

MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

**ARCHAEOLOGICAL TESTING AND EVALUATION OF LA 71686 NEAR
GRANTS, CIBOLA COUNTY, NEW MEXICO**

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ADMINISTRATIVE SUMMARY

In May 1991, the Office of Archaeological Studies, Museum of New Mexico, conducted testing and evaluation of prehistoric site LA 71686 in the vicinity of Grants for the New Mexico State Highway and Transportation Department. Testing was confined to the existing highway right-of-way because the highway project will not go beyond the current right-of-way fence.

LA 71686 is a lithic artifact scatter with a few sherds. The few diagnostic artifacts suggest one or more occupations dating from the Middle to Late Archaic and the end of Basketmaker III (3000 B.C. to A.D. 700).

LA 71686 appears to be a low-density surface scatter with low numbers of artifacts and a general lack of features and diagnostic remains within the highway project area (i.e., the existing right-of-way). As a result, further archaeological investigations within the right-of-way are unlikely to yield important information on local prehistory. We therefore recommend that no further studies be conducted unless the highway project is expanded to include portions of the site currently lying outside the existing right-of-way.

Submitted in fulfillment of Joint Powers Agreement D04040 between the New Mexico State Highway and Transportation Department and the Office of Archaeological Studies, Museum of New Mexico, Office of Cultural Affairs.

Cultural Properties Review Committee Excavation Permit No. SE-68
NMSHTD Project No. SP-2603 (201)
MNM Project No. 41.509 (Grants 2)

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INTRODUCTION

In May 1991, the Museum of New Mexico tested one archaeological site along NM 117 in the vicinity of Grants, New Mexico (Fig. 1; Appendix 1). The Office of Archaeological Studies of the Museum conducted the testing and evaluation program at the request of William L. Taylor of the New Mexico State Highway and Transportation Department (Project SP-2603 [201]). David A. Phillips, Jr., served as the principal investigator. Regge N. Wiseman supervised the project and was assisted by William L. Sarracino.

LA 71686 is a lithic artifact scatter with an occasional potsherd. No prehistoric features (structures, hearths, etc.) were seen on the surface of the site during the survey phase.

The site lies both inside and outside the existing highway right-of-way. However, the highway project will be restricted to the existing right-of-way. The project was conducted on highway right-of-way acquired from private sources.

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. Regge N. Wiseman, William Sarracino, and Timothy R. "Brad" Bradley performed the field work. Wiseman analyzed the artifacts. The report was produced by David A. Phillips, Jr. (content editing), Tom Ireland (technical editing), Ann Noble (drafting), and Nancy Hunter Warren (artifact photography and film processing and printing).

Natural Setting

The project site is in the valley of the Rio San Jose, a major eastward-flowing tributary of the Puerco River. It is at the base of a low hill near the edge of the San Jose at an elevation of 5,343 m.

Winters in the project area 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 site lies near the junction of two biotic communities (Brown 1982). The Great Basin Conifer Woodland, which covers the lower elevations associated with the Zuni Mountains, is dominated by piñon and juniper 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 were common in the area in prehistoric times, including deer, probably elk, mountain lion, rabbit, squirrels, and a variety of smaller rodents (Findley et al. 1975).

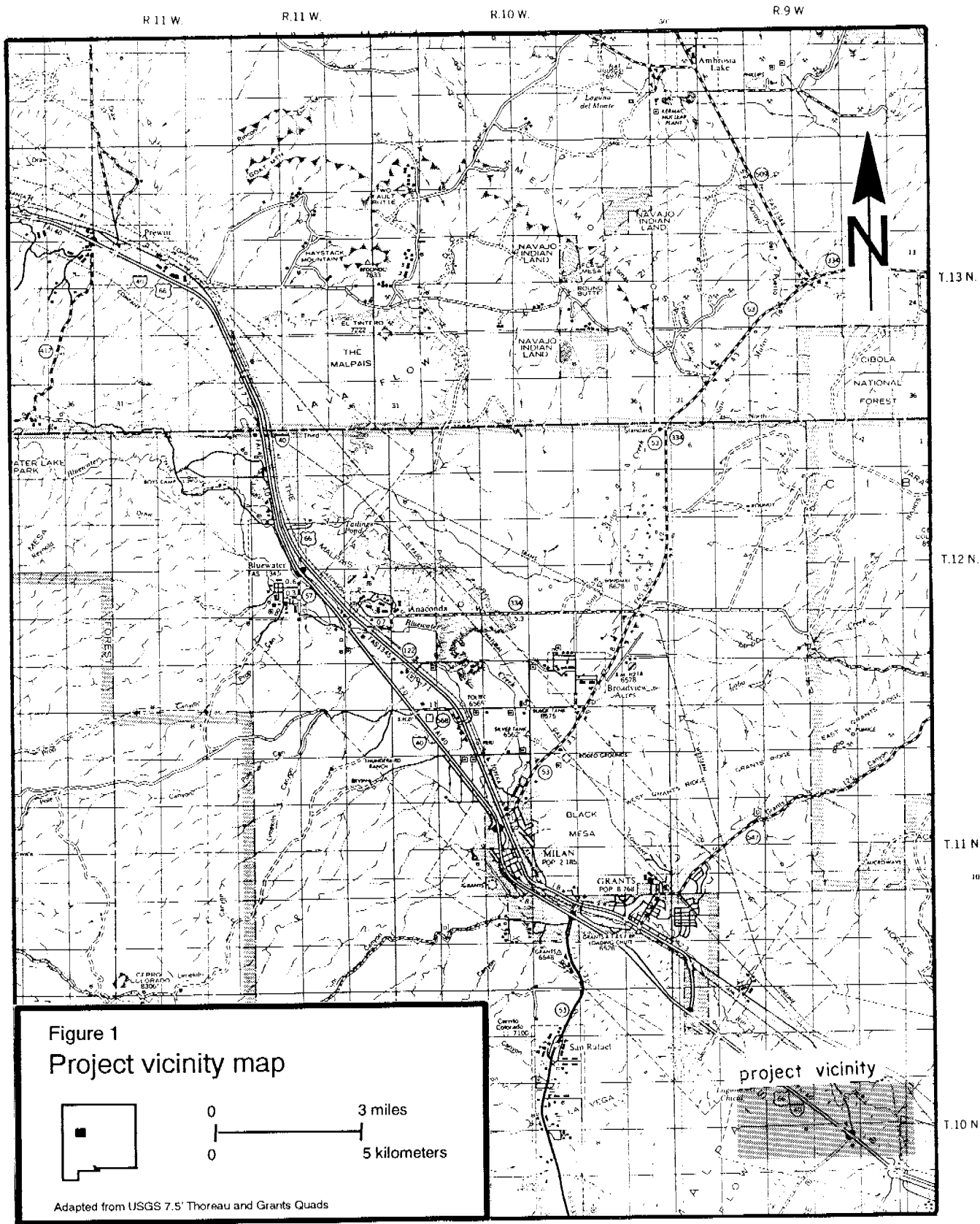


Figure 1
Project vicinity map



0 ————— 3 miles
0 ————— 5 kilometers

Adapted from USGS 7.5' Thoreau and Grants Quads

Cultural Setting

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

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. The retreat of the glaciers at the end of the Pleistocene resulted in a general climatic warming. In adjusting to the increasing aridity and the disappearance of the large Pleistocene animals, Native Americans turned to smaller animal forms such as deer and rabbits and began incorporating more plant foods into their diet. Several stages and phases have been names for this, the Archaic Period.

In this part of New Mexico, the phases of the Archaic period 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 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 an 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). 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.

Research Objectives

The objectives of this project were to determine whether the site has potential for yielding information important to our understanding of prehistory. The testing sought information on site type, the presence or absence of subsurface deposits, the presence or absence of features such as structures and hearths, and the integrity of the deposits and features. Limited artifact collections were made to provide information on occupation dates, site function, and unidentified items.

METHODS

Field Procedures

The first activity at the site was to pinflag all surface artifacts. Two diagnostic artifacts were noted and collected. Next, a grid of 2 m squares was established, using the right-of-way fence for the north-south baseline. The total artifact count within the right-of-way was 121. Artifacts were recorded by square and plotted on graph paper to facilitate visualization of density and distribution. Five squares, containing 24 artifacts, were arbitrarily selected for collection. Then, 39 3-inch bucket-auger holes were bored at 2 m intervals to test for soil depth and subsurface features. Maps based on the grid pattern were drawn on graph paper. Recording was done on standard forms and with 35 mm black-and-white photographs.

Laboratory Procedures

The artifacts were analyzed for type (projectile point, flake, etc.); material, size (length, width, thickness, weight); and in the case of the debitage, selected attributes (flake type, platform type, and distal termination type). The collections were then placed in the Archaeological Research Collection of the Museum of New Mexico.

RESULTS

LA 71686 measures 65 m north-south and 25 m east-west and lies mostly outside the existing right-of-way (Fig. 2). Fieldwork was restricted to the portion of the site within the existing right-of-way, an area measuring 50 m north-south by 4 m east-west (Fig. 3).



Figure 2. LA 71686, looking north.

The surface artifact plot (Fig. 4) shows a density of less than one item per square meter over most of the site area within the right-of-way. Only three concentrations were detected. Surface artifact density in the concentrations ranges from 1.2 to 1.7 items per square meter. The only formal artifacts noted during the surface examination were projectile point fragments, one of which lay within the right-of-way but west of the highway. Both points and a single potsherd were collected.

The auger tests showed that soil depth varies with depth to bedrock (Table 1). Organic staining was present in most tests but confined to the uppermost 5 to 30 cm, indicating that the coloration is decayed vegetation rather than cultural material. Several flakes and recent roadside debris, including pieces of glass, plastic, and rubber, were recovered by the auguring. The vertical distribution of glass and other recent artifacts (Fig. 5) shows that these items are spread throughout the artifact zone, indicating that the deposits within the right-of-way were thoroughly mixed during the original construction of the highway. Two isolated pieces of charcoal (less than 3 mm in longest dimension) were also noted.

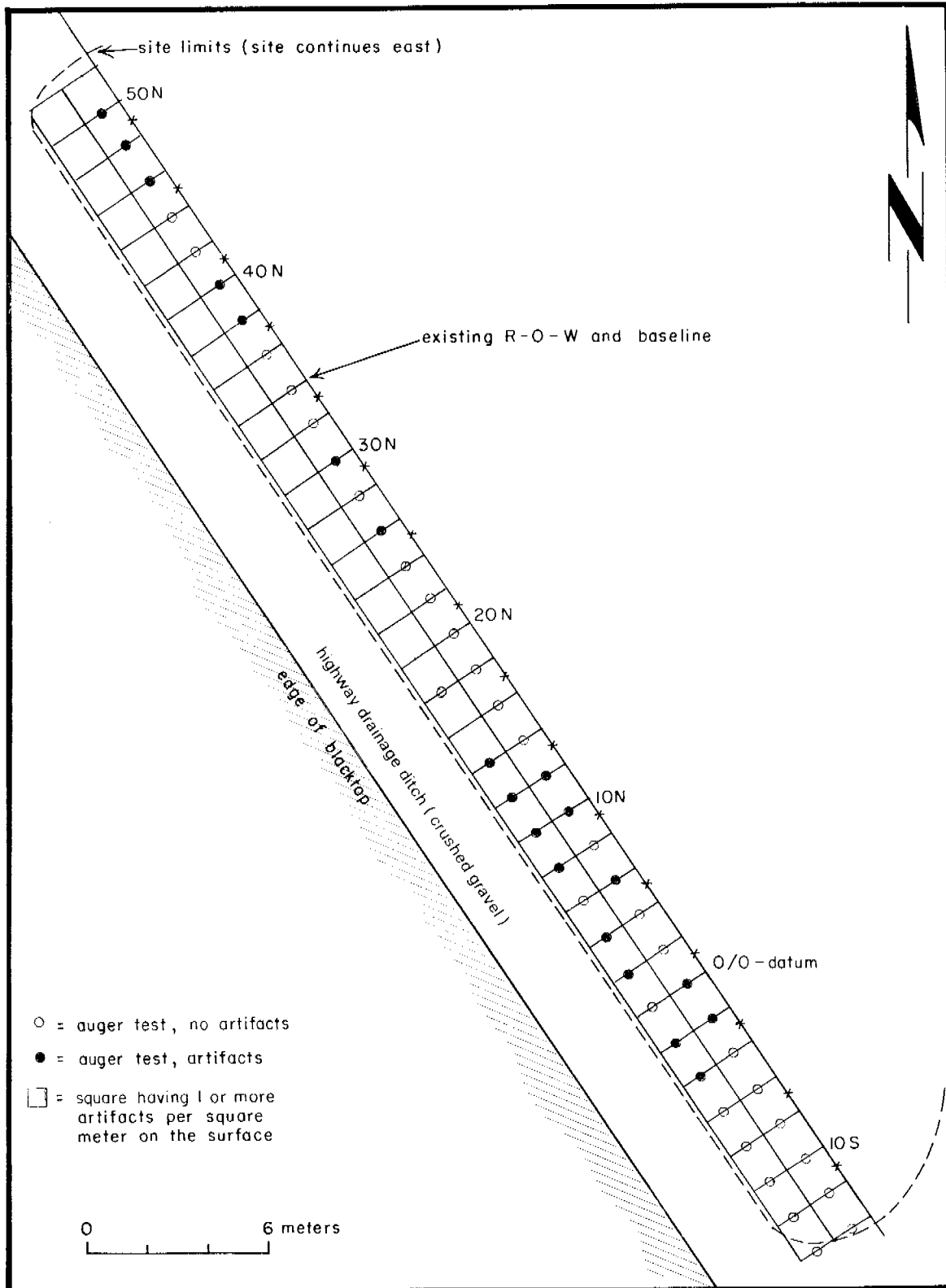


Figure 3. LA 71686, site map.

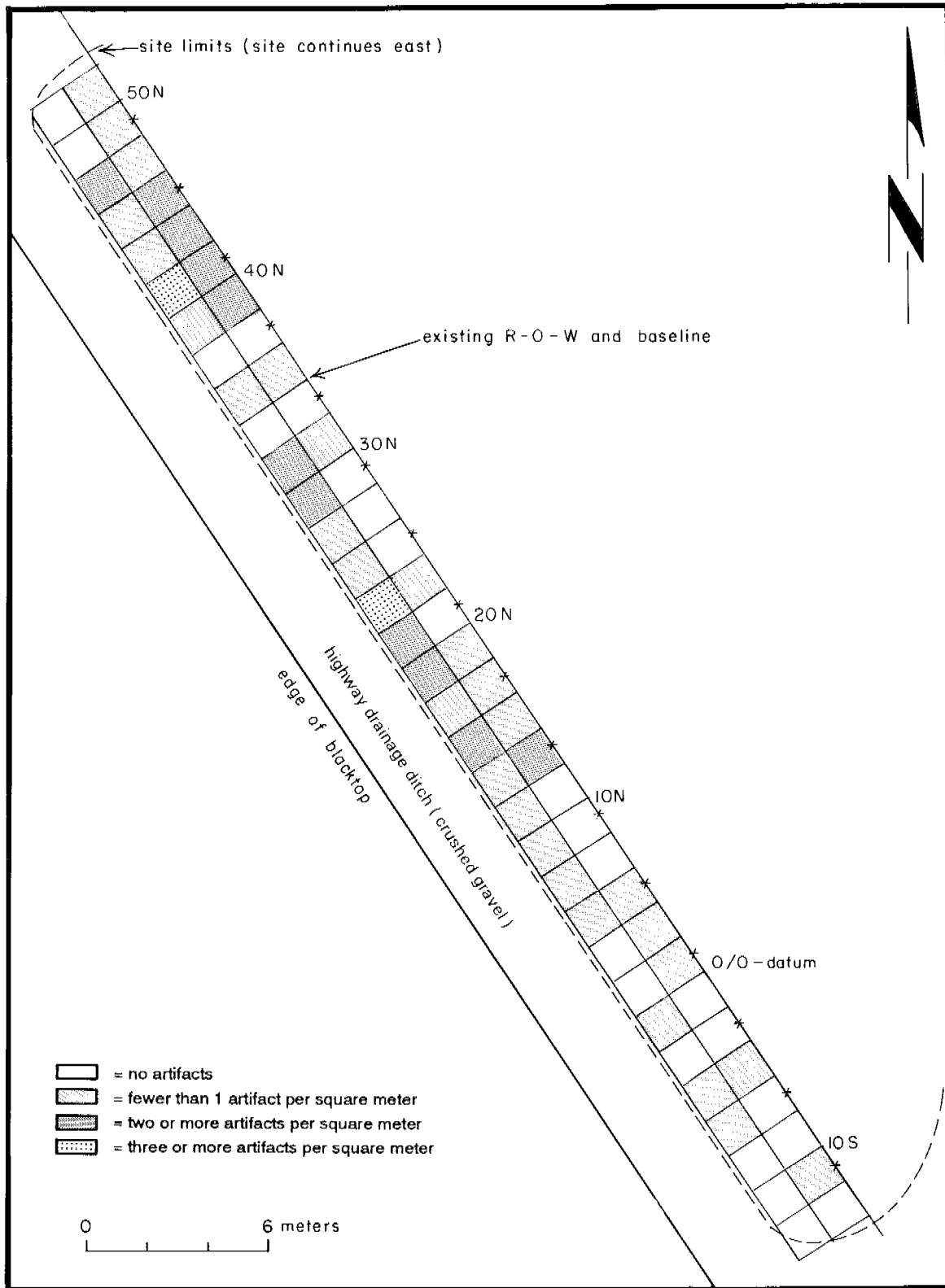


Figure 4. LA 71686, surface artifact density map.

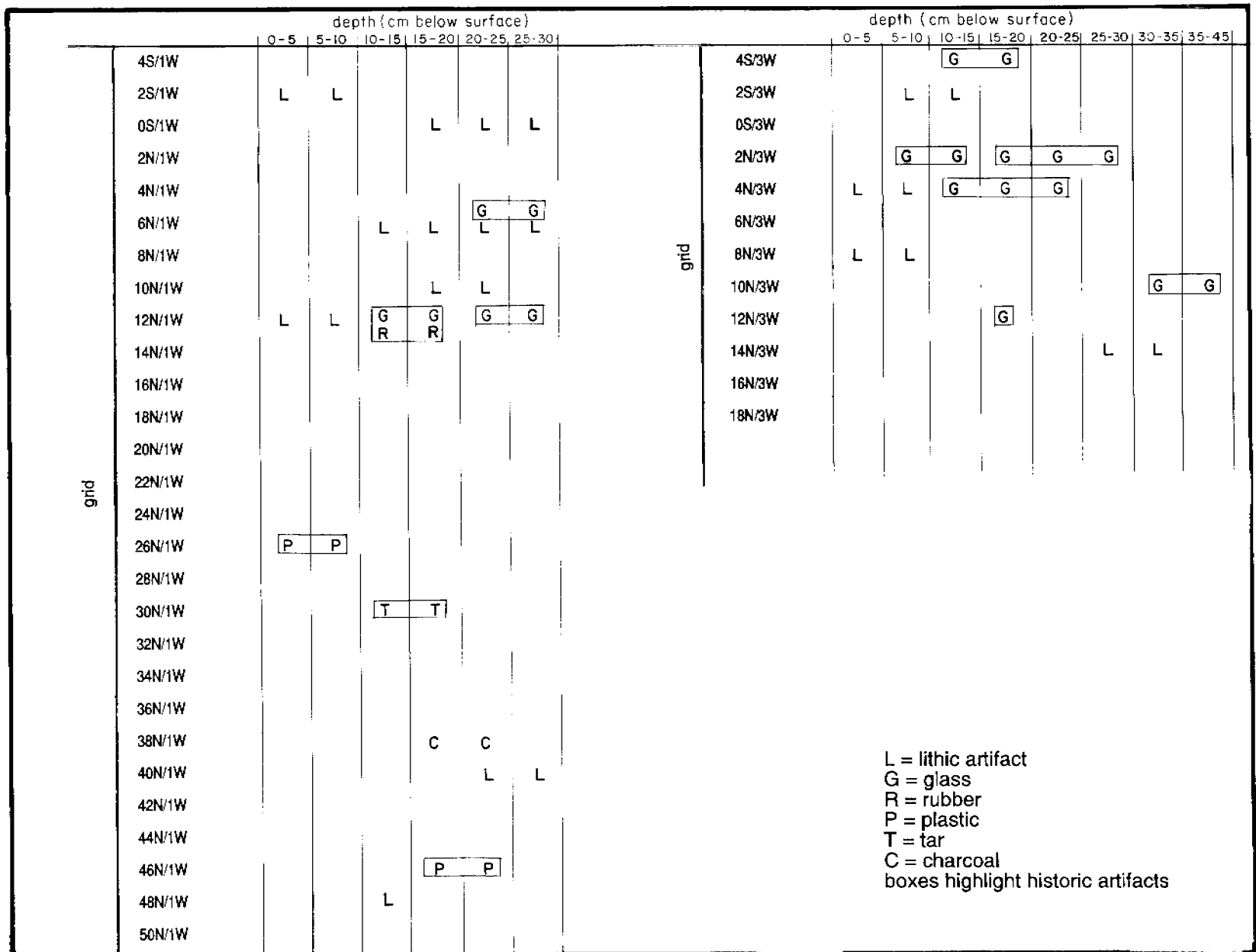


Figure 5. LA 71686, vertical distribution of artifacts from auger tests.

No subsurface features such as structures, hearths, pits, trash deposits, or stained soil were encountered in the auger tests. Consequently, no test pits were excavated.

Table 1. Summary of trowel test results, LA 71686

	Number	Range (depth in cm)	Mean (depth in cm)	SD
All tests	39	23-70	45.36	10.80
Artifact-producing tests	19	29-63	44.11	10.69
Artifacts	35	5-34	16.31	7.42

The 35 artifacts included 13 flakes, 11 pieces of glass, 6 pieces of plastic, 2 pieces of rubber, 1 road tar globule, and 2 pieces of charcoal. The recent artifacts were not collected.

PREHISTORIC MATERIAL CULTURE

Projectile Points

The only two formal artifacts recovered from the site area within the existing highway right-of-way are projectile point fragments. The first fragment is from a clear black obsidian, corner-notched point the size of a Basketmaker II point. This small portion of the blade (including the notch) measures 16 by 11 by 3 mm. It was recovered from the surface of square 20N/2W.

The second fragmentary point is either the blade of a poorly made San Jose point or part of the base of a large side and base-notched Late Archaic point. This fragment of Grants obsidian (smooth variety) measures 20 by 18 by 5 mm. The point was an isolated occurrence on the surface of the existing highway west of the pavement.

Lithic Reduction Technology and Manufacturing Debris

Items in this category are the products of lithic artifact manufacture. Of a total of 121 lithic artifacts inventoried within the right-of-way, 24 (20 percent of the total) were collected for analysis. Twenty-three are flakes, and one is a piece of obsidian (an "Apache tear") fragmented by a gravel crusher.

Materials

The four material types represented in the collection, in order of abundance, are obsidian, chert (both chalcedonic and nonchalcedonic), chalcedony, and limestone/siltstone. Only one named rock type, Grants obsidian, is present.

The obsidian assemblage is interesting in that nonlocal obsidians and the local Grants obsidian are both present. Surprisingly, the nonlocal obsidians outnumber Grants obsidian 3 to 2. The nonlocal pieces probably originated in the Jemez region, 160 km to the northeast.

Heat treatment of nonobsidian materials to make them easier to knap was little practiced at LA 71686. Only one flake (white and rose chalcedonic chert) has a highly waxy luster and coloration suggesting treatment, and an additional four flakes (all light gray-brown chert) may have been heat treated.

Flakes

Several types of flakes were recognized--decortication, core reduction, biface thinning, and platform preparation (Appendix 3). Most flakes are too fragmentary to type or to permit statistical description. Of the typable specimens, core reduction flakes are the most common.

Pieces of Material

One piece of Grants obsidian has flake scars on both faces. However, it is not a flake, core, blank, preform, or finished artifact. From the surface of Square 14N/OS, it measures 22 by 15 by 5 mm and weighs 1.5 g.

Pottery

The one small potsherd from the surface of Square 22N/2W had rounded quartz sand temper grains protruding on both surfaces. Both surfaces are light gray, but the paste is totally dark gray to black. It is uncertain whether the sherd is gray ware or white ware, making type assignment questionable. However, the surface finish and temper are distinctive of both Lino Gray and Lino Black-on-white, two common Basketmaker III types in the Four Corners region.

Dating the Site and Comments on the Artifacts

The two projectile point fragments and the single potsherd provide the slightest clues for dating the site. One projectile point is Middle to Late Archaic in form and probably dates between ca. 3000 B.C. to and A.D. 200. The other projectile point appears to be a large corner-notched point common to the Basketmaker II period, or ca. A.D. 200 to 500. The potsherd appears to be either Lino Gray or Lino Black-on-white, types belonging to the Basketmaker III period (A.D. 500 to 700). Since the identifications of the points and the sherd are tentative, all we can say is that as few as one and perhaps as many as three or more occupations are represented at the site.

The chipped lithic manufacturing debris provides several insights into activities at the site. The presence of cores (observed but not collected) and several flake types indicate tool manufacturing 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.

Both local and nonlocal materials for making chipped stone artifacts were used at the site. The Grants obsidian, cherts, chalcedony, and limestone/siltstone were probably obtained locally. Most of the non-Grants obsidian probably came from the Jemez Mountains, 160 km to the northeast. Clearly, the inhabitants of LA 71686 were either wide-ranging or, more likely, had contacts over hundreds of square kilometers.

SUMMARY AND CONCLUSIONS

LA 71686 was tested for its potential to yield information on local prehistory. A portion of the site lies within the proposed highway improvement zone for NMSHTD Project SP-2603(201). A grid was established, 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 existing right-of-way.

LA 71686 is a prehistoric lithic artifact and sherd scatter. The surface artifacts were inventoried in 2 by 2 meter squares; a total of 260 sq m of site surface was investigated. Eighty percent of the site area within the proposed highway project had less than one artifact per square meter. The remaining 20 percent of site area (52 sq m) has artifact densities ranging from 1.2 to 1.7 items per square meter. A total of five 2-by-2-meter squares was collected from the three artifact concentrations within the proposed right-of-way.

Density plots defined three concentrations of artifacts lying within the proposed highway project. Two projectile point fragments were noted and collected.

Thirty-nine 3-inch bucket-auger tests were excavated 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 23 to 70 cm. No subsurface cultural features, trash deposits, or stains were discovered. Nineteen tests produced a total of 35 flakes, glass sherds, and pieces of plastic, rubber, tar, and charcoal at depths ranging from 5 to 34 cm below modern surface. The vertical distribution of prehistoric versus historic materials clearly indicates that the fill within the right-of-way was thoroughly churned at the time of the initial construction of the highway. No intact deposits were discovered during the testing.

Testing showed that the portion of LA 71686 within the right-of-way is disturbed to a depth of at least 30 cm. By implication, the three concentrations of chipped lithic debris on the surface within the right-of-way are fortuitous, rather than cultural. No cultural features such as structures, pits, and hearths were found by the auger tests.

The only means of dating the occupation(s) of the site are the fragmentary projectile points and a potsherd. The two projectile points and Lino Gray or Lino Black-on-gray potsherd indicate one or more occupations of the site during the Late Archaic, Basketmaker II, and Basketmaker II periods (ca. 3000 B.C. to ca. A.D. 700).

LA 71686 is a low-density surface artifact scatter with a low total number of artifacts. Features and diagnostic artifacts are generally lacking within the right-of-way. Also, previous construction has probably greatly affected the extent and integrity of the remains within the right-of-way. A data recovery program within the right-of-way at the site is unlikely to yield important information on local prehistory. We therefore recommend no further studies at this site. New acquisitions involving the site would necessitate testing and evaluation of the added portions.

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APPENDIX 2: ARTIFACTS RECOVERED FROM TROWEL TESTS AT LA 79541

Test Number	Total Depth (cm)	Artifact Recovery Depths (cm)								
		0-10	5-15	10-15	10-20	15-25	15-30	20-30	25-35	30-38
2S1W	39	F								
OS/1W	30						F			
6N/1W	40				F			F, G		
10N/1W	41					F				
12N/1W	44	F			3G, 2R			G		
26N/1W	52	2P			P					
30N/1W	45				T					
38N/1W	63					C*				
40N/1W	63							2F		
46N/1W	63					3P				
48N/1W	58			F						
4S/3W	29				G*					
2S/3W	33		F							
2N/3W	32		G*				G*			
4N/3W	32	F			G*					
8N/3W	F									
10N/3W	38		C*							G*
12N/3W	40				G*					
14N/3	44								F?	
Total flakes (F)		4	1	1	1	1	1	3	1?	
Total glass (G)			1		5	1	1	2		1
Total plastic (P)		2			1	3				
Total rubber					2					
Total tar (T)					1					
Total charcoal (C)			1			1				
Total items		6	3	1	10	6	2	5	1?	1

* Not all of these artifacts were collected.

APPENDIX 3: LITHIC MATERIALS BY LITHIC DEBITAGE TYPE, LA 71686

	Flakes					Pieces of Material	Row Totals	
	Core Reduction	Biface Thinning	Decortication	Platform Preparation	Indeterminate		Number	Percentage
Cherts:								
Miscellaneous	2	1	-	-	1	-	4	11.1
White	1	1	-	-	3	-	5	13.9
Chalcedony	1	-	-	-	-	-	1	2.8
Obsidian:								
Grants	2	-	1	1	5	1	10	27.8
Other	6	4	1	-	4	-	15	41.6
Limestone/ Siltstone	1	-	-	-	-	-	1	2.8
Column totals:								
Number	13	6	2	1	13	1	36	
Percent	36.1	16.6	5.6	2.8	36.1	2.8		100.0