

MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

DATA RECOVERY PLAN FOR EXCAVATIONS ALONG THE LA PLATA HIGHWAY IN THE BARKER ARROYO SEGMENT

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ARCHAEOLOGY NOTES 71

ADMINISTRATIVE SUMMARY

The La Plata Valley north and west of Farmington, New Mexico, in San Juan County, has long been known as the location of great Anasazi activity. Sites intersected by the New Mexico Highway 170 right-of-way are illustrative of this great prehistoric presence. In connection with a four-phase plan to widen and realign the highway, New Mexico State Highway and Transportation Department has sponsored a series of archaeological investigations. The phases proceed from south to north and are as follows: 2 miles at the south end of NM 170 (completed 1986); 4 miles to Coyne Arroyo; 8 miles to the town of La Plata; and 5 miles to the Colorado state line. The work reported here involves resurvey and reassessment of archaeological resources within the second segment of the project. The primary additions made by this resurvey are added refinement to the definition of a site complex in the Jackson Lake area, two previously undefined sites in the right-of-way, and several sites immediately outside the right-of-way, including a large, late pueblo, and an isolated kiva. Summaries for all 15 "new" sites are presented, as are evaluations for 12 previously recorded sites, for a total of 27 sites discussed. The total project area is 33 ha (81 acres), though some areas adjacent to the actual right-of-way were examined. Land ownership within the project is as follows, in descending order of acreage: New Mexico State Highway and Transportation Department, within the existing right-of-way; private; New Mexico Department of Game and Fish; New Mexico State Trust Land; and the Bureau of Land Management. Strategies for investigating the extensive and often badly disturbed sites within the new right-of-way are presented, and the relevance of the community concept to sites in the La Plata Valley is discussed.

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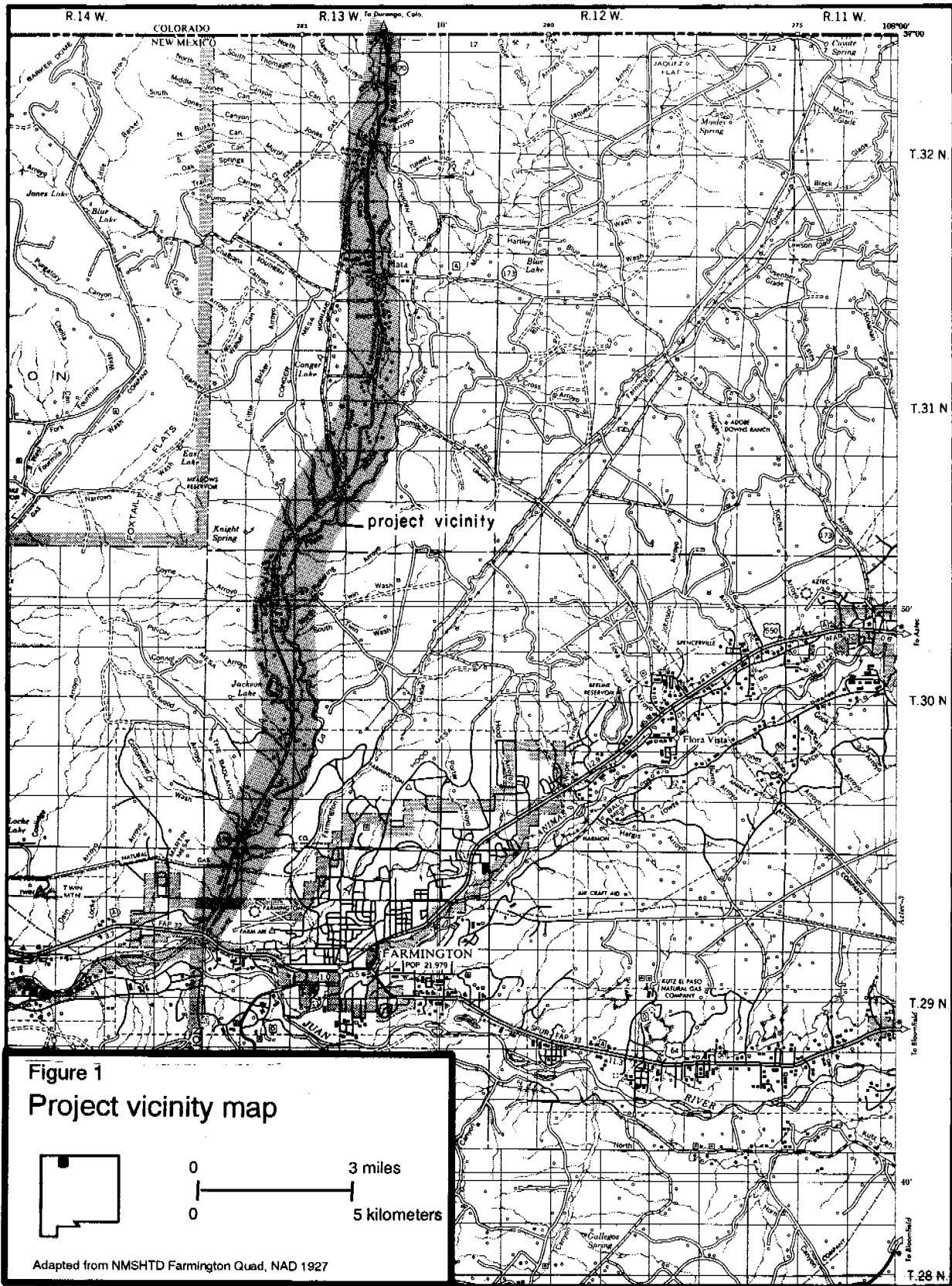
INTRODUCTION

This document was prepared by the Research Section of the Museum of New Mexico (Office of Archaeological Studies) in accordance with the requirements of the State Cultural Properties Review Committee and the Advisory Council on Historic Preservation's *Treatment of Archaeological Properties* handbook. It concerns archaeological excavations required as a result of construction work planned for New Mexico State Highway 170 in the northwest part of the state; the project is located on the 1:24,000 USGS Farmington North and La Plata quadrangles (see Fig. 1). The segment discussed here is the third in a series of four projects. The other projects include the first 2 miles north of US 550 (see Lancaster 1982b; Vierra and Anschuetz 1987), the 4-mile Jackson Lake segment (see Toll and Hannaford 1987a), and the 5 miles from the town of La Plata to the Colorado border (Toll 1990). The project reported here thus begins about 6.5 miles (10.5 km) north of the junction of NM 170 with US 550 and continues for 7 miles (11 km) to the town of La Plata. Fourteen Anasazi sites thought to contain intact elements are located in the project right-of-way. Presented here are background information, research design, field strategies, and descriptions of the individual resources involved.

This highway segment is located primarily on the first terrace on the west side of the La Plata River between Coyne Arroyo and Murphy Arroyo at the town of La Plata (from the junction of NM 170 with San Juan County Road 1788 to the junction of NM 574 [old 173] at the La Plata Schoolhouse). The site distribution is similar to that in the preceding Jackson Lake segment (Toll and Hannaford 1987), in that archaeological features occur in clusters. From a half-mile south of the confluence of Barker Arroyo with the La Plata Valley to about a mile north, the density of archaeological remains is very high. As far as is presently known, these remains are all Anasazi, and most date to the Pueblo II and Pueblo III periods. The entrance of Barker Arroyo, which drains a very large area west of the river, and the presence of a wide floodplain were surely major factors in the prehistoric popularity of this area. Morris Site 39 (LA 1897), located on the promontory above the entrance of Barker Arroyo, is an extremely large settlement with a number of apparently public structures, further signifying the prehistoric importance of the area (see Morris 1939; Dykeman and Langenfeld 1987).

The structural sites through which the road passes in this segment are practically all cobble structures, probably ranging from one to at most twenty rooms, with most probably less than ten. It is likely that many of the masonry structures have pit structures associated with them. With the exception of LA 37601, they are not presently visible. Most of the sites within the right-of-way are portions of either larger structures or complexes of structures. There is little question as to the importance to these sites of horticulture in the adjacent bottom lands but the actual relationships of the structures to those activities is unknown. The duration and seasonality of use of these structures are very important to estimating population in the valley and its organization. With only three exceptions (LA 65029, 65031, and 37607) the sites recommended for excavation in this segment all contain probable architectural remains, and there is a very high probability of further intact remains in addition to the visible remains. Characteristically for the La Plata Valley, then, this segment of the highway cuts through a very high density of structural features.

The majority of ceramics observed on the surface and those recovered in testing (Lancaster 1983:15) are fairly evenly divided between PII and PIII types, suggesting that most occupation



took place from late A.D. 900s into the 1200s. PI and Basketmaker ceramics seem to be largely absent, but materials of this age are generally less abundant. In the Jackson Lake area three Basketmaker structures were encountered, but there was no prior indication of their presence in the surface materials. Morris (1939) found materials of all periods at Morris 39 (LA 1897). The sites are described individually under Individual Resources below.

PREHISTORY, HISTORY, AND PAST AND PRESENT ARCHAEOLOGICAL WORK

The abundance of archaeological remains in the La Plata Valley have been formally reported sporadically since the previous century (e.g., Holmes 1878; Morris 1939). Nickens (1978), Ware (1986), and Dykeman and Langenfeld (1987) give more thorough accountings of archaeological work in the La Plata area, and only excerpts relevant to this segment of the valley will be covered here. Powers and Watson (n.d.) have also provided a narrative summary of human use of the valley.

Prehistoric Background

Evidence for human presence in northwestern New Mexico includes occasional Paleoindian projectile points, suggesting occupation beginning as early as 10,000 years ago. Far more abundant in the area, however, are remains from a period termed the Archaic, during which inhabitants are thought to have depended on a mobile strategy of hunting and collecting wild plant products. This period is thought to last from around 6000 B.C. to early in the Christian era. There has been increasing evidence for the use of maize in the later Archaic, perhaps by around 1000 B.C. During the period from A.D. 1 to A.D. 700 reliance on cultigens, sedentism, more permanent structures and settlement size all increased, and pottery came into use. This period is the first part of the Anasazi sequence, termed Basketmaker. Basketmaker sites are well represented in the La Plata and surrounding valleys, and excavations by the highway in the Jackson Lake area showed several instances of locations occupied during Basketmaker times and then reoccupied by Pueblos several centuries later.

At around A.D. 700, increased use of surface structures in addition to subterranean structures marks the transition from the Basketmaker to the Pueblo phases of the Anasazi sequence. From A.D. 700 through the early 1300s a series of developments take place including changes in architectural forms and ceramics, increases in structure size, and greater differentiation of structures within settlements. During this time, a complex regional system apparently focusing on Chaco Canyon developed between 900 and 1150; sites relating to this system are present in the La Plata, San Juan, and Animas valleys. Late in the period, activity in the Chaco area diminished, and the focus of the system appears to have shifted northward to the San Juan River area. Sites from this entire A.D. 700-1300 time span are present in large numbers in the valleys, though large numbers have been destroyed during the historic period. By around A.D. 1300 permanent habitation in the area seems to have ceased, and it appears that the main use of the area was occasional visits from surrounding areas, probably both by Pueblos and by Utes until Navajo movement into the region in the A.D. 1500s.

The La Plata Valley is at the southern edge of the nineteenth-century distribution of the Ute (Callaway et al. 1986:337); indeed, the San Juan River is commonly considered to be the southern edge of the Ute range. Because of the infrequent use of pottery and the transitory nature of the sites, Ute sites are seldom identified (Hull and Nickens 1982:112-114). The presence of Utes in this area probably limited its use by Navajos, although during friendly periods, Navajos did some sharecropping for Utes (Dykeman and Langenfeld 1987:124-127). The closest

reservation to the valley is a portion of the Ute Mountain Ute Reservation to the west of the project area. In spite of this proximity, no known Ute sites are present within the project area. Hancock et al. (1988:18) note that a structure of either Navajo or Ute affiliation is present on the La Plata Mine lease.

Navajo occupation of the area has continued except for interruptions caused by relocations at the hands of the U.S. government. Historic use of the area includes the passage of several Spanish expeditions, and occupation of some areas by refugee Pueblos after the Pueblo Revolt of 1680. Intensive American use of the area began in the latter 1800s. The primary use of the river valleys was agricultural, though mining of coal and other minerals occurred in surrounding areas. Continued development and use of irrigable lands has had a serious impact on survival of archaeological sites. Developments associated with the recently passed energy boom have accelerated this process.

The vast majority of known archaeological remains in the valley are Anasazi. There is no doubt that Archaic peoples used the valley, as well as perhaps Paleoindians, but the intensity of Anasazi and historic use militate against survival of earlier remains and makes their identification from surface remains unlikely. There is a great number and variety of Anasazi remains in the valley, including large settlements with large public structures possibly relating to the Chaco Phenomenon and to the post-Chaco Anasazi developments north of the San Juan River and a great many smaller structures from Basketmaker through Pueblo III. Three large community sites (Morris 39 and 41 and the Holmes Group) are all located directly above entrances of major drainages, with substantial arable land on the same side of the river. While the river is easily crossed for much of the year, at critical planting times it probably was not, and proximity to arable land on the same side of the river is likely to have been an important variable in site location.

Historic Background

Homesteading and other historic period use took place in the valley, and the remains of one historic building are in the right-of-way of this project segment. This highway segment passes through the town of La Plata, established around 1881, and passes by both the La Plata cemetery and the La Plata schoolhouse. Though there are no surface indications for it near the current road, an early freight route stop was located where the road crossed Barker Arroyo. Several ditches of the extensive system of irrigation ditches in the valley are within the project right-of-way (Dykeman and Langenfeld 1987:124-140).

Previous Archaeology

Earl Morris, who grew up in the Farmington area, conducted excavations in the valley and its vicinity from 1915 through 1930 including a prolonged period at Aztec Ruin (Lister and Lister 1968; Morris 1939). Morris's volume *Archaeological Studies in the La Plata District* remains one of the most extensive treatment of sites and material from the valley; the coverage includes sites in New Mexico and Colorado, as well from the Barker Dome area to the west and some

sites in the Mancos River drainage. His report contains descriptions of sites dating from Basketmaker III through Pueblo III periods and a detailed technological study of La Plata ceramics by Anna Shepard. Morris conducted extensive excavations at the entrance of Barker Arroyo, which is only a short distance up the valley. Working in association with Morris in 1935, Deric Nusbaum made an extensive survey of sites in the Four Corners area, including a large number in the La Plata Valley. Nusbaum's site locations are such that it is not now possible to confidently assign his numbers and collections to specific sites, although tentative guesses can be made. The following Nusbaum sites have been tentatively located in the vicinity of the current project area: LA 1899, 1914, 1915, 1928, 1904, 1906, 1900, 1911, 1926, 1903, 1897, 1925, 1920, 1928, and 1927. LA 1903, 1926, and 1897 are all included in the area of Morris 39. We have confident relocations for LA 1906 and 1927, and probably 1925. It seems likely, however, that some of the sites along the highway currently designated by other LA numbers were visited, recorded, and collected by Nusbaum. Particularly good candidates for this by virtue of their size, visibility, proximity to known Nusbaum sites, and closeness to the road are LA 37599/37600, LA 37601, and LA 65029/65030.

The entrance of Barker Arroyo into the La Plata Valley creates what the Anasazi clearly considered good conditions for settlement: among other attributes there is a very large area of low floodplain and a major drainage that frequently contains water and provides access to a large hinterland. In 1916 Earl Morris conducted extensive excavations at the very large complex of structures located on the second terrace overlooking the confluence (Morris 1939:50-55). The excavations showed that the location was used repeatedly in all phases of the Anasazi sequence from Basketmaker III through Pueblo III with complex superimpositions in many areas and cultural deposits up to 5 m deep. Excavated structures ranged from pithouses to simple cobble rooms to substantial symmetrical roomblocks with blocked-in kivas to great kivas. Morris recovered a great deal of material from these excavations, including a number of whole vessels used as type illustrations for Mesa Verde series ceramics by Breternitz et al. (1974).

The San Juan Valley Archaeological Project conducted collection survey and testing in the Jackson Lake area in 1977-1978, testing at Morris 39 (LA 1897) in 1974, and some survey in 1972 (McKenna 1976; Whalley 1980). Whalley used this material in her thesis (1980) to seriate sites on the basis of "local" ceramics. The primary thrust of her analysis was to determine if nonlocal ceramics are more common at Chaco outliers, which, she finds, seems to be the case. Whalley's thesis gives only general site locations, but the following Eastern New Mexico University site numbers are at least near the current project: 5155 (Morris 39/LA 1897), 7381, 7382, 7604, 7605, 7606, 7608, most of which are in the Morris 39 area. Of 11 components from the sites in Whalley's analysis, five were placed before A.D. 1050, and six from A.D. 1050 to 1130.

Morris 39 was one of the five areas surveyed and mapped by the La Plata Overview Project in 1984 (Dykeman and Langenfeld 1987). In addition Dykeman and Langenfeld assessed the impacts of a recent subdivision on the site. The project evaluated and tabulated previous work in the valley, and formulated both research questions and management plans for the La Plata Valley in New Mexico. The report contains a great deal of detailed background information, and recommends the concept of the community as a research foundation. Communities have become a major area of investigation in Anasazi studies (see Marshall et al. 1979; Breternitz 1982a:31-32).

Present Project

In assessing the archaeological remains within the project to widen and realign the highway, a series of archaeological examinations have taken place. The entire right-of-way from US Highway 550 to the Colorado state line was surveyed by New Mexico State Highway and Transportation Department archaeologists, and recorded by Museum of New Mexico Office of Archaeological Studies (OAS) archaeologists in 1981 (Lancaster 1982a). In 1982, 28 of the 43 sites recorded were tested (Lancaster 1982b, 1983). In November 1987 and March 1988, Museum of New Mexico OAS archaeologists reexamined the segment in order to locate archaeological manifestations on the 1:600, 1 ft contour New Mexico State Highway and Transportation Department (NMSHTD) preliminary construction maps, and to check for undiscovered remains. Additional construction areas were surveyed in October 1988. These various reexaminations recorded 12 previously unrecorded sites and two isolated artifacts in the right-of-way. Two sites previously recorded by Nusbaum were recorded on modern forms (LA 1906 and 1927).

The discovery of new sites and the reassessment of others necessitated further testing. Testing was carried out in several phases between July 1988 and January 1989 (Lent 1989; Toll et al. 1990). Eleven sites were tested, including nine newly discovered sites, one site not tested in 1982, and the slopes below Morris 39 (LA 1897). Five of these sites contain deposits within the project limits likely to yield important information. In combination with sites tested earlier and sites judged to require excavation, a total of 14 sites are likely to yield important information on the prehistory of the La Plata Valley (Table 1). Because portions of the sites within the proposed right-of-way cannot be avoided, a data recovery plan for these areas has been prepared. Description of the sites and excavation recommendations for this highway segment are presented in the Individual Resources section.

RESEARCH TOPICS

The excavations to be undertaken in the Barker Arroyo segment of the highway are a continuation of those conducted in the Jackson Lake segment. The two segments are complementary, and excavations in both are necessary to answer many of the larger questions posed; therefore, the research problems for the two are much the same. As noted above, the concept of communities has become an important organizational focus for Anasazi archaeology. The concept is hardly a new one. T. M. Prudden (1918) long ago recognized that Anasazi structures were often found in clusters, and that these clusters often contained a larger structure situated in a commanding location. His cogent discussion (Prudden 1918:49) argues the likelihood of contemporaneity of differing structure types, but at the same time recognizes that it cannot be assumed. Subsequent studies (Marshall et al. 1982; Dykeman and Langenfeld 1987) stress the concept of integrated segments of a population functioning to adapt to natural and social environments on both the local and regional levels. Archaeologically, communities are defined by spatially confined groups of contemporaneous features of several types including field houses, habitation units of varying sizes, great kivas, community structures ("great houses"), and special function sites. Our use of the concept is in accord with these latter definitions.

Though the community concept has become a popular one, opportunities to examine communities have been few. The La Plata Valley, with its large number of relatively well-preserved sites is a good place to make such a study. Archaeology along the La Plata Highway offers several research opportunities. Prime among them is the fact that the road passes through several areas of truly extraordinary density of Anasazi structures and other features. In this highway segment the "sample" of the area in the vicinity of Jackson Lake provided by the right-of-way records only a portion of the sites present, but it can be used to address a number of questions. It is this area that is especially appropriate to the question of community structure, and to establish some baseline data for comparison with succeeding segments (see above; also Dykeman and Langenfeld 1987). Of relevance to this question are the following:

1. To what extent is this dense site area the result of a great many contemporaneous buildings and to what extent is it the result of repeated replacement of buildings?
2. What is the size variability of structures within this area?
3. Are there any discernible temporal trends in location preference or structure size?
4. Is there any evidence for particular activities being concentrated at particular structures? That is, does this area of concentrated archaeological remains represent a number of essentially repetitive structures or can functionally unique structures or areas be defined?
5. The fact that the highway passes through several clusters of structures provides us with an opportunity to compare materials and architecture from what may represent several communities. Can, for example, differences in ceramic manufacture and design be detected between contemporary sites in the Jackson Lake complex and the Barker Arroyo/Morris 39 site group? Are there differences in faunal use or lithic material sources?

6. In our excavations near Jackson Lake we found an apparent break in occupation between Basketmaker III and Pueblo II, perhaps from A.D. 700 to A.D. 950. Does the same pattern occur in this adjacent segment of the valley? Can we adduce reasons for this hiatus from environmental or other data? Were climatic and/or fluvial conditions similar in BMIII and PII-III, or had subsistence strategies just changed sufficiently during that time period to allow reoccupation?

7. The Jackson Lake sites appear to lack a major community structure, but candidates for such a structure are present at Morris 39 (LA 1897). Can further differences be defined between the two areas that may correspond to this difference? Alternatively, is there evidence that the Jackson Lake sites somehow fit into a hierarchy of sites which includes Morris 39 (see Toll and Hannaford 1987b)?

8. Other than milling rooms, all seven of the PII-III pit structures (of the sort often called "kivas") excavated near Jackson Lake contained very large subfloor cists apparently intended for storage; the surviving surface structures associated with these pit structures are minimal, suggesting that this may have been an alternate storage strategy to the use of surface rooms. As the Barker Arroyo segment appears to contain more substantial surface room blocks, the associated pit structures should be examined for the presence of these large cists to determine whether the occurrence of the cists correlates with a lack of surface structures. Whether or not this correlation exists, inferences about levels of food production in the two areas, and the possibility of multiple contemporaneous storage strategies existed can give insight into social organization (Gilman 1987).

The research design developed by Lancaster and Snow for the La Plata Highway work (Lancaster 1983:84-88) dovetails nicely with the research goals above. Their design's "primary goal is to identify and describe variability in the La Plata Valley settlement pattern(s) through time and space" (Lancaster 1983:84). This goal is to be attained by particular attention to the following domains:

1. inter- and intra-site chronology, stressing absolute dating techniques;
2. subsistence and technological strategies, stressing tool kits and food remains;
3. functional differences among sites, focusing on duration of use and location.

These topics are fundamental to any number of further investigations, including the question of the structure of communities in the La Plata Valley, and the relationship of valley communities to the region through time. The portions of the sites within the project limits appear to contain information relevant to these concerns.

The fact that the La Plata Valley does have a long and intensive occupation sequence increases the difficulty of studying communities there. Nonetheless, surface ceramics from the sites in the vicinity of Morris 39 (LA 1897) area suggest that the majority of those features were in use in the 1000s through the 1200s, though there certainly are later uses of the area. The chronological concerns expressed by Lancaster and Snow are critical to the study of communities (see Breternitz 1982a, 1982b).

Archaeological definition of communities necessarily involves several assumptions. Primary among these are that proximity in time and space equals community membership (see, for example, Dykeman and Langenfeld's [1987:29-33] discussion of the community concept). Ideally, of course, additional indicators of community affiliation should be used; potential indicators might be ceramic assemblage, ceramic design, artifact style, or architectural elements. Realistically, however, none of these classes of information is likely to provide conclusive evidence: broad-based similarities in the styles of all of these categories and the demonstrated movement of portable artifacts render such indices of community affiliation weak given current resolution of material sourcing. Complementarity of site function is an intriguing possibility for defining communities and should be pursued (see #4 above). Spatial and temporal assumptions remain necessary assumptions in the definition of communities; what remains for the archaeologist is analysis of variability across space with an awareness that it may be possible to define community effects in additional ways.

In several ways the La Plata Valley forms a counterpoint to many locations in the San Juan Basin, including the Bis sa'ani community on the Escavada Wash, just north of Chaco Canyon (Breternitz 1982b; Breternitz and Doyel 1982; Marshall et al. 1982). The La Plata Valley has reliable water and good soils for crops; in empirical substantiation of this it exhibits long-term agricultural use by the Anasazi as well as in the historic period. The Bis sa'ani area, on the other hand, is a marginal location even for the San Juan Basin (Cully et al. 1982), and saw only a brief Anasazi occupation and sporadic agricultural use by Navajos. What the two have in common, however, is evidence for involvement with the Chacoan system.

Bis sa'ani is an excellent example of what Marshall, Doyel, and Breternitz (1982:1231-1233) would term a "scion community," one established by participants in the Chaco system. The apparent Chaco presence in the La Plata Valley, on the other hand, was likely the result of the adoption of architectural and other elements associated with the Chaco system by an area with a long history of use--an "ancestral community." Questions relevant to ancestral communities include the nature of the connection, the timing of the affiliation with the system, the development of the connection and whether any changes in fundamental life style were involved, and the extent of involvement of the population.

Sites in the La Plata Valley and in this road segment are fairly abundant in the time period when the Chaco system appears to have been developing connections with the San Juan area (ca. A.D. 1050-1150 see Toll 1985), so that there is potential for examining portions of this development in these sites. There is little doubt that major communities continued in the La Plata after the system, which apparently centered on Chaco Canyon, had ceased to operate, and considerable reason to believe that the La Plata was part of the focus of a new or greatly modified regional system. As the sites under examination here span that change, they provide an opportunity to build understanding of how and why it occurred.

A question of major regional significance in Anasazi studies is the population and use of the San Juan and Animas river valleys. Because of their high desirability for Anglo settlement and agriculture, much of the archaeological record in these permanently watered valleys has been destroyed or obscured. Sites such as the Aztec, Salmon, and Jacquez ruins give tantalizing suggestions as to the probable magnitude of the Anasazi settlement there. The La Plata Valley has experienced fewer of the pressures of "civilization" than have the larger river valleys. In-depth examination of sites now threatened by development will provide a window on sites now

lost in the larger valleys. At the same time, however, the fact that water in the La Plata River is less reliable than it is in the Animas and the San Juan rivers may mean that Anasazi use of the valley was somehow different from that of the permanent river valleys. Finally, the La Plata is of regional interest in that it is located between the San Juan River (and Chaco) and the populations of the Mesa Verde district, and forms a logical geographic link between the two. It is possible, then, that sites in the La Plata Valley may contribute information to studies of material movement and regional definition. Because of sites such as Morris 39 and 41 it is generally assumed that Chaco was the prime regional influence in the La Plata, but it is quite possible that developments in the vicinity or to the north were as important.

Questions of interaction are, of course, difficult to answer, and, once again, depend on well-established contemporaneity. Material sourcing is the most concrete means of showing at least some interaction, and the two materials of most utility here will be chipped stone and ceramics. To a lesser degree, more exotic materials can also be informative. Compounding the difficulty of defining communities is the fact that it is almost certain that the sample provided by the right-of-way does not intersect representatives of the several type of structures likely to have been present in a community. Lacking the full range of architectural components, community affiliation must be approximated through similarity in assemblage and time. Because it is likely that the sample at hand will include only smaller structures, the work done here must be designed to provide data on variability among structures within this class with the best chronological control possible under the circumstances. The more aesthetic goal of fully understanding community structure and operation is likely to remain elusive. The articulation of sites in the communities, and communities into regions seems at first glance to be a question of hierarchy, but there are several conceivable arrangements among sites. If, for example, community affiliation was variable the community would have been a more important interface with the region at some sites than at others.

The La Plata Valley, then, has the potential for providing a number of constructive regional comparisons:

1. Does the greater abundance of local resources and the presumably greater carrying capacity reduce the need for regional exchange?
2. How does the subsistence mix as seen in food remains compare to areas with less available moisture?
3. With the addition of a more formal relationship with the Chaco system, are any changes visible in the postulated community? The ceramic dates for this area are contemporary with the fullest operation of the Chaco system in Chaco Canyon itself (see Toll 1985).
4. Is it possible that high density areas such as the Jackson Lake group were involved to a lesser degree with the regional system than those sites located immediately adjacent to sites now recognized as outliers, such as those near Morris 39 or 41, or was their participation equal even though lacking immediately adjacent "public architecture"? Sites near the state line in the final segment of the highway project will provide materials from sites closer to a recognized Chaco outlier. Data from these areas in combination may contribute to definition of community size and structure. That is, does it appear that all sites of a given time period participate in community activities, or are some structures more independent? Does proximity

to public architecture result in greater community participation (as Dykeman and Langenfeld 1987:34) or are the differences in distance insufficient to have an affect on participation?

Data Collection Priorities

It has been noted that while the community is a relevant and appropriate organizing concept for sites along the La Plata Highway, it has considerable practical problems. It is therefore necessary to determine in advance which categories of data will be most useful in addressing more inferential areas of interest. The following topics of especial interest are listed in order of importance, and sampling categories are indicated.

I. Chronological placement

Though fixation with dating is often belittled as culture-historical backsliding, the accurate placement of features is critical to studying any type of interaction. Without chronological control, elaborate analyses of communities and regional interaction are essentially specious. Chronological placement comes from several sources, all of which will be emphasized.

A. Absolute dates

1. Dendrochronology is the dating technique of choice because of its potential accuracy and precision. Context and reuse must be carefully monitored; unfortunately previous experience indicates that tree-ring samples will be infrequent in these sites.
2. Archaeomagnetic dating can provide fairly precise time estimates for feature use. Numerous samples were collected from the Jackson Lake sites, but since the samples have not yet been analyzed, the success of this technique for hearths in this area is not known.
3. Carbon-14 dating is more expensive and often less precise than the two techniques above, and its use will be based on the unavailability of other dating sample types. It will also be used in contexts where artifactual placements are not possible, such as pre-Anasazi deposits.

B. Relative dates

1. Ceramic types and especially groups of types are quite well dated for the area. Ceramic dates will be the most available of all dating techniques. Ceramic dating can, however, always be improved, and the presence of absolute dates will refine ceramic group dates.
2. Stratigraphic placement will help date some features, and will be used to refine sequences within typologies.
3. Other stylistic information, such as projectile point form, structure form, and ground stone type may be used to make broad temporal placements.

C. Duration of use

The above means of dating deposits and quantities of material can be used to estimate the length of use of structures. Length of use is extremely important in estimating population, function, and contemporaneity.

All of this information would of course also be collected under other data priorities; emphasizing chronology merely means that special attention will be paid to collecting possible samples and that analytical resources will be apportioned to processing those samples.

II. Site and feature function

Functional determinations may take place at several levels: individual features (firepits, mealing bins), structural units (rooms, pit structures), and complexes of structural units and features (pueblos, "sites"). These levels are obviously hierarchical; the most important level is the structural unit, since sites are best compared on the basis of relative and absolute quantities of functional units. In determining function of such units, however, it is necessary to be working with primary deposits resulting from use rather than secondary trash fill. Trash fill is extremely useful, but the information it contains relates to the function of the whole feature complex rather than to the individual structural unit in which it is found.

A. Artifact assemblages

1. Vessel form distributions and metric variation within form categories supply the basis for inferences on types and quantities of activities. Some functional inferences are also possible from deposits on ceramic vessel surfaces.
2. The forms and used edges of chipped stone implements are also indicators of feature use.
3. The presence and type of ground stone implements are important indicators of classes of activity normally associated with habitation.

B. Subsistence activity

1. Floral remains are indicative of cultivated-wild plant mixes and thus season of use and emphasis on agriculture.
2. Faunal remains also indicate areas of exploitation and season of use.

C. Architectural forms are often equated with particular functions, but the assumptions involved must be carefully monitored and continually evaluated using the other functional indicators listed.

III. Exchange relationships

It is desirable to examine intracommunity exchange relationships, but, as discussed above, movement of goods and analytical resolution make it difficult to study exchange on the community scale. Regional and interregional movement of goods are, however, more amenable to study. The distribution of goods from outside the immediate area is of relevance to interrelationships of community sites as well as to economics of the community as a whole and the region (this is the focus of Whalley's 1980 study).

A. The location of manufacture of some ceramics may be determined through study of tempers and other technological attributes. Stylistic attributes may also be used for certain classes of ceramics.

- B. Local and regional sources of lithic materials can be determined through microscopic and chemical analyses, and volumes and areas of lithic movement can be ascertained.
- C. Identifiably nonlocal floral and faunal resources generally low in frequency but can also contribute to investigations of exchange.
- D. Exotic materials such as shell and turquoise are usually found in small quantities. Their distribution and the types of sites in which they are found has inferential bearing on social and community relationships.

IV. Geological context

The La Plata Valley is undergoing constant morphological change due to the action of natural forces, most notably water. In addition to the river, the level of which has historically fluctuated drastically, there are numerous side entrants of varying size that periodically deliver quantities of water, sediment, and debris. More recently, human agencies in the form of irrigation works and the highway have modified both the shape of the land surface and the effects of natural agencies upon it. The lay of the land at the time of Anasazi occupation was surely a critical factor to settlement location and function. Arrangements are under way to contract with a geomorphologist to provide the following services and information.

- A. What is the recent fluvial history of the La Plata River and how would it have affected arability of floodplain areas, given a low-level irrigation technology? What was the reliability of the river as a water source prehistorically?
- B. Assessment of the farming potential of the large open low areas in the vicinity of Barker Arroyo and Jackson Lake.
- C. Description of the geological depositional history of the site locations, especially during and immediately after occupation. Was flooding either by the river or by side drainages a factor in site location or abandonment?
- D. How nearly does the present topography resemble the prehistoric topography? What are parent materials for the site substrata, and how may they have influenced settlement and architecture?
- E. What is the etiology of occasional deep burned deposits that appear to antedate the pueblo occupation?
- F. Identification of potential sources for raw materials for ceramic manufacture and lithic tools.
- G. Provide consultation and training to archaeologists in the collection of information and materials when the geologist is not on site.

A major source of comparative information for the valley remains Morris's *Archaeological Studies in the La Plata District* (1939), which describes excavations of a large number of sites in the valley and the area to the west. As noted, Whalley's study of ceramics included material from Morris 39 (LA 1897) and some from sites very near the Jackson Lake cluster. Discovered

and partially excavated since 1983, LA 50337, a large pueblo site near the mouth of the valley (Vierra and Anschuetz 1987), provides significant comparative data, site structure information, and materials from a time period apparently not represented at Jackson Lake. The site also provides a graphic warning as to the magnitude of archaeological materials that may go undiscovered by surface survey. Other available comparative materials include items from testing along the highway, as well as subsequent excavations on the work planned all the way to the state line, and materials from mitigation projects at the La Plata Mine (Hancock et al. 1988; Reed and Horn 1987). Given the central positions of community and regional interaction within this research design, the long, heavily populated transect provided by the highway provides a substantial, if nonrandom, sample of materials appropriate to addressing the questions listed.

INDIVIDUAL RESOURCES: DESCRIPTIONS AND RESEARCH IMPLEMENTATION

Fourteen sites are considered likely to yield important information through further excavation. These sites vary widely in size and potential complexity. Summary information on the sites recommended for excavation, overlap with the right-of-way, and time estimates are provided below. Assessments are based on several procedures. A number of the sites were tested in 1982, and recommendations were made at that time (Lancaster 1983); those tests and recommendations are summarized where present. Some of those same sites were further tested in 1988, and some additional, previously untested sites were also tested in 1988. Further, all of the sites within this highway segment were surface inspected several times in 1987, 1988, and 1989. The recommendations here are the cumulative result of these numerous inspections. The sites are listed and the testing performed and excavation time estimates are summarized in Table 1.

Though it is possible only to make informed guesses, potential information yield and relationship to the study topics are given; the field actions anticipated are incorporated into each site summary. In addition to the goal of answering research questions, the preservation of information that would otherwise be lost to construction is an important motivation for performing the proposed excavations. To answer research questions and to understand the Anasazi occupation of the La Plata Valley as fully as possible, a sample as large as possible is necessary. The sample provided by work along the highway is a large one in terms of the archaeologically possible, but a small one in terms of the archaeology of the valley. The "research significance" entries in the following descriptions are somewhat repetitive, but this results from the fact that we are trying to sample a very large and very complex phenomenon.

Table 1. Sites within the Barker Arroyo Segment Requiring Excavation (arranged north to south)

Site	Test Trenches	Excavation Est. Crew Days	Comments
LA 37607	2	35	Five days of document search will be necessary in addition
LA 37606	6	40	Preliminary drainage excavation may be necessary
LA 65301	7	20	Includes three backhoe trenches
LA 65030	6	50	Shallow burial should be excavated early
LA 65029	0	40	Add TCP for ditch
LA 65028	6	3	Single hearth; includes one backhoe trench in drainage ditch
LA 37605	2	105	Burial known in present r-o-w
LA 1897	1	25	Morris 39 has had extensive excavation in the main part of the site above the right-of-way
LA 37603	2	30	Erosion exposing intact walls; excavate early
LA 37602	2	25	

Site	Test Trenches	Excavation Est. Crew Days	Comments
LA 37601	5	150	
LA 37599	6	75	
LA 37600	3	35	
LA 65024	0	8	
Total	48	641	

LA 65024

Elevation: 5,528 ft

Site type: Small cobble mound

Ownership: Private (R. McGee)

Cultural affiliation and estimated periods: Anasazi PII

Description: Located on the west side of the first terrace on the west side of the La Plata River, this site consists of well localized but infrequent sherds, lithic artifacts, and burned and unburned cobbles. The Helton Ditch passes to the east of the site and NM 170 is to the west; the site has been cut by the water line on the east side of the highway. Almost all of the material is at the edge of the water line cut, suggesting that the structure may have been larger than it now appears to be, although the scarcity of material indicates a small (two rooms maximum) feature (Fig. 2).

Size: 8 by 8 m

Condition: The most immediate source of disturbance is the water line, which very likely cut the structure. Highway and Helton Ditch construction have occurred nearby. It appears that some of the feature remains intact, however. [This site was later destroyed by new water line construction.]

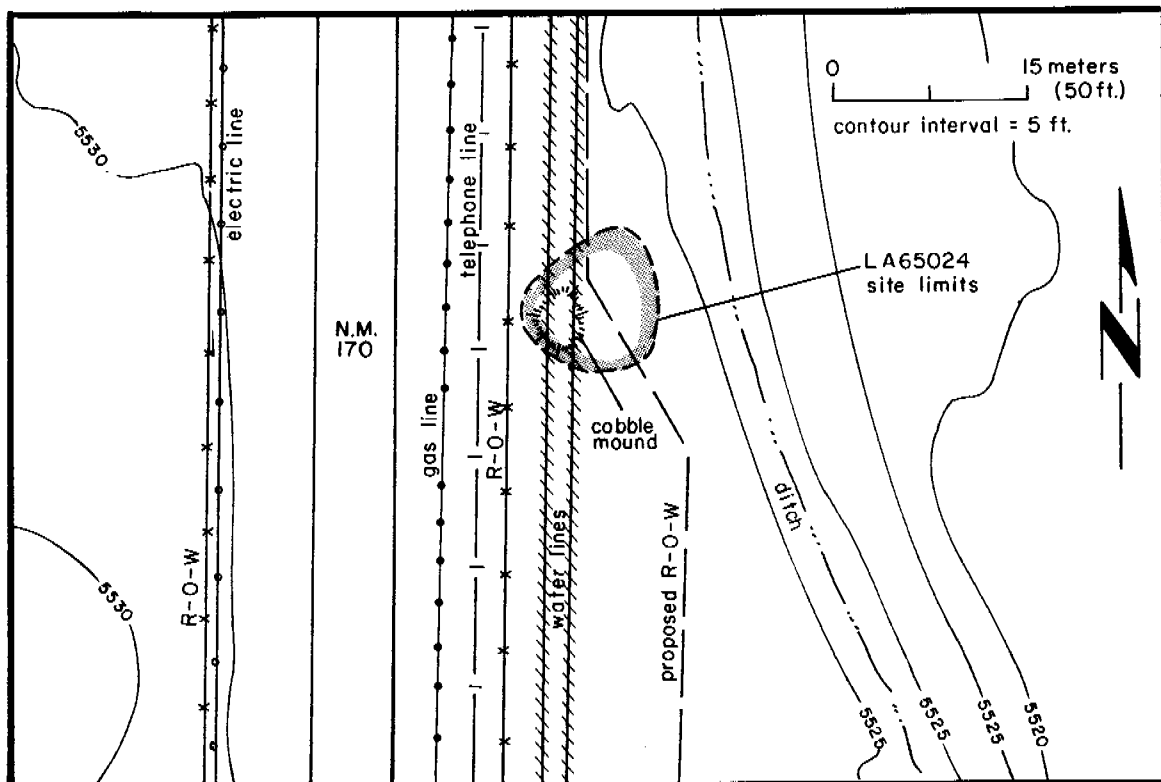


Figure 2. LA 65024 site map.

Overlap with right-of-way: The right-of-way at this site extends 75 ft from the existing east edge of the pavement; this includes all visible cultural remains at the site.

Research significance: As both a smaller and a more isolated structure, this site is important for adding perspective to the structures in larger groupings. Of relevance here is whether this site can be related to a larger group, perhaps as a seasonal use site. The site is around 1 km from the nearest larger site that will be excavated (LA 37599), offering the possibility to assess the significance of distances of this magnitude to the settlement system. Within the limitations of the smaller sample expected, is the ceramic type and vessel assemblage here somehow different from those at larger sites?

Field strategy: Excavation of this site should proceed by fully examining the existing cobble mound. After completion of excavation of contiguous features, backhoe trenching in adjacent areas should be performed to ascertain the presence of extramural and buried features; any features located by the backhoe should be excavated by hand.

Estimated effort: The area is small; surface collection, excavation, backhoe work, and mapping should take 1 crew 8 days, assuming major buried features are not encountered.

LA 37599

Elevation: 5,521-5,538 ft

Ownership: Private (R. McGee)

Cultural affiliation and estimated periods: Anasazi PII-PIII

Description: This site consists of a well-defined cobble mound with visible wall alignments and a probable pit structure depression. There are further features to the east of the mound, including another depression. Material is scattered uphill to the south, extending to a small wash, though the material to the south becomes quite sparse. There is another material area to the north of the mound and on both sides of the Jackson Ditch, on the edge of a cornfield. Sherds and lithic artifacts are fairly well concentrated in this area, but it seems likely that the ditch destroyed a feature here. The highway is all that separates the material at this site from that at LA 37600, and it seems possible that the two were probably once continuous (Fig. 3).

Size: 260 by 75 m

Condition: The area of the cobble mound has been used for some time as pasture, and there has been some scattering of the mound and trampling of surface materials. As noted, the Jackson Ditch and surrounding cultivation have probably either destroyed or severely disturbed a feature at the north edge of the site. While we do not have precise locations for water lines, they are likely to have passed between the west edge of the mound and the right-of-way fence. It is likely that the highway cut features as there is a fair amount of material in the ditch. In addition to the heavy surface disturbance, telephone lines and water lines are present within the existing right-of-way. The amount of subsurface disturbance, however, does not seem major. [In 1990, an

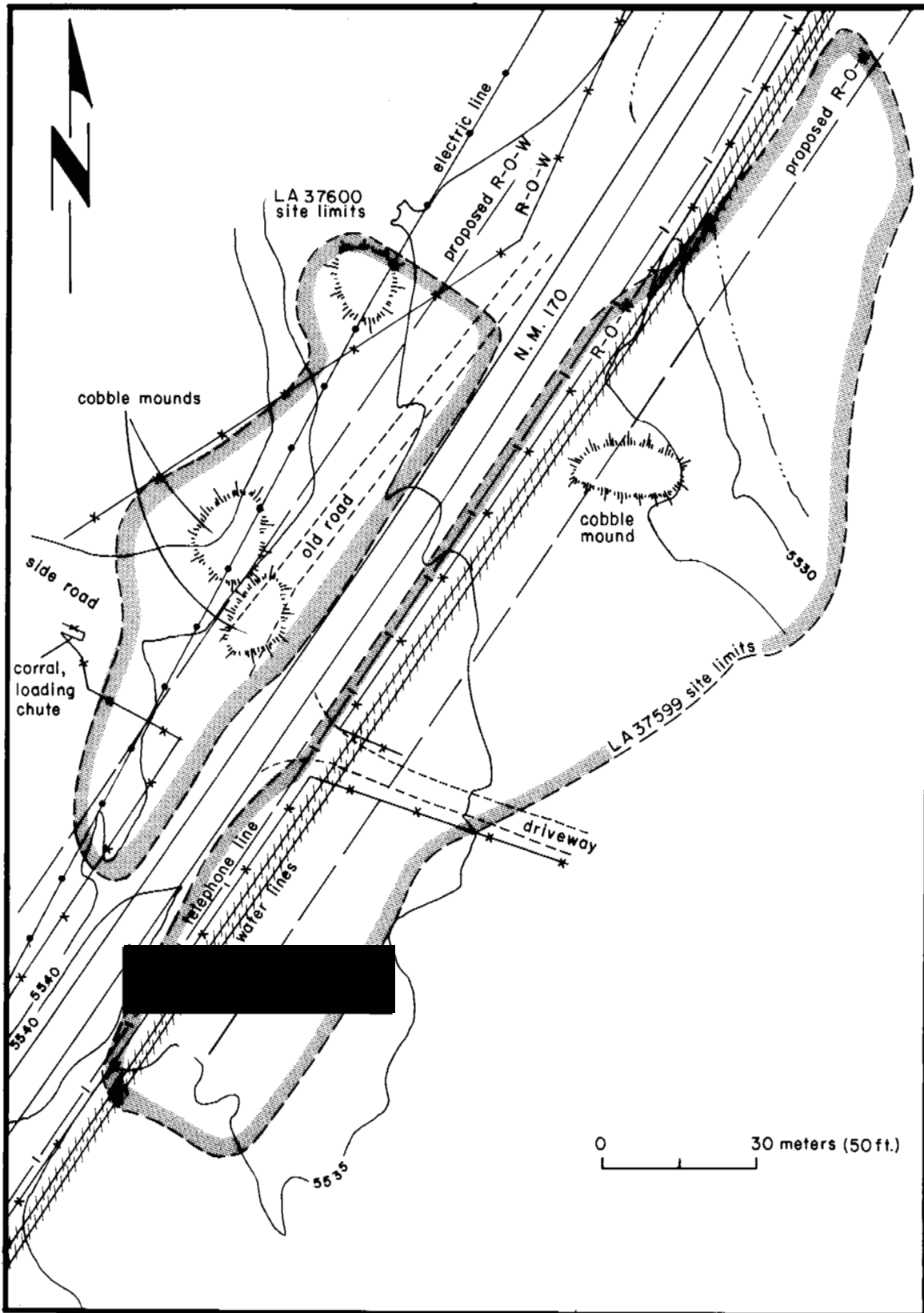


Figure 3. LA 37599 and LA 37600 site maps.

additional unmitigated water line was constructed.]

1982 tests: Six trenches indicated a six- to eight-room pueblo and a pit structure with over a meter of fill.

1982 recommendation: Excavation.

1987-1988 evaluation: Though the large mound can be avoided, the extensiveness of the site, the density of material, and the depth of deposits as shown by tests indicate that considerable excavation will be necessary.

Overlap with right-of-way: The new right-of-way has been constricted in the area of the main mound, such that the visible portion of the mound is avoided. Extensive and fairly dense material is also present in the current right-of-way and the new right-of-way, however, and some intact features are likely to be present within the project limits.

Research significance: As a portion of the major cluster of features in the vicinity of Barker Arroyo, excavations here will contribute to defining temporal and functional aspects of community settlement. Subject to excavations here and at LA 37600, this site (or the two sites combined) may represent a large settlement. Judging from surface materials and testing results, there should be a sizable material sample from this site with which to address chronological and exchange questions. Though no architectural features are now visible within the right-of-way, excavations will take place immediately adjacent to a substantial structure and exterior activity areas may be encountered, which will elucidate seasonality and types of use of the site. As a substantial surface structure was present here, any pit structures excavated here will be relevant to the question of storage within versus outside of pit structures.

Field strategy: Following surface collection, hand trenches should be used to investigate the extent of the room block into the right-of-way, and to examine areas of high surface artifact density. Once the nature and depth of visible deposits have been ascertained, backhoe trenches should be placed in the trash area south of the mound and in the disturbed material area north of the mound, as well as at intervals in the extensive scatter area.

Estimated effort: 15 crew weeks.

LA 37600

Elevation: 5,533-5,550 ft

Ownership: Private (R. McGee)

Cultural affiliation and estimated periods: Anasazi PII

Description: In addition to the area tested and mapped by Lancaster, material extends to the south across the dirt road leading to the corral and loading chute, and to the north, where there is a small cobble mound in the recess created by a drainage. Features are difficult to see from

the surface, but substantial material is present in the ditch by the highway (Fig. 3).

Size: 140 by 40 m

Condition: Highway construction has probably removed some features (see LA 37599). The loading corral and access to it may also have affected the site. There are no subsurface utilities on this side of the highway. The road that preceded the paved highway passes east of the visible cobble mounds.

1982 tests: Three trenches revealed an intact pit containing trash, cobble alignments, and deposits up to 60 cm deep. Lancaster's tests indicate intact features within 8.5 m (28 ft) of the present pavement edge.

1982 recommendation: If the site can be avoided, it should be fenced.

1987-1988 evaluation: While the right-of-way has been adjusted to avoid features with visible surface manifestations, the area still included could contain pit structures or trash deposits associated with the probable room block upslope and outside the right-of-way.

Overlap with right-of-way: The proposed right-of-way excludes the rubble mound in which Lancaster found intact walls (1983:46). It includes, however, the area east of a shallow ditch; Lancaster found cultural material to a depth of 60 cm and an intact pit.

Research significance: Definition of features in the affected area will contribute to evaluation of the size of component settlements in this site cluster at given periods. Determination of the age and extent of this site will allow judgement as to whether it is an extension of LA 37599 across the highway. If the two are better considered a single occupation, it is a large one. Addition of material and architectural information will contribute to demographic estimates, site size estimates, and sequence of site occupation in the Barker Arroyo area. The small ceramic sample from the testing program suggests that the later component (PIII) present at many sites in the area may be lacking here, possibly providing an unmixed PII assemblage.

Field strategy: Given the current level of disturbance in the affected portion of this site, backhoe trenching immediately following surface collection is an appropriate strategy. Features located by trenching should then be excavated.

Estimated effort: one crew 7 weeks.

LA 37601

Elevation: 5,520-5,532 ft

Ownership: Private (R. McGee)

Cultural affiliation and estimated periods: Anasazi PII-early PIII

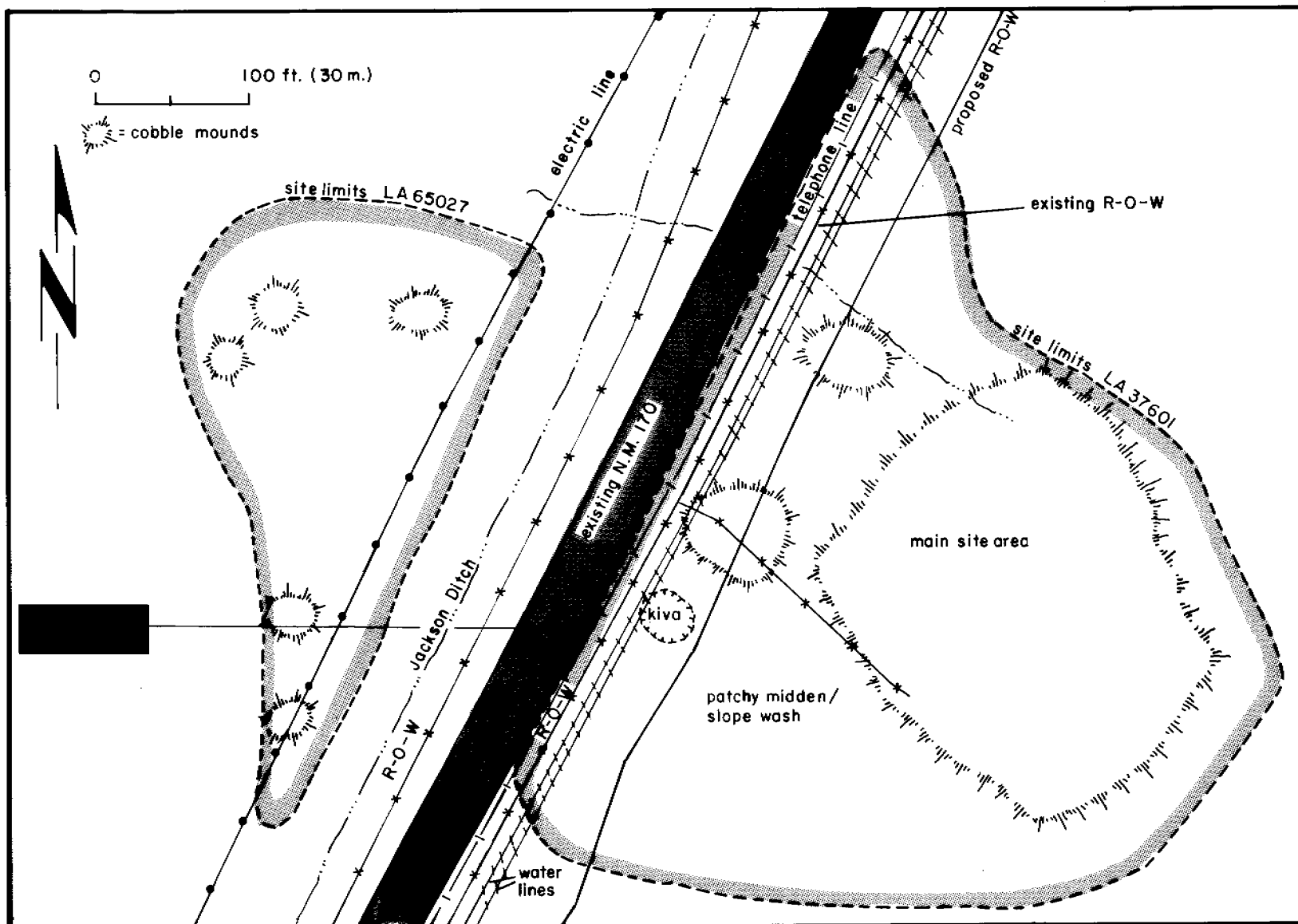


Figure 4. LA 37601 site map.

Description: As noted by Lancaster (1983:47), this site is very large and complex, extending a considerable distance to the east of the right-of-way. The area outside the right-of-way contains at least one substantial structure of 20-30 rooms and several pit structures, in addition to numerous other structures. The location is a very favorable one, just above the broad floodplain associated with the entrance of Barker Arroyo. Features continue on the west side of the highway (site LA 65027). The site is located on a low prominence; the north-south transect formed by the highway rises near the center, with material and structures on both gentle slopes. The largest visible feature in the right-of-way is a substantial cobble mound at the crest of the rise, with a pit structure to the south. The east edge of the site has not been fully evaluated.

Size: 165 by approximately 150 m

Condition: The construction of NM 170 and placement of a drainage ditch are near the north edge of the site have removed and covered the western portion of the site. The bank for this ditch contains quantities of material and it has clearly cut a feature; it is possible that intact features remain under the bank. The southern part of the site has been plowed, and a holding pond has been built fairly recently. In addition, a dirt road passes between two structural areas, and surface material scattering and crunching has occurred.

1982 tests: Five tests placed within the proposed right-of-way. A structure, a possible structure, a possible pit structure, and two relatively shallow trash areas were found.

1982 recommendation: Scientific data recovery.

1987-1988 evaluation: We fully concur that this is the edge of a large and complex site. The right-of-way will include at least five areas that are likely to include structures, including one of around 10 rooms (not tested, but with visible wall alignments).

Overlap with right-of-way: There are at least five areas likely to contain intact features within the proposed right-of-way. The majority of the sizable mound at the top of the rise is included. The drainage area at the north end of the site within the right-of-way contains remains of disturbed features and Lancaster shows an intact wall north of the ditch.

Research significance: This site is very large; given the presence of a large, possibly multistory structure, it may be in many ways comparable to Morris 39 (LA 1897). Excavation of the portion within the right-of-way will provide modern, controlled samples from a major component of the Barker Arroyo community. Information from all classes stands to be present in significant quantities. It is important to understand whether large sites like this one are large because of multiple sequential occupations or because of single, large occupations or some combination thereof. All or portions of several different structures will be excavated, providing data on structure variability within a settlement of this nature (though no information will be available from the largest structure). There are a number of sites with substantial structures located on the terrace analogous to Morris 39 (LA 1897), so that this site, with its contrasting location nearer the valley floor, can provide comparative data to those sites when they are excavated. The presence of pit structures here is virtually assured, and the presence of storage features in them is of particular relevance to the examination of pit structure storage features relative to surface structures. Demographic information from trash volumes, room counts, and possibly burials will be available.

Field strategy: Surface collect; there are a number of features visible from the surface or indicated by 1982 testing that can be approached directly with hand excavation, followed by mechanized fill removal of appropriate deposits after definition. Backhoe trenching should be used to define features in areas between surface manifestations and to obtain overall stratigraphic sequences.

Estimated effort: This will be a major excavation project. It will entail at least one crew 30 weeks.

LA 37602

Elevation: 5518-5523 ft

Ownership: Private

Cultural affiliation and estimated periods: Anasazi PII-PIII?

Description: This site is located at the mouth of Barker Arroyo on the north side of the wash, on the first terrace above the river (Fig. 5). Material is present over a wide area, but grading of the whole space east of the highway makes the nature of remains here unclear. Intact remains appear to be present to the southeast of the grading (outside of the right-of-way) and possibly along the margins of the arroyo. The testing and the concentration of material suggests that a structure was present at the south end of the site.

Size: 140 by 50 m

Condition: The highway shoulder is within the site boundaries and there is washing along the south and east edges of the site area; leveling of the area has probably removed most or all of any surface structures that were present.

1982 tests: Two trenches and 10 shovel tests showed generally shallow material, though one deposit of 55 cm and an intact pit were encountered. It is suggested that a fairly large structure or set of structures were once present.

1982 recommendation: Fence and preserve: no features within the proposed right-of-way.

1987-1988 evaluation: This site and LA 37603 across the highway are very close to Morris 39 (LA 1897) and almost surely part of its community. It is likely that the surface of this site has been further bladed since 1979. Material is presently scattered in the flat portions of the site and concentrated on the banks around the edges. The exposure of deep intact walls at LA 37603 within the right-of-way just across the highway illustrates the need to further examine areas with surface disturbance.

Overlap with right-of-way: The presently visible concentration and the deeper deposits and features exposed in the 1982 tests are outside the proposed right-of-way. Inside, there is a large scatter area that may be associated with other features.

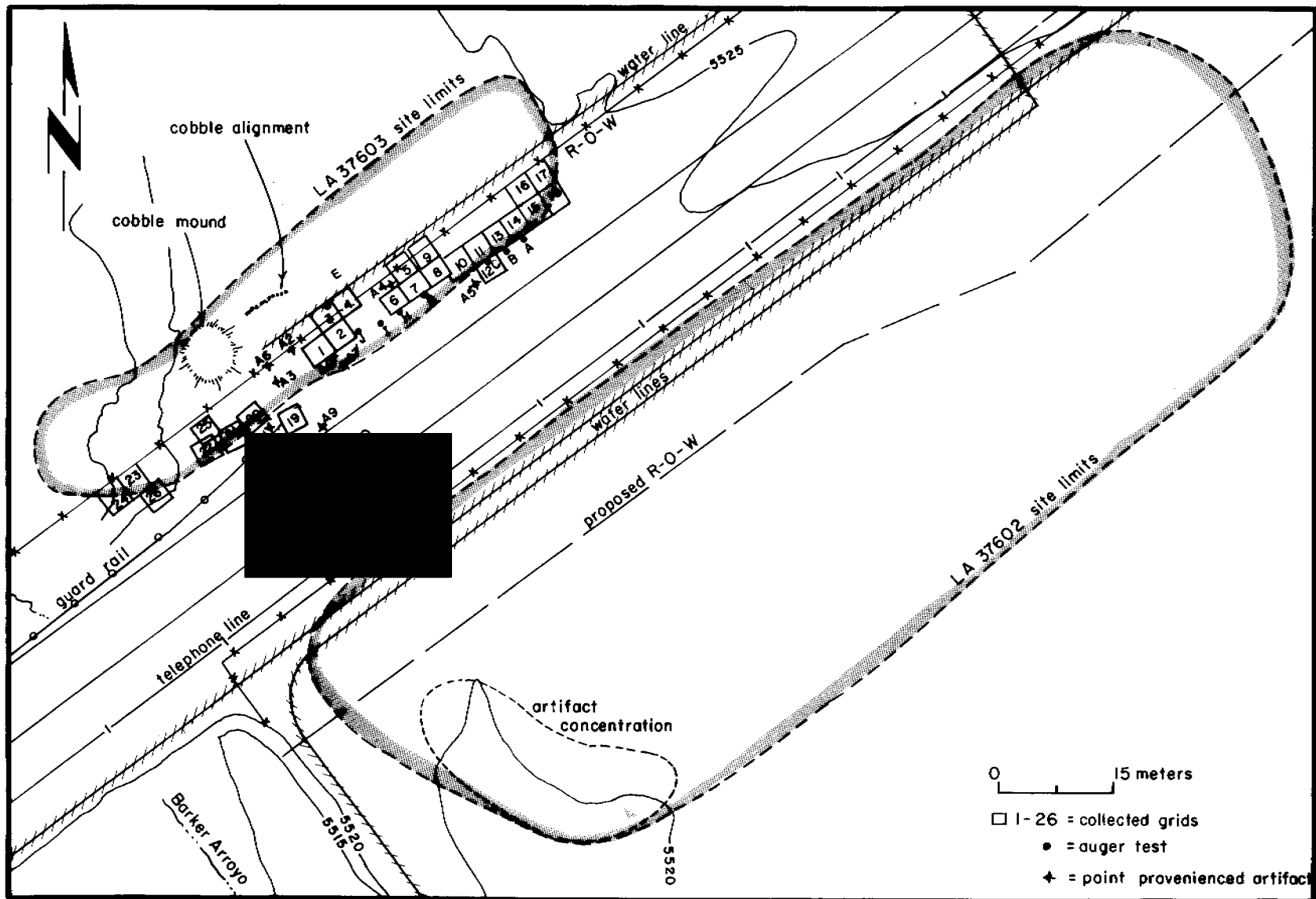


Figure 5. LA 37602 and LA 37603 site maps.

Research significance: Given the preference for this terrace at other sites and the importance of Barker Arroyo, this should have been a prime location for prehistoric settlement. LA 37602 and LA 37603 are the closest structural sites to be excavated to Morris 39, and the structures here are conceivably part of the central part of the community. As such they are important for comparison to other, more distant sites. The period and extent of occupation of these sites are relevant to the history of use of the center of this major community. LA 37602 and LA 37603 are part of a complex of structures on this lower terrace; nothing is presently known about this complex due to disturbance, modern structures, and absence of earlier work. Excavations here will provide a sample from this subgroup of structures. Comparison of materials from these sites with those excavated by Morris and from the midden samples obtained by this project will allow statements about timing of settlement of various parts of the location. Also of interest will be whether the great variety of ceramic and lithic materials suggested by collections from the single midden test at LA 1897 is also present at this immediately adjacent site.

Field strategy: Because of the high level of surface disturbance, backhoe trenches will be required to locate intact subsurface features; this will involve extensive trenching to locate remaining intact features, especially at the south end of the site. Any intact features revealed in this way will be excavated by hand in expansions from the backhoe trenches.

Estimated effort: one crew 5 weeks.

LA 37603

Elevation: 5,515-5,525 ft

Ownership: New Mexico State Highway and Transportation Department and private.

Cultural affiliation and estimated periods: Anasazi PII-PIII

Description: Located on the north bank of Barker Arroyo, this site is separated from LA 37602 by the highway and was conceivably a part of that site (see Fig. 5). The surface indications here include a disturbed small structure, which is outside the right-of-way as now defined. Erosion near the pavement edge, however, has exposed intact walls of what is probably a deep structure. Surface indications within the right-of-way are minimal, but deep deposits and intact structures are clearly present.

Size: 80 by 20m

Condition: Lancaster reported a pothunting hole (1982a:44). A log fence has been built through the site area, and then removed in late 1988 and the area has been graded. The highway drainage ditch, the approach to the Barker Arroyo crossing, and a guard rail all are present on the east edge of the site. The relatively steep slope into Barker Arroyo has caused some erosion of deposits and has recently exposed intact walls (Toll et al. 1990).

1982 tests: This site was omitted from Lancaster's (1983) report, though it was recorded in the survey report (Lancaster 1982a:43-44).

1982 recommendation: None.

1988 tests: The 1988 testing program surface collected the site and excavated three tests, two of which revealed prehistoric trash deposits and one of which revealed complex and deep architectural remains.

1987-1988 evaluation: This site is directly across the highway from LA 37602, and could at one time have been connected to the features there. Though this site is also washed and has been pothunted, there is more evidence of intact remains than at LA 37602.

Overlap with right-of-way: The proposed right-of-way is placed at the zig-zag timber fence, leaving surface indications of features outside the right-of-way. Surface material is visible inside the right-of-way, and heavy disturbance may obscure intact features related to those visible.

Research significance: Excavation of this site will add to the sample of architectural variability near the major community site of Morris 39 (see LA 37602 research significance). This site contains the only known intact portion of sites LA 37602 and LA 37603 within the right-of-way.

Field strategy: Excavations should begin with the known intact structure and expand as necessary to fully record the intact remains within the right-of-way. After excavation of known remains, backhoe trenches should be placed to the north of the known remains to ascertain the presence of other remains.

Estimated effort: Surface collection was performed in 1988. The presence of deep intact architecture suggests that considerable excavation will be necessary, though its extent is presently unknown. Assuming that the extent is not great, one crew should be able to complete work here in six weeks.

Morris Site 39: LA 1897

Elevation: 5,610 ft

Ownership: Private

Cultural affiliation and estimated periods: Anasazi BMIII-PIII

Description: This site was extensively excavated by Morris (1939) and its current condition is reported by Dykeman and Langenfeld (1987). It contains a great many structures dating from Basketmaker III to Pueblo III, including some large community structures and great kivas (see Morris 1939:51; Dykeman and Langenfeld 1987:74). Morris found that deposits up to 5 m deep were present, even quite close to the edge of the terrace.

Size: Within the right-of-way the total area is around 425m by 21m, including some road cut and some drainage area (Fig. 6). The testing and surface collection as well as the location of architectural features on the top of the terrace indicate that some portions of the area contain considerably more prehistoric material than do others. A stretch of about 130 m subtends the

majority of the largest features at the terrace edge. At the north end of the area there is a smaller group of features at the top edge of the terrace, above an area that will be modified to move the entrance of County Road 1639 to NM 170. The intervening area is in a drainage and, within the right-of-way, contains less material.

Condition: Disturbance in the main part of the site is severe; the part to be affected by the right-of-way is washed and has been cut by the highway.

1982 tests: None

1982 recommendation: None

1988 tests: The slopes within the current right-of-way were surface collected and a single test was excavated. While the deposits contain a large number of cobbles, there is also a high artifact content, and temporal stratigraphic relationships seem to be preserved.

1987-1988 evaluation: In spite of the damage it has suffered, this site remains one of major importance to understand the use and organization of the La Plata Valley during its Anasazi occupation. The part of the site that will be affected by highway work is all on the slope, but the test and the surface collection indicate that this area includes midden from the site.

Overlap with right-of-way: Slope cuts have been limited as much as possible in this area. The right-of-way includes the existing fence plus about 3 m to the west. This area is strictly cobble slopes, but, as noted, the artifact content of the slopes is quite high.

Research significance: The portion of this site within the right-of-way represents trash deposits from the core of this important community site. Excavation of these deposits will provide essential controlled comparative materials for sites both in the vicinity (LA 37599-LA 37605, LA 65029-LA 65030) and at greater distance, such as at Jackson Lake and Morris 41 near the state line. Preliminary assessments of the materials from the 1988 test indicate that the material here has great time depth, displays unusual variety, and is very abundant. Other samples from this site do exist (Whalley 1980; Morris 1939), but they are small or uncontrolled, and from different parts of this large site.

Field strategy: A series of trenches will be necessary to obtain samples to gauge the variability of the midden. The problem that must be solved here is that there is a very long area with potential deposits in a difficult excavation location. To obtain both a sample and a some index of the lateral variability in the deposits, nine 1 by 2 m trenches should be placed within the area below the feature concentration (one every 15 m), and dug to sterile. The trenches are probably best dug perpendicular to the right-of-way (up and downslope), with lateral placement consciously controlled within the systematic layout. Depending on the area to be affected at the north end, one or two hand trenches should be placed in that area. If features (such as the burn encountered in testing) are encountered by trenches the trench should be expanded at least far enough to identify, sample, and record the feature. Following hand trenching, a backhoe transect across as much of the site area as feasible should be dug. Any other areas found to warrant backhoe excavation during hand trenching should also be trenched.

Estimated effort: 11 trenches plus potential expansions and backhoe work: 1 crew 5 weeks.

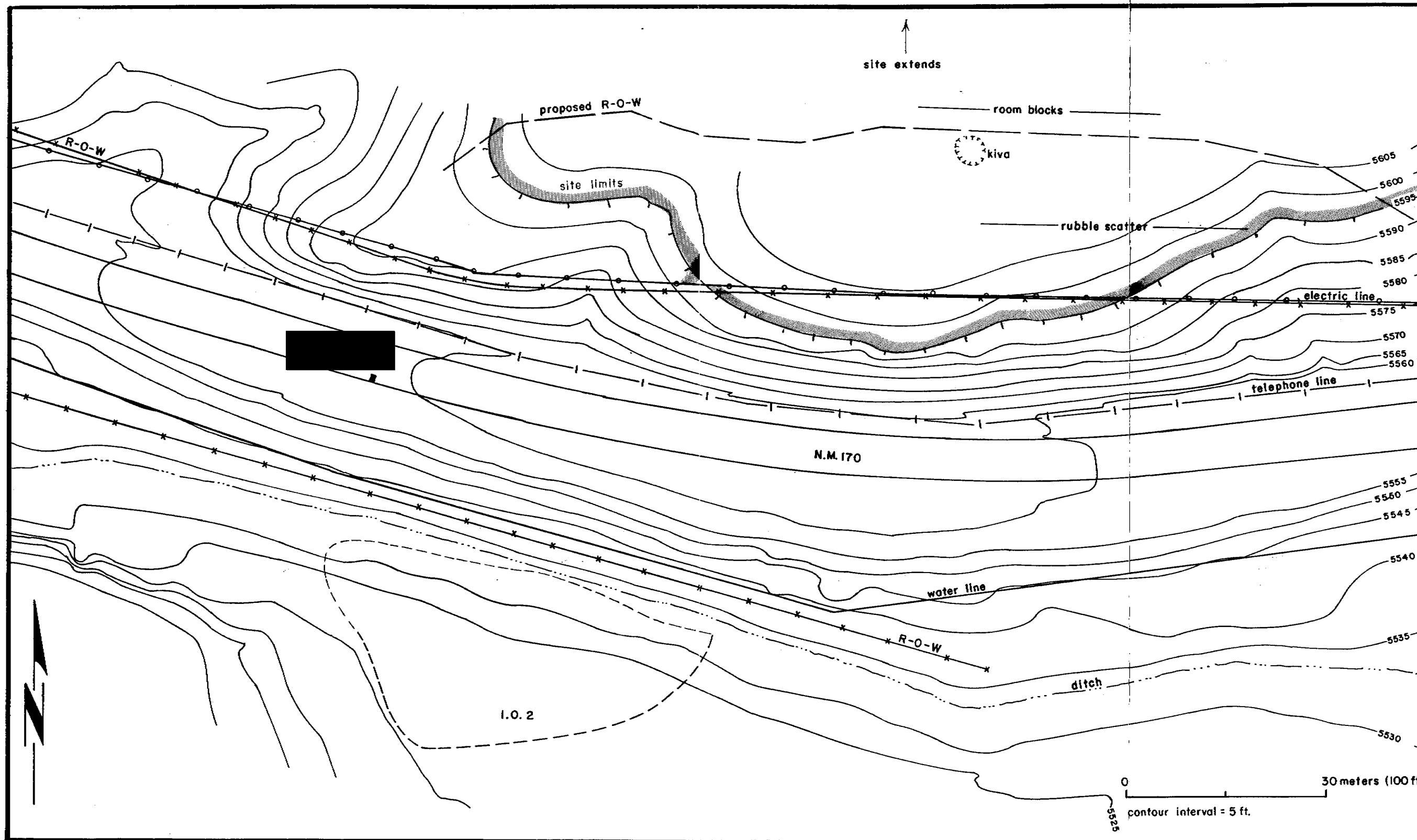


Figure 6. Portion of LA 1897 affected by right-of-way construction.

LA 37605

Elevation: 5,548-5,555 ft

Ownership: Private (P. Wiseman)

Cultural affiliation and estimated periods: Anasazi PII-PIII

Description: This site is located on a very gentle south-facing slope within 30 m of the base of the slope up to the second valley terrace. It consists of a substantial cobble mound within which Lancaster could detect wall alignments in 1982 (Lancaster 1983:52). Surface material is abundant around the mound; construction materials include both cobbles and sandstone slabs. Lancaster also noted two depressions that may represent pit structures (Fig. 7).

Size: 90 by 50 m; mound 45 by 15 m

Condition: The main mound is in a heavily grazed and trampled corral. The mound has been extensively pothunted, and the highway is certain to have cut some deposits. The water lines are present within the new right-of-way and telephone lines are present in the existing one. The construction of the house just north of the site could also have caused some disturbance.

1982 tests: Two trenches were placed within the present right-of-way. These trenches revealed a possible wall, a burial, and midden with high artifact content, all west of the current right-of-way fence and away from the mound. Pothunting holes show the rooms are 40 to 60 cm deep, and there are possibly two intact pit structures.

1982 recommendation: Given the presence of extensive intact structures and deep midden, excavation is recommended.

1987-1988 evaluation: Concur with the need for excavation.

Overlap with right-of-way: The right-of-way here is 60 ft from the existing centerline. A third to a half of the mound is within this right-of-way; extensive deposits are also present in the current right-of-way.

Research significance: This is one of a series of cobble pueblos in a size range of 10-20 rooms, probably similar to Morris 36 (Morris 1939:47-50). It is important to ascertain whether these structures are likely to be contemporaneous or sequential. Site 36 was apparently occupied for a considerable time; Morris was compelled to very rapidly and only partially excavate Site 36 and did not, of course, collect the kinds of samples and information we now do. A sample from structures such as this is critical to researching community patterns in this area; other sites that may be in this category in this segment are LA 37599, parts of LA 37601, LA 65029, and possibly LA 65030. LA 37605 will undoubtedly contain great quantities of material that will contribute to all categories of material culture analysis, as well as shedding light on size and length of occupation of this site. Given the presence of both pit structures and substantial surface structures, modes of storage can be examined.

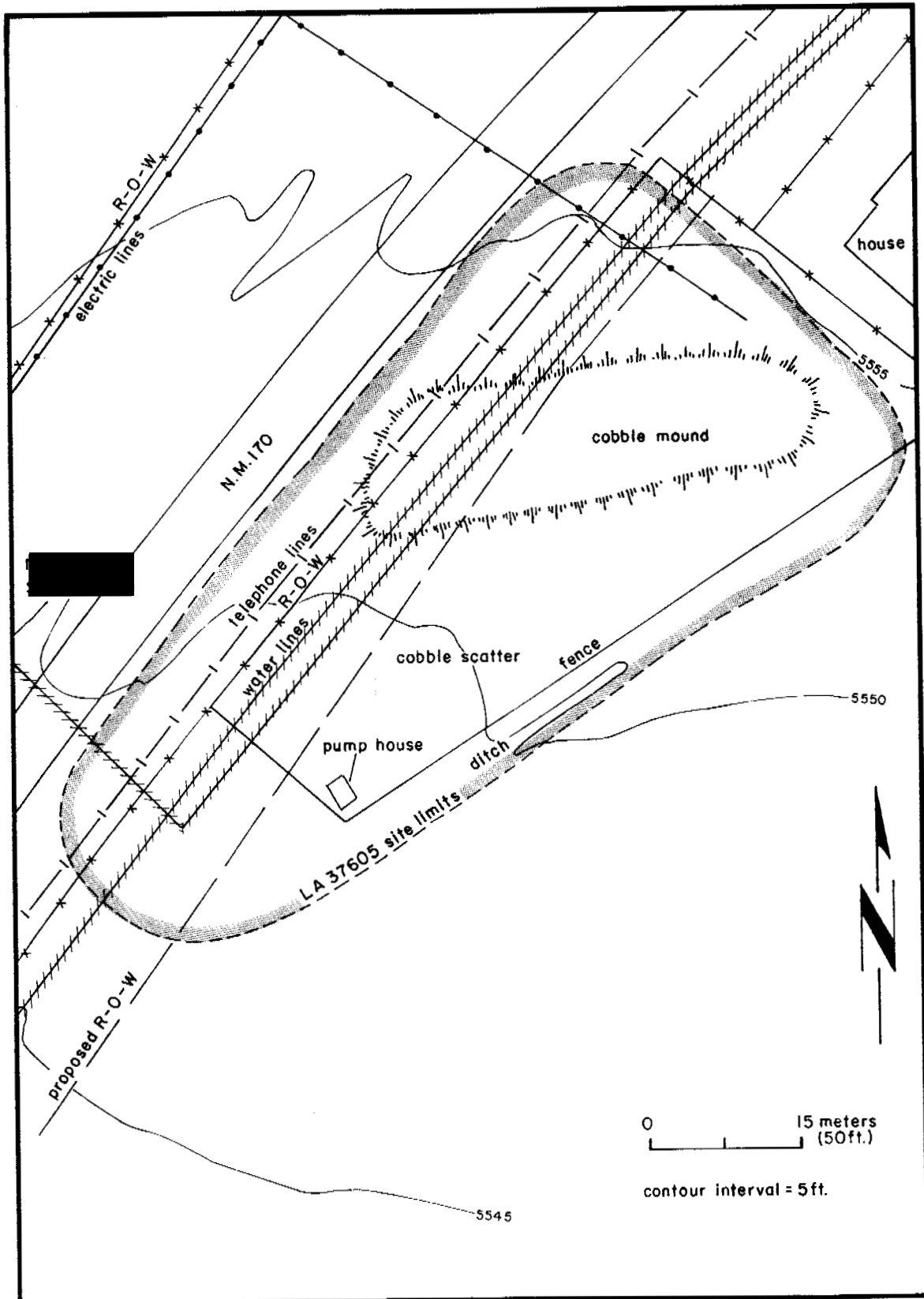


Figure 7. LA 37605 site map.

Field strategy: Because of the extensive pothunting at this site, additional care will be necessary to monitor which deposits are intact. Following surface collection, an effort will be made to locate disturbed areas. Excavation should proceed by defining structures visible from the surface and by returning to areas shown to contain intact deposits and a burial during 1982 testing. Following excavation of these areas, backhoe trenches should be placed for considerable distances on either side of the mound to locate buried features and to provide information on geological context.

Estimated effort: one crew 21 weeks.

LA 65028

Elevation: 5,562-5,610 ft

Ownership: New Mexico State Highway and Transportation Department and private (Nickles?)

Cultural affiliation and estimated period: Anasazi PII-III

Site type: Sherd and lithic artifact area, some burned rock, possible lithic material source.

Description: Material is found in the ditch on the west side of NM 170, at the base of the slope above the ditch, and on the slope above (Fig. 8). The slope is between the first and second terraces on the west side of the La Plata River. This site has been disturbed to the point that it is difficult to interpret. The site seems to include three components. The first is a lithic material testing and acquisition area on the slope. The main material involved is black, homogeneous rock that occurs in cobble form. The second component is slope wash from LA 29441, a sizable pueblo on the terrace just above the site area. The third component is from a possible structural site at the base of the slope. The highway ditch passes through this area and sherds, lithic artifacts, human bone, and burned rock are present for around 140 m. Within this dispersed material there is an apparent concentration near the center of the site; material also occurs above the ditch. A concentration of burned rock is present above and to the west of the ditch around 40 m from the south end of the material area, and a single human skull fragment was observed in the ditch near the north end. The only intact features found by the testing program was a hearth in the burned rock concentration.

Size: 140 by 60 m

Condition: As noted, the area at the base of the slope was within the highway construction zone; much of the material observed is in 1-m-high berm along the road. Above the ditch the site is washed and there is erosion above the highway cut.

1988 testing: A surface collection was made, five hand tests were dug, and a backhoe trench was placed in the present drainage ditch.

Overlap with right-of-way: The proposed right-of-way boundary is the present fence, so that the disturbed portions of the site will be affected but the portions on the slope will not. The

hearth exposed by testing is within the right-of-way.

Research significance: The cultural affiliation of this feature should be determined and a comparative sample of material culture obtained. Since this feature is a hearth, there is considerable likelihood that we will be able to obtain a date as well as a meaningful botanical sample from this isolated manifestation.

Field strategy: Fully excavate and sample hearth and attempt to identify associated surfaces and their extent.

Estimated effort: one crew 3 days.

LA 65029

Elevation: 5,570 ft

Ownership: Private (P. Wiseman)

Site type: Cobble mound

Cultural affiliation and estimated period: Anasazi PII-III

Description: Located on the first terrace on the west side of the La Plata River, near the base of the slope to the second terrace. A drainage enters the valley just to the west; the valley is very wide and flat bottomed here, and is currently under irrigation and cultivation. This site consists of a 10 by 50 m cobble concentration now defined by two irrigation ditches (Fig. 9). While the cobbles are quite dense, there is surprisingly little artifactual material for such a large cobble area. The area slopes gently down to the south, with more artifacts toward the south end. Around half of the cobbles are burned. A large (22 by 8 by 6 cm) grooved hoe or pick was observed at the northeast edge of the site. The scarcity of artifacts and the presence of ditches and cultivation suggest that the cobbles may have been considerably spread out. The site is directly across the highway from LA 65030 and the ceramics suggest a similar date for both. Material is present but thin in the surrounding fields.

Size: 60 by 10 m

Condition: Livestock has contributed to scattering the mound and its material--not only does grazing take place here, but the presence of a gate right by the cobble area means that feed is sometimes dumped on the site. Irrigation ditches pass on either side of the mound; water lines are present within the new right-of-way, and telephone lines have been placed between the highway shoulder and the fence.

Overlap with right-of-way: About a third of the cobble area falls within the new right-of-way; with relocation of the irrigation ditches, more of the cobble area will be within the project limits, probably all of it.

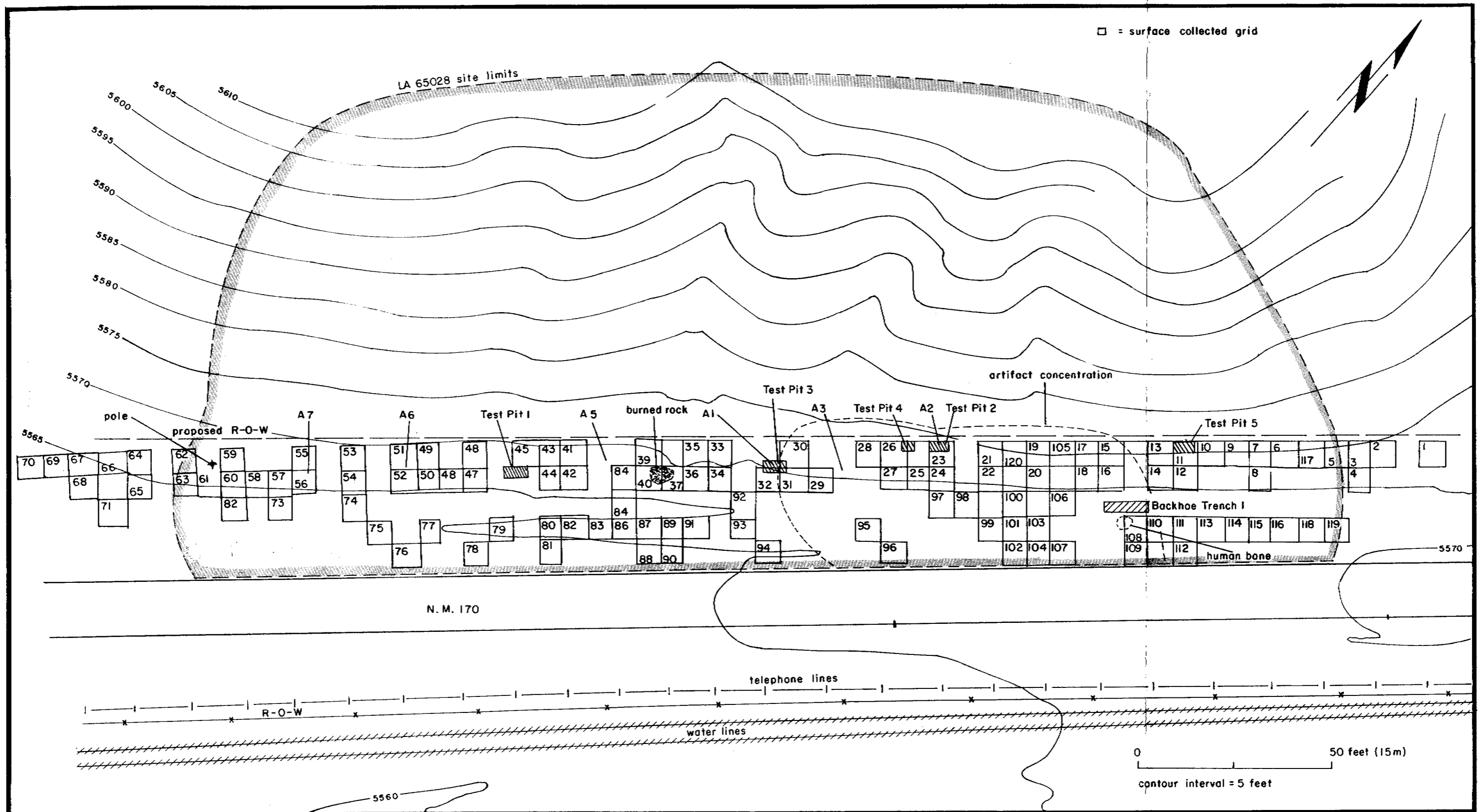


Figure 8. LA 65028 site map.

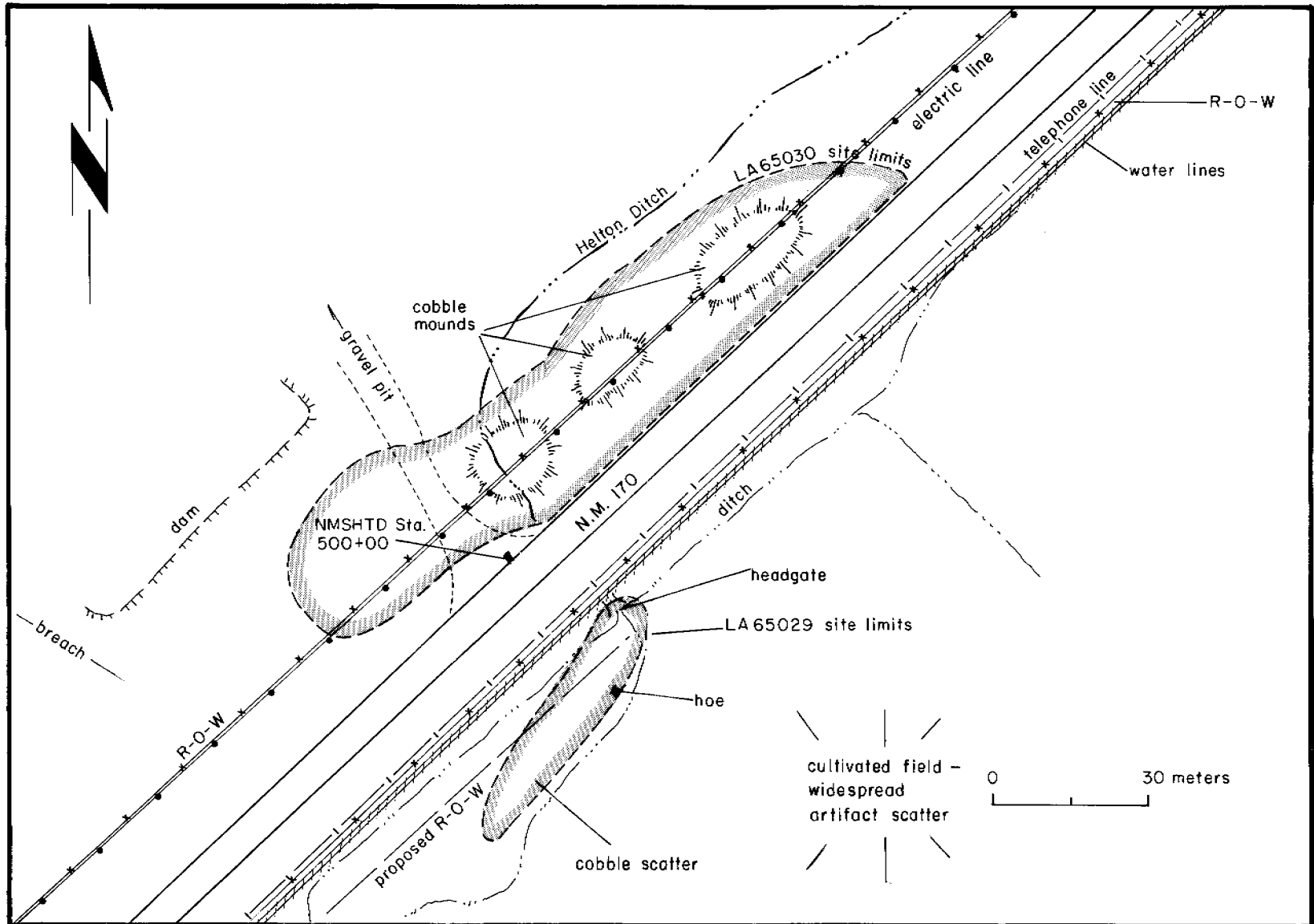


Figure 9. LA 65029 and LA 65030 site map.

Research significance: This is probably another small room block, but because of scattering it is possible that it is either a larger structure or multiple small ones. It is located in the immediate vicinity of LA 65030 and LA 37605 and its temporal and social relationships to those sites is important. The site is interesting for its proximity to the flood plain, and geological profiles here may elucidate the effects of flooding on the Anasazi occupation. There are relatively few artifacts on the surface of this site, which may be the result of post-occupational processes or may signal some functional difference for the site. Once again, there is the potential for adding to the sample of pit structure-surface room storage strategy information.

Field strategy: Some exploratory digging will be necessary to define the location of structure(s), though cobble concentrations should enable placement of trenches for feature excavation. Given the size of the cobble scatter, extensive backhoe trenches in disturbed and cultivated areas will be necessary to ascertain whether other features are present.

Estimated effort: one crew 8 weeks.

LA 65030

Elevation: 5,573-5,577 ft

Ownership: New Mexico State Highway and Transportation Department; extends onto private outside of right-of-way (Nickles?)

Cultural affiliation and estimated period: Anasazi PII-III

Description: At the base of the slope from the second terrace, at the mouth of a sizable drainage there are at least three mounds, all from cobble structures (Fig. 9). The drainage now contains a gravel pit and an earth dam. Due to the proximity of the Helton Ditch the vegetation is dense, and other features may be obscured; highway, ditch, and dam construction have also removed all or parts of additional features. The largest mound is at the north end of the site. It is at least 1 m high and 10-15 m north-south. There is a great deal of rock (much of it burned) in the highway shoulder, and portions of walls are visible in the highway cuts. There is a second, smaller mound 15-20 m south of the large mound; both are located on the fence line. The second mound is roughly 5 by 8 m and 1 m high. There is a third mound 10-15 m south of the second which is heavily disturbed; it appears to have been cut by the ditch, which turns at the site to cross under NM 170. Mr. L. Nickles reports finding a tchamahia (skinning knife) on the road shoulder at the site. The testing program results indicate that there are abundant intact remains and deposits here.

Size: 145 by 27 m

Condition: In addition to the ditch cut, the southern mound may also have been cut by the road to the gravel pit, and a power pole has been placed in the mound. There is abundant material in the road cut east of the mounds and the road cut is causing erosion of the mounds. South of the gravel pit road is a disturbed area containing mostly very small sherds; the dam also shows some material.

1988 testing: Six hand trenches all within the current right-of-way (two in the current cut and four adjacent to it). All of these pits contained cultural deposits and four revealed intact remains including walls, pits, and a burial; the remaining two pits indicated that deposits at the site are over a meter deep. Materials from these tests indicate that this site represents a relatively late occupation of around A.D. 1200.

Overlap with right-of-way: The new right-of-way limit has been moved inside the existing right-of-way fence. Testing in 1988 shows extensive deposits inside the reduced right-of-way. The reduction of the right-of-way means that intact mounds are now within a zone that presumably still belongs to the State.

Research significance: The presence of multiple large structures in close proximity puts this site (possibly combined with LA 65029) into the same class as LA 37601. All of these structures are immediately adjacent to currently farmed acreage in a prime location. Indications are that large samples of artifactual material are available here, and that some architecture may well remain within the project limits. Excavation of the site will thus contribute to all phases of inquiry, including production and exchange, demography, and community structure. As the site is apparently a late one, it should help clarify the modes of adaptation in the valley near the time of its abandonment by the Anasazi. Establishing whether or not this site is chronologically and spatially contiguous with LA 65029 will determine what size class the site(s) belong in.

Field strategy: Features located in tests should be relocated and excavated, with expansion of excavation area as indicated.

Estimated effort: one crew 10 weeks.

LA 65031

Elevation: 5,570-5,640 ft

Ownership: Private (Richard Bramhall) and New Mexico State Highway and Transportation Department

Cultural affiliation and estimated period: Anasazi PI-PII and PII-PIII

Description: Located on the slope between the first and second terraces on the west side of the La Plata River, as well as at the base of the slope and on the adjacent flat area of the first terrace, this site is divided by both the highway and the Helton Ditch (Fig. 10). On the slope above the ditch there are scattered sherds, including a possible mixture of earlier and later gray wares, and a single Deadmans Black-on-red sherd. More abundant are lithic artifacts; those observed are mostly cores and large primary flakes, suggesting that this may have been a material acquisition area. The presence of sherds on the slope is somewhat difficult to account for, as there are none at the top of the slope. The mixture of types and forms (gray ware jars of several ages, the red ware bowl, white ware jars and bowls) suggests more than a material acquisition area. It is possible that a structural site analogous in location to LA 37606 was present here and the sherds are scatter from such a site. Material appears to be most concentrated toward the base of the

slope where there is a grassy band, but it also extends across shallow drainage on the south. The site was terminated at the larger drainage below LA 29442. Construction of the ditch could easily have destroyed some features. Between the ditch and the highway there is a narrow strip of undisturbed surface. The ditch has encouraged dense vegetation including very large sage, leading to poor site visibility. Cultural material is visible in the road cut and in open areas along the fence; there are some possible cobble concentrations here, but testing found no features on the west side of the road. Across the highway in a hay field there is a scatter of sherds and lithics and a few burned cobbles in an area about 35 by 45 m. This material has been plowed, and cobble piles along the dirt road along the north edge of the material area suggest that some rock clearing has taken place. Most of the sherds are PII-III, but there are a few possible earlier gray wares as well. Subsurface features were found by testing in this area. There is a sizable structural site east of this site, nearer the river (LA 1925).

Size: 130 by 125 m

Condition: The Helton Ditch, the highway, side road construction, and cultivation east of the highway affect the condition of the site. Some water and telephone line disturbance is also likely east of the highway.

1988 testing: Five test pits and three backhoe trenches were dug. Materials on the west side of the highway were found to be surface materials only, but several features are indicated for the east side of the road, and excavation is recommended.

Overlap with right-of-way: On the west side of the highway, areas east of the ditch will be in the new right-of-way; east of the highway at least half of the scatter area is inside the new right-of-way, particularly as augmented by the Temporary Construction Permit area to the north. Some surface material is in the current right-of-way, and testing found subsurface features over a large area east of the current right-of-way.

Research significance: The presently ambiguous features indicated by the testing program are located within a cultivated area. It may be, then, that this site contains features directly related to horticultural activities, whereas most other features encountered are living features. It is also possible that this site is in some way related to LA 1925 to the east. In any case, the different location and the possibility of unfamiliar features mean that this site could contribute to broadening the range of our understanding of Anasazi activity in this area.

Field strategy: Features located during testing should be relocated and fully excavated, expanding excavation areas as necessary to define extent and nature of intact features. Backhoe trenching should be extended to the north and as indicated by feature excavation.

Estimated effort: one crew 4 weeks.

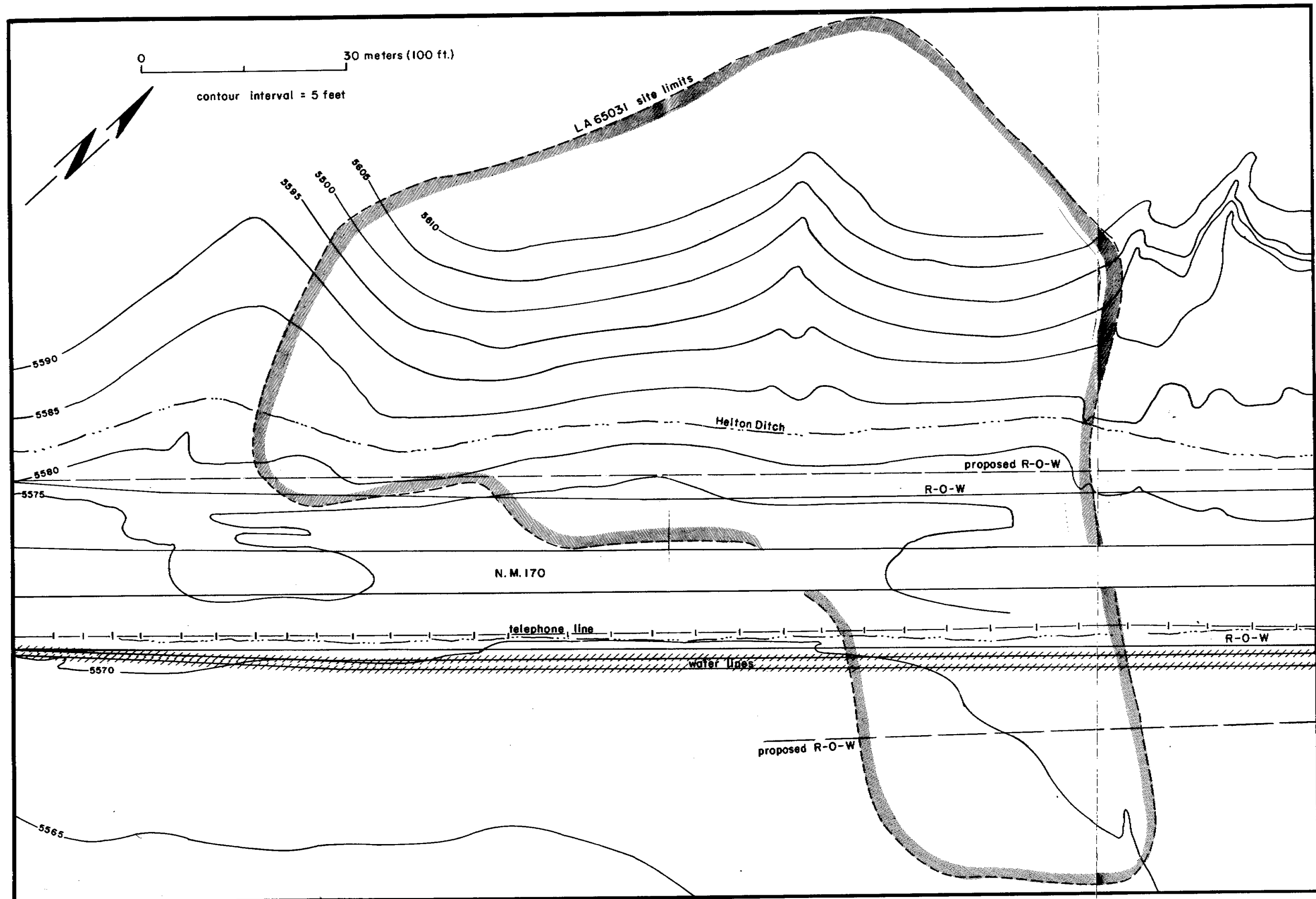


Figure 10. LA 65031 site map.

LA 37606

Elevation: 5,575-5,580 ft

Ownership: Private (Risen Hoover, Ward) and New Mexico State Highway and Transportation Department

Cultural affiliation and estimated periods: Anasazi PII-PIII

Description: Located at the base of the slope to the second terrace, this site is between the Helton Ditch and Highway 170 (Fig. 11). The surface indications include several mounds (Lancaster noted five), associated artifacts, and walls exposed by the highway borrow ditch. The road cuts and the tests show at least some of the walls to be intact to some height. The mounds are fairly small, but are in close proximity, suggesting the presence of multiple one- or two-room structures.

Size: 10 by 65m

Condition: The east edge of the site has been cut by construction of NM 170, and it is likely that the building of the Helton Ditch on the west also affected the site. A power line and a fence also pass through the site.

1982 tests: Six trenches were placed both within and outside mounds. Deep, intact walls were revealed at depths of up to 60 cm. At least three structural components are indicated.

1982 recommendation: Scientific data recovery.

1987-1988 evaluation: As noted in the survey (Lancaster 1982a:48), wall alignments remain visible in the road cut. There are clearly extensive intact deposits next to the current right-of-way, and excavation should be conducted if they cannot be avoided.

Overlap with right-of-way: The new right-of-way as marked includes the areas tested by Lancaster and all visible surface remains.

Research significance: Testing showed at least two rooms in a good state of preservation. The site seems to be composed of several closely spaced small structures, which is somewhat different from other sites in this area. Chronological, demographic, and functional analyses of this site will broaden our understanding of the extent of the Barker Arroyo community.

Field strategy: Intact features are visible in cuts and have been identified by testing; these features should be excavated before introducing disturbance by heavy equipment. Enough of each structure should be excavated to characterize fully each and to obtain samples from several use surfaces and features in each. Following excavation of known features, backhoe trenches should be used to locate pit structures and other buried features. Because of the ditch and a low spot by the highway, portions of this site are often under water. It will probably be necessary to dig drainage ditches well before excavation begins.

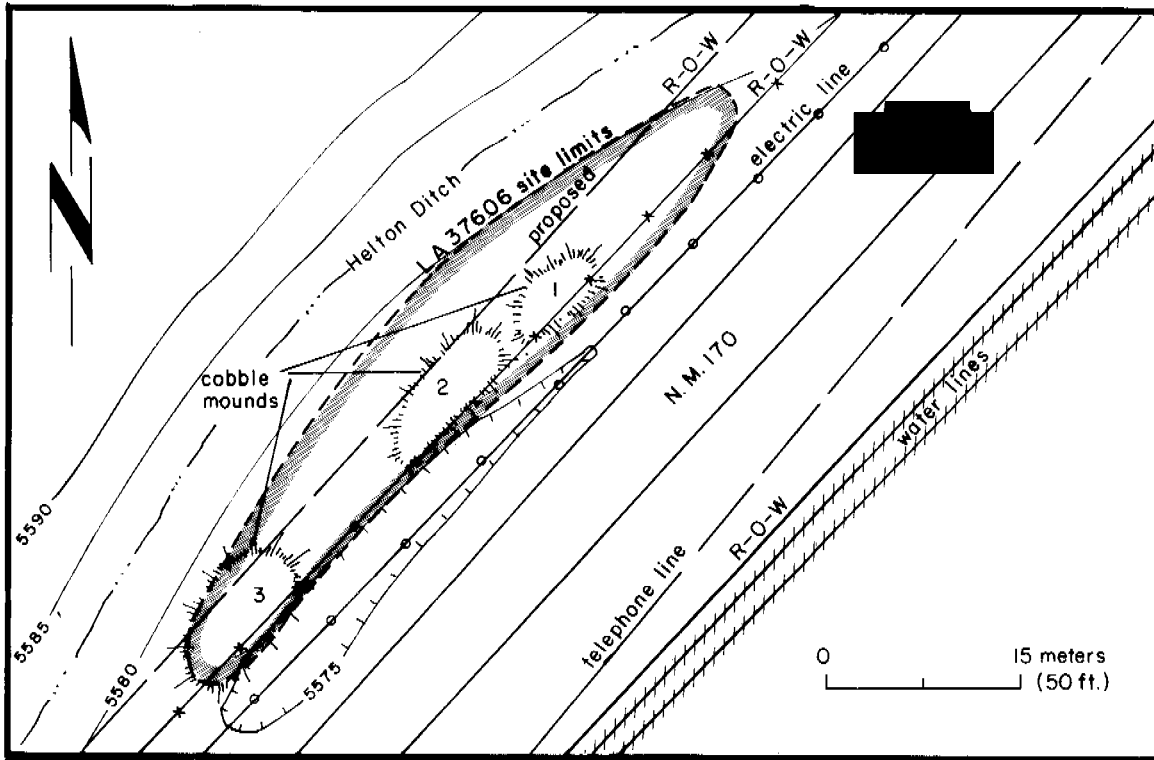


Figure 11. LA 37606 site map.

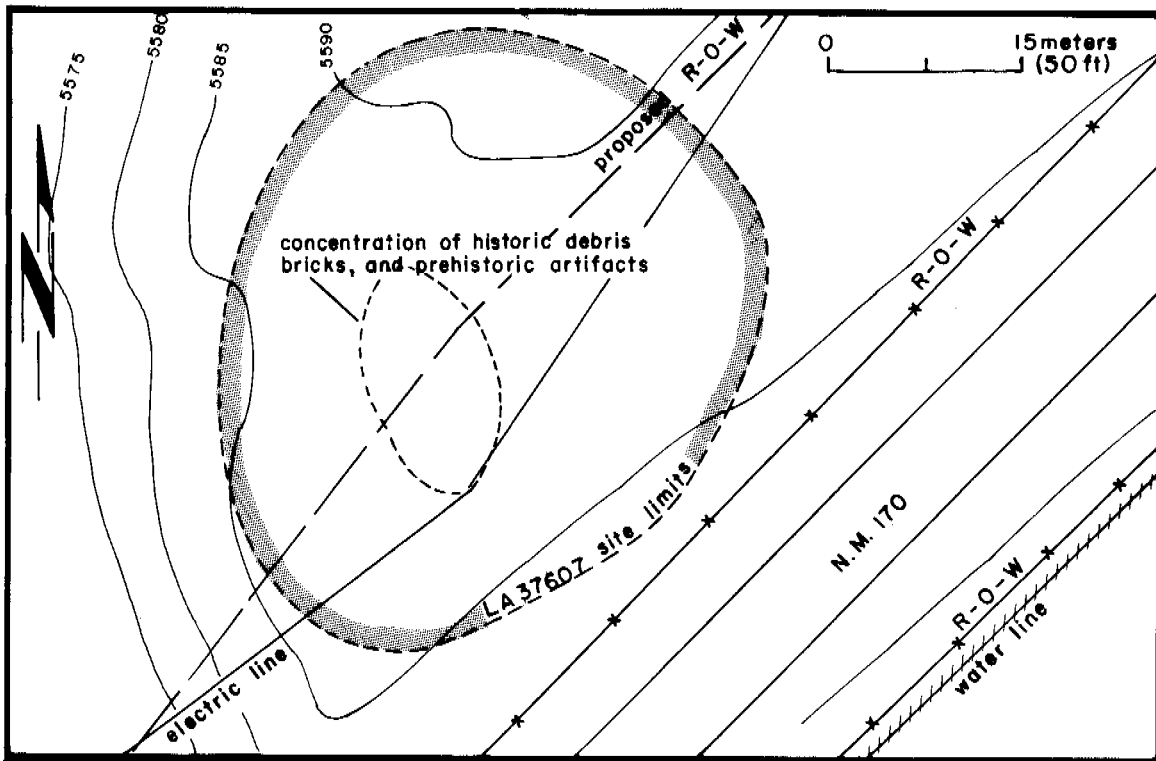


Figure 12. LA 37607 site map.

Estimated effort: There are enough visible, discrete features here to suggest that substantial time will be required, especially if pit structures are associated. One crew 8 weeks.

LA 37607

Elevation: 5,585-5,590 ft

Ownership: Private (James Bramwell)

Cultural affiliation and estimated periods: Anasazi PII? historic Anglo.

Description: This site is situated on a flat portion of the point formed by the entrance of Allen Arroyo into the La Plata Valley; it is about midway between the valley floor and the second terrace (Fig. 12). The most conspicuous remains are from an historic adobe house with brick chimney and associated features. Prehistoric artifacts are present in the same area; it is unknown whether prehistoric features remain on the site; it is, of course, possible that the prehistoric artifacts were introduced by the historic inhabitants.

Size: 45 by 50 m

Condition: A power pole has been placed near the structure, but other disturbance appears to be minimal.

1982 tests: Two trenches revealed shallow fill outside debris from an historic house and deeper fill and a probable floor level inside. Auger tests in a depression east of the house suggest a cellar with deposits at least 70 cm deep.

1982 recommendation: Scientific data recovery. A research design specific to this site was prepared by T. Seaman (in Lancaster 1983:89-90; see Appendix 1). It points out the need to supplement the incipient data base for late nineteenth- to early twentieth-century sites, and further discusses the use of documents.

1987-1988 evaluation: Concurrence with the need for excavation. Further excavation should be done to ascertain whether or not prehistoric features are present.

Overlap with right-of-way: The proposed right-of-way bisects the historic structure remains. This right-of-way cannot feasibly be moved.

Research significance: As noted by Seaman (see Appendix 1), excavations from the historic component will supplement the archaeological data base for early twentieth-century European occupation of New Mexico and will provide interesting comparative material from the larger data base for Navajo sites of the same period from this region. The amount of excavation required here will depend in part on the amount of documentary evidence available. If substantial information about the structures is available, less excavation will be necessary, but sufficient artifactual material should be recovered to allow archaeological comparison both with the documentary evidence and with other sites of similar age in the area.

The presence of a prehistoric site in this location will contribute several things to the prehistoric data base. The location is different from the others in this segment in being more removed from the floodplain. The site is also far enough from Morris 39 (LA 1897) that it might have belonged to a different community. Conceivably, some continuum of involvement based on distance might have existed here, and might be evident in the highway transect.

Field strategy: Long-time residents of the valley should be interviewed about the occupants and the extent of the historic structure and a search should be made to determine whether historic documents for this structure exist. The amount of information available through these channels will condition the eventual course of further excavation. It is possible that the historic construction eradicated intact evidence of prehistoric occupation, but excavations should be performed to determine whether the prehistoric material here results from the presence of features or whether it is from collecting by the historic inhabitants. Part of this excavation should be directed to determine whether the depression within the debris from the house is strictly historic or whether it has a prehistoric precursor.

Estimated effort: Document search and interviews: 1 person, one week; assuming that some records exist, excavation of the historical component is estimated at one crew, 3 weeks. The prehistoric component is estimated at one crew, 4 weeks, for a total of 7.

METHODS

The following is a general summary of procedures to be followed during this phase of the project. A detailed discussion of recording forms and field operating procedures is under development and available on request.

Procedures for Hand Excavation

Only those portions of sites located within the project right-of-way and associated construction zones will be excavated. The transect provided by the right-of-way constitutes a fairly small sample of the sites in the area. In order to have some control on the variability within the site cluster, samples of all manifestations within the right-of-way need to be excavated. Our objective is to investigate all intact features in the right-of-way and excavate them sufficiently to sample their contents and record their morphology.

Preliminary to work on any site to be excavated, a baseline for a grid system will be established. The grid system will be used for surface collection and for location of other excavation units. Surface collection in 3 by 3 m grid units was found to be too fine grained and time consuming during 1988 given the disturbance in the right-of-way area and the extent of many of the sites. Use of a 12 by 12 m grid is much more efficient and can still reveal patterning in surface material distribution. In cases where large concentrations are present or disturbance is less, the site supervisor will reduce the collection grid as appropriate.

During excavation, naturally defined horizontal and vertical units are considered optimal. Therefore, areas with probable features visible from the surface will first be cleared using grid control until such time as a unit such as a room is defined, at which time the room will become the excavation unit. Grid control will be maintained for extramural activity areas, and smaller extramural features such as firepits will be tied to use surfaces and excavated as part of their respective grids. Features inside architectural units will also be tied to floors and excavated in floor groups. In general, stratigraphic control for any feature will be established through controlled excavation of part of the feature to provide a profile. The profile will then guide removal of the remaining fill in natural stratigraphic units.

During preliminary excavation, in cases where natural units are very thick, or where no natural units can be defined, 10 cm arbitrary units will be imposed. Fill to defined use surfaces (formal floors or other activity surfaces) will be removed as single units of 15 cm or less, leaving floor artifacts in place for plotting. Very large features (such as pit structures) will be subdivided to increase horizontal provenience control. All materials excavated from undisturbed cultural contexts will be passed through ¼-inch screen, unless features or small artifacts or bone indicate the use of finer screen. In badly disturbed contexts or where fill is known to have low artifact content and be noncultural in deposition, screening will be dispensed. In such cases, however, a control block will be excavated and the fill will be screened. Pollen and flotation samples will be collected from features and floor fill. Floor artifacts will be located horizontally and vertically and indicated on feature maps. A subfloor test will be placed in any excavated architectural

feature to ascertain whether cultural deposits continue; all deposits will be excavated to sterile soil.

Following excavation of all features visible from the surface, trenching and surface stripping with power equipment will be used to maximize the recovery of cultural material. Trenching and blading at any site is regarded as a method of increasing the likelihood that features that would otherwise be missed will be located and investigated. In describing his 1916 investigations of his Site 39 (LA 1897), Morris found deposits up to 5 m deep in areas with little surface indication of subsurface materials (Morris 1939:50). Similarly, none of the pitstructures dug in our 1988 excavations was indicated on the surface, and limited hand tests suggested that no intact features were present at several locations where major remains were in fact present. Given both the alluvial conditions and the condition along the highway, long backhoe trenches have proven to be the best method of insuring that buried features will be found. Use of surface stripping can be helpful, but both attaining sufficient depth and placement of backdirt are problematic when large areas are involved.

Backhoe trenching will be performed mainly in areas adjacent to those in which features are known to exist. Both the trench and the fill are monitored so that the machine can be stopped if a feature is encountered. Trench walls are straightened and scraped by hand, and a profile is drawn of the deposits. A side benefit of having such trenches is that they provide opportunities to study the geological depositional history of the location in addition to the cultural deposits. Any features revealed by backhoe trenching will be profiled and then sufficiently excavated and sampled by hand so that the feature's nature and extent can be assessed. The backhoe will also be used to remove noncultural fill from large, deep, defined structures. The preferred sequence in such cases will be to define the horizontal and vertical dimensions of the structure using hand tools, and remove a controlled, screened block of fill by hand before backhoe excavation.

Excavation procedures at the historic site (LA 37607) will be largely similar to those at prehistoric sites with some exceptions. If excavation of the structure reveals sufficient architectural information to warrant it, a New Mexico Historic Building Inventory Form will be completed for the structure. Measurements will be given in both meters and feet, since the latter is the unit probably in use during the construction of the house. Given the intention to compare artifacts from this site with contemporaneous Navajo sites, a controlled collection of material will be made at this site, as at prehistoric sites. If the structure was adobe (as indicated by surface remains), samples of adobe will be collected for potential analysis.

All tests and features will be mapped using a transit. Artifacts will be kept in provenience groups, cleaned (if appropriate), and analyzed. Records and artifacts will be curated in the Archeological Records Management System and the Archeological Repository, Museum of New Mexico, in Santa Fe.

Analysis

Laboratory analysis of materials recovered will be conducted both by the staff of the Office of Archaeological Studies and by professional consultants. Analytical systems have been established and are ongoing with materials excavated in 1988. Care is being taken that the

various assemblages from different sites and different seasons be analyzed using the same procedures and definitions, in order to produce one large, consistent data set. The major materials anticipated and a brief description of categories of information desired from each are presented below.

Ceramics

Ceramics stand to contribute to temporal placements, functional assignments, and to questions of regional exchange. Ceramics will be identified by existing type names and vessel form; a sample, controlled for vessel duplication, will be examined under the binocular microscope to identify tempering material, and this sample will also have a more detailed suite of attributes recorded. A smaller sample will be submitted for petrographic analysis to provide depth for binocular temper identifications and perhaps to refine understanding of regional ceramic production.

Lithic Artifacts

Both functional and economic questions may also be addressed by chipped stone analysis. Though most of the material is likely to be from local gravels, some nonlocal materials will probably be present. Debitage will be analyzed for attributes relating to material procurement and reduction sequences. Tool morphology, production, and use can contribute to locating and defining activities performed.

Ground Stone

Analysis of ground stone tool type, size, grinding surfaces, and manufacture is also important to functional determinations of structures and to patterns of material acquisition; in appropriate contexts analyses of materials adhering to ground stone will be submitted for identification.

Faunal Remains

Faunal assemblages will be analyzed for information relating to subsistence and to utilization of bone for tools. The faunal analysis will focus on species identification in order to document faunal procurement and consumption, and their variability across time and sites. Bone tool distribution is yet another aspect of understanding site and feature function.

Floral Analysis

Pollen and flotation samples will be collected from all proveniences showing potential for providing information about subsistence practices and micro-environmental conditions. The identification of plant species will provide data on the range of wild and domestic plants in use and the relative importance of various species. Analysis of charcoal species will provide information on fuel use in the valley, from which intensity of tree cutting may be inferred. Any intact macrobotanical specimens will also be identified.

Burials

Preliminary work indicates that it is certain that human remains will be encountered. These remains must be treated with the utmost respect, according to the policies of the Museum of New Mexico. They will be removed using hand techniques, with appropriate pollen and flotation samples taken. Skeletal materials are a very important source of information, and they will be analyzed by osteological specialists. Age and sex information are crucial to developing demographic curves for the valley. Context and offerings help date the remains, and provide information on social organization. Paleopathological analyses elucidate dietary stress and health conditions of various sectors of the population. Human remains excavated by the Museum of New Mexico are presently kept in storage at the University of New Mexico Physical Anthropology Laboratory.

Exotic Materials

Low frequency items such as turquoise and shell will be identified as to source insofar as possible. The contexts of such items are relevant to understanding both their social significance and questions of social placement of sites in the community and the region.

Historic Artifacts

Historic artifacts will be processed through an analysis devised for them (see Anschuetz et al. 1985; Appendix 1). Items will be assigned to functional categories and will be dated. Comparative materials from recent excavations of Navajo sites on the Navajo Indian Irrigation Project (Kirkpatrick 1980) will be consulted.

Research Results

The final report will be published in the Museum of New Mexico's Office of Archaeological Studies *Archaeology Notes* series. The report will present all important excavation, analysis, and interpretive results. Included will be photographs, maps, and data summarized in the form of tables and graphics. Raw data such as field notes, maps, and photographs, will be deposited with the State Historic Preservation Division, Archaeological Records Management System, currently located at the Laboratory of Anthropology in Santa Fe. The artifact collection will be curated at the Museum of New Mexico's Archaeological Repository. Ultimately a synthesis will be prepared utilizing information gathered in the several phases of the La Plata Highway project.

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Appendix 1. Research Design for LA 37607, by Timothy Seaman
(updated from Lancaster 1983:89-90)

Research Goals

Although historical research is necessary to positively identify the inhabitants of LA 37607 and its period of use, it is believed that the site represents a farm or homestead dating to the early twentieth century. As such, the site is thought to contain information of potential significance to both historical and archaeological research. Historically, LA 37607 may indirectly (i.e., through documentary research) provide data relevant to the initial settlement of the La Plata Valley. Archaeological data, in the form of architectural and material culture descriptions, are also expected at the site. These data are considered potentially significant for several reasons. First, the data contained in LA 37607 would constitute an important contribution to a small but rapidly growing data base of residential sites [dating] to this period throughout New Mexico. The Museum of New Mexico has recently completed archaeological and historical investigations at several homesteads near Tukumcari (Seaman 1991), Las Vegas (Maxwell 1983), and Roswell, New Mexico (Oakes 1983), occupied during the late nineteenth and early twentieth centuries. Because historical archaeology in the state has received only minimal attention until quite recently, it is imperative that an adequate data base be built for sites of all types dating to this time period. Without such data serving as a basis for pattern recognition studies, historical archaeology will remain a particularistic endeavor with little potential for substantive advancement as a discipline of anthropology.

Data contained in LA 37607 are considered significant for their contribution to this data base. However, other equally important areas of research can be envisioned which might profitably use information contained in this site. For instance, the LA 37607 assemblage could provide a comparative data set for contemporaneous Navajo habitation sites in the Four-Corners area. Comparisons among such sites and early twentieth century homesteads such as LA 37607 occupied by other ethnic groups would enhance investigations of Navajo culture concerning differential access to and/or preferences for various classes of Euro-American manufactured goods through time and in different areas of the Reservation. Also, provided that historically documented dates of occupation can be obtained for LA 37607, it may be possible to compute 'lag' times for the introduction specific items of Euro-American manufacture onto the Navajo Reservation and thus enhance presently employed chronological controls for the many unheralded Navajo sites.

LA 37607 may also contain data crucial to the previously outlined prehistoric research in the La Plata Valley. Test excavations at the site were inconclusive regarding the presence of a prehistoric component and further testing can be conducted only after the historic component has been excavated.

Research Strategy

The investigations proposed for LA 37607 incorporate both historical (archival) research at the local, state, and federal levels, and archaeological investigation. Historical research, performed prior to excavation, will focus primarily upon the identification of the site's inhabitants, documenting its period of use, and determining its functions as reflected in the historical record. In this regard, U.S. General Land Office Records (i.e., homestead/patent records) housed in Santa Fe, New Mexico, and Washington, D.C., are especially useful as they commonly contain a variety of documents pertaining to the above areas of interest. County records such as tax assessments, marriage records, and warranty deeds are also valuable sources of information.

The excavation of LA 37607 will focus on the collection of descriptive data concerning the content and structure of the site. The investigation will concentrate on the house mound and surrounding area suspected to contain auxiliary structures, features, or activity areas (e.g., outhouses, corrals, etc.). Material culture recovered from these excavations will serve two purposes. First, the distribution and condition of various functionally specific classes of artifacts will assist in the positive identification of features and activity areas. Secondly, the recovered material culture will provide the opportunity to build a comparative assemblage and evaluate the precision and accuracy of various dating methods currently in vogue in the field of historical archaeology, e.g., South's (1977) formula-based methods.

Upon the completion of excavations focused on the identified historic remains, an attempt will be made to search for the suspected but unconfirmed presence of a prehistoric component. These test excavations will be extensive in nature and will make judicious use of power equipment. Should *in situ* prehistoric remains be found, more detailed and intensive excavations will be initiated in accordance with the preceding prehistoric research design.

Laboratory analysis of the recovered historic artifacts will concentrate on the extraction of chronological and functional information from the assemblage. Artifacts will be systematically classified using functional groupings comparable to other homestead assemblages housed at the Museum and coded in computer readable form along with additional provenience, metric, and stylistic attributes. After key entry and editing, summary tables and graphic representations of these data will be produced for comparative and dating studies. Laboratory analysis will also involve additional historical research aimed at relating LA 37607 to regional historical developments.

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