Report of Archaeological Research Conducted at Stix and Leaves Pueblo (5MT11555) Montezuma, County, Colorado

Bruce Bradley, PhD
Primitive Tech Enterprises, Inc.
Cortez, CO

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Preface and Acknowledgements

Writing acknowledgements for such a substantial piece of archaeological research is one of the more difficult parts, not because there is not enough to say but because there are so many people and organizations who should be thanked.

First and foremost my deep gratitude goes to Nick and Anh Fergis whose vision, interest and resources made this project possible. They continually fueled my enthusiasm while at the same time holding me in check with the relevant, and all too rare in professional excavations, questions “Why do you want to do that? What can we learn by doing that? “. They had their own personal reasons for wanting to do this project and our interests intersected. We were an ideal match.

The circumstances surrounding the origin of our partnership seem at times surreal. I had visited the site at the request of the previous landowners who had done some digging and wanted to know something about what they were finding. They had exposed some masonry architecture and excavated a significant portion of a midden. At the time I tried to emphasize the need for controls and the involvement of a trained archaeologist and suggested that perhaps they might desist until such time when they could do it ‘properly’. This seems to have been done. A few years later I was contacted by Larry and Nancy Hammack who had been in contact with Nick and Anh Fergis who had bought the property and house. Larry and Nancy had been advising them on possible approaches to excavations and since I was available at the time, they introduced us. After detailed discussions with the Hammacks and Nick and Anh. I was ‘hired’ to supervise a research project at the site. Together we came up

with an excavation and post-excavation plan.

Lunch break at the dig; Nick and Anh Fergis

Nick and Ahn named the site and we applied for and received a Colorado State Site number and excavation permit and fieldwork started in 1999. The Fergises were not idle bystanders and they helped with excavations when they were able. Nick was especially enthusiastic. Before we began fieldwork it was agreed that we would have a lab to process artifacts, organized storage, an archive and we would undertake preliminary analyses. To this end Cindy Bradley came on as lab director. We developed our field and lab methods, heavily based on the systems we were familiar with by working with Larry and Nancy as well as with the Crow Canyon Archaeological Center.

There was no other paid staff but we hired fieldworkers from the local jobs office as well as occasionally archaeology students. This turned out to be a successful process and we were able to hire some of the same workers each

season. This helped with continuity but also we found our workers to be excellent excavators. This was especially the case for Julia and Rachelle Brown who were as dedicated as any of us to the project.

Happy Nick

We were also greatly assisted by numerous volunteers from the local community, especially members of the Colorado Archaeological Society. We had decided early on that all of the cultural fill we excavated would be screened through ¼" mesh hardware cloth and the lion's share of this work was done by the volunteers. I am especially grateful to Don and Jeanie Tucker, Tom and Terri Hoff, Jill and Duane Patton and Angela and Roger Raynes. There were many other volunteers and those that helped with the tedious jobs (including artifact washing) were especially critical in our keeping up with the recording and processing. To all of these enthusiastic people I extend my heartfelt thanks.

Larry and Nancy continued to advise us and many other professional

archaeologists came and visited the site and lab. Each of them freely offered their insights and perspectives and brought welcome ideas and advice.

There have also been some special analyses undertaken. All of the animal bone has been identified by a PhD student, John Humance, at Simon Fraser University under the supervision of Dr. John Driver. The tree-ring analysis was done by the Tree-ring Lab at the University of Arizona in Tucson. A sample of the pottery was analyzed in detail by Scott Ortman at the Crow canyon Archaeological Center and a set of soil samples was analyzed for a Masters dissertation project by Patricia Rude under the direction of Dr. Kristin Soloblik at the University of Maine, Orono. The human remains analysis was done by Cindy Bradley.

While the project spanned several years, it was done in fits and starts, based both on availability and financial backing. We usually had two field seasons a year, one in the early summer and another in the autumn and lab work was continued intermittently between the field sessions. We managed to sustain the project long enough to complete our fieldwork and backfill all of the excavated areas so they wouldn't erode. We also completed the lab processing and basic analysis and record keeping.

The project concluded not from a lack of interest or commitment but from a change in resource availability. We produced annual descriptive reports of our work. Since it ended in 2002 I have been slowly working on this report when time and opportunity permitted.

I believe that this project has been successful and has contributed significant new information about the Ancestral Pueblo experience in south-western Colorado. It has especially contributed to our understanding of the

previously little known occupation of the tenth century. There is much more potential remaining in the collections and records of our work. For the most part only preliminary analyses have been completed. It is my hope that this report makes the record of our work and interpretations known to a wide range of interested parties and that future research will be undertaken on the material and records of Stix and Leaves Pueblo (5MT11555). Thank you one and all. You know who you are.

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Part 1 Introduction

Site Description

Location and Setting

Stix and Leaves Pueblo (5MT11555) is a large multi-roomblock site situated near the edge of Alkalai Canyon in Montezuma County, Colorado (Figure 1.1). Although the area of the site has been cleared of vegetation

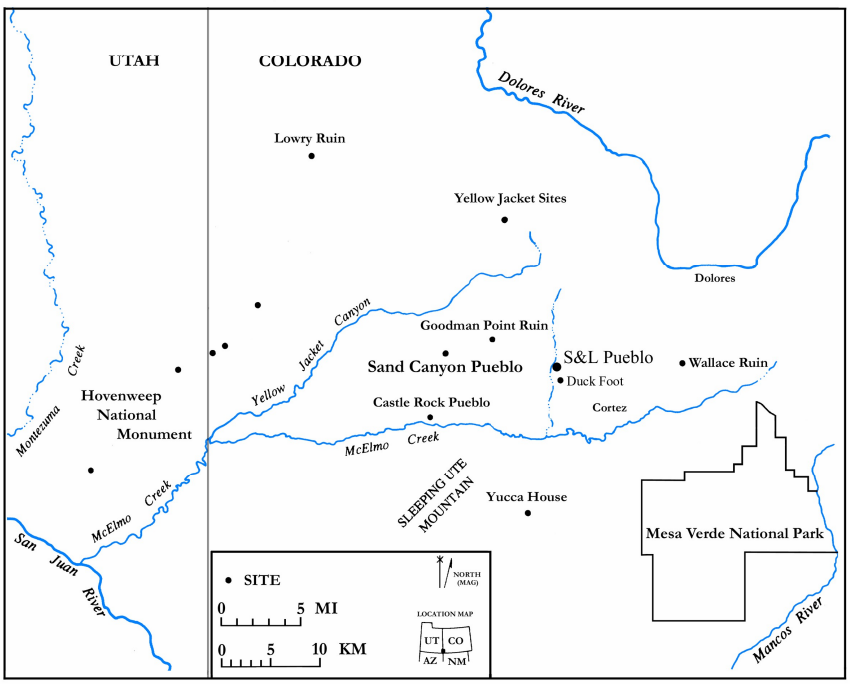


Figure 1.1. Location of Stix and Leaves (S&L) Pueblo.

(Figure 1.2), it probably was originally covered with sage. The location is at the top of a slope rising from the canyon to the west; southwest and northwest (Figure 1.3). Today, there is a permanent flow of water through the canyon, enhanced in the summer by irrigation run-off. Soils in the vicinity of the site are shallow with calcium carbonate showing in the backdirt from prairie dog holes. The depth of the calcium carbonate in times when the site was in use is evidenced by the pitstructure cuts. It is of course possible that productive

top soil has been lost to erosion due to natural processes and overgrazing.

Figure 1.2. Stix and Leaves Pueblo location (on horizon).

Figure 1.3 Site setting with Alkalai Canyon on left; site in center right.

Site Layout

The site consists of several clear roomblocks of ruined masonry architecture and a number of midden areas and shallow pitstructure depressions (Figure 1.4), including a possible great kiva. When we started this project several areas had been looted including part of Roomblock F and

a midden area south of the possible great kiva. Artifacts exposed in this midden are all of Pueblo I origin.

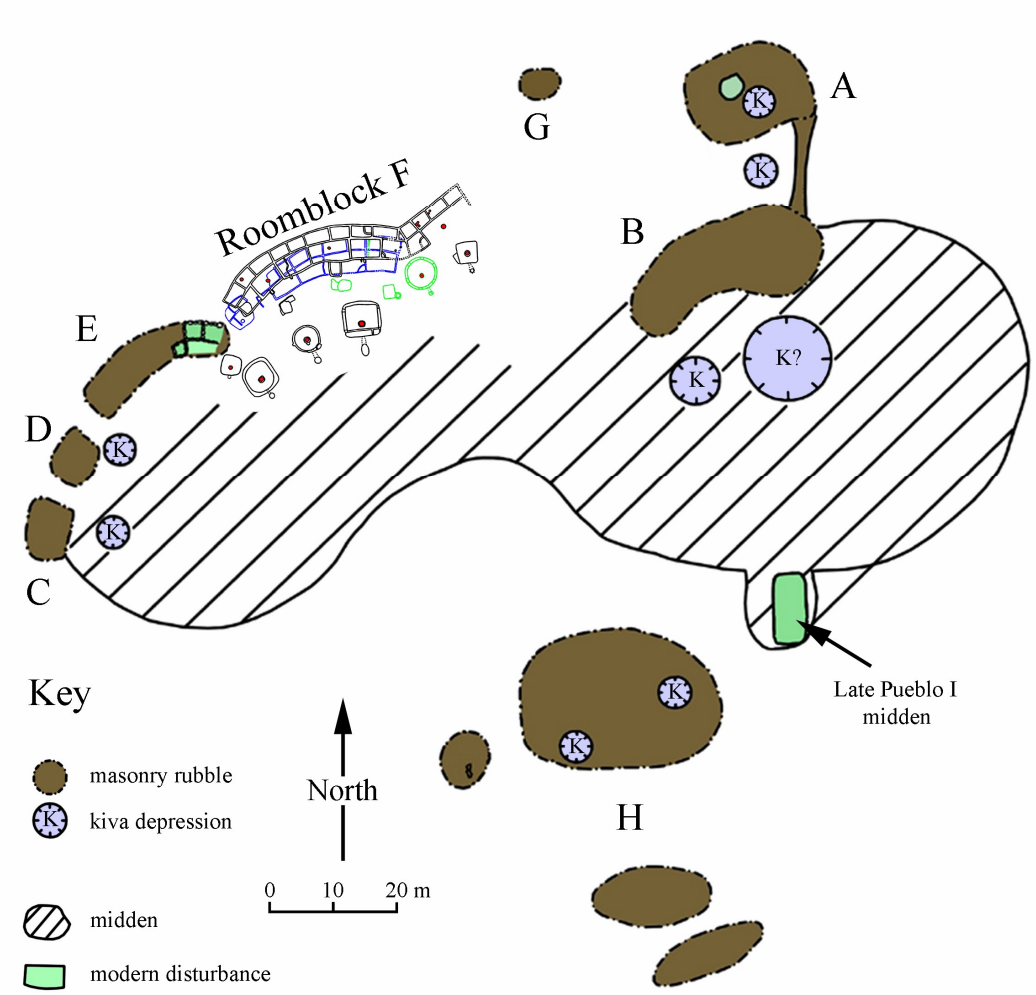


Figure 1.4. Site map with excavated Roomblock F shown in detail.

Roomblock F was fully excavated during this project (Figures 1.5 and 1.6), with the exception of some midden area to the south that was highly disturbed by an active prairie dog town. Interestingly, very few prairie dog bones were recovered in our excavations while pocket gopher bones were quite common. This may indicate that the presence of prairie dogs is a recent phenomenon. The south midden was not investigated because of the extreme disturbance and we encountered a number of other midden deposits in our excavated area. We did not conduct excavations outside of Roomblock F and its associated pitstructures and extramural areas.

Figure 1.5. Aerial view of Roomblock F at the end of the 2000 season.

Figure 1.6. Close-up view of Roomblock F at the end of the 2000 season.

Financial and Facilities Support

The property and site is owned by Nick and Anh Fergis and they provided all financial sponsorship for the excavations and analyses. We hired a local crew for the excavations and were joined by many volunteers, mostly from the Hisatsinom and San Juan Chapters of the Colorado Archaeological

Society. Although the site is on private land and we were not intending to excavate human remains we obtained State permits (98-59; 99-58; 2000-44). Excavations were carried out in several sessions in 1998, 1999, 2000 and 2001. Materials and records processing and some analyses were done while excavations were under way and between excavation sessions. Additional analyses were accomplished between 2001 and 2003.

All outside analyses were funded by the Fergises with the exception of the animal bone analysis, which was done gratis under the direction of Dr. Jon Driver, Simon Frasier University, a sample of pottery analyzed as part of another project by Scott Ortman, Crow Canyon Archaeological Center and flotation analysis of a number of hearth fills by Patricia Rude under the supervision of Kristin Sobolik, University of Maine, Orono. Tree-ring samples were analyzed by the Tree-ring Lab, University of Arizona, Tucson.

Research Design Summary

The main interest in this site was what it represented in terms of the history of a specific location of prehistoric habitation. While the questions are basic, we focused on those of most interest to the sponsors. When was the site occupied? How long was it occupied? Was the occupation continuous or were there breaks when nobody lived at the site? How were the various habitations used? Were there differences through time? Who were the people who lived there? In addition, we hoped to be able to add significant new information about the relatively unknown early Pueblo II use of the Montezuma Valley. Did people move to this site at this time from a short distance, or is there evidence of an emigration from another area? How does this compare to other sites in the area? What were the experiences of the people who lived there? Can we construct any interesting stories about the people and their experiences?

Field and Lab Procedures

Field investigations were designed to identify and excavate complete architectural units and associated work areas and intramural middens. This resulted in the complete excavation of a roomblock, which because of superposition, turned out to be two roomblocks of different ages, and a number of pithouse, pitrooms, kivas, courtyards and midden areas. Recording and laboratory procedures met currently accepted standards in Southwestern archaeology, and were based mainly on the recording procedures set out in a Field manual by the Crow Canyon Archaeological Center (2009). Our sponsors provided a modern lab facility very close to the site (Figs. 1.7 and 1.8). All records and materials are curated by the site owners.

Figure 1.7. Field lab exterior view.

testing in all of the holes). Ultimately, we selected Roomblock F for excavation for three main reasons: 1) it seemed to be the main/central architectural feature of the site; 2) it looked like it was a single component area; and 3) some of the central area had been recently disturbed and there was evidence of burning in one of the rooms. As it happened, reasons one and three were born out, but we encountered two roomblocks of different

periods; one directly on top of the other, and there was a later ‘intrusive’ kiva suite. Never the less, four of the five pitstructures were burned, yielding good construction dates. Only one early room was burned and unfortunately no cutting dates were obtained from it.

Figure 1.8. Field lab interior view.

All excavations were under the direction of Dr. Bruce Bradley. We hired a labor crew of between 3 and 5 individuals, which changed from season to season, but two Julia and Rachelle Brown worked throughout. We also had various volunteers, including the site owners/sponsors who helped in many ways. Cindy Bradley supervised the lab and materials processing, and did most of the ceramic analysis.

Excavation of structures was done by tracing the tops of walls where possible and removing the fill within structures by ‘natural’ or cultural layers. All pitstructures were sectioned with approximately ½ excavated to floor so that a profile could be viewed and recorded. All artifacts and samples that we deemed were associated with use surfaces, including floors and fallen roofs, were mapped in place. This included all of the burned timbers from the collapsed burned roofs. Prior experience at the Duckfoot Site and Sand

Canyon Pueblo indicated the importance of being able to infer where a beam came from in a roof to allow arguments about how, when, and with what construction took place.

Excavations were not confined to within architecture. North of the roomblock we ran trenches along the outside of the walls to determine whether or not there was additional hidden architecture or deposits. While we did not encounter any features we did locate one unexpected midden area. We also systematically stripped the areas south of the rooms, both in search of pitstructures that had no surface indications and for buried courtyard surfaces and outdoor features. This turned out to be very productive and added significantly to our reconstructions of activity areas and site functions.

Upper fills of the rooms consisted mostly of collapsed structure rubble under which we encountered remnants of fallen ceilings, usually resting directly on room floors. Unburned beams were not preserved. Excavation of natural deposits was done by hand with shovel skimming (Figure 1.9) but all cultural deposits and surfaces were cleared by trowel. These cultural deposits were all screened through ¼ inch hardware cloth (Figure 1.10) and all artifacts, bones, etc. collected

Environmental samples were collected on a selective basis, based primarily of the inferred integrity of the context. Samples were retained of all hearth and roasting pit fills for possible flotation and other analyses. To date samples of twenty of these have been processed and analyzed (see below). Initially, all bulk small artifacts were washed in water (Figure 1.11), but after large amounts of time were expended on washing thousands of tiny sherds, our sponsors wanted to know why this was necessary. Ultimately, in contexts that were not deemed to be use surfaces, sherds below the size of a quarter were rinsed but not brushed. All larger sherds and all flakes were washed (except some that were held back for possible future residue analyses).

Figure 1.9. Hand excavations by hired field crew (Julia Brown front left Rachelle Brown front center).

Figure 1.10. Screening by volunteers.

Standard typological recording was done for pottery from floors and

other areas of special interest (except the small unbrushed pieces and unmodified stone flakes) and other artifacts. Animal bone identification and analyses were done by and a postgraduate student under the direction of Dr. Jonathan Driver.

Figure 1.11. Washing artifacts (Shannon Bradley, left and Wendy Bryan, right).

Tree-ring samples were collected (Figure 1.12) whenever a sample was deemed likely to return a date (approximately 25-30 rings present). Initially, all tree-ring samples (from Kiva G) were analyzed, but after this, only a 25% sample of the collected pieces were submitted for dating as a means of holding down the cost. However, had the dating results been confusing or difficult to interpret additional samples would have been submitted. This was not the case. All unanalyzed samples have been retained.

Systematic refitting of broken artifacts was not undertaken across the site, however, pieces in use context (floors, fallen roofs, courtyard surfaces, pits, were examined for refitting and many whole and partial vessels, manos, etc. were put back together (Figure 1.13). Reconstruction was not done other than when it was a matter of stabilization. While sponsorship continued for some time after the conclusion of excavations, basic processing and analyses,

financial support ended and this write up has mostly been done by the authors in their ‘spare time’. The termination of sponsorship was not from lack of interest but from an unexpected change in financial circumstances.

Figure 1.12. Tree-ring sample ready for mapping and collection.

Figure 1.13 Example of a refitted artifact.

Part 2 Excavations

Architecture

Our excavations at Stix and Leaves Pueblo uncovered a range of

architectural forms and construction methods, from simple house pits dug into the soil to fully-lined masonry structures. While there were three construction periods, all of the masonry was either single stone wide or lined an earthen pit. We uncovered a multi-room Late Pueblo I roomblock (dating based primarily on associated artifacts) made up of a sequence of contiguous room suites, plus one isolated room unit. This was associated with a plaza surface with firepits, roasting pits and other features. Curiously, there were no pitstructures from this time period. Although this roomblock was found under the later architecture I describe it first, to establish a chronological order.

Late Pueblo I

This roomblock consisted of five room suites, four contiguous and one separated (Figure 2.1). There were also associated firepits and roasting pits in

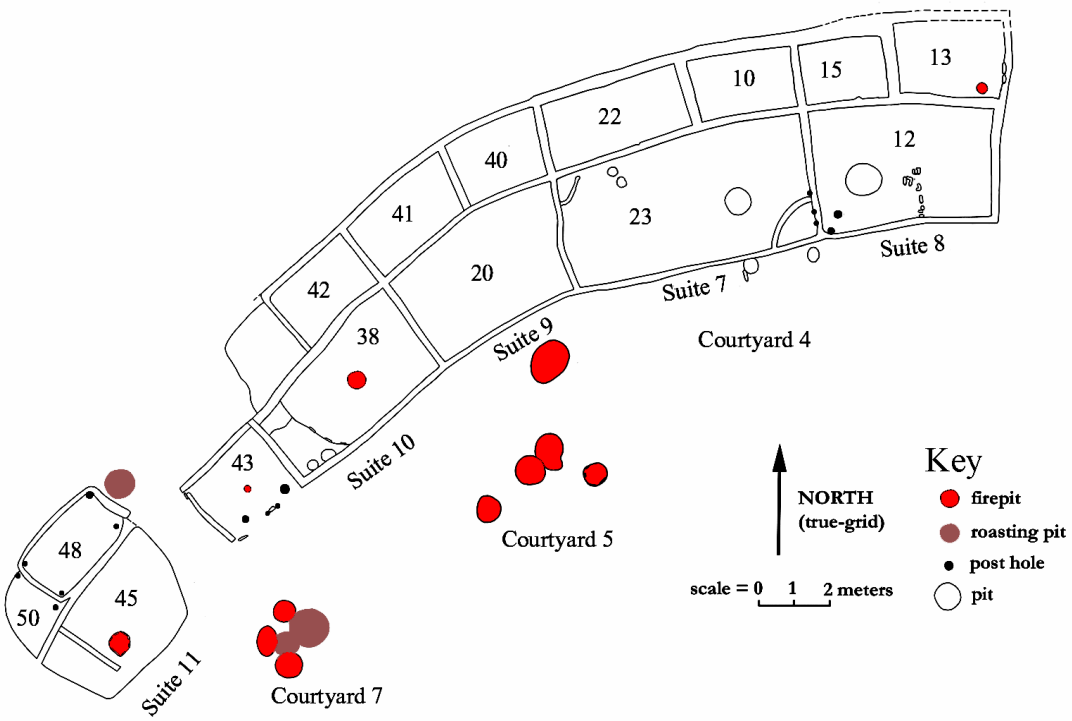


Figure 2.1. Late Pueblo I roomblock.

the courtyards to the south. The rooms form distinct suites with one front to two back rooms. The three eastern room suites did not have major thermal

features in any of the rooms, and only one small firepit that may have been a late addition in one back room. There were also none in the courtyards to the front of them. However, the most intriguing aspect of the Late Pueblo I occupation in the central area of Stix and Leaves Pueblo is the complete lack of any direct evidence of associated pithouses (see Lightfoot and Etzkorn 1993 for an example of a typical Late Pueblo I site layout.)

Back rooms were mostly masonry consisting of discontinuous coursing of unshaped stones set in a thick mud mortar (Figure 2.2). The back rooms were completely masonry enclosed, however, the front rooms either had patches of masonry or the walls (at least the bases) were simply mud or post and mud (Figure 2.3).

Figure 2.2. Typical Pueblo I masonry wall remnant.

Room Suite 7

I have chosen to start with this suite as it seems to be the central or core group of rooms based on size and internal features. The front room is also the one room in the Pueblo I roomblock that burned. Room Suite 7 (Figure 2.4) consists of three rooms with a very large front room and two smaller back rooms (Table 2.1). Construction method, layout, and associated

Figure 2.3 Portions of two Pueblo I front rooms showing wall posthole and mud rim wall bases, underlying Middle Pueblo II masonry walls.

artifacts indicate that this suite dates to late Pueblo I, probably between A.D. 850 and 875. The roof of the front room (23) was burned and 28 tree ring samples were collected, but unfortunately did not produce dates.

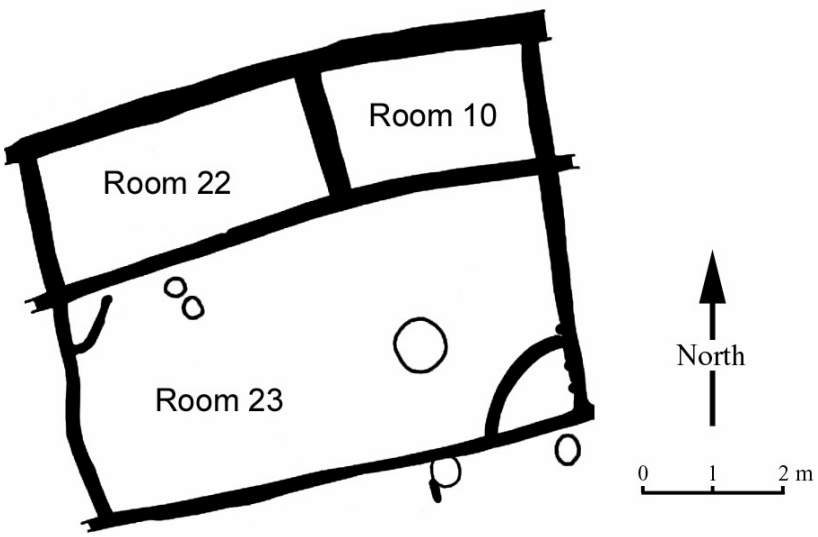


Figure 2.4. Room Suite 7

Table 2.1. Dimensions of rooms in Room Suite 7.

Room #	Position	Length	Width	Area m^2	% Area
23	Front	6.30	3.55	22.40	63.1
10	Back right	2.93	1.88	5.40	15.2
22	Back left	4.10	1.88	7.70	21.6
Total				35.50	99.9
Front to back rooms ratio				1.87:1	

All of the features in the front room (Table 2.2) were probably used for storage. There are two corner bins, a large pit (F-9), a series of postholes and two small pits. Curiously, there is no firepit. It is an outside possibility that one exists but that it lies directly under a Pueblo II wall, although there was no indication on either side and the wall was not very thick. There were no features in the back rooms. There were a number of artifacts on the floor of Room 23 (Figure 2.5) including a Moccasin Gray jar from the floor of Room 10 (Figure 2.6). The back rooms, 10 and 22, had no features.

Table 2.2. Features in the front room (23) of Room Suite 7.

Feature #	Feature Type
1	Corner bin (SE)
2	Posthole
3	Posthole
4	Posthole
5	Corner bin (NW)
6	Stone-lined 'pit'
7	Sealed pit (slab)
8	Posthole
9	Bell-shaped pit

Two features, a milling catchment basin and a storage pit (with a stone lid) were encountered on the courtyard surface immediately in front of this

room suite. We did not find an associated pithouse, but see the discussion of Kiva H.

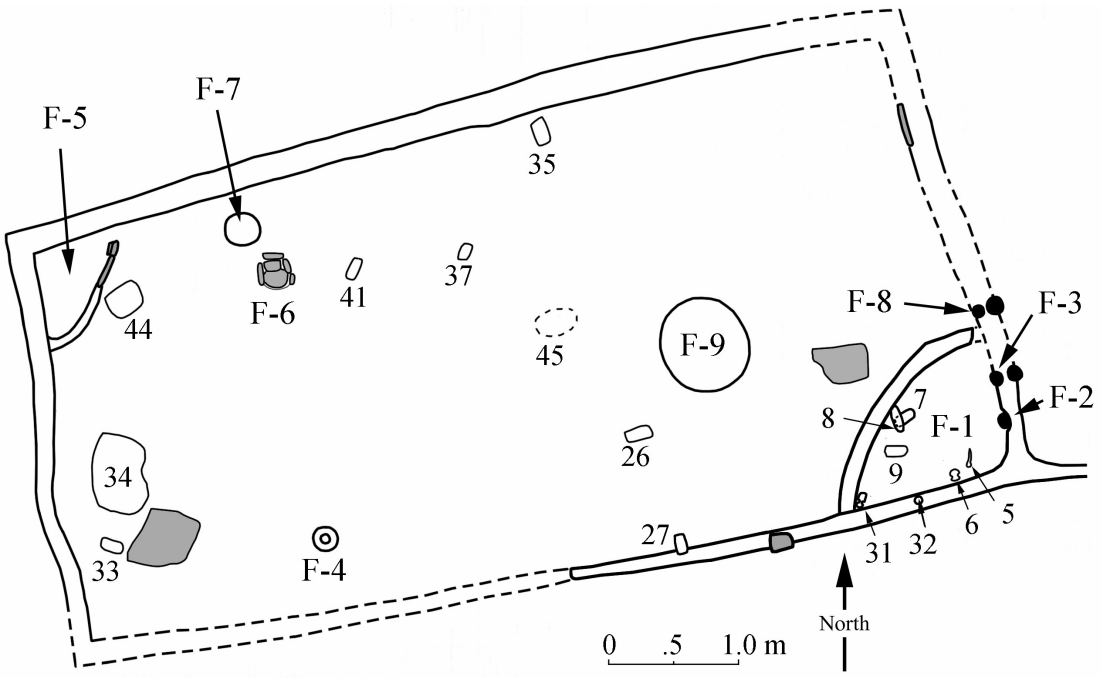


Figure 2.5. Front room of Room Suite 7 with features and floor artifacts.

Figure 2.6. Moccasin Gray jar from the floor of Room 10.

Room Suite 8

Room Suite 8 also consists of a large front room and two smaller back rooms (Figure 2.7) (Table 2.3). It is contiguous with Room Suite 7; to the east.

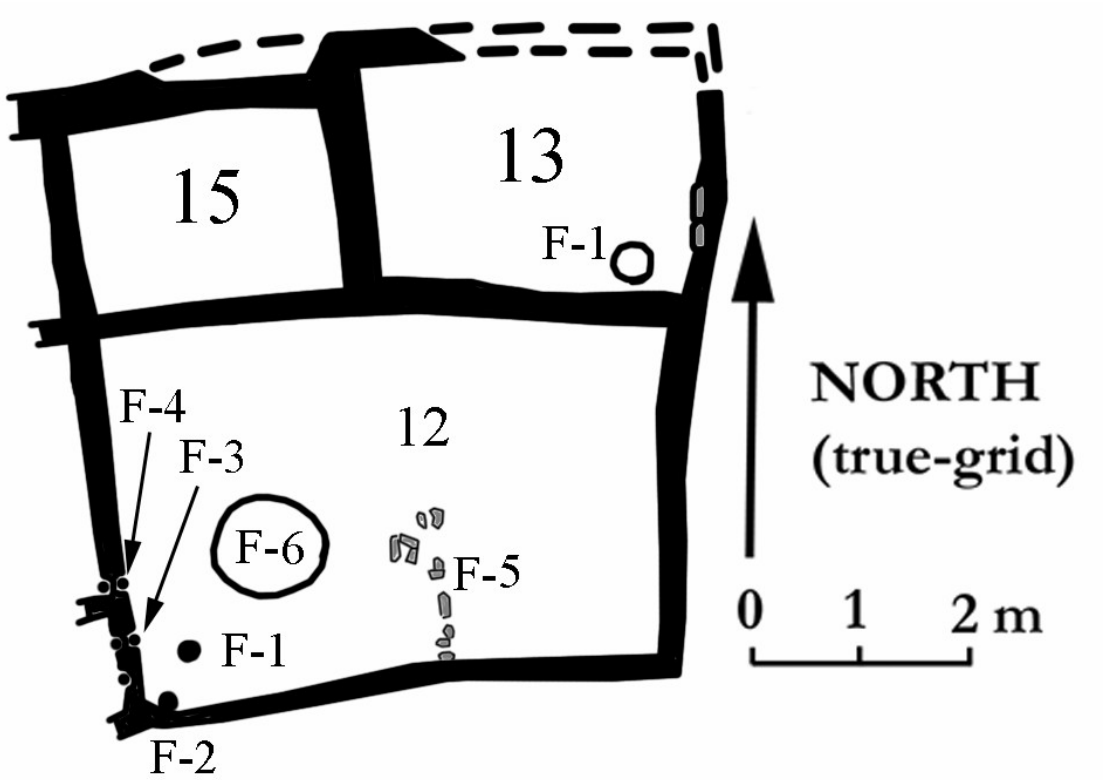


Figure 2.7 Room Suite 8.

Table 2.3. Room dimensions in Room Suite 8.

Room #	Position	Length	Width	Area m^2	% Area
12	Front	5.40	3.30	17.82	62.8
13	Back right	3.05	1.94	5.92	20.9
15	Back left	2.50	1.85	4.63	16.3
Total				28.37	100.0
Front to back rooms ratio				1.69:1	

Features in the front room (12) included four postholes, a large storage pit, and a line of small vertical slab "boxes" (Table 2.4). These boxes may have been post supports but there were no postholes inside them. Perhaps stabilizing posts were added to support a main beam that was beginning to sag. Again, it is curious that there was no firepit in this room. The only feature in one of the back rooms was a small firepit. Although this firepit evidenced a fair amount of use, it was too small to serve as a major

Table 2.4. Features in the front room (12) of Room Suite 8.

Feature #	Feature Type
1	Posthole
2	Posthole
3	Posthole
4	Posthole
5	Post supports?
6	Large pit

cooking feature. A number of artifacts were encountered on the floor of Room 15 (Figure 2.8) including a Chapin Gray jar (Figure 2.9).

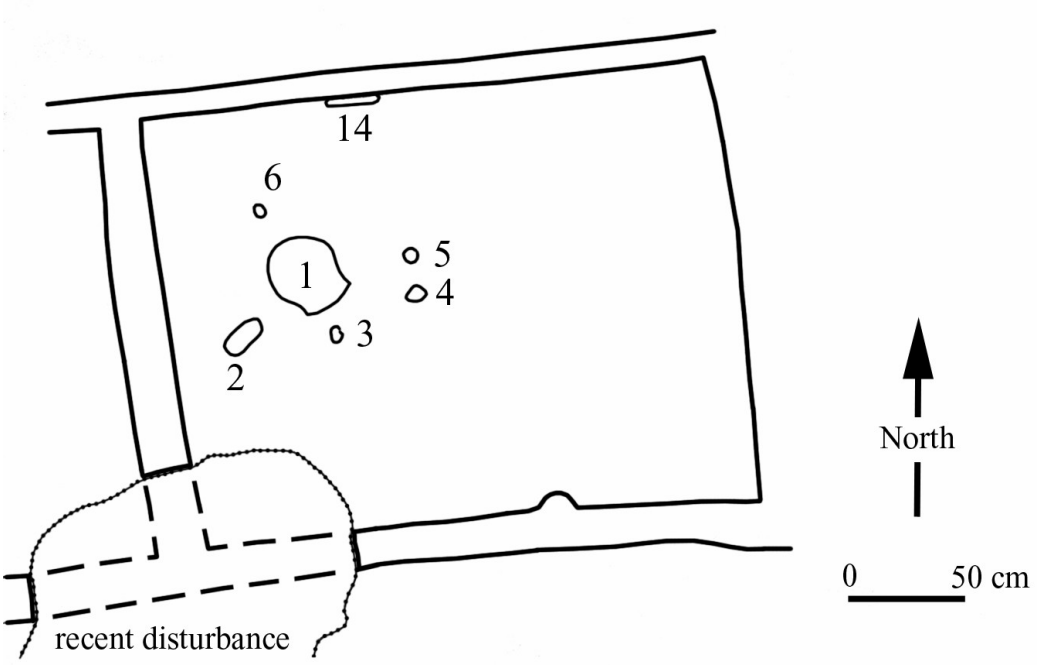


Figure 2.8. Artifacts on the floor of back Room 15.

Room Suite 9

This suite consisted of three rooms; one front and two back (Figure 2.10). Typically, the front room is the largest (Table 2.5). There were no features in any of the rooms. Curiously, a single tree-ring sample from Room 41 provided a cutting date of A.D. 972, placing it in the final use of the Early Pueblo II roomblock built on top of the Pueblo I roomblock. There was no

indication that this sample came from any particular construction element, of either time period,

Figure 2.9. Chapin Gray jar from the floor of back Room 15.

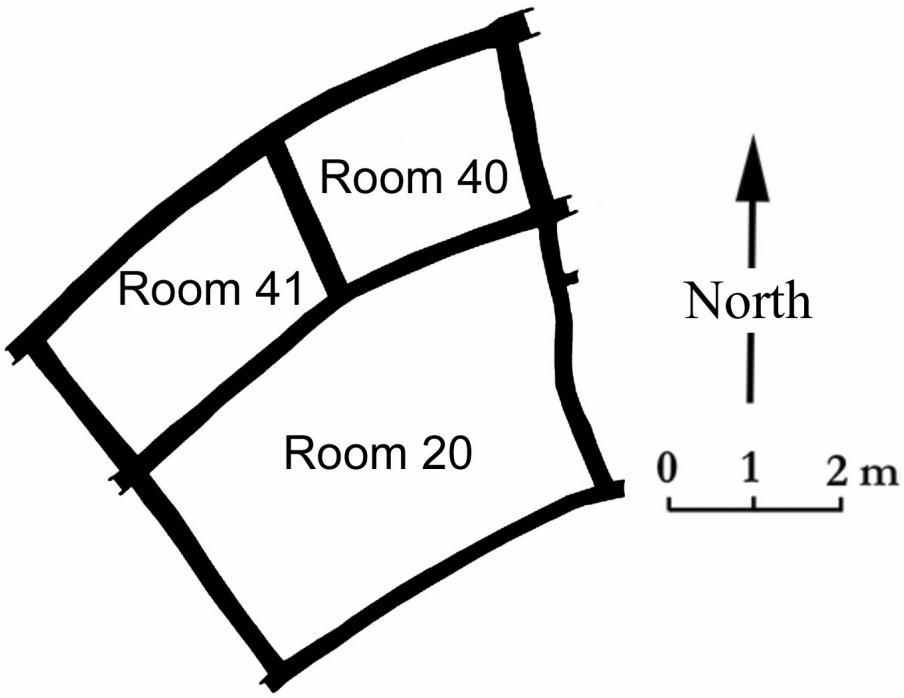


Figure 2.10. Room Suite 9.

nor was it clearly associated with Room 41. It was simply a large piece of charcoal in the fill. It is most likely that it was intruded into the fill of this room

Table 2.5. Dimensions of rooms in Room Suite 9.

Room #	Position	Length	Width	Area m^2	% Area
20	Front	4.80	3.12	14.98	59.1
40	Back right	2.50	1.84	4.60	18.2
41	Back left	3.26	1.77	5.77	22.8
Total				25.35	
Front to back rooms ratio				2.44:1	

during the use of the overlying Room 30 (which yielded dates in the mid-900s- see below).

Although this suite is a western continuation of the roomblock, and shares walls with Room Suite 7, the total lack of floor features and other signs of use, make them look like they were built and abandoned almost immediately. This initial interpretation is, however, not supported either by the addition of a room suite to the west, or the presence of a cluster of firepits in the courtyard to the south (Figure 2.11). A modified interpretation is that the rooms in Suite 9 were not used as a normal habitation suite and may have served a special, albeit minimal, function that did not include food processing.

The cluster of firepits in the courtyard is a significant indication that cooking was taking place there. It is unusual to see such a concentration. It is also likely that only one or two were used at one time.

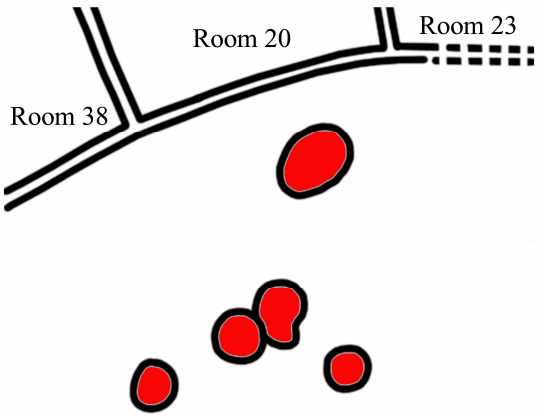


Figure 2.11. Firepits adjacent to Room Suite 9, associated with Pueblo I use.

Room Suite 10

Adjacent and to the southwest of Room Suite 9 is another set of three rooms, one front (Room 38) and two back (Rooms 41 and 42). Rooms 38 and 41 have fully masonry walls on all sides, but Room 42 is bounded on the northwest and southwest by native earth walls that are simply prehistoric excavation edges (Figure 2.12). A careful search did not reveal any evidence of posts in this room. Room dimensions are shown in Table 2.6.

Table 2.6. Original Room Suite 10 (without Room 43).

Room #	Position	Length	Width	Area m^2	% Area
38	Front right	4.96	2.58	12.80	61.0
41	Back right	2.65	1.65	4.37	20.8
42	Back left	1.95	1.95	3.80	18.1
Total				20.97	99.9
Front to back rooms ratio				1.6:1	

A small three-walled room (43) was added on to the outside of the southwest wall of the front room (38) sometime during the Late Pueblo I occupation (Table 2.7). This small room has low masonry walls on the northwest and southwest sides, but the southeast side was probably a jacal wall supported by four posts. Two of the posts probably served as the sides of a narrow doorway. A small shallow firepit was located in the center of the room.

The original front room (38) has a central fire hearth and a raised 'platform area at the southwestern end. This raised area contained a number of artifacts on the surface (Figure 2.13a) and there was another prepared surface below it also with some artifacts (Figure 2.13b). There was a cluster of firepits and roasting pits in the courtyard south of Room Suite 10 that were probably associated (Figure 2.14). Based on overlaps, these features look to have been sequential in use rather than coeval. The two roasting pits came

first followed by the firepits. Their location could also be interpreted as possibly associated with the isolated Room Suite 11 discussed below.

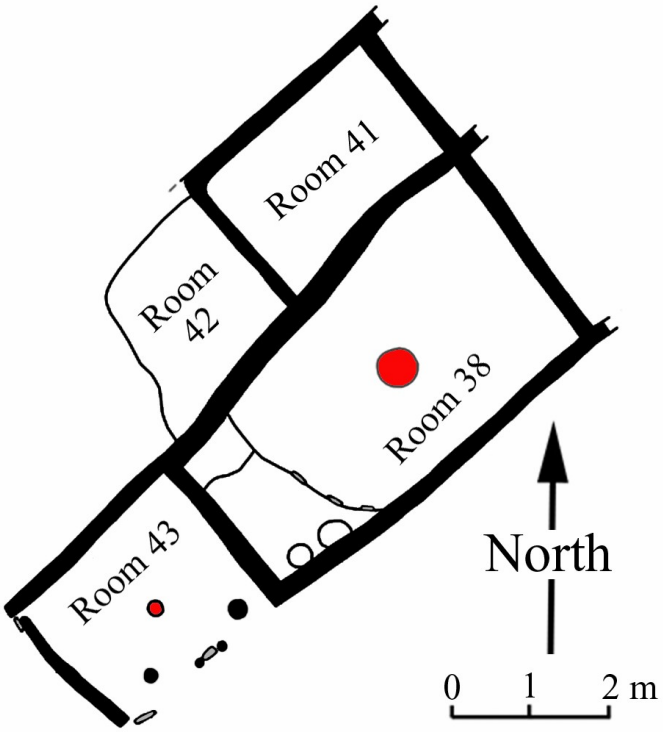


Figure 2.12. Room Suite 10.

Table 2.7 Room Suite 10.

Room #	Position	Length	Width	Area m^2	% Area
38	Front right	4.96	2.58	12.80	50.0
43	Front left	2.45	1.88	4.61	18.0
41	Back right	2.65	1.65	4.37	17.1
42	Back left	1.95	1.95	3.80	14.9
Total				25.58	100.0
Front to back rooms ratio				2.1:1	

Room Suite 11

This small suite of rooms is not like the other Late Pueblo I suites in that it is unattached and the room walls were a combination of those formed by excavation into the native soil, and stubs of jacal (Figure 2.15). Once again there is one front room (45) and two back rooms (48 and 50), but they are

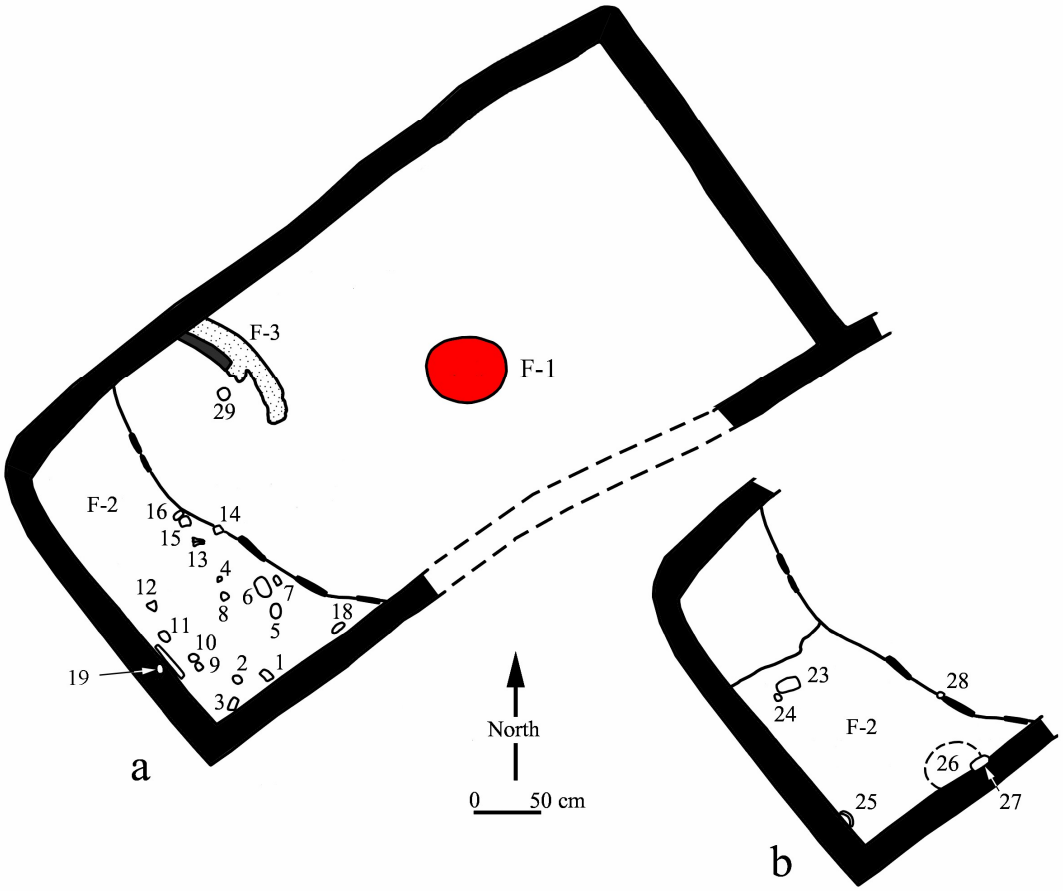


Figure 2.13. Room 38. a) artifacts on the upper surface of the 'platform'; b) artifacts on the lower surface.

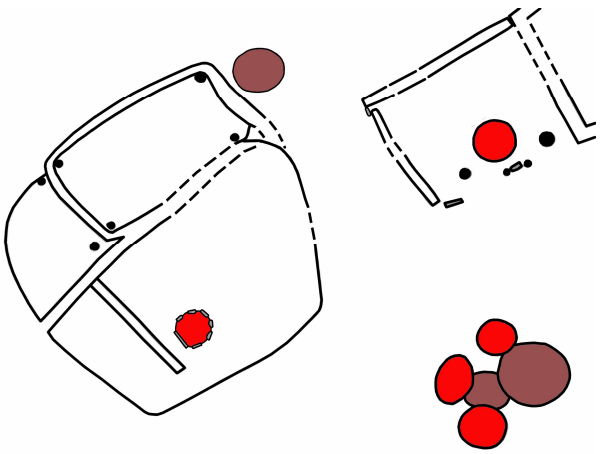


Figure 2.14. Courtyard 7 features and Room Suite 11.

smaller than any of the other masonry Late Pueblo I rooms (Table 2.8). There are four corner interior postholes in the jacal-walled back room (48), with each

posthole having a flat stone in the bottom. There are two similar postholes on the north side of the small back room (50), but no corresponding postholes at the other end. The jacal base of the back room (48) was composed of loam mud for the most part, but in several areas, either finely powdered caliche mud or plaster of Paris was used.

Features in the front room (45) are restricted to a stone-lined central hearth and a low masonry subdividing wall, probably a late addition. Outside and to the northeast is a large roasting pit that looks like it was associated with the use of this suite. Pithouse 1 lies just to the southwest and in form looks like it could have been Late Pueblo I, but the pottery on the floor indicates that at least its last occupation was during the Early Pueblo II period. Numerous tree-ring dates from its burned roof verify its later construction.

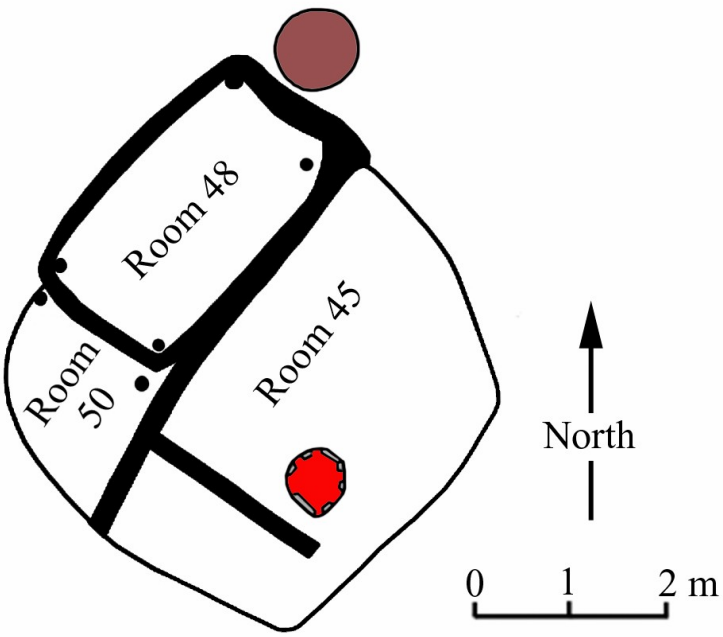


Figure 2.15. Room Suite 11.

The south end of the front room (45) behind the dividing wall (Figure 2.16 and Table 2.9) and the back right room (48) (Figure 2.17 and Table 2.10) had clusters of artifacts on their floors.

Table 2.8. Room dimensions of Room Suite 11.

Room #	Position	Length	Width	Area m^2	% Area
45	Front	4.40	2.83	12.45	64.6
48	Back right	2.74	1.65	4.52	23.5
50	Back left	1.45	1.58	2.29	11.9
Total				19.26	100.0
Front to back rooms ratio				2.8:1	

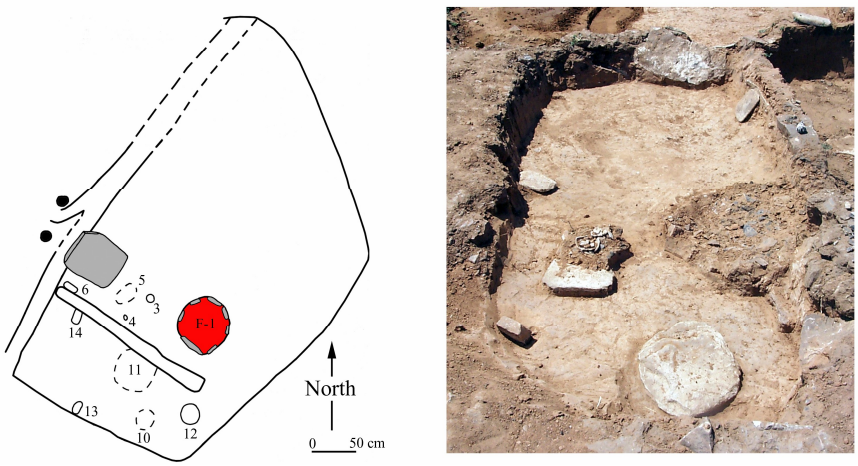


Figure 2.16. Artifacts on the floor of Room 45.

Table 2.9. Artifacts from the floor of Room 45.

PD	SP	Item
425	3	vessel
425	4	vessel
425	5	sherds
425	6	mano
424	10	sherds
424	11	sherds
425	12	pot lid?
425	13	mano
425	14	mano

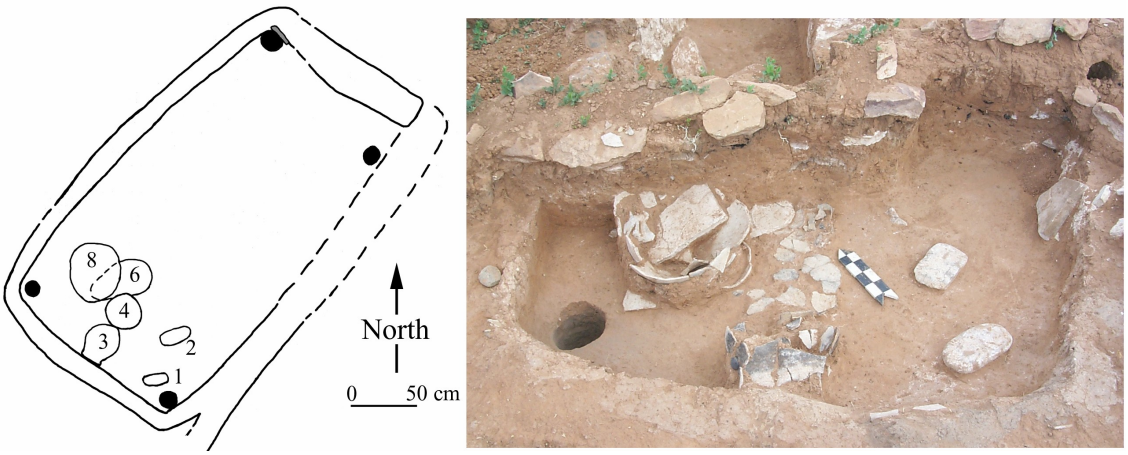


Figure 2.17. Artifacts on the floor of Room 48.

Table 2.10. Artifacts from the floor of Room 48.

PD	SP	Item
448	1	mano
448	2	mano
448	4	sherds
448	6	sherd cluster
448	8	vessel

Architectural Enigma

As indicated above, there is no direct evidence that there was any sort of pitstructure associated with this Pueblo I roomblock, however, there is circumstantial evidence for this. Excavations to the south of Roomblock H, including the underlying Pueblo I roomblock, encountered a large pitstructure exactly where one would be expected for either the Late Pueblo I or Early Pueblo II roomblocks (Figure 2.18). This large, deep pitstructure was designated Kiva H. I will not describe it in detail here as I make the argument that it was associated with the Early Pueblo II construction in the mid-900s, yet I would be remiss if I did not include some discussion at this point. Except for the location, general form and the fact that Kiva H was filled with ashy Early Pueblo II midden deposits (I make a case that these deposits were

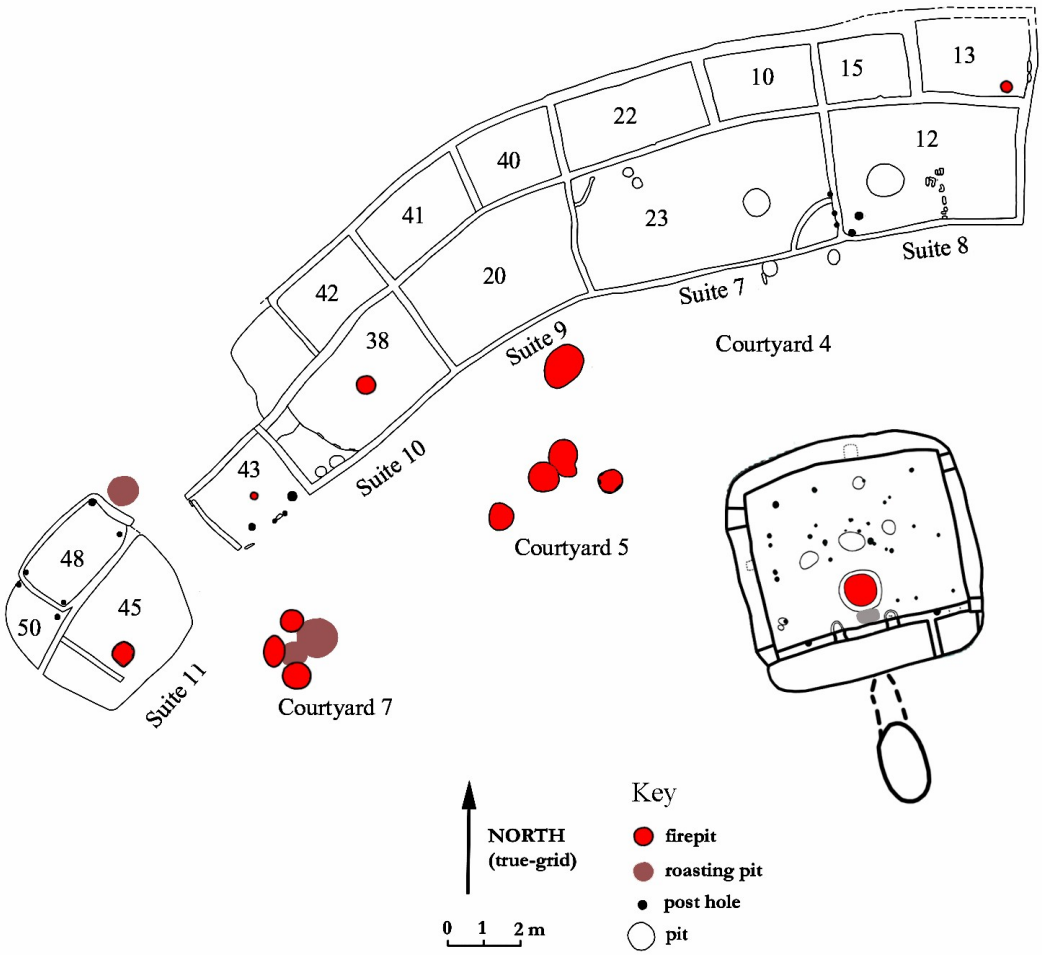


Figure 2.18. The Pueblo I roomblock with Kiva H.

related to ritual feasting) there is nothing else to indicate that it was constructed during the 9th Century. If it was, it was a precursor of things to come in that it is fully masonry-lined below the bench, partly masonry-lined above the bench, has four masonry pilasters, a masonry north niche and an internally roofed corner room. These are not features seen in Late Pueblo I pitstructures. On the other hand, it is sub-rectangular, has four corner postholes and a southern dividing wall with a deflector (for a Late Pueblo I pithouse with these features see Lightfoot and Etzkorn (1993:30-40). These are features not usually associated with Pueblo II. So what gives?

An obvious option is that it was a large Pueblo I pitstructure that was later converted into a large Pueblo II rectangular kiva. This makes the most

sense and seems to account for this structure. However, there was no *direct evidence,* of such a conversion. All aspects of the structure from the benches to the dividing wall and pilasters look to have been planned with the original construction. There was a single prepared floor that included a large number of features, indicating intensive use (mainly for ritual activities) with no evidence of replastering or renovation. The forms of the masonry benches, especially as related to the pilasters *look and feel* to have been planned with the rest of the structure. The internally roofed corner room was clearly constructed with the southern dividing wall, which exhibits no evidence of reconstruction. There were no specifically Pueblo I artifacts associated with this structure.

The bottom line is that if this large pitstructure was originally built Late Pueblo I times, as we found it, there are many features that were 'ahead of their time'. Yet, it makes sense in that it would be a logical structure as part of the Late Pueblo I architectural unit. It even has the same orientation as the roomblock. But, there is no *direct* evidence that it was Pueblo I.

If Kiva H was originally built in the early to mid-940s, it is also out of place in that it has the form of an earlier pitstructure, but both Early Pueblo II pithouses and one of the kivas are also sub-rectangular. Also, it was basically filled with early Pueblo II midden that must have accumulated over a significant time span.

The most parsimonious explanation of this structure is that it indeed was originally constructed in Late Pueblo I with the roomblock and was converted early in the Early Pueblo II occupation; yet abandoned soon there after to become the repository for a large volume of what I interpret as ritual midden, probably produced during large feasting events.

If one accepts this interpretation, it allows a new interpretation of the Pueblo I roomblock that makes more sense in relation to what we have come

to expect from such sites. Never the less, this expression of Pueblo I architecture and use does not seem to represent a 'typical' habitation unit, at least not in its entirety. All of the domestic activities (in terms of thermal features in rooms and the courtyards) took place in the southwestern section (Room Suites 9-11 and Courtyards 5 and 7). If one removes these from the map, what we see is two formal room suites with a large pitstructure centred on them to the south, with no evidence of food processing or preparation (Figure 2.19).

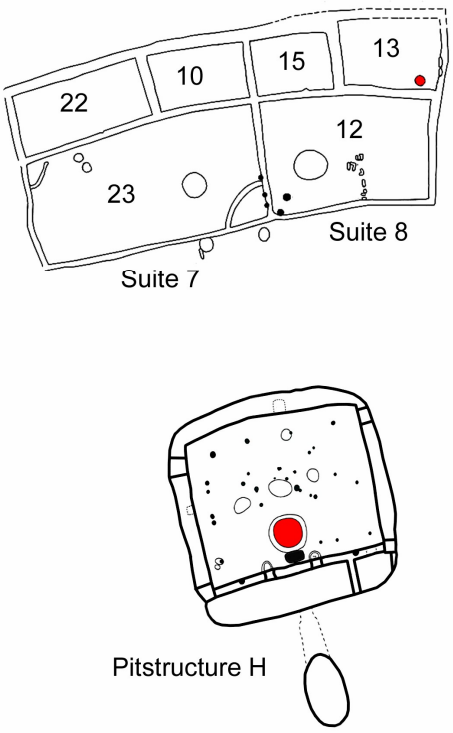


Figure 2.19. Room Suites 7 and 8 with Pitstructure H.

Pueblo I Dating

Tree-ring

Unfortunately there are no good tree-ring cutting dates from any of the Pueblo I structures. Only one front room had partly burned and none of the samples submitted provided a date. There was also not an associated

pitstructure with a burned roof. It is unclear whether or not Kiva H was originally built with the Pueblo I roomblock, but in any case it did not produce any datable samples.

Architecture

The architecture conforms very well to Late Pueblo I with the cookie-cutter room suites of one front to two back rooms. The mud and stone masonry in the back rooms and combination of mud, stone and jacal in the front rooms is also typical of Late Pueblo I (Lightfoot and Etzkorn 1993). The lack of a clearly associated pitstructure confuses the issue somewhat but even without this, the layout and room forms and sizes conform well to a late 9th century construction.

Projectile Points

Stix and Leaves produced large numbers of projectile points that conform well to the generally expected styles with barbed and tanged arrow points (Figure 2.20) being the most diagnostic of Pueblo I (Hayes 1975:144-145; Figures 178a and 179b, c, e-f; Lightfoot and Etzkorn 1993:173, Figure 4.11). This particular form of arrow point seems to be restricted to Pueblo I and possibly even Late Pueblo I. The problem of course is that Pueblo people were very good at collecting old points for their use, primarily not as projectiles. This means that once a form came into use, we can expect to find examples in any later contexts; and we do. Archaic dart points and Basketmaker dart and arrow points are commonly found in Pueblo I deposits (see Lightfoot and Etzkorn 1993:172, Figure 4.9 top row).

What has not been noticed up until now is that there is also a type of small dart point that appears in Pueblo I contexts, but seems to be lacking in

earlier assemblages. Usually these have been identified as Archaic (Lightfoot and Etzkorn 1993: 172 Figure 4.9 second row), but they have not been found in clear Archaic associations. I suggest that these are actually Pueblo I dart points and that both the atlatl and bow and arrow were in use at this time.

Figure 2.20. Pueblo I arrow points.

Several of these dart points were recovered from Sticks and Leaves Pueblo (Figure 2.21) and the Duckfoot Site in use contexts; if these were pottery, or almost any other artifact form, we would consider them to be Pueblo I. There is a specific section in this report devoted to a discussion of projectile points.

Figure 2.21. Pueblo I dart points.

Pottery

A more traditional approach to dating ancestral deposits is pottery associations. This is a well established method and need not be discussed further here. The basic assumptions are that pottery styles changed through time, which has been dated and, different styles developed at different times and the basic proportions of styles in an assemblage allows a fairly accurate assessment of when the assemblage was produced. Accurate here generally means within a 50 year time span, more or less. This should allow us to determine when within Pueblo I the Stix and Leaves structures were built and used.

Relatively small numbers (n= 111) of Pueblo I sherds (I include Chapin Gray, Moccasin Gray, Bluff B/r and Piedra B/w) were recovered, and only 21 came from clear use contexts (Table 2.11), however, several restorable vessels were encountered on Pueblo I room floors. These included both Chapin Gray (see Figure 2.9) and Moccasin Gray (see Figure 2.6). Other vessels included additional Chapin Gray and Moccasin Gray, but these have not been restored. No restorable vessels of Mancos Gray were encountered on Pueblo I structure floors. By themselves, these Chapin and Moccasin Gray vessels could indicate a date anywhere from the early through the late 9th century, as both were long-lived styles. Painted pottery is not much help either at Stix and Leaves. Very few sherds were found in Pueblo I use context and those that were are not particularly diagnostic. Never the less, Piedra B/w and Bluff B/r were the most common types. Most Pueblo I sherds (n= 90; 81%) were recovered from mixed contexts. Only 21 (19%) came from secure floor contact, and 10 (48%) of these were from a single room (10). This is not a lot of pottery evidence from which to estimate a date.

2.11. Pueblo I pottery types. (These counts do not include sherds from 2 restored vessels).

PI pottery Totals				
Structure	**Piedra B/W**	**Abajo R/O**	**Moccasin Gray**	**Bluff B/r**
Courtyard 7 St 2	0	0	1	0
Arb 1 Strat 2	3	8	1	4
Kiva H	0	0	0	2
Pithouse 1	0	0	0	1
Pithouse 2, Strat 5	1	0	0	11
Room 02	0	0	0	1
Room 09	2	0	0	0
Room 10	10	0	0	0
Room 16	0	0	1	2
Room 24, St 2	0	0	0	3
Room 25	0	0	0	9
Room 26	0	9	1	0
Room 27, St 3	0	0	1	0
Room 28	0	0	2	1
Room 31 Surf 2	1	0	2	1
Room 32 Strat 2	0	0	1	0
Room 33 Surf 2	0	0	0	1
Room 34	1	0	0	0
Room 35	0	0	0	1
Room 38 F2 Surf 1	0	0	2	4
Room 39 Surf 1	1	0	0	0
Room 39 Surf 2	0	0	0	2
Room 43	1	0	0	0
Courtyard 2	1	0	0	5
Courtyard 3 St 2	1	0	0	5
Courtyard 5 St 2	2	0	1	0
Courtyard 6 St 3	0	0	0	1
Courtyard 6 St 2	4	0	0	9
Totals	15	17	9	59

Other Artifacts

A range of other artefacts were recovered from sealed Pueblo I contexts, but none of them are types that are diagnostic of Pueblo I. Metates

were of the open-end trough style, which carried on into Pueblo II times. None of the stone axes recovered from the site came from unquestionable Pueblo I contexts, but all were of the side notched variety in any case. A number of bone tools were also recovered but these too are not particularly diagnostic.

Conclusions

Without tree-ring dates from good contexts the Pueblo I occupation in Roomblock F has not been directly dated. However, taking architecture, projectile points and pottery into account, I estimate that the Pueblo I roomblock was built and used somewhere between A.D. 850 and 880.

Early Pueblo II Architecture

The majority of architecture excavated at Stix and Leaves Pueblo can be securely dated from the middle to late tenth century A.D. This consists of a curved roomblock (F) with a line of eight front rooms, 13 back rooms; and an additional room attached to the front; two small pit rooms; courtyard features; two pithouses and three kivas (Figure 2.22).

Room Construction

Two small pitrooms, Rooms 39 and 44, (Figure 2.23) were simple excavations down into the ground about 30 cm and were unlined. The south wall of Pueblo I Room 38 is cut by Pitroom 39. Whether or not this was planned is unclear. Pitroom 44 was built into the northeast corner of Pueblo I Pitroom 45 using the same earthen wall on the east. It is difficult to imaging how this could have been a coincidence and may indicate that Pitroom 44 fell in time between the end of the Pueblo I occupation and the first Pueblo II construction. That it was built and abandoned before A.D. 947 is clear

because the southwest end of Roomblock F is superimposed on it.

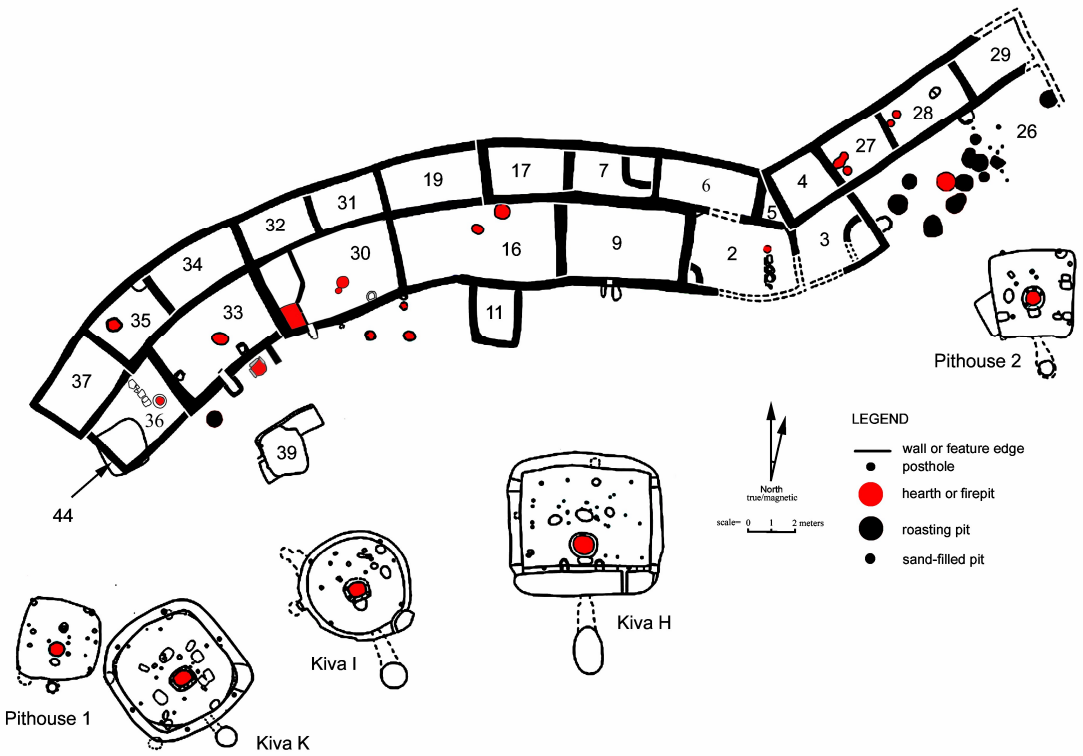


Figure 2.22. Early Pueblo II architecture (construction A.D. 947- 974). Kiva H may have been built in the Late Pueblo I but retained no direct evidence.

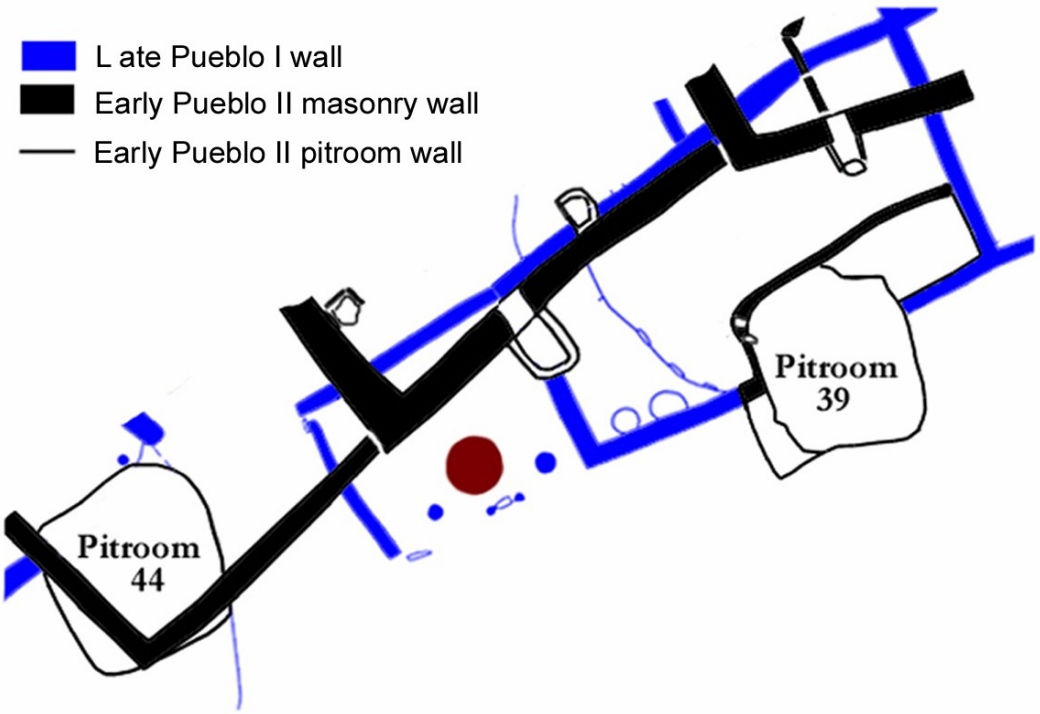


Figure 2.23. Early PII pitrooms and their relationships with earlier and later construction.

Ground surface preparation

The remaining rooms were constructed directly on a cleared land surface, much of which would have been rubble from the earlier Pueblo I structures. The consistent level at which the Pueblo II room floors were located and the immediately underlying Pueblo I wall stubs indicates that a level surface was prepared for the early Pueblo II roomblock (F).

Masonry

Room walls were constructed with in the same one stone width style as were the back rooms in the Pueblo I roomblock. Mainly unshaped, but selected stones were laid in a thick mud mortar, which was stabilized with chunks of sandstone chinking. Coursing was more evident than in the earlier rooms and the proportion of mud mortar was less (Figure 2.24). Stone sizes

Figure 2.24. Early Pueblo II masonry.

were highly variable as to length and thickness but most were the width of the

wall thickness. Occasionally, where a stone was narrower than the desired wall, a veneer would be added to make up the thickness (Figure 2.25). Running joints are common and occasionally there would be a stone set vertically in a wall. It is likely that much of the stone was obtained from the

Figure 2.25. Early Pueblo II wall top showing 'veneer' on both faces to obtain desired thickness.

earlier structure and it all looks to be local. Occasionally a ground stone artifact such as a metate fragment, most likely of Pueblo I origin, was incorporated in a wall.

Many walls were tied at the corners while others abutted each other. While it is clear that tied walls were built at the same time, abutting did not necessarily indicate sequential construction. For example in Room Suite 5,

some abutments clearly indicate a later addition of a room (only sequentially later not necessarily as a different building episode) (Figure 2.26a). While others (Figure 2.26b) were built with the rest of the walls but still abutted at one juncture. This situation makes it difficult to reconstruct the exact

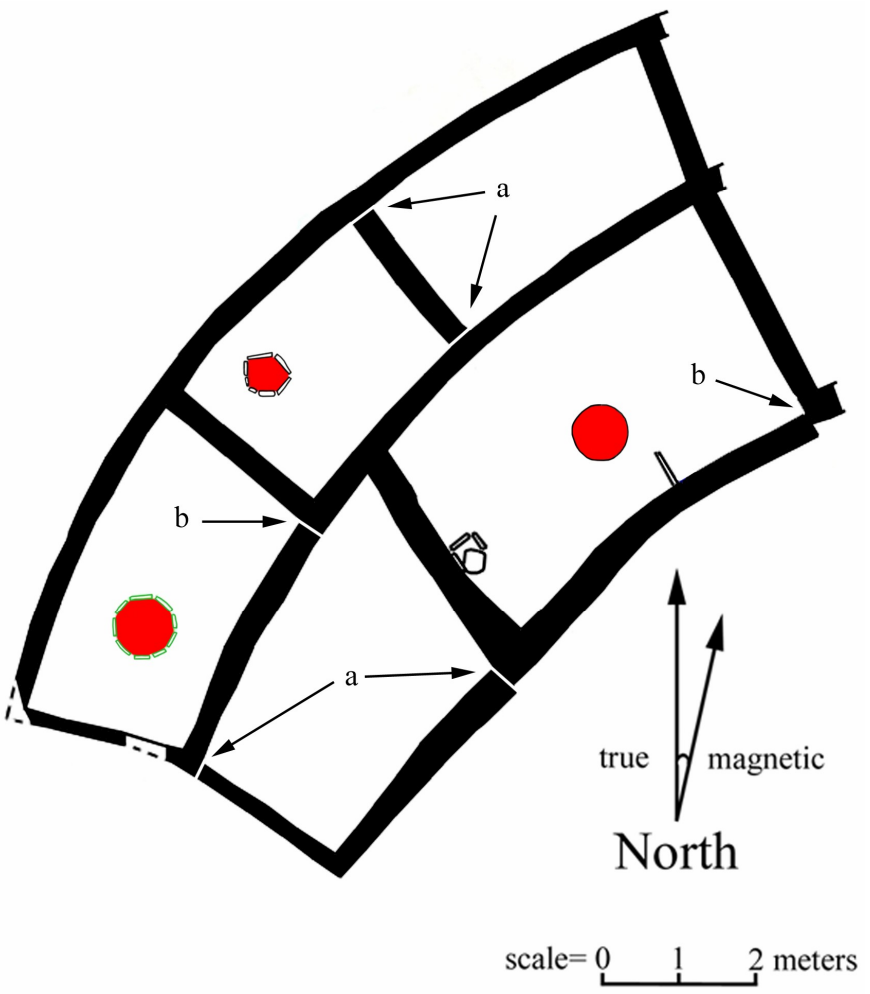


Figure 2.26. Early Pueblo II wall ties and abutments: a) abutment during a single construction event; b) added walls.

chronology of construction, but it seems that all of the western curved section of Roomblock F was built in the same major episode. Only the eastern room suite that has a different orientation was added at a later (perhaps not much later) time. This means that rather than growing by accretion, it is likely that the roomblock was planned and built in two episodes.

Floor preparation

Room floors were for the most part level and somewhat below the bottoms of the walls (Figure 2.27). Yet, the underlying Pueblo I wall remnants did not show until subfloor excavations were done. None of the floors was prepared with a hard mud coating (like in the pitstructures) but were clean silt loam. It is possible that they had been hard packed surfaces when in use and then degraded to soft silt loam through weathering after room collapse.

Figure 2.27. Middle Pueblo II wall showing the base of the wall (white line) above the final floor surface.

Ceilings and Roofs

Little evidence of how the ceilings and roofs of the rooms were built was encountered in the excavations. Most rooms had a layer of organic silty deposit directly above the floor and under the mass of wall fall. These probably were the remnants of collapsed mud-covered ceilings/roofs. In only a few rooms were there any significant numbers of artifacts in these roof fall deposits.

Features

Many of the rooms contained features, in the walls (doorways and vents) added to the interior (corner bins, platforms) or cut into the floors (firepits, hearths, pits, postholes, milling bins, etc.). Some of these features were built with the room and some were added during its use. Rather than describe these various features by type here, I will do detailed descriptions of selected features when the rooms they are in are being discussed. A feature list will be presented in a table for each structure described.

Pithouses and Kivas

There were two small pitrooms, two pithouses and two kivas constructed in association with Roomblock F in the 10th century. Additionally, the large central pitstructure designated Kiva H may also have been constructed at this time, or it may have been a Late Pueblo I pitstructure that was thoroughly remodeled. In either case, it seems to have been in use in Early Pueblo II; initially as a structure and then as a receptacle for midden deposits.

The pitrooms were small shallow excavations that were probably enclosed and covered with organic walls and roof. Neither included postholes and the means of wall and roof support is unknown. Their preservation was good enough to indicate that the excavated pits were protected from erosion before they were filled in.

The two pithouses (1 and 2) were relatively simple constructions with native earthen walls. They were excavated down and well into a calcium carbonate unit that underlies the topsoil. Each had a floor-level vent system in the center of the south wall and a roof that was supported by four interior

posts. The floors had been well plastered and I suspect that the walls also originally were coated with a thin layer of mud plaster. Both had central floor hearths and entry must have been through a roof hatchway. There were no benches or wall features other than the ventilator.

The two small kivas (I and K) were much more elaborate structures with multiple wall and floor features. They were excavated into the subsoil the same as the pithouses but they were dug so that the interior was surrounded by an earthen banquette. Below the banquette the walls were partly and selectively veneered with sandstone masonry. Support posts held cribbed-beam or flat roofs that were sealed with mud daub and covered with dirt. Entry into the kivas was through a central roof hatchway.

Each of these structures had its own construction and use history, which are described below. The final structure is a large subrectangular kiva (H) that is unique in its design. It closely resembles a Late Pueblo I pithouse in form but contained a fully masonry-lined wall below a banquette, a masonry southern dividing wall, an interior and independently roofed masonry corner room and four masonry pilasters as well as 4 support posts. It would have had a flat roof. This is described in detail below.

I have chosen to distinguish between pithouses and kivas based primarily on the complexity of the structures, the presence or absence of masonry lining and banquettes. There is also excellent tree-ring evidence that each pithouse preceded the construction of a small kiva by four to five years, indicating a staged construction of dwelling units.

The architecture classifies nicely into kiva units and the following descriptions and discussions will be presented in construction order (based on

wall abutments, room suite configurations and locations and tree-ring dating of associated pithouses and kivas. A kiva unit consists of a kiva, a pithouse, a suite of rooms and the activity areas associated with them. The kiva designation is used to identify a kiva suite.

Early Pueblo II Dating

The burned roofs of Pithouses 1 and 2 and Kivas I and K yielded large numbers of high quality tree-ring samples (Figure 2.28) , allowing confident interpretations not only of construction dates but also of the nature of construction planning and sequencing.

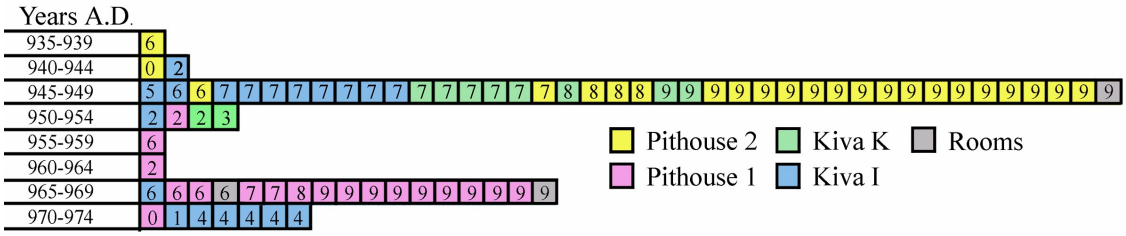


Figure 2.28. Stem and leaf diagram of Early Pueblo II cutting dates from Stix and Leaves Pueblo.

The distribution of cutting dates indicates that the first construction was of Pithouse 2 in A.D. 949. There is some evidence of stockpiling for three years from A.D. 946 to 948. There is also the use of some old wood from four and eight years earlier. The next structure to be built was Kiva K in A.D. 953, four years after Pithouse 2. Most of the beams date within the range of the Pithouse 2 dates and they may have been part of the original stockpile, with only a couple of new beams being added. I suggest that this shows a staged and pre-planned building sequence with Pithouse 2 built first, and perhaps lived in while preparations were being made to build Kiva K, and or the surrounding land was being cleared for fields, or both. Tree-ring dates from Rooms 2 and 30 indicate that Roomblock F was also constructed at this time.

The next structure to be built was Pithouse 1 In A.D. 970 with beams stockpiled for the previous four years with three coming from a few years earlier. This conforms to the pattern we see in the previous pithouse. We also see construction of Kiva I exactly four years later in A.D. 974. Curiously, while there are a few beams that may have been stockpiled in the preceding decade, the majority of earlier beams came from the same time period as Pithouse 2 and Kiva K; specifically in the mid to late 940s. It could be that there was either still a stockpile to select from or, more likely, some beams were salvaged from the earlier structures. Yet this is also difficult to accept because both of the earlier structures were also burned and seem to have had intact or at least mostly intact roofs when they burned. Perhaps they were salvaged from the roofs of rooms in Roomblock F. Another possibility is that there was a forest fire in 947 that left a lot of dead standing timber that was still available 37 years later. This seems unlikely to me. So, it is not clear where these earlier timbers came from. Never the less, the order of construction of the pitstructures is fairly clear and establishes an interesting sequence with a pithouse built four years prior to the associated kiva.

Kiva Suites

Kiva Suite H (Figure 2.29)

I have chosen to put this kiva suite first even though there is no direct dating for the Pueblo II use of Kiva H. The main room suites (2 and 3) in Roomblock F are directly north of Kiva H and form the core of the roomblock and I contend that this indicates they were central in the planning and construction of the roomblock as a whole. Based on wall abutments and corner ties, however, Room Suites 4 and 5 were also built at the same time.

The only room suite that was clearly an addition is Room Suite 1.

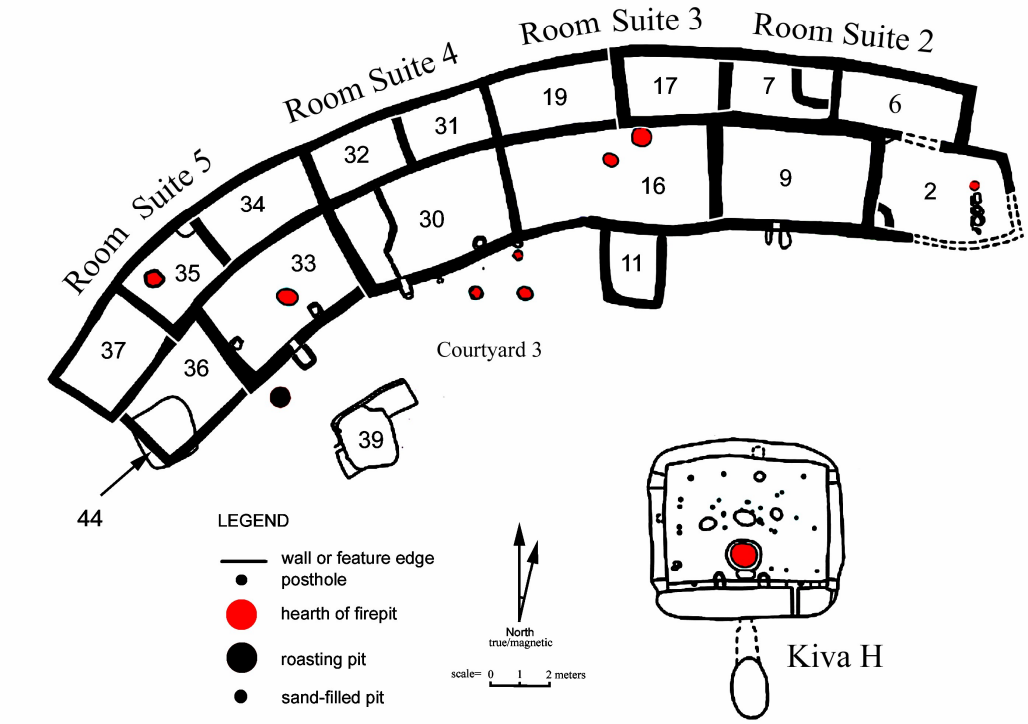


Figure 2.29. Kiva Suite H in its final configuration.

Room Suite 2

This suite consists of two front rooms (2 and 9) and two back rooms (6 and 7) (Figure 2.30 and Table 2.12). It was constructed at the same time as the rest of the western part of Roomblock F; around A.D. 949.

Table 2.12. Room Suite 2 room dimensions.

Room #	Position	Length	Width	Area m^2	% Area
2	Front right	4.50	3.12	14.04	31.9
9	Front left	5.06	3.17	16.04	36.4
6	Back right	4.25	1.75	7.44	16.9
7	Back left	3.52	1.85	6.51	14.8
Total				44.03	100.0
Front to back rooms ratio				2.21:1	

Room 2

The original outline of Room 2 is represented by masonry walls except for breaks in the north wall and most of the southeast quarter of the room (Figure 2.31). It is likely that these breaks occurred after Roomblock F was abandoned before the final occupation of the area in Middle Pueblo II times

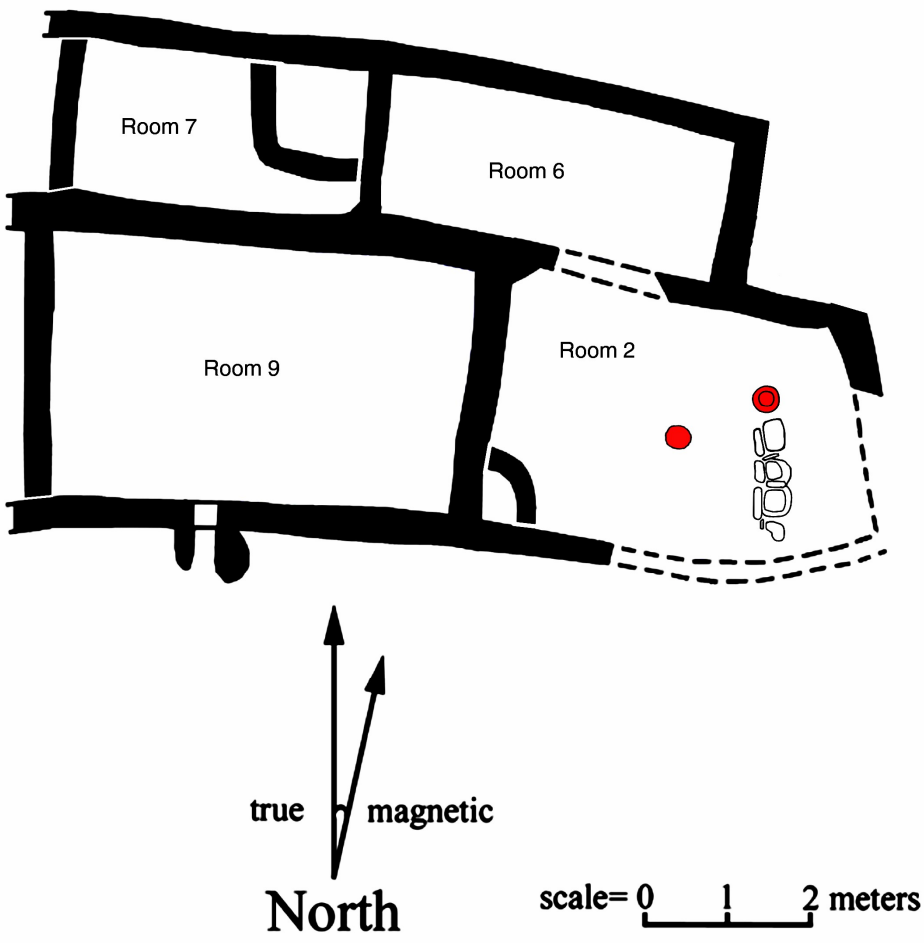


Figure 2.30. Room Suite 2.

(mid-1000s). This room was also reused at that time and it is difficult to determine what features and floor associated artifacts came from which use. There was a mix of pottery that included types that could have come from either occupation. Much of the decorated pottery looks transitional between the Early Pueblo II Cortez Black-on-white and the Middle Pueblo II Mancos Black-on-white (Figures 2.32 and 2.33). We also recovered a small

whiteware seed jar whose surface was weathered, removing any design it

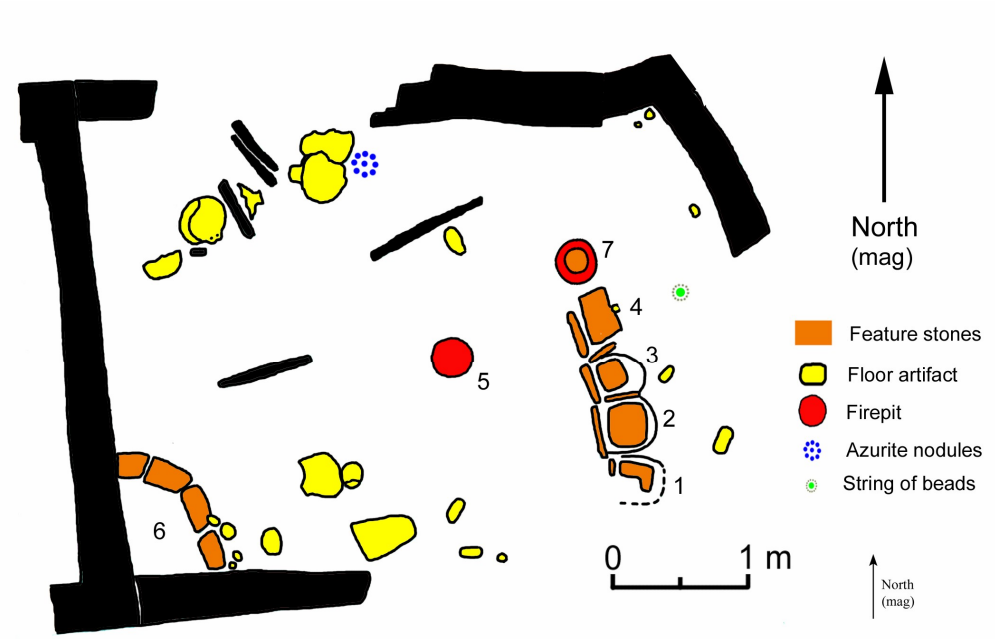


Figure 2.31. Room 2 features and floor artifacts.

might have had (Figure 2.34). There were many other artifacts in floor contact representing a range of activities (Table 2.13).

Figure 2.32. Small olla from the floor of Room 2, northwest corner. This vessel is an example of pottery that stylistically falls between Cortez and Mancos Black-on-white (see later section on pottery).

There are also a number of features in the room (Table 2.14)

representing storage and food processing; specifically milling. Many of the floor objects may have been in storage. There was a line of small slab-lined bins that were probably part of a sequence of metates (Figure 2.35). The metates would have been set on the east side with the bins catching the ground meal to the west. Interestingly, we found what might have been a bead anklet right where a person may have been kneeling (Figure 2.36). Although these small bins were set into the floor level it is not clear if they were part of the original use of the room or a later addition. The transitional style of the pottery in the room may indicate a reuse of the space after abandonment, but before the addition of the nearby Middle Pueblo II Kiva Suite G. We should remember that the majority of the site has not been excavated.

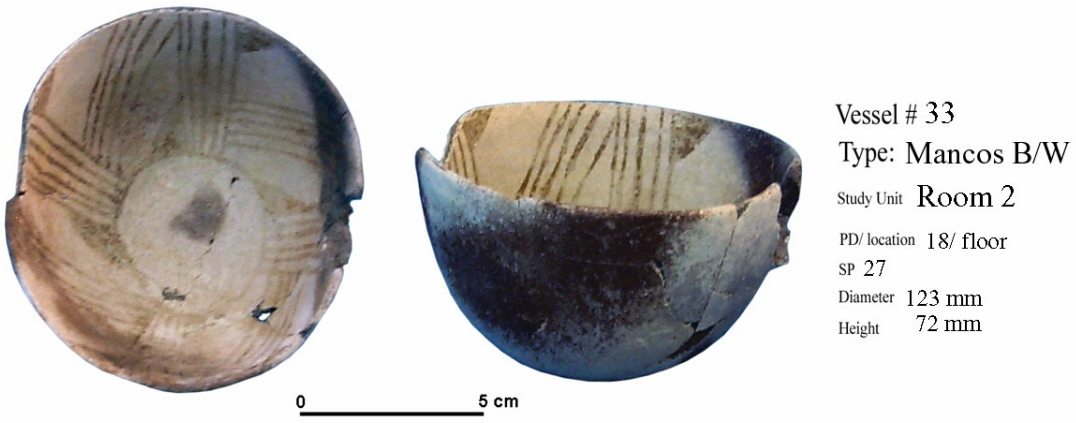


Figure 2.33. Cortancos Black-on-white ladle bowl.

There was a coursed masonry bin (Feature 6) in the southwest corner that contained a number of ground stone tools (Figure 2.37). There were also a number of unshaped small sandstone slabs that may represent a

dismantled bin. The bin interior dimensions were 70 X 50 cm and the wall was 48 cm high. The bin had a stone slab floor and was clearly an addition to the room. Access would have been from the top and it was open at abandonment.

Figure 2.34. Small whiteware seed jar.

Table 2.13. Floor artifacts in Room 2.

PD	SP	Item	PD	SP	Item
17	7	dendro	18	34	flake
18	8	peckingstone	18	35	vessel
18	9	peckingstone	18	36	mineral
18	10	peckingstone	18	37	mano
18	11	crusher	18	39	mano
18	12	mano	18	40	mano
18	13	mineral	18	41	peckingstone
18	15	worked sherd	18	42	metate
17	20	cobble	17	43	dendro
17	21	cobble	18	46	string of beads
17	22	peckingstone	53	75	axe
17	23	polishing stone	53	76	mano
18	27	Vessel 33	53	77	vessel
18	28	Vessel 34	53	78	shaped slab
18	29	Vessel 16	53	79	cobble
18	30	sed sample	53	80	cobble

18	31	vessel?	53	81	flaked stone
18	32	Vessel 32	53	82	flotation
18	33	sed sample	53	83	cobble

Table 2.14. Features in Room 2.

Feature Type
F-1 Bin
F-2 Bin
F-3 Bin
F-4 Bin
F-5 Firepit
F-6 Corner Bin
F-7 Firepit

Figure 2.35. Room 2 subfloor showing slab-lined bins and firepit in upper right and back wall of Late Pueblo I Room 12 underlying Room 2 floor (Room 6 in upper left).

There were two other features and both were small firepits. Feature 5 was just to the west of the line of slab-lined catchment bins, making it central in the room. It was 30 cm in diameter 22 cm deep and formed only by

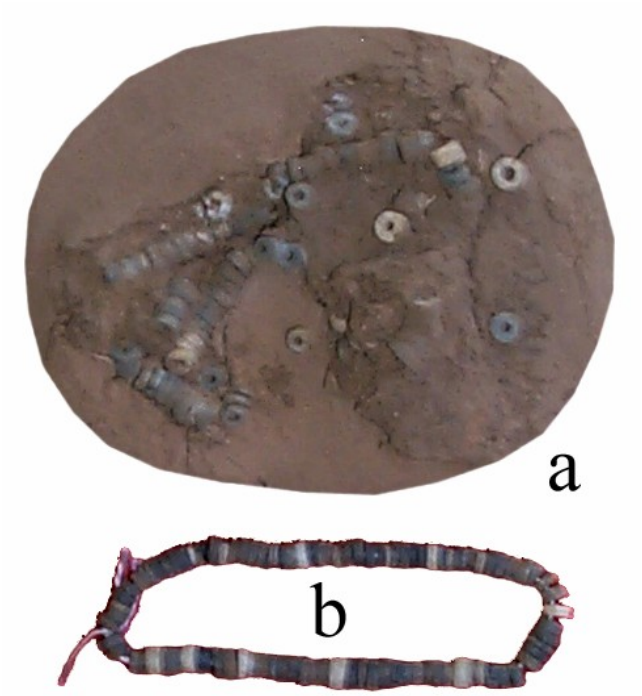


Figure 2.36. Stone and shell disk beads. a) recovered in situ; b) disturbed and restrung.

Figure 2.37. Room 2 southwest corner bin artifacts.

excavation into the floor. It was well burned and contained ash and charcoal flecks. This feature was discovered during sub-flooring, but because

of the irregular nature of the floor surfaces it wasn't clear if it had been sealed or was still in use at the end of occupation.

The other firepit (F-7) was just off the north end of the metate catchment basins. It was relatively shallow (7 cm) had sloping sides and a stone slab base. Because of the construction and location I suggest that it was associated with the milling bins.

Room 9

Room 9 is the left front room of Room Suite 2 (Figure 2.38). This could have been THE central room for the whole roomblock. Unfortunately, this is where there had been relatively recent digging and about the southern 1/3

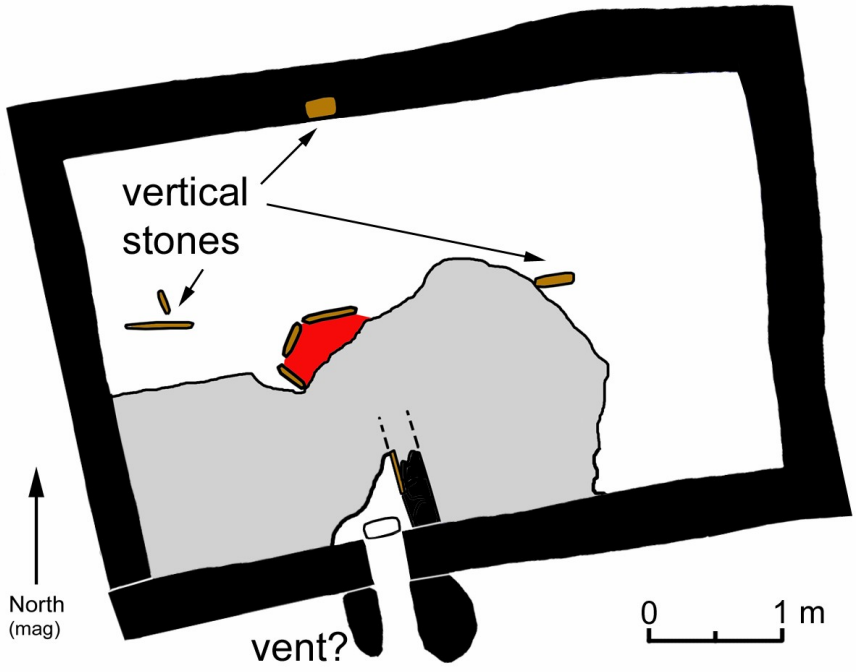


Figure 2.38. Room 9. Shaded area shows recent digging below floor level.

had been removed down to the room floor and the pit got smaller as it went down into the subfloor (into the fill of Pueblo I Room 23). This room also saw reuse during the Middle Pueblo II occupation. This reuse included the

subdivision of the room by a wall. This will be shown and discussed in the Middle Pueblo II architecture section. The current discussion only relates to the Middle Pueblo II construction and use of the room.

Masonry in this room was typical and stood 4 to five courses. Two distinctive traits are a vertical stone set in the north wall directly across from a vent in the south wall (Figure 2.39). The placement of the vertical stone could be coincidental, but I think there may have been more to it. Its base was set well below the floor level while the rest of the wall was set at floor level. It also lined up well with a central slab-lined hearth. It is reminiscent of the alignments between floor-level vent openings, central hearths and north niches in kivas.

Figure 2.39. Room 9 after all excavation including the underlying Pueblo I rooms. This view is looking through the wall vent opening across the room to the vertical stone set in the north wall. Note that the base of the stone is well below the base of the wall (white line).

While there is little 10th century architecture described in the literature of southwestern Colorado, I have found no other examples of rooms built with vent openings in their walls. The opening in the south wall of room 9 is too narrow to have been the base of a doorway and the feature extended into the room, much like one sees in kivas with subfloor vents (only this was at floor level). Unfortunately, this feature was partly removed, as was the central hearth, by looting before we initiated our excavations. It would have been very interesting to see if and how this vent feature related to the hearth. It certainly was aligned with it.

The only other clear feature in the room was the remains of a large central slab-lined hearth. This was a significant feature and in view of its relationship to the wall vent was planned and built with the room. It was heavily burned and filled with charcoal-flecked ash. It exhibited intensive use. The only other possible features were three vertical slabs protruding slightly above floor level. There is not indication as to what they might have been.

This room contained few floor-associated artifacts and none of them seemed to represent any particular activity. Never the less, I think it is safe to interpret this room as a primary living space.

Room 6

This room is a 'typical' back room in that it is smaller than the front rooms and has no strong evidence of use as a general living room. All the walls were masonry (although there was a portion of the south wall missing). The only unusual aspect of the masonry was a series of small vertical slabs at the base of the east wall and a couple more in the northwest corner along the north wall (Figure 2.40).

There were only a few floor artifacts (an axe, a flake and a handstone). The only feature was a roughly round sandstone slab (30 cm diameter) set into the floor that had a lightly pecked and abraded upper surface. It was probably used either as a clean place to set something or as an anvil for soft material processing.

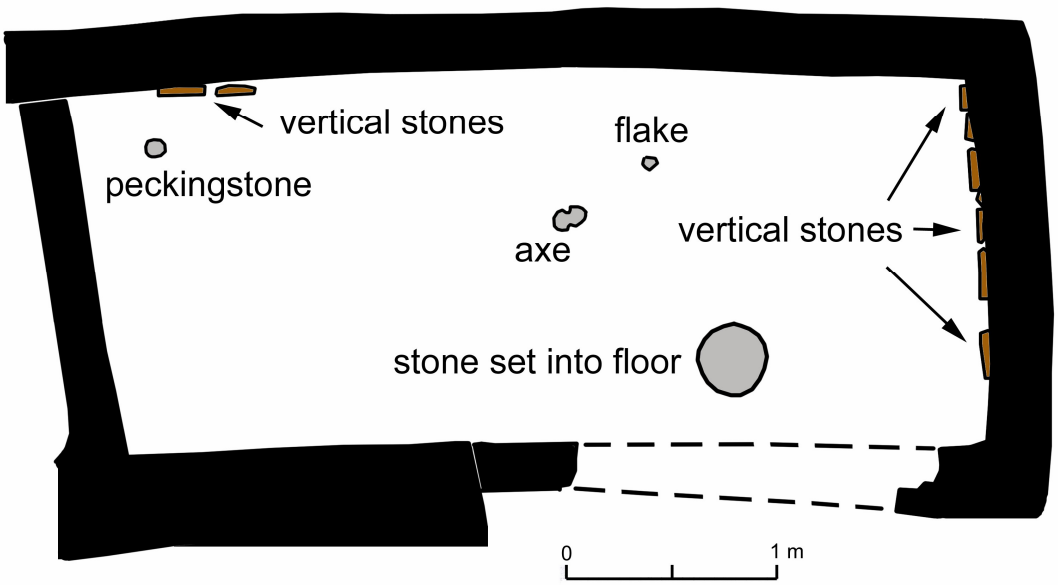


Figure 2.40. Room 6 floor.

Room 7

Room 7 is the back left room of Room Suite 2. The walls are typical coursed masonry. This room was clearly used for storage as there are three built-in storage features (Table 2.15). There were also a range of artifacts in floor contact that were probably being stored (Table 2.16 and Figure 2.41), including a damaged double-bitted axe (Figure 2.42).

Table 2.15. Features in Room 7.

Feature Type
F-1 Corner bin
F-2 Corner bin
F-3 Bin

Table 2.16. Floor artifacts in Room 7.

Room 7 Floor artifacts				
Study Unit	**PD**	**SP/PL**	**Item**	**Elevation**
Room 7	62	9	awl	99.53
Room 7	62	10	drill	99.54
Room 7	62	11	peckingstone	99.55
Room 7	62	12	worked bone?	99.53
Room 7	62	13	cobble	99.57
Room 7	62	14	mano	99.56
Room 7	62	15	mano	99.54
Room 7	62	16	ground stone	99.54
Room 7	62	17	mano	99.52
Room 7	62	18	core	99.54
Room 7	62	19	sherds	99.55
Room 7	62	20	axe	99.56
Room 7	62	23	projectile point	99.53
Room 7	62	24	polishing stone	99.54
Room 7	62	25	flake	99.53
Room 7	62	26	flake	99.53
Room 7	62	27	mineral sample	99.52
Room 7	62	28	mineral	99.53

Feature 3 is a large masonry bin added into the northeast corner that only stood 35 cm high at the north wall and angled down from there. It was probably originally deeper and accessed from the top. Feature 3 is a shallow corner bin produced simply by the setting of a single course of sandstone between the south wall and Feature 1. Feature 2 is different in construction with one stone set in a daub rim, forming a small rectangular feature. This construction method is similar to milling bin catchment basins, but there was no other evidence to indicate that this was the case here.

While there were a number of floor artifacts in this room, none were in the bins and all were damaged (axe), low value (mano), or small and easily overlooked in a dark room (projectile point, drill and awl). This, along with the

apparent decrepit state of Feature 1, probably indicates that the room was either cleared out or not in active use when the Room Suite was abandoned.

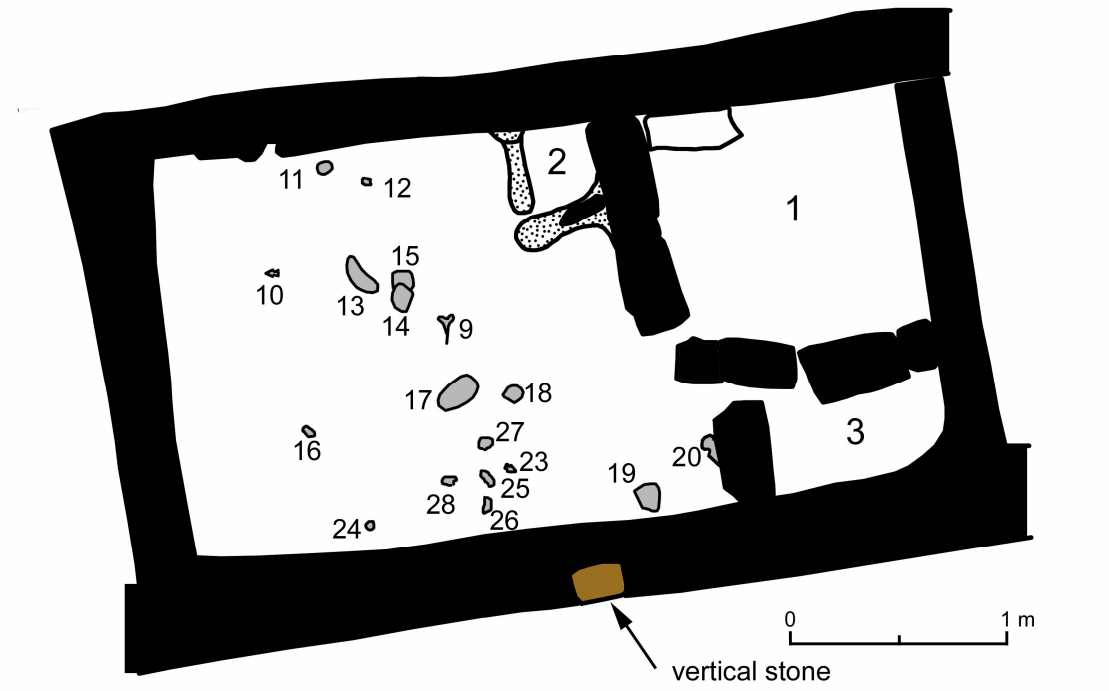


Figure 2.41. Room 7 features and floor artifacts.

Figure 2.42. Double-bitted axe (PL 20).

Interpretation

Room Suite 2 is a not atypical domestic structure with two front and two back rooms. The front left room (9) contained a large central hearth and an air vent system. The front right room (2) had food processing facilities and was probably used for active storage. The back two rooms (6 and 7) were

probably used for long-term storage. In other words, this is a 'classic' Ancestral Pueblo architectural unit. It was, however not built on its own. It was constructed as part of a larger roomblock with three other suites of rooms. While we do not know how it related chronologically with the construction of Kiva H, there is little doubt that it was built in relation to it.

Room Suite 3

This room suite has one very large front room (16) and two back rooms (17 and 19). It has the same configuration of some of the underlying Pueblo I room suites. Another room (11) was added to the front (Figure 2.43) (Table 2.17).

Table 2.17. Room Suite 3 dimensions.

Room #	Position	Length	Width	Area m^2	% Area
16	Front	6.45	3.35	21.61	54.5
17	Back right	3.05	2.00	6.10	15.4
19	Back left	4.00	2.05	8.20	20.7
11	Front add	1.72	2.20	3.78	9.5
Total				39.69	100.1
Front to back rooms ratio				1.7:1	

After the Early Pueblo II rooms were excavated they were subfloored (as was every structure) and we encountered a large firepit right of center of the north wall (Figure 2.43 light colored firepit). This feature was a shallow basin (44 X 41 X 7 cm) scooped out of cultural fill approximately 6 cm **below** the floor of Room 16, but into the fill of the underlying Pueblo I room (22). The firepit was only lightly burned but was filled with ashy soil. This feature post-dated the destruction of the Pueblo I room but predated the floor in the Early Pueblo II room. There were no associated artifacts to help determine when this feature was used.

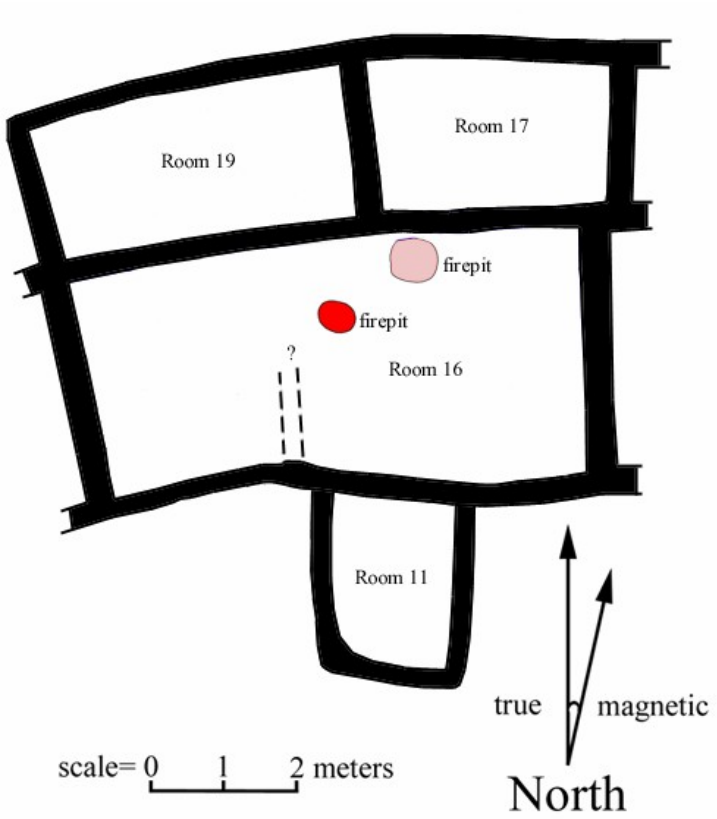


Figure 2.43. Room Suite 3.

Room 16

This large front room (Figure 2.44) was constructed with typical coursed masonry over parts of several Pueblo I rooms (see Figure 1.12). The north wall was directly on top of the underlying back wall of two Pueblo I back rooms (22 and 40). It also overlay parts of Rooms 20 and 23. While it is possible that the Pueblo II builders were unaware of the exact configuration of the underlying architecture, it seems unlikely that the direct correspondence of the back walls was coincidental. As mentioned earlier, it looks like the ground surface (rubble mound of the collapsed Early Pueblo I roomblock) was leveled for the building of the Early Pueblo II roomblock. It is perhaps during this levelling that the firepit (see above) was used and then covered by the floor of Room 16.

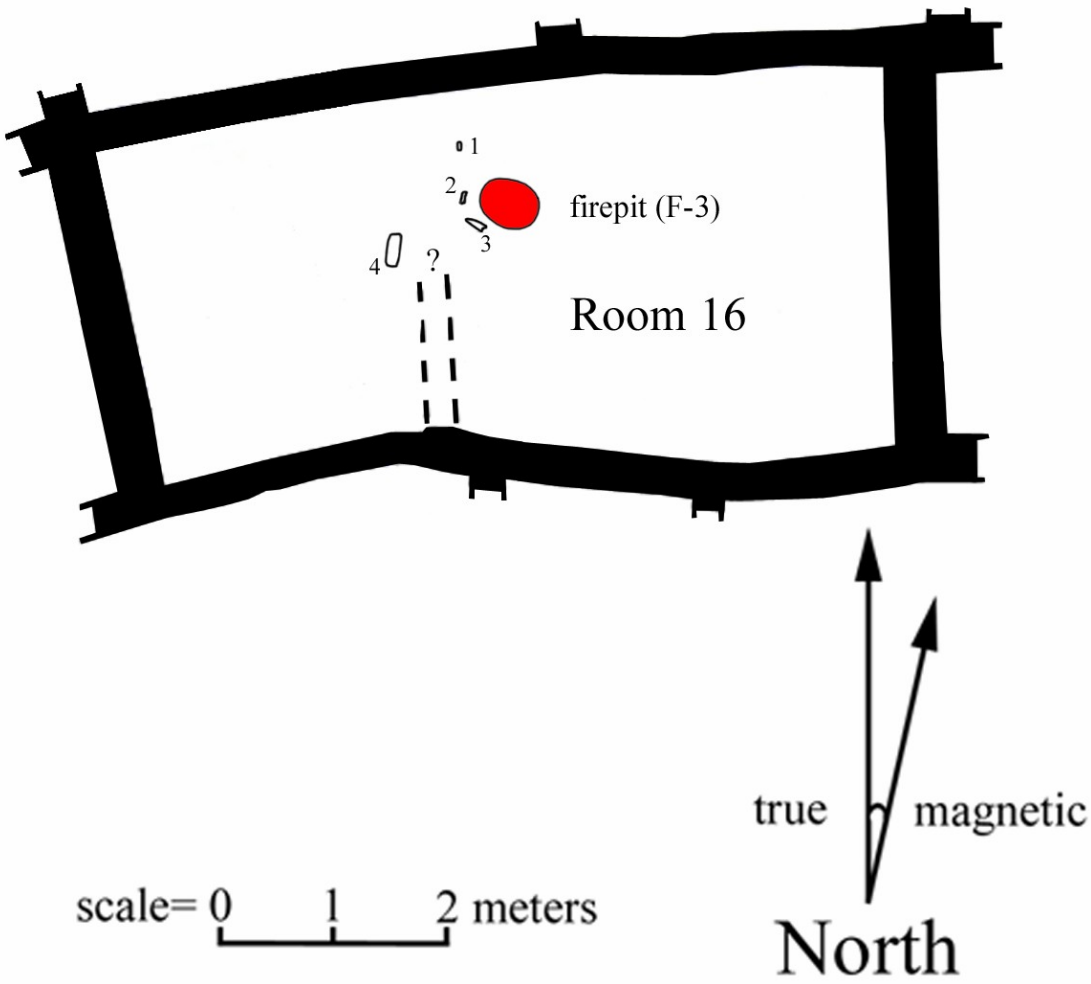


Figure 2.44. Room 16.

While it is also possible that the overlap of the back wall of Room 16 with the back wall of the Pueblo I roomblock was simple expediency, I suggest that this alignment may have been intentional and held some symbolic meaning as part of a social memory.

The front (south) wall exhibits a distinct change of alignment just west of center that may be where a dividing wall (north-south) had been built, or perhaps planned. Along with the change of alignment there was also a slight change in thickness (narrower to the west) and the interior wall surface at the join was also less regular than the rest of the wall. While this realignment and

irregularity may indicate where a dividing wall had been, there was no other evidence to support this interpretation.

This wall 'adjustment' is also where an underlying Pueblo I masonry wall was located (Figure 2.45) and this could have influenced how the south wall was constructed. It is even possible that there had been a subdividing wall directly on top of the Pueblo I wall (like the north wall) but it was later removed.

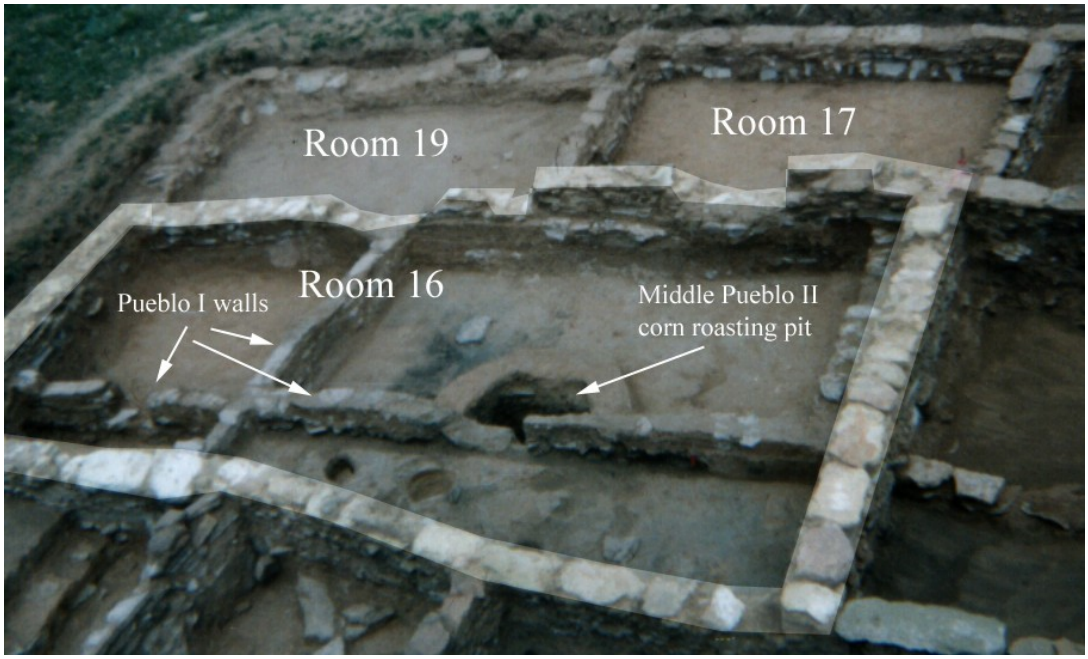


Figure 2.45. Room Suite 3 showing Rooms 16, 17 and 19 with Room 16 superimposed on Pueblo I architecture (the crossed walls) and intruded by a Middle Pueblo II corn roasting pit (large central pit). The top of Room 16 walls has been highlighted.

Four features were recorded in this room (Table 2.18), however only one of them (F-3) was associated with the construction and use of the room. One (F-1) was used before the room was finished (see above) and two (F-2 and F-4) were intrusions into the room during Middle Pueblo II reuse of Roomblock F (these are discussed with Kiva Suite G).

Table 2.18. Room 16 features.

Feature Type
F-1 Firepit
F-2 Sand-filled pit
F-3 Firepit
F-4 Roasting pit

The single small firepit was scooped out of the subfloor fill from floor level. It measured 39 cm east west and 32 cm north-south and was 11 cm deep. The sides were lightly oxidized but the bottom was unburned. It was filled with primary refuse in several strata. This feature seems either to represent short-term uses, or perhaps it was used for a longer period with period clean-outs..

There were relatively few artifacts recovered from this room with a small cluster of deer antler fragments (one modified) on the floor (Table 2.19). A Cortez B/w sherd container (Figure 2.46) was recovered from the wall fall, but how it got there is unknown.

Table 2.19. Room 16 floor artifacts.

PD		SP	Item
163	1	worked antler	
163	2	antler	
163	3	antler	
163	4	mano	
135	57	vessel	

Room 17

Room 17 was a typical back room in that it was smaller than the front room and contained no features (Figure 2.47). There were also no artifacts that were clearly associated with the Early Pueblo II use of this room. The room was, however filled with Middle Pueblo II midden into which a burial was

intruded. This will be described and discussed with Kiva Suite G.

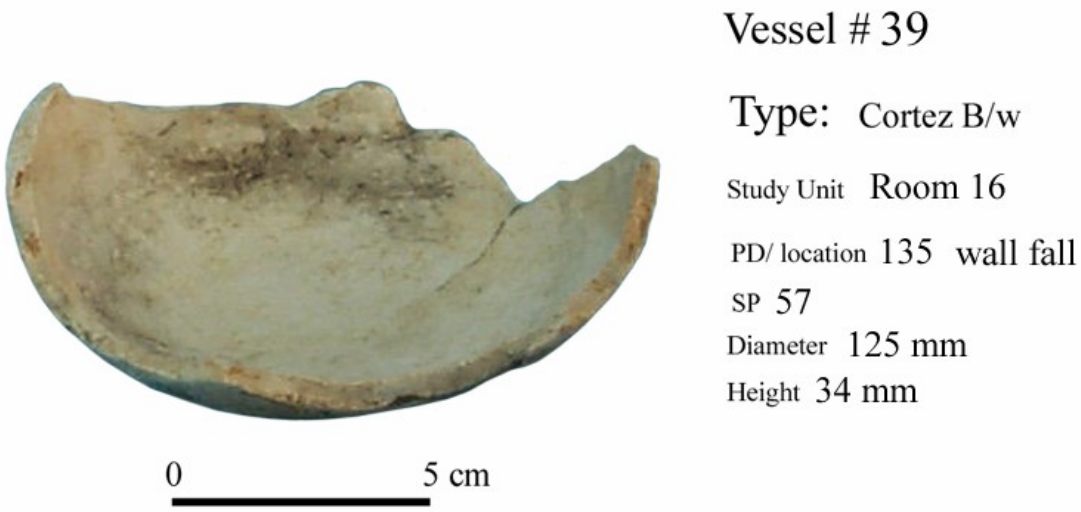


Figure 2.46. Cortez B/w sherd container from the wall fall of Room 16.

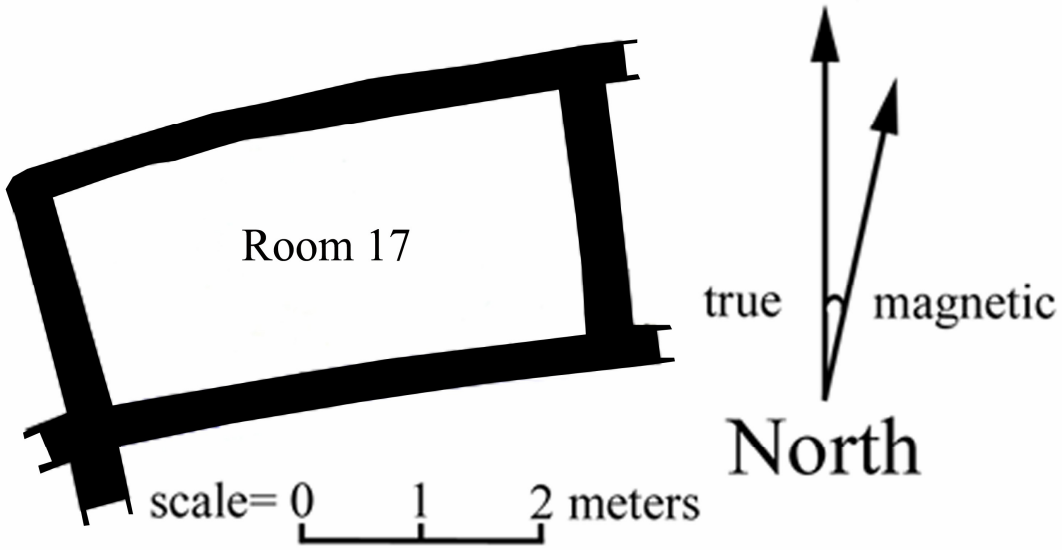


Figure 2.47. Room 17.

Room 19

Room 19 was also a typically back room (Figure 2.48). It contained no features but there were a few artifacts on the floor (Table 2.20). These artifacts may represent a storage room that was clean out before or at abandonment, or they may be evidence of the room being used for manufacturing activity, specifically knapping. However, there was not enough

debitage present to support this idea, only a few flakes and the antler punch (Figure 2.49).

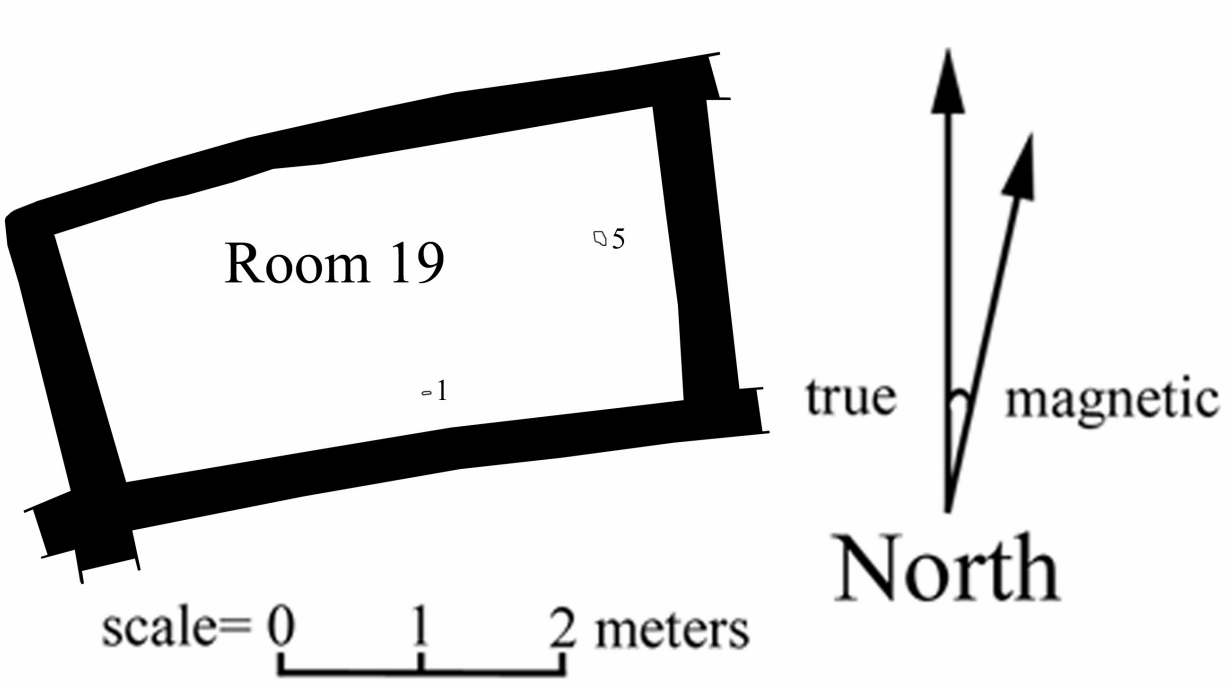


Figure 2.48. Room 19.

Table 2.20. Floor artifacts in Room 19.

PD	SP	Item
159	1	antler "punch"
159	5	sherd
159	17	sherds
159	18	flaked stone
159	19	faunal
159	20	mano
159	21	worked sandstone

Conclusions

Room Suite 3 was constructed at the same time as Room Suite 2 and comprises a 'classic' room suite with one large front room and two smaller back rooms. Access into and between the rooms is unknown as no

doorways were preserved. However, unless access was through the roof, which is likely for the back rooms, any doorways that were present would

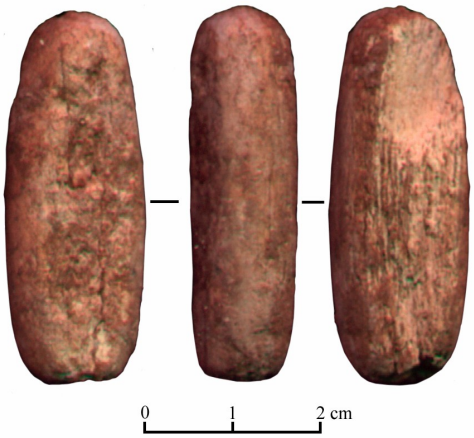


Figure 2.49. Antler punch from the floor of Room 19.

have had to be raised-sill. While the architecture is 'normal' there is little to suggest that there was a long-term habitation in this room suite. The front room had a small firepit, but this seems insufficient to suggest that it was a primary domicile. The back rooms also don't contain any distinct storage features, as were present in one of the back rooms of Room Suite 2. I get a sense that this suite may have been a sort of guest suite.

Room Suite 4

This room suite also consists of three rooms, one large front room (30) and two smaller back rooms(31 and 32). The unit is oriented southeast as the Roomblock curves, (Figure 2.50). The walls were typical masonry and this suite was part of the construction that included Room Suites 2 and 3. Room dimensions are shown in Table 2.21.

Room 30

Room 30 is the front room of this room suite. Masonry in this room was typical (Figure 5.51). The room's final configuration included 6 features (Table 2.22). It is evident that the wall vent (F-6) was part of the original

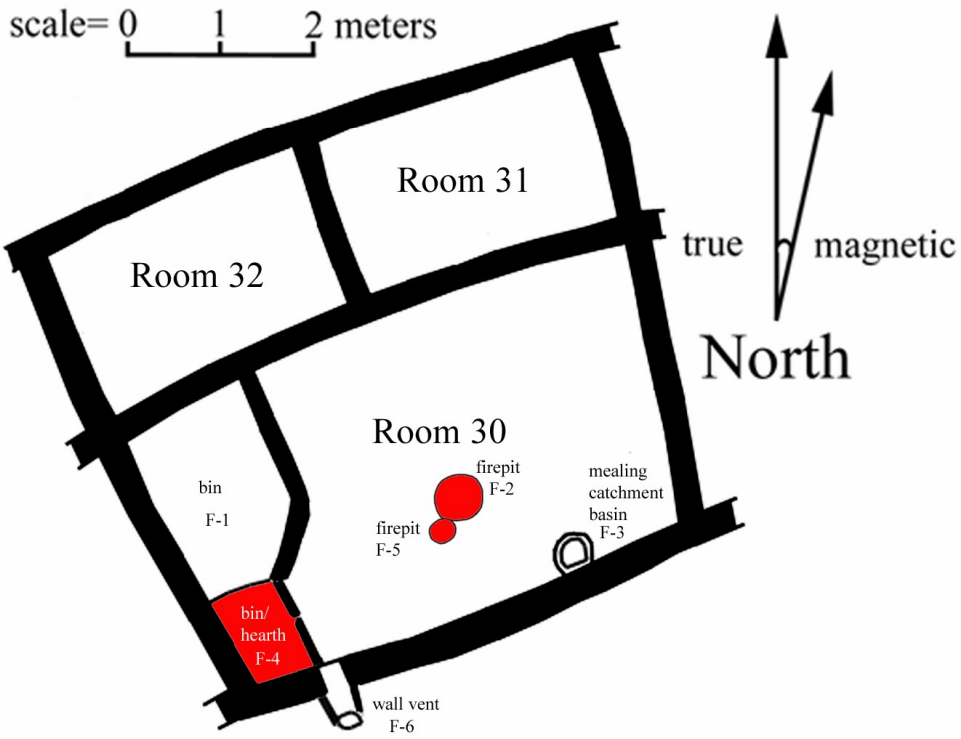


Figure 2.50. Room Suite 4.

Table 2.21. Room Suite 4 dimensions.

Room #	Position	Length	Width	Area m^2	% Area
30	front	5.4	3.3	17.8	65
31	back right	2.95	1.65	4.9	18
32	back left	2.8	1.75	4.9	18
Total				27.6	101
Front to back rooms				1.8:1	64/36%

construction. It is also apparent that the southwest corner bin (F-4) and by extension the northwest corner bin, (F-1) were additions, as they are interconnected and the east wall of F-4 partly blocks the wall vent. The remaining floor features, the two firepits (F-2 and 5) and the milling slightly cuts into the larger one (F-2) possibly indicating that it was built later. catchment basin could have been added at any time. The smaller firepit (F-5)

Figure 2.51. Room 30 north wall masonry, interior face.

Table 2.22. Room 30 features.

Feature Type and #
F-1 Bin
F-2 Firepit
F-3 Basin
F-4 Bin/hearth
F-5 Firepit
F-6 Wall vent

The southwest end of the room was subdivided by the addition of two bins created by laying a masonry wall about 2/3 of the distance from the north wall then continued by setting small sandstone slabs vertically in mud mortar (Figure 2.52). The northwest bin (F-1) was larger (2 X 1.35 m) than the southwest (F-4) (1 X ,67 m). There is no direct evidence of their use but I assume they were built as storage features. The southwest bin was secondarily used as a hearth with significant but not intense burning and an accumulation of ash. This was not the only thermal feature in the room.

Figure 2.52. Room 30 corner bin/hearth (F-4).

A large (54 cm long X 53 cm wide x 6 cm deep) firepit (F-2) was scooped out of the floor just south of the center of the room. This contained an ashy fill and the sides of the firepit were lightly oxidized. A second, smaller (25 cm long X 23 cm wide X 5 cm deep) firepit (F-5) was placed just to the southwest, and slightly intruding into the larger firepit.

Abutting to the south wall of the room was a well-formed milling catchment basin (Figure 2.53). The base was a sandstone slab set on the room floor, encased and surrounded by a mud daub collar. The south side of the basin was formed by a vertical slab anchored to the room wall with mud

daub. While there was no direct indication it is likely that a metate was set up on the east side of the bin at an angle so that ground meal would be caught in the basin.

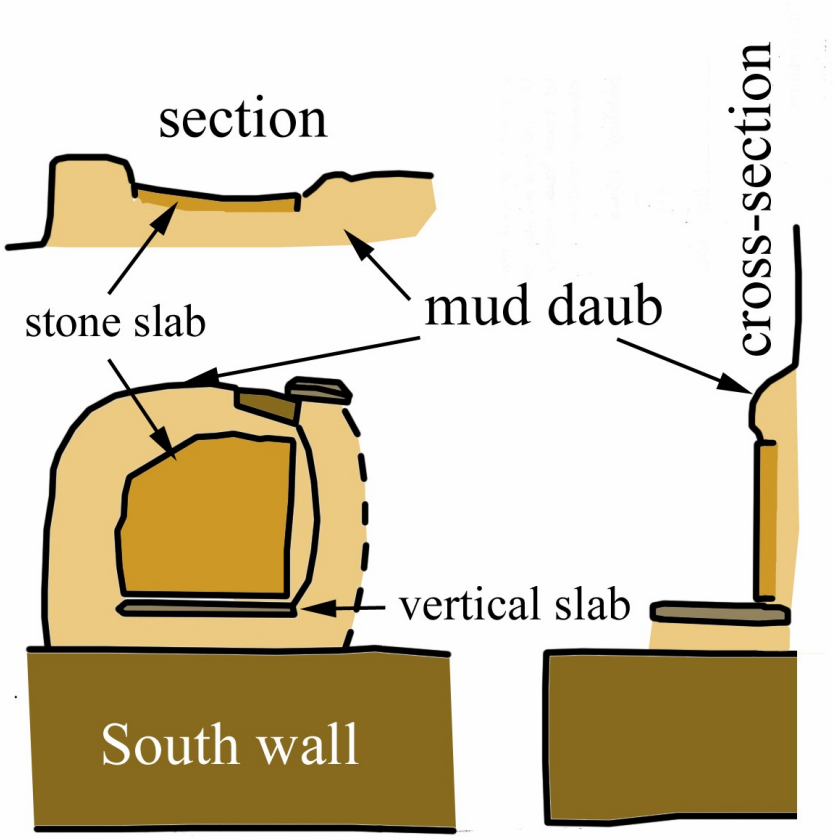


Figure 2.53. Room 30 Feature 3, milling bin catchment basin.

The room was well cleaned out and there were only small sherds in floor contact.

The final feature in this room is the south wall vent (F-6) that was clearly built during the initial construction. The form was very similar to that of the wall vent in Room 9. This indicates to me that there was an intention for there to be a fire feature in the room from the beginning. Altogether, the features in Room 30 indicate a domestic space with fire features, active storage areas and food processing.

Dating

Four tree-ring samples from Room 30 provided dates . All were juniper and all probably came from roof beams. Only one of the dates AD 949v is likely to represent a near year cutting date. The other three all had very variable (vv) outer rings but cluster well together at A.D. 949, 950 and 950. Altogether, this gives a reasonable picture of construction in the mid-tenth century. Since Room Suites 2-5 were all part of a single construction episode these dates should equally apply to all.

Rooms 31 and 32

Rooms 31 and 32 were typical back rooms and had no features or floor artifacts.

Conclusions

Room Suite 4 was constructed with the rest of Early Pueblo II Roomblock F (except for Room Suite 1). It was a continuation of an arc of Room suites that extended to the southwest. The configuration is a classic room suite with a front habitation room backed by two storage rooms. Once again, there is no direct evidence of access into the rooms. Floor artifacts were very scarce and do not help date the use of this room suite.

Room Suite 5

Room Suite 5 comprises five rooms, two front (33 and 36) and three back (34, 35 and 37) (Figure 2.54). Once again this suite was planned and built with Room Suites 2-4 and continues the arc to the southwest. Masonry continued to be the same as did all other construction methods. Room dimensions are shown in Table 2.23.

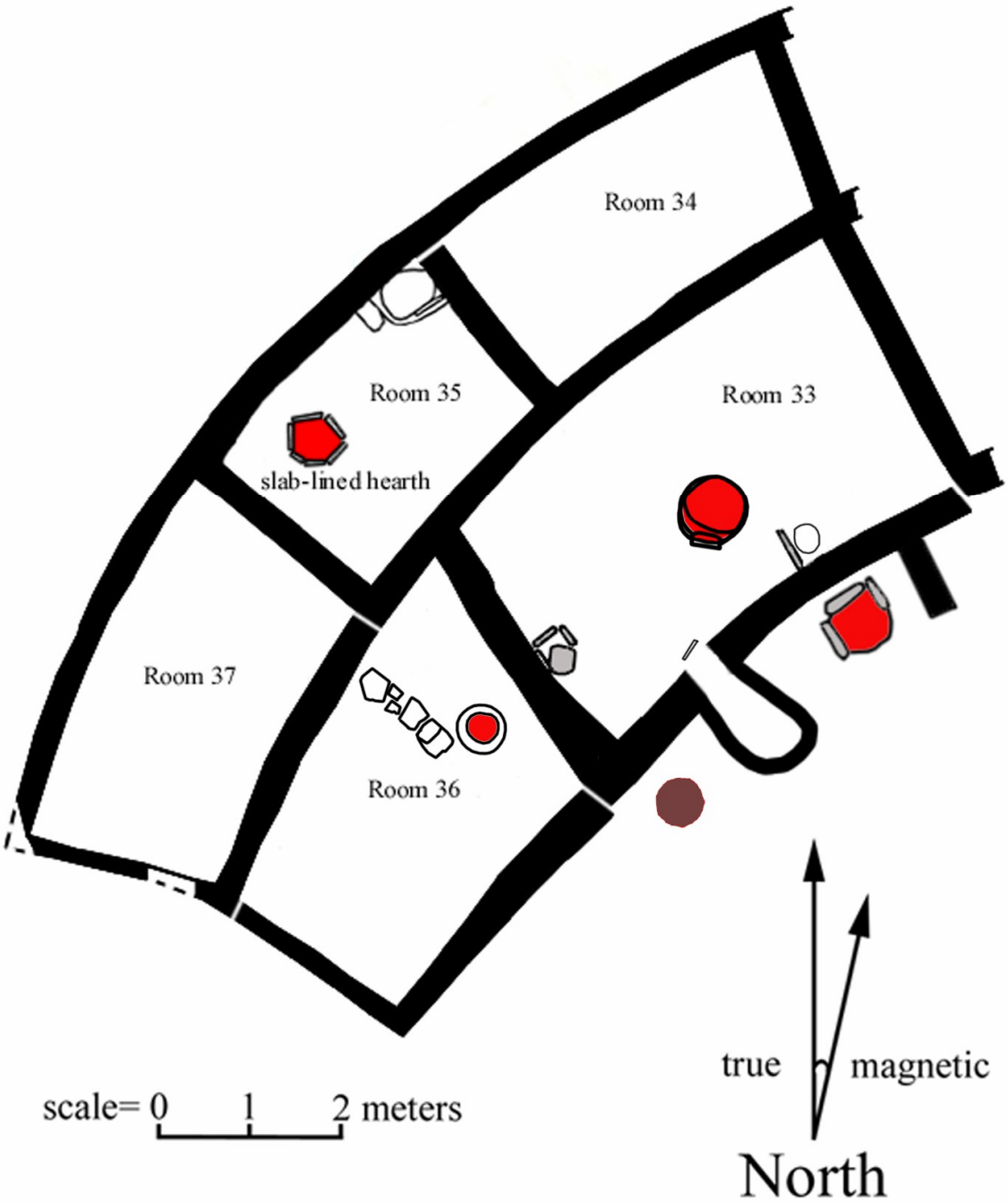


Figure 2.54. Room Suite 5.

Room 33

Room 33 (Figures 2.55 and 2.56) is the largest and most complex of the rooms in the suite. It is located at the front right and includes three features (Table 2.24). The most dominant is a central hearth (Figure 2.57).

This hearth has a comp0lex construction, is elliptical and incorporates an ash pit and a masonry deflector. It was carved out of the subfloor deposits

Table 2.23. Room Suite 5 dimensions and areas.

Room #	Position	Length	Width	Area m^2	% Area
33	Front right	4.0	2.85	11.4	26
36	Front left	3.8	2.55	9.7	22
34	Back right	3.85	2.0	7.7	18
35	Back center	2.9	2.15	6.2	14
37	Back left	3.95	2.2	8.7	20
Total				43.7	100
Front to back rooms				.93:1	48/52%

Table 2.24. Room 33 features.

Feature Type and #
F-1 Hearth
F-2 Milling catch-basin
F-3 Wall vent
F-4 Milling catch-basin

to shaped and contoured to produce the ash pit on the southeast side. A masonry deflector that would have extended above floor level was built into the southeast side of the ash pit. It exhibits extensive oxidation and intensive use. It was filled with ashy silt with charcoal flecks that was quite homogenous. The upper stones of the deflector had fallen into the feature, they were oxidized and their bases were embedded in the ash. It is unclear if this was post-use collapse with the stones pressed into the ash by the overburden, or if the hearth was used after the deflector collapsed. The oxidation on the stones indicates the latter. This is th3e most complex and intensively used of any of the thermal features in any of the rooms in the Early Pueblo II roomblock. I am confident that it was built with the room.

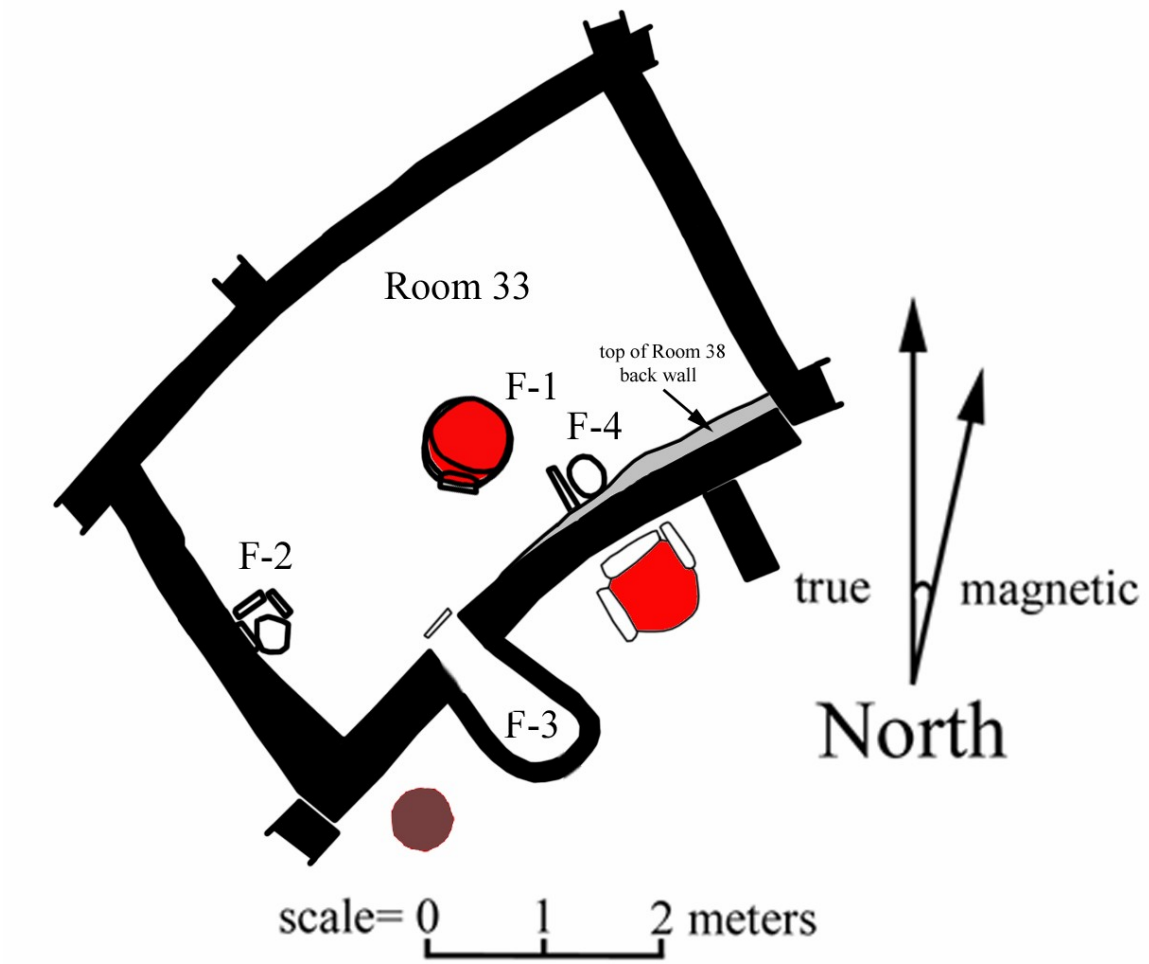


Figure 2.55. Room 33 plan.

Figure 2.56. Room 33 photo before final floor clearing. Rectangular excavation in center is sectioning the central hearth.

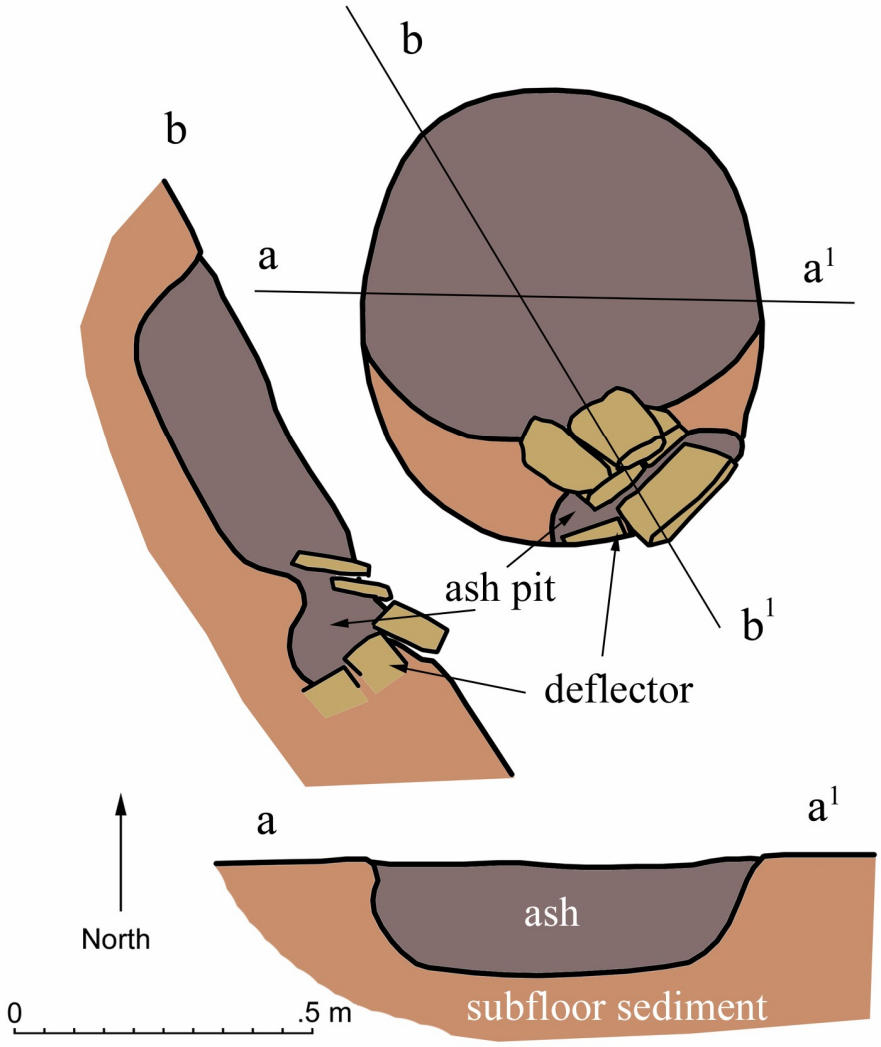


Figure 2.57. Room 33 central hearth (F-1).

Feature 2 is a milling catchment basin built against the side wall. It was constructed with three vertical sandstone slabs defining the sides and back and is open at the front. The base is a sandstone slab. The metate and miller would have been on the southwest side.

Feature 4 is another milling catchment basin, but it looks like it may have been out of service as two sides are missing. It is located against the front wall to the southeast of the central hearth. The southeast side is a remnant of the exterior of the back wall of Pueblo 1 Room 38 that extends

slightly above floor level where it diverges from the overlying wall. The end of the feature is a vertical sandstone slab and the base is a river cobble set into the floor. When in use the metate and miller would have been on the northeast side of the feature.

The final feature is another wall vent that cuts through the front wall off center to the southwest of the central hearth (Figure 2.58). A gap was left in the wall masonry then the vent was formed by a low masonry wall extending out into the courtyard in front of the room. Although the wall vent and the central hearth

Figure 2.58. Room 33 wall vent through front wall (photo taken after subflooring). Note small vertical slab just in front of opening.

do not align in relation to the room axis, the deflector built into the hearth is directly oriented to the vent opening.

There were no artifacts in direct contact with the floor that indicated any particular use of this room. It had been well cleaned out.

Dating

Three tree-ring dates were recovered from Room 33. They are non-cutting dates with very variable (vv) final rings. At A.D. 934, 944 and 946 they

fall just before and are therefore consistent with the construction dates inferred in Room 30 (next door), of the mid-tenth century.

Room 36

Room 36 is a front room that may have been added after the initial construction of this Room Suite. It has two walls that exhibit a different form of construction than is seen in the other Early Pueblo II rooms in Roomblock F. This difference is in the form of the foundations stone, which are relatively small and set vertically in pairs (Figure 2.59). This construction form for wall foundations may occur in other Early Pueblo II rooms in this roomblock, but the evidence is well covered by the overlying coursed masonry. There are some

Figure 2.59. Room 36, Surface 1, reuse level in the room fill. Note construction of the front and left walls, and reuse of a metate fragment.

hints in other rooms of this, but it is not clear. Excavations in the wall core between the paired slabs did not reveal any postholes so it is unlikely that the

upper walls were jacal.

There were two surfaces in this room, the original floor then a compacted level on top of about 20 cm of cultural fill. The cultural fill included some artifacts, charcoal, etc. but was not midden. This fill most closely resembled the roof fall units found in the other rooms. The few artifacts recovered from this level were of little help in determining when it was created. Since there are other examples of a |Middle Pueblo II reuse of some rooms, it is likely that this is another example. A firepit (F-1) was dug into this level in the back right corner of the room. The pit was lined with a layer or orange loam. The fill of the pit was a dark gray loam containing bits of charcoal. There was no apparent oxidation of the walls of the firepit. There was what looked to be a short wall stub that with the firepit divided off the corner of the room. The stub was only one stone high (Figure 2.60).

Below the use surface fill the original room floor was encountered. It was clean with no features and was at the same level as the base of the wall stones. Immediately below this floor we encountered a large roasting pit that did not relate to Room 36, but was associated with the underlying Pueblo I occupation (discussed with Room Suite 11).

Although a front room, Room 36 had no floor-associated features to indicate how it may have been used.

Room 34

This back room has little to distinguish it from other back rooms. There were no features and no floor artifacts of note. It probably served as a storage room (Figure 2.61).

Figure 2.60. Room 36 reuse level partitioned area.

Figure 2.61. Room 34 floor.

Room 35

This back center room is the smallest in Room Suite 5 (Figures 2.62 and 2.63). It has typical masonry walls and two associated floor features (Table 2.25).

Table 2.25. Room 35 features.

Feature Type and #
F-1 Slab-lined hearth
F-2 Corner bin

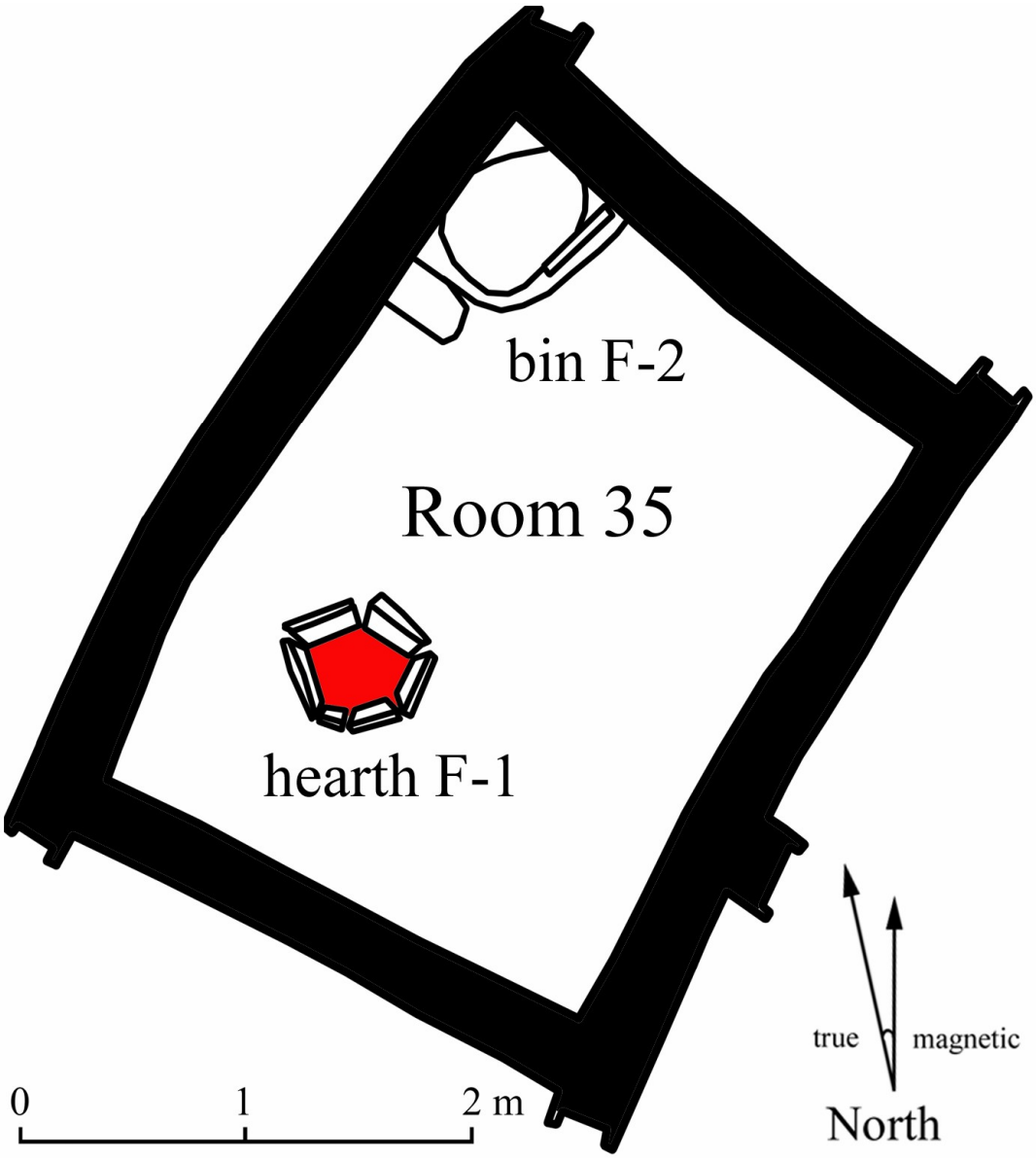


Figure 2.62. Room 35 plan.

Feature 1 is a slab-lined hearth (Figure 2.64). It was dug into the floor

and lined with sandstone slabs that angle outward slightly toward the top. The stones are lightly oxidized. This feature was open and lacked fill at abandonment. Its maximum dimensions are 60 cm (north south) X 50 cm (east-west) and 14 cm deep.

Figure 2.63. Room 35 floor photo.

Feature 2 is a small shallow bin built into the north corner of the room (Figure 2.65). The east side (down in figure) was a small sandstone slab set vertically in a loam daub collar. This collar curved around to meet the west wall where there as also the remnant of a single width masonry wall (t courses high), which has slumped to the south. There was a banded corrugated sherd cluster and a few large mammal bone fragments in the bin. The bin may have been for storage but its last use seems to have been a dump for refuse.

There were a few floor associated artifacts (Table 2.26) with two

possible stone pot lids and a peckingstone in a group just outside Feature 2.

Table 2.26. Room 35 floor artifacts.

PD	SP	Item
339	24	pot lid?
339	25	pot lid
339	26	peckingstone
339	27	sherds

Figure 2.64. Room 35 slab-lined hearth (F-1).

Room 35 has features of both a front room (slab-lined hearth) and a back room (corner bin). The corner bin seems to have no longer served a storage function and the slab-lined hearth could have been added at any time. It is curious that it was abandoned empty of ash. It is unclear how Room 35 was used or if its use changed through time.

Room 37

Room 37 was a typical back room with no features (except one in the fill that dates from the Middle Pueblo II occupation). There were a few

artifacts scattered on the floor, but these do not contribute to the interpretation of the room's use. By default I consider it a storage room.

Figure 2.65. Room 35 corner bin (Feature 2).

Conclusions

Room Suite 5 was the southwestern end of the main roomblock constructed during Early Pueblo II times. It is somewhat atypical in that it had two front and three back rooms. While the generally accepted interpretation of the room suites as representing households with the front rooms used for habitation and the back for storage, holds up, Rooms 35 and 36 are exceptions. This room suite is also unusual in that the area of the back rooms exceeds that of the front rooms. Obviously, all of the roomblock that was built as a unit needs to be considered in any interpretation of the individual room suites, but I will do this in my general summary after the extramural areas and

pitstructures have been described and discussed.

Room 11

A single small room was added onto the front of Roomblock F, extending out into the courtyard area, at an unknown time in Early Pueblo II times (see Figure 2.22). The room measures 2.18 m (north-south) and 1.67 m (east-west) giving it a floor area of 3.64 m^2. The room was formed by the construction of a U-shaped wall abutting the outside of the south wall of Room 16 and was laid directly on the existing courtyard surface. There was a single small posthole, with a low daub collar, located in the south central area of the floor. I have no idea what this was for other than perhaps a support post to prop up a sagging ceiling. Of course, any post may not have extended up to the ceiling and may have had another purpose. There were no diagnostic artifacts in floor contact. The use of this room is unknown.

Kiva H

The most enigmatic structure we excavated was a large off-square subterranean structure. This has been designated Kiva H and seems to be associated with, and may have been built at the same time as, the Early Pueblo II Roomblock F (although see the discussion at the end of the Late Pueblo I section). As with other structures designated kivas, this one exhibits complex construction and internal features (Figures 2.66 and 2.67).

Kiva H is a large structure and has several different floor areas that contribute to its overall size (Table 2.27).

Table 2.27. Kiva H floor dimensions and areas.
*direct measurement based on length and width above benches through center of kiva. This equals 1.21 m^2 more than estimated bench areas added to main chamber.

Section	Length	Width	Area m^2	% total floor area
Main chamber	5.52	4.20	23.18	64.3
Bench 1	3.10	.45	1.40	3.9
Bench 2	6.20	.55	3.47	9.6
Bench 3	3.30	.43	1.42	3.9
Bench total			6.29	17.4
Main chamber with benches	6.45	4.75	30.56*	84.7
Corner room	1.12	.90	1.01	2.8
Southern segment	4.51	.99	4.50	12.5
Total floor area			36.07	

Construction of Kiva H began by the excavation of a large off-square pit down into 1.85 m into the C horizon soil (caliche). It is possible that this excavation completely removed all vestiges of a Pueblo I pithouse (see discussion above) but there is no direct evidence that this was the case. The pit excavation was planned to incorporate banquettes on the west, north and east sides of a main chamber, but went the whole depth south of a planned dividing wall. This wall divided out a main chamber to the north, a south section and a southeast corner room. It is clear and evident that the dividing wall location and benches were part of the original plan. I am also confident that the lower and upper masonry linings were also pre-planned as were the masonry pilasters and corner room.

Main Chamber

Lining walls

The lower lining walls (below the benches) were finished with a veneer of masonry (Figure 2.67), tied at the northwest and northeast corners. The

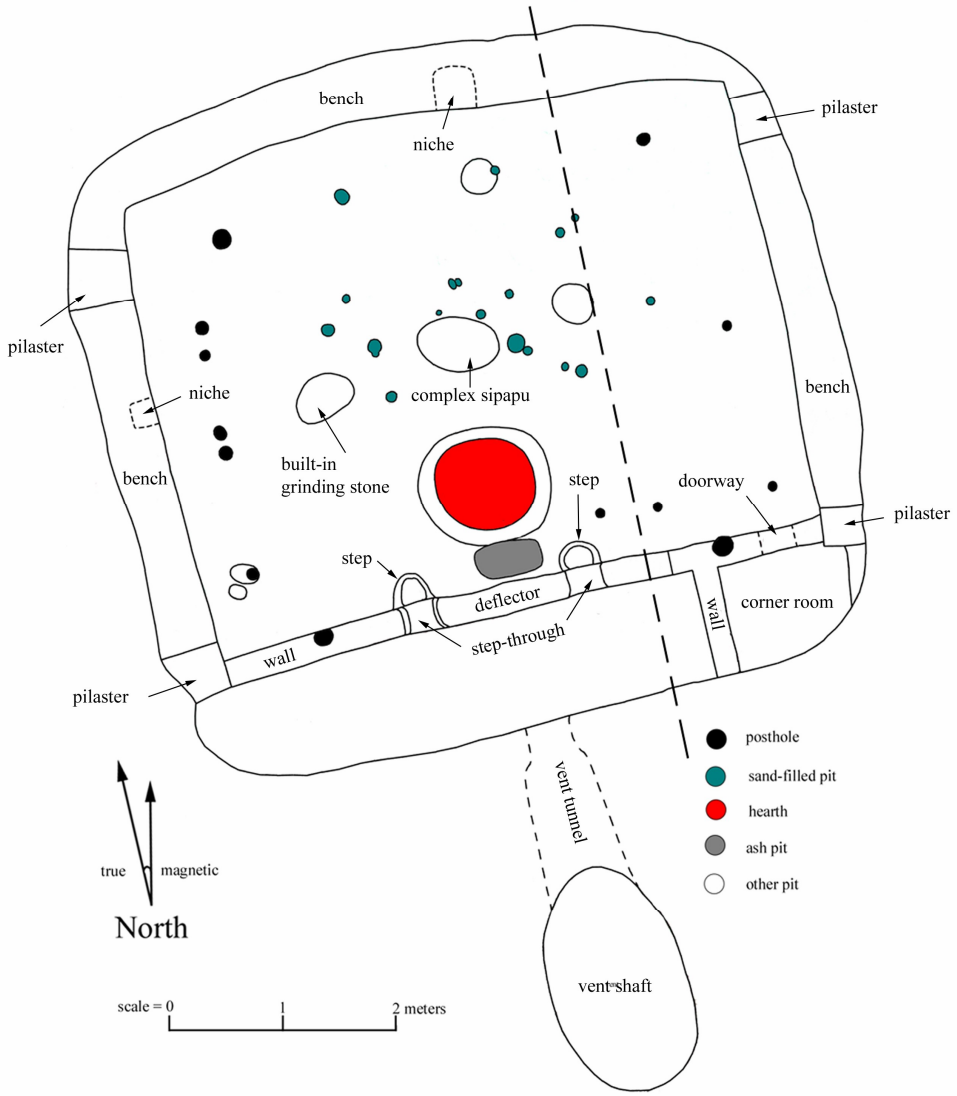


Figure 2.66. Kiva H plan.

top stones served as bench edges. The west lower lining wall includes a floor-level niche (Figure 2.68a). The upper north wall is masonry lined, although not all of the way down to the bench, and there is a central niche high in the lower wall (Figure 2.68b). The lower east wall does not include any features and the upper wall has just a few long stones set in the top (Figure2.68c). While the lower lining walls are all of well-set masonry, the upper walls look as if the stones were placed especially to control erosion or

collapse into the structure.

Figure 2.67. Kiva H looking south before most of the floor features were excavated (note plugged 'step-through in dividing wall left of the deflector).

Banquettes

Three banquette segments surround the main chamber on the west, north and east sides. Bench segment boundaries are defined by the spaces between the masonry pilasters. Bench 1 stood about 1.20 meters above the floor while Benches 2 and 3 were between 1.00 and 1.05 m above the floor.

Bench surfaces were leveled with loam plaster and were fairly even and flat.

A number of artifacts were recovered from the bench surfaces (Table 2.28).

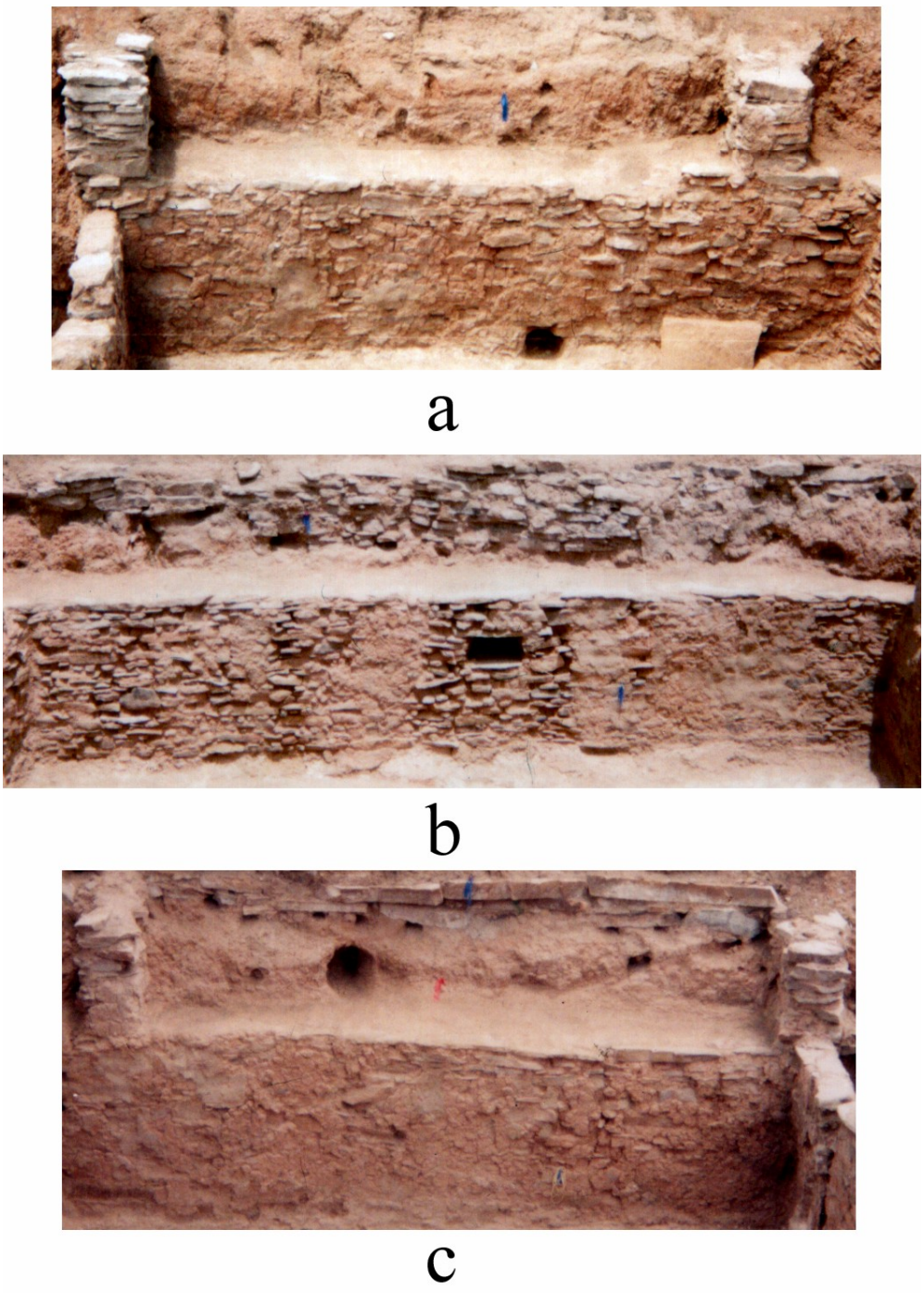


Figure 2.68. Kiva H main chamber walls: a) west wall (note floor level niche and pilasters); b) north wall (note central niche); c) east wall (note pilasters).

Pilasters

Masonry pilasters were built at the ends of the west and east walls and line up with support postholes in the main chamber on the north and the dividing wall on the south. The distance between the pilasters, across the main chamber (east-west), is six meters and this would be a substantial span for a single beam. If the entire distance was spanned by a single beam the

Table 2.28. Banquette surface artifacts.

Bench	Specimen#	Item	Map Elevation
1	899	flake cluster	98.22
1	900	flake	98.21
1	901	axe	98.12
1	902	bone	98.12
1	903	flake	98.18
1	904	bone	98.22
1	905	bone	98.20
1	906	antler flaking tool	98.20
1	907	flake cluster	98.22
2	898	axe	98.20
3	880	flake	98.02
3	881	projectile point	98.02
3	882	axe	98.02
3	883	polished stone	98.02
3	884	abrader	98.03
3	885	handstone	98.04
3	886	core	98.00
3	887	bone	98.02
3	888	bone	98.02
3	889	flake	98.02
3	890	flake	98.04
3	891	bone	98.04
3	892	flake cluster	98.12
3	893	flake	98.12
3	894	flake	98.12
3	895	mano	98.12
3	896	polished stone	98.14
3	897	flake	98.13

interior support posts would have distributed the weight of the roof and reduced the likelihood of the roof sagging and collapsing. Even so, the span between the posts on the north is 3.75 m and 3.5 m on the south. The support postholes are also not particularly large in diameter, indicating the posts were not particularly robust.

It is more likely that there were separate beams running between the roof support posts creating a square for the center of the roof and then additional beams extending from the pilasters to the tops of the posts. The span between the pilasters over the benches is also about 3.5 and 3.75m indicating that whether the main roof beams ran north-south or east-west, they would have had to be at least 3.5 meters long. This represents a significant investment in timber cutting and transport. Unfortunately, the roof wasn't burned but it was probably intentionally dismantled (perhaps to salvage beams) and the species of wood used is unknown. A few rotted beam fragments were incorporated in the roof debris that fell into the east side of the main chamber, but none of them were sufficiently preserved to yield tree-ring dates.

Floor

The floor surface in the main and south chambers varied considerably in terms of finishing. The bottom of the excavation pit was not quite level but in all areas cut into a well developed caliche deposit. Some areas of the floor were leveled by the addition of one or more layers of loam plaster. The final floor surface at the time of structure abandonment was fairly smooth and level but there were areas where the floor was caliche and others where it was loam plastered. The surface did not exhibit drip marks and was quite smooth.

There were many features cut into the floor (see below) and there were a number of artifacts in direct floor contact (Tables 2.29 and 2.30) that were present at abandonment (Figure 2.69).

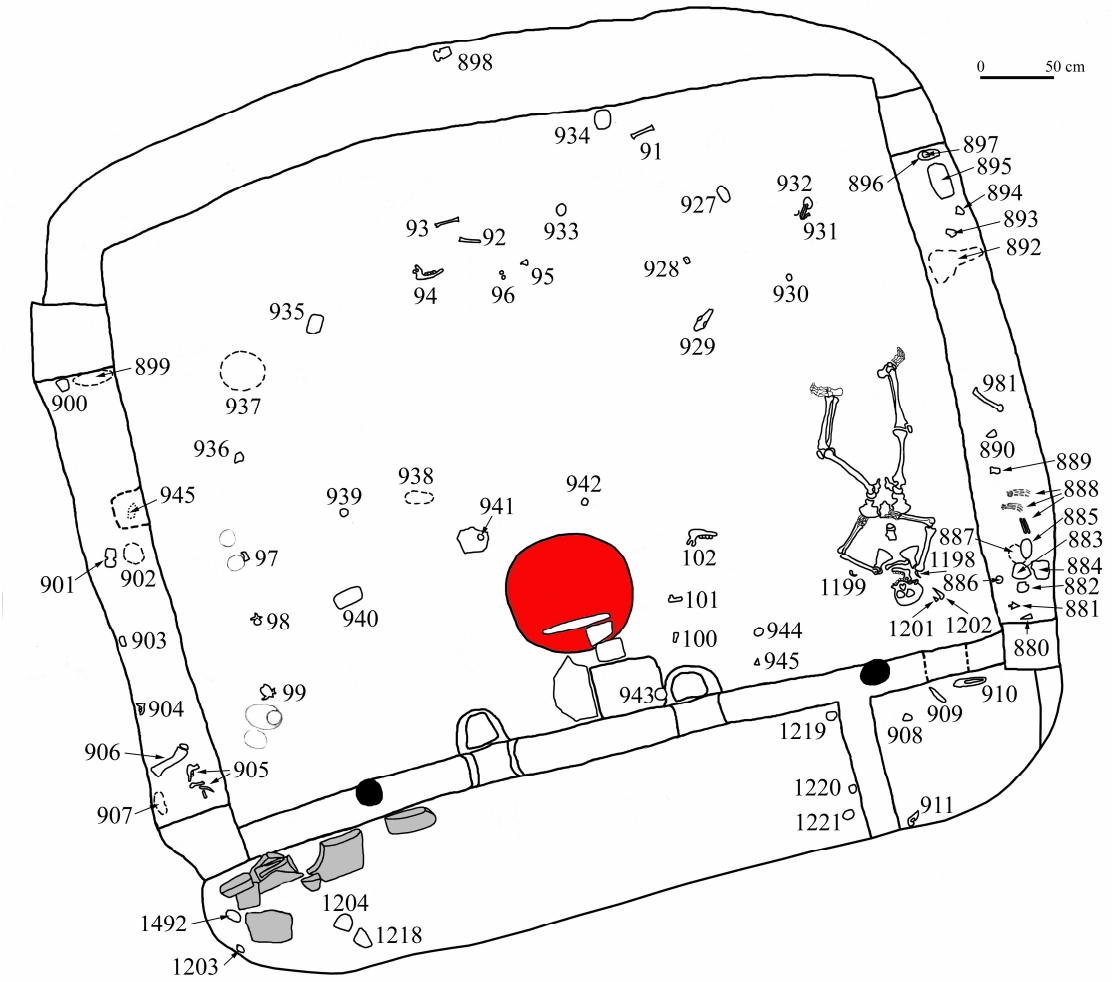


Figure 2.69. Kiva H floor artifacts.

Table 2.29. Floor artifacts in the south chamber.

Kiva H South Chamber Floor Artifacts			
PD	**SP**	**Item**	**Map Elevation**
210	1203	core	97.13
210	1204	mano	97.13
210	1218	mano	97.14
210	1219	core	97.11
210	1220	core	97.12
210	1221	peckingstone	97.13

Kiva H South Chamber Floor Artifacts			
PD	SP	Item	Map Elevation
210	1218	mano	97.14
210	1492	handstone	97.12

Table 2.30. Floor artifacts in the main chamber.

Kiva H Main Chamber Floor Artifacts		
Specimen#	Item	Map Elevation
91	bone	96.96
92	bone	96.93
93	bone	96.93
94	bone	96.93
95	bone	96.93
96	"marbles"	96.93
97	bone	97.01
98	bone	97.01
99	bone	97.03
100	bone	97.00
101	bone	97.00
102	bone	97.00
927	cobble	96.94
928	jewellery	96.90
929	bone	96.88
930	pebble/hammerstone	96.90
931	bone	96.92
932	peckingstone	96.93
933	peckingstone	96.93
934	shaped slab	97.16
935	ground stone	97.00
936	peckingstone	97.00
937	sherds	97.02
938	sherds	97.00
939	peckingstone	97.01
940	mano	97.00
941	polished stone	96.93
942	peckingstone	96.90
943	cobble	97.04
944	peckingstone	97.01
1202	projectile point	96.97

Dividing wall

The excavated pit was subdivided by a masonry wall into main chamber and southern segments (see Figure 2.67). This wall abuts sterile sediments at both ends and was built to include two support posts, two step-throughs (with slightly raised sills and adjacent stone steps) and a small doorway into a corner room (Figure 2.70). Also included in the plan of this wall were two steps. These will be further described in the wall features section below.

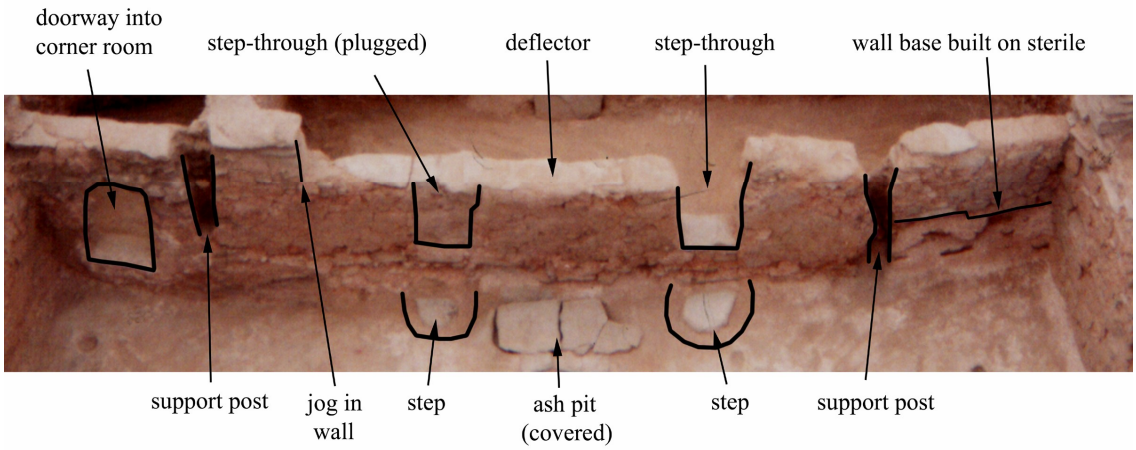


Figure 2.70. Kiva H south dividing wall showing built-in features.

The wall was built directly on the sterile caliche, which on the right (west) end was left elevated above the main chamber floor level. This demonstrates that the wall location was planned when the structure pit was dug. The wall masonry is a single stone in width and has an even face on the main chamber side but it is less evenly finished on the south face. The south dividing wall is reminiscent of the wing walls found in earlier pithouses (see Lightfoot and Etzkorn 1993:34 Figure 2.11), but in this instance it is more formal and elaborate (as is the rest of this structure). There were two roof support posts (F-33 and F-34) built into the wall and extending down into the

subfloor caliche bedrock about 45 cm. Feature 33 (right support post in Figure 2.70 was 14 cm in diameter at the top of the wall and tapered to 7 cm at the bottom. This seems to indicate that the post was set with the top of the tree at the bottom. Feature 34 (the left support post in Figure 2.70) was 18 cm at the top of the wall and tapered inward as it went down but excavation to the bottom was not possible without removing some of the wall.

Two openings were left in the wall, more or less equally spaced. I have called these two openings 'step-throughs' for lack of another term. They have raised stone sills and widen slightly from bottom to top. They measure approximately 20 cm wide at the bottom and 30 cm wide at the top. These openings allowed access to the southern chamber. The eastern step-through (F-39) was plugged with masonry and the other (F-38) was open at abandonment. Directly in front of each step-through in the main chamber were built-in steps (F-36 and F-37). These consisted of shaped pieces of sandstone set into raised mud daub forming collars (approximately 5 cm high) around them. They did not have corresponding steps in the south chamber.

The wall segment between the step-throughs may be equivalent to a deflector and is directly between the floor level ventilator tunnel opening and the central hearth.

Corner Room (F-6)

A curious feature in Kiva H was a carefully constructed small room in the southeast corner (Figure 2.71). This room was clearly planned and built as part of the original construction of the dividing wall. It was fully roofed with beams that ran from the west wall to a small masonry-lined shelf carved into the native soil on the east side.

The west wall of the corner room was tied to the dividing wall and abutted the unlined south wall of the south chamber. The outside of the west wall of the corner room was surfaced with a smooth mud plaster and the remains of the corner room roof beams were in evidence (Figure 2.72). The inside of this wall was also well plastered.

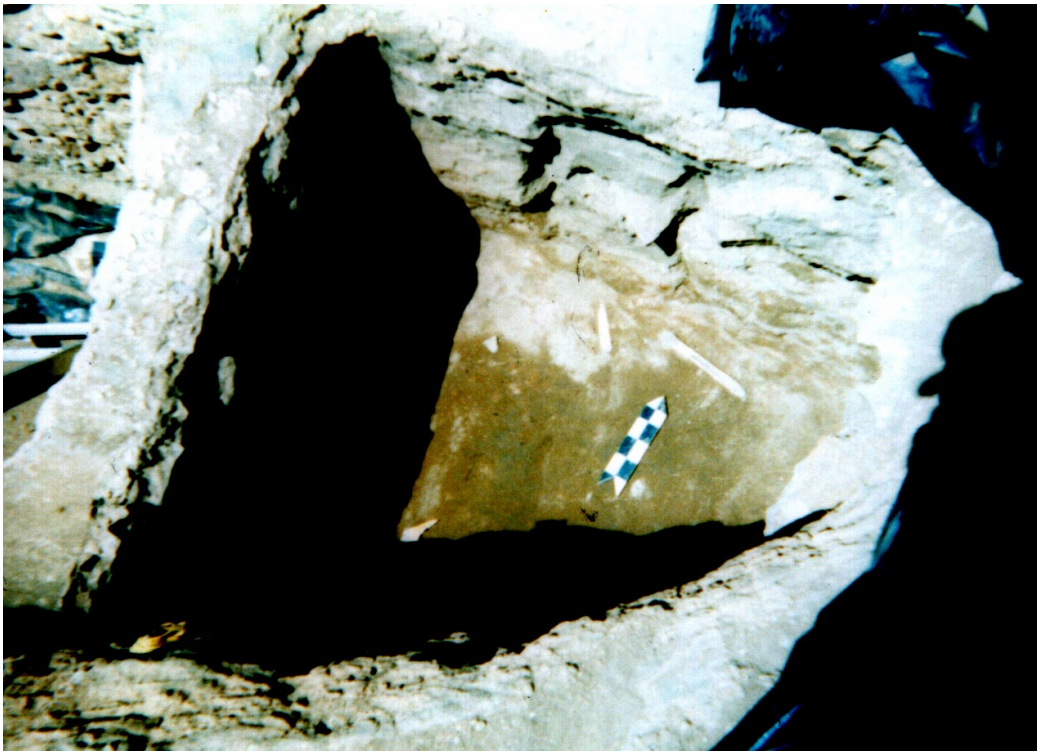


Figure 2.71. Kiva H corner room (F-6); note doorway through north wall allowing access into the room from the main chamber.

The room was entered through a doorway (F-35) in its north wall. The opening had a well defined raised sill stone, 25 cm above the main chamber floor level, but the top and east side had partly collapsed. The original opening dimensions are estimated as 52 cm high and 33 cm wide. The ceiling was 90 cm above the floor, based on the height of the beam holes in the west wall. Several artifacts were recovered from floor contact (Table 2.31).

Figure 2.72. West face of the corner room wall (note plastered surface and ends of the roof beams of the corner room).

Table 2.31. Artifacts on the floor of the corner room.

Kiva H Corner Room Floor Artifacts	
SP	**Item**
908	biface
909	awl
910	"chisel"
911	awl

Features

There were numerous other features in Kiva H, two niches in the lower lining walls (F-1 and F-11), a ventilation system (F-2) connecting the south chamber to outside of the south wall and a plethora of floor features in the main chamber (Figure 2.73 and Table 2.32).

Wall Features

Niches

Niches were encountered in two of the main chamber lower lining walls, one (F-11) at floor level in the west wall and one (F-1) below the bench surface in the center of the north lower lining wall. Feature 11 was cut directly into the caliche with the niche floor level the same as the main chamber (see Figure 2.68a). It was roofed by the masonry lining of the west lower lining wall. It measured 20 cm high, 24 cm wide and 26 cm deep. The only associated artifact was a medium sized green Morrison core flake on the floor of the niche.

Table 2.32. Kiva H structural and wall features.

#	Type	Location	LengthXWidthXHeight (cm)
1	North Niche	North lower wall	26(deep)X24X20
2	Vent System	South wall	Tunnel- 135X40X64(wall opening) Shaft- 200X124X185
3	Bench 1	West main	327X47X120
4	Bench 2	North main	631X58X100
5	Bench 3	East main	334X50X105
6	Corner	SE of dividing	112X91X90
11	Niche	West lower wall	34(deep)X30X19
35	Doorway	Dividing wall	20(deep)X33X52
38	Step-	Dividing wall	27(deep)X20(bottom) 30 (top)X32(west),
39	Step-	Dividing wall	21(deep)X30X22
47	Deflector	Dividing wall	26(deep)X116X38
53	Pilaster 1	West wall south	52(deep)X42X61
54	Pilaster 2	West wall north	58(deep)X50X40
55	Pilaster 3	East wall north	40(deep)X40X64
56	Pilaster 4	East wall south	37(deep)X34X63

Feature 1 (Figures 2.74 and 2.75) is a large wall niche set high in the north lower lining wall. It has a sandstone sill and a sandstone lintel. The sides are the masonry veneer of the wall. The niche measured 19 cm high, 30 cm wide and 34 cm deep. No artifacts were associated with this feature.

Ventilator System

This feature (F-2) is a typical vent tunnel opening at floor level and extending south to where it bends up and forms a large shaft the opens at the

ground surface south of the structure.

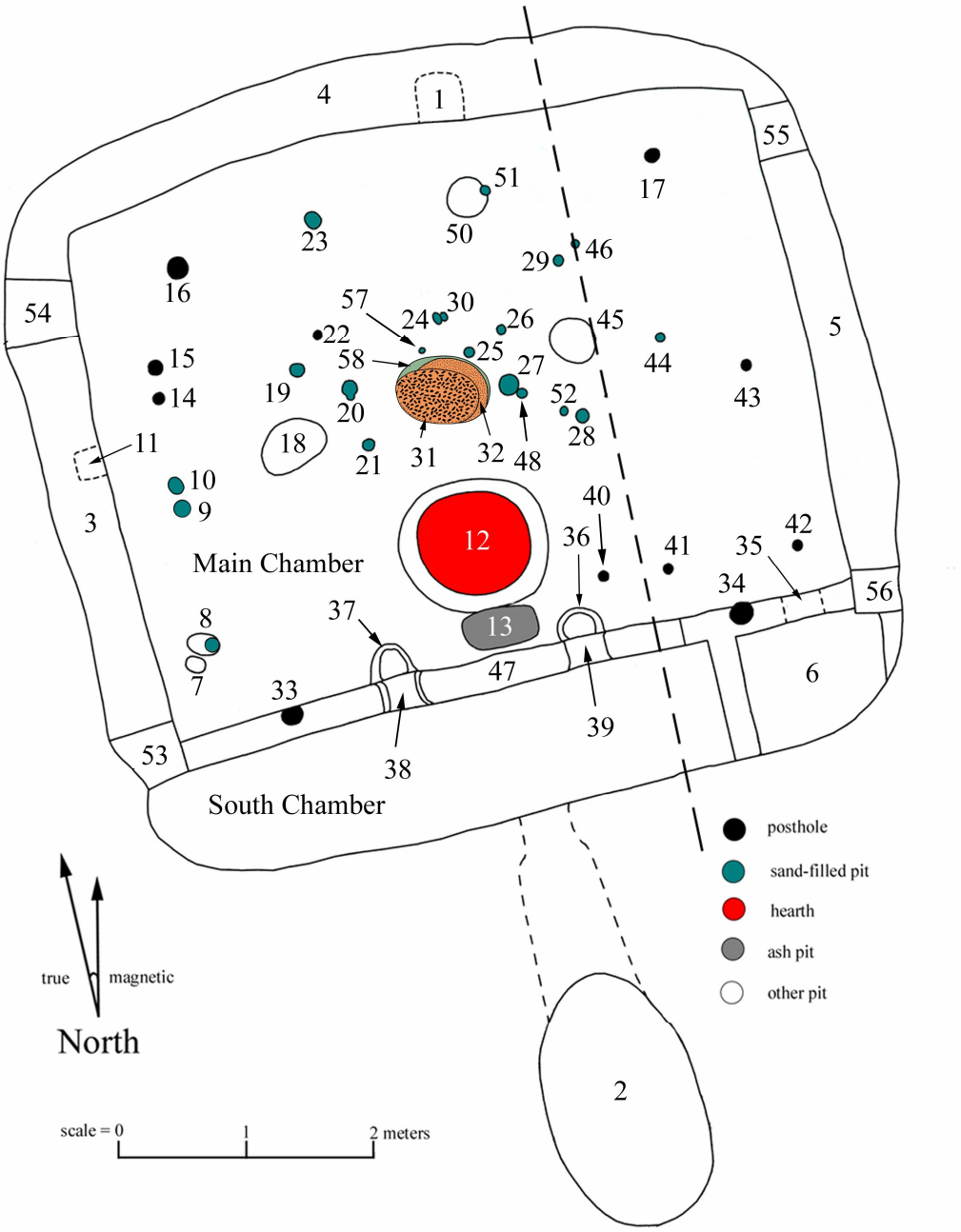


Figure 2.73. Kiva H features by number (see Tables 2.31 and 2.32).

The final wall feature is the ventilation system (F-2) in the south wall, south of the dividing wall. A tunnel was dug to the south from the center of the wall and level with the floor. The wall opening was 40 cm wide and 64 cm high. The opening was covered with a shaped sandstone slab when found

(Figure 2.76). The side walls were masonry lined directly back 30 cm from the opening.

Figure 2.74 Kiva H north niche in north lower lining wall (before excavation).

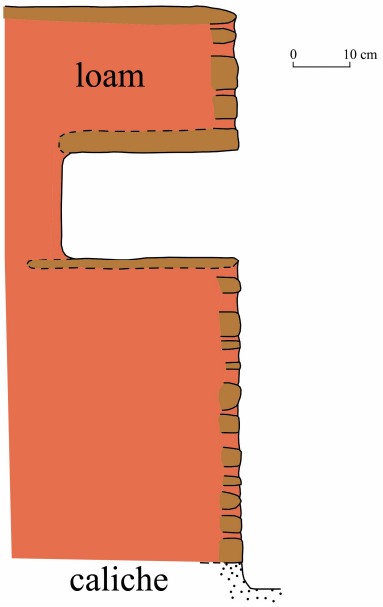


Figure 2.75. Kiva H section of lower north wall through north niche

Figure 2.76. Kiva H vent tunnel opening with cover stone.

The tunnel gradually expanded as it went south (Figure 2.77) to a width of 74 cm where it met a vertical shaft. It also gained significantly in height, but much of this was probably due to roof collapse. The vent shaft opening was large (2 m X 1.24 m) at the ground surface. This large size was also probably due mainly to collapse and masonry stones in the lower fill (Figure 2.78) may indicate that it originally was masonry lined around the opening.

Floor Features (Table 2.33)

To describe the complex of floor features I follow the definitions proposed by Wilshusen (1989:89-111). I am also in accord with his interpretations of uses in relation to probable ritual functions for many of them. Specifically I use roof support to describe postholes that I am confident held

Figure 2.77. Kiva H vent tunnel looking from the shaft toward the kiva (note in-place shaped sandstone cover.

Figure 2.78. Kiva H vent shaft fill showing stones that may have fallen from a masonry lined opening (see Kiva G for a similar situation but still in-place).

posts that extended up to the ceiling and supported the roof. Postholes are those floor features that may have held structural elements but did not necessarily contain posts that supported the roof. These may have been part

of interior raised floor platforms or other built-in features (not those added and removed during rituals). Sand-filled pits are those floor features that were intentionally filled with clean sandy sediment, occasionally of a green-gray color. I have not included in this category intentionally filled pits that contain sterile silt-loam such as that used for wall and floor plaster

Table 2.33. Kiva H floor features (see Figure 2.73)

#	Type	LengthXWidthXDepth	Use	Abandonment
7	Pit	20X17X5	single	open
8	Pit Sand-filled pit	28X13X3 10X10X11	single single	filled- orange loam filled- gray/green sand
9	Sand-filled pit	10X10X16	multiple	filled- sandy orange loam and tan/yellow sand
10	Sand-filled pit	9.5X9.5X20	single	filled- tan/yellow sand
12	Hearth	82X81X16	single	primary refuse- ash
13	Ashpit	64X29X24	single	secondary refuse- ash
14	Posthole	11X11X2	single	open
15	Posthole	13X13X4	single	open
16	Roof support	19X19X45	single	held post
17	Roof support	15X13X38	single	held post
18	Grindingstone	50X46X?	single	exposed
19	Sand-filled pit	14X13X17	single	filled-tan sand
20	Sand-filled pit	17X17X14	single	filled- dark gray-green sand
21	Sand-filled pit	11X8X12	single	filled- tan sand
22	Posthole	10X10X13	single	filled- orange loam
23	Sand-filled pit	13.5X13.5X18	single	filled- tan sand
24	Sand-filled pit	13X12X2.5	single	filled- gray-green sand
25	Sand-filled pit	11X11X12	single	filled- tan sand
26	Sand-filled pit	11X8.5X3	single	filled- tan sand
27	Sand-filled pit	17X17X18	single	filled- tan sand
28	Sand-filled pit	14X14X16	single	filled- tan sand
29	Sand-filled pit	11X10X10	multiple	filled- orange loam and gray-green sand
30	Sand-filled pit	15X13X20	multiple	filled- orange loam and gray-green sand
31	Complex sipapu	52X37X15	multiple?	filled- orange loam with charred twigs
32	Complex	62X54X20	multiple	filled- orange loam

	sipapu			with caliche flecks, gray-green sand
33	Roof support	14X14X45	single	contained post at abandonment
34	Roof support	18X18X?	single	contained post at abandonment
36	Step (east)	35X23X5	single	exposed at abandonment
37	Step (west)	39X26X5	single	exposed at abandonment
40	Post-hole	8X8X12	single	floor-capped
41	Posthole	7X7X10	single	floor-capped
42	Posthole	7X7X10	single	floor-capped
43	Posthole	9.5X9.5X12	single	floor-capped
44	Sand-filled pit	8X8X4	single	filled- gray-green sand
45	Pit	39X34X9	single	filled- orange loam
46	Sand-filled pit	7X6X4	single	filled- tan sand
48	Sand-filled pit	9X9X6	single	filled- gray-green sand
50	Pit	30X30X12	single	filled- orange loam
51	Sand-filled pit	8X8X3	single	filled- tan sand
52	Sand-filled pit	8X7X5	single	filled- gray-green sand
57	Sand-filled pit	5X5X2	single	filled- gray-green sand
58	Complex sipapu	67X54X8	Multiple?	filled- gray-green sand

There is evidence in the fill sequences that many of these pits were used more than once, frequently to hold temporary ‘posts’. Wilshusen (1989:95-96) presents a convincing argument that these may represent alter emplacements that were put up and then removed during the course of a ceremony. He sees these as mostly paired holes based on analogy to historic Pueblo alters, but the evidence in this kiva (and others at Stix and Leaves Pueblo) indicates that there may also have been alters that consisted of single ‘post’ emplacements. I include here descriptions of a range of sand-filled pits from those that are simply shallow scooped out places filled with colored sand to those with complex cut and fill sequences.

I also use the term complex sipapu for the large oval pits located just to the north of the central hearth. In terms of cut and fill sequences these resemble the sand-filled pits, just on a larger scale and in a central position. I have refrained from calling any specific sand-filled pit a sipapu in this structure as the only distinguishing trait would be a 'traditional' location north of the hearth. Several features could have been designated sipapus.

The large central firepit is called a hearth in line with the definition I have used throughout the site. A formal pit filled with ash built against the dividing wall south of the hearth has been designated an ash pit.

Pits

Five pits (Features 7, 8, 18, 45 and 51) were cut into the floor in different locations. They were filled either with orange loam or with mixed deposits and did not qualify as either sand-filled pits or complex sipapus (see below). Never the less they may also have been related to ritual uses of the structure. They were not deep enough to be considered storage pits and they showed no evidence that they had been used for mixing mortar, daub or plaster, held metates or served as milling catchment basins.

Hearth

Centrally located north of the dividing wall was a circular hearth (F-12). It was a circular pit, 82 cm in diameter cut into the caliche. On the south side it was 28 cm deep but only 11 cm deep on the north side (Figure 2.79). This discrepancy was due to a thick layer of loam flooring on the south and only a thin layer on the north; the caliche was at the same level on both sides. The interior sides sloped inward slightly to a level base and a sandstone slab was set vertically into the hearth on the south side. A line of two tabular sandstone

slabs were set into the hearth rim on the south side, similar to a deflector but only extended above the floor about 3 cm. There was oxidation throughout the hearth and it was not quite filled with a sandy white ash. It was left open at abandonment of the structure.

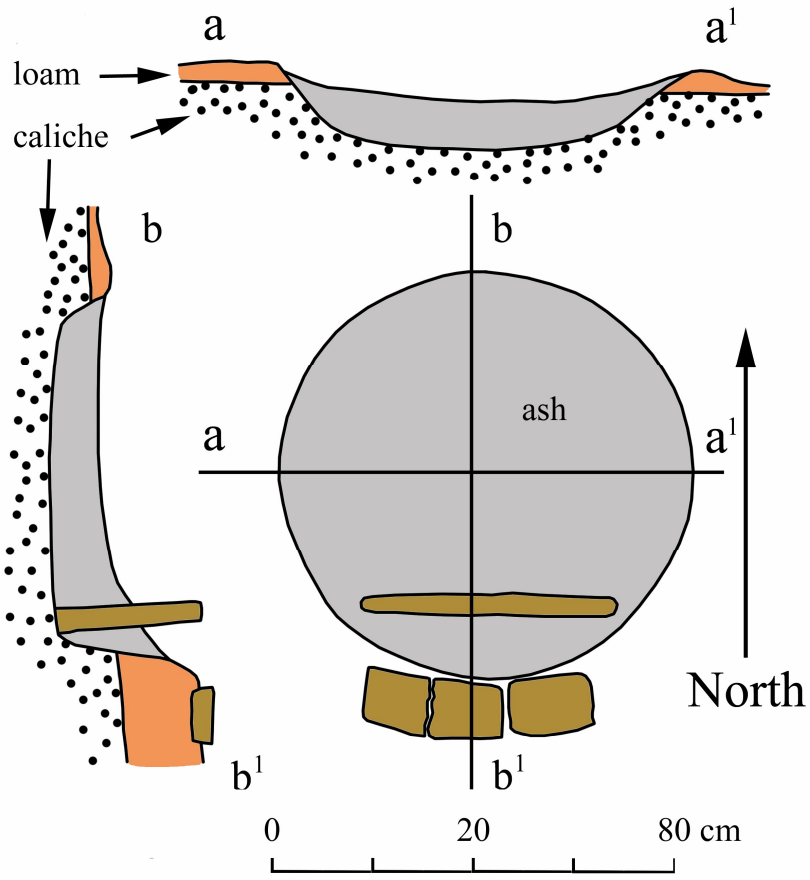


Figure 2.79. Kiva H central hearth. The dotted areas indicate caliche bedrock.

Ash Pit

A rounded rectangular pit (F-13) was constructed adjacent to the dividing wall just south of the hearth (Figure 2.80) identified this as an ash pit (Figure 2.81). The pit was cut into the underlying caliche bedrock, and based on the way the cover stone set into the rim of the pit; it was also cut through the loam flooring plaster. The pit was filled with a clean gray ash.

Figure 2.80. Kiva H hearth and ash pit (stone slab-covered) looking south.

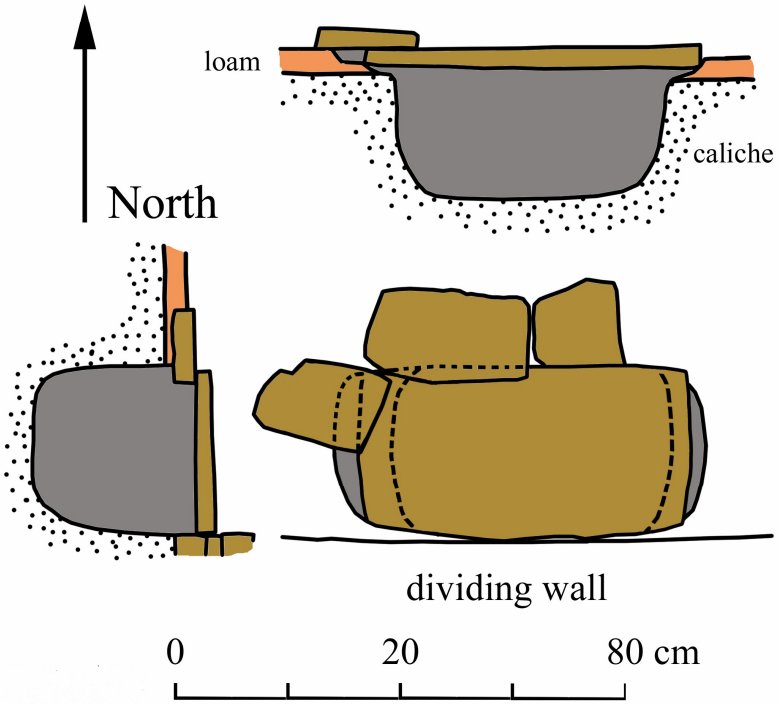


Figure 2.81. Kiva H ash pit.

Postholes

Along with the four roof support posts (described above) there were

two alignments of smaller posts, one along the west wall (Features 8-10 and 14-15) and the other along the west end of the dividing wall (Features 40-42 and 43 inside the west wall). All of these postholes, except 14 and 15 had either been capped by floor plaster or intentionally filled. Their patterns suggest that they may have been built either as partitions or screens, or as part of raised platforms. If either of these explanations were the case, the alignment along the west wall would most likely have been a platform while that in the southwest area may have screened off the view into the corner room.

The only other posthole (F-22) was not in any alignment and may actually have functioned as a sand-filled pit, but because it was filled with orange loam it doesn't conform to my definition.

Sand-filled Pits

The majority of floor features in the main chamber of Kiva H are sand-filled pits (see above for a definition). They ranged considerably in their dimensions from small shallow basins to complex posthole-like features (Figures 2.82-2.85). Some seem to have been constructed specifically for whatever their purpose was while others (for example Features 8 and 9) seem to have been postholes that then served as sand-filled pits. They were widely distributed in the main chamber and all but F-8 were north of the hearth with the majority clustered centrally (see Figure 2.73).

While some of the sand-filled pits contained a single sediment (Figures 2.82b, 2.83b and d, 2.84a and 2.85 F-24) others had multiple sand fills (Figures 2.82c and 2.84d). Some also showed clear evidence that they had been made to hold posts (probably for temporary alters or shrines) with

sediment (either caliche rubble from digging the pit or orange loam) packed in around the post. After the removal of the post the hole was then filled with clean, usually colored sand (Figures 2.82a and d, 2.83 a and c, 2.84b-d and 2.85 F-30), in two instances two different colored layers (Figures 2.82c and 2.84d). The minimum number of rituals performed in this kiva, as evidenced by sand-filled pits, can only be estimated if one assumes that the features were only used once and that no two were used at the same time. Neither of these assumptions is particularly credible. What is interesting is the near lack of superposition of these features. However they functioned, it seems that a standardized location was not part of the rituals or not locating them in the same places was, again assuming they were used one at a time. None of the sand-filled pits are paired (Features 9 and 10 are an exception and they were

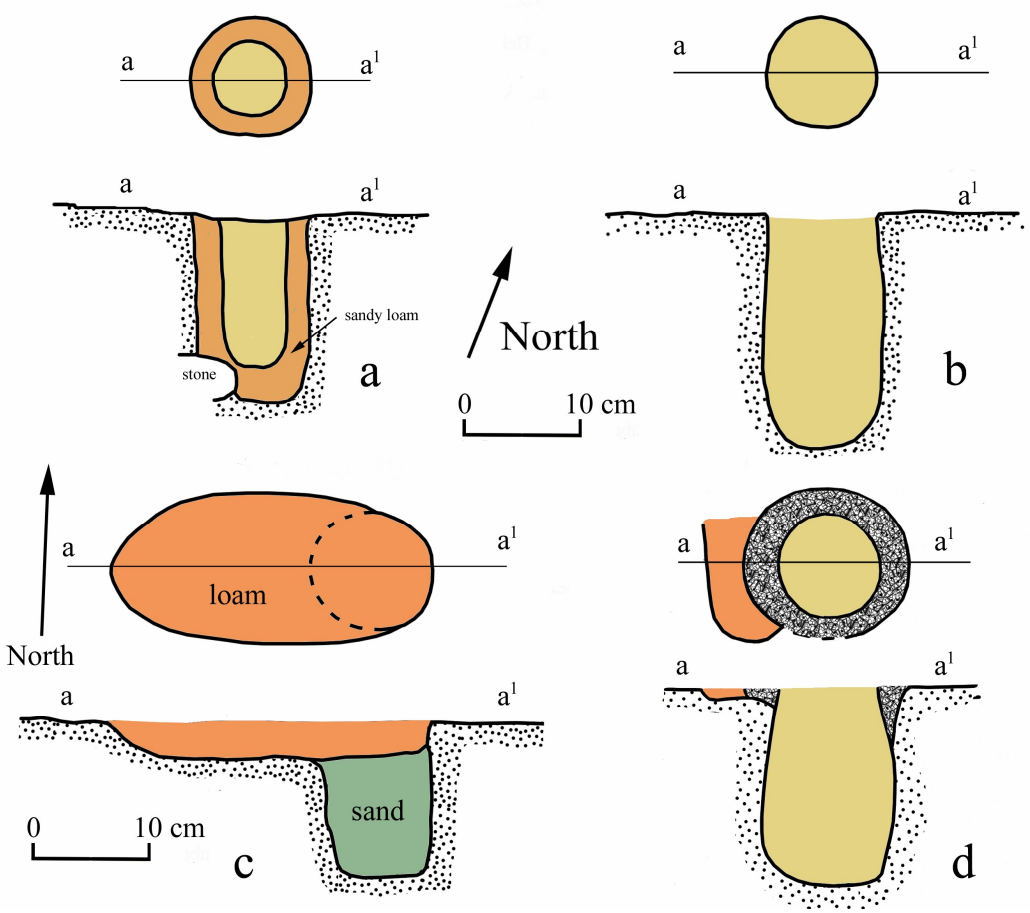


Figure 2.82. Kiva H sand-filled pits: a) Feature 9; b) Feature 10; c) Feature 10; and d) Feature 19. Colors represent the types of sediments; green is gray-green sand, yellow-tan is sand, orange is orange loam, black stippling is caliche bedrock and gray mottled is mixed caliche rubble.

originally postholes), contrary to those reported by Wilshusen (1988:32).

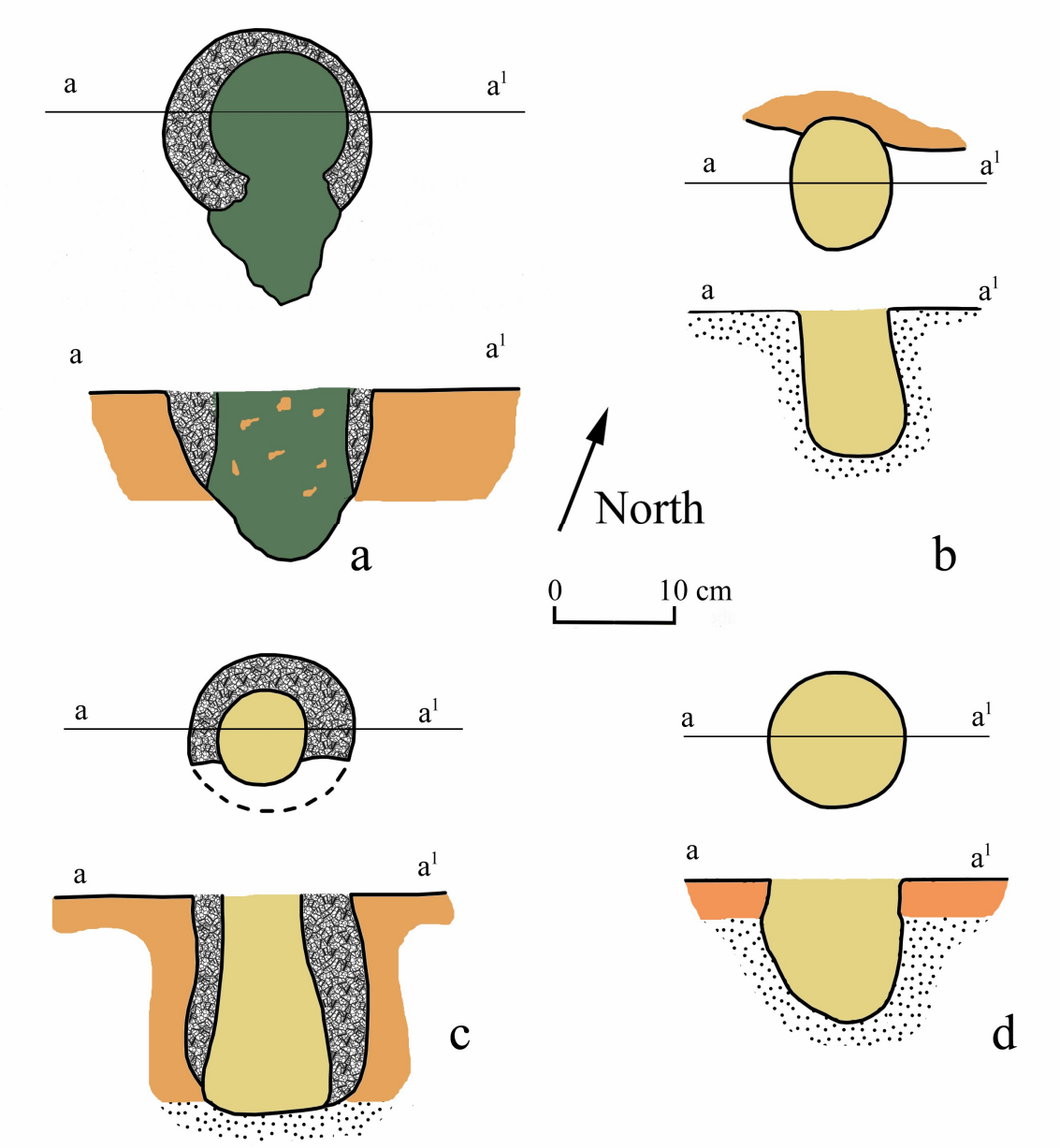


Figure 2.83. Kiva H sand-filled pits: a) Feature 20; b) Feature 21; c) Feature 23; and d) Feature 25. Colors represent the types of sediments; green is gray-green sand, yellow-tan is sand, orange is orange loam, black stippling is caliche bedrock and gray mottled is mixed caliche rubble.

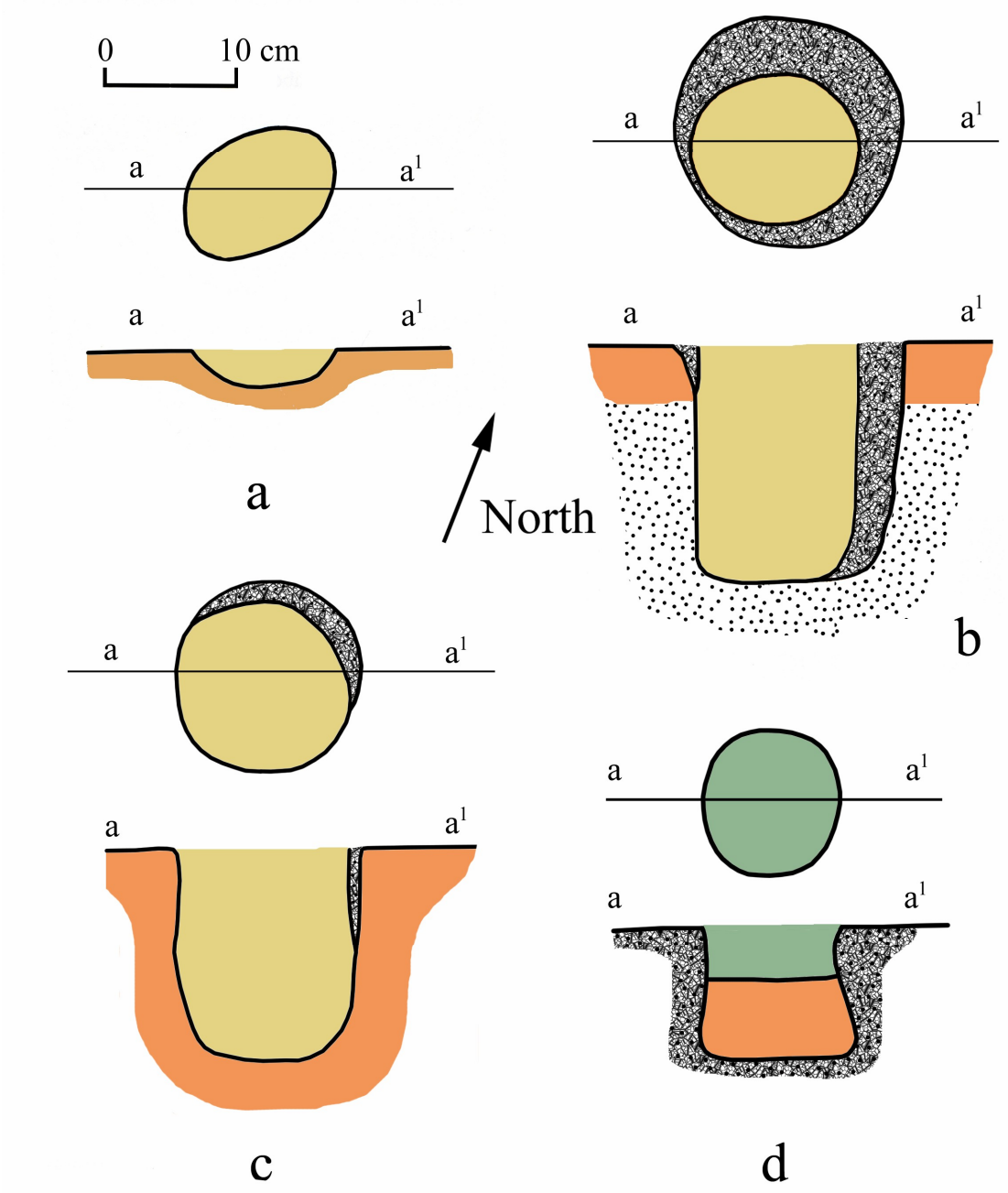


Figure 2.84. Kiva H sand-filled pits: a) Feature 26; b) Feature 27; c) Feature 28; and d) Feature 29. Colors represent the types of sediments; green is gray-green sand, yellow-tan is sand, orange is orange loam, black stippling is caliche bedrock and gray mottled is mixed caliche rubble.

The sand and loam sediments used to fill the pits were consistently clean and unmixed (except where clearly disturbed after placement in the pit). The orange loam is the natural upper soil in the area of the site, but to obtain

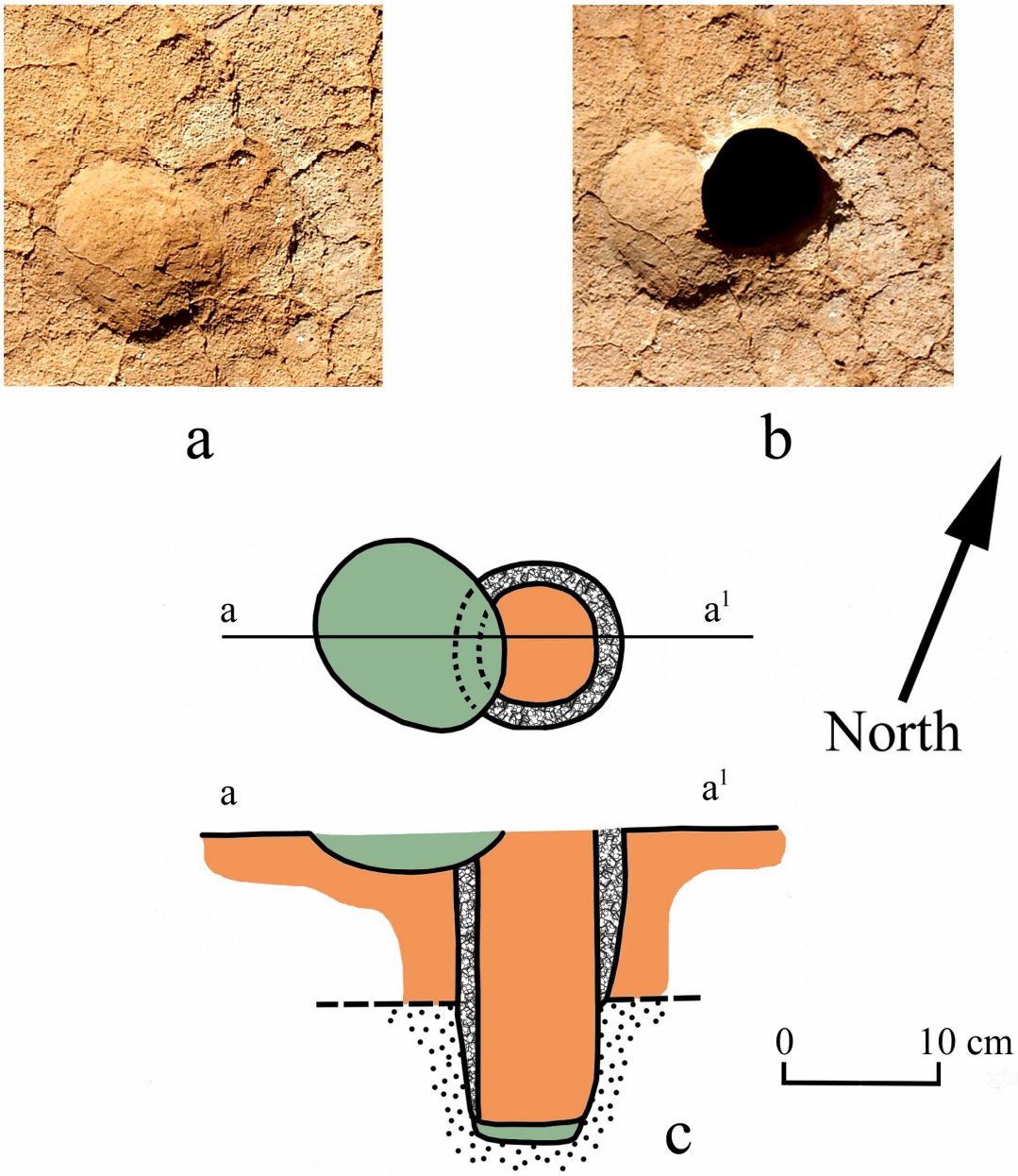


Figure 2.85. Kiva H sand-filled pits F-24 (left) and F-30 (right); a) Feature 24 excavated showing overlap with F-30; b) both features excavated; and c, plan and section maps of features. Colors represent the types of sediments; green is gray-green sand, orange is orange loam, black stippling is caliche bedrock and gray mottled is mixed caliche rubble.

clean loam it had to be excavated below the humic topsoil. This was relatively easily obtained. The yellow-tan and gray-green sands, on the other hand, are not available in the site environs and may have been obtained from distant sources, especially the grey-green. Green colored stones and sediments of

various grain sizes are available in the form of reduced iron-stained deposits in the Morrison Formation. There is one obvious deposit along the highway just south of the entry road into the 4-Corners Monument, and undoubtedly there are others that are closer to Stix and Leaves. A pebbly to sandy green sediment was a relatively common find in rooms at Sand Canyon Pueblo (5MT765). The same green color was also used in wall paintings in a kiva (501) and a second story room in the D-shaped building at Sand Canyon Pueblo. It seems evident to me that this color had ritual significance (as did turquoise during the Chaco era).

Complex Sipapu

One complex sipapu (Brisbin 1988:Figure 2.73 and Kleidon 1988:Figures 4.33 and 4.38 [from Wilshusen 1989:Figure 5]) was located just north of the hearth. This was actually a series of at least three successive features (F-31, F-32 and F-58) superimposed on another (Figures 2.86 and 2.87). The first pit F-58) (if smaller ones preceded it, it is not apparent) was the largest. All that remains is a small portion on the north and east sides. It was cut into the caliche bedrock. It had slightly sloping sides and a flat bottom. There was no lining apparent. Ultimately it was filled with gray-green sand, but there is not enough left to see if there were any other fill units.

The second pit (F-32) was smaller and rounder but apparently cut to the same depth. Again there is only a portion left and it was filled with orange loam with charcoal flecks throughout.

The third and final pit (F-31) was smaller yet, elliptical, off-set to the southwest from the center and deeper, again cutting into the caliche bedrock. The south edge was 'lined' with a well-spaced set of vertical charred sticks. In

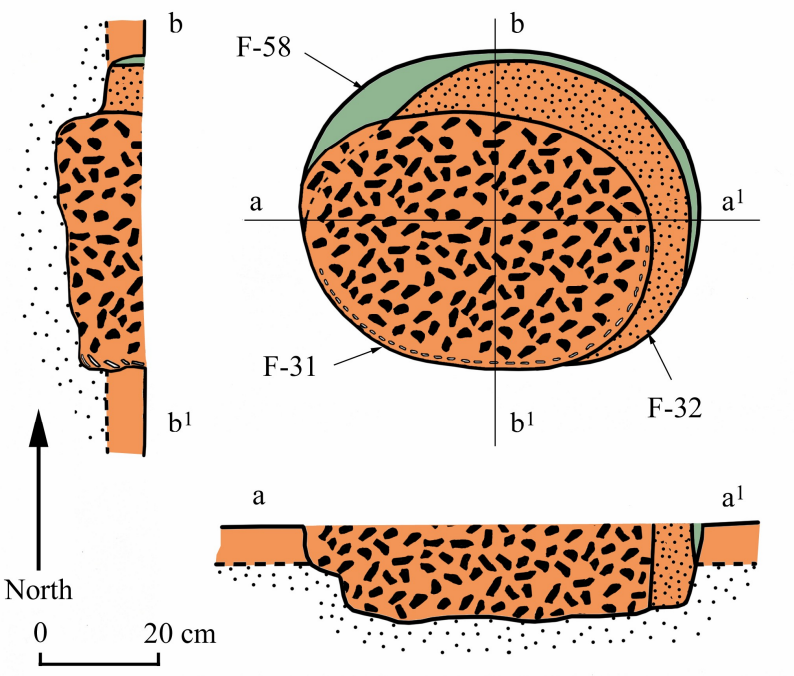


Figure 2.86. Kiva H complex sipapus Features 31,32 and 58.

Figure 2.87. Kiva H complex sipapus and surrounding features.

size and spacing they are reminiscent of a willow stick mat. When uncovered these sticks did not extend very far into the fill. It is possible that rather than being connected they were the bases of prayer feather sticks. The fill of the pit consisted of an orange loam with a mix of charred stick fragments.

Whatever this feature was it is in the correct location and has contents that suggest it served a ritual function. It was likely used in conjunction with the nearby sand-filled pits.

Built-in Grinding Slab (Figure 2.88)

It is not unusual at Stix and Leaves Pueblo to find slabs of sandstone that have been set in pitstructure floors and used as grinding surfaces (all but one of the pitstructures had one). They are, however, absent at the Late Pueblo I Duckfoot Site (Lightfoot and Etzkorn 1993). This feature (18) consists of a simply- shaped sandstone slab set into a shallow pit and held in place by loam mortar. The upper surface is somewhat irregular but exhibits abrasion. It is unlikely that it served as a food processing implement, at least not with any intensity. Its close proximity to several sand-filled pits may indicate it was used in conjunction with them. It is also possible that the other loam-filled shallow basins held such a stone (or even this stone) and it was moved around.

Kiva H Abandonment and Filling

If the architecture of this structure is unusual (unique), its abandonment and post-abandonment filling are also curious. There were few objects on the floor but the distribution of broken artifacts and small pieces of sandstone indicate that the structure had fallen into disuse some time before it was abandoned. There were several clusters of intact artifacts on the banquette

Figure 2.88. Kiva H built-in grinding slab (F-18).

surfaces, but these could easily have been overlooked in the dark interior.

Burial

Evidently the last act in this structure was the placement of a body on the floor just north of the doorway into the corner room (Figure 2.89). While this seems to be a formal burial in terms of careful placement, there are no grave goods and the position is unusual. The body was extended with the head to the south, facing up (slightly fallen to the west). The arms were slightly bent with the hands on the hips (right on top, left under). The legs are extended but the feet widely separated and the knees slightly bent. Both feet face outward. The effect is one of a dancing posture (Figure 2.90).

The only associated artifacts were a pair of dog canine tooth earrings and possibly a bone hair pin (Figure 2.91). The chest area was heavily disturbed by burrowing animals after the burial was covered by kiva fill,

Figure 2.89. Kiva H burial on floor along east wall.

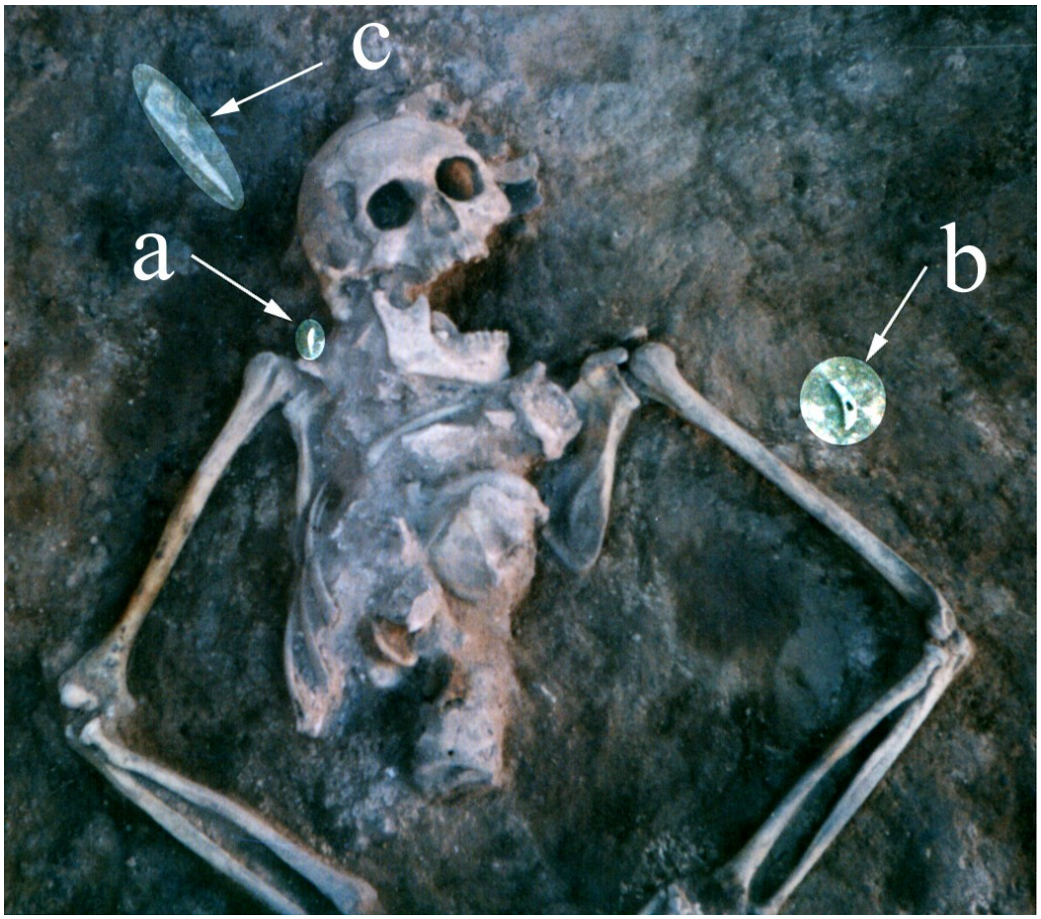
mainly roof fall. This individual "…is an older adult male, about 50 years of age based on pelvic criteria. Almost this entire person is present, though there is some post-mortem disturbance and bone loss from rodent activity. Although most of the bone surfaces are in good condition, a few of the long bones have mild to moderate weathering and root etching. Those bones, which are fractured, such as the cranium, have typical dry-bone fracturing, most likely due to natural compressive forces" (Bradley, B.A. and C. S. Bradley 1999:29-

30).

Figure 2.90. Kiva H burial showing positioning.

Human remains are frequently found in late Pueblo I pithouses (Hoffman 1993:Tables 9.1-9.10), however it is not clear that all of these were intentional burials and some could as easily have resulted from in-place trauma. In almost all cases the structures were burned. Intentional burials are rarely encountered on the floors of Kivas during Pueblo II and Pueblo III times in the 4-Corners area. Pueblo II burials, in any context are also rarely extended. The one exception to this is most of the burials found in early rooms at Pueblo Bonito in Chaco Canyon (Akins 1986: 94) where 10 of 11 were extended and on their backs. Akins doesn't give details of the positions of hands and legs but some of these can be seen in Judd's publication (1954:Plates 94-96). Of particular interest to me is the similarity in the positions of the Kiva H burial and Burial 8 at Pueblo Bonito. They are nearly identical in posture. This could of course be mere coincidence, but it is

intriguing.



Feature 2.91. Kiva H burial: a-b) perforated dog tooth earrings; and c) mammal ulna tool (possibly a hair pin).

Following the burial a hole was broken through the roof, probably as part of intentional roof dismantling. The evidence of this is clear in the profile (Figure 2.92). There was a mound of loam that was probably roof deposit. It contained pieces of rotted wood, likely remnants of beams. On top of this were additional deposits of loam with caliche and lenses of ash. These were probably materials dumped through the hole in the roof. These deposits mostly covered the burial but it was not directly under to roof hole. There were also similar deposits angling in from the south in and over the south chamber. It is less clear how these deposits came to be; perhaps there was

an opening at the edge of the roof.

At this point either the entire roof collapsed or it was intentionally dismantled and the roof beams salvaged. The remaining structure depression was filled up to the ancient ground surface with ashy midden deposits. This sediment showed diagonal laminations throughout indicating the trash was being intermittently dumped in around the edges and angling down to the center. This midden deposit was very rich in artifacts (Table 2.34) and animal bones. Many of the artifacts were intact and much of the animal bone was unbroken. Pottery sherds were plentiful as were bone tools, ornaments, projectile points, broken and unfinished preforms and biface manufacture debris. were only a small number of sherds in floor contact. Typed sherd counts are: Cortez B/w 4; Cortez/Mancos B/w 2; Mancos Gray 6, Mancos Corrugated 2; and Bluff B/r 2. A large sample of sherds from PD 95 (the second layer of secondary refuse) was analyzed by Scott Ortman of the Crow Canyon Archaeological Center (Table 2.34), however, not all of the pottery recovered from Kiva H has been analyzed.

I have taken Scott's data and further broken it down to allow specific observations and comparisons between wares and types (Tables 2.35-2.42). It has also been used to estimate the age of the deposits using an age averaging method. There are a lot of things that can be said about the results of these analyses. There is relatively little difference in type proportions between counting and weighing sherds. Certainly the differences are so small that they do not influence the interpretations. Some of the differences between the types might be differences in average sherd size or thickness.

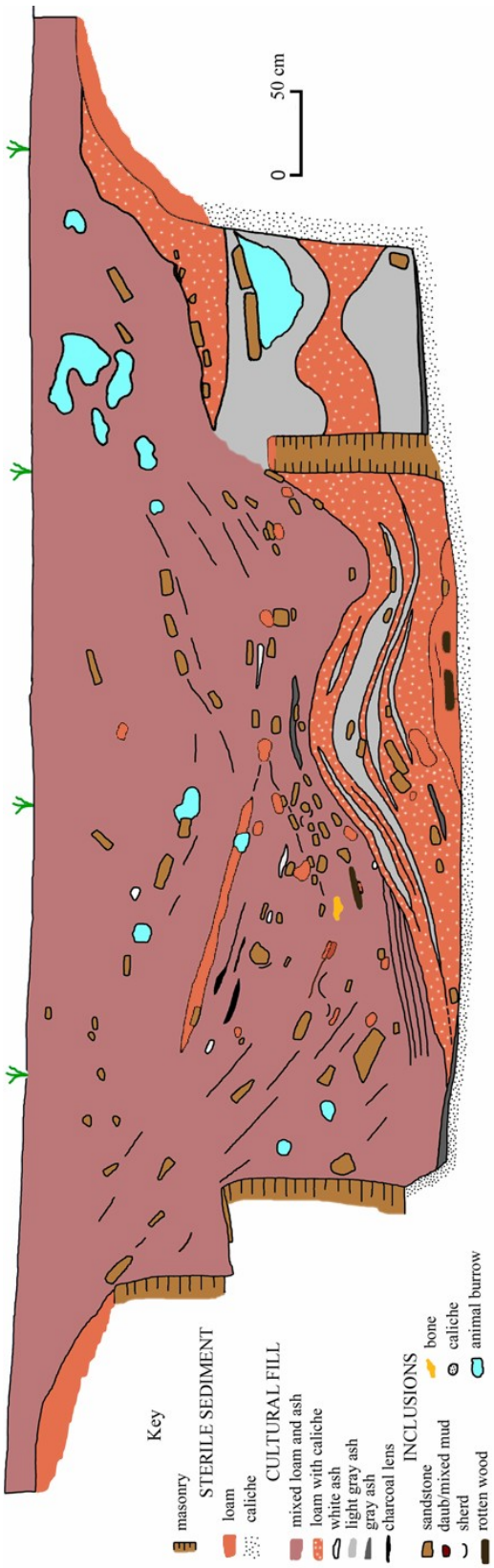


Figure 2.92. Kiva H profile, east of center.

Table 2.34. Artifacts from secondary refuse in Kiva H.

Artifact Type	Count (comp/frag)	Artifact Type	Count (comp/frag)
Bone awl	48 (44/7)	Metate	24 (5/19)
Bone needle	2	Polishingstone	1
Gaming piece	1	Pecking/hammerstone	453
'Dust pan'	1	Tchamahia	2
Bone knife handle	1	Biface blank	88
Antler flaker	1	Projectile point	150 (88/62)
Worked antler	1	Drill	10
Worked bone	9	Knife	1
Clay 'marble'	4	Modified flake	16
Pot stopper	1	Denticulate	2
Sherd scraper	1	Scraper	4
Modified sherd	74	Core	69
Abrader	18	Cobble	34
Axe	7 (5/2)	Pebble	20
Maul	1	Fossil	25
Peckingstone/maul	1	Minerals	14
Mano	217 (120/97)	Worked crystal	1
Mano blank	5	Worked gypsum	1
Handstone	1	Mano/metate	2
Subtotal	**394**		**907**
Grand Total			**1301**

Table 2.35. Pottery sherd analysis (Scott Ortman).

Ware	Type	Count	Weight (g)
Not Recorded	Not Recorded	8	110.5
Gray Ware	Chapin Gray	11	160.7
Gray Ware	Moccasin Gray	87	1449.6
Gray Ware	Mancos Gray	492	7211.1
Gray Ware	Indeterminate Neckbanded Gray	111	1548.9
Gray Ware	Indeterminate Local Gray	783	11086.7
Corrugated	Mancos Corrugated Gray	33	461.6
Corrugated	Indeterminate Local Corrugated Gray	106	1426.7
White Ware	Chapin Black-on-white	5	66.9
White Ware	Piedra Black-on-white	6	103.4
White Ware	Cortez Black-on-white	569	7750.2
White Ware	Mancos Black-on-white	66	1218.1
White Ware	Early White Painted	1	6.7
White Ware	Early White Unpainted	4	59.3
White Ware	Pueblo II White Painted	158	2030.2
White Ware	Late White Painted	181	2913.1
White Ware	Late White Unpainted	858	14604.8
White Ware	Indeterminate Local White Painted	7	85.5

White Ware	Indeterminate Local White Unpainted	279	4471.8
Red Ware	Abajo Red-on-orange	6	59.2
Red Ware	Bluff Black-on-red	41	366.7
Red Ware	Deadmans Black-on-red	115	1495.4
Red Ware	Indeterminate Local Red Painted	183	863.8
Red Ware	Indeterminate Local Red Unpainted	122	633.4
Chuskan Gray Ware	Bennett Gray	2	47.8
Chuskan Gray Ware	Sheep Springs Gray	14	182.4
Chuskan Gray Ware	Tocito Gray	172	2620.3
Chuskan Gray Ware	Gray Hills Banded	3	40.7
Chuskan Gray Ware	Newcomb Corrugated	219	3524.7
Chuskan Gray Ware	Captain Tom Corrugated	331	4732.7
Chuskan Gray Ware	Indeterminate Chuskan Gray	999	15254.4
Chuskan Corrugated	Blue Shale Corrugated	98	1513.5
Chuskan Corrugated	Indeterminate Chuskan Corrugated	3	26.1
Chuskan White Ware	Naschitti B/W	317	4954.0
Chuskan White Ware	Newcomb B/W	48	732.9
Chuskan White Ware	Taylor B/W	40	841.8
Chuskan White Ware	Brimhall B/W	2	29.4
Chuskan White Ware	Indeterminate Chuskan White	529	9156.3
San Juan Red ware, with trachyte	Abajo R/O, with trachyte	3	27.0
San Juan Red ware, with trachyte	Bluff B/R, with trachyte	17	157.1
San Juan Red ware, with trachyte	Deadman's B/R, with trachyte	71	560.0
San Juan Red ware, with trachyte	Indeterminate San Juan Red ware, with trachyte	42	192.6
Tsegi Orange Ware	Tsegi Orange ware	9	105.6
Tsegi Orange Ware	Tusayan B/R	7	105.2
White Mountain Red Ware	White Mountain Red ware	1	7.7
Ware unknown	Unknown Gray	5	93.8
Ware unknown	Unknown Red	5	44.5
Ware unknown	Unknown Pottery	2	17.2

Table 2.36. Local Whiteware by type.

Type	Count	%	Weight	%
Chapin Black-on-white	5	.8	66.9	.7
Piedra Black-on-white	6	.9	103.4	1.1
Cortez Black-on-white	569	88.1	7750.2	84.8
Mancos Black-on-white	66	10.2	1218.1	13.3
Total	**646**	**100**	**8048.6**	**99.9**

Table 2.37. Local San Juan Redware by type.

Type	Count	%	Weight	%

Abajo Red-on-orange	6	3.7	59.2	3.0
Bluff Black-on-red	41	25.3	366.7	19.1
Deadmans Black-on-red	115	71.0	1495.4	77.8
Total	**162**	**100.0**	**1921.3**	**99.9**

Table 2.38. Local Grayware by type.

Type	Count	%	Weight	%
		1.8		
Chapin Gray	11		160.7	1.7
Moccasin Gray	87	14.0	1449.6	15.6
Mancos Gray	492	79.0	7211.1	77.7
Mancos Corrugated Gray	33	5.3	461.6	5.0
Total	**623**	**100.1**	**9283.0**	**100**

Table 2.39. Chuska Whiteware by type.

Type	Count	%	Weight	%
Naschitti B/W	317	77.9	4954.0	75.5
Newcomb B/W	48	11.8	732.9	11.2
Taylor B/W	40	9.8	841.8	12.8
Brimhall B/W	2	.5	29.4	.5
Total	**407**	**100.0**	**6558.1**	**100.0**

Table 2.40. San Juan Redware with 'Chuska' temper.

Type	Count	%	Weight	%
Abajo R/O, with trachyte	3	3.3	27.0	3.6
Bluff B/R, with trachyte	17	18.7	157.1	21.1
Deadman's B/R, with trachyte	71	78.0	560.0	75.3
Total	**91**	**100.0**	**744.1**	**100.0**

Table 2.41. Chuska Grayware by type.

Type	Count	%	Weight	%
Bennett Gray	2	.2	47.8	.2
Sheep Springs Gray	14	1.1	182.4	1.0
Tocito Gray	172	13.8	2620.3	13.6
Gray Hills Banded	3	.2	40.7	.2
Newcomb Corrugated	219	17.6	3524.7	18.3
Captain Tom Corrugated	331	26.6	4732.7	24.6
Blue Shale Corrugated	98	7.9	1513.5	7.9
Naschitti B/W	317	25.4	4954.0	25.8
Newcomb B/W	48	3.9	732.9	3.8
Taylor B/W	40	3.2	841.8	4.4
Brimhall B/W	2	.2	29.4	1.5

Total	**1246**	**100.1**	**19220.2**	**101.3**

Table 2.42. All painted types.

Type	Count	%	Early	Late
Chapin Black-on-white	5	.4	2	3
Piedra Black-on-white	6	.5	4	5
Cortez Black-on-white	569	46.8	410	480
Mancos Black-on-white	66	5.4	54	62
Abajo Red-on-orange	6	.5	4	5
Bluff Black-on-red	41	3.4	27	32
Deadmans Black-on-red	115	9.5	84	105
Naschitti B/W	317	26.1	235	287
Newcomb B/W	48	4.0	36	44
Taylor B/W	40	3.2	32	35
Brimhall B/W	2	.2	2	2
Total	**1215**	**100.0**	**890**	**1060**

The relatively abundant presence of Chuskan wares is striking (Table 2.43); even if it isn't surprising- one can see the Chuska Slope from Stix and Leaves Pueblo on a clear day. Of particular interest are the differences in proportions between the whiteware/redwares and graywares. While about 1/3 of the painted wares are Chuskan and 2/3 local, just the opposite is the case for the graywares.

Table 2.43. Kiva H PD 95 pottery comparing local and Chuska counts.

Whiteware	Count	%
Local	2134	69.5
Chuskan	936	30.5
Total	**3070**	**100.0**

Redware	Count	%
Local	467	77.8
Chuskan	133	22.2
Total	**600**	**100.0**

Grayware	Count	%
Local	1623	36.9
Chuskan	2777	63.1
Total	**4400**	**100.0**

Dating Kiva H

No tree-ring samples were obtained from Kiva H and money wasn't available to do a series of AMS dates. A technique of averaging pottery type dates was used and the results (Tables 2.44 and 2.45) are consistent with tree-ring dates derived from the burned early Pueblo II structures (Pithouses 1 and 2 and Kivas I and K).

Table 2.44. Pottery Type date ranges used in the averaged mean date analysis.

Series	Ware	Ceramic Type	Early Date (AD)	Late Date (AD)
Chuska	White	Brimhall Black-on-white	1020	1125
		Burnham Black-on-white	1000	1125
		Chuska Black-on-white	1020	1125
		Naschitti Black-on-white	900	1100
		Nava Black-on-white	1100	1275
		Newcomb Black-on-white	900	1100
		Taylor Black-on-white	1000	1100
		Toadlena Black-on-white	1020	1125
Northern San Juan	White	Chapin Black-on-white		800
		Piedra Black-on-white		900
		Cortez Black-on-white	875	1025
		Mancos Black-on-white (Dogoszhi style)	1000	1150
		Mancos Black-on-white (undifferentiated)	1000	1150
		McElmo Black-on-white	1075	1275
		Mesa Verde Black-on-white	1200	1300
	Red	Abajo Red-on-orange	700	900
		Bluff Black-on-red	780	950
		Deadmans Black-on-red	880	1100

(Modified from San Juan College web page accessed 1 February 2010)

Table 2.45. Averaged mean pottery dates for PD 95 (secondary refuse) in the fill of Kiva H.

Type	**Count**	**%**	**Early**	**Late**
Chapin Black-on-white	5	.4	2	3
Piedra Black-on-white	6	.5	4	5

Cortez Black-on-white	569	46.8	410	480
Mancos Black-on-white	66	5.4	54	62
Abajo Red-on-orange	6	.5	4	5
Bluff Black-on-red	41	3.4	27	32
Deadmans Black-on-red	115	9.5	84	105
Naschitti B/W	317	26.1	235	287
Newcomb B/W	48	4.0	36	44
Taylor B/W	40	3.2	32	35
Brimhall B/W	2	.2	2	2
Total	**1215**	**100.0**	**890**	**1060**

Using all of the typed whitewares and redwares the averaged mean date for the second unit of secondary refuse (PD 95) in Kiva H is A.D. 975. However, there is a difference between the local and Chuska wares (Table 2.46) with the local being on average earlier (A.D. 958) than the averaged Chuska (A.D. 1005). I have no idea why there is this inconsistency. The local averaged date seems to better correspond with my expectations. Never the less, even with this seeming discrepancy, the results indicate that Kiva H was built, used and abandoned early in the Pueblo II use of the site.

Table 2.46. Averaged dates for local and Chuska pottery.

Type	**Count**	**%**	**Early**	**Late**
Chapin Black-on-white	5	.6	3	5
Piedra Black-on-white	6	.7	5	6
Cortez Black-on-white	569	70.5	617	723
Mancos Black-on-white	66	8.2	82	94
Abajo Red-on-orange	6	.7	5	6
Bluff Black-on-red	41	5.1	40	49
Deadmans Black-on-red	115	14.2	125	156
Total	**808**	**100.0**	**877**	**1039**

877 + 1039 /2 = Average mean date of AD 958

Type	**Count**	**%**	**Early**	**Late**
Naschitti B/W	317	77.9	701	857
Newcomb B/W	48	11.8	106	130
Taylor B/W	40	9.8	98	108
Brimhall B/W	2	.5	5	6
Total	**407**	**100.0**	**910**	**1101**

910 + 1101/2 = Average mean date of AD 1005

Kiva H Conclusions

To say that Kiva H is an enigma is an understatement. In general form and placement, in front and south of a late Pueblo I roomblock, it is similar to some of the large pithouses found in the villages of the Dolores Valley. However, the formality of the masonry architecture (including wall niches, a corner room, banquettes and pilasters) and no direct evidence that it was present in late Pueblo I times, suggest that it may have been built during the mid-tenth century and associated with Roomblock F. This issue was discussed at the end of the Pueblo I section above. The floor features are predominantly functionally ritual and the burial on the floor is atypical of any Pueblo time period in the region. The post-abandonment filling of the kiva is also curious. It is not unusual for depressions left by pitstructures to be used as convenient locations to dispose of household waste (as seen in Kivas I and K and Room 17), but the nature of the deposit in Kiva H is quite different. There are abundant complete artifacts (not including vessels), there are a lot of 'exotic' artifact forms and the abundance of whole large mammal bone is extraordinary.

Taking all of these observations into account I am willing to suggest that Kiva H, in construction, use, abandonment and post-abandonment processes was a special ritual structure and it remained a special 'sacred' place throughout the tenth century. I am also happy to suggest that it served as a receptacle for 'trash' that was generated during ritual feasting long after it had ceased to serve its initial function.

Kiva Suite K

This kiva suite comprises an L-shaped roomblock (Rooms 3, 4, 27-29), a partly enclosed courtyard ('Room' 26), a pithouse (2) and a kiva (K).

Room Suite 1

Room Suite 1 (Figure 2.93) stands out as significantly different from the other Early Pueblo II suites (Table 2.47). It consists of a single L-shaped line of rooms that were added on to the outside of the east end of Room Suite 2. Rather than continuing the symmetry of the arc, it shoots straight off to the northeast, abandoning the curved form. In front of and bordered by the rooms, there is a partly enclosed courtyard that was the location of intensive activity. This is also the only Early Pueblo II room suite that has a clear and direct association with a pithouse or kiva. Because of this highly integrated plan I describe all of the adjacent associated features as part of Room Suite 1.

Table 2.47. Room Suite 1 dimensions and areas.

Room #	Position	Length	Width	Area m^2	% Area
4	Back row far left	2.18	2.04	4.45	6.9
27	Back row middle left	2.62	2.00	5.24	8.1
28	Back row middle right	3.60	1.98	7.13	11.1
29	Back row far right	2.96	1.91	5.65	8.8
3	Front left	3.21	2.50	8.03	12.5
26	Front	9.31	3.65	33.98	52.7
Total				64.48	100.1
Front to back rooms				1.87/1	65/35%

In terms of construction method the rooms in this suite fall in line with those in the other suites. Walls were constructed of coursed sandstone masonry one stone in width. Some of the building stones were bifacially flaked along one or both faces, but the majority were natural forms. Copious amounts of mud mortar were used and spalls from shaping the blocks were set in the mortar between courses (Figure 2.94). I assume that the masonry walls stood to full height based on the volume of wall fall in and adjacent to the rooms.

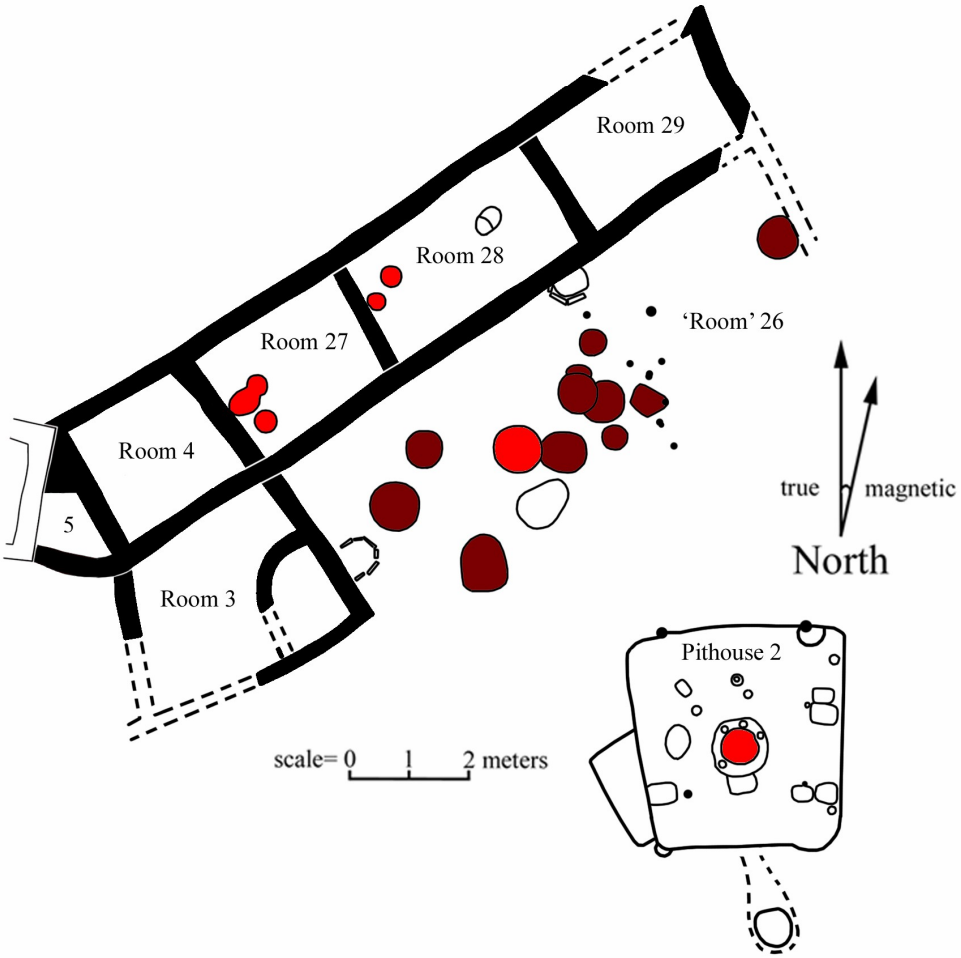


Figure 2.93 Room Suite 1, including Pithouse 2.

Figure 2.94. Masonry in Room Suite 1 (Room 28 south wall).

Four of the five rooms (4/5 and 27-29) were built first as a single line, and based on abutments, the central dividing wall was built last (Figure 2.95). A single additional room (3) was added to the southwest side of the line to form the L-shape.

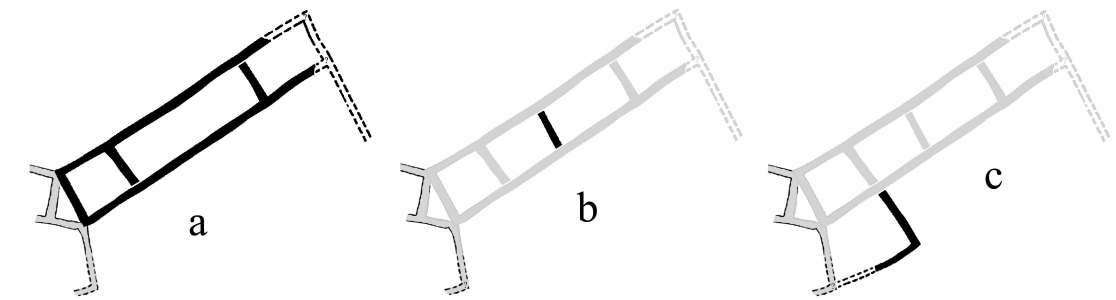


Figure 2.95. Construction sequence of Room Suite 1.

Room 4/5 Room 4 (Figure 2.96) is at the southwestern end of the line of four rooms. In order to connect with the existing roomblock at a divergent angle, this room included a triangular area designated 5 (thereby Room 4/5). While not actually a room, it did have a small interior space that served as a storage area. A complete mano and a bone awl were found in this space.

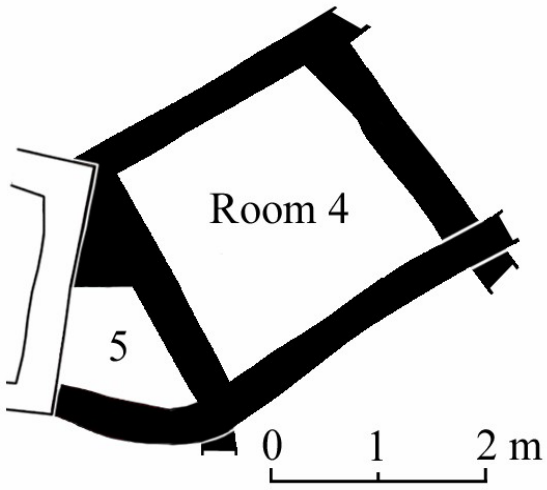


Figure 2.96. Room4/5

There were no features or floor artifacts in Room 4 and by default it was

probably used for storage.

Room 27

Room 27 had a well prepared floor with two firepits (Figures 2.97 and 2.98 and Table 2.49). Feature 1 was a shallow, double-lobed firepit cut into the sterile loam. It was 77 cm long and the widest lobe was 39 cm. It was 9 cm deep. It is possible that this was actually two overlapping firepits but there was no break in the ashy fill to indicate this. It was well oxidized. Feature 2 was a round firepit with nearly vertical sides. It was 37 cm in diameter and 13 cm deep. The base and sides were burned but not highly oxidized. It was mostly filled with post abandonment sediment except for a thin layer of charred material on the bottom.

Figure 2.97. Room 27 floor photo showing in-situ artifacts.

Table 2.48. Room 27 floor features.

Feature Type
F-1 Firepit
F-2 Firepit

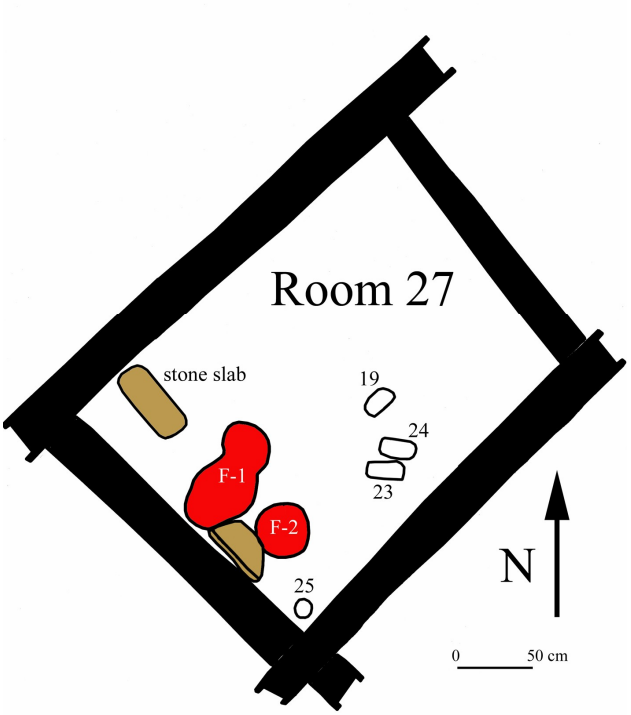


Figure 2.98. Room 27 features and floor artifacts.

Table 2.49. Room 27 floor artifacts.

PD	SP	Item
232	19	mano
232	23	mano
232	24	mano
232	25	cobble

Room 28

This room exhibited the greatest amount of activity of all of the fully-enclosed rooms in this suite. There were two firepits (F-1 and F-2) and a split-level pit (F-3) that may have been a milling catchment basin (Figure 2.99 and Table 2.50). There were also two possible postholes, but these were not clear.

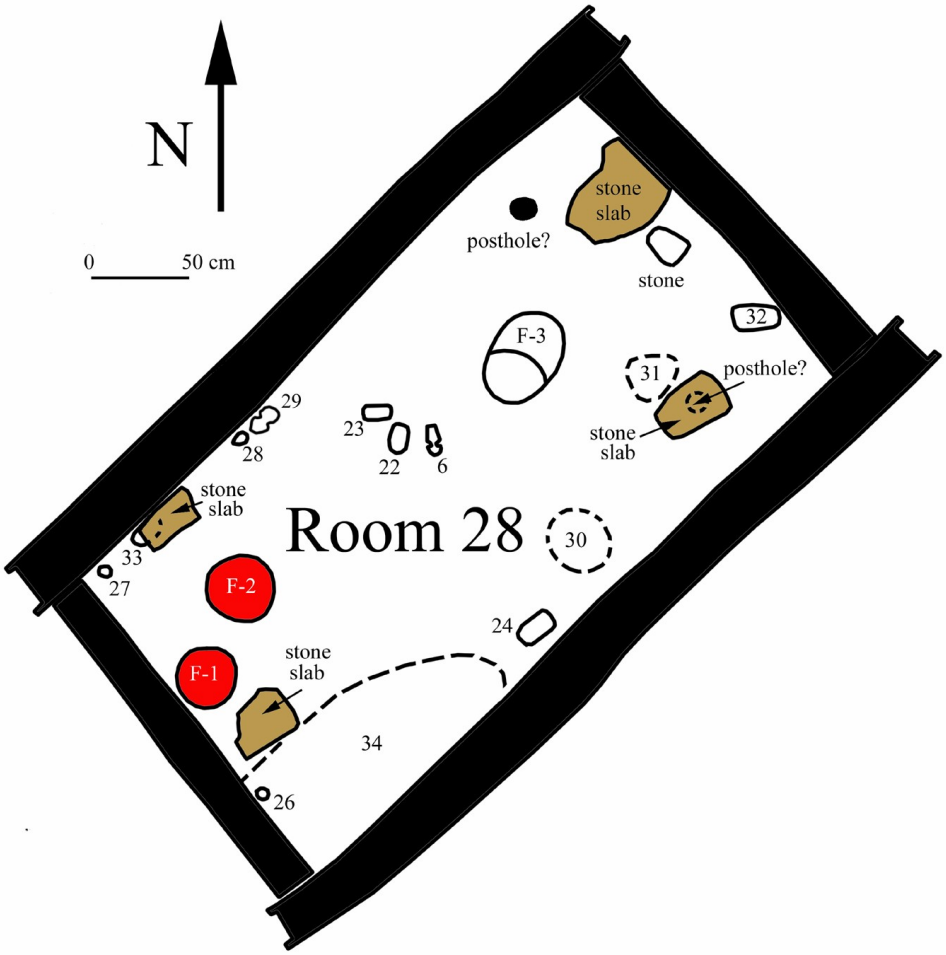


Figure 2.99. Room 28 plan.

Table 2.50. Room 28 features.

Feature Type
F-1 Firepit
F-2 Firepit
F-3 Milling bin?

There were a number of artifacts left on the floor (Figure 2.100 and Table 2.51) mostly related to food processing, but including two notched axes (Figure 2.101).

Figure 2.100. Room 28 floor photo with artifacts in situ, looking southeast.

Figure 2.101. Notched axe from the floor of Room 28 (center of photo above).

Table 2.51. Artifacts on the floor of room 28.

PD	SP	Item
226	6	axe
226	22	mano
226	23	polished cobble
226	24	mano
226	26	peckingstone
226	27	peckingstone
226	28	peckingstone
226	29	axe
226	30	sherds

226	31	sherds
226	32	crusher
226	33	sherds
226	34	gray clay sample

This room has the features and artifacts to indicate that it served, at least in its final capacity as a habitation. Rooms of this sort, in typical room suites are front rooms.

Room 29

This room (Figure 2.102) is at the northeast end of the row of four

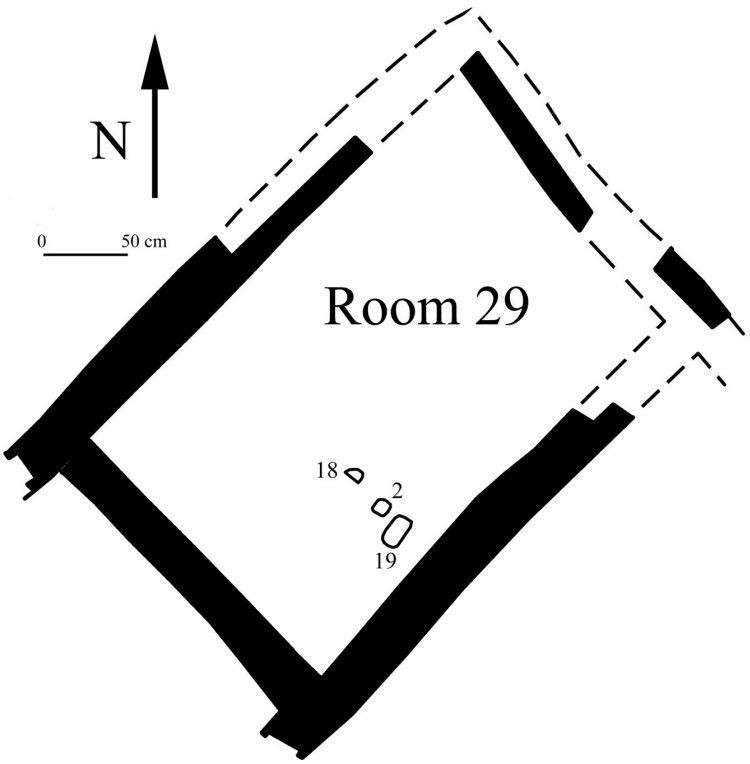


Figure 2.102. Room 29 plan.

rooms. It had no internal features and only a couple of floor artifacts, consisting of three manos (one complete and two fragments). The end (northeast) wall was mostly destroyed by plowing. The lack of features or evidence of activities indicates this room was probably designed for storage.

Since there is a single line of rooms (4 and 27-29) in this area it looks like the functions of front rooms were served by the two middle ones (27 and 28) and the normal back room functions were performed by the two end rooms (4 and 29). The main activities in all of the rooms seem to have been focused on food processing.

Room 3

The southwestern room was added onto the southeast side of Room 4 and had part of a large masonry bin in the eastern corner, taking up more than 25% of the floor space. The feature wall was masonry but only two courses high remained and about ½ of the wall was missing. Other than this bin, there were no features in the room and no significant artifacts on the floor. The southwest corner of Room 3 was also missing. Adjacent to this area (specifically in Room 2) there was quite a bit of reuse activity during the Middle Pueblo II, and perhaps these walls were removed during that time to reuse the stones. The use of this room was probably storage.

'Room' 26

The area in front of the line of rooms 27-29 was bounded on the southwest by Room 3 and on the east by a masonry wall, most of which was destroyed by plowing (Figure 2.103). Even though there seems never to have been a southeast wall enclosing this area I have chosen to designate it a room (Figure 2.104). A set of small postholes may indicate that at least some of it may have been roofed. These may instead demark some type of partition of the area. Within the space there 16 features including 9 roasting pits, a large central firepit/hearth, two small firepits, a set of 8 postholes, two small slab-lined bins (one reused as a hearth) (Table 2.52).

Figure 2.103. Remnant of wall at northeast end of 'Room' 26, destroyed by plowing.

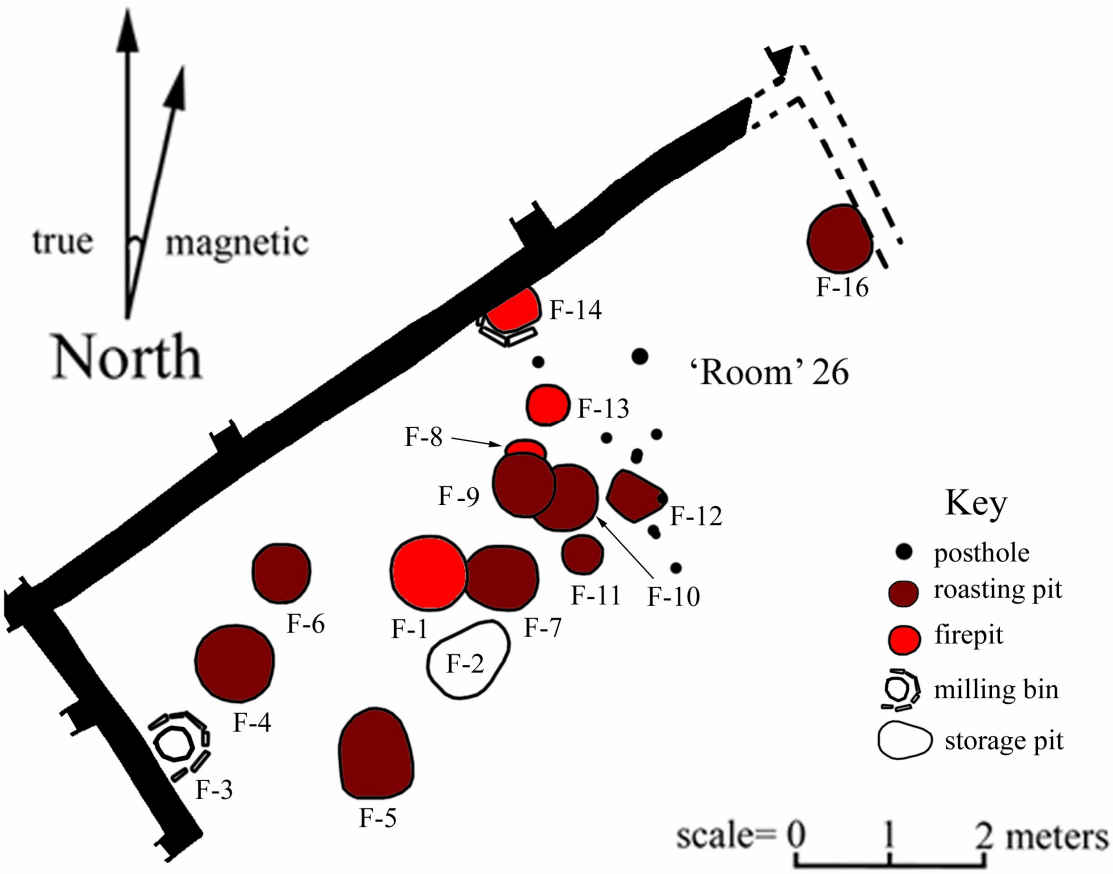


Figure 2.104. 'Room' 26 plan.

Table 2.52. 'Room' 26 features (there is no F-15).

Type and #	Dimensions (cm)			Fill
	Length	Width	Depth	
F-01 Firepit/hearth	80	75	16	Primary refuse- ash
F-02 Storage pit	90	65	32	Cached artifacts
F-03 Slab-lined bin	60	54	23	Thin layer of ash
F-04 Roasting pit	79	79	18	Mixed burned sediment- basal charring
F-05 Roasting pit	83	70	13	Mixed burned sediment- basal charring
F-06 Roasting pit	60	60	19	Mixed burned sediment- basal charring
F-07 Roasting pit	79	66	18	Mixed burned sediment- basal charring
F-08 Firepit	42	?	5	Primary refuse- ash
F-09 Roasting pit	68	65	14	Mixed burned sediment- basal charring and charcoal sticks
F-10 Roasting pit	68	68	14	Mixed burned sediment- basal charring
F-11 Roasting pit	50	37	20	Mixed burned sediment- basal charring and charcoal sticks
F-12 Roasting pit	58	48	22	Post-occupational
F-13 Firepit?	45	44	8	Disturbed by plowing
F-14 Bin/firepit	55	38	30	Basal ash (1 cm thick)
F-15 Postholes	n/a	n/a	n/a	Post-occupational
F-16 Roasting pit	80	74	10	Mixed burned sediment- basal charring

Roasting pits

The roasting pits (Figure 2.105) are more or less round, have nearly vertical sides and are cut into the sterile orange loam. Most have sooted bases and side walls but none are particularly oxidized. They mostly contained a thin layer of dark gray charcoal ash on the bottom, covered with brown loam mixed with small pieces of charcoal and small burned sandstone tabs (Figure 2.106). A few contained larger stones that were burned and had evidently been used to radiate heat for roasting (Figure 2.107).

Figure 2.105. 'Room' 26 superimposed features: a) F-8 firepit; b) F-9 roasting pit; c) F-10 roasting pit (not fully excavated); d) F-11 roasting pit; e) F-7 roasting pit; f) F-12 roasting pit.

Firepits

The firepits were smaller and relatively shallower (except the central firepit/hearth (F-1) and exhibited oxidized sides and contained ash. There were two slab-lined bins built up against the enclosing walls, one on the southwest (F-3) and one on the northwest (F-14). These may both have originally been built as milling catchment basins, but F-3 (Figure 2.108) was used as a firepit prior to abandonment.

Postholes

A set of 8 small postholes (F-15) may represent some sort of partition

dividing the open area into two sections. They do not form a straight line and this makes it unclear as to whether or not they were all part of a single feature.

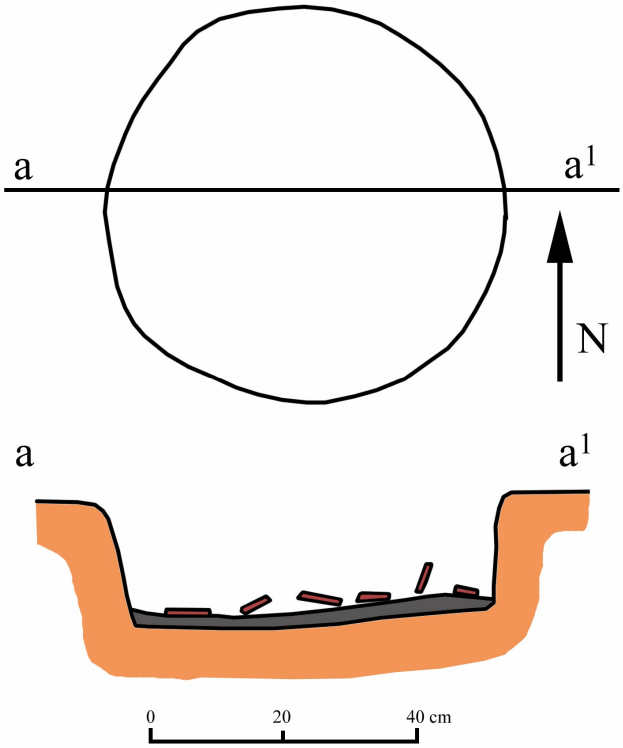


Figure 2.106. 'Room 26' typical roasting pit, F-6.

Figure 2.107. Roasting pit (F-12) with rocks that were heated.

Figure 2.108. Slab-lined bin F-3, final use as a firepit.

Storage pit

The final feature was an elliptical pit (F-2) that was southeast of the central firepit/hearth. This pit contained a set of five metates and three manos all stacked together (Figure 2.109). This pit was open when the area was abandoned, but probably became naturally filled within a short time. There is no direct evidence that it was intentionally filled to 'cache' the food processing tools it held.

'Room' 26 clearly served as an outdoor kitchen with both food processing and cooking facilities. It also seems to have been used over an extended period of time, based on the superposition of some of the features. This area adds to the growing sense that the whole room suite was an area built and dedicated to food preparation. It was directly associated with Pithouse 2, just a short distance to the southeast.

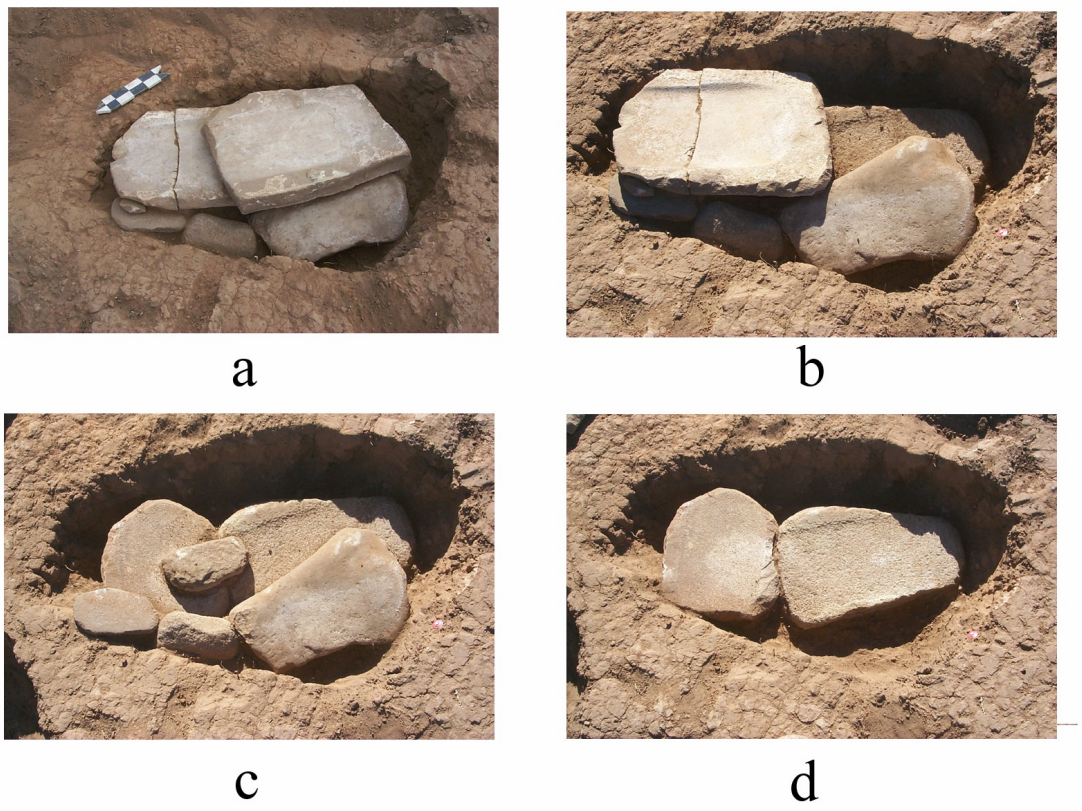


Figure 2.109. 'Room' 26 Feature 2 storage pit: a) top layer of milling tools; b) top metate removed; c) middle layer with manos; d) bottom layer.

Pithouse 2

Just to the southeast of 'Room' 26 we encountered a pithouse (see Figure 2.93). This pithouse was fully subterranean with a rectangular chamber, a four post roof support, a floor-level vent system on the southeast side (Figures 2.110 and 2.111) and a range of floor features (Table 2.53).

Table 2.53. Pithouse 2 features.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth	
1 Vent system	175	30		Post-abandonment
2 Hearth	Ext 98 Int 58	Ext 96 Int 60	21	Primary refuse- ash
3 Ash pit	50	50	48	Filled – 3 layers ash and construction fill
4 Pit	50	35	8	Natural- roof fall
5 Post support	14	12	17	Natural- disintegrated post
6 Pit	56	39	16	Filled and capped

7 Sand-filled pit	15	14	8	Filled- gray-green sand
8 Sand-filled pit	15	14	16	Filled- gray-green sand
9 Sand-filled pit (sipapu)	Top 18 Bottom 7	Top 18 Bottom 7	21	Partly filled- gray-green sand topped with roof fall
10 Pit	40	33	37	Natural- roof fall
11 Roof support	11	10	19	Natural- disintegrated post
12 Pit	38	25	10	Partly filled- ash?
13 Pit	36	35	11	Partly filled
14 Pit	41	26	6	Filled and capped
15 Pit	47	33	2	Capped
16 Sand-filled pit	7.5	6.5	7.5	Filled- gray-green sand Topped by floor sweepings?
17 Built-in slab	25	16	?	Set into shallow pit
18 Roof support	16	16	24	Natural- disintegrated post
19 Roof support	15	15	22	Natural- disintegrated post
20 Pit	15	15	6	Capped
21 Corner pit	25	15	20	Natural- roof fall

The walls were the native sediments with orange loam on top of caliche. The floor surface was level and reasonably smooth with some patches of loam plaster, but for the most part, caliche.

Features

Ash pit and hearth

An ash pit was dug into the caliche with only a small area of loam daub in the southeastern corner. The hearth was also dug into the caliche, but not as deeply. Its final configuration had a substantial loam daub collar that overlapped the filled ash pit. The filling was gray ash in the bottom with sandstone chunks added, evidently to serve as a foundation for the hearth. This ash and stone layer was topped with a dark gray ash upon which the daub collar was built.

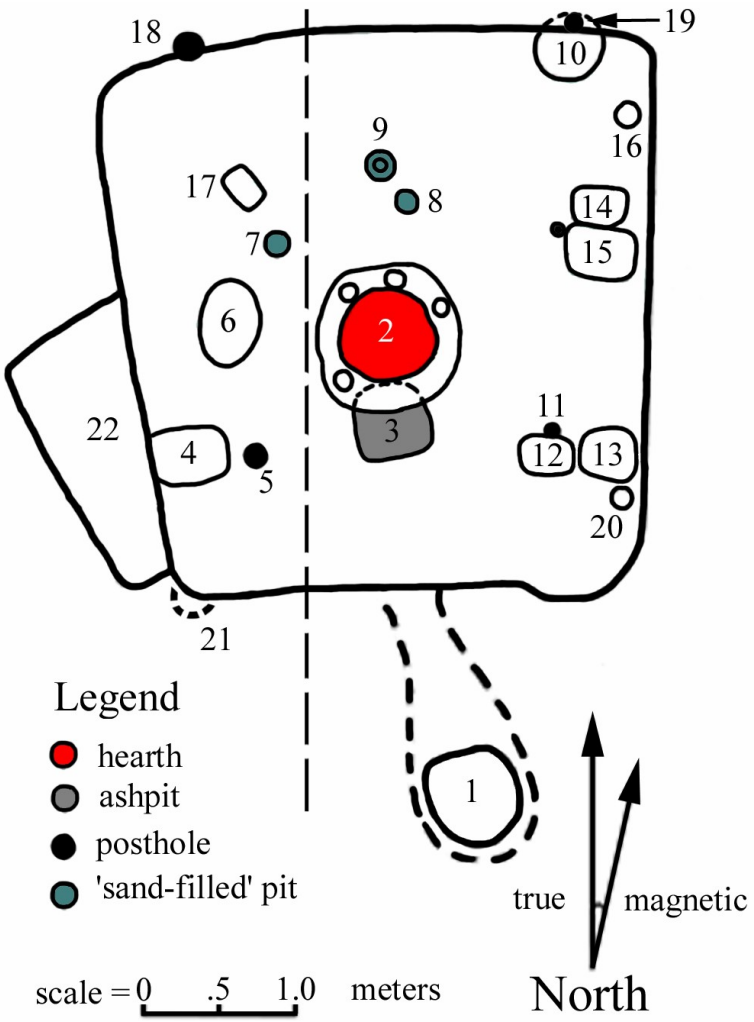


Figure 2.110. Pithouse 2 plan map showing feature numbers.

Figure 2.111. Pithouse 1 floor before most features excavated.

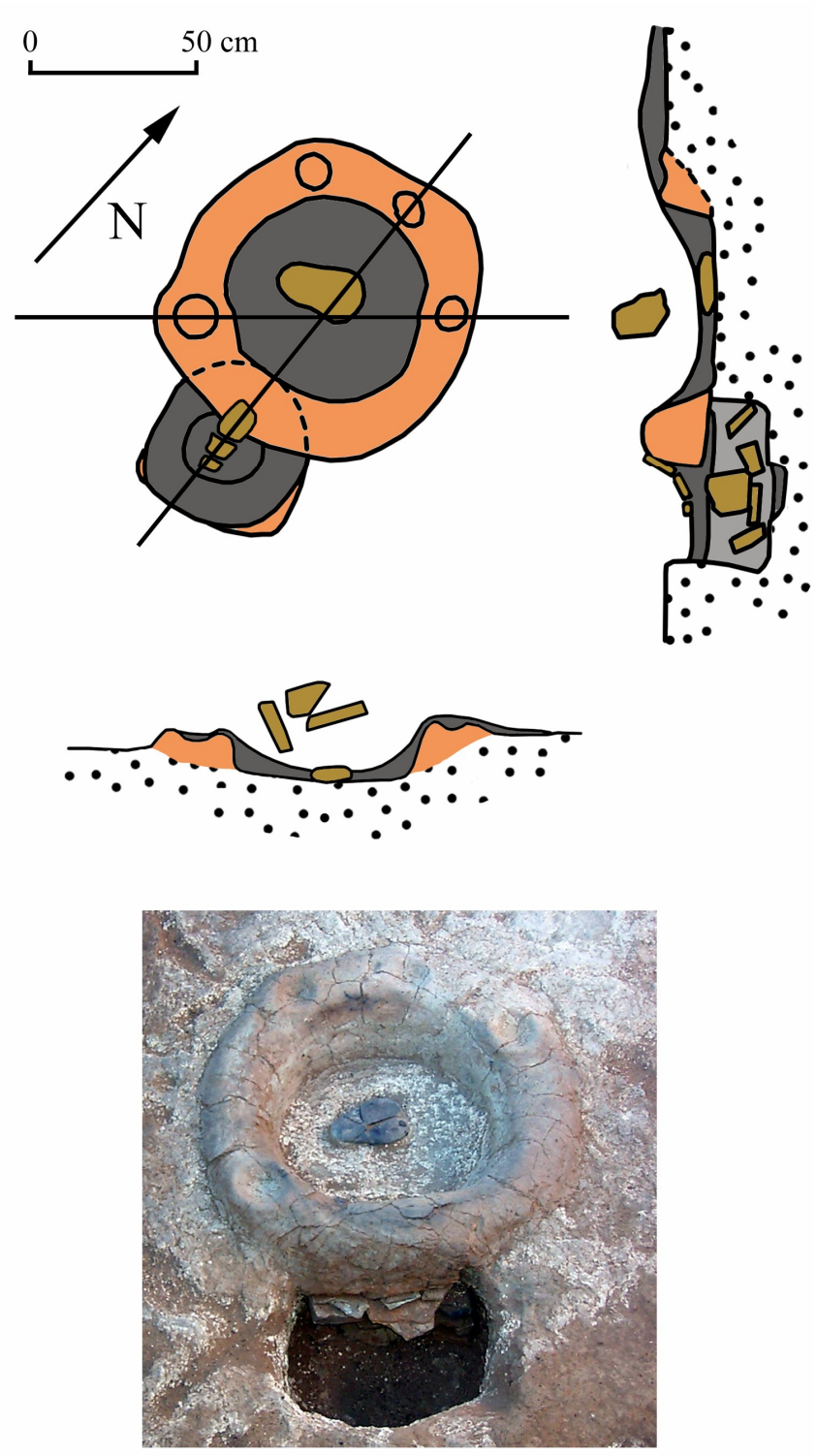


Figure 2.112. Pithouse 2 hearth and ash pit.

The collar had four off-round basins modeled into the top, with irregular spacing. These depressions would have served well in which to set small vessels (such as the small neck-corrugated pitcher in Figure 2.121) to keep

warm around the fire. This feature was also present in the two Early Pueblo II kivas (K and I), but not in Pithouse 1.

The relationship between the hearth and ash pit clearly indicates that there was significant remodelling, probably showing a fairly long period of use of the pithouse. This is also evident by the capping of some of the other floor features.

Rectangular pits

There were two pairs of shallow sub-rectangular pits; Feature 12 and 13, and 14 and 15 (Figure 2.113). All of these features were dug into the caliche floor and all were filled with loam daub. Since they are paired I conclude that they were used together. There is nothing to indicate how they were used and they were not in use at abandonment of the structure. They may have held metates as they are the correct size and shape. The inset into the floor would have kept them from moving when in use. Contrary to this is the lack of 'typical' milling features such as meal catching basins. The metates would also have been horizontal rather then set at an angle, so this would also have been an issue. Another possibility is that they held either stone or wood 'cutting' boards that could have been used in any number of ways.

Another similar feature (4) was a sub-rectangular pit dug into the caliche against the wall southwest of the hearth (Figure 2.114). It had slightly sloping walls and a fairly flat bottom. It is located just across from the paired Features 12 and 13 and resembles them as well as Features 14 and 15. What is different is that it was open when the pithouse was abandoned. Again there is no direct evidence of its use.

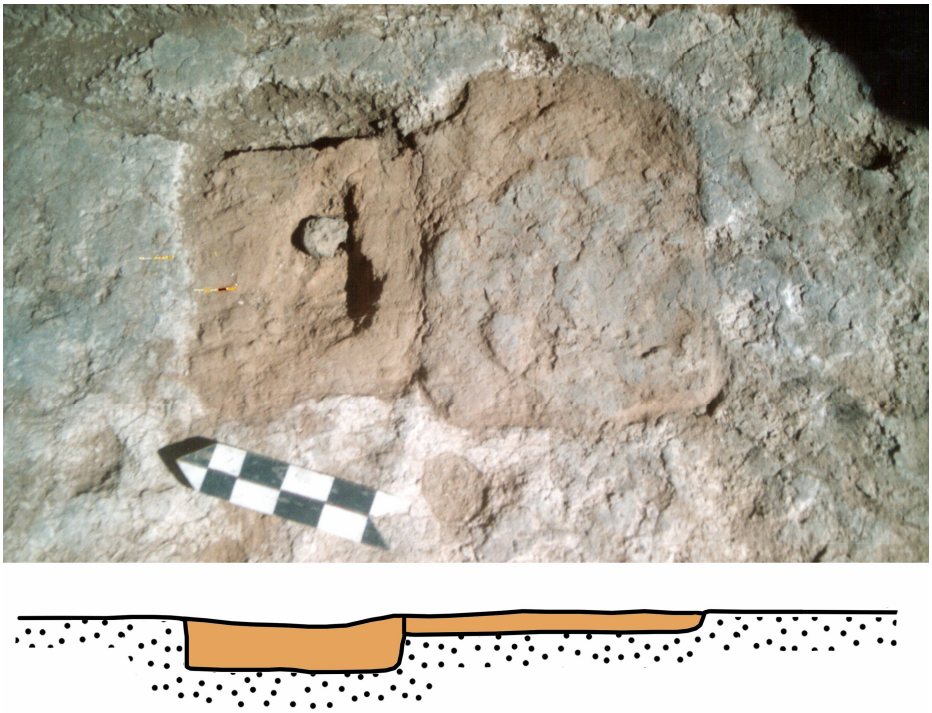


Figure 2.113. Pithouse 2 floor pits, F-14 left and F-15 right.

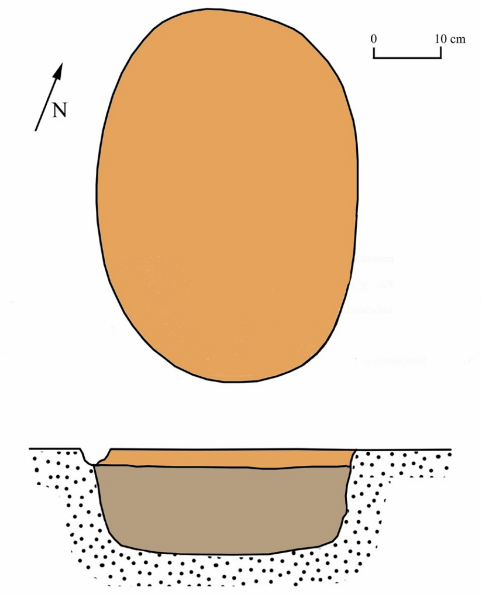


Figure 2.114. Pithouse 2 floor pit, F-4.

Built-in Grindingstone

There was also a sandstone slab built into the floor in the northwest

quadrant (Feature 17). It exhibited light surface grinding but was clearly not used for processing maize in any quantity. This is similar in location, type and size to the built-in slab in Kiva H. It is smaller than the previously described pits, and of course, it is by itself. Never the less it could have been the same sort of feature.

Storage features

There were three features in Pithouse 2 that were likely used for storage; Features 6, 10 and 21. Feature 6 was an elliptical pit located midway between the hearth and the west wall. It had slightly sloping sides and a shallow basin-shaped bottom. It was filled with mixed brown loam and then capped with flooring plaster. It was not in use at abandonment.

Feature 10 was a pit dug into and undercutting the north wall (Figure 2.115) and incorporated the northeast roof support post (F-19). It is unclear if the pit was part of the original construction or added later. There was what looked to be a patched area along its rim, perhaps indicating a long use life. It was open at abandonment and filled with roof fall.

The final possible storage feature was an area scooped out of the lower wall in the southwest corner. Its floor was at the floor level of the main chamber and the feature was almost spherical. It was open at abandonment and filled with roof fall. Although small, its location is reminiscent of a corner bin.

Roof supports and postholes

The roof of the pithouse was held up by four support posts, two (Features 18 and 19) were cut into the sterile sediments of the north wall

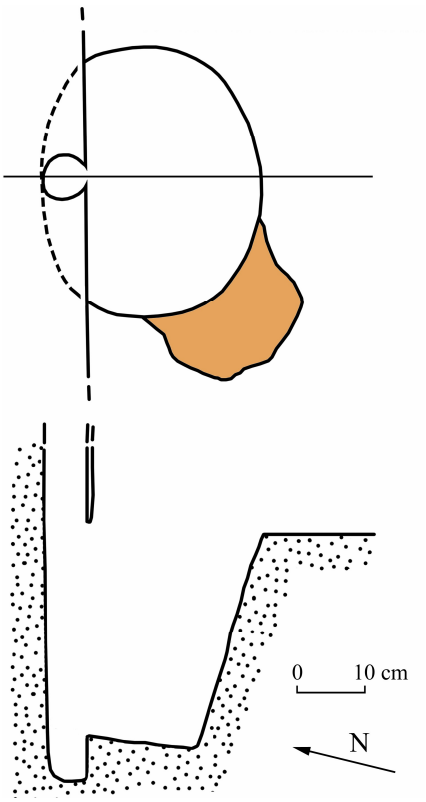


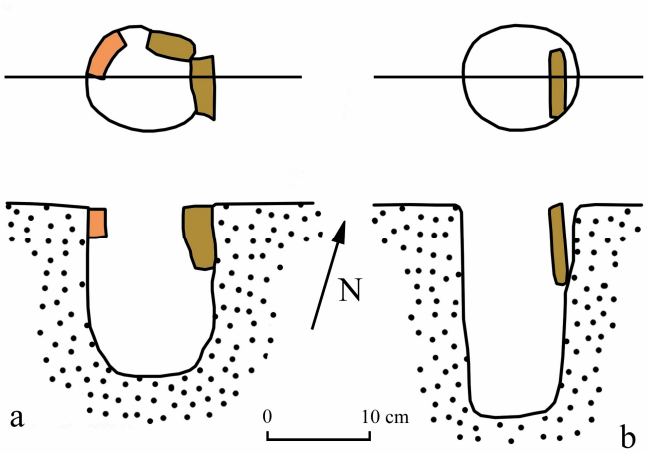
Figure 2.115. Pithouse 2 storage pit (F-10) and roof support posthole F-19).

instance a plug of daub were used to shim the posts in place. (Figure 2.116), and two (Features 5 and 11) in the southern floor area (Figure 2.117). All held relatively small diameter posts and all probably still held posts when the structure roof was burned. Pieces of sandstone, and in one

Two other shallow posthole-like features (20 and 16) were located along the eastern wall. The southern one (F-20) was filled and capped with loam daub and not open at abandonment. The north one (F-16) was filled up ½ way with gray-green sand topped with mixed brown loam that looked like floor sweepings. It was filled to floor level at abandonment. The clean sand in the bottom qualifies it as a sand-filled pit and it conforms well to others in this structure (Figure 2.118). It is possible that both of these features were used the same as sand-filled pits, but their even spacing and matched look

may indicate they were used together in some manner, with the north one being reused as a sand-filled pit.

Figure 2.116. Pithouse 2 NW roof support posthole. (F-18).



Feature 2.117. Roof support postholes, F-5 left and F-11 right.

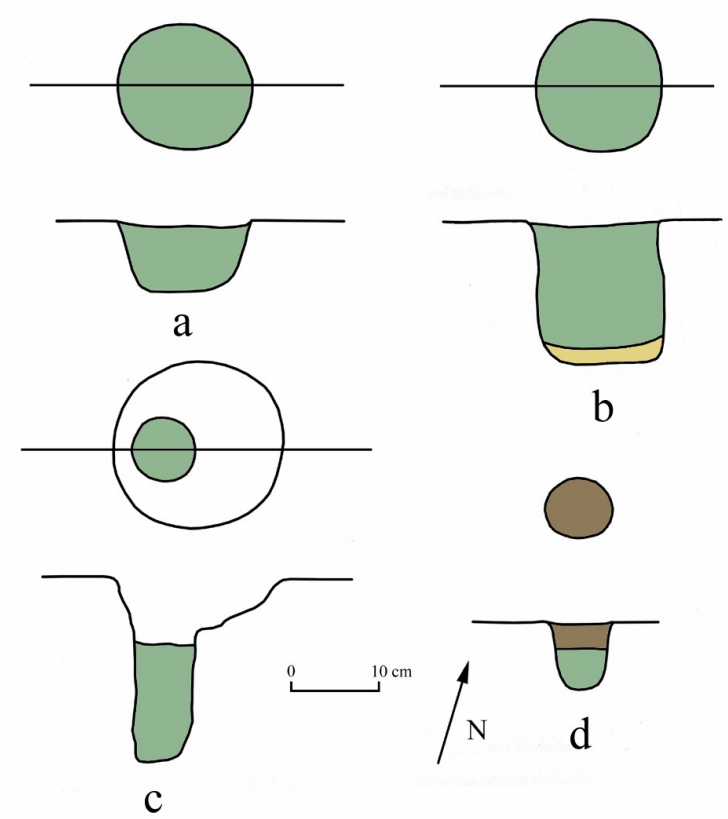


Figure 2.118. Pithouse 2 sand-filled pits: a) Feature 7; b) Feature 8; c) Feature 9; d) Feature 16.

Sand-filled pits and sipapu

There were four clear sand-filled pits; Features 7-9 and 16. Feature 7 (Figure 2.118a) was bowl-shaped, relatively shallow and filled with clean gray-green sand. Feature 8 (Figure 2.118b) was more cylindrical with a flat bottom and had two levels of clean sand fill. The bottom level was a yellow-tan color while the upper layer was gray-green in color. The spacing and location (just north of the hearth) may indicate that these two pits were designed to temporarily hold an alter or screen. The third (F-9) was located on the pithouse access half way between the hearth and the north wall. This is the 'typical' location for a sipapu, and the form of the feature (Figure 2.118c) also conforms to this interpretation. The hole constricts from the floor down to

about ½ of the depth where if changes to a cylindrical form with a rounded bottom. This bottom portion was filled with gray-green sand while the top portion was open at abandonment and filled with roof fall. Feature 16 (Figure 2.118d) had gray-green sand at the bottom topped by sediment that may have accumulated during use of the pithouse.

Ventilation system

Pithouse 2 had a typical floor-level ventilator tunnel opening in the center of the south wall. The opening led into a tunnel, cut out of the caliche, which connected with a vertical shaft angled slightly to the east. The only part of the system that exhibited any construction other than excavation was the north side of the shaft opening at the old ground surface. This took the form of a few sandstone building slabs set into the native soil. This could have been an addition to halt surface collapse common to unlined shaft openings. The tunnel opening was sealed with a sandstone slab at abandonment.

Floor Artifacts

There were quite a few artifacts left on the floor of Pithouse 2 when it was abandoned (Figure 2.119 and Table 2.54). Some were clearly fragments at the time while others were complete. There was a cluster of stone artifacts in the southeast corner (Figure 2.120). Of particular interest was a complete neck banded/corrugated jar (Figure 2.22a) that was covered with a shaped sandstone lid (Figure 2.121). There was also a restorable neck corrugated jar (Figure 1.122b) spread across the floor. It is unclear when this vessel was broken but with its wide dispersion I think it was already broken at abandonment. A third vessel was recovered from the northeast corner (Figure 1.22c). This was a neck corrugated pitcher. The two large jars exhibit

sooting from use on a fire while the pitcher was unsooted.

While the floor assemblage contained a variety of items, many of them related to food processing and all of the vessels were either used for cooking or containing liquid. The small jar is just the correct size to have been set in one of the depressions on the hearth rim for warming.

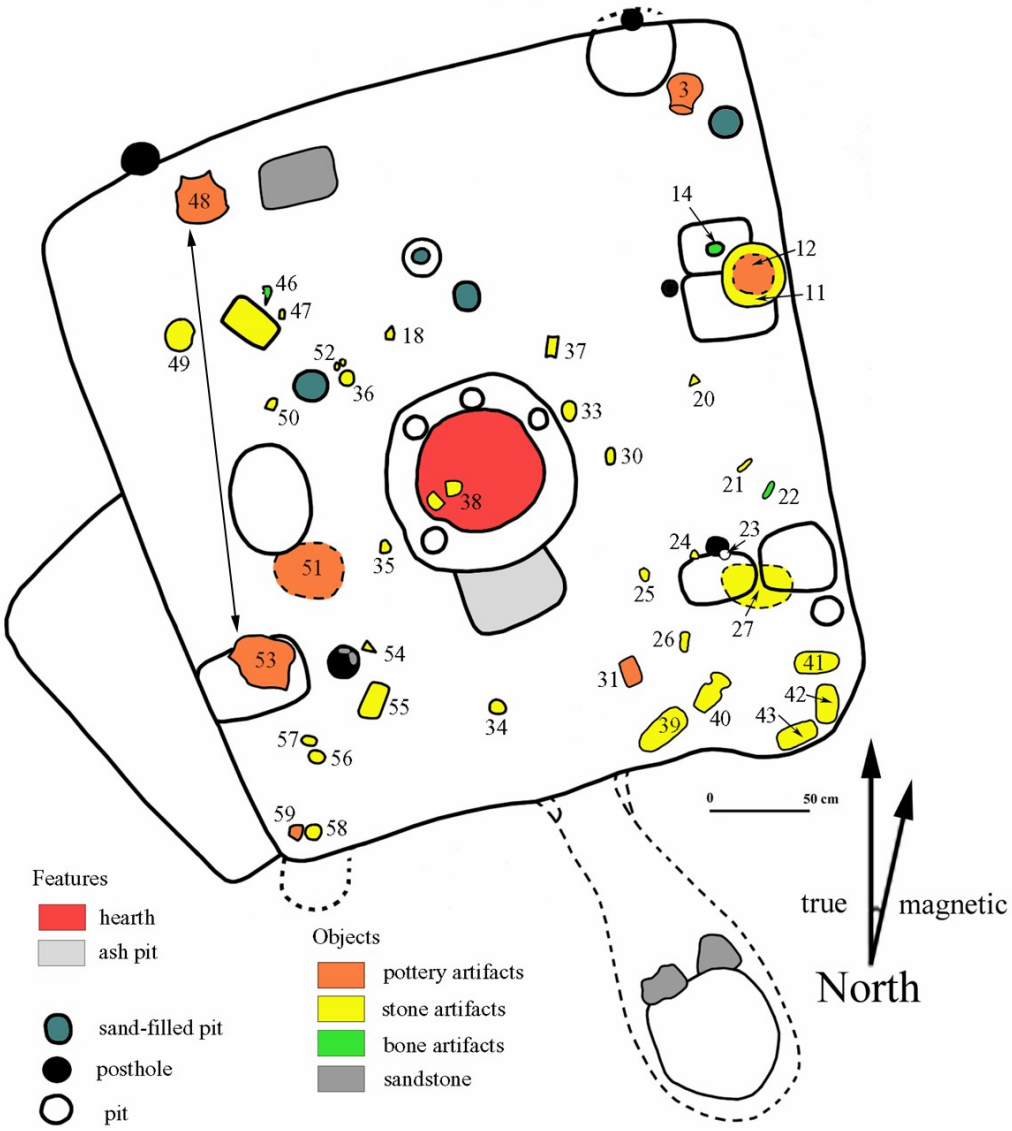


Figure 2.119. Pithouse 2 floor artifacts (see Table 2.53).

Table 2.54. Pithouse 2 floor artifacts.

SP	Item	SP	Item
3	Vessel (Fig. 2.122c)	39	mano
11	jar lid	40	axe
12	Vessel (Fig. 2.122a)	41	crusher/mano
14	bone	42	mano
18	stone tool	43	mano
20	flake	46	awl
21	flake	47	flake
22	bone	48	Vessel (Fig. 2.122b)
24	flake	49	jar lid
25	flake	50	flake
26	peckingstone	51	sherds
27	flake cluster	52	flaked stone
30	flaked stone	53	Vessel (Fig. 2.122b)
31	Vessel (Fig. 2.122b)	54	flake
33	flake cluster	55	mano
34	flake	56	peckingstone
35	flake	57	peckingstone
36	flake	58	peckingstone
37	axe	59	sherd
38	axe		

Figure 2.120. Pithouse 2 artifact cluster in SE corner.

Figure 2.121. Stone lid cover of neck banded/corrugated jar.

Post-abandonment filling

The stratigraphy in Pithouse 2 showed a somewhat complex collapse and filling sequence (Figure 2.123). The lower part of the main chamber was filled with the collapsed burned roof. On top of this there was a layer of washed-in native loam. At that point in time there would still have been a significant depression in the ground. This depression was then filled with midden deposit. The contents of this midden looked to be typical household waste and the pottery indicated it was deposited during the mid eleventh century. This corresponds to the final use of Roomblock F and is described below. The layered structure of the midden deposit also indicates that it accumulated through time with episodes of erosion and weathering throughout. Subsequent to filling, the deposits in the pithouse were substantially disturbed by animal burrowing, especially in the lower units.

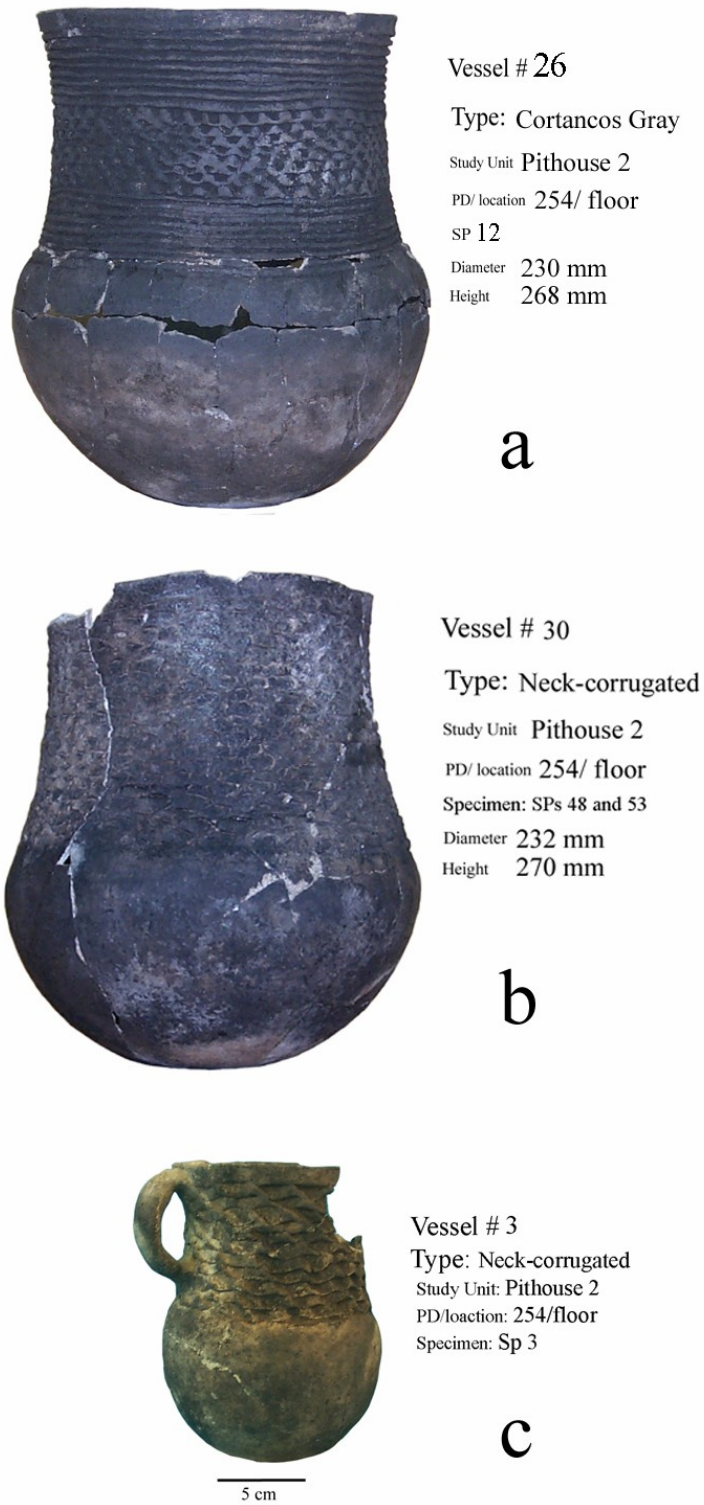


Figure 2.122. Pithouse 2 floor vessels: a) Mancos Gray neck-banded/neck-corrugated; b and c) Mancos Gray neck-corrugated.

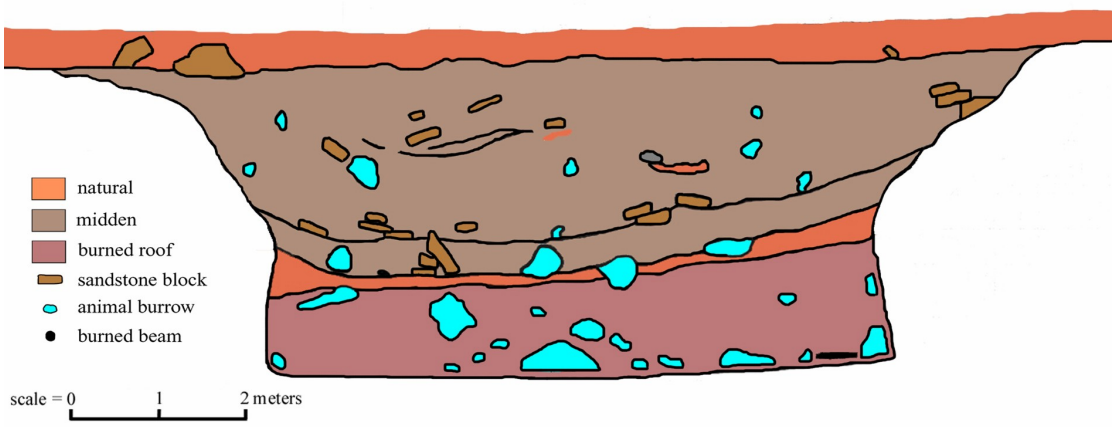


Figure 2.123. Pithouse 2 profile looking west.

Dating

The roof of Pithouse 2 burned and collapsed smothering the fire and preserving the roof timbers as charcoal. These were recovered for tree-ring dating and 20% (24 of 120) were selected for analysis (see sampling procedures in Part 1). Twenty of the samples returned dates and all but one were cutting dates (Table 2.55).

Table 2.55. Pithouse 2 tree-ring cutting dates.

Inner	ISymb	Outer	OSym	Specie
870	p	936	+rB	juniper
909	p	940	rB	juniper
887	p	946	r	juniper
835	+/-p	947	rB	juniper
887	+/-p	948	rB	juniper
910	p	948	rB	juniper
854	p	948	rB	juniper
868	+/-p	949	rB	juniper
909	p	949	rB	juniper
859	+/-p	949	rB	juniper
901	p	949	r	pinyon
877	p	949	r	pinyon
891	p	949	rB	pinyon
887	p	949	r	pinyon
887	p	949	r	juniper
884	p	949	r	juniper
888	p	949	rB	juniper
859	p	949	rB	juniper
887	p	949	r	juniper
898	p	949	r	juniper

876	+/-p	949	rB	juniper
903	p	949	rB	juniper
911	p	949	r	pinyon

These dates clearly indicate that most of the tree cutting for timbers occurred in AD 949, or at least before the onset of the AD 950 growing season. It also looks like there was stockpiling for the three years leading up to the major cutting event as well as the procurement of some earlier wood (AD 936 and 940). While this sample cannot preclude the roof being remodeled, the dates are consistent with a single construction event, probably in the summer of A.D. 950.

Conclusions

Pithouse 2 was an integral part of an addition to the end of Roomblock F, but the dates indicate that it occurred basically at the same time, A.D. 950. The architecture is very similar to Pueblo I pithouses but it does include some interesting features. There was a dominance of food processing facilities and even the final artifact assemblage indicates primarily food preparation. This fits well with the associated room suite where there is ample evidence that it served primarily as a kitchen, indoors and out. The pithouse was burned at abandonment and then served as a receptacle for household midden in the Middle Pueblo II period, possibly by the inhabitants of Kiva G suite in the mid-eleventh century.

Kiva K

While there has been, and continues to be much discussion about what a kiva was, both architecturally and functionally (see Lekson 1989 and Smith 1990:59-75), I have consciously chosen to identify this structure as a kiva because of its complex architecture and internal features. The alternative

would be to call it a proto-kiva (Hayes 1975), but I see no advantage in this. I am using architectural configuration and features and hope to tease out how the structure was used. I do not include inferred primary structure function in my definitions of either pithouses or kivas; therefore the functional transition from primarily domicile to exclusively religious/ritual is not of relevance to what I call a particular structure. The architectural traits I use include what Smith (1990:70-71) discusses as architectural relationships. He emphasizes location and distinctiveness of a structure and I agree with this. However, this tends to apply equally between pithouses and kivas in Pueblo sites in southwestern Colorado. They are both distinctive from the associated room architecture. They may also both include a similar range of floor features. So what are my criteria? For me, to be called a kiva (as opposed to a pithouse) a structure must have a banquette, a significant use of masonry, plastered walls and a complex array of ritual features (sand-filled pits, sipapus and wall niches). I also really am not particularly concerned with what a given structure is called. What matters is understanding it in terms of behaviour.

Initial Architecture

Kiva K is the most complex structure we excavated because it is a kiva and it exhibited substantial reconstruction including re-roofing. The initial construction was the digging of a rounded square pit with a ventilation system, oriented to the southeast, with offsets around the entire pit to form a banquette. While the orientation is clearly NW-SE, for ease of description I will consider the northeast wall the east, the northwest wall the north, the southwest wall the west and the southeast wall the south. The floor was native caliche with thin layers of loam plaster, with up to three surfaces in

areas. There were a lot of features in this initial structure (Figures 2.124 and 1.125). There were six roof support posts

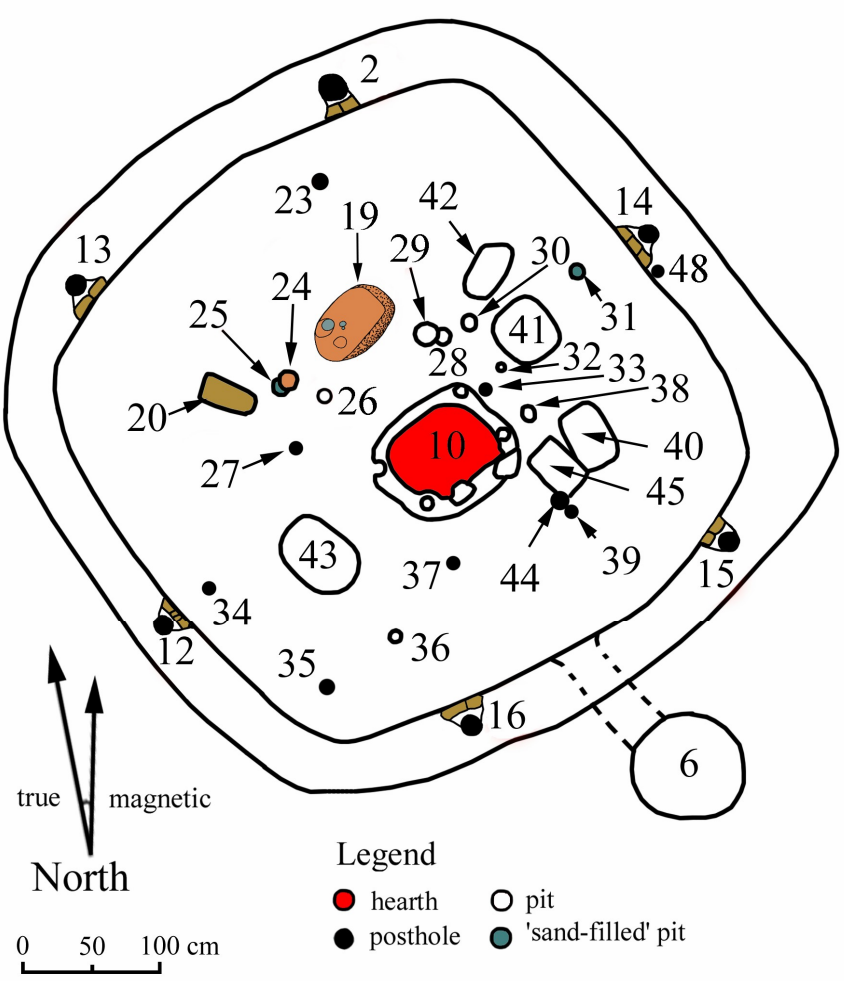


Figure 2.124. Kiva K original construction and features before remodelling.

built into the bench. This was accomplished by cutting vertical slots back from the face of the lower wall and then digging down at the bottom of the slot. The posts were then set in the hole and slot and then stabilized by the plugging of the slot with masonry and filling the posthole around the post (Figure 2.126).

. Curiously, there are six posts in locations one would expect pilasters in later kivas. Since this first roof was replaced it is not apparent whether or not the original roof was cribbed, but I think it probably was.

Figure 2.125. Kiva K original floor surface. Wall faces in the east (right) half were eroded over the winter and show details of the wall without plaster.

Figure 2.126. Kiva K northeast post (F-2) showing hole it was set in and masonry plug holding it in place.

In its final configuration the walls were well covered with multiple layers of loam plaster (Figure 2.127). The final layer shows little sooting while the earlier layers were sooted. It is unclear which, if any, of these layers relates to pre-remodelling walls.

Figure 2.127. Kiva K wall plaster showing multiple layers.

Features

Kiva K contained quite a few features in its original form (Table 2.56) and many of these were no longer used after remodelling.

Table 2.56. Kiva K features before remodelling.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth	
2 Roof support posthole	11	25	110	Filled and capped
6 Vent system	152	48/75	3/35 opening	Natural fill- open
10 Hearth	50	74	20	Primary refuse- ash
12 Roof support posthole	14	10	?	Filled and capped

13 Roof support posthole e	13	11	?	Filled and capped
14 Roof support posthole	16	13	?	Filled and capped
15 Roof support posthole	15	14	?	Filled and capped
16 Roof support posthole	11	10	?	Filled and capped
19 Complex sipapu	56	42	27	Intentional fills multiple episodes
20 Built-in slab	38	19	?	Open
23 posthole?	8	8	23	Sealed by flooring
24 Pit/sipapu	12	12	6	Clean orange loam Sealed by flooring
25 Pit/sipapu	10	10	5.5	Clean gray-green sand Sealed by flooring
26 Floor depression	9	8	2.5	Clean orange loam Sealed by flooring
27 Posthole?	8.5	8.5	20	Sealed by flooring
28 Depression	8	8	2	Sealed by flooring
29 Pit	14	14	4.5	Sipapu? Sealed by flooring
30 Pit	10	10	3	Sealed by flooring
31 Sand-filled pit	10	8.5	4	Clean orange-tan loam Sealed by flooring
32 Depression	6	5	1	Clean orange loam Sealed by flooring
33 Posthole	7.5	8	26	Sealed by flooring
34 Posthole	7.5	8	17	Sealed by flooring
35 Posthole	8	8	17	Sealed by flooring
36 Depression	7	7	2.5	Clean tan-gray loam Sealed by flooring
37 Posthole	7.5	7.5	20	Sealed by flooring
38 Depression	10	9	3	Sandy gray-brown loam Sealed by flooring
39 Posthole	8	8	17.5	Sealed by flooring
40 Pit	51	34	20	Mixed orange-brown loam with charred twigs Sealed by flooring
41 Pit	50	43	17	Mixed orange-brown loam with charred twigs Sealed by flooring
42 Pit	41	23	60+	Clean orange-tan loam Sealed by flooring
43 Pit	58	42	15	Mixed orange-brown

				loam with charred twigs Sealed by flooring
44 Posthole	10	10	28	Sealed by flooring
45 Posthole	35	23	60	Clean orange-tan loam Sealed by flooring
46 Pit	36	25	40	Mixed loam caliche
48 Posthole	7	7	?	Capped

Hearth

A large well-prepared hearth was present in the center of the structure. It was in use at the end and it is difficult to determine if it was in its original form. It was constructed with a daub collar in which were modeled four depressions in approximately the 'corners'. The bottom of the pit was caliche but the walls were lined with daub. The south side was formed by a vertical sandstone slab and stones were set into both south and north sides of the rim (Figure 2.128). The hearth contained three distinct layers of ash, all three of

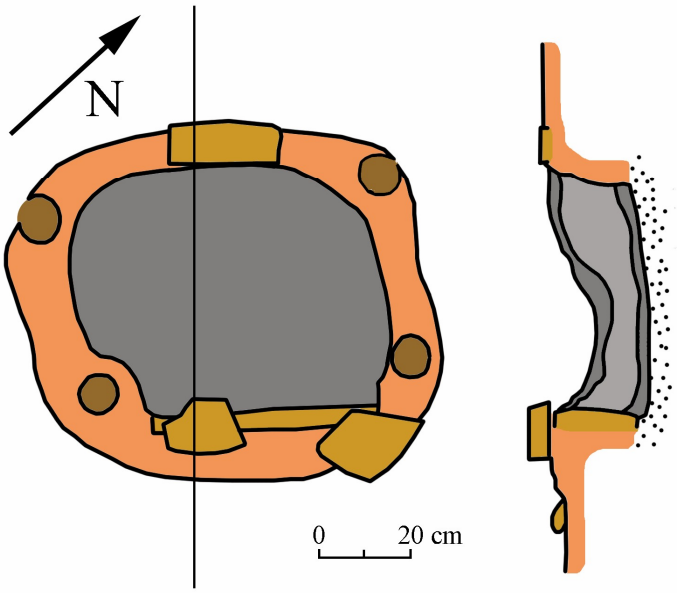


Figure 2.128. Kiva K hearth.

which were depressed in the middle (Figure 1.129). Of interest is the lack of an ash pit that frequently accompanies hearths in early pithouses and kivas

(see Kiva H).

Figure 2.129. Kiva K hearth cross-section. Note rim depressions in lower corners and vertical stone wall on the left..

Rectangular pits

There are four distinctive rectangular pits in Kiva K (Features 40, 41, 43 and 45). The first three are similar in size. They average 53 cm long, 39 cm wide and 17 cm deep, with a mean volume of 35,923 cm^3. All three were filled with a mixed orange-brown loam that contained charred twigs (they look like sage). They were also all sealed by floor plaster. The fourth pit (F-45) is the same basic shape and slightly cuts into F40, indicating it came later. It was smaller in length and width but significantly deeper than the other three. It was filled with clean orange-tan loam and capped with floor plaster.

I do not know what use this pits served and they closely resemble the rectangular pits in Pithouse 2 except these are deeper. Their consistent unusual fill is also curious. The only other place we found this in our

excavations was in the final filling of the complex sipapu in Kiva H (see above).

Complex sipapu (vault)

Between the hearth and the north wall was a similar sub-rectangular pit (Figure 2.130) that conforms to the definition of a complex sipapu (see discussion of Kiva H).

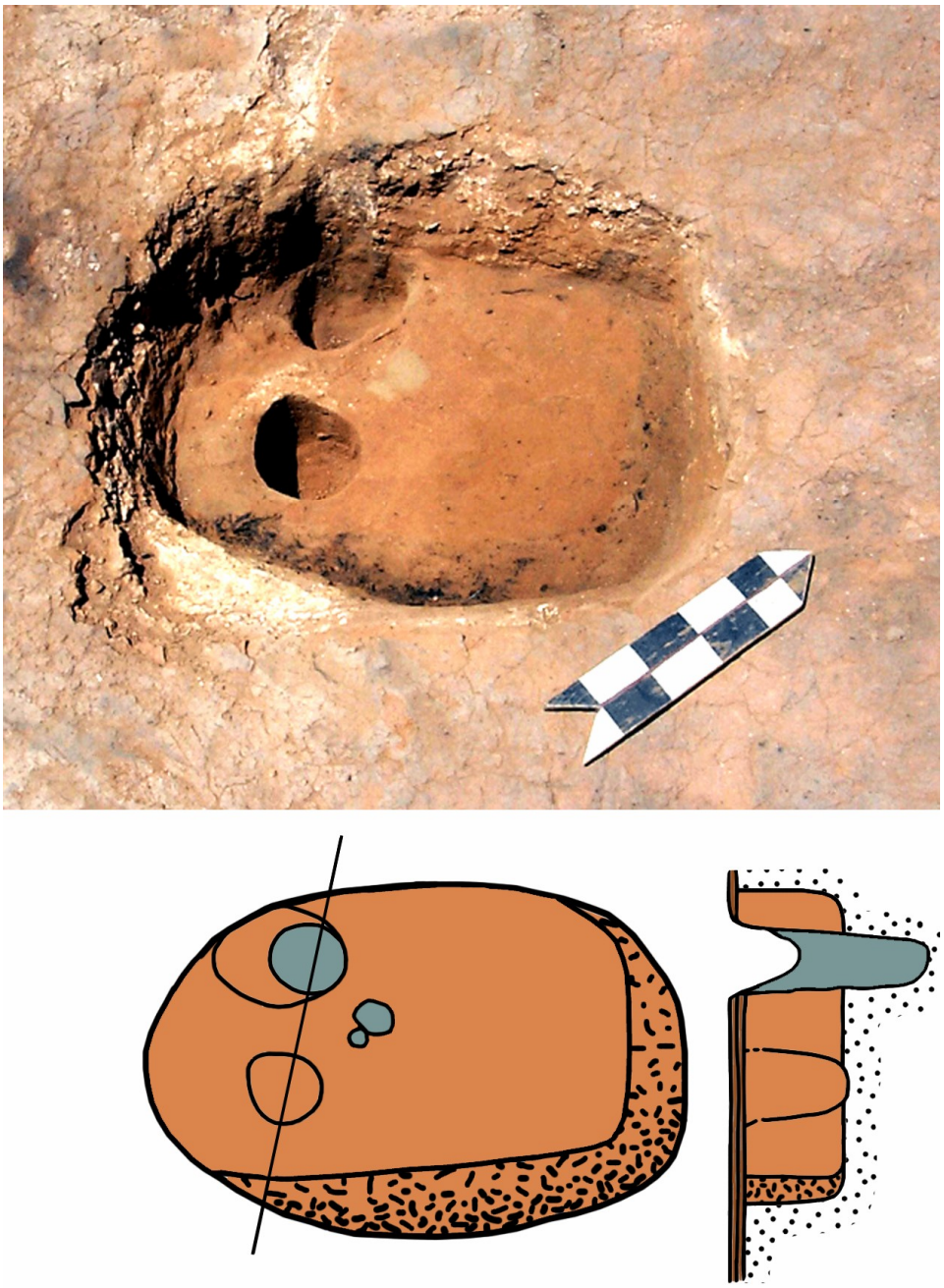


Figure 2.130. Kiva K complex sipapu. The sand-filled (gray-green) posthole-like feature was added after the rest of the feature had been floored over.

When empty, the pit closely resembled the rectangular pits in that it had steep sides and a nearly flat bottom. It was also filled with a sequence of intentional deposits which included intrusions. The main pit and fill units were part of the original (pre-remodelling) kiva. The first unit of fill (that remained) was another of orange loam with a lot of charred twigs mixed in, the same as seen in the rectangular pits and the complex sipapu in Kiva H. This evidently filled the pit. which was then cut into by a smaller rectangular shape, which was filled with clean orange loam. Then, a posthole-like feature was cut and filled with more clean orange loam. There was also a double spot of gray-green sand that was not clearly in pits. At this point the whole feature was twice sealed with floor plaster.

From the final floor surface (after remodelling) a sand-filled pit feature was cut and filled. In the final kiva configuration only this sand-filled pit was visible in the floor. It was not completely filled and the upper portion contained burned roof fall indicating it was open when the kiva roof burned.

Storage feature

There was one pit (F-42) I conclude was probably used for short-term storage. It was not particularly large but it was quite deep. It was intentionally filled with clean orange loam and this might counter my storage pit argument, as this is what some other features I have considered ritual were also filled with.

Roof supports and postholes

Kiva K included an array of postholes, some (6) of which undoubtedly originally held roof supports. These were all built into the benches forming an hexagonal pattern typical of later round kivas with pilasters. They ranged

between 11 and 16 cm in diameter at bench level and all were plugged with loam daub. There was also a single small posthole (F-48) in the bench adjacent to the east roof support post (F-14). I do not know what purpose it may have served.

There were also a number of postholes in the floor, all of which were covered by floor plaster, probably added during remodelling. They were scattered around the structure with no particular overall pattern. The majority were in the south half of the kiva.

Sand-filled pits and sipapus

Other than the complex sipapu/vault, there were three other pits that were sand-filled (Features 24, 25 and 31). Two of these (Features 24 and 25) (Figure 2.131) were just northwest of the hearth and in the general area where they

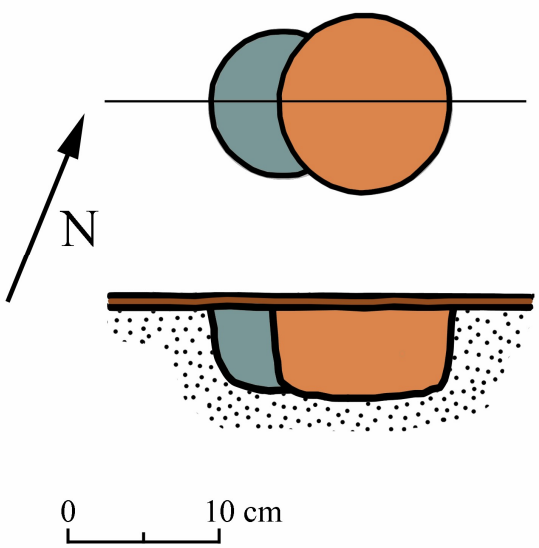


Figure 2.131. Kiva K sand-filled pits, Feature 25 (left) and Feature 24 (right).

would normally be identified as sipapus.

Feature 25 was truncated by F-24, both were filled with clean sediments and then covered by two layers of floor plaster. The third (F-31)

was located centrally just inside the east wall and it was filled with a clean, fine sandy orange-tan loam. Except for location this too exhibited characteristics of a sipapu.

Ventilation system

There was a standard floor-level ventilation tunnel in the center of the south wall (actually southeast). It was dug through the sterile deposits. The floor-level opening measured 30 cm wide and 35 cm high. There was a sandstone sill and the tunnel opened out to 48 cm in diameter before it turned up into a shaft that opened at the then ground surface. The total length of the tunnel was 152 cm. Stones in the fill of the shaft indicated that there had been a surrounding wall at the ground surface, between two and three courses high. There was a tunnel closing slab fallen directly in front of and partly extending into the tunnel, indicating it was probably in p-lace sealing the tunnel at abandonment. The Vent system filled naturally after abandonment of the structure.

Floor Artifacts

There were no floor artefacts associated with the first use of the structure. The few sherds recovered from fills of sealed features only indicated an Early Pueblo II use. There was no indication that this structure began as a Pueblo I pithouse.

Remodelling

While it is common to encounter internal remodelling of pitstructures, it is less frequent to find evidence of complete remodelling, including roof replacement and reconfiguration. This is exactly what happed in Kiva K. The roof was removed, the support posts pulled and it was replaced with a four

post roof. This was accomplished by the addition of support posts in the four corners (Features 1, 4, 7 and 8), held in place by holes that extended below floor level and masonry walls that rounded out the corners (Figures 2.132 - 2.134).

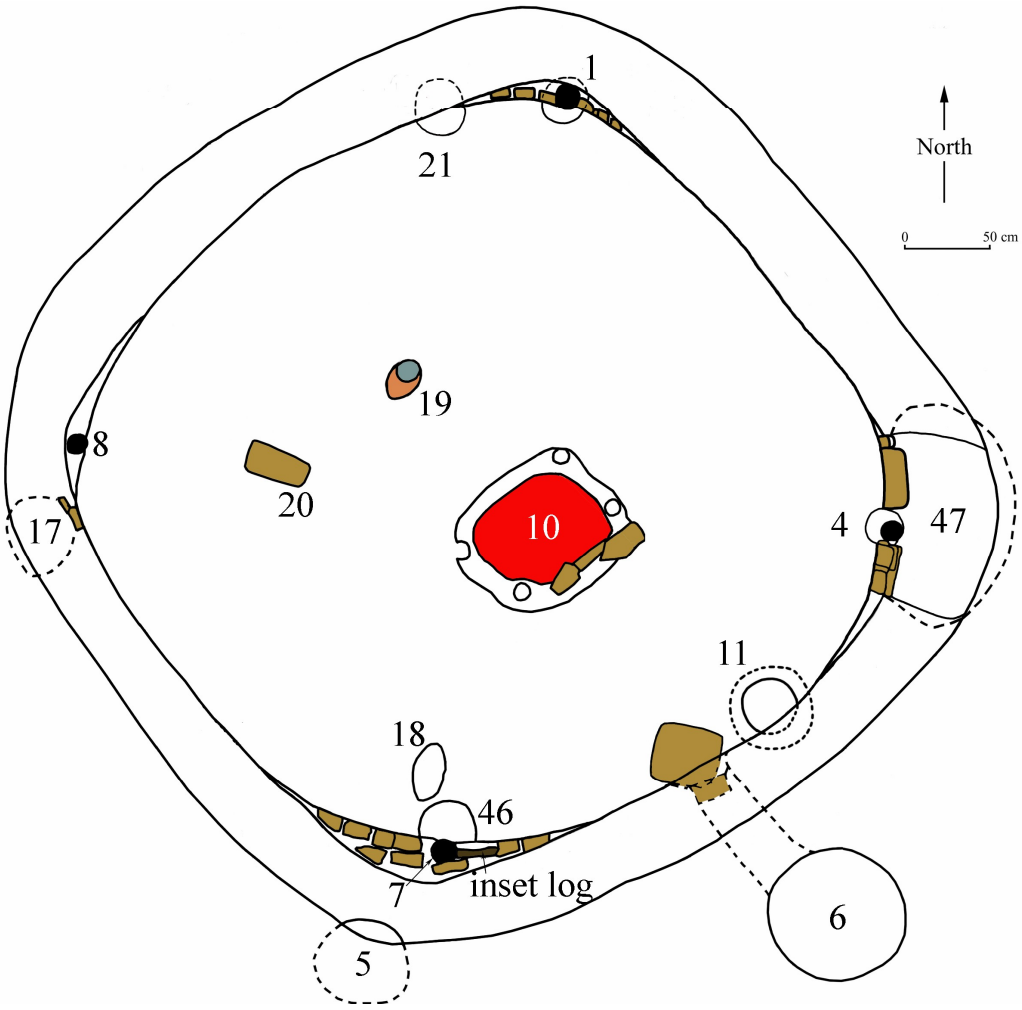


Figure 2.132. Kiva K showing features of remodelling stage.

These new corner posts were still in place (burned) and all were set with the original top of the tree pointing down (Figure 2.134). These posts seem to me to be quite insubstantial, never the less, they clearly held a heavy beam roof. The configuration of the roof beams is not clear even though a large number were

Figure 1.133. Kiva K final floor surface after remodelling.

encountered where they fell. The pattern may be interpreted as either indicating a square superstructure or a cribbed roof. Perhaps it was a combination of both (Figure 2.135). Tree-ring samples were recovered from all of these support posts and two were dated (the other two were kept but not submitted). The post from F-1 (NE support) yielded a cutting date of AD 947 and F-4 (SE support) gave a cutting date of A.D. 949. See below for further discussion of Kiva K dating.

There were far fewer features in the kiva after it was remodeled. This could be related to a change in function or simply that it has a shorter use life. Since structure use is determined by its contents it is reasonable to apply the same criteria in this case.

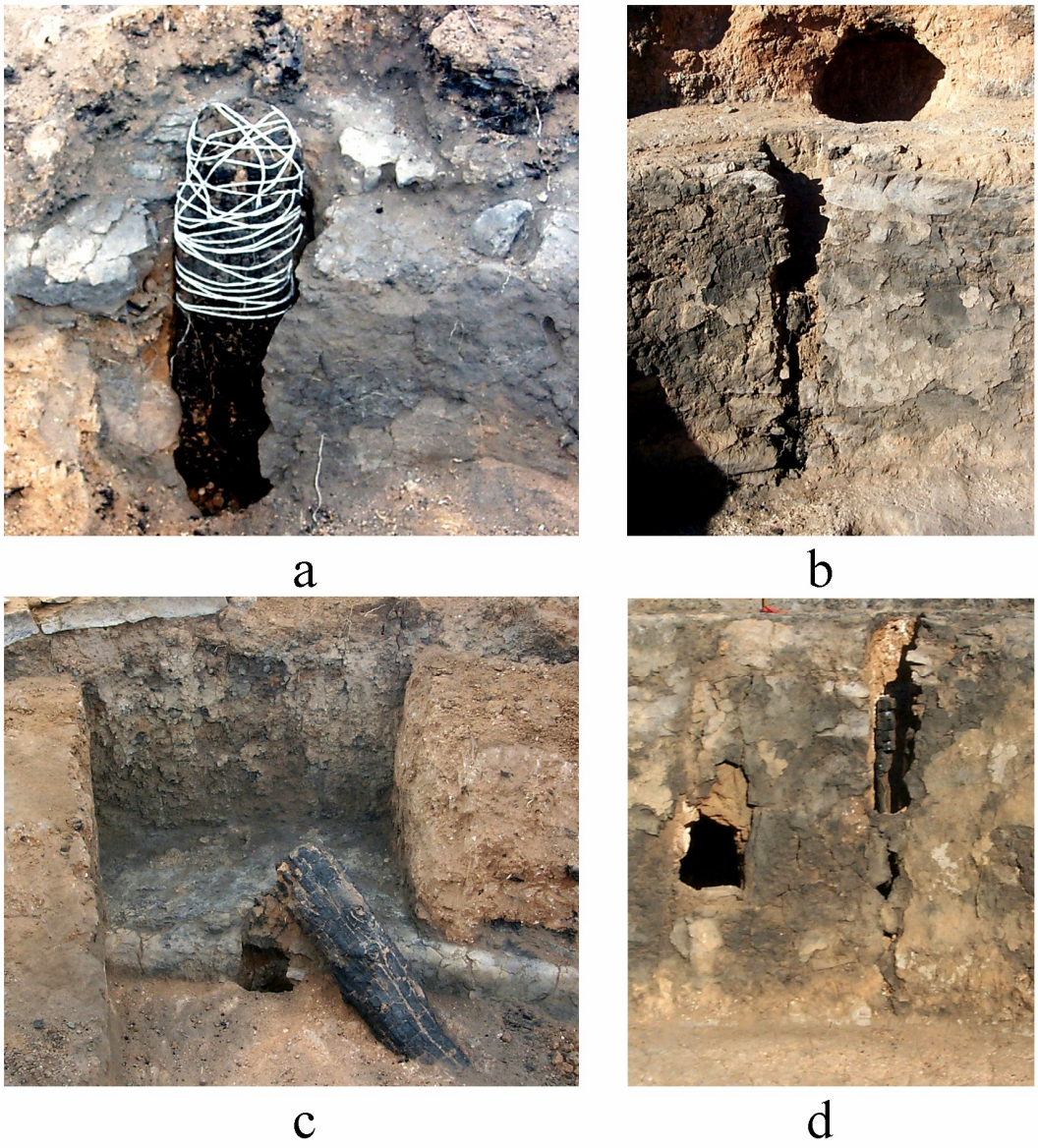


Figure 2.134. Remodelling support posts: a) northeast post (F-1 yielded a cutting date of A.D. 947); b-d) northwest post (F-8).

Features (Table 2.57)

Most of the features belonging to the initial construction and use of Kiva K were deliberately filled and sealed over with floor plaster. At least two layers of floor plaster were added either as part of the renovation or subsequently. The only major feature that seems to have lasted through initial construction and use all of the way to abandonment, was the central hearth.

Table 2.57. Kiva K features in remodeled structure.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth	
1 Roof support post and hole	10	10	114	Contained burned post
4 Roof support post and hole	11	11	?	Contained burned post
5 Pit	39	45	50	Open
7 Roof support post and hole	12	12	?	Contained burned post
8 Roof support post and hole	12	12	?	Contained burned post
10 Hearth	50	74	20	Primary refuse- ash
11 Pit	57	37	42	Filled- partly open
17 Niche	34	41	42	Open
18 Depression	28	20	5	Open
20 Built-in slab	38	19	?	Open
21 Pit	32	24	24	Filled, natural, open
47 Corner bin				

Hearth

This feature (10) was described above and all need be said here is that the description is of its final configuration and use and not its original configuration, as far as I can tell.

Sipapu

The sipapu in the final floor consisted of a single posthole-like feature located to the north of the hearth and falling in the underlying complex sipapu of the first occupation. It was cut from the final floor. Further details are described above (F- 19).

Floor and Bench Pits

A cavity was dug into the southwest corner (Figure 2.136a) of the structure from bench level (F-5). The opening was 45 cm wide and 39cm high. It extended back 50 cm into the sterile soil. The base of the pit cut just slightly below the bench level. There was no other preparation of this pit that was

open at structure abandonment. It may have been used for storage.

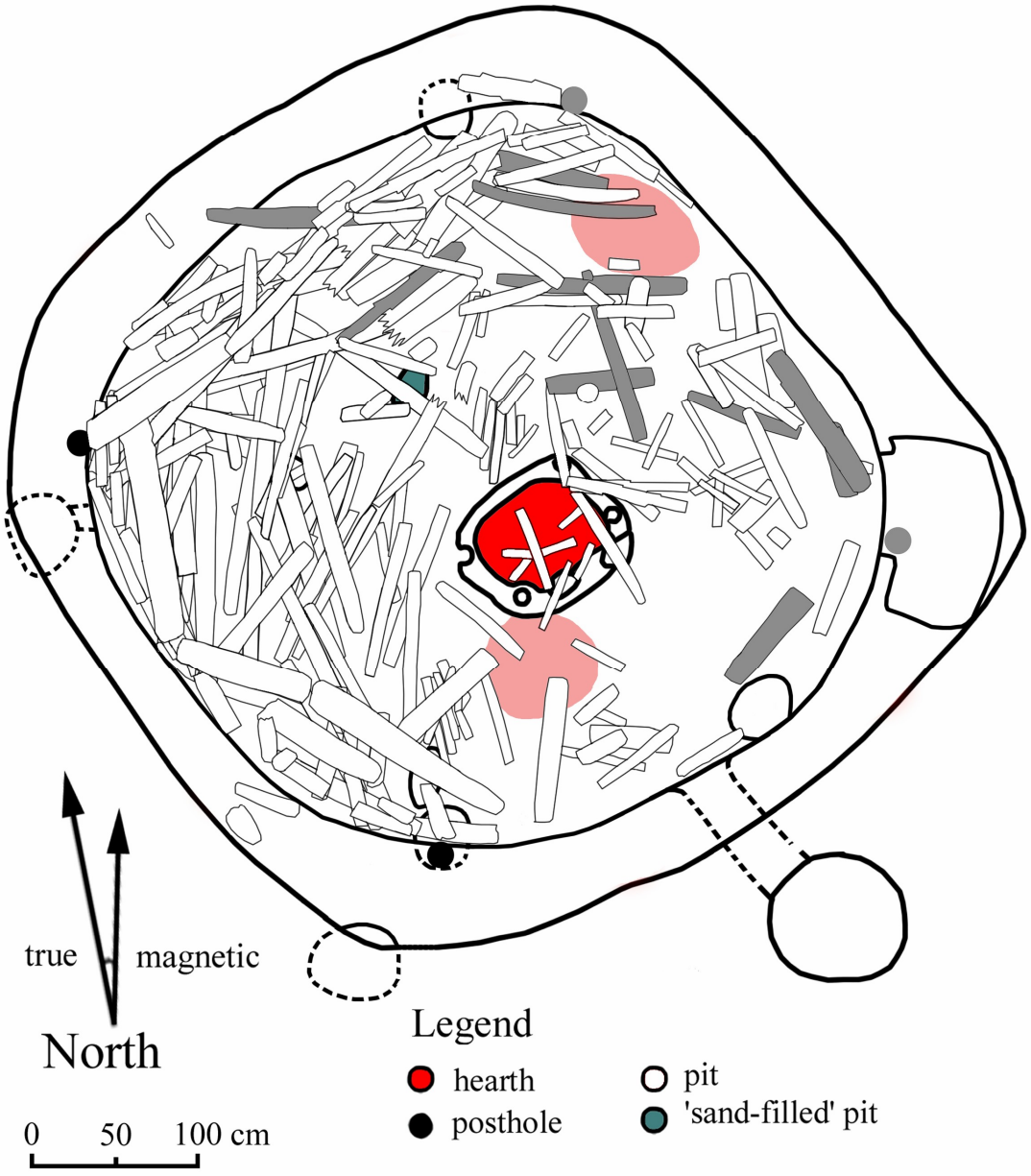


Figure 2.135. Kiva K collapsed burned roof. Shaded beams yielded tree-ring dates. The pink areas denote locations of fire concentration (hot spots).

This is a pit along the south wall that undercuts it into the sterile caliche (Feature 2.136b). It was mostly filled with mixed sediment and a polished igneous cobble rested on top of it at floor level. This may originally have been for storage.

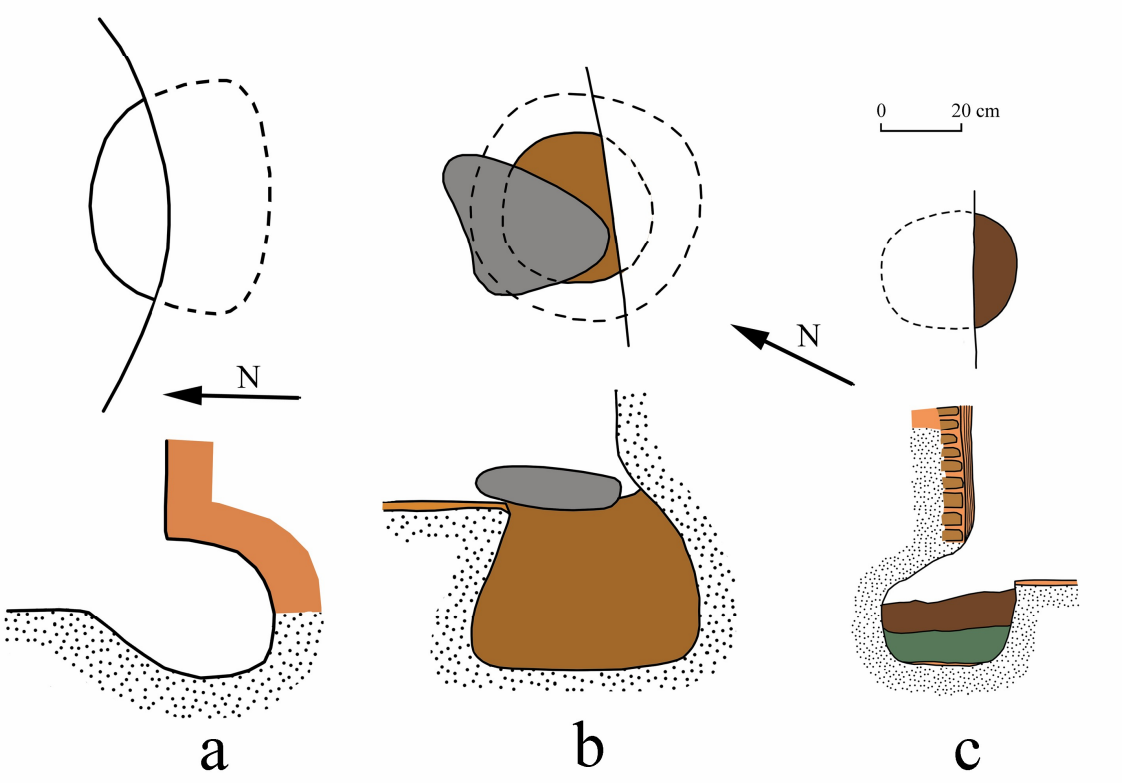


Figure 2.136. Kiva K pit features: a) Feature 5; b) Feature 11, c) Feature 21.

Feature 21 (Figure 2.136c) was cut into the native caliche in the northeast area and undercut the wall. This pit had a thin layer of flooring daub on the bottom. It was partly filled with gray-green sand, the same as found in many of the sand-filled pits in the kivas and pithouses. In this circumstance it seems more like it was being stored rather than part of a ritual function. There was a layer of mixed fill on top of the gray-green sand and then the upper portion of the pit was open at abandonment of the kiva.

Corner Bin A relatively large pit was cut into the southeast corner from the bench level to the floor level (Figure 2.137). The walls expanded outward as it went down, especially on the north side. It was enclosed on the main chamber side by a single stone width masonry wall that also incorporated the corner support post (tree-ring dated at A.D. 949) (Figure 2.138). A raised-sill,

with sill stone, (Figure 1.138a) opening was left to allow access from the main chamber.

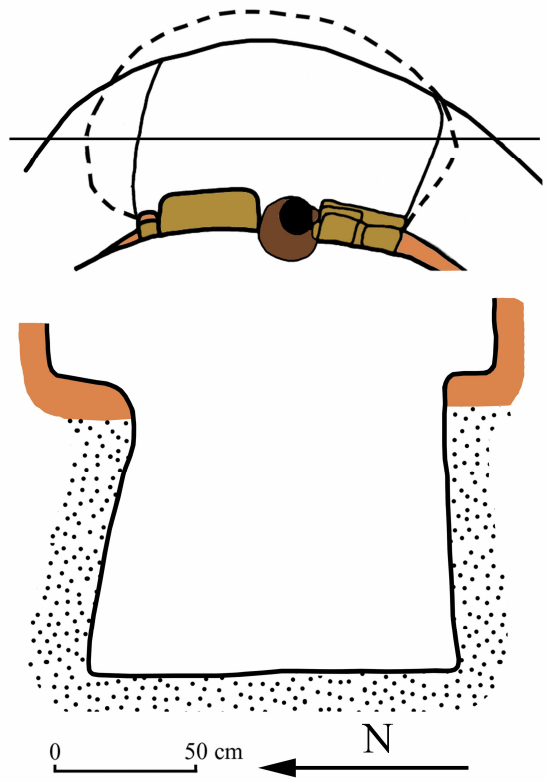


Figure 2.137. Kiva K corner bin plan and section.

Although there was no direct evidence, it seems this pit was probably roofed, based on the burned beams in it. These could have come from the main chamber roof but is unlikely. A few artifacts were recovered from the floor of the bin (Table 2.58) but they do not indicate any particular use. This feature probably served the same function(s) as the corner rooms in later kivas.

Wall Niche

A cavity was dug into the west wall below the banquette. The opening was closed with masonry except for an aperture (Figures 2.139 and 2.140) that served as an access point. This feature was mostly empty when found with just some small pieces of caliche in the bottom. The pit probably served as a storage area but the size of items put in it would have been restricted by

the aperture.

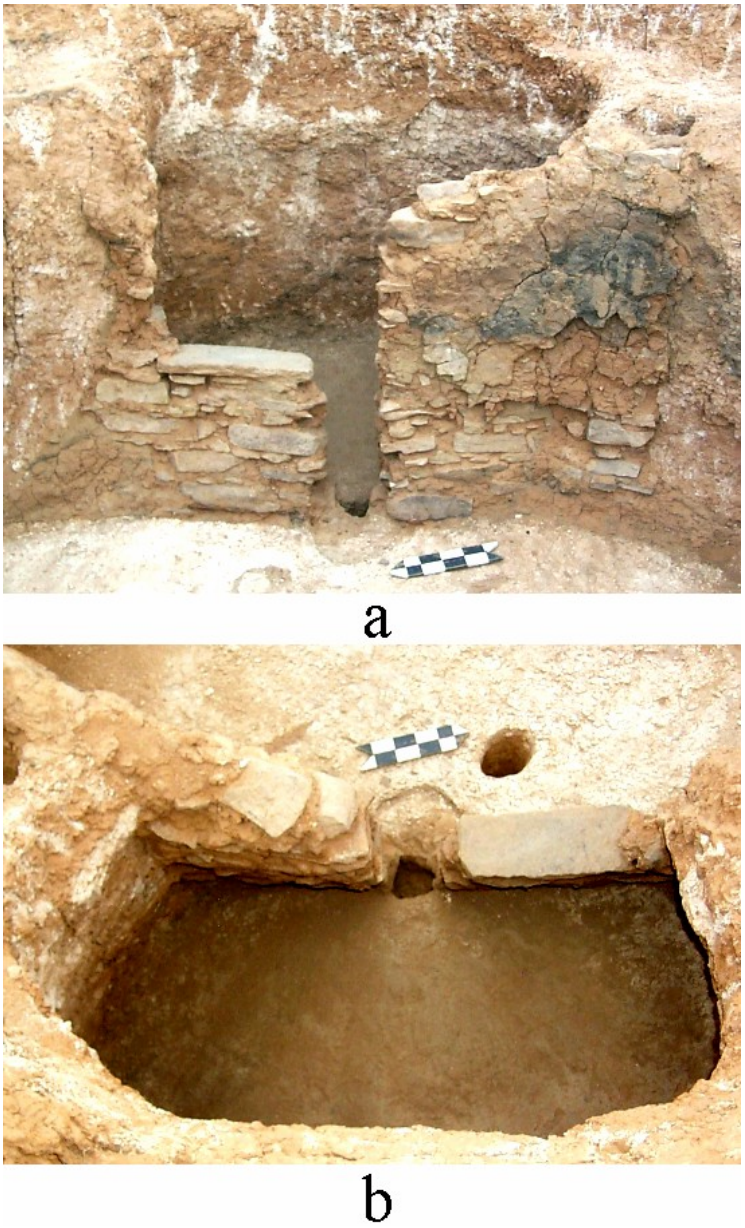


Figure 2.138. Kiva K corner bin (F-47) views: a) from main chamber; b) looking down.

Artifacts

There were a large number of artifacts left in the kiva when the roof was burned (Table 2.59). Many of these came from floor contact in the main chamber and on the benches (Figure 2.141). There is a wide range of types but there are quite a few food processing tools such as manos. There was

also a complete metate within a cluster of other artifacts (Figure 2.142).

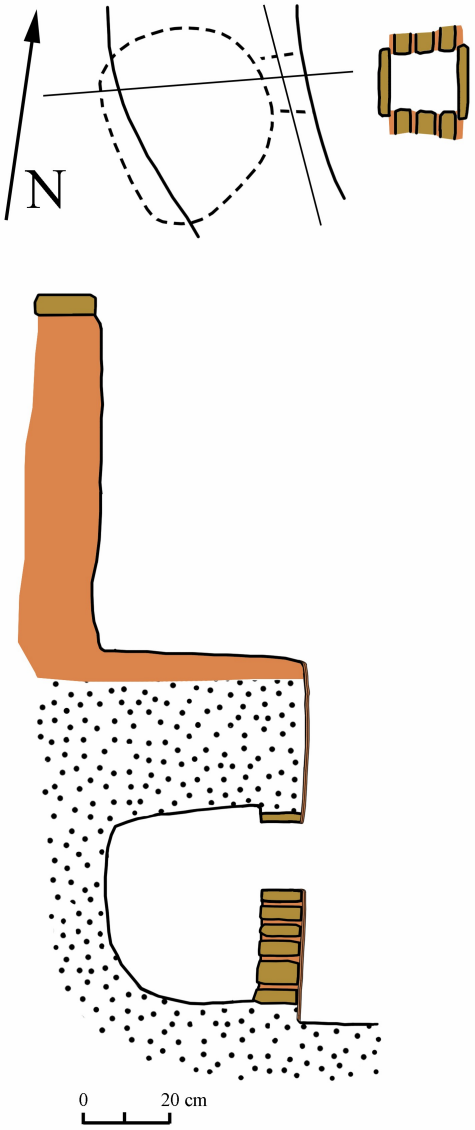


Figure 2.139. Kiva K wall 'niche' F-17.

Several partly restorable vessels (Table 2.60) were recovered from the floor and benches (Figure 2.143). These included a Cortez B/w olla (Figure 2.143a), a Cortez B/w pitcher (Figure 2.143b) and the upper portion of a Mancos Corrugated jar (Figure 2.143c). There were also additional Grayware vessels that haven't been restored.

Figure 2.140. Kiva K wall niche photo F-17.

Table 2.58. Kiva K artefacts on the floor of the corner bin (F-47).

SP	Item	Comments
373	vessel	miniature pot, unfired
376	mixed	
469	projectile point	
470	ground stone	fragment
471	flaked stone	
472	projectile point (perform?)	obsidian
473	bone	

Table 2.59. Kiva K artifacts from roof fall and floor.

SP	Item	SP	Item
6	pot lid	208	burned corn cob
7	Vessel- sherd container	233	flake
8	bone	234	abrader

9	bone	235	shaped slab
10	mano	236	bone
11	flake	237	flake
13	awl	238	flake
77	bow?	239	flake
94	sherds	240	bone
95	worked wood items	241	flake
96	pot lid	298	gaming piece?
97	spall concentration	302	metate
98	handstone	303	wood plank
99	bone	306	mano
100	'marble'	307	shaped slab
101	bone	308	ground stone
102	sherd	309	sherd
103	vessel	310	hammerstone
104	worked sherd	311	paint grinding stone
105	sherds	312	mano
106	flake cluster	313	mano blank
107	mano/pounder	314	polished stone
108	cobble	315	mano blank
109	cobble spalls	316	metate
110	pine needles	317	mano
178	burned corn cobs	318	abrader
195	cut(?) stick	319	faunal
196	awl	320	Vessel 43 Cortex B/w
197	sherds	321	Vessel 44 Mancos corrugated
198	flake	322	pot lid
199	sherd	324	mano
200	drill	325	mano
201	awl	326	ground stone
202	flake	327	polished igneous slab
203	Vessel- sherd container	233	flake
206	sherd	234	abrader
207	bone		

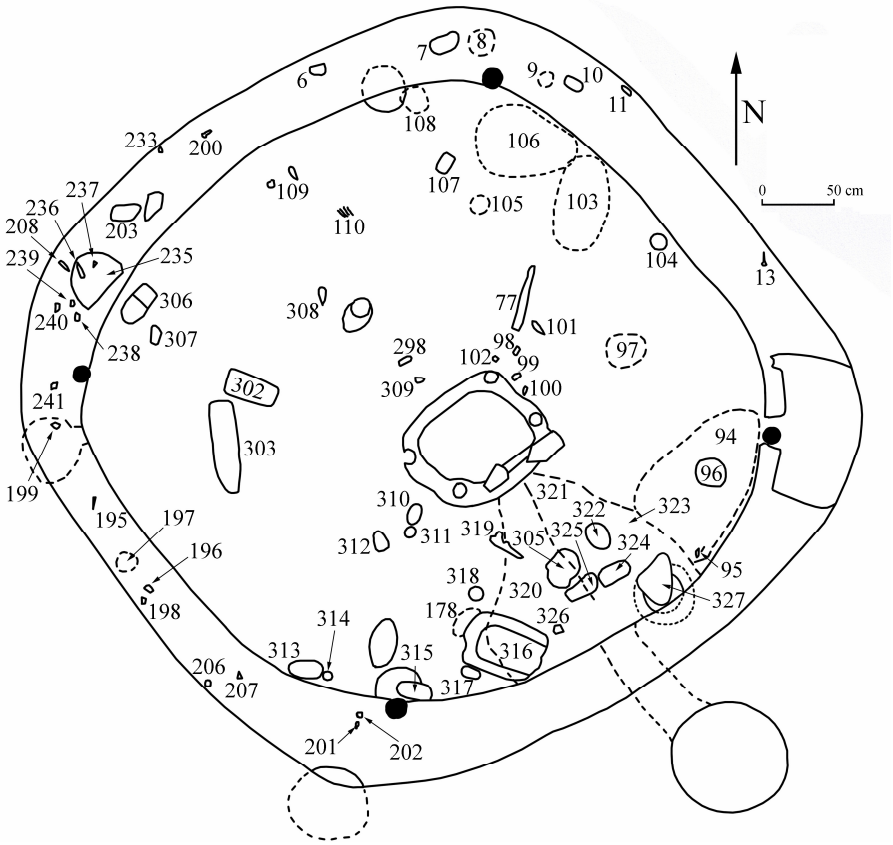


Figure 2.141. Kiva K floor artifacts.

Figure 2.142. Kiva K artifacts (including sherd clusters 230 and 231) between hearth and vent tunnel opening (unexcavated).

Table 2.60. Vessels from Kiva K.

Specimen #	Vessel	Comments
539	?	from sherd clusters 470/320
540	Cortez B/w olla	Vessel #43
541	Mancos Corrugated jar	Vessel #44
7	sherd container	
14	neck-banded, restorable?	
103	Cortez B/w pitcher	small
203	sherd container	
320	Vessel sherd cluster	3 bags, includes restorable vessel?
321	Vessel sherd cluster	multiple bags

A small number of additional sherds were also recovered from the floor (Table 2.61). These also indicate a time when Cortez and Mancos B/w pottery were both in use.

Table 2.61. Identifiable sherds from the floor of Kiva K (not including those that were included in restorable vessels.

Structure	Cortez B/W	Cortancos B/W	Mancos B/W	Mancos Corrugated	Deadman's B/R
Kiva K	26	7	16	36	1

Dating

The burned roof in Kiva K yielded a large sample of charred beams. Of the 154 collected, 13 were submitted to obtain tree-ring dates (Table 2.62). Since there was an obvious reroofing of the structure, I expected there would be a fairly wide range of dates but there wasn't. Two of the 13 samples had very variable outside rings, but they still fell well within the cluster that only spanned seven years. Beams were cut in ever year between A.D. 946 and 953 with the exception of 951. The distribution of dates is very similar to those from Pithouse 2 with the probable construction date being only three

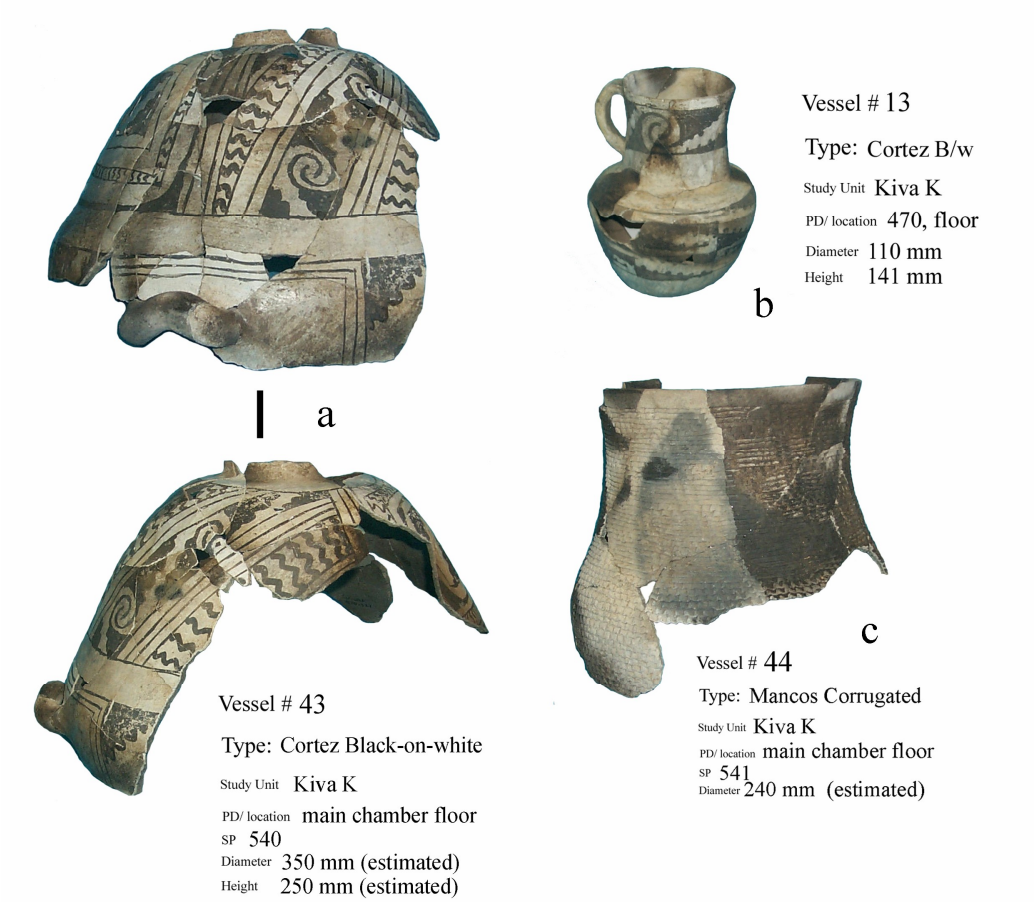


Figure 2.143. Partly restorable vessels from the floor of Kiva K.

years later (A.D. 953). Many of the dates are the same and the beams may have been from the same stockpile. Two of the built-in roof supports had cutting dates of 947 and 949, so this second roof could not have been constructed before 949.

The lack of earlier dates in our sample may mean that we needed a larger sample or that when the structure was re roofed all of the beams were reused ones. If this was the case, the reroofing and final use may have been later than the mid-900s. The sherds recovered from the floor included some Mancos B/w and these probably indicate a later date for final use than the beams indicate, which are date construction

Figure 2.144. Kiva K roof fall. Possible ladder rung lashing.

Table 2.62. Kiva K tree-ring dates.

Inner	ISymb	Outer	OSym	Specie	Comment
877	p	946	r	jun	inc.
855	+/-p	947	v	jun	comp.
870	p	947	r	jun	comp.
840	+/-p	947	r	jun	inc.
862	p	947	r	jun	comp.
820	p	947	r	jun	F-1 post
856	p	948		jun	comp.
843	+/-p	949	r	jun	comp.
835	p	949	r	jun	inc. F-4 post
888	p	950	+vv	jun	
869	+/-p	952	r	jun	inc.
876	p	953	+vv	jun	
853	p	953	+rB	jun	comp.

Post-abandonment filling

Like Pithouse 2, Kiva K was burned. There was no indication of any accumulation of sediments on the floor, nor was there any other evidence that it had been unused for a period before the fire. During the burning there were two ‘hot spots’. These could simply be where the roof collapsed in such a way as to allow oxygen to reach the fuel in these areas, or it might indicate where the roof had been intentionally opened up to make the fire burn more

completely. Neither of these hot spots was in front of the ventilator tunnel opening and a slab was present indicating that the opening was probably sealed when the roof burned. Quite a few of the beams were only charred on the outside and were rotted away on the interior. This was especially prevalent in the northwest area of the structure.

When the roof collapsed so did the roof hatchway, which was bounded by masonry (Figure 2.145). The location of the fallen stones may indicate that the hatchway was not directly above the hearth but offset to the south.

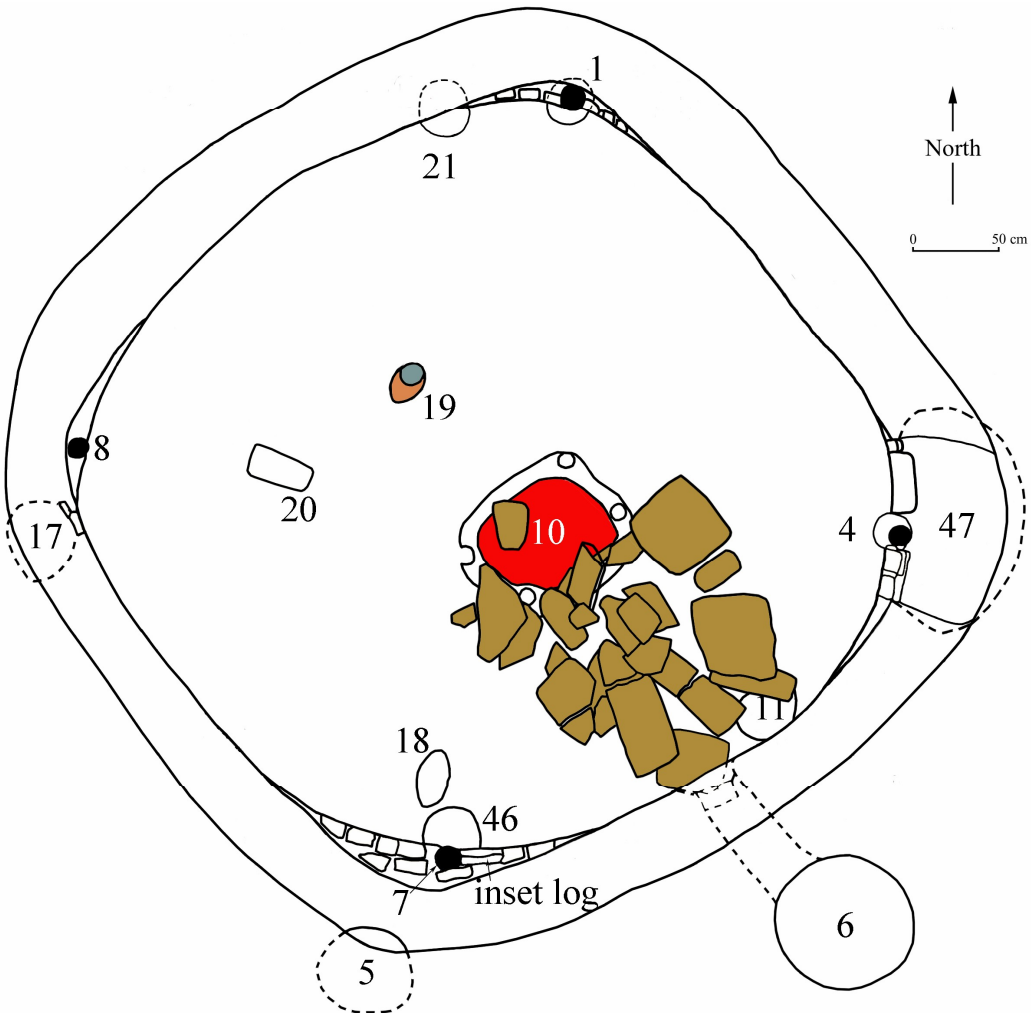


Figure 2.145. Kiva K showing the fallen hatchway stones.

Stratigraphy

The stratigraphy in Kiva K was typical and similar to the other burned pitstructures in our excavations (Figure 2.146). Immediately below the modern ground surface was a deposit of secondary refuse that filled a significant depression. The midden deposit contained Mancos Black-on-white pottery as well as Mancos Corrugated, placing the deposit in the Middle Pueblo II period of the 11th century. This was underlain by a thick deposit of washed-in natural loam sediment. Near the center of this deposit was a pit-like depression that may have been the result of human activity before the midden was deposited. The lower portion of the natural sediment was laminated, indicating sequential puddling. Below the natural sediment was the burned roof fall consisting of burned sediment, charred beams, pieces of sandstone, ash lenses and pieces of burned daub.

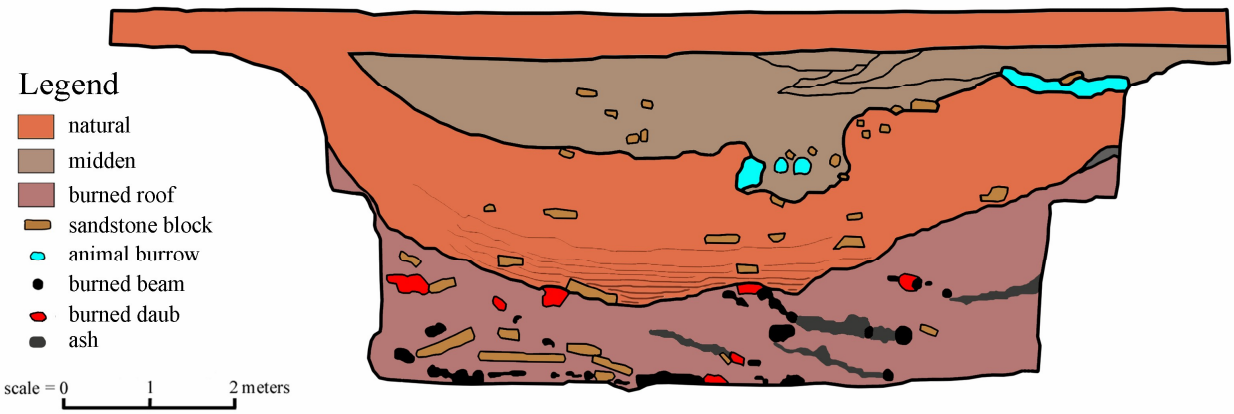


Figure 2.146. Kiva K section profile looking southwest.

Conclusions

It is unknown when Kiva K was originally built it was used for a significant time before it was remodeled, including reroofing. Dates from the second roof indicate that remodelling took place in A.D. 953, however, if all of the beams were from the original roof this date may indicate when it was

originally constructed.

The structure's original configuration was reminiscent of Late Pueblo I pithouses except it lacked an ash pit, a deflector and wing walls. Unlike a Pueblo I pithouse it had a high banquette and six roof supports. This may indicate a cribbed roof form, not known in earlier structures. The second roof was changed to a four post support system by removing the six supports and adding masonry veneers and posts into the corners, somewhat rounding the main chamber.

Features added during its original use point more to ritual than domestic activity. There were many sand-filled pits and a complex sipapu. There were also a number of rectangular pits that although they may have been used in some domestic activity had fill units similar to one of the units in the complex sipapu. This may indicate that they had special, perhaps ritual functions. Most of the features were intentionally filled and capped by floor plaster.

There were few associated artifacts with the original use so this does not contribute to our understanding of the structure's function(s).

Along with a new roof, the structure saw added wall plaster and floor plaster that sealed most of the floor features. Three features, the hearth, the vent system and a built-in grinding stone, continued in use. Features added to the remodeled structure were dominated by floor and bench level pits (undercutting the walls), a wall 'niche' and a large corner bin. All of these features were probably for short-term storage. There was a single sipapu with partial sand filling, but open at abandonment.

At the time the roof was burned, there were a significant number of

artifacts on the floor and banquette surfaces of the structure. These included several partial vessels, two Cortez Black-on-white and a Mancos Corrugated jar. Two sherd containers were left on banquette surfaces and additional partial grayware jars have yet to be restored. While there is a wide range of other artifacts represented, the assemblage is dominated by food processing tools, including complete manos and a trough metate.

The overall effect of the features and artifacts is one of domestic activity rather than ritual. This may, perhaps, be an example of a predominantly ritual structure being converted to domestic use. Its remodelling and final use may correspond to the construction of Pithouse 1 and Kiva I in the A.D. 970s. The pottery in Kiva K indicates this later date.

Kiva Unit K Conclusions

Kiva Unit K was constructed at the same time as the Early Pueblo II roomblock in the mid-900s, more specifically between A.D. 947 and 953. The original roomblock Room Suites 2-5) was built as a partial arc opening to the south and curving to the southwest. The room suites (2-5) were typical with large front rooms and smaller back rooms. There was evidence that some, but not all, of the front rooms served as habitations and the back rooms as storage facilities. However, the room suite (1) added to the east end, diverged from the arc and angled off to the northeast. It was not typical in design and was dominated with food processing features.

Pithouse 1 was associated with Room Suite 1 and was constructed in A.D. 950. It also served as a food processing facility. Kiva K was built just a few years later, quite a distance away to the southwest near the end of the arc of rooms. Pottery associations were primarily Cortez Black-on-white but

some were trending to a transition into Mancos Black-on-white. Mancos Neck-banded dominated but indented corrugated neck vessels were also present.

When all of the architecture and features of Kiva Unit K are evaluated together, my interpretation is that it primarily had a food processing focus, perhaps to support ritual feasting of a larger community.

Kiva Unit I

The final unit of architecture that dates to the 10th century consisted of a pithouse and a kiva. The pithouse (1) was constructed adjacent to the northwest corner of Kiva K and the Kiva (I) was located in the space between Kivas H and K (see Figure 2.22). There were no rooms added to the roomblock that are associated with these structures.

Pithouse 1

This small pithouse was a slightly rounded trapezoid in shape (Figures 2.147 and 2.148). It had vertical sterile sediment walls and a caliche floor with some loam floor plaster in places. There were 21 features (Table 2.62). The structure is south-facing.

Features (Table 2.63)

Hearth (F-6) and Deflector Pit (F-7)

A basin-shaped hearth and an elliptical pit that originally held a deflector slab (Figure 2.149) were located south of the center of the floor. The hearth was a pit scooped out of the caliche that was lined with a loam plaster. This lining was heavily burned and irregular through use. There was also a remnant of a low daub collar on the southwest side, but no evidence that there had been modeled depressions like the other hearths in pitstructures at

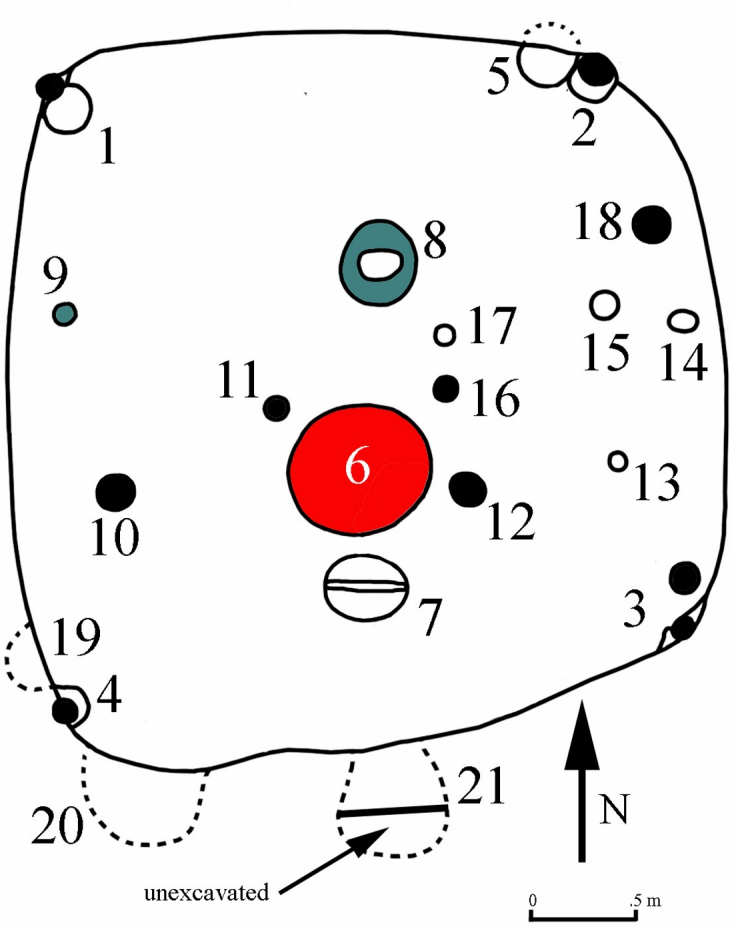


Figure 2.147. Pithouse 1 plan map showing features

the site. The only fill in the feature was a thin (5 cm) layer of dark gray ash containing charcoal flecks. Resting on top of this ash was the upper 2/3 of a neck corrugated jar (Figure 2.150). The way this is resting indicates that it may have served as a pot rest for holding a vessel during cooking or heating its contents.

Just to the south of the hearth was a shallow elliptical pit dug into the caliche. At the base of this pit was a shallow groove running perpendicular to the kiva axis. This pit and groove were likely the support for a stone slab deflector. A shaped sandstone slab was located on the floor by the wall southeast of the pit that when set on end exactly fit in the groove (Figure 2.151). While this doesn't prove that this slab was a deflector, it seems very

likely that it was.

Figure 2.148. Pithouse 1 photo of floor and floor artifacts.

Table 2.63. Pithouse 1 features.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth	
1 Roof support	30	25	60 +	Post in place- burned
2 Roof support	22	16	40+	Post in place- burned
3 Roof support	10	10	102+	Post in place- burned
4 Roof support	15	12	67+	Post in place- burned
5 Pit	30	26	22	Partly sand filled otherwise open
6 Hearth	61	53	17	Ash in bottom otherwise open
7 Deflector pit	43	32	10	Open
8 Sipapu	40	26	10	Filled with gray-green sand with open center
9 Sand-filled pit	13	12	7	Filled with gray-green sand
10 Posthole	19	19	16	Open
11 Posthole	13	13	14	Open
12 Posthole	17	16	13	Open
13 Posthole?	10	9	10	Filled with mixed sediment and sealed with floor plaster
14 Posthole	14	10	9	Filled with mixed sediment and plugged with daub
15 Posthole	13	13	13	Filled with mixed sediment

				and plugged with daub
16 Posthole	14	12	16	Open
17 Posthole?	10	10	12	Filled with mixed sediment and sealed with floor plaster
18 Posthole	18	18	16	Open
19 Wall pit	32	18	22 (height)	Open
20 Wall pit	58	48	50 (height)	Open
21 Vent	30	30	?	Open

Figure 2.149. Pithouse 1 hearth and deflector pit.

Figure 2.150. Pithouse 1 neck-corrugated jar in hearth.

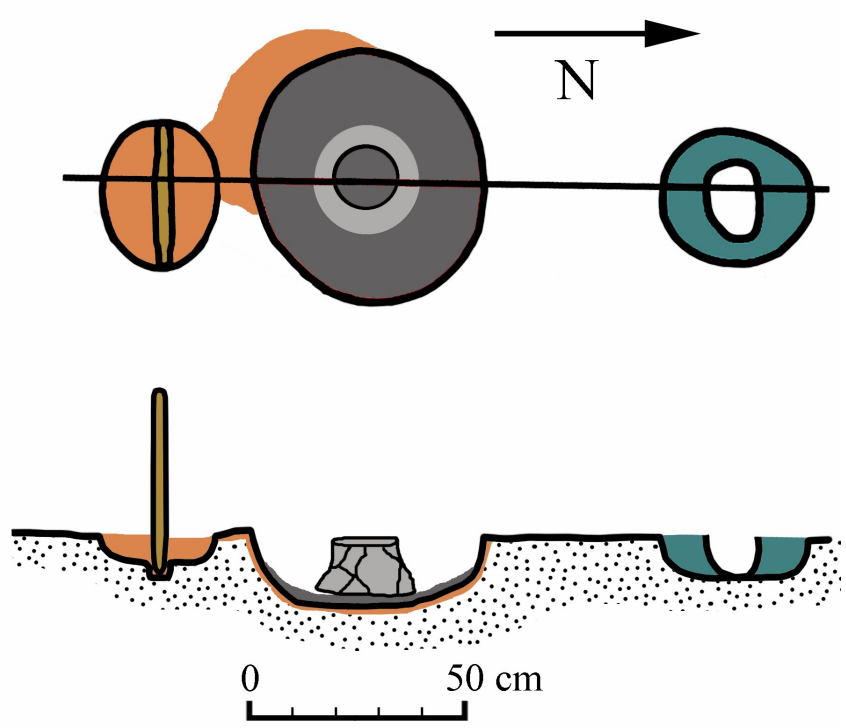


Figure 2.151. Pithouse 1 section through sipapu, hearth and deflector. This is reconstructed assuming that the shaped sandstone slab on the floor near-by was the deflector and that it had been set in the shallow groove in the pit and the pit filled to floor level with native orange loam; also with an approximation of the neck-corrugated jar.

Roof Support Posts (Figures 2.152.and 2.153)

The pithouse roof was supported by four posts, one in each corner. These were set by cutting a pit in the floor and a groove into the caliche up each corner. Posts were set into these pits (some on basal stones) (Figure 2.152a), bottoms up, and then they were wedged into place with stones (Figure 2.152b), the pits filled with loam daub (Figure 2.152c) and the posts lined with daub (Figure 2.152d).

NE corner (F-2); c) SE corner (F-3).

All of the posts were charred above floor level when the roof burned yielding two tree-ring samples that dated A.D. 969 +vv (F-1) and A.D. 969r (F-3

cutting date). They were rotted away below the floor level.

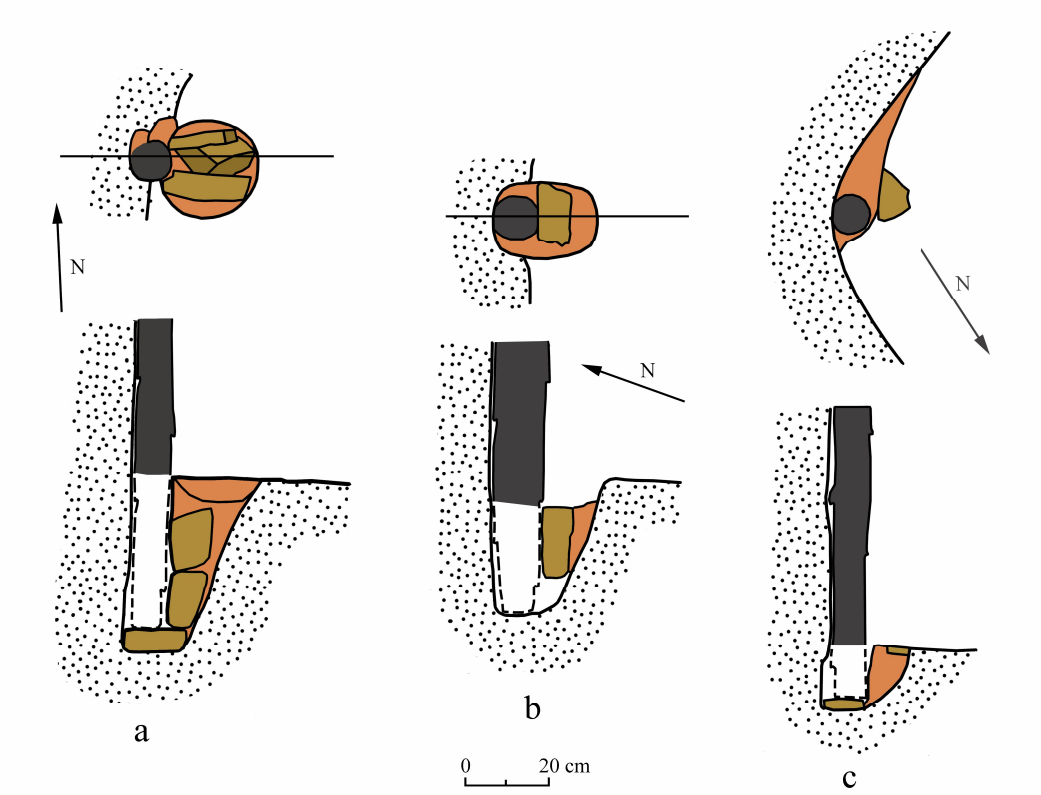


Figure 2.152. Pithouse 1 corner roof support posts: a) NW corner (F-1); b)

Sipapu

A relatively shallow pit (F-8) was due to the north of the hearth. This was filled with gray-green sand and then a smaller posthole-size pit was dug into the center (see Figure 2.51) and was open at the time the roof burned. Another small hole (F-9) near the center of the west wall was filled with gray green sand.

Postholes and Posthole-like Features

There were a number of other postholes and posthole-like features. Some were open at abandonment and some had been plugged or sealed (see Figure 2.147 and Table 2.62). None of them retained either burned stubs of posts or clear evidence of rotted wood so it is difficult to determine their final

uses.

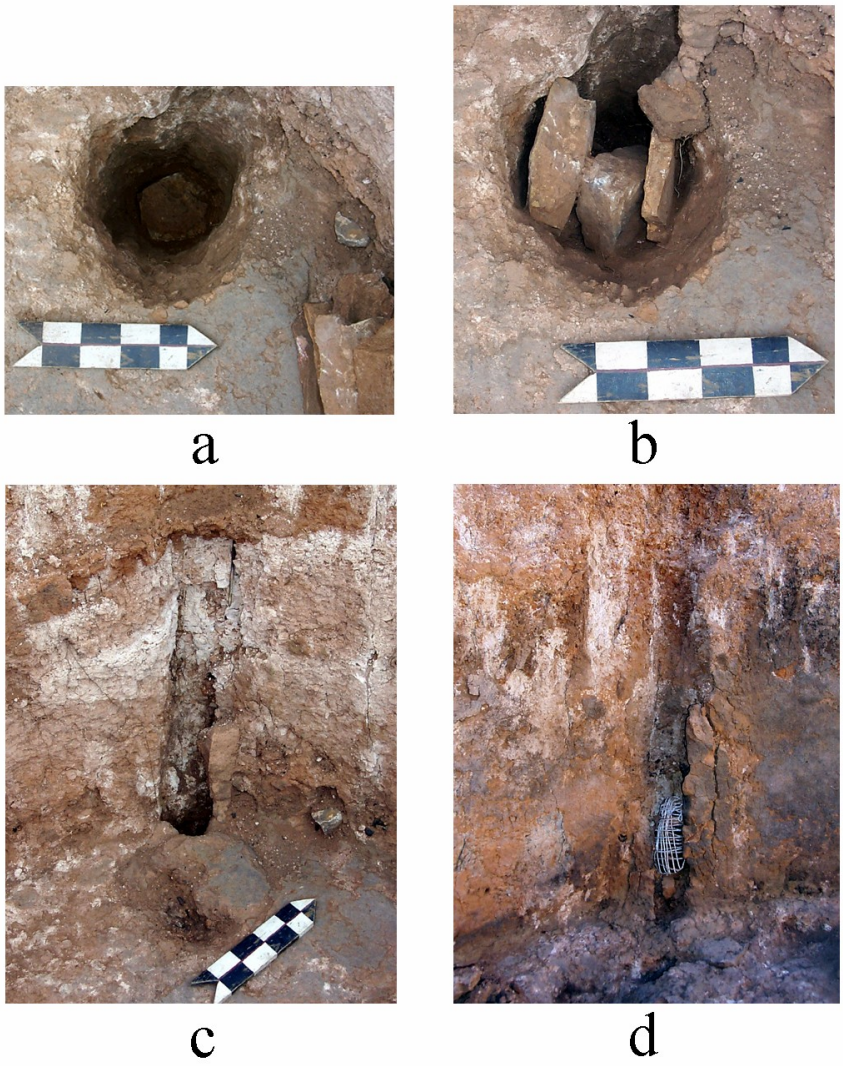


Figure 2.153. Pithouse 1 corner roof support features: a) stone in bottom of pit; b) stone wedges; c) filled pit; d) daub packing along post.

Floor Pit

There was one floor pit (F-5) against and undercutting the north wall next to the NE roof support post (Figure 2.154). It was very similar to a pit in Kiva K.

Floor Artifacts

There were a number of floor artifacts in Pithouse 1 (Figure 2.155 and Table 2.64). There was also the complete skeleton of a dog and a separate mandible of another dog. The complete skeleton was composed and not

sprawled and looked to have been deliberately placed, possibly as a ‘burial’ (Figure 2.156).

Figure 2.154. Pithouse 1 floor pit (F-5) and NE roof support posthole.

The sparse floor assemblage is not a very specific indicator of the final use of the structure other than most items were ground stone used in food processing activities. The presence of the polished igneous cobble is curious as this artifact form seems to have a very high correlation with pitstructures, yet we have no idea what they were used for. There were very few sherds on the floor and only two identified painted; one Cortancos Black-on-white and one Bluff Red-on-orange. The former probably was chronologically associated with the structure while the latter probably originated in the Pueblo I occupation of the site. There was a scatter of grayware but no rim sherds. The neck-corrugated jar section in the hearth, and the partial Cortez Black-on-

white olla in the roof fall probably are good indicators of the mid- to late 10th century.

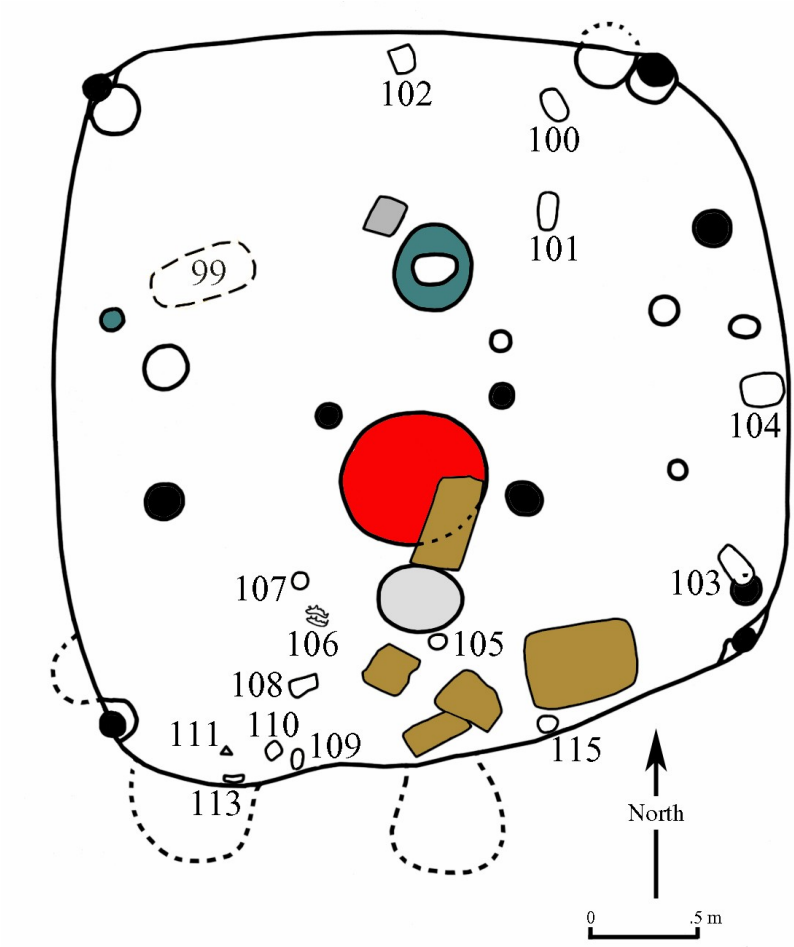


Figure 2.155. Pithouse 1 floor artifacts.

Figure 2.156. Pithouse 1 dog 'burial'.

Table 2.64. Pithouse 1 floor artifacts.

SP	Item	SP	Item
99	dog burial	107	peckingstone
100	abrader	108	abrader
101	mano	109	peckingstone
102	mano	110	abrader
103	mano	111	flake
104	polished igneous cobble	113	burned woven object
105	peckingstone	115	sherd disc
106	dog mandibles		

Dating

The roof of Pithouse 1 was burned and yielded 94 tree-ring samples (Figure 2.157). Twenty of these were sent for dating and they all yielded dates, only two of which may be non-cutting dates (Table 2.65). There are a couple of dates in the A.D. 950s that could possibly have come from either the roomblock, Pithouse 2 or Kiva K. There is one date in the early 960s but there is a sequence starting in 966 and going through to 970 that probably represents stockpiling for three years, the same as seen in the earlier pitstructures. The single date of 975 may be the result of a repair.

Abandonment and Filling

Like Pithouse 2 and Kiva K, Pithouse 1 was burned at or soon after abandonment. The sparse floor assemblage and the lack of evidence of a significant fire in the hearth also indicate that the fire was neither catastrophic nor accidental. The lack of fallen hatchway stones and beams above the hearth may be evidence that this area of the roof had been opened up for the fire to get oxygen. After the burning there was a long period of natural filling followed by the deposition of a midden deposit in the depression. Ultimately,

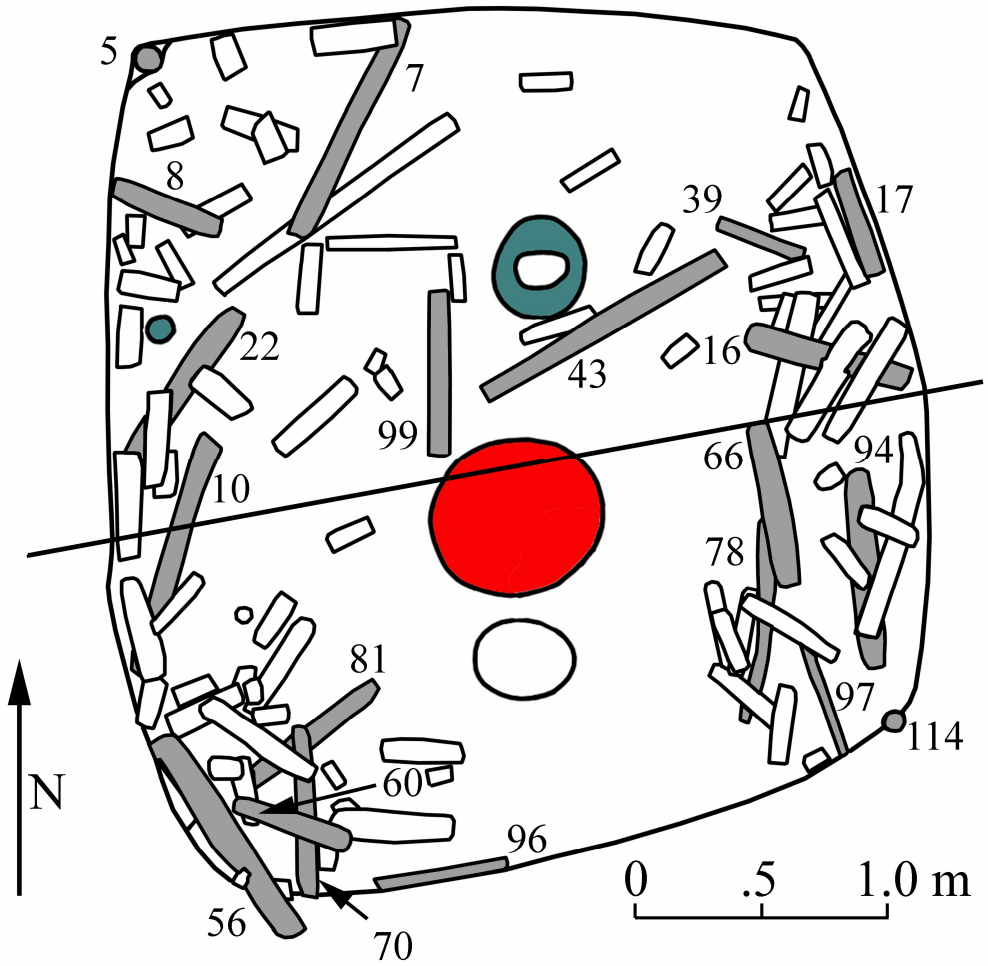


Figure 2.157. Pithouse 1 burned beams in thee fallen roof. Shaded beams mark those that were tree-ring dated.

this was all covered by another natural deposit (Figure 2.158). This midden deposit once again can be dated to the 11th century based on the large quantities of Mancos Black-on-white and Mancos Corrugated and the lack of any later types.

Conclusions

Pithouse 1 is a small rectangular pitstructure with relatively simple four post roof construction and an array of ordinary internal features. Roof beams were mostly cut in the mid to late A.D. 960s and the structure was probably in A.D. 970, using some old and stockpiled beams. The features as well as final

Table 2.65. Pithouse 1 tree-ring dates.

SP	Inner	ISymb	Outer	OSym	Specie	Comment
81	864	p	950		pnn	
22	874		956	+rB	jun	comp.
16	872	p	962	B	jun	comp.
66	881	p	966	v	jun	comp.
10	899	p	966		pnn	
8	915	p	967	vv	pnn	
56	892	p	967	r	pnn	inc.
60	858	p	968	+r	jun	comp.
43	896	p	969	r	jun	comp.
7	878	p	969	rB	jun	comp.
70	893	p	969	+r	jun	inc.
17	908	p	969	r	pnn	
35	871	p	969	+v	jun	
9	925	p	969	+r	jun	
95	906		969	+vv	jun	F-1 post
97	897	p	969	v	jun	comp.
114	911	p	969	r	jun	comp.
49	900	p	969	r	jun	comp. F-3 post
94	864	p	970	r	jun	inc.
78	927	p	975	vv	jun	

artifact assemblage indicate it probably served as a domicile, and the degree of erosion around the hearth indicates it was probably used for a period of years with little maintenance. At, or very near, abandonment, a dog was placed on the floor and the roof intentionally burned. The ruined structure was left to fill naturally until the remaining depression was used as a midden during the following Mancos Phase.

This pitstructure was built a generation after the construction of the large Early Pueblo II roomblock, Kiva H and Kiva Suite K. It is unclear whether or not any of these structures were still in use, but the filling of Kiva H with midden probably occurred, at least in part, when Pithouse 1 and its associated Kiva I were in use.

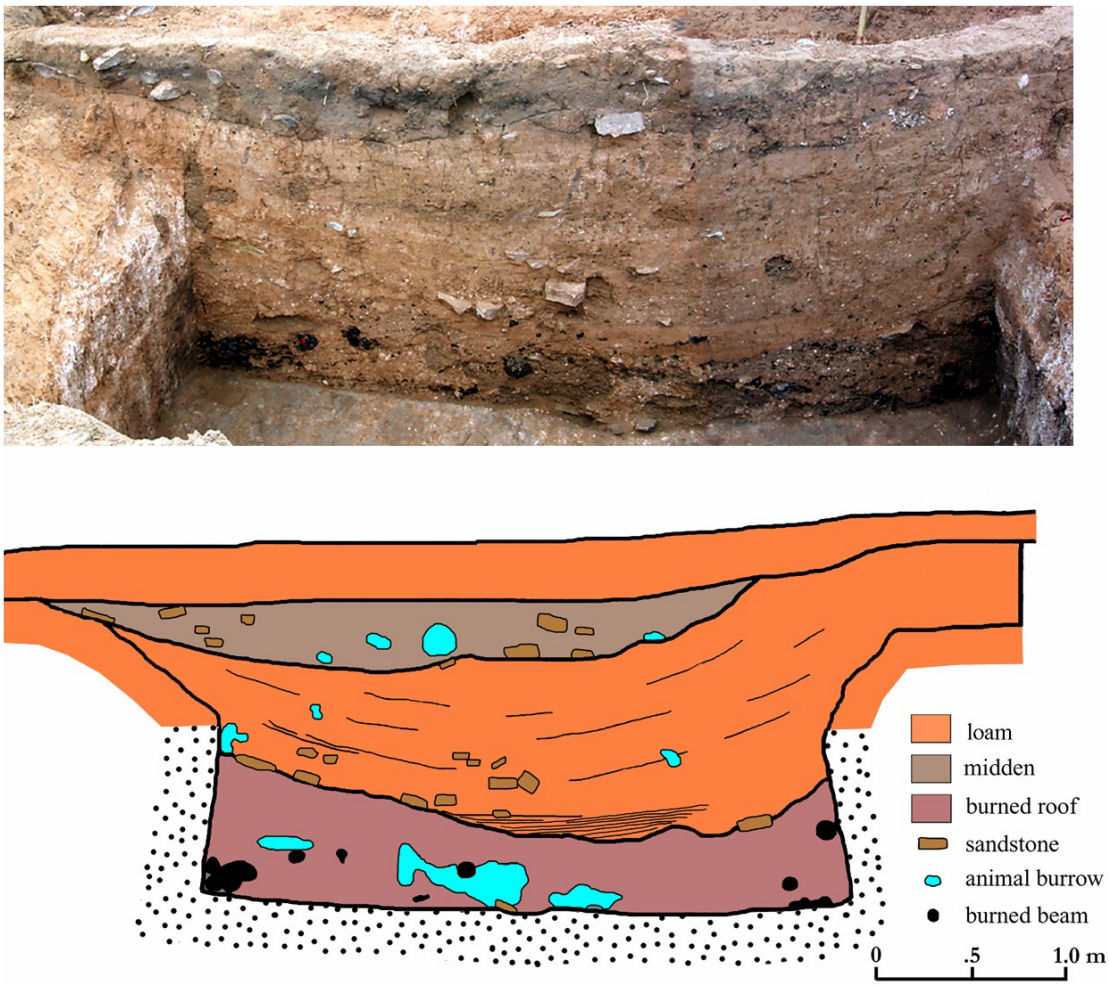


Figure 2.158. Pithouse 1 sections looking south. Note the north rim of the hearth just beginning to be exposed.

Kiva Suite I

Kiva I

Architecture

Kiva I is located in between Kivas K and H. Based on tree-ring dating this kiva was associated with Pithouse 1 but constructed 3 years later. As with the other pitstructures Kiva I was dug into the native loam and caliche. It is oriented slightly east of south. The pit was basically round with an off-set for the banquette. The walls below and above the banquette surface were lined with a veneer of sandstone masonry and the lower walls were well

plastered (Figure 2.159). It had a four-post support roof. The floor was well-plastered.

a b

Figure 2.159. Kiva I walls: a) upper lining wall masonry; b) plastered lower lining wall.

Features

Twenty-five features were encountered in this kiva including the usual hearth, ash pit, roof support postholes, a built-in grinding slab and various floor pits, sand-filled pits and wall bins (Figure 2.160 and Table 2.66).

Roof support posts

Four roof support posts were located in the four 'corners', the north two built into the lower lining wall and the south two built adjacent to the lower lining wall (Figure 2.161). The two north posts were built into the lower lining wall and emerged from the banquette surface (Figure 2.62). The south posts were placed on postholes cut from the floor, wedged with stones and then connected to the wall with daub (Figures 2.163 and 2.164). All three roof support posts tree-ring dated to A.D. 974 (cutting dates).

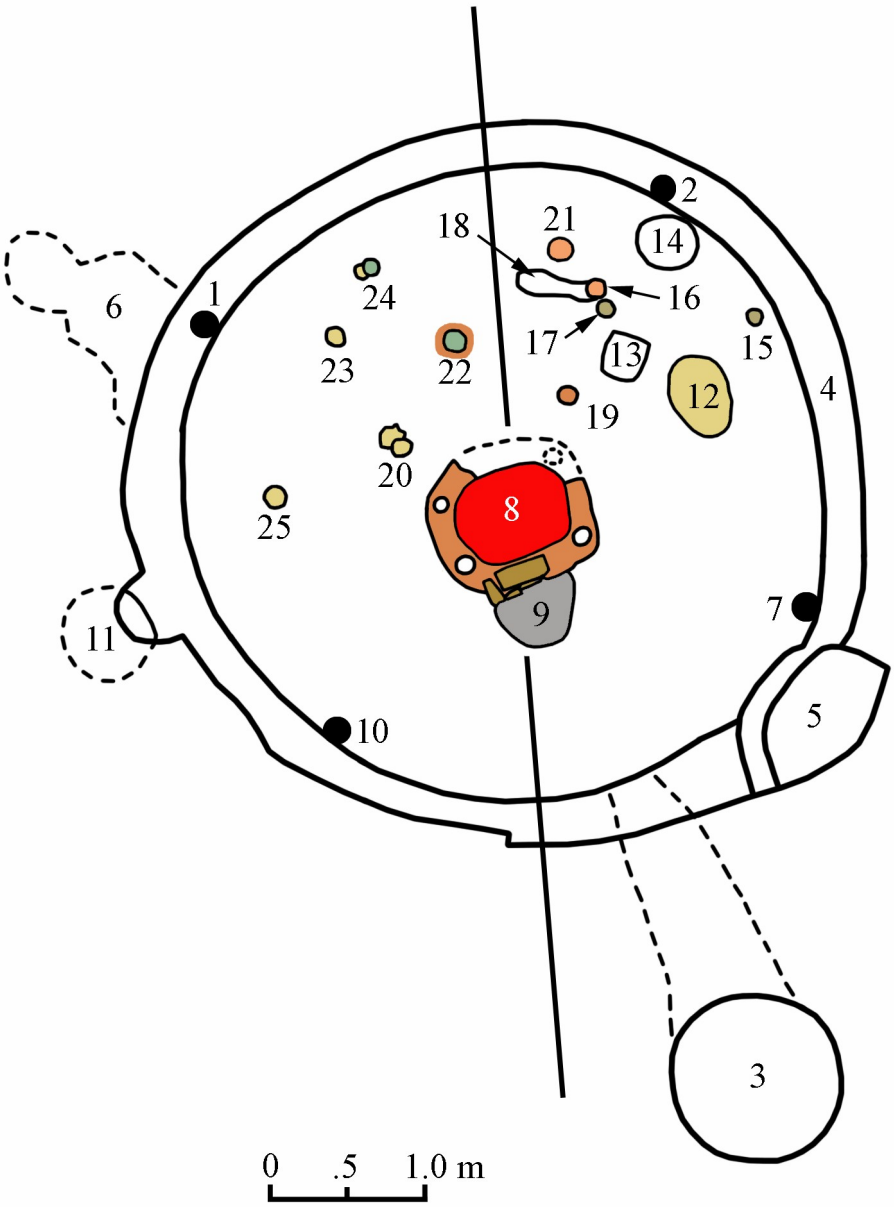


Figure 2.160. Kiva I plan showing features.

Hearth and Ash Pit

A large off-rectangular hearth was located on the kiva axis just south of center (Figure 2.165). This took the form of a shallow pit cut into the caliche surrounded by a collar of modeled daub with stones built into it on the south side (Figures 2.166 and 2.167). The collar had modeled basins in the four

corners (as in Pithouse 2 and Kivas H and K). The north portion of the collar was missing. There was a layer of consolidated ash on the bottom of the hearth. This was covered by a layer of oxidized orange sand. It seems likely

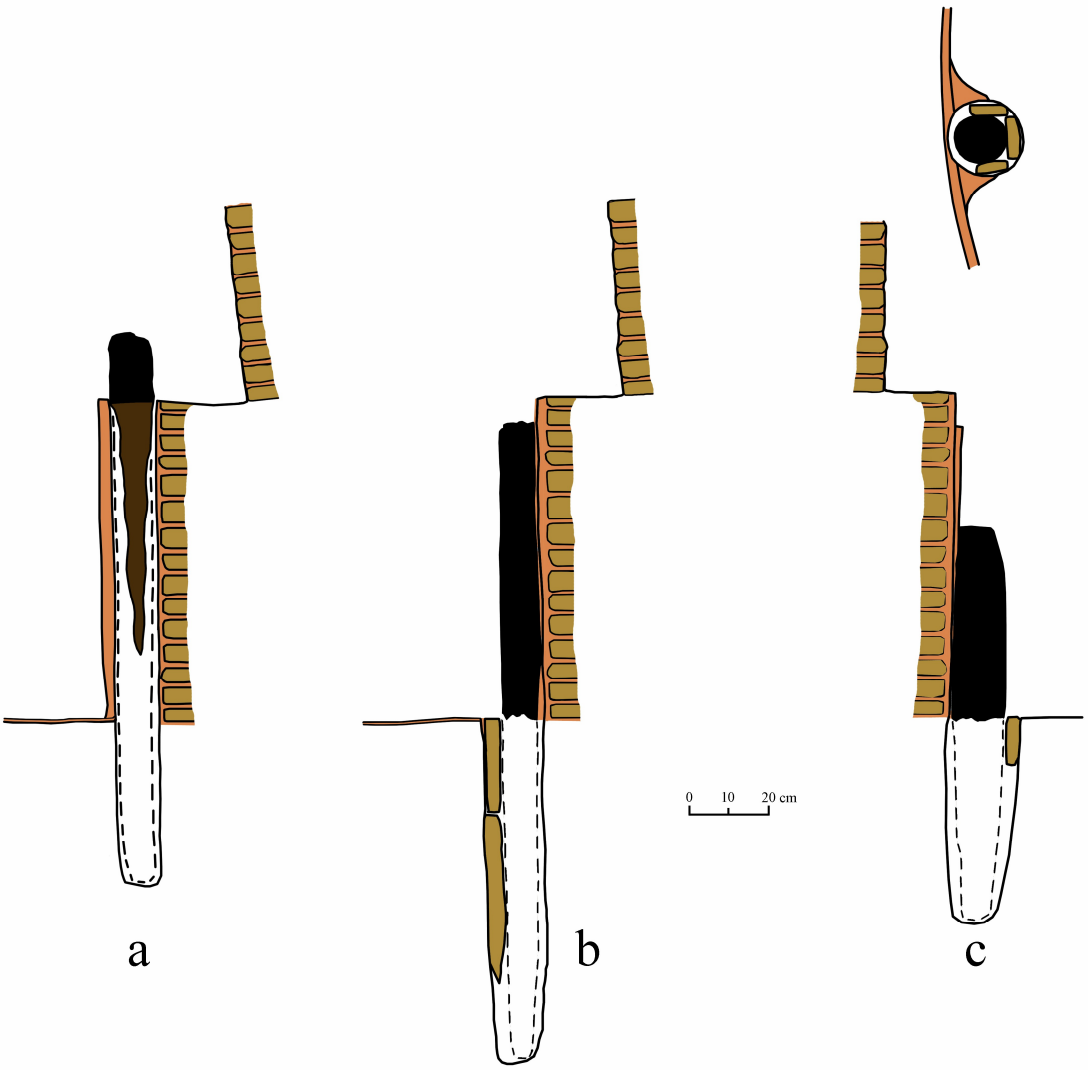


Figure 2.161. Roof support posts: a) NE post F-2; b) SE post F-7; SW post F-10.

that this sand was intentionally put in the hearth and then burned. This in turn was covered with a layer of gray ash. This ash overlapped some of the surrounding daub collar.

Table 2.66. Kiva I features.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth/height	
1 Roof support post	14	14	113 below bench	Post in place
2 Roof support post	12	12	123 below bench	Post in place
3 Vent system	60	43 X 28	173	Natural open
4 Bench surface	n/a	27	82 above bench	Open
5 'Corner' bin	110	62	76	Roof fall open
6 Wall cist	87	46	110	Natural open
7 Roof support post	15	15	132	Post in place
8 Hearth	108	96 (estimated)	20	Open
9 Ash Pit	54	38	32	Open
10 Roof support post	18	17	119	Post in place
11 Wall cist	55	55	42	Open
12 Sand-filled pit	54	37	16	Tan sand sealed
13 Grinding slab	36	24	n/a	Open
14 Pit	47	39	19	Mixed fill sealed
15 Sand-filled pit	10	10	17	Tan-gray sand open
16 Sand-filled pit	113	13	14	Orange sand sealed
17 Sand-filled pit	14	14	6	Gray-tan sand sealed
18 Pit	39	15	2-5	Mixed fill open
19 Filled-pit	9	9	18	Orange loam sealed
20 Sand-filled pit	26	24	17	Tan sand sealed
21 Sand-filled pit	13	12	5	Orange sand and orange loam sealed
22 Sand-filled pit	15	13	25	Gray-green and tan sand sealed
23 Sand-filled pit	12	12	3	Yellow-tan sand sealed
24 Sand-filled pits (1) (2)	18 8	13 8	4 12	Gray-green sand sealed Yellow-tan sand sealed
25 Sand-filled pit	11	10	12	Yellow-tan sand sealed

a b

Figure 2.162. Kiva I north roof support posts: a) NW (F-1); b) NE (F-2).

a b

Figure 2.163. Kiva I SE post: a) charred post in place; b) charred post removed (note the masonry behind the post and the daub liners).

Figure 2.164. Kiva I SW roof support post: a) charred post in place; b)

charred post removed (note sandstone wedges and daub post support linings.

Figure 2.165. Kiva I hearth, ash pit and vent tunnel opening.

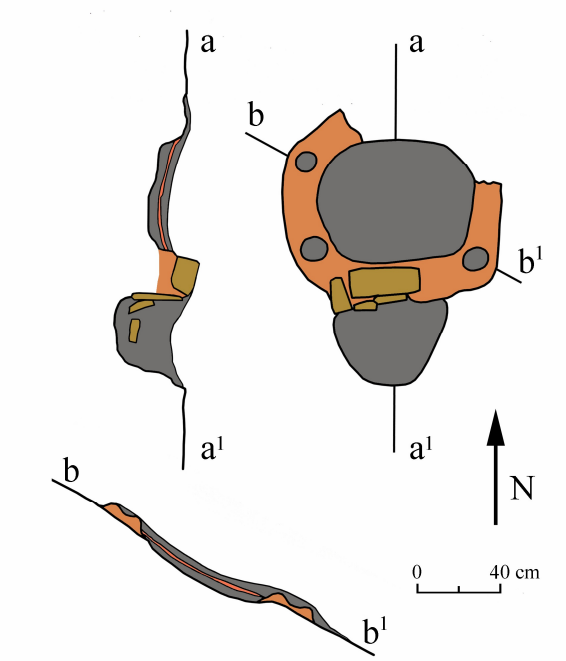


Figure 2.166. Kiva I hearth and ash pit plan, section and cross-section.

Figure 2.167. Kiva I ash pit and hearth.

Figure 2.168. Kiva I hearth section looking west.

There was a pit adjacent to the south side of the hearth. This was filled with clean ash containing a few pieces of sandstone. This ash pit (F-9) was built and used with the hearth. While this sort of feature is common in ancient Pueblo pitstructures, their use is not known. It may have been a place to keep ash for banking fires, or perhaps a place to keep ash for ritual purposes.

Wall Cists and Bins

A large bin (F-5) was located in the SE area built on the banquette level (Figure 2.169). An area above the banquette was scooped out of the upper wall. This was enclosed by a curved single stone width masonry wall. Most of this wall had collapsed into the kiva, but it is likely there was an opening in the side allowing access into the bin. Roof fall in the feature indicates that is may have been separately roofed, forming an equivalent of a corner room. The exterior surface of the enclosing wall was plastered.

Figure 2.169. Kiva I masonry enclosed banquette-level bin.

Along with burned beams two large grayware jars were recovered from this feature. One is Mancos Corrugated (Figure 2.170a) and the other is Mancos Neck-banded (Figure 2.170b). No macroscopic organic remains were found in the feature or vessels other than the burned beams. This bin was used as a storage area.

A large cavity was dug into the upper wall directly behind the NW roof support post. This had an irregular shape and was quite elongated. The masonry lining of the wall served as an opening lining (Figure 2.171) and masonry was added on the sides back into the cist (F-6) for about 50 cm. The floor of the feature was well made and was just below the banquette surface level. Otherwise the cist was unlined. It was filled with natural post-

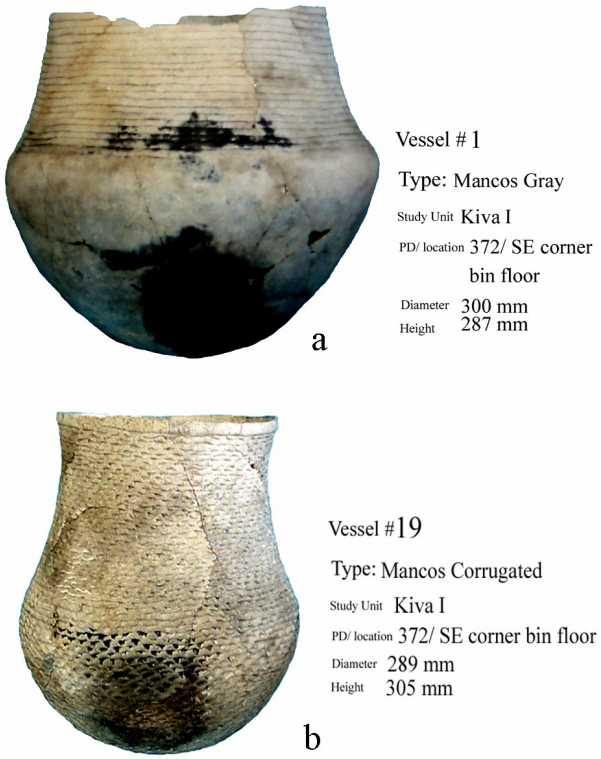


Figure 2.170. Kiva I grayware vessels from the banquette bin (F-5): a) Mancos Neck-banded; b) Mancos Neck-banded.

Figure 2.171. Kiva I wall cist opening (F-6).

abandonment deposits and there were no associated artifacts. This may have served as a storage area.

Another, smaller cavity was excavated into the wall above the banquette on the west side of the kiva. This formed another possible storage area. This cist (F-11) created a domed alcove that may also have been used for storage. It was filled naturally and had no associated artifacts.

Sand-filled Pits

Ten of the pits in the floor of Kiva I have been identified as sand-filled pits (see discussion with Kiva H). These range in size and content. The largest, F-12, was located approximately half way between the hearth and the east wall. It was 54 cm long 37 cm wide and 16 cm deep (Figure 2.172). This elliptical pit

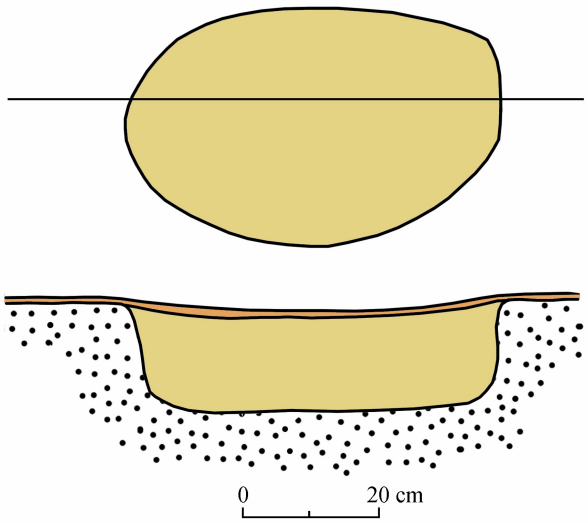


Figure 2.172. Kiva I sand-filled pit F-12.

was dug into the caliche with nearly vertical sides and a flat bottom. No other preparation was noted. It was filled with clean tan sand and then sealed with a thin layer of floor plaster. The section of the pit shows a slight depression, which may indicate that the floor plaster was put over it before the sand was consolidated. This feature, in size and shape, but not in location or complexity is similar to a complex sipapu.

The remaining sand-filled pits are more typical of those in other pitstructures at Stix and Leaves Pueblo. They range in configuration, contents and abandonment condition (Figure 2.173). Feature 15 (Figure 2.173a) was the only one that hadn't been sealed with a layer of floor plaster.

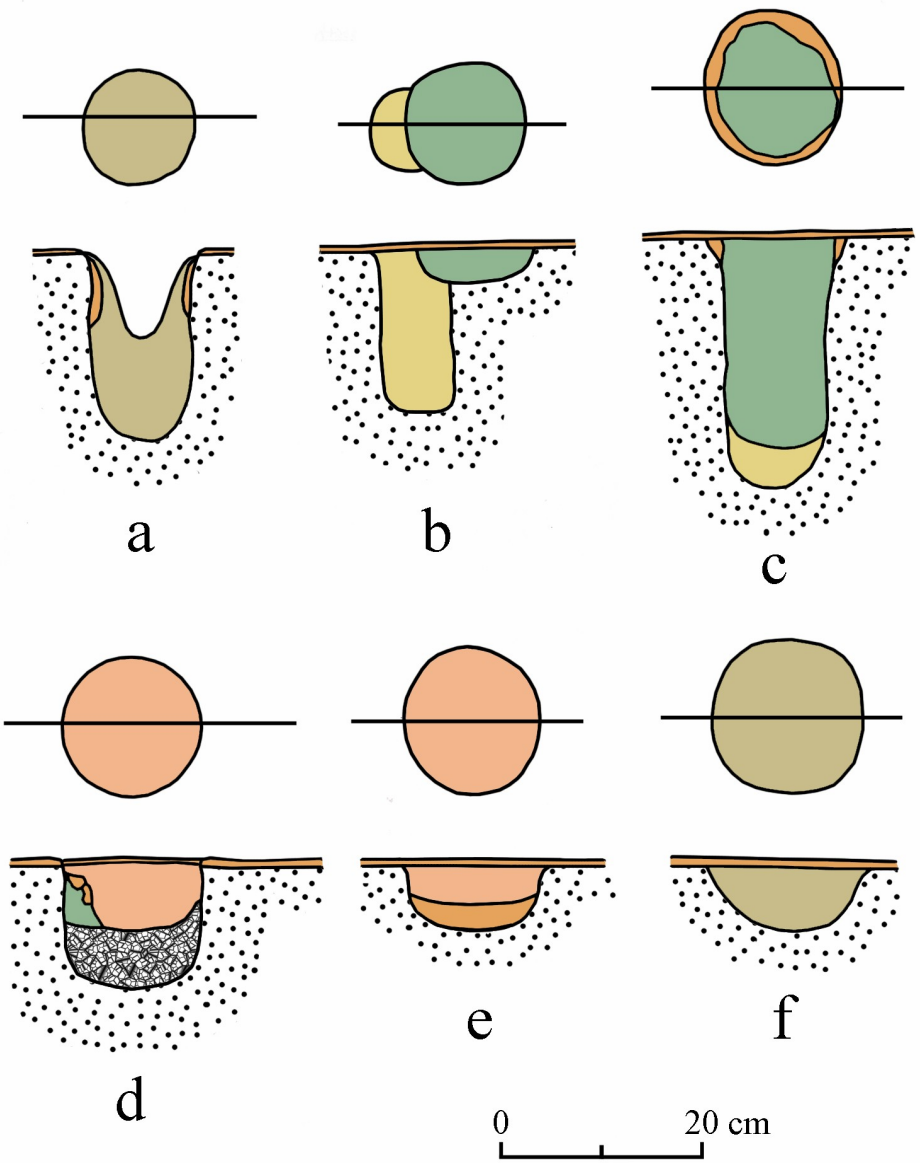


Figure 2.173. Kiva I sand-filled pits: a) F-15; b) F-24; c) F-22; d) F-16; e) F-21; f) F-17.

As with the rest, it was dug into the caliche and filled, in this case partly, with clean sediment. Rather than being flush with the floor the gray-tan sand had a deep indentation in its surface. This was filled with burned roof fall

indicating it was open when the roof burned.

Feature 24 was actually two sand-filled pits, one cutting into the other (Figure 2.173b). The first was a posthole-like pit filled with yellow-tan sand. The second was a basin-shaped pit that overlapped it and was filled with gray-green sand. Both were sealed with floor plaster and not visible during the final use of the structure.

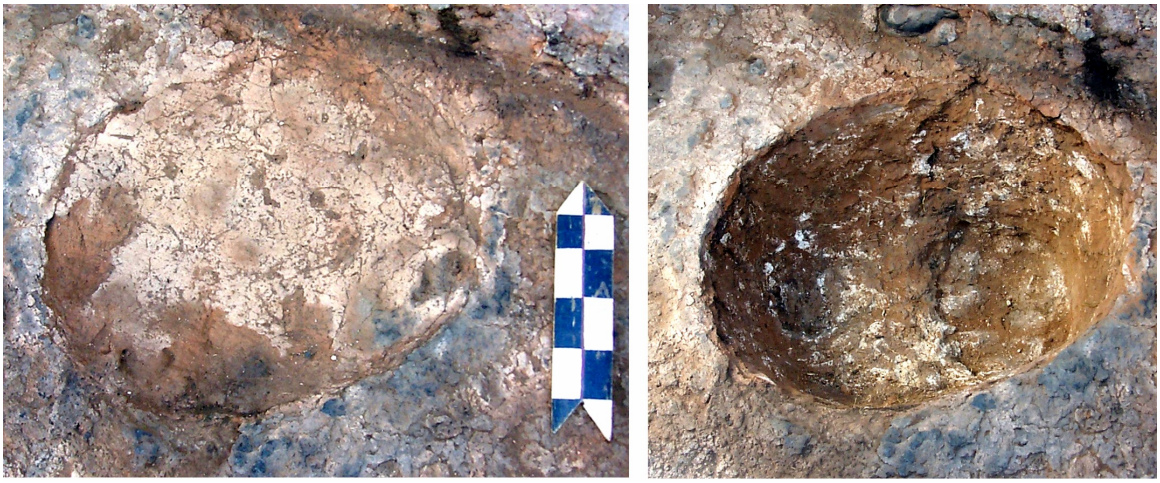
Feature 22 was another posthole-like pit, but it had an orange daub rim (Figure 2.173c). The base had a deposit of yellow-tan sand topped with gray-green sand. This was also sealed with floor plaster. The location of this feature, its formality (daub rim) and clean sand filling would designate it a sipapu if it were an isolated occurrence.

Feature 16 was intermediate in depth between the basin-shaped and posthole-like pits. It had a more complex filling sequence than most (Figure 2.173d). The base was filled with caliche rubble. This was topped with what looks to have been a gray-green sand unit that may have had an orange daub rim (like F-22) but was subsequently mostly removed and replaced with a deposit of orange sand. Ultimately it was sealed with floor plaster.

There were two small basin-shaped pits (F-21 and F-17) that were filled with clean sediments and floored over. Feature 21 had a lower layer of orange daub topped with orange sand (Figure 2.173e) and Feature 17 had a single deposit of gray-tan sand (Figure 2.173f).

Floor Pits

There was a single pit (F-14) that was filled with mixed deposits and floored over (Figure 2.174). Its size and location, adjacent to the NE roof support post, is reminiscent of pits in Pithouses 1 and 2.



a b

Figure 2.174. Kiva I pit (F-14) near NE roof support post: a) sealed with floor plaster; b) excavated.

The only other pit without clean sediment fill was an irregular trench-like feature (18) that was adjacent to Feature 16 and seemed to tail off from it. It was filled with burned roof fall. Initially I though this was simply an animal burrow, and it may well have been, but its termination exactly at the side of Feature 16 was strange. F-16 was sealed by floor plaster.

Built-in Grinding Stone

A sandstone slab was built into the floor (Figure 2.175) to the northeast of the hearth on-line with, and about half way to, the NE roof support post. The upper surface of the slab exhibited all over light abrasion indicating it was used for grinding, but the surface was not smooth as if it had been used with a mano.

Vent System

A simple floor-level ventilator system (F-3) was built with this kiva (Figures 2.176 and 2.177). It is typical in that there is a relatively small opening into the kiva but the tunnel widens out and the shaft is quite large.

Figure 2.175. Kiva I grinding slab (F-13) set into floor.

This size could have resulted from the natural walls sloughing off through time and the debris cleared out. Some of it may also have resulted from post-abandonment sloughing and filling. If this were the case it is curious that it seems to have been symmetrical ending up with an almost round shaft. The top of the tunnel became unconsolidated and expanded as caliche rubble down into the tunnel, after it had partly filled (otherwise the rubble would have fallen to the floor).

Floor Artifacts

There were a large number of artifacts in use contexts in Kiva I (Table 2.67). These were mostly on the main chamber floor but also on the banquette and the banquette bin (Figure 2.178). The range of types is wide and there is nothing particular that influences me to interpret it either as domestic or ritual.

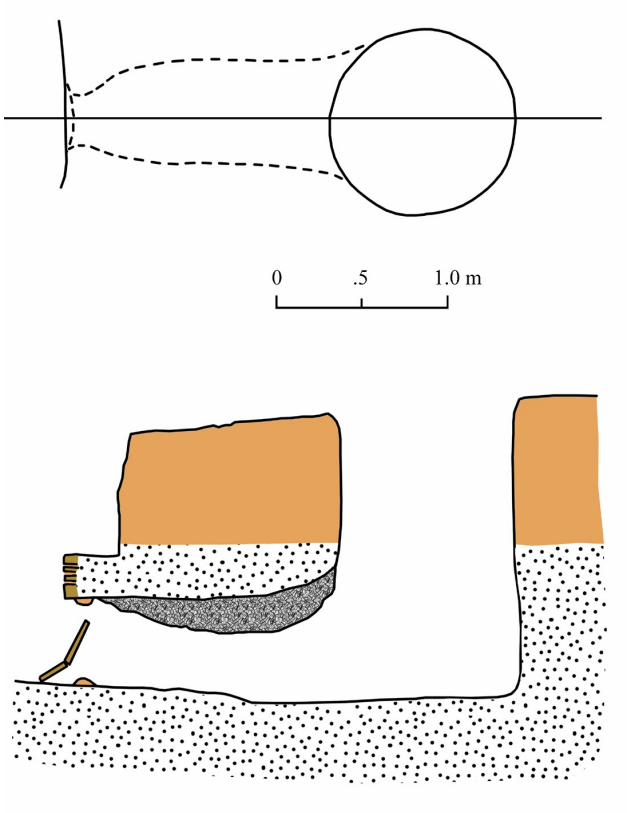


Figure 2.176. Kiva I ventilator system section

Figure 2.177. Kiva I ventilator tunnel opening: a) cover slab as found; b) cover slab moved to show tunnel.

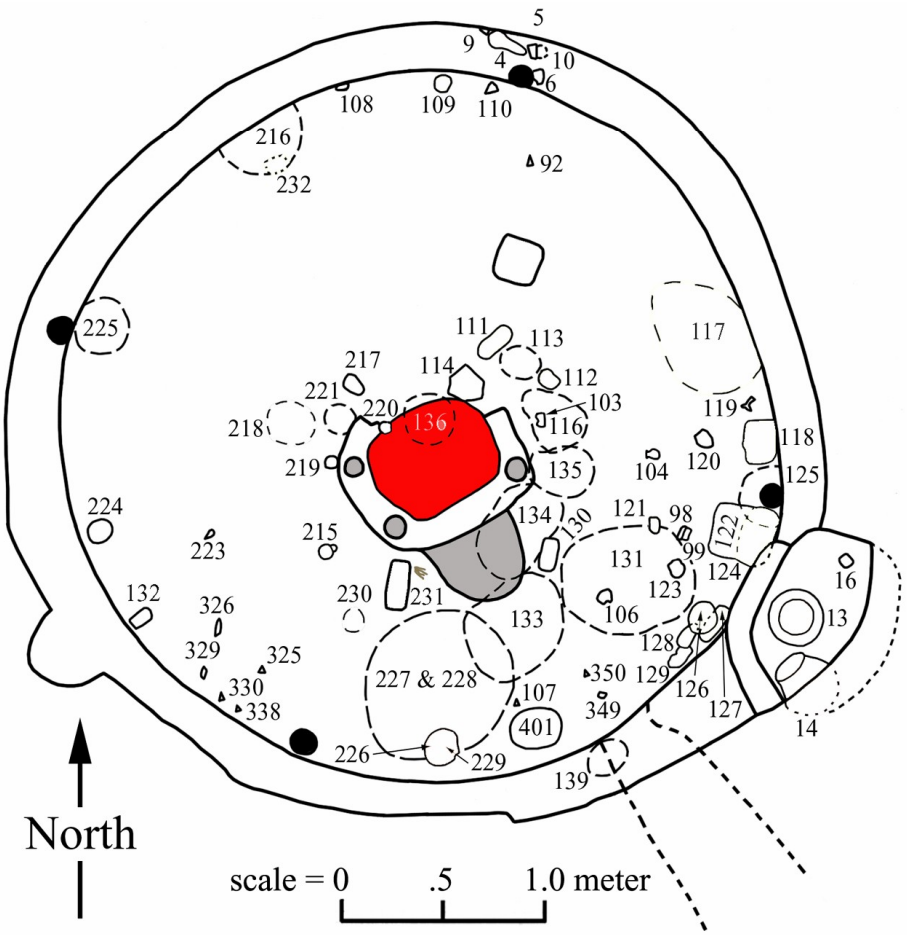


Figure 2.178. Kiva I floor and banquette artifacts.

Most of the main chamber artifacts were in the south half. Along with the usual durable stone (Figure 2.179) and pottery (see Figures 2.170 and 2.180) were several charred organic items (Figures 2.181-2.183).

The pottery represents a nice 'transitional assemblage from the Ackman to Mancos Phases. This is appropriate as the construction date of A.D. (see below) fits with the Cortez Black-on-white and Mancos Neck-banded, while the Mancos Black-on-white and Mancos Corrugated may represent pottery introduced later in the 10th century.

Table 2.67. Kiva I floor and banquette artifacts.

SP	Item	SP	Item
4	Vessel 9	127	mano
5	stone tool	128	mano
6	core	129	spalled stone
9	awl	130	mano
10	burned corn	131	artifact scatter/sherds
13	Vessel 19	132	'hoe'?
14	Vessel 1	133	artifact scatter/sherds
16	peckingstone	134	artifact concentration
92	ceramic pipe stem	135	artifact concentration
98	antler 'punch'	136	artifact concentration
99	ceramic cloud	139	charred wood platter?
102	pot stopper	215	Vessel 12
103	Vessel 14	216	Vessel 20
104	Vessel 11	217	plank
105	Vessel 14	218	basketry
106	Vessel 14	219	sherd
107	basketry	220	sherd
108	mano	221	sherds
109	handstone	223	awl
110	sherd	224	stone disc
111	mano	225	burned corn kernels
112	mano	226	Vessel 20
113	artifact	227	sherds
114	sherd	228	burned corn cobs
115	artifact	229	burned corn kernels
116	artifact	230	woven sandal?
117	stone slabs	231	plank and pine
118	stone slab	232	abrader
119	baked clay artifact	325	flaked stone
120	polished cobble	326	bone
121	abrader	329	bone
122	sandstone slab	330	flaked stone
123	mano	338	flaked stone
124	cobble	349	flaked stone

125	artifact	350	core
126	pot lid	401	burned corn cobs

Figure 2.179. Kiva I stone artifacts in SE corner.

Dating

Kiva I had a burned roof that preserved a large number of charred beams (Figure 2.184) when it collapsed. One hundred and forty-five samples were recovered and 24 were submitted for tree-ring dating (Table 2.68). The dates exhibit a range from the mid-A.D. 940s through to the construction date of 974. I base this construction date on the large cluster of this year as well as three of them were roof support posts and two came from the bench bin (F-5). It is possible that the kiva was originally built around the same time as the Early Pueblo II roomblock, Pithouse 2, and Kivas H and K, but it is more likely that the early dates were reused beams from those other constructions.

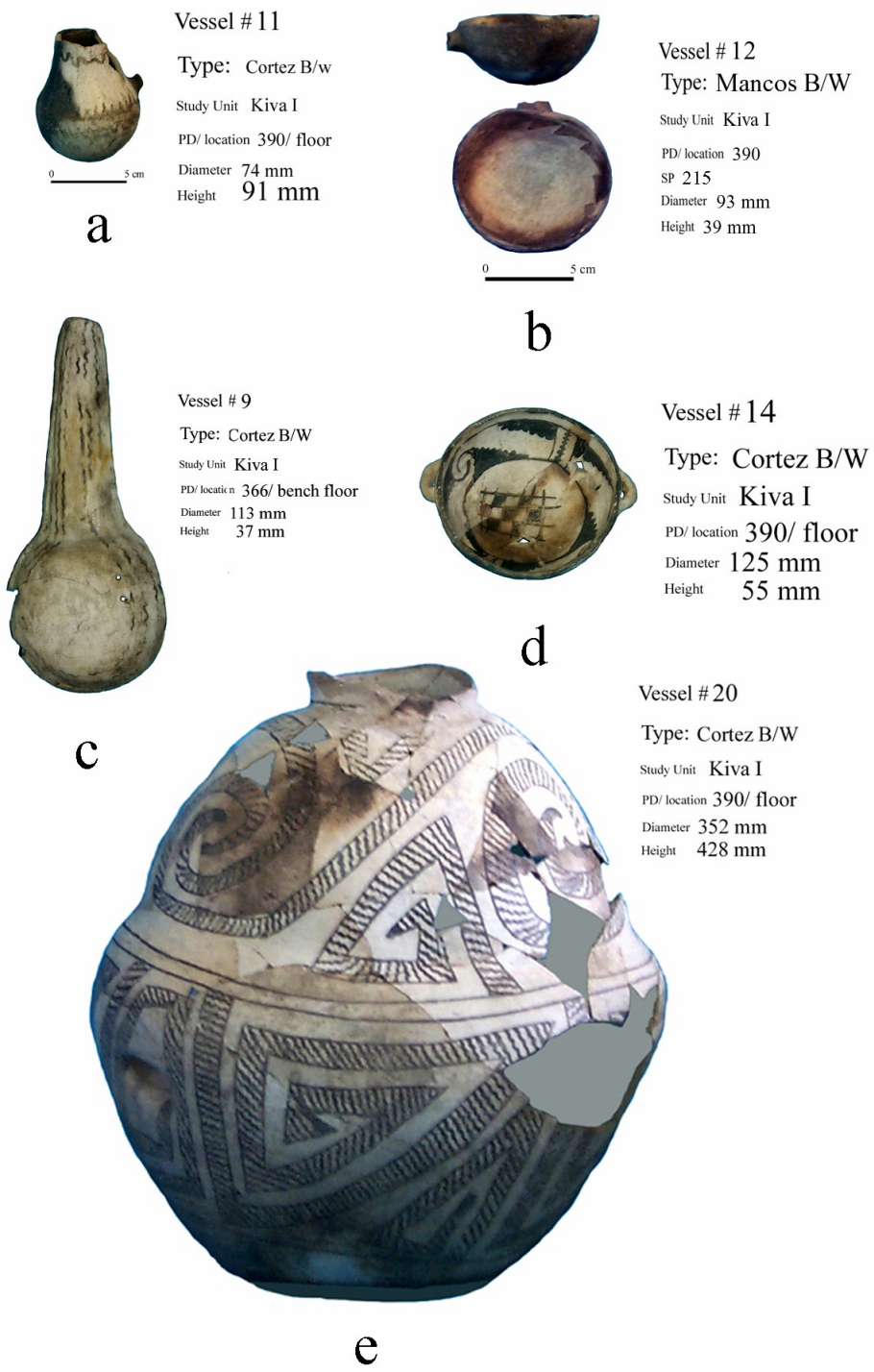


Figure 2.180. Kiva I vessels from the floor and banquette: a) Vessel 11 FS 104; b) Vessel 12 FS 215; c) Vessel 9 FS 4; d) Vessel 14 FS 103, 105, 106; e) Vessel 20 FS 216 and 226.

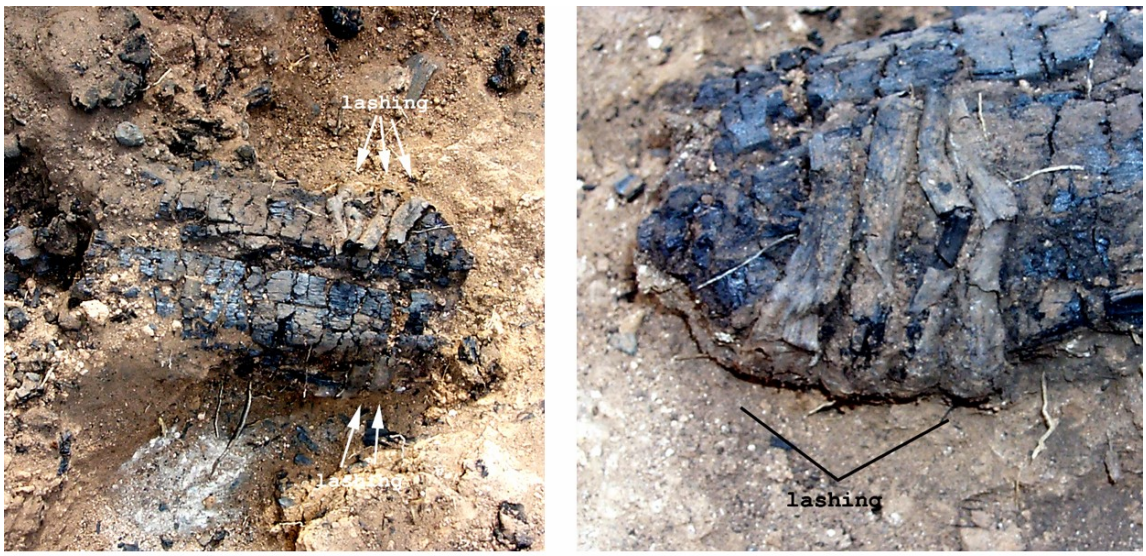


Figure 2.181. Kiva I charred ladder lashings: a) lashed paired beams; b) close-up.

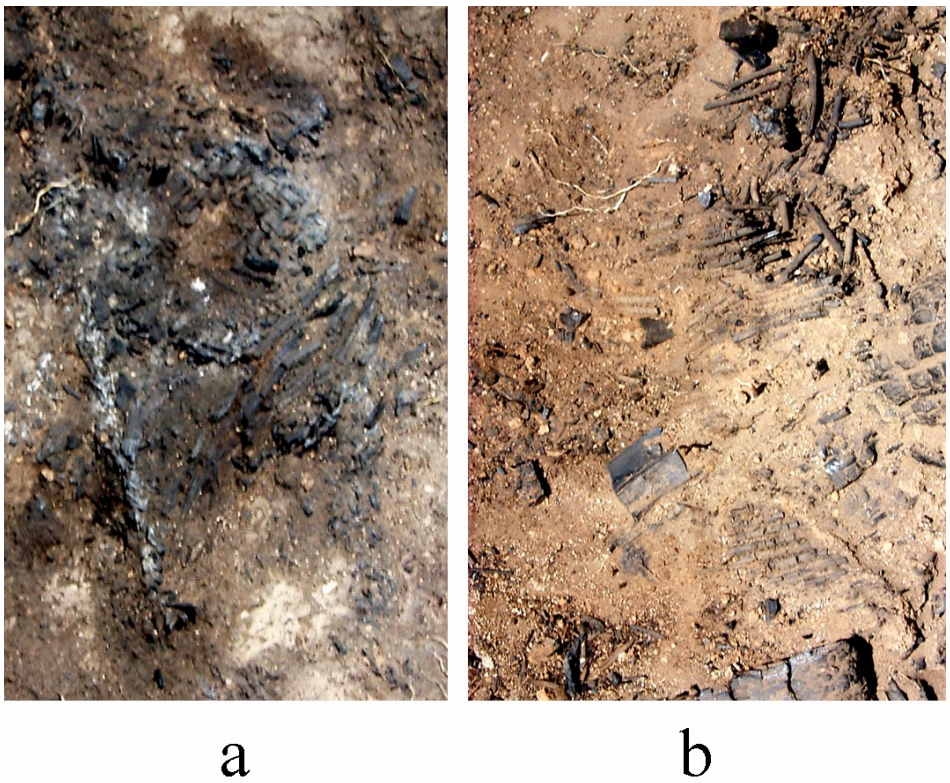


Figure 2.182. Kiva I charred artifacts: a) plaited sandal; b) coiled basket fragments.

Figure 2.183. Kiva I charred materials: a) corn cobs; b) wood plank and pine needles.

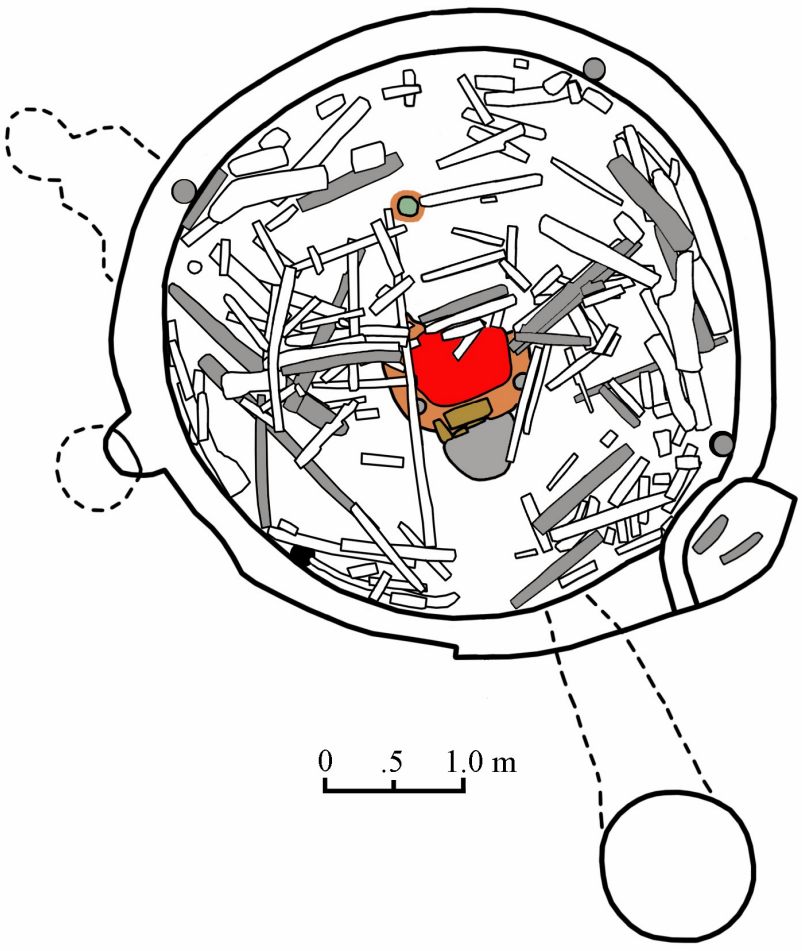


Figure 2.184. Kiva I collapsed roof beams, shaded beams returned tree-ring dates.

Table 2.68. Kiva I tree-ring dates (shaded rows indicate cutting dates).

Inner	ISymbol	Outer	OSymbol	Species	Comment
821	+/-p	919	vv	jun	
868		928	vv	jun	
808	p	932	++vv	jun	
798	+/-p	942	+B	jun	
875	p	944	vv	jun	
876	+/-p	945	r	jun	comp.
856	p	947	v	jun	
874	+/-p	947	r	jun	comp.
895	p	947	rB	jun	comp
827	p	947	rB	jun	comp.
875	+/-p	947	r	jun	inc.
895	p	947	rB	jun	comp.
873		947	r	jun	inc.
893	p	947	r	jun	inc.
869	+/-p	950	r	jun	inc.
890	+/-p	956	vv	jun	
896	p	966	r	jun	inc.
820		971	+r	jun	comp.
889	p	974	+rB	jun	comp.
872	p	974	+r	jun	comp.
874	p	974	vv	jun	
881		974	+r	jun	comp. F-1 post
822	p	974	+r	jun	comp. F-2 post
887	p	974	+r	jun	comp. F-7 post

Post-abandonment filling

Kiva I was abandoned with quite a few artifacts, many of which may still have been useable. The roof was intentionally burned and it collapsed directly onto the floor and the objects on it.

Stratigraphy

The stratigraphy in Kiva I was similar to the other burned pitstructures except that it was overlain with mixed cultural and natural sediments rather than being partly filled with a trash deposit (Figure 2.185).

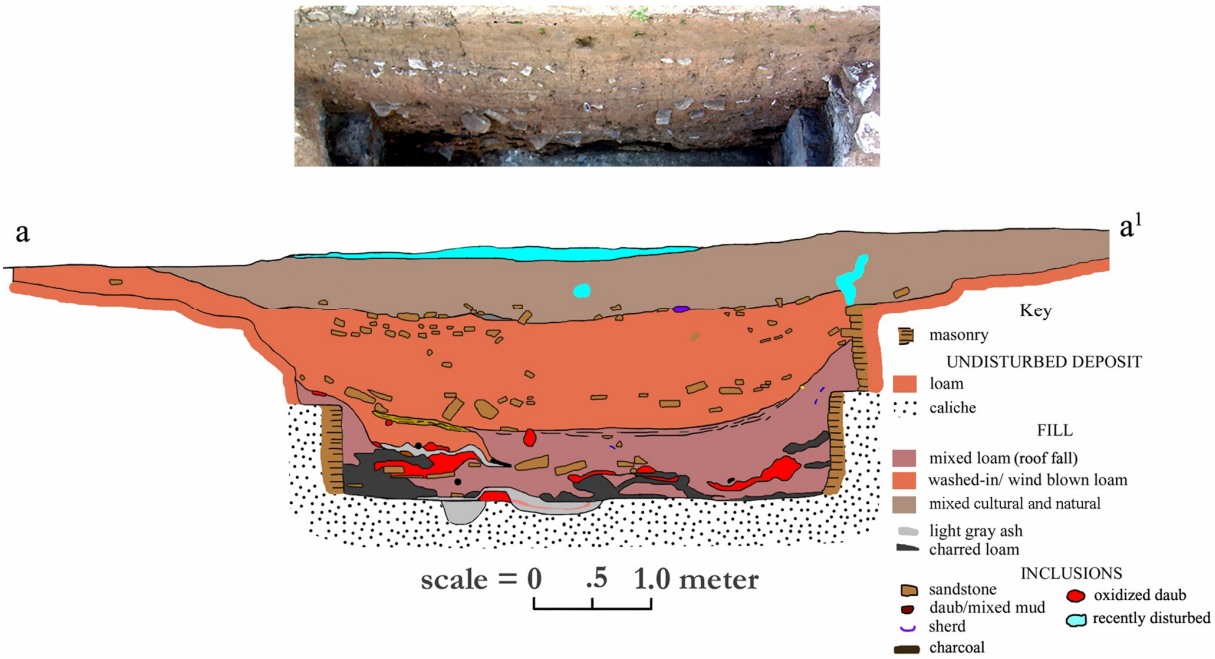


Figure 2.185. Kiva I section along kiva axis looking west.

Conclusions

Kiva I was associated with, and built three years after, Pithouse 1 in A.D. 974. At this time it is likely that the large Early Pueblo II roomblock had fallen into disuse and Kiva H was on its way to being filled with midden. It is unclear if Room Suite 1 and Pithouse 2 (collectively a kitchen) were still in use.

Pithouse 1 and Kiva I bracket Kiva K and perhaps replaced it as a structure. It is not clear how long Kiva I remained in use but the presence of a Mancos Black-on-white ladle bowl and a Mancos Corrugated jar may indicate final use occurred at the start of the 11th century.

Middle Pueblo II Architecture

Kiva Unit I was the last architecture built in the 10th century in our excavated area. The next construction took place in the mid-11th century and consisted of a single Kiva Unit (G) (Figure 2.186). This unit was not typical in

that there was no roomblock built with the kiva. Rather, the Early Pueblo II roomblock and courtyard areas were, in a small way, reused and a couple of pitrooms with special functions were added. We encountered some extra-mural features, a midden-filled room with a burial, and several other midden areas that dated to this time.

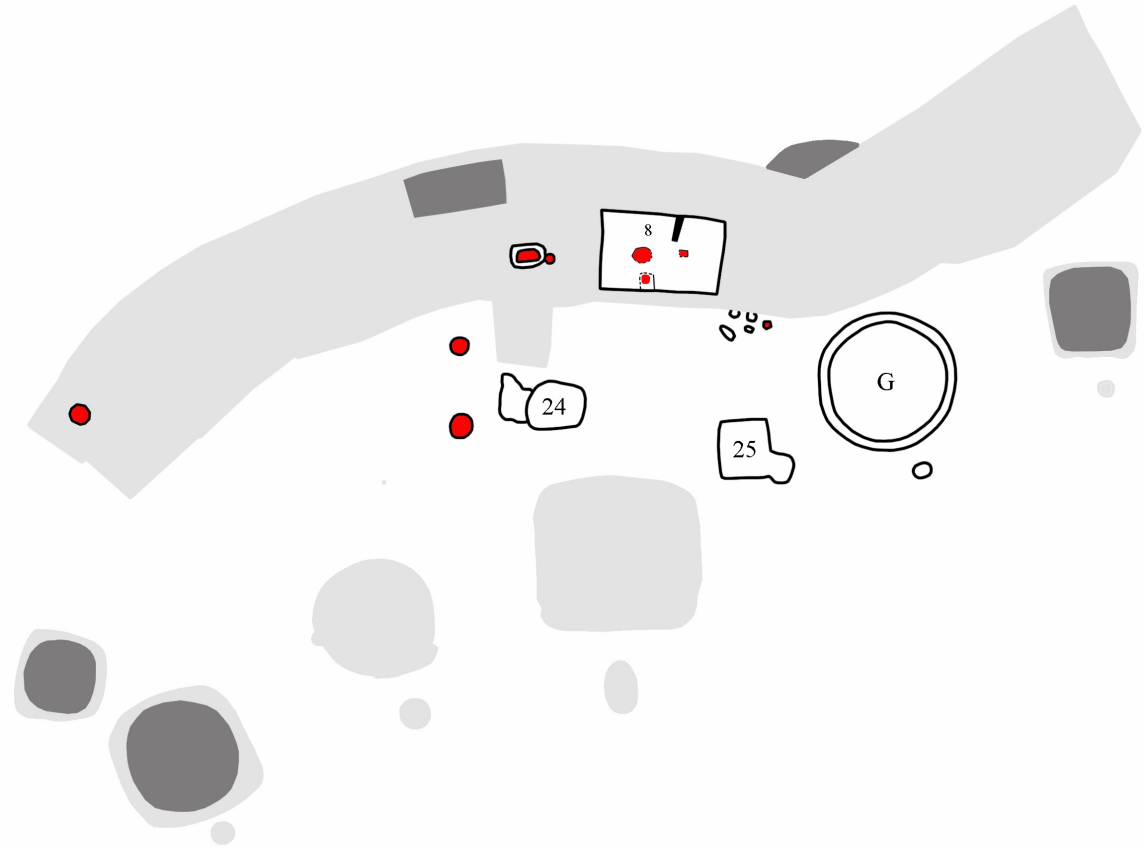


Figure 2.186. Middle Pueblo II occupation. Light gray indicates earlier structures; black lines indicate Middle PII construction; dark gray indicates Middle PII midden; red indicates extra-mural thermal features.

It is clear that several of the midden units dated to this general time period (based on pottery), however, I am less confident that they all resulted from the occupation of Kiva Unit G. This is especially true for the middens in Kiva K and Pithouse 1 in the southwestern area of our excavations. There are several other unexcavated roomblocks on the site that could include 11th century occupations.

Kiva Suite G

Kiva G

Kiva G (Figures 2.187 and 2.188) was the first structure we excavated and it turned out to be quite special. Architecturally, it is reasonably typical for this time period

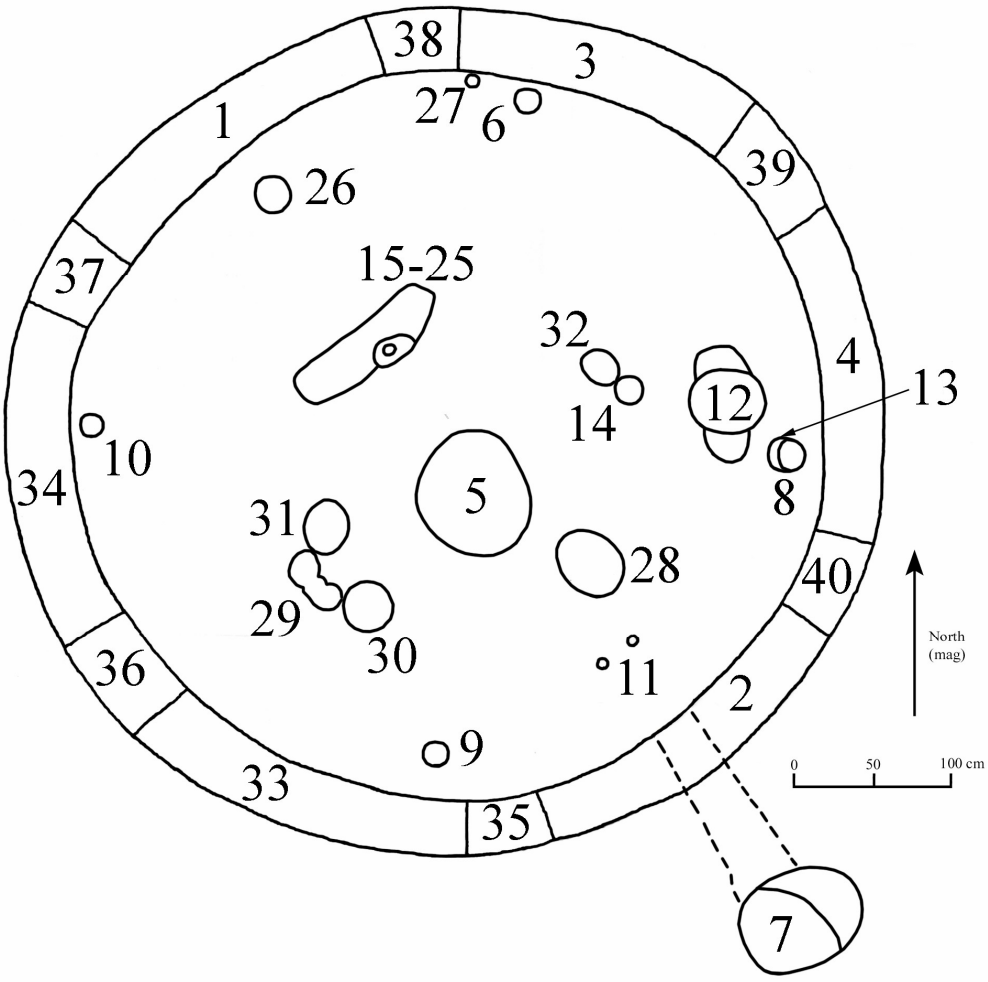


Figure 2.187. Kiva G feature plan.

in that it is round, has a six masonry pilaster roof support system, a full banquette, a central hearth a floor level ventilator system and various floor features. Masonry, where it occurred, was fairly well-laid with tabular sandstone pieces with mainly unmodified faces in a loam daub mortar. On the other hand it lacked a deflector and wall niches. It is also unlike the Early

Pueblo II kivas we excavated in that it did not have any storage pits either in the floor or walls.

Figure 2.188. Kiva G final photo (cleaned and restored vess3els replaced where found).

Features

Kiva G had a number of features (Table 2.69). Many were typical and structural such as masonry pilasters, a floor-level vent, a cribbed roof and a masonry-lined hatchway. Other typical features included a central hearth, an ash pit, other floor pits and a sipapu. An unusual complex sipapu accounted for the majority of floor features.

Table 2.69. Kiva G features.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth	

1 Bench 3	212	43	n/a	Open
2 Bench 6	220	46	n/a	Open
3 Bench 4	185	47	n/a	Open
4 Bench 5	215	38	n/a	Open
5 Hearth	75	75	23	Ash filled in use
6 Posthole NE	24	23	17	Partly sealed and partly open
7Ventilator system	180	55	185	Shaft open aperture closed with sandstone slab
8 Posthole SE	23	23	15	Sealed
9 Posthole SW	21	21	17	Sealed
10 Posthole NW	18	17	10	Sealed
11 Ladder holes	8 8	8 10	3 2	Open Open
12 Pit	74	44	10	Filled
13 Pit	10	?	11	Filled
14 Pit	31	28	7	Filled
15 Complex sipapu	75	24	20	Complex multi-feature filling (see Features 16-25)
16 Pit	30	14	17	Filled
17 Sand-filled pit	6.5	6.5	7	Filled- gray-green sand
18 Pit	6	6	11	Filled
19 Sand-filled pit	10	10	18	Filled- gray-green sand
20 Sand-filled pit	10	?	11	Filled- gray-green sand then orange-gray loam21
?21 Sand-filled pit	21	?	10	Gray-green sandy loam
22 Pit	7	7	1	Sealed
23 Sand-filled pit	14	12	6	Gray-green sandy loam
24 Sand-filled pit	7	?	9.5	Gray-green sandy loam
25 Pit	6	6	1.5	Sealed
26 Sand-filled pit	20	17	10	Gray-green sand, caliche rubble, brow-gray loam
27 Sand-filled pit	14	12	8.5	Gray-green sand, plugged with tan loam
28 Ash pit	45	38	12	Mixed ash and loam
29 Pit	25	23	7	Filled with orange loam
30 Pit	32	25	6	Filled with orange loam
31 Pit	35	27	6	Filled with brown loam with charcoal flecks
32 Pit	30	16	4	Filled with brown loam with charcoal flecks
33 Bench 1	215	42	n/a	Open
34 Bench 2	215	44	n/a	Open
35 Pilaster 1	54	32	42	Open
36 Pilaster 2	65	46	50-57	Open
37 Pilaster 3	57	44	21	Open
38 Pilaster 4	58	42	45	Open
39 Pilaster 5	68	44	45	Open
40 Pilaster 6	60	38	55	Open

Hearth and Ash Pit

A central hearth was simply made by scooping a shallow oval basin into the caliche floor. There was then a deeper round pit dug slightly toward the north side (Figure 2.189). It is possible that this sequence occurred in reverse. The hearth was oxidized around the top but less so on the interior base. It was partly full of ash (primary refuse, and two grayware vessels (Figure 2.190) were resting on and slightly impressed into the ash. They seem to be in a use location and cooking or heating may have been taking place near the time of abandonment.

The ash pit was an elliptical pit dug to the south of the hearth. It mainly contained mixed gray ash with some charcoal flecks, a sandstone block, fragments of daub, a peckingstone (under the sandstone block) and a thin irregular layer of white ash with charcoal. (Figure 2.190). This feature seems to have been a receptacle for ash cleared out of the hearth and may have been kept to bank fires in the hearth.

Floor Pits

There were four shallow floor pits (F-12 and F29-31) that were basins scooped out of the floor caliche. None of them contained any fill other than the loam daub used to fill them to floor level. They were all sealed at the time of abandonment. They were too shallow to have been used for the storage of any sizeable items and may have temporarily held items or materials used in cooking as they were all in the vicinity of the hearth.

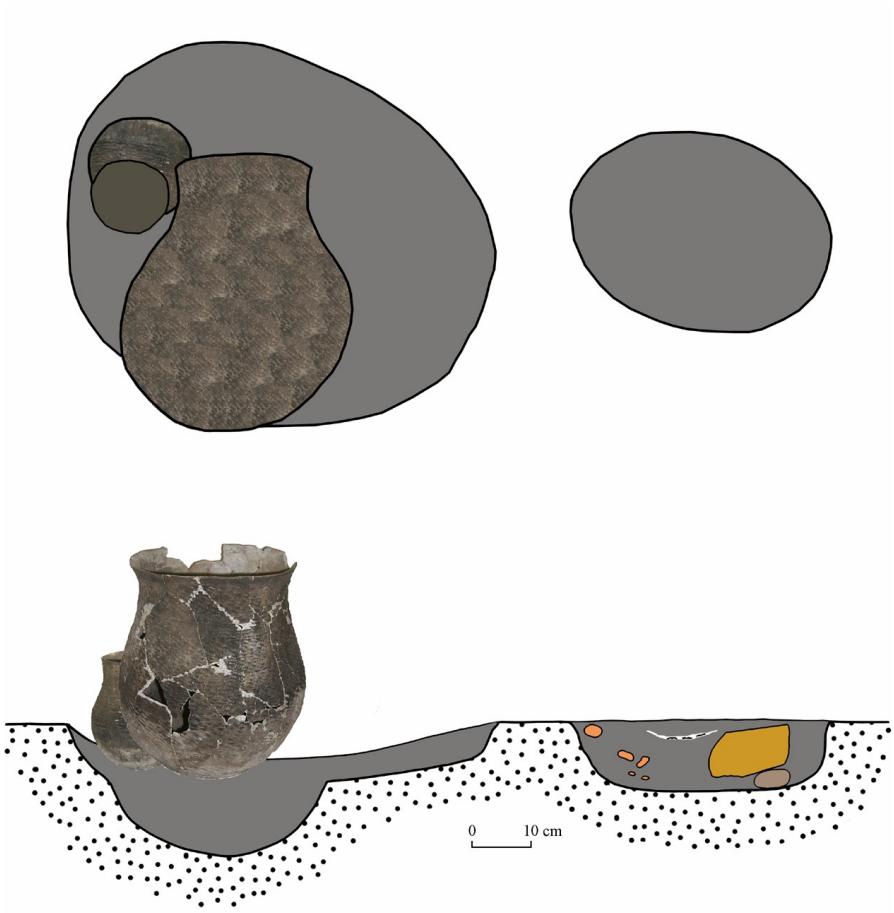


Figure 2.189. Kiva G hearth (F-5) and ash pit (F-8) showing approximate locations of two grayware vessels that were in heating positions at abandonment. The plan view shows distorted proportions on the large jar because it was crushed by roof collapse.

Complex Sipapu

Just to the north of the hearth was a sallow elongated pit that contained a series of deposits as well as a number of smaller features (Figure 2.191). These deposits and features represent a complex series of activities all confined within the shallow pit cut into the caliche. It is so complex that I have been unable to sort it out sequentially. Some of the pits clearly cut through others but there are a number that don't overlap. There are also some that are covered by the complex of deposits in the general pit (F-15) which obviously came before its final filling. What I can say is that this complex

sipapu was clearly the focus of multiple episodes of ritual activity. Some of

Vessel #6
Type: Mancos gray
Study Unit: Kiva G
PD/Location: 24/in hearth
Specimen # 171
Diameter: 16.5 cm
Height: 20.7 cm

Vessel #28
Type: Mancos Corrugated
Study Unit: Kiva G
PD/Location: 24/in hearth
Specimen #169
Daimeter: 32.5 cm
Height: 38.6 cm

Figure 2.190. Kiva G grayware vessels found sitting in the hearth.

the individual pits exhibit more than one use and there are undoubtedly activities that are no longer represented. It is clear that these pits were filled as part of ritual activities, yet some have mixed sediment fill units that had they been found in isolated features would not be considered the result of ritual activity. This probably means that some of the similar features (in other pitstructures) were identified as postholes rather than sand-filled pits (ie domestic rather than ritual), as it is the clean sediment filling that has been used to distinguish between them. Once the complex sipapu was completely excavated, leaving only the evidence of the pits that cut below the original pit base, it was still obvious that there had been a lot of activity in the feature (Figure 2.192).

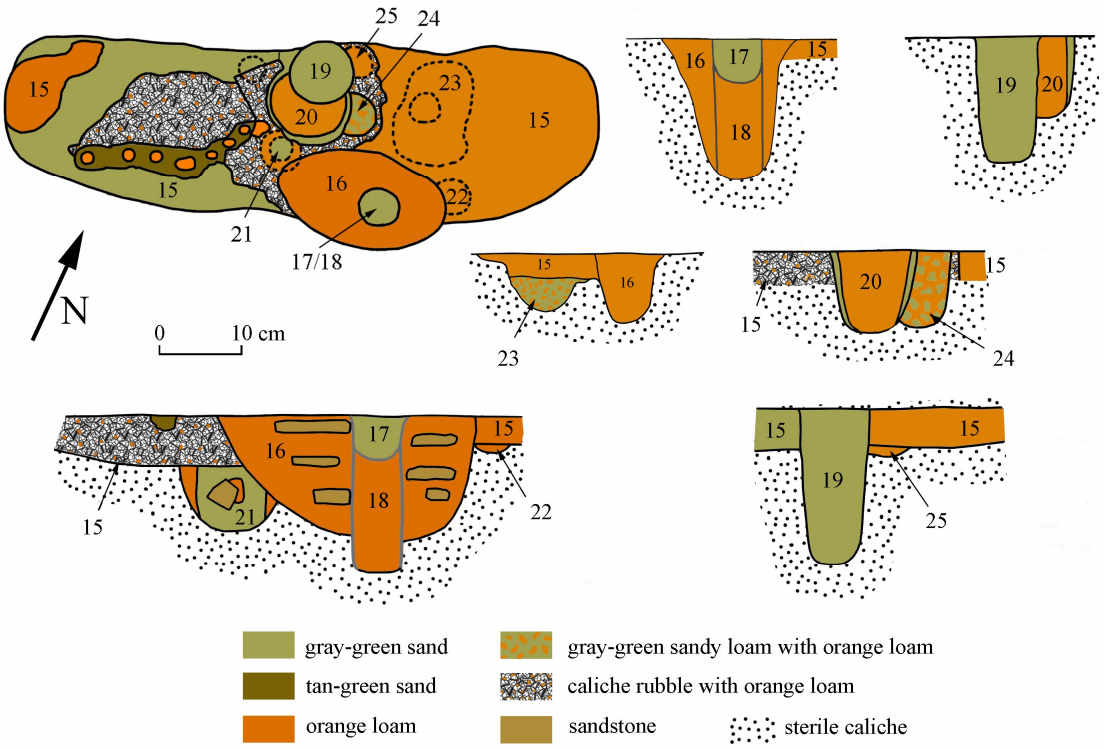


Figure 2.191. Kiva G complex sipapu (Features 15-25). Section and cross-section lines are not shown on the plan as they were too complicated and would obscure some of the finer details of the map.

Figure 2.192. Kiva G complex sipapu after final excavation.

A wide variety of mixed and clean sediments were used to fill the various holes that were cut into the complex sipapu. These included varieties

of gray-green sediments from clean sand to mixed sandy loam and loam. What is of interest is the use of the gray-green colors as this seems to be a continuation of the earlier Pueblo II behaviour.

Sand-filled Pits

There were two sand-filled pits in Kiva G outside of the complex sipapu. Feature 26 (Figure 2.193) was near the north wall on the kiva axis. Except for being a bit further north than usual, this is the typical location for a sipapu when a complex sipapu is not present. Since this feature did not overlap with the complex sipapu, it was not possible to determine if they occurred in a sequence or both were done during the same time period.

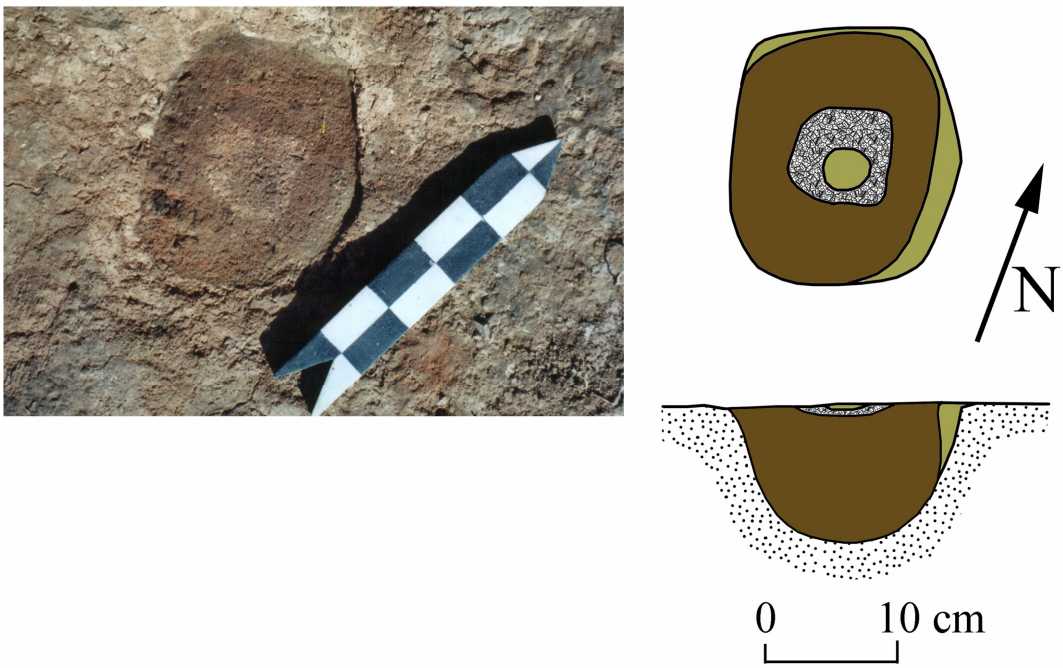


Figure 2.193. Kiva G sipapu F-26.

Feature 26 was a simple small pit dug into caliche, but it had multiple fills. The first looks to have been a gray-green sand that was mostly removed by a subsequent small pit which was in turn filled with a mixed brown-gray sediment that included some charcoal and daub chunks. The top of this

deposit was then scooped out by a small shallow sub-rectangular area that was filled with caliche rubble. This in turn had an even smaller off-round area of gray-green sand. While the first two fill units may have related to the pit holding some sort of post-like item the last two were not deep enough to do so.

Feature 27 is another sand-filled pit (Figure 2.194) that originally held gray-green sand that was mostly replaced with a mixed gray-brown loam. This small pit was against the kiva wall, quite out of the way.

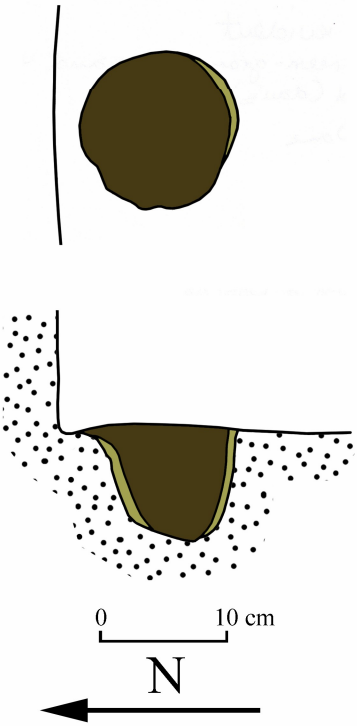


Figure 2.194. Kiva G sand-filled pit F-27.

Ventilator System

The kiva was fitted with a floor-level ventilator system. The vent tunnel had a ceiling of small beams that supported sandstone building blocks (Figure 1.195). The north side of the vent shaft was also masonry from the tunnel roof up part of the way. While this feature could have been built as found it seems more likely to me that the beams and masonry were added as part of repairs of a partly collapsed vent tunnel. The tunnel opening into the main

chamber was lined with a veneer of daub chinked with numerous small pieces of sandstone (Figure 1.196). The opening was sealed with a sandstone slab.

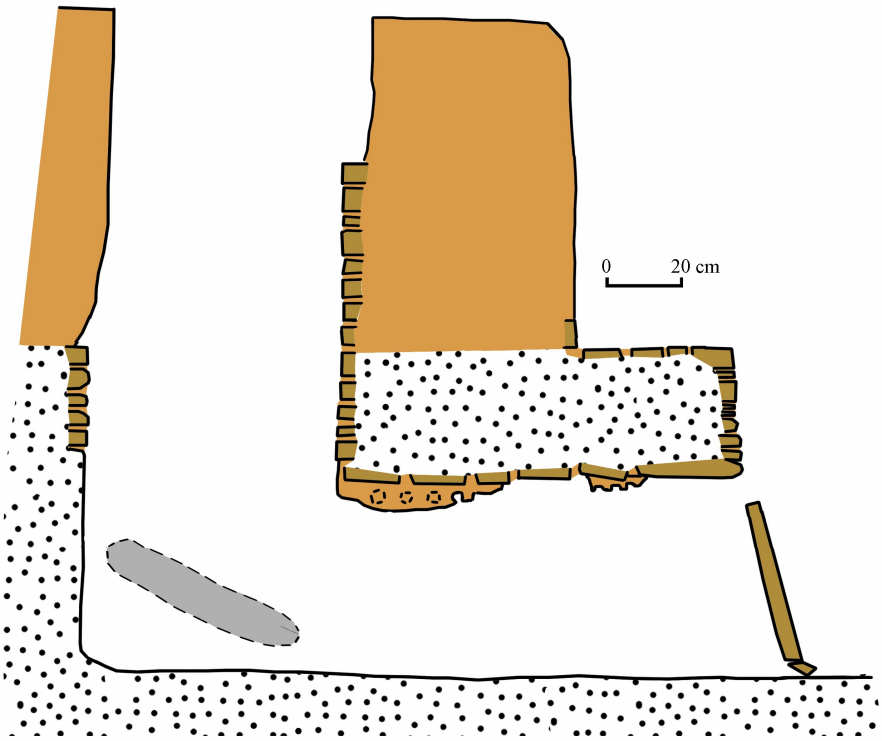


Figure 2.195. Kiva G vent system section looking east. Gray area contained two headless turkey skeletons.

Ladder Holes

Directly between the vent tunnel opening and the hearth/ash pit was a pair of shallow holes. I have interpreted these as holes into which the base or a rung ladder could have been set. A ladder could have angled from there to a hatchway directly above the hearth.

Hatchway

There was a substantial pile of sandstone building stones (Figure 2.197) in the roof fall above the hearth and ash pit. This was likely the remains of a masonry enclosed hatchway in the roof.

Figure 2.196. Kiva G vent tunnel opening showing cover slab. Also note paired ladder holes. These could also have held an organic deflector, although there was no evidence of this in the form of charred remains.

a

b

Figure 2.197. Kiva G fallen hatchway stones in roof fall above hearth/ash pit.

a

b

Figure 2.198. Kiva G cribbed roof beams on Bench 4. Note that the beams overlap in between the pilasters, not on top of them.

The northeast posthole of the original roof had been partly dug out prior to the roof burning and the removed fill piled on the floor next to the hole (Figure 2.199). At the base of the excavation we found a complete human foetal skeleton. Some of the tiny bones were lightly charred and the posthole above was filled with fallen roof debris. This is a clear indication that the foetus had been placed in the hole before the roof burned. It was not clear if the remains had skeletonized before the fire.

Artifacts

There were very interesting assemblages of artifacts on the roof, floor

and banquette surfaces when the kiva was abandoned. The roof served as a courtyard and was likely related to the activities in adjacent Courtyard 1 (discussed below). The artifact assemblage was dominated by food processing tools (Table 2.70).

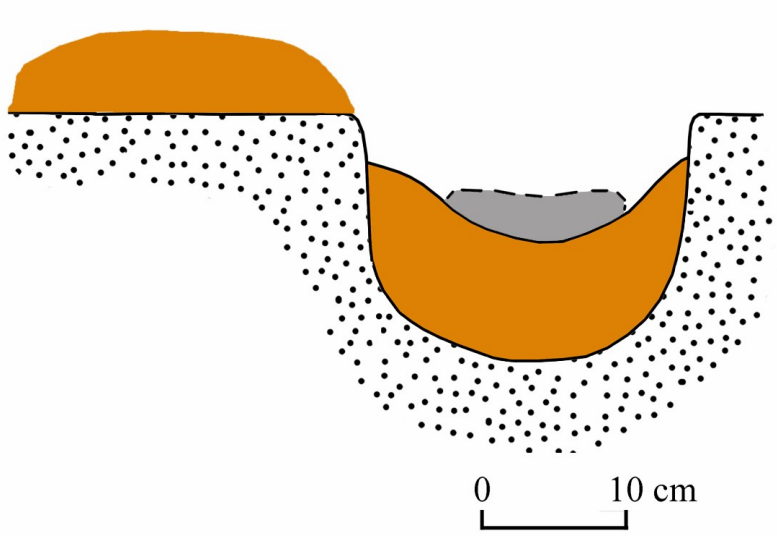


Figure 2.199. Kiva G Northeast posthole (F-6) section showing removed daub fill on floor and location of human foetal bones (gray area).

The floor and banquette artifact assemblages were different (Figure 2.200 and Tables 2.71 and 2.72) than on the roof in that they included whole vessels, arrow points and organic remains (charred during the fire).

There were also a few ground and flaked stone items. Many of the artifacts in the kiva also seemed to be in use or storage locations (Figure 2.201), including two cooking vessels on the hearth

In terms of the vessel assemblage it represents a complete 'set'. There is a large storage jar that may have been used to hold ingredients in preparation for cooking. This was in the northeast area below Banquette 4 where there was a quantity of shelled corn. This vessel could have been on the banquette surface from which it fell to the floor when the roof collapsed. The partial

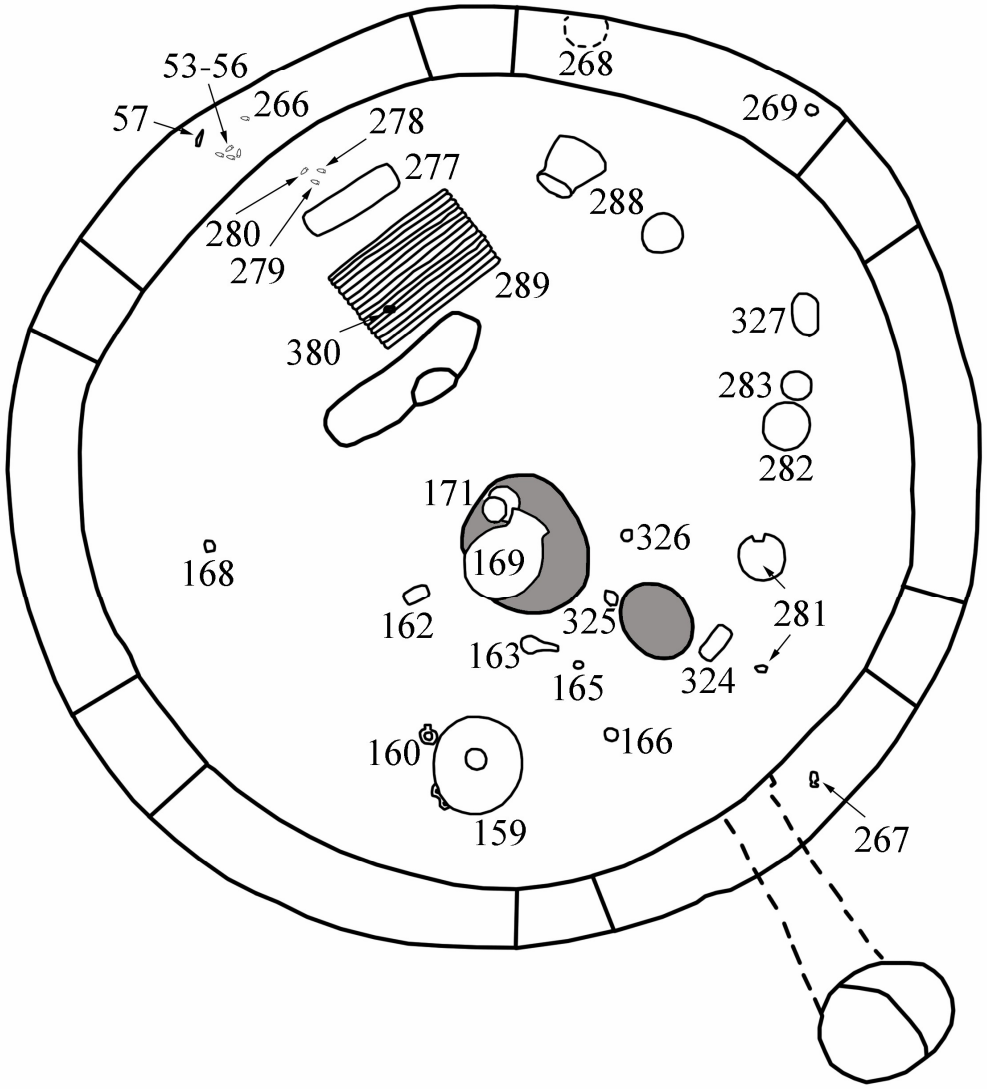


Figure 2.200. Kiva G floor and banquette surface artifacts.

corrugated jar in the roof fall was directly below this same banquette and may also originally have been there rather than on the roof. There is one large and two small cooking pots (all sooted), a large corrugated storage vessel (not sooted), two painted serving bowls, a painted dipper, a painted water olla and a painted pitcher. This would work well to prepare one main and two side dishes (or a side and a hot drink), plus the dipper and pitcher for serving into the two bowls. The set is well suited to two people.

Table 2.70. Kiva G roof artifacts (in roof fall).

SP	Item	SP	Item
7	mano	26	peckingstone
8	mano	32	mano
9	mano	35	mano
10	Mancos Corrugated jar	36	mano
13	mano	37	peckingstone
14	mano	45	awl
19	mano	59	metate
20	mano	60	mano
21	mano	61	peckingstone
22	mano	70	awl
25	metate	276	figurine

Table 2.71. Kiva G floor artifacts.

SP	Item	SP	Item
159	Vessel #18 Mancos B/w olla	279	arrow point
160	Vessel #15 Mancos B/w pitcher	280	arrow point
162	mano	281	Vessel #4 Mancos B/w corrugated bowl
163	Vessel #10 Mancos B/w dipper	282	Vessel #7 Mancos B/w bowl
165	flake?	283	Vessel #5 Mancos Corrugated jar
166	core	288	Vessel #29 Mancos Corrugated jar
168	peckingstone	289	coiled basket fragment
166	core	324	mano
168	peckingstone	325	core
169	Vessel #28 Mancos Corrugated jar	326	peckingstone
171	Vessel #6 Mancos Gray jar	327	polished igneous stone

277	Board/plank	380	arrow point
278	arrow point		

Table 2.72. Kiva G banquette surface artifacts.

SP	Item	SP	Item
Bench 3		Bench 4	
52	arrow point	268	Corn (charred)
53	arrow point	269	peckingstone
54	arrow point	Bench 6	
55	arrow point	267	axe
56	arrow point		
57	awl		
266	arrow point		

The stone implements were all near to and south of the hearth with the exception of the axe (on the south banquette) and the arrow points (on the north banquette and the floor immediately below). The arrow points on the floor may also originally been on the banquette from which they fell. The single fragmentary point was under the stick mat.

Between the complex sipapu and the north wall were a stick mat and a shaped wood plank (both charred and poorly preserved). This completes the inventory. There were no sherds on the floor or banquettes that did not fit back into one of the vessels, and in both cases these could easily have been separated during roof collapse.

Dating

Kiva G had a burned roof that fell and smothered leaving a large number of tree-ring datable samples. All considered likely to yield cutting dates (those with 20+ rings) were sent for analysis. One hundred and sixty-

nine samples returned dates (Table 2.73) with 77 considered cutting dates (Table 2.74).

Figure 2.201. Kiva G showing floor artefacts (artifacts scale approximate in relation to each other),

Table 2.73. Kiva G all tree-ring dates.

Inner	ISymbol	Outer	OSymbol	Species	Comment
880	p	953	vv	jun	
887	+/-p	988	vv	jun	
883	+/-p	990	++B	jun	
887	p	991	++vv	jun	
880	+/-p	992	vv	jun	

Inner	ISymbol	Outer	OSymbol	Species	Comment
887	p	996	vv	jun	
870	p	1000	vv	jun	
894	p	1004	vv	jun	
877		1004	vv	jun	
941		1004	++vv	jun	

Inner	ISymbol	Outer	OSymbol	Species	Comment
874	+/-p	1008	vv	jun	
900	p	1012	vv	jun	
946		1015	vv	jun	
928		1017	vv	jun	
945	p	1017	vv	jun	
933		1019	+vv	jun	
913	+/-p	1021	vv	jun	
898	p	1021	vv	jun	
871		1022	vv	jun	
925	p	1022	vv	jun	
878	+/-p	1022	vv	jun	
910	+/-p	1022	vv	jun	
893	p	1023	vv	jun	
880	+/-p	1024	vv	jun	
879	p	1025	vv	jun	
908	p	1027	++B	jun	
806	+/-p	1029	vv	jun	
835	p	1031	+v	jun	
835	p	1031	+v	jun	
891	+/-p	1033	++B	jun	
960	p	1034	v	jun	inc
892	+/-p	1034	vv	jun	
889	+/-p	1034	vv	jun	
888	+/-p	1034	++v	jun	inc
946	p	1034	+vv	jun	
948	p	1034	+vv	jun	
886	p	1035	++vv	jun	
917		1035	++B	jun	
948	+/-p	1035	+v	jun	comp
915	p	1037	vv	jun	
929	+/-p	1038	vv	jun	
941	p	1038	vv	jun	
925	p	1038	++rB	jun	
970	p	1039	r	jun	inc.
941	+/-p	1039	r	jun	inc.
928	p	1040	vv	jun	
934	p	1040	vv	jun	
851	+/-p	1040	++vv	jun	
928	p	1040	vv	jun	
902		1041	vv	jun	
931	p	1041	+r	jun	inc.
922	+/-p	1042	vv	jun	
961	p	1042	vv	jun	
954	p	1042	vv	jun	
917	p	1042	+rB	jun	comp.
909	+/-p	1042	r	jun	inc.
899	p	1042	v	jun	inc.
917	+/-p	1042	rB	jun	inc.
989	+/-p	1043	vv	jun	
868	+/-p	1043	++B	jun	inc.
872	+/-p	1043	vv	jun	
949	+/-p	1043	+B	jun	comp.
931	p	1043	++r	jun	
915	p	1043	r	jun	inc.
987	p	1043	+rB	jun	comp.
892	p	1043	r	jun	inc.
934	p	1044	B	jun	comp.
900	p	1044	vv	jun	
932	p	1045	+r	jun	comp.
985	p	1045	+rB	jun	comp.
904	+/-p	1045	vv	jun	
914		1045	vv	jun	
924	p	1046	++vv	jun	
931	p	1047	+B	jun	
912	+/-	1047	vv	jun	
782	+/-	1047	+v	jun	inc.
974	p	1047	vv	jun	
959	p	1047	vv	jun	
914	p	1047	vv	jun	
945		1047	vv	jun	
944	p	1047	vv	jun	
927	p	1047	+rB	jun	comp.
948	p	1048	vv	jun	
899	p	1048	+rB	jun	comp.
955		1049	+v	jun	
924	p	1049	r	jun	inc.
851	+/-p	1049	+v	jun	
985	p	1049	rB	jun	comp.
954		1049	r	jun	inc.
938	p	1050	+r	jun	inc.
958	p	1050	+rB	jun	comp.
882	+/-p	1050	+v	jun	comp.
943	+/-p	1050	+v	jun	comp.
985	p	1050	+rB	jun	inc.
930	p	1050	vv	jun	
950	p	1050	vv	pnn	
945	+/-p	1050	+rB	jun	comp.
909	p	1050	vv	jun	
938	p	1051	+rB	jun	inc.
951	p	1051	+rB	jun	comp.
971	p	1051	v	jun	comp.
983	p	1051	+r	pnn	inc.
975		1051	+r	jun	comp.
919	p	1051	r	jun	comp.
898	p	1051	+v	jun	
983	p	1051	+r	jun	inc.
898	+/-p	1051	+B	jun	comp.
950	p	1051	+rB	jun	comp.
941		1051	+r	jun	
972	p	1051	+r	jun	inc.
935	p	1051	r	jun	comp.
977	p	1051	+r	jun	inc.
899	p	1051	+r	jun	comp.
910	p	1051	+r	jun	inc.
855	p	1051	+rB	jun	comp.
927		1051	+r	jun	inc.
879	p	1051	+rB	jun	comp.
949	p	1051	+rB	jun	comp.

Inner	ISymbol	Outer	OSymbol	Species	Comment
896	p	1052	+r	jun	inc.
932	p	1052	+rB	jun	comp.
894	p	1052	vv	jun	
918	+/-p	1052	+r	jun	inc.
946	p	1052	vv	jun	
904		1052	+r	jun	inc.
919		1052	+r	jun	inc.
986	p	1052	+rB	jun	inc.
898	p	1052	+rB	jun	comp.
943	p	1052	+r	jun	inc.
882	+/-p	1052	+r	jun	inc.
893	p	1052	+v	jun	comp.
889	p	1052	+r	jun	inc.
900	p	1052	+r	jun	inc.
854	+/-p	1052	+r	jun	
893	p	1052	+rB	jun	inc.
930	+/-p	1052	+B	jun	inc.
975	p	1053	+rB	jun	comp.
986	p	1053	+rB	jun	comp.
957	p	1053	+rB	jun	comp.
938	p	1053	+rB	jun	inc.
898	p	1053	+B	jun	inc.
909	p	1053	+r	jun	inc.
935	p	1053	+r	jun	inc.
868	+/-p	1053	+v	jun	
946	p	1053	+r	jun	inc.
981	p	1053	+r	pnn	inc.

Inner	ISymbol	Outer	OSymbol	Species	Comment
940	p	1053	+rB	jun	inc.
907	+/-p	1053	+r	jun	inc.
943	p	1053	+r	jun	inc.
952	+/-p	1053	+r	jun	inc.
970	p	1053	+rB	jun	comp.
969	p	1053	+r	jun	comp.
879	+/-p	1053	+rB	jun	
982	p	1053	rB	jun	comp.
915	p	1053	+r	jun	inc.
925	+/-p	1053	+rB	jun	inc.
989	p	1053	+r	jun	comp.
931	p	1053	+r	jun	inc.
922	+/-p	1054	rB	jun	inc.
950	p	1054	+r	jun	inc.
885	p	1054	+r	jun	inc.
880	+/-p	1054	+B	jun	inc.
959	p	1054	+rB	jun	inc.
970	p	1054	+r	jun	comp.
923	p	1054	+v	jun	
966	p	1054	+rB	jun	comp.
910	p	1054	+v	jun	inc.
917	p	1054	+r	jun	inc.
968	p	1054	+r	jun	inc.
928		1055	B	jun	comp.

Table 2.74. Kiva G cutting dates.

Inner	ISymbol	Outer	OSymbol	Species	Comment
960	p	1034	v	jun	inc
941	+/-p	1039	r	jun	inc.
970	p	1039	r	jun	inc.
931	p	1041	+r	jun	inc.
899	p	1042	v	jun	inc.
917	+/-p	1042	rB	jun	inc.
909	+/-p	1042	r	jun	inc.
917	p	1042	+rB	jun	comp.
987	p	1043	+rB	jun	comp.
915	p	1043	r	jun	inc.
892	p	1043	r	jun	inc.
949	+/-p	1043	+B	jun	comp.
985	p	1045	+rB	jun	comp.
932	p	1045	+r	jun	comp.
927	p	1047	+rB	jun	comp.
931	p	1047	+B	jun	
899	p	1048	+rB	jun	comp.
954		1049	r	jun	inc.
924	p	1049	r	jun	inc.
985	p	1049	rB	jun	comp.
945	+/-p	1050	+rB	jun	comp.

Inner	ISymbol	Outer	OSymbol	Species	Comment
985	p	1050	+rB	jun	inc.
938	p	1050	+r	jun	inc.
958	p	1050	+rB	jun	comp.
935	p	1051	r	jun	comp.
941		1051	+r	jun	
899	p	1051	+r	jun	comp.
910	p	1051	+r	jun	inc.
855	p	1051	+rB	jun	comp.
927		1051	+r	jun	inc.
938	p	1051	+rB	jun	inc.
879	p	1051	+rB	jun	comp.
972	p	1051	+r	jun	inc.
949	p	1051	+rB	jun	comp.
977	p	1051	+r	jun	inc.
951	p	1051	+rB	jun	comp.
950	p	1051	+rB	jun	comp.
898	+/-p	1051	+B	jun	comp.
983	p	1051	+r	jun	inc.
919	p	1051	r	jun	comp.
975		1051	+r	jun	comp.
983	p	1051	+r	pnn	inc.

Inner	ISymbol	Outer	OSymbol	Species	Comment
971	p	1051	v	jun	comp.
854	+/-p	1052	+r	jun	
900	p	1052	+r	jun	inc.
889	p	1052	+r	jun	inc.
882	+/-p	1052	+r	jun	inc.
943	p	1052	+r	jun	inc.
898	p	1052	+rB	jun	comp.
896	p	1052	+r	jun	inc.
930	+/-p	1052	+B	jun	inc.
893	p	1052	+rB	jun	inc.
904		1052	+r	jun	inc.
918	+/-p	1052	+r	jun	inc.
932	p	1052	+rB	jun	comp.
986	p	1052	+rB	jun	inc.
919		1052	+r	jun	inc.
931	p	1053	+r	jun	inc.
952	+/-p	1053	+r	jun	inc.
940	p	1053	+rB	jun	inc.
970	p	1053	+rB	jun	comp.
969	p	1053	+r	jun	comp.
879	+/-p	1053	+rB	jun	
982	p	1053	rB	jun	comp.
915	p	1053	+r	jun	inc.
925	+/-p	1053	+rB	jun	inc.

Inner	ISymbol	Outer	OSymbol	Species	Comment
989	p	1053	+r	jun	comp.
943	p	1053	+r	jun	inc.
946	p	1053	+r	jun	inc.
986	p	1053	+rB	jun	comp.
907	+/-p	1053	+r	jun	inc.
957	p	1053	+rB	jun	comp.
938	p	1053	+rB	jun	inc.
898	p	1053	+B	jun	inc.
909	p	1053	+r	jun	inc.
935	p	1053	+r	jun	inc.
981	p	1053	+r	pnn	inc.
975	p	1053	+rB	jun	comp.
922	+/-p	1054	rB	jun	inc.
968	p	1054	+r	jun	inc.
917	p	1054	+r	jun	inc.
966	p	1054	+rB	jun	comp.
950	p	1054	+r	jun	inc.
970	p	1054	+r	jun	comp.
959	p	1054	+rB	jun	inc.
880	+/-p	1054	+B	jun	inc.
885	p	1054	+r	jun	inc.

The cutting dates reveal a very interesting pattern that carries over from the Early Pueblo II pitstructures. This is the stockpiling of beams for future planned use. The final roof of Kiva G contained beams cut as early as A.D. 1034 but starting in 1039 more than one beam is represented for most years through 1050, but no more than 4 in any year. It was in 1051 that cutting began in earnest with 19 followed by 14, 21 and 9 in each successive year through 1054. While it is unclear exactly what the process or plan was there was either clearly a long-term plan (starting in 1034) or perhaps some of the earlier years were represented by salvaged beams. In total the numbers of beams represented before the big effort in 1051 is 24. I suggest that it is possible that beams cut (or obtained) between 1034 and 1050 were used to construct the temporary roof in Kiva G. It became useable in that year and then the occupiers began a concerted effort to cut and stockpile beams for 3 years with the final year, 1054, being the construction episode with some fresh-cut beams.

This scenario is consistent with the date distribution but could of course not have been the case. What is apparent from the dates is that there was no significant remodelling episode after 1054 that added enough new beams to be represented in the sample. This is unfortunate as I have no way of estimating how long the structure was used before it was abandoned and burned.

Abandonment of Kiva G

The intact artifact assemblage, seemingly in use and storage positions, indicates a catastrophic event. There was no accumulation of sediments on the floor before the roof was burned and there was no apparent effort to salvage any of the useable artifacts that were recovered. Of course we can't know what might

have been removed. Even the roof had a suite of useable implements that were lost to the fire. The final, pre-burning, act was likely the partial excavation of the fill of the northeast posthole and the deposition of a human foetus. At the end of this section I present an interpretation and reconstruction of what I think may have happened.

Post-abandonment Filling

There was a fairly clear-cut stratigraphy in Kiva G (Figure 2.202). The roof was burned and collapsed into the main chamber. This did not affect the filling of the vent shaft and tunnel as they were sealed from the main chamber. The depression filled naturally with no evidence of a midden deposit. The vent tunnel also filled naturally, but the vent shaft may have been intentionally filled. Near the bottom were two headless adult turkey skeletons, there was a substantial accumulation of sandstone building blocks and just below the modern ground surface immediately above the vent shaft was a burial with an incomplete skeleton. All of this may have been intentionally deposited at an unknown time, but certainly relatively soon after kiva abandonment as there was no evidence of collapse in the vent shaft as would have been the case had it been left open to the elements.

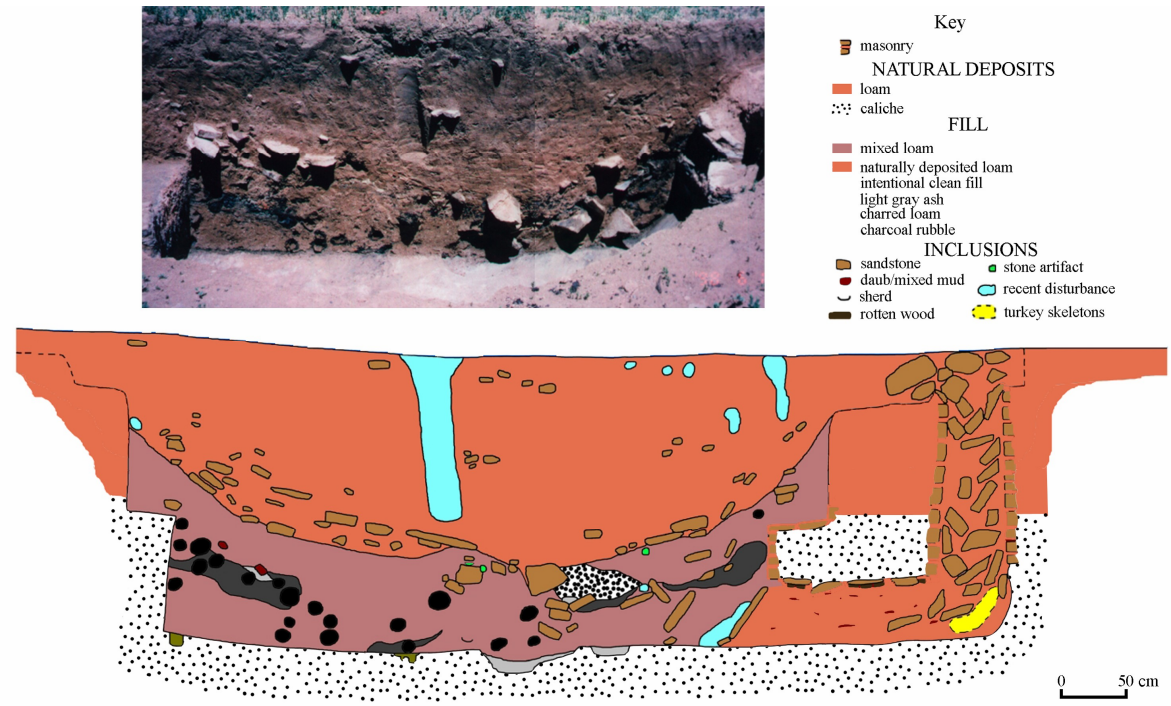


Figure 2.202. Kiva G profile looking east.

Burial

The partial remains of a young child, about 4 years of age based on dental development, were encountered just below the surface above the vent shaft opening of Kiva G. The sex is indeterminate due to age. The remains are incomplete and in fair condition, consisting of the cranium, mandible with several teeth, an upper deciduous molar, two rib fragments, the left humerus, and left and right femora and tibiae (Figure 2.203). This child's remains were apparently disturbed before excavation. The bones exhibit dry-bone fractures occurring in the historic period, as well as root etching. Due to the condition and incompleteness of the remains, assessment of skeletal stress is very limited. There is no deciduous dental hypoplasia, and the permanent teeth, in crypts, are not assessable. A rough estimate of femur length, compared to dental

development, suggests that the child was not stunted.

Figure 2.203. Kiva G Burial 1.

Conclusions

Kiva G was constructed in or soon after A.D. 1054. This falls in the Mancos Phase of the Middle Pueblo II era, which is verified by the presence of typical Mancos Phase pottery, specifically Mancos B/w and Mancos Corrugated. The kiva was dug into the natural stratum that was maintained for most of the walls and floor. It was originally built with a temporary four post-supported roof, possibly in A.D. 1050, which was replaced with a six-pilaster supported cribbed roof. Masonry was restricted to the pilasters the ventilation system and the hatchway surround. Original features included a central hearth and associated ash pit. There was no ventilator. A number of features were added during the course of the use of the kiva, including shallow floor pits that were not deep enough to be used for long-term storage. The most impressive feature centred

around a complex sipapu, which contained a sequence of sand-filled pits. All of these probably represent the history of ritual use of the features. There were also two other sipapu-like pits.

There were no built-in food processing facilities, but the roof was probably used for this activity. The abandonment artifact floor assemblage included a few stone and organic items as well as a complete set of domestic pottery vessels. Otherwise the floor was clean.

Abandonment was catastrophic and included the burning of the roof, probably intentionally torched. Post-destruction filling was natural and there was no evidence of significantly later activity.

Rooms and Extra-mural Features

A roomblock was not constructed to accompany Kiva G. Instead, the Roomblock F was partly reused. A single room (8) was constructed inside a pre-existing Early Pueblo II room area (9). This was achieved by adding a north-south masonry wall and three features. Unfortunately, about 1/3 of the room was recently removed during 'pothunting' activities. A single tree-ring cutting date of A.D. 1043 indicates that this area was roofed at this general time. In addition to this room, another Early Pueblo II room (17) was used as a midden into which a burial was added.

There were also two semi-subterranean pitrooms (24 and 25) constructed, a suite of food processing features added in Courtyard 1 area and five thermal features intruded into the collapsed roomblock and adjacent areas (three hearths, a firepit and a corn roasting pit). Based on pottery there were also several midden accumulations from this time period in the depressions left by the

collapse of Early Pueblo II pitstructures. Another eleventh century midden was encountered on the exterior of the early roomblock. While all of these midden deposits are from the Mancos Phase, it is difficult to reconcile that they were all due to the activities in Kiva Suite G. It is more likely that a significant portion of midden deposit resulted from occupations in unexcavated areas of the site.

Room 8

Based on what was excavated it is difficult to reconstruct the exact state of Room 9 in the middle of the 11th century, one hundred years after its construction. Whatever its condition, during the Middle Pueblo II, probably in association with Kiva G, the room was rebuilt. A tree-ring sample from the floor yielded a cutting date of A.D. 1043. A beam of the same date in the roof of Kiva G may have been cut at the same time. I proposed that the original, temporary, roof in Kiva G was built in 1050. It is reasonable to me to suggest that this room may have been renovated at the same time. A dividing wall and three features were associated with the floor (Figures 2.204 and 2.205).

There was a slab-lined hearth just west of center of the room. Approximately ½ of it was removed during pothunting, and only about ¼ of the fill was still in place. The top of the slabs were at the floor level and they were well oxidized. The hearth contained white ash indicating a well burned fire.

Adjacent to the south wall, just west of center was a low masonry construction. Again much of it was recently removed. This is in a location similar to the room vents

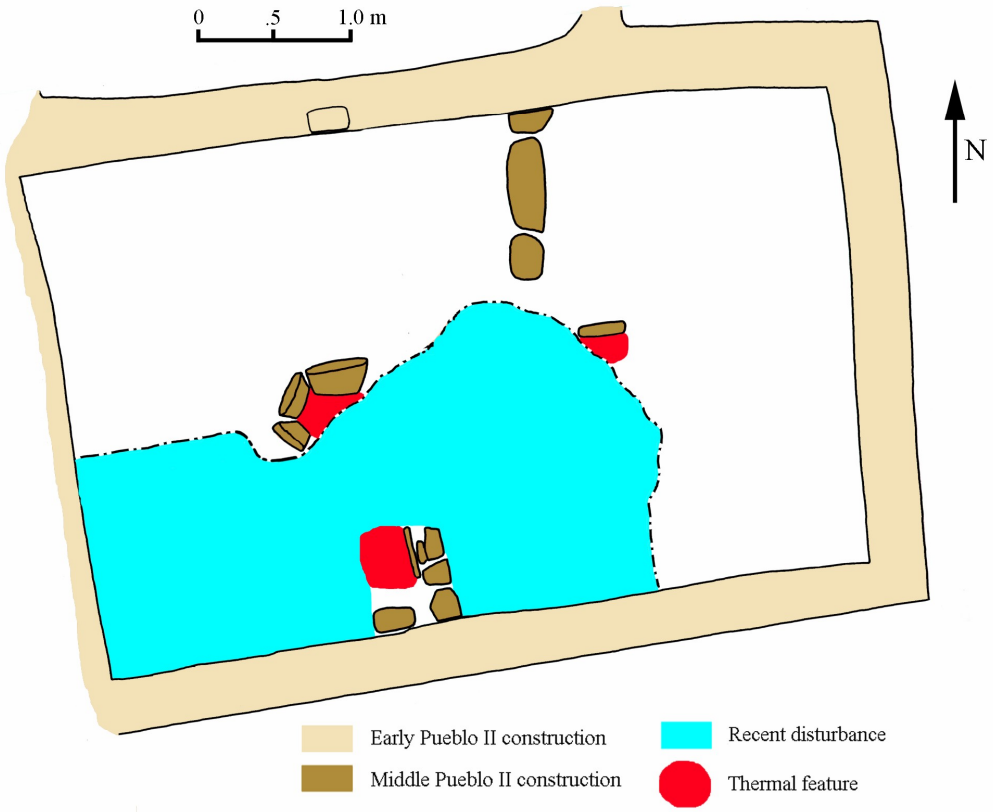


Figure 2.204. Room 8 Middle PII plan.

Figure 2.205. Room 8 east end. Note remnant of subdividing wall in upper left and edge of pot hunting disturbance on left.

seen in other Early Pueblo II rooms in the roomblock. It may date from then which would mean it was associated with Room 9. However, at the north end of what remained there was an ash deposit and the adjacent vertical slab was oxidized, indicating an open fire. I suggest that this may have been a mid- PII reuse of an Early PII feature.

A similar situation may have existed with the remaining feature in the east ½ of the room. Again, it was disturbed by recent digging. The North side was a vertical slab set into the floor with a shallow basin on the south. This resembles what I have identified as a milling bin. Its final use was as a firepit as it was burned and contained some ash. This could have been a reused Early Pueblo II feature.

No identifiable sherds were recovered from what was clearly floor contact

so the dating of this use relies completely on the single tree-ring sample. It is clear that there was a Middle Pueblo II use of this room but exactly what it represents is unclear.

Pitrooms 24 and 25

A rectangular room (F-25) was dug down into the native soil to the southwest of kiva G. It had an interior design where the floor contained three 'troughs' that slated down to the center from both ends (Figures 2.206). A step down entryway was built on the southeast side and there were two postholes that supported some sort of roof structure. An off-round feature was added to the east side slightly overlapping with one of the troughs. This structure was probably a milling room and the floor features probably held metates and were designed to hold them at the correct angle for grinding. Whatever tools were used in this room were removed and the floor features damaged (Figure 2.207).

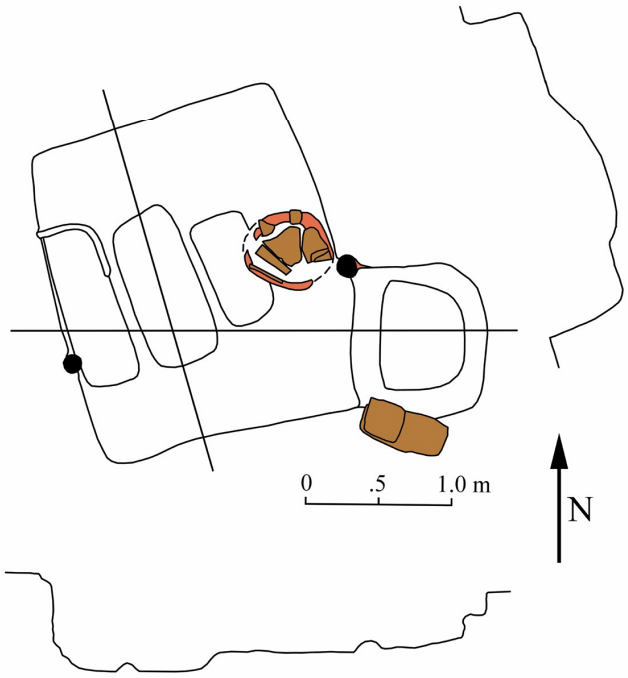


Figure 2.206. Room 25 plan and sections.

Figure 2.207. Room 25 showing features and damaged surfaces

Structure 24 was another pitroom cut down into the underlying deposits including Late Pueblo I and Early Pueblo II courtyard surfaces. This structure was amorphous in shape and consisted of two chambers at slightly different levels (Figures 2.208 and 2.209). There were no prepared features and no

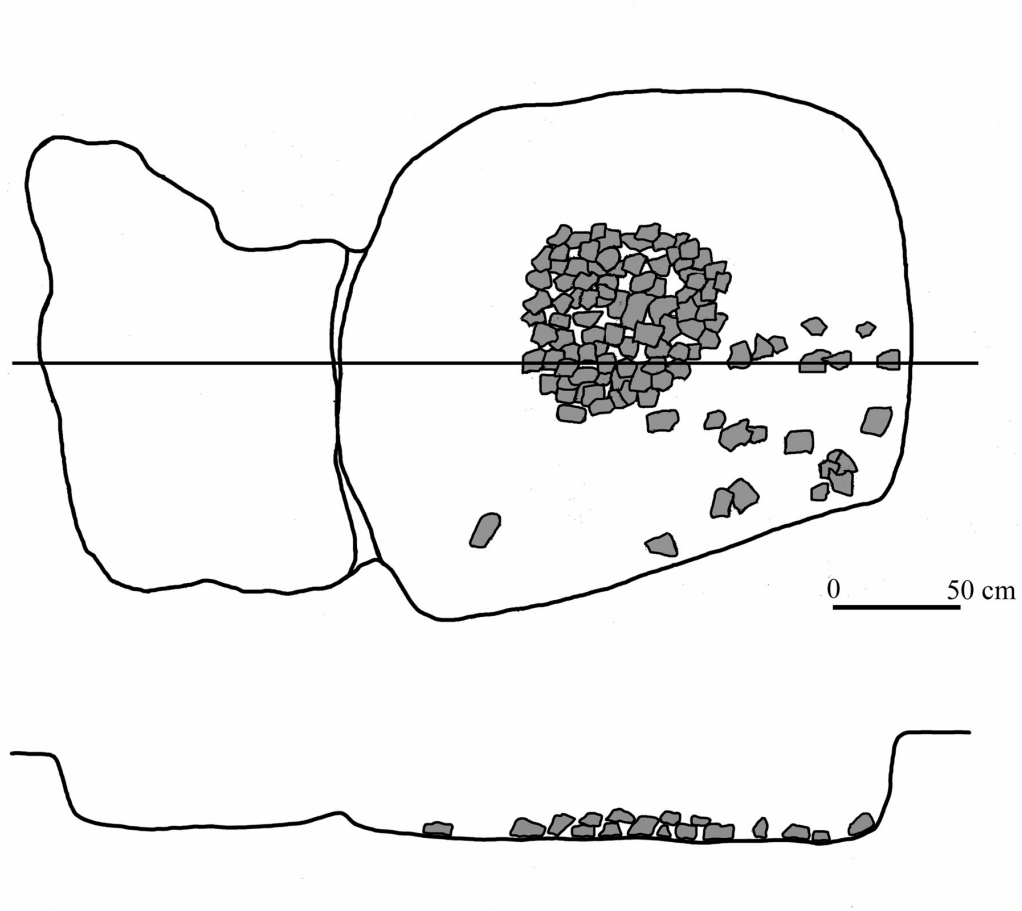


Figure 2.208. Room 24 plan and section.

evidence if it had been roofed. The center of the structure was full of fire cracked rock but there were no signs that there had been a fire inside. It looks as though the stones were brought into the pitroom, probably when hot. The fill was natural loam without a higher than normal charcoal content. There was also no

indication that the stones were used for cooking as is seen in the roasting pits. I think that this may be a sweat house. I know of no other examples of this in Pueblo sites in the 4-corners region.

Just to the west of Room 24 were two hearths, both are simple pits dug into the surface and cutting down into the courtyards below. Both were filled

Figure 2.209. Room 24 (sweat lodge). Note darker area toward the bottom of the image. This was charring of the soil but not in-place burning.

with mixed charred sediments and it is unclear how they were used. Their locations would have been convenient for the heating of the stones found in Room 24, but neither had any appreciable ash or burned stones.

Corn Roasting Pit

During the excavation of Room 16 (Middle Pueblo II) I encountered the top of a rounded rectangular pit. I first noticed it at the floor level of the room but I am fairly sure that it extended up into the room fill for some distance. This indicates that it was cut after the room had collapsed and started to fill. Because of this circumstance, it was

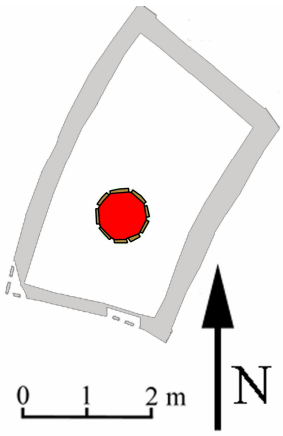


Figure 2.210. Slab-lined hearth built into the fill of Room 37 (outline indicated by light gray). The walls may or may not have been visible at the time the hearth was built.

unclear exactly where the upper boundaries were. The original excavation of this feature would have produced a significant pile of spoil including mixed cultural deposits, clean loam and caliche rubble. Various combinations of these sediments plus a liberal component of charcoal is what filled most of this feature (see below for further discussion). The opening of the pit was rectangular with rounded corners. As the pit extended downward it expanded outward and became more rounded, giving it an elongated bell shape (Figure 2.211). The pit cut through the native loam and well into the caliche. There were digging stick

marks on all of the walls. It was not plastered or otherwise prepared. The floor was level.

The feature was located near the middle of Room 16 but when the pit was cut the south side encountered the south wall of the underlying Late Pueblo I Room 22. This wall became the south side of the pit to the base of

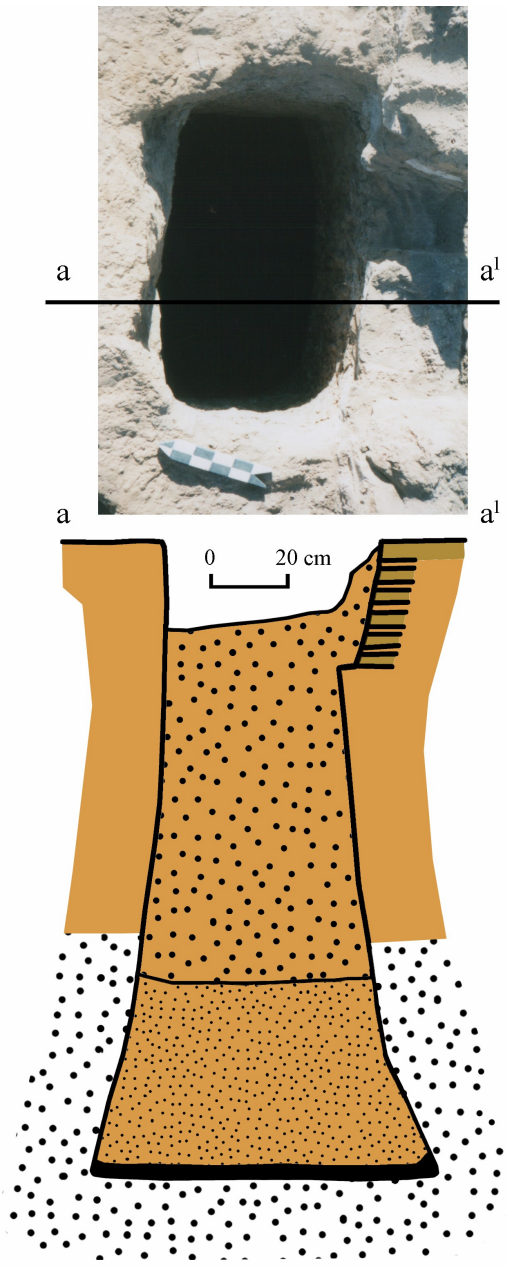


Figure 2.211. Corn roasting pit.

the wall. This restricted the expansion of the south side of the pit until it reached the bottom of the wall. Although possible, it is unlikely that the excavators knew where this wall was before they started digging.

On the floor of the pit was a double layer of charred corn on the cob. The

ears had been shucked and then placed directly on the floor in two well-arranged layers. The top of this layer was uneven indicating that from there upwards the pit had been cleared. This layer is curious in that it seems to have been intentionally burned. I have participated in several corn pit-roasting activities at different pueblos and in each case the pit was preheated with a significant fire before ears of corn with their husks were dumped and thrown into the heated pits. The pits were then sealed with a lid and covered with a thick layer of dirt and the corn steamed, in each case over night. The pits were opened the next morning and the steaming corn removed. In only one case were any of the ears charred, and then only a few. The charring did not ruin any of the ears and was confined to the husks. When all was done, the pits were recovered (empty) and left for the next round. However, in all of the episodes I was involved with, there were metal lids that fitted well over the pits. I have also done a lot of pit roasting on my own, mostly for cooking meat. I have never maintained a pit but instead re-dug and refilled it each time. This ends up mixing a lot of charcoal into the fill that is thrown back in and this is what was in the corn roasting pit at Stix and Leaves Pueblo. On the floor of the pit was the double layer of charred ears of corn (we recovered approximately 35,000 cm^3). This was topped with a thick layer of mixed loam, caliche and dense charcoal (containing some charred corn and ear fragments). This in turn was topped with the same sort of sediment except that the caliche and charcoal made up lesser proportions. The very top of the pit was naturally filled with mixed sediments with relatively little charcoal. The interface between the two charcoal-containing fills was more of a continuum of reducing amounts of inclusions rather than a distinct boundary.

Based on the intact digging stick marks on the walls, the double layer of charred ears and the reducing proportion of caliche and charcoal in the fill, I contend that this feature was used only the one time. I think multiple uses would have obliterated the digging stick marks, there would have been more charred corn mixed into the fill and the fills would have been more homogenized. I am not confident in suggesting whether or not the roasting was a success. There is a lot I don't understand about the evidence. Never the less to my knowledge this type of formal corn roasting pit has not been reported at other pueblo sites in the region.

Courtyard 1

Just to the north and slightly west of Kiva G was a well used courtyard area containing a number of features (Figure 2.212 and 2.213). These features (Table 2.75) were built to a specific level that served as the use

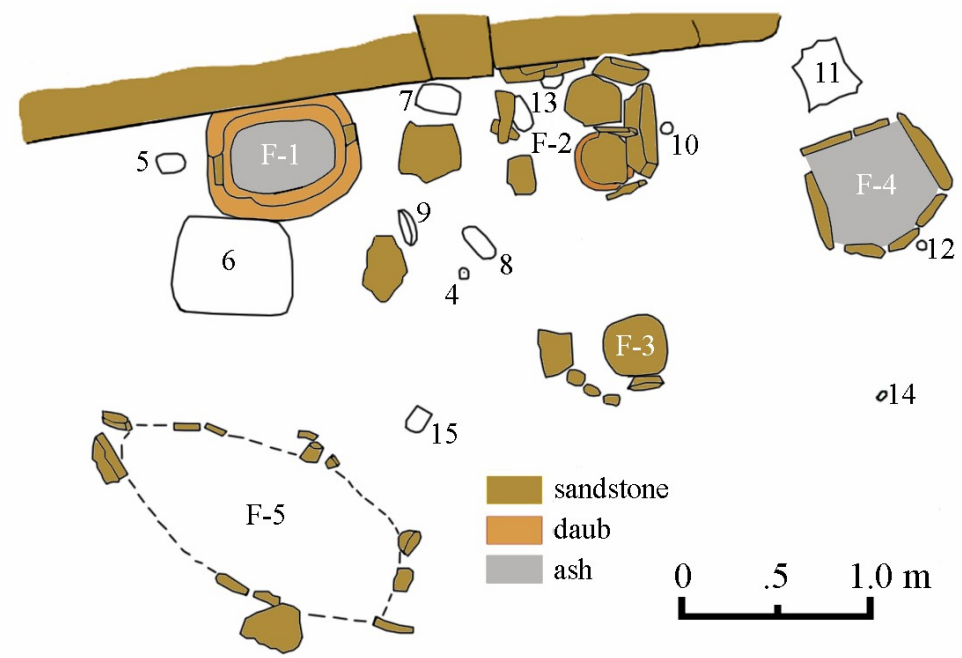


Figure 2.212. Courtyard 1 features and surface artifacts.

Figure 2.213. Courtyard 1 looking west.

Table 2.75. Courtyard 1 features.

Type and #	Dimensions (cm)			Fill and Abandonment
	Length	Width	Depth	
1 Hearth	62	53	22-29	Primary refuse- ash, open
2 Milling bin (double)	75	64	19-20	Open
3 Milling bin(?)	71	40	17	Open
4 Slab-lined hearth	64	62	27	Primary refuse- ashy soil. open
5 Vertical stone outline				

surface for this extramural area. Three of the features were built up against the exterior wall face of the earlier PII roomblock. This may indicate that the adjacent rooms (2 & 9) were still standing. Or it may indicate the courtyard surface was made by clearing structure collapse. Either way the features were built in relation

to the wall.

Hearths

There were two different style hearths built and used in this courtyard area. The first (F-1) was constructed by the excavation of a pit adjacent to the exterior wall of the Early PII roomblock then lined with modeled daub. This formed a collar around the elliptical pit and had a vertical stone set in the west end (Figure 2.214). The hearth was well used and highly oxidized. It contained a layer of ash.

The second form was a slab-lined hearth (F-4) typical of many others found in courtyard spaces during all time periods. The sandstone slabs lined a pit and extended slightly above the use surface. There was no base stone and the bottom and sides were oxidized. The fill was ashy sediment with pockets of white ash. It was highly disturbed by animal activity

Figure 2.214. Courtyard 1, collared hearth, Feature 1.

Milling Bins

Two milling bins were located in the courtyard; Feature 2 was a double bin (Figure 2.215) against the roomblock wall and a single bin separated from it to the south. No metates were found in-place in the bins, but one was found next to Feature 1. There were also several manos in the near vicinity. The other (F-3) was a single bin and some of the expected stones were missing.

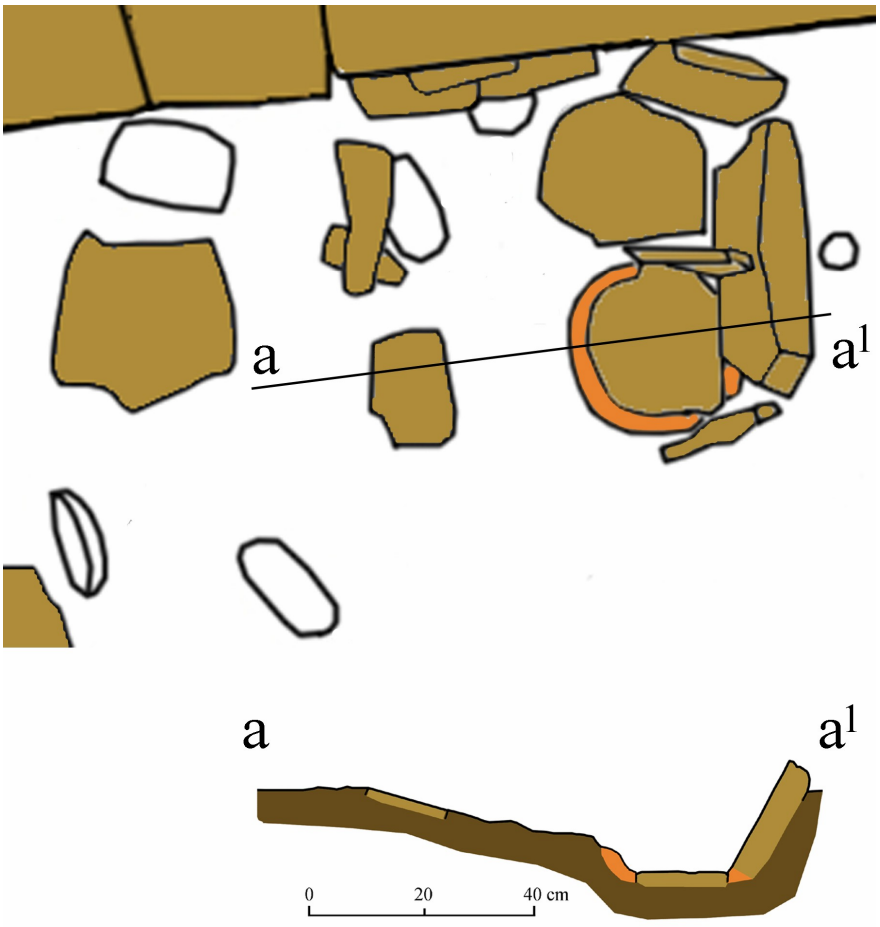


Figure 2.215. Courtyard 1 Feature 2 double milling bin.

Vertical Stone Outline

In the southwestern area of the courtyard there was an outline of a feature (5) of unknown use. The outline was made by spaced out small vertical

sandstone slabs. There were no postholes to indicate there was a roof. This may have been some sort of shelter, but this is unclear.

Artefacts

There were a number of artifacts found on the use surface of Courtyard 1 (Table 2.76). These consisted of manos, a metate, peckingstones and two ornaments. The manos and metate were for food procession. The peckingstones were for maintaining the manos and metate. The were also a couple of large sherds and two ornaments.

Table 2.76. Courtyard 1 use surface artifacts.

SP	Item	SP	Item
4	pendant	10	peckingstone
5	sherd	11	sherd
6	metate	12	peckingstone
7	mano	13	mano
8	mano?	14	pendant
9	mano	15	mano

Observations

The artifact inventory in Courtyard 1 clearly indicates it was used for food processing and the hearths probably indicate cooking. Altogether, this area looks to have been an outdoor kitchen. This likely was used by the people who were using Kiva G. As with the nearby Room 2 milling bins, the metates were not in-place and had either been removed (salvaged) or these bins were not designed to incorporate 'built-in' metates. I think this is the case as there is little evidence of destruction of the features that would occur if built-in metates were removed. The metate cache in 'Room 26' may be another indication that they were put

away when not in use and simply placed in the milling features when needed. Since all of the metates we found were of the trough type they would not need separate sides to maintain control of the flour, just a way to collect it. With the later slab style metates that lacked sides, it would be most effective and indeed probably necessary to build them into a collection basin if milling was on an intensive scale. I suspect that this shift in milling stone form reflects a change in social organization, ownership and/or permanence of constructed facilities.

Room 17 and Burial 3

Room 17 (an Early Pueblo II room) was filled from the floor to the top of the walls with midden that contained Mancos Black-on-white and Mancos Corrugated pottery, clearly placing its deposition in the Mancos Phase. While it is uncertain that this deposit was the result of the occupation of Kiva Unit G, this seems the most likely. In this midden deposit was the burial of a woman (Figures 2.216). While the deposit was a midden it did contain quite a few artifacts (Figure 2.217 and Table 2.77) that might be considered unusual in a midden in that many

were intact.

Figure 2.216. Room 17 burial.

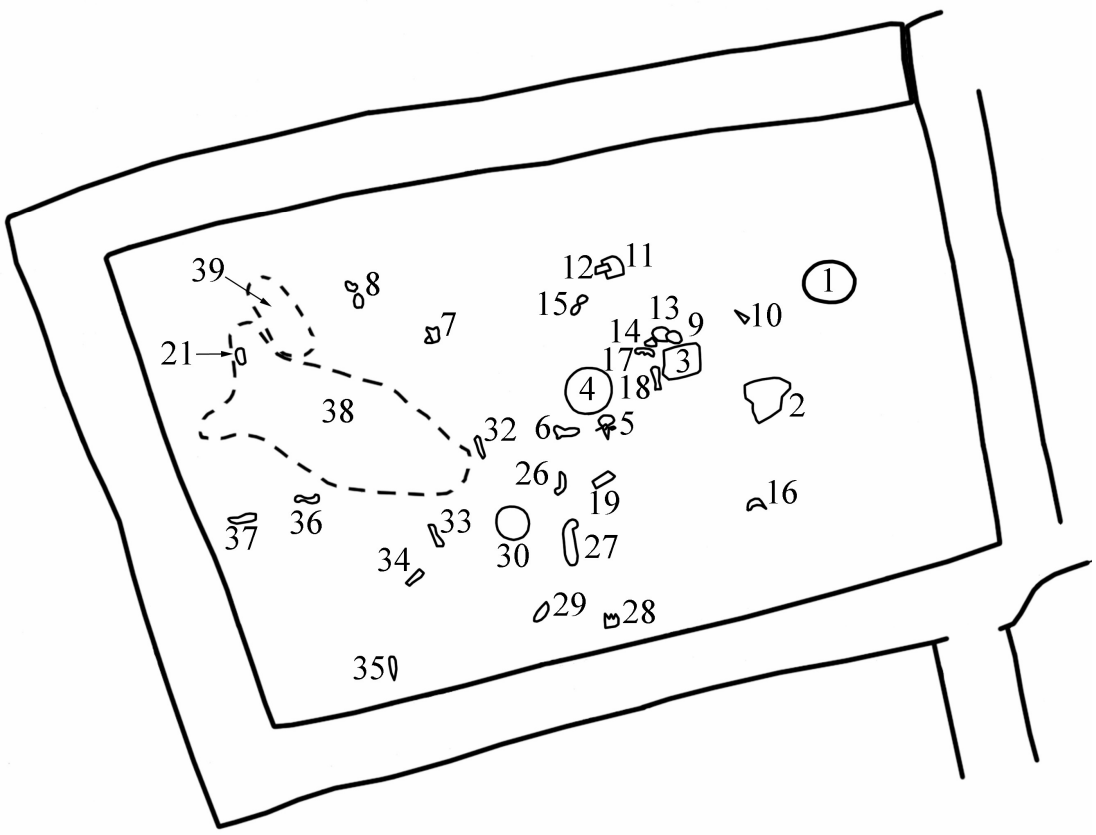


Figure 2.217. Room 17 artifacts, animal bones and burials.

Table 2.77. Room 17 artifacts, animal bones and burials

SP	Item	Comments
1	worked sandstone	pot lid?
2	corrugated jar base	
3	corrugated jar rim +	
4	Vessel #	Mancos B/w bowl
5	human vertebra	
6	animal bone	

SP	Item	Comments
7	human vertebra	
8	human pelvis frags	
9	gastrolith concentration	
10	turkey mandible	
11	sherd	fits SP 2
12	animal bone	
13	human rib	
14	faunal	
15	articulated human phalanges	
16	human rib	
17	animal bone	
18	animal bone	
19	animal bone	
21	animal bone	
26	animal bone	
27	stone	odd-shaped
28	animal tooth	
29	animal bone	
30	Vessel #	Mancos B/w bowl
33	animal bone	
34	animal bone	
35	animal bone	
36	animal bone	
37	animal bone	
38	human burial	articulated skeleton
39	puppy burial	articulated skeleton

The scatter of some of the smaller human bones in this deposit indicates that there had been a fair amount of post-depositional disturbance. This is not unusual at the site as there are prairie dog towns adjacent to it now and I suspect in the past as well.

Burial 3 is an adult female, approximately 60 years of age, based on pelvic criteria. Almost all of her bones are present and in fair to good condition,

exhibiting typical post-mortem root and compression damage. Rodent disturbance resulted in damage to and the loss of a few upper vertebrae and ribs. The presence of partuition pits suggests at least one pregnancy. There is no skeletal evidence of anemia, infection, stunting, or ante- or perimortem trauma. However, the cortical bone of the broken (postmortem) left humerus midshaft is only a maximum 3 mm thick; the humerus surface is similar in appearance to the other long bones, which are extremely lightweight. This indicates diffuse cortical thinning, or osteoporosis, which is to be expected in an elderly, postmenopausal female. In addition, Burial 3 had lost all but two lower incisors, many years to within a few years before death. Dental hypoplasia of the lower incisors is not assessable due to their extensive wear. The tooth sockets in the upper dental arch are completely resorbed, and the lower arch sockets are almost as affected. Although hormonal factors could account for her extensive osteoporosis, the loss of so many teeth, for so many years, could also be a factor. She also exhibits severe osteoarthritis of the inferior articular facets of the 1st cervical vertebra, or atlas. However, this condition was primarily due to cranial shifting, a congenital condition in which the cranial occipital condyles and the atlas fail to separate during fetal development. Although this developmental, biomechanical problem did not affect the spinal column dimension, it would result in restricted head up and down, or nodding movements, eventually leading to osteoarthritis. Unfortunately, the C2 vertebra is missing postmortem, probably removed or destroyed by rodent activity, so the extent to which that bone was affected by arthritis is unknown. However, the C3-C5 facets do not show unusual arthritic change. All vertebrae centra, cervical through lumbar, have moderate osteophytic

growths, in keeping with this person's age. The normal, symmetrical appearance of the vertebrae centra suggests that she did not have scoliosis. In sum, the Burial 3's pathologies are indicative of natural degenerative processes normally seen in an older postmenopausal female, somewhat exacerbated by a congenital skeletal condition.

By the feet of the burial was a nearly intact skeleton of a puppy. This is likely to have been buried with the woman and one can only speculate about the circumstances that led to this association.

Middle Pueblo II Interpretations

It is tempting at this point to just continue with the normal corporate interpretation of the archaeological evidence. By this I mean sticking to the normal evidence and reconstructing the sequence, material culture, etc. but leaving out the people. However, this is not what the sponsors of the work want nor is it satisfactory to my own desires. Yes, we are interested in contributing to the larger story of the cultural sequences in our region and this is a valid contribution in its own right. But, there is more available in the evidence here than this and I am choosing to apply the definition of archaeology as 'imagination informed by evidence'. I am compelled to do this both because of the interests of the sponsors and the influence of many of my Pueblo friends who have shared conversations and discussions with me about archaeology over the years.

To say they are uninterested, or that they are all interested at the same level or in the same things would be misleading. Yet it is clear where most of their interests lie. I find very little discussion of the details of the general evidence emerging. When I bring up general chronologies of architecture or

pottery types the subject is quickly diverted. When I speak of environmental change their eyes glaze over. When I get enthusiastic about statistical 'proofs' they yawn and I find myself alone. Their interests are specific and humanistic. They want to know about the people.

When we talk about finding how arrowheads were made or particular ways in which pottery was fired, the conversations are lively. When I speculate about what may have happened to individuals or about specific incidences there is much interest not only in my interpretations but in the evidence I use to support them.

Because of these influences, and my general proclivity to tell stories, I have chosen to construct what I consider a plausible interpretation of the Middle Pueblo II occupation based on the evidence we found in our excavations at Stix and Leaves Pueblo. While I try to incorporate and at the same time not ignore the evidence we have this is, of course only a product of my imagination and life experience. It is not based on any specific ethnographic analogy, nor is it detailed to the point of constructing named individuals. Yet, I feel that it may be the sort of story that would be both of interest and quite reflection when told around a campfire, with my colleagues and non-archaeologist friends and family

The setting is the Montezuma Valley in what is now southwestern Colorado. The surroundings are the sage lands and juniper-pinyon forests of the high plateau. It is the mid-eleventh century of the Christian calendar and there is great activity at Chaco Canyon to the south. People have re-established a significant foothold in the area after a population drop. New homesteads and dispersed communities are being established wherever good agricultural land is

available. The weather patterns are reasonably stable and in general life is good.

Our specific location is a place where people have settled before and left a visual record of their presence. There are a number of ruined buildings, some with walls and perhaps even some roofs remaining. This may be a place that is known to be of special import in the stories of the people. To the southwest the view is of the towering Ute Mountain, to the south southwest the distant Chuska Mountains, to the southeast the tablelands of Mesa Verde and to the east the San Juan Mountains. It is here that a young couple began the next generation of Pueblo life through the establishment of a homestead.

In the mid eleventh century, perhaps in the year A.D. 1046, the planning for a new life and family finally came to fruition by the renovation of an old room in a mostly collapsed roomblock. A few beams were cut and brought to the location to repair the roof to make a place where people could stay or seek shelter while constructing their new home. For three years these activities involved the accumulation of a stockpile of beams and stone for the building of a pitstructure that would serve as a dwelling and a place of household ritual. They probably also included the clearing and preparations of fields and the planting of some crops supplemental to those in their home villages, in preparation for the move. I can imagine the long planning discussions, the advice taken and set aside as the new generation looked ahead and invested in their future. All of this would have been with the support of friends and family.

Construction began in earnest in A.D. 1050 with the digging of the pit for the main structure (Kiva G). This pit was excavated with digging sticks and the spoil removed a basket load at a time. Things would have progressed well until

they reached a consolidated layer of caliche, yet this did not stop them. They continued down until they reached the level where the floor would be, almost two meters below the surface. This round pit was dug with an off-set that formed a shelf, or banquette, around the circumference. Holes were dug into the floor level at the four ‘corners to hold roof support posts. These were not particularly deep as the roof was meant to be temporary. A flat roof was added. This work was probably accomplished by the couple as well as friends and family.

This temporary roof was kept until enough beams and other building materials were accumulated, and then in late 1054 or early 1055, the temporary four-post roof was removed and a six-pilaster cribbed roof replaced it. This completed the main construction and the unit was ready to be moved into permanently. Through time additional facilities were added. First a separate semi-subterranean milling room with space for three metates (Room 25) was built. Then a sweat house was built and the outdoor kitchen area was completed. How long all of this took is unknown. At some time after the couple moved in they were joined by the mother of one of them, perhaps when the father died. Household waste, including the ashes from the hearths was dumped in nearby spaces (the depression of Pithouse 2, behind the north wall of the roomblock and in Room 17. In due course the mother died and they buried her, with her puppy, in Room 17.

Life went on and household rituals were carried out (complex sipapu, sipapu and sand-filled pit). It may be that some of these were focused on fertility (figurine in the roof). Eventually the women became pregnant and a new generation was in the offing. It was then that disaster struck and all the planning

and work came to naught. Late in the pregnancy the woman miscarried, probably in the kiva. The NE posthole was partly scooped out and the foetus was placed in it, uncovered. Nothing else in the structure was removed and the roof was set alight. At that point the homestead and site was abandoned. I cannot hazard a guess where the couple went but nobody came back and built on the spot at a later date.

Part 3 Dating

Understanding the chronological sequence of construction and use of the section of Stix and Leaves Pueblo we investigated is of course important and a standard question of any archaeological investigation. We are fortunate to work in an area that has excellent tree-ring dating as well as human behaviour that left us so many interpretable samples in the form of burned roofs. Stix and Leaves Pueblo was no exception and I posit that it is well dated (at least the section we excavated). The results of tree-ring dating are shown in Table 3.1. Artifacts and architecture also give fairly good indications of when a site was built and occupied, if on a grosser scale.

Table 3.1. Tree-ring samples from Stix and Leaves Pueblo.

Study Unit	Found	Submitted	Dated	Cutting Date
Late Pueblo I				
Rooms	28	28	0	0
Early Pueblo II				
Pithouse 1	94	20	20	18
Pithouse 2	120	24	20	19
Kiva K	154	13	13	11
Kiva I	145	24	24	18
Room 2	5	5	5	2
Room 30	4	4	4	1
Room 33	3	3	3	0

Room 41	1	1	1	0
Subtotal	526	94	90	69
Middle Pueblo II				
Kiva G	169+	169	169	77
Room 8	1	1	1	1
Subtotal	170+	170	170	78
Total	724+	292	260	147

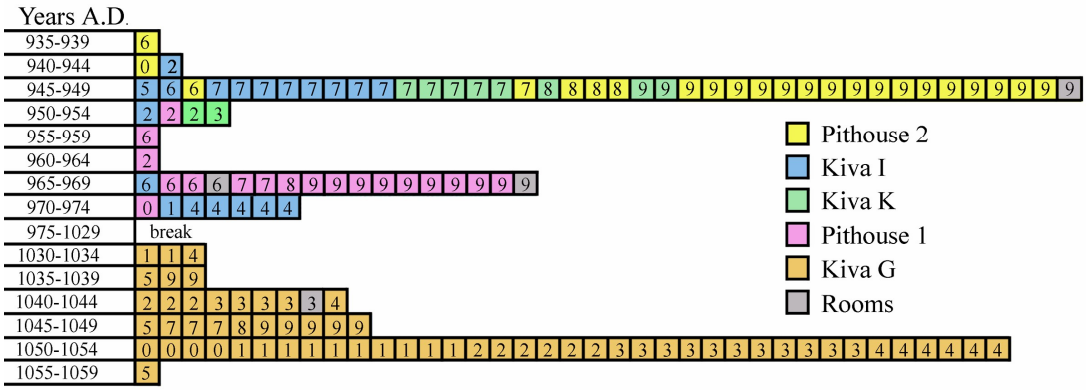
This indicates that we found a total of 724+ tree-ring samples, but this excludes possible samples (mostly charred but rotted beams) that were not deemed suitable in the field and were not collected. Of the 274+ found, 292 (40%) were submitted to the Tree-ring Lab in Tucson for dating. This percentage was not equally divided amongst the various study units as our sampling strategy changed after the first year of the project. Initially, all potential samples were submitted (specifically from Kiva G). After receiving the results, which included multiple dates from the same years) the sponsor and I agreed to only submit a 20% sample form each structure with over 50 samples and to retain the remainder for possible future analysis. This means that Pithouses 1 and 2 and Kivas K and I only had about 20% submitted while all of the rooms that yielded samples were 100% submitted. This was a viable strategy as the return allowed reasonable interpretation yet did not cost beyond the sponsor's budget. While the results were adequate, I would like to see more dating done for Kiva K to get better evidence that might distinguish the original construction and remodelling dates.

Two hundred and sixty samples (89% of submitted) returned dates. This proportion would be even higher if the poor Late Pueblo I samples are removed from the submitted number. I sent in everything I found knowing that the

samples were poor and unlikely to yield dates, which turned out to be the case. Never the less of all the submitted samples 147 (40%) yielded cutting dates including those that didn't yield dates. Of the samples that did yield dates, 57% were cutting dates. This is an unusually high return, but not surprising because except for the samples from the rooms, each sample was carefully evaluated in the field and lab before they were selected for dating.

Tree-ring

The burned roofs of Pithouses 1 and 2 and Kivas I and K yielded large numbers of high quality tree-ring samples (Figure 3.1) , allowing confident interpretations not only of construction dates but also of the nature of planning



and sequencing.

Figure 3.1. Stem and leaf diagram of Early Pueblo II cutting dates from Stix and Leaves Pueblo.

The distribution of cutting dates indicates that the first construction was of Pithouse 2 in A.D. 949. There is some evidence of stockpiling for three years fro A.D. 946 to 948. There is also the use of some old wood from four and eight years earlier. The next structure to be built was Kiva K in A.D. 953, four years after Pithouse 2. Most of the beams date within the range of the Pithouse 2

dates and they may have been part of the original stockpile, with only a couple of new beams being added. I suggest that this shows a staged and pre-planned building sequence with the pithouse built first, and perhaps lived in while preparations were being made to build Kiva K, and or the surrounding land was being cleared for fields, or both.

Co-incident with this construction was the building of Roomblock F and probably Kiva H. There were only two cutting dates from the rooms, one at A.D. 949 (Room 30) and the other A.D. 969 (Room 2). While this is a very small sample the dates do correspond well with the types of pottery recovered. The main roomblock contained mainly Cortez Black-on-white and Mancos Gray pottery but Room 2 was reused (based on features) and it contained a series of pottery types including Cortez, B/w, Cortancos B/w, and Mancos B/w indicating a transition from Cortez B/w to Mancos B/w. This is usually dated as happening in the late tenth and early 11th centuries, and this data supports this conclusion.

The next structure to be built was Pithouse 1 In A.D. 970 with beams stockpiled for the previous four years and three coming from a few years earlier. This conforms to the pattern we see in the previous pithouse. We also see construction of Kiva I exactly four years later in A.D. 974. Curiously, while there are a few beams that may have been stockpiled in the preceding decade, the majority of earlier beams came from the same time period as Pithouse 2 and kiva K; specifically in the mid to late 940s. It could be that there was either still a stockpile to select from or, more likely, some beams were salvaged from the earlier structures. Yet this is also difficult to accept because both of the earlier structures were also burned and seem to have had intact or at least mostly intact

roofs when they burned. Another possibility is that there was a forest fire in 947 that left a lot of dead standing timber that was still available 37 years later. This seems unlikely to me. So, it is not clear where these earlier timbers came from. Never the less, the order of construction of the pitstructures is fairly clear and establishes an interesting sequence with a pithouse built four years prior to the associated kiva.

The Middle Pueblo II occupation dates were based entirely on the tree-rings samples from Kiva G. These indicated that again there was an episode of stockpiling and possibly the use of some older beams from a structure we did not excavate. Rather then the sequence of a pithouse followed later by a kiva, the evidence indicates that a room and a pitstructure with a temporary roof were built first (circa A.D. 1050) and served as the dwellings until the final kiva construction was done 4 years later. While this is different from the Early Pueblo II approach, the concept was the same and I suggest was a continuation of a behavior that probably extended back into at least Pueblo I times in our region.

Pottery

Other than gross counts and percentages the pottery is only a general indication of when the Pueblo II construction and occupation of Roomblock F and associated structures occurred. Detailed and comprehensive pottery analysis remains to be done except for one major stratigraphic unit in Kiva H (see discussion above) that was analyzed by Scott Ortman. When pottery averaging is applied to this assemblage it indicated that it was produced and deposited in the mid to late tenth century. There was a discrepancy between the averaged date returned for the local pottery (A.D. 958) and the non-local Chuska wares

(A.D. 1005). However, combined they yielded an average date of A.D. 975. This is exactly what I predicted from the tree-ring dates and the filling sequence of Kiva H.

While pottery averaging is a gross technique and there are discrepancies between the local and non-local estimates, it seems to work well in relation to the tree-ring dates and my expectations based on the architecture and filling of Kiva H.

Other artifacts

Other artifacts from Stix and Leaves Pueblo conformed to general expectations and with the exception of arrow point styles were not particularly useful min distinguishing between the construction and occupation episodes. The arrow point forms did, however, conform nicely to expectations. Late Pueblo I contexts (probably late 9th century) yielded barbed-and-tanged arrow points as well as a few stemmed dart points. The Early Pueblo II (mid to late 10th century) contexts produced typical small deeply corner notched arrow points and Kiva G (mid-eleventh century) contained a set of typical relatively narrow corner notched arrow points with convex bases. All contexts produced points from earlier time periods as well, going well back into the Archaic. This was likely due to the collection of points by the inhabitants and is discussed elsewhere in this report.

Architecture

The architecture we encountered at Stix and Leaves Pueblo generally conforms to the ranges of forms and technologies that could be expected from each of the time periods represented. The paucity of tenth century excavated sites in the region does make it more difficult to know whether or not what we

found is indeed typical, but is seems to well represent an intermediate development from the earlier Pueblo I to the later Pueblo II forms and technologies. The exception to this was Kiva H. While its general form is similar to Late Pueblo I pithouses, the details of its features and construction methods is much more like what one would expect from late eleventh and twelfth century pueblo structures in the 4-corners region. Without the associated artifact deposits I would have been hard pressed to place it in the tenth century.

Part 4 Artefacts

Stix and Leaves Pueblo was rich in artifacts. This is typical for large pueblo sites in the region, however, typical small habitations, especially from Pueblo II and Early Pueblo III times tend not to have such extensive remains (excluding household middens). Most of the artifact inventory from our work at Stix and Leaves Pueblo came from a few specific locations including burned pitstructures and particular rooms, middens and storage features.

Comprehensive analyses of the artifacts has not been completed, but there are enough relatively whole items from good contexts that allow me to characterize the various assemblages. The following represents a selected sample of some of the artifact groups that allow characterization of the remains. I also focus on those items that I deem particularly interesting or unusual. I have chosen to present this discussion in a traditional format based on general material/technological types and then sum it up in a chronological context for each category.

Pottery

It would be non-traditional to start with anything other than pottery. We

recovered a whole range of whole and/or restorable vessels in our excavations and these illustrate well what is represented in the sherd assemblages, with the exception of the redwares. We used standard typological identifications for the pottery but, with the exception of the assemblage analyzed by Scott Ortman, did not distinguish between the local San Juan and the non-local Chuskan types. We have identified it all in the San Juan series, but this of course may be amended during further analyses.

We recovered graywares that are typical of the date ranges of our occupations starting with Chapin Gray and ending with Mancos Corrugated (Figure 4.1).

Figure 4.1. Representative grayware vessels: a) Chapin Gray olla; b) Chapin Gray jar; c) Moccasin Gray jar; d) Mancos Gray neck-banded jar; e) Mancos Gray banded jar; f) Mancos Gray neck-banded patterned jar; g) Mancos Gray Corrugated jar; h) Mancos Gray Corrugated jar; i) Gray neck-banded body corrugated jar, j) Mancos Corrugated jar; k) Mancos Corrugated jar; l) Mancos Corrugated jar.

Late Pueblo I contexts were dominated by Chapin and Moccasin Gray vessels (Figure 4.1 a-c), but also included some Mancos neck-banded. The first Pueblo II occupation had both Mancos Gray neck-banded (Figure 4.1d) and various combinations of neck banding with alternating plain and indented coils (Figure 4.1 f), and indented corrugated that extended down to the shoulder

(Figure 4.1 e, g-h). These forms dominated the second major construction in the Middle Pueblo II and Mancos Corrugated also came into use (Figure 4.1j). Finally, in the mid 11th Century Mancos Corrugated (Figure 4.1k and l) was the main utility ware. There were still, however vessels textured down to the shoulder (Figure 4.1e) and one example of a small jar with neck-banding and an indented corrugated base (Figure 4.1i).

Neck-banding occurred in a variety of forms from flat wide adjacent coils, to 'clapboard overlapping styles to narrow round coils. At least four vessels that had interesting spiral coils (Figure 4.2) were represented by sherds from the fill of Kiva H. What makes these sherds particularly interesting is that the patterns were formed by fully integrated coils rather than the spiral appliqués seen attached to the exteriors of later corrugated, and on occasion earlier, grayware vessels.

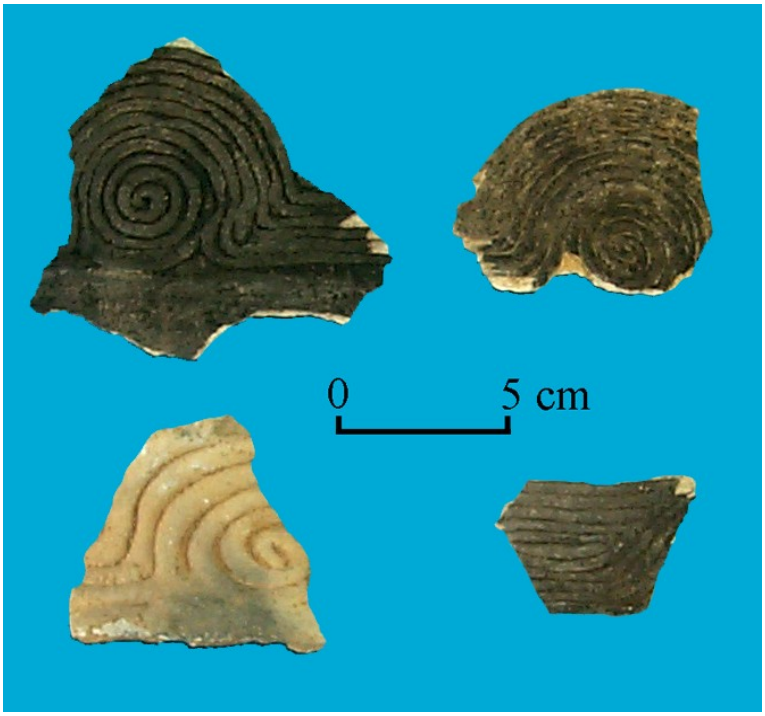


Figure 4.2. Spiral-coiled neck-banding.

Decorated pottery included San Juan whitewares and redwares. There were no restorable redware vessels but sherds of Bluff Red-on-orange, Bluff Black-on-red (Figure 4.3a) and Deadmans Black-on-red (Figure 4.3b) were recovered from various Late Pueblo I and Early Pueblo II contexts.

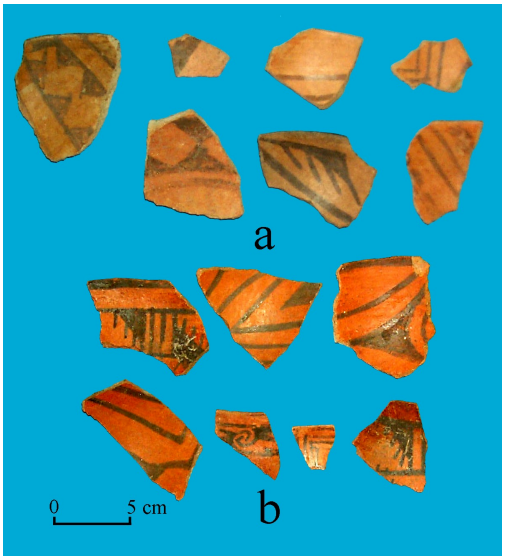


Figure 4.3. San Juan Redware sherds: a) Bluff-Black-on-red; b) Deadmans Black-on-red.

There were no redware sherds from the Middle Pueblo II occupation other than those made into pendants.

Whiteware sherds and vessels were found in all time period contexts. There were no restorable vessels of either Chapin Black-on-gray or Piedra Black-on-white. There were a few sherds in Late Pueblo I contexts. By far the dominant painted type was Cortez Black-on-white (and its Chuskan counterpart in Ortman's analysis). This type came in many sizes and forms (Figure 4.4) and included a range of design elements (Figure 4.5).

Figure 4.4. Cortez Black-on-white vessels.

While Cortez Black-on white and Mancos Black-on-white come in a variety of design styles there is a certain amount of overlap between them. At the extremes of their variation they are relatively easy to separate but when the similarities are considered they grade into each other. This is very apparent in the pottery from Stix and Leaves Pueblo. We saw this with the graywares and it is even more apparent with the black-on-white pottery. Rather than try and force any particular sherd or vessel into one or the other category we have used an intermediate classification for those pieces that exhibit traits of both types. I am calling this class Cortancos Black-on-white. As with all pottery typologies classification is at best subjective. What matters

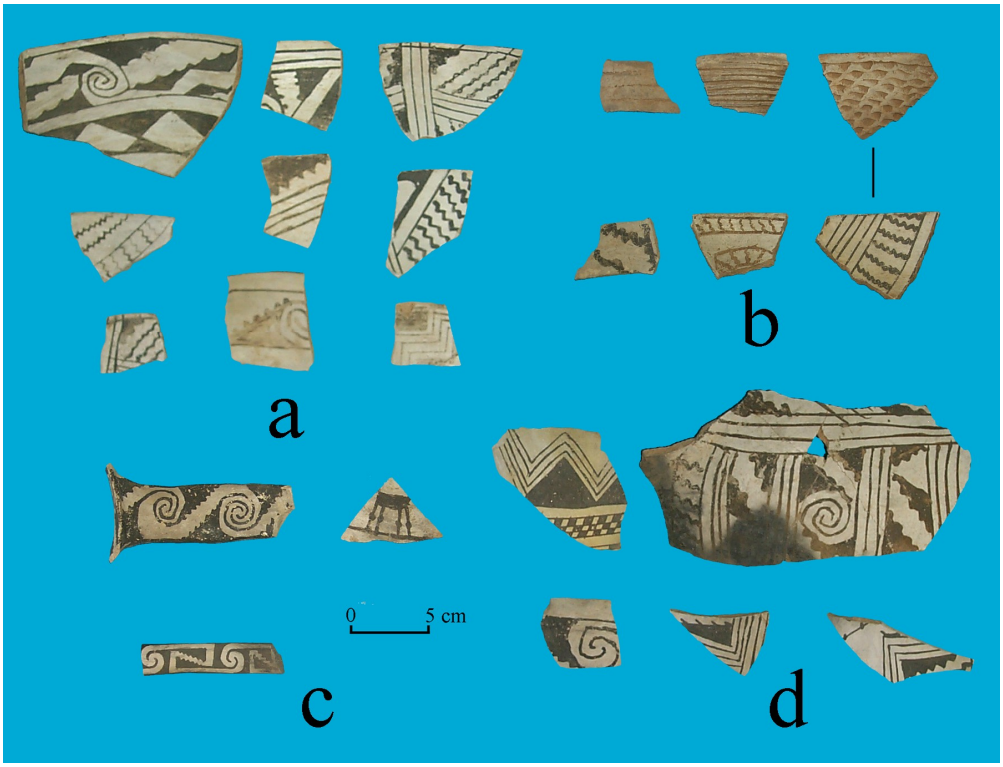


Figure 4.5. Cortez Black-on-white sherds; a) bowl; b) bowl with corrugated exterior; c) handles and animal form design; d) jar and olla.

is what is intended to be done with the accumulated data. In this case, since we have such well dated contexts, the main outcome is just to see what the pottery looked like in a given time and how it changed through time.

Cortancos Black-on-white is basically pottery that shares technological and/or design traits with both Cortez and Mancos Black-on-white (Figure 4.6). It tends to retain some of the curvilinear design elements but the line work is less fine and the spacing between parallel lines is closer together. It also tends to be relatively thicker and less well finished than Cortez B/w. It may also share design elements in mixed motifs. Mancos Black-on-white was the main indicator of deposits from the mid-eleventh century occupation at the site. It was also the only painted type found in Kiva G. A number of whole and restorable vessels

were recovered (Figure 4.7).

Figure 4.6. Cortancos Black-on-white.

Figure 4.7. Mancos Black-on-white vessels: a, c, e-g) Kiva G; b, d) Room 17.

A wide range of Mancos design styles is represented in the assemblage and even in the grouping that was on the floor of Kiva G, all in use at the same time by the same people. A single sherd with a deer figure was recovered (Figure 4.8).

Figure 4.8. Mancos Black-on-white jar sherd with deer figures.

Sherd and Modeled Clay Artifacts

Numerous modified sherds were recovered from all time periods and multiple contexts (Figure 4.9). These took many forms from intentionally

Figure 4.9. A selection of modified sherd artifacts.

shaped to those that look like they may just have been used. These have not been analyzed beyond their simple identification, however all types of sherds were modified. The majority were whitewares followed by redwares and finally graywares.

We also recovered a few artifacts made of modeled clay (Figure 4.10), some obviously parts broken from pottery vessels (Figure 4.10c). One is a fired whiteware 'plumb bob' (Figure 4.10d). There are also baked clay items including stylized human figurines (Figure 4.10a) and 'marbles' (Figure 4.10b) of unknown use.

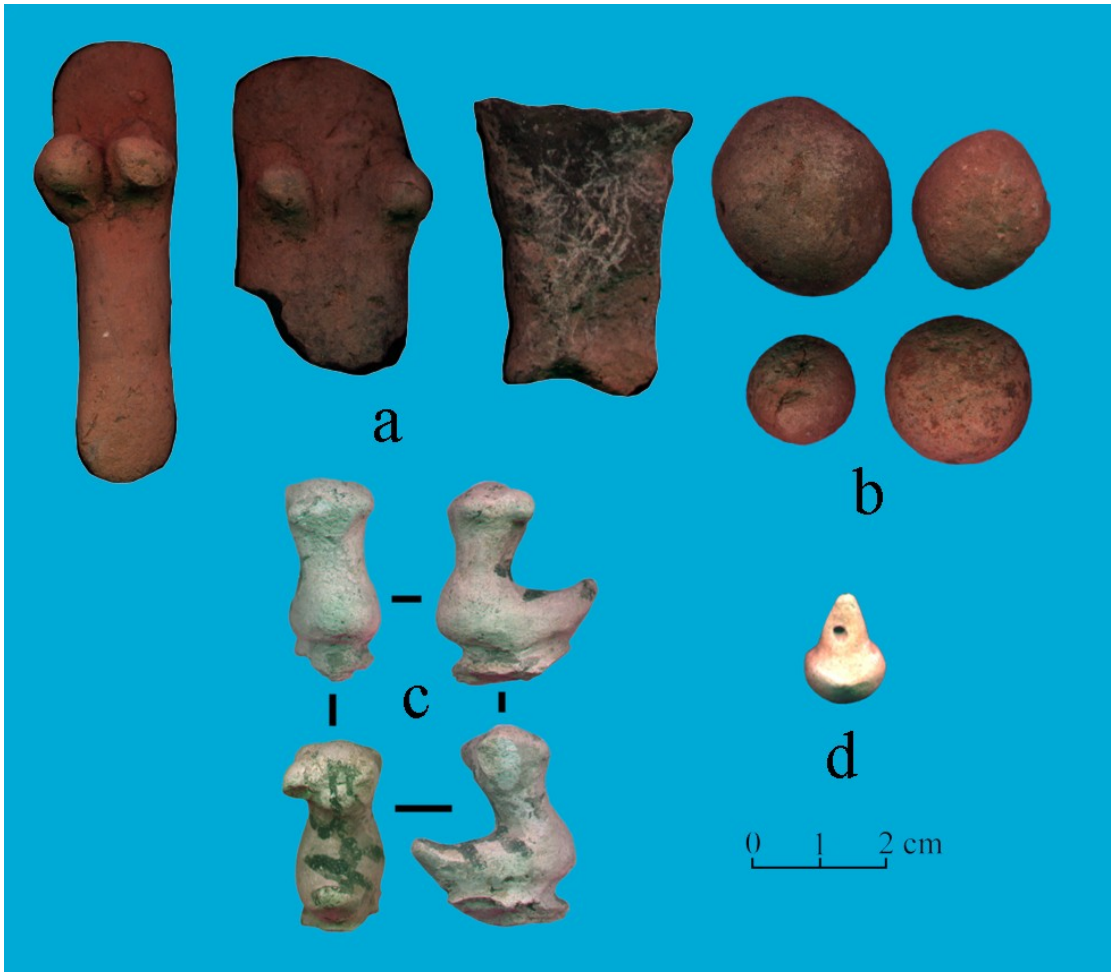


Figure 4.10 Modeled clay artifacts.

Flaked products and flaking tools

Projectile Points

Types

Everywhere we excavated, we encountered evidence of projectile points; manufacture, use, discard, and even collecting. There are dart points from Middle and Late Archaic, Basketmaker II, as well as arrowheads from Basketmaker III (Figure 4.11). These are all from times before the Pueblo was

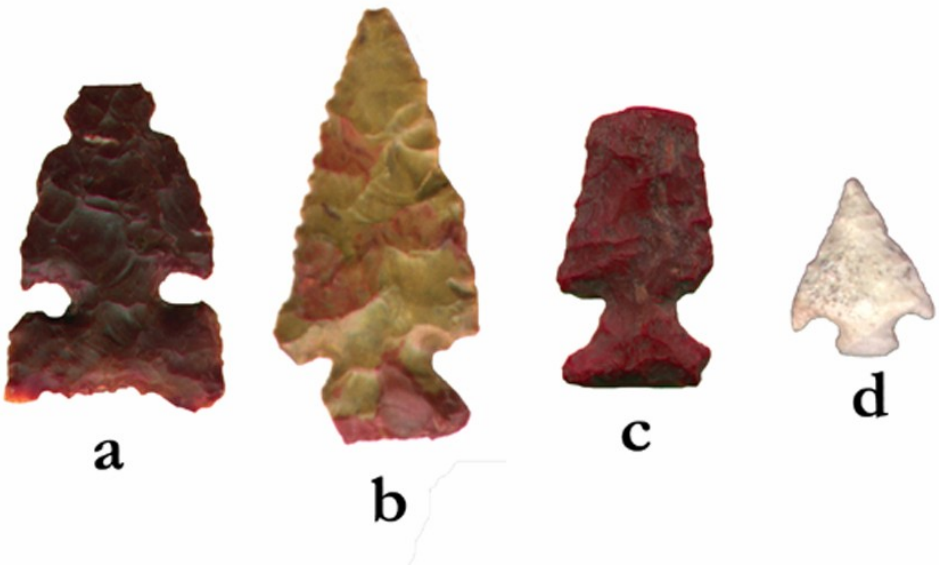


Figure 4.11. Pre-Pueblo projectile points: a) Middle Archaic Mallory point [note notching near broken tip for suspension as a pendant]; b) Late Archaic Elko Corner-notched point [note evidence of heat treatment seen in remnants of red oxidized areas]; c) Basketmaker II point; d) Basketmaker III point.

established. These earlier points are mostly broken and none seem to have been resharpened for reuse as points. But, one and possibly two have been renotched for use as pendants (Figure 4.11a). We found a total of 314 projectile points not including unfinished discarded pieces.

The first points that we find that are clearly associated with the use of the village are of two varieties. We have found several dart points (Figure 4.12a) that on first inspection might be classified as Archaic. However, I have

Figure 4.12. Pueblo I projectile points: a) dart points; b) arrow points.

carefully gone through a lot of site reports on Archaic sites in the Four Corners area, and have found none of these points. The form does occur at other Pueblo I sites, often in direct contact with structure floors, so I am convinced that dart points were being made and used during Late Pueblo I between A.D. 850 and 875. This is curious because dart points, and evidently the atlatl, are not found in the preceding Basketmaker III times. Was the atlatl reintroduced after being abandoned as a weapon? Or could it be that the Pueblo I people were a different group that had retained its use and moved into the area?

The second point style is a tanged arrow point (Figure 4.11b). Many of these points are beautifully made and they are clearly associated with late Pueblo I deposits and structures. They were made in two different ways. Some

were initially formed by controlled percussion flaking while others were made with only pressure flaking. We have a few arrow points that look to be stylistically between the tanged Pueblo I type and the subsequent early Pueblo II (A.D. 925-1040) corner notched style (Figure 4.13). This could simply be the result of flaking mistakes rather than a true transitional style.

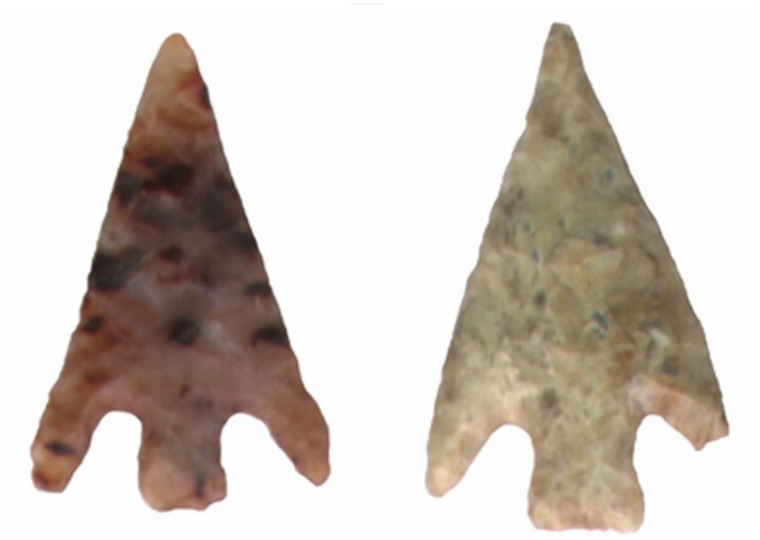


Figure 4.13. Pueblo I- Pueblo II transitional style projectile points?

Early Pueblo II points were also made using both percussion and pressure techniques and there seems to be no change in the technology. The form did, however, change significantly. Where the Pueblo I tanged points have concave sides, flaring ears, and straight to contracting stems, the Early Pueblo II points have slightly convex sides, convex to straight bases, and deep narrow corner notches (Figure 4.14a). Although not seen on all specimens, the narrow notches frequently expand inward, and they are sometimes even slightly curved. The best

pieces are magnificent and, as an accomplished flint knapper, it is hard for me to imagine how the notches were made. We have found antler pressure flakers and even some that look like they may have been notching tools, but none could have been used to make these deep narrow notches.

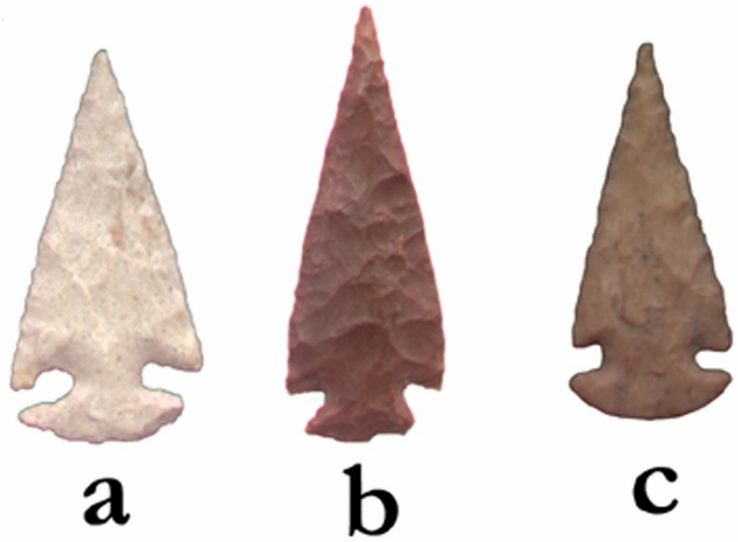


Figure 4.14. Pueblo II arrow points: a) Early; b-c) Middle.

As time went on and we get to what is called mid-Pueblo II (A.D. 1040-1100), the points become narrower the bases more variable, and the corner notches relatively wider and shallower (Figure 4.14b). By the late 1050s there is a distinctive sub-style that has an almost pointed basal convexity, making the indentations fall between corner and side notches(Figure 4.14c). To be sure, quite a few of the points can only be classified as general Pueblo II because they are simply corner notched and lack the distinctive characteristics of the early and mid varieties. Given enough points, it is possible to see a general continuum in corner notched forms.

Manufacture

Of particular interest to me is the large assemblage of Pueblo I and Pueblo II point production failure and discard pieces at Stix and Leaves Pueblo. Two methods were used: 1) percussion shaping and thinning followed by pressure retouch (Figure 4.15); and 2) pressure shaping of a thin flake (Figure 4.16). Percussion flaking could either have been done by hand-held

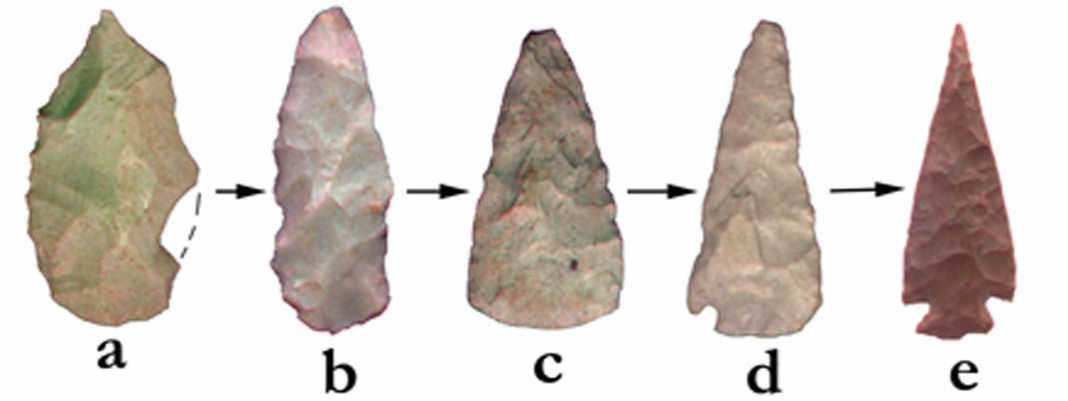


Figure 4.15. Pueblo II arrow point percussion manufacture sequence: a) initial rough out; b) early interval; c) middle interval; d) late interval with one pressure notch; e) finished by pressure retouch and notching.

direct percussion or indirect percussion. Platforms were made by beveling an edge, but grinding and individual platform preparation are rare or absent. This flaking usually used a form of diving flakes that ended in hinge or step fractures near the middle of the preform. The hinges were then picked off by the same sort of flakes struck from the opposing edge. Sometimes this process was unsuccessful and a preform would be rejected because of stacking. All points were finished with pressure flaking. Although it seems strange to me that such small delicate points would be shaped by percussion, the evidence is very clear.

The pressure method started with a thin straight flake. An edge was beveled to form a platform and shaping and thinning progressed in a selective sequence. It is common for some of the original flake surfaces to remain on finished points.

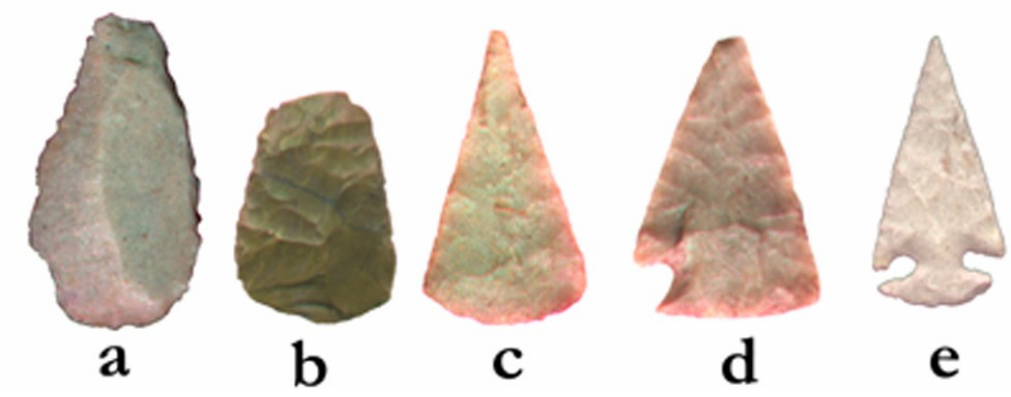


Figure 4.16. Pueblo II arrow point pressure manufacture: a) flake blank; b) Early interval; c) late interval; d) first notch; e) finished.

All stages of manufacture from the simple platform edge trimming on a flake to perverse fractures while notching are present, as well as typical examples of flaking errors (Figure 4.17). In fact my favorite find so far was a

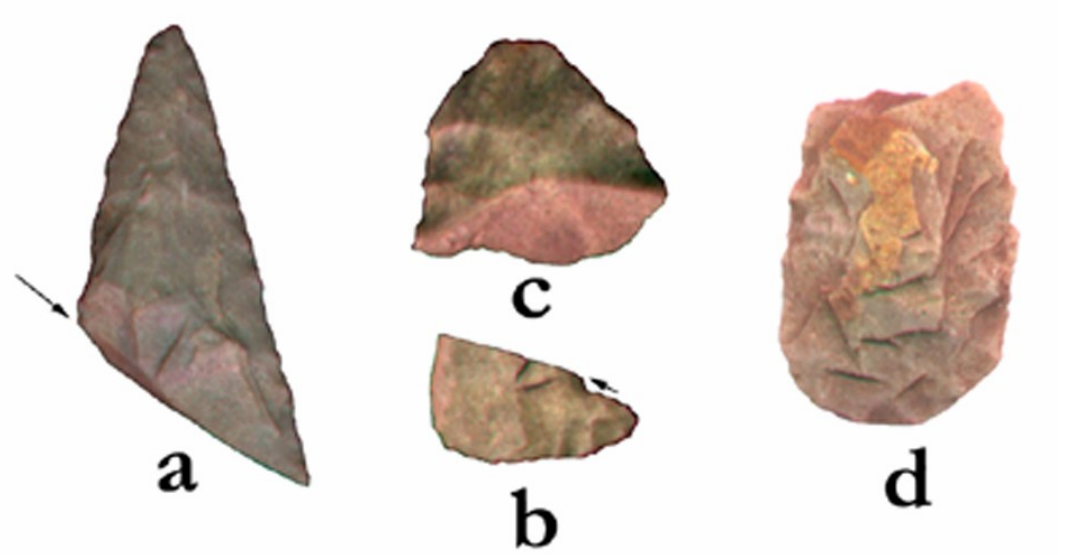


Figure 4.17. Projectile point manufacture errors: a) perverse fracture; b) bend break, possible end shock; c) perverse during notching; d) stacking.

tight cluster of small flakes in the fill of a room. We carefully collected all of the dirt around the cluster and washed it through a window screen. What we had left was a nice collection of small flakes, all of the same local white Dakota quartzite, and both ends of an early Pueblo II arrowhead (Figure 4.18). It had broken during the first notch attempt. Curiously, if one looks closely at the point, when it broke, the notch was already past the midpoint. Even if it hadn't broken, it wouldn't have been possible to notch the other corner as deeply without intersecting the first

notch! It looks like a case of "this is going so well I can't believe it", until the fatal pressure was applied. The small flakes were clearly the remnants of the flakes

Figure 4.18. Early Pueblo II arrow point broken during first notching attempt and flakes from its manufacture.

removed during the points shaping, and most are percussion flakes. It is also apparent that the flaking had been done on a piece of leather or mat and the products carefully discarded in a tight cluster in a partly filled room, or possibly on the roof. The compact nature of the flakes may indicate they were in a small pouch or bag. We have also recovered a number of unfinished pieces that do not exhibit any apparent reason for not being finished. Three even have one corner notch, seemingly lost or discarded before the second notch was made.

Stones used for making the points at Stix and Leaves Pueblo were both local and non-local. Detailed analysis of the flakes has not been done but it looks like the stone type ratios will be similar for the points and preforms. About 60% of the pieces were made from locally available stone (within 20 km or so) with Brushy Basin chert and Dakota quartzite dominating. The non-local stone was coming from a number of sources including the distinctive orange chalcedony from the Chuska Mountains on the Arizona-New Mexico border to the south. We also have a lot of chalcedony, agate, and jasper from southeastern Utah, petrified wood from northwestern New Mexico, and obsidian. The obsidian probably comes from the Jemez Mountains in New Mexico, but this hasn't yet been verified by trace element analysis. It is possible that some of the points made from non-local stones were brought to the site as points, but the presence of flakes and preforms of most of the stone types indicates that stones, or at least unfinished points, were being brought to the site to be worked.

Heat treatment of some of the stones is also clearly present, as seen especially on broken preforms. This pre-flaking treatment was being done mostly on the Utah chalcedonies and agates, but is also evident on a yellow jasper (that turns red on heating).

Eccentrics

Three flaked stone items called eccentrics were recovered from the secondary refuse (midden) in the upper fill of Pithouse 2. This puts them in association with Mancos Black-on-white pottery from the mid-eleventh century. They were all small with one having the general form of a projectile point (Figure 4.19a) and the other two being multi-notched forms (Figure 4.29 b and c). Their use is unknown.

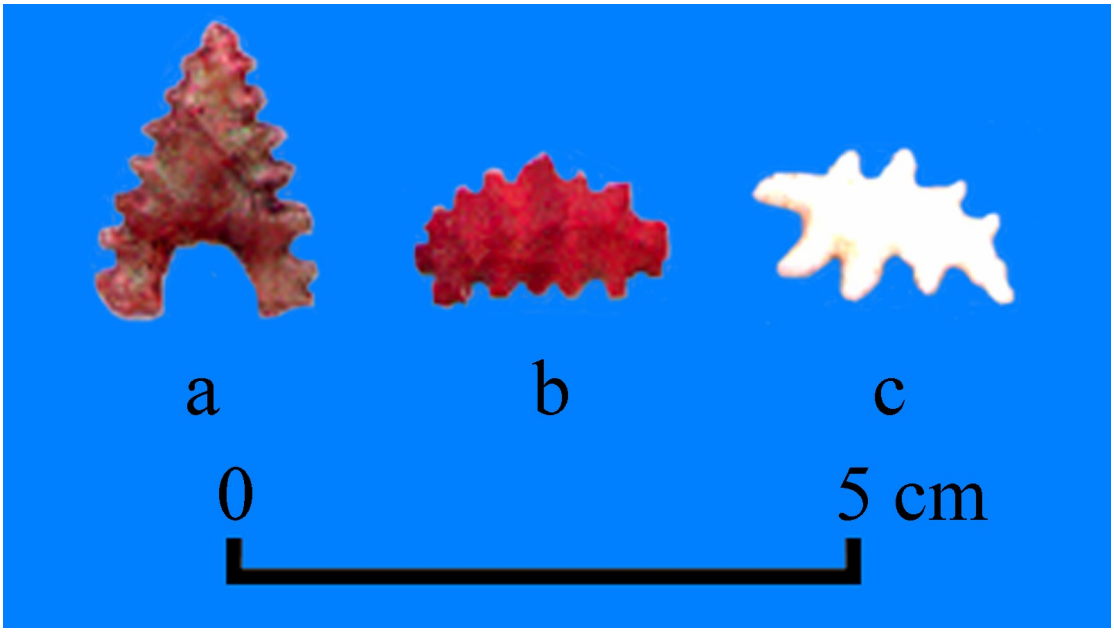


Figure 4.19. Flaked stone eccentrics from Pithouse 2.

Other Flaked Stone

There were many other flaked stone items, the majority of which are flakes and fragments that were collected as bulk samples. These have been processed but not analyzed. Table 4.1 lists the types of flaked stone artifacts and their counts:

Table 4.1. Flaked stone artifacts from Stix and Leaves Pueblo.

Artifact Type	Count
Projectile points	314
Bifaces (blanks)	150
Drills	26
Eccentrics	3
Denticulates	4
Retouched flakes	27
Utilized flakes	22
Mapped flakes	75
Bulk flake samples	433
Cores	249

Material types varied widely with the majority of flakes and cores being of relatively local materials such as Dakota silicified sandstone and Burro Canyon silicified conglomerate. There were also items made from materials from more distant locations but still in the general area such as Brushy Basin chert. More

distant sources were less well represented but still present including chalcedony, jasper, petrified wood, Nabrona Pass chalcedony and obsidian.

Core technology was for the most part expedient flake production with no particular or specialized product apparent. However, technological analysis has not been done.

Flaking Tools

A number of bone and antler tools have been recovered in our excavations that were probably flaking tools. There are two small antler lozenges (Figure 4.20) that may have been used as punches for indirect percussion. One of these exhibits end splintering that is consistent with this type of use. We have also recovered antler tine pressure flakers, and possibly an antler baton (Figure 4.21).

Figure 4.20. Antler punches possibly used for flaking projectile points.

Figure 4.21. Antler pressure flaking tools.

A number of things have been learned about Pueblo projectile point manufacturing from the excavations at Stix and Leaves Pueblo:

1) points were being made during all of the occupations at the site;

2) both percussion and pressure techniques were employed;

3) non-local stones were being brought to the site from many surrounding areas;

4) heat treatment was sometimes being used;

5) Pueblo I people were making and using dart and arrow points;

6) point forms generally conform to the already described types, but excellent context and dating has allowed a refinement so that some Early and Mid-Pueblo II points can be distinguished; and

7) like many other Pueblo people, the inhabitants of Stix and Leaves Pueblo collected old points.

Another observation that seems important to me is the fact that projectile points were being made at the site during all three occupations, even though there were times when the site wasn't occupied. This is in sharp contrast to almost all of the other pueblos in the region where points are scarce and there is little or no evidence of manufacture. Why is this? If, as the evidence seems to indicate, Stix and Leaves Pueblo was the focus of arrowhead making, does this indicate a village level specialization? If it does, we will have to seriously re-evaluate our concept of general village self-reliance and community autonomy, and perhaps even the complexity of social organization of early Pueblo society in the Four Corners region of the Southwest.

Pounding, pecking, chopping and grinding tools

Food Processing

Ground stone artifacts were common throughout the site and consist primarily of implements used to process food, specifically manos (Figure 4.22) and metates (Figure 4.23) for maize grinding, or tools to make and maintain them (Figure 4.24).

All completed manos and metates were of the trough type. The grinding on the mano faces curved up at the ends, fitting in the troughs. The

metates were open-ended trough forms.

Peckingstones (Figure 4.24) were common items throughout the site as well and occurred in structures, courtyards and in middens. They were also in all stages of use from very light to heavy. While the primary use of most of the peckingstones was probably for fashioning and resharpening grinding tools, some were also used for notching axes and mauls and probably for various and sundry other pounding activities.

Figure 4.22. Manos.

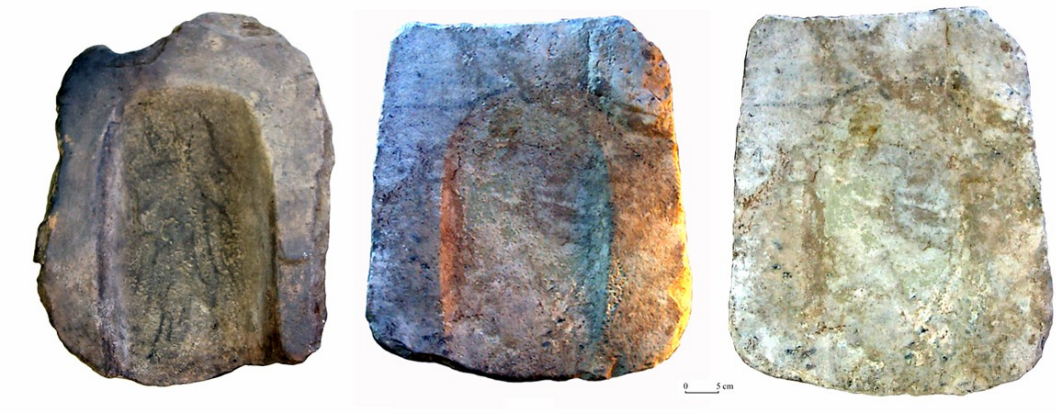


Figure 4.23. Metates.

Axes and Mauls

Stone axes were found in a number of different contexts across the site. They were side-notched and mainly made on river cobbles (Figure 4.25b-f, j). Axes are single-bitted except for one which is double-bitted (Figure 4.25f). There was a preference for igneous stones.

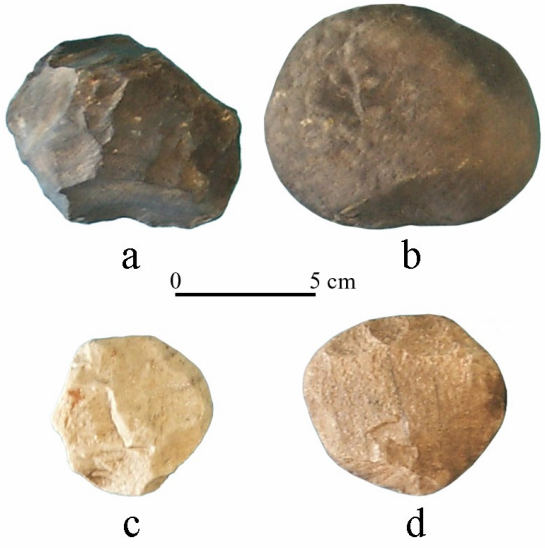


Figure 4.24. Peckingstones for shaping and maintaining manos and metates.

Two of the notched pieces (Figure 2.25h-i) have sharp points rather than beveled bits and these are classified as picks. One broken battered piece is a maul (Figure 4.25l) based on its final use. We also recovered two notched cobbles (Figure 2.25m-n) that did not have any other modification. These were found together in a shallow pit in a courtyard and may have been intended to be made into axes.

Other stone artifacts

There was a range of other stone artifacts recovered (Table 4.2). Some of

these are common daily-use tools (e.g. hammerstones) while others are represented by a single example (Figure 4.26). There are also a number of polished igneous slabs and cobbles (Figure 4.27) that might normally be discounted as just another grinding stone of some sort. However, there is a high correlation between these stones and pitstructures, especially kivas at Sand Canyon Pueblo (a Late Pueblo III site). This correlation extends back into the Early Pueblo II period at Stix and Leaves Pueblo. Of the 8 items

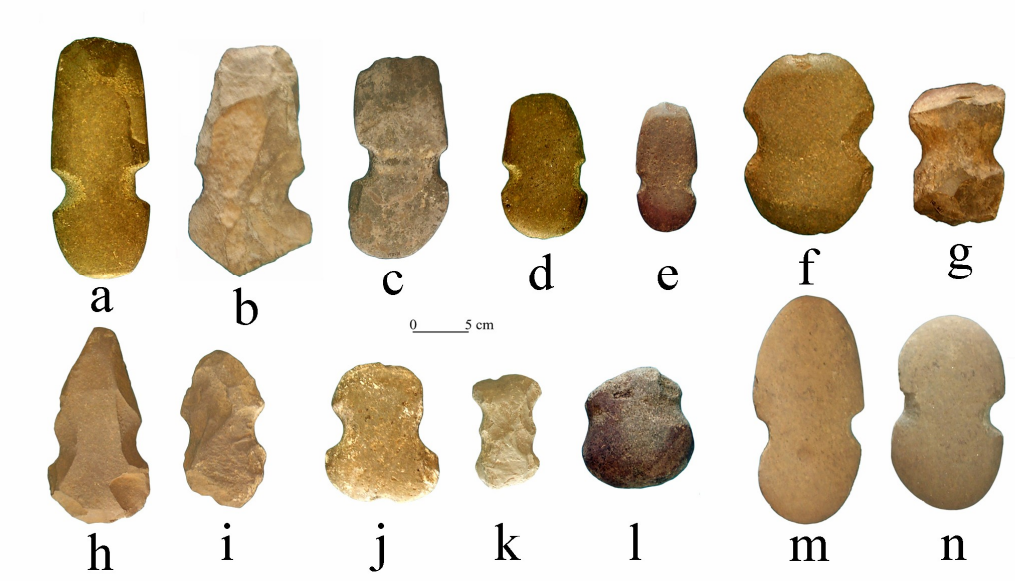


Figure 4.25 Axes (a-g, j-k), maul (l) and notched cobbles (m-n).

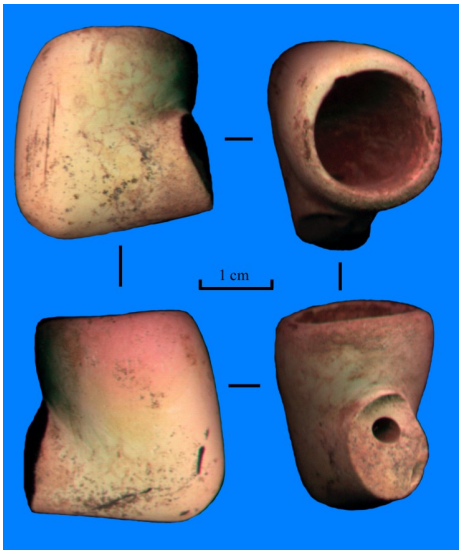


Figure 4.26. Stone pipe bowl.

identified as polished igneous stones, 7 came from pitstructure floors or banquette surfaces (at least one in each structure) and the other came from the floor of Room 28, directly associated with Pithouse 2. None were recovered from other rooms, courtyards or midden deposits. Whatever they were for or represented it was clearly associated with pitstructure uses.

Figure 4.27. Polished igneous cobbles.

Table 4.2. Other ground stone artifacts.

Artifact Type	Count
Abraders	87
Adzes	2
Crushers	5
Cobbles	87
Hammerstones	68
Handstones	11
Pebbles	69
Pipe bowl	1
Polished Igneous cobbles/slabs	8
Polishingstones	3
Pot lids	10
Shaped sandstone	45
Disc	1

Another similar artifact that has a high correlation with pitstructures at Stix and Leaves Pueblo I is grinding slabs set into the floors. These were present in all but one (Pithouse1) of the pitstructures we excavated. They varied in position, stone type and degree of wear, but none of them was evenly worn like it had been used as a metate.

Minerals, crystals and fossils

Several minerals, one quartz crystal and a piece of turquoise were

recovered (Figure 4.28). A group of azurite nodules were located in Room 2 and look to have been in a small jar before it was broken by a collapsing roof. Small fossilized bivalve shells were also commonly recovered from a variety of contexts. These were not modified in any obvious manner. While there is no Mancos shale on-site, these fossils are a common occurrence in it and may have come to the site as pottery clay.

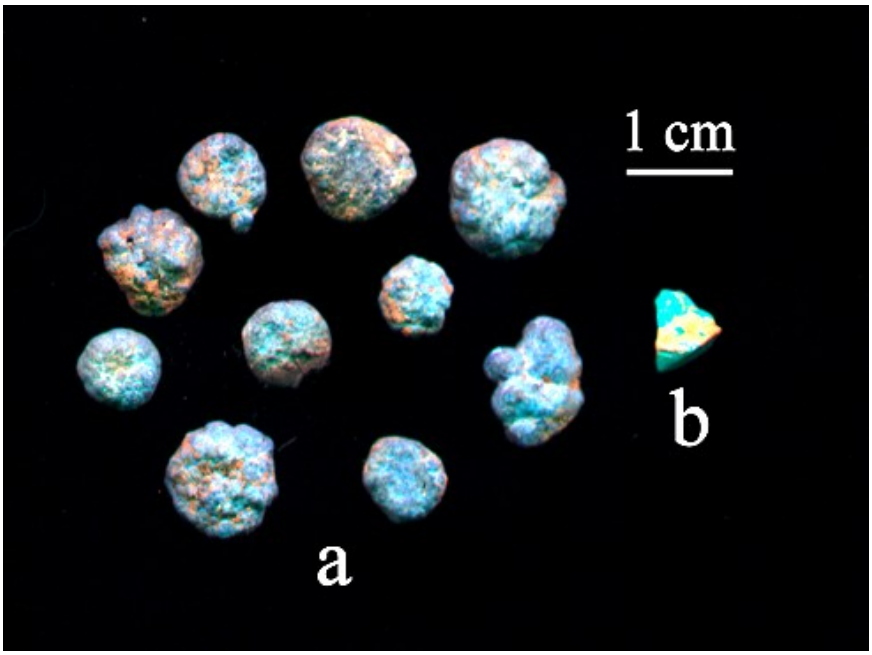


Figure 4.28. Azurite nodules and a piece of turquoise.

Perishable artifacts

The burning and smothering of fires in pitstructures created conditions conducive to the preservation of (charred) organic artifacts and unmodified materials. The most common were of course the burned structural elements such as roof beams and support posts. There were also remnants of roof closing

material; usually sage branches and twigs. There were also fragments of organic artifacts. These have not been studied in detail and I can only superficially describe them.

Planks

There were parts of two planks, one complete in Kiva G (Figure 4.29a) and another on the floor of Kiva K in a cluster of other artifacts and associated with a bundle of pine needles. Both planks had been carefully shaped and were about 3 cm thick.

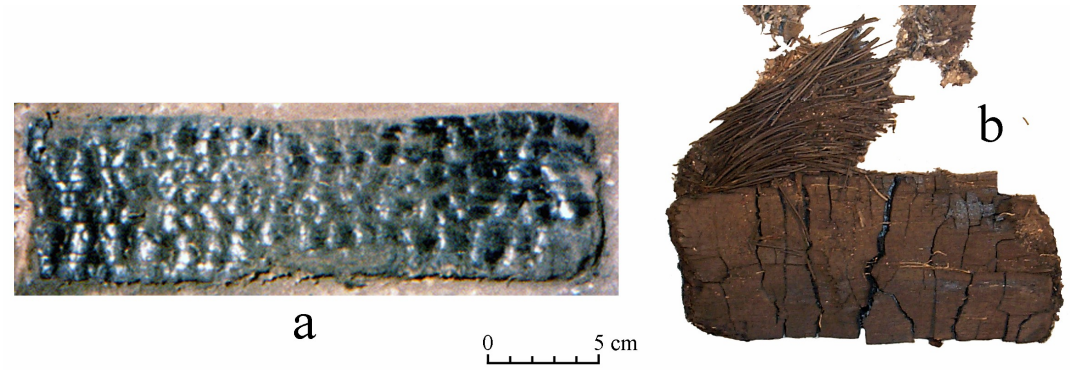


Figure 4.29. Wood planks: a) Kiva G floor adjacent to a stick mat; b) Kiva K floor associated with a bundle of pine needles.

Bow

Approximately ½ of what looks like may have been a bow (Figure 4.30) was found on the floor of Kiva K. It was carefully shaped and seems to have broken in the grip area, although there is no clear evidence of a grip. The end is also without evidence of a bow string attachment, so it is possible that this was not a bow. However, it was carefully fashioned whatever it was.

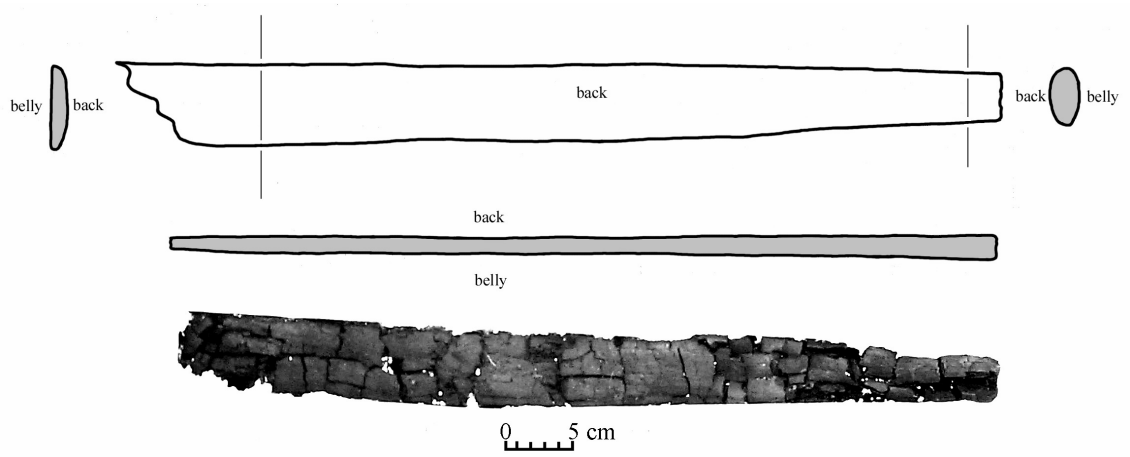


Figure 4.30. Possible bow section.

Stick Mat

A complete but very poorly preserved stick mat was encountered on the floor of Kiva G just to the north of the complex sipapu (see Figure 2.200). It was not well enough preserved to determine how it was held together or what wood it was made from. There are samples that may allow this to be determined.

Bark Cylinder

What looks to be fragments of a poorly preserved bark cylinder (Figure 4.31) were recovered from the floor of Kiva K. It is unknown what bark was used but it looks like either cottonwood or aspen. There was clearly a rim and two small holes had been drilled just below the rim in separated areas. One hole retains a fragment of what looks like cordage. The holes are not next to each other and probably do not represent repair as seen in pottery. All preserved pieces have been kept for future analysis. A more complete example of this artifact type was recovered at Mug House, a Late Pueblo III site on Mesa Verde (Rohn 1971:251)

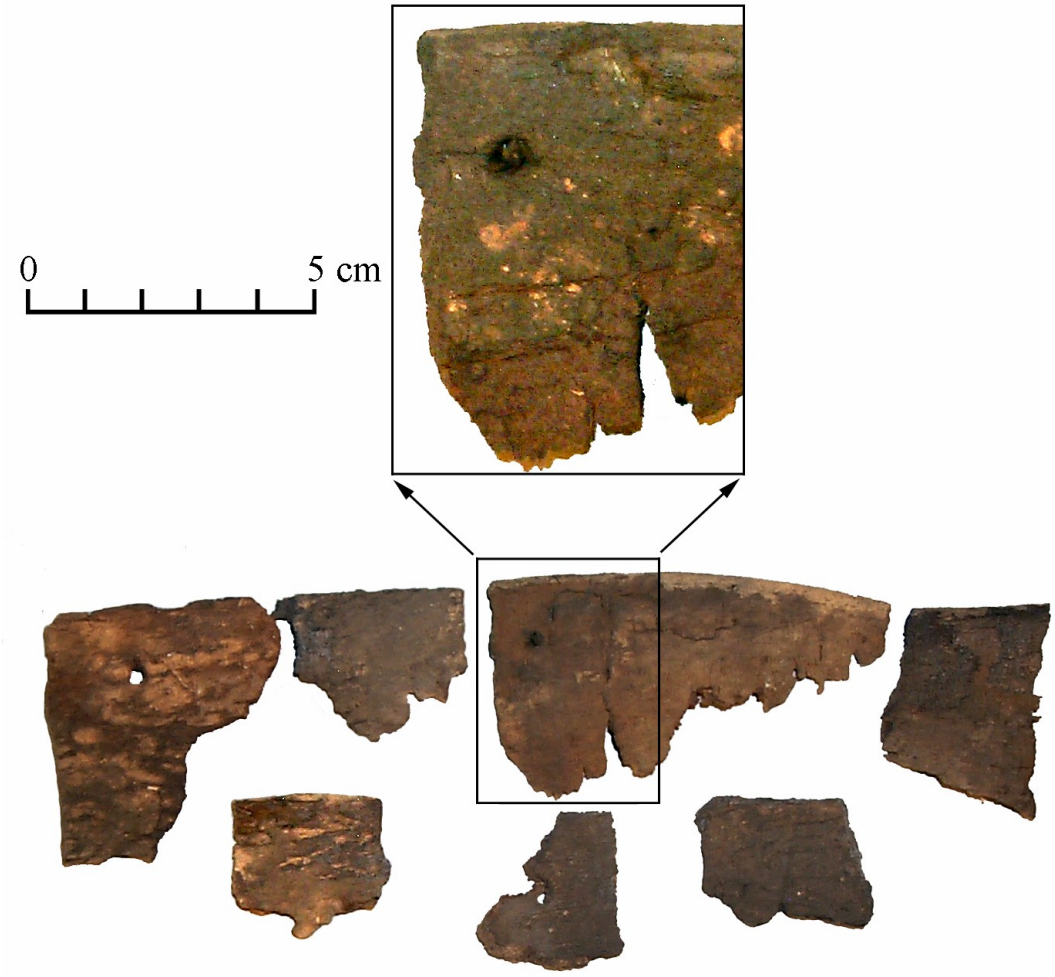


Figure 4.31. Bark cylinder fragments. The upper edge of the top fragments is a well defined rim. Note the two holes, one of which (inset) retains a fragment of cordage or splint.

Coiled Basket

Fragments of a coiled basket were found in the main artifact cluster on the floor of Kiva K. This artifact was badly charred and it was difficult to determine whether or not it was fragmented before the fire. It has very fine stitching and seems to have been of single rod construction (Figure 4.32). It was not possible to determine its original form. All fragments were retained.

Sandal

A poorly preserved woven sandal (Figure 4.33) was also found in the

Figure 4.32. Coiled basket fragments from Kiva K.

dense artifact concentration on the floor of Kiva K. All that could be discerned was part of the outline and a bit of the weaving. It looks like it was a twined (plaited?) yucca sandal. It was adjacent to a bundle of pine needles and the plank. Fragments were collected.

Figure 4.33. Sandal fragments from Kiva K.

Textile Fragment

A fragment of a woven textile (Figure 4.34) was recovered from the floor of Pithouse 1. This has not been analyzed and the technology and

material has not been identified. It was kept for future analysis.

Figure 4.34. Textile fragment from Pithouse 1.

Ladder Lashings

The only other perishable artifact that we found was what looked to be yucca lashings on a long narrow beam that may have been part of a ladder in Kiva K. Samples were kept for analysis.

Bone artifacts

Animal bones, and therefore bone tools, were generally extremely well preserved at Stix and Leaves Pueblo. Finished tools were recovered from virtually all contexts and are for the most part typical of Pueblo I and Pueblo II tools. The bone tools have not been systematically analyzed. Some bone items are reported with an artifact group such as ornaments or jewellery.

Awls

It is not surprising that the majority of bone artifacts fall into the category of

awls (Figure 4.35). Including fragments we recovered 124. They

Figure 4.35. A sample of bone awls from various contexts.

have a wide range of variation but they were almost exclusively made from large mammal long bones.

Needles

Five tools classified as needles were recovered. These were made from long bone splinters, are relatively small and have perforations. These perforations were either cut (Figure 4.36a) or drilled (Figure 4.36b). Cut holes tend to be beveled on the interior and would work better for holding and pulling a sewing element than would the drilled perforations. I do not know how these

tolls were used but their size and relative fragility probable indicate that they were not used for perforating and sewing at the same time. Whether used for basketry or hide work it is likely that stitch holes would have been made first and the needles just used to sew through the holes.

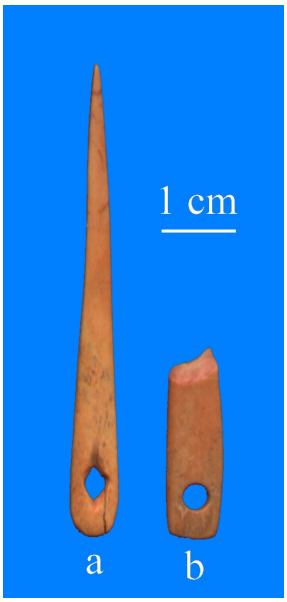


Figure 4.36. Bone needles from various locations: a) cut perforation; b) drilled hole.

Knife Handle

A curious, ingenious and, as far as I know, unique bone knife handle

(Figure 4.37) came from the midden in Kiva H. This was made from the

Figure 4.37. Bone knife handle.

Dice/gaming pieces

Small bone lozenge-shaped items were recovered from various contexts and are identified as dice or gaming pieces (Figure 4.38). These may have been used in games, possibly together with shaped pottery sherds.

Figure 4.38. Bone gaming pieces or dice.

Paho Handles

Several perforated rabbit tibia (Figure 4.39) were recovered from the midden deposits in Kiva K. Previously, these have been identified as bone tinklers but no evidence for this interpretation has been presented. One such object was recovered from a burned kiva at sand canyon Pueblo that retained the end of a feather quill in the reamed out end. This quill was wrapped in cordage and the cord emerged from the small hole drilled in the side and was knotted there. I interpreted this item as a paho (prayer feather) handle. The proximal end of a rabbit tibia is reamed out to open it up to the interior bone cavity. Then a small hole is drilled in the side of the shaft into the interior cavity. It is then possible to thread a fine piece of cordage into the drilled hole to emerge through the reamed out end. The cordage that emerges is then wrapped around the quill

of a feather and the feather quill is pulled down into the central cavity of the bone. The cordage is knotted at the perforated hole, holding the feather in place.

Figure 4.39. Paho handles made from rabbit tibia: a) broken through side perforation; b) complete.

These artifacts are found at many Pueblo sites in the region. They seem to change little through time except that the earliest ones have the side perforation relatively low on the bone while in later times (Pueblo III) the hole has moved closer to the proximal end (see Rohn 1971:249-250).

'Dust Pan'

An extremely unusual, and as far as I can determine, unique bone artifact was recovered from the midden deposit in Kiva H. The best analogy I can come up with is a dust pan (Figure 4.40). This was made from the scapula of a large deer (possibly a mule deer but the final identification has not been done). The

central spine has been cut off and the cuts smoothed over. The distal end of the right side has also been ground to a bevel. A handle was made by fracturing the neck resulting in the removal of the articular end. Finally, the distal end was beveled by grinding. A small piece of the distal edge is missing. I have seen nothing like it in any report from the region and the closest analog I can find are bison scapula hoes from earth lodge villages in the Middle Missouri, which perhaps coincidently date to about the same time period. I am not suggesting they are in any way related, just that they are similar in form.

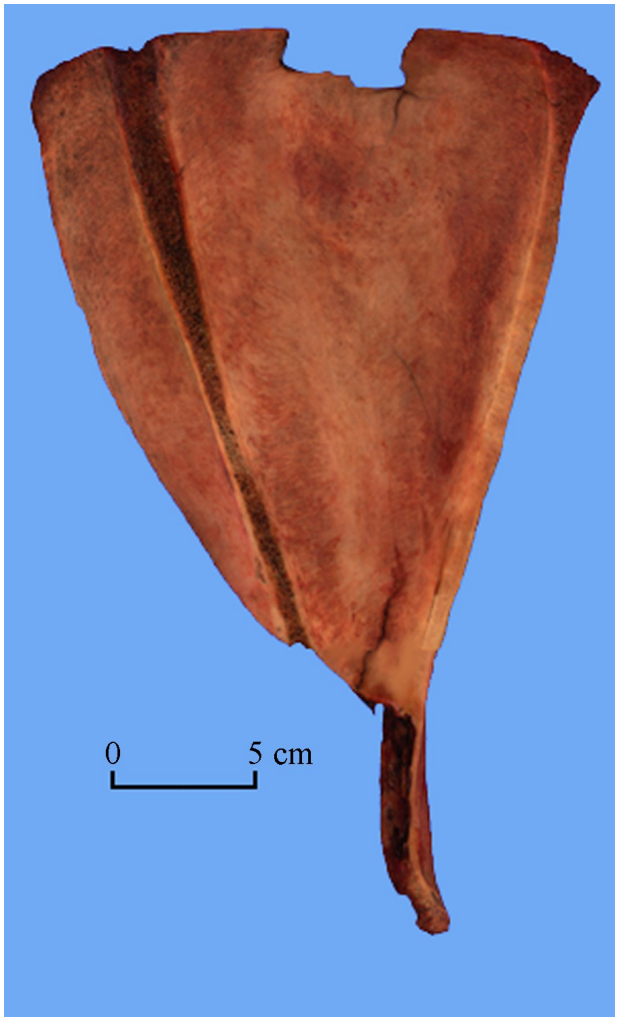


Figure 4.40. Scapula 'dust pan' from midden in Kiva H.

Antler Artifacts

Antler pressure flakers and punches are discussed above and illustrated in Figures 4.20 and 4.21. There are two other antler artifacts that may also have been used in flaking (Figure 4.41). The first is an antler tine that has been carved to produce a squared tang (Figure 4.41a). This could have been a hafting element and the item used as a handled pressure flaker. Unfortunately, the distal end is missing so any wear from use as a pressure flaker is not present.

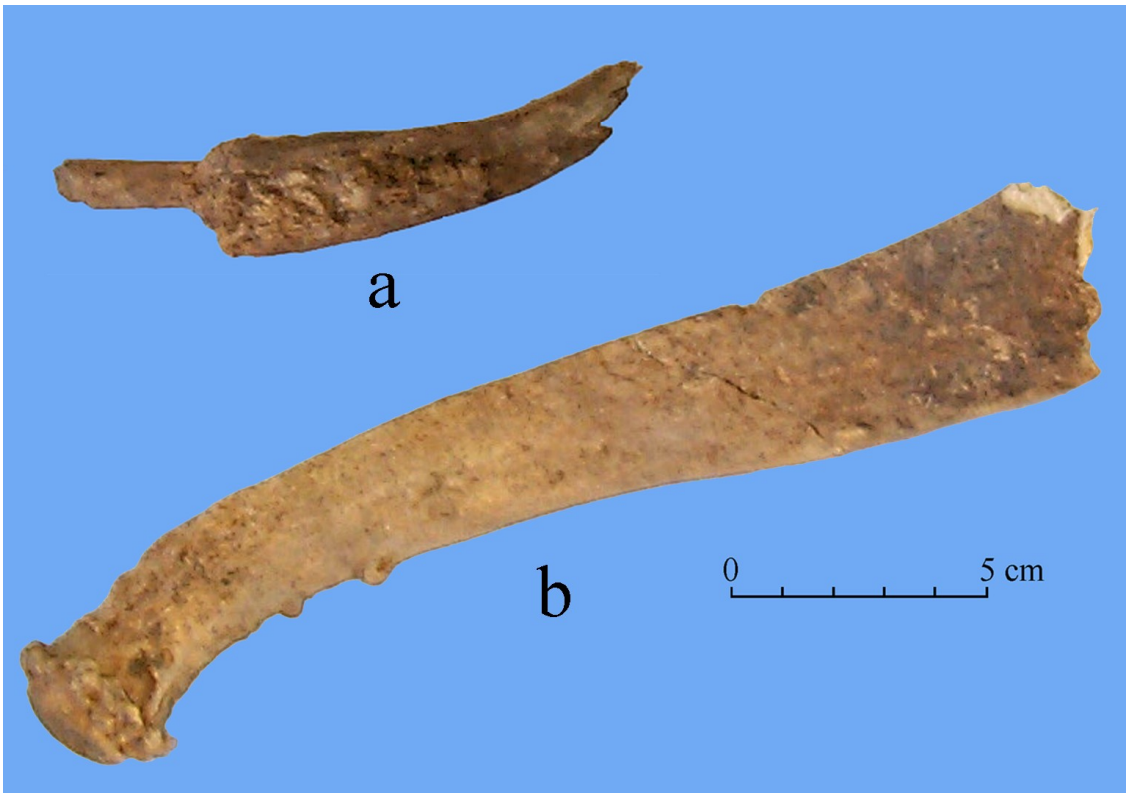


Figure 4.41. Antler artifacts, possibly used for flaking stone: a) tanged tine; b) hammer.

The second artifact is the base of a deer antler (Figure 4.41b). The distal end is missing due to a fresh break, but the proximal end is intact. This shows that the antler was shed. It retains the burr but the end has been carefully rounded by grinding. This is a form that is useful for use as a light hammer, perhaps for percussion flaking. There is no wear that clearly indicates it was used in flaking stone, but microscopic inspection has not been done.

Ornaments

A wide range of ornaments or jewellery (Figure 4.42) was recovered from different contexts. These were fairly common finds, partly because all

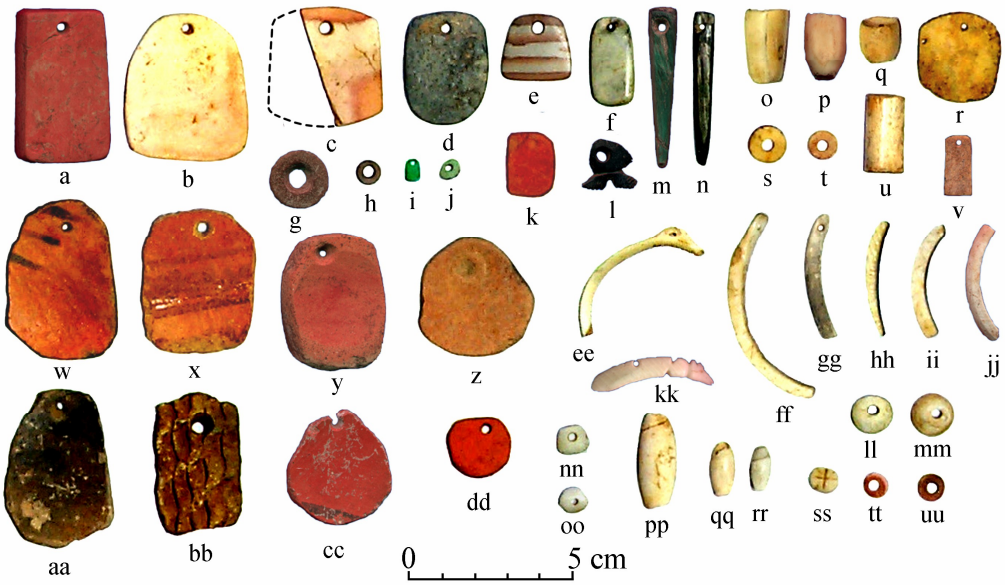


Figure 4.42. Ornaments and jewellery: a-n) stone; o-v) bone, w-dd) pottery; ee-uu) shell.

cultural fills were screened through ¼" hardware cloth. All of the items may be classified as pendants or beads and they were made from local and non-local stones (Figure 4.42a-n), bone (Figure 4.42o-v), pottery sherds (Figure 4.42w-dd) or shell (Figure 4.42ee-uu). Local stones (meaning within the canyon areas west of Cortez) were used but there is a high proportion of materials from outside of the area such as baked shale (Figure 4.42a and k), turquoise (Figure 4.42i and j). I do not know where some of the stones came from. Most of the bone items could have been made from local materials but three (Figure 4.42o-q) are made of an unknown substance, either bone or possibly tooth. Production technology was basic with grinding, polishing and perforation being used in most cases. The pottery sherds were probably obtained from the site, but the San Juan redwares that dominate may have originated to the west in SE Utah. Although detailed analysis has not been

undertaken, the shell items all look to have been produced from marine shells. Bracelet fragments were reworked into pendants and it is likely that the bracelets from which they came originated in the Hohokam culture of southern Arizona. Some of the shell clearly came from the Sea of Cortez (Figure 4.42pp-rr and tt-uu).

A string of mix of white shell and black stone beads was found on the floor of Room 2 near a line of milling bins (see Figures 2.31 and 2.36). Towelling disturbed some of them and it is unclear if they were all part of a single string, but quite a few remained in strung order (Figure 2.36a). Those that remained in strung order were recovered by the removal of a block of floor sediment and they are kept as found. The loose beads were restrung (Figure 2.36b). Detailed analysis has not yet been done. The beads range in size and it is possible that they are graduated. There are not enough visible in the strung position to discern a patter but for the loose restrung beads there are approximately 78 black and 17 white. This means there are about 4.5 black beads for each white bead. We encountered no evidence of disc bead manufacture in our excavations and the materials are not of local origin, so these beads came to the site ready made and probably already strung.

Observations

Objects that were probably used for adornment were not uncommon in our excavations. They have not been systematically analyzed but it is possible to make some observations. Those pieces that were made from local materials tended to be relatively simple with relatively little effort, specifically pendants made from sherds. While it is not possible to determine whether or not bone

items were local, the abundance of animal bone may indicate that most bone ornaments were probably of local manufacture. We recovered a number of shaped sherds that were classified as pendant blanks because they had been partly drilled but the holes hadn't been completed. We also found stone drills that could have been used for the perforations on sherd pendants. I think it is reasonable to conclude that sherd pendants were being made at the site. We didn't find the same to be the case with stone pendants.

Those ornaments made from non-local materials such as turquoise, jet and shell tended to be more elaborate and better made. There are a few exceptions to these general statements. While there was not production of exotic ornaments taking place at the site, or possibly even within the general area, there was a significant source outside of the area, specifically from the south. How these exotic objects came to be at the site is certainly interesting but mainly speculative. When taken as a group they might be explained by invoking trade or exchange, yet this is too facile an interpretation. It is just as likely that the majority were brought to the site by individuals who 'married in' from outside. The large proportion of Chuskan pottery in the Kiva H midden indicates a strong connection to the south and it would only take one or two people to bring their personal belongings to account for the exotic jewellery we recovered.

It is also interesting, however, to examine the final location of the items we classified as jewelry. Those made locally were found fairly well distributed throughout our excavations, with about 70% in midden deposits and 30% in other (non-midden fills and floors). There is a similar distribution for the non-local ornaments with about 67% in middens and 33% in other. Taken as is this would

indicate that there was no difference in where ornaments were in the archaeological deposits. However, these general proportions don't really reflect the real story, primarily because of the way I chose to set my location categories. For example, while there were 33 ornaments from Kiva H, all of the non-local came from midden deposits. Only local ornaments were found on the floor with the rest coming from the midden. In the same way, of the ornaments recovered from rooms all but 1 of the 11 were from mixed cultural deposits, mostly post-abandonment deposits such as wall fall. There were 4 local and 6 non-local. The single non-local item was in the midden deposit. So, what I am getting at is it looks like the majority of non-local ornaments were in midden deposits, specifically in Kiva H. If this is the case, it may support the idea that the midden deposition in Kiva H was special.

Part 5 Environment, Subsistence and Human Remains

Samples of various sorts were collected during excavations. These were selectively collected rather than systematically. These mostly were soil samples for potential pollen, macro-floral, sediment and chemical analyses. Most of these came from sealed contexts but we also collected the fills of intact and restorable vessels.

Twenty samples from hearths were processed and analyzed by Patricia Rude for her MA thesis research at the University of Maine under the supervision of Dr. Kristin Sobolik. The results of this analysis are available from Ms. Rude. There were no surprises.

Carbonized plant remains

Because all but one of the pitstructures was burned we collected a large

sample of carbonized plant remains. These consisted mostly of construction elements (beams, posts, closing material) but also included a sizable sample of corn cobs, kernels and other pieces. We also found organic artifacts. The Middle Pueblo II corn roasting pit produced a massive number of corn cobs with kernels.

Animal Bones

A massive sample of animal bones was recovered in our excavations. These were sent to Dr. Jon Driver at Simon Fraser University for analysis. He had a PhD student, John Heuman, who took this on as his PhD research and he managed to identify them before he had to withdraw for health reasons. His results, though preliminary are none the less interesting. I do not have the break down by provenience but Table 5.1 lists the bone counts by category of analysis. Please note that the "unidentified species" in this table reflect specimens where the element could be identified (e.g. femur) but the species couldn't be worked out. Along with the nearly 17,000 identifiable bones, there were almost another 29,000 unidentified fragments (where the element couldn't be identified).

Table 5.1. Animal bones from Stix and Leaves Pueblo.

Zoological Description		Total
Lagomorpha	Rabbits and hares	1898
Sylvilagus species	Cottontail	6127
Lepus species	Jackrabbit	4555
Sub-total		12580

Zoological Description		Total
Rodentia	Rodents	134
Sciuridae	Squirrel family	227
Marmota species	Woodchuck/marmot	1
Cynomys species	Prairie dog	5

Sciurus aberti	Abert's squirrel	1
Geomyidae	Pocket gophers	135
Thomomys species	Pocket gophers	1
Muridae	Mice and voles	89
Neotoma species	packrat	49
Erethizon dorsatum	Porcupine	14
Castor canadensis	Beaver	3
Sub-total		659

Zoological Description		Total
Carnivora	Carnivores	2
Canis species	Dog/wolf/coyote	554
Canis lupus	Wolf	4
Canis familiaris	Dog	1
Ursus horribilis	Grizzly bear	5
Procyon lotor	Raccoon	1
Martes americana	Marten	1
Mustela species	Weasel	7
Mustela erminea	Ermine	1
Gulo luscus	Wolverine	1
Taxidea taxus	Badger	5
Lynx sp.	Prob. Bobcat	3
Cervidae	Deer family	3
Cervus elaphas	Elk	159
Odocoileus species	Deer	627
Antilocapra americana	Pronghorn	97
Ovis canadensis	Bighorn sheep	32
Bison bison	Bison	1
Large carnivore		2
Medium carnivore		25
Large artiodactyl		139
Medium artiodactyl		764
Large mammal		100
Medium mammal		537
Small mammal		63
Unidentified species		68
Sub-total		3202

Zoological Description		Total
Falconiformes	Hawks/eagles	4
Accipiter gentilis	Goshawk	3
Aquila chrysaetos	Golden eagle	31
Falco sparverius	American kestrel	3

Tetraonidae	Grouse family	7
Dendragapus obscurus	Blue grouse	12
Urophasianus	Sage grouse	26
Meleagris gallopavo	Turkey	214
Zenaida macroura	Mourning dove	3
Strigiformes	Owls	5
Bubo virginianus	Great horned owl	4
Passeriformes	Perching birds	13
Corvidae	Crow family	6
Corvus corax	Raven	5
Pica pica	Magpie	19
Large bird		92
Medium bird		29
Small bird		3
Sub-total		479

Zoological Description		Total
Amphibia		3
Frog		1
Testudinidae		3
Sub-total		7

All Identified Bones	16,926
Unidentified	28,928
Grand total	45,854

Without specific provenience information it is not possible to investigate some of the basic questions that might be asked of such a well-documented assemblage. The first thing to consider from the data at hand is how many of the bones represent natural deposition and how many came to be there through human agency. I suspect that this will be difficult to determine for the small animals that lived in the site after it was abandoned, such as pocket gophers. In other cases, say for deer and elk bones, it is unlikely that they became incorporated in the deposits through natural mechanisms.

Some categories**,** such as the lagomorphs (rabbits and hares) may be well

represented by both natural and anthropogenic processes. I find it curious that some of the species that might be expected to be intrusive, such as prairie dogs and squirrels are poorly represented while others such as porcupine and grizzly bear are equally or more abundant. Prairie dogs live all around the site today and I would have expected them to be common intrusive animals.

While samples as small as a single individual bone may seem insignificant, the species they represent are indeed curious; specifically marmot, raccoon, marten, ermine, bison, wolf and of all animals, wolverine. Other striking occurrences of relative abundance include eagle, various grouse and passeriforms (perching birds). Canine bones are also very abundant. It would be interesting to know if dogs (and their wild cousins) were on the menu.

The relatively high count of turkey bones might be taken as an indication of abundance, but the majority of the turkey bones were recovered as two articulated skeletons from the vent shaft of Kiva G.

Gastroliths

Gastroliths, more particularly gizzard stones, occur in the crops of some types of birds and reptiles. They tend to be small stones that undergo extreme wear and polish through time. In Pueblo sites their presence usually denotes turkeys. Gastroliths were found throughout our excavations. They were never abundant, but we certainly overlooked many of them even though we screened most sediment through ¼" mesh hardware cloth. Examination of their distribution indicates they were deposited at least from Early Pueblo II times. A number were recovered from the midden deposits in Kiva H. It would be nice to have the results of the animal bone analysis to see if the same deposits contained turkey

bones. At this time I am unsure as to whether the gastroliths indicate domestic turkeys or hunted wild turkeys, or both.

Conclusions

There is little to say about either the environment or subsistence at Stix and Leaves Pueblo that hasn't been identified at most other ancient Pueblo sites in the region. The environment was much like it is today, the people were maize farmers and they hunted. It is also likely they collected wild plants for food as well. Only detailed analyses of samples from Stix and Leaves will allow the potential for more refined reconstructions.

Human Remains

The remains of four individuals were encountered during our excavations; a foetus, a small child and two adults. These were analyzed by Cynthia Bradley and are described with the architectural units in which they were found. The remains were removed to the lab for study and subsequently collected by the Colorado State Archaeologist's representative and removed to Denver. Their ultimate disposition was not revealed to us. While this procedure follows the regulations of State law, the landowner and I would rather they had been reburied where they were found.

Part 6 Synthesis, interpretations and conclusions

Settlement

Excavations at Stix and Leaves Pueblo included one roomblock (F) and associated structures and extramural areas (Figure 6.1). This is only one

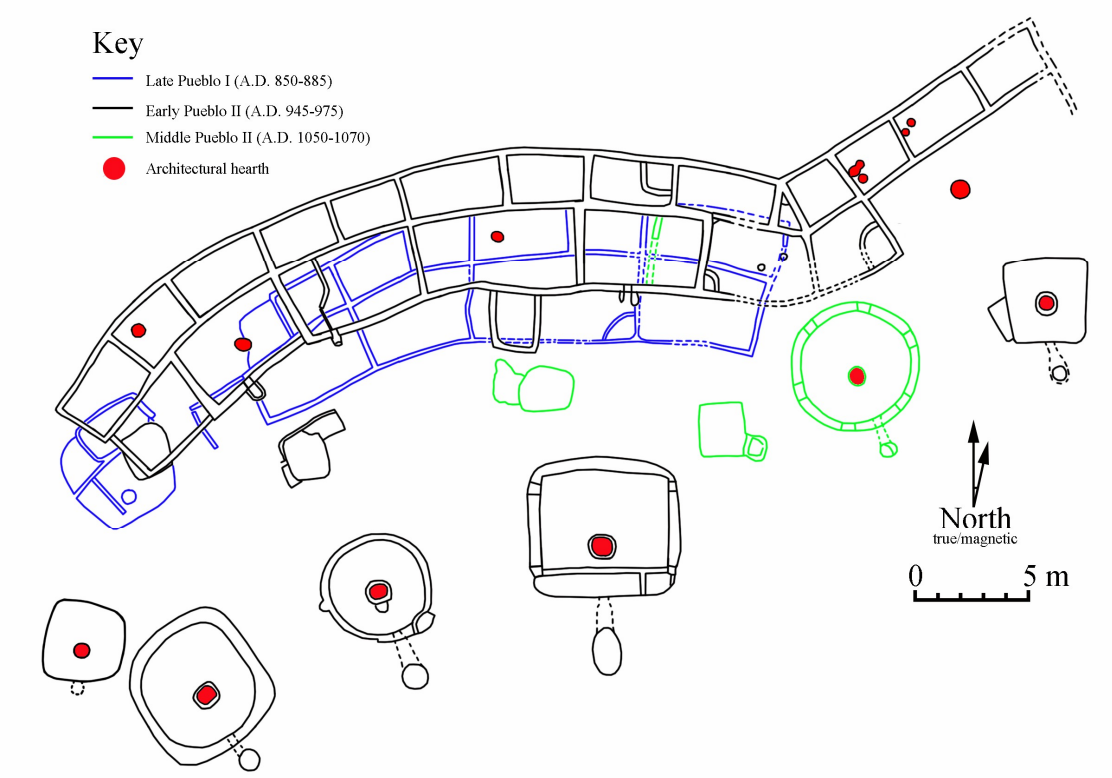


Figure 6.1. Architecture of Roomblock F and associated structures.

of several architectural blocks present at the site (Figure 6.2). The dating of the most of the other roomblocks is unclear from surface indications but another line of roomblocks (Figure 6.2 C-E) look to be an off-set extension that curves around to the southwest and is probably mid- to late 10th century.

The only other surface indications that have clear chronological placement are a separated small unit pueblo (Figure 6.2H) to the south of the east end of the settlement, dating to the 11th century, and a large Late Pueblo I midden between it and the eastern roomblocks. This midden was extensively disturbed in modern times. It is unclear when the eastern

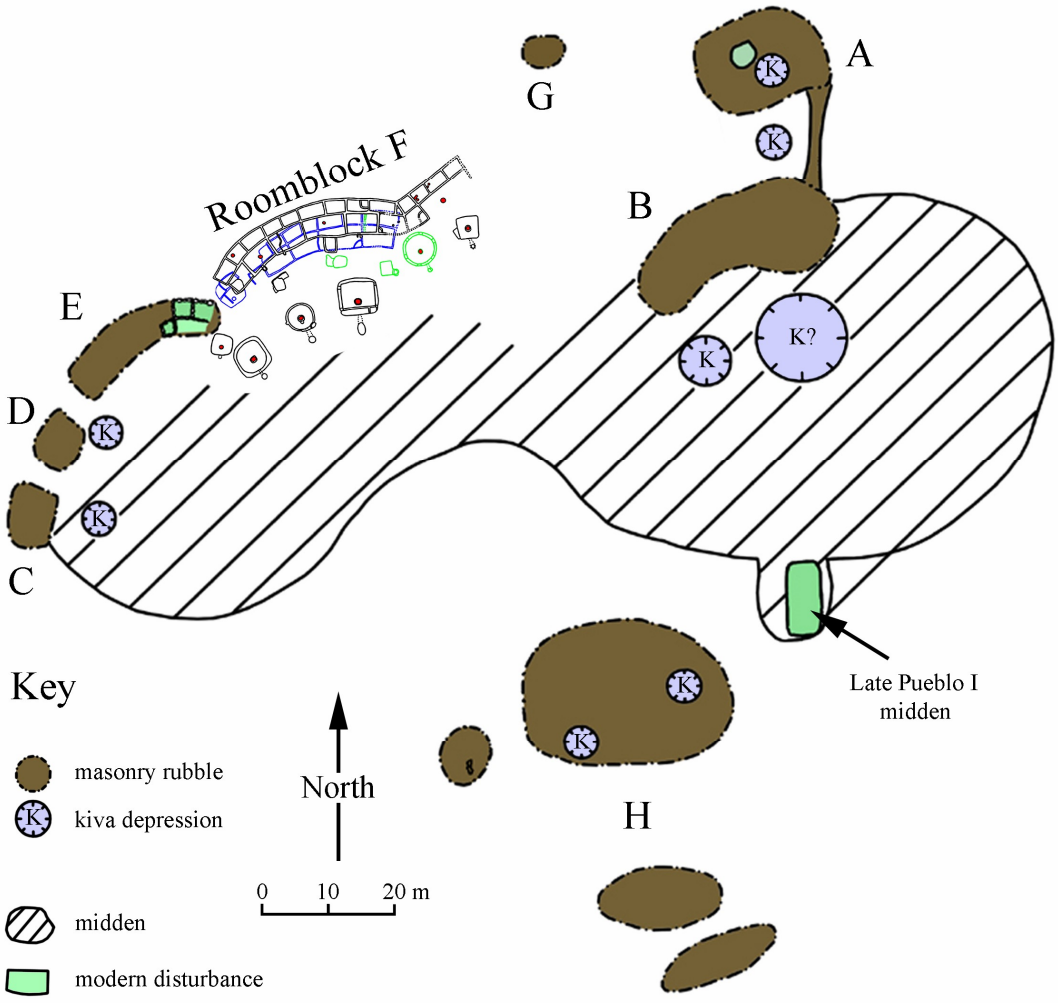


Figure 6.2. Settlement plan showing surface indications and excavated Roomblock F and associated structures.

roomblocks (Figure 6.2A and B) were built and occupied but I suspect that there is a substantial Late Pueblo I occupation, perhaps built over in the mid-tenth century, as we see in Roomblock F. A large shallow depression in this area may be a great kiva. A small roomblock (Figure 6.2G) in the north central area is not associated with anything clearly datable. There are undoubtedly additional pitstructures and other extramural features that do not show on the surface. There are no indications of any construction or use after the 11th century until

historic times.

Dating

Thanks to the number of burned pitstructure roofs there is precise dating for construction events for the Pueblo II parts of Roomblock F. Unfortunately this is not the case for the Pueblo I structures. I am estimating the Pueblo I roomblock to have been built in the mid to late 9th century based only on architectural forms and associated artifacts, specifically pottery and projectile point forms. I am fairly confident in this chronological placement because of the great similarities between our evidence and other well dated Late Pueblo I sites in the region.

I would have been less confident of the Early Pueblo II dating as there are few comparable sites that have been excavated, dated and reported in the region. Our evidence is certainly the best to date from the 10th century. The mid-Pueblo II occupation would have been fairly easy to estimate chronologically without the tree-ring dates, again because of many local comparisons. Never the less, the exact timing of the construction of Kiva Unit G is of some local and regional interest as it occurred just when major construction was occurring in Chaco Canyon as well as within the decade of the first Great house construction at Wallace Ruin, a Chaco Outlier, in the eastern Montezuma valley.

To summarize the evidence from our excavations there was a roomblock of unknown function built in the mid to late 9th century. It is unclear if there were any directly associated pitstructures but there is a possibility that there was a large pithouse (Kiva H). However, there is ample evidence elsewhere on the site of intensive Late Pueblo I habitation in the form of a substantial midden.

There was a major construction episode in the A.D. 940s-950s with the building of Roomblock F, Kiva H (or renovation), Kiva K and Pithouse 2. It is not clear how the major portion of Roomblock F was used as while the architecture is typically what one would expect; the internal features are less clear as to how it was used. There is not enough evidence in many of the front rooms to indicate continuous habitation. The roomblock (F) and kiva (H) construction was according to a plan and of a significant scale. It was preceded by the construction and use of two small pitrooms, which may have served as temporary shelters during construction. A north eastern extension was added to the roomblock at the end of the 940s as well as Pithouse 2 in A.D. 949. This architecture was clearly designed and used as a kitchen (food processing and cooking).

While all of this was going on, beams were being stockpiled for the construction of a kiva (at the western end of the roomblock) four years later in A.D. 953.

The duration of the use of these structures is unclear and they may have continued in use for a couple of generations. At some time in the A.D. 960s-970s Kiva H was abandoned, partly dismantled and became the main repository for multiple episodes of midden deposits. The amount of midden was huge and consisted of large quantities of ash and artifacts, many of which were intact and would have been serviceable. Abundant artifacts included projectile points and the debris from their manufacture and ornaments made from non-local materials. There were also masses of animal bones, many from large mammals, some as unusual as grizzly bear and wolverine, to various birds including eagle, and many of the bones were complete.

While there were large quantities of pot sherds, these did not constitute whole smashed vessels. A detailed analysis of a large sample of pottery by Scott Ortman indicated a strong connection with the Chuska area to the south.

The nature of the midden deposits, episodic, as well as the contents lead me to suggest that this represents a multi-year, probably ritual deposit that related to ceremonial activities that included feasting, especially on meat. Who was involved in these ceremonies and from where they came is speculation, but the Chuskan pottery, ornaments made from exotic materials (mostly southern) and the presence of flaked stone materials, also from the south suggest to me that people may have been coming fairly long distances to participate.

Many analyses remain to be done and the results could certainly influence or even radically change this initial interpretation, but perhaps it might serve as a testable theory for future work.

In A.D. 969-970 Pithouse 1 was constructed followed four to five years later by Kiva I in A.D. 974. It is unclear if the earlier structures were still in use, although I suspect they were not. It is however likely that Kiva H was still in use as a midden depository. The results of dating based on pottery type averaging support this conclusion. After an unknown amount of time Kiva I was re-roofed and seems to have changed from a 'typical' kiva use of habitation and household ritual to mainly habitation (based on the paucity of ritual features, the change to a four post roof and the abandonment artifact assemblage). The length of occupation is not obvious although there is little evidence of long-term use after the remodelling. If Kiva K and Pithouse 2 were already burned and collapsed it is interesting that their depressions were not used for midden deposition at this time.

Finally, in the mid-eleventh century (A.D. 1050-1055) Kiva Unit G was built, managing to avoid overlapping with any of the earlier structures except where parts of Roomblock H were renovated and reused. This was confined to a single room and some extramural areas. There was no separate roomblock constructed at this time in the area we excavated. There was another sizeable mid-Pueblo II unit built at the south end of the site that may be related to this occupation. It is clear that all of the earlier pitstructures were in ruins by the mid-eleventh century as they had not only burned and collapsed but partially filled through natural erosion before they became the locations of midden deposition in the eleventh century. The architecture also included two pit rooms; a separate milling structure and an unusual sweat house. Along with a courtyard food processing area there was also a large, seemingly single use, corn roasting pit that may have been unsuccessful.

This final use of the site (at least in our excavated area) looks to have come to an abrupt end with the abandonment of Kiva G continuing an in-tact artifact assemblage (defacto refuse). I have constructed a possible scenario where personal tragedy (not related to violence) led to this abrupt departure.

People and Society

As with any settlement with a complex history it is difficult to feel confident in interpreting the social scale at any given moment of time and through the life of the settlement. This is especially the case when only part of it has been excavated. Never the less it is appropriate to make some statements about what the evidence in hand might indicate. Our evidence indicates that the Late Pueblo I construction was either not completed or inhabited full-time or it was built as a

place for people to visit and use on an occasional basis. This could perhaps have been a special function structure related to community activities that involved multiple settlements; a community center. On the other hand if there was a large Late Pueblo I habitation in the eastern area of the settlement, this could have been ancillary architecture that served it and not a larger community. The ambiguity of the presence of an associated pitstructure makes interpretation especially tenuous.

In the mid-tenth century another significant roomblock and a large associated kiva was constructed on top of the Late Pueblo I architecture. Some of the walls of the earlier rooms were used a footers for this new roomblock, but it was larger and this direct overlap broke down as the structure advanced to the west. Never the less the basic arcing form was retained. The lack of clear evidence of intensive use of the roomblock and the size and internal features of the kiva again suggest a special, probably community and ceremonial function for this construction. The size of the community it may have served is again a matter of speculation but the paucity of 10th century sites in the area may indicate that this was part of a larger regional development.

Never the less there was some habitation but our excavations indicate this was also on a small, probably single household scale. The unexcavated roomblocks to the east, should they turn out to have been 10th century, could easily change this interpretation.

This unit seems not to have lasted for very long but the abandonment of the kiva, occurring at or soon after an unusual intramural burial, did not signal the end of the special nature of this site. The kiva became the locus of intermittent

intensive ritual midden deposit over a significant stretch of time. The artifacts in these deposits may indicate that people from as far away as the Chuska area to the south were coming to the site. The duration of the deposits argues against the Chuska pottery being there as the result of a colonizing group.

The abundant evidence of projectile point manufacture at this site,

seemingly during all of its uses and including exotic materials from the Chuska, Chaco and SE Utah areas may suggest that there was some form of craft specialization associated with this particular locality. The choice of this location is difficult to explain in terms of local resources. There are no significant sources of flakable stone in the vicinity and there is no indication that other resources related to arrow making would have been unusually abundant nearby. So why here? If it was only related to a single occupation one could easily suggest that it was just the product of an individual or household that was particularly focused on this activity. Its occurrence throughout the use of the site is a different story, unless we want to suggest that settlement craft specialization was developing. This may have been the case. With my propensity to see Pueblo life imbued with ritual and sacred activities and my conviction that the historic importance of projectile points in ritual and ceremonial life, I can't help but wonder if this was the locus of the manufacture of points for these purposes. There may have been a religious significance ascribed to the location that related to projectile points

The final use of our area of the site seems to have been by a young family starting out to build a new life. This single household may have been a spin-off from the larger unit to the south or could have been unrelated to it. Without

excavation and good dating of that unit this will remain unknown. In any case this budding occupation seems to have been cut short after only a few years. The site was not to be used again until more than eight hundred years later

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