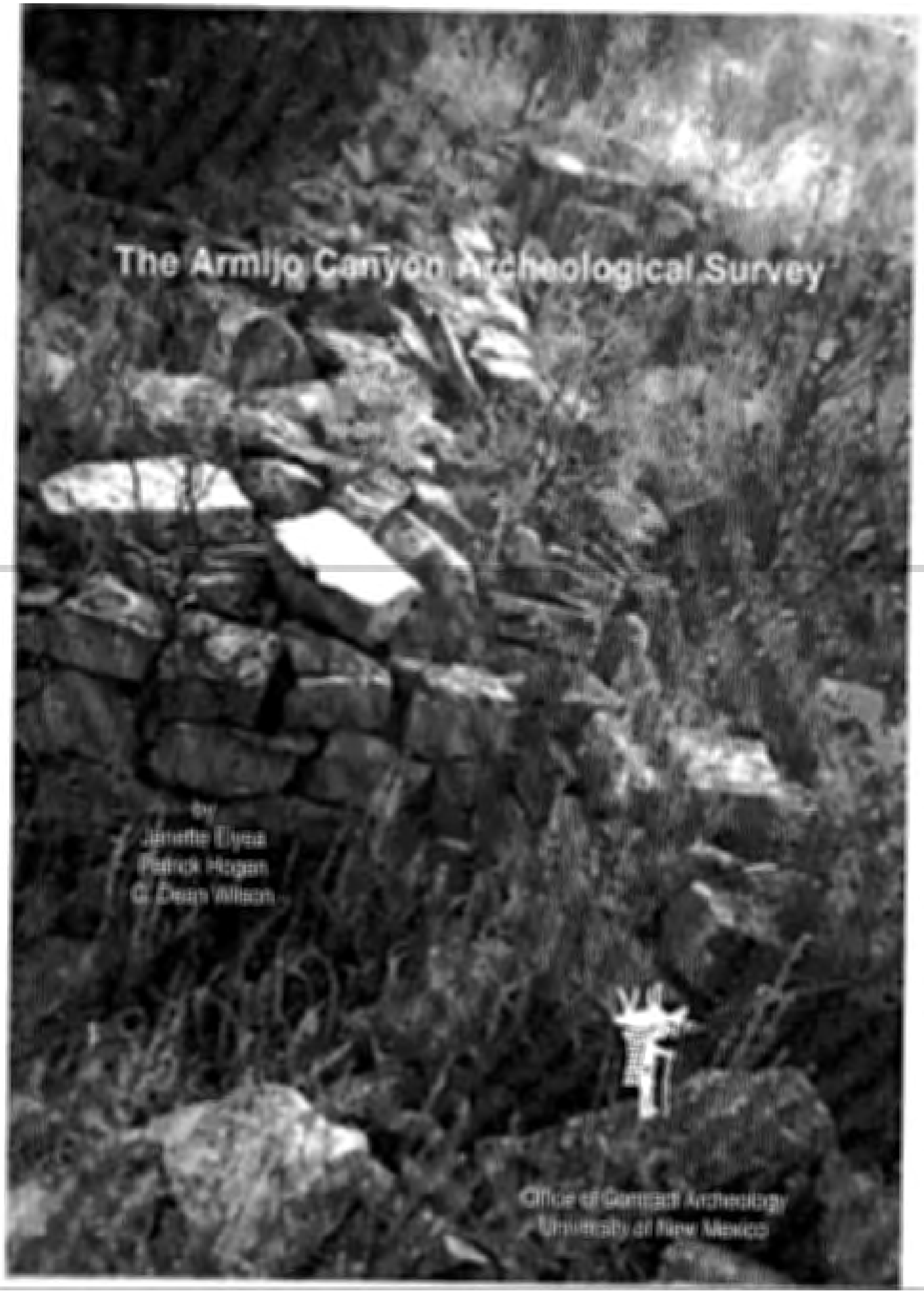
The Armijo Canyon Archeological Survey
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submitted by
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UNM Proposal No. 184-485
Contract No. YA651-CTO-340014

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Rio Puerco District

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ABSTRACT

This report describes a Class III cultural resources inventory survey of 760 acres of federal land at the mouth of Armijo Canyon in the El Malpais National Conservation Area, New Mexico. The survey was performed by the University of New Mexico's Office of Contract Archaeology at the request of the Bureau of Land Management Rio Puerco Area Office under Delivery Order No. 0017 of Contract No. YA651-CTO-340014 (UNM Proposal No. 185-485A). Patrick Hogan was Principal Investigator for the project and John Roney acted as the BLM's Contracting Officer's Representative. Fieldwork was completed between 12 September and 13 November 1992 under the supervision of Janette Elyea, Project Director, and required approximately 100 person days of labor.

The study area is roughly centered on the Dittert Site, a probable Chacoan outlier that continued to be occupied or was reoccupied during the thirteenth century. The basic objectives of the survey were to document the surrounding Puebloan community and to continue development of a database that will allow comparison of the ceramic assemblages from similar, contemporaneous sites. Because the BLM has long-term plans to interpret the Dittert Site and to establish a trailhead in the area, the project also had two secondary management objectives: (1) to obtain information on site condition needed to guide future management of these cultural resources, and (2) to provide baseline data on the ceramic assemblages that can be used to monitor the long-term effects of increased visitation.

Sixty-four sites and 637 isolated occurrences were recorded during the survey. These cultural resources reflect low-intensity, sporadic use of the study area during the Paleoindian and Archaic periods, and a Formative occupation dating between AD 870 and 1325, with the most intensive occupation occurring during the late Pueblo II and Pueblo III periods. Despite the presence of an isolated great kiva and probable Chacoan great house, the Armijo Canyon community never attained the size of the nearby Cebolla Canyon community. Indeed, the majority of late Pueblo II sites may be seasonal farmsteads. This suggests that a permanent residential population may not have been present in the canyon before ca. AD 1125. A comparison of the ceramic assemblages from the Cebolla Canyon and Armijo Canyon areas also revealed some interesting contrasts, suggesting possible differences in the trading alliances of the two communities. The Armijo Canyon sites generally had more brownware sherds, and Socorro Black-on-white occurred only in trace amounts at a few sites.

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Chapter 1

INTRODUCTION

Between 12 September and 13 November 1992 the Office of Contract Archeology conducted a Class III Cultural Resources Inventory at the mouth of Armijo Canyon in El Malpais National Conservation Area, Cibola County, New Mexico. The project was conducted at the request of the Bureau of Land Management, Rio Puerco Resource Area (BLM Task Order No. YA 651-CTO-340014-0017; UNM Proposal No. 185-485). John Roney was the BLM Contracting Officers's Representative, and Patrick Hogan was the Principal Investigator. Fieldwork for the survey required 100 person days of labor.

The survey area is roughly centered around the Dittert Site. This site was partially excavated by Alfred Dittert in the late 1940s (Dittert 1949, 1959) and is a prominent site in the archeological literature of the region. The BLM has recently requested designation of the Dittert Site and a 480-acre surrounding parcel as a Chacoan Archeological Protection Site under Public Law 96-550. There are also long-term plans to interpret this site and to establish a trailhead for public access into the nearby Cebolla Wilderness area.

Janette Elyea served as the project director during the field and analysis stages, mapped the sites and supervised preparation of the site descriptions, and edited the final site forms. C. Dean Wilson conducted the in-field and laboratory analysis of ceramics and authored the ceramic analysis chapter. Ingrid Redd conducted the in-field lithic analysis and photography. Kevin Wellman prepared the initial site descriptions. Ron Stauber drafted all of the final maps and illustrations and Peter Eschman conducted all the computer data analysis manipulations. Technical editing was done by June-el Piper.

The inventoried parcel consists of 760 acres in the Sand Canyon, New Mexico, USGS 7.5-minute quadrangle (Figure 1). Specifically, the survey area encompasses:

T 5 N, R 11 W,
Section 11 SW 1/4 of the SW 1/4;
Section 14 W 1/2,
W 1/2 of the SW 1/4 of the NE 1/4,
W 1/2 of the NW 1/4 of the SE 1/4,
W 1/2 of the SW 1/4 of the SE 1/4;
Section 15 E 1/2 of the E 1/2;
Section 22 NE 1/4 of the NE 1/4;
Section 23 N 1/2 of the NW 1/4,
SW 1/4 of the NW 1/4,
W 1/2 of the NW 1/4 of the NE 1/4.

The area was inventoried by a pedestrian survey with a maximum 15 m interval between personnel. The survey documented all cultural materials within each survey parcel using a classification of sites and isolated occurrences. Isolated occurrences consist of fewer than 10 artifacts in a 100 sq m area. Site documentation consisted of systematic artifact inventories, narrative descriptions, photographs, and site mapping. The site maps include all major features, location of artifact inventories, existing datum stakes, and areas of vandalism.

Documentation of artifacts and features was designed to collect standardized data sets that could provide a basis for comparison with prehistoric community surveys in the Southwest, particularly the Cebolla Canyon area, which lies about 7 km to the north-northeast. Special attention was given to the field identification and analysis of the ceramic assemblages.

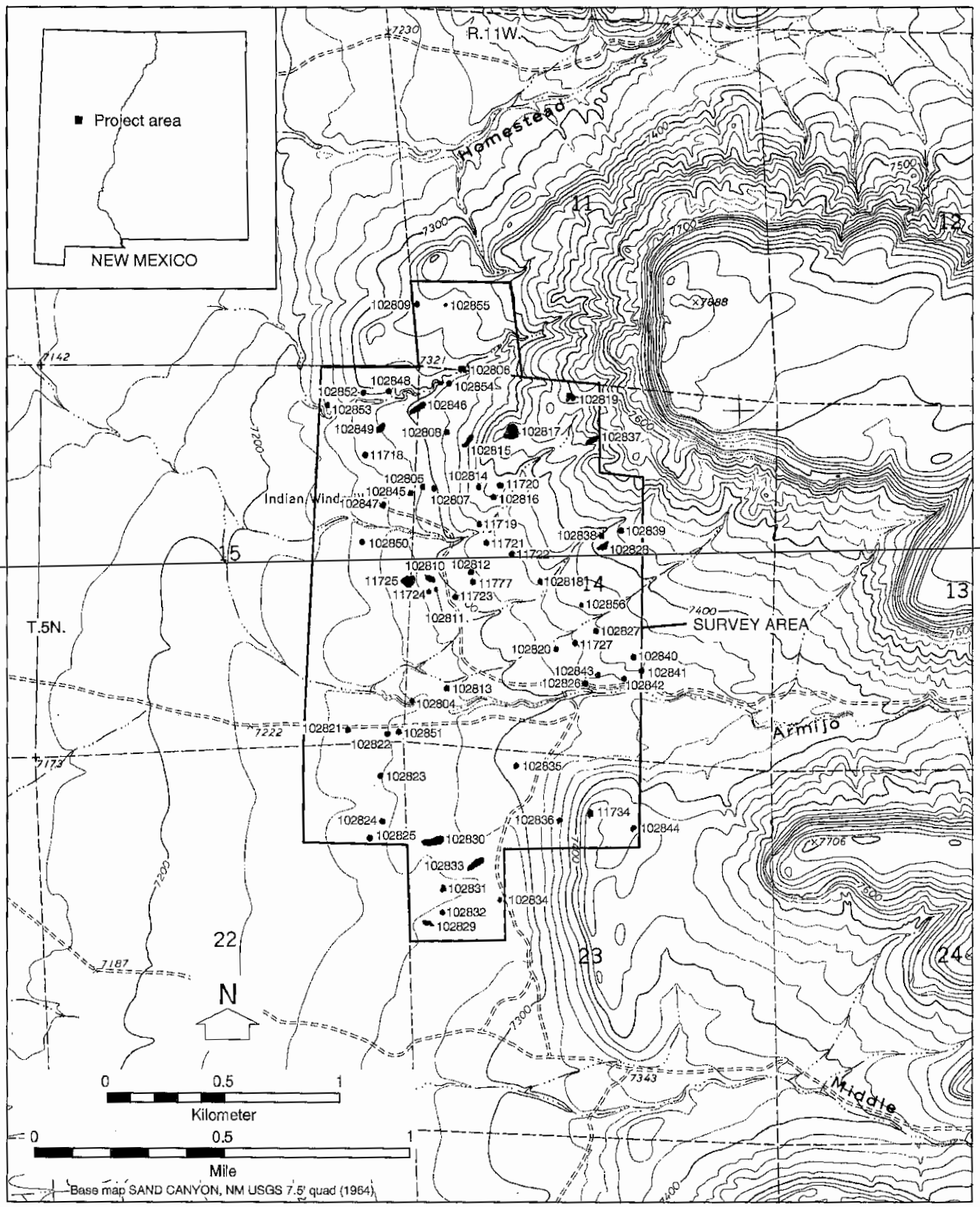

Figure 1. Location of survey area and recorded sites.

Chapter 2

ENVIRONMENTAL SETTING

The study area lies at the mouth of Armijo Canyon on the eastern flanks of the North Plains (Figure 2) at elevations ranging from 2200 to 2292 m (7220-7520 ft). Armijo Canyon is one of several westerly flowing drainages that has dissected the west flanks of Cebolleta Mesa. The head of the canyon is about 5 km east of the survey area, and about 2.5 km downstream the canyon constricts to 400 m wide with steep, 30 m sides. This small dendritic drainage system covers only about a 21 sq km. catchment area before draining onto the flanks of the North Plains. During our survey, we noted alluvial deposits in the eastern portion of the survey area, from south of the current channel to the base of the mesa in Section 23. The alluvium and the deep broad swale in the southernmost part of our survey area (SW 1/4 of the NW 1/4 of Section 23) indicate that water once flowed in this area. This drainage could be part of a bifurcated canyon, or at one time Armijo Canyon could have been located south of its present course. Armijo Spring is located in the canyon about 2.5 km east of the survey area.

GEOLOGY

The study area is located in the southeastern part of the Colorado Plateau physiographic province, with the Acoma Embayment of the San Juan Basin to the east and northeast. The Acoma Embayment is a zone of uplifted and folded strata that date from the Triassic to the Cretaceous periods. The mesa is composed mostly of flat lying Cretaceous sandstones (Gallup and Tres Hermanos) and Mancos shales. During erosional cycles the older surfaces have been dissected, resulting in the creation of mesas and buttes. Cebolleta Mesa, which rises 90 m above the study area, is one of the major remnant mesas from these erosional processes.

Figure 2. Environmental setting of the survey area.

The North Plains, which lies immediately west of the study area, is a broad, nearly flat topographic feature underlain by Quaternary basalts. Broad alluvium-filled valleys drain a complex system of mesas, buttes, and isolated volcanic necks. The North Plains and Cebolleta Mesa are separated by a complex fault zone that trends 25-30° east of north. One major fault lies across Armijo Canyon at the eastern edge of the survey area.

SOILS

Most soils in the survey area belong to the Rockland-Torriorthents-Arguistolls associations (Maker et al. 1978), which develop from weathered residual sedimentary sandstones and shales. These soils are generally shallow and stony and contain well-rounded sandstone pebbles, particularly on the mesa slopes. The deepest observable soils are the alluviums in Armijo Canyon, where 1 to 2 m of silts can be observed in many places along its entrenched channel. Eolian sands consisting of redeposited North Plains alluviums also occur within the survey area. These soils are generally shallow and blanket the rocky underlying soils in open terrain in the western part of the survey area. A prominent ridge in the northeast portion of the survey area, however, has moderately deep deposits.

VEGETATION

The study area falls within the Upper Sonoran life zone (Bailey 1913). The dominant plant association within this area is piñon-juniper woodland, but plant composition varies with elevation and exposure. In the higher elevations, piñon is dominant with occasional ponderosa pine. The understory includes such montane shrubs as squawbush, scrub oak, mountain mahogany, and serviceberry.

With decreasing elevation, the proportion of piñon declines and juniper becomes dominant. This proportion changes at about 2200 m within the survey area. The montane shrubs also disappear from the understory and are replaced by rabbitbrush, sage, saltbush, snakeweed, or some combination thereof.

On the lowest slopes of the study area, the vegetation grades to an open juniper savannah and then to an open grassland. Blue grama is the dominant plant in this community. Shrubs are widely dispersed and include snakeweed, rabbitbrush, and saltbush.

FAUNA

Mammals known or thought to occur in the vicinity of the study area include cottontails and black-tailed jackrabbits, and a variety of rodents (cliff chipmunks, grey-collared chipmunk, ground squirrels, rock squirrels, Gunnison's prairie dog, Aberts squirrel, Botta's pocket gopher, silky pocket mouse, Ord's kangaroo rat, banner-tailed kangaroo rat, western harvest mouse, piñon mouse, rock mouse, and Mexican vole). Carnivores include coyotes, grey foxes, black bear, badger, striped skunk, mouutain lion, and bobcat. Mule deer and pronghorn are known to occur as well. Mountain sheep are no longer present, but their remains have been found in the El Malpais area. Bison herds were probably also prominent in earlier periods, and a small herd was transplanted in the area in 1993.

CLIMATE

The climate of the survey area is semi-arid, and approximately two-thirds of the 30 to 36 cm (12-14 in) of annual precipitation falls between May and September when cyclonic circulation carries moisture into the area from the Gulf of Mexico. Maximum rainfall generally occurs during July and August from localized

thunderstorms (Tuan et al. 1973). The winter months are relatively dry since the Pacific storms tend to lose their moisture in the higher elevations along the Mogollon Rim (Maker et al. 1978).

The warmest weather occurs in July and the coldest in January. Elevation and topography are the greatest factors in regional temperature fluctuations; there is generally a 5° F decrease in temperature for every 1000 ft increase in elevation. Topography can also influence the variation in temperature in a localized area. North- versus south-facing slopes exhibit well-known temperature variation, and east and west-facing slopes also show different temperature regimes. Cold-air drainages in deep canyons and valleys can also reverse the usual temperature/elevation gradients.

The temperature regimes affecting the growing season were undoubtably the most important for the prehistoric inhabitants of Armijo Canyon. The frost-free season in the area is about 120 to 140 days per year. Cold-air drainages can further reduce the length of the growing season. The average date of the last killing frost in the study area ranges from 10 to 20 May, and the average first killing frost is from 30 September to 10 October (Tuan et al. 1973).

Chapter 3

CULTURE HISTORY

The report of the Cebolla Canyon survey (Wozniak and Marshall 1991) provides a recent and comprehensive culture history overview for the Cebolleta Mesa area, focusing particularly on the Puebloan period. The background information in this chapter is therefore limited largely to a brief description of the regional culture chronology.

THE PALEOINDIAN PERIOD

The Paleoindian period (10,000 to 8000 BP) is characterized as a specialized hunting adaptation with a particular emphasis on bison procurement. The recognition of these sites depends on the presence of distinctive projectile points, scrapers, and distinctive flake types, such as channel flakes. Paleoindian sites have been documented along the western edge of the North Plains (Elyea 1990), and numerous materials have been recorded in the Rincon Hondo area of Cebolleta Mesa (Broster 1982). These include Clovis, Folsom, Midland, Belen, and Cody Complex sites. All of these sites seem to represent small, short-term occupations, and several of the site areas exhibit materials from more than one occupational phase.

THE ARCHAIC PERIOD

During the Archaic period (8000 BP to AD 400) there was a decreased reliance on hunting and an increased use of plant resources. Plant resources apparently become increasingly important from the middle Archaic period to the late Archaic period, as cultigens were incorporated into the subsistence system.

Two Archaic traditions are widely recognized in this area of New Mexico, the northern Oshara and the more southwestern Cochise. As our knowledge of the distribution of Archaic materials in the Southwest increase, however, it is becoming clear that other traditions are also represented in the interior basins of New Mexico. The recent recognition of northern Colorado Plateau and Trans-Pecos materials illustrates the rather fluid cultural boundaries that were operant during most of the Archaic period. Nevertheless, Oshara and Cochise are the most commonly represented Archaic traditions in western New Mexico.

The Oshara and Cochise traditions are distinguished by projectile point styles and geographic distance. Other differences may become more evident when further analysis is conducted on materials from the Cochise tradition. For example, recent analysis of the Cox Ranch assemblages from south-central New Mexico, which contained some Cochise materials, suggests dramatic differences in the use, curation, and discard of lithic materials within the southern Archaic settlement system (Gerow 1993).

Both the Cochise (Sayle 1983; Sayles and Antevs 1941) and Oshara (Irwin-Williams 1973) sequences are divided into phases. From earliest to latest, the Cochise Tradition consists of the Sulpher Spring (12,500-11,000 BP), Cazedor (9000-8000 BP), Chiricahua (8000-3500 BP), and San Pedro (3500-2000 BP) phases. The Oshara tradition comprises the Jay (7500-6800 BP), Bajada (6800-5200 BP), San Jose (5200-3800 BP), Armijo (3800-2800 BP), and En Medio (2800-1550 BP) phases. The beginning and ending dates for the phases in both traditions are best viewed as tentative and useful for comparison of regional chronologies only.

In the region of the survey area, projectile points from both traditions occur in almost equal numbers (O'Hara and Elyea 1985). This finding even hold for the Cebolleta Mesa survey (Broster and Harrill 1982), which recorded the most intensive Archaic utilization of any survey in the immediate area.

Wozniak and Marshall (1991) note a striking dissimilarity between the relatively high density of Archaic materials on the mesa and the low density of material on the west flanks of the mesa.

THE FORMATIVE PERIOD

The Formative period refers to a semi-sedentary or sedentary agricultural adaptation that eventually evolved into modern-day Puebloan culture. As in the preceding Archaic period, two traditions have been defined for the Southwest -- the northern Anasazi and the southern Mogollon. Again, the study area is assumed to be within a region of interaction between the two traditions. Most often this assumption is based on the occurrence of both Anasazi graywares and Mogollon brownwares in ceramic assemblages. The co-occurrence of these wares in the same assemblage had obvious influences on the early research by Ruppé (1953) and Dittert (1959), whose studies remain the foundation for discussions of cultural sequences in the area. Wozniak and Marshall (1991) discuss some of the problems with Ruppé (1953) and Dittert's (1959) descriptions of the Acoma Cultural Province. The majority of their work was done north of the Cebolla Canyon study area, in what they refer to as the Los Pilares district, and south of Cebolla Canyon, in the Los Veteados district, which includes Armijo Canyon.

The Basketmaker III Period

The distinction of Basketmaker III (AD 400-700) occupations from the preceding late Archaic traditions is based on the presence of ceramics, the shift to bow and arrow technology, and the use of formalized pithouses. Ruppé believes that the Basketmaker III occupation of the area is late and reflects entry into the region by populations from the north or west. The nature of Basketmaker settlement and subsistence is not well known. Pitstructures, located adjacent to field areas, and abundant storage features suggest a more sedentary settlement pattern than in the preceding Basketmaker II and Archaic periods. The occurrence of small campsites dating to this period, however, suggests that hunting and gathering was still an important part of the settlement system.

The Pueblo I Period

During the Anasazi Pueblo I period in the Southwest (AD 700-950) above-ground architecture became increasingly common. Initially, these structures were jacal storage rooms located adjacent to pithouse habitations. By the end of the period these surface rooms had become actual roomblocks facing an area containing one or more pitstructures.

Dittert and Ruppé did not find any early Pueblo I sites in the Los Veteados area, which includes Armijo Canyon. North of Armijo Canyon, in the Los Pilares district, however, settlements grew in both number and size. The favored site areas were the sandy slopes of upper tributary canyons, where the residents constructed permanent habitations containing pitstructures and jacal surface rooms. The increase in settlements is attributed to an influx of Mogollon populations.

Middle Pueblo I pithouse villages with up to six pitstructures and associated jacal and occasionally small masonry units are documented in the Los Pilares district. Settlement continues to be concentrated in the upper side canyon tributaries. In the Los Veteados district only one middle Pueblo I site has been recorded, and it did not have pitstructures, but surface jacal rooms.

By late Pueblo I (Red Mesa phase, AD 870-950) the settlement pattern shifted from the upper side canyons to the open canyon bottoms. The number of masonry sites and components increases in both Los Veteados and Los Pilares districts during this period, and according to Ruppé the development of a distinct Acoma Cultural Province began during this time period. Adobe wall construction and Socorro Black-on-white ceramics also occur at this time.

Other regions in the Southwest were also exhibiting this transition to surface rooms. In the Chaco Canyon area Sebastian (1992) sees the shift from pithouses with surface storage rooms to surface roomblocks as an indication of a subsistence system truly dependent on agriculture. That is, a strategy of multiyear storage of cultigens began to be employed as a back up for crop failure, rather than relying on increased hunting and gathering during periods of stress.

The Pueblo II Period

During the Cebolleta phase (AD 950-1125) settlement continued to shift from the side canyons to the valley floors. The Los Veteados district saw sharp increases in the numbers of habitation sites. Most were constructed from sandstone, but some were jacal and adobe. Again, Dittert and Ruppé attribute this increase in the number of sites to an influx of Mogollon populations, and the presence of adobe buildings and further increases in amounts of brownwares seem to support this hypothesis.

The Los Pilares district sites did not exhibit any adobe construction, nor the high amount of brownwares that is found in the more southern district. Sites in this district also were not as large as those in the Los Veteados district. Habitation units ranged from one- or two-room jacal structures to multistory roomblocks. In both areas, kivas were often associated with sites of all sizes.

Increased number of sites and increased site size is prevalent throughout numerous regions in the Southwest. Even after factoring out the effects of the increasing numbers of specialized sites (e.g., fieldhouses and field camps), Sebastian (1992) found that the numbers of habitations increase threefold between the Pueblo I and Pueblo II period sites in the Chaco Canyon area.

In the San Juan Basin, the classic Chacoan settlement system emerged at about AD 900 when building episodes occurred at three sites (Pueblo Bonito, Peñasco Blanco, and Una Vida) on a different scale from those at other sites in the canyon. Sebastian (1992) views this early labor-intensive development as a "Big Man" phenomenon that eventually developed into a hierarchical leadership. She sees two trajectories in agricultural production -- land extensive and labor intensive. Briefly, it is the labor-intensive groups who could amass the most surplus during productive years.

Pueblo III

In the Pueblo III period (AD 1125-1325), the number of sites seems to decrease, as the size of the sites generally increases. By the Pueblo III period habitations with 20 or more rooms are typical. In the Los Veteados district the sites contain an average of 16.7 rooms, and some roomblocks are coursed adobe. Brownwares are found in smaller numbers and are less frequent than graywares, but Socorro Black-on-white is as common as Tularosa Black-on-white.

In the Los Pilares district the total number of sites is greater than in the Los Veteados district, but the average number of rooms per site is only 7.16. No coursed adobe buildings were found in this district.

The site locations continue the earlier trends with settlements in the open valleys and canyons, but also on low benches near the canyon mouths and the edge of the North Plains. The trend, as elsewhere, was toward large habitations; compound or multiple roomblocks with plazas.

There were fewer sites and fewer tradewares in the Los Veteados district during the later part of the Pueblo III period. Ruppé believes that the Los Veteados district was abandoned after the late Pueblo III period, whereas some occupation continued into the Pueblo IV period in the Los Pilares district.

The Pueblo IV Period

The Cebolleta Mesa area was abandoned early in the Pueblo IV period (AD 1325-1540). The few Pueblo IV sites in the Cebolleta Mesa area are walled, compound sites on inaccessible mesas. Dittert and Ruppé both believe that the remaining population was concentrated in these few very large (200+ rooms), defensively situated pueblos.

REGIONAL CHRONOLOGY

Various chronological sequences for the Acoma Province are illustrated in Figure 3. Dittert (1959) divides the prehistoric Formative occupation of the region into seven phases -- White Mound (Basketmaker III), AD 700-800; Kiatuthlanna (Pueblo I), AD 800-870; Red Mesa (early Pueblo II), AD 870-950; Cebolleta (Pueblo II), AD 950-1100; Pilares (Pueblo III), AD 1100-1200; Kowina (Pueblo III to Pueblo IV), AD 1200-1400; and Cubero (late Pueblo IV), AD 1400-1600. As Tainter (1980:57) notes, the first three phases follow Gladwin's formulation for the Chaco branch, whereas descriptions of the later phases stress the distinctiveness of cultural developments within the Acoma Province. Ruppé and Dittert view migration and diffusion as the major processes of cultural change in the region, and they argue that the resulting mixture of Anasazi and Mogollon traits gave rise to a distinct Acoma cultural tradition. Although Tainter (1980:63-66) and others have questioned this interpretation, the phase sequence remains the primary temporal framework for the Cebolleta Mesa region.

Wozniak and Marshall (1991) argue that this chronology has several weakuesses. First, they note that the phases do not correspond with any precision to the Pecos Classification, although the phases are equated with Basketmaker and Pueblo periods. Second, they argue that the phase system is calculated to emphasize the uniqueness of developments within the Acoma Province. Both of these problems are seen as major impediments to comparisons of developments in the Cebolleta Mesa area with those in other regions of the southern Colorado Plateau. Finally, Wozniak and Marshall contend that the phase divisions are neither well justified nor well defined in terms of distinctive material culture attributes.

During the Cebolla Canyon survey, Wozniak and Marshall employed a revised culture chronology formulated to correct these perceived deficiencies. Based on seriation data and published age estimates for various ceramic types, Marshall (1991:Table 6.16) describes 17 temporally-diagnostic ceramic groups (A-Q). Each of the ceramic groups was assigned estimated dates and correlated with a period and phase. The resulting sequence divides the Acoma Province culture chronology into ceramic phases, nine of which were represented in the Cebolla Canyon area: Late Lobo, 150 BC-AD 700; Kiatuthlanna (middle Pueblo I), AD 800-870; Red Mesa (late Pueblo I), AD 870-950; Early Cebolleta (early Pueblo II), AD 950-1050; Late Cebolleta (middle Pueblo II), AD 1050-1125; Pilares (late Pueblo II), AD 1125-1175; Early Kowina (early Pueblo III), AD 1175-1225; Middle Kowina (middle Pueblo III), AD 1225-1275; and Late Kowina (late Pueblo III), AD 1275-1325. In correlating the ceramic phases with Pueblo periods, Wozniak and Marshall employed a modified version of the traditional Pecos Classification in which the Pueblo I period is dated between AD 700 and 950; the Pueblo II period, between AD 950 and 1175; and the Pueblo III, between AD 1175 and 1325.

The greatest disparity between these two sequences (Figure 3) occurs in the Pecos Classification designations for the iudividual phases. This difference can be confusing to the casual reader but it is hardly a major impediment to regional comparisons. The Pecos Classification, as originally conceived, was a developmental scheme based largely on changes in architecture and utility ware ceramic styles. As Roberts (1935) observed, the ordering of the periods had some chronological implications, but regional developmeuts were not expected to be synchronous, nor were all stages expected to be represented in every area. In identifying the Basketmaker and Pueblo period correlates of their phases, Dittert and Ruppé were applying a general developmental scheme to a local sequence, so it is not surprising that their dates do not conform precisely to the general date ranges attributed to the Pecos periods.

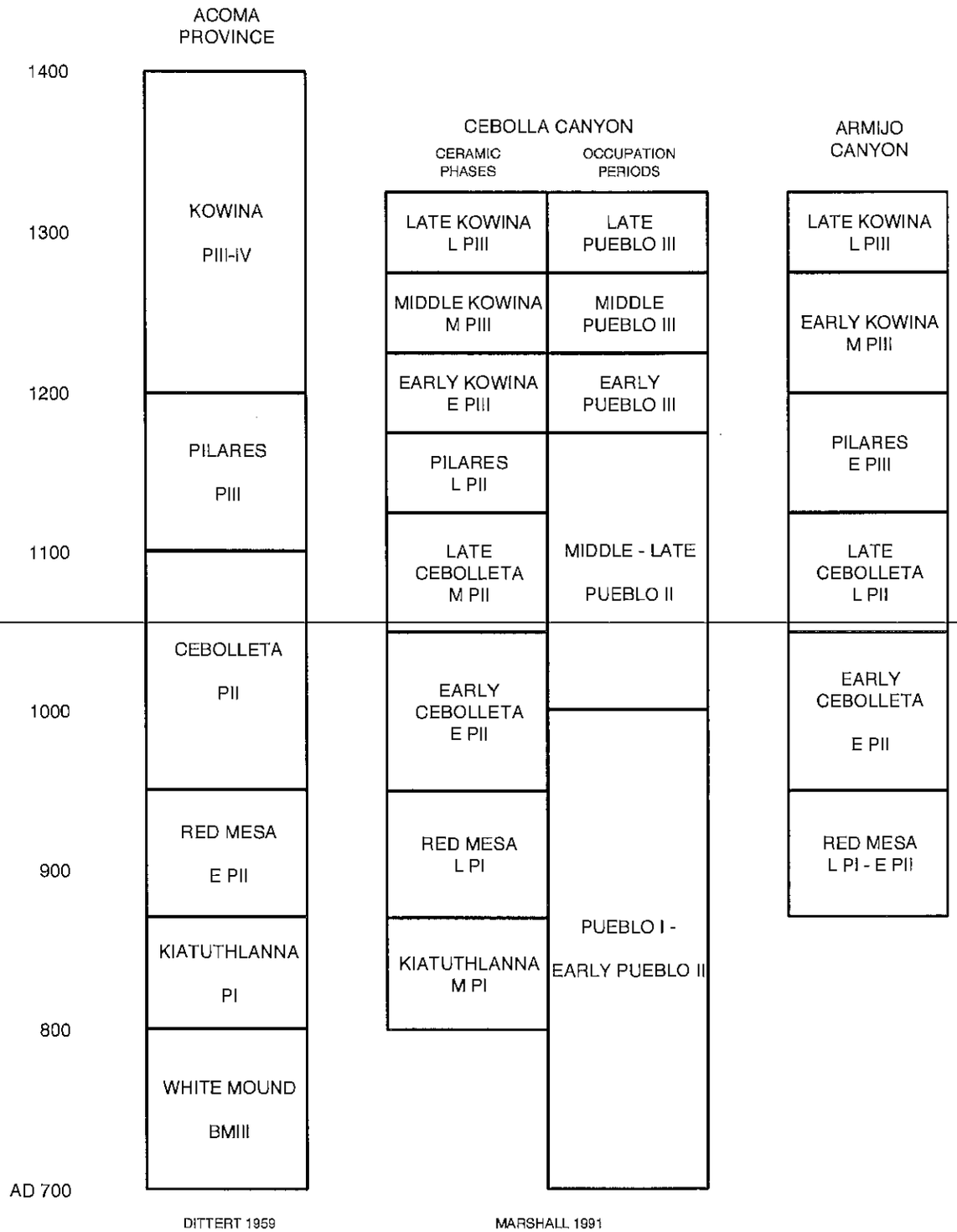

Figure 3. Comparison of chronological sequences for Cebolleta Mesa region.

The revisions suggested by Wozniak and Marshall also reflect a perception of the Pecos Classification as a developmental sequence but, in this instance, the dates and defining criteria for the Pueblo periods were changed to more closely conform to cultural developments in the Cebolleta Mesa area and adjacent regions. Specifically, Wozniak and Marshall (1991:4-9) argue:

> Developments both in Chaco and other regional systems, . . . which began in the mid-10th century, did not come to an abrupt end in AD 1100 but continued into the mid-12th century when a number of factors contributed to the collapse of the Chacoan system in the central San Juan Basin and a significant reorganization in the regions surrounding the basin core. Developmentally, architecturally, and ceramically what happened on the Southern Colorado Plateau between AD 950 and AD 1175 was all of one piece; therefore, the era of the great drought of the 12th century, the emergence of St. Johns Polychrome as a pan-Anasazi ceramic, and the demise of Pueblo II centers are more appropriately grouped together as marking the divide between the Pueblo II and Pueblo III periods.

If the Pecos Classification is viewed as a developmental sequence, then there is much to recommend the revisions proposed by Wozniak and Marshall. However, these revisions are unlikely to achieve their stated objective -- to encourage regional and pan-regional comparisons of Anasazi cultural development. Faced with the same inconsistencies described by Wozniak and Marshall, archeologists in the Chaco region have variously suggested dating the break between the Pueblo II and Pueblo III periods to AD 1050 (e.g., Hayes et al. 1981) or AD 1150 (e.g., Sebastian 1992). Similarly, Cordell (1979) uses an AD 1200 date for the beginning of the Pueblo III period, which is manifest in the northern Rio Grande area by the introduction of Santa Fe Black-on-white. The flaw in this approach is obvious; revision of the Pecos Classification to accommodate the cultural developments in a particular region will, regardless of its other merits, complicate any comparison between regions since the dates attributed to the Pecos periods may not be equivalent.

To minimize this problem, we elected to strip the Pecos Classification of its developmental implications and use the periods simply to denote blocks of time: Pueblo I (AD 700-900), Pueblo II (AD 900-1125), and Pueblo III (AD 1125-1325). These dates deviate only slightly from the 200-year date ranges commonly cited for the periods, which should facilitate regional comparisons. Even so, we feel that correlations of local sequences should be based on calendar dates whenever possible.

If we ignore the Pecos period correlates for the various phases, the only discrepancy between Dittert's sequence and Marshall's ceramic phases is the date range for the Pilares phase, which Dittert places at AD 1100-1200. Marshall (1991:6-20) uses the Pilares phase "to define a ceramic horizon which postdates the AD 1125 inception of Wingate Polychrome and yet ends before the development of St. Johns Polychrome in AD 1175." He also divides the Cebolleta into late and early ceramic phases and the Kowina into early, middle, and late ceramic phases to provide more fine-grained temporal control for the late Formative occupation of the Cebolleta Mesa region. Except for the revised Pilares dates, the aggregate date ranges for these phases are consistent with Dittert's original formulation.

With two minor modification, Marshall's ceramic phases were also used to order sites in the Armijo Canyon community (Figure 3). As already noted, the beginning of the Early Kowina phase is marked by the appearance of St. Johns Polychrome, which Carlson (1970) dates to AD 1175. In reviewing the ceramic assemblages from tree-ring dated contexts in west-central New Mexico, however, Mills (1987) found that three of the five assemblages containing St. Johns Polychrome were later than AD 1200; one was associated with cutting dates in the AD 1030s; and the last, with a single cutting date of AD 1103. Since both of the early dates are probably from multicomponent sites, Mills concluded that the available evidence suggests a date of AD 1200 for the appearance of St. Johns Polychrome. We therefore extended the end date for the Pilares ceramic phase from AD 1175 to AD 1200. In addition, the Early Kowina phase, as defined here, encompasses Marshall's Early Kowina and Middle Kowina ceramic phases. This modification was made because we were unable to apply the criteria used by Marshall to distinguish these two phases during the survey.

As discussed in Chapter 5, Marshall's ceramic phases are primarily useful for dating sites that occupied for relatively short periods; they cannot be applied with any precision to sites occupied for a period spanning two or more ceramic phases. In addition, sites with small sherd assemblages frequently lack the ceramic horizon markers used to define the ceramic phases. During the Armijo Canyon survey, sites that could not be assigned to ceramic phases for either of these reasons were dated as precisely as possible but they were not given phase designations. This left us with four residual categories: Pueblo II-III (AD 950-1325), Pueblo II (AD 950-1125), early to middle Pueblo III (AD 1125-1275), and middle to late Pueblo III (AD 1200-1325). Note that an initial date of AD 950 is used here for Pueblo II and Pueblo II-III because all of the sites in these residual categories postdate the Red Mesa ceramic phase.

Marshall appears to have had similar difficulties in applying this chronology since he ultimately groups the Cebolla Canyon sites into six occupation periods -- Basketmaker III, Pueblo I-Early Pueblo II (ca. AD 700-1000), Middle-Late Pueblo II (ca. 1050-1175), Early Pueblo III (ca. AD 1175-1225), Middle Pueblo III (ca. AD 1225-1275), and Late Pueblo III (ca. AD 1275-1325). The latest three occupation periods correspond to the Early Kowina, Middle Kowina, and Late Kowina ceramic phases, respectively, and the Basketmaker III occupation is equated with the Late Lobo ceramic phase (Marshall 1991:Table 6.17). The remaining two occupation periods do not correspond precisely to ceramic phases.

The Pueblo I-Early Pueblo II occupation period consists mainly of sites designated as Red Mesa (Ceramic Group D-E) but also includes a few sites designated Kiatuthlanna-Red Mesa (Ceramic Group C-D). Marshall does not describe these compound ceramic groups, but Ceramic Group C-D is presumably intermediate between the assemblages characteristic of the Kiatuthlanna and Red Mesa ceramic phases, while Ceramic Group D-E is intermediate between the assemblages described for the Red Mesa and Early Cebolleta ceramic phases. Marshall's Middle-Late Pueblo II occupation period consists of sites assigned to the Late Cebolleta and Pilares ceramic phases, as well as a few sites designated Late Cebolleta-Early Pilares (Ceramic Group F-G), which are dated ca. AD 1050-1175.

Chapter 4

SURVEY RESULTS

The Armijo Canyon survey recorded 64 archeological sites with components dating from the Paleoindian period to the historical era (Table 1). Most of the sites date to the Formative period and range from small, ephemeral use areas to large, multistoried roomblocks. The Formative sites were classified chronologically by Dean Wilson (Chapter 5); functional classification follows research by Sebastian (1983) and Hogan (1985). This functional classification relates primarily to the smaller sites, which were presumably situated near agricultural fields. Featureless artifact scatters are inferred to represent day-use activities adjacent to field areas. Field camps are ephemeral scatters that lack structural remains but show evidence of food preparation and consumption (i.e., hearths or groundstone). These sites presumably represent field locations where one or more individuals occasionally camped overnight. The final category of field-associated sites, fieldhouses, represents warm-season occupations with evidence of structures but minimal amounts of midden. Permanent habitations, in contrast, are winter or year-round residences that contain substantial living areas and midden deposits. Both fieldhouses and permanent habitations typically have artifact assemblages that reflect the full range of domestic activities. This similarity makes it difficult to interpret early Formative settlement patterns in the Armijo Canyon area, since the one- or two-room structures common during the Pueblo II period could be either small permanent habitations or seasonally-occupied fieldhouses.

The survey also recorded 637 isolated occurrences (Figure 4), which include 1343 ceramic and 207 lithic artifacts. These remains presumably reflect nonlocalized, day-to-day activities that occurred away from the residences. The extremely large number of isolated occurrences in the Armijo Canyon area reflects intensive use of the area not only by the inhabitants of the local permanent habitations, but probably by people from adjacent areas as well. We did not record isolated occurrences around the larger sites or within the community surrounding the Dittert site to minimize the "noise" that results from artifacts eroded from these locally-dense cultural deposits.

THE PALEOINDIAN PERIOD

The earliest component documented during the survey is located at LA 102817, which encompasses debitage from Paleoindian occupations, residential campsites from the middle Archaic period, and evidence of hunting activities probably dating to the Formative period. The site is situated on the west edge of a small mesa that overlooks playa areas in the North Plains. Evidence of Paleoindian use of the site includes a Washington Pass chert channel flake and a few obsidian parallel oblique flakes. It is impossible to differentiate a Clovis from a Folsom period channel flake, but owing to the rarity of Clovis materials, it is likely that the Washington Pass flake is related to a Folsom occupation. Likewise, parallel oblique flakes occur during several Paleoindian phases, but in the interior basin areas of New Mexico it is likely that they belong to one of the Cody Complex phases.

The sparse materials that can be positively associated with the Paleoindian period suggest that the site area was used as a hunting overlook rather than a campsite. An arrow point and a few sherds in the area indicate that the site was also used during the Formative period as a hunting overlook. The only other evidence for Paleoindian use of the study area is a reworked Folsom point found at a Pueblo II site (LA 102838).

Table 1. Summary of Components at the Armijo Canyon Sites

Site Number									
OCA	LA	BLM	Culture	Period	Phase	Date	Site Type	Features	Number of Rooms
1	102804		Anasazi	E P II	E Cebolleta	AD 950-1050	Habitation	Pitstructure	1
2	102805		Anasazi	Mid P III	E Kowina	AD 1200-1275	Habitation	Roomblock, kiva, midden	8-12
3	102806		Anasazi	E-M P III	Pil/E Kowina	AD 1125-1275	Field facility/camp	L/C scatter, groundstone	-
4	102807		Anasazi	E-M P III	Pil/E Kowina	AD 1125-1275	Habitation	Rubble mound, middens	4-6
5	102808		Anasazi	E-M P III	Pil/E Kowina	AD 1125-1275	Fieldhouse	1 room	1
6	102809		Anasazi	Mid P III	E Kowina	AD 1200-1275	Fieldhouse	Possible jacals	2?
7	11725	BLM 87	Anasazi	E P III	Pilares	AD 1125-1200	Habitation	Roomblock, kiva, midden	-
			Anasazi	E P III	Pilares	AD 1125-1200	Fieldhouse	Room	1
8	102810		Anasazi	E P III	Pilares	AD 1125-1200	Habitation	Roomblock, road, midden	-
9	102811		Anasazi	M PIII, PIV	E Kowina	AD 1275-1325	Habitation	Roomblock, road, midden	11
10	11724	BLM 86	Anasazi	M PIII, PIV	E Kowina	AD 1275-1325	Habitation	Roomblock	5
11	11777	BLM 140	Anasazi	Mid P III	E Kowina	AD 1200-1275	Habitation	Roomblock, midden	4
12	11721	BLM 83	Anasazi	M-L P III	E-L Kowina	AD 1200-1325	Habitation	Rubble, midden	2-3
			Anasazi	M-L P III	E-L Kowina	AD 1200-1325	Habitation	Roomblock, kiva	35-40
			Anasazi	M-L P III	E-L Kowina	AD 1200-1325	Field facility	L/C scatter, ash	-
13	102812		Anasazi	E P III	Pilares	AD 1125-1200	Field facility/camp	Road, L/C scatter	-
14	11722	BLM 84	Anasazi	P II - P III		AD 1050-1275	Habitation	Roomblock, midden	31
15	102813		Anasazi	Late P II	L Cebolleta	AD 1050-1125	Fieldhouse	L/C scatter, gs, poss. structure	1
16	11719	BLM 81	Anasazi	E P III	Pilares	AD 1125-1200	Habitation	Roomblock, midden, alignment	18
17	102814		Anasazi	Mid P III	E Kowina	AD 1200-1275	Checkdam	Checkdam, field, L/C scatter	-
18	102815		Archaic	Unknown	Middle	3000-1000 BC	Residential camp	Hearth, fcr, lithic scatter	-
			Anasazi	Late P II	L Cebolleta	AD 1050-1125	Field facilty/camp	L/C scatter, groundstone	-
19	102816		Anasazi	E P III	Pilares	AD 1125-1200	Habitation	Roomblock, L/C scatter	12
			Anasazi	E P III	Pilares	AD 1125-1200	L/C scatter	L/C scatter	-
20	102817		Paleo	Folsom	Cody Complex	9000-7000 BC	Hunting overlook	Channel, parallel oblique flakes	-
			Archaic	Middle	San Jose	2000-1000 BC	Residential camp	Poss. ash, fcr, lithic scatter	-
			Anasazi	Pueblo III		AD 1100-1300	Hunting overlook	Ceramic scatter, projectile point	-
21	11720	BLM 82	Anasazi	E PII/M PIII		AD 1000-1275	Habitation	Roomblock, midden, hearth	7-8
22	102818		Anasazi	L P I-E PII	Red Mesa	AD 870-950	Habitation	Poss. pithouse, midden, slab feat.	1
23	102819		Anasazi	E P III	Pilares	AD 1125-1200	Field facility/camp	L/C scatter, groundstone	-
24	102820		Anasazi	Early PII	E Cebolleta	AD 950-1050	Possible habitation	L/C scatter, gs, poss. pithouses	-
25	11727	BLM 89	Anasazi	E P III	Pilares	AD 1125-1200	Habitation	Roomblock, midden	25-30
			Hispanic	Historical		AD 1930-1940	Homestead	House, barn, garage,corral	-

Table 1. Continued

Site Number									
OCA	LA	BLM	Culture	Period	Phase	Date	Site Type	Features	Number of Rooms
60	102852		Anasazi	Late P II	L Cebolleta	AD 1050-1125	Fieldhouse	Scattered rubble,	1-2
61	102853		Anasazi	Early P II	E Cebolleta	AD 950-1050	Field facility/camp	L/C scatter	-
62	102854		Anglo	Historical		1960s	Homestead	Cabin, corral	1
63	102855		Archaic	Unknown	Unknown		Campsite	Lithic scatter	-
64	102856		Anglo	Historical		1930s-1940s	Line camp	Hearth, trash	-

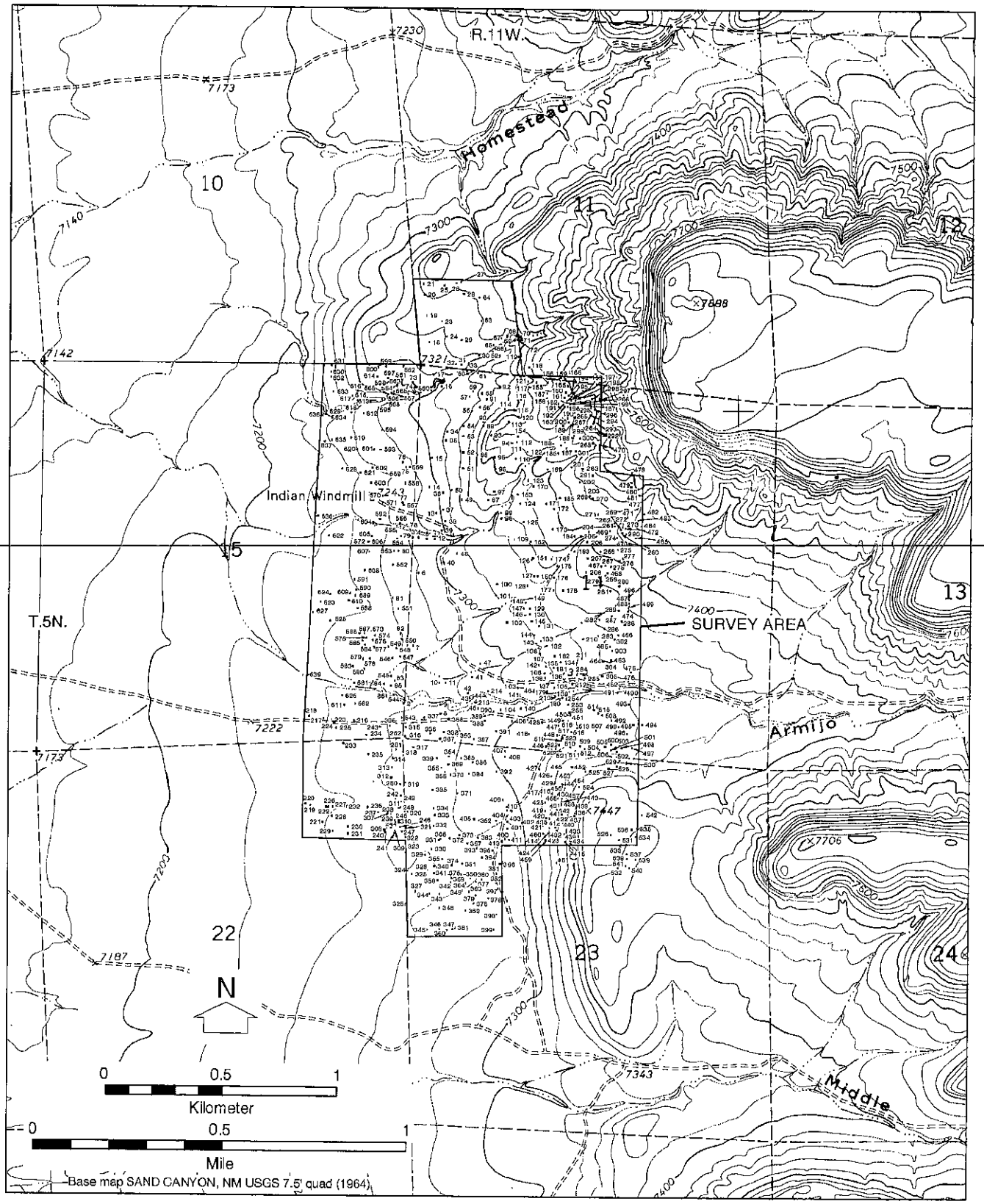

Figure 4. Location of isolated occurrences in survey area.

THE ARCHAIC PERIOD

Four Archaic components were located during the Armijo Canyon survey. As noted above, the most extensive Archaic deposits occurred at LA 102817. The Archaic occupation at this site consists of a series of residential campsites that contain groundstone, ash, and lithic debris and tools. The tools include one San Jose style projectile point, indicating that at least a portion of the site dates to the middle Archaic period, about 4000 BP. The large site area (ca. 7000 sq m) suggests multiple occupations, and most of the materials within the site area appear to date to the Archaic period.

Three other sites in the area also contain Archaic materials. LA 102841 is a diffuse scatter of lithics with some groundstone, which suggests residential campsite activity. The site contained one fragmentary projectile point with a rounded, shouldered-stemmed base and serrated edges. The type and date of this point are unknown.

LA 102855 was originally recorded as an isolated occurrence but it was reclassified as a site after we realized the paucity of knappable lithic materials in the project area. The site contains 15 surface artifacts, including a scraper and groundstone. The site is in a setting similar to LA 102817 with an excellent view of the North Plains.

The Archaic component at LA 102815 consists of a hearth, scattered fire-cracked rock, a few flakes, a utilized flake, a unifacial chopper, and an unidentifiable stemmed projectile point. This style of point has not previously been described in the literature, but its size suggests that it probably dates to the middle Archaic period.

Additional Archaic materials located in the survey area include two San Jose projectile points that were isolated occurrences. Two San Pedro and one San Augustin projectile points were also found on Formative period sites. The mixture of Cochise and Oshara projectile point styles is consistent with data from other projects in the area. As discussed in Chapter 3, boundaries between these two Archaic traditions were fluid, and both cultures apparently used the North Plains and Armijo Canyon area.

The relatively small assemblages at the Armijo Canyon Archaic sites are a direct reflection of the lack of suitable lithic raw materials in the survey area. This limiting factor apparently resulted in efficient and conservative use of lithic raw materials, which had to be brought into the survey area. This also probably accounts for the overall paucity of Archaic sites recorded in the El Malpais area. In fact, one of the four Archaic components in the project area was initially classified as an isolated occurrence. It is possible that ephemeral Archaic sites have been overlooked by other surveys in the region.

The fact that three of the Archaic components are located on promontories also suggests that the focus of the few existing sites was on hunting. Other than periodic piñon crops, we did not see any resources that would attract bands of hunter-gatherers. Economic grasses, such as Indian ricegrass, are currently absent in the project area, and we saw only a few stands of dropseed. We also did not observe usable weeds, such as Cheno-Ams.

THE FORMATIVE PERIOD

Red Mesa Phase

The earliest Formative occupation in the Armijo Canyon survey area dates to the late Pueblo I-early Pueblo II period, AD 870 to 950. These sites include two possible permanent habitations evidenced by possible pitstructures. A third site may have an ephemeral structure, but the associated trash is not extensive enough to suggest a long-term occupation. The fourth site consists of an isolated hearth in an eroding context. All of these sites are situated immediately adjacent to small drainages (Figure 5).

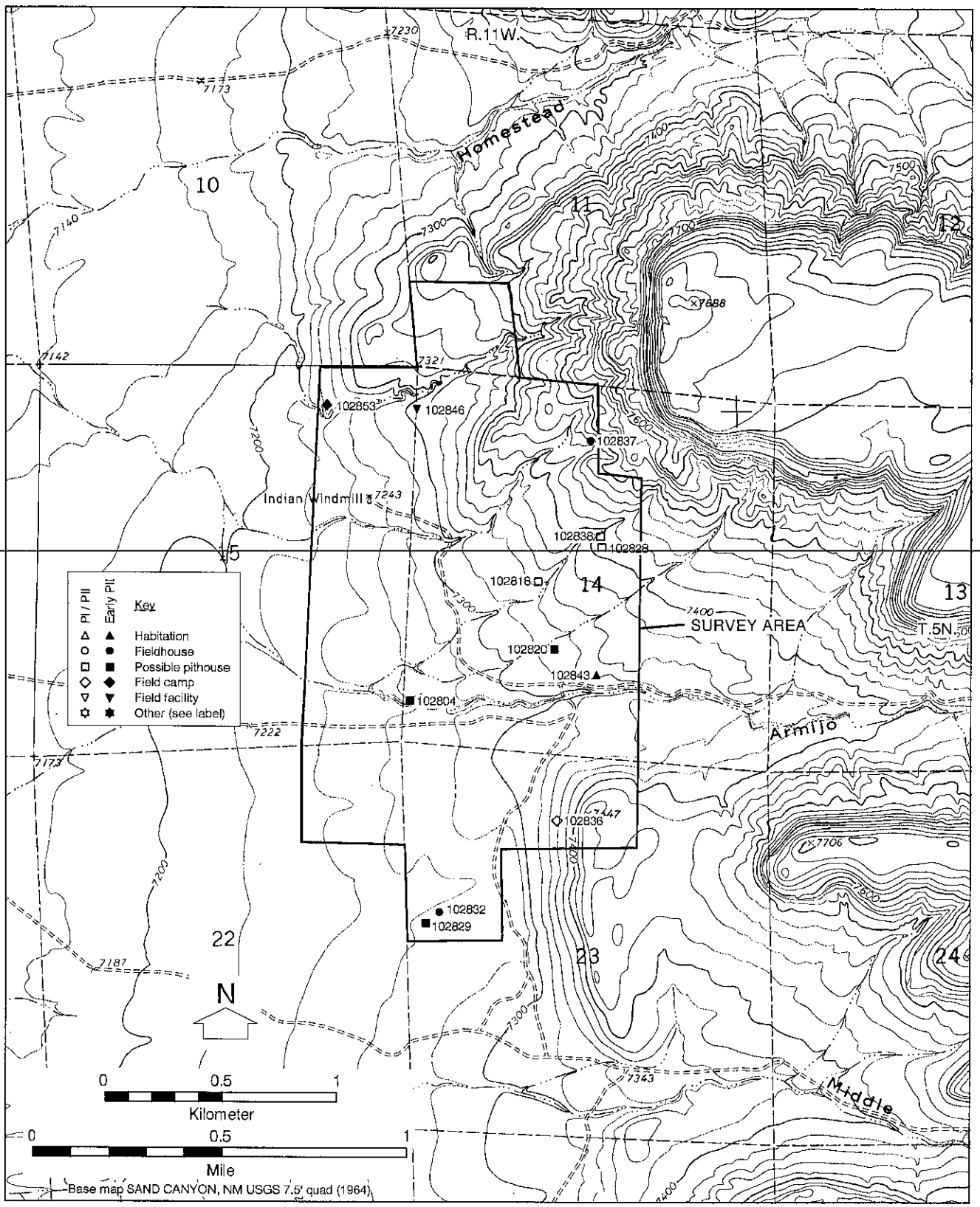

Figure 5. Location of Red Mesa and Early Cebolleta Phase sites in survey area.

LA 102818 encompasses a midden and a possible pitstructure depression. The midden measures 13 by 7 m, and the 4.5 m diameter depression is located 2 m southwest of the midden. Two burned sandstone elements, each approximately 45 cm long, are located on the northeast edge of the 10 cm deep depression.

LA 102828 consists of a large ceramic and lithic scatter, a dense midden, and an ash-stained area. The overall site area is 60 by 40 m, with a dense scatter measuring 10 by 10 m in the northeast portion of the site. Localized erosion has also exposed an area of dark ash-stained soil just north of the artifact concentration. It is unclear if the ash-stained area is part of the midden or if it represents one or more burned structures.

LA 102838 is a sparse 22 by 21 m ceramic and lithic scatter with some subsurface ash visible near a badger burrow. The ash and the presence of groundstone suggest that domestic activities occurred within the site area, but the diffuse nature of the scatter does not indicate a permanent habitation. The site appears to be a field camp or ephemeral fieldhouse location. A reworked Folsom projectile point was also found within the site area.

LA 102836 is a hearth and ceramic scatter. The hearth is being eroded by an arroyo, and the poor condition of the site along with its location on a talus slope below a large pueblo hinders a functional or temporal interpretation of the site area.

Early Cebolleta Phase

The survey recorded eight sites that date to the early Pueblo II period, AD 950-1050. Functional classification of these sites was hampered by our expectations concerning permanent habitation sites from this period. Generally, the overall Southwestern trend indicates a transition from pithouses to above-ground masonry structures during this period, at least at permanent habitations. The settlement pattern also shifts from a generalized multifunctional one, in which most sites are permanent habitations or residences, to one in which more specialized sites, including fieldhouses, are incorporated.

The pattern in Cebolla Canyon, however, included few masonry structures; most of the early components were described as middens associated with later structures. Clear evidence of structures was also lacking at most of the Early Cebolleta components, so the functional classification of sites dating to this ceramic phase should be regarded as provisional. In the absence of extensive arroyo downcutting, the one site with a visible pitstructure (LA 102804) would have been classified as little more than a domestic scatter. We suspect that two other sites may have pitstructures (LA 102820 and LA 102829), and three sites have masonry structures with one to two rooms. Two additional sites consist of a field camp and a field facility. As in the preceding Red Mesa phase, all sites are adjacent to drainages and potential field areas (Figure 5).

LA 102804 is a permanent habitation represented by a 3.5 m wide pitstructure exposed in the north wall of the Armijo Canyon arroyo. The light scatter of artifacts on the north rim of the wash is only visible in slightly eroded areas; the true size or extent of the site is unknown. The pitstructure has burned roof fall, including beams, and an oxidized plastered floor 1.5 m below the modern ground surface. The pithouse contained a hearth that was archeomagnetically dated by the Bureau of Land Management (John Roney, personal communication 1993). The sample, collected from the hearth's adobe collar, yielded a date with a 95% confidence interval of AD 1040-1095. The ceramics from the site suggest that the occupation dates to the Early Cebolleta Phase (AD 950-1050).

LA 102820 consists of a 66 by 38 m sherd and lithic scatter, which is primarily visible as a 30 by 20 m concentration eroding from the south side of a large patch of wolfberry. Evidence of intensive ground-squirrel burrowing is also present, and a few artifacts have been brought to the surface by the rodents. The site is located in a large, historically deforested area associated with the homestead north of the site. It is unclear if the area was used historically as a pasture or a plowed field. The site appears to be mostly buried by colluvial sand. No definite surface indications of structures or other features are present, but two shallow depressions near the south edge of the site may be deeply buried pitstructures.

LA 102829 is a ceramic and lithic scatter. This site is either a seasonal or a year-round habitation area. The moderately dense scatter measures 68 by 28 m and contains an ash stain near the densest artifact concentration.

LA 102832 is either a fieldhouse or a permanent habitation with a ceramic and lithic scatter, a small sandstone structure, and ash stains. The site measures 34 by 28 m and includes a 12 by 11 m area with very high artifact density (approaching that of a midden) and diffuse ash. The structure consists of a 4 by 2 m scatter of sandstone clasts with a 1.5 m long alignment.

LA 102837 is a fieldhouse with a storage room, a possible habitation room, and a diffuse ceramic and lithic scatter. The habitation room is represented by unshaped sandstone clasts covering a 8 by 6 m area. The storage room is a 70 by 70 cm area fronted by a one-course-high masonry alignment built under an overhanging sandstone boulder. Sherds from one large jar were found within the facility. The overall artifact scatter around the two features measures 60 by 52 m.

LA 102843 is a small habitation represented by a ceramic and lithic scatter and a one or two-room masonry structure. The site measures 34 by 20 m and contains a 4 by 4 m sandstone rubble mound. Two meters of probable wall fall extend from the west side of the rubble scatter. A 12 by 12 m sheet midden lies 7 m southeast of the rubble.

LA 102846 is a sparse artifact scatter that measures 68 by 38 m. There are neither visible features nor any artifacts that indicate domestic activities. It probably represents a day-use facility associated with an agricultural field.

LA 102853 is a small field camp measuring 17 by 8 m. No rubble or features were visible, but the associated groundstone suggests that domestic activities occurred at the site.

Late Cebolleta Phase

We located nine sites that date to the late Pueblo II period (AD 1050-1125). Two are suspected permanent habitations, three are apparent fieldhouses with ephemeral one-room structures, and three are field camps. The two suspected permanent habitations are mostly buried and were exposed by the Armijo Canyon arroyo and a road near Indian Windmill. Both have sandstone building elements, but these stones are scattered and no longer have any significant vertical relief. The distribution of late Pueblo II sites does not differ from that of the earlier phases in the Armijo Canyon area. All of the sites are located immediately adjacent to drainages and potential fields (Figure 6).

LA 102813 is a small scatter of sandstone rubble and artifacts covering a 16 by 10 m area that appears to be the remnant of a fieldhouse. The rubble, which covers a 6 by 4 m area, has little vertical relief and is composed of unshaped cobbles from 10 to 35 cm in diameter. No wall alignments could be defined. Some of the cobbles appear to be burned.

LA 102815 is a multicomponent site with evidence of Archaic and late Pueblo II occupations. The late Pueblo II component appears to be a field facility/camp with no associated structure. It consists of a 14 by 10 m scatter of sherds, lithics, and groundstone and a separate 6 by 4 m ceramic and lithic scatter that is 24 m to the northeast.

LA 102821 is a ceramic and lithic scatter and possible jacal fieldhouse foundation. A linear alignment of sandstone blocks measuring 2 m long forms a structural foundation on the east side of the site. A moderately dense ceramic and lithic scatter measuring 29 by 29 m surrounds the structure. The Armijo Canyon road has cut the scatter on the north, and numerous artifacts are exposed where they have been bladed along the south side of the road.

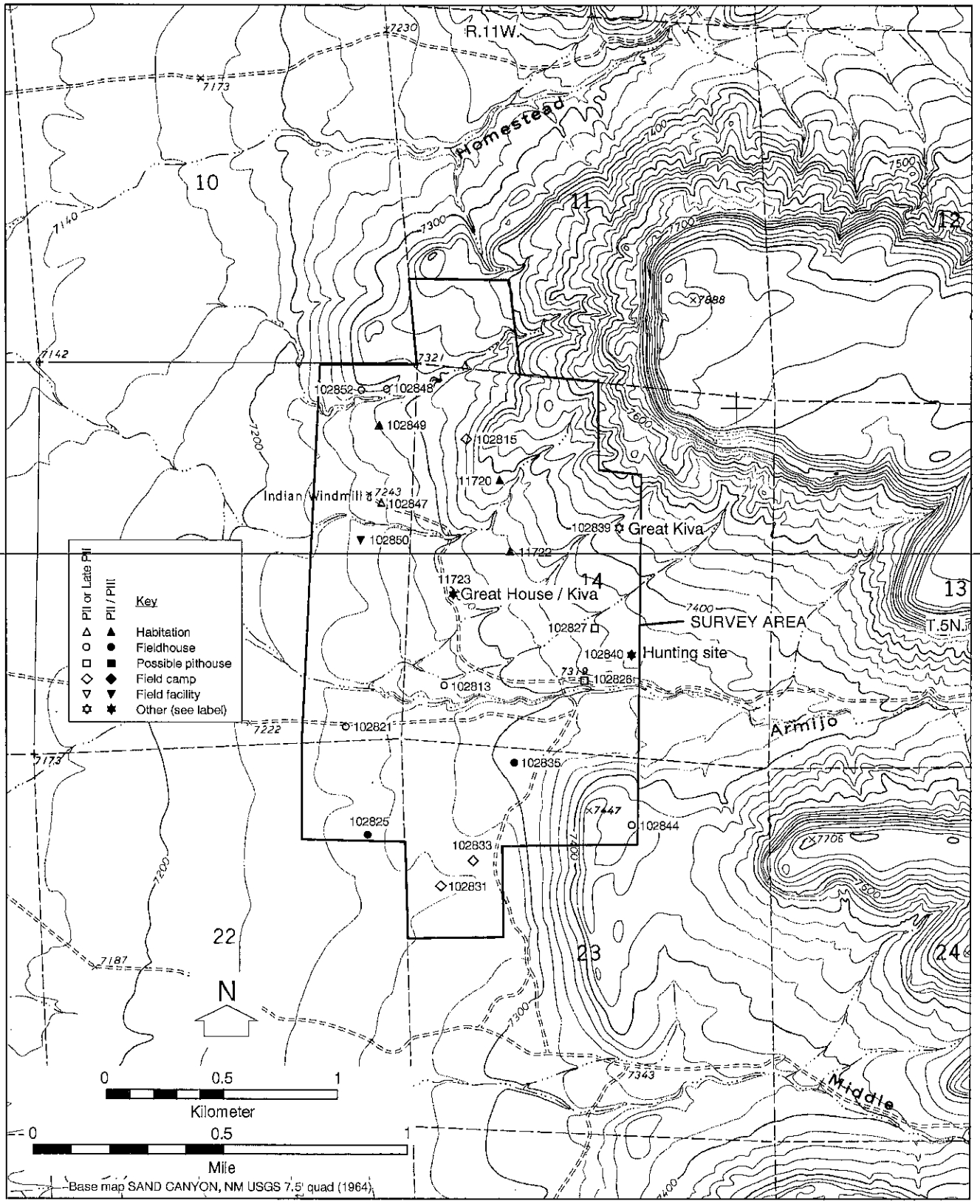

Figure 6. Location of Late Cebolleta Phase, Pueblo II, and Pueblo II/Pueblo III sites in survey area.

LA 102826 consists of a very dense artifact concentration located where erosion of the Armijo Canyon arroyo has exposed a 6 by 5 m area of ash and burned and unburned sandstone rubble. It is unclear if this buried feature is a midden or a structure. A less dense ash and charcoal lens is also visible in the arroyo wall 35-40 cm below the stabilized surface. It extends 6-8 m east of the eroding feature, and additional ash is exposed opposite the feature on the south bank of Armijo Arroyo. This ash lens is 3 m long, 20 cm thick, and 20 cm below the top of the arroyo bank. Although the exact nature of deposits at LA 102826 is unclear, the presence of either a midden or a structure suggests the site was a permanent habitation.

LA 102831 is a 33 by 22 m ceramic and lithic scatter that is located around a cattle wallow. The wallow is a circular depression 10 m in diameter and 20 cm deep. The presence of groundstone suggests that the site was used as a field camp.

LA 102833 is an apparent field camp located within a wide swale, which may represent a former Armijo Canyon channel. The scatter covers a 73 by 39 m area and has no features. The presence of groundstone suggests that meals were prepared in the site area.

LA 102844 is a fieldhouse with a 175 by 175 cm concentration of sandstone clasts. The diffuse 27 by 20 m artifact scatter includes ceramics, chipped stone, and groundstone, suggesting a small fieldhouse location.

LA 102847 has overall dimensions of 38 by 12 m and encompasses a 12 by 7 m rubble scatter that may represent a buried permanent habitation. Erosion from an old two-track road has exposed most of the artifacts visible on the surface; the majority of the site is buried by colluvial sands.

~~LA 102852 is a fieldhouse represented by a diffuse 9 by 6 m scatter of sandstone clasts and tabs and a 26~~ by 23 m artifact scatter.

Pueblo II

Four sites contained ceramic assemblages that were characteristic of a Pueblo II period occupation (AD 950-1125) but that were too small to permit the sites to be assigned to either the Early Cebolleta or Late Cebolleta ceramic phases. The largest of these sites is a great kiva. The other three are a buried site of unknown type, a small field house, and a hunting camp.

LA 102827 is evidenced by a few artifacts and burned sandstone fragments brought to the surface by two badger burrows. The nature and extent of the buried deposits in this area are unknowu, but sherds representing at least five ceramic vessels have been exposed.

LA 102839 (Los Veteados) is an isolated Pueblo II great kiva and associated artifact scatter (Figure 7). The top of the kiva depression is 22 m in diameter; the bottom of the depression measures 14 by 12 m. The depth from the top of the exterior mound to the bottom of the depression is 1.7 m. A 1.2 m long wall segment with three courses is exposed on the northeast side of the depression. It is unclear whether this section is part of the main structure wall or au interior bench.

A low, 2 m wide rubble mound standing 30-70 cm high surrounds the kiva depression. Since no wall alignments were identified, the mound may be the collapsed, above-ground portion of the kiva; backfill from kiva construction; or remnants of surrounding rooms. Three additional areas of rubble extend to the north-northwest, southeast, and southwest the circular rubble mound. An ash stain projects 2 m beyond the southeastern section of rubble.

LA 102840 is a small Formative period hunting site. The site consists of a 19 by 14 m lithic and ceramic scatter with a small, indistinct area of ash. The lithics include one arrow point, retouched flakes, and debitage from tool manufacture. The cherts and chalcedonies at this site are dissimilar to the materials from other Formative sites in the project area. This suggests that the site was not used by the occupants of the residential sites in the study area. The small ceramic assemblage suggests an early Pueblo II affiliation.

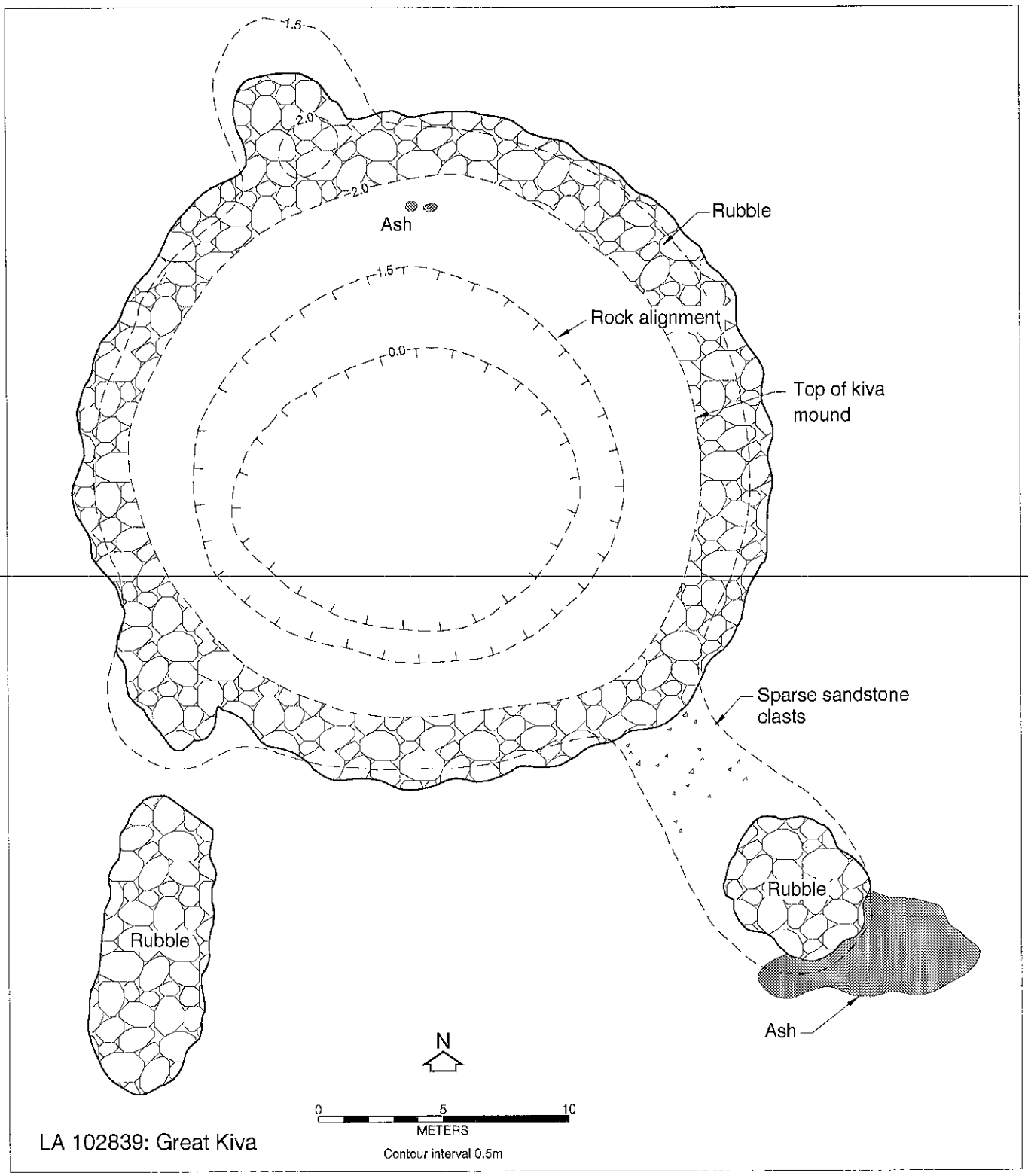

Figure 7. Plan of the great kiva at Los Veteados.

LA 102848 is a small fieldhouse with two artifact scatters and a possible structure. The overall site dimensions are 44 by 12 m. The western scatter consists of a 7 by 8 m area of sandstone tabs and clasts, groundstone, chipped stone, and ceramics. The other scatter is 27 m to the east and contains lithic and ceramic artifacts with no visible features.

Pueblo II/Pueblo III

We located seven sites dating to the Pneblo II or Pueblo III period (AD 1050-1275). Three of these sites are permanent habitation roomblocks that appear to span both periods. The remaining four cannot be dated more precisely because of their small ceramic samples. Two of the latter sites are fieldhouses, one is a field facility, and one is a probable permanent habitation with few surface artifacts.

LA 11722 consists of a sandstone rubble mound and associated midden, and may correlate with Ditterts L.V. 4: 14-C. The rubble mound measures 22 m east-west by 10 m north-south and appears to represent a roomblock nine rooms wide and three rooms deep. Three isolated rooms on the north or back side of the block appear to have been two stories high. These rooms are evenly spaced about 4 m apart. Of an estimated thirty rooms in the roomblock, six have been looted, one relatively recently. The recent potting has exposed a core and veneer masonry wall in the central second-story room (Figure 8). Six meters east of the roomblock is a 6 by 4 m scatter of rubble with a light scatter of artifacts. A possible 1.6 m long, north-south wall alignment was identified in the rubble. A 20 by 12 m ashy midden area with a dense concentration of artifacts is located south and southeast of the roomblock (Figure 9).

Figure 8. Core Veneer Manonry at LA 11722

LA 11720 appears to have both an early Pueblo II and a middle Pueblo III component. An L-shaped sandstone rubble mound measures 14 m long and appears to represent a single row of five rooms with two additional rooms extending from the southwest. The roomblock is undisturbed except for natural disturbance from a fallen tree.

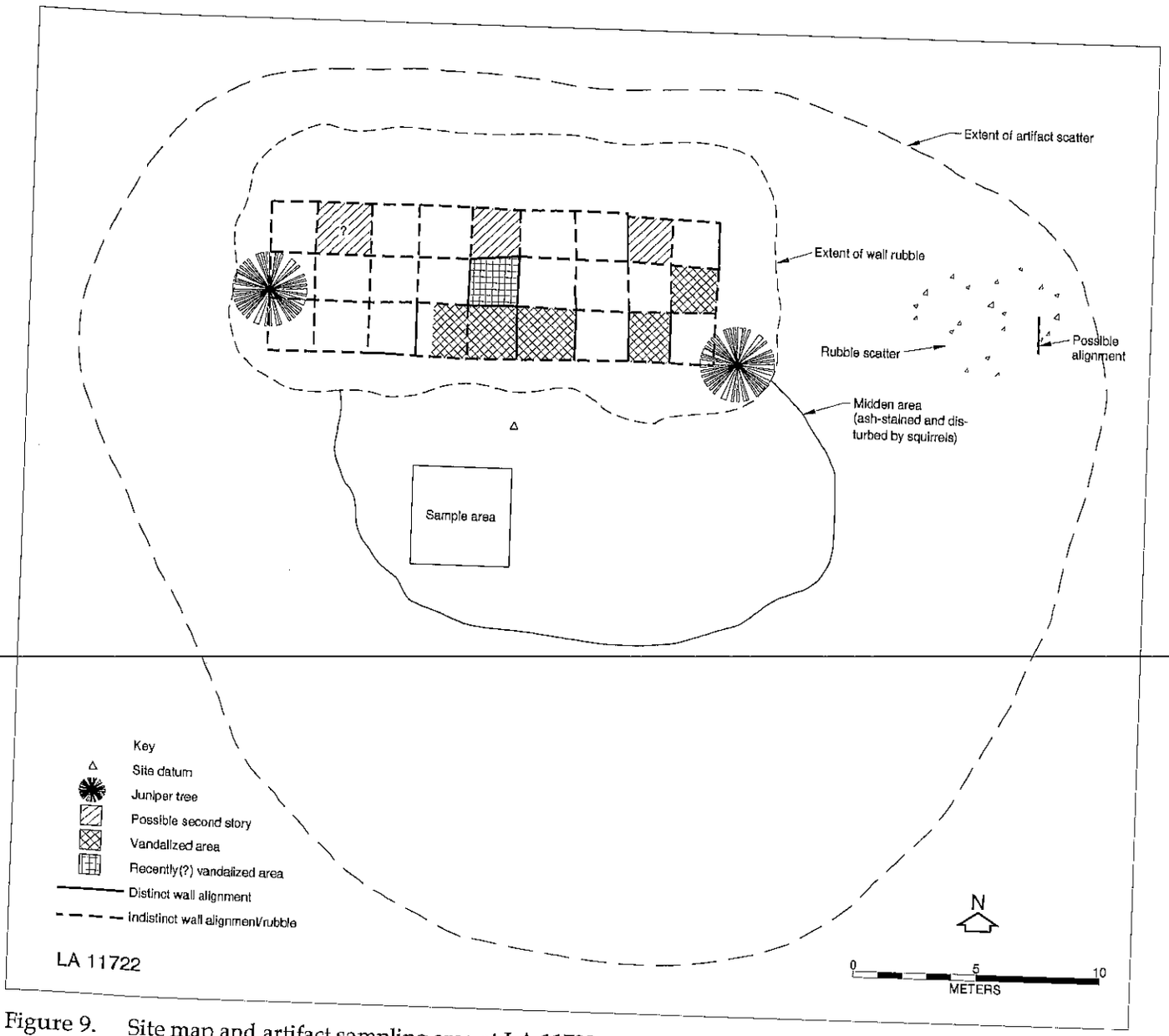

Figure 9. Site map and artifact sampling area at LA 11722.

The site also contains a moderately dense midden, an apparent hearth, and an alignment of sandstone blocks one course high that runs to the north beginning 4 m west of the roomblock. This 5 m long "wall" may have served as a checkdam across the low swale between the roomblock and a sandstone outcrop. This site may correspond with Dittert's L.V.4:15-C.

LA 102825 is a fieldhouse represented by a ceramic and lithic scatter and three possible jacal foundations. The foundations are unshaped sandstone blocks. One consists of two parallel alignments about 2 m apart that measure 1.5 and 2 m long. A second possible structure is located east of the parallel foundations. It consists of unaligned pieces of sandstone extending over a 2 by 2 m area and one possible short alignment. A third area of sandstone rubble is located west-southwest of the parallel alignments and may represent another structure. The artifact scatter measures 30 by 24 m. The sparseness of the scatter suggests that the site is mostly buried. A 12 by 10 m concentration of artifacts is eroding from around the jacal foundations.

LA 102835 is a fieldhouse with a small structure, ash stains, and a diffuse 20 by 10 m artifact scatter. The structure is indicated by a 3 m alignment within a 3 by 2 m area of scattered sandstone clasts. Diffuse ash staining is present south and west of the rubble.

LA 102849 is a habitation represented by a small rubble mound and a very sparse artifact scatter. This buried site has an 8 by 5 m rubble mound with only one short sandstone clast alignment visible. The very sparse artifact scatter around the roomblock measures 28 by 24 m. Artifacts are visible only where exposed in small localized areas of erosion, and the majority of the site is apparently buried beneath sandy colluvial fill.

LA 102850 is a small ceramic and lithic scatter that appears to represent a day-use field facility. The scatter measures 28 by 28 m and contains no features or groundstone.

LA 11723, also known as the Dittert Site and L.V. 4:14-A, is a suspected Chacoan outlier. The site was partially excavated by Dittert in 1948, and the BLM stabilized the roomblock in 1976 (BLM 1978). Major stabilization maintenance was completed by the BLM in 1993.

The main ruin (Figure 10) closely resembles a Chacoan great house, particularly if the eastern and western rooms are eliminated. This two-story pueblo contains a blocked-in kiva, about 30 ground-floor rooms, and a total of 50+ rooms. A small roomblock is located south of the great house, along with a large depression that looks suspiciously like a kiva. Two prehistoric road segments also terminate at the back or north side of the site (Figure 11).

The tree-ring dates from Dittert's excavations suggest construction during the Early Kowina phase, however. The kiva dates from AD 1233 with use until AD 1267. Rooms 1, 5, 6, and 8 were constructed at different intervals between AD 1236 and 1263. Room 7 has cutting dates spanning more than 50 years, with possible construction in AD 1226-27 and periodic repair or alteration as late as AD 1279 (Bannister et al. 1970).

In interpreting these dates, it should be recognized that the pueblo apparently consists of a central unit house with later additions of attached rooms on the east and west sides. The tree-ring dates were obtained from the attached rooms, one upper story room in the central part of the roomblock, and the kiva. Consequently, it is possible that the dates relate to reoccupation or remodeling episodes that postdate the original construction of the great house.

Regrettably, the site has only a diffuse sherd scatter that has probably been picked over by visitors. The presence of Escavada and Gallup style Cebolleta Black-on-white is suggestive of a Pueblo II occupation, while the high frequency of White Mountain Red Wares is consistent with an early-to-middle Pueblo III occupation. Given the small size and questionable representativeness of the ceramic sample and the conflicting architectural and dendrochronological evidence, we chose to date LA 11723 to the Pueblo II-III period.

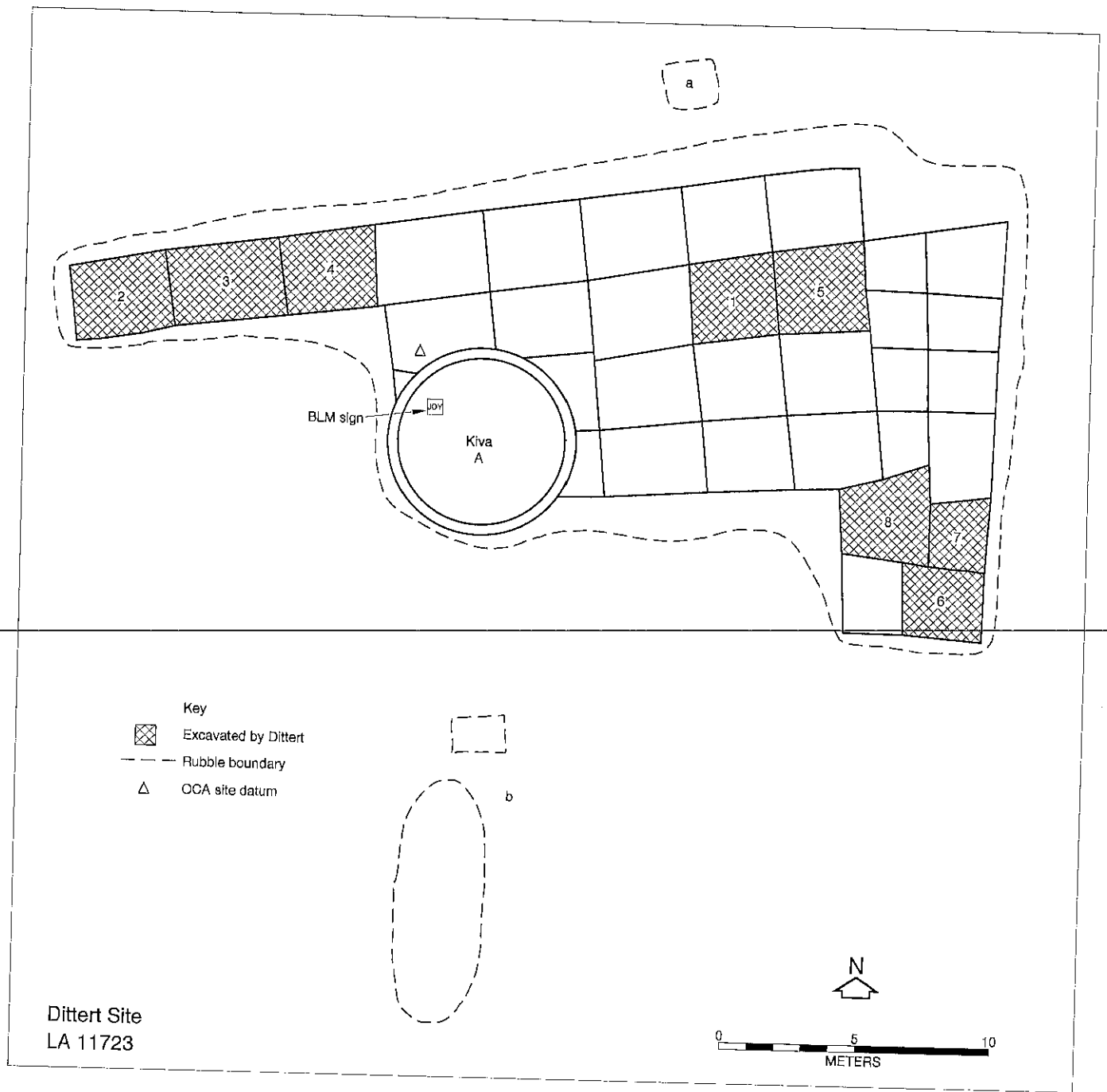

Figure 10. Plan of LA 11723 (after Dittert 1959).

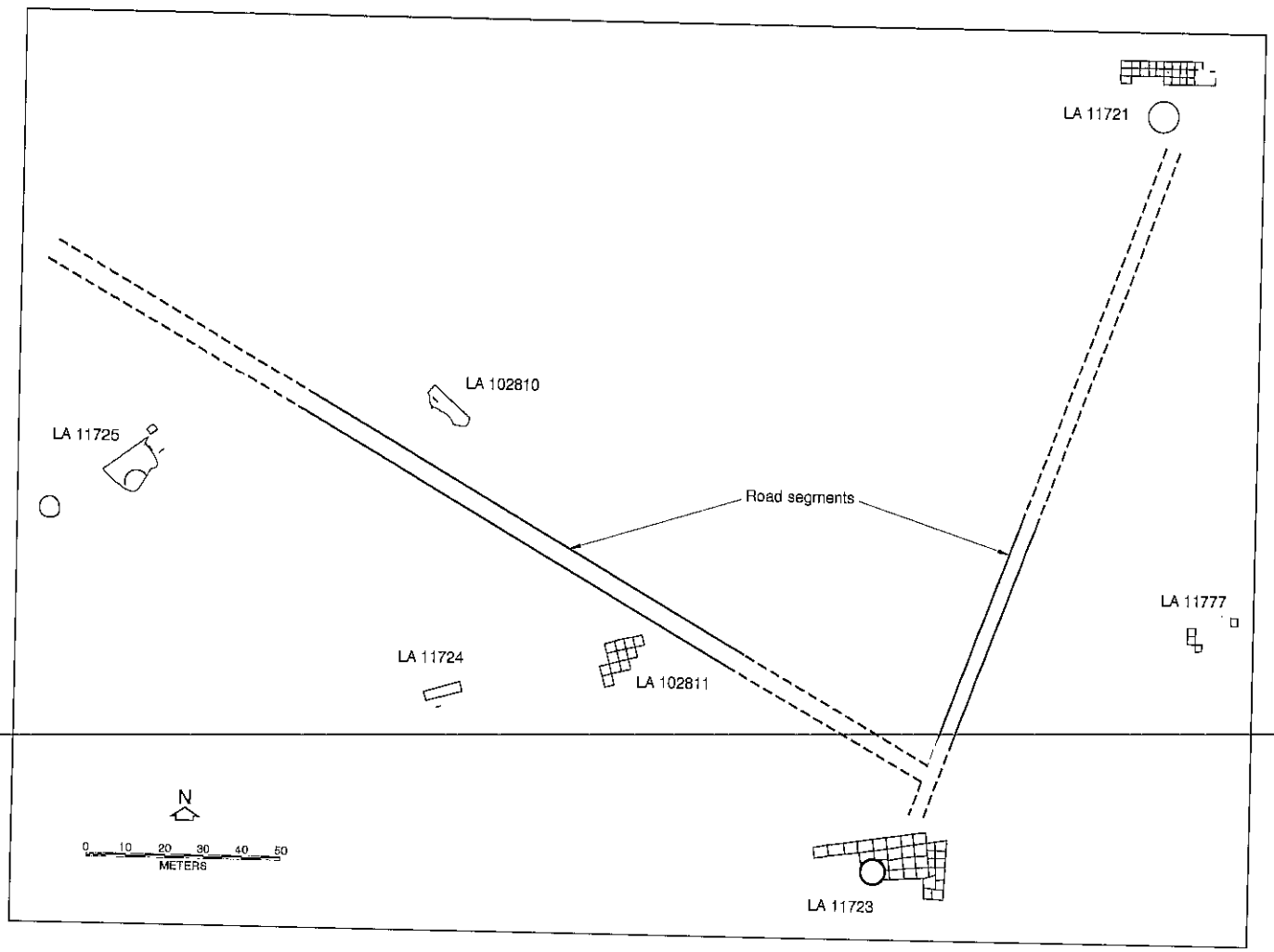

Figure 11. Road segments associated with LA 11723.

Pilares Phase

The eight sites that date to the early Pueblo III period (AD 1125-1200) indicate a substantial increase in population density over the preceding Pueblo II period (Figure 12). Earlier kivas were found at the Dittert Site, which may span both periods, and the isolated Los Veteados great kiva, but the first kivas associated with small roomblocks occur during this phase. Five of the early Pueblo III period sites in the survey area are permanent habitations that range from about six to thirty-five rooms. An estimated 85 rooms are represented in the five roomblocks. Two other sites are artifact scatters that probably represent day-use field facilities, and one is a scatter with a possible pitstructure depression.

LA 11725 is an Anasazi habitation site with a roomblock, kiva, associated middens, and two lithic and ceramic scatters with scattered building elements. The roomblock (Provenience 1) is 16 m long and is constructed of sandstone and adobe. Nearly three-quarters has been destroyed by vandals; the roomblock may have contained between 12 and 14 rooms, although the vandalism makes this a tenuous estimate. The main rubble mound is 7 m wide on the northeast end and 12 m wide on the southwest, where a 6 by 4 m area of burned adobe extends to the northwest. The adobe pieces are small, and we could not determine if they represent puddled adobe or jacal construction. A 6 m diameter kiva depression is located off the southwest end of the roomblock, and another possible kiva depression is contiguous with the south-southwest side of the roomblock. This second depression is located in the heavily disturbed portion of the roomblock and may be the result of pothunting activities. Three middens associated with this roomblock all contain materials suggestive of an early Pueblo III occupation.

Provenience 2 is a 15 by 8 m area located about 30 m northwest of the rubble mound. It contains a moderate sherd and lithic scatter with two features. One is a 1.5 m long wall alignment, one course high, that is oriented northeast-southwest. The other is a 1.5 by 1.5 m area of construction rubble that shows no evidence of alignments. All artifacts in this area were inventoried.

Provenience 3 is located about 60 m west of Provenience 1 and consists of an 8 by 10 m area of scattered construction rubble and a moderately dense concentration of ceramics and lithics. Again, all artifacts associated with the provenience were inventoried. The sherds from both of these proveniences are also indicative of occupations between AD 1125 and 1200.

LA 102810 is a small early Pueblo III habitation with a roomblock, four middens, and an associated prehistoric road. We recorded the site in three proveniences. Provenience 1 includes a roomblock, two middens, and a small area north of the roomblock that contains some possible structural elements. The roomblock is a 10 m (northeast-southwest) by 4 m (southeast-northwest) rubble mound that has been mostly destroyed by vandalism. We estimate that three-quarters of this low-relief mound has been destroyed. A 4 by 4 m area containing shaped sandstone building elements is located 5 m northeast of the rubble. Although no wall alignments were identified, it appears to represent a detached room.

A probable prehistoric road is visible about 10 m west of the site and continues to the east where it becomes obscured by trees as it approaches the Dittert Site (LA 11723). The road segment is marked by a 50-75 cm deep swale about 5 m wide.

Provenience 2 located 12 m south of Provenience 1 rubble mound, and is contiguous with the south side of the prehistoric road. This area contains an 8 m square dense midden, a light scatter of artifacts, and possible building elements located 12 m southwest of the midden. The apparent remnants of a slab-lined feature, which has been destroyed by erosion, was also found within this area.

Provenience 3 is a 16 by 7 m dense midden contiguous with the north side of the prehistoric road. It is located 15 m east-southeast of the Provenience 1 rubble. A 2 by 2 m inventory sample was recorded within this provenience, and no subsurface disturbance is apparent.

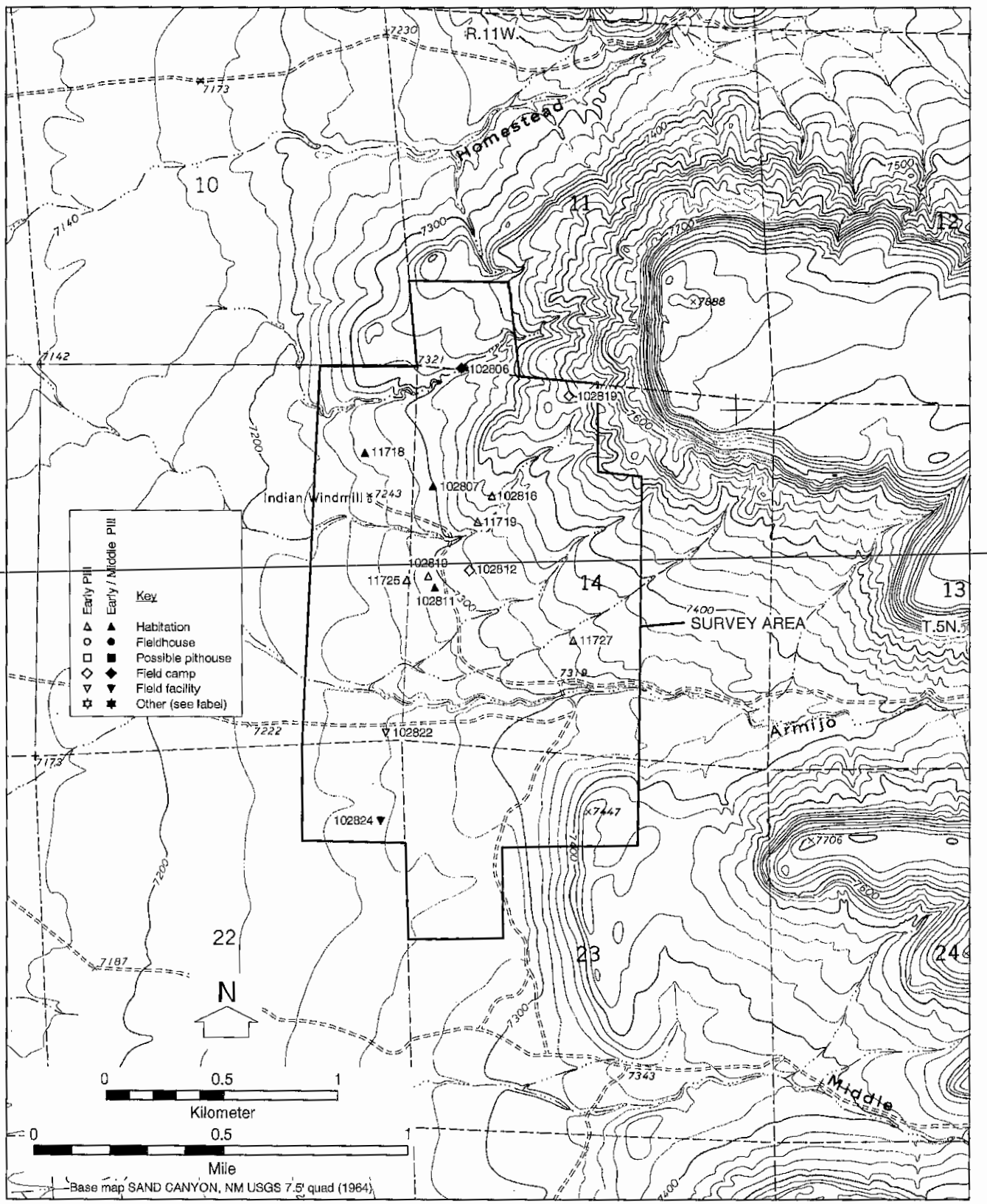

Figure 12. Location of Pilares Phase and Early to Middle Pueblo III sites in survey area.

LA 102812 is a 34 by 32 m artifact scatter adjacent to the prehistoric road. The road is visible 12 m south of the site area as a prominent 4 m wide by 0.8 m deep swale running 200° degrees southeast and terminating at the back of LA 11723.

LA 11719 is an early Pueblo III roomblock with associated features, which may correlate with Ditterts L.V. 4:14-E. The site consists of an L-shaped rubble mound, two features, and an associated artifact scatter. The linear sandstone rubble mound is 18 m east-west by 10 m north-south and approximately 50-60 cm high. Four large looter's pits and associated spoil dirt make room definition difficult. The roomblock appears to be three rooms deep on the east end, two rooms deep elsewhere, and eight rooms long for an estimated total of eighteen rooms.

The midden is located south of the rubble mound, and part of it appears to have been eroded downslope by channeled runoff. Artifacts are strewn along a small erosion channel for more than 100 m at which point, the channel enters a large arroyo. The area of new vegetation has since become established on the midden.

Two possible sandstone features are located to the southeast of the rubble mound. Feature 1 is a C-shaped alignment of large (30-75 cm long) sandstone blocks. It appears to be recent and is probably a hearth built by pothunters. Feature 2 is a 1.5 m long alignment of sandstone blocks one course wide. This feature may have served as a retaining wall across the low swale in front of the roomblock. No kiva depression was identified.

LA 102816 encompasses a roomblock and associated artifact scatter. The site was recorded as two proveniences. Provenience 1 consists of a 50 cm high sandstone rubble mound measuring 14 m southwest-northeast by 6 m northwest-southeast. The rubble mound has been heavily vandalized; six potholes have destroyed more than half of the original mound. The rubble mound represents an estimated twelve-room linear roomblock two rooms deep and six rooms long. The roomblock is oriented 250° to the southwest. A dense scatter of artifacts 18 m southeast of the roomblock may be the eroded remnants of a midden. There is also a very vague depression located at the southeast end of the roomblock that could be a kiva.

Provenience 2 is a 30 by 10 m ceramic scatter located 32 m southwest of the rubble mound. This extremely diffuse and eroded scatter is located on a steep talus slope.

LA 102819 is a 54 by 28 m ceramic and lithic scatter with groundstone that dates to the early Pueblo III period. There are no discernible fields or potential fields in the area, but it is quite possible that the soil may have been deeper prehistorically. The presence of groundstone artifacts suggests that meal preparation occurred at the site. However, no structural remains were found, and the lack of fill precludes the possibility of any intact subsurface remains. The site may represent day-use related to field activities.

LA 11727 has both an Anasazi and historical component. The Anasazi component consists of a moderate-sized rubble mound and a small midden. The sandstone rubble mound measures 28 by 10 m and is 50-60 cm high. Historical reuse of building elements and probable pothunting has severely impacted the mound. A barn/stable, built in part of scavenged sandstone blocks, is located on the north edge of the mound. An estimated 60% of the roomblock remains intact. A number of wall alignments were seen across the rubble mound, primarily near or within the looter's pits. The rubble mound represents an estimated 35-40 rooms arranged in a linear roomblock 3-4 rooms deep and 11 rooms long. The roomblock is three rooms wide on the west end and four rooms wide on the east end and is oriented 261° to the west.

A small midden, located southwest of the roomblock, has been disturbed by a historical road. A 35% flag sample of sherds in the midden area contained Tularosa Black-on-white, Cebolleta Black-on-white (solid and hatched styles), White Mountain Red Wares, one polychrome sherd, and indented corrugated graywares.

LA 102822 is an early Pueblo III artifact scatter with a possible pithouse depression. The scatter measures 44 by 22 m but artifacts are present only in small, localized areas of erosion. A depression located near the center of the scatter measures 3.6 m in diameter and 25-30 cm deep.

The Early to Middle Pueblo III Period

Five sites recorded during the survey were assigned occupation dates of Early to Middle Pueblo III (AD 1125-1275), an interval that encompasses the Pilares and Early Kowina phases. Two of these sites had ceramics assemblages suggesting that their occupations spanned this entire period. The other three were occupied sometime during this interval, but their ceramic assemblages lacked the distinctive attributes needed to assign them to a ceramic phase. Three of the sites are small roomblocks that collectively total about 19 rooms. One is a field facility/camp and the other is a field facility.

LA 102806 is a small sherd and lithic scatter that measures 19 by 13 m that includes a 6 by 6 m concentration of artifacts in a small drainage rill. There are no associated features, but the presence of milling stones suggests that the area was occasionally used as a campsite. The site is believed to represents an Anasazi field camp probably associated with an adjacent agricultural field.

LA 102807 is a small habitation that dates to the Pilares or Early Kowina phase. The site has a small sandstone rubble mound that measures 8 m east-west by 5 north-south and is approximately 50 cm high. The mound appears to represent a rectangular structure with four to six rooms. The upper portion of the mound has been filled by slope wash, so it is possible that additional building elements have been buried by colluvium. Two small middens are located south and north of the rubble. The south midden measures 18 by 10 m and the north midden is 7 by 6 m. Two 1.5 m long ash lenses, 10 to 15 cm thick, are exposed in the arroyo 50 cm below the modern ground surface. These stains are adjacent to surface staining in the southern midden area, and they may represent additional midden deposits or subsurface features.

LA 102811 is a small Pueblo III Anasazi pueblo that appears to have an occupation extending into early Pueblo IV period. It consists of a roomblock, midden, and a possible prehistoric road segment that is adjacent and to the north of the roomblock. The roomblock is a sandstone rubble mound that measures 20 by 10 m. It appears to be the ruins of an irregular-shaped roomblock with 10 to 12 rooms. Several wall alignments were visible across the top of the mound, where about 60% of the rubble mound has been destroyed by pothunting. A 10 by 8 m midden is located 15 m southeast of the rubble mound.

LA 102824 is a diffuse ceramic and lithic scatter covering a 44 by 35 m area. No features were located, but a small (10 by 8 m), dense concentration of artifacts occurs in an area of localized erosion, suggesting that the site is buried under shallow fill. Lithics include one projectile point, four flakes, and angular debris.

LA 11718 is an early to middle Pueblo III habitation represented by a roomblock and associated artifact scatter. Its overall site dimensions are 34 by 31 m, and the site contains an 8 by 8 m rubble mound that is 20 cm high. It appears to represent a small L-shaped roomblock with 3 or 4 rooms. The associated artifact density is extremely low, owing to colluvial deposition, and no midden is apparent. This site may correlate with Ditterts L.V. 4:15-G.

Early Kowina Phase

Nine sites occupied during the middle Pueblo III period (AD 1200-1275) were recorded during the survey (Figure 13). Five are permanent habitations with roomblocks ranging in size from four to 36 rooms, and two have partial adobe or jacal construction. This first multiple-roomblock sites appear during this interval, and three of the habitations also have one or more kivas. Sites from this phase also include one fieldhouse, two field facilities, and one large check dam.

LA 102805 is an Anasazi habitation represented by a roomblock, three middens, and two possible kiva depressions. The rubble mound is T-shaped, and the main portion of it measures 19 by 4 m and is 1-1.5 m

high. The roomblock was constructed with sandstone blocks and appears to be one room wide, containing 8 to 12 rooms. Two circular depressions are adjacent to and south of the roomblock. One or both of these depressions may be kivas.

LA 102809 is an Anasazi field facility represented by a light ceramic and lithic scatter and possible structural remains. The artifact scatter measures 20 by 16 m. An area containing rubble or a low sandstone outcrop is located in the center of the scatter. Two possible wall alignments located on the site may also be natural sandstone. Without subsurface testing, we could not determine if these features were natural or the foundations of jacal structures.

LA 11724 is a small Anasazi pueblo that contains a rubble mound and associated midden (Provenience 1), and a second smaller provenience with a scatter of possible building rubble and a light scatter of artifacts. All or a portion of the site may correlate with L.V. 4:15-D. The rubble mound in Provenience 1 measures 14 by 8 m and is 40 cm high. The roomblock appears to be two rooms wide by three rooms long. An area of burned adobe that probably reflects jacal construction is located on the northwest quadrant of the mound. An associated midden extends over a 9 by 20 m area southeast from the southwest corner of the mound. There has been no vandalism to the site.

Provenience 2 is about 42 m to the south-southwest and consists of a 5 by 5 m area with a few scattered sandstone clasts and a few sherds. We did not sample this area, but it appears to date to the Pueblo III period.

LA 11777, which may correlate with L.V. 4:14-O, is a small rubble mound and midden. The sandstone roomblock represents an estimated three rooms. A fourth, noncontiguous room is located 9 m east of the northern edge of the rubble mound. A light midden measuring 5 by 5 m is adjacent to the southeast corner of the roomblock, and a low-density artifact scatter covers an area of about 28 by 20 m around the rubble and midden.

LA 102814 is a check dam consisting of large sandstone blocks placed across two drainages in a 20 m wide swale. The eastern portion of the dam is 10.5 m long and constructed of angular blocky sandstone. The western portion is 6 m long and has been breached. The check dam may have been constructed for a water reservoir, or it could be a field area. Without subsurface testing to locate clay or silt deposits that would suggest a reservoir, or pollen tests to determine a field location, we cannot be certain of the check dam's function.

LA 102823 is a ceramic and lithic scatter measuring 15 by 12 m. The site has no surface features, and the absence of groundstone artifacts suggests that it was occupied as a day-use field facility.

LA 102830 is a large habitation with three rubble mounds, one definite and four possible kiva depressions, and four associated middens that extend over an area of approximately 130 by 70 m. Provenience 1 consists of a large sandstone and adobe rubble mound, a large kiva depression, and two middens. The rubble mound measures 28 by 10 m and has a maximum height of 1.25 m. Sandstone rubble is limited to a sparse, unaligned scatter across the south side of the mound and two 10 by 6 m wide areas on each end of the roomblock; the remainder of the mound is adobe. We did not find any organic impressions in the adobe, or any visible adobe walls. Consequently, we do not know if the abode portion of the roomblock is jacal or puddled adobe. The mound represents an estimated four masonry rooms connected by an unknown number of adobe rooms. A dense area of burned corn lies on the southwest end of the mound, and a burned slab feature is also visible in this area. Wall alignments are visible in the one room on the east end that has been vandalized.

A large kiva depression, 10 m in diameter and 75 cm deep, is located adjacent to and south of the roomblock, and a 4 m long alignment of upright sandstone elements occurs on the southwest side of the kiva. A 25 by 18 m midden area is adjacent to the southeast end of the roomblock, and a 15 by 11 m midden is adjacent to and southwest of the kiva. One slab-lined feature is located northeast of the kiva.

high. The roomblock was constructed with sandstone blocks and appears to be one room wide, containing 8 to 12 rooms. Two circular depressions are adjacent to and south of the roomblock. One or both of these depressions may be kivas.

LA 102809 is an Anasazi field facility represented by a light ceramic and lithic scatter and possible structural remains. The artifact scatter measures 20 by 16 m. An area containing rubble or a low sandstone outcrop is located in the center of the scatter. Two possible wall alignments located on the site may also be natural sandstone. Without subsurface testing, we could not determine if these features were natural or the foundations of jacal structures.

LA 11724 is a small Anasazi pueblo that contains a rubble mound and associated midden (Provenience 1), and a second smaller provenience with a scatter of possible building rubble and a light scatter of artifacts. All or a portion of the site may correlate with L.V. 4:15-D. The rubble mound in Provenience 1 measures 14 by 8 m and is 40 cm high. The roomblock appears to be two rooms wide by three rooms long. An area of burned adobe that probably reflects jacal construction is located on the northwest quadrant of the mound. An associated midden extends over a 9 by 20 m area southeast from the southwest corner of the mound. There has been no vandalism to the site.

Provenience 2 is about 42 m to the south-southwest and consists of a 5 by 5 m area with a few scattered sandstone clasts and a few sherds. We did not sample this area, but it appears to date to the Pueblo III period.

LA 11777, which may correlate with L.V. 4:14-O, is a small rubble mound and midden. The sandstone roomblock represents an estimated three rooms. A fourth, noncontiguous room is located 9 m east of the northern edge of the rubble mound. A light midden measuring 5 by 5 m is adjacent to the southeast corner of the roomblock, and a low-density artifact scatter covers an area of about 28 by 20 m around the rubble and midden.

LA 102814 is a check dam consisting of large sandstone blocks placed across two drainages in a 20 m wide swale. The eastern portion of the dam is 10.5 m long and constructed of angular blocky sandstone. The western portion is 6 m long and has been breached. The check dam may have been constructed for a water reservoir, or it could be a field area. Without subsurface testing to locate clay or silt deposits that would suggest a reservoir, or pollen tests to determine a field location, we cannot be certain of the check dam's function.

LA 102823 is a ceramic and lithic scatter measuring 15 by 12 m. The site has no surface features, and the absence of groundstone artifacts suggests that it was occupied as a day-use field facility.

LA 102830 is a large habitation with three rubble mounds, one definite and four possible kiva depressions, and four associated middens that extend over an area of approximately 130 by 70 m. Provenience 1 consists of a large sandstone and adobe rubble mound, a large kiva depression, and two middens. The rubble mound measures 28 by 10 m and has a maximum height of 1.25 m. Sandstone rubble is limited to a sparse, unaligned scatter across the south side of the mound and two 10 by 6 m wide areas on each end of the roomblock; the remainder of the mound is adobe. We did not find any organic impressions in the adobe, or any visible adobe walls. Consequently, we do not know if the abode portion of the roomblock is jacal or puddled adobe. The mound represents an estimated four masonry rooms connected by an unknown number of adobe rooms. A dense area of burned corn lies on the southwest end of the mound, and a burned slab feature is also visible in this area. Wall alignments are visible in the one room on the east end that has been vandalized.

A large kiva depression, 10 m in diameter and 75 cm deep, is located adjacent to and south of the roomblock, and a 4 m long alignment of upright sandstone elements occurs on the southwest side of the kiva. A 25 by 18 m midden area is adjacent to the southeast end of the roomblock, and a 15 by 11 m midden is adjacent to and southwest of the kiva. One slab-lined feature is located northeast of the kiva.

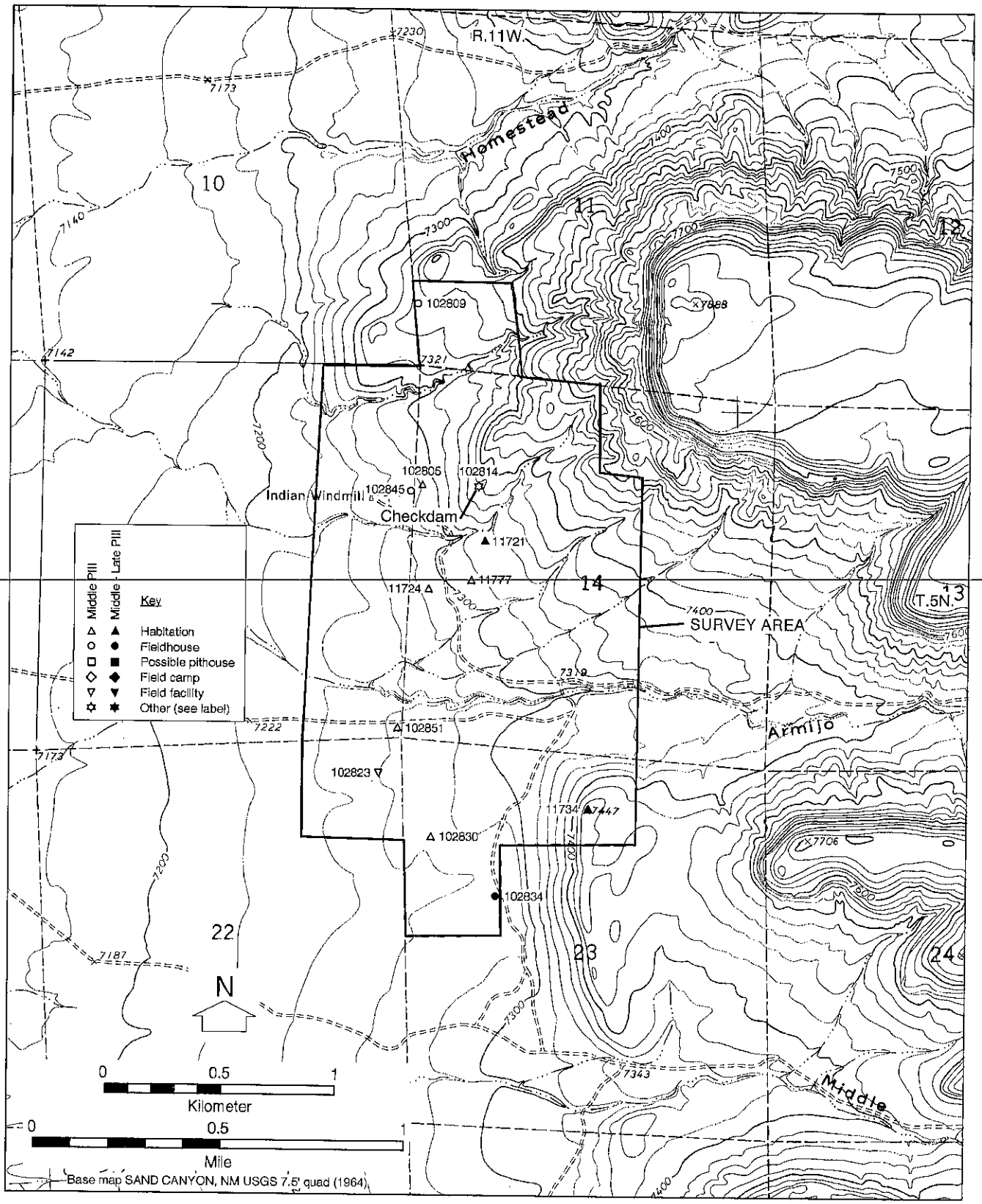

Figure 13. Location of Early Kowina Phase and Middle to Late Pueblo III sites in survey area.

Provenience 2 consists of a sandstone rubble mound and two possible kiva depressions. The rubble mound measures 12 by 6 m and is 1.25 m high. The roomblock is an estimated two rooms deep and five or six rooms long, totaling 10 to 12 rooms. Two adjacent potholes, measuring 4 by 2 m, have been excavated near the eastern side of the roomblock. Two possible kiva depressions are south of the roomblock. The eastern depression measures approximately 8 m in diameter and the western depression is about 6 m in diameter.

Provenience 3 is a small sandstone and burned adobe rubble mound measuring 10 by 10 m with an estimated height of 25 cm. The north end of the mound is burned adobe, and sandstone clasts are scattered along the southeast perimeter of the mound. A dense area of burned corn is located within the burned adobe. We could not determine if this structure was jacal or puddled adobe. A light midden measuring 8 m in diameter extends southeast of the rubble, and a possible kiva depression measuring 6 m in diameter is located adjacent to and southeast of the rubble.

Provenience 4 is located at the eastern edge of the site and consists of an 8 m diameter depression with a few scattered sandstone blocks and a small 6 by 4 m midden area.

LA 102845 is a fieldhouse with an associated 38 by 22 m artifact scatter. The site contains a low, 12 by 3 m, arc-shaped mound with sparse rubble and burned adobe daub.

LA 102851 is a permanent habitation with a roomblock, midden, and artifact scatter. The sandstone roomblock measures 12 by 9 m and is 25 to 30 cm high. It appears to represent a L-shaped roomblock, three rooms long with one room projecting to the east. Immediately northeast of the rubble mound are several large sandstone blocks, three of which appear to form a corner alignment. The function of this feature is unknown. A well-developed ashy midden measuring 23 by 12 m lies adjacent to and east of the roomblock.

Middle to Late Pueblo III Period

The middle to late Pueblo III period (AD 1200-1325) is represented by three sites. Two of the sites are habitations that appear to span the Early and Late Kowina phases, while the other is a fieldhouse with a small ceramic assemblage that would not allow a finer chronological assessment.

LA 11721 is a moderate-sized permanent habitation with a roomblock, a kiva, a midden area, and other features recorded in three proveniences. All or a portion of the site may correlate with Ditterts L.V. 4:14-B. Provenience 1 (24 by 16 m) has two areas with possible building materials, an apparent midden, and the possible remnants of a slab feature. One area of building materials is a 9 by 5 m scatter of sandstone rubble. Two perpendicular 2 m long wall alignments within this scatter form the corner of one room. The second discrete area of scattered sandstone rocks is 4 m east of the first and may also represent building elements. A burned upright sandstone slab, 4 cm thick and 45 cm high, was located 3 m south of the first sandstone scatter. It may be the remnant of a slab-lined feature. South of the two discrete sandstone scatters is an area of ash-stained soil and a ceramic scatter.

Provenience 2, located 9 m southwest of Provenience 1, consists of a 26 by 9 m sandstone rubble mound approximately 1.5 m high, an associated kiva depression, and a midden. The rubble mound is a rectangular roomblock three rooms wide and ten rooms long (Figure 14). Eight rooms in the back or north row of the pueblo appear to be two stories high. The eastern and western ends of the back row of rooms are single-story. Additional rubble is scattered to the east of the main roomblock, and two wall alignments are visible in this area. The roomblock contains an estimated 32 to 36 rooms. Approximately 10% of the roomblock has been disturbed by pothunters.

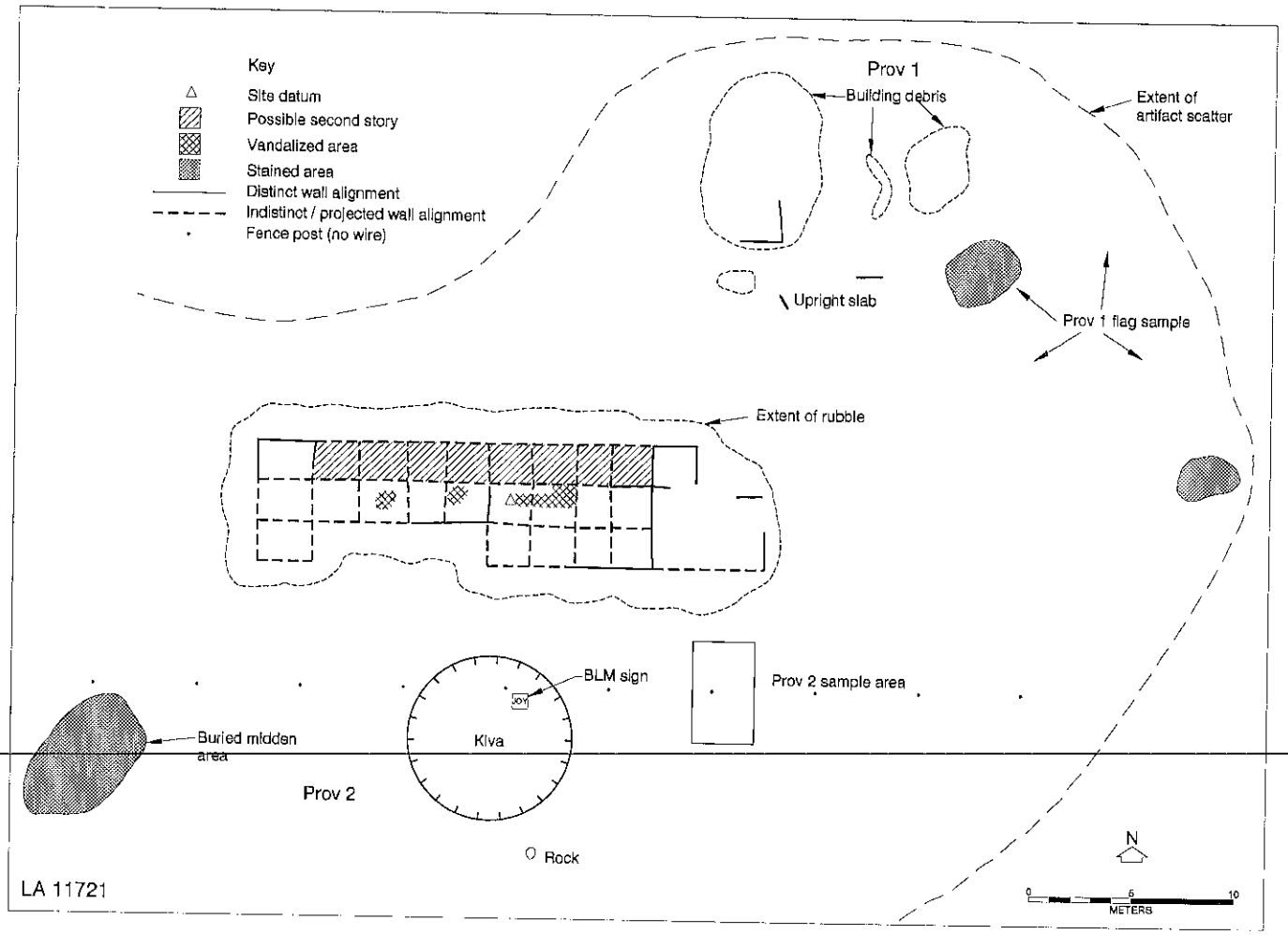

Figure 14. Plan of LA 11721.

A kiva depression 8 m in diameter is located 4 m south of the approximate center of the roomblock. Sixteen meters southwest of the roomblock is a 7 by 8 m area of ash staining and a light scatter of ceramics. The ash stain is only visible in areas of localized erosion, and the scatter is heavily covered by wolfberry. It appears to be a buried midden deposit.

Provenience 3, located 28 m west of the large Provenience 2 roomblock, is a light scatter of ceramics and lithics spread over the top and down a low escarpment and talus slope. The area measures 28 by 22 m. Sandstone bedrock is exposed along the top of the escarpment, and large sandstone boulders ar e situated below. At least one *tinaja* is located atop one of the boulders. Artifacts are scattered between the boulders, and a dense concentration of sherds is located on the relatively flat area below.

LA 11734 is a large roomblock with an associated depression, rock art, middens, bedrock grinding areas, and a terrace feature. It probably correlates with Ditterts L.V. 4:23-M. This vandalized site has a 30 by 26 m irregularly shaped sandstone rubble mound containing 50 to 60 rooms (Figure 15). Eight rooms in the northern portion of the roomblock are two-story. The remainder of the pueblo is one room high. About 15 rooms have been vandalized, exposing a number of unaligned wall segments and various masonry styles that suggest multiple construction episodes. A possible blocked-in kiva was reported by Wiseman (1973), but it was not visible in this badly vandalized area when we recorded the site.

A 7 m diameter depression located 5 m west of the roomblock was excavated into sandstone bedrock and may be a small reservoir. A 3 by 4 m area of sandstone rubble lies north of this depression. The sandstone caprock immediately west of the roomblock also contains two petroglyph panels, two bedrock mortars, and nine bedrock metates. Midden deposits extend down the western face of the mesa; the other middens adjacent to and southeast of the roomblock appear to be mostly buried by eolian sands. A small terrace formed by a retaining wall constructed of six large (75-100 cm long by 20-50 cm wide) sandstone blocks lies 45 m southwest of the roomblock on the sandstone talus slope.

LA 102834 is a middle to late Pueblo III fieldhouse. The site measures 36 by 26 m and contains one room evidenced by two perpendicular, 3 m and 2 m long, sandstone clast alignments. Although no jacal or adobe daub was located, the minimal amount of rubble may indicate a jacal structure.

The Pueblo IV Period

Only three sites, all of which contain earlier components, have any evidence for Pueblo IV occupations. LA 102811 and LA 11724 have a few sherds of Heshotauthla Black-on-red and LA 102838 has 43 Heshotauthla Polychrome sherds.

Unknown Pueblo Components

LA 102808 appears to be a one-room structure with a very light artifact scatter. The room has 2 by 2 m interior dimensions. The building elements are sandstone, and some are shaped blocks. Wall fall extends 1 m to the east and west, suggesting that the original wall height was quite low. One Tularosa Black-on-white and one corrugated sherd and three flakes were the only associated artifacts. This small one-room site may have been a seasonally occupied fieldhouse, or the small structure could be a storage unit associated with a nearby field or possibly a piñon nut storage area.

LA 102817 is mainly composed of Archaic materials, but it also contains evidence of Paleoindian and Formative hunting activities. Wilson dates the few ceramic materials to the Pueblo II period. The overlook situation of this site and the presence of an arrow point suggest a Formative hunting component, while the scatter of ceramics suggests multiple visits to the site area.

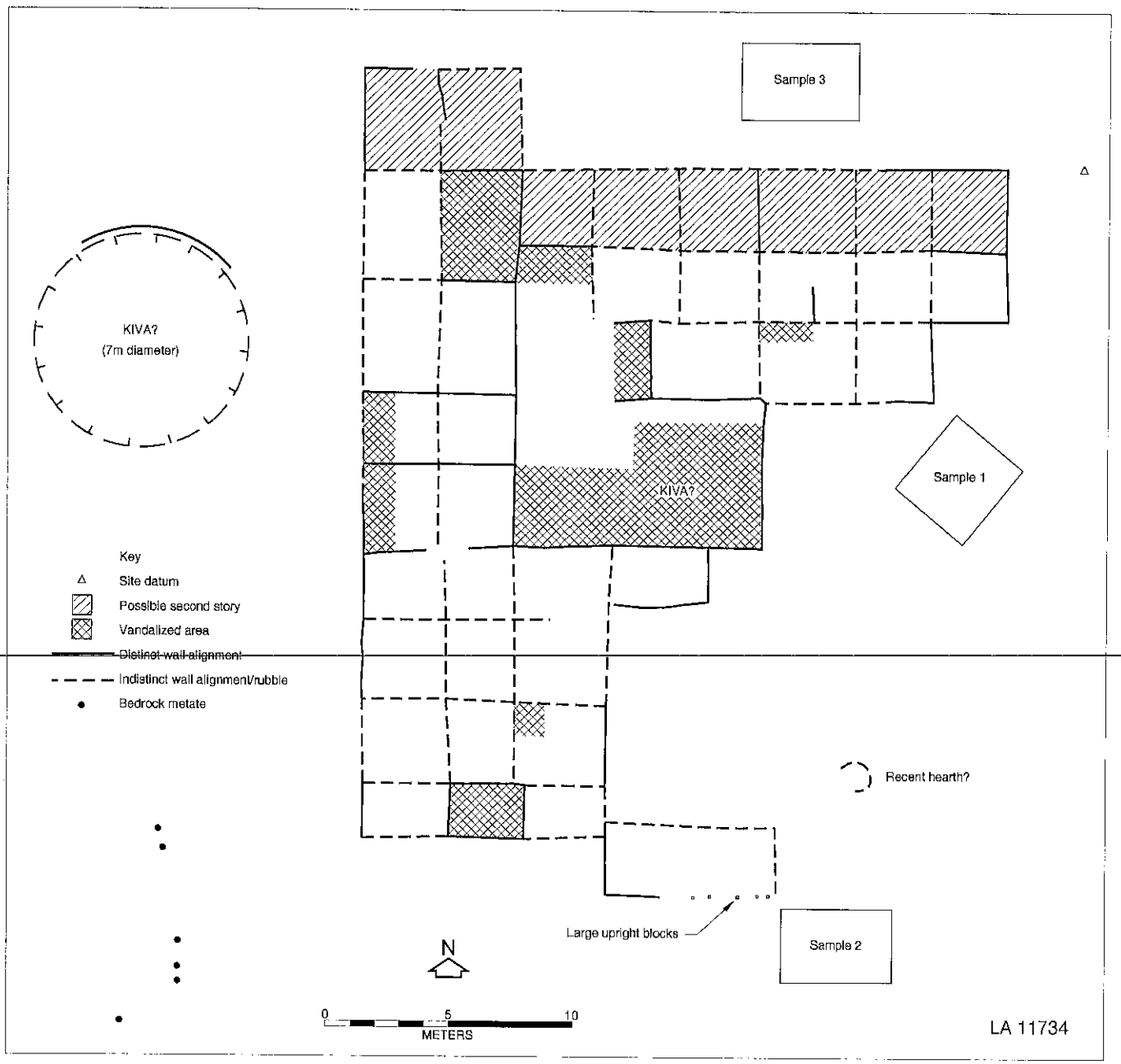

Figure 15. Plan of LA 11734.

LA 102842 is a Formative period lithic procurement area. An outcrop of metamorphosed sandstone with conchoidal fracturing characteristics is the focus of this procurement area. This material is of wretched quality, but it is the only knappable material in the Armijo Canyon area. It occurs as debitage on most of the Anasazi sites recorded during the survey. The site measures 36 by 13 m and includes a two concentrations of core reduction debris measuring 10 by 6 m and 6 by 8 m. The lithic technology is consistent with previously documented Formative reduction strategies, and the five associated ceramics suggest, but do not confirm, a possible Pueblo II affiliation. It is likely that the site was visited during numerous periods.

REEVALUATION OF THE NZ SITES

As part of the Armijo Canyon survey, the BLM required a retabulation of the ceramics at four sites recorded during the NZ Project, Class II survey (Elyea 1990). These sites are located in a 40 acre parcel in Section 10, T 5 N, R 11 W, which abuts the northwest portion of the Armijo Canyon survey area. The sites are LA 11714 (NZ 125) and LA 11715, LA 11716, and LA 11717, which were recorded as a single site (NZ 146).

LA 11714 encompasses a 90 m by 44 m area containing 1920s to 1930s homestead on a small masonry pueblo. The homestead was built on top of the prehistoric component and probably incorporated salvaged prehistoric building materials. The prehistoric component consists of an obscured roomblock, a possible pitstructure or kiva depression, and a light-to-moderate lithic and ceramic scatter. The number of rooms could not be estimated, but the site seems to be a permanent habitation.

Both the NZ and the Armijo Canyon ceramic samples at LA 11714 were obtained from a relatively dense concentration of ceramics adjacent to a Model-T. The NZ Project sample suggested a late Pueblo II or early Pueblo III occupation (AD 1050-1125) with a mean ceramic date of AD 972.9. The Armijo Canyon sample suggested a Late Cebolleta phase occupation (AD 1050-1125).

NZ 146 consists of a 120 m by 200 m area that contains four roomblocks, three possible kivas, and four midden areas (Elyea 1990, Figure 8.42). These features were previously recorded by Wiseman (1974), who assigned separate site numbers to three of the roomblocks (LA 11715, LA 11716, and LA 11717). NZ 146 also includes a large oval depression (Feature 4), measuring 25 by 15 m. Originally, this 1 m deep depression was identified as a possible prehistoric road segment. This feature was re-examined during the Armijo Canyon survey, and it is clearly not a road segment. It appears to have been excavated into sandstone bedrock and may have served as a water reservoir.

During the NZ survey, ceramic samples were taken from each of the four roomblock areas. The roomblocks are situated on a high sandy ridge and, when the area was revisited during the Armijo Canyon survey, considerable windblown sand has accumulated in the areas corresponding to NZ Sample 1 at LA 11715 and NZ Sample 4. These areas could not be resampled as there were no surface artifacts. Our reanalysis was therefore limited to the sample areas at LA 11716 and LA 11717. Both of these samples suggest that the roomblocks date to the Early Kowina ceramic phase (AD 1200-1275). The NZ samples, in contrast, suggested that both sites dated to early Pueblo III (AD 1120-1220). The reasons for the discrepancies between the occupation dates assigned to these sites during the NZ and Armijo Canyon surveys are discussed in Chapter 5.

THE HISTORICAL PERIOD

Evidence of historical use of the survey area consists of one large homestead that was patented in 1929 and included all of Section 14, a small line camp, and a short-lived "homestead" that dates to the late 1960s.

The historical component at LA 11727 is represented by the remnants of a house, barn, privy, forge, garage, corral, and a small trash dump. Only the barn is extant. Policarpio Barela proved the patent on 17 October 1929 and reconveyed it to the US government in 1966.

LA 102854 is a recent homestead with a fallen log cabin, a corral, and associated trash. The trash, which includes steel pop cans with aluminum pop tops, suggests a late 1960s occupation date.

LA 102856 is a line camp that was used in the 1930s and 1940s. It consists of a brick-lined hearth, spice tins, bottle glass, and cone-top beer cans. The site is located along an old fence line, and the amount of trash and the discard patterns suggest that it was used repeatedly.

ISOLATED OCCURRENCES

The 637 isolated occurrences containing 1343 ceramic and 207 lithic artifacts represent the day-to-day activities that occurred away from the residences. We examined the proportions of the isolated artifact types relative to the site assemblages and the distribution of particular artifact classes to discern any patterning in their location. The distributions and patterns of these artifacts, which mark non-site use of the survey area, are important for understanding the full range of prehistoric land use in the study area.

Table 2 lists the ceramic types recorded as isolated occurrences, which occur in proportions similar to those recorded at the sites. The distributions of jar sherds and Cibola whitewares showed a uniform, continuous pattern across the survey area with no apparent clustering or patterning. The distribution of brownwares and bowl sherds, however, exhibited clustering that may represent land use patterns not reflected by the locations of the recorded sites.

The brownware ceramics (Figure 16) are concentrated in the southeast part of the survey area, and their distribution does not appear related to the distribution of sites containing ample brownwares in their assemblages. This area of the survey parcel is located where we believe the Armijo Canyon drainage was once located. The clusters of brownwares in this area, most of which are jar sherds, could be related to the maintenance of agricultural fields in this area.

The 396 isolated bowl sherds consist mainly of unidentified Cibola whitewares (24.2 percent) and unpainted whitewares (26.5 percent). Bowls were presumably used primarily for food preparation and consumption, so they are most likely to be associated with residential components. Consequently, we were surprised to find that the overall distribution of isolated bowl sherds is not closely correlated with habitation site locations.

Assuming that the presence of bowl sherds is indicative of a residential occupation, this distribution could be due to a number of different factors. For example, the densest concentration, marked A in Figure 16, occurs in a heavily forested portion of the survey area, and may indicate the presence of one or more buried residential sites. The concentrations marked B, on the other hand, are along a minor but well-developed drainage where farm fields may have been established. The extensive distribution marked C is along the pirated Armijo drainage and may also denote some association with field locations.

We would not expect the routine maintenance of agricultural plots to produce a concentration of bowl sherds, however. From ethnographic accounts (e.g., Cushing 1974), it appears that Pueblo farmers rarely carried bowls of food on their daily forays to work in the fields. The concentrations of isolated bowl sherds in potential field locations are therefore more likely to be indicative of activities like protecting the maturing crop from predators or roasting green corn that would require one or more individuals to remain in the field overnight or for several days. Although these activities may be evidenced by the sites classified as field camps or ephemeral fieldhouses, it seems unlikely that more than a small fraction of such short-term residential localities would be recognizable after several hundred years. Unless some evidence

Table 2. Ceramic Isolated Occurrences

Ceramic Type	Count	Percent
Unidentified Cibola Whiteware	228	16.97
Unidentified Narrow Line CWW	10	0.74
Unidentified Medium Line CWW	12	0.89
Unidentified Solid CWW	6	0.44
Unidentified Hatched CWW	6	0.44
Unidentified Reserve/Tularosa B/W	9	0.67
White Mound B/W	2	0.14
Red Mesa B/W	11	0.81
Escavada B/W	8	0.59
Reserve B/W	1	0.07
Tularosa B/W	48	3.57
Gallup B/W	1	0.07
Unpainted Whiteware	254	18.91
Mesa Verde B/W	1	0.07
Unidentified Wt. Mt. Redware	16	1.19
Unidentified Wt. Mt. Redware B/R	12	0.89
Unidentified Wt. Mt. Redware Polychrome	2	0.14
Puerco B/R	1	0.07
St. Johns B/R	3	0.22
St. Johns Polychrome	5	0.37
Springerville Polychrome	5	0.37
Unidentified Cibola Grayware	4	0.29
Lino Gray	4	0.29
Plain Gray	122	9.08
Kana-a Neck Banded	3	0.22
Unidentified Clapboard Corrugated Gray	18	1.34
Unidentified Indented Corrugated Gray	314	23.38
Narrow Neck Banded Gray	1	0.07
Incised Corrugated Gray	6	0.44
Socorro B/W	30	2.23
Alma Plain	61	4.54
Plain Brown	1	0.07
Reserve Plain, Smudged	21	1.56
Reserve Plain Corrugated	16	1.19
Reserve Incised Corrugated	1	0.07
Reserve Plain Corrugated, Smudged	1	0.07
Reserve Indented Corrugated	5	0.37
Reserve Indented Corrugated, Smudged	4	0.29
Tularosa Pattern Corr., Reserve Var	1	0.07
Three Circle Neck Corrugated	1	0.07
San Francisco Redware	1	0.07
Los Lunas smudged	3	0.22
Cebolleta Escavada Style	67	4.98
Cebolleta Gallup Style	17	1.26
Total	1343	

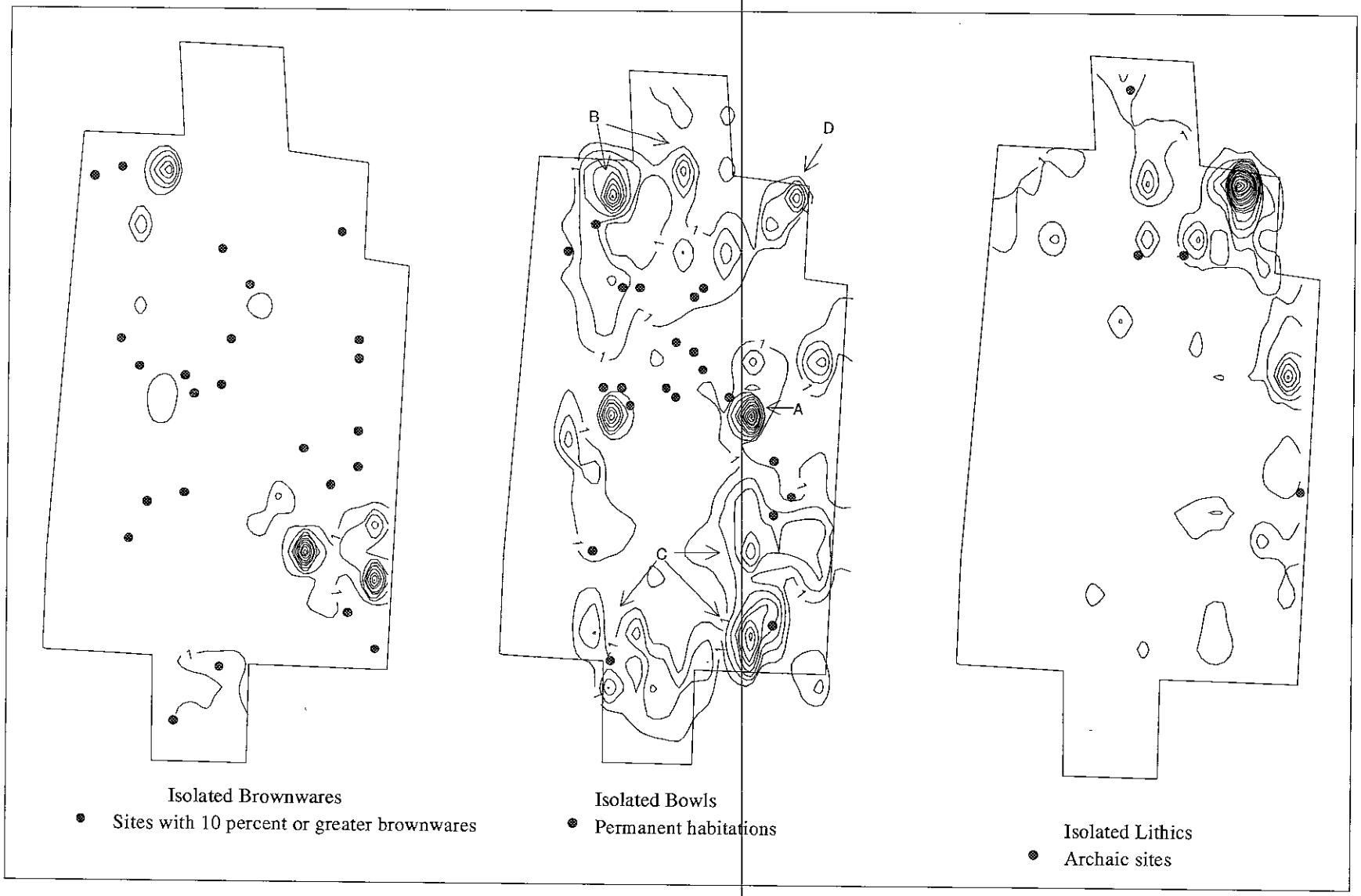

Figure 16. Isolated Occurrences

of hearths or ephemeral structures were preserved, the low-density scatter of non-perishable debris resulting from these brief occupational episodes would be recorded as a series of isolated occurrences.

The fourth cluster of isolated bowl sherds, Concentration D, is associated with the densest concentration of isolated lithics artifact. Like the ceramics, the isolated lithic assemblage appears similar to the materials recorded at the sites; that is, neither the proportions of artifact types nor the proportions of raw material types differ markedly from the site assemblages (Tables 3 and 4). Consequently, the isolated artifacts are suggestive of the same range of activities that were performed at residential locations.

The lithics are concentrated on the only extensive sand deposits in the survey area that could have supported stands of the wild seed grasses most commonly exploited by Archaic groups, so we initially assumed that these materials were related to the three Archaic occupations located nearby. The cluster of bowl sherds suggests that Anasazi camps might also be present in this area, however. The most likely interpretation, therefore, is that the isolated artifacts in this part of the study area reflect brief occupational episodes by both Archaic and Anasazi groups engaged in the exploitation of wild food resources.

Table 3. Isolated Lithic Types

Lithic Artifact Type	Count	Percent
Angular debris	6	2.89
Flake	136	65.70
Flake-from hammerstone	1	0.48
Core-irregular	3	1.44
Hammerstone	2	0.96
Chopper, unifacial	1	0.48
Flake, retouched	13	6.28
Projectile point	2	0.96
Biface	3	1.44
Uniface	1	0.48
Spokeshave	1	0.48
Unknown grnd. stone	12	5.79
Mano-unknown	5	2.41
Mano, one-hand	4	1.93
Mano, two-hand	1	0.48
Metate-unknown	8	3.86
Metate, slab	3	1.44
Metate, basin	2	0.96
Metate, trough	1	0.48
Pestle	1	0.48
Other groundstone	1	0.48
Total	207	

Table 4. Isolated Lithic Material Types

Material Type	Count	Percent
Chalcedony, blk incl.	13	6.28
Chalcedony, red incl.	3	1.44
Chalcedony, clear	4	1.93
Silicified Wood	32	15.45
Silic. Wood, platy	1	0.48
Quartzite, fine grain	10	4.83
Quartzite, med/coarse	7	3.38
Chert, brown	3	1.44
Chert, tan	3	1.44
Chert, gray	1	0.48
Chert, red	1	0.48
Chert, green	1	0.48
Chert, fossiliferous	20	9.66
Chert, clastic	2	0.96
Chert, oolitic	2	0.96
Chert, white	7	3.38
Jasper, dendritic	1	0.48
Obsidian	12	5.79
Basalt	9	4.34
Basalt, vesicular	11	5.31
Rhyolite, fine grain	1	0.48
Sandstone	23	11.11
Altered sedimentary	39	18.84
Shale	1	0.48
Total	207	

Chapter 5

ARMIJO CANYON CERAMIC ANALYSIS

C. Dean Wilson

This chapter describes procedures and results of field analysis conducted on 6174 sherds from 61 sites analyzed during the Armijo Canyon survey. The primary goal of the field analysis was to determine the probable period of occupation for each site. Data sufficient for a basic characterization of ceramic assemblages, enabling the examination of basic trends concerning cultural association, interaction, exchange, and vessel function, were also recorded. Previously defined ceramic categories were employed whenever possible, so data recorded during the Armijo Canyon survey are comparable with those described during other studies conducted in surrounding areas (Dittert 1959; Marshall 1991; Mills 1987; Ruppé 1953, 1966). Field analysis forms and recording conventions previously developed and employed by OCA were used during the Armijo Canyon survey, although a few categories were added.

ANALYSIS STRATEGIES AND METHODS

Strategies for choosing the samples to be analyzed depended on the quantity and distribution of sherds at a particular site. If the total number of sherds at a site was small (less than 200), the location of each sherd was marked with a pin flag during the initial stages of site recording. Information concerning each sherd was recorded, and the pin flag was removed. At sites containing heavy sherd concentrations, procedures were implemented during the initial stages of site recording to select a sufficient number of representative sherds for field analysis. At sites with large numbers of sherds, an attempt was made to locate areas with heavy sherd concentrations suitable for field sampling. If it appeared that more than one component might be represented, ceramic concentrations were selected for analysis to date each component at a site. At larger sites, areas associated with each roomblock or midden area were sampled separately. Pin flags were used to mark areas chosen for analysis, and the dimensions and locations of those areas were recorded on the site map. Data were collected for all sherds within the sample areas. In addition, unusual sherds found outside the designated sampling areas that might yield relevant dating information were pin-flagged during the initial examination of a site and later recorded separately as rare-item samples.

Information concerning ceramic type, vessel form, and count was recorded in the field. This information was entered into a computer file at OCA and used to generate tables illustrating distributions of ceramic types, traditions, and functional categories at each site. These tables formed the basis for subsequent interpretations.

Sherds were not collected during analysis, but small clips were taken off a very small number of sherds and placed into bags with a label listing type and vessel form. These clips were later analyzed in a lab, and information on temper type (identified utilizing a binocular microscope) and refired color (recorded using a Munsell color chart after the clips had been fired with standardized temperature and firing atmosphere in a kiln) was recorded.

WARE AND TYPE CATEGORIES

Previously defined ceramic tradition, ware, and type categories were employed during field analysis. Sherds were assigned to several distinct traditions and ware groups, including Cibola Gray Ware, Cibola White Ware, White Mountain Red Ware, and Mogollon Brown Ware traditions. These groups were differentiated based on stylistic treatments and surface characteristics. Sherds placed into various traditions

were then assigned to specific types based on surface treatments or design styles known to be temporally significant. Even though most researchers in this region have used similar typological categories, enough variation exists between different studies that brief descriptions of the various traditions and types defined during this project are presented below.

Cibola Tradition

In most schemes, ceramics thought to have been produced in the area around Armijo Canyon are considered to represent a distinct expression of the Cibola tradition (Dittert 1949, 1959; Marshall 1991; Ruppé 1966). Sherds were assigned to Cibola tradition types based on the presence of sand and sherd temper and mineral paint and, in some cases, by stylistic traits. Ceramics exhibiting characteristics of Cibola types dominate assemblages over a very wide area, including most of the southern Anasazi region. The Armijo Canyon area has been placed into the Vetado subregion in the southern part of the Acoma (or Cebolleta) province (Dittert 1959; Marshall 1991; Ruppé 1953, 1966). During some time periods, ceramics from the Acoma province appear to have been identical to those found elsewhere in Cibola region, but during the Pueblo II period they appear to have partially diverged from this tradition. Some investigators recognize types distinctive to the Acoma province whereas others do not, resulting in some ambiguity and inconsistency in the ceramic typology used for this area. During field analysis of material from Armijo Canyon, a combination of type categories utilized for the entire Cibola tradition, as well as a few type categories defined for the Acoma variants, were distinguished. Such distinctions are often based on subtle differences in paste, slip, and decorative tradition. The following Cibola tradition types (including Acoma variants) were identified during field analysis.

Cibola Gray Wares

Most of the utility wares from sites in Armijo Canyon and other areas of the Acoma province appear to be identical to Cibola tradition types found elsewhere in the southern Anasazi country. Because it is generally not possible to differentiate between grayware types belonging to different traditions during field analysis, these types are described without reference to specific type names, and no attempt was made to recognize Acoma variants. Instead, sherds were assigned to one of 11 general categories employing conventions and terms similar to those utilized in other studies in the region (Kayser and Carroll 1988; Marshall 1991; Mills 1987).

Graywares were usually defined by the presence of white to gray pastes and the absence of polish or painted decorations. The great majority of graywares from sites in Armijo Canyon dating to all occupations were light gray to white and refired to buff colors in an oxidizing atmosphere, indicating the use of clay low in iron content (Table 5). Grayware sherds from earlier sites were tempered with sand, whereas those associated with Pueblo III occupations were usually tempered with crushed sherd.

Plain Gray includes all unpolished gray body sherds. These sherds could have originated from Lino Gray vessels or from the lower portions of neckbanded, neck-coiled, or corrugated forms.

Lino Gray refers to unpolished grayware rim sherds that have been completely smoothed on both surfaces. Only rim sherds are assigned to this category because similar body sherds could also be from vessels exhibiting coiled or corrugated treatments around the rim or neck.

Kana-a Neck Banded refers to sherds exhibiting unobliterated coils near the neck or rim. Coils are relatively wide (8-20 mm) and exhibit very little overlap. *Narrow Neckbanded Gray*, in contrast, refers to sherds with thin (3-10 mm) unobliterated rounded or overlapping coils near the neck or rim. *Neck Corrugated Gray* refers to sherds clearly derived from vessels with corrugations on the neck but smooth bodies.

Table 5. Summary of Sherd Temper and Refiring Analysis

Type	Temper	Firing Color	Quantity
Gray Ware			
Plain Gray	Sand	Buff	9
	Sand	Pink	6
	Sherd	Buff	2
Total			17
Corrugated Gray	Sand	Buff	1
	Sand and sherd	Buff	3
	Sherd	Buff	37
Total			41
Whitewares			
Unknown Whiteware	Sand	Buff	4
	Sand	Pink	2
	Sherd and sand	Buff	6
	Fine igneous rock	Buff	1
Total			13
Tularosa Black-on-white	Sherd and sand	Buff	1
	Sherd	Buff	18
Total			19
Cebolleta Black-on-white	Sand	Buff	3
	Sherd and sand	Buff	6
	Sherd and sand	Gray	2
	Sherd	Buff	5
Total			16
Organic Painted Whiteware	Sherd and sand	Buff	1
Socorro Black-on-white	Sand and sherd	Buff	1
	Sand and sherd	Gray	2
	Sherd and sand	Buff	1
	Sherd	Buff	6
	Sherd	Brown	1
	Sherd	Gray	4
Total			15
Red Mesa Black-on-white	Sand	Buff	6
	Sand	Pink	1
	Sherd	Buff	1
Total			8
Mogollon Brownware	Fine igneous rock	Yellow-red	27

Table 5 continued

Type	Temper	Firing Color	Quantity
White Mountain Redware	Sherd	Buff	2
	Sherd	Buff/Red	1
	Sherd	Pink/Red	5
	Sherd	Yellow-Red	1
	Sherd	Yellow-Red/Red	1
Total			10
Unknown Redware	Sherd	Buff/Red	6

Unidentified Clapboarded Corrugated Gray refers to the presence of thin overlapping coils, similar to treatments noted on Indented Corrugated Gray but lacking spaced indentations.

Unidentified Indented Corrugated Gray refers to sherds exhibiting very thin overlapping coils, usually covering the entire vessel surface. The coils are usually narrow and evenly spaced. *Incised Corrugated* exhibit similar exterior treatment except that the coils have incised decoration. Corrugated indented vessels from earlier sites are usually tempered with sand, whereas those from later sites are tempered with crushed sherd. Corrugated sherds containing crushed igneous temper are often assigned to a different type than those containing sand temper.

Pueblo II Corrugated Rim refers to corrugated rim sherds exhibiting rim eversion less than 30°. *Pueblo II/III Corrugated Rim* refers to corrugated rim sherds exhibiting rim eversion from 30 to 55°. *Pueblo III Corrugated Rim* refers to corrugated rim sherds exhibiting rim eversion greater than 55°.

Cibola White Wares

Cibola White Ware categories identified during the present study include types produced over most of the southern part of the Anasazi region (Gladwin 1945; Hawley 1936), as well as a few limited to the Acoma province (Dittert 1949, 1959). Most decorated Cibola White Ware types exhibit a thick brown to black mineral paint. The great majority of whitewares have light gray to white pastes and are often slipped. Prior to AD 1000 Cibola White Wares were usually tempered with sand, but later types were tempered with sherd. Most Cibola White Wares from Armijo Canyon sites have light gray to white pastes and surfaces, and they fire to buff colors when exposed to oxidizing firing atmospheres. The following Cibola White Ware categories were identified during the present study.

Unpainted White Ware refers to unpainted sherds exhibiting a polished surface. These sherds could be from the unpainted portion of most Cibola White Ware types. *Unidentified Cibola White Ware* refers to painted ceramics lacking stylistic attributes indicative of a specific type.

Unidentified Narrow Line (Cibola White-Ware) was rarely identified during the Armijo Canyon Survey. This category consist of unidentified painted sherds with narrow (<3-4 mm) line designs. *Unidentified Medium Line (Cibola White Ware)* refers to unidentified painted sherds with line designs of medium (>3-4 mm) width. This category was also uncommon on the Armijo Canyon sites. *Unidentified Solid (Cibola White Ware)* is a seldom used category that refers to unidentified painted Cibola White Wares with solid designs.

Kiatuthlanna Black-on-white is indicative of the late Pueblo I-early Pueblo II period. Surfaces are usually unslipped and unpolished. Temper is usually sand without sherd. Designs are executed with mineral pigments. Design elements include narrow to medium parallel lines or chevrons, which may be embellished with ticked lines or triangles.

Red Mesa Black-on-white refers to sherds and vessels exhibiting the widely distributed styles of the early Pueblo II period. Temper may be sand, sherd, or sherd and sand. Designs consist of multiple parallel lines, sometimes embellished with triangles or ticked lines; ribbons with squiggle hachure; and scrolls. Painted designs are often well executed, and a number of elements often occur together in fairly complex patterns.

Puerco/Escavada Black-on-white was used to designate sherds exhibiting a range of painted styles indicative of material previously classified as Puerco Black-on-white or Escavada Black-on-white. These two types were grouped together here because definitions of and distinctions between these types are confusing and vague. As used here, this category denotes the use of a range of solid design styles employed during the later Pueblo II and early Pueblo III periods. Design styles often include triangles, parallel lines, and chevrons.

Gallup Black-on-white refers to sherds exhibiting Pueblo II surface manipulation (i.e., mineral paint usually applied over a thin, white washy slip that gives the surface a streaked appearance) and hachured designs. Lines are usually narrow and closely spaced.

Cebolleta Black-on-white is characterized by treatments and designs that are apparently distinct to ceramics produced within the Acoma province during the Pueblo II period. Sherds assigned to this category exhibit design styles that are very similar to those described for Puerco/Escavada Black-on-white, Gallup Black-on-white, and Reserve Black-on-white. In addition, a late Snowflake style, which may be contemporaneous with Tularosa Black-on-white, was occasionally utilized (Dittert 1959). Cebolleta Black-on-white is distinguished from other contemporary Cibola types primarily on the basis of a white (sometimes slipped), well-polished surface (Dittert 1959). Marshall (1991) notes that local Cebolleta types also tend to have thicker walls, softer paste, and a thicker slip than Puerco/Escavada and Gallup types.

Most of the Pueblo II-style sherds examined during the Armijo Canyon survey had pastes and polished surfaces similar to those described for Cebolleta Black-on-white, whereas design styles and other characteristics closely resembled those found on other Pueblo II Cibola tradition types. Although Cebolleta Black-on-white may represent a valid type, it should be used with caution; good descriptions from a wide area are needed before the usefulness or validity of this type can be established. During the present study, sherds exhibiting appropriate surface color, polish, and design styles were therefore classified as varieties of Cebolleta Black-on-white. For example, sherds exhibiting surface treatments described for Cebolleta Black-on-white and painted hachured styles similar to those observed in Gallup Black-on-white were identified as Cebolleta Black-on-white, Gallup style.

Reserve Black-on-white refers to sherds and vessels with designs of opposed solid and hatched elements generally organized into all-over designs. Sherds assigned to this type are usually slipped and moderately to well polished. Hatched elements are usually wider than solid elements. Designs include scrolls, broad lines, triangles, and sawtooth elements. *Unidentified Reserve/Tularosa Black-on-white* refers to sherds exhibiting treatments and designs that could belong to either Reserve Black-on-white or Tularosa Black-on-white.

Tularosa Black-on-white is the dominant Pueblo III decorated type identified during the present study; it is distinguished from earlier types by the presence of thick white slips, very polished and crackled surfaces, thick vessel walls, and distinctive designs arranged in complex patterns. Design motifs are small and well executed, and painted designs cover much of the vessel space. Design motifs include interlocking hachure and solids, with rectilinear patterns more common than curvilinear patterns. Lines tend to be more closely spaced than in earlier types. Most of the sherds from the Armijo Canyon sites placed into this type appear

to represent an Acoma variety of Tularosa Black-on-white which, may have developed out of Cebolleta Black-on-white (Dittert 1959).

White Mountain Red Wares

White Mountain Red Ware types represent a specialized ceramic technology. The production area for this pottery was apparently limited to west-central New Mexico and east-central Arizona, but it was widely traded throughout much of the Southwest (Carlson 1970). White Mountain Red Wares exhibit white, gray, and orange pastes; sherd temper; and dark red slips. Surfaces are well polished, and painted decorations are usually executed in a black mineral or organic paint, although polychrome effects are sometimes achieved through the use of a white clay paint.

Thirteen categories of redwares were distinguished during this analysis. *Unidentified White Mountain Red Ware* refers to White Mountain Red Ware sherds that do not display painted decoration. *Unidentified White Mountain Black-on-red* refers to painted White Mountain Red Ware sherds that do not display temporally distinctive painted decorations. *Unidentified White Mountain Polychrome* refers to sherds decorated with both black and white pigment, but not displaying distinctive painted styles. *Unidentified Wingate/St. Johns Black-on-red* refers to sherds with dark red to bright red slips and designs that could be indicative of either Wingate Black-on-red or St. Johns Black-on-red.

Puerco Black-on-red exhibits dark red to bright red slips. Designs include both broad lines and solid designs, including triangles, checkerboards, and parallel lines. *Wingate Black-on-red* also exhibits dark red to bright red slips, but designs consist primarily of hachure elements and sometimes opposed solid elements. *St. Johns Black-on-red* contains bright red to red-orange slips. Designs include Tularosa-style interlocking opposed solids and hachure. *Heshotauthla Black-on-red* as used here is similar to earlier White Mountain Red Wares but contains glaze paint.

Wingate Polychrome exhibits surface treatments and designs identical to Wingate Black-on-red with the addition of bold white designs on bowl exteriors. Similarly, *St. Johns Polychrome* refers to bowls with surface treatments and designs identical to those noted on St. Johns Black-on-red with the addition of designs in white clay paint on the exterior surfaces of bowls. *Springerville Polychrome* is similar to St. Johns Polychrome except that it has both black and white clay paint.

Unknown Painted Red refers to atypical painted sherds probably belonging to the White Mountain Red Ware tradition; however, they are unusual enough that they were not assigned to any of the other categories during the present study. Finally, *Unknown Unpainted Red* refers to unpainted atypical White Mountain Red Ware tradition sherds that could not be assigned to a type or to any other category used during the present study.

Socorro Black-on-White

Socorro Black-on-white has sufficiently distinctive characteristics that it is placed into a regional tradition of its own. Socorro Black-on-white occurs within an area roughly bounded by Socorro, Albuquerque, Grants, and Quemado (Sundt 1979). Socorro Black-on-white was probably not locally produced in Armijo Canyon, but it may have originated in areas to the east. Socorro Black-on-white is distinguished from Cibola types on the basis of surface color, paint, and designs (Dittert 1949; Mera 1935; Sundt 1979). Surfaces are gray and unslipped. Paint is black and very vitrified. Design motifs include fine lines, hachure, dots, lines appended with dots, checkered squares with and without dots, and triangles. Hatched lines are closely spaced. Motifs are often arranged to form opposed solid and hatched combinations. Design layout consists of continuous and paneled bands for bowls, and wide bands or all-over patterns on jars.

San Juan White Wares

Northern San Juan (or Mesa Verde) tradition ceramic types exhibit characteristics indicating that they were produced in the northern part of the Mesa Verde region (Abel 1955). Mesa Verde tradition ceramics are usually defined by the presence of crushed igneous temper and stylistic criteria. Since temper was not recorded during field analysis, it was generally not possible to recognize graywares or unpainted whitewares belonging to this tradition. However, in some cases Mesa Verde White Ware types can be identified by the presence of organic paint and a distinctive design style, although it is possible that some specimens could represent southern expressions of types such as Magadelena Black-on-white (Knight and Gomalak 1981).

Three categories of Mesa Verde White Wares were identified during this survey. The most general of these, *Unidentified Organic Paint*, refers to sherds with organic paint and indistinguishable design style.

McElmo Black-on-white was the dominant type in the Mesa Verde region during the early Pueblo III period. Rims are generally rounded to flat, and are often ticked. Vessel walls are thicker than they were in earlier types. Surfaces are usually well polished, often slipped, with a pearly white surface. McElmo Black-on-white decorations are almost always organized in a single band. Decorations are generally applied with an organic pigment. One common design consists of a series of broad rectilinear lines in bands parallel to the rim. Other designs include ribbons filled with straight hachure, dots, triangles, stepped triangles, diamonds, and ticked lines. Designs within bands are generally more sparsely filled than in Mesa Verde Black-on-white. Framing lines may be present, but usually are relatively thin. If several lines are present, all lines are of uniform thickness.

Mesa Verde Black-on-white is usually well polished and often slipped with a pearly white surface. Vessel walls, especially in bowls, are generally very thick. Rims are typically flat, with ticked painted decorations. Vessels exhibit decorations in organic paint. Designs are usually complex and well executed. Painted designs cover much of the vessel surface. Design elements are similar to those observed in earlier types and include hachure, triangles, stepped triangles, dots, diamonds, and ticked lines. Two classes of designs occur on Mesa Verde Black-on-white: banded and all-over styles. Banded designs are usually bracketed by framing lines. Single framing lines are usually thick, and if more than one framing line is present, they are usually of different thicknesses. Simpler designs often occur on the exterior of Mesa Verde bowls.

Mogollon Brown Wares

Mogollon tradition types dominate sites in the Mogollon highlands, covering much of the southwestern part of New Mexico. Mogollon Brown Ware types, as defined here, refer to unslipped pottery made from self-tempered clays derived from colluvial igneous sources common in the Mogollon highlands (Wilson 1992). These clays are high in iron content and contain igneous and sandstone inclusions. Mogollon Brown Wares were assigned to previously defined types based on differences in textured decoration, coil patterns, and smudging (Haury 1936; Kayser and Carroll 1988; Rinaldo and Bluhm 1956).

Alma Plain (Plain Polished) refers to sherds and vessels that are completely smoothed on both sides and polished on at least one side. Sherds placed into this category may be from completely smoothed vessels or from the lower portions of vessels exhibiting coiled or corrugation treatments along the rim or neck. Surfaces are often bumpy, and walls are uneven in thickness. Paste and surface color is gray, buff, brown, or red. Sooted or smudged surfaces are rare, but sometimes present. *Plain Brown (Alma Rough)* sherds exhibit these same characteristics except both surfaces are unpolished.

San Francisco Red is similar to Alma Plain but contains a red slip applied over a brownware paste. Slips were applied over a bumpy or indented surface. Surfaces are well polished and exhibit a lustrous sheen.

Alma Neckbanded is similar to Plain Polished with the addition of rows of wide (8-20 mm) unobliterated coils on the neck. Coils may be polished or unpolished. *Three Circle Neck Corrugated* is similar to Alma Neckbanded except the coils are narrower (3-10 mm) or overlapping.

Reserve Plain Smudged refers to rim sherds exhibiting plain smoothed exteriors without fillets or corrugations near the rim. This type is distinguished from Polished Plain by a highly polished, black, intentionally smudged interior.

Reserve Plain Corrugated sherds have thin (3-10 mm) overlapping coils on bowl exteriors without patterned indentations. *Reserve Plain Corrugated Smudged* sherds exhibits a similar exterior treatment with the addition of polished and smudged interiors.

Reserve Indented Corrugated also has thin overlapping coils on vessel exteriors, but the coils contain evenly spaced patterned indentations. *Reserve Indented Corrugated Smudged* refers to sherds with a similar stylistic treatment with the addition of polished and smudged interiors.

Reserve Incised Corrugated sherds have exterior treatments similar to that described for indented corrugated except that the coils have incised decorations. The exterior treatment on *Reserve Incised Corrugated Smudged* sherds is identical to that described for Reserve Incised Corrugated, but the interior surfaces are highly polished and smudged.

Tularosa Pattern Corrugated refers to plain and indented corrugations spaced to form diamond, triangular, or chevron patterns. Sherds with this exterior treatment that also had polished and smudged interiors were classified as *Tularosa Pattern Corrugated Smudged.*

Los Lunas Smudged exhibits thin, well-controlled coils with added punched embellishments (Mera 1935). Although this type resembles other Mogollon Brown Wares, Mera assigned it to the same cultural complex as Socorro Black-on-white. It exhibits similar tempers to those noted in other Mogollon Brown Ware types and thus is grouped here with the brownware types described for the Mogollon tradition.

VESSEL FORM

Vessel form is one of the major categories used for examining distributions and changes in vessel use and function. Vessel form categories were assigned to all sherds and vessels based on observed shape; however, the accuracy of this characterization depends on sherd size and the portion of the vessel from which a given sherd was derived (Blinman 1988). Thus, functional inferences based on sherd collections may be misleading. The consistent placement of all sherds into similarly defined vessel form categories maximizes the interpretive potential of small collections, but the resulting form class definitions may exhibit variable degrees of resolution. Rim sherds can generally be assigned to more specific categories than body sherds. Four vessel form categories were recognized during the present study.

Bowl includes rim sherds whose form can be determined through vessel shape or body sherds exhibiting painted decoration or polishing on the interior surfaces. *Jar* refers to rim sherds exhibiting a shape indicating they were derived from a jar, or body sherds containing no evidence of polishing and painting or containing those manipulations on the exterior surface only. *Ladle* refers to specialized forms consisting of bowls with cylindrical handles, which are often hollow. This form can be identified either by evidence of a handle attachment, or by the presence of distinctive dipper wear on the rim. *Handle Indeterminate* refers to a coiled or strap handle from an unknown vessel form.

CERAMIC DATING

The main objective of the ceramic analysis conducted during the Armijo Canyon survey was to determine the period of occupation of a given site or component. The wide diversity of ceramic traditions and types present in the Armijo Canyon assemblages makes it possible to date the site quite precisely. For example, inferences can be based independently on changes in surface texture documented for Cibola Gray Ware and Mogollon Brown Ware types; changes in painted decoration on Cibola White Ware types, Socorro Black-on-white, and San Juan White Ware types; and the appearance of polychromes in White Mountain Red Ware types. Site dates were based both on the occurrence of ceramic types with known temporal durations and on combinations and frequencies of various types. Because of the relatively small number of archeological excavations conducted within this area and the rarity of independently dated sites within this region, it may be difficult to determine the exact temporal span of occupation through ceramic distributions. However, it is usually possible to determine the relative placement of a number of distinctive components through the distribution of ceramic types.

Some studies have attempted to define or use a series of temporally distinct phases for sites in the Acoma province (Dittert 1949, 1959; Ruppé 1953, 1966); Marshall's (1991) recent modifications of this system place previously defined periods into more precisely dated phases. Although this scheme provides a basis for the recognition of distinct phases, it generally assumes that most sites were occupied during fairly short periods, which is probably not the case for a number of sites in Armijo Canyon. It is fairly easy to distinguish temporally separated assemblages representing distinct occupations, but it is more difficult to identify sites that were occupied for more than one period. For example, it would be very easy to distinguish between ceramics derived from early Pueblo II and late Pueblo III occupations, but it would be very difficult to distinguish between ceramics derived from an early to middle Pueblo III occupation and ceramics associated solely with a middle Pueblo III occupation. Since many sites were probably occupied from one phase to the next, the actual number of sites occupied during a given phase is probably higher than that defined ceramically.

As discussed in Chapter 3 the present study uses ceramic phases similar to those employed by Marshall (1991), with slight modifications. The temporal spans assigned to these phases are best-guess dates and are subject to change. The ceramics recorded during the survey are listed in Appendix 1. These data are summarized by site as no temporally-distinct components were distinguishable in the samples taken from individual site proveniences. The ceramic phases or occupation dates assigned to the sites on the basis of the sherd samples have already been presented (Table 4.1). This section described the assemblages characteristic of each ceramic phase and summarizes changes in the frequencies of types through time. The results of this analysis indicate a continuous occupation of the Armijo Canyon area from early Pueblo II to late Pueblo III. The number of occupations increases during the Pueblo II period and is highest during early and middle Pueblo III.

Red Mesa Phase, ca. AD 870-950

Ceramics phases prior to the late Pueblo I-early Pueblo II period were not identified during the present study. The identification of the Red Mesa phase was based primarily on the presence of Red Mesa Black-on-white as the predominant whiteware (Table 6). Socorro Black-on-white is usually present in small amounts (2-3%), and Cebolleta Black-on-white was recorded at one site, LA 102828. Most grayware sherds belong to Kana-a Neckbanded and Plain Gray (Table 7), although Indented Corrugated may occur in extremely small frequencies. Alma Plain was the dominant brownware type (Table 8). White Mountain Red Wares (Table 9) are absent except for an occasional sherd reflecting later use of the site area.

Table 6. Summary of White Ware Types by Ceramic Phase and Occupation Period

Ceramic Type	Phase																		Ceramic Type Total	
	Red Mesa		Early Cebolleta		Late Cebolleta		Pueblo II		Pueblo II III		Pilares		Early-Middle Pueblo III		Early Kowina		Middle-Late Pueblo III			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unidentified Cibola Whiteware	32	44.4	88	23.4	130	32.5	25	24.3	56	31.5	126	35.1	30	33.0	71	29.0	158	65.8	716	34.7
Unidentified Narrow Line CWW	.	.	1	0.3	.	.	.	.	.	.	.	.	.	.	6	2.4	.	.	7	0.3
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	1	0.0
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	.	.	5	5.5	4	1.6	.	.	9	0.4
Kiatuthlanna B/W	2	2.8	1	0.3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	0.1
Red Mesa B/W	15	20.8	51	13.6	5	1.3	1	1.0	1	0.6	.	.	.	.	.	.	.	.	73	3.5
Escavada B/W	1	1.4	2	0.5	1	0.2	2	1.9	.	.	4	1.1	.	.	.	.	.	.	10	0.5
Puerco B/W	.	.	1	0.3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.0
Reserve B/W	.	.	1	0.3	3	0.8	.	.	2	1.1	2	0.6	1	1.1	1	0.4	.	.	10	0.5
Tularosa B/W	.	.	.	.	4	1.0	1	1.0	13	7.3	43	12.0	13	14.3	60	24.5	47	19.6	181	8.8
Gallup B/W	1	1.4	4	1.1	1	0.2	.	.	1	0.6	.	.	.	.	.	.	.	.	7	0.3
Unpainted Whiteware	13	18.1	123	32.7	113	28.3	29	28.2	78	43.8	101	28.1	35	38.5	59	24.1	20	8.3	571	27.7
Cebolleta Hatched	.	.	.	.	1	0.2	.	.	.	.	2	0.6	1	1.1	1	0.4	.	.	5	0.2
Cebolleta Escavada Style	3	4.2	61	16.2	76	19.0	19	18.4	17	9.6	47	13.1	4	4.4	8	3.3	6	2.5	241	11.7
Cebolleta Snowflake Style	.	.	.	.	3	0.8	.	.	.	.	1	0.3	.	.	1	0.4	1	0.4	6	0.3
Cebolleta Reserve Style	.	.	.	.	4	1.0	1	1.0	.	.	.	.	.	.	1	0.4	.	.	6	0.3
Cebolleta Gallup Style	1	1.4	12	3.2	16	4.0	13	12.6	2	1.1	5	1.4	.	.	2	0.8	2	0.8	53	2.6
Unidentified Organic Paint	.	.	.	.	.	.	.	.	1	0.6	3	0.8	.	.	4	1.6	.	.	8	0.4
McElmo B/W	.	.	.	.	.	.	.	.	.	.	1	0.3	.	.	6	2.4	.	.	7	0.3
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.4	.	.	1	0.0
Socorro B/W	4	5.6	31	8.2	43	10.8	12	11.7	6	3.4	24	6.7	2	2.2	20	8.2	6	2.5	148	7.2
Phase Total	72	100	376	100	400	100	103	100	178	100	359	100	91	100	245	100	240	100	2064	100

Table 7. Summary of Gray Ware Types by Ceramic Phase and Occupation Period

Ceramic Type	Phase																		Ceramic Type Total	
	Red Mesa		Early Cebolleta		Late Cebolleta		Pueblo II			Pueblo II III		Pilares		Early-Middle Pueblo III		Early Kowina		Middle-Late Pueblo III			
	N	%	N	%	N	%	N	%		N	%	N	%	N	%	N	%	N	%	N	%
Lino Gray	.	.	1	0.6	.	.	1	1.7		.	.	.	.	1	0.9	.	.	.	.	3	0.1
Plain Gray	142	77.6	131	75.3	35	21.0	46	78.0		18	9.0	34	6.0	17	14.5	24	2.8	18	4.9	465	17.3
Kana-a Neck Banded	12	6.6	5	2.9	1	0.6	2	3.4		.	.	.	.	.	.	.	.	.	.	20	0.7
Neck Corrugated Gray	.	.	1	0.6	.	.	.	.		.	.	.	.	.	.	.	.	.	.	1	0.0
Unidentified Clapboard Corrugated Gray	13	7.1	12	6.9	7	4.2	2	3.4		2	1.0	6	1.1	.	.	.	.	.	.	42	1.6
Unidentified Indented Corrugated Gray	8	4.4	20	11.5	113	67.7	8	13.6		176	88.0	513	91.1	93	79.5	814	94.5	349	94.6	2094	77.8
Narrow Neck Banded Gray	7	3.8	2	1.1	7	4.2	.	.		1	0.5	.	.	.	.	.	.	.	.	17	0.6
PII Corrugated Gray Rim	1	0.5	2	1.1	1	0.6	.	.		.	.	.	.	1	0.9	3	0.3	.	.	8	0.3
PIII Corrugated Gray Rim	.	.	.	.	1	0.6	.	.		1	0.5	3	0.5	1	0.9	19	2.2	1	0.3	26	1.0
PII-III Corrugated Gray Rim	.	.	.	.	2	1.2	.	.		2	1.0	6	1.1	3	2.6	1	0.1	1	0.3	15	0.6
Incised Corrugated Gray	.	.	.	.	.	.	.	.		.	.	1	0.2	1	0.9	.	.	.	.	2	0.1
Phase Total	183	100	174	100	167	100	59	100		200	100	563	100	117	100	861	100	369	100	2693	100

Table 8. Summary of Brown Ware Types by Ceramic Phase and Occupation Period

Ceramic Type	Phase																		Ceramic Type Total	
	Red Mesa		Early Cebolleta		Late Cebolleta		Pueblo II		Pueblo II III		Pilares		Early-Middle Pueblo III		Early Kowina		Middle-Late Pueblo III			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Alma Plain	29	87.9	116	65.5	73	38.0	15	62.5	28	40.6	24	17.5	5	18.5	5	10.2	8	12.5	303	39.2
Plain Brown	.	.	2	1.1	15	7.8	.	.	.	.	.	.	.	.	.	.	.	.	17	2.2
Reserve Plain, Smudged	1	3.0	10	5.6	16	8.3	2	8.3	5	7.2	56	40.9	13	48.1	14	28.6	26	40.6	143	18.5
Reserve Plain Corrugated	3	9.1	29	16.4	28	14.6	6	25.0	17	24.6	4	2.9	2	7.4	.	.	8	12.5	97	12.6
Reserve Incised Corrugated	.	.	.	.	5	2.6	.	.	1	1.4	4	2.9	.	.	.	.	.	.	10	1.3
Reserve Plain Corrugated, Smudged	.	.	1	0.6	3	1.6	.	.	.	.	9	6.6	1	3.7	14	28.6	.	.	28	3.6
Reserve Incised Corrugated, Smudged	.	.	.	.	.	.	.	.	.	.	3	2.2	.	.	.	.	.	.	3	0.4
Reserve Indented Corrugated	.	.	1	0.6	32	16.7	.	.	7	10.1	15	10.9	2	7.4	10	20.4	18	28.1	85	11.0
Reserve Indented Corrugated, Smudged	.	.	.	.	5	2.6	.	.	10	14.5	18	13.1	3	11.1	5	10.2	4	6.2	45	5.8
Tularosa Pattern Corrugated	.	.	.	.	.	.	.	.	1	1.4	.	.	.	.	1	2.0	.	.	2	0.3
Tularosa Pattern Corr., Reserve Var	.	.	.	.	1	0.5	.	.	.	.	.	.	.	.	.	.	.	.	1	0.1
Tularosa Pattern Corr., Reserve Var, Sm.	.	.	.	.	.	.	.	.	.	.	2	1.5	.	.	.	.	.	.	2	0.3
Alma Neck Banded	.	.	2	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	0.3
Three Circle Neck Corrugated	.	.	15	8.5	10	5.2	1	4.2	.	.	1	0.7	1	3.7	.	.	.	.	28	3.6
Alma Incised	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.1
Los Lunas smudged	.	.	.	.	4	2.1	.	.	.	.	1	0.7	.	.	.	.	.	.	5	0.6
Phase Total	33	100	177	100	192	100	24	100	69	100	137	100	27	100	49	100	64	100	772	100

Table 9. Summary of Red Ware Types by Ceramic Phase and Occupation Period

Ceramic Type	Phase																		Ceramic Type Total	
	Red Mesa		Early Cebolleta		Late Cebolleta		Pueblo II		Pueblo II III		Pilares		Early-Middle Pueblo III		Early Kowina		Middle-Late Pueblo III			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unidentified Wt. Mt. Redware	1	100	1	100	3	12.0	2	100	20	46.5	19	16.1	3	17.6	23	20.4	19	27.9	91	23.5
Unidentified Wt. Mt. Redware B/R	.	.	.	.	19	76.0	.	.	9	20.9	16	13.6	3	17.6	40	35.4	17	25.0	104	26.8
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	.	.	4	9.3	1	0.8	.	.	1	0.9	1	1.5	7	1.8
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	1	0.8	.	.	.	.	1	1.5	2	0.5
Puerco B/R	.	.	.	.	1	4.0	.	.	3	7.0	5	4.2	1	5.9	3	2.7	.	.	13	3.4
Wingate B/R	.	.	.	.	2	8.0	.	.	.	.	6	5.1	3	17.6	2	1.8	.	.	13	3.4
St. Johns B/R	.	.	.	.	.	.	.	.	6	14.0	6	5.1	3	17.6	18	15.9	19	27.9	52	13.4
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	2	1.7	1	5.9	1	0.9	.	.	4	1.0
St. Johns Polychrome	.	.	.	.	.	.	.	.	1	2.3	.	.	.	.	24	21.2	7	10.3	32	8.2
Springerville Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	5.9	4	1.0
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	3	17.6	1	0.9	.	.	4	1.0
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	43	36.4	.	.	.	.	.	.	43	11.1
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	11	9.3	.	.	.	.	.	.	11	2.8
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	8	6.8	.	.	.	.	.	.	8	2.1
Phase Total	1	100	1	100	25	100	2	100	43	100	118	100	17	100	113	100	68	100	388	100

Early Cebolleta Phase, ca. AD 950-1050

The early Pueblo II period is marked by the consistent presence of Cebolleta Black-on-white, although Red Mesa Black-on-white remains the dominant Cibola White Ware type at five of the eight sites assigned to

the ceramic phase. A few Gallup or Escavada/Puerco sherds occurred at four of the sites, and Socorro Black-on-white was present varying frequencies (1-13%). Most of the graywares are represented by Kana-a Neckbanded and Plain Gray, but Indented Corrugated is usually present in small frequencies (1-4%). Brownware types include Plain Smudged, Plain Corrugated, and Three Circle Neckbanded.

Late Cebolleta Phase, ca. AD 1050-1125

Cebolleta Black-on-white is usually the dominant whiteware in late Pueblo II assemblages. Socorro Black-on-white is also consistently present and it was the dominant whiteware type at LA 102833 and LA 102844. Gallup Black-on-white was absent at the nine sites assigned to this ceramic phase, and Puerco/Escavada Black-on-white was recorded at only one site. Tularosa Black-on-white appears during this phase but only three sites had one or two sherds. Marshall (1991) indicates that White Mountain Red Ware types also appear during this time period, and types such as Puerco and Wingate Black-on-red may be present in small amounts. Only three of our sites had small quantities (1.4%) of redware, however. The dominant corrugated grayware type is Corrugated Indented, although Plain gray still dominates in three assemblages from this phase (LA 102826, LA 102833, and LA 102852). Brownware types typically include some Indented Corrugated and Indented Corrugated Smudged, and a few sherds of Los Lunas Smudged were present at LA 102813 and LA 102833.

Pilares Phase, ca. AD 1125-1200

Early Pueblo III ceramic assemblages were marked by the consistent presence of Tularosa Black-on-white (1-7%), although Cebolleta Black-on-white is usually the dominant whiteware. Socorro Black-on-white is present in small quantities (1-3%) at most sites and was the dominant whiteware type at LA 102822. There were a few sherds of Puerco/Escavada Black-on-white at three sites, but no Gallup Black-on-white was observed. White Mountain Red Wares comprise an average of 6% of the assemblages, with Wingate, Puerco, and St. Johns Black-on-red being the most common types. Wingate Polychrome, which Marshall (1991) describes as a hallmark of this ceramic phase, was recorded at only two sites -- LA 11725 and LA 11719. The great majority of graywares are Indented Corrugated, although Plain Gray sherds may be present. Brownwares include Plain Corrugated Brown and Indented Corrugated Brown.

Early Kowina Phase, ca. AD 1200-1275

Tularosa Black-on-white is the predominant white ware in middle Pueblo III assemblages, although Cebolleta Black-on-white is still common and was the dominant whiteware at LA 102823. Socorro Black-on-white occurred at only four sites, but it was the dominant whiteware type identified at LA 11777. Mesa Verde and McElmo Black-on-white were also present at three sites (LA 11724, LA 11777, and lA 102845) in small frequencies (1-5%). St. Johns Black-on-red and St. Johns Polychrome are the predominant redware types, although Puerco and Wingate Black-on-red may still occur. Corrugated Indented is the dominant grayware.

Late Kowina Phase, ca. AD 1275-1325

This ceramic assemblage is identical to that used to define the preceding period with the addition of late White Mountain Red Ware types, including Springerville Polychrome and Pinedale Polychrome, which are known to date to the transition between the Pueblo III and Pueblo IV periods. The placement of sites in the early and late Kowina phases (Marshall 1991) is usually based on the presence of only one or two late sherds, and it may be better to classify these phases as a middle to late Pueblo III occupation as we have

done here. Still, the use of this ceramic phase does convey information concerning the presence of sites in Armijo Canyon that date unusually late in the Pueblo III period.

Pueblo IV, Post-AD 1275?

Occupations dating to the Pueblo IV period in this region are indicated by the presence of White Mountain Red Ware sherds exhibiting what appears to be a glaze paint, classified as Heshotautla Black-on-red. These ceramics are associated in extremely small amounts with otherwise typical Pueblo III assemblages. Their present could indicate either that the latest occupation in this area just postdates after AD 1275 or that White Mountain whitewares exhibiting glazed paints may date slightly earlier than this time.

CERAMIC EXCHANGE

Although the lack of consistent in-field recording of temper categories limits interpretations concerning ceramic production and exchange, distributions of types belonging to various traditions provide the basis for interpretations concerning ceramic production. It is likely that much of the ceramics assigned during the present study to either grayware or whiteware types of the Cibola tradition was locally produced. This is indicated by the predominance of ceramic types representing this tradition at sites dating to all periods (Table 10). In addition, field observations by the author have established that local clay and temper sources exhibit characteristics similar to those noted in Cibola tradition types from sites in this area. This does not mean that all Cibola tradition sherds were locally produced, as ceramic vessels exhibiting similar characteristics were produced over much of the southern Anasazi country. It is also likely that sherds assigned to the Mogollon Brown Ware, White Mountain Red Ware, and San Juan White Ware traditions, as well as those classified as Socorro Black-on-white, were not locally produced. The high frequencies of types belonging to nonlocal traditions at the Armijo Canyon sites indicates a considerable amount of exchange with surrounding areas as well as significant shifts in the intensity and direction of exchange.

One of the strongest pieces of evidence for significant levels of exchange of ceramic vessels is the presence of Mogollon Brown Ware types. Although some researchers have assumed that brownwares were locally produced within the Acoma province (e.g., Dittert 1949), this is unlikely given the characteristics observed in locally available clay resources. The brownwares recovered during the Armijo Canyon project are identical to those noted on sites in the Mogollon Highlands, known to have been made from locally available, high quality, self-tempered colluvial clay that does not appear to have been available in the Armijo Canyon area.

Trends in brownware frequencies appear to be similar to those previously reported for various areas within the Acoma province, although in some cases there is considerable variation in brownware frequencies at contemporaneous sites. A general increase in the amount of brownwares appears to have occurred between the Pueblo I-II transition period and the early Pueblo II period. Brownware frequencies at all sites assigned to the Pueblo I-II transition (Red Mesa phase) are less than 30%, whereas more than half the assemblages dating to the early Pueblo II period (Early Cebolleta phase) contain more than 30% brownwares. This frequency remains similar for assemblages dating to the later Pueblo II (Late Cebolleta phase) occupation. A decrease in the frequency of brownwares is evident in assemblages dating to the early and middle Pueblo III periods (Pilares and Early Kowina phase); no sites assigned to these occupations contain more than 20% brownware. Surprisingly, two sites dating middle to late Pueblo III contained high frequencies of brownwares.

These observations are similar to those described for other areas of the Acoma province, where a significant increase in brownware ceramics occurred from about AD 950 to 1100 (Danson 1957; Ruppé 1953; Stuart and Gauthier 1981; Tainter and Gillio 1980). The only observation resulting from the Armijo field analysis that seems to contradict previously noted trends is the presence of high frequencies of brownware pottery at two sites dating to the middle to late Pueblo III period. A comparison of trends noted for the Armijo Canyon and the Cebolla Canyon area supports previous observations that the frequency of

Table 10. Summary of Ceramic Ware Groups by Ceramic Phase and Occupation Period

Phase	Ceramic Ware Group												Phase Total
	Cibola Gray Wares		Cibola White Wares		White Mountain Red Wares		San Juan White Wares		Socorro B/W		Mogollon Brown Wares		
	N	%	N	%	N	%	N	%	N	%	N	%	N
Red Mesa	183	63.3	68	23.5	1	0.3	.	.	4	1.4	33	11.4	289
Early Cebolleta	174	23.9	345	47.4	1	0.1	.	.	31	4.3	177	24.3	728
Late Cebolleta	167	21.3	357	45.5	25	3.2	.	.	43	5.5	192	24.5	784
Pueblo II	59	31.4	91	48.4	2	1.1	.	.	12	6.4	24	12.8	188
Pueblo II-III	200	40.8	171	34.9	43	8.8	1	0.2	6	1.2	69	14.1	490
Pilares	563	47.8	331	28.1	118	10.0	4	0.3	24	2.0	137	11.6	1177
Early-Middle Pueblo III	117	46.4	89	35.3	17	6.7	.	.	2	0.8	27	10.7	252
Early Kowina	861	67.9	214	16.9	113	8.9	11	0.9	20	1.6	49	3.9	1268
Middle-Late Pueblo III	369	49.8	234	31.6	68	9.2	.	.	6	0.8	64	8.6	741
Ware Total	2693	45.5	1900	32.1	388	6.6	16	0.3	148	2.5	772	13.0	5917

brownware drops significantly over relatively short distances in areas north of Armijo Canyon (Dittert 1949, 1959; Marshall 1991; Ruppé 1953, 1966). Data from the Cebolla Canyon survey area directly north of Armijo Canyon indicate that brownwares seldom made up more than 3% of the total assemblages (Marshall 1991), which contrasts dramatically with the Armijo Canyon data.

A variety of models and scenarios have been used to explain the spatial and temporal variation in brownware frequencies at sites in the Acoma province and other areas of the southern Anasazi country. Many scenarios have attempted to explain distributions of ceramics and other material culture in terms of mixing of Anasazi and Mogollon traits, and some archeologists have proposed that much of the Acoma province represents a distinct cultural area characterized by the mixture of Anasazi and Mogollon traits (Ruppé 1966). Tainter (1980) discusses problems in attempting to infer social boundaries or cultural intermingling through distributions of archeological materials, such as brownwares, and feels that the concepts of culture area and tradition are of little use when applied to the Anasazi and Mogollon. He contends that explanations of material culture patterns in terms of cross-generational transmission of a distinct cultural heritage are very tenuous and counterproductive.

Another explanation for differences noted in the characteristics of Mogollon and Anasazi ceramics is that the distribution of different ware groups reflects differences in the clay sources found in the Mogollon Highlands and Colorado Plateau, rather than a cultural boundary (Wilson 1993). If this is the case, then it likely that changes in mixtures of gray and brownwares are better explained in terms of exchange and trade between areas in which brownwares versus gray and whitewares may have been produced (Tainter 1980). Trade or exchange may have served an important role as an economic buffer, providing access to subsistence resources during periods of scarcity. In such a model, mixtures of Mogollon Brown Ware and Anasazi Gray and White Ware types may reflect strategies associated with the movement or buffering of resources from adjacent regions of the Mogollon Highlands and Colorado Plateau. The dramatic drop in the frequency of brownwares observed between the adjacent Armijo and Cebolla Canyon communities may reflect boundaries of this exchange network.

Another tradition represented in significant numbers at some sites is White Mountain Red Ware. Vessels belonging to types associated with this tradition were probably produced in areas along the Little Colorado drainage to the south. Some White Mountain Red Ware vessels may have been produced in the study area, although the great majority of sherds belonging to this tradition are assumed to have derived from vessels produced elsewhere. White Mountain Red Ware types are usually absent at sites dating to the Red Mesa transition and Early Cebolleta phases. The presence of small frequencies of White Mountain Red Ware types at sites assigned to these phases may be the result of contamination from later occupations. White Mountain Red Wares are present at some sites assigned to the Late Cebolleta phase and absent at others. They are consistently present in varying frequencies at sites dating to the Pilares phase, and they represent

at least 5% of most of the assemblages dating to the middle and late Pueblo III occupations. The introduction and gradual rise in frequency of White Mountain Red Ware sherds may indicate a gradual increase in ceramic exchange with the Little Colorado area. Thus, during the Pueblo II and Pueblo III occupations the direction of ceramic exchange may have shifted from groups in the Mogollon Highlands to those along the Little Colorado drainage.

Socorro Black-on-white may be indicative of ceramic exchange with areas to the east in the vicinity of the town of Socorro. Sherds belonging to this type are present in small but significant frequencies (about 2% to 10%) at sites assigned to all periods. This may indicate long-term interaction and exchange with areas to the east. Although some variation was evident in the amounts of Socorro Black-on-white at contemporary sites, the variation does not appear as marked as that reported for the Cebolla Canyon community (Marshall 1991).

In addition, very small frequencies of organic-paint San Juan White Ware may indicate occasional exchange with areas to the north. The rarity of San Juan tradition types does not support an inference of established exchange patterns, however.

FUNCTIONAL DISTRIBUTIONS

Changes in vessel use were also examined through changes in the distribution of ware group and vessel form. For most temporal periods, there appears to be a fairly wide range of variation, which may be related to patterns of both site use and vessel breakage (Table 11). Frequencies of bowls to jars appear to be fairly similar between sites dating to different ceramic phases. Frequencies of grayware utility jar sherds at later sites (Early Kowina phase) may be slightly higher than in previous periods. This is due in part to the decrease in brownware utility vessels, but it may also indicate an increase in the use of ceramic vessels for storage or cooking during later occupations.

NZ SITE CERAMICS

As discussed in Chapter 4, the BLM task order for the Armijo Canyon survey required a reanalysis of the ceramics at four sites recorded during the NZ survey (Elyea 1990) in a parcel adjacent to the Armijo Canyon survey area.

The reanalysis was done primarily to insure that consistent ceramic data were obtained from sites within the Armijo Canyon community, but a secondary objective was to assess the accuracy and reliability of the ceramic data from the NZ survey.

We were unable to relocate the artifact sample area at LA 11715, but the sherds from the sample areas at LA 11714, LA 11716, and LA 11717 were retabulated. Table 12 lists the ceramics recorded in these areas during the NZ and Armijo Canyon surveys. In comparing the two samples from each site, there appear to be no marked differences in the relative numbers of grayware, brownware, and redware sherds, although no redware sherds were recorded at LA 11714 during the Armijo Canyon survey. The identification of surface treatment categories for the utility wares also seems consistent between both projects. However, there are significant differences in the number of whiteware sherds between the paired samples. The ceramic sample obtained from LA 11717 during the NZ survey included 33 whiteware sherds, while only three whiteware sherds were recorded in that sample area during the present survey. This difference could result from selectively collecting whiteware sherds from this site. Alternatively, the NZ ceramics analyst may have counted very small sherds, while only larger sherds were recorded during this study.

The NZ survey samples from LA 11714 and LA 11716, in contrast, included only about half the number of whiteware sherds recorded during the reanalysis. At least part of the difference in these samples may be due to the relative inexperience of the crew member who recorded the NZ sample. This explanation is suggested by two factors. First, relatively few unpainted whiteware sherds were recorded at these sites

Table 11. Summary of Vessel Form Categories by Ceramic Phase

Red Mesa Phase

	Ceramic Vessel Form						Ware Total
	Bowl		Unid. Handle		Jar		
Ceramic Ware Group	N	%	N	%	N	%	N
White Wares	23	31.9	.	.	49	68.1	72
Gray Wares	.	.	1	0.5	182	99.5	183
Red Wares	.	.	.	.	1	100	1
Brown Wares	1	3.0	.	.	32	97.0	33
Vessel Total	24	8.3	1	0.3	264	91.3	289

Early Cebolleta Phase

	Ceramic Vessel Form						Ware Total
	Bowl		Unid. Handle		Jar		
Ceramic Ware Group	N	%	N	%	N	%	N
White Wares	157	41.8	1	0.3	218	58.0	376
Gray Wares	1	0.6	.	.	173	99.4	174
Red Wares	.	.	.	.	1	100	1
Brown Wares	13	7.3	.	.	164	92.7	177
Vessel Total	171	23.5	1	0.1	556	76.4	728

Late Cebolleta Phase

	Ceramic Vessel Form						Ware Total
	Bowl		Unid. Handle		Jar		
Ceramic Ware Group	N	%	N	%	N	%	N
White Wares	150	37.5	1	0.2	249	62.2	400
Gray Wares	2	1.2	.	.	165	98.8	167
Red Wares	13	52.0	.	.	12	48.0	25
Brown Wares	20	10.4	.	.	172	89.6	192
Vessel Total	185	23.6	1	0.1	598	76.3	784

Pilares Phase

	Ceramic Vessel Form						Ware Total
	Bowl		Jar		Ladle		
Ceramic Ware Group	N	%	N	%	N	%	N
White Wares	186	51.8	168	46.8	5	1.4	359
Gray Wares	62	11.0	501	89.0	.	.	563
Red Wares	47	39.8	70	59.3	1	0.8	118
Brown Wares	58	42.3	78	56.9	1	0.7	137
Vessel Total	353	30.0	817	69.4	7	0.6	1177

Early Kowina Phase

	Ceramic Vessel Form						Ware Total
	Bowl		Jar		Ladle		
Ceramic Ware Group	N	%	N	%	N	%	N
White Wares	144	58.8	100	40.8	1	0.4	245
Gray Wares	.	.	861	100	.	.	861
Red Wares	102	90.3	11	9.7	.	.	113
Brown Wares	8	16.3	41	83.7	.	.	49
Vessel Total	254	20.0	1013	79.9	1	0.1	1268

Table 12. Ceramic Sample Comparisons of NZ Survey and Armijo Survey

LA 11717 (NZ 146) Sample No 3

	Armijo Sample		NZ Sample	
Ceramic Type	Count	Percent	Count	Percent
Unidentified Cibola Whiteware	0	0.0	10	20.4
Tularosa B/W	1	3.7	0	0.0
Unpainted Whiteware	2	7.4	15	30.6
Unidentified Wt. Mt. Redware	1	3.7	1	2.0
St. Johns B/R	4	14.8	1	2.0
St. Johns Polychrome	0	0.0	2	4.0
Unidentified Indented Corrugated Gray	16	59.3	11	22.4
PIII Corrugated Gray Rim	2	7.4	0	0.0
Reserve Indented Corrugated, Smudged	1	3.7	1	2.0
Unidentified Narrow Line CWW	0	0.0	5	10.2
Unidentified Solid CWW	0	0.0	2	4.0
Unidentified Hatched CWW	0	0.0	1	2.0
Total	27		49	
Armijo Canyon Rare Sample				
St. Johns B/R	1			

LA 11716 (NZ 146) Sample No 2

	Armijo Sample		NZ Sample	
Ceramic Type	Count	Percent	Count	Percent
Unidentified Cibola Whiteware	12	9.2	8	8.2
Unidentified Narrow Line CWW	1	0.8	1	1.0
Unidentified Solid CWW	1	0.8	1	1.0
Unidentified Reserve/Tularosa B/W	3	2.3	0	0.0
Red Mesa B/W	0	0.0	2	2.0
Tularosa B/W	5	3.8	1	1.0
Unpainted Whiteware	11	8.5	0	0.0
Unidentified Wt. Mt. Redware	9	6.9	9	9.2
Unidentified Wt. Mt. Redware B/R	1	0.8	6	6.1
St. Johns B/R	3	2.3	1	1.0
St. Johns Polychrome	3	2.3	1	1.0
Unidentified Indented Corrugated Gray	70	53.8	65	66.3
Unidentified Clapboard Corrugated Gray	0	0.0	1	1.0
PIII Corrugated Gray Rim	2	1.5	0	0.0
Socorro B/W	1	0.8	0	0.0
Reserve Plain, Smudged	8	6.2	0	0.0
Reserve Indented Corrugated	0	0.0	2	2.0
Total	130		98	

Table 12 continued

LA 11714

Ceramic Type	Armijo Sample Count	Armijo Sample Percent	NZ Sample Count	NZ Sample Percent
Unidentified Cibola Whiteware	4	8.2	7	20.6
Unidentified Narrow Line CWW	2	4.1	0	0.0
Unidentified Medium Line CWW	0	0.0	1	2.9
Red Mesa B/W	0	0.0	4	11.8
Tularosa B/W	1	2.0	0	0.0
Gallup B/W	1	2.0	0	0.0
Unpainted Whiteware	12	24.5	5	14.7
Cebolleta Escavada Style	4	8.2	0	0.0
Cebolleta Gallup Style	1	2.0	0	0.0
Unidentified White Mountain Redware	0	0.0	3	8.8
Unidentified White Mountain B/R	0	0.0	1	2.9
St. Johns Polychrome	0	0.0	1	2.9
Plain Gray	6	12.2	5	14.7
Lino Gray	0	0.0	1	2.9
Unidentified Indented Corrugated Gray	10	20.4	3	8.8
Socorro B/W	5	10.2	0	0.0
Reserve Plain Corrugated, Smudged	1	2.0	2	5.9
Reserve Indented Corrugated	2	4.1	1	2.9
Total	49		34	

during the NZ survey. If these sherds were not recognized as whitewares, then it would account for much of the discrepancy between the samples obtained during the two projects. Second, relatively few whitewares in the NZ samples were identified to type; most sherds were placed in one of the unidentified Cibola White Ware categories, which is standard OCA policy when the analyst is not certain of the identification.

Another consistent difference between the samples was that no Socorro Black-on-white or Cebolleta Black-on-white sherds were identified during the NZ survey. As noted previously, the identification of these types is based almost exclusively on surface treatment and paste attributes. During the NZ survey, only stylistic attributes were used to differentiate whiteware types, so Socorro and Cebolleta Black-on-white would not be distinguishable from other stylistically similar Cibola White Ware types.

The differences in the occupation dates assigned to these sites during the NZ and Armijo Canyon survey result as much from differences in the definition of ceramic phases as from differences in the ceramic samples. LA 11716 and LA 11717 were assigned occupation dates of AD 1120-1220 during the NZ survey, while both sites were assigned to the Early Kowina ceramic phase (AD 1200-1275) based on the reanalysis of the ceramic samples. This disparity stems largely from the broadly defined ceramic groups employed during the NZ survey. As defined by Mills (1990), Early Pueblo III ceramic assemblages include Puerco, Wingate, and St. Johns Black-on-red, as well as Wingate and St. Johns Polychrome -- types that Marshall describes as hallmarks of his Pilares and Early Kowina ceramic phases, respectively. Similarly, her late Pueblo III ceramic phase (AD 1220-1320) is characterized in part by the presence of Springerville Polychrome and Heshotauthla Black-on-red and Polychrome, types used by Marshall to

distinguish Late Kowina, Late Pueblo III and Late Kowina, Early PIV ceramic groups. The third NZ site, LA 11714, was dated to the Late Pueblo II (AD 1020-1120) or Early Pueblo III (AD 1120-1220) ceramic phases during the NZ survey and, based on our reanalysis, it was assigned to the Late Cebolleta ceramic phase (AD 1050-1125). In this case, the dates from the two projects are consistent concerning the late Pueblo II occupation and, if the redwares recorded in the NZ sample had been present during the reanalysis, the site would have been characterized as a late Pueblo II and/or early Pueblo III occupation.

Chapter 6

THE LITHICS

The Armijo Canyon survey collected data on 1137 lithic artifacts from site areas. Attributes monitored included artifact type, condition or completeness, cortex, material type, striking platform, and length, width, and thickness measurements to the nearest millimeter. Lithic samples were always taken from the same quadrats used to sample the ceramics. Because these quadrats were preferentially located in areas with dense midden deposits, the lithic sample does not always reflect the full range of lithic artifacts present at a site. Given the general paucity of lithics at the Armijo Canyon sites, however, even these small samples are probably representative of the most commonly occurring artifact classes.

RAW MATERIAL TYPES

Armijo Canyon and the immediate surrounding areas do not contain the surface gravel deposits that are common in other areas of west-central New Mexico, and that typically contain nodules of chert and silicified wood. The only knappable lithic materials observed in the project area are quartzite cobbles and a metamorphosed sandstone. The metamorphosed sandstone is found throughout the survey area along the mesa edges, but it is most concentrated in the lithic procurement area recorded as LA 102842. This sandstone fractures concoidally, but is a very poor material that is unsuitable for the manufacture of bifaces or formal tools. It occurs in at all but eight of the recorded sites that had lithic assemblages in frequencies varying from one or two items to 100% of the assemblage at LA 102842. The majority of the metamorphosed sandstone occurs as waste flakes (93.6%), but the samples also include six cores, five hammerstones, three choppers, seven retouched flakes, and one scraper. This material comprises 33.3% of the total lithic assemblage and is the most commouly used raw material at sites in the survey area (Table 13).

The medium-to-coarse grain quartzite is found along the mesa edges and within the Armijo Cauyon drainage. This infrequently used material appears equally as debitage and tools, the latter of which consist primarily of hammerstones and cobble grindiug implements.

The local lithic raw materials -- metamorphosed sandstone, medium-to-coarse grain quartzite, and other sandstones -- constitute less than half of the Armijo Canyon lithic assemblages (42.8%). The remainder consists of materials that were brought into the area. Most of these nonlocal materials are found at a variety of locations throughout New Mexico. The only imported lithic raw materials with known, geographically-restricted source areas are obsidian, dendritic jasper, and Washington Pass chert. These materials occur in very small quantities. The Washington Pass Chert consists solely of one channel flake, probably discarded during the manufacture of a Folsom projectile point. Most of the obsidian (36 items) is a clear gray variety that probably comes from the Red Hill area near Quemado, New Mexico. Most of this material was associated with Archaic assemblages. Surprisingly few Grants obsidian artifacts were present in the assemblages, and those were mostly projectile points and bifaces.

Dendritic jasper from the Zuni Mountains makes up 5.8% of the lithic assemblage; 79% of this material is debitage and the remaining fraction consists of flaked tools. No specific quarry locations for this material have been identified, but its most likely source is the San Andres limestone, which is prevalent throughout the Zuni Mountains (Jacobson 1984). This raw material can constitute a high proportion of lithic assemblages at sites from all time periods in areas adjacent to the Zuni Mountaius, and it is common at the Pueblo II sites recorded during the Cerro de Jaspé survey (Marshall 1993). Although dendritic jasper comprises only a small portion of the overall Armijo Canyon assemblage, it is more prevalent at sites dating to the Pilares and Kowina phases (Pueblo III) than to the earlier Cebolleta phase (Pueblo II). A

Table 13. Armijo Canyon Lithic Material Types

Material	Number	Percent
Chalcedony w/black inclusions	32	2.8
Chalcedony w/red inclusions	13	1.1
Chalcedony, clear	16	1.4
Chalcedony, green	2	0.2
Chalcedony, other	6	0.5
Silicified wood	228	20.1
Silicified wood, platy	2	0.2
Quartzite, fine grained	29	2.6
Quartzite, medium-coarse	43	3.8
Orthoquartzite	1	0.1
Chert, brown	9	0.8
Chert, tan	3	0.3
Chert, gray	14	1.2
Chert, black	4	0.4
Chert, red	15	1.3
Chert, green	2	0.2
Chert, fossiliferous	84	7.4
Chert, clastic	4	0.4
Chert, Washington Pass	1	0.1
Chert, white	4	0.4
Chert, other	2	0.2
Jasper, dendritic	66	5.8
Obsidian	36	3.2
Obsidian, Grants	8	0.7
Obsidian, Polvadera	1	0.1
Basalt	14	1.2
Basalt, vesicular	33	2.9
Rhyolite	3	0.3
Limestone	3	0.3
Siltstone	15	1.3
Sandstone	65	5.7
Metamorphosed Sandstone	379	33.3
Total	1137	100.0

difference of proportion test shows a significant difference between the two periods (z=2.82, probability is 0.004). This difference has also been noted between Pueblo II and Pueblo III assemblages in the Quemado area (Elyea 1983), the Mount Taylor area (Jacobson 1984) and the Chaco District (Jacobson 1984).

The lithic raw materials from the four Archaic components differ from the Anasazi components. The Archaic sites have a higher percentage of silicified woods and lesser amounts of metamorphosed sandstone.

ARTIFACT TYPES

Despite the dearth of lithic raw materials in the project area, most site assemblages are composed mainly of waste flakes and angular debris. About 12% of the artifacts are utilized flakes or retouched tools, and 9% are ground stone implements (Table 14). Interestingly, many of the bifaces, scrapers, gravers, and other bifacially worked tools at the Anasazi sites appear to be made from reworked Archaic points and tools. In the absence of a local source of good-quality siliceous stone, the Anasazi apparently scavenged the few Archaic sites in the area for usable tools.

The assemblage includes 12 projectile points. The Archaic points are a mixture of Oshara and Cochise styles. The Oshara is represented by three San Jose points and the Cochise, by one San Augustin and two San Pedro points. In addition, two unidentifiable Archaic points were found at LA 102815 and LA 102841. These artifacts suggest that occupation of the Armijo Canyon area by prehistoric hunter-gatherers dates primarily to the middle and late Archaic period. Four Anasazi projectile points were also recorded. Three of these arrowpoints are triangular side-notched forms; the fourth is a corner-notched point.

LITHIC REDUCTION TRAJECTORIES

About three-quarters of the flaked lithic artifacts in the Armijo assemblages had little (<10%) or no cortex, and only about 14% of the artifacts had greater than 50% cortex. The proportion of artifacts lacking cortex was slightly higher for nonlocal (73%) than for local (67%) raw materials. The Archaic assemblages also had a slightly higher proportion of noncortical materials (73%) than the Anasazi assemblages (69%). Although the latter figures do not suggest any marked difference in lithic reduction strategies, the striking platforms on debitage from the Anasazi sites consist mainly of unprepared single-facet (33%) or cortical (12.5%) surfaces. The flakes in these assemblages are also relatively thick (mean=8.2 mm), which is suggestive of a core reduction technology. The only prepared striking platforms were associated with the Archaic assemblages; about 29% of the flakes in these assemblages have ground or retouched platforms, indicating a greater emphasis on bifacial reduction and formal tool manufacture.

Given the apparent focus on core reduction during the Anasazi occupation, the small number of cores in the Armijo assemblages is surprising. The few recorded cores are mainly the local metamorphosed sandstone. Nonlocal materials are represented by only one obsidian and one silicified wood core. Nevertheless, the high proportion of unutilized flakes of nonlocal materials suggests that the stone was imported as cores or cobbles and not finished tools. It therefore appears that most cores were reduced to small unusable fragments, which would account for both their near absence in the Armijo assemblages and for the high proportion of noncortical debitage.

INTERSITE COMPARISONS

The small size of the Armijo lithic assemblages, which appears to be directly related to the near absence of local raw materials, precluded any formal statistical comparisons of the lithic artifacts from the Archaic and Anasazi sites or from Anasazi sites dating to the different ceramic phases. We suspected that some differences might be discernible in the functional categories of Anasazi sites, however, as the range of activities at field-related sites are more limited and task-specific than at the permanent habitations.

As shown in Table 15, the assemblages from habitations and fieldhouses are markedly more diverse than the assemblages from field camps and field facilities. The field camp assemblages also have more artifact classes than those from the field facilities, although the absence of ground stone at field facilities is inherent in the definition of that site type. These differences are consistent with our interpretation of the functional categories, but there are marked differences in the size of the assemblages. The decreasing number of artifact classes across these categories could therefore be a function of sample size. To test this hypothesis, the four assemblages were compared using the Chi-square statistic, which indicated that the

assemblages were not statistically different at the .01 significance level (chi square=117.3, 93 df). A regression analysis was also performed to assess the association between sample size and the number of artifact classes present. The results of this analysis (r^2=0.797) indicate that sample size accounts for about 80% of the variability in the four assemblages. Thus there appear to be no significant differences in the kinds of lithic artifacts recorded at the sites assigned to different functional categories.

Table 14. Artifact Types

Artifact Type	Number	Percent
angular debris	64	5.6
flake	795	69.9
flake-bifacial thinning	6	0.5
flake-from hammerstone	11	1.0
flake-other	1	0.1
tested rock	1	0.1
core-irregular	7	0.6
tabular blank	1	0.1
hammerstone	13	1.1
pecking stone	2	0.2
chopper, unifacial	4	0.4
chopper, bifacial	1	0.1
angular debris, used	1	0.1
angular debris, retouched	4	0.4
flake, utilized	7	0.6
flake, retouched	67	5.9
projectile point	12	1.1
biface	14	1.2
uniface	2	0.2
scraper	6	0.5
drill	3	0.3
graver	4	0.4
spokeshave	5	0.4
flaked tool-other	2	0.2
unknown grndstone	56	4.9
mano-unknown	8	0.7
mano, one-hand	9	0.8
mano, two-hand	4	0.4
metate-unknown	15	1.3
metate, slab	4	0.4
metate, basin	2	0.2
metate, bedrock	1	0.1
grooved maul	1	0.1
other groundstone	3	0.3
Other	1	0.1
Total	1137	

Table 15. Formative Artifact Types and Site Types

Artifact Type	Habitation		Field-house		Field camp		Field facility	
angular debris	42	6.8	6	3.5	6	5.4	1	2.6
flake	453	73.3	103	59.5	72	64.3	32	82.1
flake-from hammerstone	4	0.6	2	1.2	1	0.9	0	0.0
tested rock	0	0.0	1	0.6	0	0.0	0	0.0
core-irregular	1	0.2	3	1.7	2	1.8	0	0.0
tabular blank	0	0.0	0	0.0	1	0.9	0	0.0
hammerstone	4	0.6	3	1.7	5	4.5	1	2.6
pecking stone	1	0.2	1	0.6	0	0.0	0	0.0
chopper, unifacial	2	0.3	0	0.0	2	1.8	0	0.0
angular deb., utilized	1	0.2	0	0.0	0	0.0	0	0.0
angular deb., ret.	2	0.3	1	0.6	0	0.0	0	0.0
flake, utilized	4	0.6	2	1.2	1	0.9	0	0.0
flake, retouched	37	6.0	11	6.4	4	3.6	4	10.3
proj. point	6	1.0	1	0.6	1	0.9	1	2.6
biface	9	1.5	3	1.7	0	0.0	0	0.0
uniface	1	0.2	1	0.6	0	0.0	0	0.0
scraper	2	0.3	2	1.2	0	0.0	0	0.0
drill	2	0.3	1	0.6	0	0.0	0	0.0
graver	1	0.2	1	0.6	1	0.9	0	0.0
spokeshave	2	0.3	0	0.0	0	0.0	0	0.0
flaked tool-other	0	0.0	1	0.6	1	0.9	0	0.0
unknown grndstone	26	4.2	14	8.1	13	11.6	0	0.0
mano-unknown	2	0.3	4	2.3	1	0.9	0	0.0
mano, one-hand	3	0.5	0	0.0	0	0.0	0	0.0
mano, two-hand	2	0.3	2	1.2	0	0.0	0	0.0
metate-unknown	4	0.6	6	3.5	1	0.9	0	0.0
metate, slab	3	0.5	0	0.0	0	0.0	0	0.0
metate, basin	1	0.2	1	0.6	0	0.0	0	0.0
metate, bedrock	1	0.2	0	0.0	0	0.0	0	0.0
grooved maul	0	0.0	1	0.6	0	0.0	0	0.0
other groundstone	2	0.3	1	0.6	0	0.0	0	0.0
other	0	0.0	1	0.6	0	0.0	0	0.0
Total	618		173		112		39	

Chapter 7
SUMMARY AND CONCLUSIONS

Archeological materials within the Armijo Canyon survey area reflect sporadic human occupation over a 10,000 year period. Although early hunter-gatherers used the area during the Paleoindian and Archaic periods, the occupations were neither frequent nor intensive. There is no evidence for occupations during the early Formative period (Basketmaker III and early Pueblo I), nor is there evidence for hunter and gatherer populations who might have co-existed with early sedentary populations (Ruppé 1953). Based on the Armijo Canyon data, it appears that this area was used infrequently until a few people arrived during the Red Mesa phase (AD 870 to 950). According to Dittert and Ruppé, earlier Formative sites occur on benches in canyon heads, a physiographic situation not present in the Armijo Canyon survey area.

During the late Pueblo I-early Pueblo II period (AD 870-950), there are dispersed occupations in the survey area adjacent to drainages. These sites include two possible pithouse occupations, a possible ephemeral structure that suggests a fieldhouse location, and an eroding hearth. The results of the Cebolla Canyon survey (Wozniak and Marshall 1991) indicate a similar low-intensity occupation during the early Formative. One camp dating to the Basketmaker III period (AD 400-700) was recorded in that area, and two sites were found dating AD 800-900: an artifact scatter with an associated hearth, and a small habitation site with a possible jacal structure.

Nine sites in the Armijo Canyon area were dated to the Early Cebolleta phase (AD 950-1050). These consist of a seven-room pueblo, which also has a middle Pueblo III occupation; one pithouse occupation, archeomagnetically dated to AD 1040-1095; two possible pithouse occupations; a one- or two-room masonry habitation; a fieldhouse or small habitation with one or two masonry rooms; a fieldhouse; a field camp; and a field facility. In the Cebolla Canyon area, 11 components were dated between AD 900 and 1000. Three of these components were artifact scatters or midden deposits adjacent to structures dating to a later phase, six were habitation units consisting of two-to-four room jacal structures with masonry foundations, and two sites were clusters of three such habitation units. There were no sites in the Cebolla Canyon area dating AD 1000-1050.

Based on this evidence, it appears that Armijo and Cebolla canyon may have both been seasonal farming areas during the early Pueblo II period, although there may have been some year-round residential occupation. The major difference in settlement patterns seems to have been the preference for jacal structures in the Cebolla Canyon area, while pitstructures were more commonly used in the Armijo Canyon area.

Permanent settlement in both areas seems to have occurred largely after AD 1050. In Cebolla Canyon, Marshall recorded five sites dating AD 1050-1175. One of these was a great house with 10 large rooms, a partial second story, and a walled-in kiva. There were also a U-shaped roomblock with 30 rooms, a crescentic roomblock of 10 rooms with a small great kiva, a site with three roomblocks totaling 15 rooms, and a two or three room jacal structure. Five other sites were dated between AD 1125 and 1175: one site with four roomblocks totaling 30-36 rooms, one site with two roomblocks (ca. 20 rooms) and a kiva, one roomblock with seven or eight rooms and an associated kiva, and two sites with roomblocks of five or six rooms. By about AD 1175, then, the number of rooms at habitation sites in the Cebolla Canyon community totaled roughly 140-150.

During the Armijo Canyon survey, nine site were recorded that dated to the Late Cebolleta phase (AD 1050-1125), including two permanent habitations of unknown size and extent. Four sites, including the great kiva, could only be dated to the Pueblo II period (AD 950-1125), and six sites were dated between AD 1050 and 1275. The latter group included the Dittert site with 30-50 rooms, another roomblock with

30 rooms, and a seven-room masonry pueblo all of which appeared to have been occupied throughout this period; there was also a probable permanent habitation of unknown size. Finally, eight sites were dated between AD 1125 and 1200, five of which were permanent habitations with roomblocks of six to 35 rooms. Thus, by AD 1200, the habitation sites in the Armijo Canyon community appear to have included approximately the same number of rooms as the at the Cebolla Canyon community.

In the thirteenth century, Marshall sees evidence for continued growth of the Cebolla Canyon community. Nine components in this community are dated AD 1175-1225, and these habitations total 159 to 165 rooms. As described by Wozniak and Marshall (1991), most of these sites are small pueblos with 3-20 rooms, but there is one large site -- the Citadel -- which was interpreted as a planned community that was never completely finished. Interestingly, only one of the sites had been occupied previously.

Thirteen sites totaling 205-225 rooms were dated AD 1225-1275, none of which had been previously occupied. Again, most of these sites are small blocks of 8-17 rooms, but there are two large sites, one with 25-30 rooms and a second with more than 60 rooms. In all, the number of rooms dating to this period totals 205 to 222. The latest occupation in the Cebolla Canyon community, AD 1275-1325, is represented by ten components totaling 204-210 rooms. Again, most of the sites are small pueblos with 6-14 rooms, but the largest site from the preceding period continues to be occupied.

In the Armijo Canyon area, there were ten habitation sites dating to the thirteenth century. As already mentioned, three of these sites (LA 11720, LA 11722, and LA 11723) have occupations spanning the late Pueblo II through middle Pueblo III periods, and two other large habitations have occupations dating between AD 1200 and 1325. The remaining five sites are small pueblos with 3-12 rooms, which date AD 1200-1275. All together, these habitations sites have somewhere between 185 and 225 rooms. This represents a 30-40% increase over the twelfth century community in Armijo Canyon, but it is equivalent to only one of the Pueblo III occupation periods in the Cebolla Canyon community. Thus growth in the Armijo Canyon community during the thirteenth century was not nearly so marked as in the Cebolla Canyon community. Given the dramatic difference in the size of the Cebolla Canyon and Armijo Canyon drainages, this variability could be largely a function of the carrying capacity of the two local environments.

In summary, the Armijo Canyon and Cebolla Canyon surveys have yielded little evidence of a permanent population prior to the mid-eleventh century, and it seems likely that both were seasonal farming areas during the late Pueblo I-early Pueblo II transition. Between AD 1050 and 1175-1200, permanent settlements with associated public architecture -- great houses and great kivas -- were established in both areas, suggesting a Chacoan affiliation for the communities. Based on room counts at habitation sites, it appears that both of these twelfth century communities were of near equal size and, given their geographic proximity, it seems probable that they were linked by some form of social ties. Nevertheless, certain differences in the sherd assemblages suggest that the two communities participated in different ceramic exchange networks. Chief among these are the higher frequencies of Mogollon Brown Wares in the Armijo Canyon assemblages, and the high frequencies of Socorro Black-on-white pottery at some sites in the Cebolla Canyon community. Although small quantities of Socorro Black-on-white were documented at many of the Armijo Canyon sites, it rarely comprised a significant proportion of the whitewares in the assemblages.

Both area evidence some population growth during the thirteenth century, but the Cebolla Canyon community clearly outstripped the Armijo Canyon community during this period. Moreover, most of the thirteenth-century sites in the Cebolla Canyon community represent new construction throughout the century, while in Armijo Canyon, many of the larger sites continue to be occupied. Another difference in settlement patterns characteristic of these areas is that the Cebolla Canyon community is dominated by permanent habitations sites, while fieldhouses, field camps, and field facilities remain common in the Armijo Canyon community. This may indicate the continued seasonal use of the Armijo Canyon area by Anasazi groups residing outside of the area. Alternatively, the population in the Armijo Canyon area may have employed a land-extensive agricultural strategy as a means of buffering environmental perturbations,

while a land-intensive agricultural strategy may have been used by the residents of the Cebolla Canyon community to exploit the larger drainage catchment of Cebolla Canyon. If this alternative explanation is accepted, then it appears that neither strategy was successful over the long-term, as both communities seem to have been abandoned by AD 1325 or shortly thereafter.

One of the most puzzling aspects of the settlement patterns in both areas is the small number of Pueblo II habitations associated with the great houses and with the isolated great kiva in Armijo Canyon. As already indicated, most of the Pueblo II sites recorded during the Armijo Canyon survey have the appearance of field-associated sites. That is, they are situated near potential farm fields, in this case, adjacent to drainages; the evidence suggests a limited labor investment in residential structures; and there are no extensive midden deposits suggesting a long occupation). Because the Armijo Canyon survey area is not centered on the great kiva, we suspected that there might be dispersed habitation sites located beyond our survey boundaries. We therefore searched the ARMS data base for Pueblo II habitations within a 1 mi and 2 mi radius around the great kiva. We also examined the previously recorded sites within a 2 mi area around the Armijo Canyon survey parcel.

The recorded sites within a mile of the great kiva include an Early Cebolleta habitation with five or six rooms (LA 74553), a Late Cebolleta phase midden associated with a large depression (LA 102391), an Early Cebolleta phase habitation with four to six rooms (LA 102393), and a 14-room pueblo (LA 11735) with an occupation spanning the Cebolleta and Pilares phases. Two other three-room habitations (LA 11732 and LA 11733) are recorded as Pueblo II-IV sites. The 2 mi radius search added LA 11714, which is described in Chapter 4, and LA 82232, a buried late Pueblo II roomblock in Homestead Canyon. LA 82237, another buried site in Homestead Canyon, could also be a habitation. It was recorded as a Pueblo II-III occupation.

Two additional habitations had been recorded within the 2 mi area surrounding the Armijo Canyon survey parcel. LA 74546 is a three-to-six room early Pueblo II site, and LA 74605 is a Pueblo II site with three pithouses. A possible great kiva (LA 74560) dating to the Pueblo II-Pueblo III period also fell within this search area. It is located adjacent to Tank Canyon, south of Armijo Canyon.

In all, 11 Pueblo II habitations were found during the records search, which could be related to the great kiva community. However, except for the 760 acres examined during this project, this 25 sq mi area has not been systematically surveyed, although sample surveys of transects spaced at 200 m intervals have been conducted in five of the sections (Doleman 1990; Elyea 1990) and there have two reconnaissance surveys in the area occupation (Wiseman 1974; Roney 1993). Consequently, the recorded sites might represent only a small fraction of the Pueblo II sites that are actually present.

In order to approximate the number of Pueblo II habitations that might be present in the area surrounding Armijo Canyon, we examined the survey results from Cerritos de Jaspé community (Marshall 1993), which is located about 24 km north of Armijo Canyon. During that project, 20 m wide transects spaced at 200 m intervals were surveyed, providing 10% coverage of the 12,800 acre Cerritos de Jaspé subunit. The area sampled included 785 acres surrounding a Late Cebolleta phase great kiva. Four contemporaneous habitation sites were located within the transects crossing this parcel.

Based on the 10% coverage, this sample suggests that as many as 40 Late Cebolleta phase habitations might be present in the vicinity of the great kiva, which is a density of 0.05 sites per acre. Transect surveys are subject to "edge effect," however, and Elyea (1990) has demonstrated that, in other areas of west-central New Mexico, such wide interval transect survey generally encounter closer to 20% of the more commonly-occurring site types. Applying this correction to the Cerritos de Jaspé data, yields a revised estimate of 20 habitations, or a density of 0.025 sites per acre for the 785 acres surrounding the great kiva.

If we include sites that could be either small habitations or fieldhouses, then the density of Pueblo II habitations recorded during the Armijo Canyon survey is 0.017 sites per acre. This figure is only slightly

below the density projected on the basis of the Cerritos de Jaspé data, but it applies to all Pueblo II habitations rather than habitations dating to the Late Cebolleta phase. Thus the proportion of late Pueblo II habitations does appear lower than expected. There are several explanations that might account for this disparity.

First, some of the Armijo Canyon Pueblo II sites might be buried. Of the 22 sites that date to the early or late Cebolleta phases, five are habitations and four are possible habitations. Three of the habitations are buried and were only located because they are exposed by the Armijo Canyon arroyo and a modern road. The NZ project also recorded two sites at near the mouth of Homestead Canyon that consisted of buried sites. One (LA 82232) dates to AD 1020-1120 and consists of a buried pueblo with a visible corner. The other (LA 82237) dated from AD 1020-1220 and consisted of a high bowl ratio assemblage in a colluvial area.

Second, the Armijo Canyon sites have been identified as later Pueblo III components. As noted in Chapter 5, it is fairly easy to distinguish ceramic assemblages representing temporally-distinct occupations (e.g., an early Pueblo II and a late Pueblo III occupation), but it is difficult to identify sites that were occupied through more than one ceramic phase (e.g., late Pueblo II through early Pueblo III). In other words, the ceramic phases provides a basis for dating sites occupied for relatively short periods, but it is difficult to apply them to sites occupied for longer periods, as appears to be the case for many of the habitations recorded in the Armijo Canyon community. Thus many of the roomblocks with Pueblo III occupations could also have Pueblo II components.

A third possibility, given the small size of the survey area, is that many of the Pueblo II habitations are dispersed over a larger area. The records search provides some support for this hypothesis, but considering the available information concerning Pueblo II settlement patterns, it does not appear that much of the land surrounding the Armijo Canyon survey area would be suitable for Pueblo II habitations.

Given the information available, the second hypothesis seems the most plausible; that is, Pueblo II occupations at some habitation sites in the Armijo Canyon area are probably being masked by later occupations. Even so, it may be a mistake to expect the Pueblo II occupatiou of the Cebolla Canyon and Armijo Canyon communities to resemble the settlement patterns observed in the Cerritos de Jaspé area or the Red Mesa Valley. Chacoan settlements in the latter areas are "ancestral" communities; that is, they emerged from pre-existing agricultural communities. The Armijo and Cebolla canyon areas, in contrast, have yielded little evidence of an early Formative occupation. Consequently, if the twelfth century occupations are Chaco-related, then they would be classified as "scion" communities. Since we know relatively little about the structure of such communities, we cannot assume that the public architecture was necessarily associated with a large number of contemporaneous habitation sites.

Recent Environmental Alterations and Impacts to the Archeological Resources

Grazing has been the principal impact on the regional environment in recent times. Ranching is the basis of the local economy, and this dependence on livestock has necessitated the construction of stock tanks, windmills, and roads in the Armijo Canyon area. The desire to increase grassland may also have precipitated the removal of new-growth piñon in the western portion of the study area. This is evidenced by numerous decayed stumps and fallen trees with 10 to 20 cm diameter trunks. Farming may also have had an impact around the one historical homestead in the survey area. We are certain that large areas around LA 11727 were deforested, but we did not see any clear evidence for agricultural fields.

Four of the sites have been impacted by the construction and use of roads. Midden deposits at two sites along the old Armijo Canyon Road (LA 102826 and LA 102843) have been slightly disturbed during maintenance of the road. This portion of the road is now closed, however, and no future impacts should occur. LA 102821 and LA 102822 are adjacent to the main road into the wilderness area. They have already been slightly impacted by road maintenance, and continued maintenance or road improvement will

probably cause further damage. LA 102851 is also near the main road, but it should not be impacted by normal use or minor maintenance.

Ten of the sites have been vandalized to some degree by pothunters. The damage varies from the destruction of one or two rooms at some sites to the destruction of about 75% of the roomblocks at LA 11725 and LA 102810. Most of this pothunting appears to have occurred several years ago and the looter's pits are refilling with slump dirt and stabilizing. LA 11722, however, contained one looter's pit that to be at most few years old. All pothunting has been confined to roomblock areas at the large habitations; no looting is discernible in the associated midden deposits. Closing the area to vehicular traffic has probably curtailed further looting in the Armijo Canyon area.

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APPENDIX A

Ceramic Type Data by Site

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	11718		11719		11720		11721		11722		11723		11724		11725		11727	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Unidentified Cibola Whiteware	7	13.7	9	7.8	20	12.5	131	42.7	9	7.2	14	13.0	6	6.2	31	11.1	5	3.7
Unidentified Narrow Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Medium Line CWW	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kiatuthlanna B/W	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
Red Mesa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.4	.	.
Escavada B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/W	.	.	1	0.9	2	1.3	.	.	.	.	.	.	.	.	1	0.4	.	.
Reserve B/W	1	2.0	2	1.7	6	3.7	22	7.2	5	4.0	2	1.9	3	3.1	12	4.3	1	0.7
Tularosa B/W	.	.	.	.	.	.	.	.	1	0.8	.	.	.	.	.	.	.	.
Gallup B/W	10	19.6	12	10.3	36	22.5	8	2.6	8	6.4	6	5.6	4	4.2	21	7.5	12	9.0
Unpainted Whiteware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.4	.	.
Cebolleta Hatched	.	.	2	1.7	10	6.2	.	.	3	2.4	2	1.9	.	.	19	6.8	3	2.2
Cebolleta Escavada Style	.	.	.	.	.	.	1	0.3	.	.	.	.	1	1.0	.	.	.	.
Cebolleta Snowflake Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Reserve Style	.	.	.	.	.	.	2	0.7	.	.	1	0.9	.	.	.	.	.	.
Cebolleta Gallup Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Organic Paint	.	.	.	.	.	.	.	.	.	.	.	.	5	5.2	.	.	.	.
McElmo B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mesa Verde B/W	2	3.9	3	2.6	1	0.6	3	1.0	9	7.2	10	9.3	.	.	8	2.9	1	0.7
Unidentified Wt. Mt. Redware	2	3.9	1	0.9	.	.	2	0.7	4	3.2	1	0.9	4	4.2	2	0.7	6	4.5
Unidentified Wt. Mt. Redware B/R	.	.	.	.	3	1.9	.	.	.	.	1	0.9	.	.	1	0.4	.	.
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	1	0.3	.	.	.	.	.	.	.	.	1	0.7
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	2	1.6	.	.	.	.	1	0.4	1	0.7
Puerco B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wingate B/R	.	.	.	.	4	2.5	12	3.9	.	.	2	1.9	1	1.0	3	1.1	.	.
St. Johns B/R	.	.	1	0.9	.	.	.	.	.	.	.	.	.	.	1	0.4	.	.
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns Polychrome	.	.	.	.	.	.	2	0.7	.	.	.	.	.	.	.	.	.	.
Springerville Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	1	1.0	.	.	.	.
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lino Gray	1	2.0	1	0.9	9	5.6	13	4.2	1	0.8	.	.	2	2.1	8	2.9	4	3.0
Plain Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kana-a Neck Banded	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neck Corrugated Gray	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	1	0.7
Unidentified Clapboard Corrugated Gray	20	39.2	76	65.5	39	24.4	89	29.0	70	56.0	43	39.8	63	65.6	135	48.2	95	70.9
Unidentified Indented Corrugated Gray	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
Narrow Neck Banded Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PII Corrugated Gray Rim	1	2.0	.	.	1	0.6	.	.	.	.	.	.	2	2.1	.	.	.	.
PIII Corrugated Gray Rim	.	.	1	0.9	1	0.6	1	0.3	1	0.8	.	.	.	.	.	.	.	.
PII-III Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Incised Corrugated Gray	.	.	4	3.4	1	0.6	5	1.6	1	0.8	1	0.9	.	.	3	1.1	.	.
Socorro B/W	1	2.0	.	.	15	9.4	1	0.3	.	.	10	9.3	.	.	3	1.1	.	.
Alma Plain																		

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	11718		11719		11720		11721		11722		11723		11724		11725		11727	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Plain Brown																		
Reserve Plain, Smudged	3	5.9			2	1.3	9	2.9			3	2.8	3	3.1	14	5.0	3	2.2
Reserve Plain Corrugated	2	3.9	2	1.7	5	3.1	2	0.7	3	2.4	4	3.7						
Reserve Incised Corrugated					1	0.6									1	0.4		
Reserve Plain Corrugated, Smudged															1	0.4		
Reserve Incised Corrugated, Smudged																		
Reserve Indented Corrugated							1	0.3	5	4.0	1	0.9			2	0.7	1	0.7
Reserve Indented Corrugated, Smudged	1	2.0					2	0.7	2	1.6	7	6.5	1	1.0	11	3.9		
Tularosa Pattern Corrugated									1	0.8								
Tularosa Pattern Corr., Reserve Var																		
Tularosa Pattern Corr., Reserve Var, Sm.			1	0.9														
Alma Neck Banded																		
Three Circle Neck Corrugated																		
Alma Incised																		
Los Lunas smudged																		
Site Total	51	100	116	100	160	100	307	100	125	100	108	100	96	100	280	100	134	100

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	11734		11777		102804		102805		102806		102807		102809		102810		102811	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Unidentified Cibola Whiteware	23	7.2	9	6.3	.	.	1	1.1	3	11.5	3	5.4	5	12.8	37	12.3	8	12.3
Unidentified Narrow Line CWW	.	.	.	.	1	3.0	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	2	2.2	2	7.7	3	5.4	2	5.1	.	.	.	.
Kiatuthlanna B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Red Mesa B/W	.	.	.	.	2	6.1	.	.	.	.	.	.	.	.	.	.	.	.
Escavada B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.3	.	.
Puerco B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve B/W	.	.	.	.	.	.	1	1.1	1	3.8	.	.	.	.	.	.	.	.
Tularosa B/W	22	6.9	4	2.8	.	.	6	6.6	3	11.5	7	12.5	6	15.4	20	6.6	1	1.5
Gallup B/W	.	.	.	.	2	6.1	.	.	.	.	.	.	.	.	.	.	.	.
Unpainted Whiteware	11	3.4	9	6.3	2	6.1	7	7.7	5	19.2	2	3.6	3	7.7	25	8.3	8	12.3
Cebolleta Hatched	.	.	.	.	.	.	1	1.1	.	.	.	.	.	.	1	0.3	1	1.5
Cebolleta Escavada Style	6	1.9	.	.	.	.	1	1.1	.	.	2	3.6	.	.	7	2.3	2	3.1
Cebolleta Snowflake Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.3	.	.
Cebolleta Reserve Style	.	.	1	0.7	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Gallup Style	.	.	1	0.7	1	3.0	1	1.1	.	.	.	.	.	.	1	0.3	.	.
Unidentified Organic Paint	.	.	4	2.8	.	.	.	.	.	.	.	.	.	.	1	0.3	.	.
McElmo B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware	9	2.8	.	.	.	.	1	1.1	.	.	.	.	.	.	3	1.0	1	1.5
Unidentified Wt. Mt. Redware B/R	12	3.7	7	4.9	.	.	1	1.1	.	.	.	.	2	5.1	1	0.3	1	1.5
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1.0	1	1.5
Wingate B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1.0	3	4.6
St. Johns B/R	5	1.6	2	1.4	.	.	4	4.4	.	.	3	5.4	.	.	2	0.7	.	.
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1.5
St. Johns Polychrome	7	2.2	1	0.7	.	.	1	1.1	.	.	.	.	.	.	.	.	.	.
Springerville Polychrome	1	0.3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	4.6
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	43	14.3	.	.
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lino Gray	.	.	.	.	.	.	.	.	.	.	1	1.8	.	.	.	.	.	.
Plain Gray	5	1.6	3	2.1	6	18.2	.	.	6	23.1	7	12.5	7	17.9	3	1.0	2	3.1
Kana-a Neck Banded	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neck Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Clapboard Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Indented Corrugated Gray	175	54.5	72	50.7	.	.	58	63.7	4	15.4	24	42.9	13	33.3	57	18.9	20	30.8
Narrow Neck Banded Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	1	1.8	.	.	.	.	.	.
PIII Corrugated Gray Rim	1	0.3	5	3.5	.	.	1	1.1	.	.	.	.	1	2.6	.	.	.	.
PII-III Corrugated Gray Rim	.	.	1	0.7	.	.	.	.	.	.	1	1.8	.	.	2	0.7	.	.
Incised Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.3	.	.
Socorro B/W	1	0.3	13	9.2	.	.	4	4.4	.	.	.	.	.	.	10	3.3	1	1.5
Alma Plain	7	2.2	2	1.4	12	36.4	.	.	1	3.8	.	.	.	.	12	4.0	.	.

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	11734		11777		102804		102805		102806		102807		102809		102810		102811	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Plain Brown																		
Reserve Plain, Smudged	17	5.3	5	3.5							1	1.8			36	12.0	8	12.3
Reserve Plain Corrugated	6	1.9													2	0.7		
Reserve Incised Corrugated																		
Reserve Plain Corrugated, Smudged											1	1.8			8	2.7		
Reserve Incised Corrugated, Smudged															3	1.0		
Reserve Indented Corrugated	12	3.7													12	4.0	2	3.1
Reserve Indented Corrugated, Smudged	1	0.3	2	1.4			1	1.1							4	1.3	2	3.1
Tularosa Pattern Corrugated			1	0.7														
Tularosa Pattern Corr., Reserve Var																		
Tularosa Pattern Corr., Reserve Var, Sm.															1	0.3		
Alma Neck Banded																		
Three Circle Neck Corrugated					7	21.2			1	3.8								
Alma Incised																		
Los Lunas smudged															1	0.3		
Site Total	321	100	142	100	33	100	91	100	26	100	56	100	39	100	301	100	65	100

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102812		102813		102814		102815		102816		102817		102818		102819		102820	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Unidentified Cibola Whiteware	17	21.8	8	13.3	26	15.6	9	8.8	10	14.7	2	18.2	10	11.4	11	7.0	8	9.4
Unidentified Narrow Line CWW	.	.	.	.	6	3.6	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kiatuthlanna B/W	.	.	.	.	.	.	.	.	.	.	.	.	1	1.1	.	.	.	.
Red Mesa B/W	.	.	.	.	.	.	.	.	.	.	.	.	2	2.3	.	.	8	9.4
Escavada B/W	2	2.6	1	1.7	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1.2
Reserve B/W	.	.	.	.	.	.	3	2.9	.	.	.	.	.	.	.	.	.	.
Tularosa B/W	2	2.6	.	.	8	4.8	.	.	2	2.9	.	.	.	.	3	1.9	.	.
Gallup B/W	.	.	.	.	.	.	1	1.0	.	.	.	.	.	.	.	.	.	.
Unpainted Whiteware	11	14.1	5	8.3	20	12.0	4	3.9	11	16.2	7	63.6	7	8.0	6	3.8	4	4.7
Cebolleta Hatched	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Escavada Style	8	10.3	10	16.7	2	1.2	16	15.7	5	7.4	.	.	.	.	3	1.9	3	3.5
Cebolleta Snowflake Style	.	.	.	.	.	.	3	2.9	.	.	.	.	.	.	.	.	.	.
Cebolleta Reserve Style	.	.	.	.	.	.	1	1.0	.	.	.	.	.	.	.	.	.	.
Cebolleta Gallup Style	1	1.3	1	1.7	.	.	.	.	3	4.4	2	18.2	.	.	.	.	1	1.2
Unidentified Organic Paint	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
McElmo B/W	.	.	.	.	.	.	.	.	1	1.5	.	.	.	.	.	.	.	.
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware	2	2.6	.	.	3	1.8	.	.	.	.	.	.	.	.	2	1.3	1	1.2
Unidentified Wt. Mt. Redware B/R	.	.	.	.	2	1.2	.	.	2	2.9	.	.	.	.	3	1.9	.	.
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/R	.	.	.	.	.	.	1	1.0	.	.	.	.	.	.	.	.	.	.
Wingate B/R	1	1.3	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns B/R	1	1.3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wingate Polychrome	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns Polychrome	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
Springerville Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11	7.0	.	.
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	5.1	.	.
Lino Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plain Gray	6	7.7	4	6.7	5	3.0	10	9.8	3	4.4	.	.	53	60.2	8	5.1	15	17.6
Kana-a Neck Banded	.	.	.	.	.	.	.	.	.	.	.	.	5	5.7	.	.	1	1.2
Neck Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Clapboard Corrugated Gray	2	2.6	.	.	.	.	.	.	1	1.5	.	.	2	2.3	2	1.3	1	1.2
Unidentified Indented Corrugated Gray	22	28.2	13	21.7	71	42.5	7	6.9	18	26.5	.	.	1	1.1	93	59.2	9	10.6
Narrow Neck Banded Gray	.	.	.	.	.	.	1	1.0	.	.	.	.	.	.	.	.	.	.
PII Corrugated Gray Rim	.	.	.	.	2	1.2	.	.	.	.	.	.	.	.	.	.	.	.
PIII Corrugated Gray Rim	1	1.3	.	.	5	3.0	.	.	1	1.5	.	.	.	.	1	0.6	.	.
PII-III Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1.9	.	.
Incised Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Socorro B/W	1	1.3	6	10.0	.	.	.	.	.	.	.	.	2	2.3	2	1.3	3	3.5
Alma Plain	1	1.3	1	1.7	2	1.2	6	5.9	8	11.8	.	.	5	5.7	.	.	11	12.9

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102812		102813		102814		102815		102816		102817		102818		102819		102820	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Plain Brown							15	14.7										
Reserve Plain, Smudged			1	1.7			1	1.0									6	7.1
Reserve Plain Corrugated			2	3.3			1	1.0									5	5.9
Reserve Incised Corrugated									3	4.4								
Reserve Plain Corrugated, Smudged			2	3.3	12	7.2												
Reserve Incised Corrugated, Smudged																		
Reserve Indented Corrugated			5	8.3			19	18.6									1	1.2
Reserve Indented Corrugated, Smudged																		
Tularosa Pattern Corrugated																		
Tularosa Pattern Corr., Reserve Var							1	1.0										
Tularosa Pattern Corr., Reserve Var, Sm.																		
Alma Neck Banded																		
Three Circle Neck Corrugated							3	2.9							1	0.6	6	7.1
Alma Incised																	1	1.2
Los Lunas smudged			1	1.7														
Site Total	78	100	60	100	167	100	102	100	68	100	11	100	88	100	157	100	85	100

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102821		102822		102823		102824		102825		102826		102827		102828		102829	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Unidentified Cibola Whiteware	17	14.0	6	14.0	1	4.0	9	16.7	6	17.6	9	13.6	5	17.2	13	10.9	32	22.1
Unidentified Narrow Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kiatuthlanna B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.8	.	.
Red Mesa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8	6.7	5	3.4
Escavada B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.8	1	0.7
Puerco B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa B/W	.	.	1	2.3	1	4.0	1	1.9	.	.	1	1.5	.	.	.	.	.	.
Gallup B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.8	.	.
Unpainted Whiteware	16	13.2	3	7.0	1	4.0	10	18.5	4	11.8	13	19.7	7	24.1	5	4.2	26	17.9
Cebolleta Hatched	1	0.8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Escavada Style	12	9.9	.	.	2	8.0	.	.	.	.	11	16.7	2	6.9	3	2.5	30	20.7
Cebolleta Snowflake Style	.	.	.	.	.	.	.	.	.	.	1	1.5	1	3.4	.	.	.	.
Cebolleta Reserve Style	.	.	.	.	.	.	.	.	.	.	1	1.5	1	3.4	.	.	.	.
Cebolleta Gallup Style	.	.	.	.	.	.	.	.	.	.	3	4.5	.	.	1	0.8	.	.
Unidentified Organic Paint	.	.	2	4.7	.	.	.	.	1	2.9	.	.	.	.	.	.	.	.
McElmo B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware	1	0.8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware B/R	5	4.1	1	2.3	.	.	.	.	3	8.8	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wingate B/R	2	1.7	2	4.7	1	4.0	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns Polychrome	.	.	.	.	1	4.0	.	.	.	.	.	.	.	.	.	.	.	.
Springerville Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lino Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plain Gray	1	0.8	1	2.3	1	4.0	1	1.9	3	8.8	5	7.6	2	6.9	58	48.7	32	22.1
Kana-a Neck Banded	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	2.5	1	0.7
Neck Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Clapboard Corrugated Gray	.	.	.	.	.	.	.	.	.	.	4	6.1	.	.	6	5.0	1	0.7
Unidentified Indented Corrugated Gray	51	42.1	17	39.5	16	64.0	25	46.3	15	44.1	2	3.0	1	3.4	1	0.8	4	2.8
Narrow Neck Banded Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	1	1.5	.	.	1	0.8	2	1.4
PIII Corrugated Gray Rim	1	0.8	.	.	1	4.0	.	.	.	.	.	.	.	.	.	.	.	.
PII-III Corrugated Gray Rim	2	1.7	.	.	.	.	2	3.7	.	.	.	.	.	.	.	.	.	.
Incised Corrugated Gray	.	.	.	.	.	.	1	1.9	.	.	.	.	.	.	.	.	.	.
Socorro B/W	2	1.7	4	9.3	.	.	1	1.9	1	2.9	1	1.5	.	.	.	.	4	2.8
Alma Plain	2	1.7	.	.	.	.	3	5.6	1	2.9	6	9.1	6	20.7	15	12.6	5	3.4

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102821		102822		102823		102824		102825		102826		102827		102828		102829	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Plain Brown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Plain, Smudged	4	3.3	3	7.0	.	.	1	1.9	.	.	.	.	1	3.4	.	.	.	.
Reserve Plain Corrugated	1	0.8	.	.	.	.	.	.	.	.	.	.	4	13.8	2	1.7	2	1.4
Reserve Incised Corrugated	.	.	.	.	.	.	.	.	.	.	5	7.6	.	.	.	.	.	.
Reserve Plain Corrugated, Smudged	1	0.8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Incised Corrugated, Smudged	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Indented Corrugated	2	1.7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Indented Corrugated, Smudged	.	.	3	7.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa Pattern Corrugated	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa Pattern Corr., Reserve Var	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa Pattern Corr., Reserve Var, Sm.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alma Neck Banded	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Three Circle Neck Corrugated	.	.	.	.	.	.	.	.	.	.	4	6.1	.	.	.	.	.	.
Alma Incised	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Los Lunas smudged	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Site Total	121	100	43	100	25	100	54	100	34	100	66	100	29	100	119	100	145	100

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102830		102831		102832		102833		102834		102835		102836		102837		102838	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Unidentified Cibola Whiteware	15	3.5	10	18.2	19	12.1	42	19.8	4	3.5	.	.	.	.	7	5.5	9	23.1
Unidentified Narrow Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kiatuthlanna B/W	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	.	.	.	.
Red Mesa B/W	.	.	.	.	9	5.7	.	.	.	.	.	.	3	7.0	14	11.0	2	5.1
Escavada B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0.8	.	.
Tularosa B/W	11	2.6	.	.	.	.	.	.	3	2.7	.	.	.	.	.	.	.	.
Gallup B/W	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	1	0.8	.	.
Unpainted Whiteware	4	0.9	12	21.8	25	15.9	30	14.2	1	0.9	9	75.0	.	.	26	20.5	1	2.6
Cebolleta Hatched	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Escavada Style	3	0.7	1	1.8	6	3.8	10	4.7	.	.	.	.	.	.	5	3.9	.	.
Cebolleta Snowflake Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Reserve Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Gallup Style	.	.	.	.	.	.	11	5.2	.	.	.	.	.	.	1	0.8	.	.
Unidentified Organic Paint	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
McElmo B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware	12	2.8	.	.	.	.	.	.	7	6.2	.	.	.	.	.	.	1	2.6
Unidentified Wt. Mt. Redware B/R	16	3.7	5	9.1	.	.	8	3.8	3	2.7	1	8.3	.	.	.	.	.	.
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	.	.	1	0.9	.	.	.	.	.	.	.	.
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/R	3	0.7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wingate B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns B/R	7	1.6	.	.	.	.	.	.	2	1.8	.	.	.	.	.	.	.	.
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns Polychrome	17	4.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Springerville Polychrome	.	.	.	.	.	.	.	.	1	0.9	.	.	.	.	.	.	.	.
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lino Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plain Gray	5	1.2	3	5.5	26	16.6	.	.	.	.	1	8.3	25	58.1	28	22.0	6	15.4
Kana-a Neck Banded	.	.	.	.	.	.	.	.	.	.	.	.	3	7.0	2	1.6	1	2.6
Neck Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Clapboard Corrugated Gray	.	.	.	.	3	1.9	1	0.5	.	.	.	.	5	11.6	2	1.6	.	.
Unidentified Indented Corrugated Gray	314	73.4	20	36.4	1	0.6	7	3.3	85	75.2	.	.	.	.	2	1.6	6	15.4
Narrow Neck Banded Gray	.	.	.	.	.	.	6	2.8	.	.	.	.	6	14.0	2	1.6	1	2.6
PII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PIII Corrugated Gray Rim	3	0.7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PII-III Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Incised Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Socorro B/W	2	0.5	1	1.8	2	1.3	23	10.8	.	.	.	.	1	2.3	13	10.2	1	2.6
Alma Plain	.	.	.	.	51	32.5	44	20.8	.	.	.	.	.	.	17	13.4	9	23.1

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102830		102831		102832		102833		102834		102835		102836		102837		102838	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Plain Brown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Plain, Smudged	6	1.4	1	1.8	.	.	7	3.3	.	.	.	.	.	.	.	.	1	2.6
Reserve Plain Corrugated	.	.	1	1.8	12	7.6	18	8.5	.	.	1	8.3	.	.	5	3.9	1	2.6
Reserve Incised Corrugated	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Plain Corrugated, Smudged	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Incised Corrugated, Smudged	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve Indented Corrugated	10	2.3	.	.	.	.	2	0.9	5	4.4	.	.	.	.	.	.	.	.
Reserve Indented Corrugated, Smudged	.	.	1	1.8	.	.	.	.	1	0.9	.	.	.	.	.	.	.	.
Tularosa Pattern Corrugated	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa Pattern Corr., Reserve Var	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa Pattern Corr., Reserve Var, Sm.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alma Neck Banded	.	.	.	.	1	0.6	.	.	.	.	.	.	.	.	1	0.8	.	.
Three Circle Neck Corrugated	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alma Incised	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Los Lunas smudged	.	.	.	.	.	.	3	1.4	.	.	.	.	.	.	.	.	.	.
Site Total	428	100	55	100	157	100	212	100	113	100	12	100	43	100	127	100	39	100

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102839		102840		102842		102843		102844		102845		102846		102847		102848	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Unidentified Cibola Whiteware	10	10.5	4	11.1	2	40.0	13	12.6	8	17.4	.	.	7	17.1	17	30.4	6	21.4
Unidentified Narrow Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kiatuthlanna B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Red Mesa B/W	1	1.1	.	.	.	.	4	3.9	.	.	.	.	2	4.9	1	1.8	.	.
Escavada B/W	2	2.1	.	.	.	.	.	.	.	.	.	.	1	2.4	.	.	.	.
Puerco B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reserve B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tularosa B/W	1	1.1	.	.	.	.	.	.	1	2.2	13	7.6	.	.	.	.	.	.
Gallup B/W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unpainted Whiteware	14	14.7	4	11.1	.	.	28	27.2	5	10.9	5	2.9	8	19.5	11	19.6	4	14.3
Cebolleta Hatched	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Escavada Style	10	10.5	.	.	2	40.0	14	13.6	2	4.3	.	.	1	2.4	6	10.7	7	25.0
Cebolleta Snowflake Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cebolleta Reserve Style	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1.8	.	.
Cebolleta Gallup Style	11	11.6	1	2.8	.	.	5	4.9	.	.	.	.	3	7.3	.	.	1	3.6
Unidentified Organic Paint	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
McElmo B/W	.	.	.	.	.	.	.	.	.	.	1	0.6	.	.	.	.	.	.
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	1	0.6	.	.	.	.	.	.
Unidentified Wt. Mt. Redware	2	2.1	.	.	.	.	.	.	.	.	7	4.1	.	.	2	3.6	.	.
Unidentified Wt. Mt. Redware B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Puerco B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wingate B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns B/R	.	.	.	.	.	.	.	.	.	.	4	2.3	.	.	.	.	.	.
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
St. Johns Polychrome	.	.	.	.	.	.	.	.	.	.	2	1.2	.	.	.	.	.	.
Springerville Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lino Gray	.	.	1	2.8	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plain Gray	19	20.0	23	63.9	1	20.0	12	11.7	2	4.3	1	0.6	4	9.8	10	17.9	2	7.1
Kana-a Neck Banded	2	2.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neck Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified Clapboard Corrugated Gray	1	1.1	.	.	.	.	2	1.9	.	.	.	.	2	4.9	1	1.8	1	3.6
Unidentified Indented Corrugated Gray	4	4.2	1	2.8	.	.	4	3.9	9	19.6	134	77.9	.	.	2	3.6	2	7.1
Narrow Neck Banded Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
PII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	1	0.6	.	.	.	.	.	.
PIII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	1	0.6	.	.	.	.	.	.
PII-III Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Incised Corrugated Gray	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Socorro B/W	12	12.6	.	.	.	.	4	3.9	6	13.0	.	.	5	12.2	2	3.6	.	.
Alma Plain	4	4.2	2	5.6	.	.	9	8.7	7	15.2	.	.	6	14.6	1	1.8	3	10.7

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number																	
	102839		102840		102842		102843		102844		102845		102846		102847		102848	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type																		
Plain Brown																		
Reserve Plain, Smudged	1	1.1					3	2.9	1	2.2								
Reserve Plain Corrugated							4	3.9					1	2.4	2	3.6	2	7.1
Reserve Incised Corrugated																		
Reserve Plain Corrugated, Smudged							1	1.0			2	1.2						
Reserve Incised Corrugated, Smudged																		
Reserve Indented Corrugated									3	6.5								
Reserve Indented Corrugated, Smudged									2	4.3								
Tularosa Pattern Corrugated																		
Tularosa Pattern Corr., Reserve Var																		
Tularosa Pattern Corr., Reserve Var, Sm.																		
Alma Neck Banded																		
Three Circle Neck Corrugated	1	1.1											1	2.4				
Alma Incised																		
Los Lunas smudged																		
Site Total	95	100	36	100	5	100	103	100	46	100	172	100	41	100	56	100	28	100

(CONTINUED)

Appendix A Armijo Class III Survey, Ceramic Type by Site

	Site LA Number										Type Total	
	102849		102850		102851		102852		102853			
	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type												
Unidentified Cibola Whiteware	1	5.9	6	17.6	8	7.4	10	15.2	2	5.4	720	12.1
Unidentified Narrow Line CWW	.	.	.	.	.	.	.	.	.	.	7	0.1
Unidentified Medium Line CWW	.	.	.	.	.	.	.	.	.	.	1	0.0
Unidentified Reserve/Tularosa B/W	.	.	.	.	.	.	.	.	.	.	9	0.2
Kiatuthlanna B/W	.	.	.	.	.	.	.	.	.	.	3	0.1
Red Mesa B/W	.	.	.	.	.	.	4	6.1	7	18.9	73	1.2
Escavada B/W	.	.	.	.	.	.	.	.	.	.	10	0.2
Puerco B/W	.	.	.	.	.	.	.	.	.	.	1	0.0
Reserve B/W	.	.	.	.	.	.	.	.	.	.	10	0.2
Tularosa B/W	.	.	.	.	8	7.4	2	3.0	.	.	181	3.1
Gallup B/W	.	.	.	.	.	.	.	.	.	.	7	0.1
Unpainted Whiteware	5	29.4	10	29.4	6	5.6	17	25.8	4	10.8	578	9.7
Cebolleta Hatched	.	.	.	.	.	.	.	.	.	.	5	0.1
Cebolleta Escavada Style	.	.	2	5.9	.	.	8	12.1	2	5.4	243	4.1
Cebolleta Snowflake Style	.	.	.	.	.	.	.	.	.	.	6	0.1
Cebolleta Reserve Style	.	.	.	.	.	.	1	1.5	.	.	6	0.1
Cebolleta Gallup Style	.	.	1	2.9	.	.	1	1.5	1	2.7	55	0.9
Unidentified Organic Paint	.	.	.	.	.	.	.	.	.	.	8	0.1
McElmo B/W	.	.	.	.	.	.	.	.	.	.	7	0.1
Mesa Verde B/W	.	.	.	.	.	.	.	.	.	.	1	0.0
Unidentified Wt. Mt. Redware	.	.	.	.	.	.	.	.	.	.	91	1.5
Unidentified Wt. Mt. Redware B/R	.	.	.	.	8	7.4	1	1.5	.	.	104	1.8
Unidentified Wt. Mt. Redware Polychrome	.	.	.	.	1	0.9	.	.	.	.	7	0.1
Unidentified Wingate/St. Johns B/R	.	.	.	.	.	.	.	.	.	.	2	0.0
Puerco B/R	.	.	1	2.9	.	.	.	.	.	.	13	0.2
Wingate B/R	.	.	.	.	.	.	.	.	.	.	13	0.2
St. Johns B/R	.	.	.	.	.	.	.	.	.	.	52	0.9
Wingate Polychrome	.	.	.	.	.	.	.	.	.	.	4	0.1
St. Johns Polychrome	.	.	1	2.9	1	0.9	.	.	.	.	32	0.5
Springerville Polychrome	.	.	.	.	.	.	.	.	.	.	4	0.1
Heshotauthla B/R	.	.	.	.	.	.	.	.	.	.	4	0.1
Heshotauthla Polychrome	.	.	.	.	.	.	.	.	.	.	43	0.7
Unknown Painted Redware	.	.	.	.	.	.	.	.	.	.	11	0.2
Unknown Unpainted Redware	.	.	.	.	.	.	.	.	.	.	8	0.1
Lino Gray	.	.	.	.	.	.	.	.	1	2.7	3	0.1
Plain Gray	2	11.8	2	5.9	.	.	.	.	8	21.6	466	7.9
Kana-a Neck Banded	.	.	.	.	.	.	1	1.5	1	2.7	20	0.3
Neck Corrugated Gray	.	.	.	.	.	.	.	.	1	2.7	1	0.0
Unidentified Clapboard Corrugated Gray	.	.	1	2.9	.	.	1	1.5	1	2.7	42	0.7
Unidentified Indented Corrugated Gray	8	47.1	1	2.9	73	67.6	2	3.0	.	.	2094	35.3
Narrow Neck Banded Gray	.	.	.	.	.	.	.	.	.	.	17	0.3
PII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	8	0.1
PIII Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	26	0.4
PII-III Corrugated Gray Rim	.	.	.	.	.	.	.	.	.	.	15	0.3
Incised Corrugated Gray	.	.	.	.	.	.	.	.	.	.	2	0.0
Socorro B/W	.	.	2	5.9	1	0.9	2	3.0	.	.	148	2.5
Alma Plain	.	.	2	5.9	1	0.9	6	9.1	5	13.5	303	5.1

(CONTINUED)

Appendix A

Armijo Class III Survey, Ceramic Type by Site

	Site LA Number										Type Total	
	102849		102850		102851		102852		102853			
	N	%	N	%	N	%	N	%	N	%	N	%
Ceramic Type												
Plain Brown	.	.	.	.	.	.	.	.	2	5.4	17	0.3
Reserve Plain, Smudged	.	.	.	.	.	.	1	1.5	1	2.7	143	2.4
Reserve Plain Corrugated	.	.	4	11.8	.	.	3	4.5	.	.	97	1.6
Reserve Incised Corrugated	.	.	.	.	.	.	.	.	.	.	10	0.2
Reserve Plain Corrugated, Smudged	.	.	.	.	.	.	.	.	.	.	28	0.5
Reserve Incised Corrugated, Smudged	.	.	.	.	.	.	.	.	.	.	3	0.1
Reserve Indented Corrugated	.	.	1	2.9	.	.	1	1.5	.	.	85	1.4
Reserve Indented Corrugated, Smudged	1	5.9	.	.	1	0.9	2	3.0	.	.	45	0.8
Tularosa Pattern Corrugated	.	.	.	.	.	.	.	.	.	.	2	0.0
Tularosa Pattern Corr., Reserve Var	.	.	.	.	.	.	.	.	.	.	1	0.0
Tularosa Pattern Corr., Reserve Var, Sm.	.	.	.	.	.	.	.	.	.	.	2	0.0
Alma Neck Banded	.	.	.	.	.	.	.	.	.	.	2	0.0
Three Circle Neck Corrugated	.	.	.	.	.	.	3	4.5	1	2.7	28	0.5
Alma Incised	.	.	.	.	.	.	.	.	.	.	1	0.0
Los Lunas smudged	.	.	.	.	.	.	.	.	.	.	5	0.1
Site Total	17	100	34	100	108	100	66	100	37	100	5933	100