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Excavations at Dos Casas Hamlet (Site 5MT2193)

A Basketmaker III/Pueblo I Habitation Site

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16. Abstract

Dos Casas Hamlet (Site 5MT2193) is a small Basketmaker III/Pueblo I Anasazi site located approximately 8 km northwest of the town of Dolores, Montezuma County, Colorado. During the summer of 1978, the University of Colorado excavated the site as part of first-year operations associated with the Dolores Cultural Resources Mitigation Program. These investigations recorded two prehistoric pithouses and an arc of associated surface rooms and outdoor occupation areas to the north at Site 5MT2193. The pithouses are aligned north-south with the ventilator tunnel of the northern structure dug through the northern wall of the southern structure, indicating that two occupations, or elements, were present, perhaps both using the same group of surface facilities. These two hypothetical elements are borne out by the tree-ring dates recovered from the two pithouses. The more southerly house (Pithouse 1) was constructed around A.D. 760 and Pithouse 2 was constructed approximately 10 years later, about A.D. 770. The site is located in the Sagehen Flats Locality, Escalante Sector, Yellowjacket District, and was occupied during the Sagehen Phase (A.D. 600-850). The site is classified as a small hamlet or semipermanent to permanent habitation and is inferred to have been the abode of a family unit (perhaps six to nine individuals) practicing small-scale agriculture in the local area. This family is postulated to have been one social unit of the West Sagehen Neighborhood, a local dispersed Anasazi community inhabiting the area in the eighth century A.D.

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ABSTRACT

Dos Casas Hamlet (Site 5MT2193) is a small Basketmaker III/Pueblo I Anasazi site located approximately 8 km northwest of the town of Dolores, Montezuma County, Colorado. During the summer of 1978, the University of Colorado excavated the site as part of first-year operations associated with the Dolores Cultural Resources Mitigation Program. These investigations recorded two prehistoric pithouses and an arc of associated surface rooms and outdoor occupation areas to the north at Site 5MT2193. The pithouses are aligned north-south with the ventilator tunnel of the northern structure dug through the northern wall of the southern structure, indicating that two occupations, or elements, were present, perhaps both using the same group of surface facilities. These two hypothetical elements are borne out by the tree-ring dates recovered from the two pithouses. The more southerly house (Pithouse 1) was constructed around A.D. 760 and Pithouse 2 was constructed approximately 10 years later, about A.D. 770. The site is located in the Sagehen Flats Locality, Escalante Sector, Yellowjacket District, and was occupied during the Sagehen Phase (A.D. 600-850). The site is classified as a small hamlet or semipermanent to permanent habitation and is inferred to have been the abode of a family unit (perhaps six to nine individuals) practicing small-scale agriculture in the local area. This family is postulated to have been one social unit of the West Sagehen Neighborhood, a local dispersed Anasazi community inhabiting the area in the eighth century A.D.

INTRODUCTION

Dos Casas Hamlet, Site 5MT2193, was selected for excavation by the Dolores Archaeological Program (D.A.P.) because initial survey reports and later field inspections indicated that the site offered an opportunity to study a small Sagehen Phase (Basketmaker III-Pueblo I period) habitation site. Sites of the "hamlet" type such as Site 5MT2193 are the most numerous site type represented in the Sagehen Flats Locality of the D.A.P. project area; additional information about this site type should lead to a clearer understanding of the local Sagehen Phase community. Like most of the sites in the Sagehen Flats Locality, Dos Casas Hamlet has been disturbed by recent agricultural and grazing activities. Jacal rubble distributed over the surface of the site suggested that surface structures, as well as pitstructures, might have been present at one time. The large quantity of jacal rubble present was unique to Site 5MT2193. It was expected that preservation of these different types of structures at this site would allow information to be collected on site layout, use areas and houses, activity areas, and on the functions of such cultural loci.

Acknowledgments

Archaeological investigations at Site 5MT2193 began on 2 August 1978 under the supervision of Alice M. Emerson. Joel Brisbin assumed direction of excavations at the site on 9 October 1978 and supervised operations there until 24 November 1978, when bad weather ended work for the season. Work at this site was completed in the spring of 1979 under Brisbin. A total of 557 person-days were expended in fieldwork at Site 5MT2193: 26 of those person-days were provided by Youth Conservation

Corps crew members, 128 person-days by Young Adult Conservation Corps crews, and the remainder by Dolores Archaeological Program staff affiliated with Washington State University and the University of Colorado.

Location

Dos Casas Hamlet is located in Montezuma County in southwestern Colorado (Figure 5.1). On the U.S.G.S. Trimble Point 7.5 Minute Quadrangle Topographic Map, the site lies in the Northwest Quarter, T38N, R16W, Sec 35. Universal Transverse Mercator grid coordinates are zone 12, 714,041 E, 4,154,654 N. The site lies at an elevation of 2118 m on one of a series of low, north-south trending rises which contribute to the rolling uplands of the Sagehen Flats area. The rise on which Dos Casas Hamlet is located is close to the center of the Sagehen Flats Locality. The site overlooks the Sagehen Marsh 0.8 km to the south; the Dolores River is 3 km to the east.

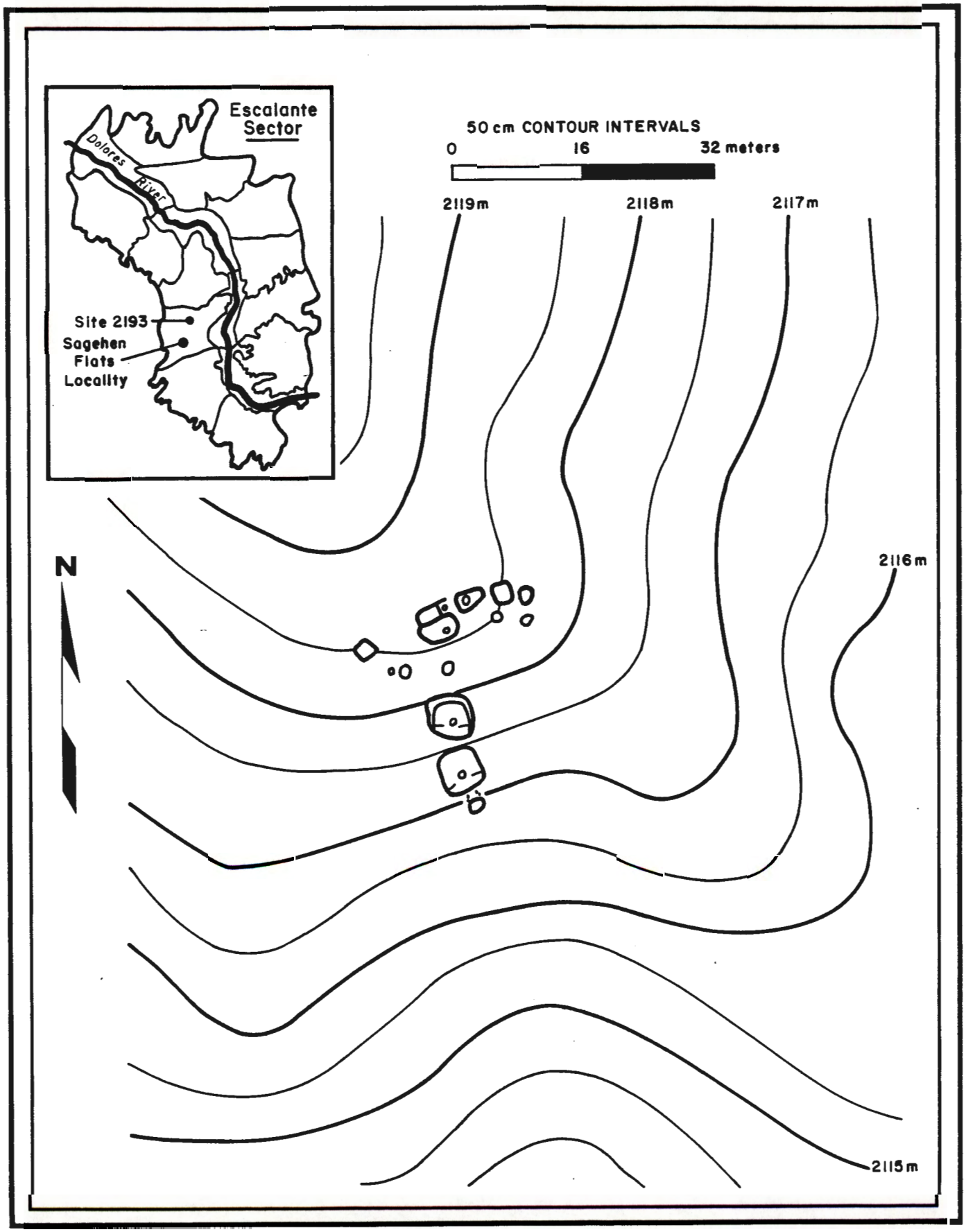

Figure 5.1 Topographic view of Dos Casas Hamlet

ENVIRONMENTAL SETTING

Local Geography

Dos Casas Hamlet is situated on a low ridge that commands a rather extensive view over other ridges and drainages in the vicinity. The structures at the site are placed where precipitation drains quickly to the east, west, and south. Figure 5.2 illustrates the immediate environment of Site 5MT2193.

On a larger scale, Dos Casas Hamlet is situated in the undulating terrain north of the Sagehen Marsh. This particular location could have allowed the inhabitants of the site ready access to a varied and abundant resource base, including good agricultural soils in the immediate site area; diverse wild plant and animal habitat in the flats, in the Dolores valley to the east, and in the higher plateau country to the north; and sources of raw lithic manufacturing materials along the House Creek Fault, as well as in the Dolores River canyon.

Historic Land Use

Dos Casas Hamlet is located in an area of apparently high dry-farming potential. The land just north of the site is currently under cultivation and produced a commercial crop of pinto beans in the summer of 1978. The soil cover on the low centrally located rises in the Sagehen Flats area appears to be largely eolian in origin, possibly related to the Mesa Verde loess deposit described by Arrhenius and Bonatti [1] . Some of the soil cover has eroded from the crests of the rises; this erosion has probably been hastened recently by modern farming methods.

The rise on which Site 5MT2193 is located was cultivated at least as

Figure 5.2 Dos Casas Hamlet before excavation, looking west (D.A.P. 003001).

recently as the 1930s; rabbitbrush (Chrysothamnus nauseosus) and snakeweed (Xanthocephalum sarothrae) dominate the vegetation cover at the site, in contrast to the heavy growth of big sagebrush (Artemisia tridentata) in adjacent areas. These latter areas were probably never plowed, or at least were not cultivated as recently as were the areas to the west and south of the rise.

Climate

The contemporary climate in the Sagehen Flats Locality is essentially semiarid; however, as a result of diverse topography the climate can exhibit large variations within short distances. In general, the climate is characterized by low precipitation and low humidity, a wide daily temperature range, abundant sunshine, and moderate westerly winds. The United States Weather Bureau (U.S.W.B.) in Dolores, located 6.4 km south east of the Sagehen Flats Locality, has recorded a mean July temperature of 19.7°C and a mean January temperature of -3.1°C. Precipitation occurs predominately in the winter months and in the late summer and early autumn. Summer precipitation usually occurs as isolated thunderstorms which can often be quite severe. The mean annual rainfall recorded at the U.S.W.B. in Dolores is 460.5 mm at the U.S.W.B. in Yellowjacket, 13.7 km west of Dos Casas an annual average of 126 frost-free days has been recorded. For a further description of the climate of Sagehen Flats Locality see Kane [2].

Flora and Fauna

Other plants and grasses present at this site include Utah thistle (Cirsium utahensis), lupine (Lupinus sp.), Indian paintbrush (Castilleja

chromosa), Indian Ricegrass (Oryzopsis hymenoides), squirrel-tail (Sitanion sp.), and brome grasses. (Bromus sp.). The vegetation noted includes two weedy types, thistle and the brome grasses; their presence is likely the result of agricultural clearing and continued grazing. Left undisturbed, this area would probably support a heavy sagebrush vegetation with open pinyon-juniper forest on slightly higher elevations to the north and on localized outcrops of Mancos Shale to the south. A dense, sagebrush-dominated vegetation cover offers relatively little in the way of economic plant resources. Indian Ricegrass is the only important aboriginally utilized plant resource available at the present time in the immediate site area. The nearest pinyon (Pinus edulis) occurs some 500 m to the south, but these particular stands are not very extensive. Much more extensive stands of pinyon can be found on higher ridges 0.75 km to the north or 1 km to the east and west of Site 5MT2193. Refer to Bye [3] for additional description of vegetation in the vicinity of Dos Casas Hamlet.

Faunal resources that were recorded in the area during the field season and that might have been available locally to inhabitants of Dos Casas Hamlet include jackrabbit (Lepus sp.), cottontail (Sylvilagus sp.), Gunnison's prairie dog (Cynomys gunnisoni), American elk (Cervus canadensis), mule deer (Odocoileus hemionus), and a variety of small rodents. See Emslie [4] for further discussion of the present-day fauna in the D.A.P. project area.

Additional floral and faunal resources which might have been available prehistorically in the general site area are associated with the Sagehen Marsh (0.8 km south of Site 5MT2193). This marsh, which occupies the lowest-lying land in the area, receives drainage from a large part of

the Sagehen Flats uplands. An alluvial fan at the east end of the marsh prevents it from draining into the Dolores River, 3 km to the east and some 40 feet lower in elevation. The present extent of the marsh and the amount of standing water impounded are probably due in large part to diversions of water from Montezuma Valley Irrigation Company Main Canal #2 into this basin to encourage the growth of hay in the western portions of the depression. It is not certain whether the marsh existed prehistorically.

Plants which are present in the marsh today and might have been exploited by the inhabitants of Dos Casas Hamlet, if the marsh existed at that time, include three species of sedge (Carex sp.), American bulrush (Scirpus americanus), and cattail (Typha latifolia). Currant bushes (Ribes sp.), squawbush (Rhus aromatica ssp. trilobata), chokecherry (Prunus virginiana), serviceberry (Amelanchier sp.), squawapple (Peraphyllum ramosissimum), wild onion (Allium sp.), sego lily (Calochortus nuttallii), and foxtail barley (Hordeum jubatum), occur on the slopes bordering the southern margin of the marsh.

A well-entrenched arroyo, 0.5 km southeast of the site, retains some soil moisture even during the hottest months of the year. This moisture supports a good growth of grasses, sedges, and bulrushes which attracts game. This particular location is apparently favored by deer; during the course of investigations at the site, two to three deer were flushed out of the arroyo on several occasions. The presence of deer might have been due in part to stock tank construction at the head of the arroyo, however, and the game here may be a response to present conditions only.

Soil

Probably the most important resource available to the inhabitants of Site 5MT2193 was the soil in the immediate area. The soil is Witt Loam which has developed in a thick loess deposit with an Ap-Bu-Bt-Bca-Cca horizon sequence (Leonhardy [5]). The A horizon is a humic silty deposit consisting of slope wash and wind-blown sediments. The B horizon, stratigraphically below the A horizon, is characterized by a high clay content, a strongly developed structure, and a clay loam texture. The C horizon, the lowest soil horizon, is calcareous loam to sandy loam. Due to the high clay content and the strong structure, the Witt loam retains moisture well and is an ideal soil for modern dry farming.

SOCIAL SETTING

Dos Casas Hamlet is classified as a habitation unit of the West Sagehen Neighborhood, a dispersed community that inhabited the area north of the Sagehen Marsh (Kane [2]). Tree-ring analysis indicates Dos Casas Hamlet was occupied from A.D. 760-780; thus, it falls well within the temporal limits estimated for this Sagehen Phase community (A.D. 600-850) (Kane [6]).

Currently there are 42 Sagehen Phase sites recorded in the Sagehen Flats Locality (Greenwald [7]). Thirty of these sites are tentatively identified as habitations, 18 of which are located within 1 km of Site 5MT2193, and 8 of which are located within 0.5 km. While many of these sites were probably not occupied at exactly the same time as was Dos Casas Hamlet, habitation sites do appear to cluster in this vicinity (Figure 5.3). It is inferred that this clustering indicates close social ties and that the sites within the cluster might define the central activity area or home base for the West Sagehen Neighborhood.

One neighboring habitation site, Site 5MT4614 (Yarnell [8]), appears very likely to have been occupied at the same time as Dos Casas Hamlet. Based on architecture (Hewitt [9]) and ceramic chronologies, Site 5MT4614 is dated between A.D. 700 and 800. The architectural styles and ceramic frequencies at Pithouse 2, at Site 5MT4614 are similar to those found at Pithouse 1 at Site 5MT2193. These similarities and the relative dates proposed for these sites suggest a possible overlap in their occupations; however, there is no direct evidence to indicate that these habitations were contemporaneous. Another explanation accounting for similar ceramics and architectural style is that the occupants of one of these sites

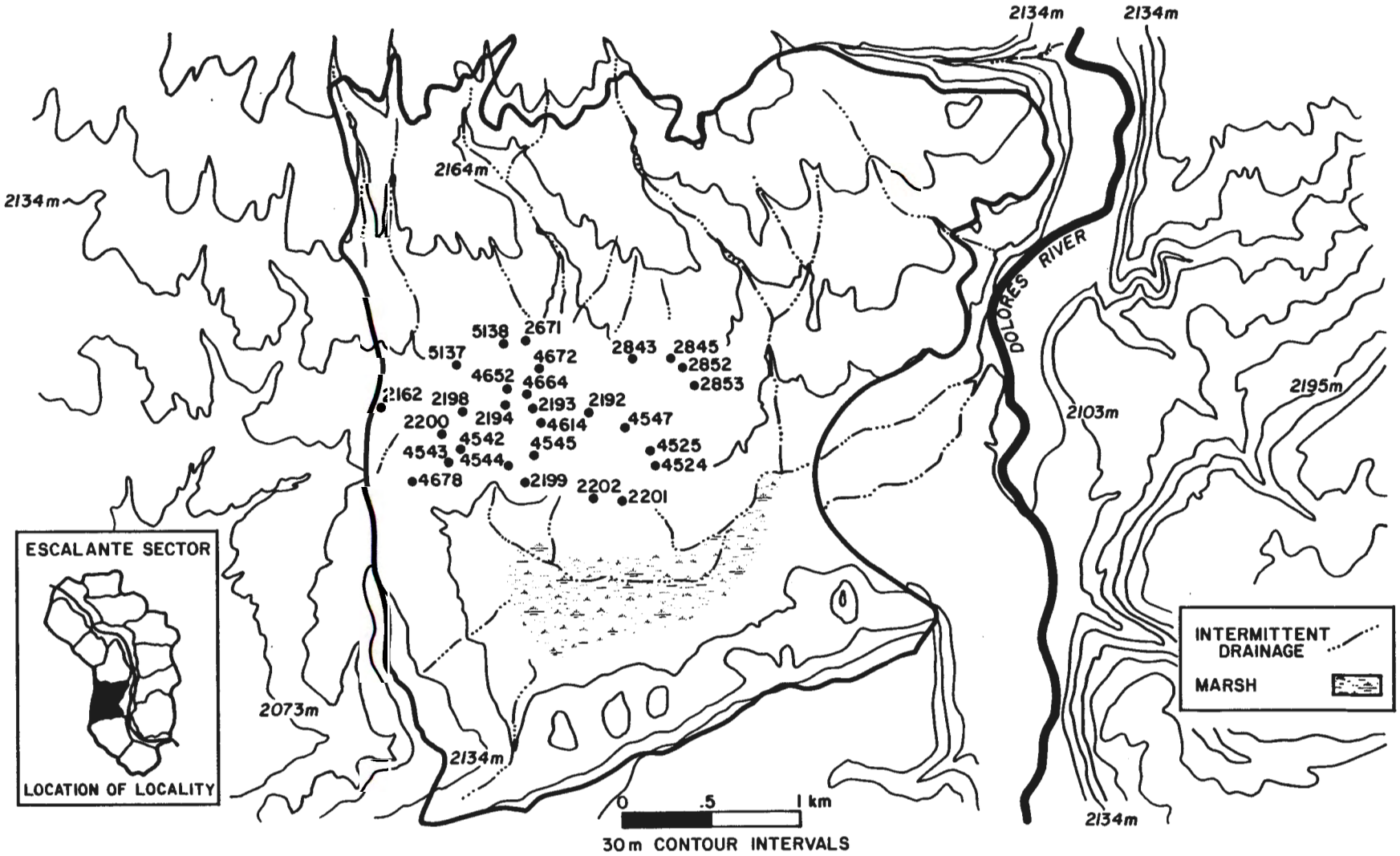

Figure 5.3 Locations of sites contemporaneous with Dos Casas Hamlet.

abandoned their home and built a new habitation at the other locale.

Twelve of the sites currently recorded within 1 km of Dos Casas Hamlet are tentatively classified as limited activity or seasonal loci with a Sagehen Phase component and therefore might have been used by the inhabitants of Dos Casas Hamlet. The nearest limited activity site is Site 5MT4672, a small lithic and sherd area adjacent to a drainage located 400 m northeast of Site 5MT2193. Sites 5MT2671, 5MT2843, 5MT2845, and 5MT2852 are located on the northern slopes of the Sagehen Flats Locality and might have been associated with hunting or pinyon processing activities. Site 5MT2201 is located close to the marsh south of Site 5MT2193. Inhabitants of Dos Casas Hamlet would have had easy access to any of these sites.

SURFACE EVIDENCE

Surface Collection

Before the selection of any sampling technique could be made, it was necessary to know something about the distribution of surface materials at the site; surface and subsurface distributions of cultural materials tend to be correlated. For example, Roper [10] has noted, in a study of the effects of lateral displacement of surface artifacts in an area of intensive agriculture, that displacement was minimal and that surface distributions could therefore be reliable indicators of subsurface distributions. Original survey records (Martin and Breternitz [11]) described Site 5MT2193 as consisting of widely scattered sherds, lithics, and manos.

Vegetation in the area of Site 5MT2193 indicates that agriculture has been practiced there in the recent past, but that cultivation was not very intense or long lasting and that it probably did not severely alter the relationship between surface and subsurface artifact distributions. It was therefore decided to conduct an intensive, controlled surface collection of cultural materials and to use the distribution of these materials to determine the sampling strata at the site. A grid of 4 by 4 m squares was established across the site area, indicated by the extent of the distribution of surface materials (Figure 5.4). Each square was searched for ceramic artifacts, flaked lithic artifacts, nonflaked lithic artifacts, fired daub, and sandstone; a 100 percent sample of ceramic and lithic artifacts was collected in this manner. Daub and sandstone were not collected, but their distribution was determined by recording the total weight and the number of pieces for each 4-m square.

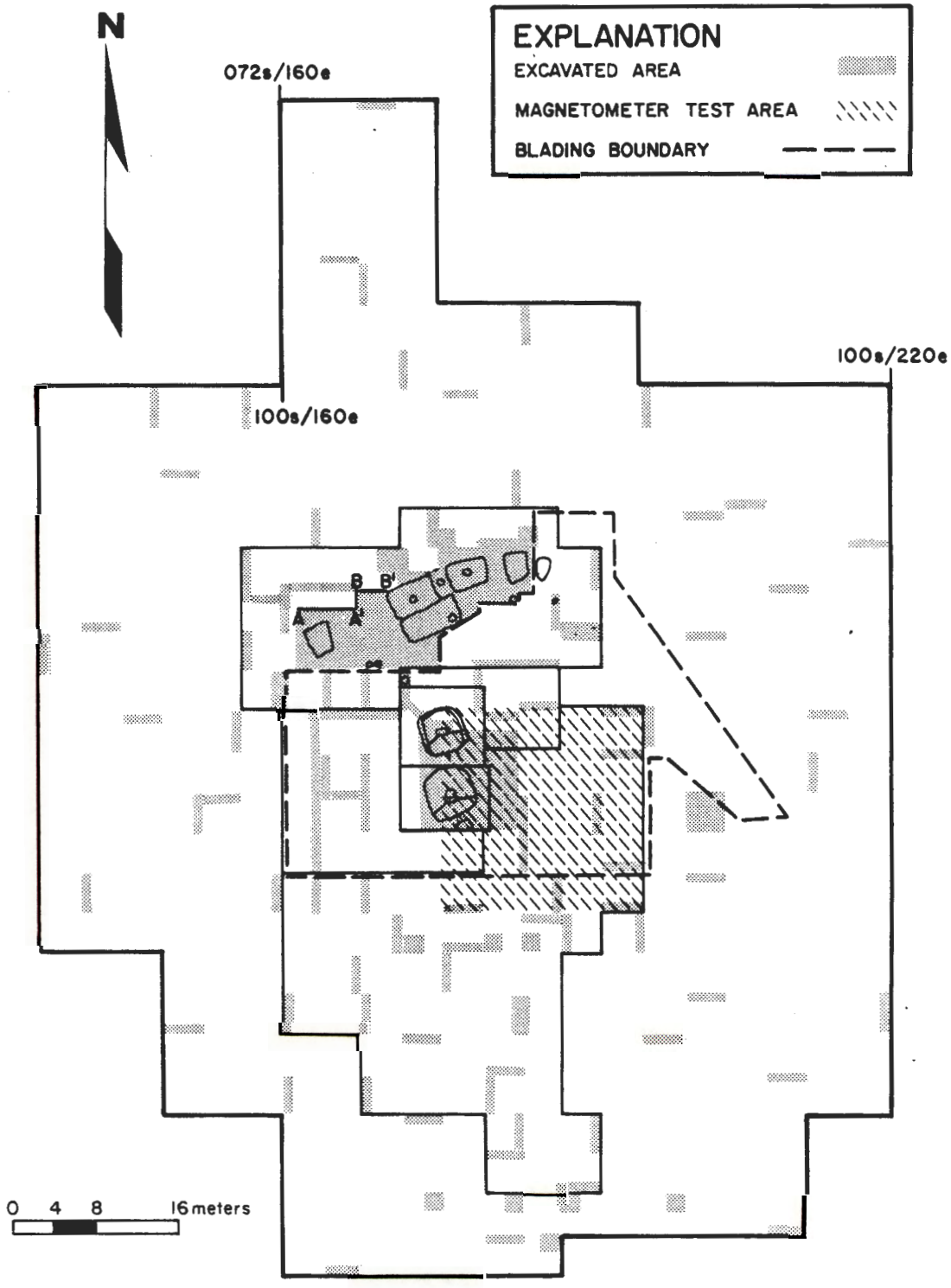

Figure 5.4 Site sampling plan (1978), Dos Casas Hamlet. AA', A'B, and BB' correspond to AA', A'B, and BB' in Figure 5.9

Magnetometer Test Area

Along with the surface collection, an additional test was carried out to help locate subsurface features. Before the sample strips south of the structures were cleared, a 400 m^2 area (Figure 5.4) was set aside for testing with a proton magnetometer. Detailed description of the results of these tests is presented in the 1978 magnetometer report (Huggins and Weymouth [12]). It should be noted here, however, that the results of the test were used to alter the sampling strategy; a priority 1 anomaly with two monopole highs was noted along the west side of the magnetometer test area. Clearance of the overburden showed two patches of underlying dark cultural fill which were found to be Pithouses 1 and 2.

EXCAVATION METHODS AND OBJECTIVES

Observations made during surface reconnaissance and subsequent inspections of Dos Casas Hamlet suggested that the site represented a Basketmaker III or early Pueblo I site. Surface indications associated with Basketmaker III-Pueblo I sites typically lack rubble mounds indicative of masonry constructions and ceramics other than plain gray ware. The presence of small pieces of burned daub suggested that Site 5MT2193 was probably a habitation site rather than a special-purpose site. It was expected that excavation would produce at least one architectural unit of jacal construction, if plowing had not too severely disturbed the site.

With this knowledge, excavation at Site 5MT2193 proceeded with the objectives of more clearly establishing the cultural and chronological affiliation of the site and of gathering data to answer questions regarding ecological adaptations, paleodemography, community activities and social organization, interregional relationships, and culture change, as set forth in the project Research Design (Kane et al. [13]). Also of interest to the excavators was the comparison of this site with other Basketmaker III-Pueblo I Period sites in other areas of southwestern Colorado, especially with regard to site plan.

Sampling

Definition of Sampling Strata

As data from the surface collection were gathered, they were recorded and transferred to a single master map. Inspection of this map clearly suggested clusterings of cultural materials in two areas. By

focusing on different materials, it was possible to establish several sampling strata which were accordingly given subarea designations (Figure 5.5). It was felt that clustering of burned adobe or sandstone would be a good indication of areas with subsurface structures. Concentrations of artifacts, on the other hand, might indicate possible living, working, and/or trash areas. Distribution maps show that adobe was distributed in a nonrandom fashion across the site (Figure 5.6), and that sandstone occurred in greater frequencies in Subarea 1 (Figure 5.7). On the basis of these distributions, four subareas were initially defined. Three other subareas also shown on Figure 5.5 (Subareas 4, 6, and 7) were defined in the process of excavating the site, but were not used during the initial site sampling phase.

Subarea 1 was defined to include that area of the site in which daub occurred in relatively high frequencies in most of the squares. Some grid squares which had moderate amounts of fired clay were not included because they were isolated from the main concentration.

Subarea 2, the second sampling stratum, was distinguished from the remainder of the site by the apparent high concentration of artifacts within the grid squares (Figure 5.8). It is separated from Subarea 1, also showing high frequencies of artifacts, by an area of relatively low artifact frequencies which was subsequently designated Subarea 5 and was found to include Pithouses 1 and 2.

As noted previously, Subarea 1 was expected to produce subsurface architectural units due to the presence of daub in that area and its general absence elsewhere. Subarea 2, having a fairly widespread distribution of artifacts, but lacking significant concentrations of

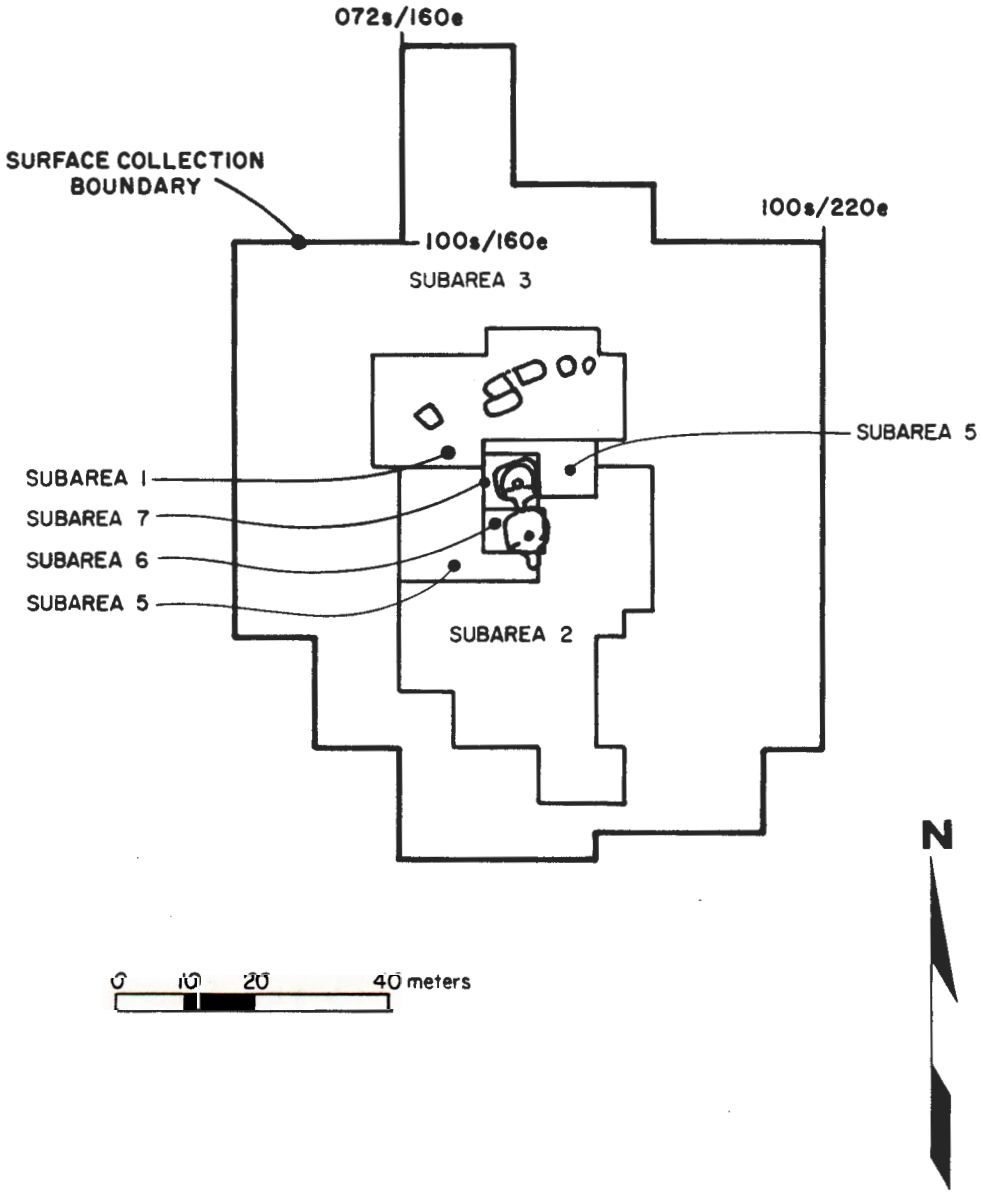

Figure 5.5 Locations of site subareas, Dos Casas Hamlet.

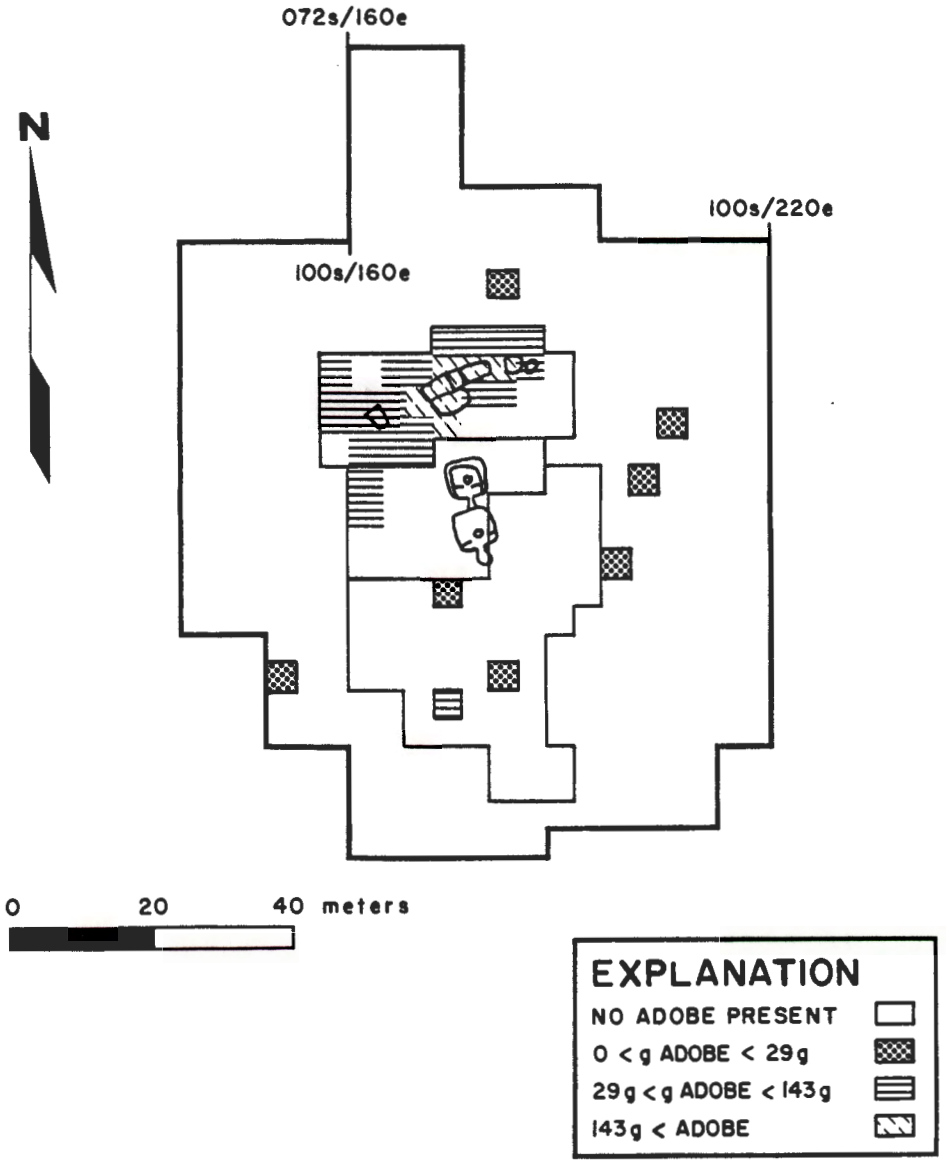

Figure 5.6 Surface distribution of burned adobe, by weight, Dos Casas Hamlet.

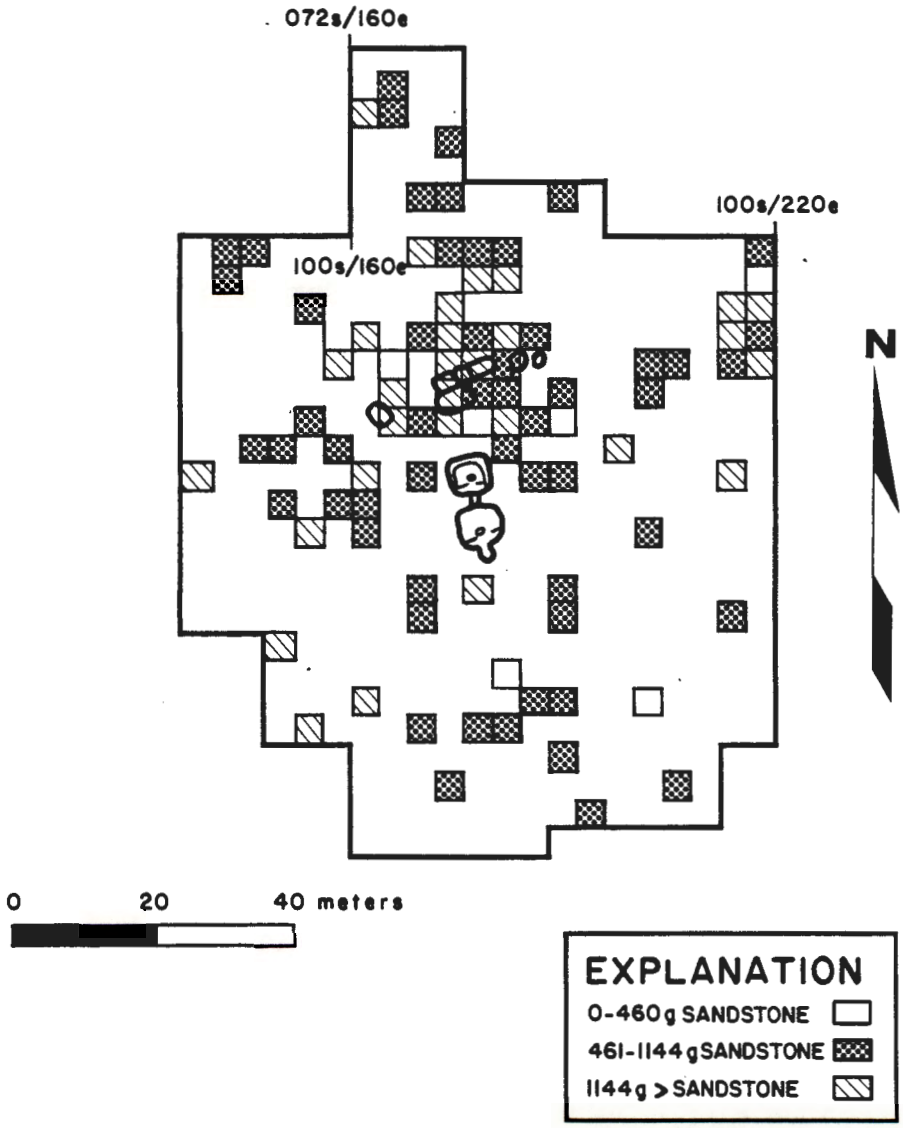

Figure 5.7 Surface distribution of sandstone, by weight, Dos Casas Hamlet.

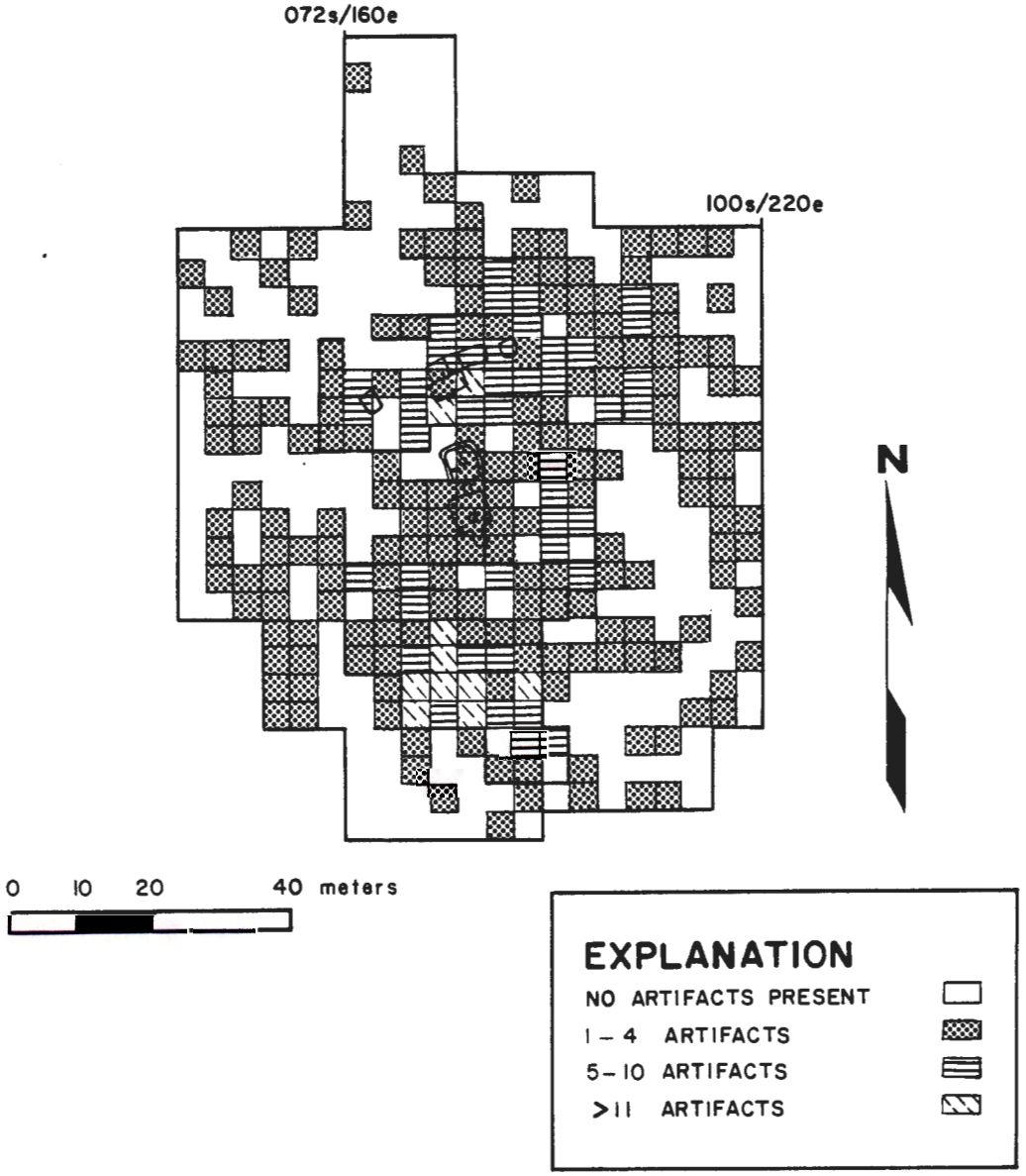

Figure 5.8 Surface distribution of artifacts, Dos Casas Hamlet.

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sandstone and jacal, was suggested as an area of probable trash deposition. It was felt, however, that if architectural features occurred in Subarea 2 they were probably at sufficient depth below the present ground surface that agricultural activities in the recent past had not disturbed them and surface indications of their presence would be lacking.

Subarea 5 was established to assure an adequately high rate of sampling in an area felt likely to produce one or more pitstructures, based upon known patterns of settlement organization. Initially, Subarea 3 was designated as all grid squares outside Subareas 1, 2, and 5. Consequently, the basic sampling design included four strata, Subareas 1, 2, 3, and 5.

Three additional subareas, Subareas 4, 6 and 7, were later defined within the above sampling strata. These were established in areas of probable cultural activity to differentiate materials in these areas from those of the larger, surrounding subareas. Because they were not used for testing and excavation, as the original sampling strata were, they will be discussed later in this section of the report.

Sampling Objectives

Because approximately the upper 25 cm of deposits had been disturbed by plowing, and because systematic surface collection had produced a large number of sherds and lithics from the top of the plow zone, it was decided that artifacts would not be collected from the test pits. Instead, the objectives of the testing program would be limited to locating structures, other features, or undisturbed artifact-bearing deposits. Consequently, it was decided that excavations in each test pit would proceed through the plow zone to sterile soil without collections, unless architectural or other undisturbed cultural deposits were found.

Subarea Sampling

With a total of 429 4-m squares on the site, it was apparent that testing at a 25-percent sampling rate, as proposed in the current project Research Design, would be too time consuming and costly to be practical. It was necessary, therefore, to decide how, and at what rate, the individual subareas would be sampled. Although sampling was anticipated for each of the site subareas, it was not felt that the same rate was required for each. Subareas expected to have subsurface architectural units and features were sampled at higher rates than other, larger subareas, felt to represent probable trash deposits or peripheral areas of the site. Sampling rates were selected to give a generally similar number of test units for each subarea (Table 5.1).

Table 5.1 Sampling Rates for Subareas of Dos Casas Hamlet

Subarea	Total Number of 4 by 4 m Units	Total Area (m^2)	Total Number of 2 by 2 m Units Sampled	Area Sampled m^2	Sampling Rate (Percentage)
1	35	560	35	140	25%
2	61	976	31	124	12.5
3	307	4912	41	164	3.3
5	26	416	26	104	25

To further reduce excavation time, only 25 percent of each 4-m square was actually excavated. At the outset hand labor was used, and, within each 4-m sampling unit, randomly chosen 2 by 2 m quadrats were excavated.

After about 15 percent of the sampling units had been excavated by hand, it became apparent that the use of the Hydra-Mac, a small front-end

loader, would increase the speed of sampling operations and allow higher sampling rates and better representation. The quadrat type of test pit was undesirable because the equipment is limited in its maneuverability. In order to use the front-end loader efficiently, short transects, or 1 by 4 m strips, were excavated within each of the 4 by 4 m units remaining to be sampled. Although this scheme excluded the centers of the 4-m grid squares, it was felt that this would not seriously bias the sample.

Additional Subarea Designations

In addition to the four subareas defined as sampling strata during the testing phase, three other subareas were designated during excavation of the site; these were Subareas 4, 6, and 7 (Figure 5.5). Here initial excavation revealed loci of probable but undefined cultural activity. It was felt that materials from such areas should be maintained under some provenience category separating them from the remainder of the larger sampling strata or subareas until a specific functional designation could be applied. For example, excavation in Subarea 1 revealed several dark patches which indicated probable cultural activity. Rather than giving these "room" or "structure" designations before it was clear whether any walled space could be demonstrated, the locus was treated as a culturally defined subarea of the site (Subarea 4), and the upper fill was excavated by grid unit. As soon as assessment could be made of these stained areas, they were given room, occupation/activity area, or feature designations. As excavation proceeded, it became apparent that the rooms, activity areas, and features encountered in Subarea 4 extended across most of Subarea 1. Thus, the Subarea 4 designation was a temporary and heuristic device for provenience control during excavation but was not retained in reporting the findings in Subarea 1.

Similar designations were made within Subarea 5 for the areas above the two pithouses; these were designated Subareas 6 and 7 before they were determined to be pithouses. In this report, pithouse designations will ordinarily be used in place of the subarea assignments.

Excavation Procedures

Due to changes in supervisory personnel, there were minor changes in excavation procedures during the 1979 field season. These changes did not affect the basic excavation methods described below.

Excavation began with the clearing of the plow zone in sample units chosen by a stratified random sampling design, as described previously. Most of this work was done with a small front-end loader. When undisturbed cultural fill or features were exposed, further excavation was done by trowel and shovel.

The distribution of cultural materials in the plow zone was expected to strongly reflect the distribution on the surface. This assumption was tested by screening part of the backdirt removed from four of the cleared strips in Subarea 2. The excavated sample was similar enough to the surface collections to justify the decision not to screen the plow-zone sediments.

When removal of plow-zone deposits exposed areas of darker sediments indicative of cultural material, investigations continued. First, the horizontal extent of the "darker" area was defined; this sometimes required additional removal of mixed sediments. Next, tests were made to determine the vertical nature and limits of the deposits. If stratification was evident, subsequent excavations were carried out in a way that preserved the stratigraphic associations of the cultural materials. In

many instances these investigations resulted in the definition of prehistoric features such as pitstructures, surface rooms, hearths, small pits, and postholes, although some investigations revealed evidence of plant and animal disturbance at the site.

During the excavations, archaeomagnetic, tree-ring, and C-14 samples were collected to help determine when the structures and features were constructed and used. Bulk soil samples were taken for finer treatment (i.e., water screening or water separation) of a sample of the sediments excavated in each culturally defined area. These samples should produce information applicable to many problems; for example, comparison of sample contents from different surface rooms, when considered in association with other data, may help determine room functions. In addition, small items missed in field excavation may be recovered in processing these samples and may indicate the range of variation in the material culture. Pollen samples from room surfaces may provide information regarding room use, and pollen and bulk soil samples from ceramic vessels may indicate how these were used, and by association, how the area they were found in was used.

As noted previously, most plow-zone sediments were not screened; screening of other deposits was also limited. Most excavations in the surface structures were by trowel or by shovel skimming. Fill from Room 4, part of Occupation/Activity Area 5, and several grids north of the roomblock was screened, however. In the pithouses, the upper layers were removed by shovel or backhoe, but deposits near the floors were carefully excavated. Screening of floor level sediments was carried out in Pithouse 1 when the excavator felt that the usual excavation techniques were not sufficient to recover the samples required by the Research Design (Kane et

al. [13]). Bulk soil samples were often taken to provide a control and as a check on the effectiveness of the excavation methods.

In excavating structures and occupation/activity areas, natural stratigraphic levels were used whenever they could be distinguished. Excavation continued by natural levels to a depth just above a floor or occupation surface. Floor artifacts were exposed and left in place for mapping and photographic recording, except when such treatment threatened pollen samples with contamination or the specimen itself with deterioration.

ARCHITECTURAL REMAINS

The Stratigraphic Profile, Subarea 1

Figure 5.9 depicts typical profiles of deposits in Subarea 1. Stratum 1, the sterile, basal deposit, is characterized by blocky structure; yellow, red-brown color; the presence of calcium carbonate; and the absence of cultural materials, except when introduced from higher strata. Its thickness was not determined because the base of the stratum was not reached by excavations. It is the surface into which the aboriginal peoples excavated their dwellings, associated structures, and features.

Above Stratum 1 in most of the 2-m units profiled is Stratum 2, a thin grayish-brown band of compact, clayey sediments containing cultural material. Inspection of the profile indicated that Stratum 2 is neither continuous nor extremely even, but the presence of cultural material was noted throughout. Initially, it was suspected that this represented a greater depth of plowing at one time, but this left no point of origin for the cultural materials mixed through this and the stratum above. When moist, this zone was extremely difficult to distinguish from the plow zone, but as it dried, the clay in the sediments gave it a much harder consistency and a lighter color.

An alternative interpretation is that Stratum 2 incorporates the deposits of cultural activities outside the surface rooms. Although not examined in profile, the sediments characterizing the excavated occupation/activity areas had the same light, gray-brown color when allowed to dry, while those of rooms and features were somewhat darker; several fragmented ceramic vessels were also associated with Stratum 2.

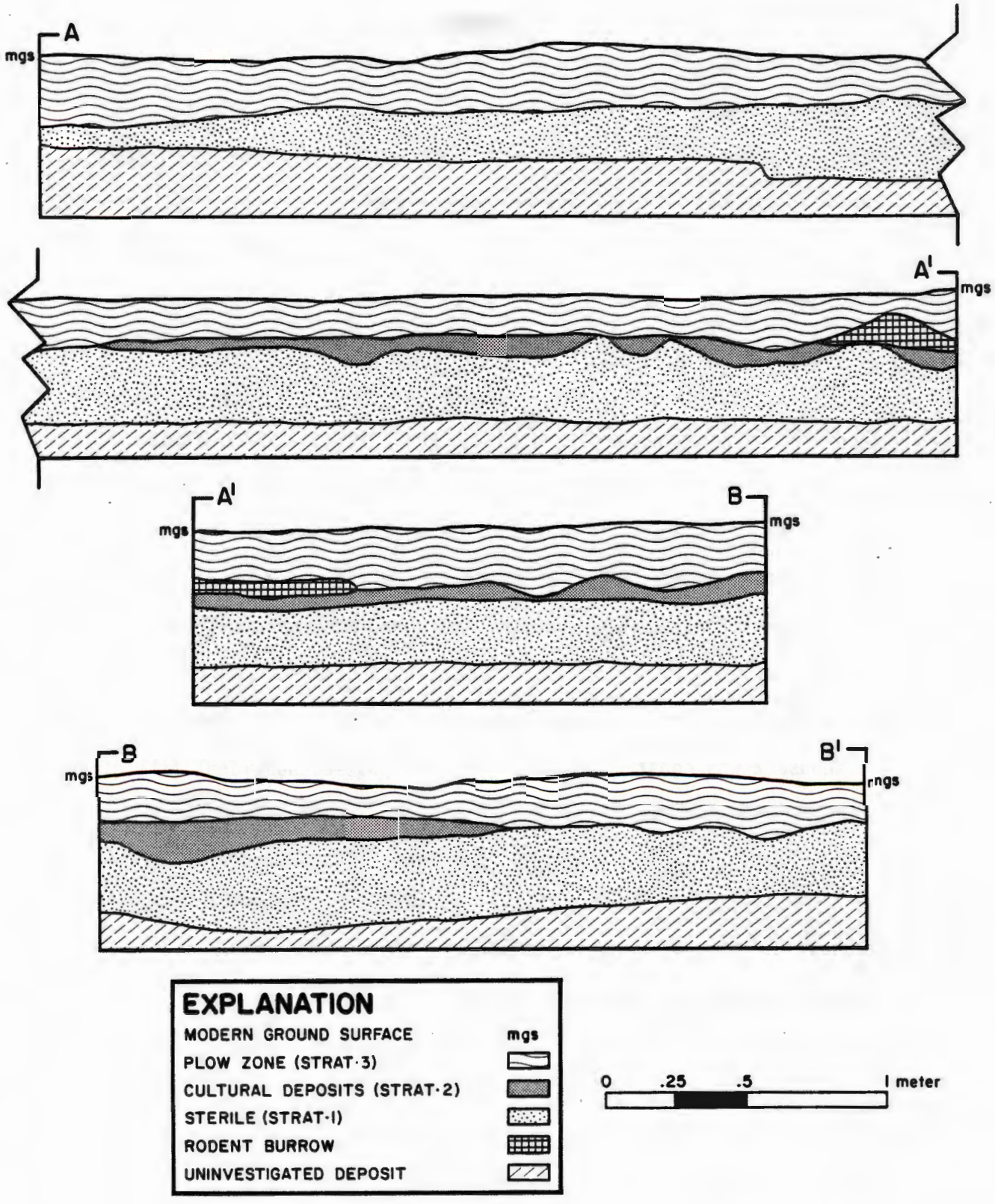


Figure 5.9 Stratigraphic profile of Subarea 1, Dos Casas Hamlet. AA', A'B, and BB' correspond to AA', A'B, and BB' in Figure 5.4.

This deposit was disturbed by numerous rodent burrows, some of which had filled and others of which were partially open. No definite structure surfaces or boundaries were encountered during excavation in the area of the profile shown. It is suggested that Stratum 2 indicates a cultural zone and corresponds to the level or zone of aboriginal occupation associated with the identified surface structures and occupation/activity areas.

Stratum 3 is uppermost in the profile. It is yellowish brown in color and composed of loose, silty sediments with organic as well as cultural materials present. The cultural materials present within Stratum 3 and on its surface are thought to have originated from Stratum 2. Stratum 3, then, represents a mixture of occupational deposits and subsequent eolian and slope wash deposits. The mixing has been largely due to modern agricultural activity and animal burrowing. These agents are evident in east-west running plow marks and rodent burrows.

Stratigraphic information was obtained elsewhere on the site from architectural superposition (Figure 5.10). The ventilator shaft of Pithouse 2 was constructed partly in the post-occupational fill of the earlier Pithouse 1.

Sources of Change in Archaeological Context

Processes of soil development, erosion, and deposition have produced changes in the archaeological context at Dos Casas from the time of its original formation until the present.

Prior to Anasazi occupation, soil formation processes were in effect at the site. Due to the construction of dwellings and associated features and to subsequent community traffic, much of the loose topsoil was probably cleared from the immediate area. It is apparent that the construction of some of the surface rooms and both of the pitstructures

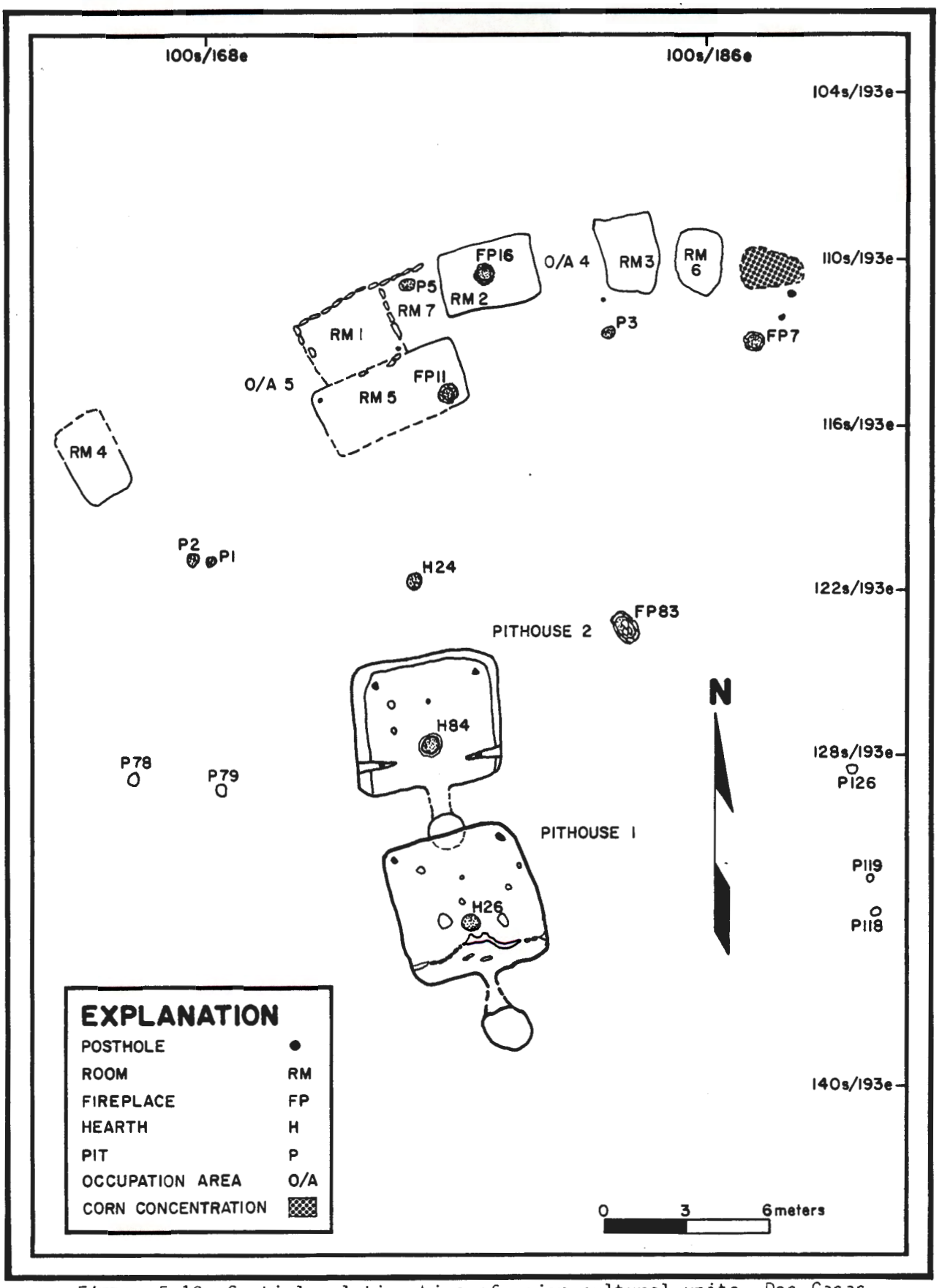


Figure 5.10 Spatial relationships of major cultural units, Dos Casas Hamlet.

required excavations into the underlying blocky sediments (Stratum 1); this resulted in quantities of loose soil being brought to the surface of the site. During occupation, Stratum 2 was in the process of formation. Depositional processes such as slope wash and eolian transport continually brought materials into the site from elsewhere. No doubt occupation would have enhanced the rate of erosion in some areas and have led to increased transport and redeposition of sediments within the site and, to some extent, off the site. At the same time, cultural materials such as artifacts, ash, and melted jacal or mortar were incorporated into the sediments in places where they were accumulating against structures or midden areas.

With site abandonment, materials derived from the construction of the structures were also incorporated into the developing cultural deposits. Following abandonment, erosion reduced these deposits in some areas. In other areas, sediments accumulated over the cultural deposits by eolian deposition and probably by some downslope transport of sediments by water. Vegetation became reestablished and soil formation processes resumed. It is assumed that these processes continued until man's intervention again disturbed the soil.

At this later time, men with agricultural machinery were the agents of disturbance. Little resistance would have been met until the hard, blocky, culturally sterile stratum was reached. Materials from Stratum 2 apparently were brought to the surface and mixed throughout Stratum 3, the plow zone. When the fields were abandoned, the process of secondary succession began again.

During each of these periods, the processes of deposition, erosion, and soil development were probably occurring on and off the site area.

How these processes affected the distribution of the existing cultural material was determined by their intensity and duration, which in part was determined by the topographic setting of the archaeological features.

Topographic mapping of the site (Figure 5.1) indicates that the excavated structures are located on a low eminence that slopes generally to the south and that separates south of the site into two low ridges. The surface rooms are located just north of the juncture of the ridges, while the pitstructures are situated at the upper end of the shallow swale lying between the ridges.

Consequently, the present ground surface at the roomblock is approximately 1.5 m higher than at Pithouse 2. Within the roomblock area, the highest point is near the center; the ground surfaces at the east and west edges are about 0.5 m lower. Drainage from the roomblock is to the east, west, and south, but in the pitstructure area it is only to the south. Generally, the surface room boundaries were most difficult to define in the downslope direction. Conversely, northern boundaries were clear, except in a few cases where erosion or plowing had penetrated deeply enough to destroy them.

A consideration of the stratigraphic profile and the topographic setting of Site 5MT2193 indicates that many processes capable of producing change in the archaeological record have occurred. In some instances, changes were great enough that the shape and even the existence of structures were in doubt. In other instances, disturbances were slight and descriptions are presented with confidence.

Cultural Units at the Site

Investigations at Dos Casas Hamlet (Site 5MT2193) resulted in the

discovery and subsequent excavation of major architectural units and smaller features in three site subareas; Figure 5.10 illustrates the horizontal relationship of the major structures at the site: these include seven surface rooms, associated occupation/activity areas, and two pithouses. These structures have been assigned to two separate elements, or occupations. Pithouse 1 and Rooms 3, 4, 6, and 7 are inferred to represent the first element at Dos Casas Hamlet. This element is dated to around A.D. 760. The second element, dating to about A.D. 770, is represented by Pithouse 2, the reuse of Rooms 3 and 7, and the construction of Rooms 1, 2, and 5, and several midden areas.

Pithouse 1

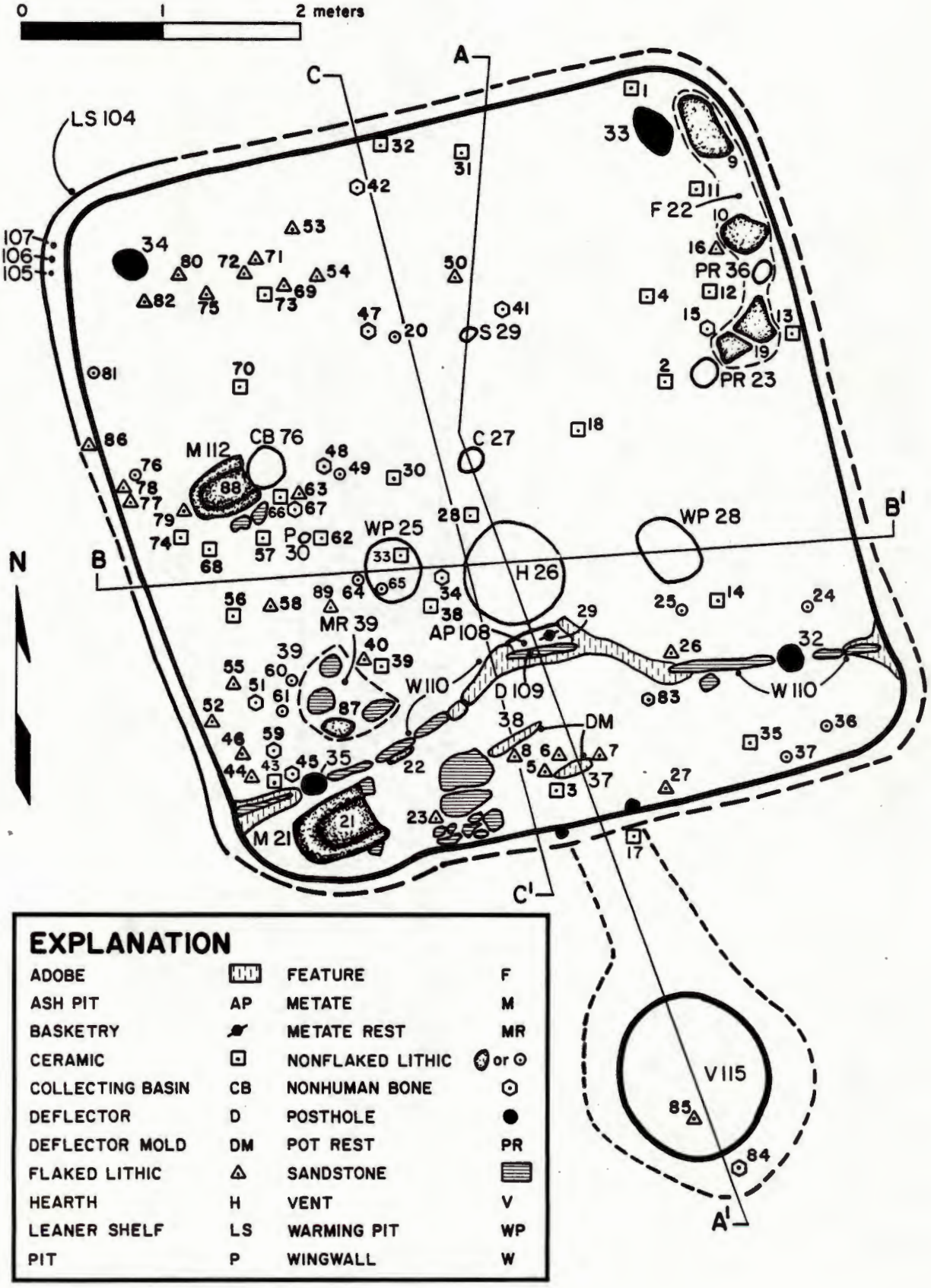
Dimensions:

N-S diameter:	5.40 m
E-W diameter:	5.25 m
Floor area:	24.33 m^2
Depth of structure (From modern ground surface):	1.40 m
Reconstructed roof height:	ca. 2.30 m
Height of leaner shelf above floor:	1.23 m

Structure description. Pithouse 1 was first detected as a large, roughly circular, dark stain at the base of the plow zone. A north-south test trench was placed across the structural main chamber, a profile was drawn, and the remaining fill was removed.

Pithouse 1 (Figures 5.11, 5.12, and 5.13) is located directly south of Pithouse 2 and approximately 14 m from the south edge of the rooms in Subarea 1. In plan, it is rectangular with rounded corners and has a ventilator shaft and tunnel extending to the south-southeast. Pithouse 1 conforms to the general pattern of Anasazi pithouse construction (Bullard [14]) in that it possesses a depressed floor, two wingwalls, and a deflector; these create distinctive spaces in the main chamber; there is

Figure 5.11 Plan map of Pithouse 1, Dos Casas Hamlet. AA' corresponds to AA' in Figure 5.12; BB' corresponds to BB' in Figure 5.13; CC' corresponds to CC' in Figure 5.14 See Table 5.4 for numbered artifact descriptions.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WP 28
H 26
MR 39
AP 108
W 110
D 109
DM
M 21
V 115
EXPLANATION
ADOBE
ASH PIT AP
BASKETRY
CERAMIC
COLLECTING BASIN CB
DEFLECTOR D
DEFLECTOR MOLD DM
FLAKED LITHIC
HEARTH H
LEANER SHELF LS
PIT P
FEATURE F
METATE M
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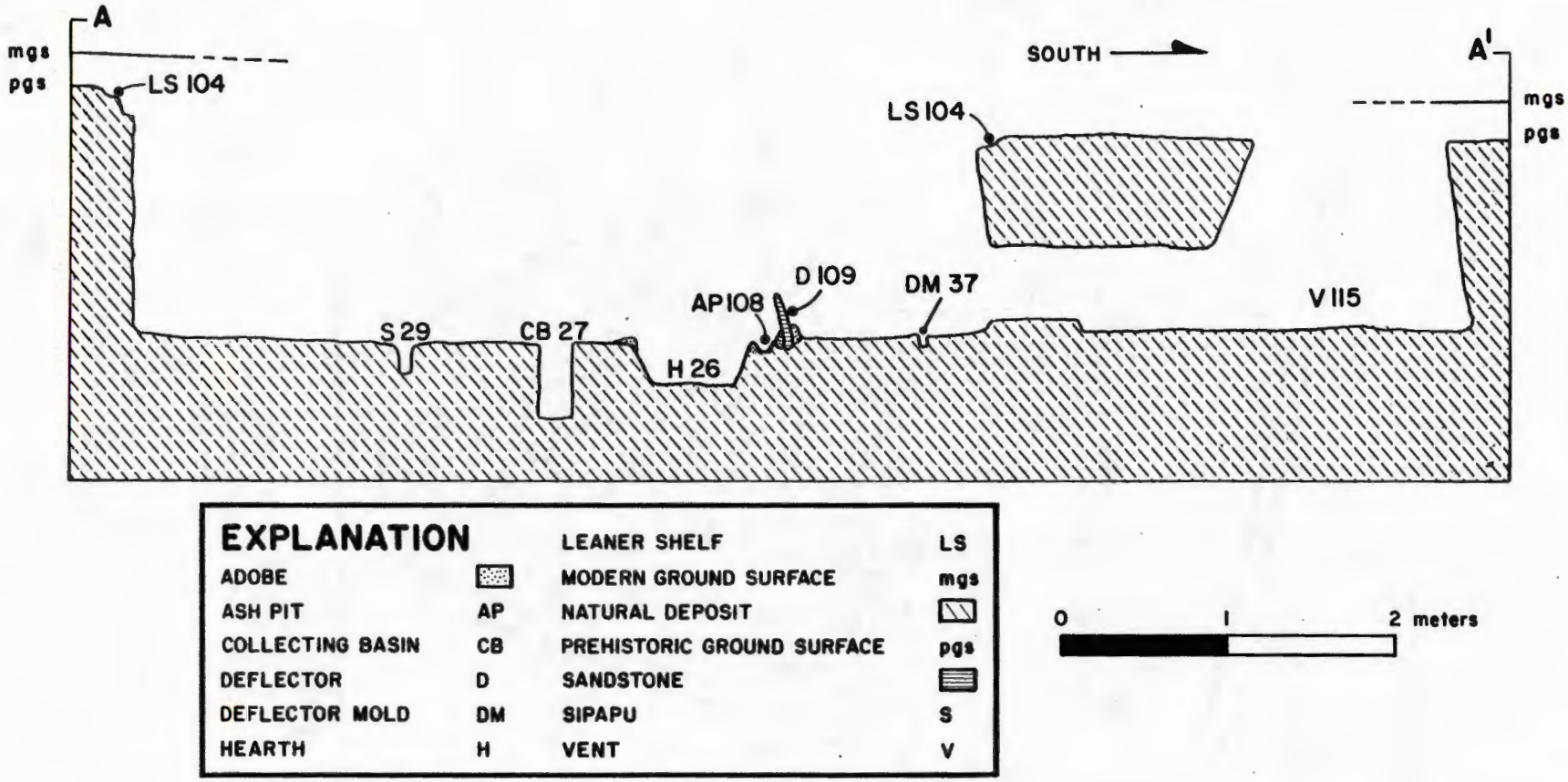

Figure 5.12 Architectural profile (north-south) of Pithouse 1, Dos Casas Hamlet. AA' corresponds to AA' in Figure 5.11.

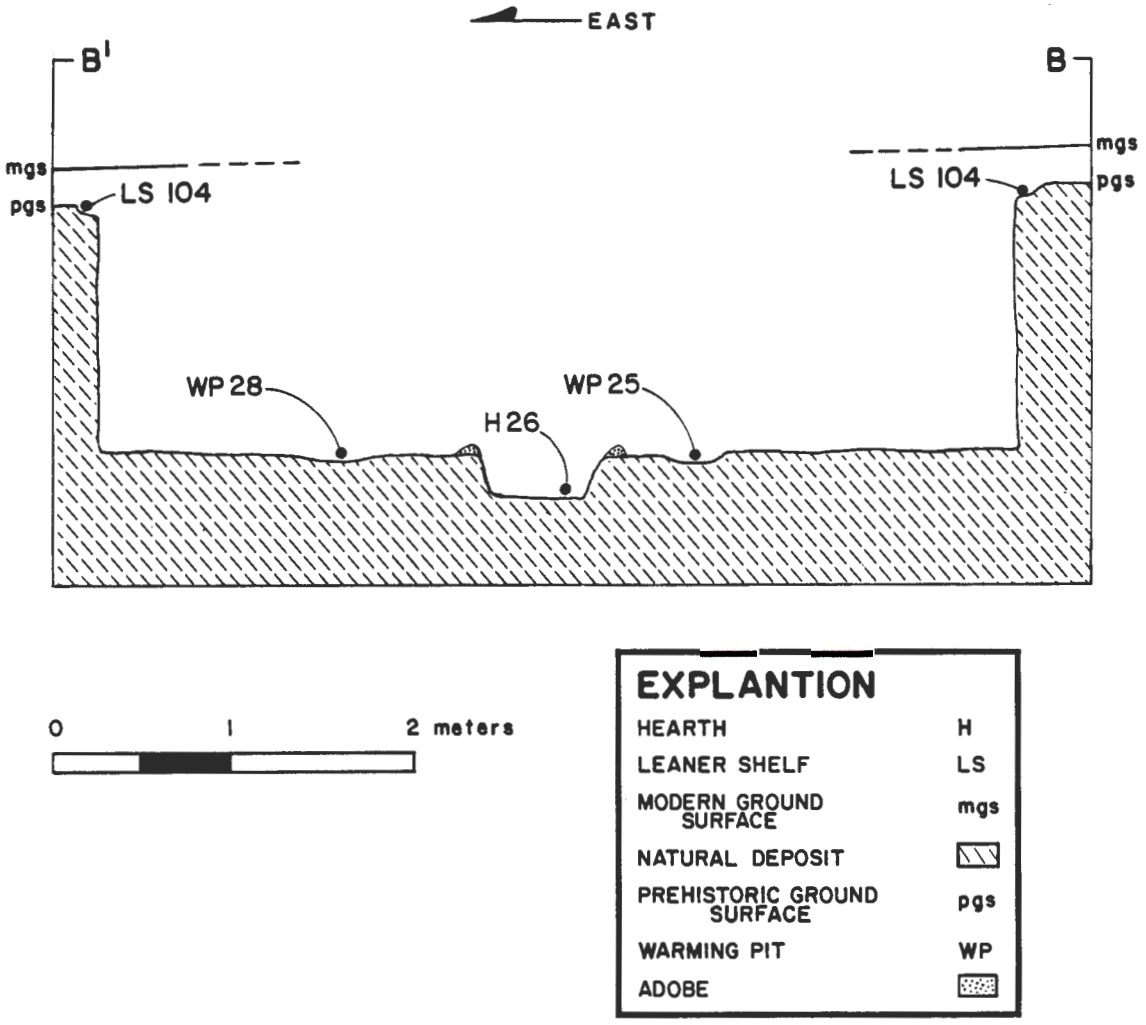

Figure 5.13 Architectural profile (east-west) of Pithouse 1, Dos Casas Hamlet. BB' corresponds to BB' in Figure 5.11.

also the typical ventilator system extending south from the main chamber. No formalized bench is present; however, a narrow shelf along the top of the walls in the main chamber served as the footing for leaner posts which formed the sidewalls of the superstructure. Also present in this pithouse are numerous subfloor features.

Structural fill. Excavation of a north-south trench across the east side of Pithouse 1 provided a vertical face from which the sequence of structural fill was determined (Figure 5.14). The profile, together with other data, indicates that Pithouse 1 was occupied and then destroyed by a fire which occurred either during occupation or following a short period of abandonment. Following the pithouse's structural collapse, the hamlet was temporarily abandoned; the period of nonoccupation was long enough for a locally derived, clean sandy fill to be deposited over the living surfaces of the first occupation. Subsequently, Dos Casas Hamlet was reoccupied, the habitation area was cleaned up, and additional structures were built. Trash, and probably backdirt from the excavation of Pithouse 2 during the second occupation, was used to fill the depression left by the collapse and incomplete natural filling of Pithouse 1. The north end of the depression appears to have filled rapidly during this process. Prehistoric construction of the ventilator system of Pithouse 2 into the deposits of Pithouse 1 is indicated by a depression cut into the sediment layers at the north end of Pithouse 1. Subsequent deposition of sediments and additional trash in the southern part of the pit depression and also into the intruded ventilator shaft at the north end brought the fill to the level of the surrounding surface. A brief discussion of the evidence supporting the above interpretation follows.

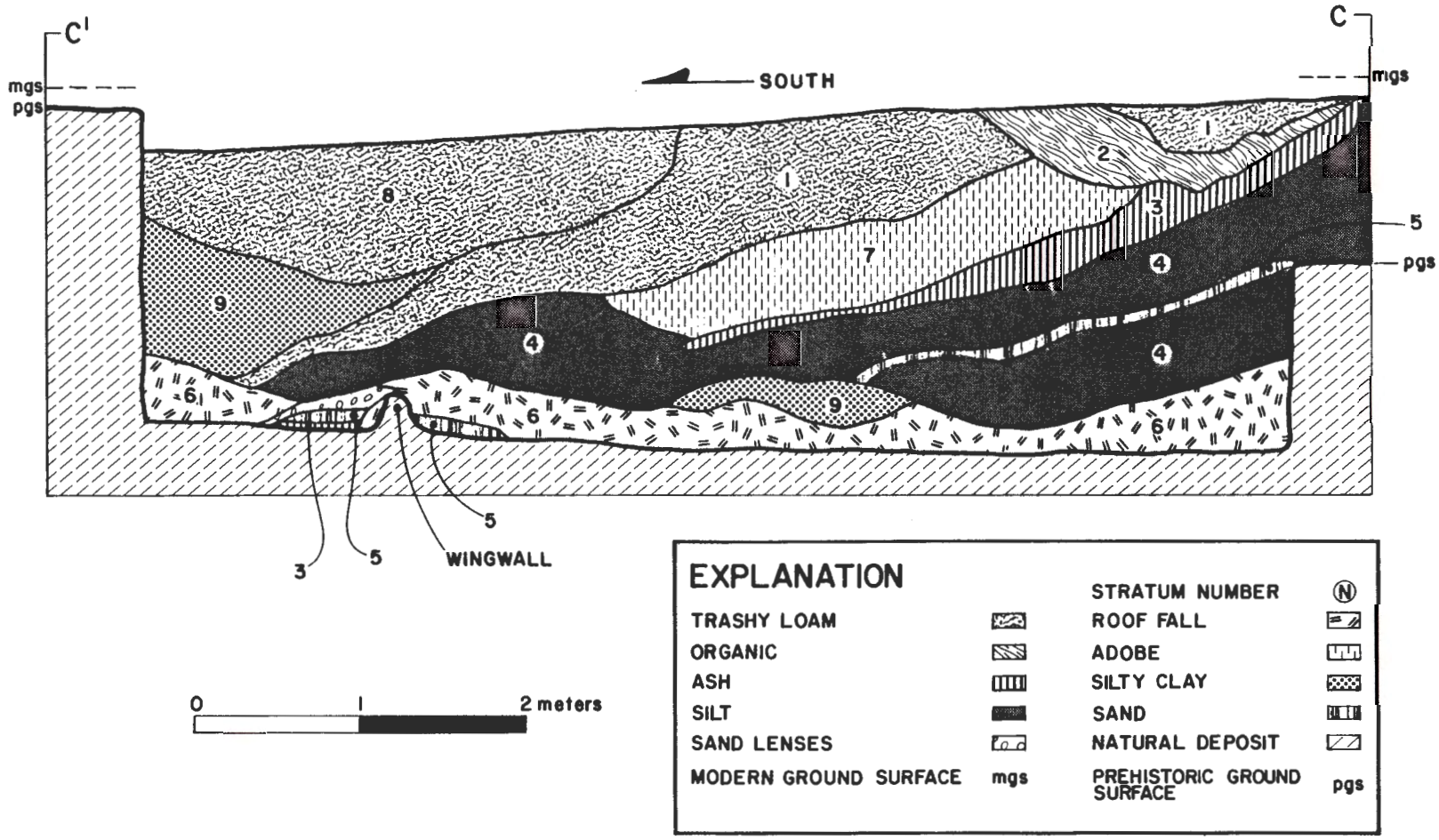

Figure 5.14 Stratigraphic profile of Pithouse 1, Dos Casas Hamlet. CC' corresponds to CC' in Figure 5.11.

rithouse 1 apparently burned shortly after abandonment. Observations suggesting that destruction quickly followed the abandonment include the relative sparsity of cultural materials on the floor and in the lower fill, and the fact that most of the subfloor features were filled with clean, light sand or silt. If the structure had been occupied when it burned, more cultural material would be expected to have been found on the floor and in the roof-fall stratum, and a more variable, probably burned, fill would have been found in the floor features.

If the structure remained empty for an extended period of time before burning, one or more post-occupational, pre-collapse strata might be expected on the floor surface (below the roof fall) or within the ventilator shaft area; no such deposits were evident. The portion of Stratum 3 which lies at the roof-fall level does not appear to represent a post-abandonment, pre-collapse deposition. Irregular collapse of the structure and subsequent filling of pockets created by this collapse might have been responsible for the formation of this stratum. The floor surface of the pithouse is overlain by roof-fall deposits which conform to the general pattern of collapse and fill. It therefore seems likely that the structure was abandoned prior to burning, but that the intervening period was not long.

There is no evidence to suggest immediate use of the pithouse after the superstructure had burned and collapsed. On the contrary, interpretations of Strata 4, 5, 6, 7, and 9 indicate a period of relatively uniform deposition, interrupted only by a thin band of sediments containing charcoal.

Above Stratum 7, the sequence of depositional events is not clear. Interpretations of the strata are dependent in part upon the spatial and

temporal relationships of Pithouses 1 and 2. The remaining strata can, however, be confidently associated with a period of reoccupation and renewed building at the site.

Strata 1, 3, and 7 appear to represent three phases in the construction of Pithouse 2. If this is correct, then Strata 1, 3, and 7 indicate rapid filling of the main Pithouse 1 depression, since prehistoric construction of the Pithouse 2 ventilator shaft would probably not have been delayed for an extensive period once work there had commenced. This interpretation is based upon the truncation of these deposits by the relatively shallow depression (designated Stratum 2) which appears in the profile. This depression represents the upper part of the ventilator shaft of Pithouse 2. The main part of this shaft lies just west of the illustrated profile.

Following the filling of the northern half of the depression of Pithouse 1 and the construction of Pithouse 2, two more depositional events occurred in the southern portion of Pithouse 1 which eventually leveled the area with the surrounding surface topography. A period of natural filling, represented by Stratum 9, was followed by a layer of refuse (Stratum 8). This trash deposit is probably the product of the second period of site occupation.

The burned organic sediments included in Stratum 2 might have resulted from the destruction surrounding the ventilator shaft of Pithouse 2. The final layer (Stratum 1) contained cultural material that appears to have been deposited by slope wash after Pithouse 1 was abandoned.

In summary, the stratigraphic profile of Pithouse 1 suggests two periods of site occupation, or elements, separated by a period of site abandonment. The first period of occupation (Element 1) is represented by

the remains of the structure's floor, walls, and superstructure; the abandonment interlude is represented by several strata indicative of rapid natural filling; and the second period of occupation (Element 2) is represented by partial excavation of previous deposits during construction of another pithouse to the north and by the deposition of material excavated during the construction of the second pithouse and of additional trash.

Structural features. The structural features of Pithouse 1 include a main chamber; a central hearth; two wingwalls, incorporating a deflector, which divide the chamber into north and south rooms; four sockets for the primary support posts; and a ventilator shaft and tunnel (Figure 5.15).

Wingwalls:

Dimensions:

Wingwall length:	
East:	1.60 m
West:	1.75 m
Wingwall height:	
Minimum:	0.64 m
Maximum:	0.76 m
Deflector width:	0.55 m
Deflector height:	0.30 m

In the main chamber, the two wingwalls consist of upright sandstone slabs covered with mortar; they incorporate the two southern primary support posts. The wingwalls were constructed by setting each slab into a subfloor depression and packing mortar from the floor up to the base of the vertical slab; this produced a concave-upward juncture between the floor surface and wingwall faces. When the slabs forming the central core of the walls were in place, a thick layer of plaster was applied to the north and south faces of the sandstone slabs. Layers of adobe "turtlebacks" or "ropes" were then applied to the upper surface to produce

Figure 5.15 Pithouse 1, Dos Casas Hamlet (looking east). Note central hearth and deflector, and metate in situ with collecting basin. Floor tags mark artifact locations (D.A.P. 004011).

Figure 5.16 Northwest post in situ, Pithouse 1, Dos Casas Hamlet (D.A.P. 003934).

Figure 5.17 View of mealing area in south room of Pithouse 1, Dos Casas Hamlet (D.A.P. 003828).

Figure 5.15

Figure 5.16

Figure 5.17

additional height. These upper sections were not found in situ, but the association between the sections was clear during excavation. Some variation in height was noted, with the central portion being lower than the extremities; this variation in height produced a stepped appearance to the wingwalls.

Each wingwall extends out from the side walls of the main chamber, terminating near the upright sandstone deflector which is set slightly north of the wingwall axis. To either side of the deflector are gaps in the wingwall which serve as passages between the north and south rooms of the main chamber; they are each approximately 0.5 m wide.

Leaner Shelf (Feature 104): The upper walls of Pithouse 1 were only partially preserved; a narrow leaner shelf was recorded around the northwest and southwest corner of the main chamber. While the presence of several postholes suggests that this shelf did provide the base for the secondary support poles (leaner posts), it is much narrower than the "true" bench observed in Pithouse 2. Its narrow width, the sparsity of artifacts along the short remnant excavated, and the short vertical space indicated by the angle between the bench surface and the proposed leaner poles suggest that the shelf surface was used only as a temporary storage space. The presence of a cluster of lithic materials on the portion of the shelf which remains intact (Point Location 86, Figure 5.11) does indicate, however, that this surface was not completely unused. Poor preservation prevents any more definite statements concerning the function of the shelf.

Main roof support postholes: The final structural features in the main chamber are directly concerned with the support of the superstructure. Features 32, 33, 34, and 35 (Figure 5.11) are inferred to be

postholes for the main structural supports. A remnant of the northwest post (Feature 34) was recovered in situ and is depicted in Figure 5.16. The postholes are located in each of the four corners of the main chamber, with both of the southern posts incorporated into the construction of the wingwalls. Table 5.2 presents the dimensions of these features.

The northeast posthole differs from the others in its lack of symmetry; rather than being essentially circular in plan view, the feature is oval, with its long axis oriented north-south.

Table 5.2 Dimensions of Postholes in Pithouse 1, Dos Casas Hamlet

Feature Number	Diameter (m)	Depth (m)
Main Support postholes		
32	0.18	0.54
33	0.31 by 0.18	0.57
34	0.22	0.57
35	0.16	0.52
Leaner postholes		
105	0.07	0.08
106	0.06	0.06
107	0.08	0.02

The fill of three of the main postholes consisted of clean, yellow-colored sand. In several cases, the charred remains of upright posts were still present. The northwest posthole (Feature 34) differed, however, by showing rodent disturbance and a gray, ashy fill with charcoal and caliche inclusions.

Ventilator system:

Dimensions:

Shaft:
- Length: 1.50 m
- Width: 1.60 m

Tunnel:
- Length: 1.40 m
- Width: 0.55 m
- Height: 0.42 m

Tunnel Platform:

Length:	0.60 m
Height:	0.08 m

The north-south profile of Pithouse 1 (Figure 5.12) illustrates the ventilator system, consisting of a vertical bell-shaped shaft opening to the original ground surface and a horizontal tunnel extending from the vertical shaft to the main chamber of the pithouse.

On either side of the opening at the north end of the tunnel, are the charred remains of two poles that had burned down even with the floor surface. The absence of any similar posts or postholes, either within or at the opposite end of the tunnel, raises doubts that the posts served as shoring for the tunnel, except possibly for the opening itself. It may be that the posts served to help fix some type of cover for the portal.

Within the tunnel, at the north end, is a small, artificially raised platform, created by the application of dark-brown sediments to the excavated tunnel surface. The function of this raised platform is unknown, but it might have served to keep water which had drained into the ventilator shaft from entering the main chamber of the structure.

Examination of the fill of the tunnel and shaft indicates that this part of the pitstructure did not burn as thoroughly as the main chamber. The shaft portion, in fact, shows no evidence of burning at all and actually yielded an undatable, unburned beam. The presence of this beam suggests that the shaft was covered in some manner, although no definite postholes were noted.

Floor features. Twenty features (Table 5.3) are described for Pithouse 1. Four of the features (Features 32-35) represent postholes of the main posts directly associated with the construction of the pithouse. Features 37 and 38, while not directly concerned with construction, might

Table 5.3 Features in Pithouse 1, Dos Casas Hamlet

Feature Number	Description	Length (m)	Width (m)	Depth (m)
21	mealing area	65.0	48.0	--
22	work area	1.50	1.0	--
23	pot rest	0.23	0.20	0.06
25	warming pit	0.43	0.33	0.08
26	central hearth	0.80	0.75	0.27
27	cist	0.20	0.20	0.48
28	warming pit	0.50	0.30	0.08
29	sipapu	0.10	0.10	0.18
30	cist	0.07	0.08	0.10
32	main support posthole	0.18	0.18	0.54
33	main support posthole	0.31	0.18	0.57
34	main support posthole	0.22	0.22	0.57
35	main support posthole	0.16	0.16	0.52
36	pot rest	0.15	0.15	0.04
37	deflector mold	0.30	0.05	0.06
38	deflector mold	0.33	0.04	0.07
39	metate rest with associated mano	--	--	--
76	collecting basin for Feat. #112	0.30	0.30	0.20
108	ash pit	0.50	0.25	0.08
112	metate in situ	0.50	0.47	0.07

represent a deflector which served to control one aspect of the internal environment. The hearth (Feature 26) served in this way as well, but was also clearly related to cooking processes. Two warming pits, Features 25 and 28, and an ash pit (Feature 108) are associated with the hearth. Feature 22 appears to constitute a work or special activity area. Features 21, 39, and Features 30, 76 and 112, as a group, are mealing areas indicated by metates, manos, and/or collecting basins; Features 23 and 36 are pot rests. The two remaining features (27 and 29) are cists that might have served ritualistic functions.

Central hearth (Feature 26), ash pit (Feature 108) and deflector molds (Features 37 and 38): The central hearth (Feature 26) is located directly north of an upright sandstone slab that served to deflect air currents entering the main chamber through the ventilator tunnel. The hearth probably served to heat and light the main chamber and was used in meal preparations. Feature 26 is circular, with straight-sided walls and a flat bottom. No sandstone slabs were used to line its edges, but a low adobe coping was placed around the rim, apparently after the hearth had been in use for an unspecified length of time. At this time also, the depth was decreased by 5 cm with the use of adobe. The fill of the feature consisted of a dark organic ash layer underlying a lighter ash lens that was covered with clean sand on top. The ashy lower fill indicates that the feature was not cleaned when the structure was abandoned. This clean sand overlying the ashy lens indicates that a period of abandonment occurred prior to the final collapse of the structure.

Associated with the hearth is an ash pit (Feature 108) that is incorporated into the wingwall-deflector complex. The adobe coping that extends from the inner edges of the wingwalls to the upright slab also

radiates out and around to the north side and encloses a small depressed area in front of the deflector, which appears to have served as a receptacle for the temporary storage of hearth ashes. Leaning against the defector and partially covered with ash were the remains of a badly burned and fragmented basket (PL 29). The association of the basket with the ash pit and hearth suggests that it might have been used to remove cooled ashes from the pitstructure.

The deflector molds (Features 37 and 38) are long, narrow, shallow depressions in the floor, located between the ventilator tunnel opening and the in situ deflector. Each deflector mold is oriented at a different angle with respect to the opening of the tunnel; their location, appearance, and proximity to two loose sandstone slabs suggest that the slabs, inserted upright into these depressions, either individually or in combination, could be used to control the direction of air movement through the structure. In particular, they might represent an attempt to increase circulation in the close quarters behind the wingwalls. Other functions for these long, narrow depressions are not immediately apparent.

Warming pits (Features 25 and 28): These two possible warming pits are oblong, shallow pits, one located west and the other located east of the hearth. Each contained a clean, yellow or yellow-brown sand fill. The proximity of these features to the hearth suggests that they might be warming pits, but they lack the characteristic ash fill of such features. There are several possible reasons for this: (1) the features were not, in fact, warming pits; (2) they had been cleaned and not subsequently used enough to produce the characteristic fill; or (3) they were cleaned prior to seasonal abandonment of the structure in preparation for the next year's reoccupation.

Mealing area (Feature 21): Feature 21 (Figure 5.17) consists of a trough metate, a mano, and three other stones located in the south room behind the west wingwall. The mano was found propped up against the wingwall and the stones and cobble were found near the metate. The stones probably served to support the metate and set it at an angle to be used. A cluster of sherds was found in this area of the structure; the cluster might represent the remains of a pot that had been used to carry or store the products of activities carried out in this work area.

Mealing area (Features 112, 76, and 30): Feature 112 (Figure 5.11), located along the west wall of the north room, is a metate which was propped up by stones to increase the slope of the trough. Directly below the mouth of the trough is a subfloor bell-shaped collecting basin (Feature 76). Two manos were found nearby, along with several ceramic clusters. Before the pithouse burned, however, the collecting basin had been filled with clean sand and sealed with a thin layer of adobe, possibly indicating seasonal use.

Feature 30, located near Feature 112, might be associated with this mealing station. The feature is a small cylindrical hole filled with sand, but showed no indication of having been sealed. It is not clear what its relationship was to Feature 112, or what purpose it might have served.

Mealing area (Feature 39): An artifact cluster which consists of several small rocks, a sherd cluster, and a mano was probably concerned with food preparation. Although no metate was recovered associated with them, the smaller stones might once have supported a metate, as at the two other mealing stations. The presence of the mano lends support to this

interpretation. If this is correct, three mealing areas were present in this structure.

Other features: Located along the east wall in the northeastern quadrant of the structure is a possible work (Feature 22) area composed of subfloor features and artifacts. The two pit features (Features 23 and 36) are small, shallow basins which were filled with sand. Similar features are often thought to be pot rests used to support unstable, round-bottomed vessels (Morris [15]), though ceramics are often absent, as in these particular features from Pithouse 1. Also found in the same area were an anvil stone and two sandstone slabs, one of which was probably a cist cover. Other artifacts found within 75 cm of the pits include two crushed ceramic jars, three ceramic clusters, a flaked lithic item, and a nonhuman bone. The function of this assemblage is not readily apparent, but the presence of only a single flaked lithic item suggests that it was not a lithic workshop.

The two remaining subfloor features are located north of the hearth along the general line of the major structural axis. The larger of these two cylindrical cists (Feature 27) is closer to the hearth. The base of an antler, showing evidence of modification, was in the bottom of the cist and was covered with brown sand. There was no adobe seal covering the feature. It is inferred that Feature 27 is the sipapu because of the presence of a ritualy placed mule deer antler (PL 41) which, along with numerous flakes, had been placed on and around this feature. This phenomena was also found in Pithouse 2, where ritual abandonment is also indicated.

Approximately 1 m north and slightly to the east of Feature 27, and still on the central axis of the structure, is another cist (Feature 29).

A projectile point fragment was found near the base of the sterile, light-yellow sand fill of this feature. Like Feature 27, this cist was not sealed. One or both of these features might have served the ritualistic purpose of the sipapu. These were the only floor features having artifacts in their otherwise sterile, sandy fills.

Floor artifacts. Concentrations of artifacts not given feature designations in the field, but nevertheless demonstrating associations of probable activity areas, were present in the main chamber of Pithouse 1. Table 5.4 provides a list of these and other floor and bench artifacts. One such cluster is a flaked lithic concentration in the northwest corner of the structure; nearby on the western shelf was another group of lithics. Although ceramic clusters were present in this area of the structure, the abundance of lithic materials indicates that this was probably a workshop using or perhaps producing such artifacts.

In the southwest corner of the north room, directly north of the wingwall, was another cluster of artifacts. The proximity of these to the probable mealing area (Feature 39) previously described is interesting, but no functional association is apparent. The artifacts in the southwest corner of the north room include a thick uniface, debitage, one mano, an anvil stone, some nonhuman bones, and a partial ceramic vessel.

The artifacts around the hearth are almost exclusively ceramic clusters. One nonhuman bone was recovered, and all artifacts are probably associated with the cooking activities of the hearth. The southeast quadrant of the north room and the eastern portion of the south room produced relatively few floor artifacts (Table 5.4). The presence of the wingwall indicates a two-part division of space and suggests there should be differences between the artifact collections in the two areas. In this

Table 5.4 Point Located Artifacts in Pithouse 1, Dos Casas Hamlet (Page 1 of 3)

PL #*	Description
	Floor
1	Ceramic, DL Moccasin Gray jar sherds (3)
	Ceramic, CA EP Gray jar sherd
2	Ceramic, item misplaced
3	Ceramic, DL EP Gray jar sherds (12)
	Ceramic, CA EP Gray jar sherds (2)
4	Ceramic, DL Chapin Gray jar sherds (20)
5	Flaked lithic, side-notched projectile point
6	Flaked lithic, thick uniface
7	Flaked lithic, used core
8	Flaked lithic debitage
9	Nonflaked lithic, cist cover
10	Nonflaked lithic, anvil stone
11	Ceramic, item misplaced
12	Ceramic, item misplaced
13	Ceramic, DL EP Gray jar sherds (4)
14	Ceramic, DL EP White bowl sherd
15	Nonhuman bone, Artiodactyl (1)
16	Flaked lithic, utilized flake
18	Ceramic, DL EP Gray jar sherd w/ fugitive red
	Ceramic, DL EP Gray jar sherds (3)
19	Nonflaked lithic, undifferentiated
20	Nonflaked lithic, undifferentiated
21	Nonflaked lithic, trough metate
22	Nonflaked lithic, two-hand mano
23	Flaked lithic, thick biface
24	Nonflaked lithic, polishing stone
25	Nonflaked lithic, indeterminate
26	Flaked lithic debitage
27	Flaked lithic, thick biface
28	Ceramic, DL EP Gray jar sherds (7)
29	Vegetal, coiled basketry - indeterminate form
30	Ceramic, DL EP Gray jar sherd
31	Ceramic, item misplaced
32	Ceramic, item misplaced
33	Ceramic, DL EP Gray jar sherds (3) w/ fugitive red
	Ceramic, DL EP Gray jar sherds (69)
34	Nonhuman bone, large mammal (9)
35	Ceramic, DL Chapin Gray jar sherd
	Ceramic, DL EP Gray jar sherds (6)
36	Nonflaked lithic, anvil stone
37	Nonflaked lithic, indeterminate
38	Ceramic, DL EP Gray jar sherd
39	Ceramic, item misplaced
40	Flaked lithic, item misplaced
41	Nonhuman bone, Artiodactyla (antler)
42	Nonhuman bone, *Odocoileus hemionus* (pressure flaker)
43	Ceramic, DL EP Gray jar sherds (58)
	Ceramic, DL EP Gray jar sherds (9) w/ fugitive red

Table 5.4 Point Located Artifacts in Pithouse 1, Dos Casas Hamlet (Page 2 of 3)

PL #*	Description
44	Flaked lithic debitage (2)
45	Nonhuman bone, *Sylvilagus* sp. (3)
46	Flaked lithic, item misplaced
47	Nonhuman bone, *Odocoileus hemionus* (antler)
48	Nonhuman bone, *Artiodactyla*
49	Nonflaked lithic, indeterminate
50	Nonflaked lithic, core
51	Nonhuman bone, item misplaced
52	Flaked lithic debitage (3)
53	Flaked lithic debitage
54	Flaked lithic debitage
55	Flaked lithic debitage
56	Ceramic, CA EP White bowl sherds (5)
	Ceramic, DL EP Gray jar sherds (19) w/ fugitive red
	Ceramic, DL EP Gray jar sherds (40)
57	Ceramic, CA EP White bowl sherd
	Ceramic, DL Chapin Gray jar sherds (3)
	Ceramic, DL Chapin Gray seed jar sherds (3)
	Ceramic, DL EP Gray jar sherds (15) w/ fugitive red
	Ceramic, DL EP Gray jar sherds (85)
58	Flaked lithic debitage (15)
59	Nonhuman bone, item misplaced
60	Flaked lithic, indeterminate
61	Nonflaked lithic, anvil stone
62	Ceramic, DL EP Gray jar sherds (3)
	Ceramic, DL EP Gray jar (11) w/ fugitive red
63	Flaked lithic debitage (5)
64	Nonflaked lithic, generalized
65	Nonflaked lithic, hammerstone
66	Ceramic, DL EP Gray jar sherds (6)
	Ceramic, DL EP Gray jar sherds (7) w/ fugitive red
67	Nonhuman bone, item misplaced
68	Ceramic, DL EP Gray jar sherds (29)
	Ceramic, DL EP Gray jar sherds (5) w/ fugitive red
	Ceramic, DL Chapin Gray jar sherd
	Ceramic, CA EP Gray jar sherds (3)
69	Flaked lithic debitage
70	Ceramic, DL EP Gray jar sherds (2)
71	Flaked lithic debitage
72	Flaked lithic debitage
73	Ceramic, DL Chapin Black-on-white bowl sherd
	Ceramic, DL EP White bowl sherds (3)
	Ceramic, DL EP Gray jar sherds (27)
	Ceramic, DL EP Gray jar sherds (6) w/ fugitive red
74	Ceramic, DL EP Gray jar sherds (4)
75	Flaked lithic debitage
76	Nonflaked lithic, one-hand mano
77	Flaked lithic, core
78	Flaked lithic debitage
79	Flaked lithic, item misplaced

Table 5.4 Point Located Artifacts in Pithouse 1, Dos Casas Hamlet (Page 3 of 3)

PL #*	Description
80	Flaked lithic debitage
81	Nonflaked lithic, anvil stone
82	Flaked lithic debitage (24)
83	Nonhuman bone, item misplaced
87	Nonflaked lithic, two-hand mano
88	Flaked lithic, trough metate
89	Flaked lithic, used core
	Ventilator
17	Ceramic, DL EP White bowl sherds (3)
	Ceramic, CA EP Gray jar sherds (2)
	Ceramic, DL Chapin Black-on-white bowl sherd
	Ceramic, SJ Chapin Black-on-white bowl sherd
	Ceramic, DL EP Gray jar sherd
85	Flaked lithic, thick biface
	Leaner Shelf
84	Nonhuman bone, small mammal
	Nonhuman bone, mammal (4)
	Nonhuman bone, *Lepus californicus* (3)
	Nonhuman bone, *Castor canadensis* (2)
86	Flaked lithic debitage (27)

*See Figure 5.11 for artifact locations.

( ) - Number of items
DL - Dolores Tract
EP - Early Pueblo
CA - Cahone Tract
SJ - San Juan Tract

case, however, there was not much difference; the division did not apparently confine or limit the transfer of materials from one area to another.

Superstructure. There is sufficient evidence to suggest a four-post vertical support system holding up a framework of horizontal beams, upon which smaller, lighter leaner poles rested. Charred remains of juniper and sagebrush were abundant across most of the main chamber, indicating their use in construction. The timber framework was apparently covered with a layer of these vegetal materials prior to the addition of an earth cover. The sagebrush and juniper would provide a strong, light-weight base while increasing surface area to strengthen the bond with the adobe covering.

During excavation, samples of the numerous charred beams and leaner poles were collected for tree-ring, radiocarbon, and organic material analysis. The 82 tree-ring samples submitted produced only two datable specimens; these indicate a probable construction date sometime during or shortly after A.D. 760. (Further discussion is provided under Dating Samples.)

Pithouse 2

Dimensions:

N-S Diameter:	5.11 m
E-W Diameter:	4.72 m
Floor area:	20.50 m^2
Total Roofed area:	25.60 m^2
Depth (below modern ground surface):	1.00 m
Reconstructed roof height:	2.00 m
Bench height above floor:	0.45 m

Structure description. Pithouse 2 is located immediately north of Pithouse 1 (Figure 5.10), with its ventilation system constructed into the northern portion of Pithouse 1. In plan, Pithouse 2 (Figure 5.18) is

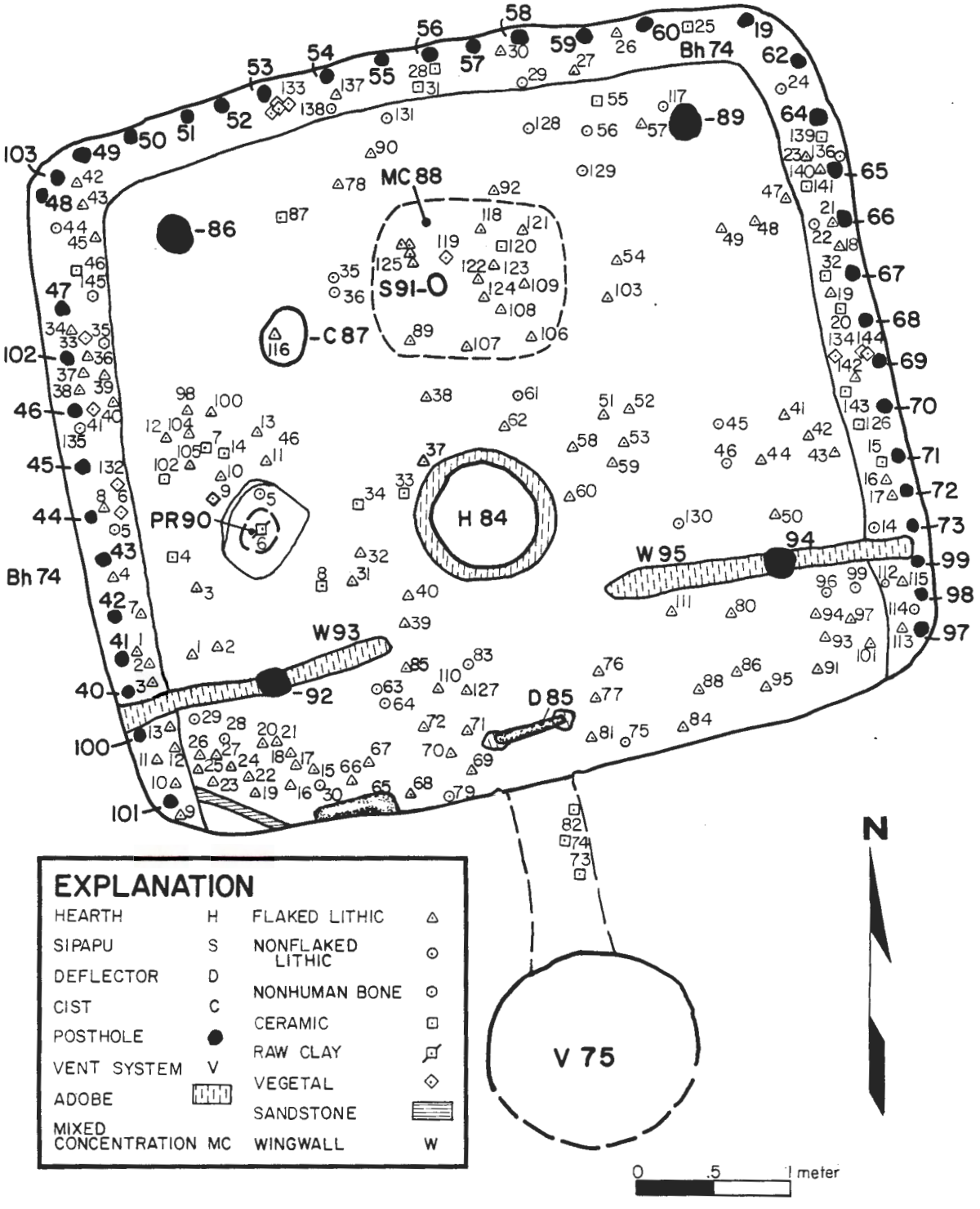

Figure 5.18 Plan map of Pithouse 2, Dos Casas Hamlet. See Table 5.6 for numbered artifact descriptions.

almost square with rounded corners. This house, like Pithouse 1, is equipped with wingwalls, a hearth, four main roof-support sockets, and a ventilator system. Unlike Pithouse 1, Pithouse 2 has a standard bench encircling the west, north, and east sides of the main chamber (including the area south of the wingwalls). The ventilator shaft and tunnel of Pithouse 2 are slightly larger than those of Pithouse 1, and they are oriented more directly north-south. The width of Pithouse 2 is about the same size as Pithouse 1, but its length is about 0.75 m less. Figure 5.19 illustrates the architectural profiles of Pithouse 2.

Structural fill. Pithouse 2, like Pithouse 1, was destroyed by fire, but the fill sequence in Pithouse 2 is not as complex as that of Pithouse 1. The stratigraphic profile (Figure 5.20) shows eight levels of deposition. These levels can be easily grouped into two strata. Lenses 3 through 8 represent different degrees of burning from the collapsed roof, while Lenses 1 and 2 represent different stages of a natural fill sequence with no cultural materials. This profile reveals that after Pithouse 2 was destroyed by fire, the house, and probably the site, was abandoned and never reused.

Structural features. The major structural features of Pithouse 2 are the wingwalls, a bench, main support sockets, and the ventilator system. These features are almost carbon copies of those in Pithouse 1; the major difference is that Pithouse 2 contains a bench and Pithouse 1 does not.

Wingwalls:

Dimensions:

Wingwall Length:	
West:	2.22 m
East:	2.00 m
Wingwall Height:	
Minimum:	0.30 m
Maximum:	0.85 m

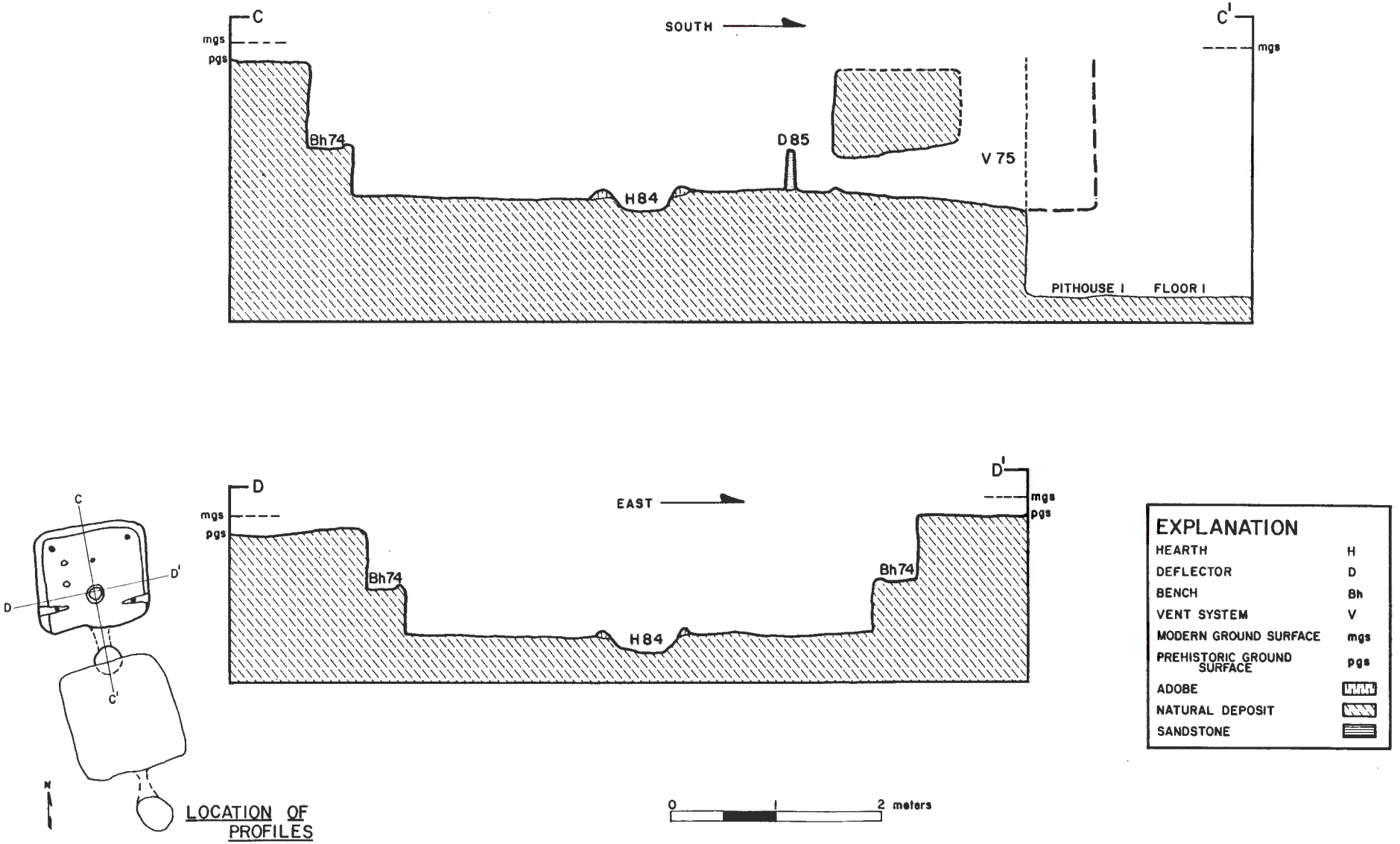

Figure 5.19 Architectural profiles of Pithouse 2, Dos Casas Hamlet.

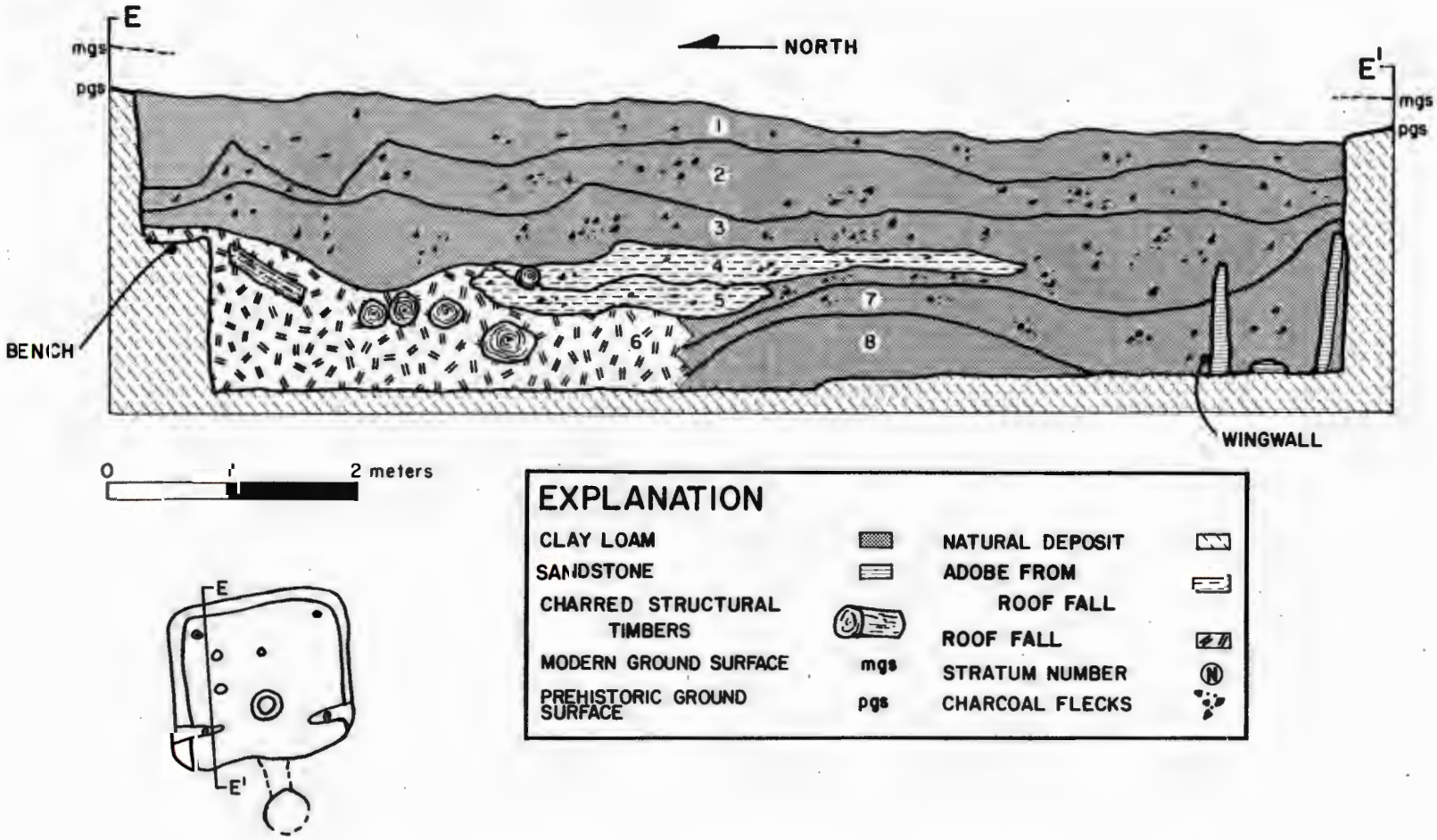

Figure 5.20 Stratigraphic profile of Pithouse 2, Dos Casas Hamlet.

Deflector:

Width:	0.48 m
Height:	0.37 m

The main chamber of Pithouse 2 was divided into two unequal areas by two slab and adobe walls, the wingwalls, which run east and west across the southern end of the house. A 0.9 m gap in the center allows passage between the two areas. Each wingwall was constructed of upright slabs set into shallow floor slots and mortared into place with adobe. Also incorporated into these wingwalls were the main support posts, which had been set into sockets about 0.8 m deep. Once the posts were packed into place and the slabs secured to the floor, the whole wall was covered with a thick coat of mud.

At the tops of these slabs are adobe "ropes" set in a turtleback fashion (one face is concave, the other is convex), as was the case in Pithouse 1; this gives the wingwalls additional height. This mode of construction was continued to each side of the bench and stopped just short of the upper walls of the house. Evidence suggests that the wingwall was constructed in a stair-stepped manner in which the innermost portion was lower than the portion on the bench.

The function of the wingwalls becomes obvious when the artifacts found to the south, in the smaller area, are examined. Metates, manos, and heavier pounding stones are frequently found in this area (Bullard [14]). Apparently wingwalls served to separate an area where heavy work took place from the main chamber where lighter tasks and general living occurred.

The wind deflector stone is located only 0.34 m in front of the vent opening, midway along the south wall. This sandstone upright slab is set

into the floor in the same manner as the upright slabs of the wingwall. The wingwall, deflector, and vent opening can be seen in Figure 5.21.

Bench: The bench which extends around all but the southern wall of Pithouse 2 is not a bench in the modern sense of the word, i.e., a place to sit. The so-called benches in the northern San Juan area structures served two purposes, whether they are found in pithouses (Gillespie [16]) or in the later kivas (Hayes and Lancaster [17]). In pithouses, they were usually used as footings on which to butt the end of leaner poles; they also seem to have been convenient areas for storing portable household items to keep them off the floor. In later kivas, the cribbed-roof type of construction negated the possibility of anyone sitting on the bench, and invariably the small portable objects found on benches in pithouses are also found along kiva benches. Only rarely was a pithouse or kiva constructed so that a person could actually have sat on the bench. When this occurs, it is usually in a Basketmaker III pithouse. It would seem that the older term "banquette" better lends itself to defining a feature that used both as a roof support and as an internal storage area.

The bench, or banquette, in Pithouse 2 average 0.45 m high and 0.40 m wide. A raised adobe lip (0.05 to 0.1 m in height) was affixed to the front of the bench, perhaps to act as a stop for items placed on the bench that might otherwise have rolled off. Near the back of the bench a similar rope of adobe was positioned to encompass the base of the leaner poles and their sockets. Small compartments formed by this adobe rope were big enough to store small items, e.g., awls, blades, jewelry. These occurred only at the base of some of the posts along the east and midway along the north sides of the banquette.

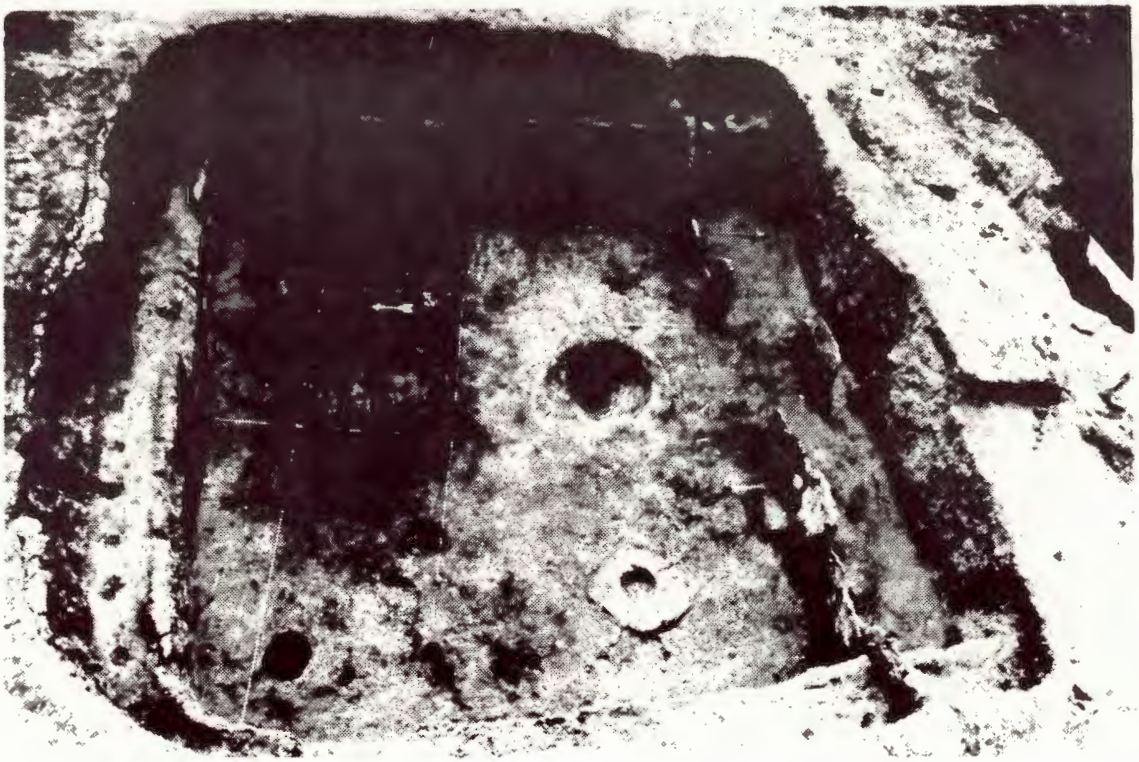

Figure 5.21 South end of Pithouse 2, Dos Casas Hamlet (D.A.P. 007134).

Figure 5.22 Ceramic manufacturing area in Pithouse 2, Dos Casas Hamlet (D.A.P. 003322).

There were 41 leaner-post sockets surrounding the back of the bench (Figure 5.18 and Table 5.5). These sockets averaged 0.7 m in diameter and were spaced 0.30-0.35 m apart. The top of the bench was smooth, but the extreme burning made it impossible to determine if it had been plastered.

Main roof support postholes: Within the main chamber of Pithouse 2 are four deep post sockets (Figure 5.18 and Table 5.5). These sockets, when equipped with four stout logs, were apparently the foundation for the whole superstructure. The two southern posts were incorporated directly into the wingwall. None of the sockets contained material suitable for dating.

Ventilator system (Feature 75):

Dimensions:

Shaft:	
Length:	Indeterminate
Width:	1.05 m
Height:	0.7 m
Tunnel:	
Length:	1.40 m
Width:	0.55 m
Height:	0.45 m
Tunnel Platform:	
Length:	0.85 m
Height:	0.07 m

The ventilator system of Pithouse 2 has a horizontal tunnel which opens into the south wall of the main chamber. This horizontal tunnel expands into a bell-shaped vertical shaft 1.4 m south of the south wall of the main chamber, intruding into Pithouse 1 (Figure 5.10).

The bottom portion of the vertical shaft was dug into the accumulated fill of Pithouse 1 and was removed during excavation of Pithouse 1, before its presence was discerned. The vent systems of both structures seem

Table 5.5 Dimensions of Postholes in Pithouse 2, Dos Casas Hamlet

Feature No.	Diameter (m)	Depth (m)
Main support postholes		
94	0.15	0.85
89	0.19	0.85
92	0.19	0.84
86	0.24	0.80
Leaner postholes		
40	0.07	0.20
41	0.07	0.10
42	0.10	0.08
43	0.10	0.06
44	0.08	0.10
45	0.08	0.06
46	0.09	0.08
47	0.06	0.13
48	0.07	0.10
49	0.07	0.10
50	0.09	0.29
51	0.09	0.09
52	0.08	0.15
53	0.08	0.14
54	0.06	0.12
55	0.06	0.18
56	0.10	0.15
57	0.08	0.18
58	0.08	0.16
59	0.07	0.22
61	0.08	0.30
62	0.08	0.15
63	0.05	0.17
64	0.08	0.17
65	0.08	0.18
66	0.10	0.16
67	0.09	0.13
68	0.08	0.17
69	0.06	0.17
70	0.09	0.18
71	0.07	0.20
72	0.06	0.18
73	0.07	0.17
97	0.08	0.09
98	0.08	0.09
99	0.09	0.15
100	0.09	0.10
101	0.09	0.13
102	0.08	0.13
103	0.08	0.17

virtually identical. Both horizontal shafts have a raised platform at the north end (apparently used as a water stop), and each horizontal shaft expands into a bell-shaped vertical shaft. The stratigraphy (Figure 5.20) in Pithouse 2 indicates that the vent shaft was open at the north end and covered by some form of wooden superstructure at the south end. When the structure burned, the draft through the vent tunnel carried enough sparks to ignite the wooden structure covering the mouth of the vertical shaft, and apparently pieces of this covering fell to the bottom of the shaft while it was burning. After abandonment, the vent began its natural filling; about midway through this process the remainder of the burned wooden superstructure slumped into the vent. During the process of natural filling, the material flowing through the vent tunnel formed an alluvial fan over the floor as far as the north rim of the hearth.

Floor Features.

Hearth (Feature 84):

Dimensions:

North-south:	0.65 m
East-west:	0.56 m
Greatest depth:	0.2 m

The southern edge of the central hearth is located 1 m north of the slab deflector, along the north-south axis of the house. The hearth is circular in plan and basin-shaped in profile; an adobe collar was added around the circumference of the feature. This collar was 0.1 m wide and 0.04 m high. The fill in the hearth consisted primarily of layers of fine sand interspersed with pockets of ash. This sand fill is interesting because it is not a natural deposit but rather a cultural phenomenon.

Sipapu (Feature 91):

Dimensions:

Diameter:	0.13 m
Depth:	0.24 m

Lying 1.28 m north of the hearth on the north-south axis of the pithouse is a small circular feature in the traditional position of the sipapu. Vertical grooves found in the sides of the feature may represent digging-stick marks. The feature was filled with clean sand and contained a small unworked unidentifiable gastropod shell. The antler of a mule deer was found lying above this feature.

Cist (Feature 87):

Dimensions:

Diameter:	0.28 m
Depth:	0.05 m

Cist (Feature 90):

Dimensions:

Diameter:	0.23 m
Depth:	0.05 m

The remaining two floor features are shallow circular basins, usually referred to as pot rests. One cist (Feature 87) lies 0.9 m to the southwest of the sipapu. This feature contained roof-fall debris, indicating it was open at the time Pithouse 2 was destroyed by fire. A second such cist (Feature 90) is located 1 m south of Feature 87. This "pot rest" was found beneath a large sandstone slab which had a large clump of unfired ceramic clay resting on its surface. The feature was filled with clean sand similar to the sipapu.

Activity areas. Four areas in the pithouse were defined as activity areas: the first of these areas is the mealing area behind the west wingwall. The tools associated with this area are three manos and two trough metates (one whole and one fragment) and a shaped stone slab, all of which were found leaning against the south wall of the pitstructure. The placement of the metates against the wall indicates that they were not in use at the time the fire destroyed the structure.

The second activity area is located directly north of the mealing area across the wingwall. This area contained a large shaped sandstone slab with a lump of unfired clay resting on it. Temper was mixed into this clay, suggesting it was intended for use in pottery manufacture. Around the slab were three sherd concentrations, all from large olla-type jars. This grouping (slab, clay, and ceramics) probably represents an area where pottery was constructed prior to firing. Figure 5.22 illustrates this activity area.

The third activity area is the central hearth, Feature 84. This feature was probably used most often in the winter months, when it is inferred that subteranean residence was resumed after spending the summer in the surface rooms. The hearth was probably a source of light heat, as well as the focus of food preparation.

The final activity area is the result of a one time happening, the ritual abandonment of the structure, rather than of daily activity. As in Pithouse 1, the antler of a mule deer (Feature 88) again was found lying on the sipapu and numerous flakes were scattered in the area on and around the sipapu. There were piles of items located in the centers of the west, north, and east portions of the bench. The items and the ritual nature of the abandonments are discussed in more detail in the conclusions to this report. The antler arrangement is shown in Figure 5.23.

Artifacts. There were 65 point-located artifacts or artifact cluster on the bench of the pithouse and 126 on the floor (Table 5.6 and Figure 5.18). Of this total, waste flakes make up 55 percent (35 items) of the bench artifacts and 46.3 percent (87 items) of the artifacts found on the floor. This high number of waste flakes would seem to indicate that

Figure 5.23 Mule deer antler concentration (Feature 88) over sipapu in Pithouse 2, Dos Casas Hamlet (D.A.P. 0071251).

Table 5.6 Point Located Artifacts in Pithouse 2
Dos Casas Hamlet (Page 1 of 5)

PL #*	Description
	Floor
1	Flaked lithic debitage
2	Flaked lithic debitage
3	Flaked lithic debitage
4	Ceramic, DL EP Gray jar sherds (10), w/ fugitive red
	Ceramic, DL Chapin Gray jar sherds (8)
	Ceramic, DL EP Gray jar sherds (144)
	Ceramic, QS EP Gray jar sherds (6)
	Ceramic, CA EP Gray jar sherd, w/ fugitive red
	Ceramic, CA EP Gray jar sherds (20)
	Ceramic, indeterminate White Ware bowl sherd
	Ceramic, DL EP White bowl sherds (3)
	Ceramic, DL Chapin Gray jar sherds (4), w/ fugitive red
5	Nonflaked lithic, shaped stone slab
6	Ceramic, unfired clay
7	Ceramic, DL EP Gray jar sherd
8	Ceramic, item misplaced
9	Vegetal, *Artemesia-Chrysothamnus* wood (1.6 g)
	Pinus sp. wood (< 1 g)
	Juniperus sp. wood (2.5 g)
	Phragmites sp. culm fragment (< 1 g)
	Populus sp. wood (< 1 g)
10	Flaked lithic debitage
11	Flaked lithic debitage
12	Flaked lithic debitage
13	Flaked lithic debitage
14	Ceramic, item misplaced
15	Flaked lithic debitage
16	Flaked lithic debitage
17	Flaked lithic debitage
18	Flaked lithic debitage
19	Flaked lithic debitage
20	Flaked lithic debitage
21	Flaked lithic debitage
22	Flaked lithic debitage
23	Flaked lithic debitage
24	Flaked lithic debitage
25	Flaked lithic debitage
26	Flaked lithic debitage (2)
27	Flaked lithic debitage
28	Nonflaked lithic, abrading grinding stone
29	Nonflaked lithic, two-hand mano
30	Nonflaked lithic, polishing stone
31	Flaked lithic debitage
32	Flaked lithic debitage
33	Ceramic, DL EP Gray jar sherd
34	Ceramic, DL EP Gray jar sherd
35	Nonflaked lithic, indeterminate
36	Nonflaked lithic, undifferentiated

Table 5.6 Point Located Artifacts in Pithouse 2
Dos Casas Hamlet (Page 2 of 5)

PL #*	Description
	Floor (cont.)
37	Flaked lithic debitage
38	Flaked lithic debitage
39	Flaked lithic debitage
40	Flaked lithic debitage
41	Flaked lithic debitage
42	Flaked lithic debitage (2)
43	Flaked lithic debitage
44	Flaked lithic debitage
45	Nonflaked lithic, indeterminate
46	Nonflaked lithic, abrading stone
47	Flaked lithic debitage
48	Flaked lithic debitage
49	Flaked lithic debitage
50	Flaked lithic debitage
51	Flaked lithic debitage
52	Flaked lithic debitage
53	Flaked lithic debitage
54	Flaked lithic debitage
55	Ceramic, DL EP Gray jar sherds (12)
56	Nonflaked lithic, item misplaced
57	Flaked lithic debitage (3)
58	Flaked lithic debitage
59	Flaked lithic debitage
60	Flaked lithic debitage
61	Nonflaked lithic, one-hand mano
62	Flaked lithic debitage (6)
63	Nonflaked lithic, two-hand mano
64	Nonflaked lithic, two-hand mano
65	Nonflaked lithic, trough metate
66	Flaked lithic debitage (2)
67	Flaked lithic debitage
68	Flaked lithic debitage
69	Flaked lithic debitage
70	Flaked lithic debitage (6)
71	Flaked lithic debitage
72	Flaked lithic debitage (2)
75	Nonflaked lithic, abrading grinding stone
76	Flaked lithic debitage
77	Flaked lithic debitage (2)
78	Flaked lithic debitage (15)
79	Nonflaked lithic, metate fragment
80	Flaked lithic debitage
81	Flaked lithic debitage
83	Nonflaked lithic, shaped stone slab
84	Flaked lithic debitage

Table 5.6 Point Located Artifacts in Pithouse 2
Dos Casas Hamlet (Page 3 of 5)

PL #*	Description
	Floor (cont.)
85	Flaked lithic debitage
86	Flaked lithic debitage
87	Ceramic, SS EP Gray jar sherds (5)
88	Flaked lithic debitage
89	Flaked lithic debitage
90	Flaked lithic debitage (8)
91	Flaked lithic debitage
92	Flaked lithic debitage (7)
93	Flaked lithic debitage
94	Flaked lithic debitage
95	Flaked lithic debitage
96	Nonflaked lithic, undifferentiated
97	Flaked lithic debitage
98	Flaked lithic debitage (4)
99	Nonflaked lithic, hammerstone
100	Flaked lithic debitage
101	Flaked lithic debitage
102	Ceramic, DL EP Gray jar sherds (3)
103	Flaked lithic debitage (5)
104	Flaked lithic debitage
105	Flaked lithic debitage
106	Flaked lithic debitage (2)
107	Flaked lithic debitage (3)
108	Flaked lithic debitage
109	Flaked lithic debitage
110	Flaked lithic debitage
111	Flaked lithic debitage
116	Flaked lithic debitage
117	Nonflaked lithic, undifferentiated
118	Flaked lithic debitage
119	Vegetal, *Gymosperm* wood (< 1 g)
	Vegetal, *Zea mays* kernels (3.3 g)
120	Ceramic, DL EP Gray jar sherd
	Ceramic, BL EP Red bowl sherd
121	Flaked lithic debitage
122	Flaked lithic debitage
123	Flaked lithic debitage
124	Flaked lithic debitage (3)
125	Flaked lithic debitage (18)
127	Flaked lithic, core
128	Nonflaked lithic, undifferentiated
129	Nonflaked lithic, shaped stone fragment
130	Nonflaked lithic, undifferentiated
131	Nonflaked lithic, metate, not further specified
132	Flaked lithic debitage

Table 5.6 Point Located Artifacts in Pithouse 2
Dos Casas Hamlet (Page 4 of 5)

PL #*	Description
	Bench
1	Flaked lithic debitage
2	Flaked lithic debitage
3	Flaked lithic debitage
4	Flaked lithic debitage
5	Nonhuman bone, large mammal (4)
6	Vegetal, *Zea mays* (2 whole, 2 fragments cupules; 7 cob fragments)
7	Flaked lithic debitage
8	Flaked lithic debitage
9	Flaked lithic, utilized flake
10	Flaked lithic debitage
11	Flaked lithic debitage
12	Flaked lithic debitage
13	Flaked lithic debitage
14	Nonflaked lithic, undifferentiated
15	Ceramic, CA Chapin Gray jar sherds (7)
16	Flaked lithic, utilized flake
17	Flaked lithic debitage
18	Flaked lithic debitage
19	Flaked lithic debitage (3)
	Flaked lithic, utilized flake
20	Ceramic, DL EP White bowl sherds (2)
21	Flaked lithic debitage (9)
	Flaked lithic debitage, utilized flake (2)
22	Nonflaked lithic, undifferentiated
23	Flaked lithic debitage
24	Nonflaked lithic, item misplaced
25	Ceramic, DL EP Gray jar sherds (2)
26	Flaked lithic debitage (85)
27	Flaked lithic debitage
28	Ceramic, DL EP Gray sherd (pipe)
29	Nonflaked lithic, two-hand mano
30	Flaked lithic debitage (3)
31	Ceramic, DL EP Gray jar sherd
32	Ceramic, BL EP Red bowl sherd
33	Nonhuman bone, large mammal (2)
34	Flaked lithic debitage
35	Flaked lithic debitage
36	Flaked lithic debitage (2)
37	Flaked lithic debitage
38	Flaked lithic debitage
39	Flaked lithic debitage
40	Flaked lithic debitage
41	Nonhuman bone, item misplaced
42	Flaked lithic debitage
43	Flaked lithic, utilized flake
44	Flaked lithic, metate fragment
45	Flaked lithic debitage
46	Ceramic, DL EP Gray jar sherd

Table 5.6 Point Located Artifacts in Pithouse 2
Dos Casas Hamlet (Page 5 of 5)

PL #*	Description
	Bench (cont.)
112	Nonflaked lithic, shaped stone slab
113	Flaked lithic, core
114	Nonflaked lithic, hammerstone
115	Flaked lithic debitage
126	Ceramic, item misplaced
132	Vegetal, *Zea mays* (10 cob fragments; 12 cupule fragments)
133	Vegetal, *Zea mays* (54 cob fragments)
134	Vegetal, *Zea mays* (38 cob fragments)
	Vegetal, *Juniperus osteosperma* seeds (3 whole, 1 fragment)
	Vegetal, Gymnosperm wood (< 1 g)
135	Nonhuman bone, *Vulpes vulpes*
136	Nonflaked lithic, pendant
137	Flaked lithic debitage
138	Nonflaked lithic, undifferentiated
139	Ceramic, SJ EP Gray jar sherds (3)
140	Flaked lithic debitage
141	Ceramic, SJ EP Gray jar sherd
142	Flaked lithic debitage
143	Ceramic, DL EP Gray jar sherd
144	Nonhuman bone, item misplaced
145	Nonhuman bone, mammal
	Ventilator
73	Ceramic, DL Piedra B/W bowl sherd
74	Ceramic, DL EP White bowl sherd
82	Ceramic, DL Piedra B/W bowl sherd

*See Figure 5.18 for artifact locations.

( ) - Number of items, if greater than one.
SJ - San Juan Tract
DL - Dolores Tract
EP - Early Pueblo
BL - Blanding Tract
SS - Sandstone Tract
CA - Cahone Tract
QS - Quartz Sand

flaked tools were manufactured within the confines of the pithouse. There were only four relatively complete artifacts found on the bench: a mano, a ceramic pipe, a hammerstone, and a jet pendant (Figure 5.24).

On the floor of the pithouse, the crushed ceramics around the pottery-manufacturing area were the only ceramics that might have been complete or nearly so when the structure burned. On the eastern portion of the bench was a partial Dolores Early Pueblo White bowl.

Surface Rooms and Occupation/Activity Areas

Stripping of sample units in Subarea 1 revealed dark sediments with cultural remains mixed throughout. Continued clearing of the plow zone deposits in these areas resulted in the uncovering of diffuse outlines of burned surface rooms (Figure 5.10). Between these rooms, areas of dark fill containing some cultural materials were found, but they lacked definite boundaries. These areas were not given room designations, however, because they lacked the darker fill characteristic of the burned rooms, and although some burned daub and charred wood fragments were found, these occurred in comparatively small quantities. On the basis of this information, these areas were designated as occupation/activity areas. Pit features, hearths, and artifact concentrations were found in many of the rooms and activity areas. Several other features were outside the boundaries of this complex, but still in Subarea 1. A total of seven rooms, two occupation/activity areas, and four external features were located in Subarea 1 (Figure 5.25).

Rooms 1, 2, 3, 4, 6, and 7 form an arc, oriented to the southwest-northeast. Room 5 is in front of the others and apparently shared a wall with Rooms 1 and 7, directly behind it. Rooms 1, 2, 5, and 7 are the only

Figure 5.24 Jet pendant (a) and ceramic pipe (b) from bench in Pithouse 2, Dos Casas Hamlet.

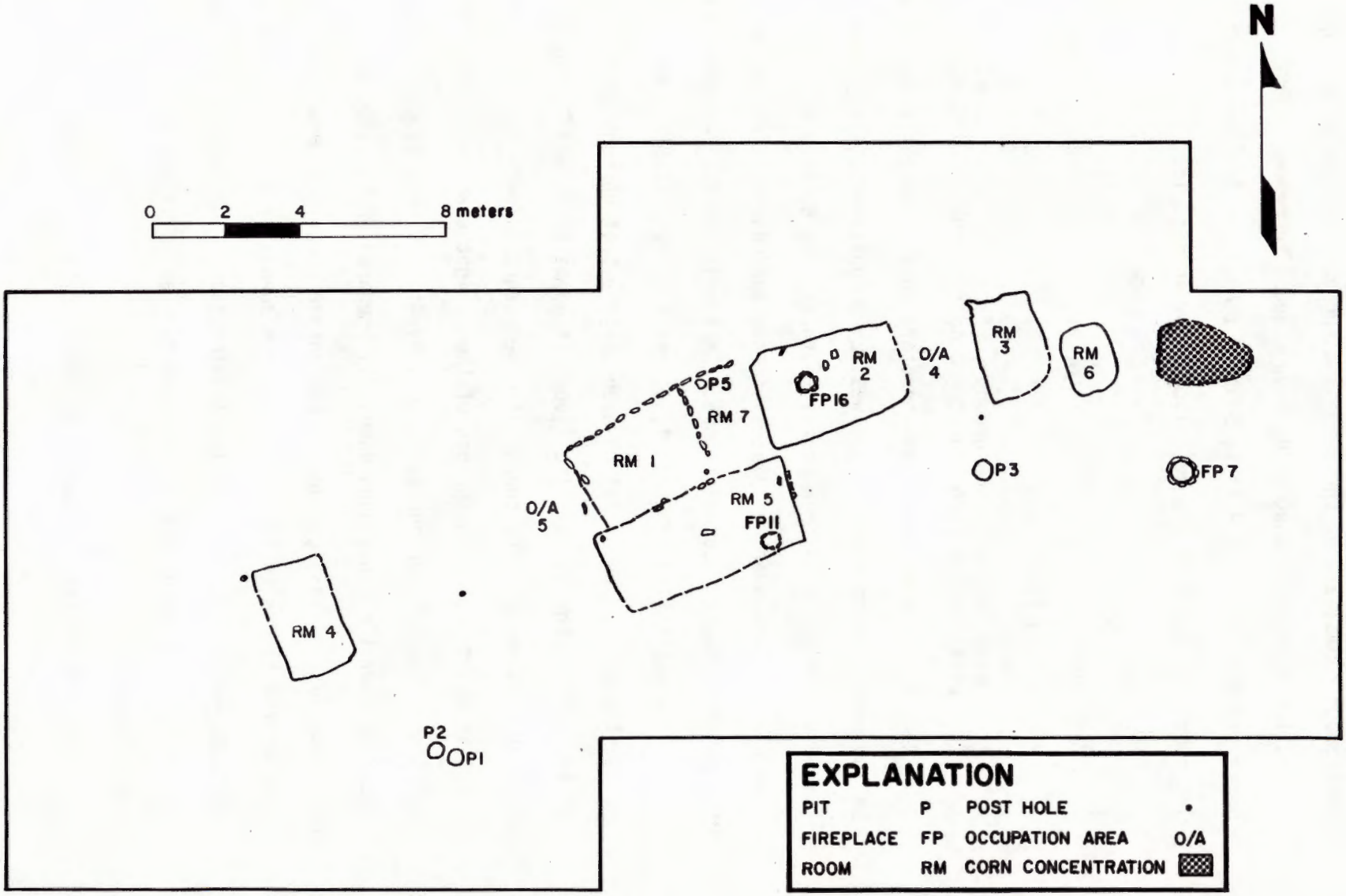

Figure 5.25 Plan map of roomblock, Dos Casas Hamlet.

contiguous rooms; all of the remaining surface structures are separated by occupation/activity areas, or by enough space to render them noncontiguous. Table 5.7 lists Subarea 1 room and feature associations. The rooms in Subarea 1 are described below in numerical order.

Room 1.

Dimensions:

Length (E-W):	3.25 m
Width:	2.60 m
Depth (below modern ground surface):	0.50 m
Depth (below prehistoric ground surface):	0.20-0.05 m

Room 1 is the west-central structure in the roomblock and is bordered on the east by Room 7 and on the west by Occupation/Activity Area 5 (Figures 5.25 and 5.26). Directly south is Room 5, with which it shares a common wall. The numerous pieces of daub and charred timbers, as well as the posthole in the southeast corner, all indicate jacal construction.

The construction of Rooms 1, 5, and 7 differs from the remaining rooms; these three rooms all have an alignment of upright sandstone slabs at the base of the walls. The floors of Rooms 1, 5, and 7 also were not excavated as deeply into the sterile sediments as were the floors elsewhere in the roomblock. The use of the upright slabs might have provided additional support for the walls so they did not need to be as deep. The floor of Room 1 had not been specially prepared or finished during construction. Investigations of the entire roomblock area revealed that none of the floors in the rooms had been specially prepared, although some had been excavated deeper during construction. The surface of Room 1 had been burned, allowing archaeomagnetic samples to be collected from the floor (Appendix A).

Large quantities of carbonized corn, both shelled and on the cob,

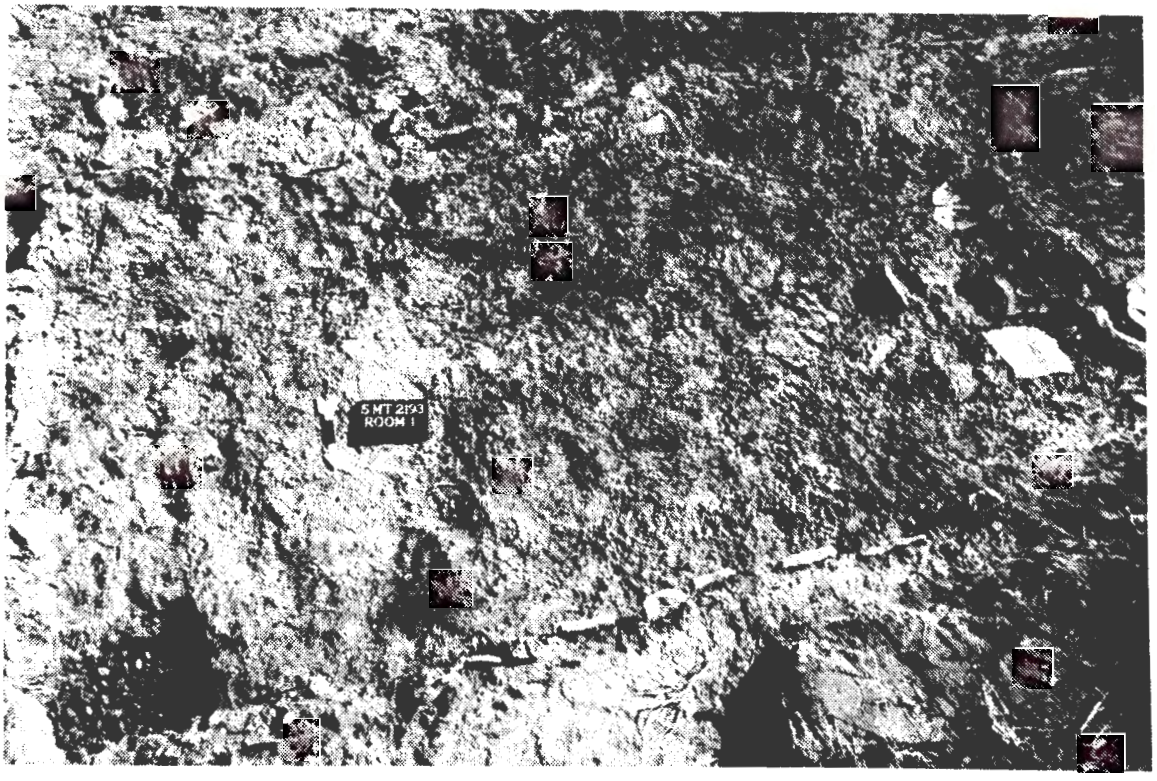

Figure 5.26 Room 1, Dos Casas Hamlet (view from north) (D.A.P. 003701).

Table 5.7 Room and Feature Associations, Subarea 1, Dos Casas Hamlet

Cultural Unit*	Feature No.	Feature Description	Length (in meters)	Width	Depth
Room 1	-				
Room 2	16	Rock-lined fireplace	0.80	0.70	-
Room 3	-				
Room 4	17	Lithic concentration: sandstone, flaked and nonflaked lithics			
Room 5	6	Lithic concentration: possible hearth			
Room 5	9	Lithic concentration: large cobble and spalls			
Room 5	11	Rock-lined fireplace			
Room 5	14	Lithic concentration: cobble cores			
Room 7	5	Shallow basin-shaped pit	0.50	0.45	0.10
O/A 4	-				
O/A 5	10	Ceramic concentration			
O/A 5	12	Ceramic concentration			
O/A 5	13	Ceramic concentration			
O/A 5	15	Ceramic concentration			
O/A 5	18	Ceramic concentration			
-	1	Shallow basin-shaped pit	0.48	0.35	0.09
-	2	Shallow basin-shaped pit	0.50	0.40	0.12
-	3	Shallow basin-shaped pit	0.56	0.53	0.05
-	7	Rock-lined fireplace	0.70	0.65	0.17

*O/A - Occupation/Activity Area

were present in the fill. There were no floor-associated artifacts collected from Room 1. Pollen samples (Appendix B) were taken from the sediments trapped in two crushed vessels that were found in the fill of the room. There were no internal features to indicate that Room 1 was used for any purpose other than storage.

Room 2.

Dimensions:

Length (E-W):	3.35 m
Width:	2.40 m
Depth (below modern ground surface):	0.41 m
Depth (below prehistoric ground surface):	0.08-0.20 m

Room 2 (Figure 5.25) is bordered on the east by Occupation/Activity Area 4 and on the west by Room 7. The unplastered floor surface is below the prehistoric ground surface, and the presence of daub and timber fragments indicates a jacal superstructure. One daub fragment has a pole impression approximately 7 cm in diameter. No postholes were found either inside or outside the apparent boundaries of the structure, implying that vertical posts for wall support were not deeply footed. Structural support might also have been derived from the superstructure of the adjoining Room 7.

Room 2 is oriented along the major axis of the roomblock, basically east-west. The floor is relatively even and apparently required more extensive excavation at the west side because the room is located on a slope. Room 2 has a rock-lined fireplace (Feature 16) located slightly north of the room's center. The fill of the fireplace resembled the fill of the structure as a whole, implicating that the fireplace had been cleaned before abandonment.

The only artifacts on the floor of Room 2 were a cluster of 12 sherds, representing several different gray ware jars, found in the south

half of the room. Corn kernels were found in the fill, but they, also, were relatively rare.

At least two interpretations of these data are possible. Room 2 might have been used as a living area where the occupants cooked and possibly slept. Alternatively, the fireplace, which would ordinarily suggest that the room was used for habitation, might have been there for other reasons. Successful storage of corn requires that the corn be dried first to insure against spoilage. Although corn kernels were not abundant, they were present. Some of the corn might have been prepared in Room 2 prior to being deposited in a storage room. It is not apparent, however, why a closed room would have been more desirable than a ramada for such work, since daytime temperatures during the corn harvest would still have been relatively warm. It seems likely that Room 2 was used as a habitation space.

Room 3.

Dimensions:

Length (N-S):	2.80 m
Width:	2.00 m
Depth (below modern ground surface):	0.40 m
Depth (below prehistoric ground surface):	0.10-0.30 m

Room 3, (Figure 5.25) at the east end of the roomblock, is bordered on the west by Occupation/Activity Area 4 and on the east by Room 6. The room is rectangular in plan. The dark cultural deposits marking the location of the room were first encountered at approximately 15 cm below the present ground surface. Charred corn, burned timbers, and baked fragments of jacal from this fill, as well as from the burned surface of the floor, all indicate that Room 3 was destroyed by fire.

Examination of the setting indicates that the occupants of the site excavated into Stratum 1 sediments, preparing the floor below the modern ground surface. The floor is depressed in the center and slopes up to abut the flaring walls; neither the floor nor walls show evidence of special surface preparation. The presence of burned fragments of adobe and support timbers indicates that the superstructure was of jacal construction. The vertical support system apparently relied on the walls, plus one deeply set post of ponderosa pine. If there were other corner supports, their sockets were shallow enough so that traces were not preserved or observed. Two other timbers of unknown function were collected for species identification; they were of ponderosa pine and *Populus* sp.

None of the wood samples that were collected proved datable by dendrochronology; the archaeomagnetic samples collected from the burned floor surface were not datable either.

The absence of a hearth or other features in Room 3 suggests that it was not generally used as a habitation room in which cooking or sleeping took place. The question arises, then, for what function did the room serve. A single Early Pueblo White bowl sherd and one piece of flaked lithic debitage were found on the floor of the room; however, charred corn kernels and cobs were scattered throughout most of the fill and concentrations were also found in isolated pockets. The amount of corn was not only more abundant than the artifact yield, but it also increased in density near the floor. Consequently, it seems likely that the room was used to store corn.

The method of storage is not clear, but both cobs and shelled corn were present in the remains. The shelled corn implies the use of a storage vessel, but, as previously noted, only a few sherds were found in the fill. Perhaps baskets were used, or it is even possible that the kernels became separated from the cobs during the fire. Kernels and cob fragments were found throughout the fill and mixed with the roof fall; sometimes concentrations of corn were found in small pockets. It may be that containers of maize, or perhaps the ears themselves, were suspended from the ceiling or walls of the room. The ethnographic Hopi (Beaglehole [18]) store foodstuffs in this manner; ethnographic data do not necessarily indicate prehistoric activities, however. Such a suspended storage method might have produced the uneven, pocketed distribution of maize that was noted. If storage was on the floor, there probably would have been fewer concentrations, with possibly larger quantities in each concentration, and the remains would probably have been better articulated with the floor itself.

Destruction of the room by fire is evident from the burned floor surface and the charred conditions of the structural timbers and fragments of adobe wall. The mixture of corn throughout the fill also suggests that burning occurred either during the room's use or shortly after abandonment. If the latter was the case, then it suggests the seasonal abandonment of a farming hamlet and the leaving of a small cache of corn for the next year's planting. Otherwise, abandonment of a valuable food product is indicated, implying a hasty retreat. This seems doubtful, considering the lack of such evidence in the pitstructure or elsewhere at the site.

To summarize, the available evidence indicates that Room 3 was a room used to store maize in both the cob and shelled form. If other activities

took place there, they did not require a hearth, ceramic vessels, or many lithic implements. Collapse of the structure was apparently caused by fire, which occurred either during occupation or shortly after temporary abandonment of the site. If a fire occurred after the site was abandoned, it is possible that some artifacts could have been removed even though maize was left.

Room 4.

Dimensions:

Length (N-S):	2.70 m
Width:	1.70 m
Depth (below modern ground surface):	0.50 m
Depth (below prehistoric ground surface):	0.05-0.20 m

Room 4, (Figure 5.27) the westernmost room of the structures in Subarea 1, is separated from the other rooms by approximately 7 m. Like Room 3, this structure is oriented with its longest axis perpendicular to the major axis of the roomblock. Despite the distance between this and the other rooms of the roomblock, its placement along the alignment of the arc suggests that it was an integral part of the complex.

The construction of Room 4 resembles that of Rooms 2, 3, and 6. The floor was recessed below the surrounding occupation surface and excavated into the sterile sediments; the surface and lower walls created by this excavation show no indication of having been plastered. Other construction techniques also conform to the pattern established from investigation of the other rooms. A single, deeply set juniper post apparently provided the stability for the remaining support timbers. Several shallow possible post sockets were found, but it could not be established whether these resulted from rodent activity or from aboriginal construction. Other timbers excavated from the structure's roof-fall

Figure 5.27 Room 4, Dos Casas Hamlet (view from west) (D.A.P. 004101).

deposit were all of ponderosa pine. These poles, together with numerous pieces of burned daub, support the inference of jacal construction.

Room 4 differs significantly from the other rooms in the nature of its fill. There were two distinct stratigraphic levels; the lower of these consisted of approximately 5 cm of silty yellow-brown sediments with cultural material and charcoal flecks mixed throughout; the upper stratum was apparently roof-fall materials, characterized by dark sediments with charred timber fragments, burned daub, and some cultural material. The fill of the other structures resembled only the upper fill of Room 4. The separation of the roof-fall stratum from the floor of the structure indicates that Room 4 was unoccupied during part of the time that the other structures of the roomblock were in use. The presence of bone refuse among broken ceramics and lithics in the lower stratum indicates that it might have been used as a trash dump. The relatively small quantity of debris suggests, however, that it was not used in this way for very long. Artifacts were not distributed uniformly through this lower stratum but were concentrated at floor level.

Although no obvious remains of agricultural products were noted in the fill, it appears that the structure was constructed, and probably used, as a storage room. The lack of floor features is the primary evidence leading to this interpretation. Although all of the other storage rooms in the roomblock had carbonized corn in their fill, its absence here might be attributed to the room's early abandonment.

In summary, due to it small size, isolated location, and the lack of surface features, Room 4 has been defined as a storage room. When it stopped being used for storage, either because it had deteriorated, or because it was no longer needed, the site occupants began dumping refuse

into the empty structure. There was a crushed vessel and a mixed assemblage of artifacts and sandstone rocks (Feature 17) at the top of the lowest stratum; these artifacts might represent items from the roof's surface that fell into the empty room when it burned or from the additional dumping of trash at a later date. The final period of deposition associated with the uppermost stratum was the result of the burning and collapse of the structure.

Room 5.

Dimensions:

Length (N-S):	2.80 m
Width:	5.25 m
Depth (below modern ground surface):	0.40 m
Depth (below prehistoric ground surface):	0.40-0.30 m

Room 5, the largest of the rooms in Subarea 1, is south of the main arc of rooms, yet it is adjacent to Rooms 1 and 7 (Figure 5.25). It is much longer than the other rooms and extends across the fronts of both Rooms 1 and 7. The boundaries of Room 5 were difficult to define because plowing had disturbed the remains quite extensively; projections for those uncertain areas have been determined from the locations of the known limits; the presumed outline of Room 5 is illustrated in Figure 5.28. It is possible that Room 5 extended farther south, though the deposits south of the illustrated boundary appear to have resulted from slope wash of room deposits.

Both the eastern and western boundaries of the structure were well defined. As in Room 1, a few upright sandstone slabs remained along the east and the north sides; others were probably removed by plowing. The few remaining upright slabs are important in identifying the relationship among Rooms 1, 5, and 7, the only structures on the site which have sandstone slab footings.

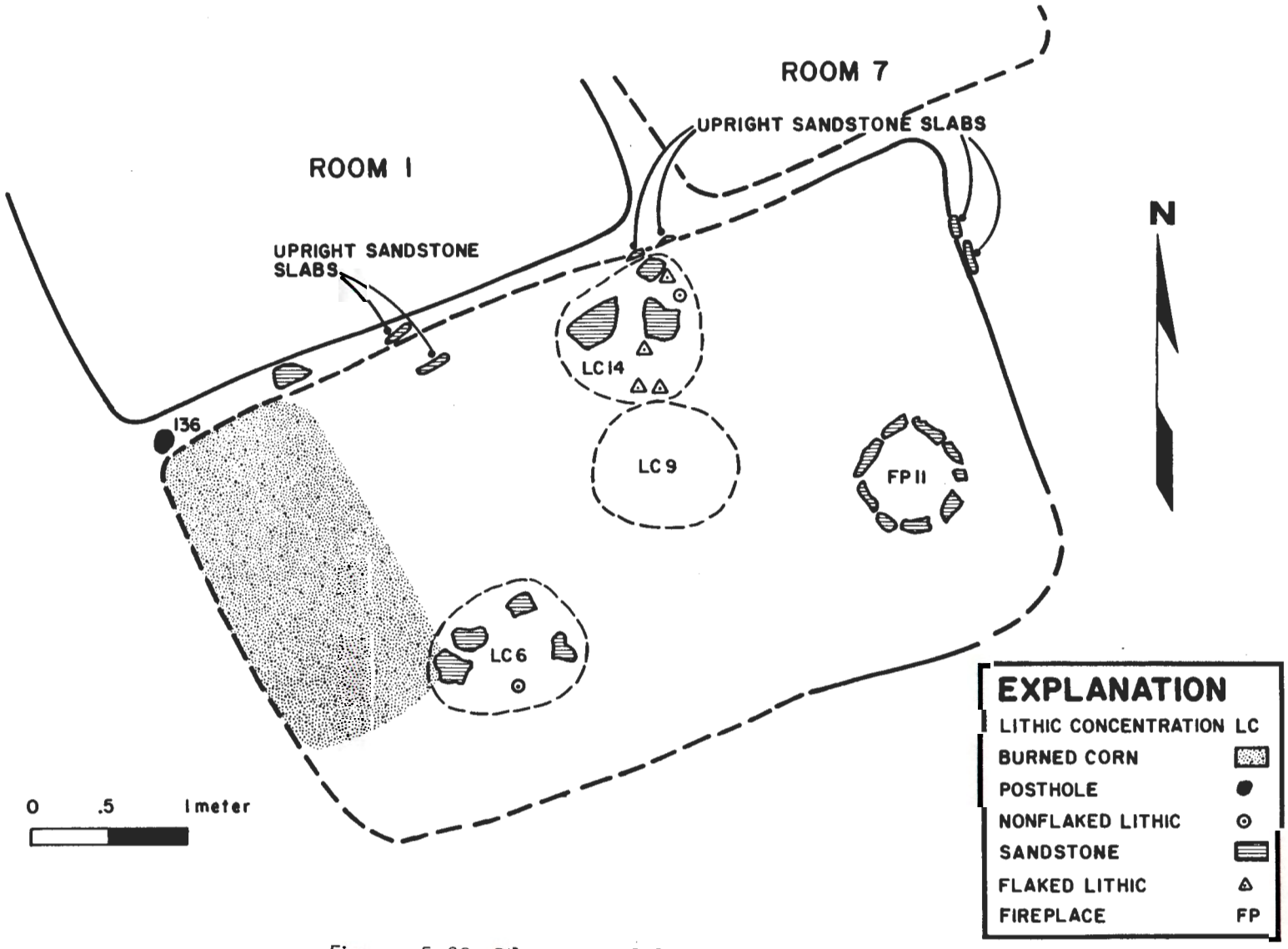

Figure 5.28 Plan map of Room 5, Dos Casas Hamlet

Another similarity among Rooms 1, 5, and 7 is their relatively shallow floor levels. Although Rooms 2, 3, and 4 were built by erecting a jacal superstructure over a floor which had been excavated into the subsoil, the excavations for Rooms 5 and 7 apparently involved only clearing away the loose topsoil. Room 1 also shows evidence of only limited preparatory excavation.

The presence of a hearth and several concentrations of artifacts in Room 5, as well as its size, suggests that Room 5 was used for more than storage. The scattered pockets of carbonized corn found in the fill along the west side of the structure represent relatively small quantities in contrast with those found in Room 1; Room 5 appears to have been used as a living or work area.

Fireplace (Feature 11):

Dimensions:

Length:	0.77 m
Width:	0.74 m
Depth:	0.18 m

A roughly circular, rock-lined fireplace (Feature 11) is located in the southeast corner of Room 5. It has sloping sides and a slightly basin-shaped, fire-reddened bottom. The fill was varied with occasional patchy lenses of clean sand among mixed layers of clayey sediments; a dense charcoal lens was present in the central area of the hearth. None of the observed strata, however, had a particularly high ash content. The absence of any definite ash zones suggests that the ash might have dissolved naturally, leaving charcoal flecks as the only indication of its presence in the sediments, or that the deposits resulted from the collapse of the structure. The presence of several small pieces of daub in both

the bottom and upper levels of the fill support the idea that the collapse of the structure formed the deposits, indicating that the fireplace was not in use when the room burned. The hearth is important to the assessment of the usage of the rooms as well; its presence suggests probable cooking activities, in addition to serving as a source for light and heat.

Floor artifacts: The remaining features of Room 5 are all concentrations of artifacts found on the floor. A large, flat river cobble was surrounded by small spalls fragmented from its edges (Feature 9). The spalls probably resulted from the burning of the structure rather than any intentional modification of the cobble. The cobble might have been used as a working surface for some activity in this central area of the room.

A concentration of lithic artifacts (Feature 14) was located along the north wall of Room 5. The concentration appears to be a cache of tools, cores, or raw materials, rather than a work area, due to the absence of other flaked lithic items in the immediate area.

The final artifact concentration (Feature 6) contained unmodified pieces of sandstone associated with a mano (PL 1). Initially, the burned surfaces on some of the rocks and the presence of charcoal suggested a possible hearth, corresponding with the one in the opposite corner of the room. Examination of the sediments, however, showed no fire-reddening from prolonged exposure to heat which is typical of hearths. Subsequently, the burned materials are thought to be associated with the burning of the roomblock.

In the pitstructures, several similar concentrations of artifacts were noted, varying only in the presence of a metate. It is suggested,

therefore, that Feature 6 represents an assemblage similar to that of Feature 39 of Pithouse 1, where the metate had been removed from its rock supports. The presence of the mano in Feature 6 lends further support to this interpretation.

Examination of the features from Room 5 indicates that the structure was probably used as a living area where several activities occurred. Cooking and probably sleeping are suggested by the presence of the hearth, and food preparation might have occurred in the southwest corner at a mealing station. Feature 9 might represent a smooth flat rock used as a working surface; and Feature 14 appears to be a cache of lithics, materials to be worked into tools. Of all the structures in Subarea 1, this room shows the greatest diversity of activities represented by the various features and artifacts.

Room 6.

Dimensions:

Length (E-W):	1.75 m
Width (N-S):	1.35 m
Depth (below modern ground surface):	0.20 m
Depth (below present ground surface):	0.23 m
Total floor area:	2.4 m^2

Room 6 is the easternmost room at Dos Casas, it is located 0.35 m east of Room 3. This small room is rectangular in plan view, with its long axis north-south (Figure 5.29). The stratigraphy in Room 6 indicates that its initial use was probably for storage during the occupation associated with Element 1. The few floor artifacts seem to be randomly distributed and give no indication of a specific function that might have occurred in the Room. Floor artifacts found in this room were two pieces of flaked lithic debitage, two Dolores Tract Early Pueblo Gray jar sherds, one

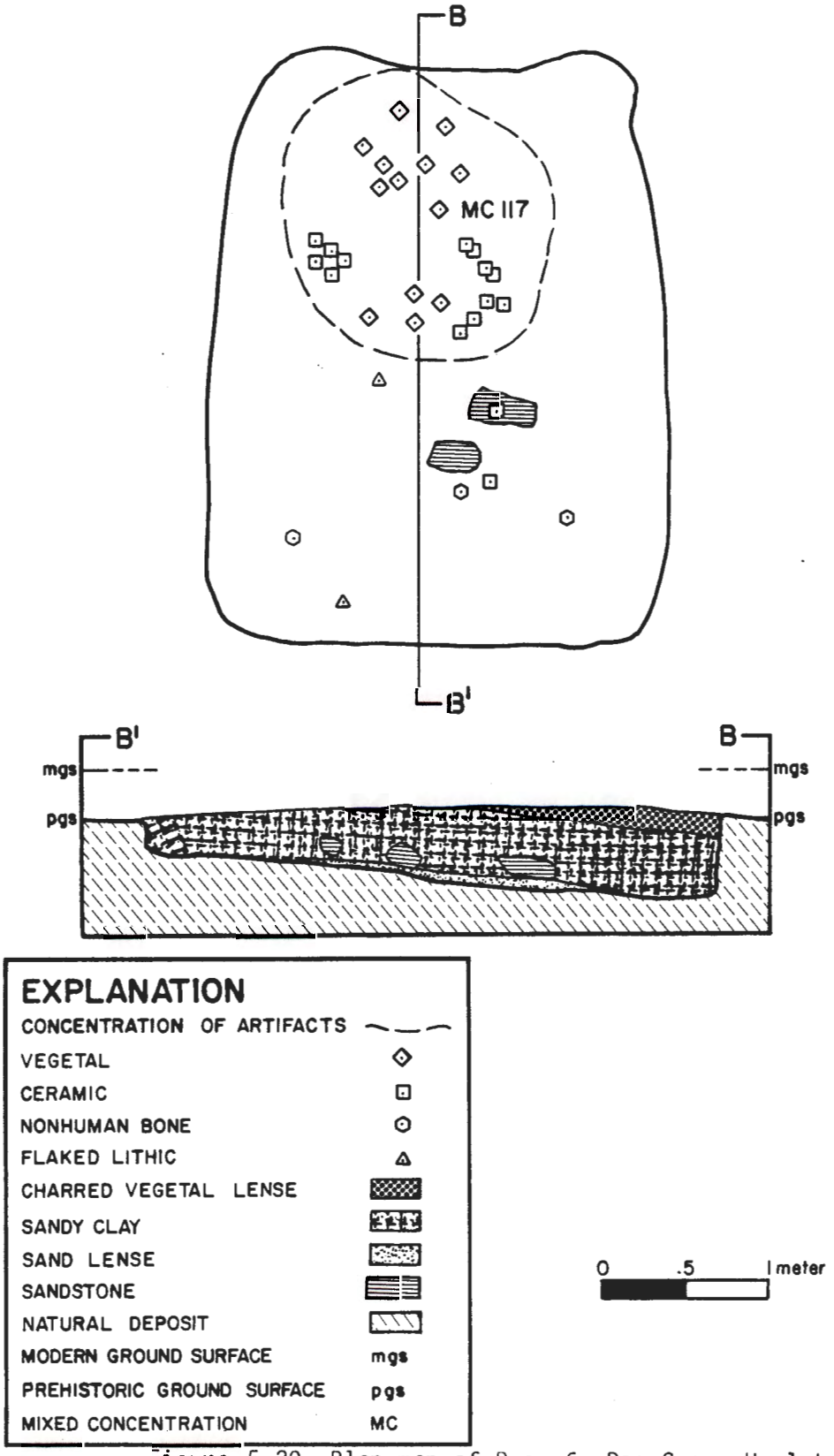

Figure 5.29 Plan map of Room 6, Dos Casas Hamlet

Dolores Early Pueblo White jar sherd, and three nonhuman bone (one of large mammal, one Canis familiaris, and one Erethizon dorsatum). It was then abandoned and naturally deposited materials almost completely filled the structure.

When the site was reoccupied, during Element 2, this area was again used. Evidence indicates that a ramada-type structure was erected over the natural deposits overlying Room 6. This ramada might have been more like an awning which was anchored to Room 3. This area had almost a quarter bushel of carbonized corn lying about, especially concentrated in a depressed area at the north end (Feature 117). The corn was found associated with numerous pieces of a large Chapin Gray jar. The corn was probably in this jar until the ramada roof caught fire and fell in. Burned roof fall was found in a half-meter area over the corn-filled depression and jar sherds, indicating the ramada-like structure had burned.

Any other evidence of a ramada-type structure has been totally destroyed by modern plow action. Plowing had disturbed another area east of Room 6 where a dispersed concentration of carbonized shelled corn was found. That area was so badly disturbed that nothing further can be said. The original Room 6 is quite similar in plan view to Rooms 3 and 4.

Room 7.

Dimensions:

Length (N-S):	2.80 m
Width:	1.95 m
Depth (below modern ground surface):	0.26 m
Total Floor Area:	5.46 m^2

Room 7 is located in the rear-central portion of the arc. It is bordered on the west by Room 1, on the east by Room 2, and on the south by the

northern end of Room 5. The north and west boundaries of the room are marked by upright sandstone slabs which are remnants of the jacal-wall bases. Excavation of the fill produced dark deposits with numerous fragments of burned daub and two vertical fragments of a single charred post of ponderosa pine.

The surface of this room is 0.12 m higher than that of Room 1 and 0.23 m higher than that of Room 2. The surface is characterized by hard-packed deposits slightly darker than sterile subsoils of the general site area. The floor slopes gently downward to the south, conforming to the depth of the floor of Room 5 where the two rooms adjoin. The construction method used appears to be similar to that of Room 5.

Almost at the center of the north wall of Room 7, is a shallow basin-shaped pit (Feature 5), which contained a dark fill. Although charcoal bits and flecks were scattered throughout this fill, the absence of any ash or fire-reddening on the bottom indicates that it did not serve as a hearth. This feature might have served as a pot rest.

Cultural material from the fill of the room includes ceramics, flaked and nonflaked lithic items, and charred corn. These materials might have been on the roof of Room 7 when it burned and fell. There were no artifacts on the floor of the room.

In summary, Room 7 is substantially different from the other rooms. It is small, like many storage rooms, but also has a pit feature along the north wall. Cultural materials found in the structure include both ceramics and lithics. The presence of corn in the room is not indicative of large-scale storage; the quantity was relatively small and the kernels were concentrated in one pocket. The lack of evidence indicating a living

or food-storage area, suggests that Room 7 might have been a work area, it could have functioned as a unit with Rooms 1 and 5.

Occupational/Activity Area 4.

Dimensions:

Inferred length:	2.40 m
Inferred width:	2.40 m
Depth (below modern ground surface):	0.28 m
Approximate area:	5.76 m^2

Occupation/Activity Area 4 (Figure 5.24) is on the eastern side of the roomblock. Its shape is roughly square, but it probably extended a little farther south at its east end. Removal of the plow zone overlying this activity area exposed deposits containing cultural material. These deposits were slightly darker in color than, though closely resembling, the sterile subsoil of the general site area. The inclusion of cultural materials and a slight discoloration, however, suggested they were cultural deposits. During excavation, materials from the burning of the roomblock were found in the deposits, including small amounts of burned daub and charred pieces of wood of varying sizes. Contained within the areas were small wood pieces, possibly fragments of sticks and branches which probably covered a framework of horizontal poles, forming a ramada-like structure. The absence of any postholes suggests that any covering that might have existed was probably an integral part of the roomblock. Beams extending between structures probably could have supported a light-weight roof. Other cultural materials excavated include ceramics and flaked lithics. Although lithic artifacts were not recovered in large numbers, they were more abundant in this area than in either of the adjoining rooms. If this unit represents a lithic workshop, the small number of artifacts recovered might be attributed to periodic cleaning and removal of waste material.

Occupation/Activity Area 5.

Dimensions:

Inferred length:	4.70 m
Inferred width:	3.80 m
Depth (below modern ground surface):	0.25 m
Approximate area:	17.86 m^2

Occupation/Activity Area 5 (Figure 5.25), located on the western side of the roomblock, is larger than Occupation/Activity Area 4. The area was originally defined based on an association of three crushed ceramic vessels found immediately west of Room 1, approximately 25 cm below the present ground surface (Figure 5.30). Expansion of the excavations to the west uncovered five other clusters of ceramics, two of which are parts of the same vessel (Figure 5.31). There were some difficulties, however, in establishing the vertical relationships of these ceramic clusters. In addition to the ceramic remains, the area was also marked by a barely visible, though discontinuous, darkening of the deposits.

An upright juniper post marked the western extent of these deposits and the western boundary of the activity area. In addition to this post, a timber fragment (*Populus* sp.) was found on the east side of the area. Small quantities of burned daub were recovered from the area as well, probably originating from the adjacent rooms, rather than from an overhead structure. These data suggest that Occupation/Activity Area 5 was covered by a framework of vertical posts and horizontal timbers, with the top probably covered by brush. It is doubtful that adobe was incorporated into the construction, considering the small quantities of adobe that were recovered.

The stratigraphic context of Occupation/Activity Area 5 is somewhat unclear. Below the plow zone, an apparent surface (at about 25 cm below

Figure 5.30 Crushed ceramic vessels in situ, Occupation/Activity Area 5 (D.A.P. 003703).

Figure 5.31 Crushed ceramic vessels in situ, Occupation/Activity Area 5 (D.A.P. 003215). Dark area in foreground is a test pit.

modern ground surface) was marked by the presence of several crushed ceramic vessels. This level, designated Surface 1, was thought to represent the habitation surface. Continued excavations to the west exposed several additional clusters of ceramic sherds, some at greater depth.

Discussion of Surface Rooms and Occupation/Activity Areas

The generally small quantities of artifacts found in the surface rooms and the presence of burned daub in the lower fill of the hearth in Room 5 suggest that these structures were not in use at the time they burned. If they were still being used, one might expect an increased quantity of artifacts in the rooms, evidence of then-recent use of the hearth, and larger quantities of corn in the storage rooms. The lower deposits of the fill in Room 4 do not indicate the length of time that the room was not used; it is apparent, however, that any period of abandonment for the other rooms prior to burning was less extensive than in Room 4.

While there is no evidence of a continuous wall joining all the rooms into a single arc, it is possible that the structures were connected by other, more perishable materials. A conjecture is that there were ramada-like connecting structures, opened on the sides, and covered with brush on the top. If this were so, some charred timbers might be expected in the roof-fall zone of the occupation/activity area deposits. Remnants of charred beams were in fact found in Occupation/Activity Area 4, but they are so few in number that they might represent only burned timbers from the collapse of the adjacent rooms. Unfortunately, these timbers were too fragmentary to provide tree-ring dates for comparisons among the rooms.

Southwest of Occupation/Activity Area 5 is the remnant of a post that might have been used to support a ramada-like structure over the activity area; however, little roof fall remains. Before separate rooms are postulated, consideration should be given to how the burning of these structures would compare with that of walled rooms. The absence of much burned roof-fall material suggests that any structure which existed here probably lacked sidewalls, except those formed by the walls of the cojoining rooms. A framework of posts and a covered roof is as a likely structural form; if so, the fire that destroyed the jacal structures would probably have consumed such open-sided structures without leaving much evidence of their existence. Jacal structures, on the other hand, generally leave fairly extensive remains when burned, because chunks of clay are preserved through firing, and because the clay-covered walls and roof often smother burning pieces of wood before they have turned to ash.

The nature of the roomblock construction, therefore, remains incompletely known. The relatively few jacal fragments and charred timbers, and the lack of upright sandstone slabs except around Rooms 1, 5 and 7, suggest that the occupation/activity areas were not closed spaces. It is uncertain, however, whether they were partially covered or completely opened. The presence of occasional charred, though highly fragmented, timbers and a single isolated upright post, suggests that they were at least partially covered.

Subarea 1 thus includes a roomblock composed of seven jacal surface rooms, separated by two occupation/activity areas which might have been covered by ramada-like timber and brush structures. There were also at least four "outdoor" pit features (Features 1, 2, 3, and 7) in the vicinity.

It is thought that Rooms 3, 6, and 4 were constructed during the occupation of Element 1 and were associated with Pithouse 1. It is thought that Room 7, because of its positions in the roomblock, might have originally been part of the Element 1 construction episode but was then revised during the Element 2 occupation. The reuse and possible modification of this rooms during Element 2 might have obliterated all evidence of the Element 1 structure. The remaining surface rooms, Rooms, 1, 2 and 5 were constructed during the Element 2 occupation.

Other Subarea 1 Features

Excavations in Subarea 1 exposed several other features in addition to the structures constituting the roomblock. Clearing of the plow zone in four of the sample excavation units uncovered dark circular deposits: three of these were shallow basin-shaped pit features and the fourth was a rock-lined fireplace. All are located south and east of the roomblock. Figure 5.25 illustrates their locations and relationships to the structures and Table 5.7 lists their dimensions.

Two of the shallow basin-shaped pits (Features 1 and 2), containing dark fill with numerous pieces of burned sagebrush, are located approximately 3 m southeast of Room 4, at the western end of the roomblock. Despite the presence of charcoal, there was no ash or reddening of their walls; Features 1 and 2 do not appear to have functioned regularly as hearths. No artifacts were found in Feature 1, but Feature 2 yielded several lithic and ceramic artifacts. These were probably part of the general sheet trash rather than intentional depositions.

A third shallow basin-shaped pit (Feature 3) also had numerous pieces of charcoal in the fill. All of the charcoal examined in the field was

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sagebrush. The fill also contained a few ceramic sherds and pieces of burned daub. Fire-reddening was evident along the sides of the feature, it is possible that Feature 3 was a hearth, but it differed significantly from the other hearths identified at the site. It is less than one-third as deep as the other identified hearths, and it lacks the characteristic rock lining of Subarea 1 or the straight-sided walls of the unlined hearth at Pithouse 1. The presence of burned daub in the fill suggests that the deposits probably resulted from the burning and collapse of the roomblock structures. Some of these deposits might have been hot enough to produce the slightly reddened surface observed, which was much less distinctive than reddened surfaces from use in the other hearths. It is possible, however, that the feature was used only briefly and does not, therefore, have the characteristics of other hearths at this site.

A fourth feature, located southeast of the roomblock, can definitely be identified as a fireplace (Feature 7). It is lined with small sandstone slabs and is relatively flat along the bottom. The base is fire-reddened, and several archaeomagnetic samples were collected. The fill of the hearth was homogeneous and included charcoal. No artifacts were found in the fill, but both ceramics and flaked lithics were found around the feature at the base of the plow zone.

In addition to the exterior features in Subarea 1 seven other external features were found at the site (Figure 5.10). Six of these are shallow heating pits similar to Features 1 and 2. The seventh is a rectangular stone-lined fireplace (Feature 81) located 5 m east of the northeast corner of Pithouse 2. This feature was damaged by historic farming practices, but enough evidence remains to indicate it was a fireplace; the dimensions of the remains of Feature 81 are: length 0.75 m;

0.62 m; and depth 0.16 m. The fill consisted of burned sandstone and pieces of burned jacal, which probably originated from the burned roomblock. Of the six basin-shaped heating pits, two (Features 78 and 79) are located 5 m and 8 m, respectively, west of the southwest corner of Pithouse 2; one (Feature 24) is located 2.5 m north of Pithouse 2; and the remaining three (Features 118, 119, and 126) lie 11.5 m east of Pithouse 1. The fill of these basin-shaped heating pits was generally dark brown to black. This coloration appears to have originated from decomposing vegetal matter that was left in the pits after their final use.

There is no definitive evidence for assigning these features to either Element 1 or Element 2. Based solely on their spatial relationships with the pithouses, Features 118, 119, and 126 have been assigned to Element 1 and the remaining external features have been assigned to Element 2.

MATERIAL CULTURE

Ceramics, flaked lithic items, and nonflaked lithic items were the artifacts most commonly found at Dos Casas Hamlet. Other artifacts found in small quantities include nonhuman bone and vegetal and inorganic materials. Because of the difficulty in assigning materials to either element, the total site assemblage is discussed here. Results of analyses of vegetal material and bulk soils samples are presented in Appendix C.

Ceramics

Ceramics recovered from the present ground surface, from the Subarea 1 structures, and from the lower fills and floors of Pithouses 1 and 2 have been classified in terms of ceramic wares and their respective types. Review of Table 5.D.1, Appendix D, indicates that the majority of the sherds recovered from the investigations at Site 5MT2193 represent Anasazi gray wares. Gray ware body sherds (Early Pueblo Gray) account for 85 percent of all ceramics recovered from the site. In descending order of prevalence, Early Pueblo White (6.2 percent), Chapin Gray (3.9 percent), Early Pueblo Red (1.4 percent), and Chapin Black-on-white (1.3 percent) are also present. All types recorded by the analysis represent the Basketmaker III and Pueblo I periods of the Anasazi culture. The latest type recovered was a reconstructable Moccasin neckbanded vessel (RC 4) which was found on the floor of Room 2, Room 5 and in the adjoining activity or ramada area. These are all Element 2 units. The begining date for this ceramic type in the project area is A.D. 775.

Sherds from 43 reconstructable (RC) vessels were recovered from various parts of the site. Reference should be made to Appendix D for a

listing of those vessels by form and traditional type. Figures 5.32 and 5.33 illustrate a selection of these vessels. Gray ware vessels account for the majority of RC items; Chapin Gray is represented by 15 vessels and Early Pueblo Gray 16 vessels, with Moccasin Gray being represented by only 1 vessel. For the white wares, Chapin Black-on-white accounts for seven vessels, Piedra Black-on-white, one vessel, and Early Pueblo White, three vessels. No red ware RC items were recovered. Jar forms are the primary vessel shape in the collection (32) with 10 bowls also represented. One Chapin Gray miniature jar (RC 43) was also recorded.

Fragments of Vessel #14, a Chapin Gray jar with a fugitive red exterior, were found in both Rooms 3 and 4 (Figure 5.33). The location of the sherds in both rooms provides supporting evidence that Room 4 was used as a trash dump prior to the burning of the surface structures, as has been suggested earlier.

Flaked Lithics

One hundred seventy-six flaked lithic tools and 1282 pieces of debitage were collected from Site 5MT2193. The most common tools, representing 48.3 percent of the total flaked lithic tools, were utilized flakes, while cores were the next most common tool (16.5 percent of the flaked lithic tools). Twenty-one items (11.9 percent) were choppers or scraper planes, and there were 24 (13.7 percent) thick and thin scrapers. Only eight of the tools (4.5 percent) were projectile points (Figure 5.34). Specialized forms, bifaces, and indeterminate pieces make up 5.1 percent of the flaked lithic tools. A detailed analysis of the flaked lithic tools can be found in Appendix E.

Figure 5.32 Selected reconstructable ceramic (RC) vessels from Dos Casas Hamlet: (a) Chapin Gray jar (RC 30) from Pithouse 1 floor; (b) Chapin Gray miniature (RC 43) from Pithouse 1 floor (PL4); (c) Chapin Black-on-white bowl (RC 32) from fill of Pithouse 1; (d) Chapin Gray jar (RC 12) from Occupation/Activity Area 5; (e) Chapin Gray jar (RC 10) from Occupation/Activity Area 5; (f) Moccasin Gray jar (RC 25) from floor of Pithouse 1. (D.A.P. 116301)

a
b
c
d
0
10 cm
e
f

Figure 5.33 Reconstructed Chapin Gray jar from Rooms 3 and 4 Dos Casas Hamlet (D.A.P. 008323).

Figure 5.34 Selected flaked lithic artifacts from Dos Casas Hamlet:
(a) projectile point from floor of Pithouse 1 (PL 5);
(b and c) projectile points fom modern ground surface;
(d) knife from fill of Pithouse 1
(D.A.P. 006525)

CM

The flaked lithic debitage indicates that locally available orthoquartzites were the most commonly used raw materials. Out of a total of 1282 pieces of debitage, 982 are of fine or very-fine material; these grades of orthoquartzites are locally available. The 101 pieces of debitage classed as microgranular include material types such as chalcedony, chert, jasper, and obsidian. Fifty-one percent of all debitage has some cortex on the dorsal surface, and 39.7 percent retains a striking platform.

The high percentage of debitage with cortex indicates that a fair amount of tool production took place at this site. The predominance of expedient-type tools (utilized flakes, cores, chopper/scraper planes) indicates a subsistence pattern which did not require a great number or variety of specialized stone tools.

Nonflaked Lithics

The nonflaked lithic tools from Dos Casas consist primarily of small hand-held pounding or grinding stones. Twenty-four manos constitute 19.5 percent of the total assemblage, while generalized unhafted tools account for 28.5 percent of the total. There are 25 hammerstones, accounting for 20.3 percent of the total assemblage. In any site a number of stones turn up that are cultural by association but cannot be assigned to any specific function. Seventeen items fall into this category. Most of these are unmodified river cobbles. They have not been included in the site totals.

Pithouses 1 and 2 are more similar in their nonflaked lithic inventories than in their flaked lithic inventories. The floor assemblage of Pithouse 1 contains seven generalized unhafted tools, five manos, and two complete trough metates, while the floor of Pithouse 2 contains nine

manos and one trough metate. The trough metates in Pithouse 1 formed two distinct activity sets. One was in the southwest corner of the house behind the wingwall, and the other was to the north of that area, in the main room. The metate-mano combination in Pithouse 2 was found in the southwest corner behind the wingwall. Selected nonflaked lithic tools from Dos Casas Hamlet are depicted in Figure 5.35 and 5.36.

Pollen

Pollen analysis at Dos Casas Hamlet revealed that sagebrush (*Artemisia*) appears particularly concentrated around the hearth of Pithouse 1, possibly indicating its use as a fuel. Two other pollen types, flax (*Linum*) and buffaloberry (*Shepherdia*), occur that are rare enough to indicate they may have a religious or ceremonial connotation. The buffaloberry was, in fact, found in the sipapu of Pithouse 2. Detailed results of pollen analysis at Dos Casa Hamlet are presented in Appendix B.

Faunal Remains

Five hundred forty-three nonhuman bones were recovered from excavations at Dos Casas. Twenty-eight of these bones were too fragmentary to be identified and will not be considered in this discussion. The total number of bones and the total percentages for all categories are listed in Appendix F.

Of the many species represented, cottontail rabbit (*Sylvilagus*) is the most common in the site assemblage (106 bones), followed by Gunnison's prairie dog (*Cynomys gunnisoni*) (44 bones), and black-tailed jackrabbit (*Lepus californicus*) (40 bones). Some of the rodent bones (prairie dog, ground squirrel, etc.) might represent a food source, but the burrowing

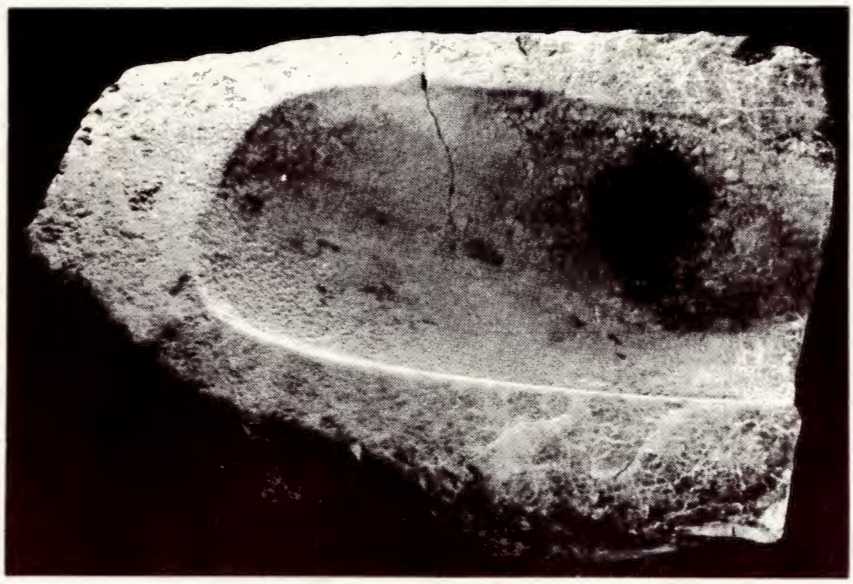

Figure 5.35 Trough metate from Pithouse 1, Dos Casas Hamlet (D.A.P. 006517).

Figure 5.36 Notched mauls from roof fall level in Pithouse 1, Dos Casas Hamlet (D.A.P. 006513).

nature of these animals makes it often impossible to determine whether the recovered bone is cultural or intrusive.

Bones of the porcupine (Erethizon), a relatively easy animal to hunt and kill, are almost as numerous as mule deer bones. Two beaver bones (Castor canadensis) were found on the floor of the vent shaft in Pithouse 1. Beaver are still found today in the Dolores River area directly east of Dos Casas Hamlet.

Thirty-four percent of all bones collected (183 bones) were found on a living surface; of these, as would be expected, only 33 (19 percent) came from the surface rooms, and 150 (81.9 percent) came from the pithouses, where most of the daily living activities took place. Only two rooms had any bone on the floor; both of these (Rooms 4 and 5) are storerooms which had been abandoned and used as trash dumps for a short period of time. Even though Rooms 2 and 5 have been termed seasonal living rooms, based on their slab-lined fireplaces, no faunal remains were found on their floors. There were 16 worked bones found at Dos Casas.

Midden areas generally yield a good representation of the variety of faunal species that were utilized by a residential group. There were undisturbed midden deposits in Rooms 4 and 6 and in the horizontal tunnel of the vent complex in Pithouse 1. Room 4 contained bones from marmot, woodrat, porcupine, mule deer, and bighorn sheep. Room 6 contained bones from porcupine, mule deer, elk, and dog. The horizontal vent in Pithouse 1 contained the fragmentary remains of both cottontail and jackrabbit; mule deer, marmot, and beaver were also represented.

Dating Samples

During excavation, tree-ring, C-14, and archaeomagnetic samples

were collected for dating purposes. Detailed information about the archaeomagnetic samples can be found in Appendix F. None of the C-14 samples were analyzed.

Tree-ring Samples

Tree-ring samples were collected from the surface structures and from both of the pithouses. Of the 228 samples submitted, 25 proved datable (Table 5.8). None of the samples collected from the surface structures were suitable for dating, and samples from Pithouse 1 produced only two dates. Figure 5.37 indicates the locations of tree-ring and C-14 samples taken from Pithouse 2.

Of the 25 dated specimens, the analysts felt that only three samples (DAR-28, DAR-129, and DAR-130) could be given a "v" rating; such a rating indicates a high probability that the outside ring closely reflects the cutting date. On the basis of the clustering of these and the less reliable "vv" dates, it seems very likely that Pithouse 2 was built during A.D. 769-771. Pithouse 1 is stratigraphically earlier, but it is not clear how much earlier; the two (noncutting) dendrochronological dates are 0737vv and 0759vv. If the latter is from original construction and is at or close to a cutting date, then Pithouse 1 might have been used for less than a decade, from approximately A.D. 760-770.

Each tree-ring sample was also taxonomically identified. Table 5.9 shows the distribution of species by structure for the site. Inspection of this table shows that more than half of the specimens identified are ponderosa pine, followed by Populus, and then juniper and pinyon. It is interesting that pinyon, the most abundant of these species in the nearby present environment, is represented by only a single specimen. Juniper, another common member of the vegetation of the Sagehen Flats area, is also

Table 5.8 Results of Tree-ring Analysis for Dos Casas Hamlet

	Provenience*	Lab Number	Field No.	Species	Dating** Inside	Outside
Pithouse 1:						
	Surface 1	DAR-4	37	Juniper	0641p	0737vv
	Surface 1	DAR-17	160	Juniper	0587p	0759vv
Pithouse 2:						
	Stratum 2	DAR-36	130	Juniper	0660p	0732vv
	Test trench, 40-60 cm	DAR-29	161	Ponderosa	0706p	0742vv
	Test trench, 40-60 cm	DAR-31	47	Juniper	0670p	0759vv
	Test trench, 40-60 cm	DAR-20	171	Ponderosa	0731p	0763vv
	Stratum 2	DAR-19	52	Juniper	0676+p	0764vv
	Test trench, 40-60 cm	DAR-24	168	Ponderosa	0718p	0765vv
	Test trench, 40-60 cm	DAR-33	61	Juniper	0711p	0765vv
	Test trench, 40-60 cm	DAR-34	60	Juniper	0707+p	0765vv
	Stratum 2	DAR-3	120	Ponderosa	0714p	0766vv
	Test trench, 40-60 cm	DAR-32	78	Juniper	0702+p	0766vv
	Test trench, 40-60 cm	DAR-18	166	Ponderosa	0724p	0768vv
	Stratum 2	DAR-39	119	Ponderosa	0721fp	0768vv
	Stratum 2	DAR-35	104	Juniper	0641+p	0769vv
	Test trench, 40-60 cm	DAR-30	83	Ponderosa	0720p	0769vv
	Test trench, 40-60 cm	DAR-25	48	Ponderosa	0721p	0769vv
	Surface 1	DAR-22	76	Ponderosa	0705p	0769vv
	Test trench, 40-60 cm	DAR-28	49	Ponderosa	0730fp	0769v
	Surface 1	DAR-128	210	Ponderosa	0735p	0765vv
	Stratum 2	DAR-126	204	Ponderosa	0714p	0767vv
	Surface 1	DAR-127	208	Ponderosa	0724p	0769vv
	Surface 1	DAR-129	212	Ponderosa	0732fp	0769v
	Surface 1	DAR-130	213	Ponderosa	0724p	0769v
	Posthole 58, Bench	DAR-133	226	Juniper	0676p	0770vv

*See Figure 5.37 for mapped locations of samples in Pithouse 2, by field number.

**p - pith ring present

fp - the curvature of the inside ring indicates that it is far from the pith

±p - pith ring present, but due to the difficult nature of the ring series near the center of the specimen, an exact date cannot be assigned to it. The date is obtained by counting back from the earliest dated ring.

v - a subjective judgement that, although there is no direct evidence of the true outside on the specimen, the date is within a very few years of being a cutting date.

vv - there is no way of estimating how far the last ring is from the true outside.

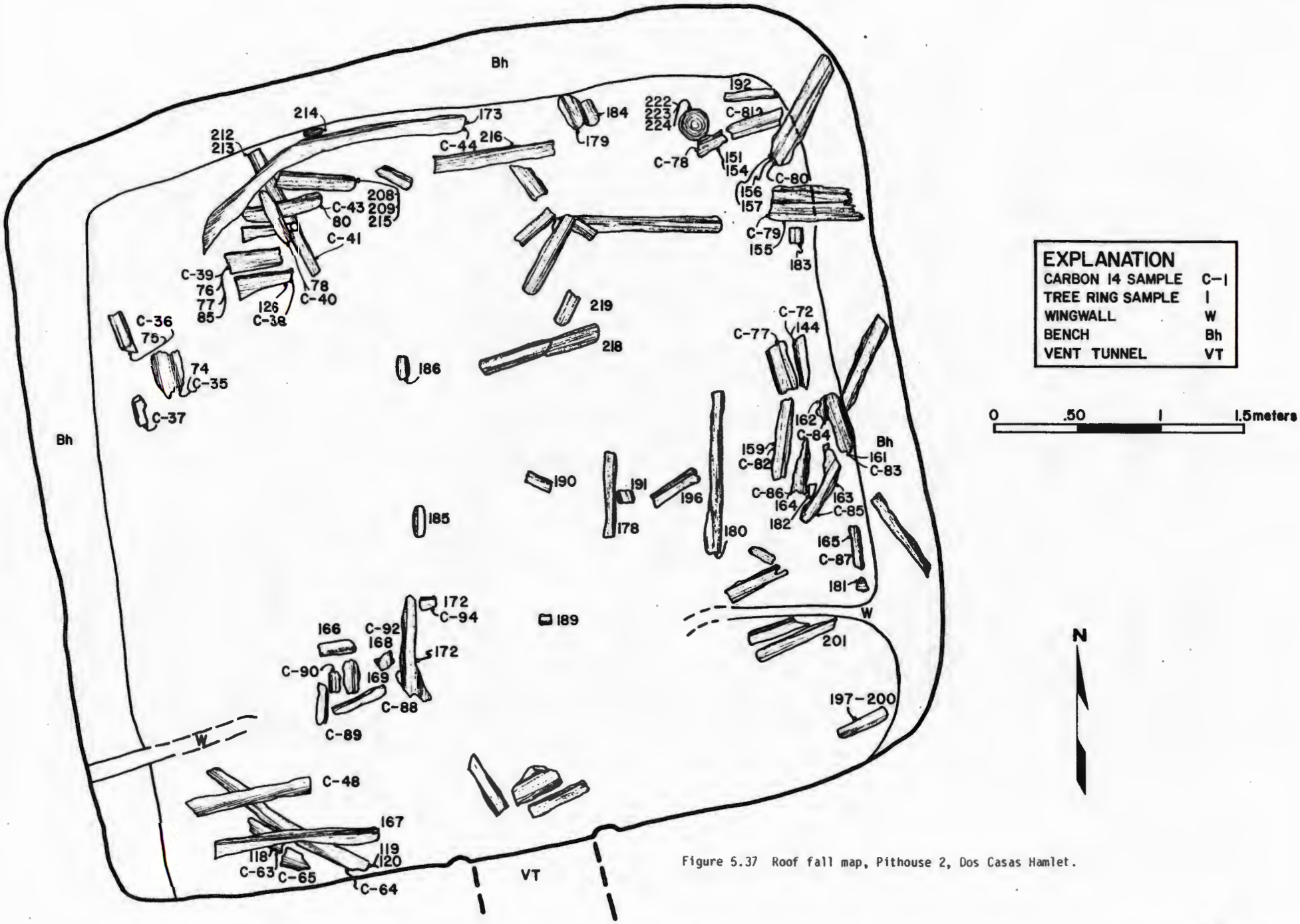

Figure 5.37 Roof fall map, Pithouse 2, Dos Casas Hamlet.

Table 5.9 Identification of Structural Timbers by Species for Dos Casas Hamlet

Subarea	Provenience	Ponderosa Pine	Juniper	Populus	Pinyon	Totals
1	Room 3	2	0	1	0	3
	Room 4	4	4	0	0	8
	Room 5	2	0	0	0	2
	Room 7	2	1	0	0	3
	Occupation/ Activity Area 5	0	2	1	0	3
Totals, Subarea 1		10	7	2	0	19
6	Pithouse 1	43	3	45	1	92
7	Pithouse 2	47	10	4	0	61
SITE TOTALS		100	20	51	1	172
PERCENTAGE		58%	12%	30%	0.6%	

quite low in representation. The Populus specimens cannot be identified below the genus level, so it cannot be determined whether they were from cottonwoods or from some other species. Cottonwoods are currently infrequent in the immediate area but are plentiful in the lowlands along the Dolores River, a short distance away. Ponderosa pines grow at higher elevations and on the sloping walls of the Dolores River canyon a few miles downstream.

From the distribution of species, some differences in species preferences appear to be evident. The earliest structure, Pithouse 1, had ponderosa pine and Populus in about equal amounts. In Pithouse 2, ponderosa pine remains important, but Populus decreases sharply, while juniper increases. In the surface structures, ponderosa pine is most abundant, with juniper and Populus occurring in lesser proportions. The small number of specimens do not permit conclusions regarding the significance of these differences. Furthermore, it was not always possible to determine whether multiple samples of a single structural timber were present. There does appear to be an apparent difference, however, in relative frequencies of the three predominant species recovered from each subarea.

There is also some indication that certain species were preferred for use as specific elements in construction. Of the samples identified as porportions of primary vertical support posts, four are juniper. Considering its low overall representation at the site, its use in this capacity seems significant. Ponderosa pine was also used, however, indicating that such preferences were not invariant. This is also true for pole remnants recovered from the leaner shelf of Pithouse 1. Eight of the leaner-shelf poles were ponderosa pine and one was Populus, which

suggests that the former species was preferred. Consideration must be given to the small number of specimens recovered, and trends seen here may only be the result of small sample size.

Archaeomagnetic Samples

There were 14 samples taken from Site 5MT2193 for purposes of archaeomagnetic dating, a rather recent chronometric method. The method and results are discussed in Appendix A, this report.

Only three of the samples, 1, 2, and 18 were useable. Sample 1 taken from the hearth (Feature 16) in Room 2 produced four possible dates. Only one date, A.D. 735 ± 75, falls into a range that could fit well with Room 2. The others are too recent for this site, based on architecture, and ceramic seriation, as well as tree ring dates from the two pithouses. Sample 2 produced three possible dates, and only one, A.D. 730 + 40, fits with the other variables mentioned above. This sample came from Room 1, Surface 1 and corresponds with Element 1, to which Room 1 was assigned. Sample 18, like Sample 2, produced three dates, one of which was acceptable. The sample was taken from Pithouse 1, which tree-ring dates at A.D. 759 vv. The date of A.D. 735 + 50 covers this time period. This sample came from the curned wall of Pithouse 1 and represents the termination date of Pithous 1 occupation, which took place around A.D. 775. Most of the unexceptable dates were post A.D. 900 dates and were not further considered.

CONCLUSIONS

Chronology

Excavation of Dos Casas produced two pithouses and a roomblock. Stratigraphic, archaeomagnetic, and tree-ring data indicate that Pithouses 1 and 2 were not occupied concurrently; Pithouse 1 was constructed in approximately A.D. 760 and occupied for a short time before it was destroyed by fire. After a brief period of abandonment, the site was reoccupied; Pithouse 2 was built and the roomblock was rebuilt and modified. This reoccupation took place around A.D. 769.

It is difficult to determine how each of the two pithouses relates temporally to the rooms and occupation/activity; based on available evidence, Pithouse 1 and its associated surface structures are referred to as Element 1 and Pithouse 2 and its associated features are designated Element 2.

Based on the presence of trash fill, two rooms in the roomblock can be designated earlier (Element 1) constructions. Room 4, which lies at the western end of the roomblock, was trash filled, and Room 6, which lies at the eastern end of the roomblock, had trash on the floor, topped by natural fill into which a later pit feature was dug (Feature 117).

Another criterion that can be used to separate rooms in Element 1 from those in Element 2 is shape. Rooms 4 and 6 are small, and their long axes run north-south; two other rooms, Rooms 3 and 7, also fit this description.

At this point, however, interpretation becomes more difficult because the central portion of the roomblock appears to have been a part of both elements. Room 7, for example, has a shape similar to that of the storage

rooms in Element 1, but was also used by the household of Element 2. Rooms 1 and 2 are large rooms, and their long axes run east-west. It appears that these rooms were built to either side of Room 7 when the site was reoccupied, thus forming a row of contiguous rooms. At the same time, Room 5 was added to the front of Room 1 and extended across most of Room 7. Because Room 5 is large and contains a slab-lined hearth, it has been interpreted as a seasonal living room. Room 2 also contains a slab-lined hearth, and probably also served as a part-time living room.

It is possible that the construction of this central cluster of rooms obliterated another Element 1 storage room located under Occupation/ Activity Area 5, immediately west of Room 1. This area may have contained more than one ceramic-bearing surface. The upper surface (Element 2) was located just below the plow zone and contained the fragmentary remains of vessels. Below this surface (0.15-0.20 cm) other fragmentary vessels were located. If there were an Element 1 storage room under this area, it would have been the fifth room of a noncontiguous east-west arc of storage rooms forming Element 1.

When the site was reoccupied after a short period of abandonment, Pithouse 2 was constructed, along with Rooms 1, 2, and 5. Room 3 was refurbished at this time, but Rooms 4 and 6 were totally abandoned. In fact, a ramada-like structure supported by Room 3 seems to have been built over the old Room 6, and a pit feature was built into the fill at the north end of Room 6.

In summary, during the Element 1 occupation of Pithouse 1, a series of four, or possibly five, surface storage rooms was built to the north (Figure 5.38). After approximately 10 years of occupation, Pithouse 1 was destroyed by fire and the site was abandoned for a short time.

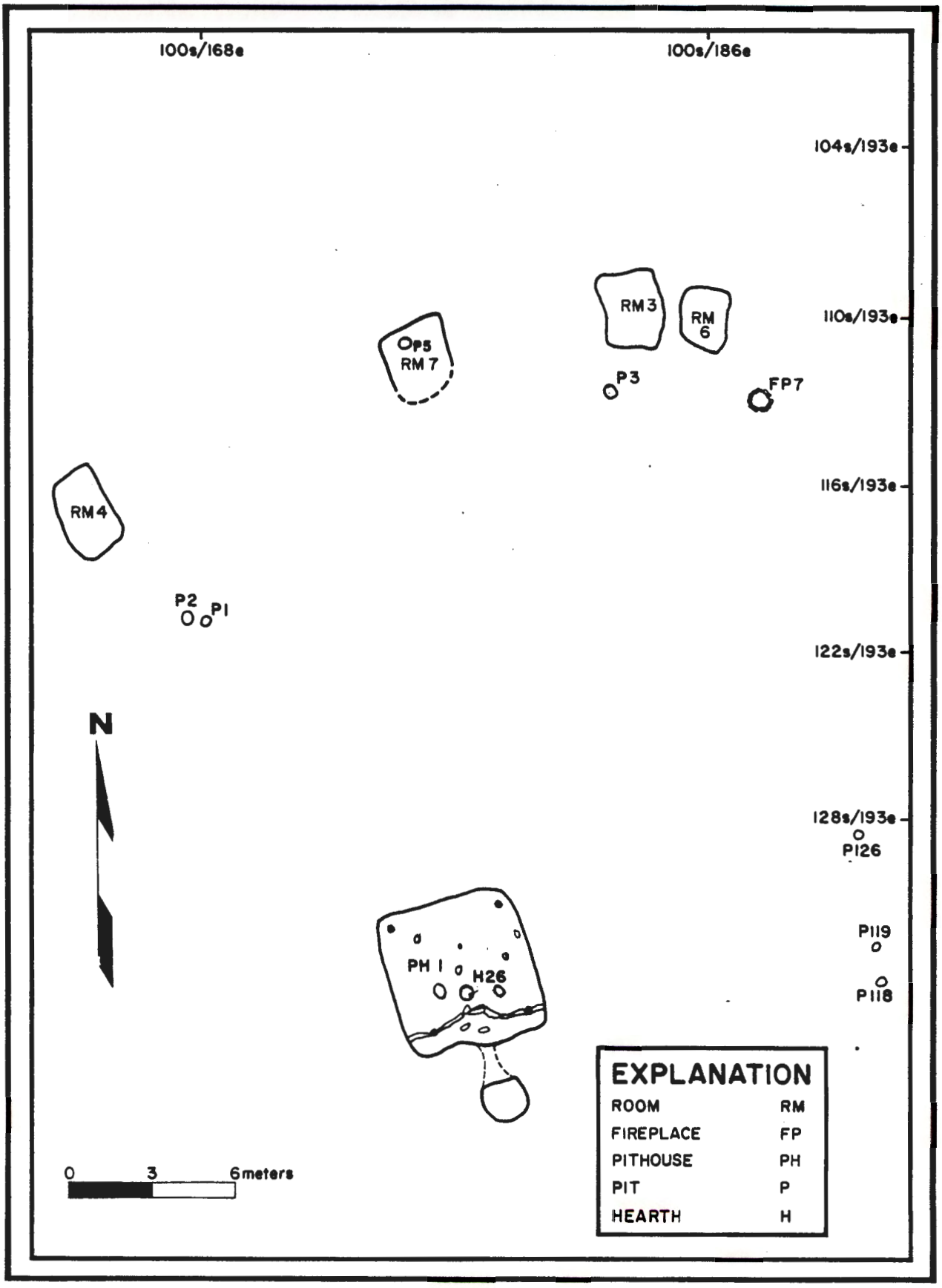

Figure 5.38 Plan map of architectural units, Element 1, Dos Casas Hamlet.

When the site was reoccupied (Element 2), another pithouse (Pithouse 2) and three additional rooms were built (Figures 5.39 and 5.40). Rooms 4 and 6 were not reused. The vent complex in Pithouse 2 cut through the north wall of the earlier pithouse and was constructed in part in the accumulated fill of that structure. This reoccupation occurred around A.D. 770, according to tree-ring dates from Pithouse 2. The whole site burned during or after the second occupation; it was not reoccupied.

Adaptation and Economy

Dos Casas Hamlet is classified as a small habitation of the Sagehen Phase (A.D. 600-850), Anasazi Tradition. The occupants of Dos Casas were engaged in a variety of subsistence activities, many of which involved the use of resources that could be found in the immediate vicinity of the site; others required more extensive trips to obtain preferred materials.

Numerous lines of evidence indicate that the inhabitants of this site were engaged in agricultural activities. They grew corn and stored the surplus in surface structures probably built for this purpose. In addition they hunted wild game, providing meat and raw materials for tools and clothing. Wild plants were also collected and probably were important resources.

Houses were built of materials from the surrounding area. Timbers used to support the earth coverings were probably cut from stands along the nearby Dolores River. Juniper bark and reeds were probably found closer to the site, within the Sagehen Flats Locality. Sagebrush was a handy resource, found on the site itself. Slabs of sandstone, used to line the lower walls of some surface rooms, to form the core of the

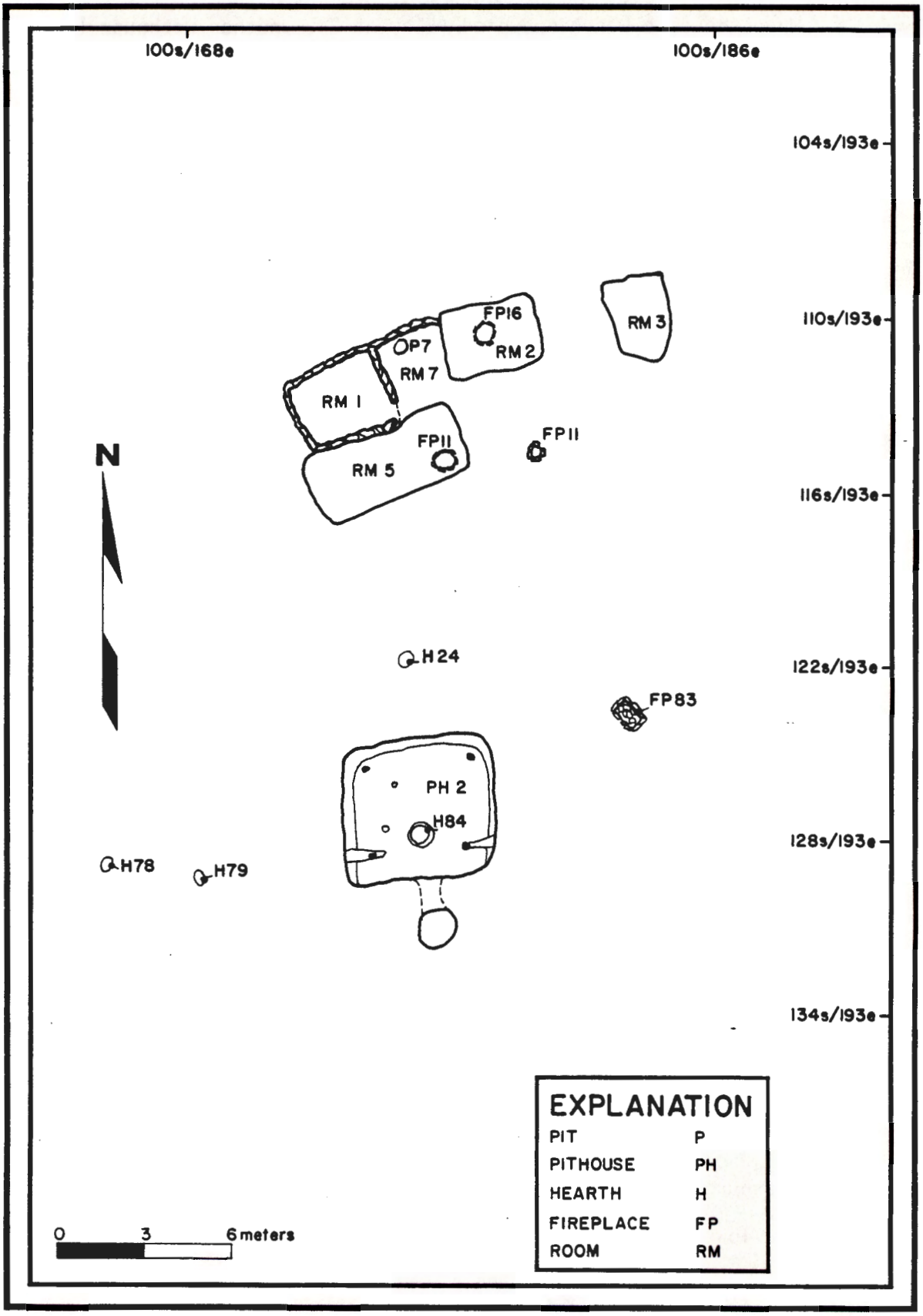

Figure 5.39 Plan map of architectural units, Element 2, Dos Casas Hamlet.

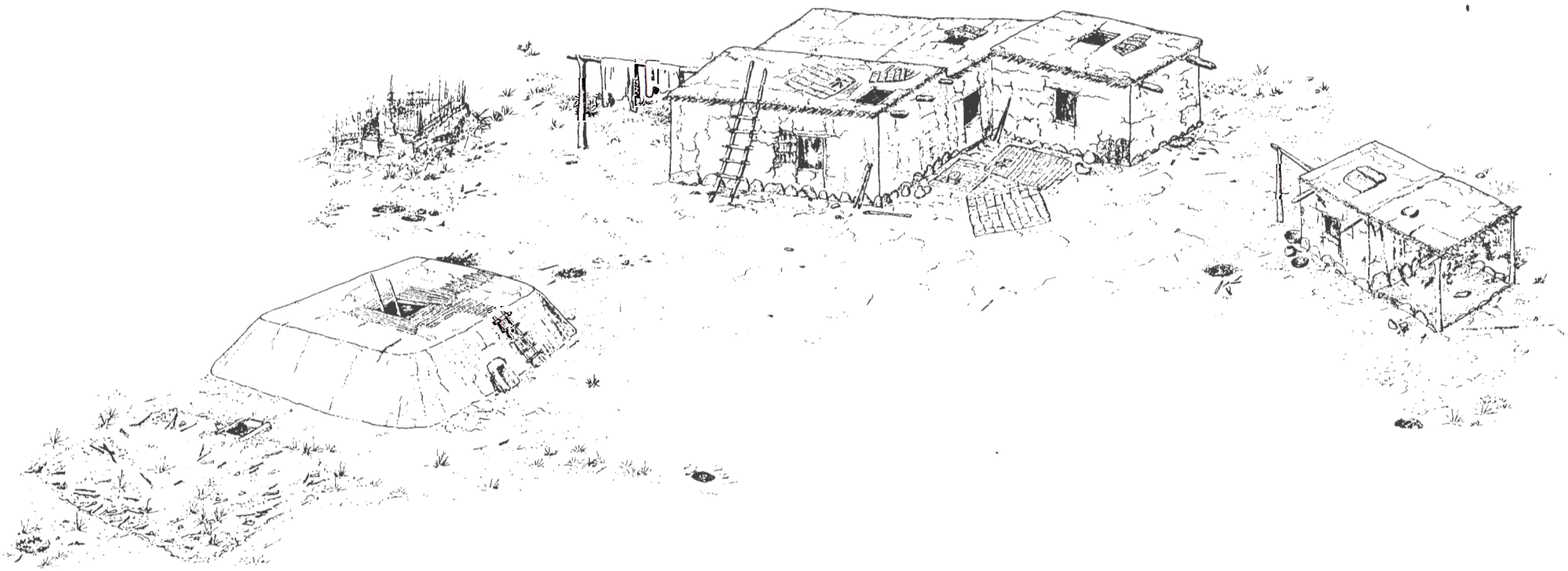

Figure 5.40 Artist's reconstruction of Element 2, Dos Casas Hamlet.

wingwalls, and to serve as deflectors in the pithouses, were probably gathered from outcrops that occur within a short distance of the site.

Other resources related to the manufacture of tools, containers, and clothing might have come from within the locality or from a slightly greater distance. Analytical studies now under way promise to define these resource materials and their source locations. Still other materials could have been obtained by trade; no information currently available, however, establishes the existence of trade relationships. In any case, most items were acquired locally rather than through trade with other groups.

Paleodemography

Methods of estimating settlement population and the resulting population figures are extremely varied. Ethnographic data have often been used for this purpose, with varying success.

Many social scientists arrive at population estimates for prehistoric settlements by calculating population/dwelling area ratios in existing and ethnographically known societies and applying these figures to archaeological data (Narroll [19], Leblanc [20], Casselberry [21], Clarke [22], Cook [23], and Rohn [24]). As there is no consensus on a standard formula for population estimates, a battery approach was employed similar to that used by Birkedal [25]. Population estimates were computed for both elements identified at Dos Casas Hamlet and are presented in Table 5.10. A primary difficulty in calculating the ratios was in determining which structures to include as living space. It was assumed that this parameter consisted of a pithouses plus one or two surface rooms in Element 2 and only the single Pithouse in Element 1. In general, surface

rooms with hearths are considered most likely to have served as habitations.

Another difficulty was in deciding whether seasonal living areas should be fully included in calculating the ratios or whether they should have lesser consideration in the estimates. The inferred construction of the surface rooms suggests that they were occupied or intensively used during the warm months only, and that the pithouses functioned as winter domiciles. Summers, then, would have been a period of maximum space utilization by Dos Casas inhabitants, while winter climate forced the habitation population into a smaller space. Population estimates are thus based on pithouse floor area plus surface living room floor area. Results of the different methods are summarized below.

Narroll's Method

Narroll [19:587-88] conducted a comparative study of population dwelling area ratios in 18 preindustrial societies and derived a general formula for estimating population. Narroll suggests that the population of a settlement is equivalent to one-tenth the floor area as measured in square meters; he considers the floor area to be the total area under the roof of the dwelling. The figures produced by employing Narroll's method (Table 5.10) appear too low. Estimates of less than five individuals for two surface rooms and a pithouse are much lower than those suggested by ethnographic accounts of historic Pueblo towns (Cook [23:15]).

LeBlanc's Method

LeBlanc [20:210-211] has modified Narroll's method so that the formula applies only to the living area at a habitation and not to extra-household or storage space included under roofed areas. The results, using LeBlanc's formula, are even lower than those using Narroll's

Table 5.10 Estimates of Population for Dos Casas Hamlet

Element	Living Structures	Total Roofed Area (m^2)	Living Area (m^2)	Number of Individuals					
				Narroll's Method	Leblanc's Method	Cassel-berry's Method	Clarke's Method	White's & Parsons' Method	Rohn's Method
1	Pithouse 1	27.72	ca. 24	2.77	2.40	4.62	9.24	10-12	4-5
	Total	27.72	24	2.77	2.40	4.62	9.24	10-12	4-5
2	Pithouse 2	25.61	ca. 19.5	2.56	1.95	4.27	8.54	10-12	4-5
	Room 2*	8.04	ca. 6.5	0.80	0.65	1.34	1.68	2	4-5
	Room 5*	13.20	ca. 11	1.32	1.10	2.20	4.40	2	4-5
	Total	46.85	37	4.69	3.70	7.81	15.61	14-16	12-15

* Seasonal use as living area

calculations, and Leblanc's methods probably cannot be applied to Dos Casas Hamlet or to the West Sagehen Neighborhood.

Casselberry's Method

Casselberry's study [21] of eight ethnographically known societies with multifamily dwellings suggests a ratio of one person per 6 m^2 of total floor area. Casselberry restricts use of the method to multifamily dwellings, a scenario that cannot be ruled out for the West Sagehen community and Dos Casas Hamlet. Indeed, results using Casselberry's method (Table 5.10) suggest that his formula is probably the most accurate for these data.

Clarke's Method

Based on his ethnographic work at Cochiti Pueblo, Clarke [22] has developed a formula specifically for estimating the population of prehistoric Pueblo settlements. The estimates derived for Dos Casas Hamlet by applying Clarke's formula appear too high. This formula probably must be applied to actual "pueblo" habitations with contiguous roomblocks (as was Clarke's original intent) rather than to the dispersed hamlets typical of the late Basketmaker III-early Pueblo I periods in the project area.

White's and Parsons' Method and Rohn's Method

White and Parsons (Rohn [24]) suggest two individuals per surface room and 10-12 individuals per pithouse. Both of these estimations, however, conflict with other archaeologists' assessments of the nature of pitstructure households. Hayes and Lancaster [17:23] and Rohn [24:269] indicate that pitstructures were probably single family dwellings rather than multiple family units. This is supported by Cook [23:15], who discusses family size and the minimum indoor space required for a family

to carry on its domestic operations. For a population to maintain itself, average nuclear family size must be at least four and one-half persons, but for population to increase, higher averages of five to six individuals per family are required. Cook indicates that the minimum space required for a family of four to six ranges from 120-350 ft^2. He further states [23:15] that "no house under 350 square feet could have contained a family of more than six persons..." This suggests that the estimates of 9-12 individuals per pithouse, derived from Clarke's statistics and White's and Parsons' statistics are probably excessive for Pithouse 2, which contains only 300 ft^2 (25.6 m^2) of floor space.

Average family sizes of four to five individuals have been used to estimate Pueblo settlement populations (Rohn [24:262]). Using this figure for each living structure and assuming contemporaneous use of the structures, a population of 12-15 individuals is indicated for the later component of this site. As discussed previously, however, some of the living structures at the site (specifically the two surface rooms) probably were used only seasonally. Hence, the total population was probably less than the 12-15 persons.

To summarize, it appears that the estimates calculated using Narroll's and Leblanc's methods (four to five individuals for each element) are too low for the space and facilities at Dos Casas Hamlet. Assuming a seasonal use of Rooms 2 and 5 as living areas, the estimates from using Clarke's, White's, Parsons', and Rohn's methods (12-16 individuals) are probably too high. The "best fit" estimate (seven to nine individuals) was obtained using Casselberry's method. Birkedal [25:443] reports that he also obtained the best estimates for prehistoric populations by employing Casselberry's formula (in this case, the formula

was used to estimate pithouse populations during the Basketmaker III period at Wetherill Mesa, Mesa Verde National Park).

Social Organization

Evidence of community activities for small settlements of late Basketmaker to early Pueblo affiliation is more limited than those for later Pueblo sites. It is unlikely, however, that a single small habitation such as Dos Casas Hamlet served as a full community, but it was probably, instead, part of a larger unit. A group of contemporaneous habitations were probably similarly occupied in this part of the Sagehen Flats Locality during the Sagehen Phase. Dos Casas Hamlet has been classified as a habitation unit of the West Sagehen Neighborhood, an early dispersed farming community in the area (Kane [2]).

The best population estimate for the habitation is seven to nine individuals during both Elements 1 and 2. Based on information from the average household size described by Parsons [26] for Laguna Pueblo and by White [27] for Sia Pueblo, it is thought that more than one household unit might have inhabited Site 5MT2193; perhaps two households or one extended family were present at the site during each element. During the winter months, all social units would have used a single pithouse as a domicile. This hypothesis is supported by the interpretation of feature and artifact distributions in Pithouse 1, where three potential mealing stations have been tentatively identified on the west portion of the floor (Figure 5.11); this seems to be an excessive number of mealing station for one household.

Pitstructures at this time probably served as dwellings rather than as ritual and community structures. The open air structures of the

roomblock at Site 5MT2193 might have served as areas of informal intracommunity interaction, but evidence of organized activities is lacking. The small estimated population size and the proximity of the living rooms suggest that interactions were probably frequent and informal and that there was little or no need for special measures to integrate community activities at Dos Casas Hamlet.

Most activities at the site were probably routine tasks. Occasional cooperation between members of separate households might have been required in the construction and maintenance of site structures, and possibly in some subsistence activities. It is likely that most tasks were individual efforts involving the preparation of meals, maintenance of fuel supplies, preparation of clothing, and manufacture of tools. Many of these activities were performed within the habitation structures and in occupation/activity areas. The presence of fireplaces, a hearth, and other shallow pit features outside the structures indicates that some activities were carried out in the area between the roomblock and the pithouse. There is direct evidence that corn was ground inside the dwelling units, and the occurrence of concentrations of lithic artifacts suggests that activities involving the use of lithic materials also took place indoors.

Settlement layout and estimated population size suggest that the basic social unit was the household. Such units might have been represented by nuclear families, but the definition of household does not necessarily entail the existence of biological ties. Later developments in Pueblo settlement patterns, involving the establishment of multiple habitation rooms and kiva associations, have been cited as indications of localized lineages (Longacre [28]). It is not known whether lineage

organization was operating during the earlier Pueblo I and Basketmaker periods.

The burning of both pithouses at Dos Casas Hamlet seems to have been purposeful rather than accidental. Both houses, though not totally devoid of artifacts, did not contain the variety of cultural goods that are commonly found in a structure that has accidently burned while still in use.

In each house, the antler of a mule deer had been placed directly on top of the sipapu and a quantity of flaked lithic debitage was found nearby (Figure 5.40). In Pithouse 2, small piles of cobbed corn were found on the banquette to the west, north, and east of the sipapu, perhaps intentionally placed in the cardinal directions; one such pile of corn was also found on the only remaining section of the stringer shelf in Pithouse 1. Artifacts were found in association with the piles of corn in Pithouse 2: the pile of corn on the west bench was accompanied by two bone awls; the one on the north bench by a ceramic pipe; and the one on the east bench a partial bowl. These were the only small artifacts found anywhere in the house.

These occurrences in only one house would have been highly suggestive, but almost identical arrangements were found in both houses, temporally separated by at least 10 years. It thus seems highly probable that the houses were deliberately destroyed, and that special ceremonies took place before the houses were burned. The ceremonies seem to have involved leaving a token number of artifacts in the house representing some or all of the activities that had taken place there.

Trade

Twenty-two sherds identifiable as nonlocal in origin were recovered from the excavation activities at Site 5MT2193. Included in this total are gray and white wares from the Cibola area and one sherd of a smudged bowl assigned to the Mogollon culture. The smudged sherd was found in the vent shaft of Pithouse 2. This small number of nonlocal ceramics in the ceramic assemblage argues that contact with southerly populations was in existence, but the nature of the contact is at present unknown.

APPENDIX A

ARCHAEOMAGNETIC RESULTS FROM DOS CASAS HAMLET

by

J. Holly Hathaway

Archaeomagnetic dating is a relatively recent chronometric method employed by archaeologists seeking temporal control for past cultural behavior. Utilization of this method will not only refine ancient chronological estimates but enable temporal assignment in the absence of other dating methods (e.g., dendrochronology and Carbon-14). The accuracy and reliability of dates provided by archaeomagnetism is dependent upon several conditions: (1) precise and conscientious collection in the field; (2) reliable laboratory work, especially with demagnetization and "cleaning" procedures; and (3) an accurate master paleopole curve for the time and areas under study. Archaeomagnetic methods are continually being refined in these areas in attempts to increase the variety of datable features, to tighten temporal control, and to further understand the nature of the magnetic change. For a complete discussion of laboratory and field methods employed on the D.A.P. as well as an evaluation of the applicability of the current Southwest master curve (DuBois [29]) to the Dolores area see Hathaway and Eighmy [30].

Sampling and Methods

Fourteen samples were collected from Site 5MT2193 during the 1978 and 1979 field seasons. The site is located at 37.52° N latitude and 251.43° E longitude in the Sagehen Flats area of the Dolores valley. The site functioned as a small permanent hamlet during the Sagehen Phase (A.D. 600-850).

Sample 1 was collected from a temporary hearth (Feature 16) located on Surface 1 of Room 2. Samples 2, 3, and 5 were collected from fire-hardened floors located in Room 1 (Samples 2 and 5) and Room 3 (Sample 3). Sample 4 was collected from a slab-lined fireplace (Feature

11) in Room 5. Sample 6 was collected from a fireplace (Feature 7) in the eastern section of the roomblock. Samples 15-17 were collected from the central hearth (Feature 26) of Pithouse 1. Sample 15 from the bottom of the hearth, Sample 16 from the remodeled portion of the hearth, and Sample 17 from the burned area beneath the remodeling. Samples 18 and 21 were collected from the burned walls of Pithouses 1 and 2, respectively. Sample 19 was collected from a surface hearth (Feature 83) located east of Pithouse 2 in an exterior use area. Sample 20 was collected from the floor of Pithouse 2, Surface 1.

Twelve specimens were collected for each of the samples from Site 5MT2193, except for Sample 18, for which 17 specimens were collected. Each specimen (an estimated volume of 3.4 cm^3) was encased in a 25 cm plaster cube (15.6 cm^3). The orientation of each specimen was maintained by leveling the cube and measuring the magnetic declination of one cube side. To control for current local magnetic declination North Star was sighted on 2 September 1978. The average observed magnetic declination was 13.5°, one-half degree different than the U.S.G.S. 1965 Geological Map, and in substantial agreement with expected values calculated from the National Oceanic and Atmospheric Administration Map Magnetic Declination in the United States - Epoch 1975.0.0."

Results

Results from Samples 1-6 and 15-22 are included in Table 5.A.1. Samples 1-6 were demagnetized (degaussed) at 150 oersteds and Samples 15-22 were demagnetized at 25 oersteds. Demagnetization is a laboratory process used to eliminate effects in a specimen from secondary components such as viscous or low temperature theromoremanent magnetizations.

Table 5.A.1 Archaeomagnetic Results from Dos Casas Hamlet (Page 1 of 3)

Archaeomagnetic Designation	Sample 1	2	3	4	5	6
Feature and Provenience	Feature 16 Room 2	Room 1 Floor	Room 3 Floor	Feature 11 Room 5	Room 1 Floor	Feature 7
Specimens used in final analysis/total collected	8/12	11/12	12/12	12/12	12/12	9/12
Degauss level	150 oersted	150 oersted	150 oersted	150 oersted	150 oersted	150 oersted
Mean Inclination	58.75	53.25	57.37	63.33	56.80	60.31
Mean Declination	1.52	2.45	8.32	338.24	354.49	10.38
Mean Intensity	0.214×10^{-4}	0.459×10^{-4}	0.215×10^{-4}	0.144×10^{-4}	0.398×10^{-4}	0.182×10^{-4}
Mean Sample Vector	7.94	10.98	10.80	10.41	10.96	8.56
Precision Parameter (k)	127.18	520.94	9.19	6.93	10.58	18.23
Alpha 95	4.93	2.00	15.13	17.77	13.99	12.39
Paleolatitude	87.70	85.79	83.40	72.12	85.63	81.16
Paleolongitude	282.02	41.56	334.86	192.57	161.36	313.28
Error along great circle (EP)	5.46	1.93	16.16	22.15	14.74	14.27
Error perpendicular to great circle (EM)	7.34	2.78	22.12	28.06	20.31	18.80

Table 5.A.1 Archaeomagnetic Results from Dos Casas Hamlet (Page 2 of 3)

Archaeomagnetic Designation	Sample 15	16	17	18	19	20
Feature and Provenience	Feature 26 Pithouse 1	Feature 26 Pithouse 1	Feature 26 Pithouse 1 Surface 1 beneath ramp	Pithouse 1 South wall	Feature 83	Feature 84 Pithouse 2
Specimens used in final analysis/total collected	12/12	12/12	11/12	12/17	12/12	12/12
Degauss level	25 oersted	25 oersted	25 oersted	25 oersted	25 oersted	25 oersted
Mean Inclination	51.13	48.47	75.26	53.51	58.91	57.08
Mean Declination	6.50	14.51	67.79	7.89	348.20	8.83
Mean Intensity	0.456×10^{-4}	0.580×10^{-4}	0.404×10^{-4}	0.106×10^{-3}	0.102×10^{-3}	0.117×10^{-3}
Mean Sample Vector	9.28	11.12	8.60	11.93	11.27	11.77
Precision Parameter (k)	4.04	12.57	4.16	158.34	15.13	48.48
Alpha 95	24.76	12.74	25.54	3.46	11.54	6.30
Paleolatitude	82.19	75.48	42.83	82.70	80.54	83.01
Paleolongitude	26.39	10.94	287.46	7.96	178.14	338.00
Error along great circle (EP)	22.70	10.99	42.77	3.36	12.82	6.68
Error perpendicular to great circle (EM)	33.53	16.74	46.74	4.82	17.19	9.17

Table 5.A.1 Archaeomagnetic Results from Dos Casas Hamlet (Page 3 of 3)

Archaeomagnetic Designation	Sample 21	Sample 22
Feature and Provenience	Feature 74 Pithouse 2	Pithouse 2 Floor
Specimens used in final analysis/total collected	13/13	12/12
Degauss level	25 oersted	25 oersted
Mean Inclination	57.02	49.90
Mean Declination	5.49	3.59
Mean Intensity	0.169×10^{-3}	0.967×10^{-4}
Mean Sample Vector	12.68	11.76
Precision Parameter (k)	37.11	45.36
Alpha 95	6.90	6.51
Paleolatitude	85.65	82.50
Paleolongitude	339.47	47.07
Error along great circle (EP)	7.30	5.80
Error perpendicular to great circle (EM)	10.03	8.70

The individual magnetic directions are plotted in Figures 5.A.1 and 5.A.2 for Samples 1, 2, and 18. Samples 3-6, 15-17, and 19-22 were too scattered and were not plotted. Four outliers were identified from Sample 1, one from Sample 2, and five from Sample 18. Samples with more than four outliers (33 percent of the population) are viewed skeptically and results based on these samples may not be an accurate respresentation of the true paleopole position. Outliers were determined in the following manner. The sample was rerun with relatively extreme specimens excluded and a new mean and angular deviation calculated. The excluded specimens were defined as outliers of the new mean (smaller sample) if they fell beyond two standard deviations. It is felt that there is a strong possibility that these "outliers" are not a part of the same population and that the new ("cleaned") sample is a better representation of the true direction created by the ancient firing.

Three tests were used to determine sample reliability. Alpha 95 is defined as the radius of a circle centered on the observed mean direction within which the true mean will fall 95 percent of the time. Small values indicate tighter clustering about the mean. A good archaeomagnetic sample was defined by alpha 95 values of less than 3.5°. Provided this criterion was met, samples were then plotted and their relative position to the Southwest master curve reported. The precision parameter (k) is estimated by Fisherian statistics and values increase geometrically with internal consistency. The mean sample vector indicates internal consistency as the value approaches the number of sepcimens used for determination of the mean. Error along the great circle (EP) and perpendicular to the great circle (EM) are functions of the alpha 95 which has an oval distribution when plotted, with a short axis which runs along the great circle between

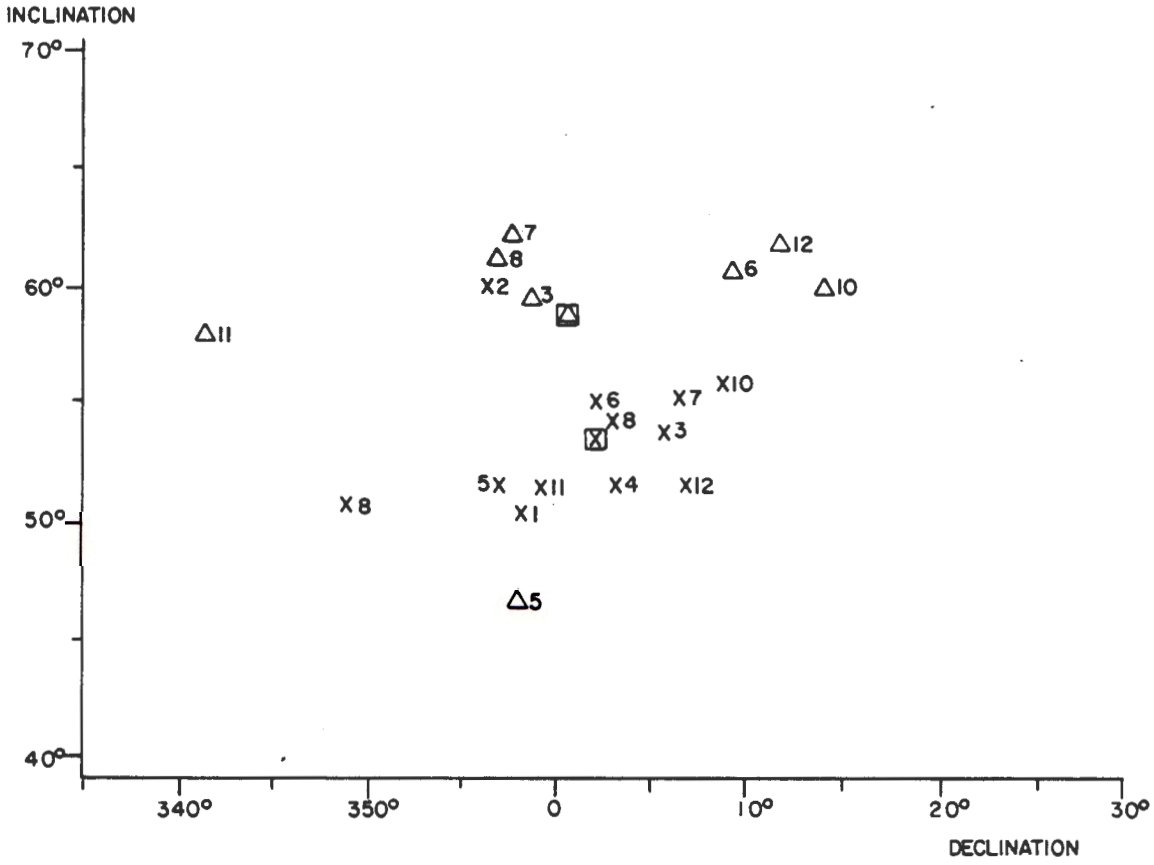

Figure 5.A.1 Individual magnetic directions for Archaeomagnetic Samples 1 and 2, Dos Casas Hamlet.

Δ 5MT2193-1. Specimens 1, 2, 4 and 9 fell outside plotting surface and were defined as outliers. ⊠ indicates mean sample value, excluding outliers.

x 5MT2193-2. Specimen 8 defined as outlier. ⊠ indicates mean sample value, excluding outlier.

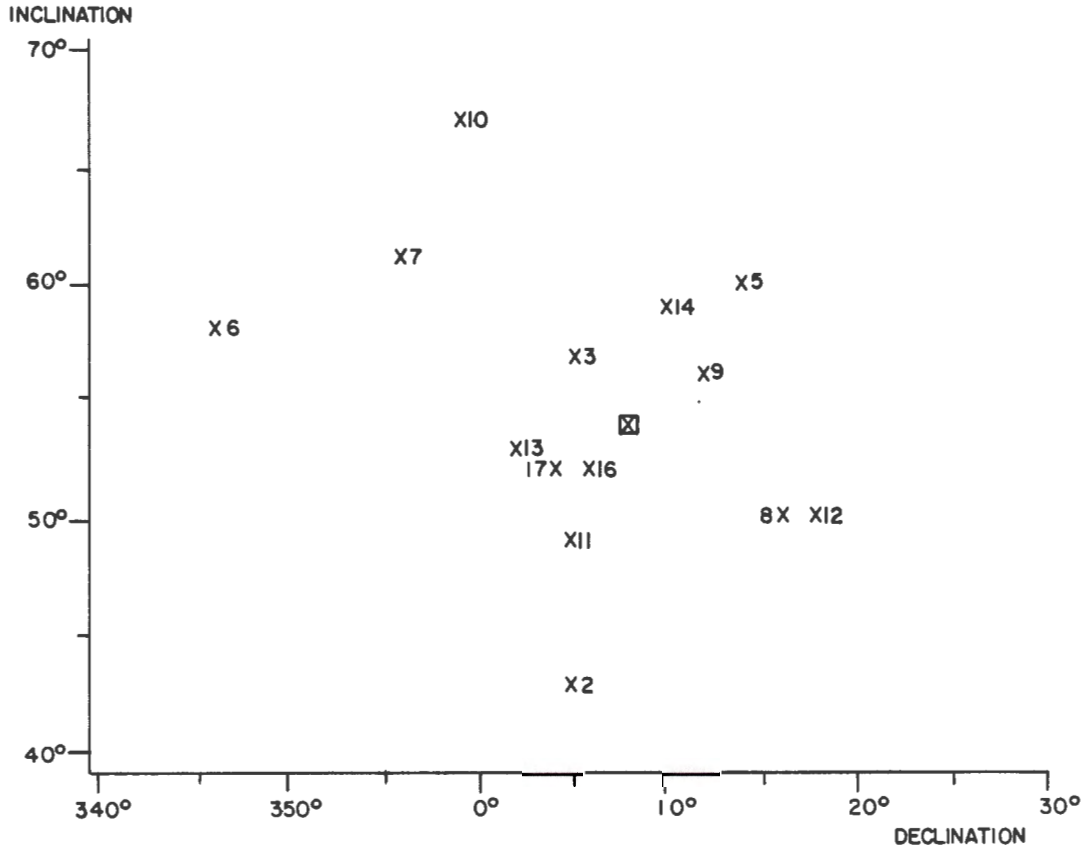

Figure 5.A.2 Individual magnetic directions for Archaeomagnetic Sample 18, Dos Casas Hamlet.

x 5MT2193-18. Specimens 1, 4, and 15 fell outside plotting surface; Specimens 1, 4, 6, 10, and 15 were defined as outliers. ⊠ indicates mean sample value, excluding outliers.

the collecting site and paleopole position. The long axis is perpendicular to the short axis; both are centered on the paleopole. The range of error for each sample is determined from the value calculated for EM.

The paleopole positions for the demagnetized and cleaned results of Samples 1, 2, and 18 were calculated and plotted on the virtual geomagnetic pole (Figure 5.A.3). This position was then compared to the current Southwest master curve; dates reported reflect correspondence with this curve. Because of the nature of this curve, several interpretations may be possible given a particular paleopole position. In such instances it is the responsibility of the archaeologist to determine the most plausible alternative.

Sample 1 is probablematic due to a large range of error (± 85 years). Possible archaeomagnetic interpretations include: A.D. 725, 1000, 1080, 1280, and 1350. Sample 2 falls near the A.D. 780 portion of the curve with a small range of error (± 30 years). Sample 18 falls near several portions of the curve: A.D. 750, 960, and 1500 with a ± 50 year range of error.

Hydrometer tests conducted on soils collected from Feature 26 (Sample 17), the south wall of Pitstructure 1 (Sample 18), and Feature 84 (Sample 20) by the Colorado State University Soils Laboratory (Fort Collins, Colorado) indicates the following ratio:

Sample 17 - 56 percent sand, 21 percent silt, and 23 percent clay

Sample 18 - 45 percent sand, 31 percent silt,and 24 percent clay

Sample 20 - 44 percent sand, 39 percent silt, and 17 percent clay

These samples were categorized as sandy clay (Sample 17) and loam (Samples 18 and 20). Clays and clay-based soils are optimum for recording and

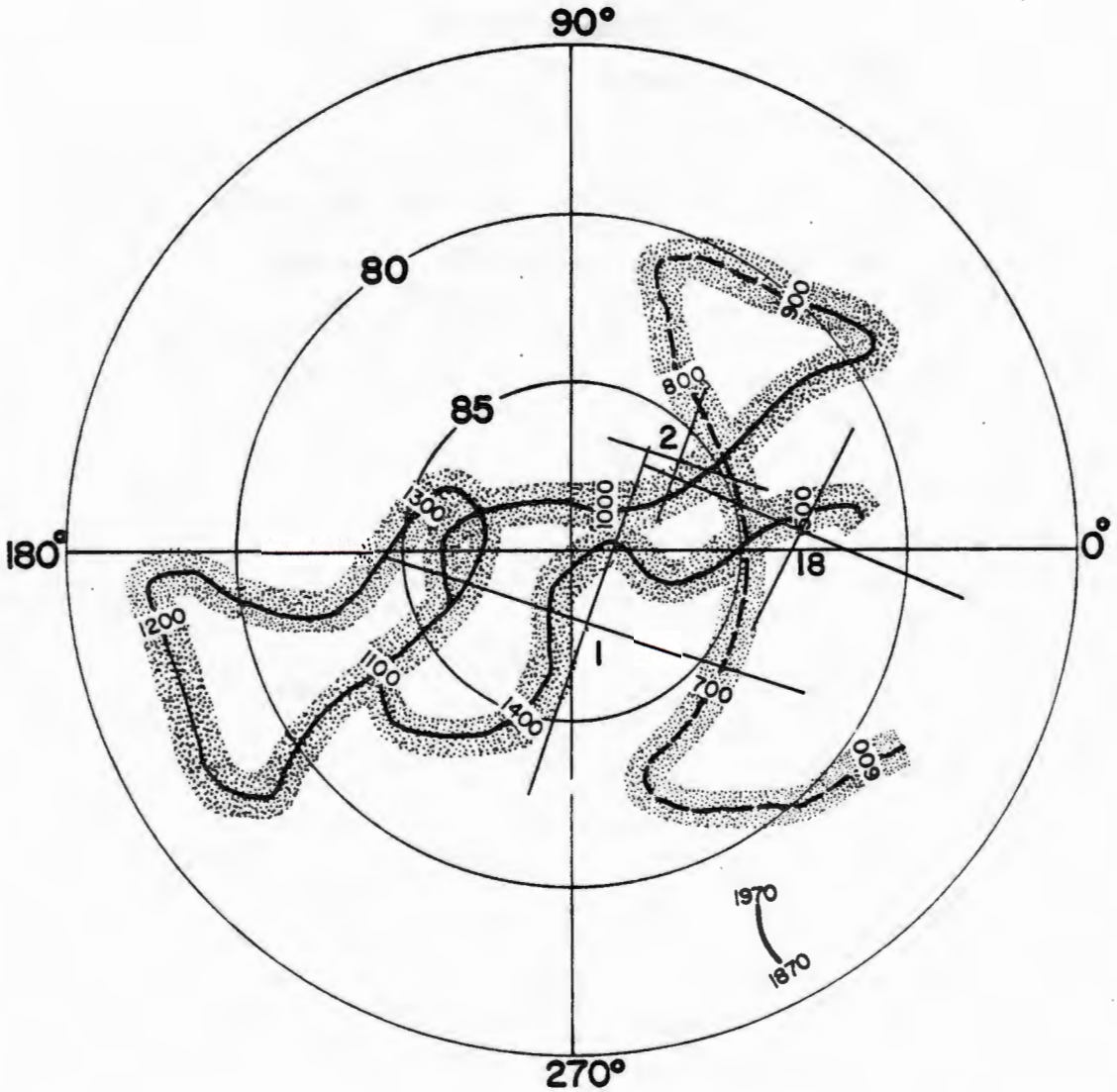

Figure 5.A.3 Paleopole plots for Archaeomagnetic Samples 1, 2, and 18, Dos Casas Hamlet.
Solid portion is based on Dubois [29]
Dashed portion is based primarily on Wolfman [31]
Modern portion is calculated from U.S.G.S. magnetic declination and inclination maps for the United states. - Epoch and from Svendson [32].

retaining the ancient magnetic pole positions. Sand is less conducive to good archaeomagnetic results due to the size of the particles. The presence of clay is but one characteristic necessary for the production of good archaeomagnetic results. The firing atmosphere, maximum attained temperature, type of affected ferrous minerals, and amount of intrusive material all contribute to the resultant thermoremanent magnetization.

APPENDIX B

REPORT ON POLLEN REMAINS FROM DOS CASAS HAMLET

by

Linda J. Scott

Pollen samples were collected at various D.A.P. sites to obtain information concerning the prehistoric environment and potential economic resources used by the prehistoric peoples. Discussion of the methodology involved and intersite comparisons are presented in the Pollen Administrative Report (Scott [33]). Not all the pollen recovered is discussed in detail in that report, but mention is made of the various types and the entire pollen record is graphically represented.

Twenty-one pollen samples were selected for analysis from Pitstructures 1 and 2 at Site 5MT2193 (Table 5.B.1). The preservation of the pollen grains was considerably better in Pithouse 1 than in Pithouse 2. All of the samples from Pithouse 1 yielded sufficient pollen for analysis, whereas most of the pollen samples from Pithouse 2 contained much less pollen, frequently yielding only a minimum count of 100 pollen grains. Four of the samples from Pithouse 2 did not contain sufficient pollen for even a minimum count. Only two samples contained abundant pollen in this pitstructure (Samples 31 and 45).

The pollen record in Pithouse 1 (Figure 5.B.1) suggests the division of the samples into two groups - those that contain small to moderate quantities of Artemisia pollen, and those that contain large frequencies of Artemisia pollen. Pollen Samples 1, 15, 16, 27, and 20 all contain small to moderate amounts of Artemisia pollen and were collected from the floor of the pithouse and the floor of a mealing receptacle in the pithouse. The second group of samples, containing larger quantities of Artemisia pollen, were collected from the pithouse floor near the hearth, warming pit, and from a vessel (Samples 25, 26, 28, and 29). The concentration of Artemisia pollen in the vicinity of the hearth and possibly also the warming pit may suggest the utilization of sagebrush

Table 5.B.1 Provenience of Pollen Samples from Dos Casas Hamlet

PN	FS#*	Pollen**	Provenience
1	272	100	Pithouse 1, floor beneath smashed ceramic vessel
15	426	200	Pithouse 1, Floor under PL 13
16	457	100	Pithouse 1, Floor
20	473	200	Pithouse 1, meal receptacle
23	475	200	Pithouse 1, floor
25	490	200	Pithouse 1, west warming pit
26	471	100	Pithouse 1, hearth
27	429	200	Pithouse 1, floor scraping under slab
28	426	200	Pithouse 1, interior fill of vessel (PL 4)
29	426	200	Pithouse 1, pollen wash of vessel (PL 4)
30	674	100	Pithouse 2, bench surface
31	665	200	Pithouse 2, antler concentration around sipapu
32	665	100	Pithouse 2, antler concentration around sipapu
34	665	100	Pithouse 2, antler concentration around sipapu
35	665	Insuff	Pithouse 2, sipapu
37	688	100	Pithouse 2, floor under mano
39	470	Insuff	Pithouse 2, floor under metate
40	470	100	Pithouse 2, antler concentration around sipapu
45	665	200	Pithouse 2, antler concentration around sipapu
46	665	Insuff	Pithouse 2, antler concentration around sipapu
47	665	Insuff	Pithouse 2, antler concentration around sipapu

*FS# - Field Provenience Unit

**Insuff - insufficient pollen for analysis

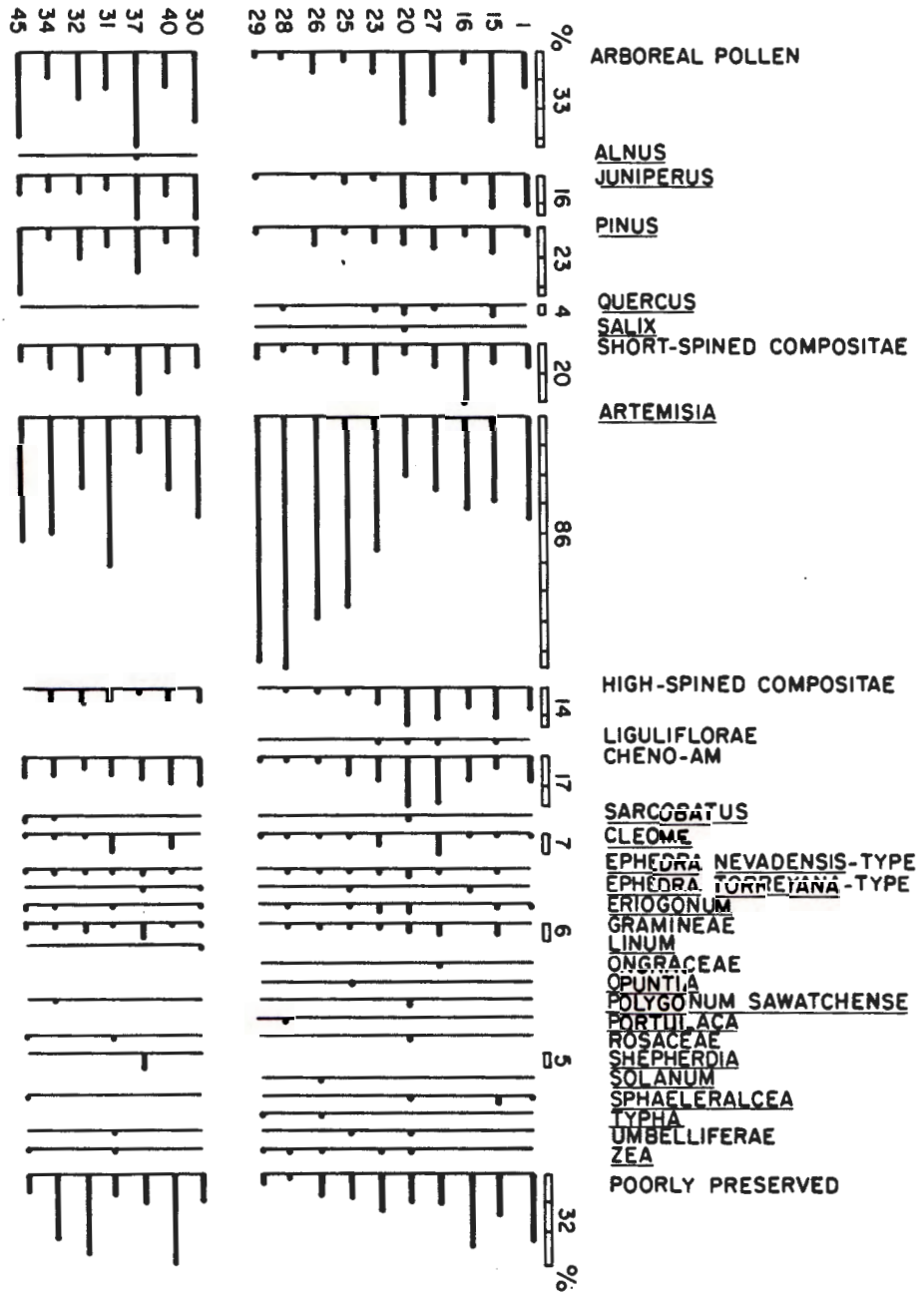

Figure 5.B.1 Pollen Diagram for Pithouse 1 and Pithouse 2, Dos Casas Hamlet.

as a fuel. The concentration of Aretmisia pollen in the fill and wash samples from the vessel probably indicate the presence of Aretmisia pollen within the pithouse as fill was accumulating in the vessel. Pollen Sample 23 from the floor of this pithouse was intermediate in its Artemisis pollen frequency between those samples displaying large and moderate quantities of Artemisia pollen.

Cheno-am pollen is noted in rather low frequencies in Pithouse 1, with the highest quantities occurring in Samples 20 and 27 from the floor of a mealing receptacle and a general floor sample, respectively. The quantity of cheno-am pollen in even these two samples is not sufficiently high to be clearly indicative of the use of chenopods or amaranths in these locations. Cleome was noted in small frequencies throughout this pitstructure, with the largest quantity occurring in Sample 27 from the floor.

Many other pollen types representative of plants with documented ethnographic importance are noted sporadically throughout this pitstructure, including Ephedra, Eriogonum, Graminae, Onagraceae, Opuntia, Solanum, Sphaeralcea, Typha, and Umbelliferae (Table 5.B.2). Small quantities of Zea pollen were also noted from the floor of the mealing receptacle, the floor near the hearth and sipapu, the hearth, and the fill and wash from the vessel.

The analysis of pollen samples from Pithouse 2 was oriented toward identifying any anomalies in the pollen record in samples taken in the area of the sipapu, which contained a concentration of antlers. This site has been described as having been adandoned in the ritual mode, and, therefore, offered the first opportunity for pollen analysis of this unique abandonment situation.

Table 5.B.2 Pollen Taxa Observed at Dos Casas Hamlet

Scientific Name	Common Name
Arboreal Pollen	
Alnus	Alder
Juniperus	Juniper
Pinus	Pine
Quercus	Oak
Salix	Willow
Nonarboreal Pollen	
Artemisia	Sagebrush
Short-spined Compositae	Sunflower family, includes such genera as: Ambrosia (Ragweed), Franseria (Bur-sage), Xanthium (Cocklebur)
High-spined Compositae	Sunflower family, includes such genera as: Chrysothamnus (Rabbitbrush), Helianthus (Sunflower)
Liguliflorae	Subfamily within Sunflower family
Cheno-ams	Members of the Chenopodiaceae (Goosefoot family) and Amaranthus (Pigweed)
Sarcobatus	Greasewood
Cleome	Beeweed
Ephedra	Mormon tea
Eriogonum	Umbrella plant
Graminae	Grass family
Linum	Flax
Onagraceae	Primrose family
Opuntia	Prickly pear cactus
Polygonum sawatchensis	Sawatch smartweed
Portulaca	Purselane
Rosaceae	Rose family
Shepherdia	Buffaloberry
Solanum	Wild potato or tomato
Sphaeralcea	Globe Mallow
Typha	Cattail
Umbelliferae	Carrot or parsley family
Zea	Maize

A single pollen sample (Sample 30) was analyzed from the bench of the pitstructure and yielded primarily ambient or background pollen types and frequencies. The exception to this was the single pollen grain of Linum noted in that sample. The only other incidence of Linum pollen from the D.A.P. was noted in a bench sample from Pithouse 2 at Site 5MT4644. The presence of Linum pollen only in samples taken from benches may be indicative of a pattern of utilization and/or storage of Linum and should be investigated further.

Pollen Sample 40, taken under a metate, apparently also contains primarily ambient or background pollen. The exception in this sample is the presence of Cleome pollen (5 percent), which is higher than in other samples from the floor and may be associated with utilization of the metate.

Pollen Sample 37 was taken from the sipapu, and contains relatively larger quantities of Juniperus, Pinus, short-spined Compositae, Graminae, and Shepherdia pollen than do other samples from this pitstructue. With the exception of Shepherdia pollen, all of these pollen taxa are represented in other samples from this pitstructure.

Seven pollen samples associated with the antler concentration around the sipapu were analyzed for their pollen content. Four of these samples yielded sufficient pollen for analysis, while three did not. These samples displayed a pattern in the frequencies of many of the common pollen taxa noted, similar to the pattern in the other pollen samples from the pitstructure. All of the samples from this area contained at least some Cleome pollen, and Sample 31 contained 6 percent Cleome. Zea pollen was also noted in two of the samples from this concentration of antlers as 1 percent or less of the pollen. The presence of Cleome and Zea,

especially in small quantities, is common in pitstructures in the project area, and has been noted in several samples from Pithouse 1 at this site.

There is little in the pollen record to indicate that the ceremonial use of pollen was important in the ritual abandonment of this pitstructure. On the contrary, the pollen record contains fluctuations in the frequencies of pollen taxa similar to that observed in other pitstructures. The two elements of the pollen record from Pithouse 2 which are the most unusual are the presence of Linum pollen in the bench sample, and the presence of 5 percent Shepherdia pollen in the sipapu sample. This quantity of Shepherdia pollen in the sipapu appears to reflect ceremonial significance, since Shepherdia pollen is very rare in the samples from archaeological sites in the D.A.P. area.

APPENDIX C

MACROBOTANICAL ANALYSIS FOR DOS CASAS HAMLET

by

Meredith H. Matthews

The preliminary analysis of bulk soil samples (BS) and vegetal specimens from Site 5MT2193, Dos Casas Hamlet, is presented in Tables 5.C.1, 5.C.2, and 5.C.3. The tables have been divided on the basis of the element designations for the site. Macrobotanical materials associated with Element 1 (approximately A.D. 760) are found in Table 5.C.1 while macrobotanical remains associated with Element 2 (approximately A.D. 780) are presented in Table 5.C.2. The macrobotanical remains retrieved from proveniences not clearly associated with either element are recorded in Table 5.C.3. There were 45 bulk soil samples and approximately 143 bags of vegetal material analyzed from Dos Casas Hamlet. Twenty-four families and 26 genera of plants were identified, although not all of these plant remains are associated with the prehistoric occupation. Bulk soil samples and vegetal specimens were collected from structural and nonstructural fills, features, and occupation surfaces.

The possible ceremonial abandonment of Pithouses 1 and 2 creates interpretational problems for macrobotanical remains. According to the excavators (this report), both structures were abandoned for a short period of time before they were deliberately burned. The occurrence of antler over the sipapus and a variety of artifacts placed in what appeared to be significant strategic areas of the benches prompted assignment of a ceremonial abandonment mode. Interpretational problems arise with the potential for contamination, during the interim between abandonment and burning of the structures, from the anthropogenic plant community that surrounded the structures. Some of the ruderal plants that could occur in the disturbed habitat of the site are *Amaranthus* sp., *Chenopodium* sp., *Portulaca* sp., *Solanum* sp., and genera in the Compositae, Cruciferae and Graminea families. Parts of these plants could have drifted into the

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 1 of 9)

TAXON	PH 1 Roof FS428 VEG	PH 1 Roof F432 VEG	PH 1 Roof FS438 VEG	PH 1 Floor FS439 VEG	PH 1 Roof FS440 VEG	PH 1 Roof FS441 VEG	PH 1 Floor FS442 VEG	PH 1 Roof FS443 VEG	PH 1 Roof FS445 VEG	PH 1 Floor FS446 VEG	PH 1 Roof 447 VEG	PH 1 Floor 448 VEG	PH 1 Roof 449 VEG
Amaranthaceae													
Amaranthus sp.													
seed													
Anacardiaceae													
Rhus aromatica													
twigs													
Chenopodiaceae													
Chenopodium sp.													
fruits													
Cheno-ams													
fruits													
Compositae													
Artemisia sp.													
fruit													
wood	++/C	++/C	+++/C	+++/C	++/C		++/C	+++/C	+++/C	++/C	++++/C	++/C	++/C
leaf													
Helianthus sp.													
fruit													
Cupressaceae													
Juniperus sp.				++/PC									
wood			+/C	*/C		++/C			++/C				
Dicotyledoneae													
Indeterminate													
wood													
seed													

See following page for additional contents of these samples

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 2 of 9)

TAXON (continued)	PH 1 Roof FS428 VEG	PH 1 Roof F432 VEG	PH 1 Roof FS438 VEG	PH 1 Floor FS439 VEG	PH 1 Roof FS440 VEG	PH 1 Roof FS441 VEG	PH 1 Floor FS442 VEG	PH 1 Roof FS443 VEG	PH 1 Roof FS445 VEG	PH 1 Floor FS446 VEG	PH 1 Roof 447 VEG	PH 1 Floor 448 VEG	PH 1 Roof 449 VEG
Gramineae													
Phragmites sp.													
stem												+/C	
Zea mays													
kernel						+/C							++/C
cob													
cupule													
Gymnospermae													
Indeterminate													
wood												+/PC	
Leguminosae													
Indeterminate													
seed													
Liliaceae													
Yucca sp.													
fiber													
Loasaceae													
Mentzelia sp.													
seed													
Malvaceae													
Indeterminate													
seed													

See following page for additional contents of these samples

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 3 of 9)

TAXON (continued)	PH 1 Roof FS428 VEG	PH 1 Roof F432 VEG	PH 1 Roof FS438 VEG	PH 1 Floor FS439 VEG	PH 1 Roof FS440 VEG	PH 1 Roof FS441 VEG	PH 1 Floor FS442 VEG	PH 1 Roof FS443 VEG	PH 1 Roof FS445 VEG	PH 1 Floor FS446 VEG	PH 1 Roof 447 VEG	PH 1 Floor 448 VEG	PH 1 Roof 449 VEG
Pinaceae													
Pinus sp.												+++/PC	
wood				+++/C							++/C	++++/C	++/C
P. edulis													
needle													
seed													
P. ponderosa	++/PC		++/PC										
wood	*/C	++++/C	+++/C	+++/C		+++/C	+++/C	++++/C	+++/C	+++/C		++/C	
Polygonaceae													
Polygonum sp.													
fruit													
Salicaceae													
Populus sp.													
wood	+++/C	++++/C	++++/C	*/C	++++/C	***/C	+++/C	***/C	*/C	*/C	*/C	+++/C	+++/C
Indeterminate													
wood													
Indeterminate													
fruit													
seed													

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 4 of 9)

TAXON	PH 1 Floor FS450 VEG	PH 1 Roof FS451 VEG	PH 1 Floor FS452 VEG	PH 1 Roof FS453 VEG	PH 1 Roof FS455 VEG	PH 1 Roof FS456 VEG	PH 1 Floor F.115 VEG	PH 1 Floor F.32 VEG	PH 1 Floor F.35 VEG	PH 1 Shelf PL95 VEG	PH 1 Shelf PL96 VEG
Amaranthaceae											
Amaranthus sp.											
seed											
Anacardiaceae											
Rhus aromatica											
twigs			W/C								
Chenopodiaceae											
Chenopodium sp.											
fruits											
Cheno-ams											
fruits											
Compositae											
Artemesia sp.											
fruit											
wood	+/C	+/C		+++/C	++/C	++++/C					
leaf											
Helianthus sp.											
fruit											
Cupressaceae											
Juniperus sp.											
wood							+++/C	***/N	***/N		
Dicotyledoneae											
Indeterminate											
wood	+/C	+/C		+/C							
seed											
leaf							+/N				

See following page for additional contents of these samples

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 5 of 9)

TAXON (continued)	PH 1 Floor FS450 EG	PH 1 Roof FS451 VEG	PH 1 Floor FS452 VEG	PH 1 Roof FS453 VEG	PH 1 Roof FS455 VEG	PH 1 Roof FS456 VEG	PH 1 Floor F.115 VEG	PH 1 Floor F.35 VEG	PH 1 Floor F.32 VEG	PH 1 Shelf PL95 VEG	PH 1 Shelf PL96 VEG
Fagaceae											
Quercus gambelii											
wood		+/C				+/C					
Graminea											
Phragmites sp.											
stem											
Zea mays											
kernel		++/C									
cob		4fr/C								9fr/C	18fr/C
cupule		+/C								62/C	7/C
Gymnospermae											
Indeterminate											
wood							+/C				
Leguminosae											
Indeterminate											
seed			W/C								
Liliaceae											
Yucca sp.											
fiber											
Loasaceae											
Mentzelia sp.											
seed											
Malvaceae											
Indeterminate											
seed											

See following page for additional contents of these samples

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 6 of 9)

TAXON (continued)	PH 1 Floor FS450 VEG	PH 1 Roof FS451 VEG	PH 1 Floor FS452 VEG	PH 1 Roof FS453 VEG	PH 1 Roof FS455 VEG	PH 1 Roof FS456 VEG	PH 1 Floor F.115 VEG	PH 1 Floor F.32 VEG	PH 1 Floor F.35 VEG	PH 1 Shelf PL95 VEG	PH 1 Shelf PL96 VEG
Pinaceae											
Pinus sp.											
wood	++/C	+++/C		+++/C	+++/C	+++/PC	++/C				
P. edulis											
needle											
seed											
P. ponderosa											
wood						+++/C					
Polygonaceae											
Polygonum sp.											
fruit											
Salicaceae											
Populus sp.											
wood	+++/C	***/C	++/C	*/C	++++/C	*/C					
Indeterminate											
wood		+/C									
Indeterminate											
fruit											
seed											

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 7 of 9)

TAXON	SUB 1 F. 1 BS19	SUB 1 F. 2 BS21	SUB 1 F. 3 BS25	PH 1 Floor BS171	PH 1 Floor BS188	PH 1 F. 26 BS196	O/AS SURF FS391 VEG	O/AS SURF FS405 VEG	PH 1 Roof FS414 VEG	PH 1 Roof FS415 VEG	PH 1 Floor FS416 VEG	PH 1 Floor FS426 VEG
Amaranthaceae												
Amaranthus sp.												
seed	1/N	10/N	X/N	X/N	2/N	3/C						
Anacardiaceae												
Rhus aromatica												
twigs												
Chenopodiaceae												
Chenopodium sp.												
fruits	3/C		2/C									
Cheno-ams												
fruits	2/N		1/C			2/C						
Compositae												
Artemesia sp.												
fruit		1/C	1/C			1/C						
wood	+/C	+/C	+/C	+/C	+/C	+/C			+/C	+/C		+++/C
leaf				+/C								
Helianthus sp.												
fruit								2/N				
Cupressaceae												
Juniperus sp.												
wood									++/C			
Cyperaceae												
Indeterminate												
fruit					1/N							
Dicotyledoneae												
Indeterminate												
wood					+/C	+/C						
seed					1/C	1/C						

See following page for additional contents of these samples

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 8 of 9)

TAXON (Continued)	SUB 1 F. 1 BS19	SUB 1 F. 2 BS21	SUB 1 F. 3 BS25	PH 1 Floor BS171	PH 1 Floor BS188	PH 1 F. 26 BS196	O/A5 SURF FS391 VEG	O/A5 SURF FS405 VEG	PH 1 Roof FS414 VEG	PH 1 Roof FS415 VEG	PH 1 Floor FS416 VEG	PH 1 Floor FS426 VEG
Fagaceae												
Quercus gambelii												
wood												
Gramineae												
Phragmites sp.												
stem												
Zea mays												
kernel	1/C		+/C			+/C	+/C					
cob												
cupule	X/C	13/C	X/C									
Gymnospermae												
Indeterminate												
wood	+/C	+/C		+/C	+/C	+/C						
Leguminosae												
Indeterminate												
seed			1/C		1/C							
Liliaceae												
Yucca sp.												
fiber												
Loasaceae												
Mentzelia sp.												
seed												
Malvaceae												
Indeterminate												
seed	1/N											

See following page for additional contents of these samples

Table 5.C.1 Macrobotanical Remains Associated With Element 1 (Page 9 of 9)

TAXON (Continued)	SUB 1 F. 1 BS19	SUB 1 F. 2 BS21	SUB 1 F. 3 BS25	PH 1 Floor BS171	PH 1 Floor BS188	PH 1 F. 26 BS196	O/A5 SURF FS391 VEG	O/A5 SURF FS405 VEG	PH 1 Roof FS414 VEG	PH 1 Roof FS415 VEG	PH 1 Floor FS416 VEG	PH 1 Floor FS426 VEG
Pinaceae												
Pinus sp.												
wood												
P. edulis												
needle						1/C						
seed												
P. ponderosa												
wood									+++/C	++/C		
Polygonaceae												
Polygonum sp.												
fruit			1/N	X/N				50/N				
Salicaceae												
Populus sp.												
wood			+/C	+/C					+++/C	++/C	+++/C	++++/C
Indeterminate												
wood												
Indeterminate												
fruit				1/C								
seed						3/C						

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 1 of 20)

TAXON	RM 1 Fill BS22	RM 5 F. 6 BS26	RM 1 Fill BS29	RM 5 F. 9 BS71	RM 5 F. 11 BS91	RM 5 F. 11 BS104	RM 5 F. 11 BS105	RM 6 F. 11 BS106	PH 2 Floor BS112	PH 1 Fill BS160	PH 2 Floor BS177	PH 2 Floor BS178	SUB 5 F. 24 BS185	PH 2 Floor BS194
Amaranthaceae														
Amaranthus sp.														
seed	1/N	22/N	65/N	2/N	1/N	1/N		X/N	2/N			10/N	5/N	
Chenopodiaceae														
Chenopodium sp.														
fruits	1/C				1/C								1/C	
Cheno-ams														
fruits		2/N		2/N		1/N								
Compositae														
Artemisia sp.														
fruit			1/C											
wood		+/C	+/C		+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C
leaf			1/N											
Helianthus sp.														
fruit													X/N	
Iva sp.														
fruit														
Indeterminate														
fruit												1/N		
Cruciferae														
Indeterminate														
seed														
Cupressaceae														
Juniperus sp.														
wood									++/C		+/C			++/C
J. osteosperma														
seed														

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 2 of 20)

TAXON (Continued)	RM 1 Fill BS22	RM 5 F. 6 BS26	RM 1 Fill BS29	RM 5 F. 9 BS71	RM 5 F. 11 BS91	RM 5 F. 11 BS104	RM 5 F. 11 BS105	RM 6 F. 11 BS106	PH 2 Floor BS112	PH 1 Fill BS160	PH 2 Floor BS177	PH 2 Floor BS178	SUB 5 F. 24 BS185	PH 2 Floor BS194
Cyperaceae														
Indeterminate														
fruit														
Dicotyledoneae														
Indeterminate														
wood									+/C	+/C		+/N	+/C	+/C
seed			1/C								2/N			
fruit			1/C											
flower			3/N											
leaf			1/N											
Gramineae														
Phragmites sp.														
stem				+/C					+/C					+/C
Zea mays														
kernel	+/C	+/C	++/C	+/C					++/C					
cob			1fr/C											
cupule	X/C		X/C	X/C	X/C	X/C	2/C	X/C				X/C		X/C
Indeterminate														
fruits														
culm														
Gymnospermae														
Indeterminate														
wood		+/C	+/C				+/C		+/C	+/C	+/C		+/C	
Leguminosae														
Phaseolus sp.														
cotyleden	1/C		4/C											

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 3 of 20)

TAXON (Continued)	RM 1 Fill BS22	RM 5 F. 6 BS26	RM 1 Fill BS29	RM 5 F. 9 BS71	RM 5 F. 11 BS91	RM 5 F. 11 BS104	RM 5 F. 11 BS105	RM 6 F. 11 BS106	PH 2 Floor BS112	PH 1 Fill BS160	PH 2 Floor BS177	PH 2 Floor BS178	SUB 5 F. 24 BS185	PH 2 Floor BS194
Liliaceae														
Yucca sp.														
fiber														
Loasaceae														
Mentzelia sp.														
seed	1/C													
Malvaceae														
Sphaeralcea sp.														
seed							1/N							
Indeterminate														
seed				1/N	1/C									
Pinaceae														
Pinus sp.														
wood	+/C				+/C	+/C			+/C		+/C		+/C	
P. edulis														
seed			1/C											
P. pondersoa														
wood														
Polygonaceae														
Polygonum sp.														
fruit	1/C	9/N											3/C	
Portulacaceae														
Portulaca sp.														
seed			2/C											

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 4 of 20)

TAXON (Continued)	RM 1 Fill BS22	RM 5 F. 6 BS26	RM 1 Fill BS29	RM 5 F. 9 BS71	RM 5 F. 11 BS91	RM 5 F. 11 BS104	RM 5 F. 11 BS105	RM 6 F. 11 BS106	PH 2 Floor BS112	PH 1 Fill BS160	PH 2 Floor BS177	PH 2 Floor BS178	SUB 5 F. 24 BS185	PH 2 Floor BS194
Rosaceae														
Cercocarpus sp.														
wood														
Indeterminate														
wood														
Salicaceae														
Salix sp.														
wood														
Populus sp.														
wood		+/C	+/C		+/C	+/C	+/C	+/C	+/C					
Indeterminate														
wood										+/C				
Solanaceae														
Solanum sp.														
seed			1/N	2/N										
Verbenaceae														
Verbena sp.														
fruit														
Indeterminate														
fruit														
seed	2/C	1/N			2/C		1/N					1/C		
wood										+/C				

Table 5.C.2 Macrobotanical Remains Associated With Element21 (Page 5 of 20)

TAXON	PH 1 Fill BS202	PH 2 Bench BS214	PH 2 Bench BS215	PH 2 Bench BS217	PH 2 Floor BS229	PH 2 Floor BS230	PH2 Floor BS234	PH 2 Floor BS235	PS 2 F. 84 BS255	PS 2 Bench BS268	PS 2 Bench BS269	PS 2 Bench BS270	RM 4 Fill FS268 VEG	SUB 1 Fill FS271 VEG
Amaranthaceae														
Amaranthus sp.														
seed	35+/N	13/N			11/N	11/N	1/N	22/N	2/C			10/N		
Chenopodiaceae														
Chenopodium sp.	4/N													
fruits	2/C					X/C		1/C	1/C					
Cheno-ams	12/N													
fruits	1/C													
Compositae														
Artemisia sp.														
fruit								1/C						
wood	+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C		+/C	+/C		
leaf								X/C						
Helianthus sp.														
fruit	1/N								1/C					
Iva sp.														
fruit	1/N													
Indeterminate														
fruit	1/N													
Cruciferae														
Indeterminate														
seed	1/N											1/N		
Cupressaceae														
Juniperus sp.														
wood	+/C	+/C			+/C		++/C		+/C			+/C		
J. osteosperma														
seed												X/C		

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 6 of 20)

TAXON (Continued)	PH 1 Fill BS202	PH 2 Bench BS214	PH 2 Bench BS215	PH 2 Bench BS217	PH 2 Floor BS229	PH 2 Floor BS230	PH 2 Floor BS234	PH 2 Floor BS235	PS 2 F. 84 BS255	PS 2 Bench BS268	PS 2 Bench BS269	PS 2 Bench BS270	RM 4 Fill FS268 VEG	SUB 1 Fill FS271 VEG
Cyperaceae														
Indeterminate														
fruit												1/N		
Dicotyledoneae														
Indeterminate														
wood		+/C			+/C		+/C		+/C					
seed	1/N													
fruit														
flower														
leaf						1/N		1/N				X/N		
Gramineae														
Phragmites sp.														
stem			+/C	+/C	+/C	+/C	+/C				+/C	+/C		
Zea mays														
kernel											X/C		+/C	+++/C
cob									1/C					
cupule	X/C	1/C	1/C		1/C				1/C	X/C	1/C			
Indeterminate														
fruits								1/C						
culm								+/C						
Gymnospermae														
Indeterminate														
wood			+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C	+/C		
Leguminosae														
Phaseolus sp.														
cotyleden														

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 7 of 20)

TAXON (Continued)	PH 1 Fill BS202	PH 2 Bench BS214	PH 2 Bench BS215	PH 2 Bench BS217	PH 2 Floor BS229	PH 2 Floor BS230	PH 2 Floor BS234	PH 2 Floor BS235	PS 2 F. 84 BS255	PS 2 Bench BS268	PS 2 Bench BS269	PS 2 Bench BS270	RM 4 Fill FS268 VEG	SUB 1 Fill FS271 VEG
Liliaceae														
Yucca sp.														
fiber														
Loasaceae														
Mentzelia sp.														
seed									1/C					
Malvaceae														
Sphaeralcea sp.														
seed	1/N	1/N												
Indeterminate														
seed						6/N								
Pinaceae														
Pinus sp.														
wood				+/C	+/C				+/C					
P. edulis														
seed														
P. pondersoa														
wood		+/C			+/C									
Polygonaceae														
Polygonum sp.	37/N													
fruit	3/C													
Portulacaceae														
Portulaca sp.														
seed	1/N													

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 8 of 20)

TAXON (Continued)	PH 1 Fill BS202	PH 2 Bench BS214	PH 2 Bench BS215	PH 2 Bench BS217	PH 2 Floor BS229	PH 2 Floor BS230	PH 2 Floor BS234	PH 2 Floor BS235	PS 2 F. 84 BS255	PS 2 Bench BS268	PS 2 Bench BS269	PS 2 Bench BS270	RM 4 Fill FS268 VEG	SUB 1 Fill FS271 VEG
Rosaceae														
Cercocarpus sp.														
wood														
Indeterminate														
wood														
Salicaceae														
Salix sp.														
wood					+/C									
Populus sp.														
wood		+/C		+/C		+/C		+/C						
Indeterminate														
wood														
Solanaceae														
Solanum sp.														
seed	8/N													
Verbenaceae														
Verbena sp.														
fruit	1/N													
Indeterminate														
fruit								1/C						
seed	5/C					1/N								
wood	4/N					+/C								

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 9 of 20)

TAXON	SUB 1 Fill FS274 VEG	RM 1 Roof FS281 VEG	RM 2 Fill FS339 VEG	RM 5 Floor FS349 VEG	RM 3 Fill FS356 VEG	RM 3 Fill FS363 VEG	O/A 5 Fill FS394 VEG	PH 2 Fill FS417 VEG	PH 2 Roof FS419 VEG	PH 2 Floor FS420 VEG	PH 1 Fill FS421 VEG	PH 2 Fill FS425 VEG	PH 2 Bench PL 6 VEG	PH 2 Roof FS434 VEG
Amaranthaceae														
Amaranthus sp.														
seed														
Chenopodiaceae														
Chenopodium sp.														
fruits														
Cheno-ams														
fruits														
Compositae														
Artemesia sp.														
fruit														
wood									+++/C	++/C	++/C			
leaf														
Helianthus sp.														
fruit														
Iva sp.														
fruit														
Indeterminate														
fruit														
Cruciferae														
Indeterminate														
seed														
Cupressaceae														
Juniperus sp.											++/PC			
wood								+++/C	*/C	++/C	++/C			++/C
J. osteosperma														
seed														

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 10 of 20)

TAXON (Continued)	SUB 1 Fill FS274 VEG	RM 1 Roof FS281 VEG	RM 2 Fill FS339 VEG	RM 5 Floor FS349 VEG	RM 3 Fill FS356 VEG	RM 3 Fill FS363 VEG	O/A 5 Fill FS394 VEG	PH 2 Fill FS417 VEG	PH 2* Roof FS419 VEG	PH 2 Floor FS420 VEG	PH 1 Fill FS421 VEG	PH 2 Fill FS425 VEG	PH 2 Bench PL 6 VEG	PH 2 Roof FS434 VEG
Cuperaceae														
Indeterminate														
fruit														
Dicotyledoneae														
Indeterminate														
wood														
seed														
fruit														
flower														
leaf														
Gramineae														
Phragmites sp.														
stem		+/C						+/C	+/C	+/C				
Zea mays														
kernel	+/C	+++/C	++/C		++/C	++/C	+/C		+/C			+++/C		
cob		7fr/C	4fr/C		12fr/C	2fr/C					1fr/C		5F/C	
ear			1fr/C		1/C									
cupule		+/C	X/C		25/C								2/C	
Indeterminate														
fruits														
culm														
Gymnospermae														
Indeterminate														
wood									+/C					
Leguminosae														
Phaseolus sp.														
cotyleden		2/C												

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 11 of 20)

TAXON (Continued)	SUB 1 Fill FS274 VEG	RM 1 Roof FS281 VEG	RM 2 Fill FS339 VEG	RM 5 Floor FS349 VEG	RM 3 Fill FS356 VEG	RM 3 Fill FS363 VEG	O/A 5 Fill FS394 VEG	PH 2 Fill FS417 VEG	PH 2 Roof FS419 VEG	PH 2 Floor FS420 VEG	PH 1 Fill FS421 VEG	PH 2 Fill FS425 VEG	PH 2 Bench PL 6 VEG	PH 2 Roof FS434 VEG
Liliaceae														
Yucca sp. fiber														
Loasaceae														
Mentzelia sp. seed														
Malvaceae														
Sphaeralcea sp. seed														
Indeterminate seed														
Pinaceae														
Pinus sp. wood									*/C	+/C				++/N
P. edulis seed														
P. pondersoa wood									+++/N +++/PC **/C		++/PC ++++/C	+/N ++/C		+/N ++/PC ***/C
Polygonaceae														
Polygonum sp. fruit														
Portulacaceae														
Portulaca sp. seed														

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 12 of 20)

TAXON (Continued)	SUB 1 Fill FS274 VEG	RM 1 Roof FS281 VEG	RM 2 Fill FS339 VEG	RM 5 Floor FS349 VEG	RM 3 Fill FS356 VEG	RM 3 Fill FS363 VEG	O/A 5 Fill FS394 VEG	PH 2 Fill FS417 VEG	PH 2 Roof FS419 VEG	PH 2 Floor FS420 VEG	PH 1 Fill FS421 VEG	PH 2 Fill FS425 VEG	PH 2 Bench PL 6 VEG	PH 2 Roof FS434 VEG
Rosaceae														
Cercocarpus sp.														
wood														
Indeterminate														
wood														
Salicaceae														
Salix sp.														
wood				+/C										
Populus sp.														
wood									++++/C	+/C	*/C			
Indeterminate														
wood														
Solanaceae														
Solanum sp.														
seed														
Verbenaceae														
Verbena sp.														
fruit														
Indeterminate														
fruit														
seed														
wood														

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 13 of 20)

TAXON (Continued)	PH 2 Roof FS435 VEG	SUB 7 Fill FS437 VEG	PH 2 Floor FS457 VEG	PH 2 Floor FS464 VEG	PH 2 Bench PL134 VEG	PH 2 Bench F74 VEG	PH 2 Bench F74 VEG	PH 2 Bench PL133 VEG	PH 2 Bench PL132 VEG	PH 2 Floor FS504 VEG	PH 2 Floor FS506 VEG	PH 2 Floor FS509 VEG	PH 2 Floor FS511 VEG	PH 2 Floor FS512 VEG	PH 2 Floor FS513 VEG
Amaranthaceae															
Amaranthus sp.															
seed															
Chenopodiaceae															
Chenopodium sp.															
fruits															
Cheno-ams															
fruits															
Compositae															
Artemisia sp.															
fruit															
wood	++/C		++/C			++/C					++/C				
leaf															
Helianthus sp.															
fruit															
Iva sp.															
fruit															
Indeterminate															
fruit															
Cruciferae															
Indeterminate															
seed															
Cupressaceae															
Juniperus sp.															
wood	++++/C					+/C					++++/C				+/C
J. osteosperma															
seed					4/C										

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 14 of 20)

TAXON (Continued)	PH 2 Roof FS435 VEG	SUB 7 Fill FS437 VEG	PH 2 Floor FS457 VEG	PH 2 Floor FS464 VEG	PH 2 Bench PL134 VEG	PH 2 Bench F74 VEG	PH 2 Bench F74 VEG	PH 2 Bench PL133 VEG	PH 2 Bench PL132 VEG	PH 2 Floor FS504 VEG	PS 2 Floor FS506 VEG	PS 2 Floor FS509 VEG	PS 2 Floor FS511 VEG	PS 2 Floor FS512 VEG	PS 2 Floor FS513 VEG
Cyperaceae															
Indeterminate															
fruit															
Dicotyledeneae															
Indeterminate															
wood											++/C				
seed															
fruit															
flower															
leaf															
Graminae															
Phragmites sp.															
stem	+/C										+/C				
Zea mays															
kernel		++/C	+C												
cob					34fr/C		9fr/C	4/C	10fr/C						
ear															
cupule							2/C		X/C						
Indeterminate															
fruits															
culm															
Gymnospermae															
Indeterminate															
wood					+/C		+/C				+/N				
Leguminosae															
Phaseolus sp.															
cotyleden															

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 15 of 20)

TAXON (Continued)	PH 2 Roof FS435 VEG	SUB 7 Fill FS437 VEG	PH 2 Floor FS457 VEG	PH 2 Floor FS464 VEG	PH 2 Bench PL134 VEG	PH 2 Bench F74 VEG	PH 2 Bench F74 VEG	PH 2 Bench PL133 VEG	PH 2 Bench PL132 VEG	PH 2 Floor FS504 VEG	PH 2 Floor FS506 VEG	PH 2 Floor FS509 VEG	PH 2 Floor FS511 VEG	PH 2 Floor FS512 VEG	PH 2 Floor FS513 VEG
Liliaceae															
Yucca sp.															
fiber															
Loasaceae															
Mentzelia sp.															
seed															
Malvaceae															
Sphaeralcea sp.															
seed															
Indeterminate															
seed															
Pinaceae															
Pinus sp.															
wood	+/C		++/C	++++/C						+++/C	+/C	+++/C	+++/C	**/C	
P. edulis															
seed															
P. pondersoa															
wood	+++/C														
	++++/C			++/C						++/C			++/C		
Polygonaceae															
Polygonum sp.															
fruit															
Portulacaceae															
Portulaca sp.															
seed															

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 16 of 20)

TAXON (Continued)	PH 2 Roof FS435 VEG	SUB 7 Fill FS437 VEG	PH 2 Floor FS457 VEG	PH 2 Floor FS464 VEG	PH 2 Bench PL134 VEG	PH 2 Bench F74 VEG	PH 2 Bench F74 VEG	PH 2 Bench PL133 VEG	PH 2 Bench PL132 VEG	PH 2 Floor FS504 VEG	PH 2 Floor FS506 VEG	PH 2 Floor FS509 VEG	PH 2 Floor FS511 VEG	PH 2 Floor FS512 VEG	PH 2 Floor FS513 VEG
Rosaceae															
Cercocarpus sp.															
wood											++/C				
Indeterminate															
wood															
Salicaceae															
Salix sp.															
wood															
Populus sp.															
wood			++++/C	++/C						+++/C		++/C			
Indeterminate															
wood															++++/C
Solanaceae															
Solanum sp.															
seed															
Verbenaceae															
Verbena sp.															
fruit															
Indeterminate															
fruit															
seed															
wood															+/C

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 17 of 20)

TAXON	PH 2 Floor FS514 VEG	PH 2 Bench F.50 VEG	PH 2 Bench F.61 VEG	PH 2 Bench F.66 VEG	PH 2 Bench F.71 VEG	PH 2 Roof FS653 VEG	PH 2 Floor PL119 VEG	PH 2 Floor F.86 VEG	PH 2 Floor F.94 VEG	RM 6 Fill FS782 VEG	RM 6 Fill FS788 VEG	SUB 3 SURF F.16 VEG	SUB 3 SURF F.116 VEG
Amaranthaceae													
Amaranthus sp.													
seed													
Chenopodiaceae													
Chenopodium sp.													
fruits													
Cheno-ams													
fruits													
Compositae													
Artemisia sp.													
fruit													
wood						+++/C				+/C	+/C	+/C	
leaf													
Helianthus sp.													
fruit													
Iva sp.													
fruit													
Indeterminate													
fruit													
Cruciferae													
Indeterminate													
seed													
Cupressaceae													
Juniperus sp.													
wood	++/C	++++/PC	++/C	+++/PC	+++/PC				*/C				
J. osteosperma													
seed													

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 18 of 20)

TAXON (Continued)	PH 2 Floor FS514 VEG	PH 2 Bench F.50 VEG	PH 2 Bench F.61 VEG	PH 2 Bench F.66 VEG	PH 2 Bench F.71 VEG	PH 2 Roof FS653 VEG	PH 2 Floor PL119 VEG	PH 2 Floor F.86 VEG	PH 2 Floor F.94 VEG	RM 6 Fill FS782 VEG	RM 6 Fill FS788 VEG	SUB 3 SURF F.16 VEG	SUB 3 SURF F.116 VEG
Cyperaceae													
Indeterminate													
fruit													
Dicotyledeneae													
Indeterminate													
wood													
seed													
fruit													
flower													
leaf													
Gramineae													
Phragmites sp.													
stem						++/C							
Zea mays													
kernel						+/C	++/C			+++/C	++/C	+++/C	+++/C
cob													
cupule													
Indeterminate													
fruits													
culm													
Gymnospermae													
Indeterminate													
wood							+/C						
Leguminosae													
Phaseolus sp.													
cotyleden										1/C	1/C		1/C

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 19 of 20)

TAXON (Continued)	PH 2 Floor FS514 VEG	PH 2 Bench F.50 VEG	PH 2 Bench F.61 VEG	PH 2 Bench F.66 VEG	PH 2 Bench F.71 VEG	PH 2 Roof FS653 VEG	PH 2 Floor PL119 VEG	PH 2 Floor F.86 VEG	PH 2 Floor F.94 VEG	RM 6 Fill FS782 VEG	RM 6 Fill FS788 VEG	SUB 3 SURF F.16 VEG	SUB 3 SURF F.116 VEG
Liliaceae													
Yucca sp. fiber						X/C							
Loasaceae													
Mentzelia sp. seed													
Malvaceae													
Sphaeralcea sp. seed													
Indeterminate seed													
Pinaceae													
Pinus sp. wood	++/C					+/C				+/C		++/C	
P. edulis seed													
P. pondersoa wood								+++/C					
Polygonaceae													
Polygonum sp. fruit													
Portulacaceae													
Portulaca sp. seed													

See following page for additional contents of these samples

Table 5.C.2 Macrobotanical Remains Associated With Element 2 (Page 20 of 20)

TAXON (Continued)	PH 2 Floor FS514 VEG	PH 2 Bench F.50 VEG	PH 2 Bench F.61 VEG	PH 2 Bench F.66 VEG	PH 2 Bench F.71 VEG	PH 2 Roof FS653 VEG	PH 2 Floor PL119 VEG	PH 2 Floor F.86 VEG	PH 2 Floor F.94 VEG	RM 6 Fill FS782 VEG	RM 6 Fill FS788 VEG	SUB 3 SURF F.16 VEG	SUB 3 SURF F.116 VEG
Rosaceae													
Cercocarpus sp.													
wood													
Indeterminate													
wood													
Salicaceae													
Salix sp.													
wood						+/C							
Populus sp.													
wood	++/C									+/C			
Indeterminate													
wood													
Solanaceae													
Solanum sp.													
seed													
Verbenaceae													
Verbena sp.													
fruit													
Indeterminate													
fruit													
seed													
wood													

Table 5.C.3 Macrobotanical Remains Without Element Designation

TAXON	O/A5 Fill BS31	O/A5 Fill BS79	O/A5 F.13 BS80	RM 7 F.5 BS101	SUB 3 MGS FS43 VEG	SUB 3 Fill FS266 VEG	SUB 1 Fill FS286 VEG	SUB 7 Fill FS430 VEG	SUB 5 Fill FS467 VEG
Amaranthaceae									
Amaranthus sp.									
seed		4/N		6/N					
Chenopodiaceae									
Chenopodium sp.									
fruits	4/N								
Compositae									
Artemisia sp.									
wood					+/N				
Helianthus sp.									
fruit		X/N							
Gramineae									
Zea mays									
kernel						+/C	++/C	+/C	+/C
Gymnospermae									
Indeterminate									
wood		+/C							
Leguminosae									
Phaseolus sp.									
cotyledon	X/C								
Malvaceae									
Indeterminate									
seed		2/N							
fruit		2/N							
Polygenaceae									
Polygenum sp.									
fruit		1000/N							
Indeterminate									
fruit	X/N								
Salicaceae									
Populus sp.									
wood	+/C		+/C						
Solanaceae									
Solanum sp.									
seed		1/N							
Verbenaceae									
Verbena sp.									
fruit	2/N	4/N							

Abbreviations used in Tables 5.C.1, 5.C.2, and 5.C.3

PH	-	Pithouse
O/A	-	Occupation Activity Area
SUB	-	Subarea
F.	-	Feature
BS	-	Bulk Soil Sample
VEG	-	Vegetal Specimen
FS	-	Field Provenience
SURF	-	Surface
C	-	Charred
PC	-	Partially Charred
N	-	Noncharred
fr	-	Fragment
W	-	Worked item - basketry
+	-	1 g or less
++	-	1 g to 15 g
+++	-	16 gm to 50 g
++++	-	51 to 100 g
*	-	Between 100 and 200 g
**	-	Between 200 and 300 g
***	-	Greater than 300 g
X	-	Fragments only, no quantity assessable

structures after abandonment and then have been charred when the structures were burned, thus skewing the actual record of in situ, culturally significant macrobotanical materials.

Implicit in the above discussion is the correlation between charred remains and cultural association. The literature illustrates (cf., Bohrer and Adams [34], Keepax [35], Minnis [36], Struever [37]) the prevailing belief that noncharred macrobotanical remains, especially seeds, fruits and cellulose parts, derived from open air archaeological contexts probably represent contamination. A study by Nelson [38:24] on macrobotanical contamination in D.A.P. sites by harvester ants found that the most common contaminants in archaeological samples were Polygonum sp., Portulaca sp., Chenopodium sp., and Amaranthus sp. seeds and fruits. As illustrated in the tables, these seed types were rarely encountered in a charred condition. Therefore, it is believed that the noncharred seeds/fruits from the samples analyzed represent contaminants, brought into the site through modern agricultural disturbance (this report) and/or bioturbative processes.

The occurrence of noncharred wood is not as easily reconciled and provenience is relied upon for interpretation. Table 5.C.3, FS 43, shows the occurrence of noncharred Artemisia sp. wood, collected from the modern ground surface of the site. This material, besides appearing of a modern nature, is not considered to be associated with the prehistoric occupation of the site since it is unlikely that the wood would have survived in the open for a very long period of time. Conversely, the occurrence of noncharred Pinus ponderosa wood from the fill of Pithouse 2, and associated with charred P. ponderosa wood, is considered to be part of the prehistoric assemblage. The burning and collapse of Pithouse 2 could

have provided the preservation situation amenable to the recovery of noncharred material as durable as wood.

Comparison of Tables 5.C.1 and 5.C.2 indicate that a greater quantity of the material collected is associated with Element 2 and therefore, the two tables should only be compared on a relative basis. In Table 5.C.1 (Element 1), the identification of vegetal specimens indicates that wood from Populus sp., Pinus sp., P. ponderosa, and Artemisia sp. was used as the major roofing/construction material in Pithouse 1. Minor components would seem to be Juniperus sp., Quercus gambelii, and Phragmites sp. If vegetal specimens from floor proveniences are compared to those from roof fall (e.g., FS 426 and 428) there is little difference in the macrobotanical assemblage. This is probably a by-product of misidentifying the actual floor stratum and including roof fall material with the floor remains.

The only feature from Pithouse 1 selected for bulk soil analysis was the central hearth (Feature 26, Sample 196) which apparently had the original fill intact. Only a minimal amount of macrobotanical material was recovered from this feature, lending little evidence of subsistence remains. As previously discussed, the occurrence of charred ruderal type plant remains can be potentially misleading. The occurrence of Amaranthus and Chenopodium in the hearth fill can either indicate an exploited resource or a contaminant.

The pit features sampled in Subarea 1 (Feature 1, Sample 19; Feature 2, Sample 21; Feature 3, Sample 25) and associated with Element 1 occupation contained similar macrobotanical remains. The occurrence of charred Chenopodium fruits in two of the features aids in substantiating the prehistoric exploitation of this plant although the fills of the features

were recorded as mixed cultural-postabandonment deposits. All three features contain evidence of Zea mays. Given the type of deposit in the features, it is difficult to say if the occurrence of Zea mays indicates the use of the features for food preparation or if the occurrence of this domesticate is a by-product of washed-in trash.

The most noticeable difference in the macrobotanical remains between the two occupational elements is the increase in the genera of modern contaminants and the recovery of Phaseolus sp. (beans) in Element 2. It is unlikely that the absence of beans in Element 1 deposits is because the occupants were not cultivating or consuming this resource, since remains of Phaseolus sp. are found in other habitation sites of earlier occupations. Rather,it is believed the absence of Phaseolus remains from Element 1 is a by-product of preparation/consumption practices and preservation.

The major support and roofing components in Pithouse 2 (Table 2, Element 2) were Juniperus sp., Pinus sp., P. ponderosa, Populus sp., and Artemisia sp. wood. Two of the main support posts (Features 50 and 94) and three of the auxillary posts (Features 61, 66, and 71) found in situ were constructed from Juniperus wood, with a third support post (Feature 86) made out of P. ponderosa wood. Phragmites stems, probably used as closing material, were also recovered from the roof fall stratum, although there was no evidence of Quercus gambelii from this structure. Once again, vegetal specimens from the floor are similar to those identified as roofing materials and probably were incorporated into the floor stratum during burning or mixed in with the floor stratum materials during excavation.

Most of the bulk soils selected for analysis are from surfaces and fills. Macrobotanical remains from these samples reflects a mixture of

intrusive contaminant and potential economic resources (e.g., Chenopodium sp. and Portulaca sp.). Samples from two hearths (Features 11 and 24), with intact original deposits, do not vary greatly from other bulk soil samples in macrobotanical composition, thus limiting identification of subsistence resources.

As previously mentioned, both Pithouses 1 and 2 have been interpreted as having been ceremonially abandoned. Among the artifacts left on the stringer shelf of Pithouse 1 and the bench of Pithouse 2 were clusters of Zea mays cobs that had already been shelled (Pithouse 1: PL 95, PL 96; Pithouse 2: PL 6, PL 132, PL 133, PL 134). Whiting [39:45] has noted the use of different varieties of corn in Hopi rituals to symbolize the cardinal directions and are often placed in specific location on alters according to their appropriate direction. At present, no special analytical studies have been conducted on Zea mays recovered from D.A.P. sites to distinguish different races or varieties of maize used by the prehistoric peoples. Therefore, it cannot be stated if the cobs from the two structures are of one or several varieties of Zea mays that may have had ceremonial signficiance.

As illustrated in Table 5.C.3, macrobotanical remains retrieved from proveniences that were not given an element designation contain only a limited amount of material clearly associated with the prehistoric occupation of Site 5MT2193. This material does not really amend the information already gained from macrobotanical remains recovered from more secure proveniences. It should be noted that sample 79 in Table 5.C.3 provides a good example of what is considered a high level of contamination (approximately 1000 Polygonum sp. achenes) that can occur in an archaeological context through the activity of soil organisms, possibly harvester ants.

In summary, the macrobotanical remains from the two elements of occupation at Dos Casas Hamlet do not differ dramatically from each other. Occupants during both elements exploited similar wood resources for house construction materials and probably fuel resources. Both macrobotanical assemblages contain charred specimens of economic, ruderal plants e.g., Amaranthus, Chenopodium, that may have been utilized by the prehistoric occupants. Nonetheless, the paucity of remains and the deposits these remains were extracted from are not conducive to making statements concerning subsistence exploitation patterns for the two elements, or occupations.

There is evidence for the use of Zea mays during both occupations, potentially for ceremonial purposes as well as for subsistence. In general, the charred macrobotanical remains recovered from bulk soil samples and the vegetal specimens can not be distinguished as varieties known, ethnographically, to serve ceremonial purposes; therefore, these remains cannot, on the basis of variety, be used to substantiate the interpretation of ceremonial destruction of Pithouses 1 and 2. The minimal return of small scale remains from features and surfaces does, however, support the excavators interpretation that the structures were cleaned out to some degree prior to burning.

APPENDIX D

CERAMIC REPORT FOR DOS CASAS HAMLET

by

William A. Lucius

Preliminary (inventory) analysis of the ceramic complement from Site 5MT2193 was accomplished subsequent to the field operations by members of the Additive Analysis Laboratory of the D.A.P. and is presented in this appendix. Description of the preliminary analysis procedures, structure, and data interpretability is available in Lucius [40]. Familiarity with the inventory analysis program will aid in the understanding of the data and interpretations provided below.

Table 5.D.1 is a summary of ceramic frequencies for the site as a whole (ceramics collected during the 1972 inventory survey were not available for analysis and are not included). Sherds are grouped by "culture categories and wares" (Lindsay et al. [41]). With the exception of 22 sherds, all sherds from Site 5MT2193 were assigned to wares of the Mesa Verde Culture Category and reflect a local (Mesa Verde region) manufacturing tradition and exchange system. Pottery types within each ware are listed sequentially from early to late, and grouped types (e.g., Early Pueblo Gray) are listed last and include sherds not assignable to specific types (e.g., gray ware body sherds).

Forty-three partially or wholly reconstructable ceramic vessels were found at Site 5MT2193, and their counts and weights are excluded from Table 5.D.1. Table 5.D.2 documents the traditional types and vessel forms of these vessels, as well as any special nonvessel shapes.

Relative weights of temporally diagnostic types have been extracted from Table 5.D.1 and are presented graphically in Figure 5.D.1. Each type is expressed as a percentage of its ware total (excluding sherds not identifiable to type and excluding sherds from reconstructable vessels). The relative contribution of each ware to the classifiable site total is listed on the left. Temporal spans for the diagnostic types are based on

Table 5.D.1 Summary of Descriptive Frequencies of Ceramics at Dos Casas Hamlet*

WARE TRADITIONAL TYPE**	BY COUNT												WEIGHTS	
	BOWL		JAR		OTHER		TOTAL		RIMS		MODIFIED			
	#	%	#	%	#	%	#	%	#	%	#	%	g	%
Indeterminate Gray			16	0.6			16	0.5					105	0.2
Indeter White														
Mesa Verde Gray														
Chapin Gray			119	4.1			123	3.9	123	57.5			12916	22.4
Moccasin Gray			4	0.14			4	0.13	2	0.9			421	0.7
Early Pueblo			2692	93.8			2697	85					38010	66
Dolores Brown			2	0.1			3	0.1	1	0.5			12	0.02
Mesa Verde White														
Chapin B/W	42	14.3					42	1.3	20	9.3			2486	4.3
Piedra B/W	4	1.4					4	0.1	3	1.4			101	0.2
Early Pueblo	185	63.1	12	0.4			197	6.2	51	23.8			2436	4.2
Late Pueblo	6	2	2	0.1			8	0.3					528	0.9
Mesa Verde Red														
Abajo R/O	8	2.7	2	0.1			10	0.3	5	2.3			128	0.2
Bluff B/R	1	0.3					1	0.03	1	0.5			25	.04
Early Pueblo	43	14.8	3	0.1			46	1.4	7	2.2			323	0.6
Cibola Gray														
Lino Gray			1	0.03			1	0.03	1	0.5			7	0.01
Early Pueblo			18	0.6			18	0.6					77	0.1
Cibola White														
Early Pueblo	2	0.7					2	0.1					17	0.02
Mogollon Brown														
Indeter Smudged	1	0.3					1	0.03					4	<1
TOTALS	293		2871		10		3174		214				54599	

*Ceramic materials collected during 1972 site survey are not included.
**Indeter - indeterminate
B/W - Black-on-white R/O - Red-on-orange B/R - Black-on-red

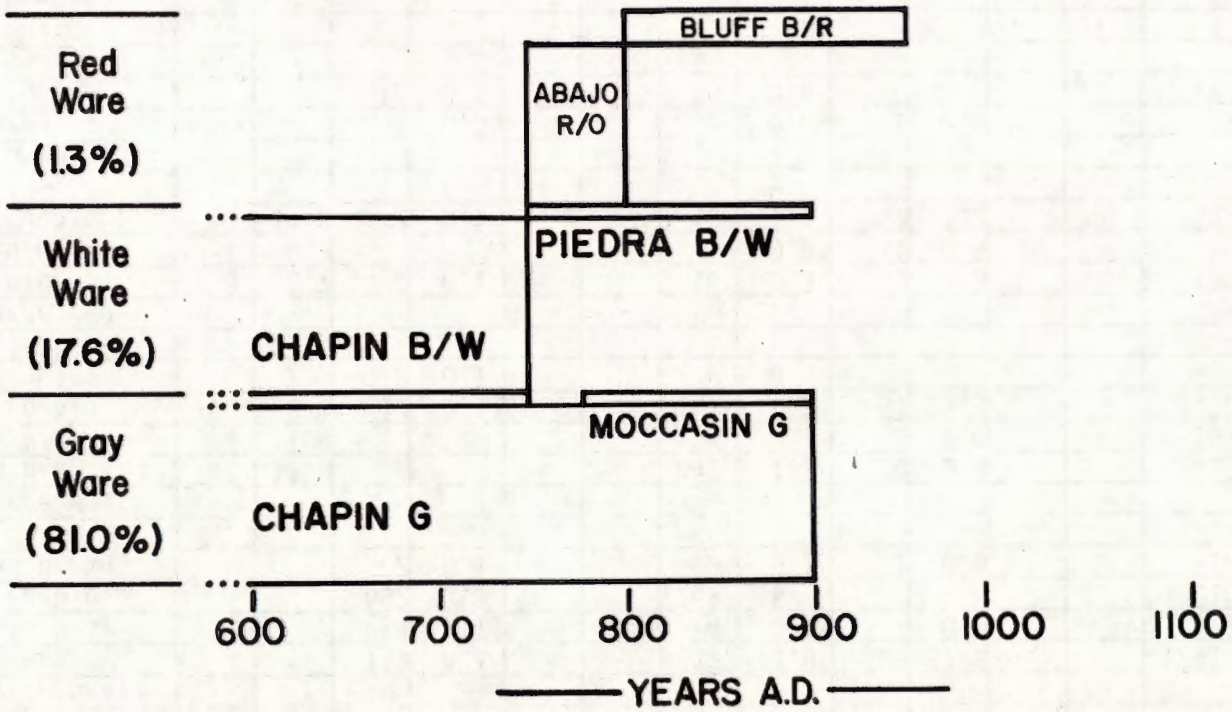

Figure 5.D.1 Diagnostic type occurrences for ceramic materials, Dos Casas Hamlet.

Breternitz et al. [42] with some adjustments based on dating results from within the D.A.P. This figure illustrates the intensity of occupation as well as the temporal range of occupation, and it can be compared with similar figures prepared for other D.A.P. sites. Table 5.D.3 presents the ceramic assemblage at Dos Casas Hamlet by selected, smaller provenience units.

The ceramic complement from Site 5MT2193 reflects a firm date range from A.D. 700-850 that is consistent with a Basketmaker III-Pueblo I period of Anasazi occupation. With the removal of the Moccasin Gray and Bluff Black-on-red ceramics from the main occupation of the site, the date range for the site indicates that the primary period of occupation probably occurred between A.D. 700-775 (those types date to after A.D. 775 and have been determined not to have been associated with the primary occupation of the site). The occupation therefore would fall within the date guidelines established for the Dos Casas Subphase (A.D. 760-850) of the Sagehen Phase as outlined by Kane [2]. The occurrence of Abajo Red-on-orange and Piedra Black-on-white in various areas of the site support the assertion that occupation occurred until after A.D. 750 (both types appear in Dolores River sites sometime after A.D. 750). See Table 5.D.3 for the proveniences of those types in the site structural features.

Out of a total of 3,174 sherds, only 22 could be determined to have been manufactured outside of the Mesa Verde region. Of that total, 21 sherds were observed to contain a quartz sand temper. Although tentatively typed as Cibola Gray and White Ware, those items could represent ceramics from the Kayenta region as well. One bowl sherd with a smudged interior and a distinctive paste type was recorded in the site and

Table 5.D.2 Reconstructable Vessels Listed by Traditional Type for Dos Casas Hamlet (Page 1 of 3)

	VESSEL NUMBER																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MESA VERDE GRAY WARE																			
Chapin Gray						+				+		+		+					
Moccasin Gray				+															
Early Pueblo Gray	+		+					+	+		+						+	+	+
MESA VERDE WHITE WARE																			
Chapin B/W		+					+						+			+			
Piedra B/W																			
Early Pueblo White					+										+				
VESSEL FORMS																			
Bowl		+			+		+						+		+	+			
Jar	+		+	+		+		+	+	+	+	+		+			+	+	+
Other																			

Table 5.D.2 Reconstructable Vessels Listed by Traditional Type for Dos Casas Hamlet (Page 2 of 3)

	VESSEL NUMBER															
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
MESA VERDE GRAY WARE																
Chapin Gray		+		+		+	+				+					+
Moccasin Gray																
Early Pueblo Gray	+		+		+			+						+	+	
MESA VERDE WHITE WARE																
Chapin B/W										+		+	+			
Piedra B/W									+							
Early Pueblo White																
VESSEL FORMS																
Bowl									+	+		+	+			
Jar	+	+	+	+	+	+	+	+			+			+	+	+
Other																

Table 5.D.2 Reconstructable Vessels Listed by Traditional Type for Dos Casas Hamlet (Page 3 of 3)

	VESSEL NUMBER								
	36	37	38	39	40	41	42	43	TOTAL
MESA VERDE GRAY WARE									
Chapin Gray	+	+	+				+	+	15
Moccasin Gray									1
Early Pueblo Gray				+	+				16
MESA VERDE WHITE WARE									
Chapin B/W									7
Piedra B/W									1
Early Pueblo White						+			3
VESSEL FORMS									
Bowl						+			10
Jar	+	+	+	+	+		+		32
Other								+	1
TOTALS									43

Table 5.D.3 Ceramic Assemblage by Selected Cultural Units, Dos Casas Hamlet (Page 1 of 5)

	Surface Collection*							
	Units Over Room block (N=43)	Units over Pithse 2** (N=2)	Units E of Pit-houses (N=9)	Units W of Pit-houses (N=21)	Units N of Room block (N=37)*	Units S of Pit-houses (N=66)	TSC†	
	%	%	%	%	%	%	#	%
MESA VERDE GRAY								
Chapin Gray								
Moccasin Gray						3	2	1.1
Early Pueblo	93	100	100	95.2	89.2	90.9	164	92.1
MESA VERDE WHITE								
Chapin B/W								
Piedra B/W								
Early Pueblo	7			4.8	5.4	4.5	9	5.1
MESA VERDE RED								
Abajo R/O								
Early Pueblo					2.7	1.5	2	1.1
TRADE WARES								
Cibola								
OTHER					2.7		1	.6
TOTALS							178	100
VESSEL FORMS								
Bowl	7			4.8	8.1	6.1	11	6.2
Jar	93	100	100	95.2	89.2	93.9	166	63.3
Other					2.7		1	.6

* - Ceramics collected during 1972 survey are not included.
** - No ceramic artifacts were recovered over Pithouse 1.
† - TSC--total surface collection

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Table 5.D.3 Ceramic Assemblage by Selected Cultural Units, Dos Casas Hamlet (Page 2 of 5)

	Roomblock			
	Fill (N = 577)	Floor (N = 155)	TOTAL	
	%	%	#	%
MESA VERDE GRAY WARE				
Chapin Gray	3.3	2.6	23	3.1
Moccasin Gray				
Early Pueblo	88.7	86.5	646	88.3
MESA VERDE WHITE WARE				
Chapin B/W	.5		3	.4
Piedra B/W				
Early Pueblo	4.3	9.7	40	5.5
MESA VERDE RED WARE				
Abajo R/O	.3		2	0.3
Early Pueblo	2.4	1.3	16	2.2
TRADE WARES				
Cibola	0.2		1	.1
OTHER	0.2		1	.1
TOTALS			732	100
VESSEL FORMS				
Bowl	69.3	10.3	56	7.7
Jar	92.7	89.7	674	92.1
Other	0.3		2	.3

* - Includes all rooms and the immediate surrounding area.

Table 5.D.3 Ceramic Assemblage by Selected Cultural Units, Dos Casas Hamlet (Page 3 of 5)

	Pithouse 1				
	Fill above Roof fall (N = 612)	Roof Fall (N = 167)	Floor (N=554)	TOTAL	
	%	%	%	#	%
MESA VERDE GRAY					
Chapin Gray	4.9			1	.1
Moccasin Gray					
Early Pueblo	74.8	88	94.4	1128	84.5
MESA VERDE WHITE					
Chapin B/W	3.4	1.8	.5	27	2.0
Piedra B/W	.2			1	.1
Early Pueblo	10.5	6.6	2.9	91	6.8
MESA VERDE RED					
Abajo R/O	1.0		.4	8	.6
Early Pueblo	2.3		.2	15	1.1
TRADE WARES					
Cibola	.3			2	.1
OTHER	2.5			15	1.1
TOTALS				1335	99.9
VESSEL FORMS					
Bowl	17.6	7.2	3.4	141	10.6
Jar	82.4	92.8	96	1191	89.2
Other			.5	3	2.2

Table 5.D.3 Ceramic Assemblage by Selected Cultural Units, Dos Casas Hamlet (Page 4 of 5)

	Pithouse 2				
	Upper Fill (N = 7)	Roof Fall (Stratum 6) (N = 4)	Floor (N = 241)	TOTAL	
	%	%	%	#	%
MESA VERDE GRAY WARE					
Chapin Gray	14.3		5.0	13	5.2
Moccasin Gray					
Early Pueblo	85.7	100	89.2	225	89.3
MESA VERDE WHITE WARE					
Chapin B/W					
Piedra B/W					
Early Pueblo			2.1	5	2.0
MESA VERDE RED WARE					
Abajo R/O					
Early Pueblo			.4	1	.4
TRADE WARES					
Cibola			2.5	6	2.4
OTHER			Indeter	2	.8
TOTALS			.8	252	100.1
VESSEL FORMS					
Bowl			2.9	7	2.8
Jar	100	100	96.7	244	96.8
Other			.4	1	.4

Table 5.D.3 Ceramic Assemblage by Selected Cultural Units, Dos Casas Hamlet (Page 5 of 5)

	Excavated Units South of Pithouses %(N=56)	SITE TOTAL #	%
MESA VERDE GRAY			
Chapin Gray	1.8	84	3.3
Moccasin Gray		1	>1
Early Pueblo	73.2	2204	86.3
MESA VERDE WHITE			
Chapin B/W		30	1.2
Piedra B/W		1	<1
Early Pueblo	5.4	148	5.8
MESA VERDE RED			
Abajo R/O		10	.4
Early Pueblo	3.6	36	1.4
TRADE WARES			
Cibola	16.1	18	.7
OTHER		21	.8
TOTALS		2553	99.9
VESSEL FORMS			
Bowl	8.9	220	8.6
Jar	91.1	2326	91.1
Other		7	.3

refiring tests indicate that the sherd represents a fragment of a Mogollon Smudged Ware bowl. The sherd could not be assigned to a diagnostic type due to its small size and its lack of diagnostic attributes. The lack of additional foreign ceramics in the collection is interpreted as an indication that exchange relationships with adjacent regions was minimal.

Review of the temper types recorded in the analysis of the site reveals a temper type which is locally available and which appears to reflect a localized manufacture (90.3 percent). The recovery of raw clay in probable association with a manufacturing area for ceramics may argue that ceramic manufacture occurred at the site. Unfortunately, the raw clay sample was misplaced and no record of it is present in the analysis files. In addition to the previously mentioned sherds containing quartz sand as temper, 9.3 percent of the collection (by weight) was recorded as containing crushed sandstone as the primary tempering agent. The presence of such sherds (in addition to 0.24 percent of other tempering agents) is suggestive of intraregional trade with ceramic manufacturing areas within the Mesa Verde region. However, the location of manufacture for those ceramics is at present unknown.

In addition to the sherds recorded in Table 5.D.1, 43 reconstructable ceramic (RC) vessels were reassembled from sherds recovered from the excavation of Site 5MT2193. A listing of those items is available in Table 5.D.2. The majority of the reconstructable ceramics represent Chapin Gray and Chapin Black-on-white vessels, although one Moccasin Gray jar and one Piedra Black-on-white bowl were also recorded in the collection. Those items are most likely associated with a later, secondary use of the site (A.D. 775-850). Thus the majority of ceramics easily fall within the Basketmaker III-Pueblo I period of occupation and therefore support an

assignment of the site to the early Dos Casas subphase of the Sagehen Phase (A.D. 760-850). Reoccupation of a portion of the site apparently occurred between A.D. 800-850. The presence of red ware ceramics on the floor surfaces of both pithouses and in the fills of various features further suggests that occupation of the site may have been continuous from A.D. 700-850, although abandonment of the pithouses apparently occurred prior to the introduction of Moccasin Gray into the project area (A.D. 775).

The provenience of the various RC items is variable, but those items representing diagnostic (versus grouped) types can be generally characterized as being recovered from three major proveniences: Pithouse 1 accounted for the majority of all vessels, surface structures also produced a number of vessels, and occupation/activity areas were responsible for several vessels, including the large jar bases which characterize the site ceramics. Only a few whole items were recovered from the excavations; rather, the majority of the RC items were fragmentary because of breakage prior to their deposition or from breakage by historic plowing activities. the number of basal portions without necks is interpreted as indicating that a number of whole vessels may have been recovered if it were not for the historic plowing activities.

In summary, the excavation of Site 5MT2193 resulted in a ceramic assemblage which is primarily oriented toward the late Basketmaker III period of occupation (A.D. 700-750) with an addition of red ware ceramics, especially Abajo Red-on-orange, which indicates site activity past A.D. 750. Either reoccupation or continued use of the surface structures is evident from the recovery of Moccasin Gray in the site (A.D. 775-850). The majority of the ceramics in the site were probably made in the

immediate vicinity and it is possible that ceramic manufacture took place at the site. Contact with nonlocal populations is documented by the presence of quartz sand tempered sherds assigned to the Cibola region, by a single Mogollon Smudged Ware bowl sherd, and the presence of a crushed sandstone temper in a small percentage of the ceramics.

APPENDIX E

LITHIC REPORT FOR DOS CASAS HAMLET

by

Carl J. Phagan and Thomas H Hruby

The data presented in Tables 5.E.1, 5.E.2, and 5.E.3 represent part of the lithic reductive-technology analysis completed for Site 5MT2193. Lithic materials recovered during the initial 1972 site survey collection are not included. From a 12-attribute Flaked Lithic Tool (FLT) analysis system, 4 attributes were selected to illustrate general technological, functional, and raw-material variablity. A traditional morphological-use classification, a ranked estimation of production technology input for dorsal and ventral surfaces, and a grain-size evaluation are included. Six variables are included from the Flaked Lithic Debitage (FLD) analysis system: grain-size ranking, classification of items with cortex, items which retain a striking platform, obsidian items, mean weight, and total number of debitage items. The Nonflaked Lithic Tool (NFLT) analysis system is represented by four variables: traditional morphological-use item classification, production-input evaluation, indication of item completeness, and raw-material grain-size evaluation. The complete lithic-analysis systems are described elsewhere in D.A.P. publications (Phagan [43]).

During 1980 the D.A.P. lithic-laboratory personnel have repeatedly reviewed the utility and reliability of the lithic-analysis systems. In this review, a number of analysis variables have been modified, particularly the item morphological-use variables on both the FLT and NFLT systems. Analytical perspectives change as information accumulates and as models of tool production and use improve. In order to minimize the effects of this analytical modification on interpretation, the observed values of these variables have been regrouped into larger categories within which analytic consistency is reliable.

Table 5.E.1 Lithic Analysis Data Summary for Dos Casas Hamlet, Flaked Lithic Tools (Page 1 of 3)

	Total Surface Collection (N = 40)		Room block* (N = 12)		Pithouse 1 Fill (N = 46)		Pithouse 1 Floor (N = 16)		Pithouse 2 Fill (N = 7)		Pithouse 2 Floor (N = 10)	
	#	%	#	%	#	%	#	%	#	%	#	%
ORPHO-USE FORM												
Indeterminate			1	8.3					1	14.3		
Utilized flakes	25	62.5	4	33.3	22	47.8	2	12.5	1	14.3	9	90.0
Cores	4	10.0	4	33.3	8	17.4	6	37.5	4	57.1	1	10.0
Choppers, Scraper	1	2.5	2	16.7	7	15.2	4	25.0	1	14.3		
Thick scrapers	4	10.0			3	6.5	3	18.8				
Thin scrapers	3	7.5	1	8.3	3	6.5						
Bifaces	1	2.5										
Projectile points	2	5.0			3	6.5	1	6.3				
Specialized forms												
THINNING STAGE: DORSAL												
Indeterminate			1	8.3					1	14.3		
Nonfacial item	4	10.0	5	41.7	8	17.4	5	31.3	4	57.1	1	10.0
Unthin item, w/ cortex	14	35.0	1	8.3	17	37.0	4	25.0			6	60.0
Unthin item, no cortex	13	32.5	3	25.0	6	13.0	2	12.5	1	14.3	3	30.0
Prelim shap, w/ cortex					1	2.2						
Prelim shap, no cortex												
Primary thinning												
Secondary thinning												
Well-shaped	9	22.5	2	16.7	13	28.3	5	31.3	1	14.3		
Highly stylized					1	2.2						
THINNING STAGE: VENTRAL												
Indeterminate			1	8.3					1	14.3		
Nonfacial item	4	10.0	4	33.3	8	17.4	4	25.0	4	57.1	1	10.0
Unthin item, w/ cortex	1	2.5			4	8.7					1	10.0
Untnin item, no cortex	27	67.5	4	33.3	23	50.0	6	37.5	1	14.3	8	80.0
Prelim shap, w/ cortex	1	2.5			1	2.2						
Prelim shap, no cortex												
Primary thinning												
Secondary thinning												
Well-shaped	7	17.5	3	25.0	9	19.6	6	37.5	1	14.3		
Highly stylized					1	2.2						
GRAIN SIZE												
Medium (coarse)			1	8.3								
Fine	4	10.0	1	8.3	3	8.7	1	6.3			1	10.0
Very Fine (detrital)	34	85.0	10	83.3	39	84.9	13	81.3	4	57.1	8	80.0
Microscopic (nongranular)	2	5.0			4	8.7	2	12.5	3	42.9	1	10.0

*all rooms and immediate surrounding area, fill and floors.

Table 5.E.1 Lithic Analysis Data Summary for Dos Casas Hamlet, Flaked Lithic Tools (Page 2 of 3)

	Other Excavation Units (N = 45)		Total Site Collection (N = 176)	
	#	%	#	%
MORPHO-USE FORM				
Indeterminate	1	2.2	3	1.7
Utilized flakes	22	48.9	85	48.3
Cores	2	4.4	29	16.5
Choppers, Scraper	6	13.3	21	11.9
Thick scrapers	4	8.9	14	8.0
Thin scrapers	3	6.7	10	5.7
Bifaces	4	8.9	5	2.8
Projectile points	2	4.4	8	4.5
Specialized forms	1	2.2	1	0.6
THINNING STAGE: DORSAL				
Indeterminate	1	2.2	3	1.7
Nonfacial item	4	8.9	31	17.6
Unthin item, w/ cortex	11	24.4	53	30.1
Unthin item, no cortex	14	31.1	42	23.9
Prelim shap, w/ cortex	1	2.2	2	1.1
Prelim shap, no cortex	1	2.2	1	0.6
Primary thinning				
Secondary thinning				
Well-shaped	13	28.9	43	24.4
Highly stylized			1	0.6
THINNING STAGE: VENTRAL				
Indeterminate	1	2.2	3	1.7
Nonfacial item	4	8.9	29	16.5
Unthin item, w/ cortex			6	3.4
Unthin item, no cortex	30	66.7	99	56.3
Prelim shap, w/ cortex			2	1.1
Prelim shap, no cortex	1	2.2	1	0.6
Primary thinning				
Secondary thinning	1	2.2	1	0.6
Well-shaped	8	17.8	34	19.3
Highly stylized			1	0.6
GRAIN SIZE				
Medium (coarse)			1	0.6
Fine	9	20.0	19	10.0
Very Fine (detrital)	21	46.7	129	73.3
Microscopic (nongranular)	15	33.3	27	15.3

Table 5.E.1 Lithic Analysis Data Summary for Dos Casas Hamlet, Flaked Lithic Tools (Page 3 of 3)

	Total Sagehill Subphase (N = 1344)	Total Dos Casas Subphase (N = 1779)	Anasazi Group (N = 7048)
	%	%	%
MORPHO-USE FORM			
Indeterminate	0.6	3.8	0.5
Utilized flakes	33.6	39.6	43.6
Cores	27.4	20.4	19.0
Choppers, Scraper planes	9.7	5.5	10.4
Thick scrapers	9.2	8.8	6.4
Thin scrapers	8.9	6.6	10.1
Bifaces	5.5	7.8	3.9
Projectile points	4.1	3.8	3.7
Specialized forms	2.1	2.7	2.3
THINNING STAGE: DORSAL			
Indeterminate	0.4	2.1	0.3
Nonfacial item	27.4	20.9	19.8
Unthinned item, w/cortex	25.8	29.6	31.7
Unthinned item, no cortex	31.9	30.9	31.4
Prelim shaping, w/cortex	3.0	3.9	3.7
Prelim shaping, no cortex	2.3	5.2	2.6
Primary thinning	1.5	2.4	1.2
Secondary thinning	1.1	2.0	1.1
Well-shaped	6.0	2.8	7.5
Highly stylized	0.5	0.4	0.7
THINNING STAGE: VENTRAL			
Indeterminate	0.4	1.9	0.2
Nonfacial item	27.2	21.1	19.5
Unthinned item, w/cortex	2.0	3.2	1.9
Unthinned item, no cortex	58.0	59.0	64.4
Prelim shaping, w/ cortex	1.1	1.3	1.4
Prelim shaping, no cortex	3.2	6.5	3.4
Primary thinning	1.5	2.2	1.2
Secondary thinning	1.3	2.0	1.0
Well-shaped	4.7	2.5	6.4
Highly stylized	0.5	0.3	0.7
GRAIN SIZE			
Medium (coarse)	1.7	0.9	2.1
Fine	7.4	6.0	6.2
Very Fine (detrital)	69.9	48.3	65.3
Microscopic (nongranular)	21.0	44.7	26.3

Table 5.E.2 Lithic Analysis Data Summary for Dos Casas Hamlet, Flaked Lithic Debitage (Page 1 of 2)

	TSC† (N=181)		Room block (N=167)		Pithouse 1				Pithouse 2			
					Fill (N=229)		Floor (N=120)		Fill (N=62)		Floor (N=364)	
	#	%	#	%	#	%	#	%	#	%	#	%
GRAIN SIZE												
Medium (coarse)	8	4.4			11	4.8			17	27.4	152	41.8
Fine	123	68.0	155	92.8	193	84.3	104	86.6	43	69.4	192	52.7
Very Fine (detrital)	9	5.0	4	2.4	15	6.6	4	3.3	1	1.6	14	3.8
Microscopic (nongranular)	41	22.7	8	4.8	10	4.4	12	10.0	1	1.6	6	1.6
Items with Cortex, %	84	46.4	66	39.5	122	50.0	56	47.0	28	45.2	207	57.0
Items with Platform, %	121	66.9	36	21.6	149	65.1	67	55.9	14	22.6	47	12.9
Mean Weight (grams)	5		3		18		14		18		11	

TSC† - Total Surface Collection

Table 5.E.2 Lithic Analysis Data Summary for Dos Casas Hamlet, Flaked Lithic Debitage (Page 2 of 2)

	Other Excavated Units (N = 159)		Total Collection (N=1282)		Total Sagehill Subphase (N=11181)	Total Dos Casas Subphase (N=12630)	Anasazi Group (N=66095)
	#	%	#	%	%	%	%
GRAIN SIZE							
Medium (coarse)	11	6.9	199	15.5	3.8	1.2	3.2
Fine	109	68.9	919	71.1	27.6	9.5	21.4
Very Fine (detrital)	16	10.1	63	49.9	48.1	47.0	51.6
Microscopic (nongranular)	23	14.5	101	7.9	20.5	42.3	23.7
Items with Cortex, %	88	55.3	651	50.8	20.3	22.5	25.9
Items with Platform, %	75	47.2	509	39.7	41.6	45.0	38.9
Mean Weight (grams)	3.0		10.0		8.48	7.6	7.93

Table 5.E.3 Lithic Analysis Data Summary for Dos Casas Hamlet, Nonflaked Lithic Tools (Page 1 of 2)

	TSC† (N = 21)		Room block (N = 12)		Pithouse 1 1 Fill (N = 28)		Pithouse 1 1 Floor (N = 22)		Pithouse 2 2 Fill (N = 10)		Pithouse 2 2 Floor (N = 18)	
	#	%	#	%	#	%	#	%	#	%	#	%
MORPHO-USE FORM												
Indeterminate	3	14.3	2	16.7	1	3.6	4	18.2	2	20.0		
General, unhafted	5	23.8	2	16.7	11	39.3	7	31.8	4	40.0	2	11.1
Hammerstones	4	19.0	2	16.7	11	39.3	3	13.6	1	10.0	2	11.1
Manos	3	14.3	2	16.7	1	3.6	5	22.7	1	10.0	9	50.0
Slab Metates												
Trough Metates							2	9.1	1	10.0	1	5.5
Unspec & Frag Metates	6	28.6	3	25.0	1	3.6	1	4.5	1	10.0	4	22.2
General, hafted			1	8.3	3	10.7						
Misc Specialized												
PRODUCTION EVALUATION												
Indeterminate	2	9.5	3	25.0			4	18.2	1	10.0	1	11.1
Module	19	90.5	6	50.0	19	67.9	12	54.5	7	70.0	12	66.7
Minimally Shaped			2	16.7	5	17.9	5	22.7	1	10.0	4	22.2
Well-shaped			1	8.3	4	14.3	1	4.5	1	10.0		
Highly stylized											1	5.5
ITEM COMPLETENESS												
Indeterminate												
Small Fragment									1	10.0		
Partial Implement	12	57.1	5	41.7	3	10.7	6	27.3	2	20.0	6	33.3
Complete (+ or -) Implement	9	42.9	7	58.3	25	89.3	16	72.7	7	70.0	12	66.7
GRAIN SIZE												
Indeterminate							1	4.5				
Coarse	4	19.0			4	14.3	3	13.6	3	30.0	2	11.1
Medium	14	66.7	5	41.7	5	17.9	5	22.7	3	30.0	9	50.0
Fine	3	14.3	7	58.3	19	67.9	13	59.1	4	40.0	6	33.3
Nongranular											1	5.5

TSC† - total surface collection

Table 5.E.3 Lithic Analysis Data Summary for Dos Casas Hamlet, Nonflaked Lithic Tools (Page 2 of 2)

	Other Excavated Units (N = 12)		Total Collection (N =123)		Sagehill Subphase (N =908)	Dos Casas Subphase (N =761)	Anasazi Group (N =4318)
	#	%	#	%	%	%	%
MORPHO-USE FORM							
Indeterminate	2	16.6	14	11.4	7.5	9.5	9.2
General, unhafted	4	33.3	35	28.5	21.3	28.9	24.0
Hammerstones	2	16.6	25	20.3	21.8	12.5	9.9
Manos	3	25.0	24	19.5	29.0	28.5	33.5
Slab Metates					2.5	0.9	2.1
Trough Metates			4	3.3	5.2	7.5	9.4
Unspec & Frag Metates			16	13.0	9.9	4.9	5.2
General, hafted	1	8.3	5	4.1	2.5	5.5	2.5
Misc Specialized					0.3	1.8	4.0
PRODUCTION EVALUATION							
Indeterminate	2	16.6	13	10.6	6.7	10.9	8.4
Module	9	75.0	84	68.3	66.3	53.1	53.5
Minimally Shaped			17	13.3	21.5	17.6	16.7
Well-shaped	1	8.3	8	6.5	5.0	16.7	21.1
Highly stylized			1	0.8	0.3	1.7	0.1
ITEM COMPLETENESS							
Indeterminate					0.3	2.7	
Small Fragment			1	0.8	1.1	8.1	3.3
Partial Implement	3	25.0	37	30.1	41.6	26.8	45.6
Complete (+ or -) Implement	9	75.0	85	69.1	56.9	62.4	50.8
GRAIN SIZE							
Indeterminate			1	0.8			8.1
Coarse	2	16.6	18	14.6			16.5
Medium	4	33.3	45	36.6			39.4
Fine	6	50.0	58	47.2			34.5
Nongranular			1	0.8			1.2

In addition to the individual site data, and for comparative purposes, the tables include data for Sagehill Subphase (A.D. 600-760) and Dos Casas Suphase (A.D. 760-850) sites, as well as data for all D.A.P. Anasazi sites analyzed prior to the 1980 field season. These latter "Anasazi group" data have been generated from computer files which have not undergone complete editing, and final figures may differ slightly form those presented. Comparisons and interpretations presented here, particularly those of an intersite nature, are based on a qualitative assessment of lithic profile variation, since significance has not been statistically established.

Based on analysis of the lithic materials, Site 5MT2193 is interpreted as a small unit hamlet placed within the Dos Casas Subphase. Because the site dated to the early Dos Casas Subphase, comparisons in this appendix are made with both Dos Casas Subphase and the preceding Sagehill Subphase (A.D. 600-760) as well as with the Anasazi Group of sites.

In general, the lithic artifacts from Site 5MT2193 are similar to other D.A.P. Anasazi sites. Though a number of deviations are apparent in the different profiles, all the tables suggest that the deviations are not great enough to depart from the general interpretation of Anasazi unit hamlets as economically self-sufficient households. Many unit hamlets in the D.A.P. area have roughly 60 percent flaked lithic tools to 40 percent nonflaked lithic tools. Site 5MT2193 has 58.9% flaked lithic tools, while the nonflaked lithic tools make up 41.1 percent of the assemblage. Both the Sagehill Subphase and the Anasazi Group have similar percentages of flaked lithic tools, 59.7 percent and 62 percent respectively. The Dos Casas Subphase has 70 percent flaked lithic tools and 30 percent nonflaked lithic tools. This divergence has no readily apparent functional interpretation.

The index of flaked lithic tools to total flaked lithics is similar for all sites. Site 5MT2193 has 12.1 tools per 100 items, while Sagehill Subphase, Dos Casas Subphase and the Anasazi Group have 10.7, 12.3, and 9.6 tools per 100 items, respectively. The above consistencies are being interpreted as representing economic independent households with similar economic orientations, though the Dos Casas Subphase may diverge slightly from this pattern.

The flaked lithic tools (FLT) from Site 5MT2193 are similar to all data groupings compared here (Table 5.E.1). These suggest that the Anasazi utilized an expedient flaked lithic technology. Roughly 65 percent of the tools from Site 5MT2193 are either utilized flakes or cores. These two tool types dominate the morpho-use profiles from the Sagehill, Dos Casas, and Anasazi Group profiles, though their relative abundance is different. Site 5MT2193 has nearly 50 percent utilized flakes. This high percentage is unusual for an Anasazi site and may suggest some unusual site function. The high values of the variable "well-shaped" in the dorsal and ventral thinning stage evaluations also support the conclusion of a unique technological situation for Site 5MT2193. These high technological input values are present even though the traditional high input tools (i.e., specialized forms, projectile points, bifaces) are not overrepresented. In fact, bifaces and specialized forms appear to be proportionally underrepresented.

In other words, Site 5MT2193 seems to demonstrate a clear technological bimodality for flaked lithic tools. Low production input items, especially utilized flakes, dominate the assemblage numerically, but represent almost none of the technological concern with item thinning on either dorsal or ventral faces. Well-thinned and shaped item faces,

however, both dorsal and ventral, show unusually high proportions, which suggests that most of the higher production input items, such as scrapers, bifaces, and projectile points, are receiving a great deal of production concern. Some specialized site function or combination of site functions may be indicated.

The flaked lithic debitage (FLD) from Site 5MT2193 is very unusual for an Anasazi site (Table 5.E.2). The unusually large quantity of fine-grained raw materials diverges from typical debitage profiles. Approximately 85 percent of the debitage material from Site 5MT2193 is either medium or fine grained. The large number of cortex pieces (50.8 percent) is also unusual, and suggests that the primary reduction of raw materials is well represented at the site. The unusually low percentage of very fine and microscopic grain sizes, 4.9 percent and 7.9 percent respectively, suggests high selectivity for raw materials collected and processed at Site 5MT2193. Apparently, however, the technological production and/or maintenance activity which produced most of the debitage at the site was focused on a class or classes of items other than those in the FLT assemblage.

Some part of this discrepancy between the two profiles may perhaps be related to analytic inconsistency, but in any case the debitage profile further supports the unique nature of the flaked lithic artifacts from Site 5MT2193.

The nonflaked lithic tools (NFLT) from Site 5MT2193 are comparable to other Anasazi sites (Table 5.C.3). Though all the profiles are similar, the best fit for the nonflaked lithic materials at Site 5MT2193 appears to be with the Sagehill Subphase. All profiles are dominated by manos, hammerstones, and generalized unhafted tools. Though the relative

percentages vary between tool types, combined they comprise roughly 70 percent of all assemblage groupings. The percentage of hammerstones is similar between Site 5MT2193 and the Sagehill Subphase. The generalized unhafted tools are similar within all the profiles, while the manos are similar except for a rather low number present at Site 5MT2193. In terms of the production evaluation variable, approximately two-thirds of the NFLT's for Site 5MT2193 and the Sagehill Subphase profiles are made from unmodified nodules; only about 6 percent are well-shaped unflaked lithic tools, and only about 53 percent of the tools are made from unmodified nodules. These observations may indicate that Site 5MT2193 is more closely related technologically to the earlier Sagehill Subphase.

Site 5MT2193 is interpreted as a unit hamlet placed at the beginning of the Dos Casas Subphase of the Sagehen Phase. However, the nonflaked lithic tool profile suggests that much of that material resembles Sagehill Subphase materials. The flaked lithic tools and debitage from Site 5MT2193 are unique for Anasazi sites, and suggests a specialized site both technologically and functionally. Technologically, the site is interpreted to represent a situation where fine and coarse grained raw materials are reduced at the site, while very fine raw materials are carried onto the site as finished tools. Traditional low input items are also receiving more technological input than is normally the case for a Anasazi site. Functionally the site diverges from other Anasazi sites of its general time period. The exact nature of this specialization has yet to be determined.

APPENDIX F

REPORT ON FAUNAL REMAINS FROM DOS CASAS HAMLET

by

Steven D. Emslie

Faúnal remains were identified using modern comparative skeletons collected in the D.A.P. region. All bones were identified to species when possible or to other taxonomic categories. Bones of the cottontail, Sylvilagus sp., were identified only to genus as several species occur in the D.A.P. region which are not osteologicaly distinct.

Minimum numbers of individuals (MNIs) for each taxon identified to genus and/or species were calculated by counting the most numerous element of the same body side, and by comparing young vs. old individuals based on bone growth.

Data

A total of 543 bones representing 15 species and 29 taxonomic categories was recovered from the site (Table 5.F.1). Unidentifiable mammal bones provide the bulk of this sample followed by rabbits and artiodactyls. Worked bone, point locations (PLs) of bone, and bone with cut marks are listed and described in Tables 5.F.2, 5.F.3, and 5.F.4, respectively, Finally, Table 5.F.5 provides percentages of bone divided into gross taxonomic categories.

Discussion

The majority of faunal remains from this site are of unidentifiable mammal, rabbits, and artiodactyla. All represented species currently occurring in the D.A.P. region with the exception of spotted ground squirrel (Spermophilus spilosoma), kangaroo rat (Dipodomys sp.), and pronghorn (Antilocapra americana). The spotted ground squirrel and kangaroo rat currently occur in open shrubland with sandy soil in the extreme western portion of the state (Armstrong [44]). The pronghorn

prehistorically ranged in open grasslands west of the present town of Cortez, where it was probably obtained by the Indians on long-distance hunts.

Rodent and rabbit remains may be intrusive to the site as these species prefer areas with deep light soils as found at the site today. However these species are known to be used for their skins and for food by modern tribes. The Indian dog and common turkey were domesticated animals kept by the Indians.

Cultural use of fauna is substantiated by the presence of butchering marks on the bone, or bone modified to form tools and ornaments. Species at the site represented in this manner include black-tailed jackrabbit, beaver, mule deer, and sandhill crane. Artiodactyls and rabbits probably provided the bulk of the animal food at this site. Comparison of this site with other sites in the D.A.P. area, once all analyses are completed, will allow further interpretations of the use of fauna by the inhabitants of Site 5MT2193.

Table 5.F.1 Taxa Identified at Dos Casas Hamlet (Page 1 of 2)

Taxon	Number of Bones	MNI*
Mammalia or Aves	10	
Mammalia, small	122	
Mammalia, medium	56	
Mammalia, large	98	
Lagomorpha		
Black-tailed jackrabbit (*Lepus californicus*)	40	4
Cottontail (*Sylvilagus* sp.)	106	8
Rodentia	1	
Sciuridae	1	
Yellow-bellied marmot (*Marmota flaviventris*)	5	2
Spotted ground squirrel (*Spermophilus spilosoma*)	44	1
Gunnison's prairie dog (*Cynomys gunnisoni*)	10	3
Pocket gopher (*Thomomys* sp.)	5	
Valley pocket gopher (*Thomomys bottae*)	1	1
Kangaroo rat (*Dipodomys* sp.)	1	1
Beaver (*Castor canadensis*)	1	1
Vole (*Microtus* sp.)	1	1
Montana vole (*Microtus montanus*)	3	1
Porcupine (*Erethizon dorsatum*)	7	1

Table 5.F.1 Taxa Identified at Dos Casas Hamlet (Page 2 of 2)

Taxon	Number of Bones	MNI*
Indian dog (*Canis familiaris*)	3	1
Red fox (*Vulpes vulpes*)	1	1
Artiodactyla	9	
Cervidae	4	
Mule deer (*Odocoileus hemionus*)	16	
Pronghorn (*Antilocapra americana*)	3	1
Bighorn sheep (*Ovis canadensis*)	3	1
Grouse	1	
Common turkey (*Meleagris gallopavo*)	2	1
Greater sandhill crane (*Grus canadensis tabida*)	2	1
TOTAL	543	

*MNI - minimum number of individuals

Table 5.F.2 Worked Bone Identified at Dos Casas Hamlet

FS/CAT No.	Provenience	Taxon	Element
58-02-1	Surface collection, 120 S, 176 E	Mammalia	long bone shaft fragment
271-02-1	Surface collection, 120 S, 172 E	Mammalia, large	long bone shaft fragment
409-02-1	Pithouse 1, upper fill	Mammalia or Aves	small fragment
410-02-1	Pithouse 1, upper fill	*Castor canadensis*	medial incisor
413-02-1	Pithouse 1, upper fill	Cervidae	antler fragment
414-01-1	Pithouse 1, upper fill	Mammalia, large	medial long bone fragment
414-01-2	Pithouse 1, upper fill	Mammalia, large	medial long bone fragment
421-02-1	Pithouse 1, upper fill	Mammalia, large	long bone shaft fragment
426-02-1	Pithouse 1, floor	Mammalia, large	long bone shaft fragment
444-02-1	Pithouse 1, floor	*Lepus californicus*	medial right tibia
447-02-1	Pithouse 1, roof fall	Mammalia	long bone shaft fragment
448-02-1, PL 42	Pithouse 1, floor	Cervidae	distal antler
448-01-2, PL 47	Pithouse 1, floor	*Odocoileus hemionus*	medial antler fragment
450-02-1, PL 41	Pithouse 1, floor	*Odocoileus hemionus*	medial antler fragment
496-02-1	Pithouse 2, bench	Mammalia, large	long bone shaft fragment
497-02-1, PL 145	Pithouse 2, bench	Mammalia	long bone shaft fragment

*some of these bones may also be listed in Tables 5.F.3 and 5.F.4

Table 5.F.3 Point Locations of Bone Recovered from Dos Casas Hamlet (Page 1 of 3)*

FS/CAT No.	Provenience	Taxon	Element
45-02-2, PL 48	Surface collection 104 S,136 E	Artiodactyla	femur w/ both ends snapped off
426-02-3, PL 15	Pithouse 1, floor	Artiodactyla	right humerus w/ both ends snapped off
429-02-12, PL 83	Pithouse 1, floor	Mammalia, small	long bone shaft fragment
429-02-13, PL 83	Pithouse 1, floor	Mammlia, small	medial rib fragment
429-02-14, PL 83	Pithouse 1, floor	*Lepus californicus*	medial left tibia; proximal epiphysis of left tibia; left calcaneum; and distal right scapula
429-02-15, PL 83	Pithouse 1, floor	*Sylvilagus* sp.	scapula-medial fragment; right humerus-distal one quarter w/ snap break; left radius; left tibia-proximal one-half w/ spiral break; right calcaneum, right tibia; left tibia; left ulna; right innominate
433-02-1, PL 5	Pithouse 1, bench	Mammalia, large	long bone shaft fragment
446-02-5, PL 90	Pithouse 1, floor	Mammalia, large	long bone shaft fragment
446-02-2, PL 45	Pithouse 1, floor	Mammalia, small	long bone shaft fragment
446-02-4, PL 45	Pithouse 1, floor	*Lepus californicus*	right radius-medial fragment w/ snap break

Table 5.F.3 Point Locations of Bone Recovered from Dos Casas Hamlet (Page 2 of 3)*

FS/CAT No.	Provenience	Taxon	Element
448-02-1, PL 42	Pithouse 1, floor	*Sylvilagus* sp.	left scapula-medial fragment w/ snap break, distal half w/ spiral break; left tibia-snap fracture, both ends missing
448-02-1, PL 42	Pithouse 1, floor	Cervidae	antler, distal one quarter w/ snap break
448-02-2, PL 47	Pithouse 1, floor	*Odocoileus hemionus*	antler, breakage indeterminate fragment
450-02-1, PL 41	Pithouse 1, floor	*Odocoileus hemionus*	antler, fresh break, distal end only missing
452-02-1, PL 34	Pithouse 1, floor	Mammalia, large	long bone shaft fragment
462-02-4, PL 84	Pithouse 1, vent	Mammalia	indeterminate element fragment
462-02-6, PL 84	Pithouse 1, vent	*Castor canadensis*	left M 3, left M 2
462-02-3, PL 84	Pithouse 1, vent	Mammalia, small	long bone shaft fragment
462-02-5, PL 84	Pithouse 1, vent	*Lepus californicus*	metapodia-distal quarter w/ snap break; right calcaneum; phalange (indeterminate)-spiral fracture, distal end missing
727-02-1, PL 92	Pithouse 1, leaner shelf	Mammalia, large	long bone shaft fragment
727-02-5, PL 99	Pithouse 1, leaner shelf	Mammalia, large	long bone shaft fragment
727-02-4, PL 98	Pithouse 1, leaner shelf	Mammalia, small	femur, proximal end only

Table 5.F.3 Point Locations of Bone Recovered from Dos Casas Hamlet (Page 3 of 3)*

FS/CAT No.	Provenience	Taxon	Element
727-02-3, PL 98	Pithouse 1, leaner shelf	*Lepus californicus*	right astragalus
727-02-2, PL 97	Pithouse 1, leaner shelf	*Sylvilagus* sp.	left mandible-medial fragment
496-02-1, PL 135	Pithouse 2, bench	*Vulpes vulpes*	left mandible-proximal quarter w/ snap break
496-02-2, PL 33	Pithouse 2, bench	Mammalia, large	long bone shaft fragment
497-02-1, PL 145	Pithouse 2, bench	Mammalia	long bone shaft fragment
784-02-1, PL 3	Room 6	Mammalia	right scapula, indeterminate medial fragment
784-02-2, PL 3	Room 6	*Erethizon dorsatum*	right femur, snap fracture, both ends missing
784-02-3, PL 4	Room 6	*Canis familiaris*	right mandible, distal third w/ snap break
784-02-4, PL 5	Room 6	*Canis familiaris*	right mandible-spiral fracture distal end missing
789-02-1, PL 7	Room 6	Mammalia, large	long bone shaft fragment

*some of these bones may also be listed in Tables 5.F.2 and 5.F.4

Table 5.F.4 Bone with Cut Marks from Dos Casas Hamlet*

FS/CAT No.	Provenience	Taxon	Element
409-02-8	Pithouse 1, upper fill	*Odocoileus hemionus*	right astragalus-w/ six perpendicular cuts, medial lateral
412-02-1	Pithouse 1, upper fill	Mammalia, large	long bone shaft fragment w/ numerous perpendicular cuts
443-02-1	Pithouse 1, roof fall	*Grus canadensis tabida*	right proximal tibiotarsus w/nine parallel cuts, lateral condyle
445-02-3	Pithouse 1, roof fall	*Grus canadensis tabida*	right proximal tarsometatarsus-burned completely

*some of these bones may also be listed in Tables 5.F.2 and 5.F.3.

Table 5.F.5 Gross Taxonomic Categories of Faunal Materials, Dos Casas Hamlet

Taxon	Percentage
Mammalia, small	22.46
Mammalia, medium	10.31
Mammalia, large	18.04
Lagomorpha	27.25
Rodentia	11.97
Carnivora	0.73
Artiodactyla	6.44

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