench 4 profile.

Table 14.2. LA 6171, Study Units 5, 6, and 7 Earliest Developmental Feature Summary

Feature No.	Date	Dating Method	Description	Dimensions (LWD in cm)	Strata	Comments
38	AD 510-650	Archaeomagnetic	Large burned pit/activity area	250 x 260 x 39	a) dark brownish gray silt with abundant fire-cracked rock spalls areas of intact feature fill and redeposited fill from cleaning. b) dark grayish brown ash mottled with yellowish sterile fill.	Shallow pit with multi-function activity areas & features. Large shallow pit with hearths/dumping episodes, possible reused pit structure. Postholes in surrounding grid units suggest that this feature may have had a super structure of some kind or possibly rack posts. (Fauna= 1, large-mammal)
40	pre AD 510-650	Stratigraphic analogy	Small pit	104 x 100 x 47	g) 10YR 5/4 yellowish brown silt loam <5% cobble. No calcium carbonate, staining or charcoal. Lithics in fill. h)10YR6/4-5/4 yellowish brown med-grained silt loam, sparse calcium carbonate inclusions, no charcoal.	Pit in base of Feature 38. Steep-walled, flat-bottomed pit with large basalt cobble sitting in first 7 cm of feature fill along Feature 38 limit. This feature probably predated Feature 38. Because of time constraints only the south half was excavated. (Associated with other large pit w/ basalt cobble?)(fauna= 1 jackrabbit radius fragment)
41	pre AD 510-650	Stratigraphic analogy	Cobble concentration	80 x 80 x 8	b) 10YR 6/4-5/4 same as Feature 40 fill.	Multi-coursed rock configuration in Feature 38. Constructed of two courses of rock below Feature 38 burned surface. Ash fill is less dense than fill in Feature 38. Base of feature is unburned. Probably predates Feature 38.
42	pre AD 510-650	Stratigraphic analogy	Small pit	48 x 46 x 40	a) 10YR 6/4 light yellowish brown silt loam, very small, sparse charcoal flecking. One large cobble–cultural fill redeposit.	Circular pit below base of Feature 38. Steep-sided pit with slightly concave bottom. Found below base of Feature 38. Small area of pit wall below rim was blackened otherwise no evidence of burning of any kind. Probable storage pit pre-dating Feature 38. West half excavated.
43	AD 500-650	Archaeomagnetic	Large burned pit	60 x 58 x 50	a)10YR 5/4 very fine-grained sandy loam with very small calcium carbonate flecks. No staining no pebbles. (Fill equivalent to Stratum 2.) b) 10YR 5/4 very fine-grained sandy loam mottled with oxidized soil (7.5YR 5/6) and medium sized charcoal flecks. Consolidated. Redeposit. Two fire-cracked rock 5 cm above base of feature.	Large bell-shaped thermal pit. Pit shape tended more towards bowl shape than bell shape. Walls and floors were extremely compact and well oxidized from feature base to top. Two large cobbles in fill b 6 cm above base were not fire-cracked. (fauna =2)
53	possibly pre AD 510-650	Stratigraphic analogy (fill same as Feature 40)	Large pit	148 x 112 x 40	a) 10YR 5/8 fine sandy loam, small gravels colluvial. b) 10YR 5/3 fine sandy loam with sparse charcoal flecks.	Large steep-sided pit with undulating base. Large basalt cobble (approximately 30 x 15 x 15 cm) located in first 10 cm of feature fill in Stratum a. Only the west half was excavated. (chipped stone=6)
54	AD 515-655; AD 440-640	Archaeomagnetic; Carbon-14 (two-sigma calibrated 95% probability)	Large burned pit	230 x 160 x 70	a) 10YR 6/3 silt with small sand grains, charcoal moderate flecks. b) 10YR 5/3 brown silt with sand, abundant charcoal flecks. Cultural stratum lays underneath Strata a and d. c) 10YR 6/3 silt. Very little charcoal. Eolian d) 5YR 6/6 reddish yellow very fine silt. Charcoal 13% oxidized lenses. This stratum both underlays and overlays c and b. Probably wall slump. Discontinuous.	Bell-shaped pit with subfloor cist, oxidized walls and wall slump. Oxidation thickness 2 to 4 cm. No evidence of alluvial deposition in feature fill. But there was lamination in Feature 55 fill. Alluvial deposition in lower Feature 55 fill suggested that this pit was left open for a period of time before a possible dumping episode and wall slump that followed. Feature 54 located approximately 25 cm from structure wall. Sub-pit (Feature 55) was within 10 cm of structure wall. May predate pit structure. Excavators identified what appeared to be mud-plastered wall behind oxidation. (chipped stone =29, fauna=6)
55	AD 515-655	Stratigraphic analogy	Small pit	56 x 56 x 20	a) 10YR 5/4 silt loam with irregular deposits of oxidized soil slump from Feature 54. Oxidized soil layered and in chunks. Some alluvial lamination. b) 10YR6/4 silt loam with abundant alluvial deposition. No oxidation. c) 10YR5/4 fine sandy silt. Discontinuous lens in south half of pit. d) 10YR 5/4 same matrix as Stratum a with charcoal and alluvial lamination.	Sub-floor pit in Feature 54. Shallow bowl-shaped pit excavated 20 cm below the base of Feature 54. Oxidation was limited to the western lip of the feature adjacent to Feature 54 floor. (fauna = 50)

Table 14.2. Continued.

Fea. No.	Date	Dating Method	Description	Dimensions (LWD in cm)	Strata	Comments
56	Earliest Developmental	Morphology and stratigraphic analogy	Large burned pit	160 x 155 x 60	a) 10YR 5/4 very-fine grained sandy/silty loam with very sparse charcoal flecks. b) 7.5YR 4/3 brown loosely consolidated silty loam charcoal flecked with sparse calcium carbonate. No ash.	Bell-shaped, oxidized storage pit with three small pits excavated into the base at the floor/wall juncture. Incomplete fill sequence for this feature. Fill in sub-pits may be in situ. (chipped stone=45, fauna=8)
57	Earliest Developmental	Morphology and stratigraphic analogy	Small pit	42 x 42 x 24	Charcoal concentration with some oxidized fill.	Sub-floor pit in Feature 56. Shallow circular bowl-shaped pit excavated 21 cm below Feature 56 floor. Fire-cracked rock and small stones in fill. (chipped stone=1, fauna = 4)
58	Earliest Developmental	Morphology and stratigraphic analogy	Small pit	70 x 60 x 30	10YR 5/6 loose charcoal concentration; calcium deposit; fire-cracked rock and loose gravel.	Sub-floor pit in Feature 56. Bowl-shaped pit excavated 34 cm below Feature 56 floor. Fill was a mixture of charcoal flecks oxidized soil and calcium carbonate deposit.
59	Earliest Developmental	Morphology and stratigraphic analogy	Small pit	60 x 40 x 25	a) 10YR 6/6 brownish yellow. b) 10YR 4/4 dark yellowish brown with sparse, even charcoal flecks. Charcoal concentration and calcium carbonate at a base of the feature	Sub-floor pit in Feature 56. Bowl-shaped pit excavated 22 cm below Feature 56 floor. Large cobble in east half of feature. (fauna=1)
83	Earliest Developmental	Morphology and stratigraphic analogy	Large burned pit	65 x 63 x 30	10YR 6/4 very fine-grained sandy loam;sparse charcoal in lower 12 cm of fill.	Thermal pit with sub-floor pit. Basin-shaped pit with sub-pit. Burned and cleaned out. Possible storage pit.
104	Earliest Developmental	Morphology and stratigraphic analogy	Small pit	25 x 32 x 12	10YR 6/4 very fine-grained sandy loam same as Feature 83.	Small cist in north half of Feature 83.
87	A.D. 610-630	Stratigraphic analogy	Large burned pit	70 x 70 x 22	a) 10YR 6/4 silt loam with charcoal flecks and small pieces of oxidized soil. b) 10YR 6/3 fine-grained sandy loam with calcium carbonate and sparse charcoal flecks. Extensively rodent disturbed.	Westernmost pit of two pits connected by a shallow trough. This trough may have been the result of rodent disturbance. Surface oxidation was present in the area between features.
88	A.D. 610-630	Archaeomagnetic	Large burned pit	60 x 54 x 30	a) 10YR 6/4 light yellowish brown silt loam with small amounts of charcoal and chunks of hardened clay. b) 10YR 6/4 with oxidized redeposited silt. No charcoal. c) 10YR 6/4 silt with large chunks of Stratum b.	Oxidized pit with intrusive pit (Feature 89).
89	pre A.D. 610-630	Stratigraphic analogy	Small pit	48 x 46 x 40	Light yellowish brown silt loam. No charcoal. Probably alluvial.	Intrusive pit in Feature 88. Excavated into Feature 88, east pit south wall sat underneath the oxidized floor of Feature 88.
90	A.D. 435-525	Stratigraphic analogy	Large burned pit	96 x 140 x 60	a) 10YR 5/4 brown silt loam with charcoal and cobbles floating in fill, probably redeposit.	Bell-shaped roasting pit with sub-floor pit. This feature was cut by Backhoe Trench 5, and feature base was removed. Profile revealed areas of adobe plaster and oxidation on north and south walls.
91	A.D. 435-525	Archaeomagnetic	Small burned pit	60 x 40 x 15	10YR 6/4 silty sand with charcoal flecks and small chunks of oxidized soil.	Located at base of Feature 90, western edge. (chipped stone=1)
92	A.D. 605-665	Stratigraphic analogy	Large burned pit; 200N/185E	100 x 46 x 56	a) 10YR 5/4 silty sand, with small charcoal flecks, 1 cm gravels throughout fill and multiple alluvial episodes, loosely consolidated. Alluvial. b) 10 YR 6/3 possible wall limit zone. d) wall fall, chunks of hardened clay overlaying fill	Large burned bell-shaped pit with sub-floor pit. This feature was identified in Backhoe Trench 4 profile and at surface scrape. Two layers of oxidized wall fall further defined the feature, and the floor was oxidized. Wall collapse made upper feature walls nearly impossible to define. Feature fill sequence was a continuation of alluvial filling episodes exhibited in Feature 93. (fauna=1)
93	A.D. 605-665	Archaeomagnetic	Small burned pit; 200N/185E	28 x 23 x 20	a) 10YR 5/4 fine-grained sandy loam, alluvial. b) oxidized clay, wall fall. c) 10YR 6/4 fine silt, alluvial. d) alluvial fill exhibiting over 25 sedimentation lenses.	Secondary pit in floor of Feature 90. Walls and floor were oxidized and well defined. Fill sequence was similar to Feature 92

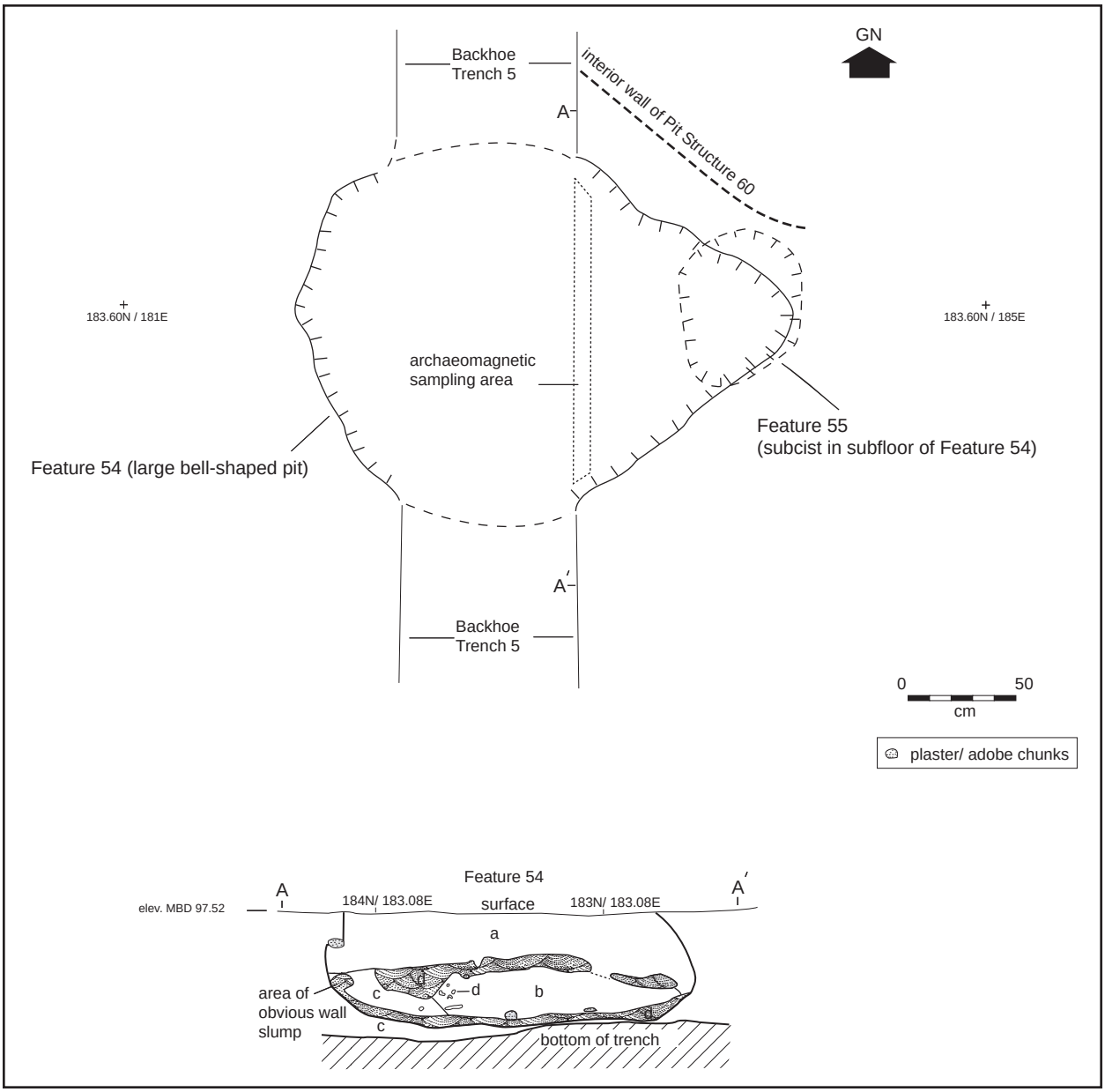

Figure 14.4. Earliest Developmental features, Features 54 and 56 with Structure 60; Feature 54 east wall profile in Trench 5.

because of their heavily oxidized bases and slumped walls. Most profiles showed evidence of alluvial lamination indicating that the features had been cleaned out after use and left open. Lithic and bone assemblages are summarized in Tables 14.3 and 14.4.

Feature 54. Feature 54 (Fig. 14.4) was the largest of the four large bell-shaped pits. Located in 182–184N/181E, Feature 54 was 25 cm south of the southwest wall of Structure 60 and measured 2.30-by-1.60-by-0.70 m. It was elliptical in shape and had one subcist (Feature 55) measuring 56-by-56-by-20 cm. This feature was bisected by a backhoe trench, and it is possible that other small pits were present. Although the feature was large, there was no evidence suggesting the presence of a superstructure.

The fill sequence was well defined and similar to those in Features 56 and 90. Features 54 and 55 were excavated into Stratum 2. Layers of colluvial wash and a small amount of redeposit-

ed fill were capped by collapsed, oxidized side walls then covered by another layer of colluvial fill. The small pit (Feature 55) located along the eastern limit of Feature 54 showed evidence of repeated alluvial lamination suggesting that it was left open before a possible dumping episode and the wall slump that followed.

Floor and wall oxidation thickness ranged from 2 to 4 cm. Field notes indicate that archaeologists observed a small patch of what may have been mud plaster behind oxidized side walls. Although Feature 54 floor was well baked, the lip of Feature 55 was not, suggesting that Feature 55 may have been excavated into Feature 54 after burning had occurred or may have been filled, shielding side walls from heat.

The stratum containing the dated corn fragments did not yield any ceramics. Five sherds were recovered from post-occupational Feature 54 fill, all of which were Middle Rio Grande Plain jar bodies. Middle Rio Grande Plain jar body fragments are common in Early Developmental contexts but can occur in later deposits.

Lithics recovered from Feature 54 fill (Table 14.3) included 35 pieces of chipped stone including 17 flakes, 1 bifacial thinning flake, 1 flake with marginal retouch, and 10 pieces of angular debris. Seventeen lithic artifacts were recovered from Stratum B. The majority of these were manufactured from chalcedony (65 percent, n = 11). Lower frequencies of Jemez obsidian (n = 3), quartzite (n = 2), and nonvesicular igneous material (n = 1) were also recovered. No ground stone was recovered from feature fill. The assemblage exhibits an emphasis on secondary reduction; 83 percent of the whole flakes lack dorsal cortex and only a single flake exhibits partial dorsal cortex. A single obsidian bifacial thinning flake has a retouched platform indicating that bifacial tool manufacture occurred. No evidence of primary decortication was recovered. No utilized tools were recovered.

Fauna from Features 54 and 55 are summarized in Table 14.4. Six bones recovered from Feature 54 were from the same deposit as corn dated to AD 440 to 640. The fauna was too degraded and fragmentary to give information more specific than size and class. Bones were from small mammal, medium to large mammal, and large mammal. Feature 55 contained five species of rodent, 68 percent of which were banner-tailed kangaroo rat, indicating a large amount of rodent intrusion. Rodent activity may suggest cereal storage in this feature, but this is not supported by macrobotanical remains.

Macrobotanical remains from Feature 54 included small amounts of corn, grass seeds and stems, goosefoot, and pigweed. Charred wood consisted of juniper and cottonwood/willow. Macrobotanical remains in Feature 55 were few, consisting of goosefoot and an unknown seed. Charred wood consisted of juniper, with trace amounts of cottonwood/willow and saltbush/greasewood.

Feature 56. Feature 56 measured 1.60-by-1.50-by-0.60 m and had three small interior pits: Features 57 (42 cm in diameter and 24 cm deep), 58 (70-by-60-by 30 cm), and 59 (60-by-40-by-25 cm) (Fig. 14.5). Feature fill consisted of two layers of colluvial fill with sparse charcoal flecks and clods of oxidized wall fall suspended in fill. Small pit fill had bits of fire-cracked rock and higher charcoal content. Feature 59 had a large cobble in the east half of the feature with a large number of small mammal bones beneath it.

A total of 46 pieces of chipped stone were recovered from Feature 56 (n = 45) and 57 (n = 1) fill. They included 34 flakes, 7 pieces of angular debris, 1 bifacial thinning flake, 1 projectile point, 1 biface, and a tested rock. The majority of chipped stone was non-igneous, while nonvesicular igneous materials accounted for the majority of the flakes (n = 17) in Feature 56, the single flake in Feature 57, and 2 pieces of angular debris. Rio Grande chalcedony was the next most common material with 9 flakes and 2 pieces of angular debris. Both tools, the bifacial thinning flake, 5 flakes, and 3 pieces of angular debris were made of Jemez obsidian.

The assemblage indicates an emphasis on later stages of secondary core reduction; 83 percent of the whole flakes lack dorsal cortex

Table 14.3. LA 6171, Earliest Developmental Features, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Basalt		Totals	
Lithic Type	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	8	44.4	-	-	1	5.6	3	16.7	6	33.3	18	21.0
Flake	18	31.6	5	8.8	1	1.8	10	17.5	23	40.4	57	69.0
Flake, Bifacial Thin	-	-	-	-	-	-	2	100.0	-	-	2	2.0
Tested Rock	-	-	-	-	-	-	-	-	1	100	1	1.0
Core, Multiplatform	-	-	1	100	-	-	-	-	-	-	1	1.0
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Biface	-	-	-	-	-	-	2	100.0	-	-	2	2.0
Total	26	31.7	6	7.3	2	2.4	18	22.0	30	36.6	82	100.0

Table 14.4. LA 6171, Earliest Developmental Features, Fauna by Feature

	Feature 43		Feature 54		Feature 55		Feature 56		Feature 57		Feature 59	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal	-	-	3	30.0%	-	-	2	25.0%	-	-	2	8.3%
Small-medium mammal	-	-	-	-	-	-	1	12.5%	-	-	-	1.0%
Medium-large mammal	1	50.0%	5	50.0%	-	-	-	-	-	-	-	8.3%
Large mammal	-	-	1	10.0%	-	-	-	-	-	-	-	1.0%
Botta's pocket gopher	-	-	-	-	2	4.0%	-	-	-	-	-	2.1%
Ord's kangaroo rat	-	-	-	-	5	10.0%	2	25.0%	1	25.0%	1	9.4%
Banner-tailed kangaroo rat	-	-	-	-	34	68.0%	-	-	-	-	-	35.4%
Woodrats	-	-	-	-	1	2.0%	-	-	-	-	-	1.0%
White-throated woodrat	-	-	-	-	1	2.0%	-	-	-	-	-	1.0%
Medium-large rodent	-	-	-	-	7	14.0%	-	-	-	-	-	7.3%
Desert cottontail	-	-	-	-	-	-	1	12.5%	2	50.0%	-	3.1%
Medium artiodactyl	1	50.0%	1	10.0%	-	-	2	25.0%	-	-	-	16.7%
Mule deer	-	-	-	-	-	-	-	-	-	-	-	2.1%
Bighorn sheep	-	-	-	-	-	-	-	-	-	-	-	1.0%
Lizards	-	-	-	-	-	-	-	-	-	-	-	1.0%
Woodhouse's toad	-	-	-	-	-	-	-	-	1	25.0%	-	1.0%
Total	2	100.0%	10	100.0%	50	100.0%	8	100.0%	4	100.0%	3	100.0%
Immature (1/2-2/3 grown)	-	-	-	-	1	2.0%	-	-	-	-	-	1.0%
Burned	1	50.0%	-	-	-	-	-	-	-	-	-	2.1%
Complete	-	-	-	-	20	40.0%	1	12.5%	-	-	-	21.9%
>75% complete	-	-	-	-	9	18.0%	1	12.5%	-	-	-	11.5%
50-75% complete	-	-	-	-	12	24.0%	1	12.5%	-	-	1	14.6%
25-50% complete	-	-	-	-	4	8.0%	-	-	4	100.0%	-	9.4%
<25% complete	2	100.0%	10	100.0%	5	10.0%	5	62.5%	-	-	2	42.7%

and 84 percent of flakes with platforms are single-faceted. Obsidian and chalcedony flakes with retouched platforms indicate bifacial tool manufacture. An obsidian biface fragment and projectile point fragment were also recovered from this provenience. It is likely that one or both of these tools may have been manufactured in this area of the site. A chalcedony flake with a retouched platform indicates that a tool was manufactured within the area but was transported to another location.

Unutilized flakes (75 percent) and unutilized small angular debris (15 percent) comprise the majority of the assemblage. The projectile point base lacked evidence of utilization, but the biface fragment exhibited a polished edge that was truncated indicating it may have been used, broken, and discarded in the area. No ground stone was recovered from the provenience.

Bone from Features 56 and 57 are summarized in Table 14.4. Both features contained the remains of desert cottontail, while Feature 56 also contained medium artiodactyl remains. All of the features contained rodent bone, but none have the amount or diversity of Feature 55.

Feature 56 has the most diverse macrobotanical remains of all the features in this group.

Table 14.4. Continued.

	Feature 87		Feature 88		Feature 90		Feature 91		Feature 92		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal	-	-	1	100.0%	-	-	-	-	-	-	8	8.3%
Small-medium mammal	-	-	-	-	-	-	-	-	-	-	1	1.0%
Medium-large mammal	2	100.0%	-	-	-	-	-	-	-	-	8	8.3%
Large mammal	-	-	-	-	-	-	-	-	-	-	1	1.0%
Botta's pocket gopher	-	-	-	-	-	-	-	-	-	-	2	2.1%
Ord's kangaroo rat	-	-	-	-	-	-	-	-	-	-	9	9.4%
Banner-tailed kangaroo rat	-	-	-	-	-	-	-	-	-	-	34	35.4%
Woodrats	-	-	-	-	-	-	-	-	-	-	1	1.0%
White-throated woodrat	-	-	-	-	-	-	-	-	-	-	1	1.0%
Medium-large rodent	-	-	-	-	-	-	-	-	-	-	7	7.3%
Desert cottontail	-	-	-	-	-	-	-	-	-	-	3	3.1%
Medium artiodactyl	-	-	-	-	6	85.7%	6	75.0%	-	-	16	16.7%
Mule deer	-	-	-	-	-	-	2	25.0%	-	-	2	2.1%
Bighorn sheep	-	-	-	-	1	14.3%	-	-	-	-	1	1.0%
Lizards	-	-	-	-	-	-	-	-	1	100.0%	1	1.0%
Woodhouse toad	-	-	-	-	-	-	-	-	-	-	1	1.0%
Table Total	2	100.0%	1	100.0%	7	100.0%	8	100.0%	1	100.0%	96	100.0%
Immature (1/2-2/3 grown)	-	-	-	-	-	-	-	-	-	-	1	1.0%
Burned light to heavy	-	-	-	-	-	-	1	12.5%	-	-	2	2.1%
Complete	-	-	-	-	-	-	-	-	-	-	21	21.9%
>75% complete	-	-	-	-	-	-	-	-	1	100.0%	11	11.5%
50-75% complete	-	-	-	-	-	-	-	-	-	-	14	14.6%
25-50% complete	-	-	-	-	-	-	1	12.5%	-	-	9	9.4%
<25% complete	2	100.0%	1	100.0%	7	100.0%	7	87.5%	-	-	41	42.7%

Remains consisted of corn, a relatively large amount of charred goosefoot, four winged salt bush, and seep weed. Seep weed has been documented by Greenhouse and others (1981:228–229) as a lining material used by the Pima to protect cholla cactus buds and to provide flavor. It could have been utilized in a similar way in this context. Feature 58 remains were not as dense, but were also mostly goosefoot with a small amount of seep weed and a small amount of bug-seed. Pollen samples obtained from Features 56 and 59 had a large amount of Cheno-am, but no corn (see Chapter 24).

Feature 90. Feature 90 was the oldest of the bell-shaped pits and measured 1.40-by- 0.96 -by-0.60 m. It had an interior small burned pit (Feature 91) that was excavated into the western wall. The feature was cut by Backhoe Trench 5 and most of it was destroyed (Fig. 14.6). An archaeomagnetic date was obtained from Feature 91, one of the few small pits that was oxidized. One Middle Rio Grande Gray ware sherd was found in the fill of each feature. There was also one piece of Rio Grande chalcedony angular debris. Charred ethnobotanical remains recovered from Feature 91 include goosefoot and goosefoot/pigweed.

Feature 92. Feature 92 (Fig. 14.7) was one of the later features in the earliest Developmental group. Archaeomagnetic samples taken from the base of the feature date it to AD 605 to 665 (AM 1110), roughly contemporaneous with Feature 88. Feature 92 was a large burned pit with collapsed walls and a smaller subfloor cist (Feature 93) excavated into its northeastern wall. Upper wall definition was extremely difficult because of the similarity between feature fill and Stratum 2, but the feature appears to have been oval with a 1.00 m maximum diameter and a 56 cm depth. Feature fill was silty sand with very small charcoal flecks, small gravels throughout the fill and occasional medium-sized pieces of charcoal. Feature 93 was a small egg-shaped, burned pit, the base of which was 20 cm below Feature 92 floor. The side walls and base of Feature 93 were well oxidized. The bottom 5 to 9 cm of feature fill showed over 25 incidences of alluvial laminations capped by 11 to 15 cm of sandy loam interspersed with six oxidized soil lenses that probably fell in from Feature 92 upper walls.

No artifacts or charred ethnobotanical remains were recovered from these features.

Artifacts. Ceramics from these features are scarce and limited to Middle Rio Grande Plain and Corrugated jar bodies. The assemblage is too small to provide fine-grained information regarding the dating of filling episodes in these large pits. One piece of ground stone, a hide processing stone was recovered from Feature 87. Tables 14.5 though 14.8 detail ground stone attributes. Most of the chipped stone in Feature 54 is associated with dated corn from Stratum B and demonstrates a reliance on local material as well as evidence of the late stages of secondary core reduction.

Faunal analysis indicates that bone fragments in these features are rare and mainly reflect rodent disturbance. Only Feature 54 contains a large percentage (11 of 15) of medium to large animal bones that may relate to feature use. Ethnobotanical remains are listed in Chapter 23.

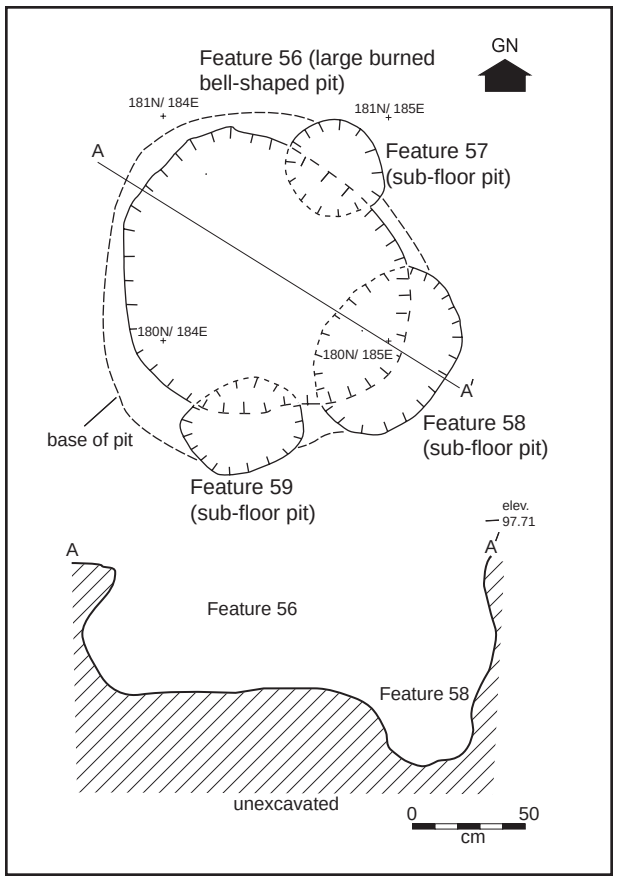

Figure 14.5. Earliest Developmental features, Features 56, 57, 58, and 59, plan and profile.

Remains consisted predominantly of goosefoot, which was prevalent in all samples containing charred seeds. Goosefoot was most dominant in subcists, accounting for 80–91 percent of the total burned seed assemblage in these features. Other weedy annuals were seep weed, pigweed, winged pigweed, and bug-seed. Charred grass seeds, monocot stems, and one juniper seed made up the remaining wild plant remains. Spurge and ground cherry were unburned, and were likely intrusive. Cultivars included squash rind as well as corn cupules, glumes, and one corn kernel. As with the rest of the site, wood from these features was dominated by juniper with a small amount of saltbush/greasewood. It is possible that some of the sampled deposits were associated with later site occupations. However, cupules from Feature 54 produced a two-sigma date range from AD 440–640 indicating early use.

Large pits were likely used repeatedly in different ways before abandonment. Although there is no evidence of remodeling, it is clear that many of these pits were cleaned of charcoal and rock before their final use either as storage facilities or as roasting pits. Multiple laminations in pit fill indicate episodes of puddling that probably hastened pit collapse after abandonment. In their 1981 observations of two roasting pits after abandonment, Greenhouse, Gasser, and Gish note that in a two-year time period, a 50-cm-deep pit was filled within 10 cm of the top. Filling rate would differ with variable conditions such as slope, soil consolidation, and other environmental factors, but it is likely that if pits were not used at LA 6171, they would have filled relatively quickly.

Other Earliest Developmental Features

Evidence of multiple-use episodes and possible remodeling is provided by features that are not bell-shaped. Features 40, 41, and 42 were found beneath burned surfaces in Feature 38. Feature 89 was located below the oxidized base of Feature 88. Later features may have been intrusive, or only partially cleaned out for reuse.

Feature 38. Located in Study Unit 5, Feature 38 was a multi-use thermal feature with a complex series of smaller thermal features and dumping episodes (Figs. 14.8, 14.9). Integrated features included two subfloor features (40 and 42), two internal features (39 and 45), and one exterior feature (Feature 41) (illustrated in Figure 14.10). Feature 38 as defined by initial excavation of Study Unit 5, was located in Grids 174–177N/181–184E approximately 4 m southeast of Structure 60. Systematic excavation involved dividing Feature 38 into quadrants; the feature fill was removed in two arbitrary levels.

General Methods. Feature 38 was excavated in two levels. Level 1 was a mix of primary refuse generated by reuse of the activity area and secondary refuse accumulated subsequent to its abandonment. These strata were difficult to distinguish. Fill was dark brownish gray silt with pockets of charcoal and areas of redeposited buff-colored sandy loam. Burning was evidenced by patches of oxidation (10YR 5/4, yellowish brown) and cultural deposition was indicated by gray-brown mottling accentuated by charcoal flecks and abundant fire-cracked

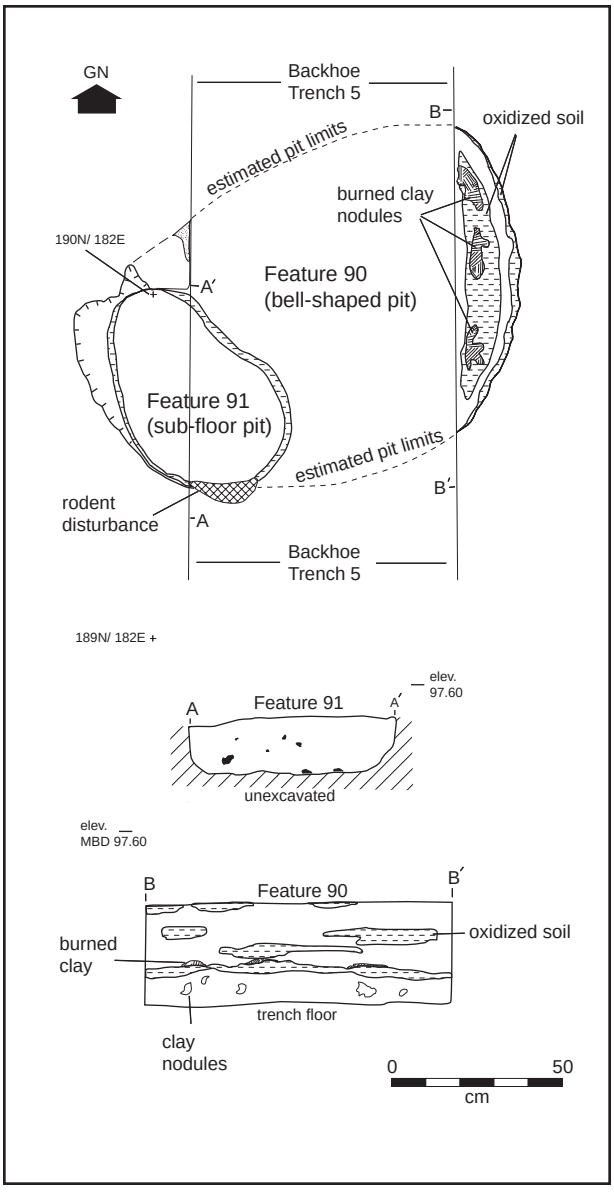

Figure 14.6. Earliest Developmental features, Features 90 and 91, plan and profile.

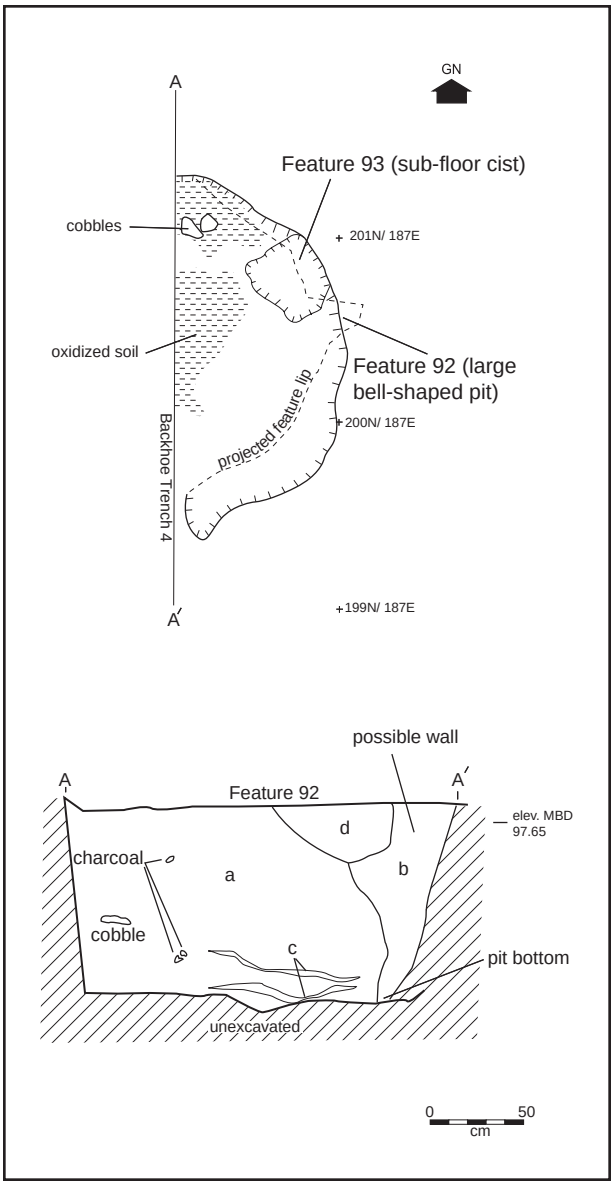

Figure 14.7. Earliest Developmental features, Features 92 and 93, plan and profile.

cobbles. Excavation of Level 1 resulted in the removal of the bulk of the burned and charcoal-stained feature fill and loose fire-cracked rock.

Removal of the northeast and southeast quadrants exposed feature stratigraphy, which was then mapped and described. Within the northeast quadrant, Feature 39, a possible thermal feature, was dug into Level 1 feature fill. It was excavated and recorded according to standard procedures as were all features within Feature 38. Fill removal from the remaining half of Feature 38 uncovered Feature 45, a single-episode refuse concentration. Level 1 was excavated to within 5 cm of the floor of Feature 38.

Level 2 was the remaining 5 cm of fill that separated the cobble layer in Level 1 and the floor of Feature 38. Level 2 contained a series of mottled pockets of remnant charcoal from Level 1. Excavation of Level 2 exposed a base of gray-brown sandy loam mottled with yellowish sterile fill and occasional fragments of fire-cracked rock. This layer was the base of the thermal-use episode.

Level 2 was excavated as a single unit because of its shallow depth. Excavation exposed an undulating floor between 97.06 to 97.13 mbd and four features: Feature 40, a subfloor pit; Feature 41, a rock concentration at the southern limit of Feature 38; Feature 42, a subfloor pit; and Feature 48, a posthole. Only half of Features 40 and 41 were excavated. All were screened with 1/8-inch mesh and ethnobotanical and archaeomagnetic samples were collected when possible.

Feature 38 is an activity area that exhibited

Table 14.5. LA 6171, Indeterminate Ground Stone Fragments, Select Attribute Summary

FS	AU	Material Type	Condition	Cross Section	Wear Pattern	Sharpening	Maximum Dimension (cm)
161	SU 10 fill	Fine-grained rhyolite	Internal fragment	Flat	Linear multidirectional striations	No maintenance	85
357-2	SU 2	Fine-grained sandstone	Internal fragment	Flat	Grinding/faceting	Pecked to sharpen	37
507	Structure 9, fill	Fine-grained sandstone	Internal fragment	Flat	Grinding/faceting	Pecked to sharpen	64
520	Structure 9, fill	Fine-grained rhyolite	Corner fragment	Convex	Linear unidirectional striations	No maintenance	123
658	Structure 60 floor	Fine-grained sandstone	Edge fragment	Flat	Grinding/faceting	No maintenance	116
683	Structure 60 floor	Fine-grained sandstone	Internal fragment	Flat	Grinding/faceting	No maintenance	269
806	SU 4, Structure 2 fill, Feature 104	Vesicular basalt	End fragment	Sinuous or irregular	Grinding/faceting	No maintenance	166
857	Structure 26, fill	Coarse-grained sandstone	Internal fragment	Concave	Grinding/faceting	No maintenance	97

Table 14.6. LA 6171, Mano Fragments, Select Attribute Summary

FS	AU	Material Type	Condition	Shaping	Wear Pattern	Sharpening	Maximum Dimension (cm)
35	Surface collection	Fine-grained sandstone	Edge fragment	No production input	Grinding/faceting	Pecked to sharpen	89
123	SU 10 fill	Vesicular rhyolite	End fragment	Pecking	Linear unidirectional striations, parallel to short axis	No maintenance	145
204	Surface collection	Fine-grained sandstone	End fragment	Pecking and flaking	Grinding/faceting	Pecked to sharpen	92

Table 14.7. LA 6171, Metate Fragments, Select Attribute Summary

FS	AU	Material Type	Condition	Shaping	Wear Pattern	Sharpening	Maximum Dimension (cm)
320	SU 2	Vesicular rhyolite	Internal fragment	No production input	Grinding/faceting	No mainentance	74
487	SU 1, Structure 1 fill	Vesicular rhyolite	Internal fragment	No production input	Grinding/faceting	No mainentance	125
588	Structure 9, floor	Fine-grained sandstone	Edge fragment	No production input	Grinding/faceting	Pecked to sharpen	73
655	Structure 60, floor	Fine-grained sandstone	Edge fragment	Pecking	Grinding/faceting	Pecked to sharpen	316
694	Structure 9, floor	Fine-grained sandstone	Edge fragment	Pecking	Linear unilateral striations	Pecked to sharpen	364
983-2	Structure 26, fill	Welded tuff	Edge fragment	No production input	Ginding/faceting	No mainentance	302

Table 14.8. LA 6171, Shaped Slabs, Select Attribute Summary

FS	AU	Material Type	Condition	Shaping	Maximum Dimension (cm)
624	Structure 9, floor	Fine-grained rhyolite	Edge fragment	Flaking and grinding	191
625	Structure 9, floor	Fine-grained rhyolite	Edge fragment	Flaking and grinding	190
627	Structure 9, floor	Fine-grained rhyolite	Edge fragment	Flaking and grinding	151
628	Structure 9, floor	Fine-grained rhyolite	Edge fragment	Flaking and grinding	133

at least two use episodes as determined by the nature and content of the cultural deposit and vertical feature distribution. While not a formal structure, a limit to the cultural deposit was defined, which suggests that Feature 38 was a discrete activity space. The earliest use of the area is represented by Features 40 (pit), 41(multi-coursed rock configuration), and 42 (circular pit), all of which were located beneath the floor of Feature 38 (Fig. 14.9). Unlike Feature 38 fill and base, which show distinct signs of thermal activity, these three subfloor features lack oxidized walls or floor surfaces.

Later use is evidenced by Feature 38 limits. Feature 38 measured 2.5 m north to south, 2.6 m east to west, and 39 cm at its deepest, below bladed ground surface. A total of 103 kg of fire-cracked rock was recovered from the Feature 38 complex. Its boundaries were irregular, but well defined, and may have been altered by later dumping or remodeling activity. The wall-floor juncture was also variable ranging from almost vertical to shallow sloping sides. Feature 38 floor ranged in depth from 97.03 to 97.25 mbd and was characterized by discrete areas of heavy oxidation contrasted with unburned areas. Feature 39, a discrete dumping episode or possible thermal feature adjacent to the Feature 38 north wall, and Feature 45, a discrete dumping episode adjacent to the northwest wall, made up the remainder of Feature 38 interior features. Although it is unclear whether Feature 39 was a dumping episode or a thermal feature hollowed out of pre-existing cultural deposits, it is apparent that Feature 38 fill was a series of dumping episodes and possible unrelated reuses.

The uneven floor surface and undulating side walls suggest that Feature 38 originated as a series of smaller unrelated thermal pits excavated into Stratum 2. It is also possible that the feature was excavated as a larger pit and that the base and side walls were obscured by multiple dumping episodes from cleaned out hearths and roasting pits. Because Features 40, 41, and 42 were located beneath Feature 38 floor, and because Features 40 and 41 have extremely clean fill, it is likely that they predate Feature 38 and may be associated with other pre-ad 500 features such as Features 53, 90, and 91.

Feature 38 contained abundant fire-cracked rock intermixed with seven sherds, ten pieces

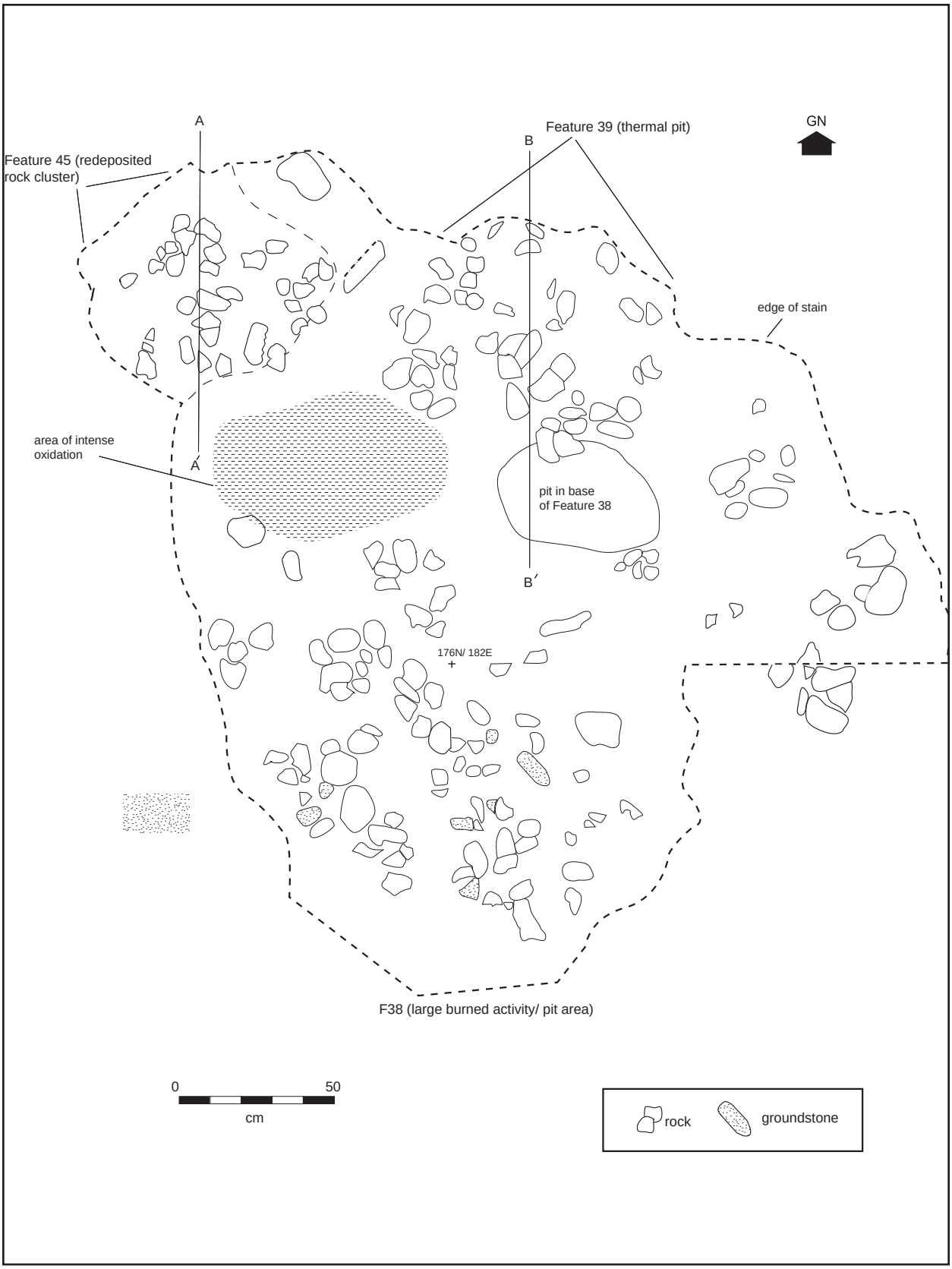

Figure 14.8. Earliest Developmental features, Feature 38, prior to excavation, plan.

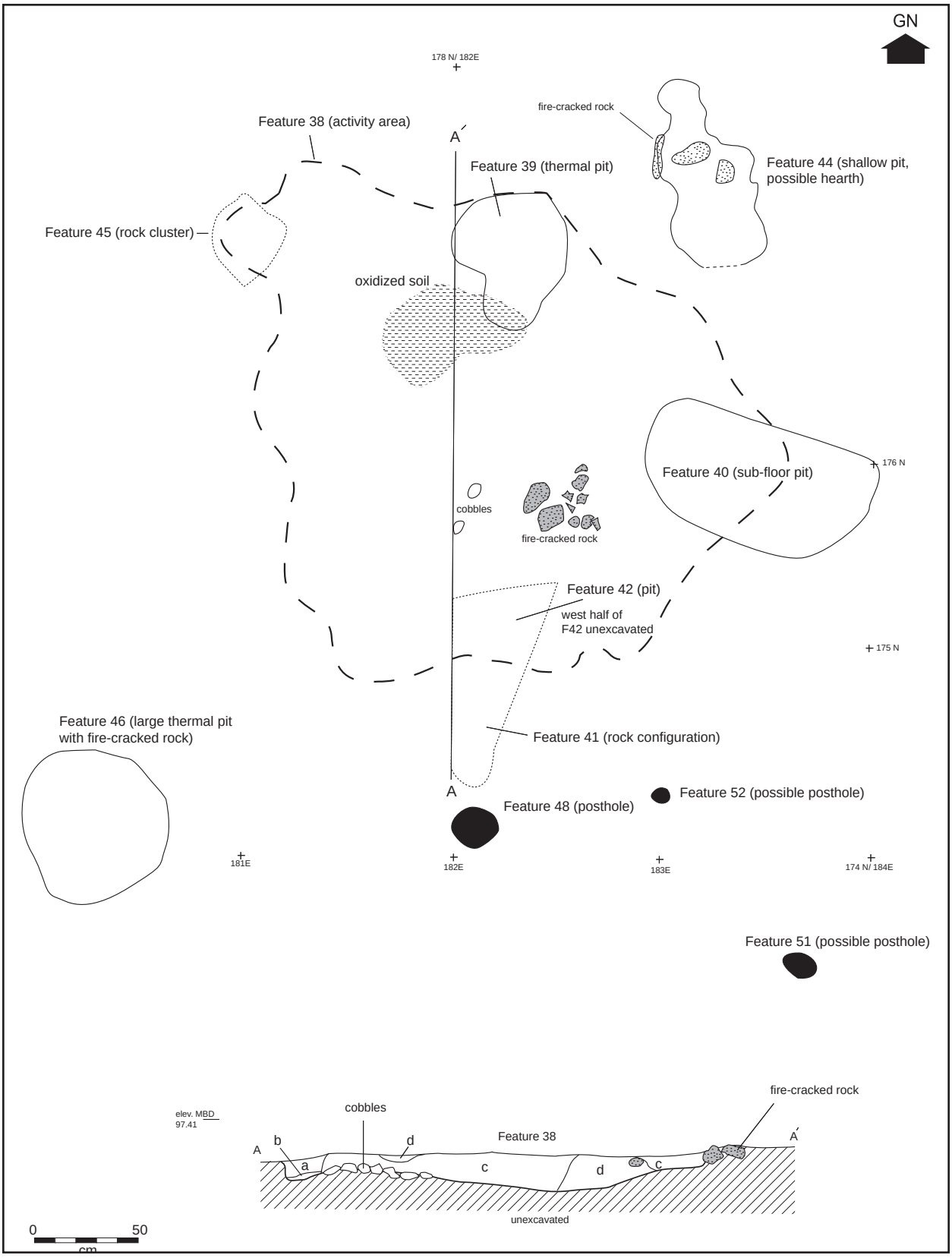

Figure 14.9. Earliest Developmental features, Feature 38 and related features.

of chipped stone and very sparse fauna. Artifacts from Feature 38 are associated with later multiple dumping episodes and are probably from secondary fill rather than the activity area floor.

Seven sherds were recovered from fill, all of which are jar fragments. Four were Middle Rio Grande Plain ware with interior use-wear indicative of cooking. One is a Middle Rio Grande Smeared Corrugated and one is Tallahogan-like.

Chipped stone artifacts recovered from fill consisted of ten flakes and four pieces of angular debris made of four types of raw material (Table 14.3). Chalcedony, chert, nonvesicular materials and quartzite were recovered. The chalcedony, chert, and nonvesicular igneous materials lack dorsal cortex indicating later stages of secondary core reduction. Three additional flakes of quartzite exhibited between 81 and 100 percent dorsal cortex indicative of primary and secondary reduction. No evidence of expedient or formal tool use was indicated. A single flake from a piece of ground stone was also recovered.

Only four pieces of bone were recovered from Feature 38, three pieces of small mammal bone and one piece of large mammal bone, none of which was charred. Macrobotanical remains included a small amount of goosefoot and corn.

Remains from the earliest component were sparse. One bone from Feature 40 was a small fragment of jackrabbit radius. The sample from Feature 39, an ash and fire-cracked rock concentration or possible thermal feature within Feature 38, was more varied yielding goosefoot, cheno-am and, prickly pear cactus. Most of the wood from both features was juniper with trace amounts of saltbush/greasewood. Variations in recovered taxa support speculation that Feature 38 fill was a series of dumping episodes.

Feature 43. Feature 43 was a large bell-shaped thermal pit with extremely compact, well-oxidized floors that produced an archaeomagnetic date of AD 500 to 650 (AM 1147) (Fig. 14.11). Two pieces of bone recovered from feature fill were medium to large mammal and medium artiodactyl. Ethnobotanical remains include corn, squash rind, goosefoot, pigweed, and an unknown taxon. Two Middle Rio Grande Plain ware jar body fragments were also recovered. Lithics were not recovered from this provenience.

Feature 53. Feature 53 was a large, steep-sided pit with an undulating base (Fig. 14.11). This pit may have been a storage feature and resembled Feature 40 with extremely clean colluvial fill and steep-sided construction. This feature could be associated with early features in the Feature 38 complex. Six lithics were recovered from Feature 53. Five were flakes, four basalt and one of pink chert. There was also one gray chert multiplatform core. No macrobotanical or faunal remains were recovered.

Feature 83. Features 83 and 104 are illustrated in Figure 14.11. Feature 83 was a basin-shaped thermal pit with well oxidized walls and floor and was located less than a meter to the south of Feature 87 at the northern edge of Study Unit 6. Maximum measurements were 63 cm in diameter and 30 cm deep. A smaller subfloor pit (Feature 104) was located in the feature's north half. Feature 104 subpit was 32 cm at its widest and 12 cm deep. Fill was the same as that of Feature 83. A total of six plain ware jar fragments were found in Feature 83. Ceramic types were Northern Rio Grande Plain (n = 1) and Corrugated (n = 2) and Middle Rio Grande Smeared Plain Corrugated (n = 3) wares. Eight pieces of uncharred bone including desert cottontail, medium to large mammal and small mammal were recovered from feature fill and are summarized in Table 14.4. There were no lithics recovered. Fill is likely intrusive or a secondary deposit and may not reflect feature use.

Features 87, 88, and 89. Features 87, 88, and 89 were a group of three thermal features each measuring 60 to 70 cm in diameter clustered along the northern edge of Study Unit 6 (Figs. 14.11, 14.12). Features 87 and 88, two shallow basin-shaped thermal features set approximately 16 cm apart, were joined by a shallow trough

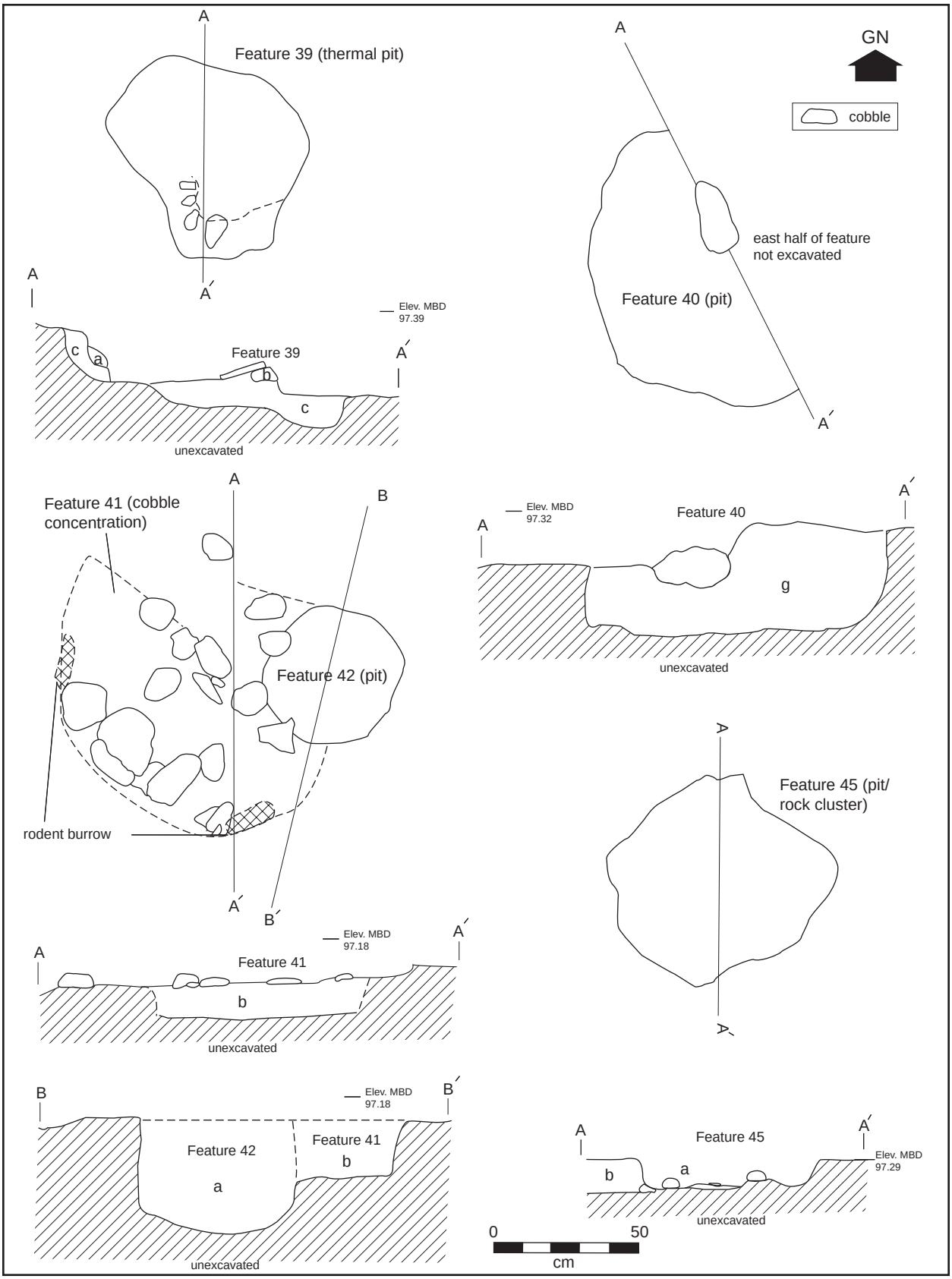

Figure 14.10. Earliest Developmental features, Features 39, 40, 41, 42, plans and profiles.

that appeared to be a rodent burrow. The ground surface to the south of Feature 87 and between both features was oxidized. Feature 89 was located approximately 10 cm beneath the compact oxidized floor and north wall of Feature 88. Feature fill was clean silt loam, but it is unclear whether it was deposited intentionally. Archaeomagnetic samples provided a date of AD 610 to 630 (AM 1146) for Feature 88. Based on the location of Feature 89, it would date to sometime before Feature 88. Features 87 and 88 appear to be functionally related. However, these features were not vertically positioned in a fill sequence. It unclear whether Feature 87 is associated with Feature 88.

A pumice handstone with a slightly convex faceted use surface was recovered from Feature 87 fill. Other wear patterns are lacking, however the nature of the material may not be conducive to the formation of wear patterns such as polish. It is oval shaped in plan view and measures 136 mm long by 107 mm wide by 43 mm thick. Its use surface measures 134 mm long by 104 mm giving it an area of 11,149 sq mm, which is within the range of one-hand manos. Edholm and Wilder (1997:38, 218, and 247) state that pumice is well suited to hide processing tasks. Three pieces of small mammal and medium to large mammal bone were recovered from Features 87 and 88 and are summarized in Table 14.4. No chipped stone was found. Ceramics from Features 87 and 88 are a mixture of Santa Fe Black-on-white bowl fragments (n = 3) and Middle Rio Grande Plain jar body fragments (n = 6) suggesting that these shallow features were re-used at a later date.

Study Unit 1 Excavation Summary

Study Unit 1 was one of the first areas excavated at LA 6171 (Fig. 14.13). Located along the southwestern boundary of LA 6171, Study Unit 1 was flanked on the east and south by Study Unit 5. Study Unit 1 was located along the eroding NM 22 roadcut on a west-facing slope and was identified during surface collection by the presence of eroding cultural deposits. Study Unit 1 contained one possible Coalition period pit structure, Structure 1.

Deposits covering the pit structure ranged from 0 to 15 cm thick. A single level of loose wind-blown sand overlaying river cobbles mixed with gravel and fire-cracked rock (Stratum 3A), possible slope wash, which may have been associated with Feature 38 in Study Unit 5, was removed from grids 176 to 180N/175 to 177E. Excavated limits were 175 to 180N/175 to 180E and units 173N/178 to 179E, 174N/178 to 180E.

General Methods. Study Unit 1 excavation began with 1-by-1-m hand-excavated grid units in Structure 1 and expanded to the east and north. Excavation of 177N/175E revealed an oxidized edge and a soil change identified as the edge of a feature. Surface stripping of grids 176 to 180N/175 to 177E failed to further define the feature. Therefore, the areas surrounding Structure 1 were excavated in one to three levels through Strata 1 and 2 to expose the top of the cultural surface. Most grid units were excavated in 1-by-1-m units with the exception of two 2-by-2-m grid units at 176N/178E and 178N/178E.

Stratigraphy. Study Unit 1 strata are summarized in Table 14.9. Stratum 1A was loose, wind-blown sand, removed during surface strip. Because Study Unit 1 was located along an eroding roadcut, artifacts were exposed. Grids to the east of the 179E line had areas of light charcoal staining and cobbles that were associated with slope wash from Study Unit 5, Feature 38. It is unclear whether this staining was present further down slope near Structure 1. Two strata were identified in Structure 1. The upper stratum, Stratum 3B, was 7.5YR 4/4, brown to dark brown, loose silty sand with small gravels and occasional charcoal stains. Stratum 3C was adobe slump with compact clay mixed into the fill. Lithics and ceramics from upper fill are summarized in Tables 14.10 and 14.11.

Structure 1. Structure 1 was a small, oval, Coalition pit structure with seven floor features located along the NM 22 roadcut in Study

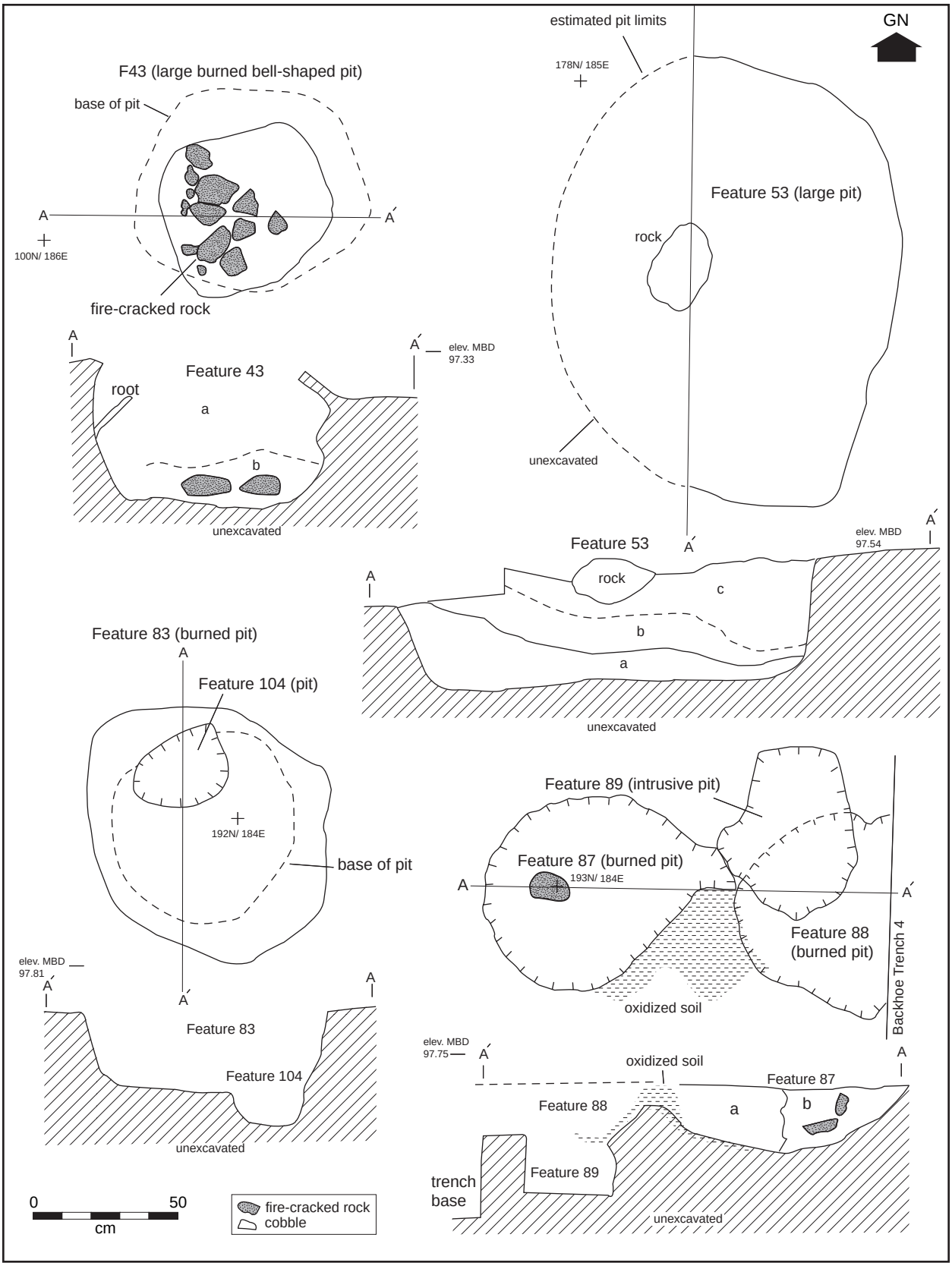

Figure 14.11. Earliest Developmental features, Features 43, 53, 83 and 104, 87, 88, and 89, plans and profiles.

Figure 14.12. Feature 87, 88, and 89 after excavation.

Unit 1 (Fig. 14.14). Its orientation is indeterminate. The structure measured 2.50 m north to south and 2.00 m east to west. Floor depth was 35 cm. There was no evidence of remodeling. Structure fill contained Coalition and Early Classic ceramics, expedient flaked tools including four flakes of nonlocal material.

General Methods. After partial definition of Structure 1, an 80-cm-wide trench was excavated along 178.80N in one level. Extending east from Structure 1 edge, the trench was excavated from 175 to179E. After a north wall profile was mapped and photographed, the remaining north half of the feature was removed by stratum. Flotation samples were taken from fill 10 cm above floor. The south half of the feature was then divided into equal parts (Fig. 14.14) and the southwest quadrant was excavated. After the east wall of the southeast quadrant was profiled and photographed, it was removed. Structure 1 floor showed intermittent oxidation and six floor features, four possible postholes (Features 106 through 109) and two thermal features (Features 2 and 3). Both thermal features were photographed, mapped, and excavated in halves to expose profiles, which were recorded before removing the remaining feature fill. Flotation samples were recovered from both features.

Fill Description. Structure 1 fill is summarized in Table 14.9 and in Figure 14.14, Structure 1 profile. Stratum 3D was 10YR 5/3, brown, sandy loam. It was structure fill that was probably mixed with artifacts from Study Unit 1. Stratum 3E was 10YR 4/1, dark gray silty clay loam and adobe slump.

One hundred and thirty-seven lithic artifacts were recovered from the upper fill in Structure 1 (Table 14.10). Chalcedony (49 percent) composed the majority of the assemblage, followed by nonvesicular igneous materials (31 percent) and Jemez obsidian (13 percent). Small numbers of chert, quartzite, and nonlocal materials were also represented. The nonlocal materials include a flake and a piece of small angular debris manufactured from Grants obsidian. The only other provenience that contained nonlocal material on LA 6171

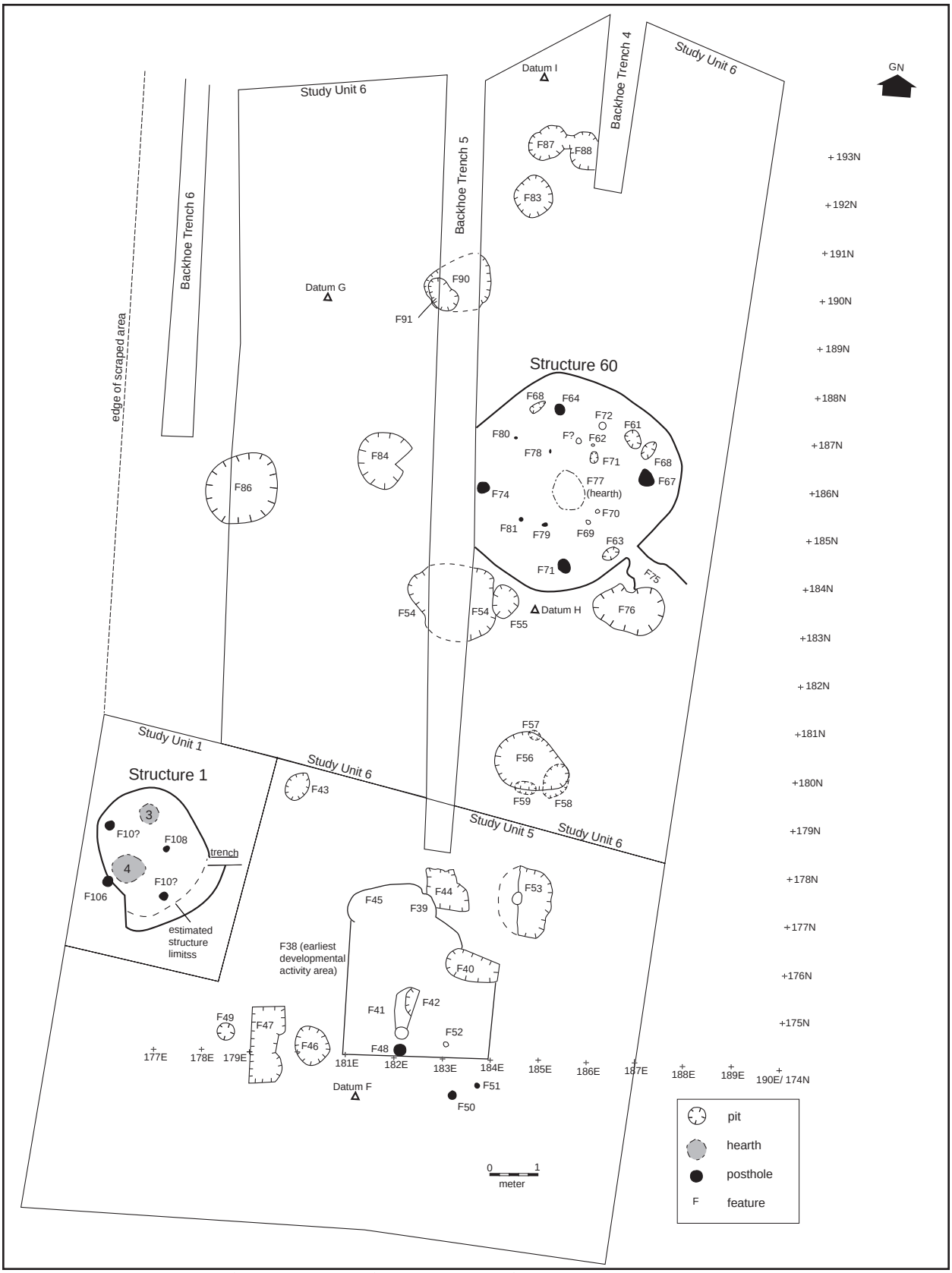

Figure 14.13. LA 6171 Study Units 1, 5, and 6, excavation, plan view.

Table 14.9. LA 6171, Study Unit 1 Strata

Desig-nation	Description	Munsell Color Range	Comments
1	Loose, wind blown sand	10YR 6/4	Located along roadcut, may be mix of eroding lower strata and overburden
3A	River cobbles and fire-cracked rock	--	May be related to slope wash from SU5 Feature 38.
3B	Loose, silty sand	7.5YR 4/4	Small gravel and occasional charcoal stains
3C	Adobe slump mixed with compact clay	--	
		Structure 1 Strata	
3D	Brown sandy loam with structure fill	7.5YR 5/3	
3E	Dark gray silty clay loam and adobe slump	7.5YR 4//1	

Table 14.10. LA 6171, Structure 1 Upper Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Nonlocal		Totals	
Lithic Type	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	19	61.3	2	6.5	1	3.2	1	3.2	7	22.6	1	3.2	31	22
Flake	43	45.3	4	4.2	1	1.1	12	12.6	34	35.8	1	1.1	95	69
Core, Multiplatform	3	75	-	-	-	-	1	25	-	-	-	-	4	2
Angular Debris, Marginal Retouch	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Marginal Retouch	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Projectile Point	-	-	-	-	-	-	4	100	-	-	-	-	4	2
Uniface	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Total	67	48.9	6	4.4	2	1.5	18	13.1	42	30.7	2	1.5	137	100

was the floor fill assemblage from Structure 60.

Although the assemblage reflects an emphasis on later stages of secondary core reduction, there is evidence of both primary and early stages of secondary core reduction of chalcedony and nonvesicular igneous material. Chalcedony and nonvesicular igneous material exhibit primary flakes with 100 percent dorsal cortex, as well as secondary flakes with partial dorsal cortex. However, 75 percent of the chalcedony flakes and 84 percent of the nonvesicular igneous materials lack dorsal cortex. No evidence of formal tool manufacture occurs in the assemblage; the majority of platforms were single faceted (86 percent) and no retouched platforms were recorded. The Jemez obsidian assemblage also indicates both primary decortication and later stages of secondary core reduction.

Unutilized flakes (69 percent) and unutilized small angular debris (22 percent) composed the majority of the assemblage. The rest of the assemblage consists of both expedient (n = 2) and formal (n = 5) tools. The marginally retouched flake and piece of angular debris lack evidence of use wear, and retouched edges are broken indicating that they most likely represent manufacturing failures. Fragments of a projectile point and three bifaces were also identified. The distal end of the projectile point was broken at the base of the notches. The biface fragments do not exhibit evidence of utilization. One uniface fragment with evidence of unidirectional scraping wear was manufactured from chalcedony. It is likely that the tool was utilized, broken, and discarded at the site. No ground stone artifacts were recovered from the upper fill of Structure 1.

Structure Description. At probable occupational ground surface, Structure 1 was roughly oval and measured 2.50 m north to south and 2.00 m east to west; maximum depth was 35 cm. Structure notes are incomplete, but profiles indicate that the floor was slightly undulating and side walls gently sloped giving the feature a slight bowl shape. The floor was covered by a hard mantle of adobe slump (not profiled). Oxidized feature limits, oxidized patches of

Table 14.11. LA 6171, Distribution of Ceramic Types Assigned to Coalition with Classic Components

Pottery Type	Structure 1, Fill
Indeterminate utility ware	3
	1.10%
Unpainted undifferentiated	6
	2.20%
NRG Indeterminate organic (Coalition phase)	2
	0.70%
Santa Fe B/w	14
	5.10%
Biscuit Ware Unpainted	1
	0.40%
Biscuit Ware Painted Unspecified	2
	0.70%
Biscuit A (Abiquiu B/G)	6
	2.20%
Unpainted (Santa Fe paste)	3
	1.10%
NRG Plain body	2
	0.70%
NRG Indented Corrugated	2
	0.70%
MRG Plain rim	2
	0.70%
MRG Plain body	178
	65.40%
MRG Indented Corrugated	10
	3.70%
MRG Plain Corrugated	1
	0.40%
MRG Smeared Plain Corrugated	12
	4.40%
MRG Smeared Indented Corrugated	18
	6.60%
MRG Unpainted undifferentiated	4
	1.50%
San Marcial B/w	1
	0.40%
MRG Slipped Red over white paste (Tallahogan-like)	5
	1.80%
Total	272
	100.00%

floor, fire-cracked rock in the fill, and large amounts of oxidized soil near the floor suggest that this feature may have burned or been reused as a thermal feature or dump after it was abandoned. Structure 1 features are summarized in Table 14.12. No ventilator shaft or entryway were found. Details about non-thermal features are insufficient to discern function. If any of these features were postholes, they were shallow, hinting that the structure lacked a substantial superstructure. This, combined with the structure's shallow depth, suggests use during warm weather (Schmader 1994:313). Ceramic seriation suggests a Coalition date some time between AD 1225 and 1325.

Artifact Assemblage. Artifacts at floor contact were not recorded for this structure. However, Structure 1 floor fill (Stratum 3E) was sampled and contained a small ceramic assemblage (n = 118) and chipped stone artifacts (n = 246). Fauna (one medium to large animal long bone fragment) was only present in upper fill. Because floor features were not sampled, archaeobotanical remains were only recovered from feature fill. One metate fragment was recovered but was not primary refuse. As discussed below, it is unknown whether Stratum 3E fill is associated with the structure's use, or is post-abandonment fill. Considering the uncertain context of the assemblage, inferences concerning activities associated with this structure are tentative at best.

Pottery recovered from Stratum 3E is shown in Table 14.13. The ceramic assemblage was dominated by Middle Rio Grande Plain ware, which made up 66 percent (n = 78) of the sherds analyzed. Of these, 69 percent (n = 54) were jar bodies and 10 percent were jar necks. Jars make up 74 percent of the total assemblage. White wares are represented by Santa Fe Black-on-white, Abiquiu Black-on-gray, and San Marcial Black-on-white, all of which are bowl fragments. Red wares are Tallahogan-like and San Francisco Red. Three of the jar body sherds exhibit abrasion from cooking.

Two hundred and forty-six lithic artifacts were recovered from the floor fill in Structure 1 and are summarized in Table 14.14. The majority of the assemblage was composed of chalcedony (41 percent) and nonvesicular igneous materials (30 percent). These material types were followed in frequency by Jemez obsidian (14 percent) and chert (9 percent). Other material types represented by few artifacts included quartzite, "other" local materials, and "other" nonlocal materials. Most assemblages lack

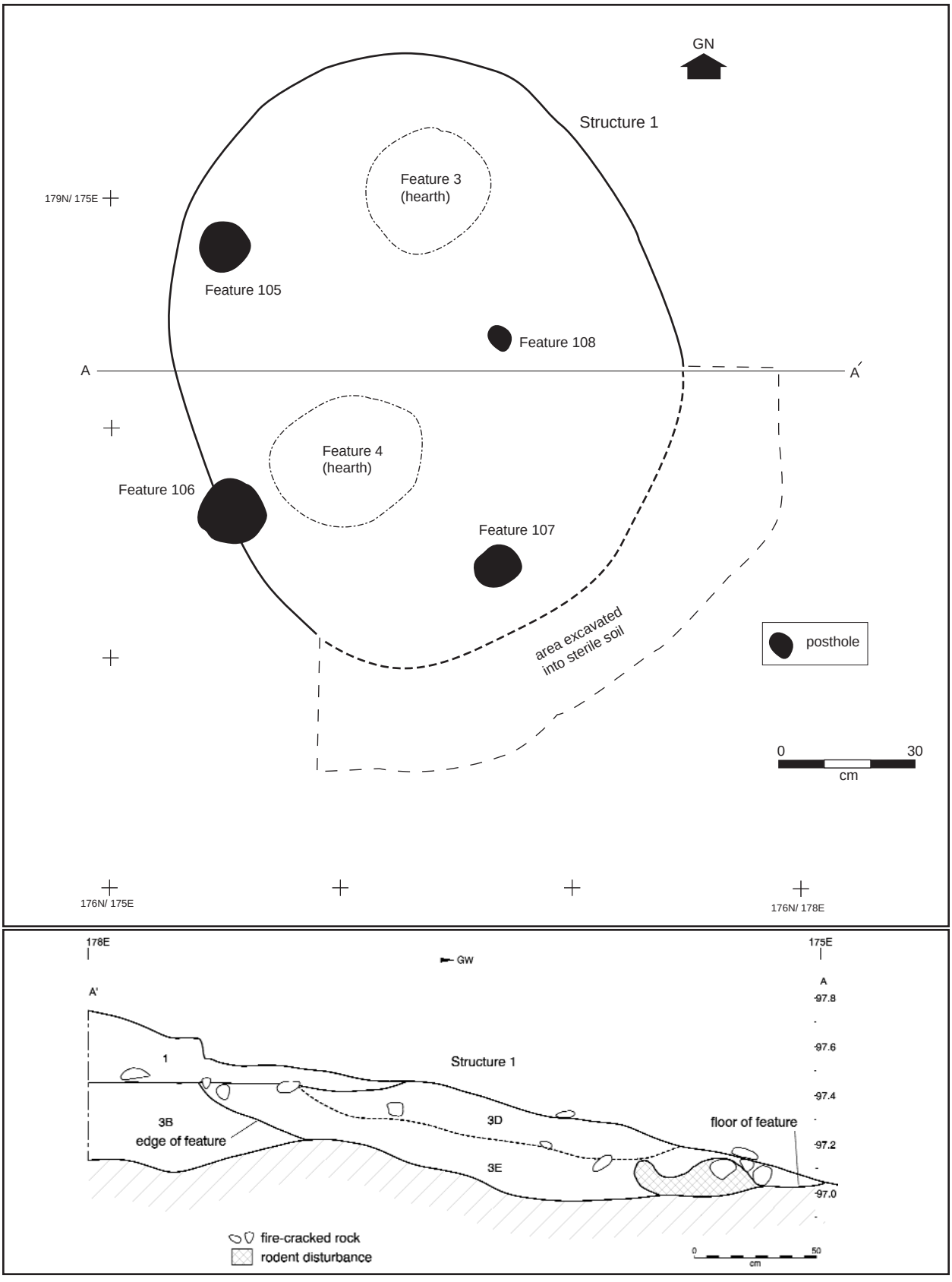

Figure 14.14. Structure 1, plan and profile.

Table 14.12. LA 6171, Structure 1 Intramural Feature Summary

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
1		Possible shallow basin-shaped pit structure	260 x 250 x 35	see Figure 14.14	See Study Unit 1 (bone=1)
2	177N/176E	Possible hearth	72 x 60 x 13	a) 5YR 3/1 dark sandy loam with artifacts, no charcoal b) 7YR 5.4 silt loam with gravel.	Oval hearth with oxidized base. No collar. Excavation notes indicate that this feature was removed to reveal wall slump and a small area of cobbles mixed with fire-cracked rock and charcoal. Although oxidation at base of this feature argues that it was a post-occupational thermal feature excavated into pit structure slump, this feature may simply have been a pocket of pit structure fill. Excavation notes are unclear.
3	179N/186E	Oxidized basin-shaped sub-floor pit (possible hearth, or ash pit)	46 x 12 x 10	a) 5YR 3/1 ash fill with brown sandy loam	Round basin-shaped thermal feature.
109	178N/175E	Small pit	8 x 8 x 2	Not described	Possible pot rest measurements approximate
106	177N/176E	Small pit	11 x 12 x 4	Not described	Measurements approximate
107	177N/176E	Small pit	5 x 7 x 3	Not described	Measurements approximate
108	178N176E	Divot	4 x 4 x ?	Not described	Measurements approximate

nonlocal materials but this provenience contained four nonlocal flakes. Two were manufactured from Grants obsidian and two others from mahogany obsidian. The only other nonlocal artifact that was identified on LA 6171 was a Grants obsidian flake from the floor fill in Structure 60.

The combined assemblage indicates an emphasis on later stages of secondary core reduction; 79 percent of the flakes lack dorsal cortex. Evidence of early stages of secondary reduction is indicated by flakes with partial dorsal cortex (12 percent). There is some evidence of primary reduction for the two largest material classes, with only two chalcedony flakes and four vesicular igneous flakes exhibiting 100 percent dorsal cortex. Evidence of tertiary formal tool manufacture is not indicated for either of these material categories; consequently, it appears that primary and secondary core reduction of chalcedony and vesicular igneous materials occurred in the structure. Three multifaceted cores, manufactured from chalcedony, were also recovered.

Although material categories other than chalcedony and vesicular igneous contain few lithic artifacts, tertiary bifacial tool manufacture is indicated by flakes with retouched or prepared platforms in the following material categories: chert (n = 1), Jemez obsidian (n = 3), and nonlocal Grants obsidian (n = 1). Three other flakes made of Grants obsidian (n = 1) and mahogany obsidian (n = 2) exhibit single-facet platforms and lack dorsal cortex, indicating an emphasis on later stages of secondary core reduction.

Unutilized flakes (69 percent) and unutilized small angular debris (24 percent) make up the majority of the assemblage. The rest of the assemblage is composed of both expedient and formal tools. Two expedient flake tools, one of chalcedony and the other of vesicular igneous materials, exhibit wear typical of scraping on hard media like bone or wood. Six additional flakes have unidirectional marginal retouch; three exhibit unidirectional scraping wear while three others lack evidence of utilization. The marginally retouched artifacts were manufactured from chalcedony, chert, and vesicular igneous materials.

Two obsidian biface fragments were also recovered, one with evidence of prolonged use

Table 14.13. LA 6171, Distribution of Ceramic Types in Assemblages Assigned to Mainly Coalition with Early Developmental Components

Pottery Type	Structure 1, Floor, 301	SU 1, 303	Structure 9, Fill, 307	Structure 18, Fill 309	Structure 26, Fill 311	SU 6, Extramural Features, 317	Total
Indeterminate utility ware	1	-	1	-	-	-	2
	0.80%	-	0.40%	-	-	-	0.20%
Unpainted undifferentiated	9	7	11	4	6	-	37
	7.60%	5.20%	4.30%	1.40%	5.90%	-	4.00%
Kwahe'e B/w (thin	-	-	-	-	1	-	1
parallel line)	-	-	-	-	1.00%	-	0.10%
NRG Indeterminate	-	-	1	-	-	-	1
organic paint	-	-	0.70%	-	-	-	0.10%
Santa Fe B/w	7	13	34	9	3	4	70
	5.90%	9.60%	13.40%	3.20%	2.90%	13.30%	7.70%
Biscuit Ware	-	1	2	-	-	-	3
Unpainted	-	0.70%	0.80%	-	-	-	0.30%
Biscuit Ware	-	-	-	-	1	-	1
Painted Unspecified	-	-	-	-	1.00%	-	0.10%
Biscuit A (Abiquiu B/G)	1	3	2	-	-	-	6
	0.80%	2.20%	0.80%	-	-	-	0.70%
Unpainted (Santa Fe paste)	-	-	3	-	-	-	3
	-	-	1.20%	-	-	-	0.30%
NRG Plain body	1	7	-	-	-	1	9
	0.80%	5.20%	-	-	-	3.30%	1.00%
NRG Plain Corrugated	-	-	-	-	-	1	1
	-	-	-	-	-	3.30%	0.10%
NRG Smeared	-	-	1	-	-	-	1
Indented Corrugated	-	-	0.40%	-	-	-	0.10%
MRG Plain rim	5	4	-	8	7	-	24
	4.20%	3.00%	-	2.90%	6.90%	-	2.60%
MRG Plain body	78	62	127	158	41	15	481
	66.10%	45.90%	50.20%	57.00%	40.20%	50.00%	52.60%
Wide Neckbanded	-	1	-	-	-	-	1
(wiped)	-	0.70%	-	-	-	-	0.10%
MRG Indented	3	2	1	1	6	-	13
Corrugated	2.50%	1.50%	0.40%	0.40%	5.90%	-	1.40%
MRG Plain	-	-	-	2	2	2	6
Corrugated	-	-	-	0.70%	2.00%	6.70%	0.70%
MRG Smeared Plain	7	16	21	78	15	6	143
Corrugated	5.90%	11.90%	8.30%	28.20%	14.70%	20.00%	15.60%
MRG Smeared	-	11	36	-	6	-	53
Indented Corrugated	-	8.10%	14.20%	-	5.90%	-	5.80%
MRG Unpainted	3	3	1	3	5	-	15
undifferentiated	2.50%	2.20%	0.40%	1.10%	4.90%	-	1.60%
MRG Mineral Paint	-	2	1	3	-	-	6
(undiff)	-	1.50%	0.40%	1.10%	-	-	0.70%
San Marcial B/w	1	2	1	2	4	1	11
	0.80%	1.50%	0.40%	0.70%	3.90%	3.30%	1.20%
White Mountain Red	-	-	-	1	-	-	1
(undifferentiated)	-	-	-	0.40%	-	-	0.10%
MRG Slipped Red	1	-	4	1	4	10	-
over white paste	0.80%	-	1.60%	0.40%	3.90%	1.10%	-
(Tallahogan - like)	-	-	-	-	-	-	-
Local R/b	-	-	2	-	1	-	3
	-	-	0.80%	-	1.00%	-	0.30%
Glazed red	-	-	1	-	-	-	1
(unpainted)	-	-	0.40%	-	-	-	0.10%
Jornada Brown body	-	-	1	4	-	-	5
	-	-	0.40%	1.40%	-	-	0.50%

Table 14.13. Continued.

Pottery Type	Structure 1, Floor, 301	SU 1, 303	Structure 9, Fill, 307	Structure 18, Fill 309	Structure 26, Fill 311	SU 6, Extramural Features, 317	Total
Socorro B/w	-	-	1	-	-	-	1
	-	-	0.40%	-	-	-	0.10%
Socorro B/w (hatchured and solid designs)	-	-	1	-	-	-	1
	-	-	0.40%	-	-	-	0.10%
Mogollon R/b	-	-	-	1	-	-	1
	-	-	-	0.40%	-	-	0.10%
San Francisco Red	1	-	-	2	-	-	3
	0.80%	-	-	0.70%	-	-	0.30%
Alma Plain body	-	-	1	-	-	-	1
	-	-	0.40%	-	-	-	0.10%
Total	118	135	253	277	102	30	915
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14.14. LA 6171, Structure 1 Floor Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Other Nonlocal		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	24	39.3	11	18.0	3	4.9	7	11.5	15	24.6	1	1.6	-	-	61	24.0
Flake	70	40.7	10	5.8	6	3.5	25	14.5	56	32.6	1	0.6	4	2.3	172	69.0
Core, Multiplatform	3	100.0	-	-	-	-	-	-	-	-	-	-	-	-	3	1.0
Flake, Utilized	1	50.0	-	-	-	-	-	-	1	50.0	-	-	-	-	2	<1
Flake, Marginal Retouch	3	50.0	1	16.7	-	-	-	-	2	33.3	-	-	-	-	6	2.0
Biface	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	<1
Total	101	41.1	22	8.9	9	3.7	34	13.8	74	30.1	2	0.8	4	1.6	246	100.0

as a scraping tool and the other lacking evidence of use wear. It is likely that one biface was utilized, broken, and discarded in the structure. No ground stone was recovered from this provenience.

Subsistence. Archaeobotanical and faunal information from this feature are scarce and inconclusive. Flotation samples taken from feature fill contained a large amount of burned goosefoot and some corn remains. No macrobotanical remains were recovered. The only bone analyzed from floor and fill was one medium to large mammal long bone shaft fragment.

Abandonment. Oxidized slump in this structure may have been associated with structural collapse or may have been secondary redeposit. A Coalition ceramic assemblage mixed with Early Classic and Early Developmental types suggest that the area was covered by sheet midden and that the structure was later used for refuse disposal. Oxidized slump tentatively suggests that the structure was burned when abandoned and that there may have been a low adobe wall constructed around the structure that later slumped in.

Study Unit 2 Excavation Summary

Study Unit 2 was a buried Early Developmental activity area and undated animal bone bed located beneath wall fall from a Pueblo III masonry structure recorded as Feature 1 by Dittert and Eddy in December 1961. The study unit was placed immediately to the west of the masonry structure and spanned an area from 190N to 204N and 192E to 195E. Primary excavations near the top of the house block also included grids 197 to 201N/201E, 198N/199 to 200E, and 197N/198 to 200E.

Study Unit 2 excavation began with hand excavation of grid units at the top of the room block mound (Study Unit 10, Fig. 14.1). To expose possible wall alignments, the area was surface stripped in 1-by-1-m grid units to a

depth of 7 to 10 cm and screened with 1/4-inch hardware cloth. Artifacts from each unit were bagged according to type. A total of ten 1-by-1-m units were excavated to a maximum depth of 10 cm below present ground surface.

When the estimated right-of-way was reestablished approximately 5 m to the west, excavation units and the surrounding unexcavated area were mapped and abandoned. Excavations were moved west to the base and sides of the room block mound (Fig. 14.15). Two subdatums were established for the area: A primary datum at 200N/195E (99.65 m) and a secondary datum at 193N/195E (89.69 m) used for a deep exploratory pit located in 193N/192E. Grid units with the exception of 196N/192E, 194N/192E, and 194N/194E were surface stripped in 2-by-2-m units. After mapping and removal of the cobble layer that sat in the upper layers of Stratum 3F, the remainder of the stratum was excavated in one 20 to 39 cm level to the top of Surface 1. Surface 1 was defined by patches of oxidization and three features (4, 6, and 7). Excavation of each feature followed standard project procedure.

Because Feature 8 was extremely disturbed by rodents and was poorly defined, two 1-by-1-m grid units were excavated through Stratum AL2A to define the limit of the cultural deposit. Grid units 203N/195E and 204N/195E were excavated in 10 cm levels to a depth of 98.97 m where a partial immature cow or bison skeleton was found; the area was designated Feature 8. The skeleton was photographed, mapped, and removed in two levels. Fill from these two levels was screened with 1/8-inch mesh. To assure complete excavation of the bone bed, units 204N/194E and 203N/194E were also excavated to a matching depth. Although a fill differentiation was encountered at the base of 203N/194E, no definite feature limits were ever identified and investigation of this area was terminated.

Another deep excavation was conducted through Stratum AL2A in 193N/192E in 10 cm levels to a depth of 88.59 m and in 194N/192E to a depth 88.59 m. This exploratory pit was excavated to test lower strata and determine whether deep cultural deposits were present.

After Surface 1 features were identified and recorded, a series of 1-by-1-m units were excavated through Stratum AL2A to a depth of 98.85 m to expose a strata profile along the 196E line.

Stratigraphy. Study Unit 2 stratigraphy is summarized in Table 14.15. Stratum 1 was coarse eolian sand described in site stratigraphy. At 5 to 12 cm thick, Stratum 1 was shallower here than over the rest of the site. This stratum was shallowest at the top of the mound and it increased in depth at the base of the slope 4 m to the west.

Stratum 3F was dark yellowish brown (10YR 4/4) sandy loam with artifacts and was

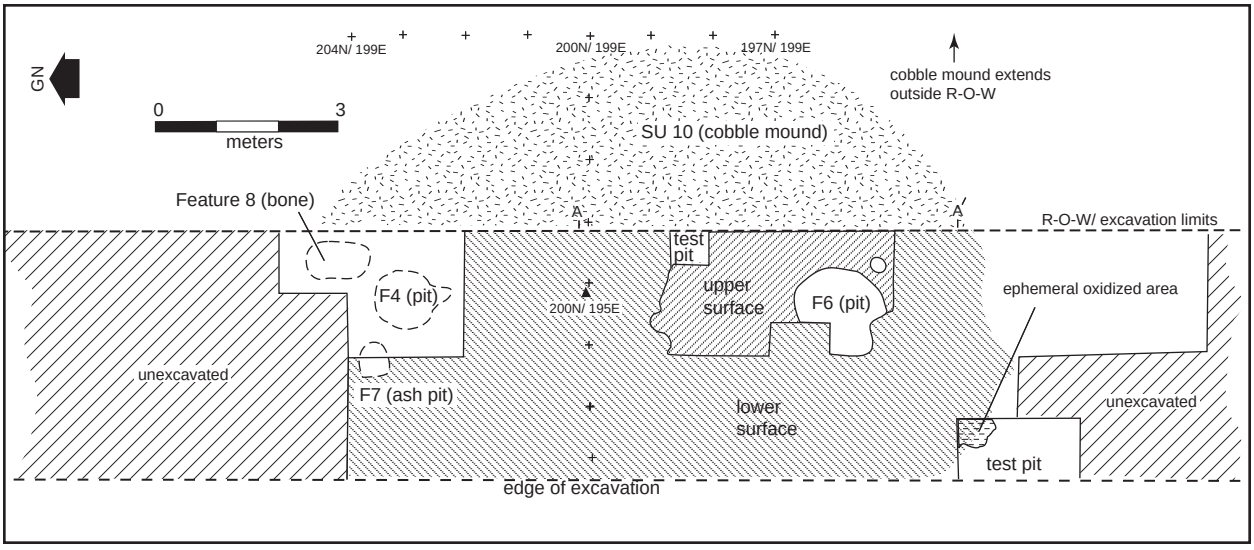

Figure 14.15. Study Unit 2, plan view.

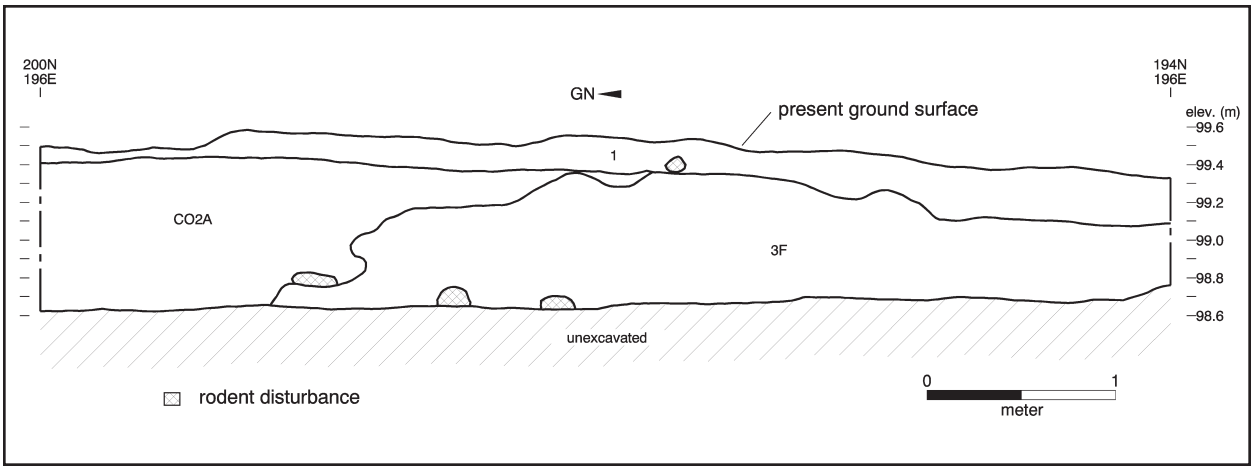

Figure 14.15. Continued. Profile of Study Unit 2.

Table 14.15. LA 6171, Study Unit 2 Strata

Desig-nation	Description	Munsell Color Range	Comments
1	Coarse eolian sand	10YR 6/4	Eroding from the top of the structure mound depth increases at base and ranges from 3 to 12 cm
3F	Sandy loam	10YR 4/4	Cultural component, probably later than Stratum 3 feature fill in Study Unit 5
CO2A	Silt loam	10YR 6/3	Small sparse calcium carbonate flecking, substrate surrounds fill in bone bed, may be indication of small natural swale
2	Stratum 2, as described in site stratigraphy		See site strata

capped by a layer of cobbles, most likely wall fall from the house block to the east. Stratum depth was approximately 20 cm. Although this cultural stratum occurred between Stratum 1 and Stratum 2, Stratum 3F was given a different stratum designation because its ceramic assemblage was mainly dated to the Classic period with some from the Coalition period. Artifacts recovered from this stratum suggest that it represents a later site component than Stratum 3 in Study Unit 5.

Stratum AL2A was a pale brown (10YR 6/3) silt loam with sparse calcium carbonate flecks and few pebbles, but no cobbles, and was from 1 cm to approximately 50 cm deep. This layer surrounded the fill in Feature 8 (bone bed). The difference between Stratum AL2A and Stratum 2 reflects the former's location within a filled-in natural swale.

Stratum 2 was a natural, noncultural material-bearing layer into which Study Unit 2 features were excavated. It is the same as described for site stratigraphy.

Artifacts. Pottery from Study Unit 2 is referred to in Tables 14.16 through 14.19. Ceramic artifacts recovered from Stratum 3F were separated into three assemblages by area and temporal component. The three loci sampled are: the top of the room block mound (designated Study Unit 10 for analytical purposes), the slope to the west of the masonry structure (stratum above Surface 1), and fill from Features 4, 6, and 7 (excavated into Stratum 2, Surface 1, and Feature 8). Lithic artifacts are summarized in respective sections for each locus and are summarized in Tables 14.20, 14.21, and 14.23).

*Room block mound (Study Unit 10).*Ceramics from the top of the room block mound repre-

Table 14.16. LA 6171, Distribution of Ceramic Types in Assemblages Assigned to Late Coalition Components

Pottery Type	SU 10 Fill, 323
Unpainted undifferentiated	3
	7.00%
NRG Indeterminate organic paint	1
	2.30%
Santa Fe B/w	1
	2.30%
NRG Plain body	2
	4.70%
NRG Smeared Plain Corrugated	1
	2.30%
MRG Plain body	16
	37.20%
MRG Indented Corrugated	4
	9.30%
MRG Smeared Plain Corrugated	3
	7.00%
MRG Smeared Indented Corrugated	5
	11.60%
Keres Utility Ware	3
	7.00%
Glazed red (unpainted)	1
	2.30%
Glaze brown/tan (unpainted)	2
	4.70%
Agua Fria Glaze A	1
	2.30%
Total	43
	100.00%

Table 14.17. LA 6171, Distribution of Ceramic Types Assigned to Mainly Classic with Coalition and Early Developmental Components

Pottery Type	SU 2, 304
Indeterminate utility ware	2
	1.60%
Santa Fe B/w	3
	2.40%
Biscuit Ware Unpainted	3
	2.40%
Biscuit A (Abiquiu B/G)	1
	0.80%
Biscuit B (Bandelier B/G)	8
	6.30%
NRG Plain body	5
	3.90%
NRG Plain Corrugated	1
	0.80%
Smudged interior/buff exterior	1
	0.80%
MRG Unknown rim	1
	0.80%
MRG Plain body	69
	54.30%
MRG Indented Corrugated	1
	0.80%
MRG Plain Corrugated	1
	0.80%
MRG Smeared Plain Corrugated	5
	3.90%
MRG Smeared Indented Corrugated	21
	16.50%
MRG Unpainted undifferentiated	1
	0.80%
MRG Mineral Paint (undiff)	1
	0.80%
San Marcial B/w	1
	0.80%
Glazed red (unpainted)	1
	0.80%
Glaze yellow/cream slipped (unpainted)	1
	0.80%
Total	127
	100.00%

sented a Late Coalition component with a small amount of glaze red, glaze brown, Santa Fe Black-on-white, and Agua Fria Glaze A, in addition to the ubiquitous Middle Rio Grande Plain body jar sherds that dominate the ceramic assemblage (see Table 14.16).

Sixty-three lithic artifacts were recovered from Study Unit 10 and are summarized in Table 14.21. The majority of lithic artifacts were manufactured from vesicular igneous materials (57 percent). Other material categories represented are chalcedony (22 percent), Jemez obsidian (11 percent), chert (n = 5), and quartzite (n = 1).

Eighty-two percent of whole flakes lack dorsal cortex, indicating an emphasis on later stages of secondary core reduction. The large percentage of single-faceted platforms support these findings. There is some evidence of primary decortication of both the chalcedony and vesicular igneous material categories. An obsidian flake with a retouched or prepared platform indicates that bifacial tool manufacture occurred in the area although a biface was

Table 14.18. LA 6171, Distribution of Ceramic Types Assigned to Early Developmental Components

Pottery Type	SU 2, Features, 305	Structure 9, Floor, 306	Total
Indeterminate utility ware	1	-	1
	10.0%	-	1.1%
Santa Fe B/w	-	1	1
	-	1.2%	1.1%
MRG Plain rim	-	8	8
	-	9.4%	8.4%
MRG Plain body	7	74	81
	70.0%	87.1%	85.3%
MRG Wide Neckbanded (wiped)	-	1	1
	-	1.2%	1.1%
MRG Indented Corrugated	2	-	2
	20.0%	-	2.1%
San Marcial B/w	-	1	1
	-	1.2%	1.1%
Total	10	85	95
	100.0%	100.0%	100.0%

not recovered from the provenience.

Unutilized flakes (76 percent) and unutilized small angular debris (20 percent) constitute the majority of the lithic assemblage. A marginally retouched chert flake exhibits unidirectional retouch but lacks evidence of use. An obsidian uniface fragment also lacks evidence of utilization.

Ground stone artifacts consisted of one mano fragment and a unidentified fragment of indeterminate use (see Tables 14.5, 14.6, and 14.7). The one-hand mano fragment shows no signs of sharpening and was only pecked during initial shaping. It displays linear unidirectional striations indicating that it was used in a reciprocal motion consistently oriented to parallel its short axis. No archaeobotanical or faunal remains were recovered.

Slope. Pottery from the slope (to the west of the masonry structure) were sherds from a Classic component mixed with some Coalition and Early Developmental pottery types (Table 14.17). The assemblage was dominated by Northern Rio Grande Plain ware (n = 69) and Middle Rio Grande Smeared Indented Corrugated jar bodies (n = 21) followed by Biscuit B (Bandelier Black-on-gray) (n = 8) bowl fragments. Other decorated wares include Santa Fe Black-on-white, Biscuit A (Abiquiu Black-on-gray), San Marcial Black-on-white, glaze red (unpainted), and glaze yel-

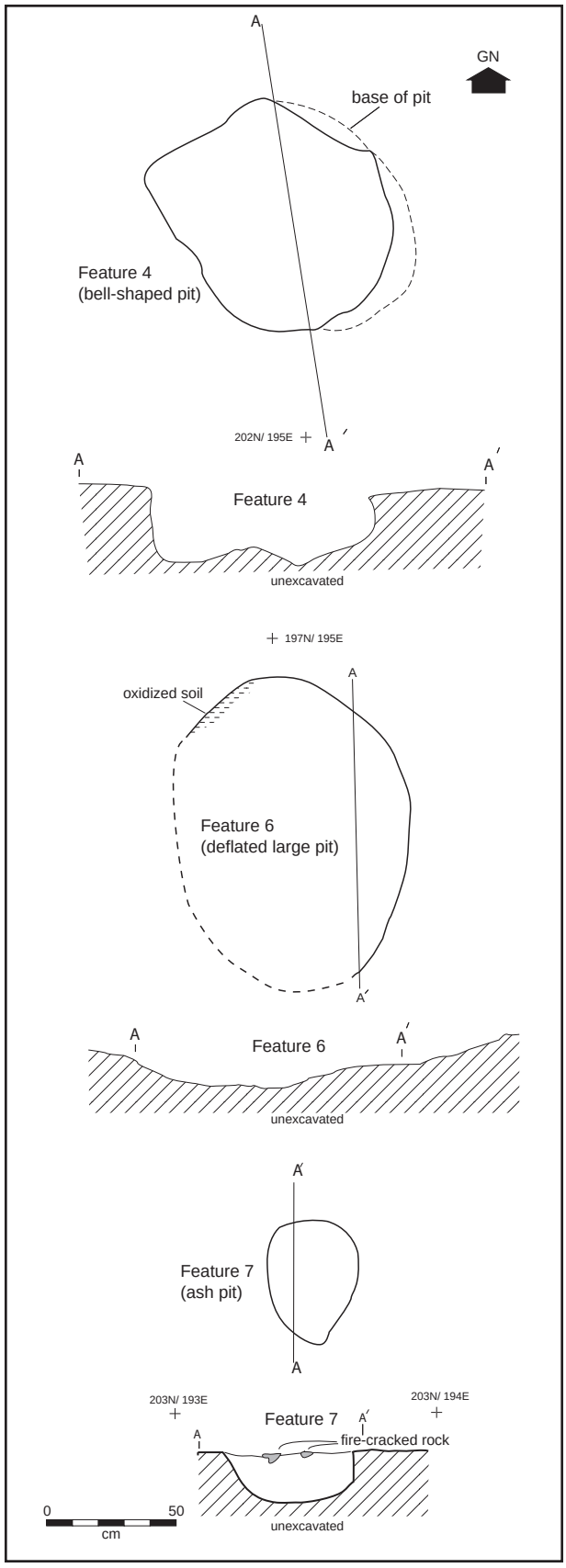

Figure 14.16. Study Unit 2 extramural features, Features 4, 6 and 7, plans and profiles.

Table 14.19. LA 6171, Distribution of Ceramic Types Assigned to Coalition Components

Pottery Type	SU 5, 314	SU 7, 320	SU 7, Extramural Features, 321	SU 8 Fill, 322	Feature 8, Fill, 325	Total
Unpainted undifferentiated	2	5	1	8	-	18
	3.20%	11.90%	16.70%	10.00%	-	8.40%
Santa Fe B/w	11	6	-	21	-	38
	17.70%	14.30%	-	26.30%	-	17.70%
Wiyo B/w	1	1	-	1	-	3
	1.60%	2.40%	-	1.30%	-	1.40%
Biscuit A (Abiquiu B/g)	-	-	-	1	-	1
	-	-	-	1.30%	-	0.50%
Unpainted (Santa Fe paste)	-	-	-	1	-	1
	-	-	-	1.30%	-	0.50%
NRG Plain rim	-	-	-	1	-	1
	-	-	-	1.30%	-	0.50%
NRG Plain body	-	-	-	5	-	5
	-	-	-	6.30%	-	2.30%
NRG Smeared	1	-	-	1	-	2
Plain Corrugated	1.60%	-	-	1.30%	-	0.90%
Tewa Buff	-	1	-	-	-	1
undifferentiated	-	2.40%	-	-	-	0.50%
MRG Plain rim	1	-	-	-	-	1
	1.60%	-	-	-	-	0.50%
MRG Plain body	27	12	3	11	12	66
	43.50%	28.60%	50.00%	13.80%	66.70%	30.70%
MRG Indented Corrugated	2	4	-	1	-	7
	3.20%	9.50%	-	1.30%	-	3.30%
MRG Plain Corrugated	1	-	-	1	-	2
	1.60%	-	-	5.60%	-	0.90%
MRG Smeared Plain Corrugated	6	6	2	11	4	33
	9.70%	14.30%	33.30%	13.80%	22.20%	15.30%
MRG Smeared Indented Corrugated	8	6	-	14	1	29
	12.90%	14.30%	-	17.50%	5.60%	13.50%
MRG Unpainted undifferentiated	-	-	-	2		2
	-	-	-	2.50%	-	0.90%
MRG Mineral Paint (undiff)	1	1	-	-	-	2
	1.60%	2.40%	-	-	-	0.90%
White Mountain Red	-	-	-	1	-	1
(undifferentiated)	-	-	-	1.30%	-	0.50%
MRG Slipped Red over white	1	-	-	-	-	1
paste (Tallahogan-like)	1.60%	-	-	-	-	0.50%
Socorro B/w	-	-	-	1	-	1
	-	-	-	1.30%	-	0.50%
Total	62	42	6	80	18	215
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

low/cream slipped (unpainted). This mixed assemblage may be part of a sheet midden associated with Study Unit 10 or other unexcavated areas to the east. The Study Unit 2 slope and Study Unit 10 are the only two extramural contexts from which ceramics, collected from within 10 cm of present ground surface, were analyzed, possibly accounting for the presence of later types.

Fifty lithic artifacts were recovered from the extramural features in Study Unit 2 (Table 14.21). The majority of the assemblage consist-

ed of chalcedony (36 percent) and nonvesicular igneous materials (32 percent). Other material categories containing low frequencies are quartzite, chert, Jemez obsidian, vesicular igneous, and sandstone.

Eighty-six percent of flakes lack dorsal cortex indicating an emphasis on later stages of secondary core reduction. A large percentage of flakes with platforms are single faceted (77 percent). The assemblage contains little evidence of primary reduction; only two primary flakes of nonvesicular igneous materials were recorded. Tertiary formal tool manufacture is not indicated, as no retouched or prepared platforms were recorded. One multiplatform core manufactured from chalcedony was also recovered.

Unutilized flakes (70 percent) and utilized small angular debris (16 percent) compose the majority of the lithic assemblage. Three unifacial quartzite choppers represent the only chipped stone tools recovered from the provenience.

Grinding activities are indicated by a fine-grained sandstone two-hand mano and a vesicular igneous indeterminate metate fragment. Another ground stone implement is represented by a fragment of indeterminate sandstone.

The two-hand mano is subrectangular in plan view and has slightly convex use surface cross sections. The mano was manufactured by pecking and grinding a fine-grained sandstone. Its use surface exhibits linear unidirectional striations that parallel the artifact's short axis indicating a consistently oriented reciprocal grinding motion. The use surface exhibits pecking, presumably to sharpen it. The artifact measures 201 mm long by 128 mm wide by 42 mm thick. Its use surface measures 185 mm long by 122 mm wide giving it an area of 22,570 sq mm.

Features. A total of four extramural features were located in Study Unit 2. These features include two large pits (Features 4 and 6), one ash pit (Feature 7), and a natural swale containing the remains of a bison or cow (Feature 8). Feature descriptions are summarized in Table 14.22 and illustrated in Figure 14.16.

Pottery from Features 4, 6, and 7 (Table 14.18) represented an Early Developmental

Table 14.20. LA 6171, Study Unit 10, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	23.1	1	7.7	1	7.7	1	7.7	7	53.8	13	20.0
Flake	11	22.9	3	6.3	-	-	5	10.4	29	60.4	48	76.0
Flake, Marginal Retouch	-	-	1	100.0	-	-	-	-	-	-	1	1.0
Uniface	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Total	14	22.2	5	7.9	1	1.6	7	11.1	36	57.1	63	100.0

Table 14.21. LA 6171, Study Unit 2, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Sandstone		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	37.5	2	25.0	-	-	-	-	3	37.5	-	-	-	-	8	16.0
Flake	14	40.0	4	11.4	1	2.9	2	5.7	13	37.1	1	2.9	-	-	35	70.0
Core, Multiplatform	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	2.0
Chopper, Unifacial	-	-	-	-	3	100.0	-	-	-	-	-	-	-	-	3	6.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	2.0
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	2.0
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	2.0
Total	18	36.0	6	12.0	4	8.0	2	4.0	16	32.0	2	4.0	2	4.0	50	100.0

Table 14.22. LA 6171, Study Unit 2, Extramural Features Summary

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
4	230N/194E	Large pit	110 x 95 x 28	a) 10YR 5/4 very fine-grained sandy loam with small charcoal flecks. b) 10YR5/4 very fine-grained sandy loam with almost no charcoal c) 10YR 6/4 silty clay	Large irregularly-shaped bell-shaped pit. This feature may have been excavated into Feature 8, bone bed. (ceramics=7, chipped stone=4 [including a multi-platform core], fauna=3)
6		Deflated large pit (Oxidized area)	50 x 38 x 11		No artifacts
7	203N/194E	Ash pit	48 x 32 x 16	10YR 3/2 charcoal	Small basin-shaped ash pit (ceramics = 3, chipped)
8	203N/194E, 203N/195E, 204N/194E, 204N/195E	Bone bed	200 x 200 x 70	a) Silt loam with sparse, variable charcoal flecking. b) Stratum at base of unit. Well-sorted fine-grained clay, no charcoal. (4 ceramics)	Informal pit or natural depression with concentration of deer/elk bones. (No artifacts)

Table 14.23. LA 6171, Feature 8 Floor Fill, Lithic Type by Material Group

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%
Angular Debris	1	25	1	25	-	-	2	50	4	16
Flake	11	52.4	6	28.6	1	4.8	3	14.3	21	84
Total	12	48	7	28	1	4	5	20	25	100

Table 14.24. LA 6171, Feature 8 Fauna Summary

	Feature 8, Fill		Feature 8, Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Medium to large mammal	1	4.8%	8	12.7%	9	10.7%
Large mammal	1	4.8%	5	7.9%	6	7.1%
Medium artiodactyl	1	4.8%	27	42.9%	28	33.3%
Mule deer	-	-	1	1.6%	1	1.2%
Cow or bison	18	34.9%	22	34.9%	40	47.6%
Total	21	100.0%	63	100.0%	84	100.0%
Fetal, neonate	1	4.8%	22	34.9%	41	48.8%
Immature	1	4.8%	23	36.5%	24	28.6%
Heavy burn	-	-	1	1.6%	1	1.2%
>75% complete	6	28.6%	4	6.3%	10	11.9%
50-75% complete	-	-	2	3.2%	2	2.4%
25-50% complete	2	9.5%	7	11.1%	9	10.7%
<25% complete	13	61.9%	50	79.4%	63	75.0%

Table 14.25. LA 6171, Feature 8, Cattle/Bison Skeletal Elements

Element	Side	Portion	Grid North	Grid East	Elevation	End Count
Long bone fragment	Indeterminate	Shaft fragment	204.43	195.17	99.04	1
Cranium	Indeterminate	Auditory bulla	204.14	195.26	99	4
	Indeterminate	Auditory bulla	204	195.46	98.97	1
		Auditory bulla fragment	204	194	98.92	1
		Auditory bulla fragment	204.16	195.36	98.92	1
		Nasal	204	195.46	98.97	1
	Axial	Occipital region	204	195.46	98.97	1
	Left	Max premolar	204.37	195.06	99.02	1
	Indeterminate	Fragment	204.16	195.36	98.92	1
	Right	Face/frontal	204.38	195.64	98.94	1
Mandible	Indeterminate	Premolar	204	195	98.92	1
		Molar	203.99	194.86	98.93	1
		Body fragment	204	195	98.85	1
	Right	Molar	204	195	98.85	1
	Left	Incisor	204.33	195.23	98.95	1
		Molar	204	195	98.85	1
		Molar	204.34	195.12	98.96	1
Thoracic vertebra	Axial	Spinous process	204.47	195.26	99.02	1
	Axial	Spinous process	204.35	195.36	98.94	2
	Axial	Spinous process	204.34	195.44	98.97	1
Rib	Indeterminate	Distal fragment	204.43	195.17	99.04	1
	Right	Shaft fragment	204.35	195.36	98.94	1
		Dist shaft fragment	204.35	195.36	98.94	1
		Complete	204.35	195.36	98.94	3
		Distal and 2/3 shaft	204.35	195.36	98.94	1
	Left	Shaft fragment	204.43	195.17	99.04	1
		Shaft fragment	204.35	195.36	98.94	1
		Shaft (2/3+)	204.43	195.17	99.04	4
Radius	Right	Proximal shaft fragment	204.48	195.02	98.95	1
Second phalanx	Indeterminate	Proximal shaft fragment	204.44	195.6	98.95	1
Third phalanx	Indeterminate	Distal and 2/3 shaft	204.45	195.66	98.91	1
Metapodial	Indeterminate	Shaft fragment	204.19	195.7	98.97	1

component and was limited to a total of ten sherds including seven Middle Rio Grande Plain body jar sherds. Other types included, Middle Rio Grande Wide Neckbanded and Middle Rio Grande Corrugated. Ceramics (n = 18) from Stratum AL2A (Feature 8, fill) were split by depth into two assemblages. Ceramics from fill above the deer skeleton at 98.97 m and ceramics from the stratum surrounding the skeletal deposit, including sherds recovered from fill above skeletal remains, resembled a Coalition period assemblage with Middle Rio Grande Plain body jar fragments (Table 14.19). Information from the bone bed assemblage was inconclusive due to small sample size.

Fourteen flakes, pieces of angular debris and a multiplatform chalcedony core were recovered from Features 4, 6, and 7. Five were manufactured from chalcedony, one from chert, seven from Jemez obsidian, and one from nonvesicular igneous material. Although no expedient formal tools were recovered, the majority lacked cortex. Two ground, retouched platforms on obsidian flakes indicate that formal tool manufacture occurred in the area.

Chipped stone from the bottom of Feature 8 was made up of 25 lithic artifacts summarized in Table 14.23. Material categories represented in the lithic assemblage are chalcedony (n = 12), chert (n = 7), vesicular igneous materials (n = 5), and Jemez obsidian (n = 1).

The entire assemblage consists of unutilized flakes (n = 21) and unutilized small angular debris (n = 4) implying that none of it was used to process the cow or bison found at the base of the feature. The assemblage clearly

indicates secondary core reduction; flakes without dorsal cortex (76 percent, n = 13) and with partial dorsal cortex (23 percent, n = 4) make up the entire assemblage. All platforms are also single faceted. There is no evidence of primary decortication or tertiary bifacial tool manufacture. No chipped or ground stone tools were recovered.

Flotation samples were only processed from Feature 7. The only charred remains are of goosefoot, juniper, and cottonwood/willow. Very little bone was recovered from Study Unit 2 extramural features. Three medium artiodactyl bones were recovered from Feature 4 and a large mammal long bone was recovered from Feature 7. The majority of the fauna was recovered from the base of Feature 8, a natural swale containing the remains of a bison or cow. Etching prevented accurate age assessment and obscures signs of animal activity or potential processing. The Feature 8 faunal assemblage is summarized in Table 14.24 and a detailed inventory of the bison or cow skeletal elements is provided in Table 14.25.

Study Unit 5 Excavation Summary. Study Unit 5 was the southernmost study unit at LA 6171. Bordered by Study Unit 6 to the north and Study Unit 1 immediately to the east, Study Unit 5 spanned a 110-sq-m area including grid units 170 to 180N and 178 to 189E. The study unit was an extramural activity area containing 15 cultural features, the largest of which was Feature 38 a multi-use thermal feature with a complex series of smaller pits and dumping episodes. Feature 38 and features found below its base date to the earliest Developmental period. These include two subfloor pits (40 and 42) and one exterior cobble concentration (Feature 41). Other features include a large oxidized storage pit (Feature 43), a large unburned storage pit (Feature 53), and an oxidized bell-shaped pit (Feature 54) with a small pit dug into the base (Features 55).

Later features in Study Unit 5 included a redeposited rock cluster (Feature 45) and a possible thermal pit (Feature 39). Both were located above Feature 38 floor (see Fig. 14.8). Other extramural features include a deflated hearth (Feature 44) and two possible thermal features (Features 46 and 49) and one small pit (Feature 47). Four postholes (Features 48, 50, 51, and 52) may represent the ephemeral remains of a shade structure or wind break.

Study Unit 5 excavation started as a continuation of activity in Study Unit 1. While trying to locate the source of cultural deposits eroding from above Structure 1 (Study Unit 1), grid units 174 to 181N/180 to 183E were excavated by hand. Approximately 30 cm of Stratum 1 was removed from present ground surface to the top of cultural staining at 97.45 m. Sample screening removed artifacts from grid units 179N/181E and 174N/182E. Grid units 175N/181E, 176N/180E, and Grids 177N/180–182E were excavated into deposits of fire-cracked rock and burned, charcoal-stained soil that were later designated as Feature 38.

Backhoe Trenches 4 and 5 also revealed cultural deposits. The occurrence of these deposits and features within Stratum 2 indicated that more subsurface features occurred over a larger area. To investigate their probable occurrence, the remainder of Study Unit 5 was mechanically scraped. Stratum 1 (sandy overburden) and Stratum 3 (a cultural layer) were removed, exposing the dense Stratum 2 into which features were excavated. Systematic excavation focused on expanding areas within Study Unit 5 that had feature outlines or cultural deposits.

Stratigraphy. Study Unit 5 stratigraphy was similar to that of Study Unit 6 and conformed to general site stratigraphy (Table 14.1). Stratum 1 capped the study unit with a 30 to 40 cm layer of non-cultural eolian/colluvial deposition as described in "Site Stratigraphy." The surface of this stratum had a low density artifact scatter. Stratum 2 was the dense noncultural layer into which all features were excavated; minimum thickness was 70 cm.

Stratum 3 was designated in profiles as general cultural stratum. All feature fill and activity area surfaces were initially designated Stratum 3 in Backhoe Trench 4 and 5 profiles. In Study Unit 5, this cultural layer was from approximately 10 to 15 cm thick.

Table 14.26. LA 6171, Study Unit 5 Extramural Features Summary

Feature No.	Location	Description	Dimensions (LWD in cm)	Fill	Comments
39	176-177N/18 E (Feature 38, NE quad)	Thermal pit in base of Feature 38	70 x 80 x 10	a) 10YR 3/2 silt with ash and charcoal. Probably third use. b) 10YR 6/4 sandy silt. Redeposited non cultural matrix. c) 10YR 3/2 silt with ash, charcoal and pieces of stratum b.	Circular rock configuration with ash and charcoal fill. In south half, charcoal fill sat on yellowish brown silt (b) which sat on another layer of ash. The feature's north wall was burned. Unclear whether this was a dumping episode or thermal feature.
44	177N/182E	Shallow pit; possible deflated hearth	90 x 86 x 29	a) Light brownish gray fine-grained sandy loam.	Undulating feature limits. Possibly associated with Feature 38.
45	177N/181E	Re-deposited rock cluster in Feature 38	74 x 68 x 7	a)10YR3/1 very dark silt loam with charcoal and ash. (Flotation sample find out #) 610	
46	174N/180E	Large thermal pit with fire-cracked rock	74 x 68 x 7	b) 10YR 5/4 fine-grained sandy loam. small charcoal flecks, pebbles. No carbonate. c) 10YR 3/2 very fine-grained sandy loam. Few pebbles 4 to 6 cm from bottom of fill. a) 10YR 6/4 fine-grained sandy loam with sparse charcoal flecking consolidated. (Could be pit structure closing material)	Shallow flat bottomed thermal feature with vertical sides. Fire-cracked cobbles were present in south half at feature base. Walls and floors were slightly burned, though not compacted. (chipped stone=18, fauna=1)
47	173N/179E	Small pit & redeposited rock cluster	56 x 45 x 27	a) 10YR 5/3 brown sandy silt with small sparse charcoal flecks and mixed gravels, rodent burrow or remnant of Stratum 1?	Small bowl-shaped pit with fire-cracked rock capping and sitting in it. (ceramics=7, chipped stone=9)
48	174N/182E	Posthole	20 x 19 x 41	a) 10YR 5/4 sandy silt with ash, charcoal chunks, gravel and artifacts, fire-cracked rock 3 to 7 cm.	Excavated at a 90 degree angle to exposed ground surface.
49	174N/178E	Pit; possibly thermal	36 x 36 x 10	a) 10YR 3/2 ash and charcoal feature fill. Two pieces of fire-cracked rock in upper fill.	Circular, flat bottomed, steep-walled pit. Sides and base not well burned. Fill suggested thermal use or redeposit. Rock associated with Feature 47 may have been removed from this feature.
50	173N/183E	Possible posthole	16 x 17 x 54	a) 10YR 4/3 sandy silt with 3% gravel (equivalent to site Stratum 2?) Charcoal 1% c) 10 YR 5/4 silt <1% sand. With small sparse charcoal flecks.	Cultural fill common in Study Unit 5 features. Orientation to exposed ground surface was 90 degrees.
51	173N/184E	Possible posthole	15 x 15 x 52	Dense gravels in upper 10 cm. Ant disturbance.	Orientation to exposed ground surface was 90 degrees.
52	174N/182E	Possible posthole	10 x 11 x 35	No fill description	Possible auger hole?

The ceramic assemblage recovered from exploratory pit excavations resembled a Coalition component. Excavations into Strata 1 and 3 were not well recorded and it is unclear whether the cultural component located above Feature 38 (Stratum 3) was redeposited material associated with Feature 38 fill, or if it was colluvial fill similar to that which filled other Study Unit 5 features and blanketed the site. Ceramic information from Feature 38 was inconclusive due to the small size of the assemblage, however an archaeomagnetic sample taken from the base of the feature dated AD 510 to 650 (AM 1104) indicating that the ceramic assemblages and possibly feature fill are not associated with the earliest use of this feature.

Extramural Features. A total of 15 features that post-dated the earliest Developmental component were excavated in Study Unit 5 (feature descriptions are summarized in Table 14.26 and feature locations are shown in Figure 14.13). This number includes Feature 38, a rock cluster (Feature 45) and a possible fire pit (Feature 39) within its boundaries.

Feature 47, a small unburned pit was located immediately to the west of Feature 46. Feature 47 was a small, shallow bowl-shaped pit with fire-cracked rock capping it and float-

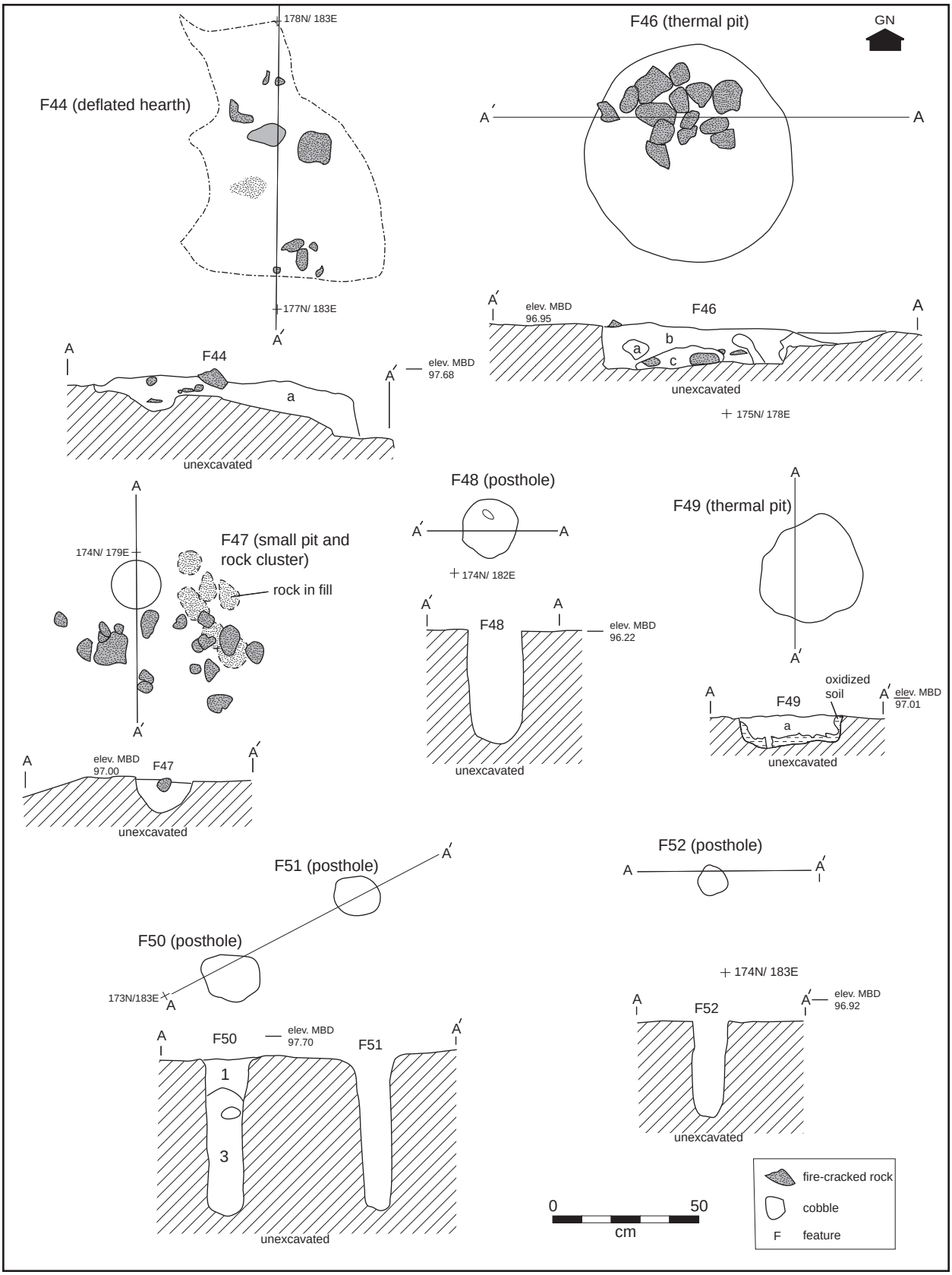

Figure 14.17. Study Unit 5 extramural features; Features 44, 46, 47, 48, 49, 50, 51, 52, plans and profiles.

ing in fill (Fig. 14.17). Chipped stone (n = 9) included flakes and angular debris. Material was less varied than in Feature 46, lacking quartzitic sandstone. Middle Rio Grande Plain Corrugated (n = 4) and Plain body (n = 1) jar fragments were found with two undifferentiated bowl body fragments. There was no fauna.

Three postholes and a fourth possible posthole were found immediately to the south of Feature 38. Features 48, 50, and 51 ranged in depth from 41 to 54 cm and were 15 to 20 cm in diameter (Fig. 14.17). Feature 52 (Fig. 14.17) was shallower in depth and smaller in diameter and it may also have been a posthole. All postholes were vertical and showed no signs of plaster or remodeling. Feature depths and diameters suggest that they held fairly substantial posts, but it is unclear if the postholes were associated with each other or with Feature 38. It is possible that postholes were the supports for a wind break or drying rack. Fire-cracked rock spalls and small pebbles were found in Feature 50 and Feature 51 fill. A large cobble lodged in Feature 50 fill approximately 20 cm below surface (97.01 m) suggests that it was filled intentionally. Feature 48 also contained cultural fill. These features probably filled in after Feature 38 was in use.

Extramural thermal features included Features 44, 46, and 49. Feature 44 was a shallow pit with undulating feature limits. Stratum 2 surrounding this feature sloped to the south and no side wall was present. Feature 44 may have been a deflated hearth. No artifacts were recovered.

Feature 46 was a large, shallow, flat-bottomed thermal pit with vertical side walls. Lithics (n = 18) included flakes and angular debris; the products of secondary core reduction. One Jemez obsidian flake with a prepared platform was also recovered, evidence of formal tool manufacture. Jemez obsidian, chalcedony and quartzitic sandstone were represented in roughly even amounts, Basalt and chert were also present. No sherds or fauna were recovered.

Feature 49 was a possible thermal feature because its side walls were slightly oxidized. Ashy fill may have been from thermal use or redeposit. One Rio Grande chalcedony flake was recovered. There were no ceramics or fauna.

Twenty-eight lithic artifacts were recovered from the features in Study Unit 5 and are summarized in Table 14.27. Chalcedony (32 percent, n = 9) and Jemez obsidian (21 percent, n = 6) constitute the majority of materials represented. Other materials are quartzite, chert, and vesicular igneous materials.

Unutilized flakes (n = 20) and unutilized small angular debris (n = 8) compose the entire lithic assemblage. Although the assemblage of whole flakes is small (n = 16), flakes lacking dorsal cortex indicate an emphasis on later stages of secondary core reduction (81 percent, n = 13). An obsidian flake with a retouched or prepared platform provides evidence of bifacial formal tool manufacture although no formal tools were recovered from the provenience. No grinding activities are indicated.

The ceramic assemblage recovered in Study Unit 5 Developmental period features was too small to date. The only sherds recovered were from Feature 47 and are discussed in feature descriptions above. No fauna was recovered.

Study Unit 5 extramural features were not given a temporal assignment. Relative dates were not obtained for any feature in Study Unit 5 other than Feature 38. An ambiguous relationship to Feature 38 or any other sur-

Table 14.27. Study Unit 5 Extramural Features, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	2	25.0	2	25.0	2	25.0	-	-	2	25.0	8	28.0
Flake	7	35.0	2	10.0	3	15.0	6	30.0	2	10.0	20	71.0
Total	9	32.1	4	14.3	5	17.9	6	21.4	4	14.3	28	100.0

rounding structure, and a ceramic assemblage too small to reliably date, preclude any precise temporal assignment.

Study Unit 6 Excavation Summary. Study Unit 6 was mechanically scraped and excavated concurrently with Study Unit 5. Located immediately to the north of Study Unit 5, Study Unit 6 included grid units 180 to 194N to 178 to 189E, covering a 154-sq-m area (Fig. 14.13). Excavation of Backhoe Trenches 4, 5, and 6 led to the identification of an Early Developmental (ad 600 to 900) pit structure, one human burial (Feature 24) as well as 18 extramural features including a series of large, oxidized, burned storage pits containing smaller subfloor pits already summarized in the earliest Developmental Features section. Other features may be Early Developmental, but assigning a temporal component has proved problematic as the features are mostly unburned and they yielded small, temporally nondiagnostic ceramic assemblages.

No hand excavation preceded backhoe trenching and mechanical scraping. Mechanical excavation removed Strata 1 and 3 exposing Stratum 2, into which features were excavated. Following mechanical excavation, the area was shovel scraped to define features. To maintain elevational control, datums H (97.75), I (97.95) and G (97.96) were established with a transit from main datum at 200N/200E. The east wall of Backhoe Trench 5, which bisected Feature 54 and clipped the western edge of Structure 60, was profiled. Excavation of extramural features and Structure 60 were conducted simultaneously.

Stratigraphy. Study Unit 6 stratigraphy conformed to basic site stratigraphy. Study Units 5 and 6 show similarity in fill deposition and thickness. Extramural feature fill contained sherds from a Coalition component mixed with Early Developmental ceramic types. A Coalition component is also represented by sherds recovered from fill above Study Unit 5 features.

In contrast, the ceramic assemblage from Structure 60 fill and floor was mainly made up of Early Developmental pottery types mixed with some Coalition types. The higher incidence of Early Developmental sherds found in Structure 60 and an archaeomagnetic sample dating AD 740 to 835 (AM 1141) reliably date this structure. The presence of six features with earliest and Early Developmental dates ranging from ad 435 to 665 (AM 1108, 1146, 1147) in Study Units 5, 6, and 7 suggest that some of the extramural features predate the structure occupation. However, similar ceramic assemblages from intramural and extramural contexts leaves the possibility that extramural features in both study units could have been associated with the Structure 60 occupation. Study unit strata are similar to strata in Study Unit 5 and are summarized in Table 14.1.

Table 14.28. LA 6171, Structure 60 Stratigraphy

Designation	Description	Munsell Color Range	Comments
CO3U	Moderately consolidated very fine-grained sandy loam	10YR 6/3; 10YR 6/4	Alluvial fill, small sparse charcoal flecking throughout, plentiful rodent disturbance. Pebble content 1 to 3 percent. Depth ranged from 15 to 40 cm.
AL3V	Consolidated silt loam	10YR 6/3	Alluvial fill with multiple alluvial episodes, no gravel, no pebbles. Depth was 1-10 cm
3U/V	Stratum 3D with Stratum 3E inclusions	10YR 6/4; 10YR 6/3	Possible closing material from 2 to 24 cm in depth.
EOX	Fine-grained sand with occasional charcoal flecks	10YR 5/4-10YR 6/3	Eolian or alluvial fill
		Burial Fill	
3W	Silt loam	10YR 6/4	Secondary deposition, extremely low charcoal content, fill above 97.25 m has trace amounts of oxidized soil.

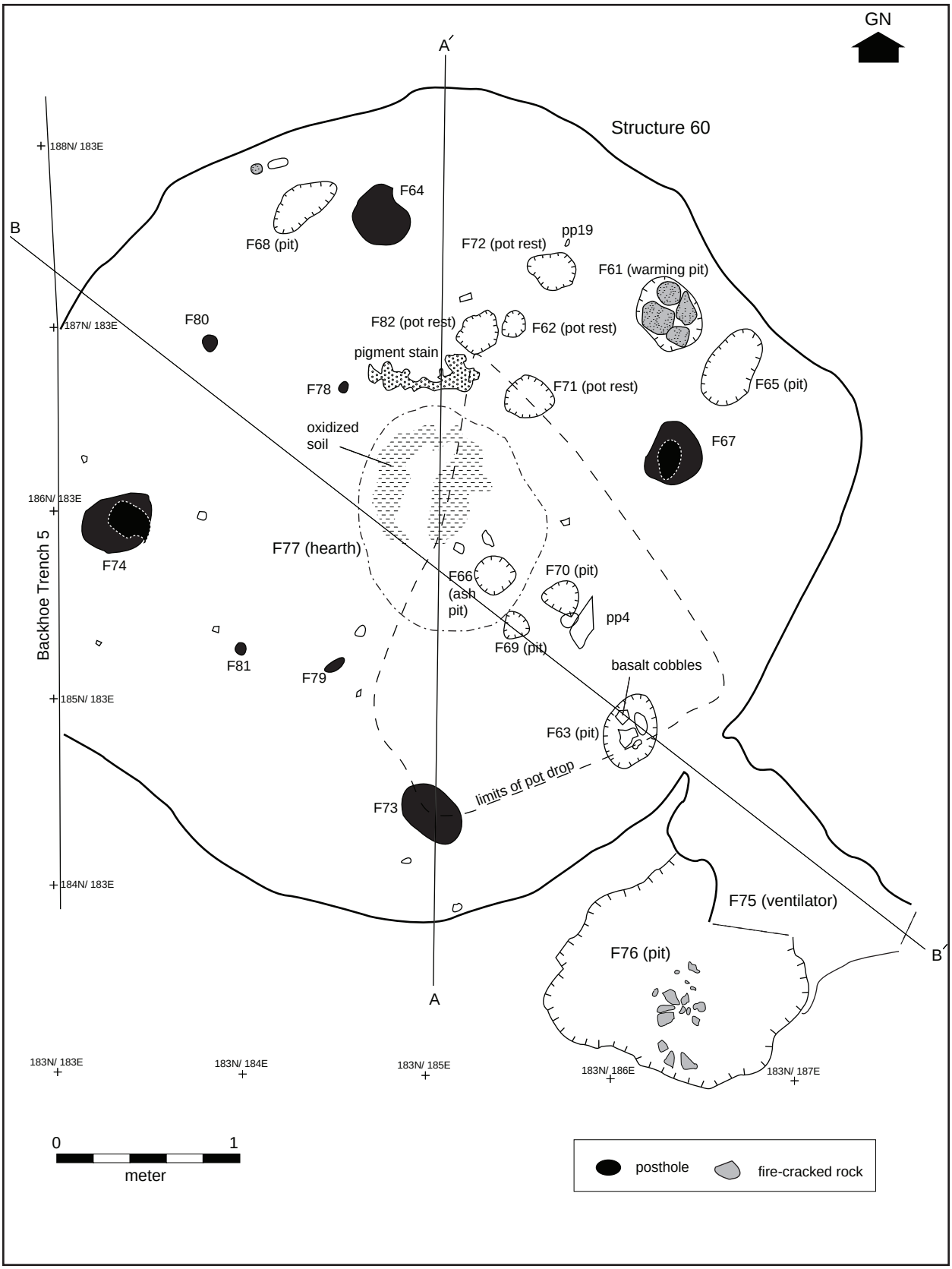

Figure 14.18. Structure 60, plan view and profile.

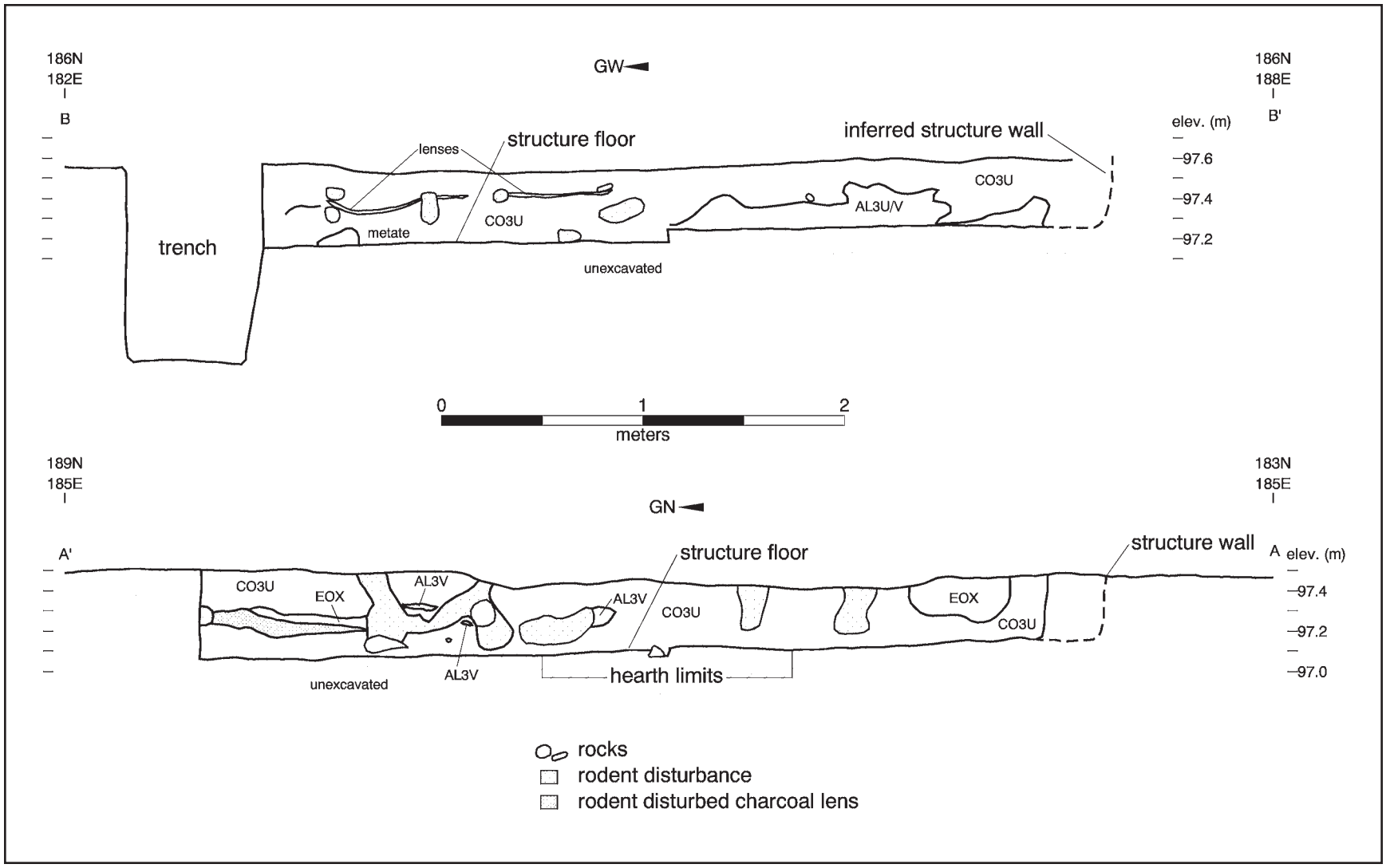

Figure 14.19. LA 6171, Structure 60 stratigraphic profile.

Figure 14.20. LA 6171, Structure 60 overview.

Structure 60. Structure 60 was a circular Early Developmental pit structure with 21 floor features (Fig. 14.18). Located in the northeast portion of Study Unit 6, it was oriented to the southeast, measuring 5.40 m north-south and 4.30 m east-west with a floor area of 18.23 sq m. Floor depth was approximately 40 cm below backhoe scrape and 55 cm below prehistoric occupation surface. Feature 76 intersected the western ventilator shaft wall destroying it. Feature 54, one of the earliest Developmental features, was located 25 cm south of the southwest wall of Structure 60.

There is no evidence of structural remodeling. Post-abandonment deposits were colluvial and churned by in-fill processes and bioturbation. Structure fill contained a moderate amount of scattered debris including, a mixture of Early Developmental and Coalition ceramics, expedient flaked tools, various bone fragments, and fire-cracked rock.

Archaeomagnetic samples from the central hearth yielded a date range of AD 740–835. Floor and floor fill ceramics are dominated by Middle Rio Grande Plain wares indicative of an Early Developmental date.

General Methods. Structure 60 quadrants were defined along the 195E line and along the 186N line. Northwest and southeast quadrants were removed, creating two staggered pie-shaped wedges that exposed alternating north and east profiles. Both quadrants were excavated in a single 30-cm bulk to 10 cm above the pit structure floor (97.24 m) leaving a 10-cm bulk to protect the structure's exterior wall. Because the quarter-section profiles showed rodent disturbance and no discernible breaks in strata, the remaining northeast and southwest quadrants were removed in arbitrary 10 cm levels to 97.24 m (10 cm above floor). The remaining 10 cm of floor fill was removed in one level and screened with 1/8-inch mesh. In addition, a flotation sample was taken from each quadrant just above floor. All cultural material and pollen samples from the floor were point provenienced and collected. After the floor

Table 14.29. LA 6171, Distribution of Ceramic Types in Assemblages Assigned to Mainly Early Developmental with Coalition Components

Pottery Type	Structure 18, Floor, 308	Structure 26, Floor, 310	SU 4 Extramural Features, 312	Structure 60, Floor, 318	Structure 60, Fill, 319	Total
Indeterminate utility ware	1	-	-	-	-	1
	1.9%	-	-	-	-	0.2%
Unpainted undifferentiated	1	-	-	3	5	9
	1.9%	-	-	1.6%	1.9%	1.7%
Santa Fe B/w	1	-	-	1	3	5
	1.9%	-	-	0.5%	1.2%	0.9%
NRG Plain body	-	-	-	1	-	1
	-	-	-	0.5%	-	0.2%
NRG Smeared	-	1	-	-	-	1
Indented Corrugated	-	4.3%	-	-	-	0.2%
MRG Plain rim	2	2	1	2	2	9
	3.8%	8.7%	5.6%	1.0%	0.8%	1.7%
MRG Plain body	34	18	11	159	207	429
	64.2%	78.3%	61.1%	82.8%	79.9%	78.7%
Wide Neckbanded (wiped)	-	-	-	1	-	1
	-	-	-	0.5%	-	0.2%
MRG Indented Corrugated	-	-	1	-	2	3
	-	-	5.6%	-	0.8%	0.6%
MRG Smeared Plain	4	-	3	21	23	51
Corrugated	7.5%	-	16.7%	10.9%	8.9%	9.4%
MRG Smeared	2	-	-	1	4	7
Indented Corrugated	3.8%	-	-	0.5%	1.5%	1.3%
MRG Unpainted	-	1	-	1	1	3
undifferentiated	-	4.3%	-	0.5%	0.4%	0.6%
MRG Mineral Paint	-	-	1	1	1	3
(undiff)	-	-	5.6%	0.5%	0.4%	0.6%
San Marcial B/w	-	1	-	-	3	4
	-	4.3%	-	-	1.2%	0.7%
White Mountain Red	1	-	-	1	2	4
(undifferentiated)	1.9%	-	-	0.5%	0.8%	0.7%
MRG Slipped Red over white	3	-	-	-	5	8
paste (Tallahogan-like)	5.7%	-	-	-	1.9%	1.5%
Glaze-on-red (undiff)	-	-	-	-	1	1
	-	-	-	-	0.4%	0.2%
Jornada Brown body	3	-	1	-	-	4
	5.7%	-	5.6%	-	-	0.7%
Reserve Smudged	1	-	-	-	-	1
	1.9%	-	-	-	-	0.2%
Total	53	23	18	192	259	545
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

surface was contacted at 97.11 m, the walls were defined. A total of 21 subfloor features were excavated, in addition to a spill of green pigment (PP 7) possibly made from locally available malachite (Warren 1979d:57), and a pot drop mostly contained in the southeast quadrant (Fig. 14.9). Intramural feature excavation followed standard project procedures. After floor excavation was complete, a 25-cm-wide trench was excavated through the central hearth to rule out the possibility of sub-hearth features. Additional subfloor information was provided by Backhoe Trench 5, which nicked the western half of the feature.

Stratigraphy. Structure 60 stratigraphy consisted of a series of rodent-disturbed alluvial

Table 14.30. LA 6171, Structure 60 Upper Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	10	55.6	4	22.2	-	-	1	5.6	3	16.7	18	17
Flake	29	37.7	16	20.8	2	2.6	8	10.4	22	28.6	77	76
Flake, Bifacial Thin	-	-	-	-	-	-	1	100	-	-	1	<1
Flake from Hammerstone	-	-	-	-	-	-	1	100	-	-	1	<1
Flake, Utilized	2	66.7	1	33.3	-	-	-	-	-	-	3	2
Projectile Point	-	-	-	-	-	-	1	100	-	-	1	<1
Total	41	40.6	21	20.8	2	2	12	11.9	25	24.8	101	100

fill episodes with charcoal lenses and a shallow, inconsistent layer of closing material that may have been churned by colluvial in-filling or bioturbation. There was no evidence of burned roof fall or wall slump. Structure 60 strata are summarized in Table 14.28 and illustrated in Figures 14.19 and 14.20.

Stratum CO3U overlaid all strata and made up the majority of colluvial fill measuring from 15 to 40 cm deep. Fill was light, yellowish brown (10YR 6/3–6/4), very fine-grained sandy loam with small sparse charcoal flecks. Pebble content was less than 2 percent. Fill was moderately consolidated with abundant rodent disturbance. Artifact counts were moderate and included lithic, ceramic, bone, one piece of shell *(Anodonta californiensis),* turquoise, one piece of ochre, an unidentified mineral, and sixteen pieces of fire-cracked rock in the fill of Levels 1 and 2.

Stratum AL3V was a series of alluvial episodes interspersed throughout Stratum CO3U, the thickest of which was 10 cm. Fill was pale brown (10YR 6/3) silt loam with extremely small (2 mm) sparse charcoal flecks and was well consolidated without gravel or pebbles.

Stratum AL3 (Fig. 14.19) represented charcoal lenses within Stratum CO3U. Lens thickness ranged from 1 to 2 cm. Stratum AL3U/V was a mixture of both CO3U and AL3V with a high percentage of larger chunks (1–3 cm) of Stratum AL3V. This stratum was located at the bottom 2 to 24 cm of the eastern half of the structure underneath Stratum CO3U. Stratum boundaries were undulating and rodent disturbed. The consolidated nature of the stratum and the inclusion of chunks of AL3V suggest that it may have been rodent-churned closing material. This feature was excavated in arbitrary levels and artifact content is not discernable from CO3U. Stratum EOX was mixed eolian or alluvial fill and was pale brown (10YR 5/4–6/3) fine-grained sand with occasional charcoal flecks.

Tables 14.29 through 14.30 contain detailed artifact information from floor and upper fill. The ceramic assemblage recovered from structure fill (all strata) and floor fill (10 cm above floor and features, strata CO3U and AL3UV) was assigned to the Early Developmental with Coalition components (Table 14.29). However, there were no diagnostic Coalition ceramics recovered from Structure 60 features and the pot drop found on the structure floor was Cibola Gray Ware. Unutilized flakes (76 percent) and unutilized small angular debris (17 percent) compose the majority of the upper fill lithic assemblage (Table 14.30). Two expedient flake tools, manufactured from chalcedony and chert, exhibit wear patterns that indicate use characteristic of scraping on hard media like bone or wood. A third flake tool, made of chalcedony, exhibits unidirectional polish typical of prolonged scraping on a hard medium. These tools were probably discarded because they were no longer functional. The lateral portion of an obsidian biface lacks evidence of use. Bone was mostly medium artiodactyl (Table 14.31). Ground stone was not recovered from this provenience.

Structure Description. Structure 60 was roughly circular in outline and was oriented to the southeast, measuring 5.40 m north-south and 4.30 m east-west (see Figs. 14.18 and 14,20). Structure depth ranged from 97.17 m to 97.11 m, or approximately 40 cm below backhoe scrape.

Table 14.31. LA 6171, Structure 60 Fauna Summary

	Fill		Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-large bird	1	2.1%	-	-	1	0.9%
Small mammal	3	6.4%	14	20.6%	17	14.8%
Medium to large mammal	3	6.4%	9	13.2%	12	10.4%
Large mammal	3	6.4%	9	13.2%	12	10.4%
Yellow-faced pocket gopher	2	4.3%	5	7.4%	7	6.1%
Pocket mice	-	-	1	1.5%	1	0.9%
Banner-tailed kangaroo rat	-	-	2	2.9%	2	1.7%
Cricetid rodent	-	-	1	1.5%	1	0.9%
Woodrats	-	-	2	2.9%	2	1.7%
Desert cottontail	10	21.3%	7	10.4%	17	14.8%
Black-tailed jackrabbit	1	2.1%	4	5.9%	5	4.3%
Medium artiodactyl	19	40.4%	8	11.8%	27	23.5%
Large artiodactyl	1	2.1%	-	-	1	0.9%
Mule deer	1	2.1%	-	-	1	0.9%
Pronghorn	2	4.3%	6	8.8%	8	7.0%
Plains or Woodhouse's toad	1	2.1%	-	-	1	0.9%
Total	47	100.0%	68	100.0%	115	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Light/scorch	-	-	3	4.4%	3	2.6%
Light to heavy	1	2.1%	-	-	1	0.9%
Dry burn	-	-	1	1.5%	1	0.9%
Heavy or black	7	14.9%	3	4.4%	10	8.7%
Heavy to calcined	3	6.4%	-	-	3	2.6%
Complete	5	10.6%	5	7.4%	10	8.7%
50-75% complete	1	2.1%	2	2.9%	3	2.6%
25-50% complete	2	4.3%	5	7.4%	7	6.1%
<25% complete	39	83.0%	56	82.4%	95	82.6%

Based on ground surface depth, the original wall height may have been as much as 55 cm. Other than the immediate area around the ventilator shaft (Feature 75 in the southeast pit structure wall), structure walls were unplastered and were distinguished by contact with Stratum 2. The western ventilator shaft wall was destroyed by later excavation of Feature 76.

Total floor area was approximately 14.5 sq m. A light green pigment stain with irregular borders was found on the floor immediately to the north of the central hearth. Artifacts at floor contact included a small piece of ochre, a piece of mineral pigment, as well as ten ground stone artifacts, three ground stone slabs with red pigment staining, two metates, a ground slab, and a possible hammerstone. Other floor artifacts included a pot drop, four lithics, and a piece of animal bone. An archaeomagnetic sample taken from the central hearth (Feature 77) dated AD 740–835 (AM 1141).

The structure had 21 intramural features (Features 61 through 74 and 76 through 82; see Table 14.32) including four postholes, two possible warming pits, two possible pot rests, a series of small postholes that may have been supports for a rack, numerous small features, and a series of small pits and divots; see Structure 60 plan view map for feature locations (Fig.14.18).

Structure Construction. Structural remains provide limited information about construction. Little evidence of the roof remained suggesting that it was insubstantial. Salvaging of usable building materials following abandonment left limited evidence regarding pit struc-

Table 14.32. LA 6171, Structure 60, Intramural Features

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
61	186-187N/186E	Warming pit	38 x 40 x 8	a) 10YR 4/4 coarse-grained sand and silt, clean redeposit. b) 10YR 6/4 silt with less than 5 percent sand, abundant gravels.	Shallow steep-sided warming pit with basalt heating rock and sand fill. Four flat bottomed vesicular basalt cobbles all approximately 15 cm in diameter and 5 cm thick sat on top of Stratum a. All cobble bases were burnt, however no sign of burning along pit walls or in feature fill.
62	186-187N/185E	Divot/pot rest	21 x 12 x 3	10YR 5/4 very fine-grained silty loam with less than one percent charcoal.	Small, shallow pit with steep sides and flat base.
63	184N/185-186E	Pit	36 x 26 x 12	10YR 6/6, very fine silty loam with very sparse charcoal flecks, (2 to 5 percent) and one large pebble floating in fill.	Steep-sided pit with artifact cache. Surface assemblage included one piece of ground stone, two lithics, and one sherd. A single sherd was also embedded at the base of the feature. Evidence of burning was limited to a small patch on the southwest rim of the pit. (ceramics=3, chipped stone=2 flakes, one with retouch)
64	189N/184E	Posthole	32 x 26 x 42	10YR 5/4 very fine-grained silty loam with very sparse charcoal flecks, no pebbles and one small (2 cm) chunk of baked clay.	Posthole in NW structure quadrant. Steep-sided conical pit excavated through the cobble terrace, depth and placement (see map) suggest that this may have been a posthole enlarged for post replacement or removal. (ceramics=3, fauna=1)
65	186-187N/186E	Pit	40 x 25 x 6	10YR 5/4 very fine-grained silt loam with sparse charcoal flecks and very small pebbles (colluvial).	Possible warming pit or pot rest? Shallow egg-shaped pit with gravel base and sides. (fauna=2)
66	185N/185E	Ash pit	20 x 20 x 11	10YR 6/2 very fine silt with abundant loosely consolidated ash, 15 percent pebble content and occasional sand grains. (fill in situ)	Small, round, steep-sided pit with slightly oxidized walls. Located on south east side of the central hearth. (chipped stone=1flake)
67	186N/186E	Posthole	34 x 28 x 48	10YR 5/4 fine-grained silt loam with small charcoal flecks and two large cobbles (15 x 12 cm) floating in fill.	Oval, deep, steep-walled pit. North side wall flared at top to create an asymmetrical conical shape. Pit diameter at base narrowed to 15 cm. Feature was excavated into gravel terrace and was not plastered. Depth and placement suggest that this was a posthole widened for post removal or replacement. (ceramics=1)
68	187N/184E	Pit	25 x 26 x 6	10YR 6/4 fine-grained sandy loam with less than 1 percent charcoal flecks.	Oval, irregularly-shaped, shallow pit with gradually sloping walls and a concave base that sloped to the east. Base was irregular gravel terrace. (chipped stone = 2 , one Jemez obsidian, fauna=1)
69	185N/185E	Shallow pit	16 x 19 x 6	a) 10YR 7/3 silt, no charcoal b) 10YR4/2 high charcoal/ash content and fine silt with sand inclusions.	Eastern deflector posthole? Shallow pit with oxidized walls. Placement suggests that this feature could have been a deflector support but the feature was so shallow that its ability to support a post bearing much weight is questionable.
70	185N/185E	Shallow pit	14 x 18 x 5	10YR 7/4 silt, very sparse charcoal flecks.	Western deflector posthole? See comments for Feature 69. (chipped stone=1 Jemez obsidian angular debris)

Table 14.32. Continued.

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
71	186N/185E	Divot/pot rest	20 x 24 x 4	10YR 5/4 very fine-grained sandy loam with sparse charcoal flecks and small pebbles.	Shallow pot rest, extremely shallow, three-sided pit with consolidated sides.
72	187N/185E	Divot/pot rest	18 x 25 x 2	10YR 5/4 loam no charcoal.	
73	184N/185E	Posthole	28 x 31 x 35	10YR 6/4 silt with sparse charcoal flecks.	Deep oval pit excavated into terrace gravels and left unplastered. Feature walls sloped to the north at a 64 degree angle giving the impression that a post would slant to the northwest, away from the center of the structure. Apparent slope is most pronounced on the northern wall and may also have been caused by posthole removal. One large piece of smoothed turquoise (2.2 cm) was found in feature fill 14 cm below structure floor level. Slight oxidation at bottom and sides. (fauna=1 large-mammal)
74	185N/183E	Posthole	28 x 38 x 42	10YR 6/4 moderately consolidated silt loam with very sparse charcoal flecks.	Conical pit excavated into terrace gravels. Northwest of four postholes which probably supported structure roof. Walls and sides were moderately oxidized, slightly "S" curved and rodent-disturbed. Posthole slanted to the east, towards the center of the structure. This slant may have been caused by posthole removal. (chipped stone= one obsidian angular debris)
75	184N/186E	Ventilator or shaft	110 x 44 x 32	a) 10YR 5/4 silt loam with sparse charcoal flecks and a few fire-cracked cobbles. b) 10YR 7/3 very pale brown consolidated b) 10YR 7/3 very pale brown consolidated mud plaster (surrounds vent shaft)	"U-shaped" ventilator shaft excavated into the southeast structure wall. Structure wall around vent shaft was plastered and plaster chunks found in the duct fill suggest that the duct was plastered as well. Southeast portion of the duct sloped upwards to the south. Southwestern half of the duct intersected feature 76. (fauna=1 toad femur)
77	185-186N/185E	Central hearth	120 x 100 x 4	a) 7.5YR 6/1 whitish ash– located at the center bottom of the hearth. b) 7.5YR 2/3 ash.	Shallow central hearth defined by pronounced area of oxidation. No pit or collar was evident. Base of pit was extremely oxidized clay with patches ranging from red to black and 5YR 6/3, pale olive. No charcoal was present to collect for carbon-14. Fill was very scarce and was collected from between peaks of burnt clay. (ceramics=1, chipped stone=1chalcedony angular debris)
78	186N/184E	Posthole	6 x 7 x 15	10YR 6/4 loose sand with white sand inclusions	One of four small postholes, possibly for a rack. South wall sloped slightly to the south.
79	185N/184E	Posthole	8 x 7 x 10	10YR 6/4 silt; 7.5YR 5/4 sandy loam	Small egg-shaped posthole one of four postholes for a rack
80	186N/183E	Posthole	9 x 11 x 12	10YR 6/4 loose sand with white sand inclusions.	Small conical pit, possibly a posthole for a rack? South side wall sloped at a 60 degree angle. South wall
81	185N/183E	Posthole	6 x 6 x 10	10Y/R 6/4 silty sand	Possible posthole for a rack. Hole at 90 degree angle to floor. (chipped stone=1 Jemez obsidian flake)
82	187N/185E	Divot/pot rest	10 x 8 x 4	10YR 6/4 silty sand	Small shallow pit

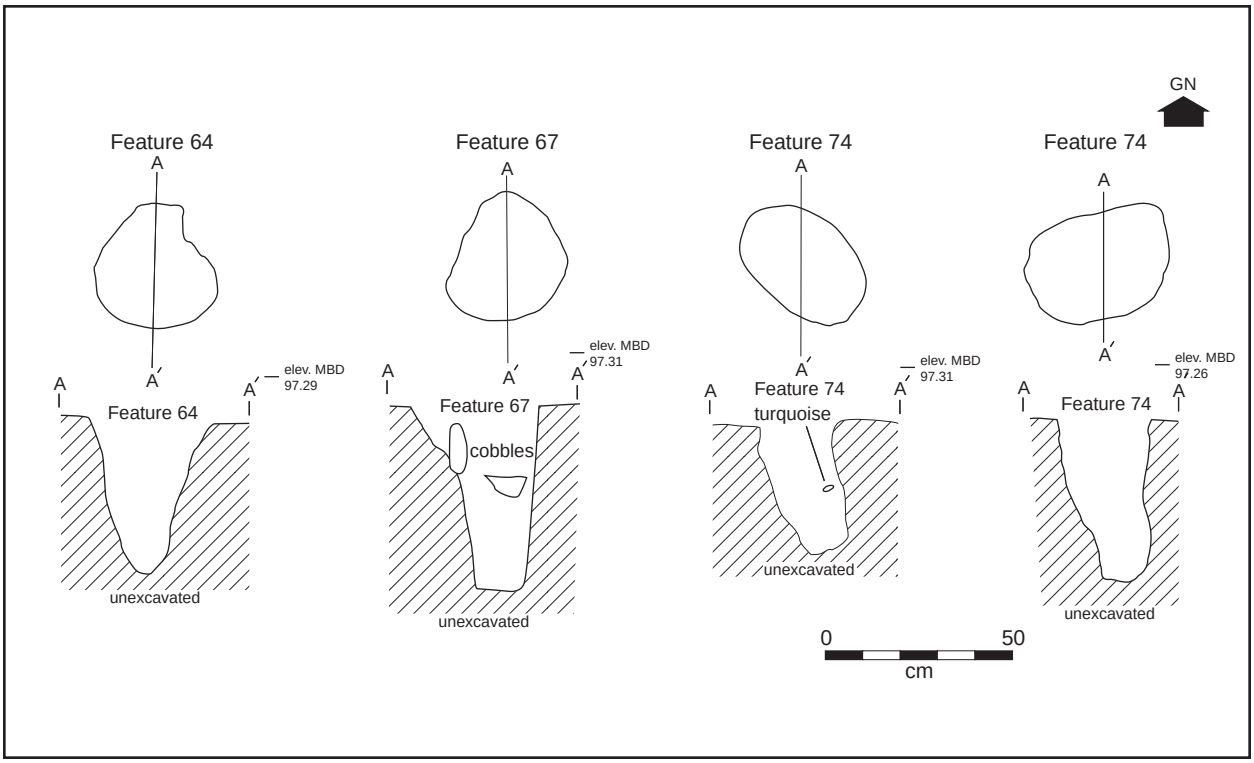

Figure 14.21. LA 6171, Structure 60 postholes, Features 64, 67, 73 and 74 plan view and profile.

ture construction.

Walls were defined by contact with Stratum 2. The only remaining sign of wall plaster was a 20 cm patch of adobe plaster in the southwest quadrant that reached from below the ventilator shaft to the structure floor. There were no signs of remodeling or burning on any areas of the wall surface. Wall height ranged from 36 to 47 cm below the backhoe-scraped surface and may have originally been as tall as 57 cm. Structure walls were at an almost 90 degree angle to the floor. Wall-floor juncture was a smooth excavated curve with adobe floor plaster ending approximately 5 cm above the floor. The floor was excavated to approximately 10 cm above the gravel terrace and prepared with a silty mud plaster. It exhibited irregular small pitted areas and oxidized patches.

Structure 60 roof was supported by four posts (Features 64, 67, 73, and 74) excavated through Structure 60 floor and Stratum 2 into the gravel terrace. No remnant wood was recovered but function is inferred using size, depth, and location. Postholes were set from 20 to 35 cm in from structure walls and were spaced between 1.05 and 1.15 m (measured from center point of the posthole). Depths ranged from 35 to 48 cm below floor surface. Posthole upper limits were oval with maximum diameter ranging from 31 to 38 cm and minimum diameter ranging from 26 to 28 cm. They appear to have been removed later leaving roughly conical holes with unplastered side walls (Fig. 14.21).

Postholes showed possible signs of burning. Features 73 and 74 were moderately oxidized along the floors and walls. Feature 74 slanted to the east, towards the center of the structure, and was slightly S-curved. Feature 73 walls slanted 64 degrees to the northwest, away from the center of the structure. Slanting posthole side walls may have been caused by post removal or could reflect irregularities in post shape. Feature 64 contained one chunk of baked clay, three Middle Rio Grande Plain body sherds and one small-mammal bone. Feature 67 had two large cobbles (15-by-12 cm) floating in fill. Feature 73 contained a one large mammal bone fragment as well as a large (2.2 cm) smoothed piece of

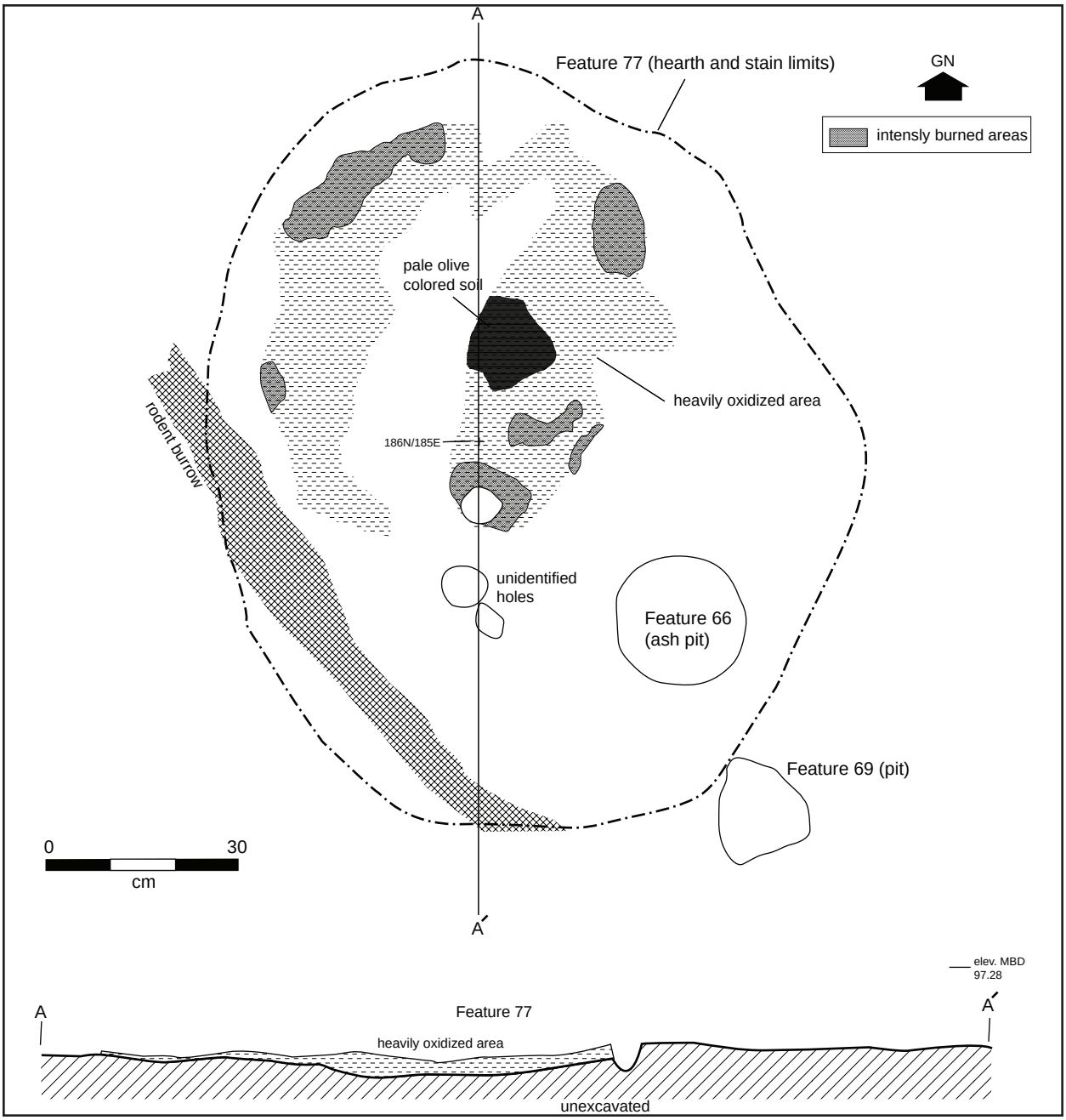

Figure 14.22. Structure 60 central hearth, Feature 77, plan view and profile.

turquoise placed 14 cm below the structure floor level. Posthole descriptions are summarized in Table 14.32.

The shallow depth of the structure suggests that Structure 60 was used during warm weather (Schmader 1994:313). The lack of significant amounts of roof fall imply that the superstructure may not have been substantial or that roofing material was completely scavenged after abandonment. A ventilator shaft in the southeast structure wall and a well oxidized hearth suggest that Structure 60 housed a residential occupation.

Floor Features. A total of 21 floor features were excavated through Structure 60 floor and Stratum 2 into the cobble layer. Feature dimensions and fill descriptions are summarized in Table 14.32 and intramural features are illustrated in (Figs. 14.21 through 14.27).

Feature 77, the central hearth (Fig. 14.22) is

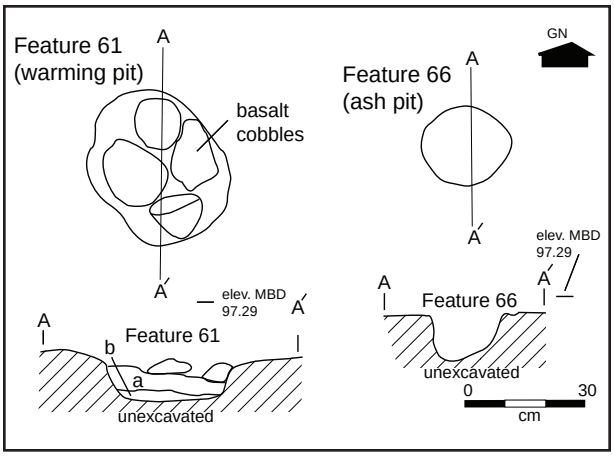

Figure 14.23. Structure 60 small thermal pits, features 61 and 66, plan and profile.

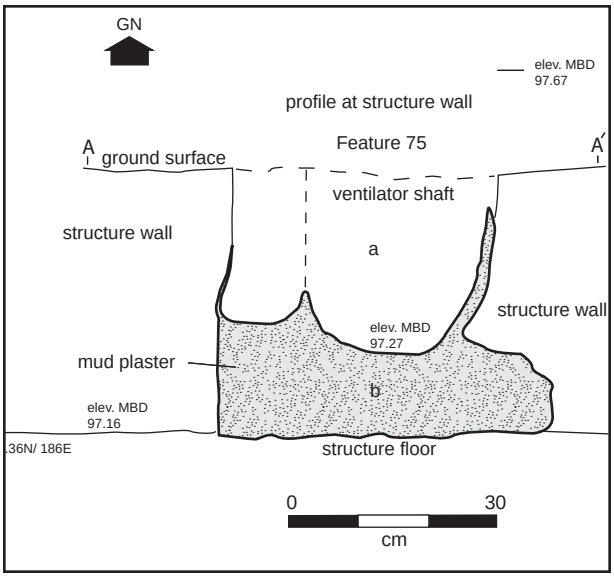

Figure 14.24. Structure 60 ventilator shaft profile at wall contact.

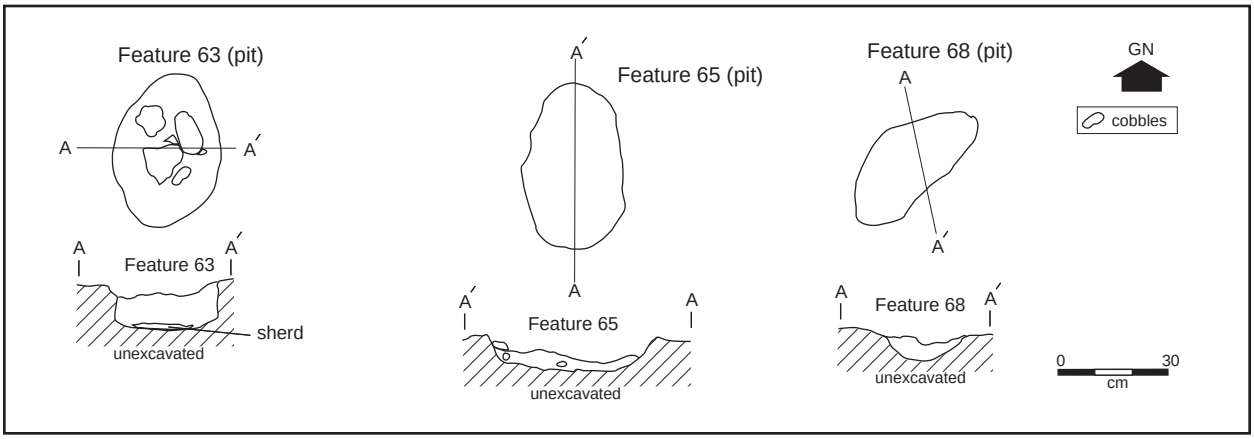

Figure 14.25. Structure 60 small pits, Features 63, 65, and 68, plans and profiles.

best described as a heavily burned pallet. The feature was over a meter in diameter, and although it was well oxidized, it had a maximum depth of only 4 cm, which could be attributed to floor unevenness rather than feature excavation. No collar was present. One piece of angular debris of Rio Grande chalcedony was recovered along with one Middle Rio Grande Plain body sherd. Charred ethnobotanical remains were limited to a small amount of lambsquarter. There was no fauna.

Feature 66 (Fig. 14.23), a small, round ash pit, with oxidized side walls hardened from heat, was located within and along the southeastern edge of the central hearth (Feature 77), and was oriented in line with the ventilator shaft. One basalt flake was recovered from fill. A small amount of cheno-am and corn cupules were recovered from fill. Wood was mostly juniper with a small amount of saltbush/greasewood. There were no ceramics or fauna.

Feature 61 (Fig. 14.23), a small steep-sided warming pit filled with clean sand and four flat-bottomed vesicular basalt cobbles floating in the fill, made up the last of the thermal features. No artifacts were recovered from fill. Ethnobotanical remains were limited to a few corn cupules.

Feature 75, the structure's ventilator shaft was excavated through Stratum 2 into the southeast structure wall (Fig. 14.24). Fill contained chunks of adobe plaster suggesting that

Figure 14.26. Feature 63, cache.

the duct was originally plastered. The ventilator shaft opening is the only area in the structure where plaster still adhered. As mentioned above, the southwestern half of the duct was intersected by Feature 76. It is unclear if the structure had a deflector, although a large ground stone slab was found in the structure fill. Features 69 and 70, however, were optimally placed to be deflector supports, were extremely shallow (5 to 6 cm), and do not seem deep enough to provide reliable support. Artifact content was low. There were no lithics or ceramics and no flotation sample was processed. One bone, a toad femur, was recovered.

Feature 63 was a steep-sided pit with an artifact cache (Figs. 14.25 and 14.26). Lithics included two Rio Grande chalcedony flakes, one with marginal retouch. A single Middle Rio Grande Plain ware sherd was embedded at the base of the pit. No fauna was recovered and no flotation sample was processed. The feature was located near the structure wall offset to the west of the ventilator shaft opening.

Other shallow egg-shaped pits included Features 65 and 68 (Fig.14.25), both located near the structure walls. Features 78 through 81 (Fig.14.27) were small shallow postholes, which may have supported a rack of some kind. Features 62, 71, 72, and 82 were small shallow depressions that might have functioned as pot rests. Features 69 and 70 were shallow divots located between the hearth and ventilator shaft.

Artifact Assemblage. Artifacts and material samples from Structure 60 floor contact and floor fill indicate that, among other activities, the inhabitants of this structure were likely processing pigments possibly for decorating hide or objects made of vegetal material. Artifacts from floor fill and floor contact were comprised of 192 sherds and 67 bone fragments including 2 awls, 5 pieces of turquoise, 4 limonite (yellow) nodules, and 16 lithics. Two unifaces were part of the chipped stone assemblage, one exhibited unidirectional wear typical of scraping on hard

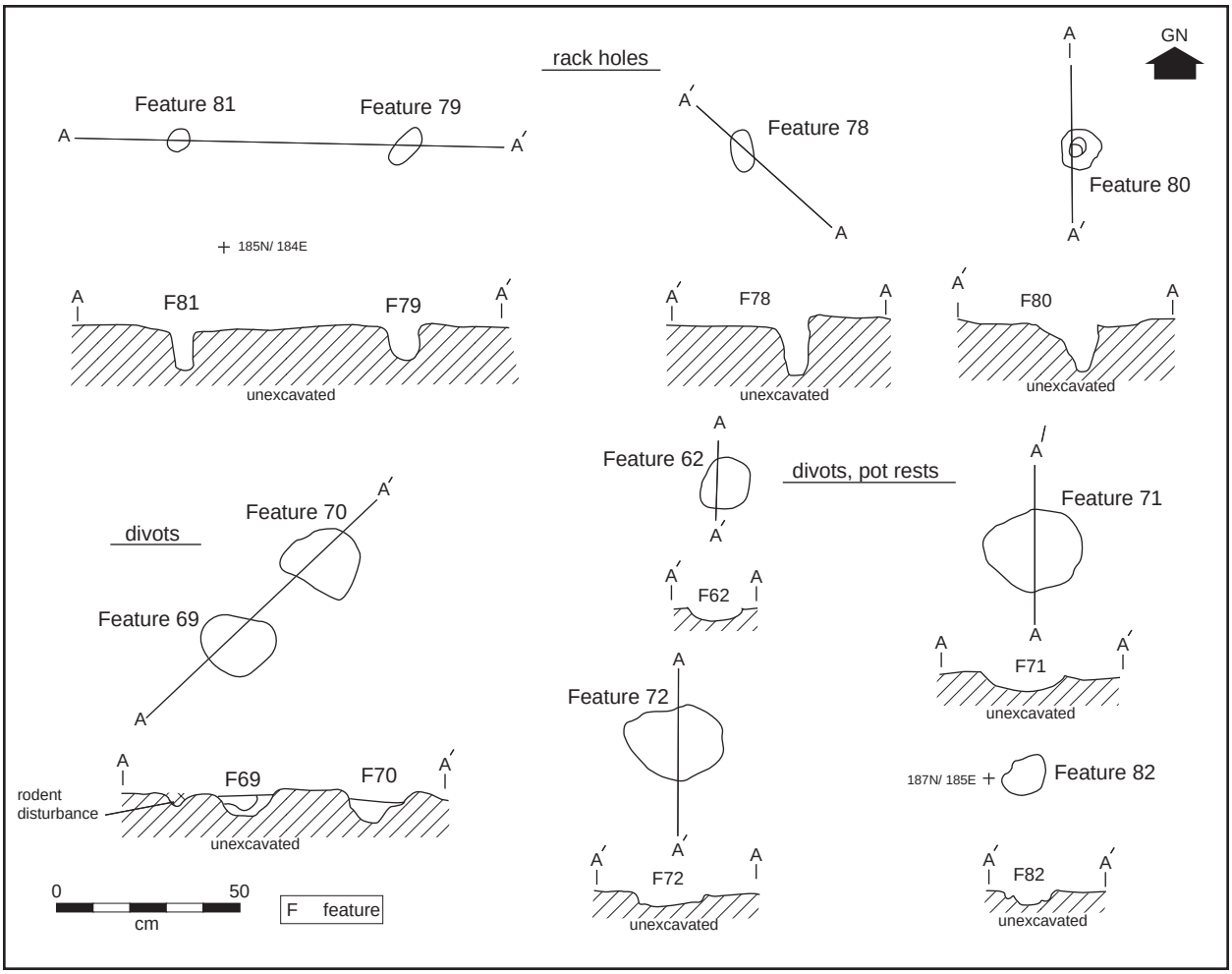

Figure 14.27. Structure 60 features; Features 78, 79, 80, and 81, possible rack holes; Features 69 and 70, divots; Features 62, 71, 72, and 82, pot rests.

media. Five pieces of ground stone were found at floor contact. One green pigment stain was also observed on the floor north of the hearth at the time of excavation.

Middle Rio Grande Plain ware made up 84 percent of the ceramic assemblage from floor and floor fill (Table 14.29). Of these, 86 percent were jar bodies. The next most common type was Middle Rio Grande Plain Corrugated. Other Gray wares included Northern Rio Grande Plain body, Middle Rio Grande Smeared Indented Corrugated, and Middle Rio Grande Wide Neckbanded, all in trace amounts. Decorated wares included Santa Fe Black-on-white and White Mountain Redware, which were intrusive. The floor assemblage is made up of 14 Middle Rio Grande Gray ware jar fragments, most of which were recorded as a pot drop, and one of which is solidly inset at the base of Feature 63. Absence of sooting or interior abrasion suggests that this vessel (or vessels) were used for storage. One Middle Rio Grande Smeared Indented Corrugated sherd was found at floor contact but is likely intrusive.

Sixteen chipped stone artifacts were recovered from floor and floor features. Material types included chalcedony, chert, Jemez obsidian, and nonvesicular igneous material and were evenly represented. Chalcedony and Jemez obsidian flakes and angular debris indicate an emphasis on the later stages of secondary core reduction. One marginally retouched chalcedony flake exhibited unidirectional wear typical of scraping bone or wood.

Floor fill contained 271 lithic artifacts, sum-

Table 14.33. LA 6171, Structure 60 Floor Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Nonlocal		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	22	48.9	7	15.6	2	4.4	4	8.9	10	22.2	-	-	45	16.0
Flake	95	45.0	26	12.3	2	0.9	34	16.1	53	25.1	1	0.5	211	77.0
Flake, Bifacial Thin	-	-	-	-	-	-	3	100.0	-	-	-	-	3	1.0
Flake, Uniface Resharp	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Core, Multiplatform	2	50.0	1	25.0	-	-	-	-	1	25.0	-	-	4	1.0
Flake, Utilized	-	-	-	-	-	-	2	100.0	-	-	-	-	2	<1
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Biface	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Uniface	-	-	-	-	-	-	1	50.0	1	50.0	-	-	2	<1
Total	120	44.3	34	12.5	4	1.5	47	17.3	65	24.0	1	0.4	271	100.0

marized in Table 14.33. Most lithics were manufactured from chalcedony (44 percent), vesicular igneous materials (24 percent), and Jemez obsidian (17 percent). Other material categories that exhibit low frequencies are chert, quartzite, and nonlocal Grants obsidian.

The lack of dorsal cortex on 86 percent of the whole flakes indicate an emphasis on later stages of secondary core reduction. Eighty percent of platforms were single faceted, also indicating secondary core reduction. Four multiplatform cores manufactured from chalcedony (n = 2), chert (n = 1), and vesicular igneous materials (n = 1) were also recovered. There is also evidence in the form of retouched or prepared platforms for bifacial tool manufacture within both chalcedony (n = 2) and Jemez obsidian (n = 6) material categories. The presence of a chalcedony biface and a Jemez obsidian biface indicate that these tools were probably manufactured within the structure. A Jemez obsidian resharpening flake would suggest that a biface was utilized and resharpened during activities carried out in the structure.

Unutilized flakes (77 percent) and unutilized small angular debris (16 percent) make up the majority of artifacts recovered from the floor fill. A number of both expedient and formal tools were identified in the floor assemblage. They include two utilized flake tools, both exhibiting use-wear typical of scraping on hard media like bone or wood. A marginally retouched obsidian flake also exhibits similar wear. These tools were probably used in the structure and discarded when they were no longer functional. Two bifacial artifact fragments, one chalcedony and the other obsidian, lack evidence of utilization. Two unifacial artifacts, one manufactured from Jemez obsidian and the other from vesicular igneous material, were also recovered from the floor assemblage. The vesicular igneous uniface exhibited unidirectional wear typical of scraping on hard media like bone or wood. It appears that the tool was used and discarded within the structure.

The ground stone assemblage from Structure 60 floor and floor fill (Tables 14.5 and 14.7) reflects production activities that took place in the structure. Artifacts at floor contact included two indeterminate ground stone fragments with adhering red pigment residue that can be refit into a larger fragmentary artifact. Both exhibit heat alteration in the form of crenated fracturing and sooting. One edge fragment froma fine-grained sandstone metate has an edge configuration consistent with a trough metate. The fragment displays evidence of maintenance, a concave use-surface cross section, and has only grinding-faceting wear. One fragmentary mortar of welded tuff appears to be pecked. The use-surface cross section is concave. The artifact's maximum linear dimension is 223 mm. Its use-surface has a maximum linear dimension of 140 mm and a maximum depth of 51 mm. A metaquartzite cobble with yellow (possibly limonite) residue was also recovered.

Figure 14.28. Feature 85, preburial excavation.

The faunal assemblage recovered from Structure 60 (Table 14.31) was small, limited to 114 bones, approximately 60 percent of which came from floor and floor fill. Artiodactyl bone dominated the floor fill assemblage, almost half of which came from a single pronghorn foot. Desert cottontail, yellow-faced pocket gopher, and black-tailed jackrabbit were found in smaller amounts. The assemblage at floor contact and within features was sparse, limited to seven pieces of bone, all of which were fragmentary and unburned. Three small-animal long bones were found in the fill of small warming pits (Features 64, 65, and 68), as well as one medium artiodactyl fragment and one large-mammal bone fragment. One pronghorn bone fragment was found on the structure floor as well as a coarse point awl which may have been used to widen puncture holes made

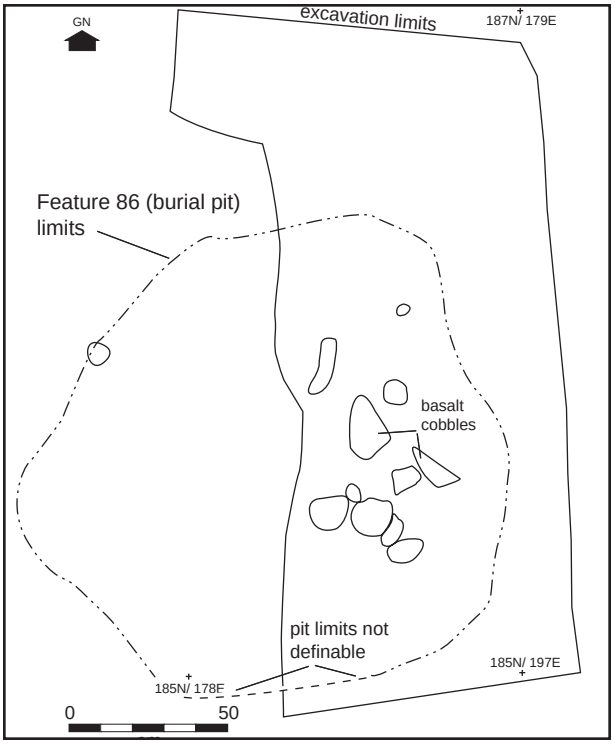

Figure 14.29. Feature 86, burial pit.

in hide. An awl without a tip was also found in floor fill. Three pieces of shell were recovered; two were beads made of *Olivella.*

Activities. Archaeobotanical remains from Structure 60 (summarized in Chapter 23) were sparse, but included small amounts of goosefoot and evidence of corn consumption or use in the form of stray cupules that were probably swept into small warming pits and pot rests. Fuel wood from the ash pit was mostly juniper. Potential economic species identified by pollen analysis were diverse and are summarized in Chapter 24. However, sampling strategy was not systematic, and results do not provide information about specific activity areas within the structure. Although this structure was likely used for many activities such as sleeping and food preparation, as evidenced by the presence of fragmentary small-animal bone and remnant corn in feature fill, other evidence left at the time of abandonment point to this structure as a locus of painting and processing, possibly of hide.

Abandonment. No evidence of burned timbers or matting was found in structure fill. Except for consolidated material found in Stratum AL3U/V, possible closing material, there did not appear to be much roof fall. A layer of what appeared to be eolian sand was present just above floor in the northwest quadrant but not in postholes, suggesting that the structure was abandoned for a length of time before the timbers were removed. Moderate oxidation of postholes and patches of lightly oxidized soil on the floor might argue for a partial structural burn or the posthole walls were fire-hardened to counteract the loosely consolidated Stratum 5 underlying the structure floor.

Feature 85 Burial. Feature 85 was an isolated human burial. It was located at the far western side of Study Unit 6 (185N/178–179E) (see Fig. 14.13). The burial pit, Feature 86, was defined by backhoe scraping that created a jagged partial profile (Figs. 14.28, 14.29). Pit excavation began by bisecting it along the 127E grid line and then excavating the already reduced west half. Once human remains were encountered, the excavation strategy changed. The burial was excavated in three arbitrary levels.

Excavation of Levels 1 and 2 exposed the burial outline. The burial was defined in Level 3 (97.34 to 96.65). Removal and documentation of remains followed standard project procedure. After all remains were removed, the remaining fill was excavated from Feature 86 and the burial pit was mapped and photographed.

Burial pit fill was light yellowish brown (10YR 6/4) silt loam with 10 percent small, round pebbles. Charcoal content was extremely low with the highest concentrations above 97.25 m. Fill above this elevation also exhibited trace amounts of oxidized soil. The base of the feature was compacted and easy to define. Ceramic assemblage was limited to six sherds, not sufficient to yield a date. They were a mixture of Middle Rio Grande Smeared Plain Corrugated (n = 2), San Marcial Black-on-white (n = 1), Northern Rio Grande Plain Corrugated (n = 1), and Santa Fe Black-on-white (n = 1). The presence of corrugated and Santa Fe Black-on-white pottery suggest a Coalition period interment. Fourteen lithics were recovered from burial fill. Tools included two unifacial choppers (one of quartzite and one of basalt) and two flakes with marginal retouch (one of basalt and one of chert). Tools were recovered from Level 1 and were not likely associated with the burial. Other chipped stone artifacts included one piece of Rio Grande chalcedony angular debris and nine flakes, the majority of which (n = 5) were of Jemez obsidian. Other than human bone, 45 pieces of fauna were recovered from the burial fill. Most (n = 41) were rodent, indicating rodent intrusion after final internment. Three artiodactyl and one medium bird bone were also recovered and could easily have been deposited by bioturbation.

The individual was a male, approximately 45 years in age (Chapter 22), and buried in a semiflexed position. The body was placed in the southeast portion of Feature 86, the burial pit was then covered with approximately 20 cm of soil and six to seven courses of cobbles.

Table 14.34. LA 6171, Study Unit 6, Extramural Features Summary

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
76	183N/186E	Pit with intrusive thermal feature	120 x 108 x 46	a) Fill from informal fire pit–10YR 5/2 grayish brown ash charcoal and silt with fine-grained sand. Charcoal 1 to 2 cm, 40% of fill. b) Pit structure closing material or redeposit? 10YR 6/4 light yellowish brown silt loam sparse charcoal flecks. Chunks of clay and plaster compacted down to floor. excavated after the pit house or both.	This feature was located immediately to the south of Structure 60 and intersected with the structure's ventilation shaft. May have been the structure's entry-way, an unrelated extramural feature. Intrusive fire pit was not well defined, it contained fire-cracked rock and possible pronghorn bone Rodent-disturbed. (fauna=32 mostly artiodactyl)
84	186-187N/180-181E	Shallow pit with flat base	142 x 94 x 15	3 10YR 5/3 very fine-grained sandy loam extremely sparse, small charcoal flecks, no calcium carbonate ash or stain. Colluvial.	Shallow, irregular pit with steep walls and flat base.
85	185-186N/178E	Human burial	80 x 100 x 37	a) burial fill – 10YR5/4 yellowish brown very fine silt. Secondary deposit. b) burial fill– 10YR 5/6 slightly more consolidated than Stratum a, redeposited fill. c) 10YR 6/4 light yellowish brown sandy silt. Consolidated possible wall slump.	Unclear if burial was placed in empty pit or if a filled-in pit was excavated to place the body. Covered by five courses of rock. Rodent intrusion, rodents nest. (fauna =45, chipped stone=3 including a unifacial chopper and two flakes with marginal retouch)
86	185-186N/178E	Burial pit	160 x 140 x 70	See Feature 85	Steep-sided, flat-bottomed pit with evidence of burning. This pit was probably a storage feature before its use as a burial pit. (fauna=3)

Table 14.35. LA 6171, Study Unit 6, Extramural Features Fauna Summary

	General Fill		Feature 76		Feature 83		Feature 84		Feature 85	
	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal	-	-	7	21.9%	1	12.5%	2	50.0%	2	4.4%
Medium to large mammal	4	80.0%	3	9.4%	3	37.5%	-	-	1	2.2%
Large mammal	-	-	2	6.3%	-	-	1	25.0%	-	-
Botta's pocket gopher	-	-	-	-	3	37.5%	-	-	2	4.4%
Banner-tailed kangaroo rat	-	-	-	-	-	-	-	-	16	35.6%
Northern grasshopper mouse	-	-	-	-	-	-	-	-	18	40.0%
Medium to large rodent	-	-	-	-	-	-	-	-	2	4.4%
Desert cottontail	-	-	1	3.1%	1	12.5%	1	25.0%	-	-
Medium artiodactyl	-	-	11	34.4%	-	-	-	-	3	6.7%
Mule deer	1	20.0%	4	12.5%	-	-	-	-	-	-
Pronghorn	-	-	1	3.1%	-	-	-	-	-	-
Medium bird	-	-	-	-	-	-	-	-	1	2.2%
Woodhouse's toad	-	-	3	9.4%	-	-	-	-	-	-
Total	5	100.0%	32	100.0%	8	100.0%	4	100.0%	45	100.0%
Immature	0	0.0%	-	0.0%	0	0.0%	0	0.0%	0	0.0%
Light/scorch	1	20.0%	-	-	-	-	-	-	-	-
Light to heavy	-	-	1	3.1%	-	-	-	-	-	-
Dry burn	1	20.0%	-	-	-	-	-	-	-	-
Heavy	-	-	1	3.1%	-	-	-	-	-	-
Complete	-	-	2	6.3%	-	-	-	-	16	35.6%
>75% complete	-	-	1	3.1%	-	-	-	-	7	15.6%
50-75% complete	-	-	1	3.1%	-	-	-	-	3	6.7%
25-50% complete	-	-	3	9.4%	1	12.5%	-	-	8	17.8%
<25% complete	5	100.0%	25	78.1%	7	87.5%	4	100.0%	11	24.4%

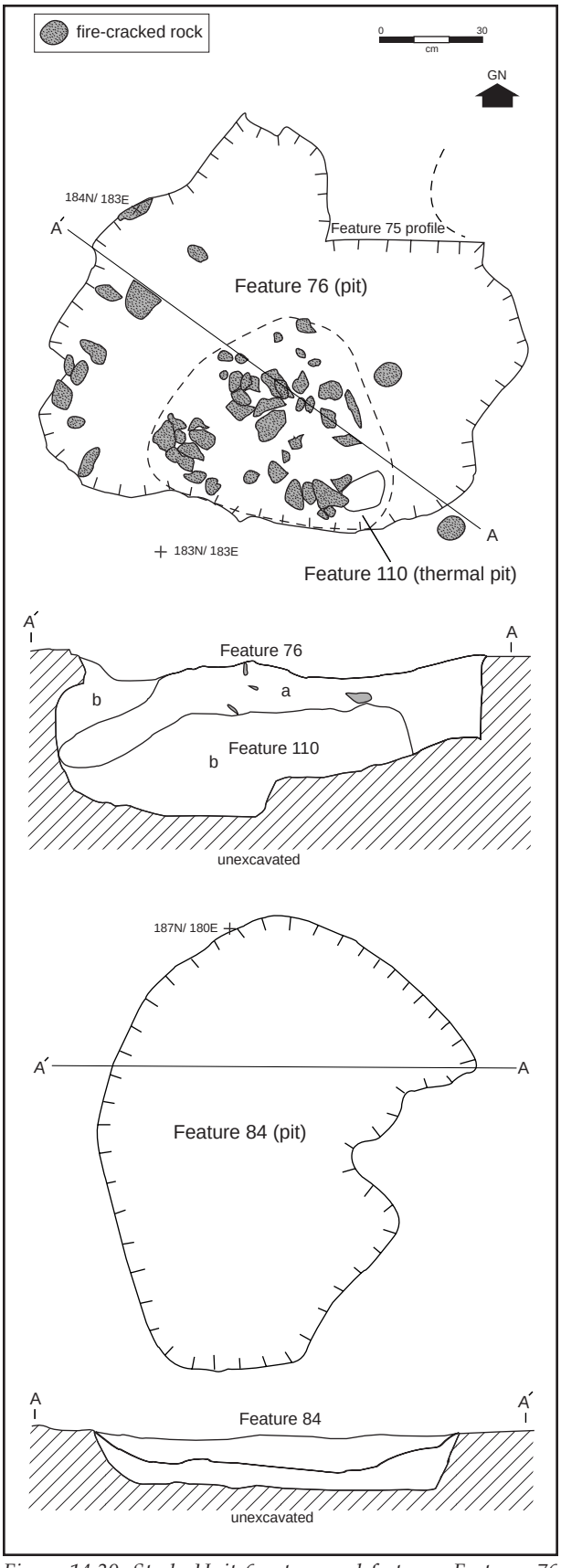

Figure 14.30. Study Unit 6 extramural features, Features 76 and 84, plan and profile.

Disarticulation of the left humerus and left arm placement may be explained by tooth marks left by a scavenger (possibly a dog) on the left scapula (Chapter 22). Scavenger disturbance may also explain why cobbles were later placed on top of the burial fill directly above the burial. Pollen remains contained species common to samples taken from other features. No flotation samples were processed.

Extramural Features. Not including the burial, 16 extramural features were located in Study Unit 6. Feature descriptions are summarized in Table 14.34 and feature illustrations are provided in Figure 14.30. Half of the features were large thermal pits and their subfeatures, and represent evidence of the earliest occupations at LA 6171 (see Earliest Developmental Features). Developmental features are discussed below.

Features 76 and 84 were the only two unburned features in Study Unit 6. Feature 84 was an extremely shallow, irregular, almost C-shaped pit with a flat base. Side walls were rodent disturbed and steep. Maximum length was 1.42 m and depth was 15 cm. The feature was located immediately to the west of Structure 60. Three Middle Rio Grande Plain body sherds and four bones were recovered from alluvial fill. No lithics were recovered.

Feature 76 was a large irregular pit with steep walls and a diffuse thermal pit (Feature 110) suspended in feature fill. This feature was located immediately to the south of Structure 60 and intersected the structure's ventilator shaft (Feature 75). Ceramics included Middle Rio Grande Smeared Plain Corrugated (n = 2), and Middle Rio Grande Plain ware (n = 1). The fauna assemblage (n = 16) had an interesting mix of artiodactyl, including part of a pronghorn cranium (possibly originally placed in the ventilator shaft) and neck and foot bones from a deer, probably waste or discard. One of the bones is heavily burned. Other remains included desert cottontail (n = 1), woodhouse toad (n=3), and assorted mammal bone (n=12). No lithics were recovered.

Feature 110 was a deflated, irregular fire pit located in the northeast half of Feature 76.

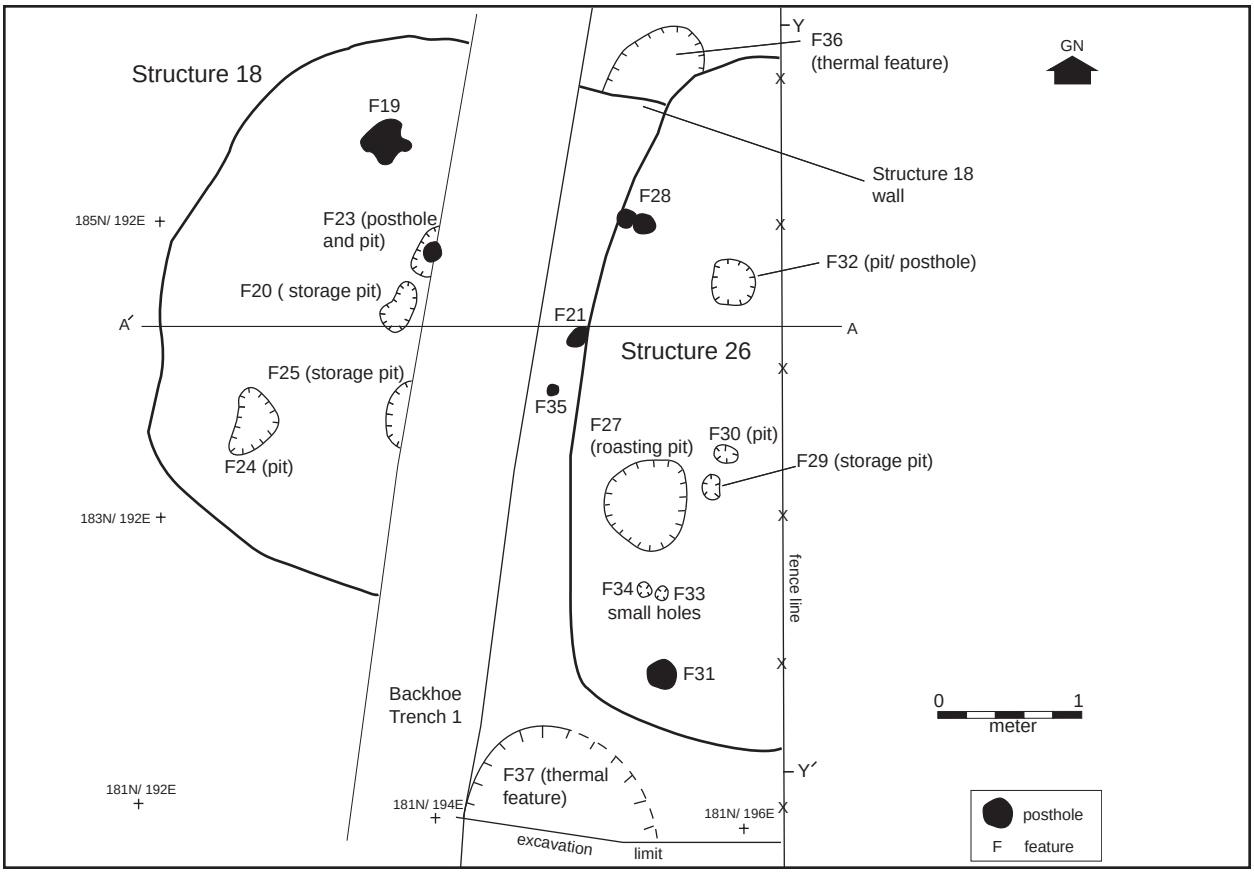

Figure 14.31. Study Unit 4, Structures 18 and 26, plan view.

Figure 14.32. Study Unit 4, Structures 18 and 26, overview.

Feature dimensions were approximately 60-by-30 cm, fill was approximately 15 cm deep with fire-cracked rock and two pieces of bone, possibly pronghorn. No chipped stone was recovered.

Artifacts. The Study Unit 6 fauna assemblage was small (n = 53) and is summarized in Table 14.35. Most of the rodent bone was probably from post-occupational burrows. Feature 85 (burial) in particular may have contained a rodent's nest. The pits with larger animals and burning could represent occupational trash. Burning is rare throughout with roasting-like burns on a small-mammal bone from Feature 76, dry burns on a deer humerus from general fill, a scorch on medium to large-mammal from general fill and a heavy burn on medium artiodactyl from Feature 76. No flotation samples from Study Unit 6 were processed.

Lithics were exclusively from burial and burial pit fill. The 17 artifacts represent a range of reduction and use activities. Six different raw materials were represented in the assemblage. Chalcedony debitage (n = 3) exhibited little dorsal cortex which is consistent with later stages of secondary core reduction. The Jemez obsidian (n = 6) lacked dorsal cortex also, but exhibited retouched and prepared platforms indicating that obsidian was used for formal bifacial tool manufacture. Nonvesicular materials exhibited dorsal cortex typical of both primary and secondary core reduction. Quartzite, chert, and pumice were also represented.

Table 14.36. LA 6171, Study Unit 4, Structure 18 and Structure 26 Stratigraphy

Designation	Description	Munsell Color Range	Comments
		Structure 18	
3J	Silt loam	10YR 5/3; 10YR 5/2	Charcoal flecking, staining and oxidized clay, may be dumping from surrounding features
CO3K	Very fine-grained sandy loam	10YR 3/4	Very sparse small charcoal flecking, probably alluvial wash
3L	Very fine-grained sandy loam	10YR 6/4	Sparse charcoal flecking, possible closing material mixed with alluvial wash
		Structure 26	
3M	Silt loam with Stratum 2 mottling	10YR 5/3	Dumping episode 1: plentiful charcoal flecking, ash staining, consolidation moderate, 10 to 20 percent small pebbles. Depth ranged from 6 to 20 cm
3N	Silt loam	10YR 5/3	Dumping episode 2: with large charcoal chunks. Depth ranged from 19 to 40 cm
AL3M	Silt loam with Stratum 2 mottling	10YR 5/3	Less charcoal stained than 3A, higher percentage of larger Stratum 2 mottling (3 to10cm). Depth ranged from 3 to 10
CO3P	Very fine-grained sandy loam	10YR 6/3	Structure 26 possible closing material: charcoal flecking throughout and 1 to 2 cm chunks of Stratum 2. Depth ranged from 8 to 28 cm.
CO3Q	Very fine-grained sandy loam	10YR 6/3	Structure 26 possible closing material: similar to 3E with significantly less Stratum 2 and less charcoal. Depth ranged from 20 to 54 cm.
3R	Fine-grained sandy loam	10YR 5/4	Dumping episode 3: ash-stained fill with 20 percent ash content, extremely mottled and poorly sorted. Depth ranged from 14 to 20 cm.
AL3S	Fine to medium-grained sandy loam, well-sorted	10YR 5/4	Last fill: alluvial, extremely small, sparse charcoal flecking, 2 percent gravels. Depth ranged from 1 to 56 cm.
EO3T	Medium-grained sand	10YR 6/3	Discontinuous layer sits immediately below floor 1. Depth ranged from 1-2 cm.

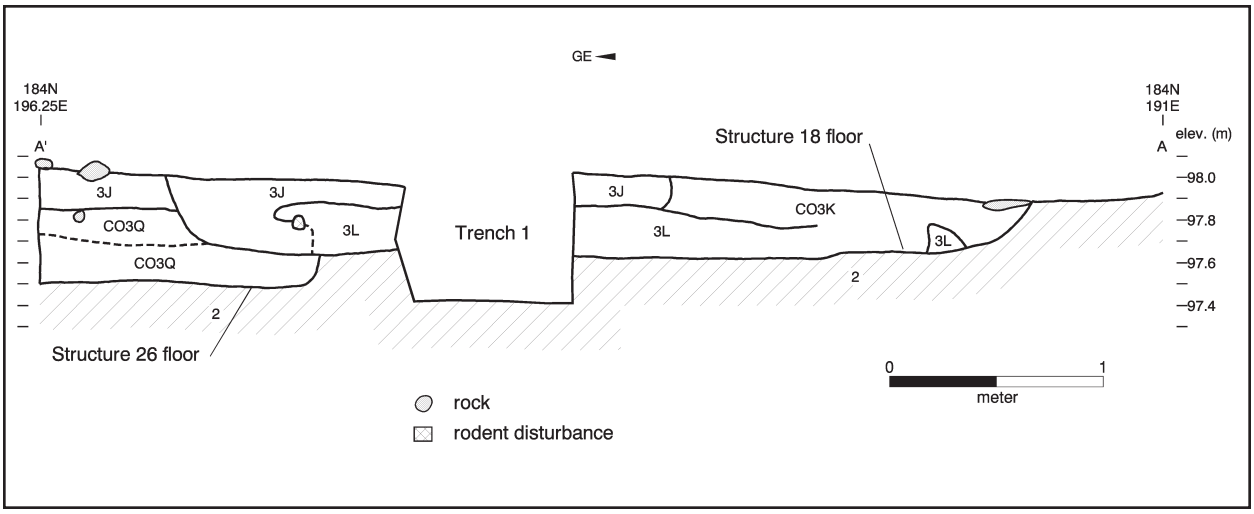

Figure 14.33. Study Unit 4 fence line profile (above) and stratigraphic profile of Structures 18 and 26.

Two unifacial choppers, one of quartzite and the other of nonvesicular igneous materials indicate that choppers were used at the site. Two additional flakes (three edges) exhibited unidirectional retouch and wear patterns consistent with scraping activities.

Study Unit 4 Excavation Summary. Located approximately 15 m south of the structure mound at 200N/200E, Study Unit 4 spanned a 10-sq-m area, incorporating Grid Units 181–186N/191–196E. The area was bisected by Backhoe Trench 1. Study Unit 4 contained two superimposed pit structures (Structures 18 and Structure 26), that overlapped by approximately 80 cm (Figs. 14.31 and 14.32). The structures contained 21 associated intramural features and were associated with 3 extramural features. The study unit ended at the right-of-way fence line allowing only partial excavation of Structure 26.

General Methods. Study Unit 4 was identified when Backhoe Trench 1 bisected cultural deposits (Stratum 3) buried beneath Stratum 1. The east face of the trench was profiled and Stratum 1 (38 cm) was removed in a single surface scrape using a backhoe. The area was further defined by manual shovel scraping. As a result of both backhoe and hand excavation, up to 16 cm of cultural fill (Stratum 3) was removed. None of this fill was screened. The grid system was re-established and a datum at 98.50 was established west of the Structure 18 limit. Although feature limits were well defined in the northwestern area of the study unit, the area to the east was extensively rodent disturbed and definition was problematic.

Stratigraphy. Study Unit 4's natural strata conformed to the sequence established for Study Unit 5. However, cultural strata were specific to each pit structure. Structure strata are detailed in their respective sections and are summarized in Table 14.36. Both structures had washed in and redeposited fill with ceramic assemblages that are made up of mainly Coalition components mixed with some Early Developmental types. Structures 18 and 26 had floor fill with an Early Developmental ceramic component and some Coalition types. Presence of Coalition ceramics in floor fill of this structure is easily explained by dumping episodes visible 10 cm above floor in the fence line profile and evidence of an excavation in the south half of the structure profile (Fig. 14.33).

Structure 18. Structure 18 was a shallow, round Early Developmental pit structure with seven floor features. It was 3.74 m in diameter with an estimated maximum wall height of 51 cm and a floor area of approximately 11 sq m. Floor depth was 97.97 mbd.

The east half of Structure 18 was excavated into Structure 26, fill (Stratum CO3P/CO3Q). The west half was excavated into Stratum 2. The two structures overlapped by approximately 80 cm. The floor of Structure 18 was 10

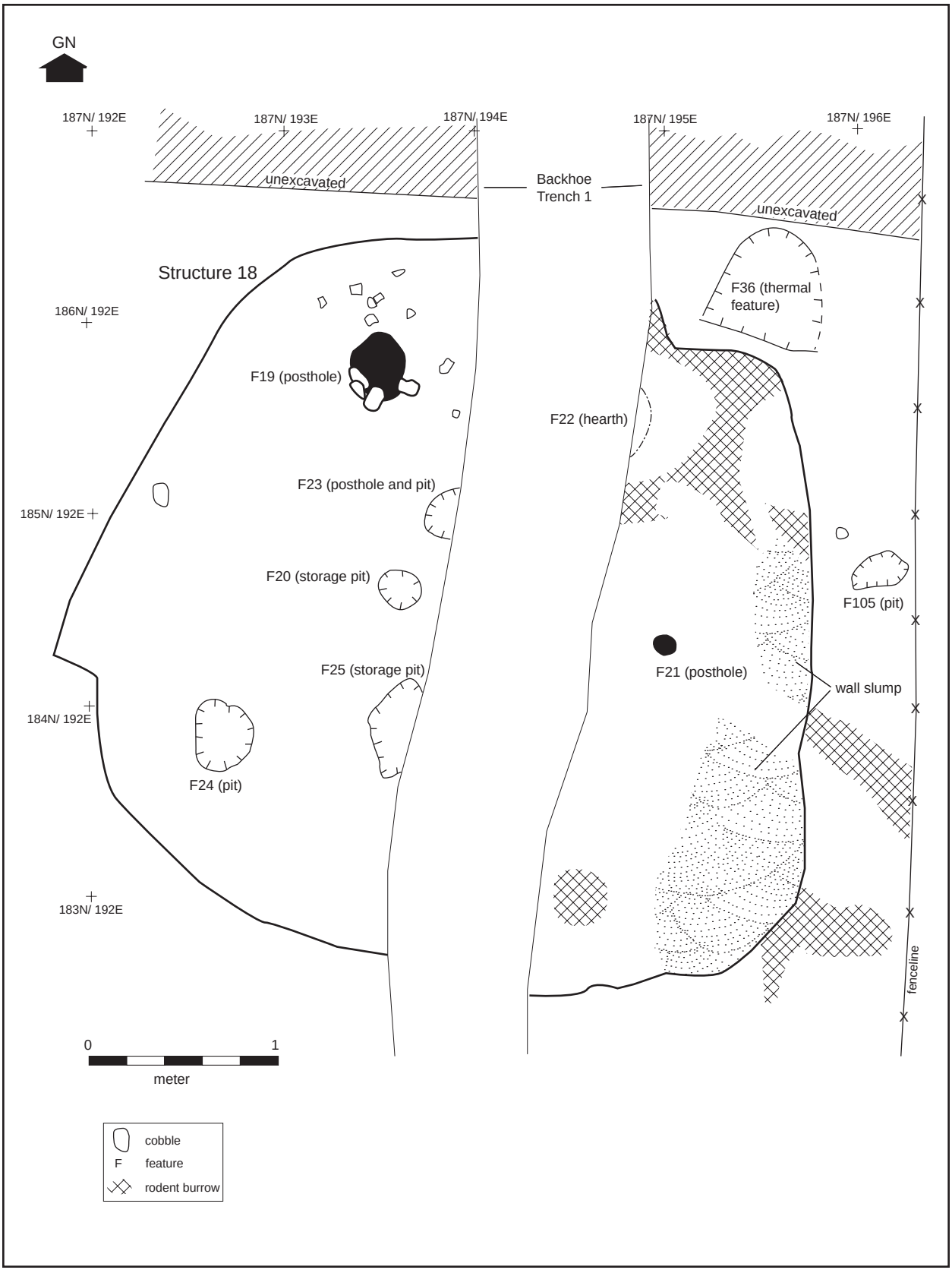

Figure 14.34. Structure 18, plan view.

to12 cm above Structure 26 floor.

Evidence of possible structural remodeling was provided by posthole placement. No absolute dates were obtained but ceramics from floor fill were from Early Developmental and Coalition periods.

General Methods. Excavation began when Study Unit 4 was bisected along the 184N line perpendicular to Backhoe Trench 1, effectively quartering the structure. Figure14.34 illustrates Structure 18 excavation and feature placement. The western half of Structure 18 was removed in two quadrants. Strata were not discrete or easily separated, and structure fill (Strata 3J, 3K, and 3L) was removed in three arbitrary 10-cm levels. Fill was screened with 1/4-inch mesh. Level 4, floor fill, predominately made up of Stratum 3L, was removed in a final 10-cm level and screened through 1/8-inch mesh. On the west side, removal of Level 4 exposed the pit structure floor, which was lighter in color, less mottled, and more consolidated than structure fill. Flotation samples were taken from each quarter and a pollen sample was taken from the northwest quadrant.

Floor and wall definition in the eastern half of Structure 18 proved to be more elusive. Although floor definition in the northeast quadrant was fairly consistent with the surface found in the western half of the feature, the floor in the southeast quadrant was not easily defined. Subtle fill differences and rodent disturbance in the eastern half of Structure 18 made the wall and floor extremely hard to locate. Structure limits were defined by Structure 18 wall slump and contact with closing material from Structure 26, which was considerably more consolidated than Structure 18, fill. Flotation samples were taken from Level 4 of each quadrant and a pollen sample was taken from the floor of the northeast quadrant. All Level 4 floor fill was screened with 1/8-inch mesh.

Feature 36, a thermal feature excavated into Stratum 2 and AL3BK, overlapped both structures and was encountered while trying to define the northeast wall of Structure 18. Fill differences and difficulty locating Structure 18 east wall suggested that other intrusive features were present. Profiles 1, 2, and 3 were cut to determine whether any intrusive pits could be identified (Fig. 14.34). The remainder of Structure 18, fill, was excavated in a 9-cm level to expose the structure floor. Once profiles were recorded, a 20-cm window was excavated through Level 6 (Stratum 3P) in 186N/195E and the Structure 26 floor was identified. Feature 21 (posthole) was excavated and Structure 18, east half floor (Stratum 3R), was removed to expose a clear Structure 26 outline.

Stratigraphy. Structure 18 strata were defined in the wall profile along the 184N line. They are summarized in Table 14.36 and illustrated in Figure 14.33. Fill was rodent disturbed and was a combination of alluvial wash, one dumping episode, and melted structural material. Rodent disturbance made strata difficult to define and strata in the profile are discontinuous. Fill ranged from fine-grained sandy loam to silt loam with varying charcoal content, oxidized soil, and fire-cracked rock. The only evidence of redeposited cultural material was a concentration of fire-cracked rock, and dark gray partially oxidized soil found in Levels 1 through 3 in the southwest quadrant but not visible in the profile.

Stratum 3J was a 5- to 35-cm-thick layer of brown to gray-brown (10YR 5/3 to 10YR 5/2) silt loam with charcoal flecks. This stratum overlaid Stratum 3L. Staining and oxidized clay in this stratum may have represented dumping from surrounding cleaned out features. This stratum may correspond to Stratum 3M in Structure 26.

Stratum CO3K was dark yellowish brown (10YR 3/4), very fine-grained sandy loam measuring from 15 to 30 cm in depth with very sparse, small charcoal flecks. This stratum was discontinuous and was located in the western half of the feature above Stratum 3L. Lack of cobbles, low frequency charcoal and moderate artifact content suggest that this stratum was probably colluvial wash.

Stratum 3L was another discontinuous stratum and ranged in depth from 7 to 25 cm. Fill was light yellowish brown (10YR 6/4), very fine-grained sandy loam with very sparse charcoal flecks mixed with slump from side walls.

Stratum 3L was located underneath Stratum 3J and Stratum CO3K.

Structure 18 floor fill (Stratum 3L, 10 cm above floor and features) ceramic assemblage was associated with Early Developmental ceramics mixed with Coalition pottery types while the structure fill (Strata 3J and CO3K) assemblage had Coalition with some Early Developmental pottery types. This later pottery may have been deposited by slope wash across the site and gradual natural filling of the structure depression. Artifacts from upper fill also include lithics, fauna, and shell (four *Anodonta californiensis* fragments and one *Olivella* bead). Artifacts are summarized in Tables 14.13 and 14.29.

Structure Description. Structure 18 was a shallow, round, pit structure, measuring 3.74 m in diameter with a floor area of approximately 11 sq m. Floor depth was 97.97 m. Recorded wall height ranged from 26 to 35 cm but approximately 16 cm of cultural material was removed during surface scrape and the structure may have been up to 51 cm deep. Walls and floor in the east half of the structure were excavated directly into Structure 26 fill (Stratum CO3P/CO3Q) and were not plastered or oxidized. Western-half walls were excavated into Stratum 2 and were also unaltered (except by rodent activity). In the west half of the structure, floors showed intermittent areas of light, patchy oxidation, but no plaster or formal preparation was encountered. No absolute dates were obtained. Stratigraphy indicates that most of the structure fill was colluvial. Evidence of a post-abandonment dumping episode was provided by a fire-cracked rock concentration mixed with partially oxidized soil, possibly cleaned out from a roasting pit.

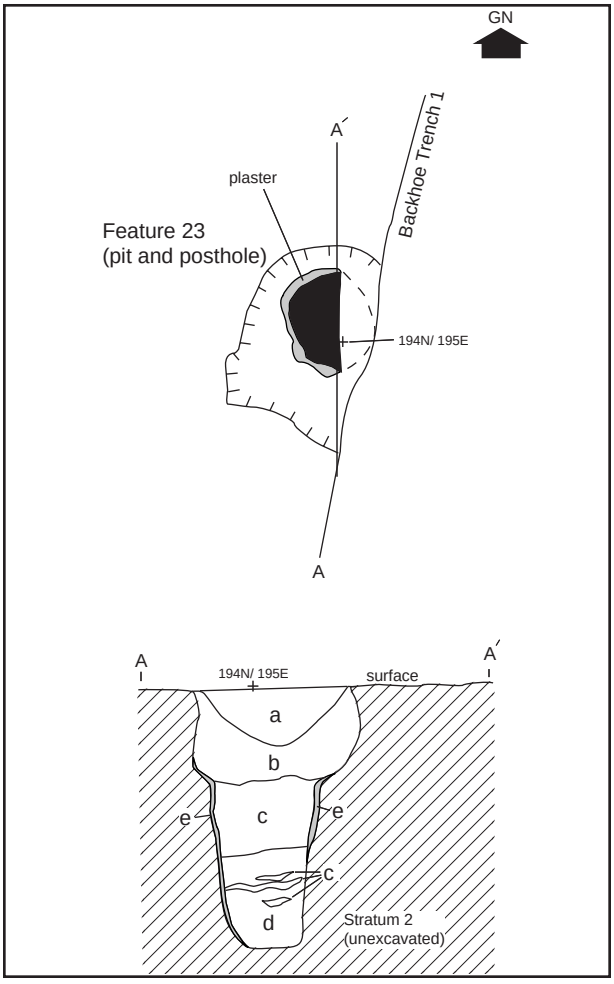

Figure 14.35. Structure 18, Feature 23, remodeled posthole.

The structure had seven intramural features (Fig. 14.34). Features 19 through 25 included a hearth (Feature 22) located in the structure's northwest quadrant, a remodeled posthole (Feature 19), one posthole which may have been reused as a storage pit (Feature 23), one shallow posthole (Feature 21), two storage pits (Features 20 and 25) and one small pit of indeterminate use (Feature 24).

Structure Construction. Evidence of structure construction was limited to floor feature placement. The structure was unburned. Any construction material that was not deliberately removed during dismantling probably disintegrated.

Wall-floor juncture was a gradual slope; neither were prepared. The superstructure was not supported by four-post construction typical of other Early Developmental structures at LA 6171. Three postholes were found in this structure floor (see Fig. 14.34). Placement of the postholes and evidence of remodeling, illustrated by Feature 23 in Figure 14.35, suggest that all were not used to support the roof at the same time. This implies that the roof was peaked or otherwise insubstantial.

All postholes were excavated into Stratum 2. Dimensions ranged from 12 to 38 cm in diameter and from 12 to 36 cm in depth (Fig.

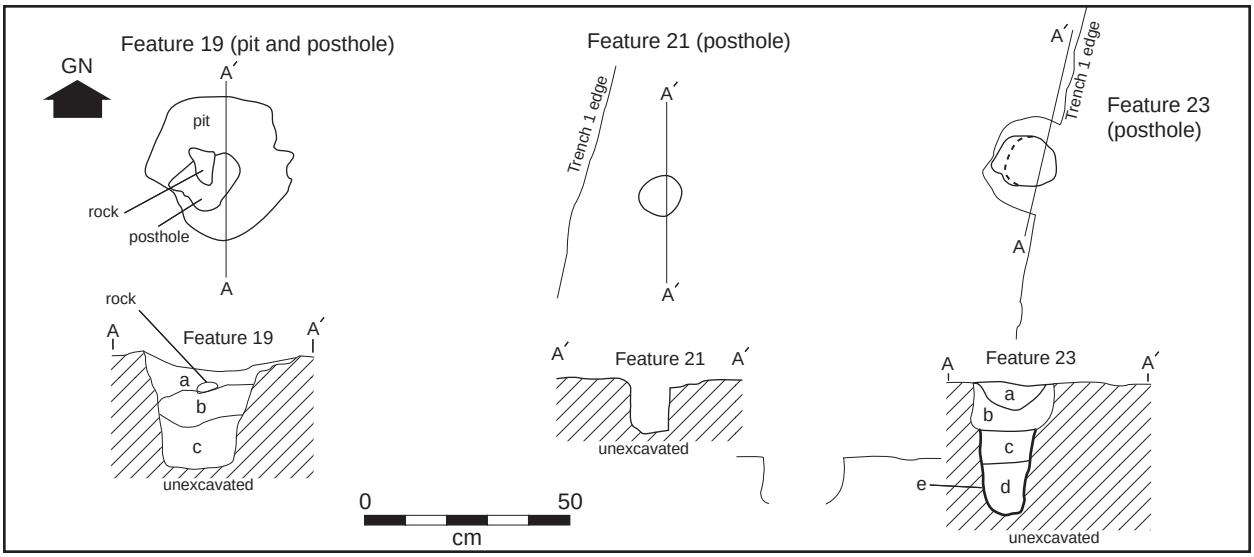

Figure 14.36. Structure 18 postholes, Features 19, 21, and 23, plan views and profiles.

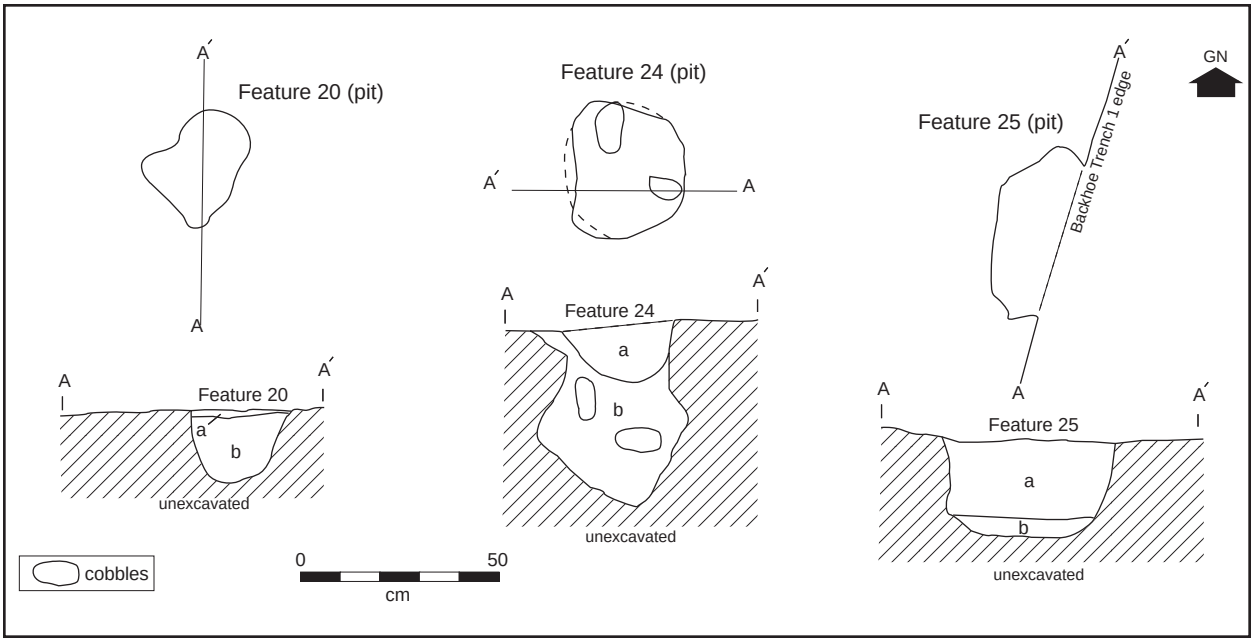

Figure 14.37. Structure 18 small pits, Features 20, 24, and 25, plan views and profiles.

14.36). Postholes were not uniform in shape or size and, with the exception of Feature 21, were located in the western half of the structure. Feature 19, a 30 cm deep remodeled posthole 44 cm south of the structure wall, may have been a roof support. Feature 24 may also have supported the roof, but its sides were so disturbed by rodent activity that it is impossible to tell whether this feature was a remodeled posthole or a storage pit (Fig. 14.37). Feature 23 was remodeled and later used as a bowl-shaped storage pit, but may have also been used to support the roof at one time. Feature 21 was the smallest of the postholes located 68 cm from the structure's east wall, roughly equidistant between the north and south walls, and may have been used as secondary roof support or as a support for a rack.

No entryway or ventilator shaft was found. Given the structure's small size and depth, it is likely that an entryway did not exist. If there was a ventilator shaft in the southeast wall, it

Table 14.37. LA 6171, Structure 18 Intramural Features

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Description
19	185N/193E	Remodeled posthole	38 x 38 x 30	a) 10YR 4/3 silt loam with ash, large charcoal pieces and chunks of 10YR 6/4 silt clay loam. (Closing material?) b) 10YR 6/4 fine silt loam with charcoal and calcium carbonate filaments. (Rodent disturbance, redeposit) c) 10YR 6/4 fine silt loam with calcium carbonate filaments and sparse charcoal flecks.	Irregularly-shaped pit with steep-sided walls. Two pieces of fire-cracked rock in fill, one at base of Stratum a, the other in Stratum b. East side feature wall had less than a 90 degree angle and appeared to have been enlarged, possibly the origin of Stratum c in this feature. (chipped stone= one Jemez obsidian flake and one angular debris)
20	184N/193E	Storage pit	30 x 30 x 19	a) 10YR 5/3 very fine-grained sandy loam with charcoal flecking. (1cm thick); b) 10YR 6/3 pale brown silt loam. No pebbles, gravel, or charcoal. No calcium carbonate or oxidation. No bioturbation.	Shallow irregularly-shaped feature with steep-sided walls. Fill was very clean and may have been intentionally deposited.
21	184N/195E	Posthole	12 x 12 x 12	10YR 5/4 loosely consolidated fine-grained sandy loam with sparse charcoal flecks.	Small, round, regularly-shaped pit with vertical side walls.
22		Hearth	40 x — x 10	10YR 5/3 fine-grained sandy loam with alluvial lenses of coarse to medium-grained sand.	The bulk of this feature was removed by Backhoe Trench # 1. Depth is estimated.
23	184N/195E	Pit and posthole	27 x 27 x 36	a) 10YR 3/2 very fine-grained silt loam with small sparse charcoal flecks. b) 10YR 5/4-6/3 mottled silt loam with sparse charcoal flecks. c) 10YR 5/4 consolidated fine to medium-grained sandy loam with small scattered pebbles and 25 to 30 percent charcoal flecks. Top of this stratum may have been a prepared surface. d) 10YR 6/4 fine-grained sandy loam with small pebbles, charcoal staining and three Stratum c lenses less than 1cm thick. e) 10YR 6/3 hard adobe/clay covering posthole portion side wall.	Remodeled posthole with possible secondary use as a bowl-shaped storage pit. Strata b-d filled posthole. Stratum d was most likely secondary fill. If the feature was reused as a storage pit, it is likely that Stratum c was redeposited as well. (fauna=3, 1 *Anodonta californiensis* shell with ground edges)
24	183N/193E	Unburned pit	33 x 28 x 48; second use depth 15 cm	a) 10YR 5/4 fine to very fine-grained sandy loam with small, sparse charcoal flecks throughout fill. b) 10YR 6/4 very fine-grained sandy loam with scattered calcium carbonate and charcoal flecks rodent disturbed. Two cobbles found in this stratum suggesting that this feature was filled in intentionally.	Deep, round pit with steep, undulating, concave walls. Two cobbles were found floating in fill. It is likely that rodent disturbance has extensively altered this feature. Stratum a, a steep-walled cyst may have been a secondary use of this pit. (chipped stone=11 including one biface thinning flake and one piece of angular debris with marginal retouch, fauna=2)
25		Unburned storage pit	46 x 22 x 23	a)10YR 6/4 silt loam with scattered charcoal flecks no pebbles or cobbles, no calcium carbonate, very small consolidated closing material flecking. Stratum exhibited five layers of alluvial deposition. Burned bone present in upper fill. b) 10YR 6/4 Stratum a with occasional charcoal staining, charcoal and pieces of oxidized soil.	Steep-sided, flat-bottomed pit. Two distinct alluvial episodes separated by approximately 2 cm of fill are evident in the feature profile. The first of these episodes was located 5 cm above the feature floor and suggests that the structure was abandoned for a period of time before the feature filled. (chipped stone=1, fauna=4 potential processing indicated by impact fracture)

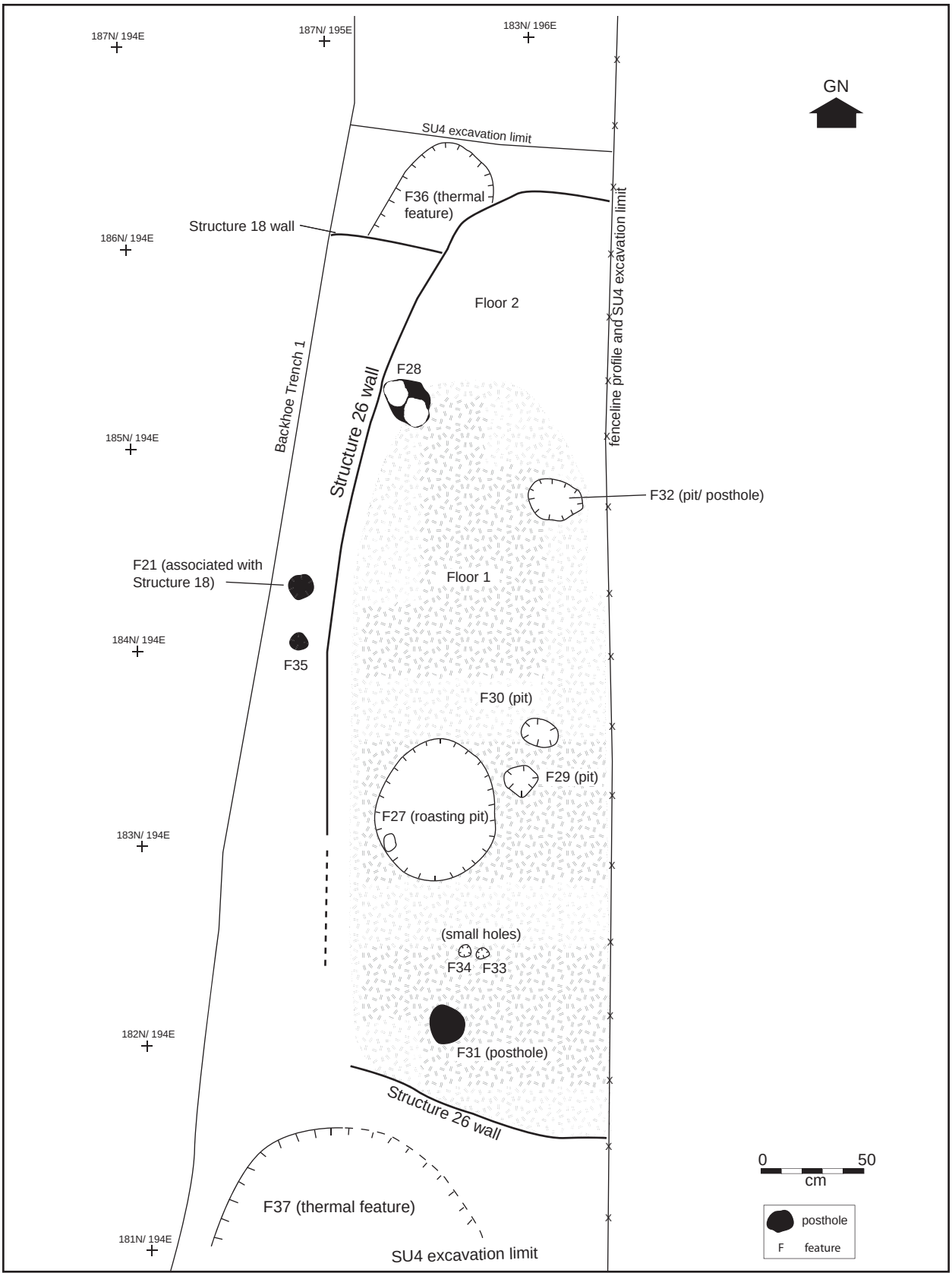

Figure 14.38. Structure 26, plan view, features and excavation units.

may have been indistinguishable from Structure 26 fill.

Floor Features. A total of seven floor features were located in Structure 18. Despite the Structure 18/Structure 26 overlap, all of these features were excavated into Stratum 2. Feature dimensions and fill descriptions are summarized in Table 14.37 and illustrated in Figure 14.38.

Feature 22, the structure hearth, was the only thermal feature in Structure 18. It was located near the north wall. Backhoe Trench 1 removed most of this feature. Only partial dimensions were available. A flotation sample of the remaining fill was taken, but no artifacts were recovered. In addition to the postholes discussed above, two small storage pits were located in the western half of Structure 18.

Feature 20 was an irregularly shaped pit with steep walls. The pit was 30 cm in diameter and 19 cm deep. Feature fill was very clean and may have been intentionally used to fill the pit. The fill had no artifacts.

Feature 24 was a deep, round, extensively rodent-disturbed pit with undulating walls and an uneven base. Two 10 cm (maximum dimension) cobbles suspended in the feature fill suggest that this feature was remodeled by partially filling it to create a steep-walled pit that may have been used for storage. Feature 24 was 28 cm in diameter and 48 cm deep. The second use depth was 15 cm. As mentioned above, Feature 24 placement and depth suggest possible primary use as a posthole, but rodent disturbance has obliterated the feature's original limits making inferences about its use uncertain. Chipped stone (n = 11) included one utilized flake of silicified wood and one bifacial thinning flake of Rio Grande chalcedony. Other chipped stone included three pieces of angular debris, one with marginal retouch, and six additional flakes. Two pieces of medium- to large-mammal bone were also recovered.

Feature 25 was a steep-sided, basin-shaped storage pit with multiple alluvial lenses 5 cm above the feature floor. These lenses suggest that the structure may have been open for a time after abandonment. One basalt flake and four pieces of animal bone were recovered.

Artifact Assemblage. Point-provenienced artifacts found at floor contact in the eastern portion of Structure 18 included one piece of turquoise, one ground stone fragment, one piece of lithic debitage, one Middle Rio Grande Plain ware pot drop, and two pieces of red ochre. Artifact content on the west half of the floor was sparse. With the exception of a pot drop in the northwest quadrant, no artifacts were found on the floor surface in the western half of the structure.

Pottery from Structure 18 is summarized in Table 14.29. Middle Rio Grande Plain ware jar bodies (n = 34) and rims (n = 2) were the most common pottery type recovered from floor fill and contact. They make up 68 percent of the floor fill assemblage and are the only pottery type at floor contact. The rest of the sample from floor fill is peppered with Middle Rio Grande Smeared Plain Corrugated, Middle Rio Grande Smeared Indented Corrugated,

Table 14.38. LA 6171, Structure 18 Floor and Features, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	5	71.4	-	-	1	14.3	-	-	1	14.3	-	-	7	13.0
Flake	15	40.5	3	8.1	1	2.7	5	13.5	13	35.1	-	-	37	72.0
Flake, Bifacial Thin	1	33.3	-	-	-	-	1	33.3	1	33.3	-	-	3	5.0
Core, Multiplatform	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Angular Debris, Marginal Retouch	1	100.0	-	-	-	-	-	-	-	-	-	-	1	1.0
Flake, Utilized	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Total	22	43.1	4	7.8	2	3.9	7	13.7	15	29.4	1	2.0	51	100.0

Table 14.39. LA 6171, Structure 18 Floor Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	19	61.3	4	12.9	-	-	4	12.9	4	12.9	-	-	31	13.0
Flake	81	43.5	24	12.9	3	1.6	34	18.3	42	22.6	2	1.1	186	83.0
Flake, Bifacial Thin	-	-	-	-	-	-	2	100.0	-	-	-	-	2	<1
Biface	1	33.3	-	-	-	-	2	66.7	-	-	-	-	3	1.0
Uniface	-	-	-	-	-	-	2	100.0	-	-	-	-	2	<1
Total	101	45.1	28	12.5	3	1.3	44	19.6	46	20.5	2	0.9	224	100.0

Table 14.40. LA 6171, Structure 18 Fauna Summary

	Fill		Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal	6	35.3%	11	19.3%	17	23.0%
Medium to large mammal	1	5.9%	14	24.6%	15	20.3%
Large mammal	5	29.4%	2	3.5%	7	9.5%
Botta's pocket gopher	-	-	1	1.8%	1	1.4%
Woodrats	-	-	1	1.8%	1	1.4%
Small rodent	-	-	1	1.8%	1	1.4%
Desert cottontail	2	11.8%	12	21.1%	14	18.9%
Black-tailed jackrabbit	-	-	7	12.3%	7	9.5%
Medium artiodactyl	3	17.6%	7	12.3%	10	13.5%
Mule Deer	-	-	1	1.8%	1	1.4%
Total	17	100.0%	57	100.0%	74	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Light/scorch	-	-	1	1.8%	1	1.4%
Light to heavy	-	-	1	1.8%	1	1.4%
Dry burn	-	-	1	1.8%	1	1.4%
Heavy or black	1	5.9%	3	5.3%	4	5.4%
Heavy to calcined	-	-	1	1.8%	1	1.4%
Calcined	-	-	5	8.8%	5	6.8%
Complete	-	-	2	3.5%	2	2.7%
>75% complete	-	-	4	7.0%	4	5.4%
50-75% complete	1	5.9%	-	-	1	1.4%
25-50% complete	-	-	5	8.8%	5	6.8%
<25% complete	16	94.1%	46	80.7%	62	83.8%

Reserve Smudged, and Jornada Brown. Decorated wares include Tallahogan-like, Santa Fe Black-on-white, and White Mountain Redware, all of which were bowls. At floor contact, half of the jar bodies show abrasion from cooking. Jars from floor fill are mostly abraded.

Fifty-one lithic artifacts were recovered from the floor and features in Structure 18 and are summarized in Table 14.38. Chalcedony (43 percent) and nonvesicular igneous (29 percent) lithic artifacts were most common in the assemblage. Low frequencies of Jemez obsidian, chert, quartzite, and "other" local materials were also represented.

Seventy-nine percent of the flakes lack dorsal cortex and 74 percent of the platforms are single-faceted, indicating an emphasis on later stages of secondary reduction. A single multiplatform core is also represented. Bifacial tool manufacture is indicated by two retouched and prepared platforms, one made of chal-

cedony and the other from "other" local material. Bifacial thinning flakes of chalcedony (n = 1), Jemez obsidian (n = 1), and nonvesicular igneous materials (n = 1) also indicate that bifacial tool manufacture occurred in the structure.

Utilized flakes (72 percent) and small angular debris (13 percent) made up the majority of the assemblage. A utilized flake with unidirectional scraping wear indicates prolonged use on hard media. A marginally retouched piece of small angular debris exhibits unidirectional retouch but lacks evidence of use wear. In addition, a lateral fragment of a Jemez obsidian projectile point was also recovered. No ground stone was recovered.

Two hundred and twenty-four lithic artifacts were recovered from the floor fill in Structure 18 and are summarized in Table 14.39. Most of the lithic assemblage consists of chalcedony (45 percent), nonvesicular igneous materials (21 percent), and Jemez obsidian (20 percent). Additional material categories, exhibiting low counts, are chert (13 percent), quartzite, and "other" local materials.

The combined assemblage indicates an emphasis on later stages of secondary core reduction; 85 percent of whole flakes lack dorsal cortex and another 10 percent exhibit partial cortex. The majority of platforms are single-faceted. Only three flakes exhibit 100 percent dorsal cortex indicative of primary reduction. Tertiary formal tool manufacture is indicated by four obsidian flakes with retouched or prepared platform, two of which were defined as bifacial thinning flakes. Other material categories lack evidence of bifacial tool manufacture.

The majority of the assemblage consists of unutilized flakes (83 percent) and unutilized small angular debris (13 percent). Although expedient tools were not identified in the assemblage, five formal tools were recovered from the floor: three Jemez obsidian biface fragments, one chalcedony biface fragment, and one Jemez obsidian uniface. All the bifaces were fragmentary; one exhibits utilization while two others lack evidence of use. The utilized biface exhibits unidirectional polish wear; the use edge was incomplete, indicating that the tool was probably used, broken, and discarded in the structure. The uniface also had a utilized edge typically resulting from scraping on hard media like bone or wood.

Ground stone artifacts were not found on Structure 18 floor or in floor fill. One fully grooved maul was recovered from upper fill, but is likely not primary refuse. It has a shallow medial groove that parallels the artifact's short access. It was manufactured by pecking an elongated oval cobble of medium-grained metaquartzite. Both ends show minimal battering wear. The artifact measures 245 mm long by 87 mm wide by 79 mm thick.

Subsistence. The faunal assemblage from Structure 18 floor and floor fill (Table 14.40) was small (n = 57). The majority of the sample was recovered from floor fill and is divided almost equally between small and medium/large animal bone with a slightly larger amount of small mammal present. A little more than half of the assemblage was made up of very small bone fragments, which precluded identification beyond animal size. These fragments are suggestive of floor and hearth sweepings. Over 8 percent of the bone was burned, a high percentage for the floor (Chapter 22).

Only nine bones from this assemblage were recovered from three floor features. Feature 23 held only small-mammal bone. Features 24 and 25 held medium-to-large-mammal bone fragments. Feature 24 contained two fragments, one of which was burned. Feature 25 had a medium-to-large-mammal rib (atypical of the assemblage), a large-mammal long bone fragment, a deer metatarsal shaft fragment, and an artiodactyl long bone fragment that had an impact fracture indicative of processing.

A high ratio of large- to small-mammal bone is atypical of Early Developmental pit structures at Peña Blanca. The ratio of identifiable jackrabbit to cottontail is also high (33 percent). It is unclear whether these results reflect a change in subsistence strategy, activities particular to the structure, or are a result of poor preservation or sampling error from a small assemblage. The percentage of burned bone

from floor fill and Feature 24 suggests that both small and large animals were consumed. The deer metatarsal and medium artiodactyl long bone fragment with an impact fracture from Feature 25 are potential evidence of tool making. Shell was limited to two fragments of *Anodonta californiensis;* one had ground edges.

Four pollen samples were taken from Structure 18 and are summarized in Chapter 24. One floor sample taken from the northeast quadrant, and samples taken from Features 19, 20, and 24. Flotation samples were also processed from floor fill in each quadrant.

The only potential economic species identified during structure use was cheno-am. *Zea mays,* Cactaceae, Solanaceae, and *Ephedra* are in contexts that are problematic because of rodent disturbance or that relate more to structure abandonment than use. Like pollen, ethnobotanical plant remains from Structure 18 floor were sparse containing only purslane, pig weed, and goosefoot. No samples from features were processed.

Absence of ground stone and sparse, limited botanical and pollen remains indicate that plant remains were not regularly processed in the structure. Faunal remains are also few and fragmentary and were made up of only slightly more small-mammal than medium-to-large-mammal. Architectural characteristics coupled with a faunal assemblage that does not appear to emphasize a reliance on small-mammals (evidence of local hunting), suggest that this structure may have been temporary, possibly a warm season habitation used by returning agriculturalists.

Abandonment. The small size and shallow depth of Structure 18 suggest that it was used as habitation during warm weather or as a sleeping structure (Schmader 1994:313). Sparse roof fall, posthole placement in the western half of the structure, and the lack of a ventilator shaft suggest that the roof may have been of peaked jackal construction supported by two or three posts. Multiple closely spaced postholes that exhibit signs of remodeling, and a storage feature (Feature 25) with alluvial lenses 5 cm above the feature floor, suggest that Structure 18 was abandoned and remodeled at least once before final abandonment. Feature fill with sparse charcoal and occasional consolidated clumps of dirt, which may be closing fill, suggest that the structure was dismantled, used briefly as a dumping area for roasting pit waste, and then filled naturally.

Structure 26. Structure 26 was a shallow, probably oval, Early Developmental pit structure excavated into Stratum 2. Located in grid units 182 to 186N/195 to 196E, it was flanked on the east by the highway right-of-way. Structure excavation was limited to approximately 20 percent of the estimated total area. The exposed floor measured 4.61 m across but the structure was most likely at least 5 m in diameter. Structure 26 west wall was almost completely destroyed by Structure 18, the east half of which was excavated into Structure 26. Two features were excavated into Structure 26 fill: Feature 36 (a thermal pit) and Feature 105 (a discrete dumping episode).

Evidence of remodeling was provided by two postholes and two floor plastering episodes separated by a layer of sand. Carbon-14 samples taken from Feature 27 provided dates ranging from AD 770 to1020.

General Methods. Excavation began by removing fill east of Profile 1 to expose the fence line profile (Fig. 14.38). The structure was divided into northwest and southwest quarters along the Study Unit 4 bisection line at 184N. Figure 14.38 illustrates Structure 26 excavation units and features. Fill was removed from the northwest quarter of Structure 26 in irregular units (184N/196E and 185N/196E) by stratum. Grid 185N/196E was the first grid to be excavated. When a well-defined dumping episode (Feature 105) was encountered, the area was bisected along the 184.82N line. Structure 26, southwest quadrant, was removed to the fence line profile in irregular unit 183N/196E in 10-cm arbitrary levels. Following this, unit 182N/195E was removed in three 10 cm levels to expose the structure's southern limit. Structure 26 interior was bisected along the 184N line and excavated in northwest and southwest quadrants. Stratum

Table 14.41. LA 6171, Structure 26 Upper Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Igneous		Sandstone		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	5	45.5	2	18.2	2	18.2	-	-	2	18.2	-	-	-	-	11	11.0
Flake	32	45.1	10	14.1	3	4.2	11	15.5	15	21.1	-	-	-	-	71	73.0
Flake, Bifacial Thin	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	2	2.0
Core, Multiplatform	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	1.0
Core, Single Platform	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Flake, Marginal Retouch	-	-	-	-	1	50.0	1	50.0	-	-	-	-	-	-	2	2.0
Projectile Point	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	3.0
Biface	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	1.0
Uniface	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	1.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Metate, Unknown	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Grinding slab	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Total	40	41.2	12	12.4	9	9.3	17	17.5	17	17.5	1	1.0	1	1.0	97	100.0

Table 14.42. LA 6171, Structure 26, Fauna Summary

	Fill		Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal	39	33.3%	22	33.3%	61	39.6%
Small to medium mammal	-	-	1	1.5%	1	0.6%
Medium to large mammal	5	5.7%	1	1.5%	6	3.9%
Large mammal	6	6.8%	6	9.1%	12	7.8%
Yellow-faced pocket gopher	3	3.4%	1	1.5%	4	2.6%
Desert cottontail	9	10.2%	23	34.8%	32	20.8%
Black-tailed jackrabbit	8	9.1%	9	13.6%	17	11.0%
Medium artiodactyl	13	14.8%	1	1.5%	14	9.1%
Mule deer	1	1.1%	-	-	1	0.6%
Pronghorn	3	3.4%	-	-	3	1.9%
Bighorn sheep	-	-	1	1.5%	1	0.6%
Scaled quail	1	1.1%	-	-	1	0.6%
Great horned owl	-	-	1	1.5%	1	0.6%
Total	88	100.0%	66	100.0%	154	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Light/scorch	-	-	2	3.0%	2	1.3%
Dry burn	2	2.3%	1	1.5%	3	1.9%
Heavy or black	2	2.3%	2	3.0%	4	2.6%
Heavy to calcined	1	1.1%	-	-	1	0.6%
Calcined	1	1.1%	-	-	1	0.6%
Complete	5	5.7%	9	13.6%	14	9.1%
>75% complete	-	-	1	1.5%	1	0.6%
50-75% complete	1	1.1%	1	1.5%	2	1.3%
25-50% complete	8	9.1%	5	7.6%	13	8.4%
<25% complete	74	84.1%	50	75.8%	124	80.5%

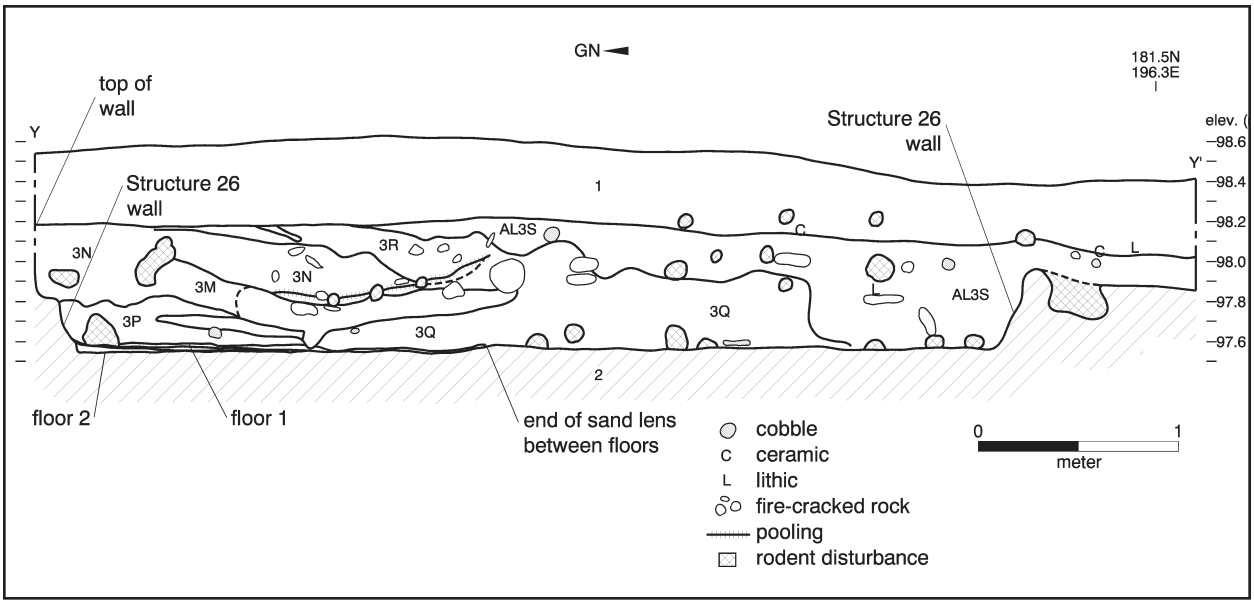

Figure 14.39. Stratigraphic profile of Structure 26.

3P and 3Q were removed in Level 6 to expose a slightly undulating floor designated as Floor 1 at 97.83 cm. Flotation and carbon-14 samples were taken from fill 1 to 5 cm above floor and pollen samples were taken from Floor 1 surface and from Floor 2.

After the floor was exposed, features were bisected and excavated. Floor 1 was removed and sampled. Floor 2 was exposed and excavated in the same manner. Finally, a 10-cm-deep trench was excavated through the base of Structure 26 along the fence line profile to eliminate the possibility of buried features or an additional buried floor. Soil samples were taken from each stratum profile. Pollen samples were also taken from Floor 2.

Stratigraphy. Structure 26 fill was made up of colluvial fill with chunks of churned closing material followed by multiple dumping episodes, excavations by later inhabitants into the fill, and a final alluvial deposition (Fig. 14.39). Fill strata are summarized in Table 14.36. Artifacts from upper fill include ceramics, lithics, and fauna and are summarized in Tables 14.13, 14.41, and 14.42. One shell bead (*Olivella* sp.) was also recovered from upper fill.

Stratum 3M, Dumping Episode 1, was brown silt loam (10YR 5/3) with plentiful charcoal flecks and ash staining as well as small areas of Stratum 2 mottling and 10 to 20 percent small pebbles; consolidation was moderate. Stratum depth ranged from 6 to 20 cm. Stratum 3N, Dumping Episode 2, was brown silt loam (10YR 5/3) with large charcoal chunks. Fill depth ranged from 19 to 40 cm.

Stratum AL3M was brown silt loam (10YR 5/3) but with less charcoal-stained content than Stratum 3M. Consolidation remained moderate with a higher proportion of Stratum 2 mottling, which was larger in size (5 to10 cm) than in Stratum 3M. Fill depth ranged from 3 to 10 cm.

Stratum CO3P, colluvial fill containing possible Structure 26 closing material consisting of 2- to 3-cm chunks of clay and Stratum 2 (recorded in Profile 1), was 10YR 6/3–6/4, pale brown to light yellowish brown, very fine-grained sandy loam with even charcoal flecks throughout (0.5 to 1 cm). Fill depth ranged from 8 to 28 cm.

Stratum CO3Q fill contained possible Structure 26 closing material (2 cm nodules of 10YR 6/2, light brownish gray, consolidated clay which may have been part of the superstructure). Fill matrix was 10YR 6/3, pale brown, very fine-grained sandy loam similar to Stratum 3P but with significantly less Stratum

2 mottling and lower charcoal content. Fill depth ranged from 20 to 54 cm.

Stratum 3R, Dumping Episode 3, was yellowish brown (10YR 5/4) fine-grained sandy loam with 20 percent ash content and evenly distributed charcoal flecks in about the same amount as Stratum 3M and 3N. This stratum was extremely mottled and poorly sorted. Fill depth ranged from 14 to 20 cm.

Stratum AL3S, Last Fill, was yellowish brown (10YR 5/4) fine to medium-grained sandy loam. Sand content in this stratum was high. Fill was extremely well sorted without mottling or cultural staining. Charcoal flecks were extremely small and sparse and pebble content was 2 percent. This fill was colluvial and the last stratum to be deposited in Structure 2. Fill depth ranged from 1 to 56 cm.

Stratum EO3T was a 10YR 6/3, pale brown, discontinuous layer of medium-grained sand that was immediately below Floor 1. Fill depth ranged from 1 to 2 cm.

Structure Description. Structure 26 was excavated into Stratum 2 and was roughly oval in plan. Maximum exposed dimensions were 4.61 m north-south and 1.36 m east-west, but the entire pit structure was probably at least 5 m in diameter. Structure depth ranged from 97.83 to 97.81 cm. If there is a ventilator shaft, it is probably located in the unexcavated southeast quadrant of the structure. Only one 60 cm portion of the north wall was intact, this section of wall was excavated into Stratum 2 and was unplastered. Structure 26 west wall was almost completely destroyed by Structure 18. Existing wall depth was a maximum of 52 cm below the scraped surface but may have been as deep as 68 cm when accounting for 16 cm of fill removed while defining the structure. Structure 26, Floor 1, was 10 to 12 cm below the base of Structure 18. Structure Floor 2 was relatively level but became more uneven to the south.

Two artifacts, a projectile point and a burned great horned owl talon, were found on the structure floor. Intramural features (Features 27 to 35) included one remodeled roasting pit, one small storage pit, two small pits of indeterminate use, two small holes and two postholes, one of which was remodeled and one of which was a double posthole. See Structure 26 plan view map for locations (Fig. 14.38).

Structure Construction. Structure 26 remains provided limited information about its construction. The structure was a shallow, roughly oval Developmental pit structure excavated into

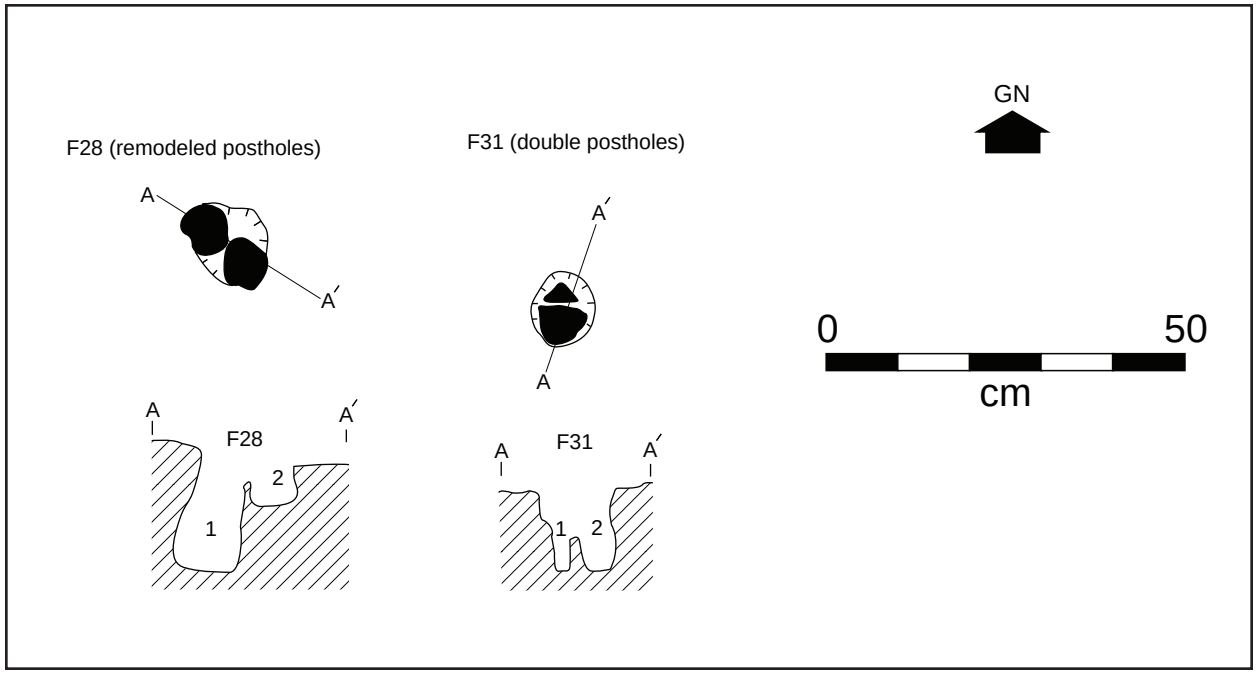

Figure 14.40. Structure 26 double postholes, Features 28 and 31.

Figure 14.41. Structure 26, Feature 28.

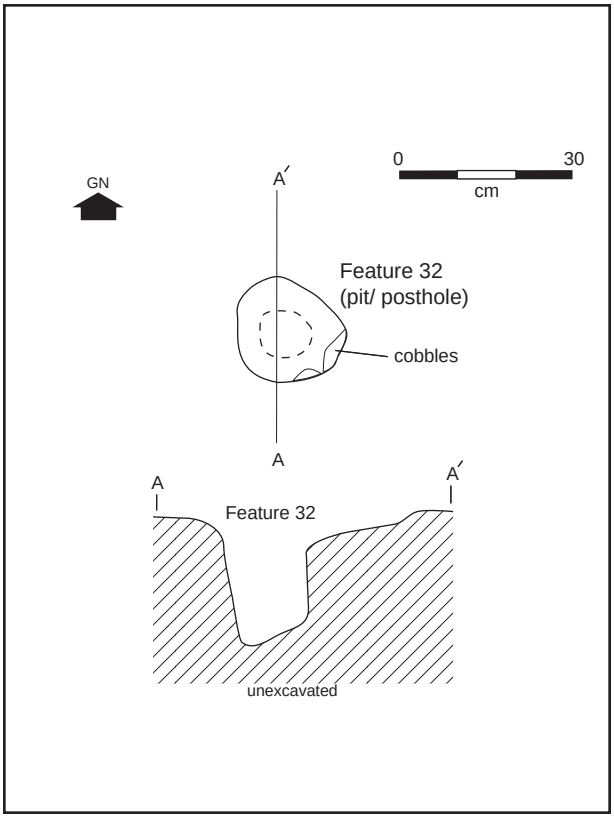

Figure 14.42. Structure 26, Feature 32, plan and profile.

sterile Stratum 2. Structure 26 had two floors. Floor 2 was covered by a 0.5- to 2-cm-thick sand lense in the northern portion of the structure and was then replastered. Replastering (Floor 1) was only distinguishable in the northen portion of the structure where the sand lense was present. Although Floor 1 was relatively regular, Floor 2 became progressively more rodent disturbed and undulating to the south. Floor-wall juncture was approximately 90 degrees and was plastered over by the construction of Floor 1 (see Fig. 14.34). Plaster continued less than 5 cm up the wall.

Two small postholes were located in Structure 26; both contained double or remodeled holes. Overall feature diameters ranged from 20 to 30 cm and the holes were up to 30 cm deep, but individual postholes within the features were from 12 to 14 cm in diameter and individual post depths were as shallow as 10 cm (Fig.14.40). These holes may have been part of the roof support but there is not enough information available to infer the type of roof construction.

Figure 14.43. Structure 26, Feature 27, roasting pit.

Feature 28 was a double posthole (Fig. 14.41). The original posthole, Posthole 1, was the deepest of two. It was filled with coarse sand like that associated with heating pits in Structure 60, and was probably deliberately filled. Posthole 2 was set into an enlarged posthole and then plastered in; more fill was added to stabilize the post. Artifacts were limited to one chalcedony flake.

Feature 31 was a round posthole with a dividing wall 12 cm below the top of the feature that restricted the southern two-thirds of the feature, and was probably used to support a smaller replacement beam. Feature 32 (Fig. 14.42) may have also been a posthole. The feature was extremely rodent-disturbed and may have been enlarged for post removal. Only lithics were recovered from the fill: two flakes and one piece of angular debris.

Floor Features. A total of eight features including postholes were excavated into Structure 26 floor. Feature dimensions and fill descriptions are summarized in Table 14.43 and illustrated in Figures 14.43 through 14.45.

Feature 27 was an oval roasting pit with oxidized feature edges that exhibited at least three use-episodes. The pit held a series of fires fueled by small twigs that had been deliberately smothered with soil and spread up the sides of the pit edge to a uniform thickness (Figs. 14.43 and 14.44). Although juniper was found in all levels of the feature, Level 2, with the largest wood sample, had slightly more saltbush than juniper. Despite extensive sampling, wild plant remains from Feature 27 were extremely sparse and were limited to goosefoot and juniper seeds. No lithics were recovered.

Feature 30 was a storage pit with slightly belled sides (Fig.14.45). It contained almost all (83 percent) of the chipped stone (n = 20) recovered from Structure 26. The assemblage consisted of three tools including a Jemez obsidian biface and two utilized flakes, one of Rio Grande chalcedony and one of chert, and a multiplatform core of Polvadera Peak obsidi-

Table 14.43. LA 6171, Structure 26, Intramural Feature Summary

Feature	Location	Type	Dimensions	Fill	Comments
27	183N/195E	Remodeled roasting pit with basalt cobble lining	66 x 54 x 18	a) 10YR 6/3 very fine-grained sandy loam with small, sparse charcoal flecks and 10 percent coarse-grained sand. (Capping fill) b) 10YR 5/2 charcoal (95 percent), and ashy silt loam. c) 10YR 5/4 silt loam with gravel inclusions and large charcoal chunks, plentiful charcoal and ash mottling. d) Same as base of Stratum a. e) Level 4, mixed Strata c and b. Mixture of charcoal lenses, ash and oxidized redeposited fill with three pieces of fire-cracked rock. Stratum e may consist of a smothered charcoal layer mixed with a very fine, but disturbed, layer of capping fill. These layers were not well defined and were impossible to separate.	Oval roasting pit with at least three visible use-episodes and one remodeling (see profile). This feature held a series of fires made from small twigs. Preservation of small intact sticks lining the pit suggest that these layers were deliberately smothered. Top 7 cm of pit side walls were extremely oxidized. Use 3 was the last remodeling episode and was defined by nine flat cobbles that lined the pit. Three of the cobbles were placed into Stratum d (redeposited fill) to create a flat base at 97.95 cm. Some of the cobbles lining Use 3 side walls were also supported by Stratum d. A dense charcoal layer (Stratum b) lined the feature up the side walls and was capped with a thick layer of fill (Stratum a) Removal of Stratum d showed charcoal and oxidized edges below. Use 2 was defined by the base of Use 1 rocks. Charcoal and oxidized soil at feature rim level peeled off to reveal another oxidized layer. Stratum d, a redeposited stratum also defined Use 2 to the west. This stratum sat on Stratum e Use 1 and bounded Fill c (Figure 76.61 and 76.61.1). Stratum d appears to have been de
28	185N/194E	Remodeled posthole (postholes 1 and 2)	1) 13 x 13 x 30; 2) 16 x 9 x 11	a) 10YR 5/4 silt loam with moderate charcoal flecking and lumps of clay plaster (Posthole 2 fill); b) 10YR 5/4 silt loam with sparse charcoal flecks and calcium carbonate filaments and chunks of compact silty clay–adobe plaster? c) 10YR 5/4 coarse sand with small pebbles and small charcoal flecks (Posthole 1 fill). Redeposited.	Shallow oval pit with plaster “cap” housing two postholes: Posthole 1 to the northeast and posthole 2 to the southwest. Posthole 1, original posthole: Placement underneath Stratum b and unusual coarse sand fill associated with heating pits indicated that Stratum c was redeposited. Posthole side walls were adobe plastered and slightly belled. Posthole 2, secondary posthole: Post was set into an enlarged posthole and then plastered in. Stratum b was deposited to stabilize the post. Stratum a was deposited after the post was yanked. Could this structure have been used while left open or barely roofed by later inhabitants? (chipped stone=1flake)
29	183N/195E	Storage pit	20 x 15 x 18	10 YR 6/4 silt loam without calcium carbonate or charcoal flecks.	Extremely rodent-disturbed shallow pit with undulating side walls and base. Original pit limits were destroyed by rodents.
30	183N/196E	Unburned pit	16 x 19 x 18	a) 10YR 6/3 silt loam with very sparse charcoal flecks and without pebbles or calcium carbonate.	Storage pit with slightly belling sides. (chipped stone=20 one utilized flake, fauna=3)
31	182N/195E	Double posthole	Overall: 19 x 15 x 22; 1) 6 x 10 x 26; 2) 9 x 14 x 23	a) 10YR 6/4 fine-grained sandy loam with small charcoal flecks, and closing material visible throughout. b) 10YR 5/4 silt loam with sparse charcoal flecks.	Round posthole with “dividing wall” 12 cm below top of feature. This wall restricted the southern two thirds of the feature. Both halves were filled with Stratum b.

Table 14.43. Continued.

Feature	Location	Type	Dimensions	Fill	Comments
32	184N/196E	Steep-walled pit/posthole	27 x 31 x 34	a) 10YR 5/4 very fine-grained sandy loam with small charcoal flecks and moderate calcium carbonate flecks b) 10YR 5/4 very fine-grained sandy loam with higher charcoal content than Stratum a.	Round posthole with vertical sides and a base that slopes upwards to the south. Digging stick marks in east wall as well as fill differentiation from north to south could represent remodeling episode but could just as easily be evidence of final post removal. Fill was rodent-disturbed. (chipped stone=3)
33		Small hole associated with Feature 34	7 x 7 x 6	10YR 5/4 silt loam with sparse ash	Westernmost of two small, round shallow steep-sided divots in pitstructure floor. Probably associated with Feature 34 located immediately to the east.
34		Small hole associated with Feature 33	7 x 7 x 7	10YR 5/4 silt loam with sparse ash	Eastern divot of two. See feature 33 description
35	184N/194E	Posthole	10 x 10 x 10	7.5 YR 5/3 silty sand	Small posthole with stepped base sloped to the west.

Table 14.44. LA 6171, Structure 26, Floor and Features, Lithic Type by Material Group

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%
Angular Debris	-	-	2	40.0	-	-	3	60.0	5	20.0
Flake	6	40.0	4	26.7	-	-	5	33.3	15	62.0
Core, Multiplatform	-	-	-	-	1	100.0	-	-	1	4.0
Flake, Utilized	1	50.0	1	50.0	-	-	-	-	2	8.0
Biface	-	-	-	-	1	100.0	-	-	1	4.0
Total	7	29.2	7	29.2	2	8.3	8	33.3	24	100.0

Table 14.45. LA 6171, Structure 26 Floor Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	1	25.0	1	25.0	1	25.0	1	25.0	-	-	4	6.0
Flake	26	47.3	6	10.9	3	5.5	19	34.5	1	1.8	55	84.0
Core, Multiplatform	2	100.0	-	-	-	-	-	-	-	-	2	3.0
Flake, Marginal Retouch	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Projectile Point	-	-	1	50.0	-	-	1	50.0	-	-	2	3.0
Mano, One-Hand	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Total	30	46.2	8	12.3	5	7.7	21	32.3	1	1.5	65	100.0

an. Other chipped stone artifacts included eight flakes and four pieces of angular debris. It was also one of the few features containing animal bone (n = 3) including desert cottontail and medium artiodactyl (n = 2).

Features 33 and 34 were two divots located next to each other (Fig.14.45). These two features may have been rack supports.

Artifact assemblage. The ceramic assemblage (Table 14.13) from Structure 26 floor and floor fill was quite small (n = 23) and conformed to the general site pattern exhibiting a predominance of Middle Rio Grande Plain ware jar bodies. In this case, the assemblage from floor contact is more diverse than the floor fill, which was exclusively made up of Middle Rio Grande Plain ware jar fragments. One Northern Rio Grande Smeared Indented Corrugated jar neck and one San Marcial Black-on-white bowl body were included in

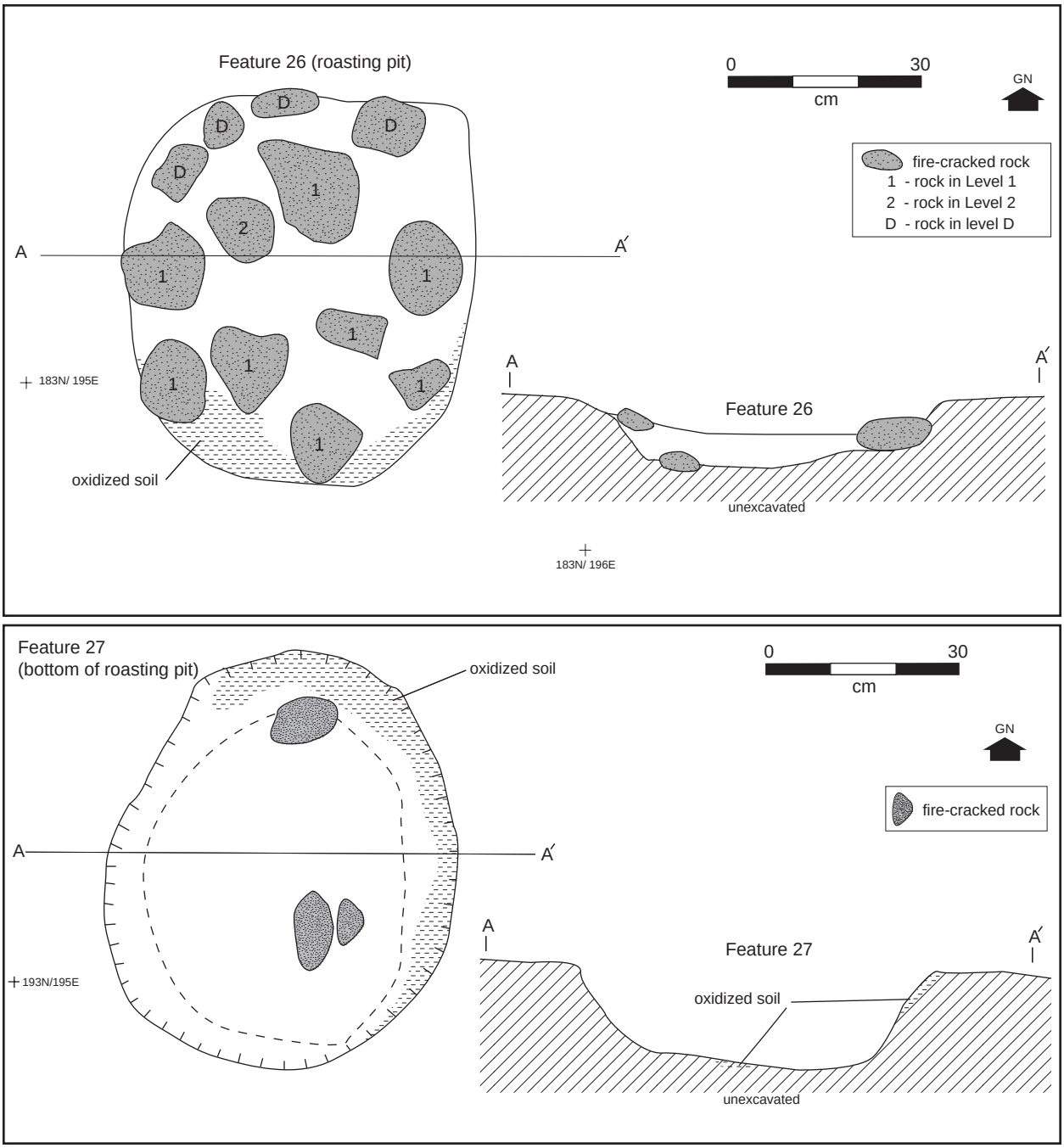

Figure 14.44. Structure 26, Feature 27, roasting pit, plan and profile.

the sample of 13 sherds from the floor.

Twenty-four lithic artifacts were recovered from the floor and features in Structure 26 and are summarized in Table 14.44. Nonvesicular igneous (33 percent), chalcedony (29 percent), chert (29 percent), and Jemez obsidian (8 percent) material categories were all represented in the assemblage.

Although the assemblage is small, the debitage indicates an emphasis on later stages of secondary core reduction. Most of the platforms were single faceted (77 percent). Only a single primary flake exhibits 100 percent dorsal cortex and there are no retouched platforms that would provide evidence of tertiary formal tool manufacture. A Jemez obsidian core was

also recovered.

Unutilized flakes (62 percent) and unutilized small angular debris (20 percent) composed the majority of the lithic assemblage. Three tools indicate both expedient and formal tool use. Both chert and chalcedony flakes exhibit unidirectional scraping use-wear typically resulting from scraping on hard media like bone or wood. A biface fragment of Jemez obsidian exhibited unidirectional rounding and striations also resulting from scraping on bone or wood. It is likely that these activities are associated with the floor occupation of in Structure 26. No ground stone was recovered.

Sixty-five lithic artifacts were recovered from the floor fill in Structure 26 and are summarized in Table 14.45. The majority of lithic artifacts were manufactured from chalcedony (46 percent) and Jemez obsidian (32 percent). Other material categories represented are chert, quartzite, and nonvesicular igneous materials.

Ninety-three percent of the whole flakes lack dorsal cortex indicating an emphasis on later stages of secondary core reduction. The large percentage of single-facet platforms (66 percent) is consistent with secondary core reduction. The assemblage lacks evidence of primary decortication or tertiary formal tool manufacture.

Most of the assemblage consists of unutilized flakes (84 percent) and unutilized small angular debris (6 percent). Two projectile points, one manufactured from obsidian and the other from chert, were recovered. The obsidian point exhibits two edges with bidirectional use-wear resulting from knife use on hard media like bone or wood. The other point lacks use-wear. A marginally retouched chalcedony flake also lacks evidence of use.

Ground stone from Structure 26 is summarized in Table 14.5-7. The only ground stone recovered from floor fill was a one-hand mano made of metaquartzite that does not appear on ground stone tables. It exhibits two opposing use-surfaces. One surface shows grinding/faceting wear and evidence of maintenance. The other exhibits striations indicating that use orientation was inconsistent or rotary.

Structure 26 fauna is summarized in Table 14.42. As in Structure 18, the floor sample was small (n = 66) and made up of a large amount of fragmentary bone in poor condition. However, Structure 26 had a faunal assemblage more typical of an Early Developmental component with a high incidence of desert cottontail (34 percent) and a smaller amount of medium- to large-mammal, and medium artiodactyl. Most of the cottontail parts from floor fill were waste that included complete foot elements and a fragmentary cranium. The predominance of cottontail suggests that people were hunting locally or in agricultural fields. Other fauna of note from floor fill included a talon from a great horned owl and a foot element from a bighorn sheep. These bone specimens were from the northwest quadrant where a later dumping episode reached almost to the floor. They were probably secondary refuse.

Subsistence. Three pollen samples were taken from Structure 26 floor and postholes, they are summarized in Chapter 24. The only economic species detected on the floor was cheno-am. Two sides of a remodeled posthole (Feature 31) were sampled. The only difference was a small amount of *Zea mays,* which occurred in the original posthole. Archaeobotanical remains included goosefoot, corn, and a small amount of squash. Fuel wood was saltbush and juniper. The one-hand mano with rotary striations suggests use with wild plant material (see Murrell, Chapter 19). The predominance of cottontail in faunal remains implies that hunting activities were local, possibly taking place while watching over agricultural fields (Akins, Chapter 20). Because only 20 percent of the structure was excavated and sample sizes are small, inferences about subsistence activities are tentative but they do appear to support evidence of basic trends observed for other early structures in the locale.

Abandonment. Structure 26 fill was a series of dumping episodes and excavations into refuse deposits. The only evidence of closing material in the fill was limited to chunks of consolidated clay that may have been part of

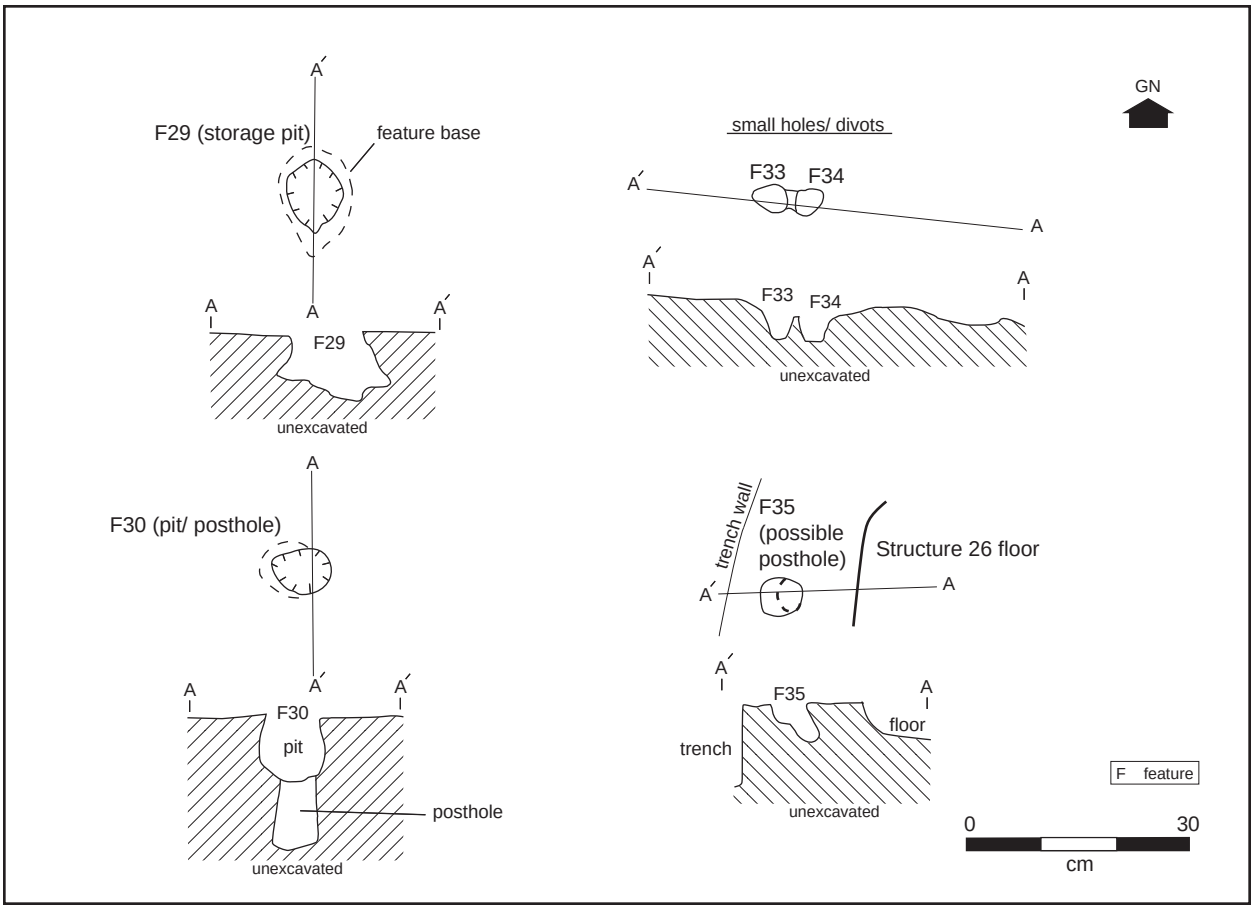

Figure 14.45. Structure 26, Features 29, 30, 33, 34, and 35; pits, postholes, and divots.

the superstructure. Lack of burned roof timbers suggest that the structure was dismantled and then abandoned. A partial sand lense above Floor 2, remodeled postholes, and a remodeled roasting feature suggest that the structure was abandoned, left open, and then possibly re-excavated and inhabited again. Clues to seasonality included shallow depth and presumably light roof construction, which suggest that this structure was used during warm weather (Schmader 1994:313), however restricted excavation makes this a tentative conclusion.

Extramural Features. Five extramural features were located in Study Unit 4. Dimensions and fill descriptions are summarized in Table 14.46 and illustrated in Figure 14.46.

Feature 35 was a small, possible posthole excavated into Stratum 2 and found underneath Structure 18 floor. The feature had a stepped base that sloped to the west and was dug before Structure 18 was excavated. It is unclear whether this feature was associated with Structure 26. No artifacts were recovered from feature fill.

Feature 36 was an oxidized, basin-shaped thermal feature, half of which was excavated into Structure 26 fill. Only the northern portion of the feature excavated into Stratum 2 was left intact. Ten pieces of chipped stone were recovered from feature fill. Flakes (n = 7) and angular debris (n = 2) were of chert, Jemez obsidian, and basalt. Ceramics (n = 7) included two Middle Rio Grande Indented Corrugated, three Middle Rio Grande Smeared Plain Corrugated, and one Jornada Plain body sherd in addition to the two Middle Rio Grande Plain body sherds. This assemblage indicates a later secondary deposit. Four animal bones were recovered from fill.

Feature 37 was a large, steep-sided thermal

Table 14.46. LA 6171, Study Unit 4, Extramural Feature Summary

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
36	186N/195E	Burned basin-shaped pit	72 x 57 x 20	b) 10YR 5/4 silt loam similar to Stratum 3M	Oval thermal pit with concave oxidized side walls. Northwest half of this pit was the only portion intact. Pit was excavated into the southwest wall of Structure 26 . (chipped stone=10, fauna=4)
37	182N/194E; 20 cm south of Structure 26, south wall	Large thermal feature (Structure 26, exterior)	130 x 150 x 20; dimensions estimated	a) 10YR 5/3 silt loam, rodent disturbed cultural fill. Corresponds to Stratum 3M in fenceline profile. b) 10 YR 6/3 very fine-grained sandy loam, laminated eolian deposits in last 10 cm of fill with one fire-cracked rock sitting on last lamination.	Time constraints allowed only the northwest portion of this feature to be excavated. Feature base undulated with patches of oxidation and two small, shallow, conical divots (features and possible rack support holes) in the northwest wall/ floor juncture. Side walls were impossible to define until 20 cm above floor and actual feature depth may have been as much as 40 cm. Remaining side walls were steep, and slightly sloping. Feature function is unknown. (chipped stone =20, fauna = 8 including one burned small-mammal long bone and one shell–*Anodonta californiensis–fragment)*
105	195N/196E	Cultural deposit in Structure 26 fill	95 x 95 x 47	Stratum 3M in Figure 71.52 profile.	Feature was a dumping episode made up of fire-cracked rock, a high artifact frequency and bits of oxidized soil and bits of mortar. Other than fire-cracked rock placement and orientation there was no clear boundary to this feature. Fire-cracked rock count was 67, three of which were 30 x 30 cm in diameter. (fauna=6 with one calcined cottontail bone, one groundstone)
109	182N/194E	Divot	6 x 4 x 12	see Feature 37	Small oval cone shaped hole. Located in Feature 37 at wall/floor juncture. Possible post/rack hole.
110	182N/194E	Divot	8 x 7 x --	see Feature 37	See Feature 109 description.

Table 14.47. LA 6171, Study Unit 4 Extramural Features, Lithic Type by Material Group

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	75.0	-	-	-	-	1	25.0	-	-	4	12.0
Flake	5	26.3	5	26.3	7	36.8	2	10.5	-	-	19	61.0
Flake, Bifacial Thin	-	-	1	25.0	3	75.0	-	-	-	-	4	12.0
Core, Multiplatform	-	-	-	-	-	-	1	100.0	-	-	1	3.0
Flake, Utilized	-	-	-	-	-	-	1	100.0	-	-	1	3.0
Projectile Point	-	-	-	-	1	100.0	-	-	-	-	1	3.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	100.0	1	3.0
Total	8	25.8	6	19.4	11	35.5	5	16.1	1	3.2	31	100.0

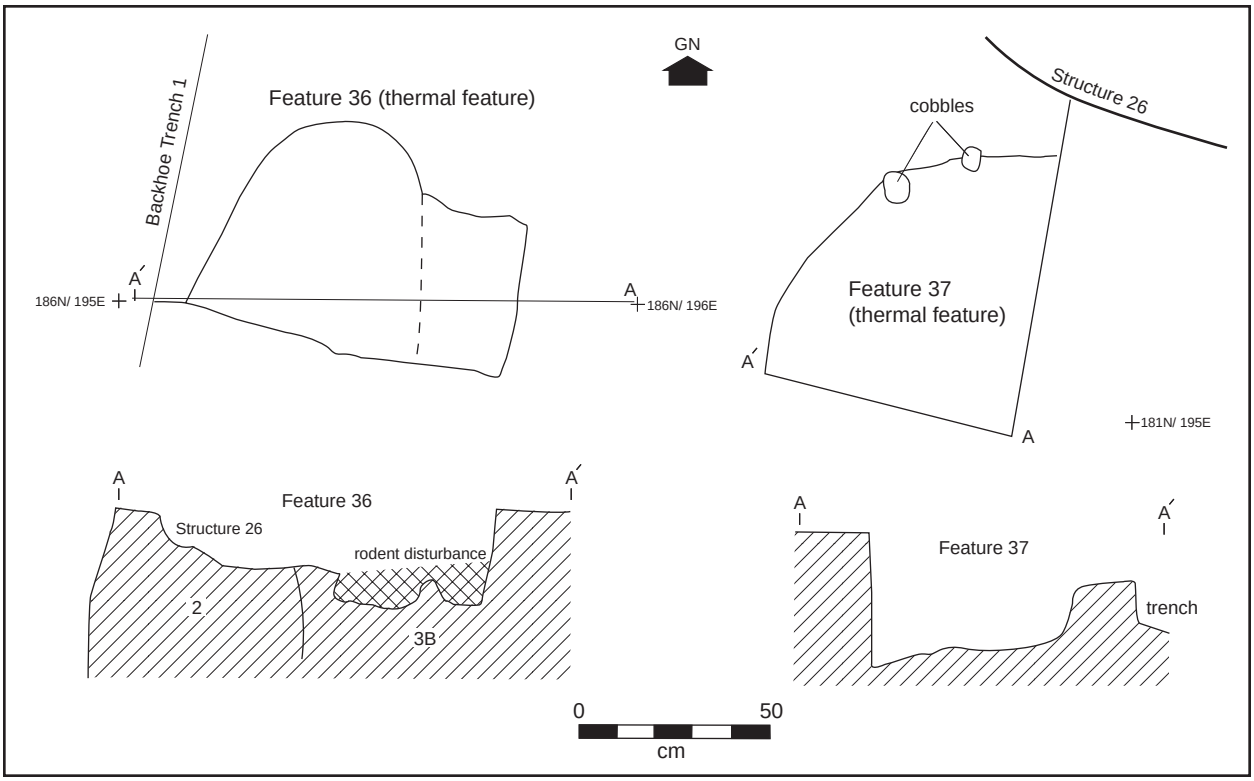

Figure 14.46. Study Unit 4 extramural features, Features 36 and 37.

Table 14.48. LA 6171, Study Unit 4 Fauna Summary

	Feature 36		Feature 37		Feature 105		Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	2	50.0%	2	25.0%	2	33.3%	6	33.3%
Large mammal	-	-	1	12.5%	-	-	1	5.6%
Botta's pocket gopher	-	-	1	12.5%	-	-	1	5.6%
Desert cottontail	-	-	4	50.0%	2	33.3%	6	33.3%
Black-tailed jackrabbit	-	-	-	-	1	16.7%	1	5.6%
Dog, coyote, wolf	1	25.0%	-	-	-	-	1	5.6%
Medium artiodactyl	-	-	-	-	1	16.7%	1	5.6%
Mule deer	1	25.0%	-	-	-	-	1	5.6%
Total	4	100.0%	8	100.0%	6	100.0%	18	100.0%
Immature (1/2-2/3 grown)	1	25.0%	0	0.0%	0	0.0%	1	5.6%
Light/scorch	-	-	-	-	1	16.7%	1	5.6%
Heavy or black	-	-	1	12.5%	-	-	1	5.6%
Calcined	-	-	-	-	1	16.7%	1	5.6%
Complete	1	25.0%	-	-	-	-	1	4.3%
50-75% complete	-	-	-	-	1	16.7%	-	-
25-50% complete	-	-	1	12.5%	-	-	2	8.7%
<25% complete	3	75.0%	7	87.5%	5	83.3%	15	83.3%

feature with a flat base excavated into Stratum 2, immediately to the south of Structure 26. This feature was similar in shape to Feature 54, one of the earliest Developmental features in Study Unit 5, but exhibited light oxidation along the northwest wall-floor juncture. Twenty pieces of chipped stone were recovered from feature fill. Tools include one Jemez obsidian biface and one utilized flake made of basalt. One basalt multiplatform core and bifacial thinning flakes of Jemez obsidian (n = 3) and local chert (n = 1) were also recovered, along with twelve flakes of local materials and one piece of angular debris. Ceramics (n = 3) were all Middle Rio Grande Gray wares. Bone included a heavily burned small-mammal long bone that was probably discarded in a fire with the flesh gone.

Features 109 and 110 were two small cone-shaped holes excavated into Feature 37 near the northern wall-floor juncture. Feature 35 proximity suggests that the feature post-dated Structure 26. Feature 105 was a refuse deposit within Structure 26 visible in the fence line profile (Fig.14.39). Lithics were sparse in this deposit, limited to one piece of ground stone. Eight ceramics were recovered, one with mineral paint. No bone was found.

Artifacts. There were a total of 18 sherds from Study Unit 4 extramural features: eight from a dumping episode in Structure 26 (Feature 105), three from Feature 37, and seven from Feature 36. Twelve of the 18 sherds were Middle Rio Grande Plain body and rims. One ceramic with undifferentiated mineral paint came from Feature 105. The feature with the most diverse assemblage was Feature 36 with two Middle Rio Grande Indented Corrugated, three Middle Rio Grande Smeared Plain Corrugated, and one Jornada Plain body sherd in addition to the two Middle Rio Grande Plain body sherds.

Thirty-one lithic artifacts were recovered from extramural features in Study Unit 4 and are summarized in Table 14.47. Jemez obsidian (36 percent, n = 11) made up the largest portion of the assemblage. Other material categories are represented by chalcedony (n = 8), chert (n = 6), nonvesicular igneous materials (n = 5), and vesicular igneous (n = 1).

Only 19 whole flakes occur in the assemblage. Of these 63 percent (n = 12) lack dorsal cortex indicating an emphasis on secondary stages of core reduction. No evidence of primary reduction was recovered. Bifacial tool manufacture is indicated for Jemez obsidian, chert, and chalcedony by bifacial thinning flakes and retouched or prepared platforms. A single multiplatform core made of nonvesicular igneous materials is also present.

Unutilized flakes (61 percent) and unutilized small angular debris (12 percent) made up the majority of the lithic assemblage. A single utilized flake fragment manufactured from nonvesicular igneous materials exhibits unidirectional wear consistent with use-wear resulting from scraping on hard media like bone or wood. The manufacture of a Jemez obsidian biface was indicated by retouched or prepared platforms and bifacial thinning flakes. A complete obsidian biface, lacking evidence of wear, was recovered; it is likely that it was manufactured in Structure 18. A single fragment of indeterminate ground stone, manufactured from vesicular basalt, was recorded.

Study Unit 4 fauna is summarized in Table 14.48. None of the three pits from Study Unit 4 had high counts. Burning was rare considering that these were thermal pits. The small-mammal bone from Feature 37 is heavily burned. Feature 105 contained a calcined cottontail cranial fragment and a fragment with a light burn at the distal end of the tibia. The heavy and calcined burn can result from being thrown in the fire when the flesh is gone. The cottontail tibia scorch is typical of a roasting burn where flesh covered and protected all but the distal end of the tibia as it roasted. The immature part is a deciduous canine from a canid.

Study Unit 7 Excavation Summary. Study Unit 7 was located immediately to the north of Study Unit 6 and was made up of two surface-stripped areas, one to the east of Backhoe Trench 4 and another to the west of Backhoe Trench 5 (see Fig. 14.1). The area contained three extramural features. Feature 92 (a bell-

shaped pit) and Feature 93 (an intramural cist) were located in the eastern surface strip area. This area spanned grids 194N (the edge of Study Unit 6) to 211N/185–188E and was located immediately to the east of Backhoe Trench 4, which removed the western half of Feature 92. The western surface strip area was located from Grids 202–216N to 181–175E and was immediately to the west of Backhoe Trench 5, which exposed Feature 94.

Study Unit 7 was first identified when Backhoe Trench 4 exposed Feature 92 and Backhoe Trench 5 removed the western half of Feature 94. The area adjacent to both features was scraped in two areas with a backhoe to remove Stratum 1 and then shovel scraped through Stratum 3 to define Feature 92 and to locate any other features excavated into Stratum 2. Despite extensive shovel scraping in both areas, none were located. The remainder of all features were excavated according to standard project procedure.

Stratigraphy. Study unit stratigraphy was much the same as described for site stratigraphy and stratum depths were similar to those in Study Unit 5 with the exception that the underlying gravel mantle, Stratum 5, was covered by deeper deposits of Stratum 4, extremely consolidated yellowish brown loam with carbonate inclusions and pebbles.

Features. Feature 92 was one of the four large earliest Developmental bell-shaped pits summarized in the Earliest Developmental section in this chapter.

Feature 94 was located in the western portion of Study Unit 7. It was a small steep-sided pit 16 cm deep with a 44 cm maximum diameter; fill was colluvial sandy loam. Six ceramics were recovered from fill, but these were from the colluvial secondary deposit. There was no chipped stone or fauna. It is not clear whether this feature was associated with the earliest Developmental features in Study Unit 6.

Study Units 3 and 8. Study Unit 3 was first identified by cultural deposits eroding from the exposed profile of the highway roadcut. This stained layer appeared 1.00 m below the present ground surface. Study Unit 3 excavation focused on this pit structure (Structure 9). Minimal testing was conducted to the south and east. To the north of Structure 9, backhoe

Table 14.49. LA 6171, Study Unit 3 and 8 Strata

Designation	Description	Munsel Color Range	Comments
3G	Semi-compact silty clay	10YR 5/4	Charcoal flecks, oxidized clay, pea with gravel and small rocks low densityartifacts, 18 to 40 cm thick
AL3G	Silty clay lense	10YR 4/4	5 to 15 cm thick with pea gravel lens
CO3H	Compact alluvial sand	10YR 5/4	Charcoal flecks, gravel and small rocks, low artifact density, 12 to 16 cm thick
CO3H1	Fine grained colluvial sand lens	10YR 6/2	No artifacts, 4 to 8 cm thick
3I	Brown silty clay	10YR 4/3	Plentiful charcoal and ash staining, moderate number of large cobbles and burned roof beams at top of stratum, 5 to 25 cm thick
4	Compact silty sand with caliche streaks	10 YR 5/4	5 to 19 cm thick
5	Alluvial sand mixed with caliche and terrace cobbles	7.5 YR 5/4	Noncultural, 15 to 30 cm thick

* It is unclear whether study unit 8 stratum 3H and study unit 3 stratum 3H are the same cultural stratum

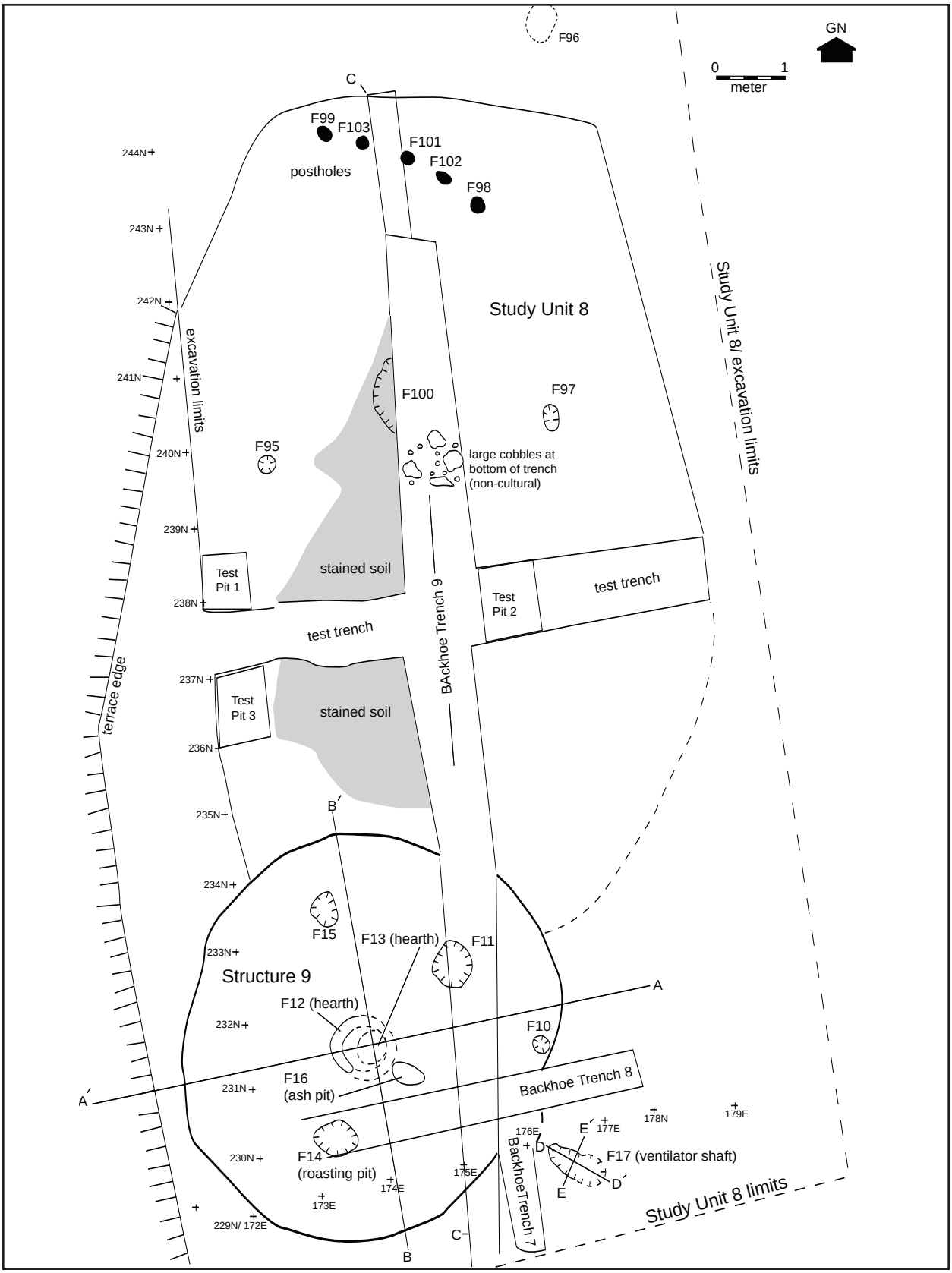

Figure 14.47. Structure 9 and Study Unit 8, plan view.

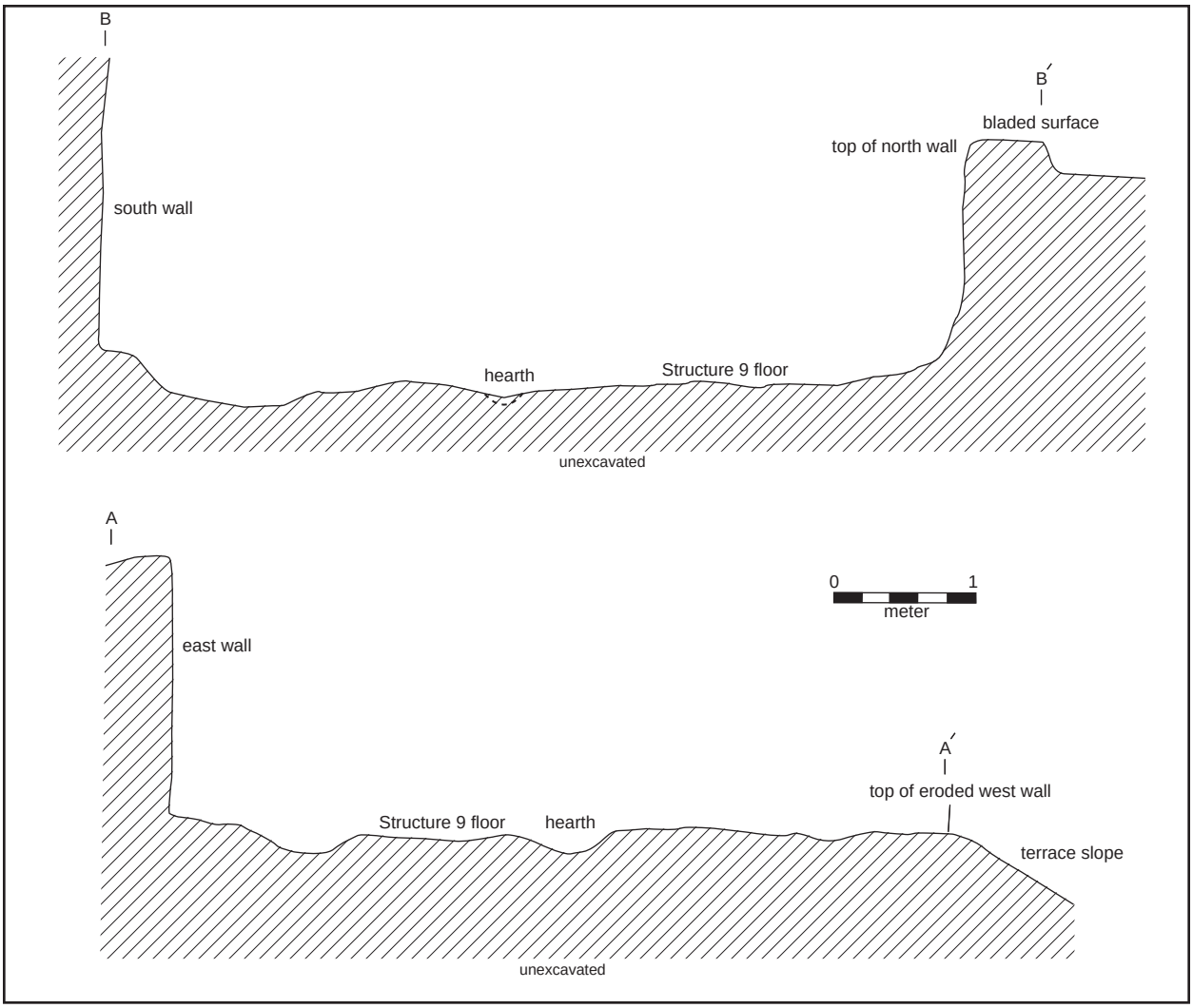

Figure 14.48. Structure 9, profile.

scraping exposed a cultural deposit (Study Unit 8) that measured 11-by-7 m and was 62 cm north of the pit structure wall.

Stratigraphy. Study Unit 3 and Study Unit 8 stratigraphy is described in the Structure 9 and Study Unit 8 strata sections and is summarized in Table 14.49. Stratigraphy conforms to site stratigraphy with the exception of the absence of Stratum 2, which was present at the north end of the site.

Structure 9. Structure 9 was a burned, Early Developmental pit structure with seven intramural features. Structure 9 (Fig. 14.47) had an almost round outline that measured 5.70 m north-south and 5.10 m east-west with a ventilator shaft excavated into the southwest wall. Floor depth was approximately 70 cm below prehistoric ground surface. It was located in the northern site area (Grids 229–234N/172–177E), on the edge of the NM 22 roadcut, immediately to the south of Study Unit 8 (an activity area). The only evidence of remodeling was to the central hearth. Post-abandonment deposits reflect colluvial fill mixed with low-density refuse.

An archaeomagnetic sample was taken from the central hearth, yielding a date range of AD 775 to 825. Ceramics from floor fill and contact were predominantly Middle Rio Grande Plain wares and San Marcial Black-on-white. The assemblage was classified as Early Developmental.

General Methods. Three 1-by-1-m explorato-

Figure 14.49. Structure 9, overview.

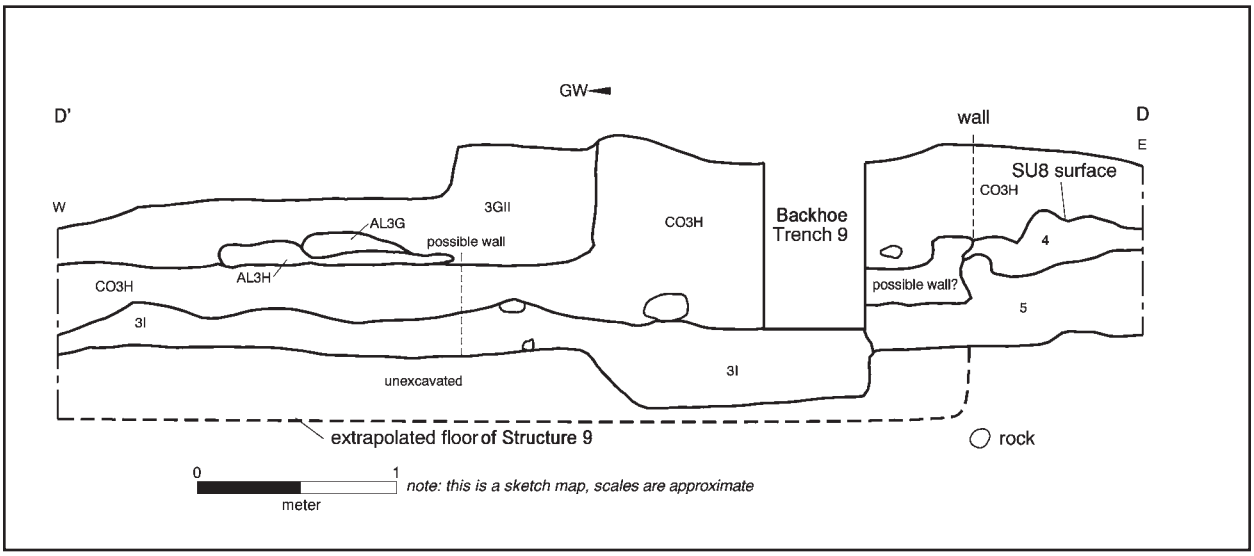

Figure 14.50. Structure 9 and Study Unit 8 profile.

ry units (230N/173E, 230N/174E, 230N/175E) were excavated by hand in 10-cm levels to contact with cultural strata. The upper six levels of structure fill exhibited minimal cultural activity; fill was most likely colluvial. Levels 7 and 8 had higher artifact content and a more intense concentration of ash and charcoal staining. Levels 9 and 10 exposed roof fall. Initial excavations stopped approximately 25 cm above structure floor.

To speed definition of the pit structure wall, Backhoe Trenches 7, 8, and 9 were exca-

vated (see Fig. 14.47). After trench walls were profiled, the pit structure was divided into quadrants along the 233N and the 177E lines. Two controlled grid units were excavated by hand and screened with 1/4-inch hardware cloth. Grid unit 231N/173E was excavated in 10-cm levels to Level 6 (Stratum 3I). Grid unit 232N/174E was excavated by stratum to floor contact.

After backhoe trenching was complete, the top two strata (Strata 3G and AL3G) were removed by the backhoe. Levels 9 and 10 were excavated by hand. Removal of Level 9 exposed fragments of burned roof beams and what appeared to be reed matting. A complete trough metate was found at the bottom of this level. These artifacts and artifacts found on the floor were point provenienced, mapped, and collected. Floor features were divided in half, profiled, and removed. An archaeomagnetic sample was taken from the central hearth.

Stratigraphy. Fill contained the five strata illustrated in Figure 14.50 and summarized in Table 14.49. Stratum AL3G and AL3H were fill lenses located within Stratum 3G. Stratum CO3H was a colluvial deposit. Stratum 3G may have been similar to midden fill associated with Study Unit 8. A thin layer of fine sand covered the Structure 9 floor, but this stratum does not appear in the profile.

Stratum 3G was 10YR 5/4, yellowish brown, semi-compact silty clay with charcoal flecks, oxidized clay, pea gravel, small rocks, and low density artifacts and was from 18 to 40 cm thick. Stratum AL3G was a 10YR 4/4, dark yellowish brown, silty clay lense coupled with a pea gravel lense 5–15 cm thick. Stratum CO3H was a 12- to 16-cm-thick layer of 10YR 5/4, yellowish brown, compact alluvial sand with charcoal flecks, gravel, small rocks, and low artifact density. Stratum AL3H was a 4- to 8-cm-thick 10YR 6/2, light brownish gray, fine-grained colluvial sand lense without artifacts.

Stratum 3I was a mixture of closing material and colluvial fill. Fill was 10YR 4/3, brown to dark brown silty clay with plentiful charcoal and ash staining. Large cobbles (15 to 25 cm) and burned beams that came from superstructure collapse after burning were found at the top of this 5- to 25-cm-thick stratum. An isolated human mandible was also found embedded in this stratum at the CO3H juncture.

Stratum 4 was a noncultural stratum similar to that described for site stratigraphy and was 5- to19-cm thick. Structure 9 was excavated into this stratum.

Stratum 5 was noncultural alluvial sand mixed with caliche and terrace cobbles, as described for site stratigraphy. Structure 9 floor rested on this stratum and intramural features were excavated into it.

Ceramics from fill were separated into two assemblages for analysis. The feature fill assemblage was taken from structure fill more than 10 cm above the structure floor. Artifacts and bone from upper fill are summarized in Tables 14.13, 14.50, and 14.51. Ceramic artifacts in this sample came from all strata in Structure 9 and represented a predominately Coalition assemblage mixed with an Early Developmental component. The floor fill assemblage was taken from floor contact and 10 cm above the floor, Stratum 3I only. Although one sherd representing a Coalition type was found in this assemblage, all ceramics

Table 14.50. LA 6171, Structure 9 Upper Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	5	41.7	1	8.3	-	-	-	-	6	50.0	-	-	12	23.0
Flake	8	26.7	5	16.7	1	3.3	4	13.3	12	40.0	-	-	30	58.0
Core, Multiplatform	1	25.0	-	-	-	-	-	-	3	75.0	-	-	4	7.0
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	50.0	1	50.0	2	3.0
Metate, Trough	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Total	14	27.5	6	11.8	1	2.0	6	11.8	23	45.1	1	2.0	51	100.0

Table 14.51. LA 6171, Structure 9 Fauna Summary

	Fill		Floor		Total	
	Count	%	Count	%	Count	%
Small mammal/med-large bird	1	1.4%	1	3.3%	2	2.0%
Small mammal	3	4.2%	5	16.7%	8	7.9%
Medium to large mammal	1	4.4%	1	3.3%	2	2.0%
Large mammal	4	5.6%	-	-	4	4.0%
Spotted ground squirrel	1	1.4%	-	-	1	1.0%
Botta's pocket gopher	1	1.4%	-	-	1	1.0%
Yellow-faced pocket gopher	17	23.9%	-	-	17	16.8%
Banner-tailed kangaroo rat	-	-	2	6.7%	2	2.0%
Desert cottontail	10	14.1%	6	20.0%	16	15.8%
Black-tailed jackrabbit	21	29.6%	10	33.3%	31	30.7%
Medium artiodactyl	6	8.5%	2	6.7%	8	7.9%
Deer or elk	-	-	1	3.3%	1	1.0%
Mule deer	2	2.8%	1	3.3%	3	3.0%
Pronghorn	2	2.8%	-	-	2	2.0%
Bighorn sheep	-	-	1	3.3%	1	2.0%
Very large bird	1	1.4%	-	-	1	1.0%
Golden eagle	1	1.4%	-	-	1	1.0%
Total	71	100.0%	30	100.0%	101	100.0%
Fetal, neonate	1	1.4%	-	-	1	1.0%
Immature	1	1.4%	0	0.0%	1	1.0%
Light/scorch	3	10.0%	1	1.4%	4	4.0%
Light to heavy	-	-	1	1.4%	1	1.0%
Heavy or black	2	6.7%	3	4.2%	5	5.0%
Heavy to calcined	3	10.0%	2	2.8%	5	5.0%
Calcined	2	6.7%	-	-	2	2.0%
Complete	13	18.3%	5	16.7%	18	17.8%
>75% complete	6	8.5%	1	3.3%	7	6.9%
50-75% complete	5	7.0%	2	6.7%	7	6.9%
25-50% complete	15	21.1%	9	30.0%	24	23.8%
<25% complete	32	45.1%	13	43.3%	45	44.6%

at floor contact were plain wares and the assemblage was classified as Early Developmental.

Description. Structure 9 had an almost round outline that measured 5.70 m north-south and 5.10 m east-west with a ventilator shaft excavated into the southwest wall. Floor depth ranged from 97.48 to 97.52, approximately 40 to 70 cm below the up-slope ground surface (the west wall was cut by the right-of-way). Floor surface was 22.81 sq m. Walls showed signs of burning and the central hearth was remodeled. Stratigraphic profiles suggest that the structure may have been excavated into a pre-existing trash-filled stratum, but the Study Unit 8 ceramic assemblage had Coalition ceramics indicating that the fill was from a later period. Features were mostly thermal and included a remodeled hearth, an ash pit, an ash pit that may have been used as a warming pit, two roasting pits, and one small pit.

Both carbon-14 and archaeomagnetic samples were taken. The archaeomagnetic sample was taken from Feature 12 and is the most precise of the two, yielding a date range of AD 775 to 825 with 95 percent confidence. Charcoal was scarce, so the carbon-14 date was obtained from Features 11, 12, and 16 flotation samples. The resulting two-sigma calibrated date

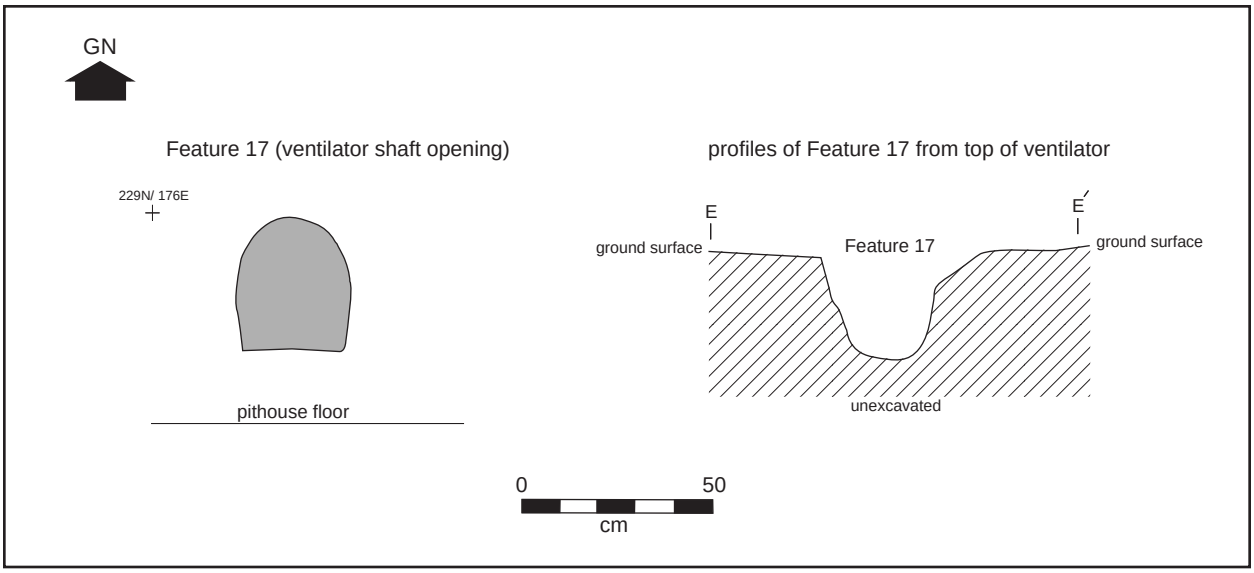

Figure 14.51. Plan and profile of ventilator shaft opening, Feature 17.

ranged 300 years, from AD 670 to 970.

Construction. Burned roof fall provided evidence of small to medium-sized beams used in construction of the superstructure. It is likely that larger elements were removed after burning.

The structure was excavated through Stratum 4 into native terrace gravels. Remaining wall surfaces were fragmentary, reduced by terrace slope grading and erosion to the west, and by rodent activity to the east. Intact wall surface in the northern portion of the structure appeared to have been unplastered and exhibited evidence of burning from structure abandonment.

Roof construction remains included burned beams and matting but displayed no pattern that reflected superstructure detail. Burned beams found in roof fall were of juniper, the largest of which measured 60 cm long and 10 cm in diameter. No definable postholes were located in the structure floor, so roof clearance may have been low. Large cobbles found on top of roof fall may have been used for stabilization or support.

The floor was uneven; 2 cm of compact clay had been smoothed over to cover natural terrace gravels that were exposed by rodent disturbance. Floor preparation sloped up 5 to 10 cm in some areas to meet structure walls.

The structure's ventilator shaft (Feature 17) was excavated through 37 cm of Stratum 2 to 98.92 mbd [?] and sloped down at a 20 to 26 degree angle to meet the structure's southeast wall. The ventilator shaft opening was arched and was 30 cm wide and 35 cm tall with a flat base (Fig.14.51) and sat approximately 19 cm above the pithouse floor. Side walls were not plastered. No entryway was evident, nor were any deflector supports. Most artifacts represent secondary refuse. Lithics recovered (n = 9) included one quartz hammerstone, a multiplatform core of Rio Grande chert. Angular debris (n = 2) and flakes (n = 5) were also made of local materials, one was from a basalt hammerstone. The majority of ceramics were Middle Rio Grande Plain wares (n = 8) with one San Marcial Black-on-white sherd. Ten bones were recovered: five cottontail (four of which are foot parts), two jackrabbit, one deer metacarpal, an antler, and the posterior vault portion of a bighorn sheep cranium. The small-mammal bone probably represents secondary refuse. The sheep cranium is more likely a closing ritual offering (Akins, Chapter 20).

Floor Features. A total of seven features were excavated into the cobble layer beneath Structure 9 floor; the majority were thermal features. Feature dimensions and descriptions are summarized in Table 14.52 and illustrated in Figures14.52 through 14.53.

Features 12 and 13 were overlapping central hearths (Fig. 14.52). Feature 13, the primary

Table 14.52. LA 6171, Structure 9 Floor Features

Feature No.	Location	Type	Dimensions (N-S x E-W x depth in cm)	Fill	Comments
10	231N/176E	Shallow pit	21 x 21 x 7	Capped with small gravels (1cm) overlain by a thin layer of charcoal mixed with clay	Small irregularly-shaped pit, walls were difficult to define. Cultural stratum was ephemeral in south half and 3 cm deep in north half. One large cobble half and 3 cm deep in north half. One large cobble in center of feature.
11	232N/175E	Oval roasting pit	60 x 54 x 17	Charcoal and loamy sand	Oval roasting pit excavated into cobble terrace. Feature side walls were stabilized with a thin layer of clay or adobe plaster. Pit sides were oxidized and charcoal smudged. Seven cobbles, averaging 19 cm in length and 8 cm in width were located approximately 5 cm below the feature edge forming a semi-circle with one cobble in the center. All cobbles were charred though not cracked and were floating in charcoal fill.
12	231N/174E	Hearth (remodeled)	84 x 82 x 3	No fill description recorded.	Remodeled, collared, hearth (second use). Large shallow hearth, Feature 12 was located above Feature 13 (primary hearth) and shared its southeastern collar segment. Hearth collar was extremely oxidized and charcoal smudged. Northwest and southeast segments were missing. Feature base was compacted and slightly oxidized.
13	231N/173E	Hearth (primary)	48 x 53 x 12	Semi-compacted silty loam with charcoal, ash staining, and white ashy fill.	Shallow basin-shaped hearth with a prepared floor, sloping sides, and partial collar, all of which were extremely oxidized. Southeast collar segment was also utilized by hearth remodel, Feature 12. (fauna=5)
14	230N/173E	Roasting/ thermal pit	38 x 60 x 12	Coarse sand, small cobbles and charcoal. No artifacts.	Oval pit with slightly oxidized edges. Excavated into cobble substrate. Rodent disturbed. (fauna=3)
15	233N/173E	Shallow pit	48 x 41 x 9	Coarse sand with plentiful gravel and an isolated concentration of charcoal with small chunks of adobe in the north half.	Shallow steep-sided pit with 4 cm divot at center base. Fill may be redeposited
16	231N/174E	Ash pit	45 x 47 x 28	Ash	Steep-sided, basin-shaped ash pit excavated directly into terrace gravels. Flanked on south edge by hearth rim. (ceramics=1, chipped stone=1, fauna=3)
17	229N/176E	Ventilator shaft and opening	32 x 62 x 41	Cobbles, gravel, charcoal and a small amount of sandy loam	Arched vent shaft excavated into pit structure southeast wall 20 cm above floor. Bighorn sheep cranium found in fill. (lithic=9 including one quartz hammerstone and a Rio Grande obsidian core, fauna=10)

hearth, was the smaller of the two collared hearths and was basin shaped with a compact, oxidized floor and sloping side walls. The hearth collar was partial but well oxidized and may have been damaged by rodent activity or when the roof collapsed. Feature fill was moderately compact silt loam stained with charcoal and ash and may have been redeposited. The primary hearth shared its southern collar segment with Feature 12, a remodeled hearth that was almost twice the diameter of the original central hearth (84 cm) but was only 3 cm deep. Feature 12 was approximately 12 cm above Feature 13 and had a compacted slightly oxidized base. Like Feature 12, the Feature 13 collar was well oxidized and fragmentary with

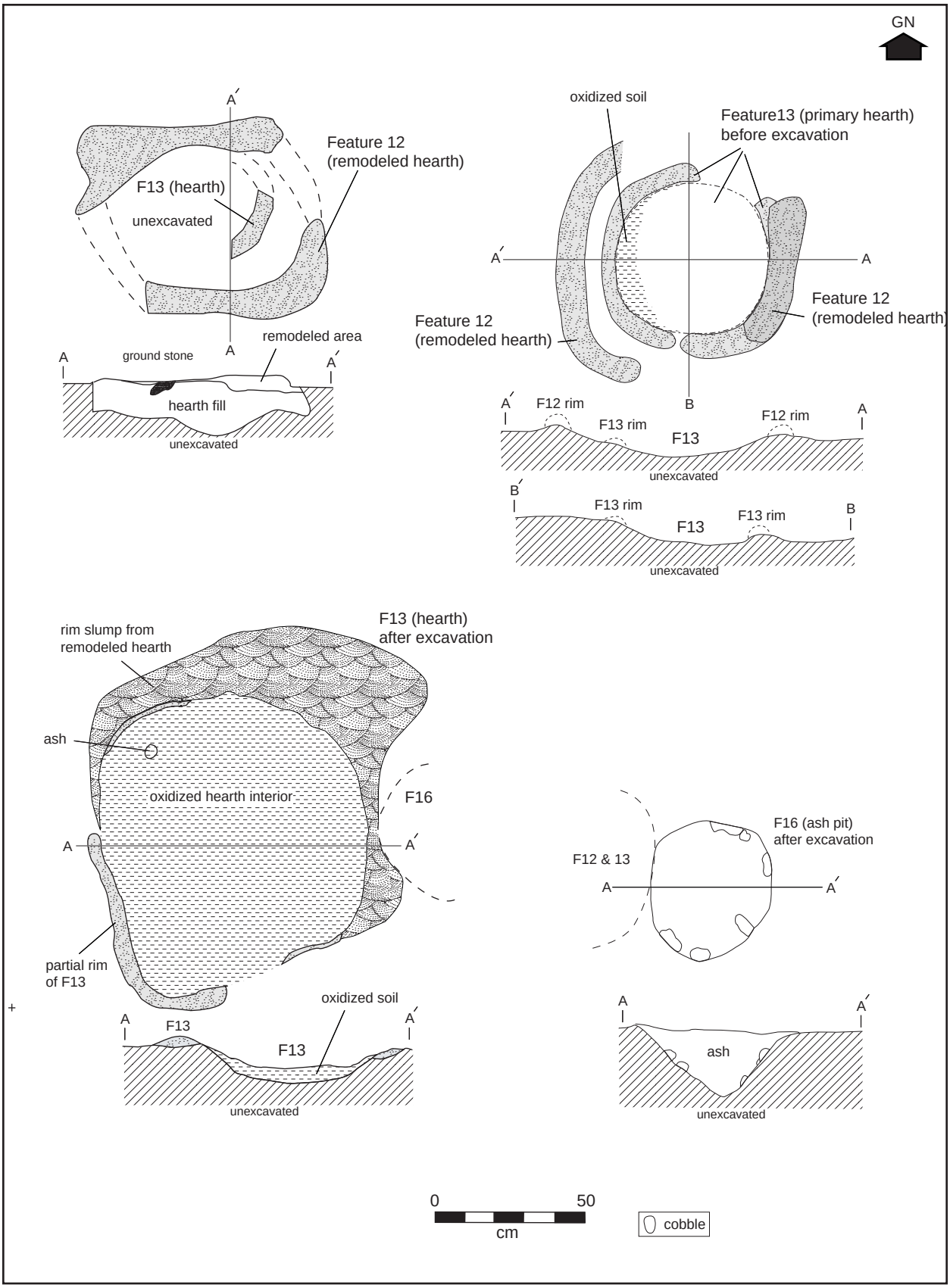

Figure 14.52. Structure 9, remodeled hearth and ash pit, Features 12, 13, and 16 plan views and profiles.

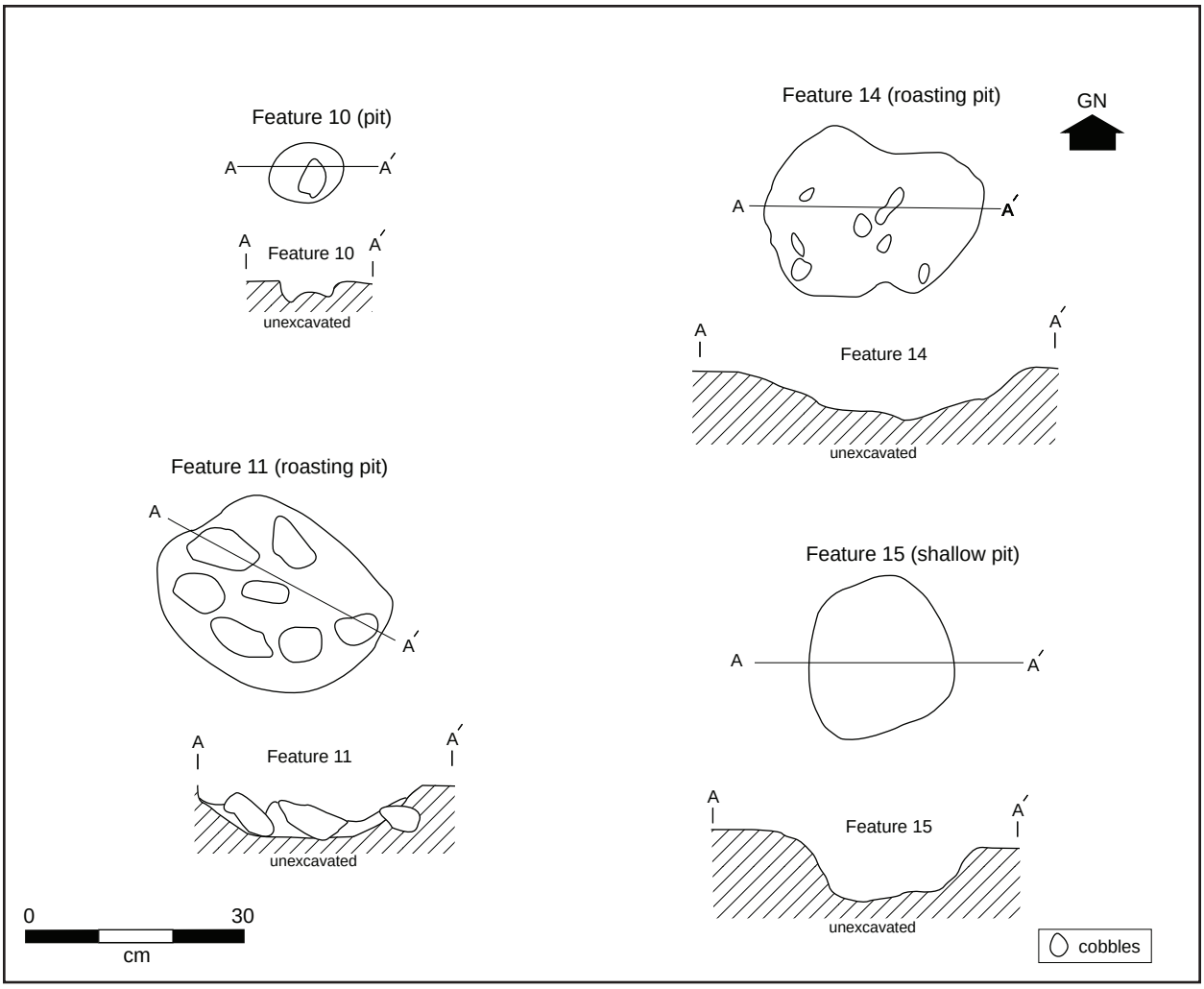

Figure 14.53. Structure 9 thermal pits, Features 11 and 14; small unburned pits, Features 10 and 15, plan views and profiles.

missing northwest and southeast segments. Eight Middle Rio Grande Plain ware ceramics were recovered from Feature 13 fill. Fauna (n = 5) included a small-mammal/medium-to-large bird long bone fragment, three small-mammal long bone shaft fragments, and a jackrabbit scapula fragment. All are heavily burned—either blackened or graded black to calcined. No chipped stone was recovered from either feature.

Feature 16 was an ash pit located immediately to the southeast of the hearth collar in line with the ventilator shaft opening. The pit was steep sided, basin shaped, and filled with ash. The fill also contained one calcined artiodactyl flat bone fragment, and the tibia and a caudal vertebra from a banner-tailed kangaroo rat, all of which were burned. Lithics included a multi-platform core of chert and one basalt flake. Four Middle Rio Grande Plain body sherds were recovered from fill and were likely deposited during floor sweeping. Charred ethnobotanical remains included a small amount of goosefoot and a few corn cupules. No wood was recovered.

Features 11 and 14 were small thermal pits (Fig. 14.53) located to the northeast and southwest of the central hearth. Feature 11 was an oval roasting pit with adobe plaster side walls that were oxidized and charcoal-smudged. Six cobbles with one in the center were arranged in charcoal fill 5 cm below the feature edge. No artifacts were recovered from feature fill and no samples were taken.

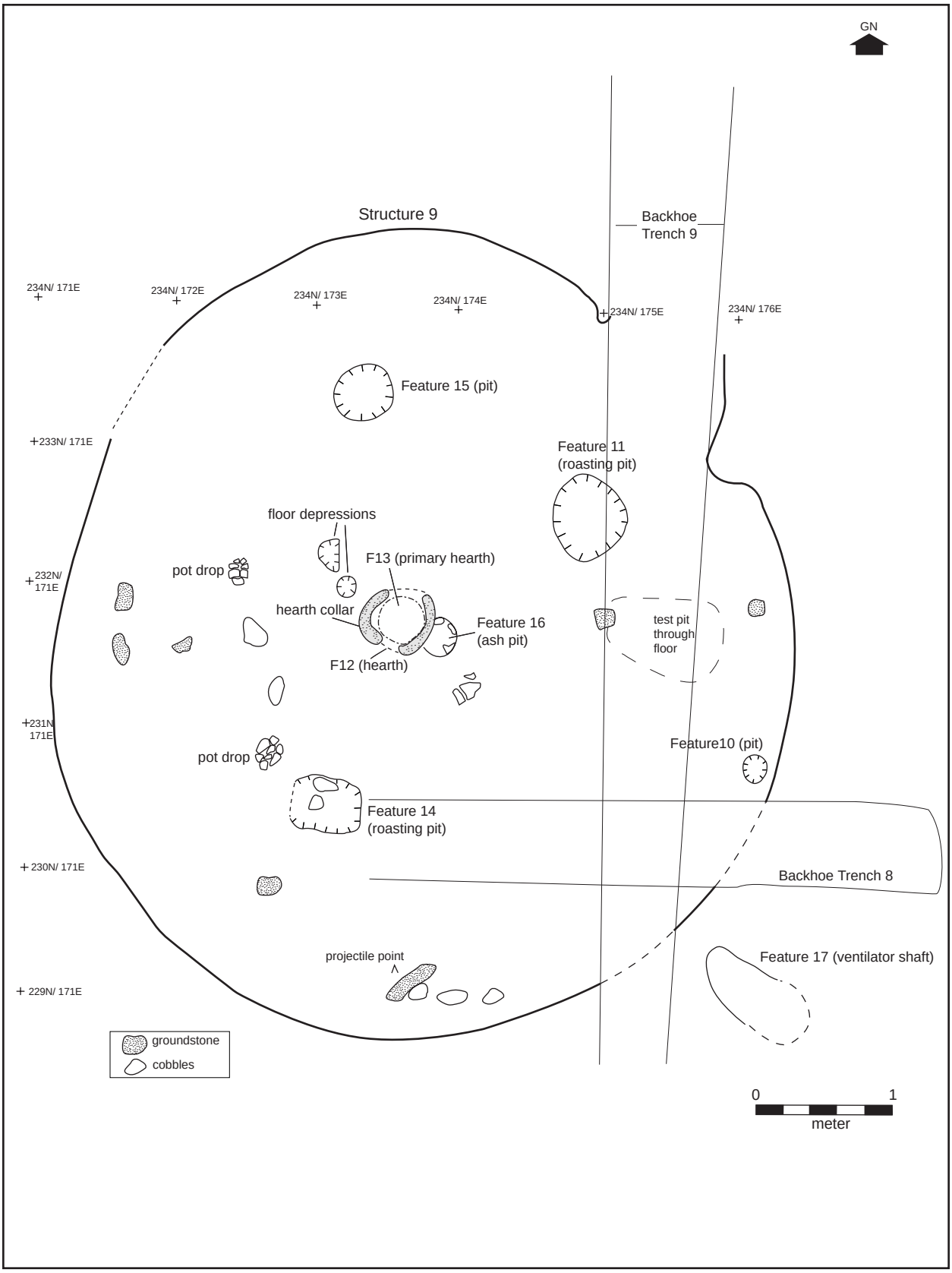

Figure 14.54. Structure 9, plan view with artifacts at floor contact.

Table 14.53. LA 6171, Structure 9 Floor and Features, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Nonvesicular Igneous		Sandstone		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	2	66.7	-	-	-	-	1	33.3	-	-	3	12.0
Flake	3	25.0	-	-	1	8.3	8	66.7	-	-	12	48.0
Flake from Hammerstone	-	-	-	-	-	-	1	100.0	-	-	1	4.0
Core, Multiplatform	1	50.0	1	50.0	-	-	-	-	-	-	2	8.0
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	1	4.0
Chopper, Unifacial	-	-	-	-	-	-	1	100.0	-	-	1	4.0
Metate, Unknown	-	-	-	-	-	-	-	-	1	100.0	1	4.0
Shaped Stone	-	-	-	-	-	-	4	100.0	-	-	4	16.0
Total	6	24.0	1	4.0	2	8.0	15	60.0	1	4.0	25	100.0

Feature 14 was an oval roasting pit with slightly oxidized edges excavated into the cobble substrate. Fauna was similar to that of the primary hearth (Feature 13), except that none was burned. The assemblage included a small-mammal long bone fragment and two jackrabbit bones. Ethnobotanical remains were limited to a few charred grass stems.

Features 10 and 15 were small unburned pits summarized in Table 14.52 and illustrated in Figure 14.53. Feature 10 was a small, irregularly shaped pit and was the only non-thermal floor feature. Two other divots were also mapped but not recorded as features. The disturbed and uneven nature of the floor precluded positive identification of these divots as the products of human activity.

Artifact Assemblage. Artifacts at floor contact included seven pieces of ground stone, two pieces of worked turquoise, one broken projectile point, and a possible pot drop consisting of three clusters of plain gray ware sherds (Fig. 14.54). A partial bighorn sheep skull was found in the structure's ventilator shaft. One metate was found in closing material fill and may have been on the roof when the structure collapsed.

Ceramics from Structure 9 are summarized in Table 14.18. Pottery from the floor and floor fill assemblages is typical of LA 6171, predominantly Middle Rio Grande Plain ware. All of the pottery (n = 75) recovered from floor contact and features were jar fragments. A pot drop located to the southwest of the central hearth was reported in floor fill and at floor contact during excavation but no reconstructible vessels were found during analysis. Three of the 70 jar fragments had interior modification indicative of cooking. In addition to Northern Rio Grande Plain body sherds, floor fill contained one Middle Rio Grande Wide Neckbanded jar fragment, one San Marcial Black-on-white jar neck, and one Santa Fe Black-on-white bowl body. The relatively large percentage of jar bodies that do not exhibit abrasion from cooking suggest that these vessels could have been used to augment storage space, which was limited in this structure.

Twenty-five lithic artifacts were recovered from the floor contact and features in Structure 9 and are summarized in Table 14.53. Most of these artifacts were manufactured from nonvesicular igneous materials (60 percent) and chalcedony (24 percent). Other material categories represented are quartzite, chert, and sandstone.

The entire assemblage represents secondary core reduction. Eleven of 12 whole flakes lack dorsal cortex and 70 percent of the platforms are single faceted. Two multiplatform cores, one made of chert and the other of chalcedony, were recovered. A flake from a nonvesicular igneous hammerstone and a quartzite hammerstone provide evidence that reduction activities were carried out in the structure. Only seven chipped stone artifacts were recovered from floor fill.

Ground stone from Structure 9 are detailed

in Tables 14.5, 14.6, and 14.7. A total of seven ground stone artifacts were recovered from floor contact and floor fill. Four were shaped slab fragments, probably from the same original slab of fine-grained rhyolite, as three of these can be refit. Two were fine-grained sandstone metate fragments, probably from the same trough metate. One was a two-hand mano made of vesicular rhyolite.

Three of the four shaped rhyolite slabs were located to the west of the hearth within a meter of the west wall limit. Although shaped, the surfaces of these artifacts do not exhibit wear and their use is unknown. The two trough metate fragments were found to the south and southwest of the central hearth near a pot drop and projectile point found on the floor. Thermal alteration observed during analysis suggests that this metate may have been on the roof when the structure burned. The two-hand mano exhibited grinding/faceting use-wear and ground upturned ends that suggest it was used with a trough metate. Use of two-hand manos and trough metates has been associated with agriculture (Lancaster 1983:17; Mauldin 1993:321; Eddy 1964:3; Murrel, Chapter 19).

The fauna assemblage (Table 14.48) exhibits evidence of extensive rodent disturbance and evidence of carnivore intrusion after abandonment. The majority of the fauna from Structure 9 was from upper fill that contained large percentages of intrusive species including yellow-faced pocket gopher, ground squirrel, and kangaroo rat. Bone from floor and features was sparse and over 30 percent of it was recovered from flotation samples. The most prevalent species (33 percent of the total floor fill and feature sample) was black-tailed jackrabbit followed by desert cottontail and small-mammal bone. Most of the burned bone were jackrabbit (n = 7) and small-mammal bone (n = 4). Other burned remains came from, small-mammal/medium to large bird bone, and medium artiodactyl. High incidence of rabbit can indicate field or near-residence hunting and a large proportion of jackrabbit suggests that cottontail may have been scarce because of hunting pressure (Akins, Chapter 20). Evidence of artiodactyls is limited to two bones, one from Feature 16, both of which had punctures, possibly made by a carnivore. A cottontail bone from floor contact also exhibited gnawing, and jackrabbit remains from Feature 14 appear to be scatological suggesting that the structure may have been uninhabited before it was burned. One shell fragment *(Anodonta californiensis)* was also recovered from the floor.

Potentially economic taxa from structure floor pollen samples were limited to *Ephedra* and *Zea mays*. Corn pollen was recovered from a sample near the eastern wall. Economic species from features included a smattering of corn cupules, grass stems, goosefoot, and winged pigweed, the majority of which came from Features 12 and 16. Corn remains coupled with trough metate fragments and a two-hand mano indicate that plant processing did occur, possibly on the structure roof. Burned roof beams were juniper. Fuel wood included saltbush/greasewood and juniper indicating that wood foraging occurred along terraces and their slopes. Cottonwood/willow was also found in the assemblage, but it is not clear whether it is contamination from the burned superstructure or fuel wood.

Abandonment. The only evidence of remodeling in Structure 9 was provided by the central hearth. Primary hearth fill did not give any indication as to whether there was a hiatus in occupation between primary hearth use and remodeling. The thin layer of sand covering the floor suggests that Structure 9 may have been uninhabited for a time before the superstructure burned. Burned beams and large cobbles sitting on top of closing material suggest that there was a substantial roof. Cobbles that may have supported the superstructure could have collapsed, or were thrown in after the roof fell. The structure was then covered by a two layers of alluvial/colluvial fill and finally capped by Stratum 1, which covers the site.

Structure 9 was relatively deep when compared to other structures at LA 6171. Presence of two thermal pits, one of which may have been a roasting pit, in addition to a well-

Figure 14.55. Study Unit 8, overview.

burned remodeled hearth and substantial roof fall tentatively suggest that this structure was inhabited during cooler times of the year.

Study Unit 8 Excavation Summary. Study Unit 8 was a shallow depression nearly 15 m in diameter containing sheet trash that covered nine extramural features excavated into natural strata (see Figs. 14.47 and 14.57). The activity area flanked the NM 22 highway roadcut to the east and spanned a 77-m area. Study Unit 8 limits were within Grid Units 234–245N/172–179E. It is unclear if this area was an abandoned pit structure excavation, a borrow pit of some kind, or a natural swale. The study unit was located immediately to the north of Study Unit 3, Structure 9.

General Methods. Study Unit 8 was first encountered when Backhoe Trench 9 was excavated while trying to define northern pit structure walls in Study Unit 3. The backhoe trench bisected Study Unit 8 along its north-south axis and a hand exploratory trench (Trench 10) cut it east to west from 237N/172E to 237N/179E. Although two cultural strata were exposed in Study Unit 8, no definable edge between Structure 9 and Study Unit 8 was present in the Backhoe Trench 9 profile (Fig. 14.50).

Once profiles were recorded, Study Unit 8 was scraped with a backhoe to remove sterile and cultural overburden. Neither machine-excavated fill nor fill from the hand trench were screened. Once backhoe excavations were complete, three 1-by-1-m grids (238N/172E, 237N/177E, and 236N/172E) were removed as control units in two10-cm arbitrary levels and screened with 1/4-inch mesh. Other screened, hand-excavated grid units included 235N/172E, 237N/172E, 237N/173E, and 237N/176E. Extramural features were excavated according to project specifications.

Stratigraphy. Study Unit 8 (Fig. 14.55) was excavated into the same natural strata (Stratum 4) as Study Unit 3 and filled with AL3H which may have been the same stratum that filled Structure 9 (Fig. 14.49, Table 14.55). Stratum 3G was recorded as homogeneous colluvial sand with charcoal flecks from approximately 18 to 30 cm in depth. Artifact density was low.

Table 14.54. LA 6171, Study Unit 8 Features

Feature No.	Location	Type	Dimensions (LWD in cm)	Fill	Comments
95	249N/172E	Shallow pit	21 x 18 x 10	Dense, black sandy loam mixed at the bottom with compacted clay/ adobe clumps.	
96	245N/176E	Hearth (deflated)	37 x 35 x 8	Compact, stained fill with small charcoal flecks, and one fire-cracked rock.	Excavated directly into terrace gravels. (chipped stone=1)
97	240N/175E	Shallow pit	40 x 26 x 10	Charcoal flecks in alluvial sand.	Shallow, burned (but not oxidized), pit located in the center of a large ephemeral stain. This feature may have been excavated through Study Unit 8 fill into sterile strata. Upper limits may have been removed during backhoe scrape.
98	243N/177E	Possible posthole	19 x 18 x 20	Semi-compact sandy clay with charcoal flecks and dime-sized gravels. Very small deposits of burned adobe/clay.	One of five shallow postholes aligned 60 cm apart from southeast to west along the northern edge of Study Unit 8. These features were extremely shallow. Were they partially excavated through Study Unit 8 Fill?
99	244N/174E	Possible posthole	21x17x11	Moderately compact sandy clay with small charcoal flecks.	Located in line with four other features spaced 60 cm apart. Feature side walls were sloped instead of vertical. Possible shallow posthole.
100	240N/175E	Shallow oblong pit	66 x 25 x 3	Alluvial sand and semi-compact clay with no other signs of charcoal or cultural material.	East half of this feature was removed by the backhoe–measurements are approximate. Excavated into natural sterile clay.
101	244N/175E	Possible posthole	16 x 20 x 10	Moderately compact sandy clay with no cultural material.	See Feature 98 comments. Very shallow.
102	244N/174E	Possible posthole	15 x 14 x 12	Moderately compact sandy clay with small charcoal flecks.	See Feature 98 comments. Base of feature stepped down on the west side and was 3 cm lower than the rest of the base.
103	143N/176E	Possible posthole	10 x 19 x 20	Moderately compact clay with large charcoal flecks.	See Feature 98 comments. Similar in profile to Feature 98, one of the two deepest postholes in a line of five features.

Table 14.55. LA 6171, Study Unit 8 Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	60.0	-	-	-	-	-	-	2	40.0	5	23.0
Flake	7	53.8	-	-	1	7.7	1	7.7	4	30.8	13	61.0
Core, Single Platform	-	-	-	-	-	-	-	-	1	100.0	1	4.0
Flake, Marginal Retouch	-	-	1	50.0	-	-	1	50.0	-	-	2	9.5
Total	10	47.6	1	4.8	1	4.8	2	9.5	7	33.3	21	100.0

Stratum CO3H was compact sand and clay and was the first to fill the study unit. This stratum may have been the same stratum as in Structure 9 with a maximum depth of approximately 70 cm. Stratum 4 (5–19 cm thick) was natural compact silty clay with caliche. Extramural features were excavated through this stratum into Stratum 5. Stratum 5 was sand mixed with caliche and terrace cobbles that underlaid all other stratum.

Description. Study Unit 8 surface was a depression approximately 1 m in depth that sloped to the north and was defined by patchy cultural staining and light oxidation mixed into a reddish compacted clay with caliche streaks (Stratum 4). This stratum ranged in

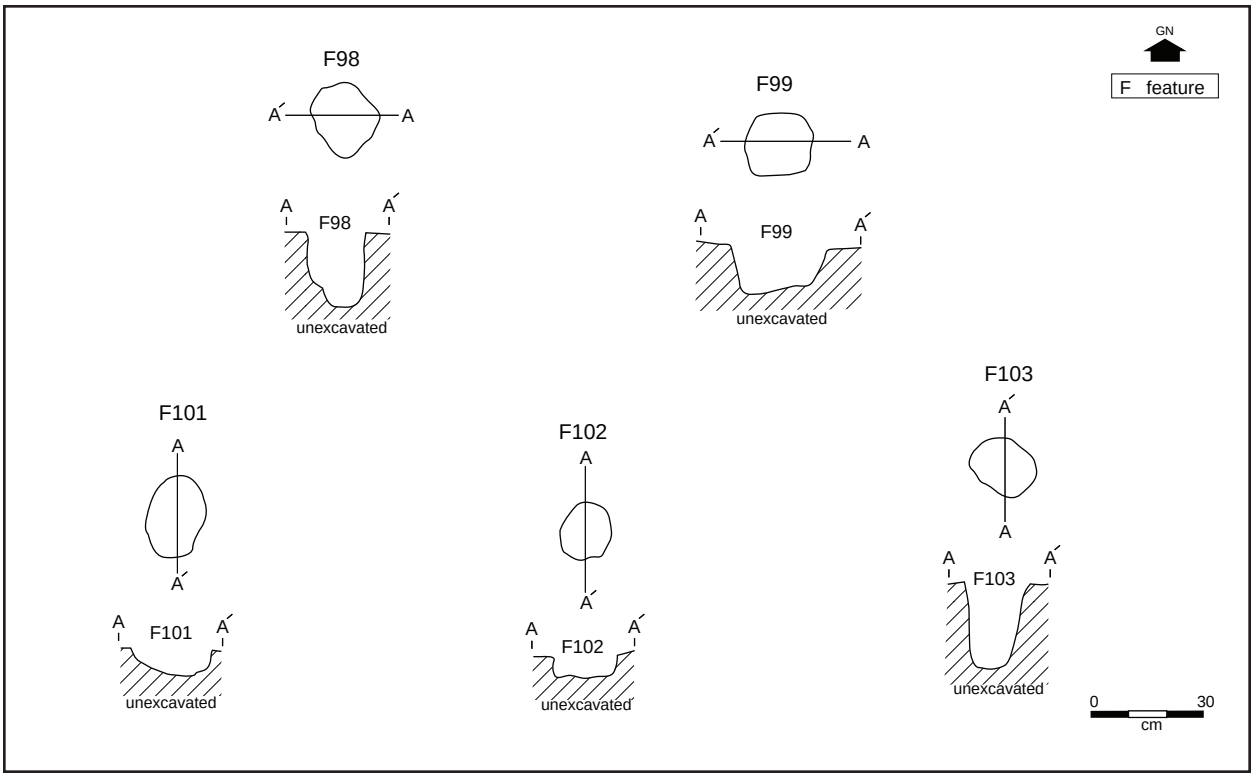

Figure 14.56. Study Unit 8 postholes, Features 98, 99, 101, 102, and 103, plan views and profiles.

thickness from 5 to 19 cm and was flanked on the eastern edge of the study unit by exposed terrace gravels. All features were excavated into the Stratum 4 and 5 terrace gravel contact. The activity area surface was uneven and unplastered. There were no side walls and activity area edges were diffuse. A series of five postholes in Grid Units 241–243N/ 175–177E were oriented north-northeast and may have been the foundation for a wind break or sunshade. Two thermal features (a deflated fire pit and one small burned pit) and three small unburned features, one with burned fill, made up the remaining features.

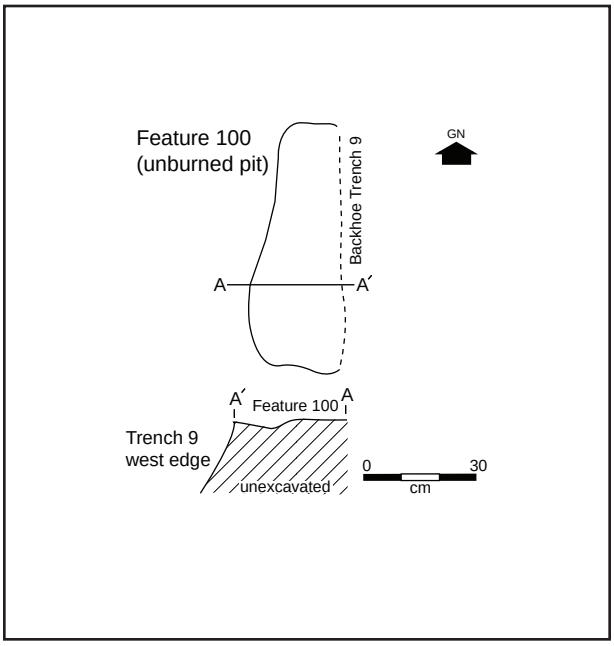

Figure 14.57. Study Unit 8, small pit, Feature 100.

Features. A total of nine features including postholes were excavated into Study Unit 8 and are summarized in Table 14.54. Postholes (Features 98, 99, and 101–103) ranged in diameter from 15 to 21 cm and from 10 to 20 m in depth (Fig. 14.56). They were aligned 60 cm apart and oriented north-northeast. Feature 96 was a shallow, deflated fire pit excavated directly into terrace cobbles. Thermal features are illustrated in Figure 14.58. One chalcedony flake was found in feature fill. Corn cupules were also recovered. Feature 95 was a small pit with charcoal-stained fill. Feature 97 was a shallow, oval pit with sloping, burned side walls. Feature 100 (Fig. 14.57) was a shallow

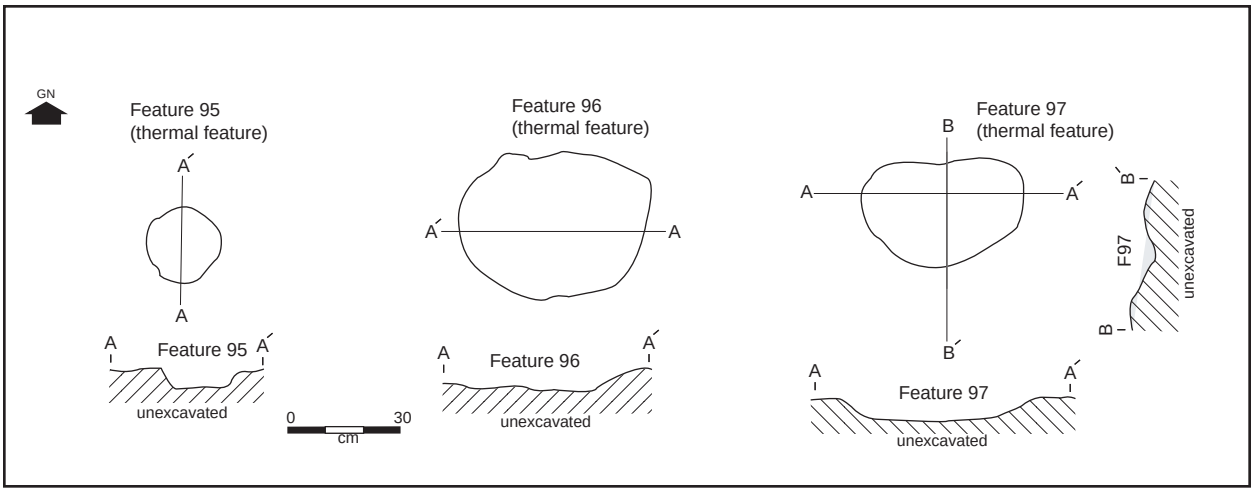

Figure 14.58. Study Unit 8, thermal features, Features 95, 96, and 97, plan views and profiles.

oblong pit, half of which was removed by Backhoe Trench 9.

Artifacts. Pottery from Study Unit 8 is summarized in Table 14.18. The Study Unit 8 ceramic assemblage is made up of nine sherds including six jar bodies, two jar necks, and one from an indeterminate vessel form. Pottery types are dominated by Middle Rio Grande Plain ware (n = 5), which is typical for this site. Other types include Middle Rio Grande Wide Neckbanded and Middle Rio Grande Corrugated.

Chipped stone from Study Unit 8 is summarized in Table 14.55. Twenty-one lithic artifacts were recovered from Study Unit 8 surface strip. Individual material categories were chalcedony (48 percent, n = 10), nonvesicular igneous materials (33 percent, n = 7), Jemez obsidian (10 percent, n = 2), chert (n = 1), and quartzite (n = 1).

Flakes lacking dorsal cortex represent 80 percent (n = 12) of the assemblage, indicating an emphasis on later stages of secondary core reduction. Single-faceted platforms typical of secondary reduction are the dominant platform type. A single-platform core made of nonvesicular igneous material was also recovered. Although no bifacial tools were recovered from this provenience, bifacial tool manufacture is indicated by an obsidian flake with a retouched or prepared platform.

Unutilized flakes (n = 13) and unutilized small angular debris (n = 5) compose the majority of the assemblage. Two marginally retouched flake tools were identified, one an obsidian flake exhibiting unidirectional wear on a denticulate edge, and the other an obsidian flake lacking evidence of utilization. It is likely that the denticulate was utilized and discarded at this location. No ground stone was recovered from the provenience. The lithic assemblage from features was limited to one artifact, a single unused chalcedony flake from Feature 96.

Seven bones were recovered from Study Unit 8 fill, none were recovered from feature fill. All bones were fragmentary, most were from large mammals, and only one was burned. The small sample size makes this sample impossible to interpret in the context of a larger assemblage which may have been present, but was not collected. Flotation samples were processed from Features 96 and 97. The only cultural plant remains were corn cupules from Feature 96. No pollen samples were taken.

Abandonment. It is unclear if this activity area was associated with Structure 9. Both the structure and the activity area features were excavated into Strata 4 and 5, but the relationship between cultural fills is ambiguous. While profiling Trench 9, archaeologists were unable to discern the difference between Structure 9 and Study Unit 8 fill. Recording inconsistences also contributed to the difficulty interpreting the relationship between these two areas.

Conclusions

Although the data recovery plan predicted some Early Developmental components at LA 6171, at that stage emphasis was placed on determining the function of several cobble concentrations hypothesized to be grid gardens or structural remnants from later periods. Excavation revealed a site largely made up of Early Developmental structural components and extramural features, which provided evidence of periodic site use and occupation from as early as AD 440 to the late 900s or early 1000s. One structure, with mostly Coalition ceramic types, may indicate habitation from approximately 1200 to 1325 and later activity in the area is provided by Classic ceramic types in upper strata.

Earliest Developmental

Earliest Developmental period components indicate occasional short-term occupation that probably continued sporadically from as early as AD 435 to as late as AD 665 with a possible hiatus sometime between AD 525 and 605. The first features (90 and 91) built at LA 6171 were used sometime between AD 435 and 525. Later storage features and an activity area were used between AD 500 and 650. Unburned pits, located underneath the surface of dated, oxidized surfaces indicate earlier site use. Features 40, 41, and 42 were beneath Feature 36 activity area (ad 510–650) and may be indicators of an earlier, shallow pit structure unintentionally modified by later inhabitants. Feature 89, beneath the oxidized limit of Feature 88 (ad 610–630), may also signal earlier activities. A corn fragment recovered from Feature 54, secondary fill (Stratum b), dated AD 440–640. This corroborates the archaeomagnetic date (ad 515–655) and indicates that later site occupants probably did not use the feature.

Large, well-oxidized bell-shaped pits could have been used for roasting, storage, or possibly for temporary shelter as indicated by very small pit structures measuring from 2.10 to 2.55 m in diameter at LA 3128, LA 27109, and LA 59623 (Schmader 1994:320) and at Paintbrush House for the Dolores Archaeological Project (Kleidon 1988:137). Subsurface storage features may have been used to cache food for spring consumption and could be indicators of a seasonal foraging pattern associated with mobile populations dependent upon wild food resources (Ware 1997:47). Presence of corn indicates that some of the site inhabitants also farmed. The majority of the earliest Developmental features contained washed-in fill with very low frequencies of trash. The resulting lithic and ceramic assemblages were limited. Low frequencies of artifacts and lack of trashy fill in these features may be another indicator of periodic site use. Similar features excavated at River's Edge (AD 619 to 980) were trash filled (Schmader 1994:320, 344). It is likely these features had filled by the time later inhabitants returned to the area, sometime between AD 740 and 835. There is no archaeological evidence suggesting the features were re-used.

Early Developmental Features

Four pit structures were built during the Early Developmental period occupation. Structures 9 and 60 could have been inhabited concurrently. Archaeomagnetic dates range between ad 775–825 (Structure 9) and AD 740–835 (Structure 60). These date ranges overlap occupations at LA 265, LA 6170, LA 6169, and LA 115862. Tentative stratigraphic information suggests that Study Unit 8 could also have been used during this period, possibly after Structure 9 was abandoned. Dates for Structure 18 and 26 are complicated by small, indeterminate ceramic assemblages and a single imprecise carbon-14 date. Structure 26 may have been occupied sometime between AD 870 and 990, though the most confident date range was AD 770–1020. After Structure 26 was abandoned, Structure 18 was constructed, probably sometime at the end of the Early Developmental period. Ceramic seriation indicates that features from Study Unit 2 were also used during the Early Developmental period, but date ranges are impossible to determine.

Structures 9 and 60 had floor areas of 25.3 sq m and 22.7 sq m respectively, within the range of similarly dated structures recorded by Schmader

at River's Edge (Schmader 1994). Both structures have ventilator complexes oriented to the southeast. Neither have visible deflector supports or entryways. Structure 60 was relatively shallow with four-post construction, whereas Structure 9 was the deepest of all the structures, and had no visible postholes. Though Structure 60 had numerous small warming pits, and possible rack holes, both features lacked internal storage pits. No extramural storage features were specifically associated with either structure but it is possible, though unlikely, that some of the earliest Developmental pits could have been dug out and used. In the case of Structure 9, these results may be biased by excavation technique. Because of time constraints, surface area immediately to the south and to the east of the structure were not investigated. Both Structures 26 and 18 were quite shallow. Structure 26 was only partially excavated, and it is unknown whether it had a ventilator complex. Its estimated area was approximately 17 sq m. The roof support system was likely of four-post construction. Structure 18 was smaller with a 10.98 sq m floor area. The structure lacked a ventilator or evident entryway. Remodeled post holes of various size were grouped on one side, and probably supported a peaked or insubstantial roof.

Structure 9 was remodeled as demonstrated by the central hearth. The structure had a substantial roof as indicated by charred juniper beams and baked soil with reed impressions in closing fill. Large timbers were not recovered and it is likely that they were salvaged. A fragmentary pronghorn skull in the ventilator shaft provided evidence of ritual closing. Structure 60 was not remodeled, and showed limited signs of burning along post molds. No charred roof material was evident, and there was no sign of ritual closing. Conical postholes suggest that supporting beams of this structure were also removed when the structure was abandoned. Structures 26 and 18 were unburned. Two floors separated by a layer of sand in Structure 26 indicated a remodeling episode.

After abandonment, Structures 9 and 60 filled naturally. The activity area in Study Unit 8 may have been used at this time. Structure 26 was filled with a combination of natural fill and site refuse. Two intrusive features and a series of dumping episodes were recorded indicating that closing material was disturbed after abandonment. Structure 18 was excavated into Structure 26 fill. Maximum overlap of the structures was approximately 80 cm and ceramic evidence indicates that Structure 26 disturbance to the east was probably contemporaneous with or post-dated Structure 18 construction. Structure 18 also appears to have filled naturally with the exception of one possible dumping episode.

In his 1994 dissertation, Schmader outlines architectural expectations for structure function and season of occupation. He contends that overall, cooking structures are more shallow, have a floor area of less than 14 sq m and more floor features than sleeping structures. Likewise, cold weather structures tend to be deeper with large hearths and more substantial roofing elements. Although not as deep as many structures along NM 22, Structure 9 fits most criteria associated with cool weather sleeping structures. It was made with a substantial roof and only four features that were not involved in the hearth or ventilator complex. Structure 60 exhibits elements that do not fully fit any of Schmader's descriptive sets implying variable seasonal and functional use probably ranging from warm weather sleeping to cool weather cooking. This is also the case for Structure 18. Information about Structure 26 is too incomplete for comparison.

Subsurface storage facilities are cited by Ware (1997:47) as one of the main characteristics in the Rio Grande archaeological record consistent with seasonal mobility, and are considered a strategy for over-wintering. Discussing storage capacity at LA 6171 is difficult. Interpretation of earliest Developmental feature use is subjective at best and the large earliest Developmental pits could have served different functions during their use-lives. If Features 54 and 56, the two largest pits, were used as temporary shelter, internal pits may have been used as storage. If so, their combined capacity would have been 0.0761 cu m. No Early Developmental structures had features this large. A smaller unburned feature

from Structure 18, the only possible storage feature with complete limits, had a storage capacity of 0.0094 cu m, roughly eight times less internal storage than the two potential earliest Developmental period shelters. The Early Developmental component lacked extramural storage, unless it was outside the excavation area. Large earliest Developmental pits and interior pits have a total estimated storage capacity of 2.8783 cu m; this does not include unburned pits. This large storage capacity is unusual for an occupation component that had no formal structures.

Subsistence and tool technology from Structures 9 and 60 reflect a mixture of expedient and formal technologies as well as emphasis on local material use. Archaeobotanical remains and ground stone provide evidence of corn production and processing. Trough metate fragments were recovered from the floors of both structures, and a two-hand mano was found in Structure 9. Ground stone from Structure 60 also indicates pigment processing.

Chipped stone assemblages from floor contact are limited to local material types and largely reflect expedient tool use. One flake of Grants obsidian recovered from floor fill in Structure 60 is the exception, and may have been deposited later, as the only other nonlocal materials were recovered from Structure 1, a Coalition pit structure. Jemez obsidian was found in all structure assemblages in low frequencies and is noticeably absent from the Structure 9 floor. It is unclear whether this is a function of material selection or availability, but this suggests that chipped stone production was expedient. Structure 26 chipped stone included formal and informal obsidian tools, and evidence of biface reduction. This indicates an element of formal tool procurement strategy and may reflect different activities performed in each structure.

Gray ware ceramics also reflect expedient procurement strategies; jars were often used for short-term storage and cooking (Wilson, Chapter 16). In Structure 9, a majority of jar fragments do not exhibit sooting or interior abrasion suggesting that their primary use was for storage, although there was some indication of their use for cooking.

Small animal bone and artiodactyl foot elements, possibly indicative of hide processing activities, were recovered from Structure 60. Bone from Structure 9 floor was also mostly from small mammals. Predominance of black-tailed jackrabbit rather than cottontail may signal hunting stress. A mixture of these small animal elements with limited amounts of large species may indicate a pattern of garden hunting punctuated by long-distance forays, a hallmark of more sedentary farming (Akins, Chapter 20).

Lithic and subsistence data from Structure 26 reflect trends established during the occupation of Structures 9 and 60, but there are no trough metates. A one-hand mano from Structure 26 with rotary striations coupled with charred goosefoot provide evidence of wild plant processing. Shallow depth and lack of formal tools may indicate a more mobile warm weather residence.

Structure 18 fauna may provide evidence of a shift in subsistence or of seasonal use. Fauna was made up of almost equal amounts of large and small mammal bone, atypical of an Early Developmental pit structure (Akins, Chapter 20). This may be due in part to small sample size. Lack of ground stone and sparse archaeobotanical remains may indicate that plant processing did not take place in the structure. Shallow depth, small size, an insubstantial support system, and remodeled postholes suggest that the structure was impermanent, constructed for short-term, possibly periodic, warm weather use.

Coalition

Ceramic evidence suggests that after Structure 18 fell into disuse the site was not inhabited again until the Coalition period (AD 1225–1325). Structure 1 was a shallow feature with an area of 5.10 sq m, well within range Schmader describes for cooking structures in his 1994 dissertation. The structure had no ventilator or visible entryway. Structure depth and four possible postholes imply that it may have been used during cool weather but information collected during data recovery is insufficient to

substantiate this assumption.

Coalition ceramics recovered from the lower fill of Structure 1 provide the only dating information available. As mentioned earlier, artifacts at floor contact were not recorded. As a result, inferences about structure use are problematic and are limited to generalities, provided by possible structural refuse combined with post-occupational fill.

Refuse indicates a continued emphasis on expedient pottery technology by the Coalition era site inhabitants with the addition of white ware bowls likely of local manufacture (Wilson, Chapter 16). Lithics exhibited a combination of expedient and formal production strategies. The assemblage was primarily the product of late stage core reduction of local materials. Nonlocal materials such as Grants obsidian and mahogany obsidian combined with local materials to provided evidence of tertiary bifacial tool manufacture. No ground stone was recovered.

Late Coalition

Evidence of the Late Coalition component at LA 6171 was limited to surface removed from the top of a room block mound in Study Unit 10. Excavation was curtailed when the right-of-way width was reduced and it is unknown if the artifacts were associated with the possible structure or if they were sheet midden associated with unexcavated site components located further to the east.

Synthesis

Ware (1997:47) considers two characteristics most indicative of seasonal mobility in the Rio Grande. They are pit structure construction and use of subsurface storage facilities as an over-wintering strategy. Archaeological investigations at LA 6171 provided evidence of habitual, though probably seasonal, small-scale occupation. Earliest Developmental features provide evidence of sporadic occupation by mobile foraging groups, who may have been opportunistic horticulturists returning to plant and harvest corn and wild plants, or to take large game from along the river. In either case, large storage or roasting pits would have been useful for the processing of large packages of meat (Wandsnider 1997) or for corn storage (Kayser 1973). Early Developmental pit structures provided evidence of slightly more sedentary, though probably short-term occupations. Deeper structures imply cool as well as warm-weather habitation by groups with a mixed agricultural and foraging economy. Lack of storage may indicate a subsistence strategy similar to one described by Powers and Van Zandt (1999:25) for Early Coalition settlements in which resources are procured for a single year (or in this case season) with limited stored surplus. Evidence of processing, but lack of storage facilities, could be a further indication of seasonal mobility and limited reliance upon agriculture, or might be an indication of community affiliation with groups living immediately to the south at LA 265. Feature 18, with its unusually large artiodactyl assemblage, could indicate settlement during a different season or may signal a change in emphasis from farming to hunting. The single Coalition structure provides evidence of a return to the area, but also appears to have been associated with seasonal habitation.

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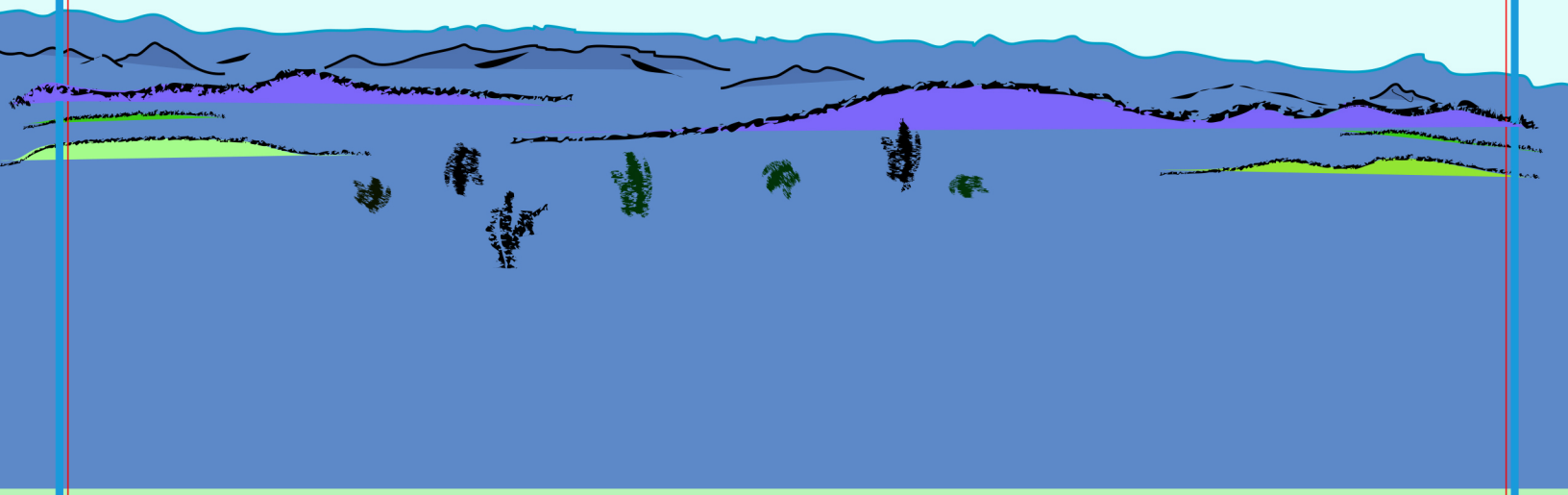

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