MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

TESTING AND EVALUATION OF THREE PREHISTORIC AND HISTORIC SITES NEAR GRANTS, CIBOLA AND MCKINLEY COUNTIES, NEW MEXICO

Regge N. Wiseman

with contributions by
Guadalupe A. Martinez
Linda J. Goodman

Submitted by David A. Phillips, Jr.
Principal Investigator

ARCHAEOLOGY NOTES 28

SANTA FE 1994 NEW MEXICO

ADMINISTRATIVE SUMMARY

The Office of Archaeological Studies, Museum of New Mexico, conducted testing and evaluation of two prehistoric sites and one historic site along I-40 near Grants, New Mexico, for the New Mexico State Highway and Transportation Department (NMSHTD). Testing was confined to the existing highway right-of-way at one prehistoric site (LA 79538) and the historic site (LA 79362) because the highway project will not go beyond the current right-of-way fence. New right-of-way will be acquired at LA 79541, necessitating testing inside and outside the existing right-of-way. The former occupants of the Navajo site (LA 79362) were interviewed for information on traditional cultural values, burials, function, and occupation dates of the site.

The two prehistoric sites are lithic artifact scatters with a few sherds. The few diagnostic artifacts from LA 79541 suggest occupation dates during the San Jose phase (3200-1800 B.C.) of the Archaic period and the latter half of the Pueblo III period (A.D. 1175-1300) of the Anasazi culture. A single potsherd at LA 79538 suggests an occupation during the Pueblo II-III periods (A.D. 900-1300) of the Anasazi culture, but the similarity of the lithic artifact assemblage with that of LA 79541 suggests a similar occupation span. No surface or subsurface features or deposits were found at either LA 79538 or LA 79541.

LA 79362 has a Navajo component dating from the mid-1920s to about 1950 and a small (presumably) prehistoric lithic artifact scatter of unknown date. Only the extreme southern part of the Navajo site lies within the highway project area (within the existing right-of-way). Most of the site features (hogan rings, corrals, trash areas, etc.) lie outside the right-of-way, but four hearths (one clearly quite recent and *not* associated with the Navajo occupation), three rock features, a possible rock alignment, and a large coal and trash dump are within the highway project zone. Interviews of former occupants of the site indicate that members of their clan lived at the site between about 1925 and 1950. Analysis of the artifacts within the proposed project area (existing right-of-way) indicates dates of ca. 1930 to 1950.

All people interviewed agreed that no traditional cultural properties were present at LA 79362. Three individuals died during the occupation of the site. One was buried at least 100 m south of the existing right-of-way, one was buried in the vicinity of the existing overpass 300 m west of the site, and the third was buried in an unknown location east of the site. No physical remains of the burials are on the surface. Long after the burial of the individuals, the interviewees attempted to relocate them and failed.

LA 79538, LA 79541, and the prehistoric component of LA 79362 all appear to be low-density surface scatters with low numbers of artifacts and a general lack of features and diagnostic remains. As a result, they are unlikely to yield important information on local prehistory. We therefore recommend that no further studies be conducted within the proposed highway project area.

The historic to recent component of LA 79362 has the potential to yield important information on local history. However, none of the known major features (hogans, for instance) lie within the proposed highway project area. The portion of this component within the right-of-way does not have the potential to yield information important to history, and past residents indicated that

Emma Bodie Begay and her granddaughter, Rosita Loretto. Used by permission.

CONTENTS

Figures

Tables

INTRODUCTION

In February 1991, the Office of Archaeological Studies, Museum of New Mexico, tested and evaluated three archaeological sites along I-40 in the vicinity of Grants, New Mexico (Fig. 1; Appendix 1). The work was conducted at the request of William L. Taylor of the New Mexico State Highway and Transportation Department (Project IR-040-1(90)63). David A. Phillips, Jr., served as the principal investigator. Regge N. Wiseman supervised the project and was assisted by William L. Sarracino.

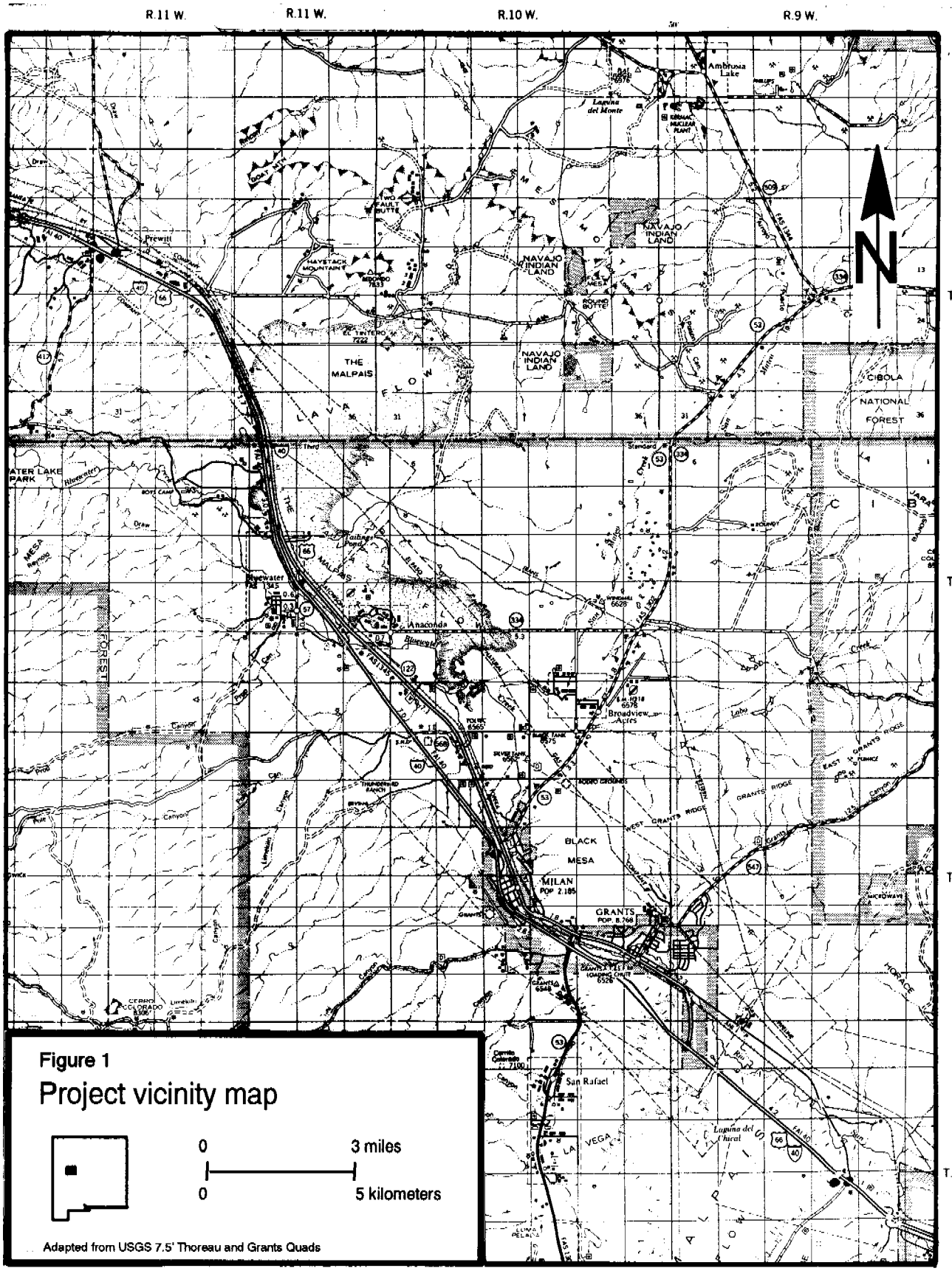
The objectives of this project were to determine whether the sites have potential for yielding information important to our understanding of regional history. The testing sought information on site type, subsurface deposits, features such as structures and hearths, and the integrity of the deposits and features, if present. Limited artifact collections were taken to provide information on occupation dates, site functions, and the identification of unknown items.

LA 79538 and LA 79541 are lithic artifact scatters with an occasional potsherd. No prehistoric features (structures, hearths, etc.) were seen on the surface of either site during the survey phase.

LA 79362 is a twentieth-century Navajo habitation site with an additional lithic artifact component of presumed prehistoric affiliation. Most of the Navajo remains, including all of the hogan rings, pens, and most of the trash dumps, lie outside the right-of-way. Four hearths (one clearly of recent origin and *not* part of the Navajo occupation), three rock features, a possible rock alignment, and a large coal and trash dump lie within the right-of-way. Interviews of former occupants of the site established the absence of traditional cultural properties and burials within the site, site function, and approximate site occupation dates.

All three sites lie both inside and outside the existing highway right-of-way. The highway project will be restricted to the existing right-of-way at LA 79538 and LA 79362; the land at both is owned by NMSHTD. New right-of-way at LA 79541 will be acquired from the adjacent private (non-Indian) landowner.

The success of the project was assured by the input of many individuals. Dan Reiley of the Historic Preservation Division, Office of Cultural Affairs, assisted with the permitting process. The writer, William Sarracino, and Timothy R. Bradley performed the fieldwork. Wiseman analyzed the prehistoric artifacts, and Guadalupe A. Martinez analyzed the historic artifacts. Jennifer Yellen entered the lithic artifact data on the computer, and Eric Blinman got it back out. The report was produced by David A. Phillips, Jr. (content editing), Tom Ireland (technical editing), Ann Noble (drafting), and Nancy Hunter Warren (artifact photography, film processing, and printing).


R.11 W.
R.11 W.
R.10 W.
R.9 W.
T.13 N.
T.12 N.
T.11 N.
T.10 N.
N
Ambrosia Lake
Laguna del Monte
NAVAJO INDIAN LAND
THE MALPAIS
LAVA FLOW
CIBOLA NATIONAL FOREST
Prewitt
Haystack Mountain
El Tintero
Bluewater
Anaconda
Broadview Acres
BLACK MESA
MILAN
POP 2,185
GRANTS
POP 8,798
San Rafael
LA VEGA
Laguna del Chical
Grants Ridge
West Grants Ridge
East Grants Ridge
Cerro Colorado
Figure 1
Project vicinity map
0
3 miles
0
5 kilometers
Adapted from USGS 7.5' Thoreau and Grants Quads

NATURAL SETTING

The three project sites are in the valley of the Rio San Jose, a major eastward-flowing tributary of the Puerco River. All three sites are situated on low hills and ridges south of the San Jose at elevations of 2,090 m (LA 79538), 1,945 m (LA 79541), and 2,105 m (LA 79362). Climatic and biotic details at all three sites are similar and can be summarized as follows.

Winters are cool (January mean of -1.9 degrees C), and summers are warm (July mean of 21.6 degrees C; Gabin and Lesperance 1977). The frost-free period is 140 days (Tuan et al. 1973). The normal annual precipitation of 254 mm has been decidedly summer dominant during the period of record (USDC 1967).

The surface geology of the project area is complex. Various sedimentary and igneous members of the Precambrian through Quaternary periods outcrop within a 20 km radius of Grants, providing a plethora of rock resources to the occupants of the project sites (Dane and Bachman 1965).

The sites lie at the junction of two biotic communities (Brown 1982). The Great Basin Conifer Woodland covers the lower elevations associated with the Zuni Mountains and is dominated by piñon (*Pinus edulis*) and juniper (*Juniperus monosperma*) trees. The Plains and Great Basin Grasslands associated with the Rio San Jose Valley are characterized by mixed short grass species. Numerous species of animals useful to humans would have been common in the area in prehistoric times. These include deer, probably elk, mountain lion, rabbit, squirrels, and a variety of smaller rodents (Findley et al. 1975).

CULTURAL SETTING

The project area lies within the southern part of the prehistoric Anasazi culture area. Several archaeological overviews have been written about this part of New Mexico (Stuart and Gauthier 1981; Tainter and Gillio 1980); refer to them for details of the prehistory and history of the area.

People have been attracted to the wealth of natural resources of the Grants region for at least the last 12,000 years. The earliest people followed a hunting and gathering lifeway that relied to some extent on now extinct forms of elephants and buffalo. Retreat of the glaciers at the end of the Pleistocene resulted in a general climatic warming. In adjusting to increasing aridity and the disappearance of the large Pleistocene animals, Native Americans turned to smaller animals such as deer and rabbits and began incorporating a larger share of plant foods in their diet. Several stages and phases have been named for this, the Archaic period. In the Grants region, the phases and their dates are as follows: Jay (5500-4800 B.C.), Bajada (4800-3200 B.C.), San Jose (3200-1800 B.C.), Armijo (1800-800 B.C.), and En Medio (800 B.C.-A.D. 400). The En Medio phase is actually a transitional phase to the subsequent pottery-producing periods of the Anasazi culture and is equivalent to the Basketmaker II period of the Pecos classification. At some point during the late Archaic, maize horticulture was introduced into northern New Mexico, setting the stage for further developments in the following centuries.

About A.D. 400, pottery manufacturing began in the Anasazi region, the growing of maize, beans, and squash began a transition to an agricultural lifeway, and the local peoples began settling in small villages of pithouses. Over the next several centuries, village sizes continued to grow, and the dominant architectural form shifted to above-ground pueblos composed of contiguous rooms. Agricultural products assumed increasing importance in the diet, pottery and other crafts developed to a degree of excellence, and population reached its zenith. Social, economic, and perhaps religious organization on a regional scale apparently took place after A.D. 1000 for reasons as yet poorly understood. Large, well-planned pueblos, surrounded by communities of smaller sites and interconnected by a series of roadways, characterized the Four Corners region (northwestern New Mexico and adjacent states). Just why these developments terminated in the late A.D. 1200s is not totally clear, but environmental degradation, probably in tandem with a long series of droughts, was involved.

By A.D. 1300 or 1350, the Anasazi had migrated from the Four Corners to adjacent regions such as the Rio Grande and the Acoma-Laguna area near Grants. The entry date of their successors, the Navajos, is still uncertain, but by A.D. 1500 at the latest, these hunters and gatherers were in place. The Navajos, Acomas, and Lagunas controlled the Grants region until the coming of Euroamericans in the middle 1800s. From that point on, the region was dominated by non-Native Americans.

LA 79538

LA 79538, a low-density lithic artifact and potsherd scatter, is on the eastward-facing upper slope of a ridge (Fig. 2). The site, which measures 70 m east-west and 30 m north-south, lies mostly outside the existing right-of-way. Fieldwork was restricted to the portion of the site within the existing right-of-way, an area measuring 30 m east-west by 8 m north-south (Fig. 3). No features such as architecture or hearths were evident on the surface prior to testing. The proposed highway project is restricted to the portion of the site within the existing right-of-way, which is owned by NMSHTD.

Field Procedures

All surface artifacts were pinflagged. A grid of 2 m squares was established using the right-of-way fence for the east-west baseline. The number of artifacts--all lithic debris in this instance (the few potsherds lie outside the right-of-way)--was recorded by square and plotted on graph paper to facilitate visualization of density and distribution. Artifacts from arbitrarily selected squares were collected for laboratory analysis. Thirty 3 inch diameter bucket-auger holes were bored at 2 meter intervals to test for soil depth and subsurface features. Maps were constructed on graph paper, using the grid and, where necessary, triangulation to plot details such as the roadcut, a rock ledge, and key vegetation. Recording was done on standard forms and by means of 35 mm black-and-white photographs. The collections have been placed in the Archaeological Research Collection (ARC) of the Museum of New Mexico.

Results

The surface artifact plot (Fig. 4) shows a density of less than 1 item per square meter over most of the site area within the right-of-way. Only two concentrations were detected. Both were located next to the highway cut, which suggests that most of these concentrations are no longer extant. Surface artifact density in the concentrations ranges from 2.0 to 3.25 items per square meter. The only formal artifact noted during the surface examination was a large biface fragment; it was collected.

The auger tests showed soil depth to vary from 5 to 50 cm, depending on depth to bedrock. Organic staining was present in most tests but confined to the uppermost 15 to 25 cm, which suggests that it derives from soil formation rather than cultural sources. The only artifact recovered by the augering is a flake that came from the uppermost 10 cm of Test 1S/6W.

No subsurface features such as structures, hearths, pits, or trash deposits were encountered in the auger tests. Because of the negative results of the augering, no test pits were excavated.

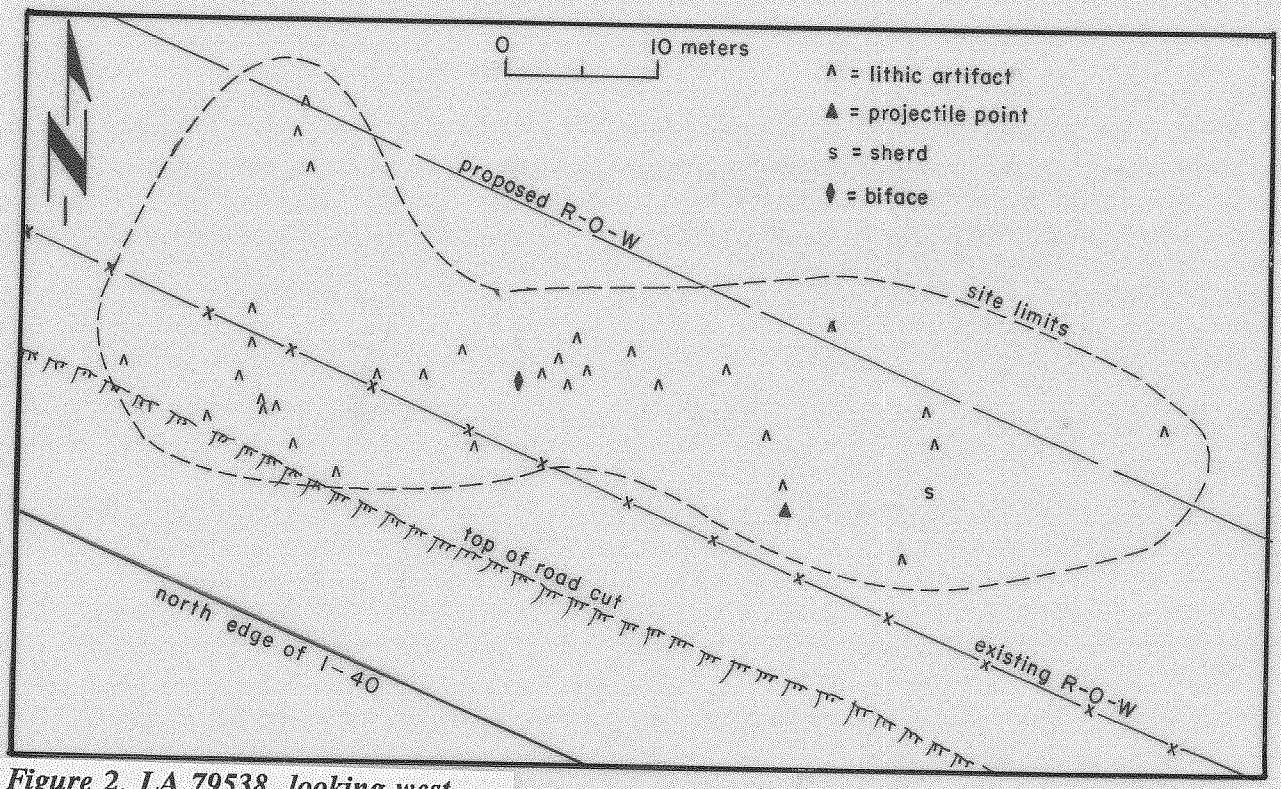


Figure 2. LA 79538, looking west.

Figure 3. LA 79538, site map.

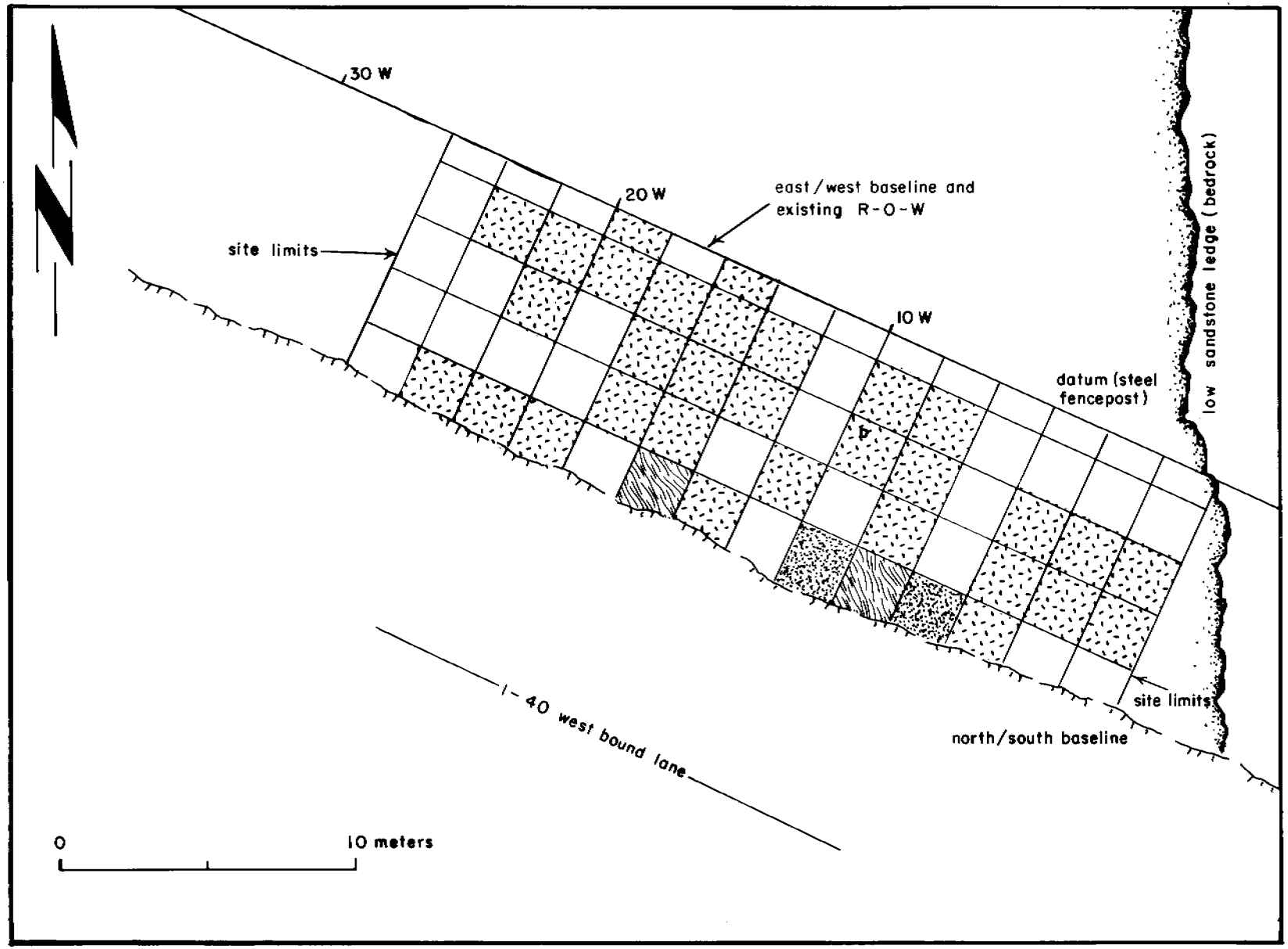


Figure 4. LA 79538, surface artifact density map.

LA 79541

LA 79541, a low-density lithic artifact and sherd scatter, is situated on the north-facing slope of a small hill at the south margin of the San Jose Valley (Fig. 5). The site measures 40 by 40 m. Nearly all of LA 79541 falls within the proposed highway project area. The site area tested for this project was quadrilateral and measured 40 m east-west and 20 to 25 m north-south (Fig. 6). No features such as structures or hearths were evident on the surface before testing. The existing right-of-way is owned by the NMSHTD, and new right-of-way will be acquired from the adjacent private (non-Indian) landowner.

Field Procedures

All surface artifacts were pinflagged. A grid of 2 m squares was set up using the right-of-way fence for the east-west baseline. The number of artifacts was recorded by square and plotted on graph paper to facilitate visualization of density and distribution. A sample of artifacts was collected by squares, and all formal artifacts noted on the site were collected for laboratory analysis. Fifty 30 by 30 cm trowel tests were dug at 3 m intervals to test for soil depth and subsurface features. The soil layer was too shallow in most places for successful augering. Maps were constructed on graph paper using the grid and, where necessary, triangulation to plot details such as the roadcut, a rock ledge, drainage areas, key vegetation, and the locations of collected artifacts. Recording was done on standard forms and by means of 35 mm black-and-white photographs.

Results

The surface artifact plot (Fig. 7) shows a density of less than 1 item per square meter over most of the site area within the right-of-way. Three concentrations were detected, two next to the existing highway fence and the third at and beyond (outside) the new right-of-way limit (Fig. 8). Surface artifact density in these concentrations ranges from less than one item per square meter to 5.5 items per square meter. Several formal artifacts, including projectile points, manos, biface fragments, and ground stone fragments, were noted during the surface examination and collected. The peripheral position of most of these finds suggests that the site has been heavily surface collected, and most formal tools have been removed.

The trowel tests showed soil depth to bedrock varies from 1 to 34 cm. Organic staining, negligible across the site, was restricted to the uppermost 10 cm of fill and clearly derives from soil formation rather than cultural sources. The depth and number of lithic debris artifacts recovered in the trowel tests are given in Table 1. Three tiny flecks of charcoal were also noted in the soil from two trowel tests.

Figure 5. LA 79541, looking north.

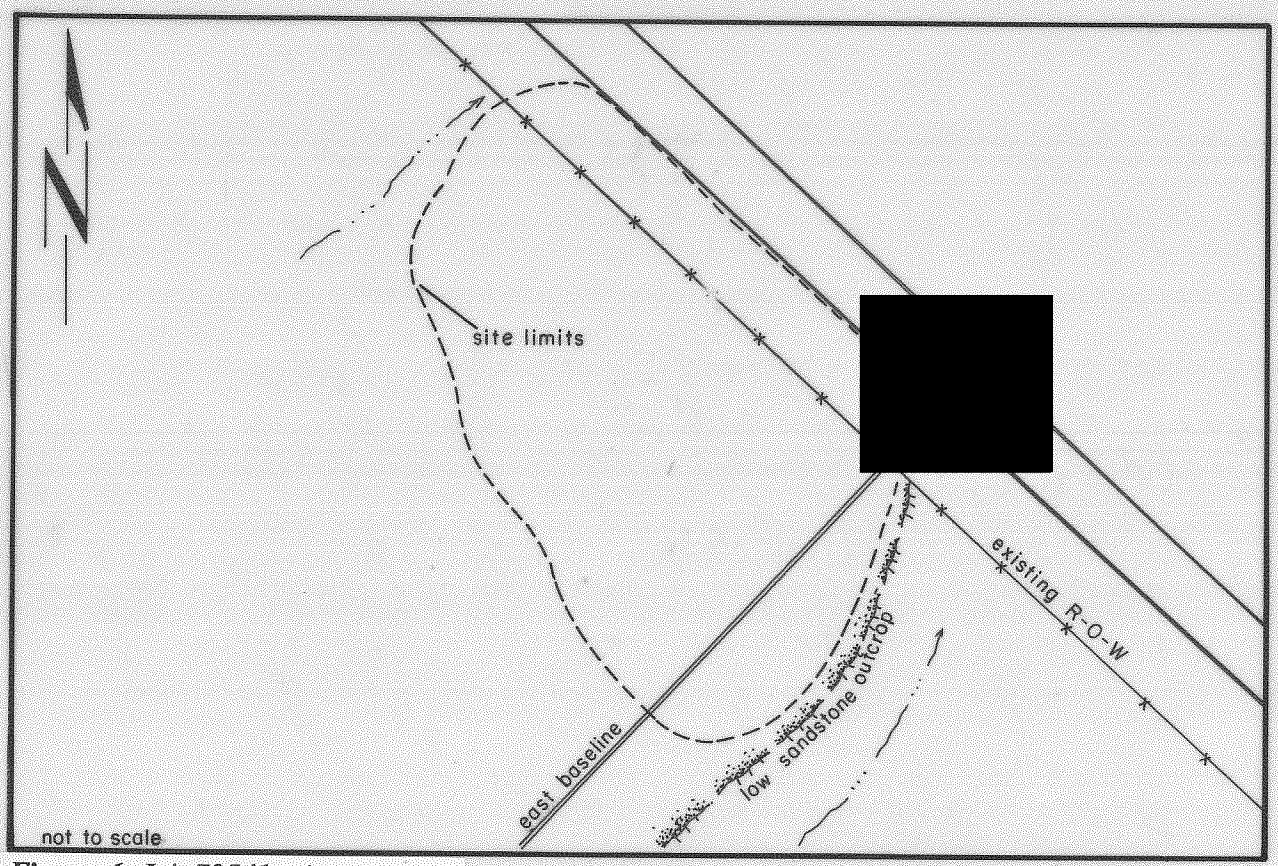


Figure 6. LA 79541, site map.

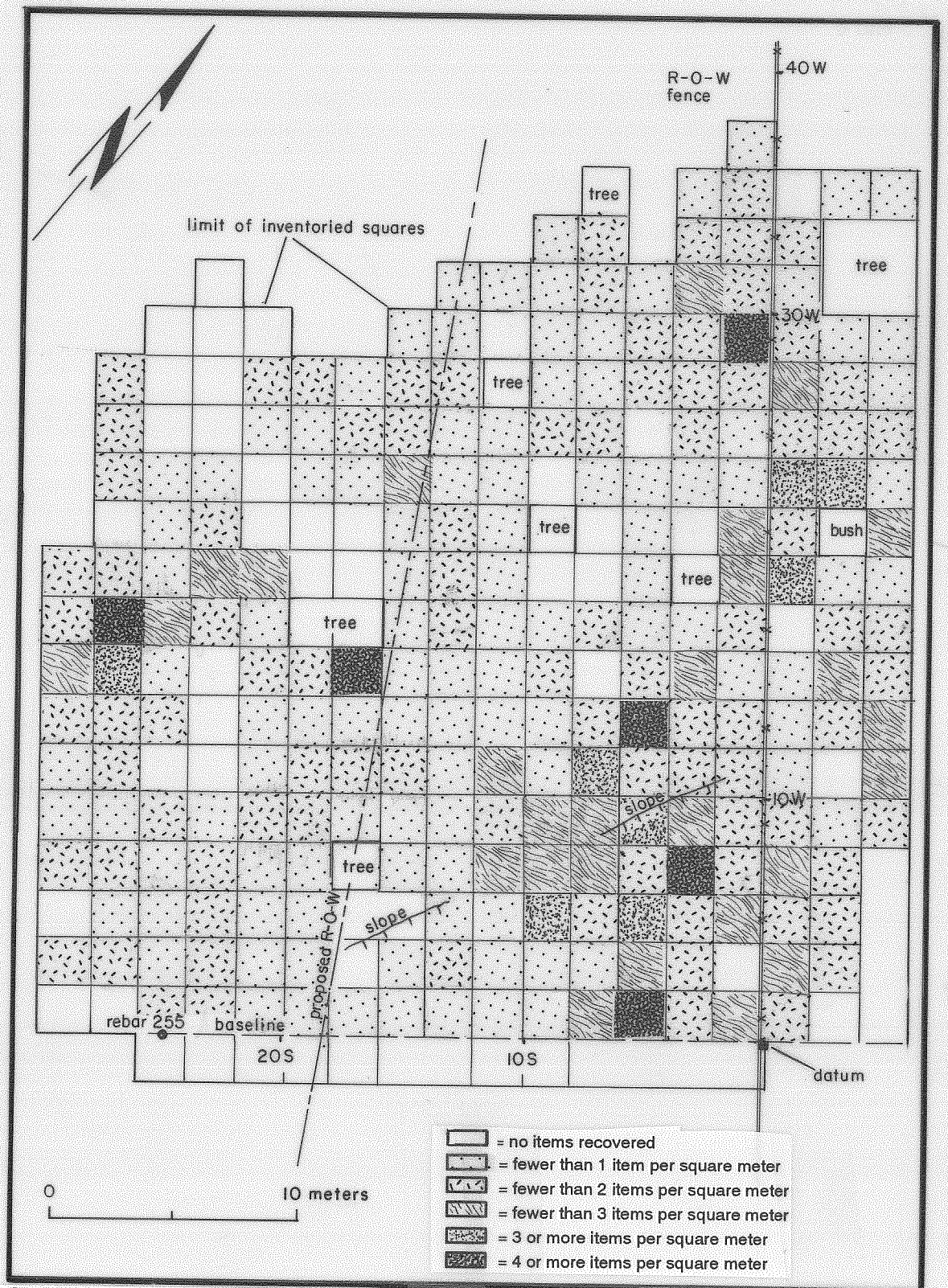


Figure 7. LA 79541, surface artifact density map.

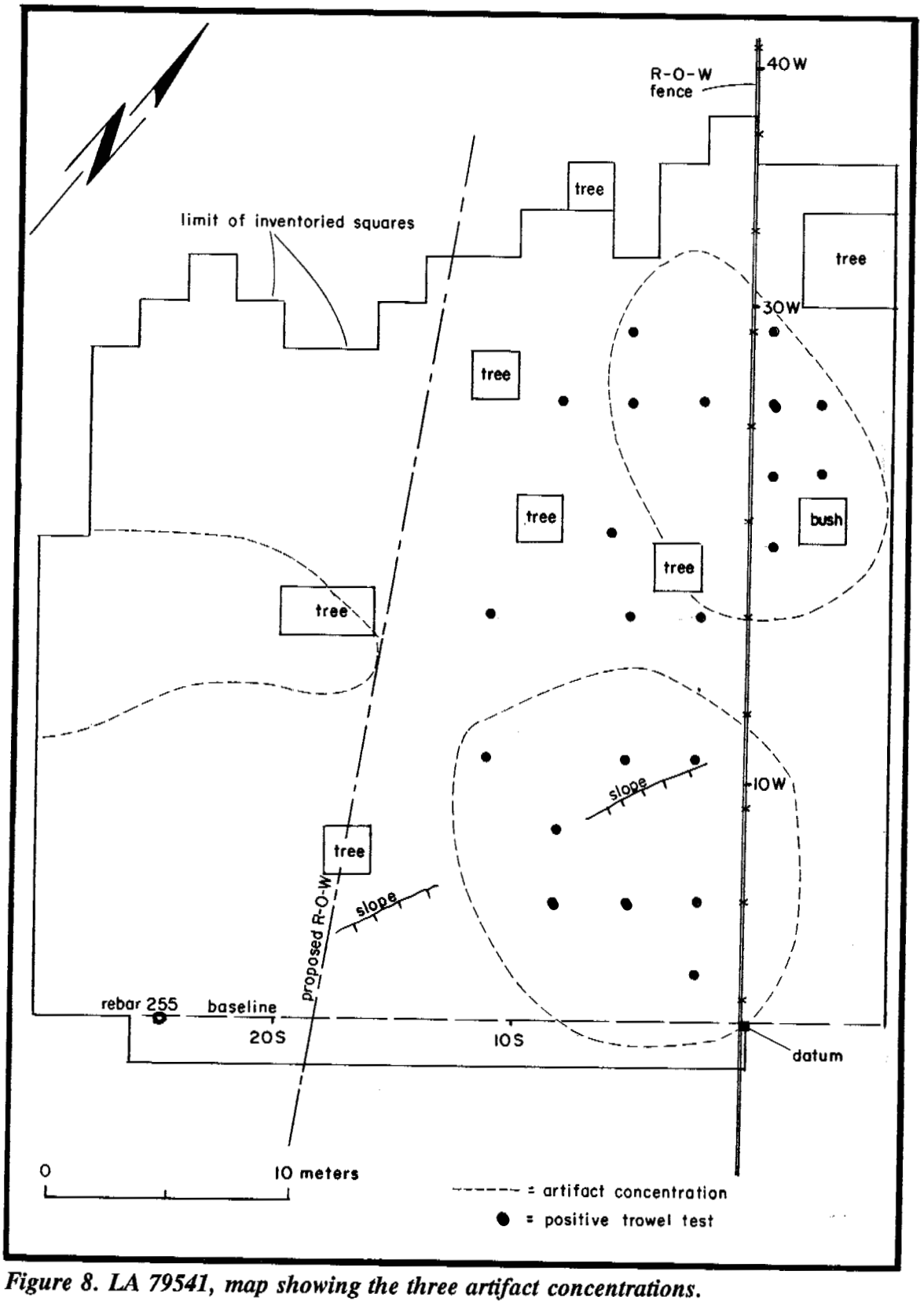


Figure 8. LA 79541, map showing the three artifact concentrations.

Table 1. Depth and number of artifacts recovered from trowel tests at LA 79541

Test Number	Total Depth (cm)	Artifact Recovery Depths (cm) and Number of Artifacts					
		0-5	5-10	0-10	10-15	15-20	20-25
2S/2W	21	1	1				
2S/5W	21		1				
2S/11W	18		1				
2S/14W	13	2					
2S/17W	15	1					
2S/26W	28	1					
5S/5W	5	1					
5S/11W	34	1					2 charcoal
5S/17W	23			3, and 1 charcoal		1	
5S/26W	18			3			
5S/29W	17			1			
8S/5W	11	1					
8S/8W	17		1				
8S/26W	18	1					
11S/11W	8	1					
11S/17W	25	1					
1N/20W	11	2	3				
1N/23W	26				1		
1N/20W	11	2	3				
1N/23W	26				1		
1N/26W	30				2		
1N/29W	15	3					
2N/5W	12			1			
2N/14W	17			1			
3N/23W	15	2			1		
3N/26W	34				1		2
Total artifacts		18	7	9	5	1	2
Total charcoal				1			2

No subsurface features such as structures, hearths, pits, or trash deposits were encountered in the trowel tests. The decrease in number of artifacts with depth indicates that most of the artifacts are surficial. Artifacts below the surface were probably deposited from natural processes such as trampling by humans, burrowing by animals, and root action. Because of the essentially negative results of the trowel tests, no test pits were excavated at LA 79541.

LA 79362

LA 79362 is a large twentieth-century Navajo site with an underlying prehistoric lithic artifact scatter. Situated on the north-facing slope of a low hill, the site measures 150 m north-south and 140 m east-west (Fig. 9). Most of the site lies outside the existing interstate right-of-way. Since no new right-of-way will be required for the proposed highway improvements at LA 79362, the testing project dealt with only that part of the site lying within the existing right-of-way (Fig. 10). The existing right-of-way is owned by the NMSHTD.

Figure 9. LA 79362, looking east.

The historic features of the site include four hogan rings, a sheep corral, outdoor hearths, rock features of unknown function, and refuse areas generally associated with each hogan. All of the hogan rings, the corral, and most of the outdoor hearths, rock features, and refuse areas lie outside (north of) the existing right-of-way. In walking over the main part of the site after most of the testing

had been done within the right-of-way, we noted that the trash outside of the right-of-way has the same content as the trash within the right-of-way. Thus, conclusions on the age and function of the remains within the right-of-way seem to apply to the site as a whole.

It was difficult to determine if artifacts were associated with the Navajo site or trash from the interstate highway, especially a number of wine bottle bottoms. The new appearance of some of the glass was helpful in some instances, but artifact distribution/density plots made for metal and glass objects were the primary means of determining the origin of the artifacts. The success of these techniques was enhanced by the fact that the site is 4-5 m above the level of the highway, thereby limiting the amount of road-related trash that could reach it.

Several features within the existing right-of-way were recorded during the survey. These included coal and trash dumps, hearths, and rock features initially thought to be hearths. Cultural items were also thinly spread among these features and over the entire site area within the right-of-way.

Field Procedures

The crew was familiarized with the features of the part of the site within the right-of-way. All artifacts of potential temporal and functional importance were pinflagged. Next, a grid of 4 by 4 m squares was established using the right-of-way fence as the east-west baseline. A general inventory of surficial artifacts was made of the number of pieces of metal, pieces of glass, pieces of "china," and prehistoric lithic artifacts in each 4 by 4 m square.

A second pass recorded all formal artifacts such as cans, flashlight batteries, spoons, buttons, and marbles. The prehistoric lithic artifacts were analyzed in a third pass, using a shortened list of attributes. Finally, selected historic and prehistoric items were collected for analysis in the laboratory. These items were chosen because of the need for further identification or because they had the potential of providing temporal or functional information important to an assessment of the site.

Because of the low density of prehistoric remains and the age of the Navajo remains (twentieth century), subsurface testing was limited to two 1.0 by 0.5 m test pits excavated to bedrock. Test Pit 1 was placed along what appeared to be a rock alignment (possible structure foundation), and Test Pit 2 was placed in a rock feature. The hearths were not tested because all are clearly historic (i.e., they were sitting *on* the surface), and all but one appeared, from eolian sand accumulations, to belong to the same occupation as the rock features and trash dumps. One hearth, at the far east end of the site within the right-of-way, is even more recent (fresh-looking charcoal) and undoubtedly was built and used by a highway transient (i.e., it does not belong to the Navajo occupation of the site).

Maps were drawn on graph paper, using the grid and, where necessary, triangulation to plot details such as the roadcut, features, key vegetation, and the locations of collected artifacts. Recording was done on standard forms and by means of 35 mm black-and-white photographs. Collections were placed in the ARC.

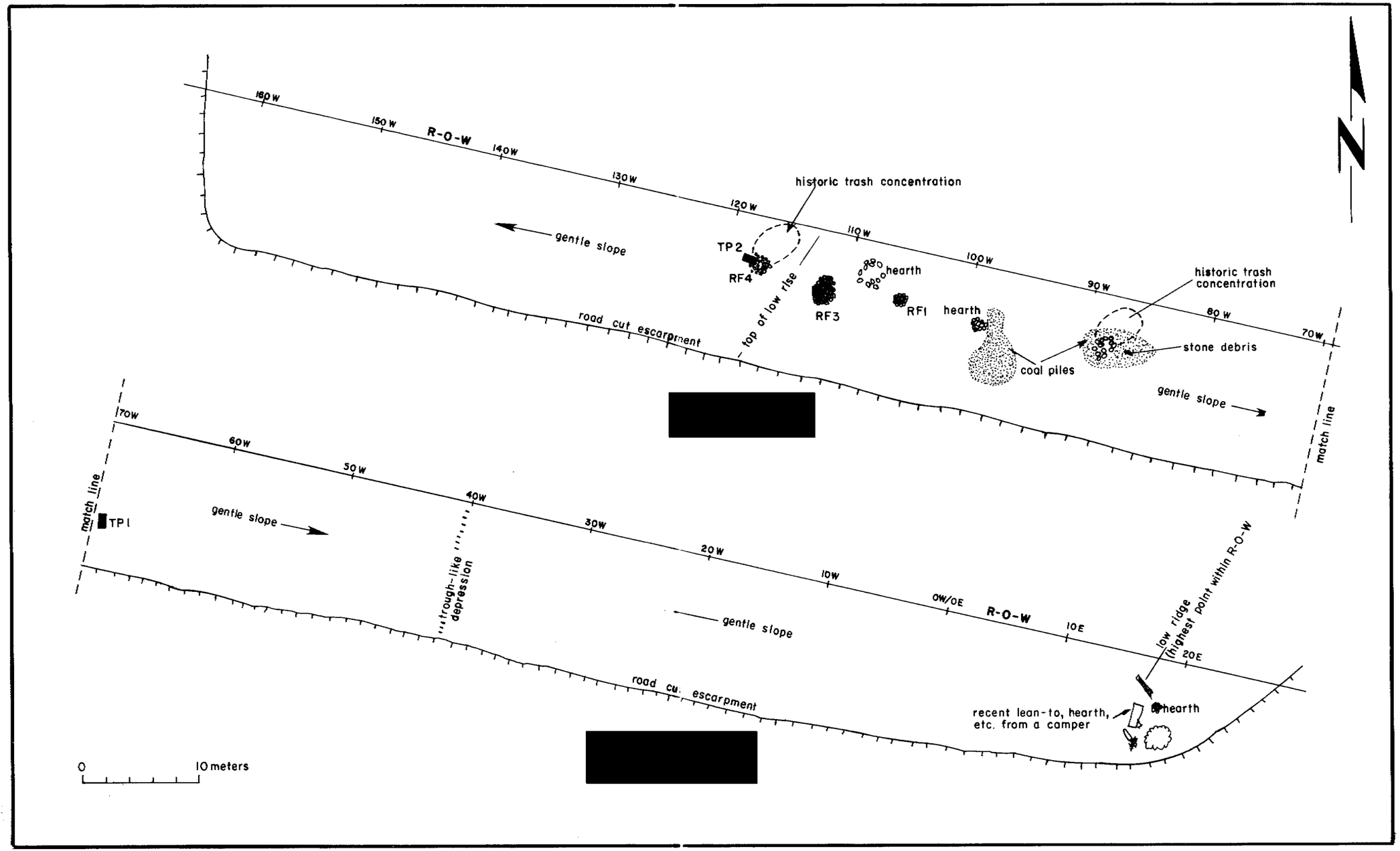


Figure 10. LA 79362, site map.

Interview Procedures

Linda J. Goodman, OAS ethnohistorian, interviewed two former inhabitants of LA 79362. Emma Begay (age 95) and Fred James (age 60) answered questions about traditional cultural properties, the burial of deceased persons, site function, and occupation dates of LA 79362. Both consented to the use of their names in this report.

Archaeological Results

The distribution/density plots of metal (Fig. 11) and glass (Fig. 12) indicate that most of these items derive from the Navajo occupation, rather than passing motorists. This can be most clearly seen in the configuration of the main artifact concentration between 80W and 128W. The densest part of the concentration lies close to the fence, and its arc ends near the highway cut. This distribution also conforms closely with the grouping of coal dumps, hearths, and rock features.

The distribution/density plot of the lithic artifacts (Fig. 13) has two salient features: these items are scattered over much of the right-of-way, and the only concentration is between 76W and 100W. But instead of being next to the right-of-way fence like the metal and glass, the main concentration of lithic artifacts lies next to the highway cut, indicating that much, if not most of this manifestation once lay to the south.

Test Pit 1 investigated a possible rock wall alignment at 8S/69W. The initial test (50 by 50 cm) was placed along the east side of the rocks. Excavation to bedrock at 17 cm below the modern surface revealed a scattering of a few small pieces of charcoal and shredded juniper bark in a sandy matrix. The test was extended southward 50 cm to obtain better exposure of the rocks. No alignment or stacking of the rocks could be discerned anywhere along the exposure. One last attempt was made to assess the configuration of the rocks by stripping the overlying soil west of the test pit. The rocks thus exposed are a jumbled mass, lacking form and obvious function (Figs. 14 and 15). Aside from the few small pieces of charcoal and the shredded juniper, the only cultural indicator was a single rusty, drawn-wire nail (44 mm long) recovered from a depth of 10-17 cm in the test pit. We could not be certain from the archaeological evidence whether the concentration of rocks was natural or cultural. It seems likely, on the basis of the interviews with the former residents of the site, that it was from construction of the hogans and represents discarded fragments of rock from the shaping of stones.

Test Pit 2 investigated the westernmost rock feature, at 4S/117W (Fig. 16), initially thought to be a hearth. Careful inspection of the surface of the feature suggested that little if any burned material was present in or around the feature. Also, the rocks are not obviously burned (blackened, reddened, or fire-broken). Test Pit 2 started out as a 50 by 50 cm square outside of and next to the west edge of the rock feature. Bedrock was encountered at a depth of 17 cm at the west (low) edge of the test. The fill consisted of rock fragments, sandy soil lacking cultural staining, shards of glass (clear, brown, and dark blue), several pieces of a ceramic cup, fragments of four rusted cans, and six small pieces of charcoal (one cm or less in diameter). The rocks were not stacked or otherwise purposely placed, and the artifacts and charcoal were scattered throughout. The test pit was then expanded 50 cm east into the center of the rock feature. Aside from a continuation of intermixed

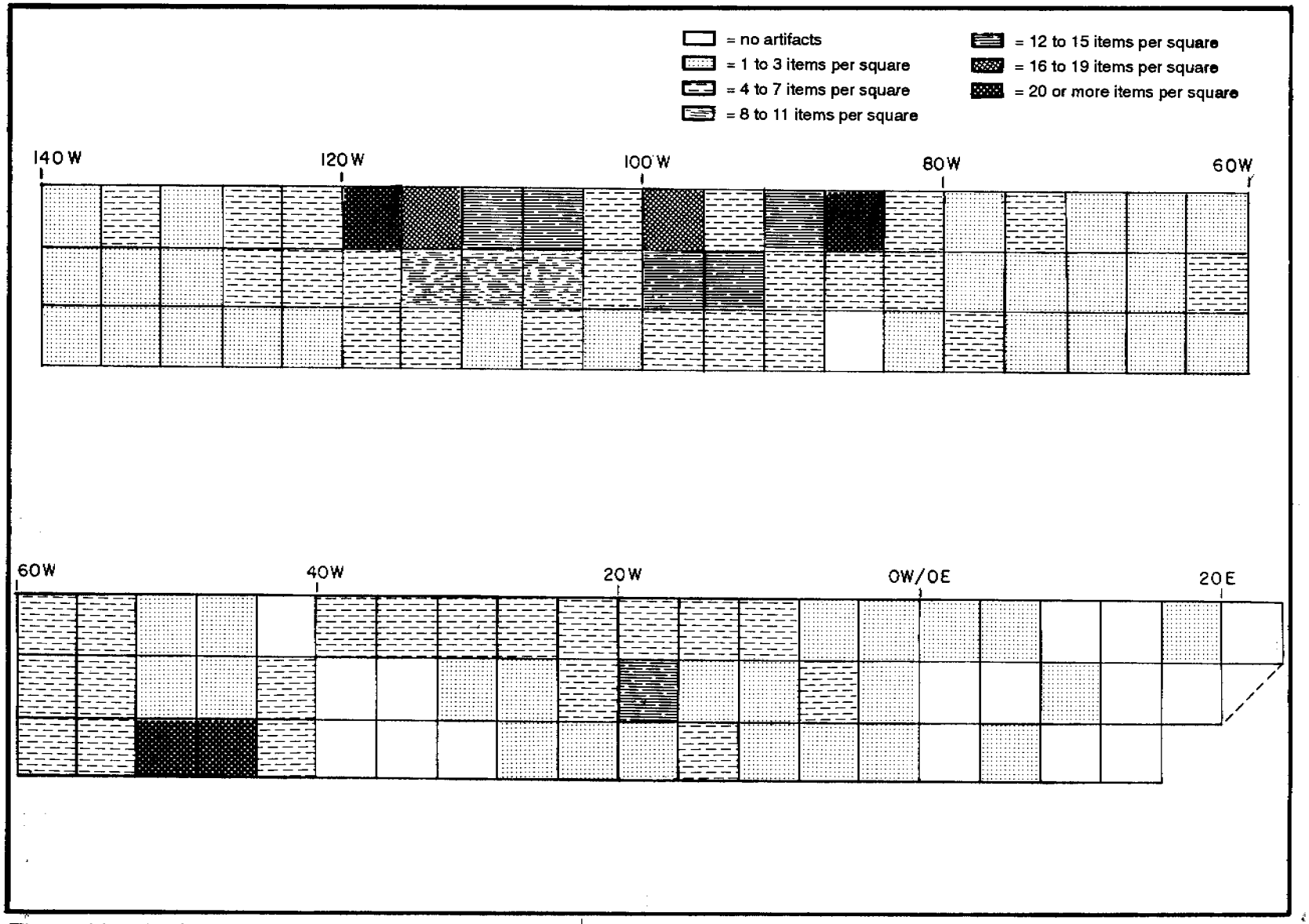


Figure 11. LA 79362, metal artifact density map.

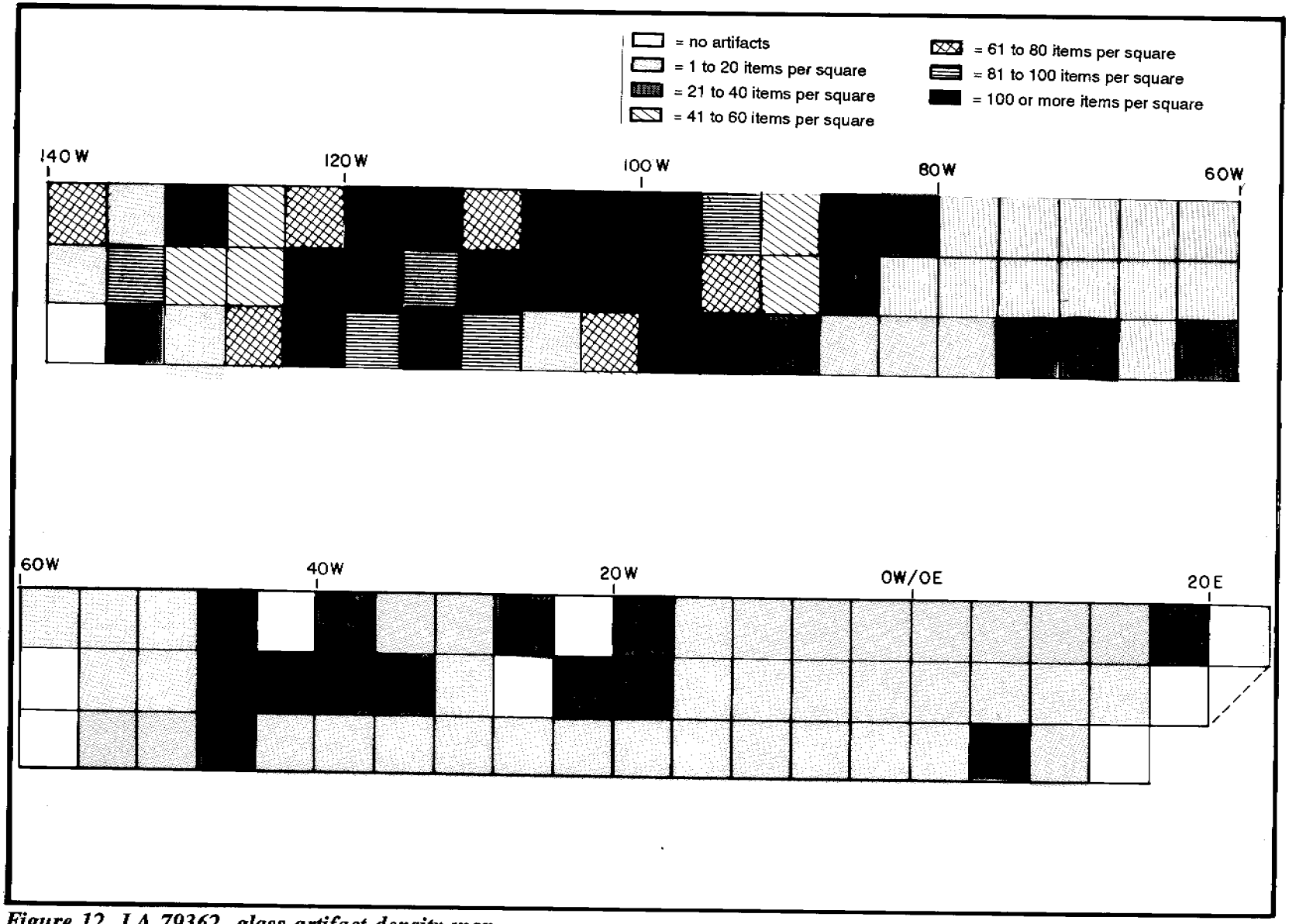


Figure 12. LA 79362, glass artifact density map.

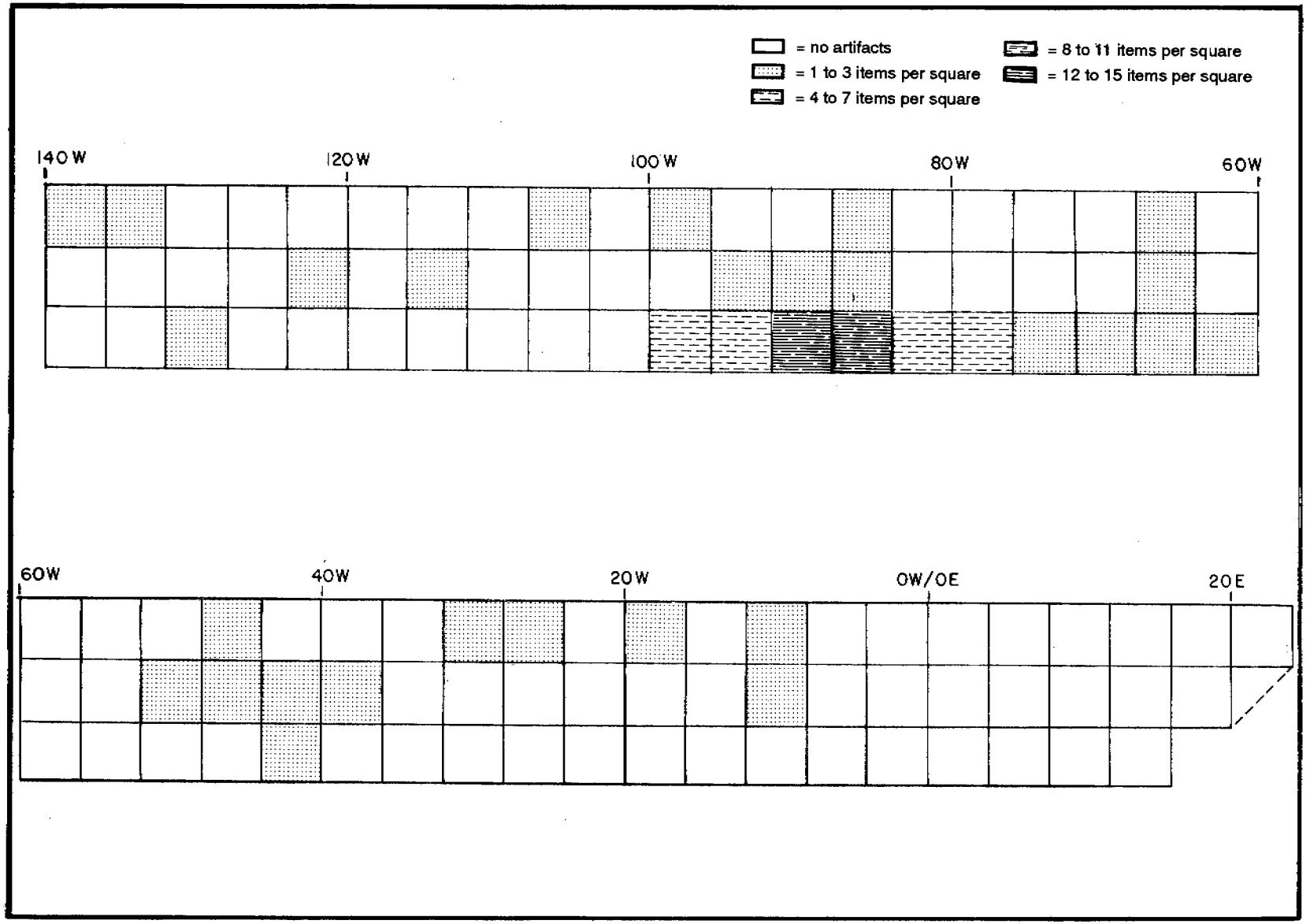


Figure 13. LA 79362, lithic artifact density map.

Figure 14. LA 79362, Test Pit 1.

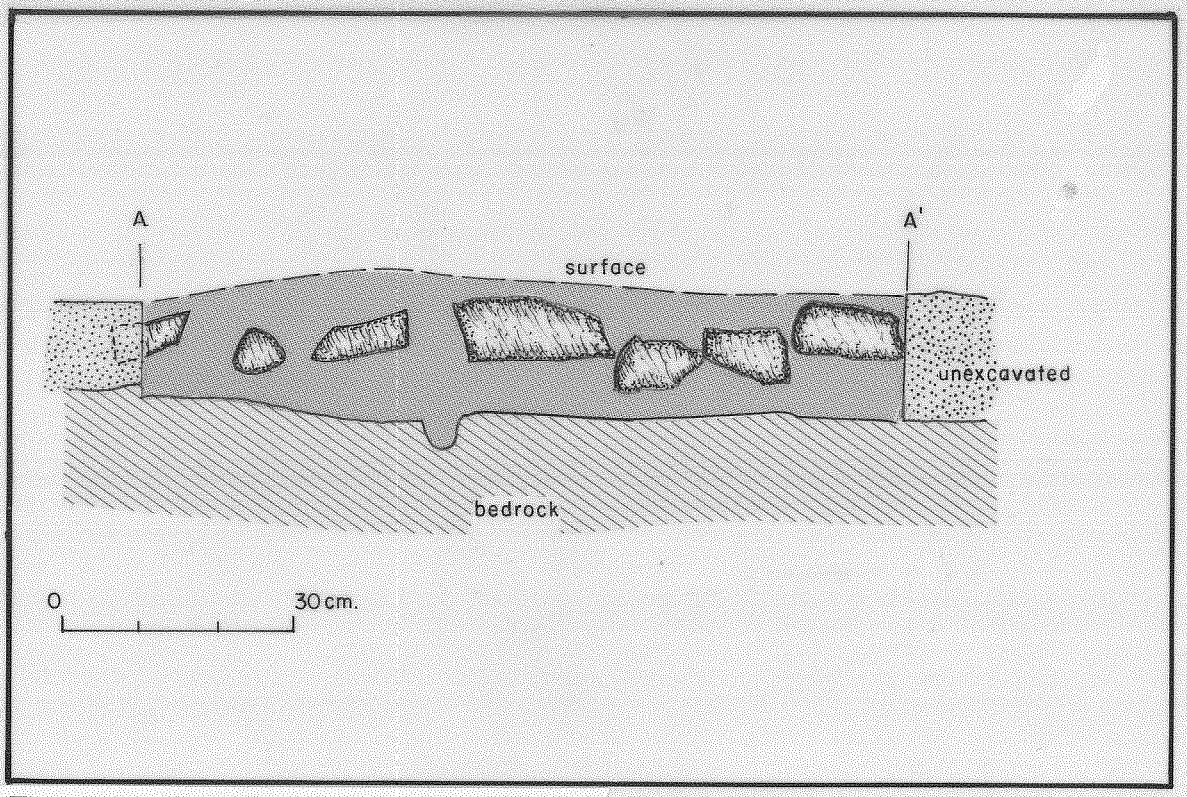


Figure 15. LA 79362, Test Pit 1, profile.

Figure 16. LA 79362, rock feature before excavation of Test Pit 2.

Figure 17. LA 79362, Test Pit 2.

trash items and three small animal bones, no new information was gained. The maximum depth of the east end of the test pit was 30 cm to bedrock, the greater depth resulting from the rise in the surface of the rock feature (Figs. 17 and 18). Interviews with former residents of the site indicate that this and similar rock features at the site are discarded fragments from shaping stones for hogan building.

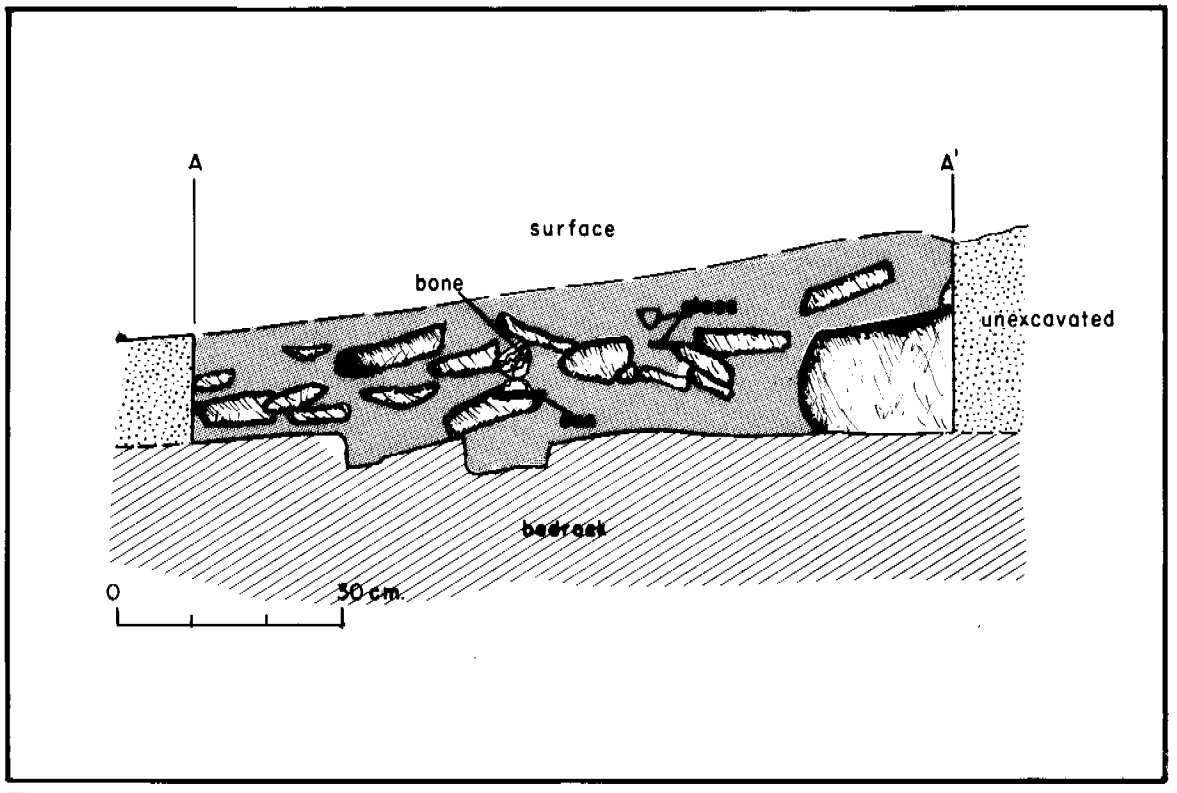


Figure 18. LA 79362, Test Pit 2, profile.

Interview Results

LA 79362 was the habitation site of a family, members of which belonged to the To Baazhni' Azhi (Two People Came to the Water) Clan. The occupation occurred from about 1925 to about 1950. The only major features at the site are the hogan rings, all of which are north of the existing highway right-of-way and therefore outside the area of the proposed highway project. Former residents indicated that no traditional cultural properties are located within the existing right-of-way.

Four local people died during the occupation of the site and were buried in the vicinity, but in no case are the locations of the burials known to living persons. An adult male was buried more than 100 m south of the existing right-of-way, well outside the proposed project area. Two children died at different times and were buried in the vicinity of and prior to the construction of the overpass, about 300 m west of LA 79362. The interviewees stated that the separate graves are now "under" the overpass, but the precise locations are unknown. The fourth grave, of an adult male, lies

in the low area east of LA 79362. None of the graves have visible physical remains on the surface, and recent attempts by the former residents of the site to relocate them were unsuccessful.

When shown the rock features at LA 79362, Fred James told William Sarracino (project assistant) that the rock concentrations at LA 79362 were waste fragments from the shaping of rocks during hogan construction. After the hogans were built, the fragments were gathered up and discarded.

Stone Artifacts

Few formal and informal artifacts were recovered from LA 79538 and LA 79541. As noted above, the tool inventory, especially of LA 79541, has been skewed by surface collectors, resulting in an incomplete picture of site type and function.

Projectile Points

Two projectile points were recovered, both from the surface of LA 79541 (Figs. 19a and 19b). Both are San Jose points representing the San Jose phase of the Archaic period. The point from 20S/28W is a dark brownish-red chert and measures 26 mm long, 19 mm wide, and 6 mm thick (Fig. 19a). The stem is 12 mm long and 15 mm wide. The tip is missing, evidently because of breakage at impact. The point from 24S/15W is black obsidian and measures 27 mm long, 19 mm wide, and 4 mm thick (Fig. 19b). The stem is 8 mm long and 14 mm wide. One side of the base is missing, and the blade appears to be reworked.

Bifaces

These artifacts were broken during manufacture and are described under manufacture debris (below).

Flake Tools

Two flake tools were recovered from LA 79541. One, from 10S/10W, is clear obsidian and measures 22 mm long, 17 mm wide, and 3 mm thick (Fig. 19c). The edges have been heavily bifacially and unifacially use-retouched. The second flake tool, from 10S/29W, is red and orange Chinle chert and measures 38 mm long, 16 mm wide, and 5 mm thick (Fig. 19d). Part of one end is unifacially thinned, and the intact lateral edge is unifacially trimmed. This item may be a rejected or broken preform rather than a flake tool.

Ground Stone Fragments

Two small fragments of tabular sandstone and one fragment of a sandstone cobble were recovered from 2N/18W, 4S/0W, and 4S/8W of LA 79541. All three are slightly oxidized and have slight to moderate grinding wear on one or both surfaces. They do not appear to be formalized tools such as manos or metates.

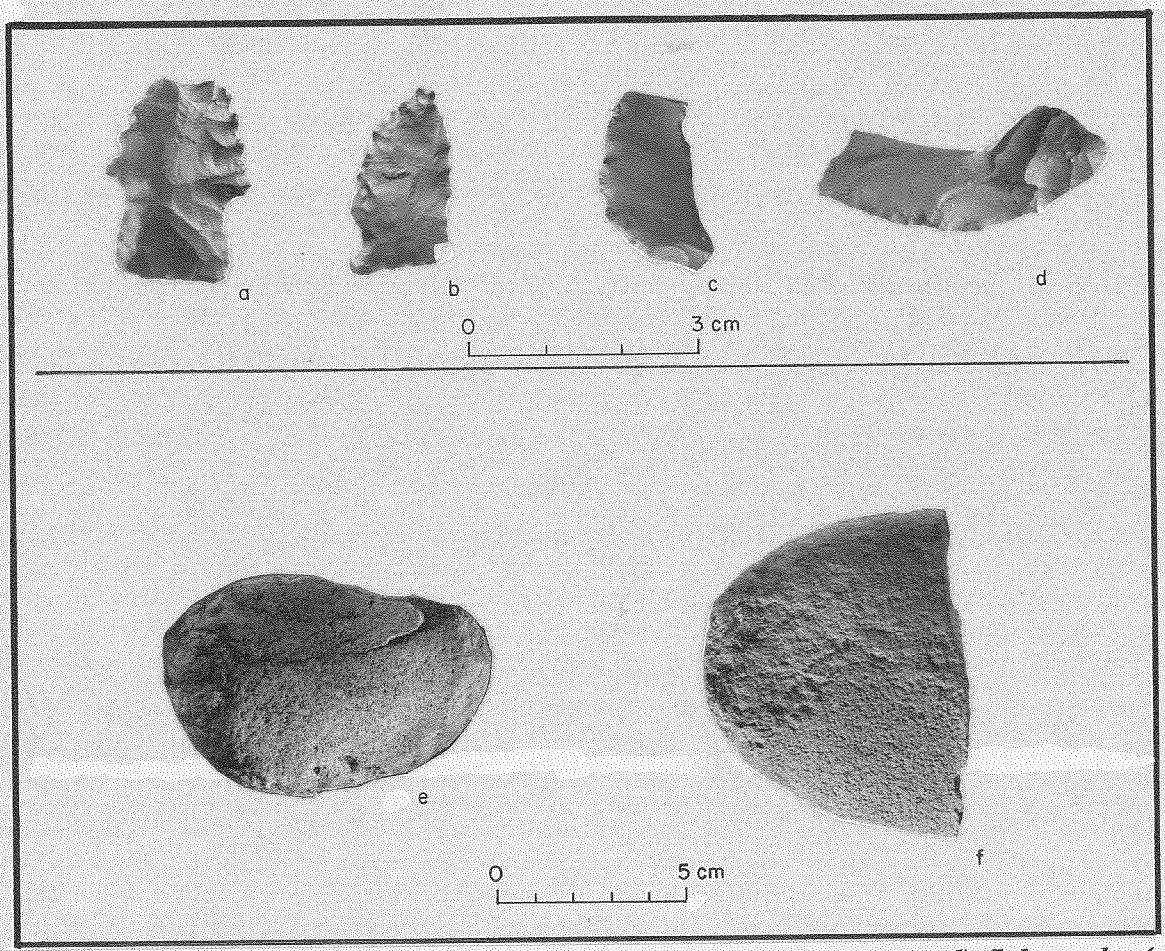


Figure 19. Stone artifacts from LA 79541: (a, b) San Jose points; (c, d) flake tools; (e) one-hand mano; (f) fragment of one-hand mano.

One-Hand Manos

Two one-hand manos from LA 79541, 0S/27W and 30S/10W, are sandstone or quartzitic sandstone cobbles that have been nearly completely shaped all over by pecking and grinding. Both are burned a light orange. The nearly complete example is 87 mm long, 59 mm wide, and 33 mm thick (Fig. 19e). The single grinding surface measures 69 mm long by 55 mm wide and has straight longitudinal and strongly convex transverse profiles. The second mano is an end fragment with slightly convex longitudinal and transverse grinding surface profiles (Fig. 19f).

Lithic Reduction Technology and Manufacturing Debris

Items in this category are the products of lithic artifact manufacture (cores, flakes, shatter, pieces of material) and artifacts broken during manufacture (biface fragments). At the two prehistoric sites, LA 79538 and LA 79541, all items observed on the surface were counted, and samples were

obtained for laboratory analysis. At LA 79362, a shortened in-field analysis was performed on all lithic items, and a small sample based on material types, artifact types, and presence/absence of heat treatment was collected for laboratory analysis.

A total of 86 items of lithic debris were recorded for the surface of LA 79538, and 23 (26.7 percent) of them were collected for laboratory analysis. A total of 1,156 items of lithic debris were recorded for the surface of LA 79541, and 297 (25.7 percent) of them were collected for analysis. Ninety items were analyzed in the field at LA 79362, and 8 (8.8 percent) were collected for further analysis in the laboratory.

Materials

Several material types and many color variations are represented in the collections from the three sites. The principal rock types are chert (both chalcedonic and nonchalcedonic), chalcedony, quartzite, obsidian, and basalt. Only four named rock types are present: Pedernal chert (chalcedony), Chinle chert, Grants obsidian, and Alibates dolomite (chert). A few pieces of silicified wood are tabulated under miscellaneous chert.

Classic Pedernal chert (chalcedony) is present in at least one of the sites. However, the range of variation in this material in the Pedernal Peak source area of the Jemez Mountains is sufficiently broad that all of the chalcedony at the project sites could be from that source. Since Pedernal Peak is 160 km northeast of the project sites, a Pedernal source for all of the chalcedony on the project sites seems unlikely. Thus, some of the Grants project chalcedony is almost certainly local, though we cannot be certain how much.

The obsidian assemblage is interesting in that nonlocal obsidians as well as the local Grants obsidian are present. The nonlocal varieties dominate the LA 79541 assemblage by a margin greater than 3 to 1. The nonlocal pieces probably originated in the Jemez region, 160 km to the northeast.

All three sites are similar in that miscellaneous cherts are a major component of the material assemblage (see site records at the New Mexico Cultural Records Information System [NMCRIS], Archeological Records Management Section, Historic Preservation Division). In terms of other materials, the two sites at Prewitt are fairly similar and contrast rather strongly with LA 79541, the Stuckey's site. White chert is a major type at the two Prewitt sites, obsidian is uncommon, and chalcedony is scarce. Chinle chert is more common at LA 79538 than at LA 79362 (21.7 percent to 3.3 percent, respectively). By way of contrast, the assemblage from LA 79362 has a strong representation of chalcedony (50.2 percent) and much more obsidian, but less Chinle chert. The differences between the Prewitt sites and LA 79541 probably reflect material availability more than anything else, though the higher percentage of obsidian, especially nonlocal obsidian, at LA 79541 is notable and may reflect economic or social factors. The difference in distance from the Jemez to the Prewitt sites and LA 79541 is slight, about 7 km, or less than 3 percent.

Many of the lithic items have such waxy lusters that it is almost certain that they were heat treated. Because time and circumstances did not permit experimentation, we opted instead to code observations in terms of degree of likelihood that each item was or was not heat treated. The

categories are "probably heat treated," "possibly heat treated," and "not heat treated." Heat treated items have highly waxy lusters and usually two or more of the following attributes: reddened areas (spots and localized "tinges"), reddened cortex, blackening (carbon deposition) on some surface but not on others, multiple internal fractures caused by heat (overheating), and adjacent flake scars that are dull lustered. Possibly heat treated items have a moderately waxy luster and one of the above attributes. Items lacking heat treatment have a dull luster and none of the above attributes. Items that were probably accidentally burned (blackened on all surfaces instead of one or two), rather than heat treated, were tallied as not heat treated.

As can be seen in Table 2, only a few clearly heat treated items were found. Those that may be heat treated are much more numerous, indicating that a study of heat treatment of these material types should be undertaken at some future date.

Table 2. Heat treatment of chipped lithic materials by site

Site	Likelihood of Heat Treatment							
	None		Possibly		Probably		Totals	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
LA 79538	13	56.5	8	34.8	2	8.7	23	100.0
LA 79541	219	73.7	67	22.6	11	3.7	297	100.0
LA 79362*	5	62.5	3	37.5			8	100.0

* Not statistically representative of the 90 items inventoried at site.

Cores

The 12 cores from the project sites (7 from LA 79541; 5 from LA 79362; 0 from LA 79538) are of two types: single platform and indeterminate/unrecorded (see site records at NMCRIS). They are of the primary materials represented at the sites: miscellaneous cherts, white chert, and chalcedony. All are small, the largest measuring 36 x 31 x 13 mm and weighing 14.8 g.

Flakes

Several types of flakes were recognized: decortication, core reduction, biface thinning, and platform edge rejuvenation (see site records at NMCRIS). Core reduction flakes are by far the most common, accounting for the majority of lithic debitage at all three sites.

Only the LA 79541 sample has a sufficient number of complete core reduction flakes to permit meaningful description (Table 3). The "average" flake is about 20 mm long, about as wide as it is long, and about 1/3 as thick. Platform preparation shows no clear preference for technique.

Flakes with single-flake scars are most common (21.3 percent), followed closely by multiple-flake scars (18.1 percent), pseudodihedral (18.1 percent; blow struck along ridge formed by adjacent flake scars), and cortex (14.9 percent) platforms. The remaining flakes have ridgelike (detaching blow struck at edge of platform) and destroyed platforms about equally represented. Flake detachment was only moderately successful, for one-quarter of the flakes have hinged or stepped distal edges. Fully 58 percent of the flakes have no dorsal or platform cortex, a rather low figure, probably reflecting small raw material unit sizes (large pebbles and small cobbles).

Table 3. Summary statistics of core reduction flakes, LA 79541

Dimension	Number	Range	Mean	SD
Length (mm)	48	38 (7-45)	19.5	7.89
Width (mm)	48	47 (5-52)	20.3	9.96
Thickness (mm)	48	18 (1-19)	6.5	3.99
Weight (g)	47	20.9 (0.1-21.0)	3.1	4.45

Shatter

These unintentional byproducts of chipped stone manufacture represent 6 percent of the sample of lithic debris from LA 79541. This is a rather low ratio considering the indication that most of the raw material units were pebbles and small cobbles. Stream-rolling creates internal fractures that can greatly hinder successful flake production through uncontrolled breakage or shatter.

Tested Cobbles

These pieces of chert and chalcedony that do not have the characteristics of cores yet were brought into the site by humans, probably with the intent of reducing them to make chipped stone artifacts. In most cases, a single flake is missing. Fully 6 percent of the sample of lithic debris recovered from LA 79541 are tested cobbles.

Biface Fragments

Six biface fragments are surface finds from the two prehistoric sites (Table 4). Four are large, roughly flaked items that represent the early stages of formal artifact manufacture. The other two are more finely flaked, indicating that the artifacts were either close to completion or finished.

Table 4. Biface data

Provenience	Material	Length (mm)	Width (mm)	Thickness (mm)	Remarks
LA 79538, 3S/9W	white chert	39	42	13	roughly flaked
LA 79541, 2N/18W a	Grants obsidian	18	27	11	roughly flaked; broken during thinning
LA 79541, 2N/18W b	chalcedony	15	22	12	roughly flaked; broken during thinning
LA 79541, 2S/28W	gray chert	29	26	13	roughly flaked; heat treated
LA 79541, 24S/15W	clear black obsidian	27	19	4	finely flaked; possibly the tip of a finished artifact
LA 79541, 10S/6W	ashy gray black obsidian	15	9	4	possibly a fragment of a finished artifact

Pottery

Prehistoric potsherds were present at both LA 79538 and LA 79541. The single sherd from LA 79538 was outside the right-of-way and therefore was not collected. It is classified as a Cibola Plain jar sherd on the survey form.

The three sherds from LA 79541 are from the same St. Johns Polychrome bowl. All were surface finds from squares 6N/12W, 4N/14W, and 8S/30W (collected). Also, a sherd of Pueblo III indented corrugated gray ware was noted off-site in a drainage approximately 12 m southeast of 25S/0W and collected. The relationship of this sherd to the occupation of LA 79541 is unknown.

Dating the Prehistoric Sites

The two San Jose Points and two one-hand manos from LA 79541 indicate a Middle Archaic component dating to the San Jose phase (3200-1800 B.C.). The St. Johns Polychrome potsherds indicate either a late Pueblo III occupation or an en passant potbreak dating between A.D. 1175 and 1300.

LA 79538 has a single potsherd on it, indicating only a ceramic- period activity or occupation at the site. Cibola White wares were made starting about A.D. 900 until about A.D. 1300. The greater volume and spread of lithic manufacture debris suggests that other time periods, including the Archaic, may also be represented. Biface thinning flakes are present at all three sites, and although some archaeologists believe this flake type indicates Archaic occupation, these flakes also

occur on pottery-period sites. Thus, their presence on the project sites is ambiguous with respect to distinguishing between the two time periods.

LA 79362 lacks diagnostic stone and pottery artifacts, but we are assuming that the chipped stone materials belong to the prehistoric period. The surface distribution and density plots of these materials suggest that they centered south of the main concentration of Navajo refuse and therefore do not belong to that occupation. However, the materials and technological details are similar to those of the lithic artifacts at the other two sites, suggesting similar culture and period.

Comments on the Artifacts

The chipped lithic manufacturing debris provides several insights into activities at the three sites. The presence of cores, several flake types, shatter, and tested cobbles indicates the complete tool manufacturing process, starting with large pebbles and small cobbles and ending with formal tools. Heat treatment of at least some of the materials was performed to facilitate working the stone. Flake detachment from cores was moderately successful, though uncontrolled breakage (shatter) and hinge-fracturing show that some difficulties were encountered.

The origin of the stone materials used for making chipped artifacts can only be guessed in most instances. Probably most were obtained locally. However, two material types are definite imports. Most of the obsidian probably came from the Jemez Mountains, 160 km to the northeast. The prize, though, is a biface thinning flake of Alibates dolomite. This material originates in the Texas Panhandle and adjacent parts of New Mexico. The closest known quarry is 400 km to the east. Clearly, the inhabitants of the Grants sites, especially LA 79541, were either wide-ranging or more likely had contacts over hundreds of square kilometers.

HISTORIC MATERIAL CULTURE

Artifacts

The majority of the artifacts and other remains at LA 79362 belong to a twentieth-century occupation of the site. Only those artifacts having dating potential or requiring functional identification were collected for analysis in the laboratory. All collected items were identified by Guadalupe A. Martinez of the OAS staff (see site records at NMCRIS). The proveniences are 4 by 4 m squares.

Glass and metal are the primary cultural materials in the portion of the site within the existing right-of-way. Most of the glass shards are from bottles (Figs. 20 and 21), though 20 or so window glass fragments are present (uncollected). An undetermined number of glass shards from wine bottles represent roadside trash accumulated over the past 30 years (since construction of I-40). However, the glass density plot for the site (see Fig. 12) suggests that the majority of glass shards belong to the Navajo site. Most of the metal artifacts (Fig. 22) are cans of various sizes (see site records at NMCRIS). The metal density plot (see Fig. 11) indicates that metal artifacts, too, belong mostly to the Navajo site. Small amounts of ceramics ("china") and a variety of formal artifact fragments are also present (Figs. 23-25). Artifacts identified in the field, but not collected, are listed in site records at NMCRIS.

Faunal Remains

Animal remains are scarce at the site. Only six bone fragments were noted on the site surface, all from medium (sheep/goat) to large (cow/horse) domestic animals. Egg shell fragments were noted on the surface of Square 8S/64W (4 by 4 m). Test Pit 2, in the rock feature, yielded three bones of small animals, including a cottontail innominate fragment, a cottontail tibia fragment, and a small mammal long bone fragment. The paucity of domestic animal bone may reflect the rebuilding of herds and flocks following the federally enforced livestock reduction program of the 1930s.

Historic Site Dating

by Guadalupe A. Martinez and Regge N. Wiseman

The historic artifacts date from the 1930s to the 1960s according to the ranges of dates derived from their attributes.

The cans, with few exceptions, were manufactured from 1936 on (Table 5). Three-piece cone-topped beverage containers were first made in 1935 and were replaced by extruded cone-topped cans a few years later (NMAC Workshop on Historic Artifacts, Santa Fe, New Mexico, March 1991).

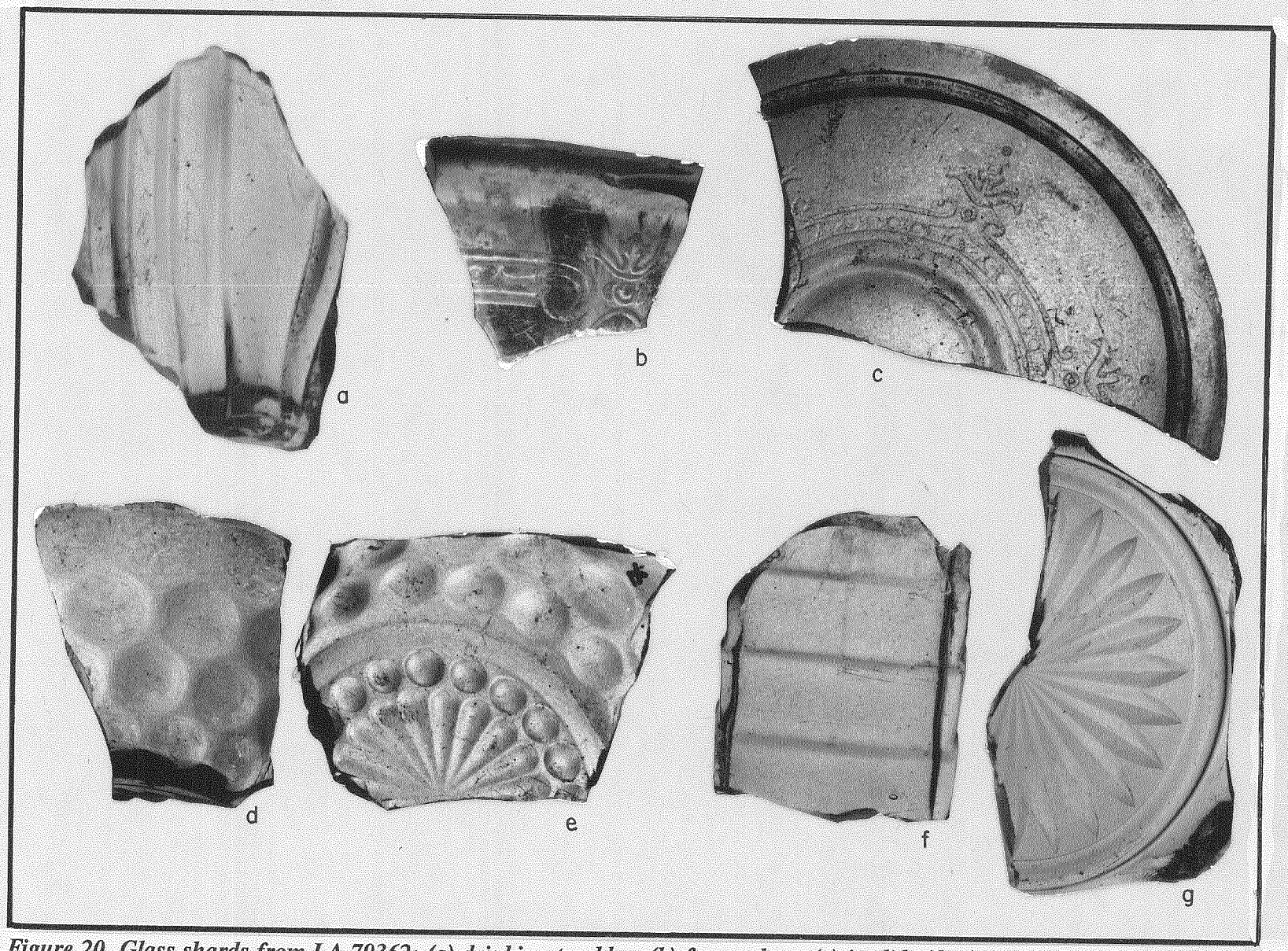


Figure 20. Glass shards from LA 79362: (a) drinking tumbler; (b) fancy glass; (c) jar lid; (d, e) fancy glass from same vessel; (f) fancy bottle; (g) depression-glass bowl.

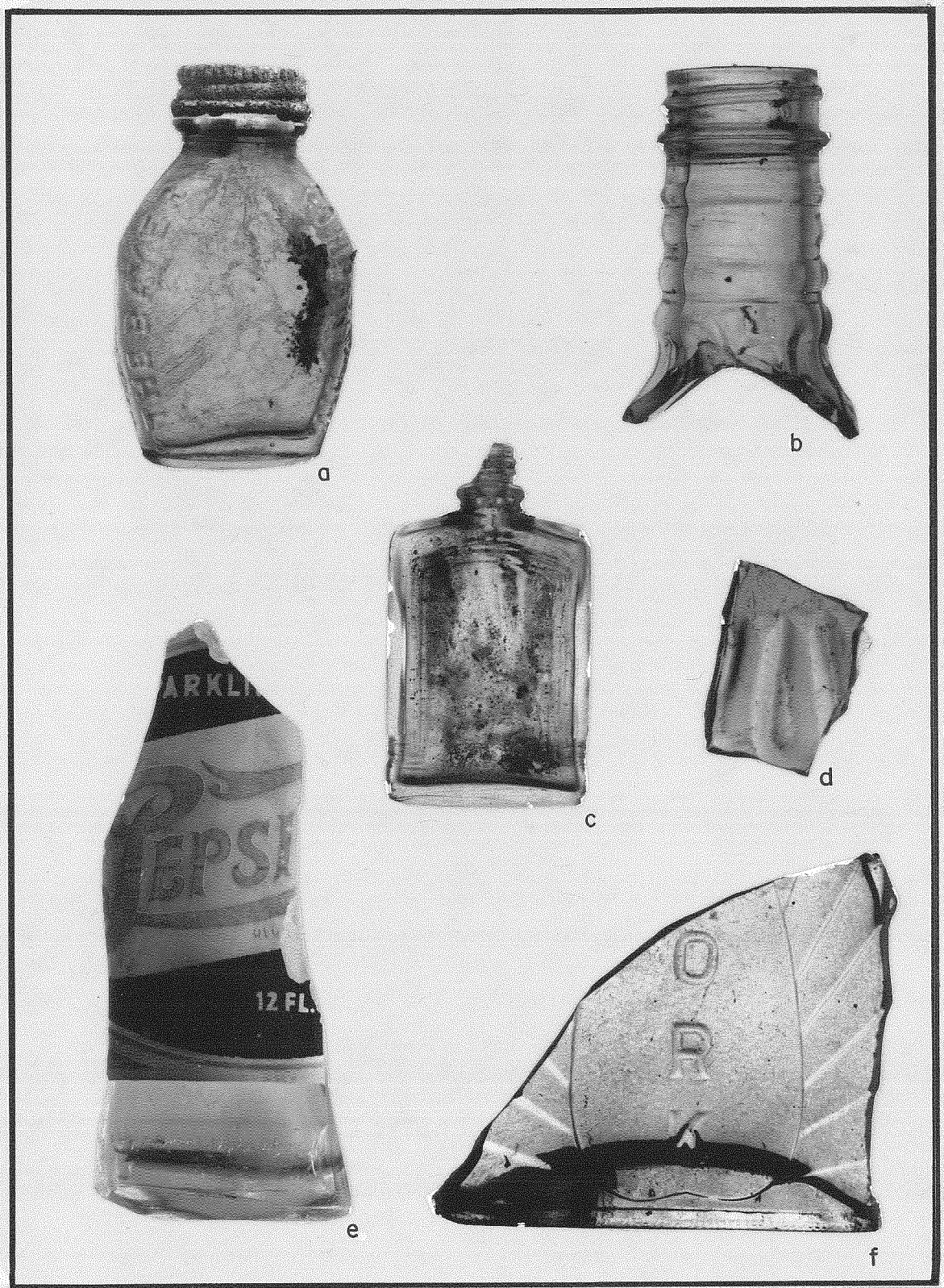


Figure 21. Glass bottles from LA 79362: (a) Bayer aspirin; (b) neck; (c) perfume; (d) brown bottle glass shard; (e) Pepsi bottle shard; (f) bottle shard.

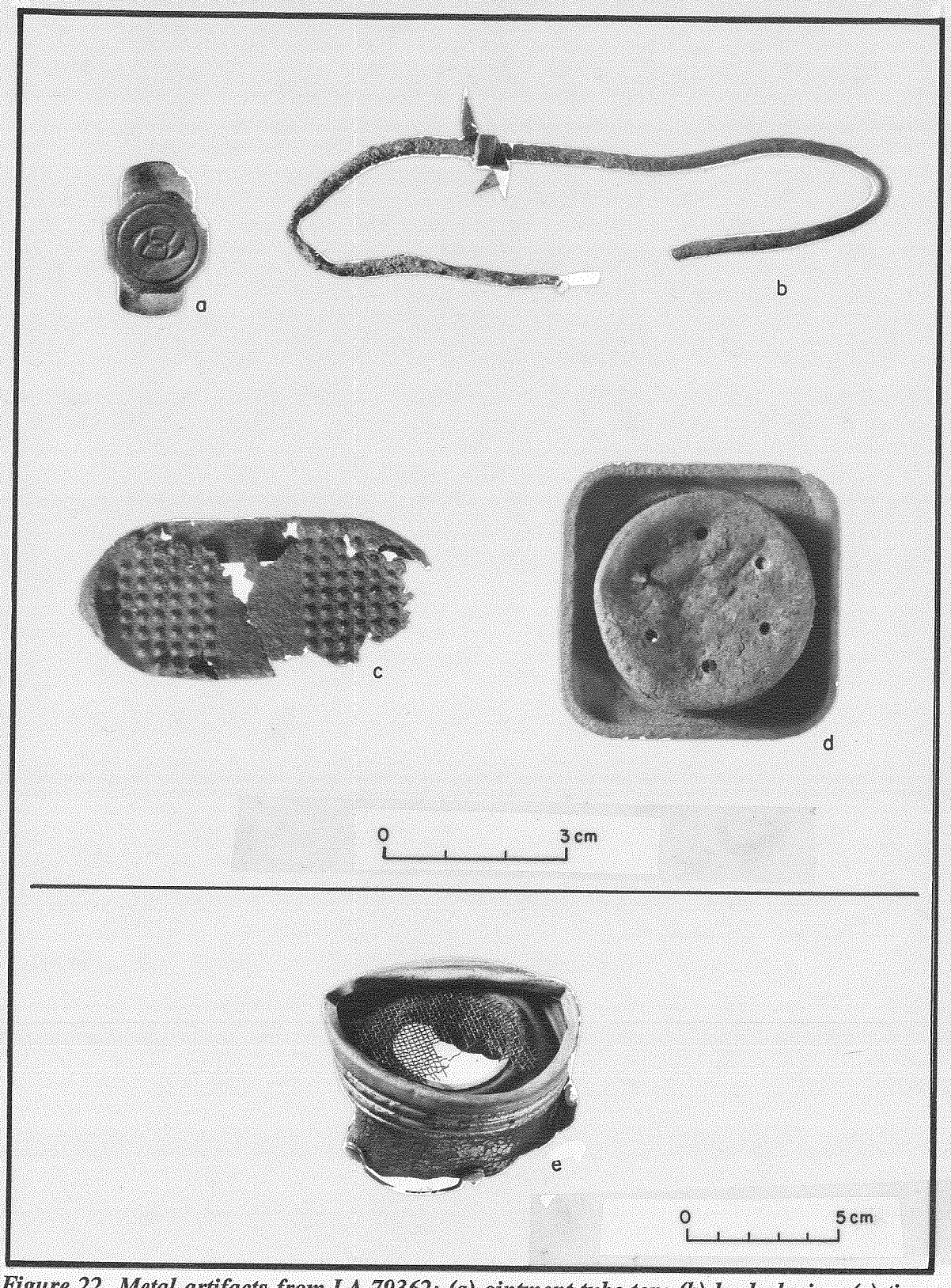


Figure 22. Metal artifacts from LA 79362: (a) ointment tube top; (b) barbed wire; (c) tire patch kit top; (d) spice can or talcum powder can lid; (e) miner's mask filter element.

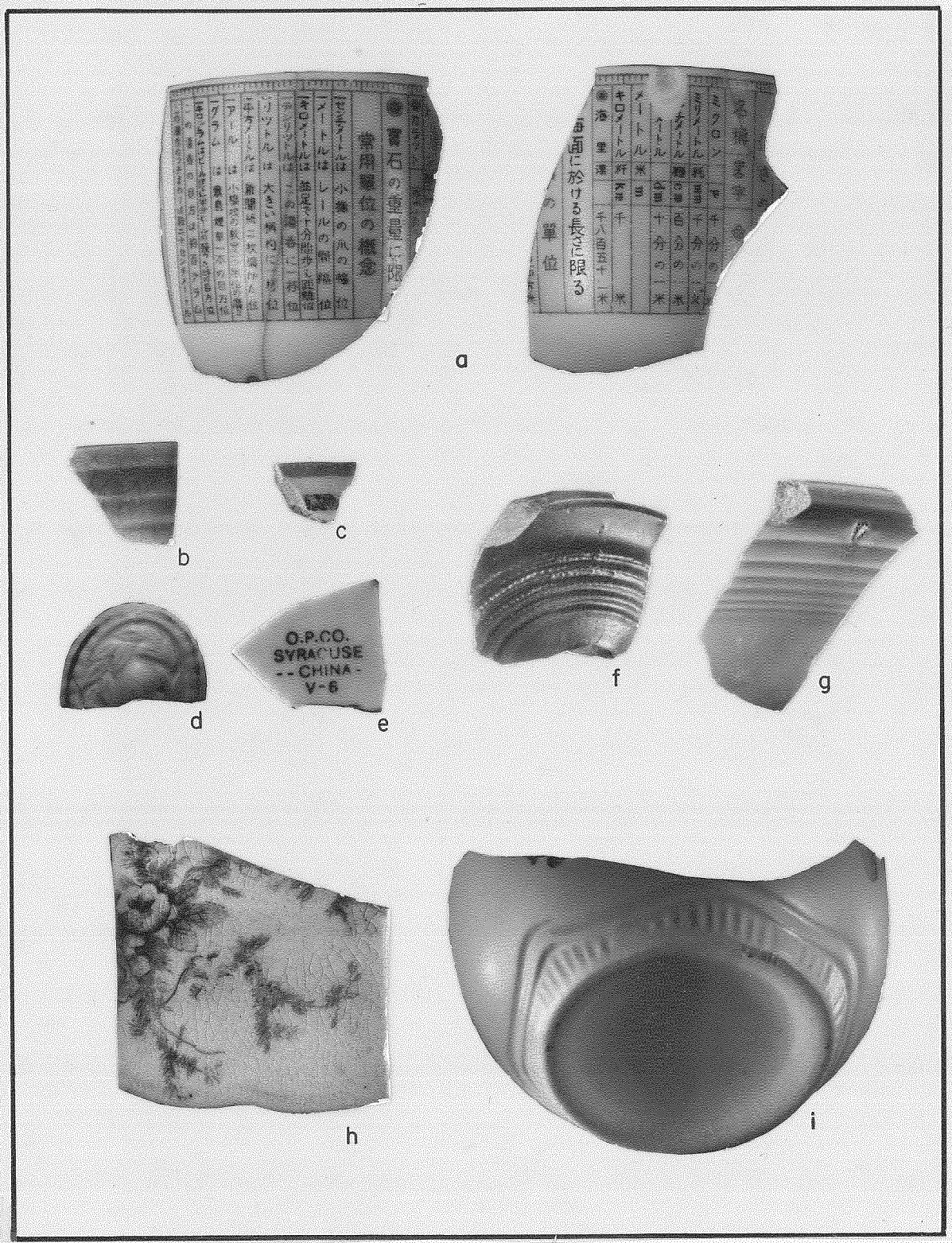


Figure 23. Ceramic artifacts from LA 79362: (a) tea cup fragments; (b) blue glaze ribbed bowl sherd; (c) bowl rim with green and silver lines; (d) ornament from bowl; (e) bottom mark, semiporcelain; (f) black ceramic jar lid; (g) fragment of blue glaze bowl; (h) fragment of saucer or small plate; (i) bottom of ceramic cup.

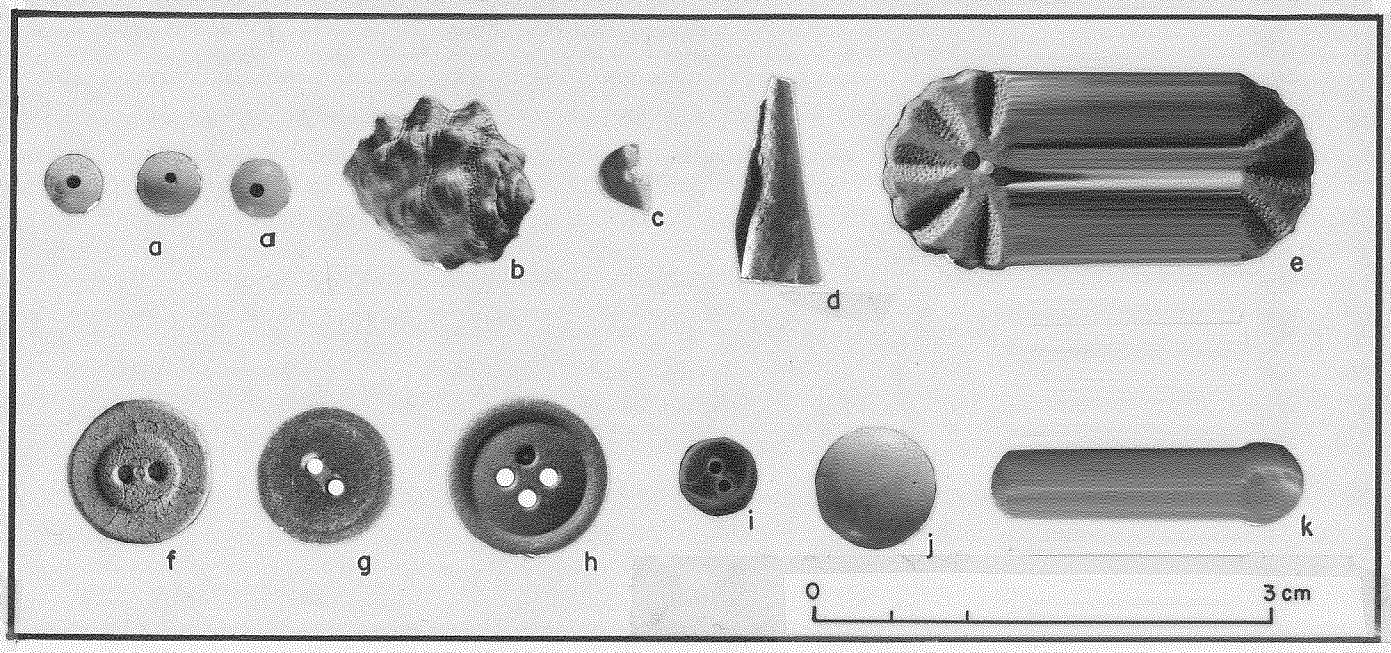


Figure 24. Other artifacts from LA 79362: (a) glass imitation pearls; (b) seashell; (c) blue bead; (d) tin tinkler; (e) plastic button; (f) composition button; (g) two-hole composition button; (h) four-hole composition button; (i) shell button; (j) white glass button; (k) shell button with shank.

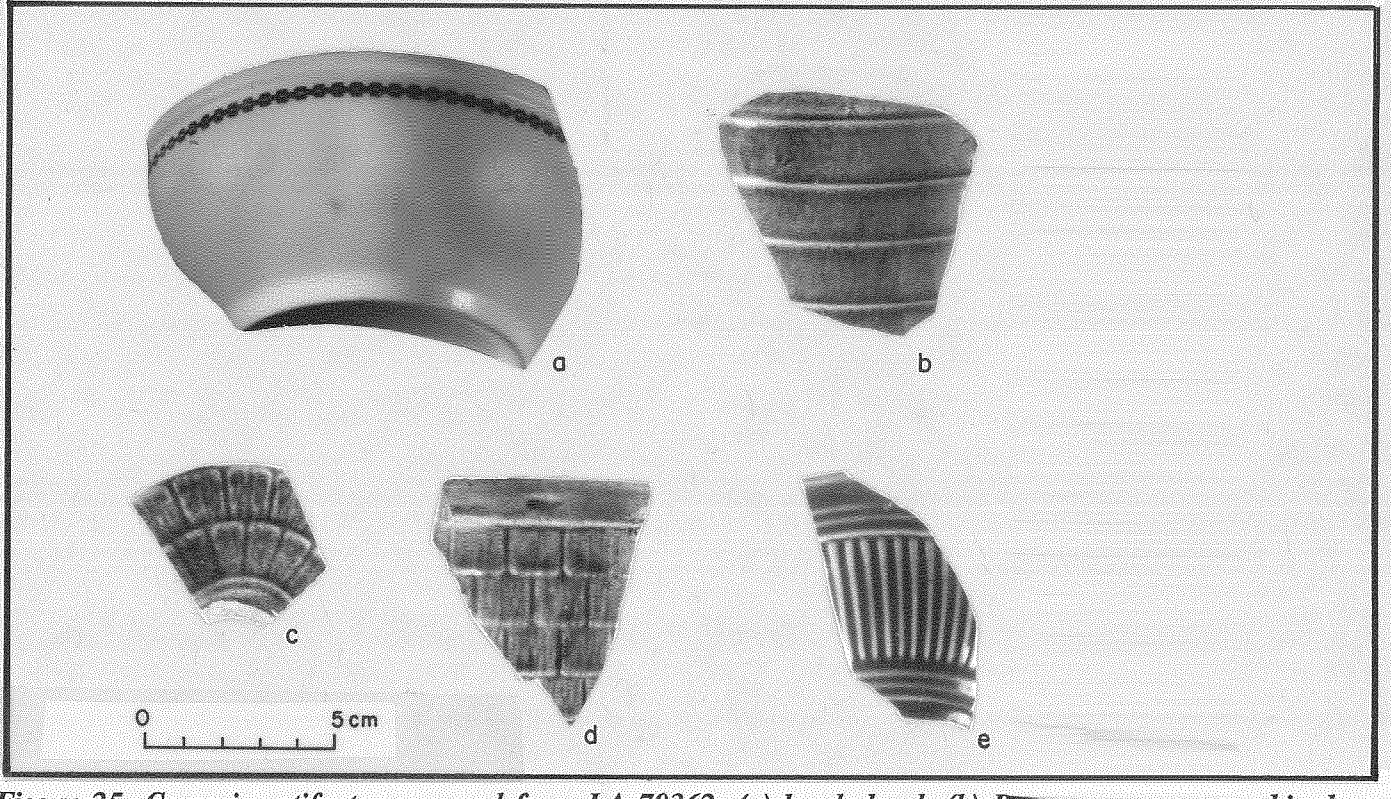


Figure 25. Ceramic artifacts recovered from LA 79362: (a) bowl sherd; (b) Rockingham crockery fragment; (c, d) Rockingham crockery fragments; (e) blue-green bowl sherd.

Table 5. Known dates of round sanitary can sizes, LA 79362 (mm)

Accurate Measurement	Close Estimate	Closest Size in References	Dates[a]
-	ca. 202 x 214	202 x 214	1936 onward
202 x 305	-	-	-
202 x 308	-	-	1936 onward
-	ca. 208 x 215	208 x 211	1936 onward
-	ca. 210 x 115	?	-
210 x 200	-	211 x 200	ca. 1949
210 x 304	-	211 x 304	1936 onward
211 x 413	-	211 x 414	1938 onward
-	ca. 212 x 400	211 x 400	ca. 1912-1915[c]
212 x 508	-	-	-
215 x 509	-	-	-
-	ca. 301 x 304	300 x 308	1975 onward[b]
300 x 407	-	-	1949 onward
300 x 510	-	300 x 509	1942 onward
301 x 411	-	-	1936 onward
302 x 409	-	302 x 411	1936 onward
306 x 408	-	-	ca. 1924[c]
-	ca. 309 x 401	307 x 400	1936 onward
312 x 410	-	-	-
400 x 410	-	410 x 411	1936 onward
-	ca. 501 x 309	-	-
-	ca. 502-300	-	-
-	ca. 514 x 412	-	-
-	ca. 604 x 701	603 x 700	1919 onward

Note: Measured cans only, including close estimates on partly crushed cans. Not all can sizes on the site are represented, since some cans were too badly crushed for size estimation. Also, among the estimated sizes, duplicates and probable duplicates have been deleted. See site records at NMCRIS for a list of measured and estimated can sizes.

[a] Closest can discussed in Kirkpatrick and Duran (1981:Table 7, 35 ff.)

[b] This date probably needs to be revised earlier since this can, like all of the tin cans at LA 79362, is heavily oxidized (rusted).

[c] These dates are generally too early according to the ethnographic data, the majority of other cans, and the other means of dating the site. They may be "heirloom" cans, or they may not belong to the occupation of the site, or the can sizes may have been manufactured longer than is currently documented.

The glass dates are even more precise. The Anchor-Hocking drinking glass (FS 0-2) dates since 1931, 1941, or 1951. The Pepsi bottle (FS 0-13) dates since 1940. The green "depression" glass appears to be the Hocking Glass Company's "Knife and Fork" colonial ware. This style has a date range of 1934 to 1936, though it was frequently collected and could date later in the context of LA 79362.

The most precise date comes from the one piece of pottery with the maker's mark, FS 0-12, which was made in June 1941.

The artifacts, then, indicate the site dates from about 1930 to about 1950. This generally agrees with interview data. Although the two interviewees were not in total agreement, early and late dates for the occupation of LA 79362 are 1925 to 1950.

The variation in artifact types clearly indicates that the trash came from a household situation (Table 6). Judging from the types of artifacts and the number of hogan rings, at least one family unit (perhaps an extended family) lived at LA 79362. Minimal age and gender composition, judging from the artifacts, was male adult, female adult, male child, and female child.

The family evidently was relatively well-to-do. The pottery included some expensive white ware, and the fine shell buttons and one glass button indicate dressy clothes. The face mask suggests that one or more of the family members was a miner, which would provide a better than average living wage.

Table 6. Types of artifacts and products, LA 79362

Cans

meats and fish*
vegetables
juices
evaporated milk cans
condensed milk cans
baking powder
soda pop and/or beer
spices
talcum powder?

Glass

milk bottles
sauce or hair tonic bottles
soda pop
beer
drinking glasses
candy dishes
perfume
aspirin bottle
Vicks Vapo-rub
cold cream
petroleum jelly

Pottery

cups and saucers
"cereal" bowl
plates
oriental tea cup
flower vase

Enamel Ware and Cooking Vessels

coffee pots
shallow pan
deep pan
sauce pan (handle)

colander
skillet (cast iron)

Toys

doll (bisque)
soldier
metal toy
marbles

Jewelry

blue beads
fake pearl beads (glass)

Other Items

ammunition cartridges (.22 cal and 410 shotgun)
aspirin tins (pocket size)
basket (wire mesh)
buttons (plain and fancy, various materials)
crockery
flashlight batteries
gapping gauge (automobile points and spark plugs)
grommets (for tents or tarpaulins)
hacksaw blade
horseshoe nail
metal box (small tin)
miner's mask
nails (wire), construction and finishing
ointment tube
pail handles
scotch tape dispensers
sea shell
shoe polish bottle lids with daubers
spoons
stove pipe fragments
talcum powder can (metal ends, cardboard body)
tire repair kit
tobacco cans

* The fish and/or shellfish from these tins may have been used for curing, rather than as food (NMAC Workshop on Historic Artifacts, Santa Fe, March 1991).

THE ETHNOHISTORY OF LA 79362, PREWITT, NEW MEXICO

Linda J. Goodman

LA 79362, a Navajo habitation site occupied in the mid-twentieth century, is located just north of I-40, near Prewitt, New Mexico (Wiseman in prep.:12-15). To check for the presence of traditional cultural properties and burials in the area, an ethnohistoric study was conducted on April 3-4, 1991. During this time information was also collected to determine site ownership, the history of occupation, site use and function, economic activities pursued by occupants, the nature of features or activity areas not archaeologically visible, and the place of this site in a larger sociocultural context.

Research methods included discussions with Navajo Nation Historic Preservation staff, site visits, oral interviews with former residents of the site and other knowledgeable individuals in the area (see Appendix 2 for a list of people interviewed), and an examination of McKinley County Courthouse documents. Later, an examination of pertinent published sources and archival material was undertaken to complete the project.

Research began with a visit to the site in the company of William Sarracino, archaeological assistant with the Office of Archaeological Studies in Santa Fe, and Fred James, Baca Chapter president, on April 3, 1991. Lengthy discussions were held with Mr. James, a former resident of LA 79362. On April 4, 1991, interviews were conducted with other local Navajo residents, some of whom had also lived at LA 79362. Finally, on April 5, 1991, documents in the McKinley County Courthouse were examined, and later, several trips were made to history and anthropology libraries in Santa Fe and the New Mexico State Records Center and Archives. Several follow-up phone calls were made to Rosita Loretto and Fred James between April 15 and July 3, 1991.

An Overview of Navajo History

The Navajo and Apache groups, Athabascan speakers related to those living in western Canada, are believed to have migrated from this northern region into the present southwestern United States sometime before the appearance of the Spaniards in New Mexico in 1540 A.D. As a migratory people they were dependent upon hunting and the gathering of wild plants, seeds, nuts, and fruits (Kluckhohn and Leighton 1962:33-35). Exactly when and how they arrived in the Southwest has not yet been established. There is no doubt, however, that they were in the area by the late sixteenth and early seventeenth centuries, when Spanish chroniclers noted their existence (Bailey and Bailey 1986:11-12; Vogt 1961:285-290).

In 1636, when Friar Benavides wrote a description of the early Navajos, they were already agriculturalists and at least partially sedentary. It has been hypothesized that they learned the rudiments of crop raising from their Pueblo neighbors (Vogt 1961:291-292). Spanish documents from the early and mid-1700s stated that the Navajos were living in small compact communities on the

tops of mesas near their fields, and agriculture was their primary economic endeavor. However, sheep and goats, acquired through raiding and trading, were already making their appearance. Even at that time, Navajo women were weaving wool dresses and blankets. Men wore buckskin clothing (Kluckhohn and Leighton 1962:34-35).

The Navajos raided the Pueblos and the Spanish settlements for sheep, horses, fresh produce, and other goods and were the target of retaliatory raids. It is known that the Navajos were raiding Spanish settlements for livestock as early as 1608 (Worcester 1947:49). During peaceful intervals these groups traded with each other. Spanish documents from the 1700s were largely concerned with the Navajos in relation to warfare and trade. Descriptive material concerning other parts of their lives was minimal (Bailey and Bailey 1986:13; Kluckhohn and Leighton 1962:36).

Though the Spaniards in the Southwest had some limited success in subduing and missionizing the Pueblo Indian groups in New Mexico in the 1500s and 1600s, they did not achieve these goals with the Navajos. Spanish missions were occasionally set up in Navajo areas, but each time the efforts of the priests were largely ineffective, and the projects were quickly abandoned (Hester 1962b:135-136; Vogt 1961:297-300). Thus the Navajos managed to remain outside the sphere of Spanish domination. Since they were not heavily affected by Spanish programs, they felt no overriding need to drive these strangers out of the Southwest. Therefore, as far as is known, the Navajos did not play a major part in the Pueblo Revolt of 1680 or the Spanish Reconquest of 1692. Before, during, and after this turmoil, however, some Pueblo refugee groups left their traditional homes in the vicinity of the Rio Grande, moved west, and joined various Navajo groups for a period of years. The Pueblo refugees brought with them their knowledge of technology, weaving, pottery making, religion, agriculture, and animal husbandry, portions of which were adapted by the Navajos with whom they resided (Vogt 1961:301, 294; Hester 1962a:67; Carlson 1965:57; Brugge 1983:493 ; Bailey and Bailey 1986:14-16; Kluckhohn and Leighton 1962:37; Spicer 1962:212).

During the early 1700s the Navajos raided Spanish settlements, and the Spaniards responded with military expeditions into their territory to punish them. From approximately 1720 to 1770, however, peaceful relations developed between the Navajos and the Spaniards because both groups had to turn their attention to the Utes and Comanches, who increasingly raided each of them (Brugge 1968:31, 144). Schroeder (1965:59) and Reeve (1960:202-204) felt that Ute and Comanche raids pushed the Navajos south into the Cebolleta Mountains and west into the Chuskas. Soon Spanish settlers also began moving into the Cebolleta Mountains, the adjacent Rio Puerco Valley, and the land to the west. Between 1753 and 1772 a number of Spanish settlers received land grants in the Rio Puerco Valley and land west of it (Jenkins and Minge 1974:4-7). This new settlement brought the two groups into sporadic conflict again (Reeve 1960).

Navajo raiding continued and increased during the Mexican occupation of the Southwest (1821-46) and in the first portion of the American occupation (1846-64) (Bailey and Bailey 1986:17-19). Throughout this time the human population and the sheep population continued to increase. Sheep and goats provided a dependable food supply, and this was a necessary condition for Navajo population increase. Also, the sale of the animals, hides, wool, and woven textiles provided a steady source of exchangeable wealth and allowed Navajos to purchase metal tools and other manufactured articles, making daily life somewhat easier (Kluckhohn and Leighton 1962:39). In general, most family-owned herds remained rather small and thus, of necessity, were often supplemented by farming, hunting, and gathering (Bailey and Bailey 1986:19-21).

During the 1800s, as the weight of economic subsistence slowly shifted from farming and hunting to herding, the settlement pattern also changed dramatically. Instead of living in a single, relatively permanent camp by their fields, families began using separate summer and winter camps, where forage and water were available for their livestock (Bailey and Bailey 1986:21). Seasonal migration became a necessity.

By the mid-1800s, herding had become strongly linked to raiding. Greater dependence upon sheep and goats fostered the need for more and larger herds, thus prompting more raiding of Spanish-American herds, which increased hostilities between these groups. Eventually the Euroamerican settlers had enough of the Navajo raids, and the Navajo War of 1863-64 led to the subsequent incarceration of the Navajos at Bosque Redondo (Bailey and Bailey 1986:21).

The Navajos who were rounded up and marched to Bosque Redondo in east central New Mexico died in great numbers. Those who survived suffered disease and great hardships during the Long Walk of 1863 and the following four years of confinement. When officials saw that the Navajos were not going to become self-sufficient farmers at Bosque Redondo, it became clear that the government would have to continue to issue rations to them if they were to survive. At an annual cost of one million dollars, the government could not afford to continue this practice indefinitely, so the Navajos were given sheep and allowed to return to their land to become self-sustaining once again (Bailey and Bailey 1986:25-27). Thus, in 1868, the U.S. government signed a peace treaty with Navajo leaders establishing a reservation in northwest New Mexico and northeast Arizona, providing some help for their shattered economy (Underhill 1953:176-181; Bailey and Bailey 1986:25; Spicer 1962:219-220). Initially they had a difficult time, but during the 1880s and 1890s their herds prospered, and so did the population as a whole.

For the first years after their return (1868-78) the Navajo people lived largely off government rations of corn, flour, and beef. To expand their small herds more rapidly, they refrained from butchering, allowed natural reproduction to occur, and also returned to their old methods of raiding and trading. Raiding eventually declined, especially after the introduction of the Navajo police in 1872. The herds continued to expand and thrive (Bailey and Bailey 1986:38-42).

The Treaty of 1868 allocated money for seed and farm implements to encourage the Navajos to begin farming once again. In spite of government efforts to introduce a variety of crops, corn remained the most important. Navajo farmers irrigated with floodwater, and the size of the area they planted in any particular year depended on the snowpack in the mountains. If the snowpack were deep, they planted extensively, expecting a heavy spring runoff to adequately irrigate their crops. If the snow were light, they planted very little. Thus, farming intensity was determined largely by climatic rather than economic conditions (Bailey and Bailey 1986:45-47).

During the late 1800s, other economic endeavors that increased in profitability for the Navajos included weaving, silversmithing, and ironworking. Pottery and basketry gradually declined in importance (Bailey and Bailey 1986:51).

Before 1898, the forked-stick hogan (an earth-covered tripod frame with a dug-out floor and, often, an elongated doorway) was the primary type of Navajo habitation. After this time, Navajo dwellings were more and more heavily influenced by Anglo-American and Spanish-American

construction techniques. Around 1898, Navajos began to build octagonal log hogans modeled in construction technique after Anglo-American log cabins. These newer structures had doors, and some even had windows. Debate raged among Anglos at the time whether these structures could be classified as hogans or whether they were houses. Since the form of the hogan had been given to the Navajos by the gods, this type of dwelling had religious significance, and the Navajos were not at all anxious to live in Anglo-American style houses (Mindeleff 1898:487-488; Bailey and Bailey 1986:68-69).

Even in the first half of the twentieth century, wealthy Navajo families built houses more as prestige symbols than for living. Families wealthy enough to have a house usually lived in a nearby hogan and used the house for storage (Lockett 1952:137; Bailey and Bailey 1986:69). Since living quarters were abandoned after a death, few could justify the expense of living in an Anglo house, which might have to be abandoned in a few years (Ostermann 1917:27; Bailey and Bailey 1986:67-69).

The building of the railroad across New Mexico and Arizona in the 1880s brought much disruption to Navajo life. The People were forced to surrender much of their best winter rangeland and many of their finest watering places to the advancing railroad. Areas later added to the reservation as a compensatory measure were significantly less desirable. One of the major problems was the granting to the Santa Fe Railroad of all odd-numbered sections (mile-square tracts) on each side of the right-of-way to a depth of 40 miles. Thus, a checkerboard strip was created in the region that had the heaviest concentration of Navajo population. Since no one else was living on large portions of this land, Navajo families often spread out and moved onto land which was not theirs.

Complications grew over the years as white ranchers from New Mexico and Colorado decided they wanted parts of the legal Navajo range and applied political pressure to have portions of the Navajo land returned to the public domain. Conflicting Indian homestead allotments and white homestead claims also exacerbated a most difficult and delicate situation, which will probably never be resolved to the satisfaction of all the involved parties (Kluckhohn and Leighton 1962:42-44). Between 1900 and 1930, various legal battles and maneuverings ensued between Navajos who were living on public domain land and had filed patents to obtain legal ownership of it and Anglo ranchers who wanted to acquire it. The situation was quite complicated, and often the Navajos ended up losing their land (Bailey and Bailey 1986:112-117).

Pressure was put on the tribe in the 1920s to open the reservation to oil and gas exploration, leasing, and well drilling. For a number of years, the Navajos rejected all requests. A lease was finally approved in August of 1921, but a number of others were denied. Strong political pressure was applied. A tribal council was created in 1923, and the first council granted the commissioner of the Navajo Tribe the authority to sign all oil and gas mining leases on behalf of Navajo Indians on the treaty portion of the reservation (Kelly 1968:69; Bailey and Bailey 1986:120-121).

In the mid-1890s wage labor began to take on some significance for the Navajos. They worked on irrigation and road projects; the railroads; sugar beet farms in New Mexico, Colorado, and Kansas; at other seasonal agricultural work; in mines in Colorado; in trading posts; for white ranchers; in area smelters, sawmills, and lumber camps; and later in the oil and gas fields. Money from these jobs was often used to purchase sheep to increase the size of the herds. During the 1920s

from these jobs was often used to purchase sheep to increase the size of the herds. During the 1920s wage labor became a more integral part of the Navajo economy, and with the passage of time, it continued to grow in importance (Bailey and Bailey 1986:155-160). By the 1960s and 1970s the emphasis had shifted from seasonal off-reservation work towards a greater dependence on permanent, full-time work on the reservation (Bailey and Bailey 1986:256-260).

The importance of sheep in Navajo life cannot be overstated. Large herds were not just sources of meat, wool, and money but especially significant symbols of a good and proper life. The owning of sizable herds also brought prestige to their owners (Kluckhohn and Leighton 1962:26). Therefore, when a government stock reduction program was instituted in 1933, it was met with great hostility.

The problem of severe erosion on the reservation caused by overgrazing, combined with large increases in the Navajo population in the early 1930s, led to the introduction of the highly controversial stock reduction program. The Navajos never accepted the overgrazing theory as the reason for the erosion problem. They felt that the reduction of their livestock caused the rain clouds to diminish; this kept the grass from growing, and the final result was erosion. Most Navajos never accepted or understood the need for livestock reduction as presented by U.S. government agents (Roessel and Johnson 1974:x; Bailey and Bailey 1986:185-186).

John Collier inherited this difficult problem and instituted a two-phase program: a voluntary reduction program from 1933 to 1936; and a "systematic" reduction program, involving a permanent regulatory program from 1937 to 1941. Even though Collier provided a number of other incentives such as more reservation land, day schools, irrigation projects, and other programs to employ Navajos, and even though he got support from the Navajo Tribal Council, the program was met with great hostility and suspicion by the Navajos who did not wish to sell their sheep or reduce their herds at all (Bailey and Bailey 1986:186-193).

In the 1990s, the Navajo Nation allows each family to obtain and maintain a homesite lease for their present land. Such a lease allows a certain number of people per acre to live on the land. Often, though not always, this includes a matrilineal extended family. As long as they pay an annual designated fee of $5, the family is allowed to stay on the land as long as they want. People who own livestock pay a $20 annual fee, which entitles them to grazing rights for a certain number of animals (Goodman field notes, 1991).

Historical Background on the Gallup Area

The Atlantic and Pacific Railroad (later known as the Atchison Topeka & Santa Fe Railroad) came into Gallup in 1881, ten years before the town was incorporated. Coal had been discovered in the region in the early 1880s, and after the completion of the railroad, many coal mines began operation in McKinley County. In 1883 a sawmill was opened at Thoreau, which at that time was called Mitchell, after the family who owned it (De Long 1936:6-7). The town of Gallup was incorporated in 1891, named after the comptroller of the St. Louis and San Francisco Railroad Company (York 1988:35). In 1901 McKinley County was formed from a portion of Bernalillo

County (De Long 1936:7).

Between 1868 and the 1930s, the external boundaries of the Navajo reservation were expanded a number of times through various executive orders and other governmental actions (York 1988:35). The expansions included land the Navajos had used prior to the Long Walk. The land provided by the 1868 treaty was not sufficient to support the increasing number of Navajos and their livestock, so expansions were critical for the economic well-being of the tribe (Spicer 1962:221-222).

Ideas and plans introduced by the Anglos were bringing important changes in the lives and livelihoods of ever greater numbers of Navajos. The Indian agent at Fort Defiance encouraged the production of wool and began shipping it to the East. Navajo blankets were being widely traded in various parts of the United States. By 1873 blankets and wool constituted significant sources of income, and the agents continued to work on expanding the markets for these items and improving the quality of the weaving. Efforts were made to improve the sheep stock and expand irrigable agricultural land. In the late 1870s Navajo men were recruited to work in labor gangs on the transcontinental railroad. In the 1880s coal mines provided jobs for some families. Though all of these efforts were helpful, the majority of the Navajos survived on small herds of sheep and goats and moved as necessary from year to year in search of good range for the livestock. The per-family income showed a slow, steady decline from 1900 to 1930, and the government still had to provide rations to parts of the reservation suffering from drought and range depletion (Spicer 1962:221-224).

By the 1930s a number of industries were operating successfully in McKinley County, including coal mining, railroading, wholesale distribution, stock raising (especially sheep and cattle), trading posts, agriculture, timber operations, and brick making (De Long 1936:2). Oil refineries also appeared east of Gallup (Goodman field notes, 1991). Some jobs were available for Navajos in these occupational areas.

In compliance with the 1868 treaty, the U.S. government opened a school for Navajo children at Fort Defiance; however, because of its authoritarian style, it was not successful, and few parents allowed their children to attend the school. A boarding school opened at Tohatchi in 1895, the Crownpoint school in 1909, and the Fort Wingate school in 1925. Another opened at Zuni (no date available). Between 1934 and 1936 numerous day schools for Indians were built at various places in the county (De Long 1936:8-9). Parents gradually became more interested in having their children attend (Spicer 1962:221-224).

The Gallup Inter-Tribal Indian Ceremonial was started by a group of business men in that town in 1922 (De Long 1936:11). It has done much to foster the development of Indian arts and crafts in the region and has become a major arts event in New Mexico.

The Bluewater-Toltec Irrigation District was organized in 1924, and the Bluewater Dam and Reservoir were completed in 1927. Fifty thousand square feet of water were impounded for irrigation, recreation, and tourism (De Long 1936:11).

The Prewitt Area

Little information is available on the Prewitt area, approximately 25 miles east of Gallup on old U.S. 66. Some of the land in the vicinity is reservation land, and some of it is privately owned. All of it is part of the complex checkerboard area mentioned earlier.

Prewitt is a ranching community located on the Atchison Topeka & Santa Fe Railroad line. There is no railstop, however. A trading post was opened here by Robert C. Prewitt, Sr., sometime in the mid- to late 1920s (opening and closing dates are unavailable). A post office was opened in 1928 (Pearce 1980:125).

Robert C. Prewitt and his wife, Maggie, moved to New Mexico from Durango, Colorado, and it is thought that he established this post because it was on the railroad line and because there were a number of Navajo families who lived in the area and would probably trade at the post (McNitt 1962:233). Before opening this post, however, the Prewitts lived and worked in Farmington, where Robert was an agent for the Springfield Fire and Marine Insurance Company in 1906 (Laughlin Papers 1915). When and why the Prewitts left Farmington and established the trading post at Prewitt is unknown.

The History of LA 79362

LA 79362 is on private land considered part of the checkerboard area (see Appendix 1). This land is not part of the Navajo reservation. The checkerboard area was originally created in 1866 by the U.S. government when it made a land grant to the Atlantic and Pacific Railroad Company. As part of this arrangement, the railroad received alternate odd-numbered sections of 640 acres each, extending 40 miles north and south of a proposed rail route. The alternate even-numbered sections consisted of federal property or public domain land; thus, a checkerboard arrangement of land ownership was created. Sales and exchanges of railroad land and the creation of the Homestead Act of 1862 began to change these early patterns of land ownership. The situation grew even more complex when federal land grants were awarded and the Dawes Allotment Act of 1887 gave parcels of land to individual Navajos (York 1988:34-35).

The Drafting Section of the Land Administration Department of the Navajo Nation stated on April 2, 1991, that R. C. Prewitt of the Prewitt Trading Co. owned the land with LA 79362 on it. Deed Book 31 (p. 41) in the McKinley County Courthouse shows a warranty deed for this piece of land in the names of Jessie and Lillie Darby dated July 18, 1980. The Plat Map for Section 18, in the McKinley County Assessors Office, showed the same information. The Darbys purchased this land from Volton Tietjen, who formerly bought a great deal of land in this area. Prewitt was owner before this time. Time and money constraints prevented a complete examination of documents relating to the land ownership history of LA 79362. It is clear that for much of the twentieth century the land has been owned by non-Navajos.

A McKinley County Assessor's record card (n.d.) showed the old Prewitt house and

outbuildings. The well and most of the buildings were of stone. This piece of land, formerly owned by Prewitt, extends all the way from U.S. 66 to I-40 and includes LA 79362.

Families Occupying LA 79362

From approximately 1925 to 1950 four Navajo families occupied four separate hogans at LA 79362 (see Appendix 3 for a partial list of site occupants). They did not move in simultaneously; rather they came a few months to a few years apart. All were related through the To Baazhni' Azhi (Two People Came to the Water) Clan. Santiago (deceased) and Emma Begay (age 95) were the first to build a hogan and move onto this land with their children in approximately 1925. Sometime later, Fred James (age 60) and his siblings moved onto the land with their parents, Perry Roy James and Rose Vandever James. Fred's maternal uncle, Walter Vandever, along with his wife and children, and Fred's maternal grandmother, Nanaba Vandever, moved onto the land a number of months after the James family. Nanaba was a widow at the time, and she lived alone in her hogan, which was adjacent to that of her son, Walter Vandever, and her daughter, Rose Vandever James. Nanaba, Walter, and Rose were all members of the To Baazhni' Azhi Clan, as was Santiago Begay. Since all these people were related by clan it was acceptable for them to occupy the same land. Neither Santiago nor Emma Begay were related to the Vandever or James families by blood; only by clan.

According to Fred James and Emma Begay, no one else was living on the land before their families moved onto it. Each family lived in a quickly constructed shade house (ramadah) until its permanent hogan was completed. The ramadah was an impermanent structure made out of tree limbs and covered with shrubs and branches.

The hogan where Emma Begay and her family lived now has a piñon tree growing out of the center of the hogan ring, which is all that remains of the former structure. According to Fred James, Walter Vandever's hogan was north and west of Emma's hogan; and that of Perry Roy James, Fred's father, was a number of meters east of Emma's. Nanaba Vandever's hogan was north of the other hogans, a bit north and east of that of Fred's parents.

Fred James was born and raised in a hogan at Haystack Mountain, approximately 10 miles north and east of LA 79362. When he was 8 to 10 years old he and his family moved to LA 79362 so that his father, Perry Roy James, could work in the refinery, first owned by Petroleum Products, Inc., and located about 1/2 mile east of the site. He continued to work at this small refinery all during Fred's childhood.

Walter Vandever and Santiago Begay often worked as sheep herders or at any wage-labor job they could find. Walter was primarily a medicine man, so a portion of his time was occupied with these duties. The wives, grandmother, and grandchildren in these families often herded sheep, when not occupied with other tasks.

At this time, it was quite common for Navajo families to put all their belongings into a wagon and move to a new place, often to seek wage work or better pasture for the animals. The land was not divided up and assigned, as it is now, and it was acceptable for them to settle wherever there was open space. Families moved very frequently, going to live near other family members or other clan

members. Perry and Rose Vandever moved to the Prewitt area from Haystack Mountain, approximately 10 miles northeast, and Santiago Begay was originally from Alamo, far to the south. He came into the area looking for work, at some point met and married Emma, and then decided to settle in the vicinity of her home. Each of the four families who lived on LA 79362 moved out at different times, just as they had done when they moved in.

House Structures

Each family's hogan had a stone foundation. Normally, stone used for this purpose was collected from the surrounding area. During the study, a flagstone quarry was found near the eastern edge of the site. Fred James stated that this stone was not used for the foundation of his family's hogan, and Emma Begay did not know whether it was or not. At the present time, without further excavation of the site, the source of the stone used for the hogan foundations remains unresolved. Once the foundation of each hogan was completed, then a regular hogan structure of logs and dirt was built above it. The hogans were made of piñon and cedar wood in those days.

A rock quarry is still present on LA 79362, north and east of the hogan rings. None of the interviewees who had lived on that land knew exactly when it had been used or by whom. Fred James felt it had been used after his family had moved out and that it was not there when he lived there. He did say that usually the stones used for a hogan foundation came from the area where it was being built, but he did not know if this had been the case with the hogans at LA 79362. Emma Begay, who was older than Fred when she was living at LA 79362, remembered that Navajos were taking stone from this quarry when the families were living there. She did not know if this quarried stone had been used in the construction of the foundations on LA 79362.

The hogan interiors included a metal water barrel cut in half and made into a wood-burning stove to provide heat. The people burned piñon, cedar, boards--anything they could find. No one burned coal, however. There were no tables, chairs, or beds in the hogan then. The primary furniture consisted of sheepskins, which were placed on the earthen floor. A kerosene lantern provided light at night. The family did keep dishes, pots, and pans inside the hogan along with the few pieces of clothing they owned.

Daily Life at LA 79362

Cooking was done outdoors over an open fire, usually in a shade house (ramadah). There was no cook stove in the hogan. Some of the more common foods made by the women included fry bread and mutton. Corn was ground on a metate and cooked in different ways. The women often made blue corn meal mush, blue corn tortillas, pancakes, and Navajo noodles.

According to interviewees who lived on the site, the families dumped their trash almost anywhere. They did not dig pits for the disposal of their trash.

To obtain water for domestic use, the women carried buckets and walked five miles west to a place where there are rock cisterns in the arroyos. Here they filled their buckets in the spring, summer, and fall and walked the long distance home. During the winter they collected water by melting snow and ice right by their hogans. After the refinery opened, sometimes the people used

horses and wagons to haul huge drums to the refinery to get water. When the Prewitt Trading Post opened (approximately in the mid- to late 1920s), nearby residents came daily to the outdoor faucet there to fill their water containers. At Haystack, by comparison, there were many places to get water--the people would fill wooden barrels a bucketful at a time, then haul the barrels back to their houses.

Washing clothes was a difficult task in a land with so little water. Dirty clothes and soap were carried to the place five miles away where the women got their water. Here the clothes were washed by hand, then hung on the surrounding trees and bushes to dry. Once dry, the clothes would be carried back to the hogans. Since water was so scarce and it was so difficult to wash clothes when they got dirty, often the people turned them inside out and wore them on the other side until they were dirty on both sides. Then they would have to be washed.

People spent a lot of time outside in those days--herding, gathering firewood, walking. According to one of the interviewees, the people were much stronger and healthier then than they are now. No one who lived at LA 79362 had a garden or raised crops. They only herded sheep and kept horses on that land. Even though several sheep pens (corrals) were located on this land, none of them held very many sheep. One pen was near Walter Vandever's hogan in the northwest portion of LA 79362. Fred's father had a corral south and east of the present ridge, right where the westbound lanes of I-40 are now located. Fred James's family had about 15 sheep, 6 horses, and no cows. Walter had about the same--15 sheep and 4 or 5 horses.

Most of the time the sheep and horses were pastured across the railroad tracks, just north of the ridge where LA 79362 is situated. A large earth tank, which collected rainwater for the animals, was located there. Interviewees stated that the rainfall at that time was adequate to keep enough water in this tank for the animals.

Occupations of Residents of LA 79362

Some of the women residents of LA 79362 were weavers when they lived there. Emma Begay made rugs for sale, but she never kept any for herself or her family. She sold her rugs in Grants because that was where she got the best price for them. She used to weave in the shade house when the weather was nice, not inside the hogan. Her daughters Velma and Anita did some weaving. Today none of the women in the family weave, and the granddaughters are not learning this art form either. According to Velma and Anita, because the young ones are in school, there is no time for them to learn to weave.

The men who lived at LA 79362 worked at whatever jobs they could find in the area. Originally, Perry Roy James moved to this location to be close to the Petroleum Products, Inc., refinery, where he had a job. The other men worked in a variety of capacities in the area. Sometimes they worked as sheepherders, sometimes as medicine men, sometimes for local trading posts, sometimes helping to build houses and other structures such as the Baca Community School. Farther east and west of Prewitt, some of the Navajo men worked in the mines and on the railroad. None of the men in the Prewitt area worked in either of these occupations, however.

Some of the women also worked at a variety of jobs to help support their families. Emma Begay is a good example. As a young woman she worked as a dishwasher for the Bluewater Village Restaurant. One summer she worked as a housekeeper in Albuquerque. When Prewitt opened his trading post in the 1920s, Emma was hired as the housekeeper for the family. She worked in the store and the cafe. She also worked for the Elkins family on their ranch for a number of years, where she took care of their children. At times she also herded sheep, and of course she raised her own children and kept her household together.

Emma said she liked all the people she worked for--they were good people. She said Prewitt treated the Navajo people well, and they liked him.

Before Prewitt opened his trading post, the Navajos living at LA 79362 and the surrounding area traveled by horse and wagon to Thoreau or Grants for groceries. Later they went to Prewitt's. People also traveled on foot and on horseback at the time.

Traditional Cultural Properties and Burials

Interviewees stated that there were no traditional cultural properties in the form of sacred sites or burials at LA 79362. There were several burials, however, in the surrounding area.

(1) Emma Begay had a boy who died while they were living at LA 79362, and he is buried beneath the north end of the overpass where NM 412 crosses over I-40, west of LA 79362. The precise location of the burial is no longer known by the family or other interviewees. Fred James also stated that another child died and was buried north of this burial, but again, no one is sure exactly where that burial is or who the child was. This burial is nowhere near LA 79362 (Goodman field notes, 1991).

According to Fred James there were several ways in which a person could be buried at that time. A hole could be dug, the body would be placed in it, and then it would be covered with rocks. Sometimes, instead of being buried, a body would be wrapped and tied with ropes and then placed up in a tree. The Navajo people who lived around the Haystack area practiced this custom (Goodman field notes, 1991).

(2) Desiderio, the grandfather of Rena James (Fred James's wife), died near I-40 and was buried below the east edge of the ridge where LA 79362 is located. The exact location of that burial is no longer known (Goodman field notes, 1991).

(3) South of I-40, directly across from LA 79362, on the southeast side of the ridge, is the location of another burial. It is far back from the highway, and again, the local residents can no longer find it. Fred James and several other men from the community searched for it in the recent past and could not find it. Tom Rafael, another member of the community, knew that this burial was away from the highway, but he, too, was unable to find it (Goodman field notes, 1991).

Site Interpretation

LA 79362, a Navajo habitation site, fits the standard pattern for the 1925-50 time period. It consisted of a residence group (coresident families living on one homesite; Kelley 1986:2) including four separate households. Three of the families were part of an extended family. All four families were related by clan (To Baazhni' Azhi), built adjacent hogans on this land, and constructed several corrals for their animals. Typically, the total number of animals owned by each family was small, partly because the stock reduction programs were in operation by 1933. Open range and water were available for livestock on the land north of LA 79362, just across the railroad tracks.

The residents of the site exemplify life patterns in transition. Before this time, most families survived as pastoralists, raising their sheep and goats and often doing some subsistence farming as well. At LA 79362 some of the adults held day-labor jobs for which they received regular wages. It appears that LA 79362 was originally occupied because of its proximity to decent range land and water for animals and to the Petroleum Products refinery (1/2 mile east), where one man held down a steady job. Because of the refinery, the site was occupied year round.

Each family maintained small herds of sheep and goats, which were cared for by the children, elders, or women who did not have full-time jobs. For the James family, the animals were no longer the primary source of economic well-being. Sheep continued to be important as a secondary source, however. For other families--those of Walter Vandever and Santiago Begay--sheep were at times primary and at times secondary means of economic survival, depending on the availability of wage work for the men or the women in the family. Some family members supplemented their income by working as medicine men or weaving and selling rugs. None of the occupants ever farmed while living at LA 79362.

With strong pressure exerted through stock reduction programs, and with various day labor-jobs opening in and around the reservation, the course of change was set for many Navajo families. Men worked at whatever jobs were available to provide for their families. Those living at LA 79362 were a part of an occupational transition brought about by the advent of Euroamerican people and value systems and by various U.S. government programs, ideally meant to help the Navajos move into a Euroamerican lifestyle. The Navajos chose a compromise--jobs for regular wages and the maintenance of their herds of sheep and goats.

One rather unusual feature of LA 79362 was that it did not have readily available water for domestic use. No well, spring, or river ran nearby, thus necessitating a daily five-mile walk by the women to obtain water for household needs. Interviewees recalled that the site was occupied before the Prewitt Trading Post opened nearby (an actual opening date was not obtainable). Once the trading post opened, it was easier and faster to obtain water there, and this became the usual routine. Also, some of the women in the family were employed by Prewitt to work in various parts of his operation.

According to the interviewees, the families living at LA 79362 were there because of the good will of the landowner, Robert Prewitt. He allowed them to remain on an otherwise deserted portion of his property. These Navajo families never acquired an allotment of their own in this area.

Descendants of Santiago Begay, and his wife, Emma, who is still living, have a Navajo homesite lease on land approximately a half mile southwest of LA 79362. The Prewitt area has been Emma's home since she was a young married woman, and this is where she wishes to be. Her three remaining daughters live in cement houses and a trailer adjacent to her home; her sons are deceased.

Fred James also settled in the area, though he presently lives several miles to the west. As a young man, he too worked in the refinery near LA 79362 and then, later, in the one near Gallup. His children live near Prewitt or in the Gallup-Grants area. None of them have moved far away.

Wage work provides the main source of livelihood for these families, but some of them still maintain small herds of sheep. The pattern established by their parents and grandparents is being maintained as an acceptable solution to the continuing unpredictableness of life.

Other Data relating to LA 79362

The Ridge South of LA 79362

LA 79362 is located on a ridge that continues on the south side of I-40. The ridge was transected by I-40. This portion of the ridge was occupied at the same time as LA 79362. Fred James and Emma Begay both stated that two families lived on the south side of the highway: Nelson Bodie and Leonard Dale. Frank Largo and his family lived in a hogan farther south, beyond the ridge. No one lived in the area where the highway is now. There was a sweathouse on the ridge on the south side of I-40, but it was in a little break in the ridge, far away from the present highway. There was a corral nearby too, located at the base of the ridge on the south side of the NM 412 overpass.

Nelson Bodie, who lived in a hogan on the ridge south of I-40, was the brother of Emma Bodie Begay. Both were members of the Tl'ogih Clan (translated as "Hairy Ones," "Weavers," or the "Zia Clan"). Nelson was married and had three or four children when he lived there. He worked primarily as a medicine man, but he also raised some sheep. He and his family moved away from this area before Emma's family did. Nelson's wife was from the Borrego Pass area, and this was where they moved. Leonard Dale was a clan relative (also from the Tl'ogih Clan) who lived on the same ridge at about the same time. He worked as a carpenter building houses and buildings in the area and also as a maintenance man. His first wife died (it is not known where she was buried), and he moved away from this area before Emma and her family. Leonard later married a woman from Torreon, and he moved there to live with her.

Medicine and Religion of the Prewitt Area Navajos

Both Nelson Bodie and Walter Vandever were well known as medicine men who conducted sings in the area. They gathered herbs and sang, and went where they were needed to perform healing ceremonies. Navajos followed the old Indian religion in those days (the 1920s); none were Christian. Even though Emma Begay's family did not use the services of her brother, Nelson Bodie,

other people in the area did. At that time the only white doctors in the area were in Fort Defiance or at Crownpoint.

Presently three religions coexist in this region: the Christian churches; the old Indian ways of praying; and the Native American Church with its peyote ceremonies. Churches and religious activities in the Prewitt area include the pentacostal Indian Mission, near Haystack, presently run by Evan Faymiller; the Assembly of God Church, across from the Prewitt post office; and traditional Navajo ceremonies (the old Indian religion), which take place throughout the region as needed.

The Prewitt Trading Post

The Prewitt Trading Post was important in the lives of the people living at LA 79362 and the surrounding area. Bob (Robert C.) Prewitt opened this post by old Highway 66 when it was just a dirt road. At that time (approximately the mid- to late 1920s) the post was about 1/4 mile northeast of LA 79362 at the base of the ridge. When Highway 66 was moved slightly north to its present location and paved, Prewitt moved his trading post several hundred feet north, next to the paved highway. According to Navajos in the area, Robert ("Old Man") Prewitt ran it for many years. The building, a stone structure with a flagstone floor, collapsed long ago.

When Bob Prewitt owned the original trading post he let Navajo families live on his land. They paid him no rent. Prewitt just allowed them to build their hogans there. Interviewees who formerly lived on his land were not aware that his family no longer owned it.

After the old man died, Prewitt's son ran the post until he sold it to Justin La Font. La Font eventually closed the post, sold everything at Prewitt, and moved to Chinle. Then Dave Ortega opened a new trading post nearby. Dates for these events were not available. Fred Elkin now owns the third and newest Prewitt Trading Post, approximately a mile north and east of LA 79362, beside paved Highway 66. Elkin has only owned this post for the past four or five years. Elkin, who was born and raised near Prewitt, owns a lot of the nontribal land along the railroad from Thoreau to Bluewater Village.

Description of the Area around LA 79362

Locally, there are many scattered Navajo residences throughout the area where NM 412 crosses I-40. A Headstart school is just south of I-40 on the west side of Highway 412. The Baca Chapter House and a senior citizen's center is about a half mile further west. The Baca Community Day School, a BIA school, is just west of SR 412 on the north side of I-40. It presently has about 80 students. A convenience store and gas station were built in the past few years on the southeast corner of the junction of NM 412 and U.S. 66. On the northeast corner of the same junction are a bar and liquor store. The Prewitt Trading Post (the third to be constructed in the area) is approximately a mile east and a little north of LA 79362 along old Highway 66. The post office is in the same area, on the north side of the old highway.

A closed oil refinery about 1/2 mile due east of LA 79362 was first owned by Petroleum

Products, Inc., next by Malco, and finally by El Paso Natural Gas. El Paso eventually closed it and opened a much larger refinery near Gallup (date unavailable). El Paso sold this big refinery to Shell, and Shell sold it to Giant, who presently owns it. It is located at Cineza.

When Malco owned the refinery, private planes for executives of the company used to land at an airstrip just north of the refinery and the nearby railroad tracks. The refinery land itself is polluted and is surrounded with a high fence. Danger and warning signs in English, Spanish, and Navajo are posted frequently around the perimeter. The tribe presently is in negotiations to exchange this land for an unpolluted piece. If this exchange occurs, El Paso Natural Gas will give the tribe a different piece of land in exchange for the polluted one, which it will then be responsible for cleaning up.

The tribe is also trying to purchase the privately owned land where the KOA Campground is located, north and west of LA 79362, and the land where the first Prewitt Trading Post stood, presently owned by Jessie and Lillie Darby.

Summary

LA 79362 functioned primarily as a Navajo habitation site, occupied approximately between 1925 and 1950. It appears that four families from the To Baazhni' Azhi Clan lived there, each with its own hogan. Several corrals were built to hold the small herds of family-owned sheep and goats, while the horses were allowed to roam free. The interviewees did not know the dates of use of a rock quarry on the same piece of land, slightly east and north of the hogans. It is unclear whether the quarry was in use at the time of occupation. Former occupants of LA 79362 raised sheep, worked as medicine men and weavers, and worked at the refinery 1/2 mile east of the site and at other wage labor jobs in the vicinity. They survived by utilizing a combination of old and new economic activities. Interviewees stated that there were no sacred Navajo sites at this location. There were several burials in the area; however, none were located at LA 79362.

RESEARCH SUMMARY

Three sites near Grants, New Mexico, were tested for their potential to yield information on local prehistory or history. Portions of the sites lie within proposed highway improvement zones for NMSHTD Project IR-040-1(90)63. At each site, a grid was laid out, surface counts of artifacts were made, an arbitrary sample of artifacts was collected, and subsurface tests were excavated. All archaeological investigations were restricted to the areas of the proposed highway project, involving the existing right-of-way at LA 79362 and LA 79538 and existing right-of-way and new right-of-way at LA 79541.

LA 79538

LA 79538 is a prehistoric lithic artifact and sherd scatter. The surface artifacts were inventoried in 2 by 2 m squares; a total of 232 sq m of site surface was investigated. Of the area within the right-of-way, 93.1 percent has less than one artifact per square meter. For the remaining 6.9 percent of site surface within the right-of-way, artifact density ranges from 2.0 to 3.25 items per square meter.

Density plots defined two concentrations of artifacts. Both concentrations are at the edge of the highway cut, indicating that large portions of both concentrations are now gone. Two 2 by 2 meter squares, one in each concentration, were selected for collection. A biface fragment noted elsewhere on the site was also collected.

Thirty three-inch bucket auger holes were bored at 2 m intervals to determine soil depth and the presence or absence of subsurface cultural features (structures, pits, hearths, etc.) and deposits. Depth to bedrock varied from 5 to 50 cm. No cultural features, trash, or stains were discovered. A single flake was found in one test at a depth of 10 cm or less.

On the basis of the testing, LA 79538 appears to lie entirely on the surface. No cultural features such as structures, pits, and hearths were found. The primary cultural manifestations of the site within the existing right-of-way are two surface concentrations of chipped lithic debris, large portions of which are no longer in existence.

Dating the site is difficult. No hearths or other features having dating potential were found, nor did we find evidence to suggest that such features exist. No diagnostic artifacts were found within the existing right-of-way. A pottery sherd noted outside the right-of-way during the survey phase of the project suggests an occupation during the period A.D. 900 to 1300. The chipped lithic debris collected and analyzed from the right-of-way is similar in many respects to that from LA 79541, a site with an Archaic component. Thus, LA 79538 may also have an Archaic component.

LA 79541

LA 79541 is a prehistoric lithic artifact and sherd scatter. The surface artifacts were inventoried in 2 by 2 m squares; a total of 1,144 sq m of site surface was investigated. Of the site area within the proposed highway project, 95.1 percent has less than three artifacts per square meter. The remaining 4.9 percent of the site area (a total of 56 sq m) has artifact densities ranging from 3.0 to 5.5 items per square meter. A total of 24 2 by 2 m squares was collected from the two artifact concentrations within the proposed right-of-way.

Density plots defined two concentrations of artifacts lying within the proposed highway project and a third concentration immediately outside the proposed right-of-way. Two projectile points, two one-hand manos fragments, two flake tools, a biface fragment, and a sherd were noted elsewhere and collected.

Fifty small trowel tests were excavated at 3 m intervals to determine soil depth and the presence or absence of subsurface cultural features (structures, pits, hearths, etc.) and deposits. Depth to bedrock varied from 1 to 34 cm. No cultural features, trash, or stains were discovered. Twenty-four tests produced a total of 42 flakes; 81 percent of the flakes came from within 10 cm of the surface, and all the rest came from within 25 cm of the surface. The tests producing the deeper flakes were in a small natural drainage at the west end of the site. Three small flecks of charcoal also came from one of those tests.

On the basis of the testing, LA 79541 appears to lie mostly on the surface. No cultural features such as structures, pits, and hearths were found. The primary cultural manifestations of the site within the existing right-of-way are two surface concentrations of chipped lithic debris.

No hearths or other features having dating potential were found, nor did we find evidence to suggest that such features exist. Several diagnostic artifacts represent at least two components. Two San Jose Points and two fragments of small, one-hand manos indicate an Archaic occupation during the San Jose phase (3200 to 1800 B.C.). Three sherds of St. Johns Polychrome (probably all from the same vessel) suggest an occupation during the period A.D. 1175 to 1300.

LA 79362

LA 79362 has two components. one prehistoric chipped lithic debris scatter and one twentieth-century Navajo habitation. The surface artifacts were inventoried in 4 by 4 meter squares; a total of 2,227 square meters of site surface within the existing right-of-way was investigated.

Prehistoric Component

The prehistoric component is a very low-density scatter of chipped lithic artifacts. A total of 90 cores, flakes, and pieces of shatter and other material were spread among 36 4 by 4 m squares.

Twenty-nine (80.5 percent) of these squares have artifact densities of less than one per square meter. Densities in the remaining 7 squares (18.5 percent) ranged from 1.0 to 3.5 per square meter.

A density plot shows that only one concentration of lithic artifacts is present within the existing right-of-way. The concentration is located next to the highway cut, indicating that an unknown portion of the concentration is now missing.

The soil depth under the lithic artifact concentration ranges from 5 to about 15 cm. No tests were done at the location, but the absence of soil stains and the shallowness of the soil cover indicate that cultural features (structures, pits, hearths, etc.) are absent and that the lithic artifacts are primarily on the ground surface.

Dating the lithic artifact occupation is basically impossible. Datable materials such as wood, charcoal, and diagnostic artifacts are absent. We assume that it is prehistoric because of the large number of biface thinning flakes, but this is by no means certain.

Historic Component

The historic component of LA 79362 is a large twentieth-century Navajo homesite consisting of several hogans, associated trash areas, outdoor hearths, a corral, and several rock features of unknown function. Most of the features, including all of the hogan rings and the corral, are outside of the proposed highway project area. Four outdoor hearths (including one very recent one that does not belong with the site), three rock features, several small trash piles, and widespread but low-density trash are within the existing right-of-way.

Density plots of several classes of materials (glass, metal, pottery) show that the most of the trash is associated with the Navajo habitation site and that only a small portion of these items derive from roadside activities unrelated to the Navajo site. Items of unknown function or having potential for dating the site were collected.

A rock feature and a possible rock alignment were tested by means of 1 by 0.5 m test pits. In both instances, no cultural features could be defined. An interview with a former inhabitant of the site indicated that these rock concentrations are waste from stone hogan construction.

On the basis of the testing, the portion of the historic component of LA 79362 within the existing right-of-way appears to lie mostly on the surface. Rock features, some of which are partly covered by sand, apparently represent detritus left over from hogan building and are not functional cultural features as such.

Interview information indicates the Navajo component was built and occupied between about A.D. 1925 and 1950, though the two interviewees were not in exact agreement. The artifacts suggest outside dates of about 1930 to 1950. No traditional cultural properties were identified at the site by the interviewees.

CONCLUSIONS AND RECOMMENDATIONS

LA 79538 is a low-density surface artifact scatter generally lacking features and diagnostic artifacts. It contains a low total number of artifacts. Also, previous construction has probably greatly affected the extent and integrity of the remains. A data recovery program at the site is unlikely to yield important information on local prehistory. We therefore recommend no further studies at this site.

LA 79541 is also a low-density surface artifact scatter generally lacking features and diagnostic artifacts. It contains a low number of remains. Also, previous construction has probably greatly affected the extent and integrity of the remains. A data recovery program at the site is unlikely to yield important information on local prehistory. We therefore recommend no further studies at this site.

The prehistoric component of LA 79362 is a low-density surface artifact scatter generally lacking features and diagnostic artifacts. It contains a very low number of remains. A data recovery program focusing on this component of the site is unlikely to yield important information on local prehistory. We therefore recommend no further studies of this component of the site.

The historic to recent component of LA 79362 consists of a Navajo residential area. At least part of this component is over 50 years old (1941 or earlier). More detailed study of some portions of the site is likely to yield important information on local history. However, the portion of the site within the proposed highway project (the existing right-of-way) is of such limited extent and nature that a data recovery program focusing on this component of the site is unlikely to yield important information on local history. Former Navajo residents of the site indicated that no traditional cultural properties lie within the proposed highway project area. We therefore recommend no further studies of this component of the site within the current right-of-way.

REFERENCES CITED

Bailey, Garrick, and Roberta G. Bailey
1986 *A History of the Navajos: The Reservation Years*. School of American Research Press, Santa Fe, New Mexico.

Brown, David E.
1982 *Biotic Communities of the American Southwest: United States and Mexico*. Desert Plants 4 (1-4). Boyce Thompson Southwestern Arboretum, Tucson.

Brugge, David M.
1983 Navajo Prehistory and History to 1850. In *Handbook of North American Indians*, vol. 10, *Southwest*, edited by Alfonso Ortiz. Smithsonian Institution, Washington, D.C.

Carlson, Roy L.
1965 *Eighteenth Century Navajo Fortresses of the Gobernador District*. Earl Morris Papers 2. University of Colorado Studies, Series in Anthropology 10. Boulder.

Dane, Carle H., and George O. Bachman
1965 *Geologic Map of New Mexico*. U.S. Geological Survey, Department of the Interior, Washington, D.C.

De Long, Eleanor
1936 WPA files, McKinley County History and Pioneers 214. Manuscript on file, New Mexico State Records Center and Archives, Santa Fe.

Findley, James S., A. H. Harris, D. E. Wilson, and C. Jones
1975 *Mammals of New Mexico*. University of New Mexico Press, Albuquerque.

Gabin, Vickie L., and Lee E. Lesperance
1977 *New Mexico Climatological Data: Precipitation, Temperature, Evaporation, and Wind, Monthly and Annual Means, 1850-1975*. W. K. Summers and Associates, Socorro.

Hester, James J.
1962a *Early Navajo Migrations and Acculturation in the Southwest*. Museum of New Mexico Papers in Anthropology, No. 6. Santa Fe.

1962b An Ethnohistoric Reconstruction of Navajo Culture, 1582-1824. *El Palacio* 69(3):130-138.

Jenkins, Myra Ellen, and Ward Allen Minge
1974 *Navajo Activities Affecting the Acoma-Laguna Area, 1746-1910*. Vol. 2 of *Navajo Indians*. Garland Publishing, New York.

Kelley, Klara

1986 *Navajo Land Use: An Ethnoarchaeological Study*. Academic Press, New York.

Kelly, Lawrence C.
1968 *The Navajo Indians and Federal Indian Policy, 1900-1935*. University of Arizona Press, Tucson.

Kirkpatrick, David T., and Meliha S. Duran
1981 *LA 18783: An Archaeological Study of a Railroad Construction Site, McKinley County, New Mexico*. Report No. 451. Cultural Resources Management Division, New Mexico State University, Las Cruces.

Kluckhohn, Clyde, and Dorothea Leighton
1962 *The Navajo*. Harvard University Press, Cambridge, Mass.

Laughlin Papers
1915 District Court cases, Folder 71. New Mexico State Records Center and Archives, Santa Fe.

Lockett, H. Claiborne
1952 Hogans vs. Houses. In *For the Dean: Essays in Anthropology in Honor of Byron Cummings*. Hohokam Museums Association, Tucson.

McNitt, Frank
1962 *The Indian Traders*. University of Oklahoma Press, Norman.

Mindeleff, Cosmos
1898 Navajo Houses. In *17th Annual Report of the Bureau of American Ethnology, 1895-96*, part 2, pp. 475-517. Washington, D.C.

Ostermann, Leopold
1917 Navajo Houses. *Franciscan Missions of the Southwest* 5:20-32.

Pearce, T. M.
1980 *New Mexico Place Names*. University of New Mexico Press, Albuquerque.

Reeve, Frank D.
1957 Seventeenth Century Navajo-Spanish Relations. *New Mexico Historical Review* 32 (1):36-52.

1960 Navajo-Spanish Diplomacy, 1770-1790. *New Mexico Historical Review* 35(3):200-235.

Roessel, Ruth, and Broderick H. Johnson, comps.
1974 *Navajo Livestock Reduction: A National Disgrace*. Navajo Community College Press, Tsaile, Arizona.

Schroeder, Albert H.
1965 A Brief History of the Southern Utes. *Southwestern Lore* 30(4):53-78.

Spicer, Edward H.
1962 *Cycles of Conquest: The Impact of Spain, Mexico, and the United States on the Indians of the Southwest*. University of Arizona, Tucson.

Stuart, David E., and Rory P. Gauthier
1981 Prehistoric New Mexico: Background for Survey. Historic Preservation Bureau, New Mexico State Planning Office, Santa Fe.

Tainter, Joseph A., and David "A" Gillio
1980 *Cultural Resources Overview: Mt. Taylor Area, New Mexico*. USDA Forest Service and Bureau of Land Management, Albuquerque and Santa Fe.

Tuan, Yi-Fu, Cyril E. Everard, Jerold G. Widdison, and Iven Bennett
1973 *The Climate of New Mexico*. Rev. ed. New Mexico State Planning Office, Santa Fe.

Underhill, Ruth
1953 *Here Come the Navajo*. Indian Life and Customs No. 8. United States Indian Service, Lawrence, Kansas.

USDC (U.S. Department of Commerce)
1967 *State of New Mexico Precipitation Maps*. Washington, D.C.

Vogt, Evon Z.
1961 Navajo. In *Perspectives in American Indian Culture Change*, ed. Edward H. Spicer. University of Chicago Press, Chicago.

Wiseman, Regge N.
in prep. Testing and Evaluation of Three Prehistoric and Historic Sites on the Grants Project, Cibola and McKinley Counties, New Mexico. Draft report for Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Worcester, Donald E.
1947 Early History of the Navajo Indians. Ph.D. dissertation, University of California, Berkeley.

York, Fred
1988 An Ethnohistory of the China Springs Trading Post Area. In *Archaeological and Ethnohistorical Investigations of Sites between Yah-Tah-Hey and China Springs, McKinley County, New Mexico*, by Timothy D. Maxwell and Frederick F. York. Laboratory of Anthropology Notes 426, Museum of New Mexico, Santa Fe.

APPENDIX 2: PEOPLE INTERVIEWED ABOUT LA 79362

All of the people in the following list gave permission to use their names in this report:

Fred James, 60 years old. To Baazhni' Azhi Clan. Baca Chapter president. Lived at LA 79362 as a child. Now lives several miles west of Prewitt.

Emma Bodie Begay, 95 years old. Tl'ogih Clan. Lived at LA 79362 as a young married woman. Now lives approximately 1/2 mile southwest of LA 79362.

Rosita Loretto, 30 years old. Tl'ogih Clan. Baca Chapter administrator. Granddaughter of Emma Begay, daughter of Velma Begay Belgarito. Married to a son of Fred James. Now lives several miles west of Prewitt.

Velma Begay Belgarito, 65 years old; Anita Mae Begay Wellito, 59 years old; and Angeline Begay Lee, 53 years old. Three daughters of Emma Begay, present during the interview with their mother. Baazhni' Azhi Clan. All three women freely contributed information when they had knowledge of a particular subject. All of them lived at LA 79362 as children and now live in houses next to their mother's house.

Eddie Hosteen, approximately 60 years old. Vice-president of Baca School Board, member of BIA Education School Board. As a child, lived in a hogan on the south side of what is now I-40. Now, a resident of Prewitt area.

APPENDIX 3: PARTIAL LIST OF OCCUPANTS OF LA 79362

Name	Age	Clan
Fred James	60	To Baazhni' Azhi
Walter Vandever	deceased	To Baazhni' Azhi
Nanaba Vandever	deceased	To Baazhni' Azhi
Santiago Begay	deceased	To Baazhni' Azhi
Emma Begay	95	Tl'ogih
Perry Roy James	deceased	unknown
Rose Vandever James Johnson	deceased	To Baazhni' Azhi
Velma Begay Belgarito	65	Tl'ogih
Anita Mae Begay Wellito	59	Tl'ogih
Angela Begay Lee	53	Tl'ogih