MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

AMENDMENT TO ARCHAEOLOGICAL TESTING REPORT AND DATA RECOVERY PLAN FOR TWO HISTORIC SPANISH SITES ALONG U.S. 84/285 BETWEEN SANTA FE AND POJOAQUE, SANTA FE COUNTY, NEW MEXICO

by
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Submitted by
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ARCHAEOLOGY NOTES 272

SANTA FE 2000 NEW MEXICO

ADMINISTRATIVE SUMMARY

Following completion of archaeological testing and submission of a report that details testing results and develops a plan and research implementation for data recovery at LA 160 and LA 4968, the former site was damaged by construction-related activities. This necessitated adaptation of the existing data recovery plan to the new circumstances. An assessment of damages to LA 160 was made and is discussed in this document, as are proposed changes to the data recovery plan, which takes the construction-related damage into account.

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NMSHTD Project No. AC-NH-HPP-084-6(55)16
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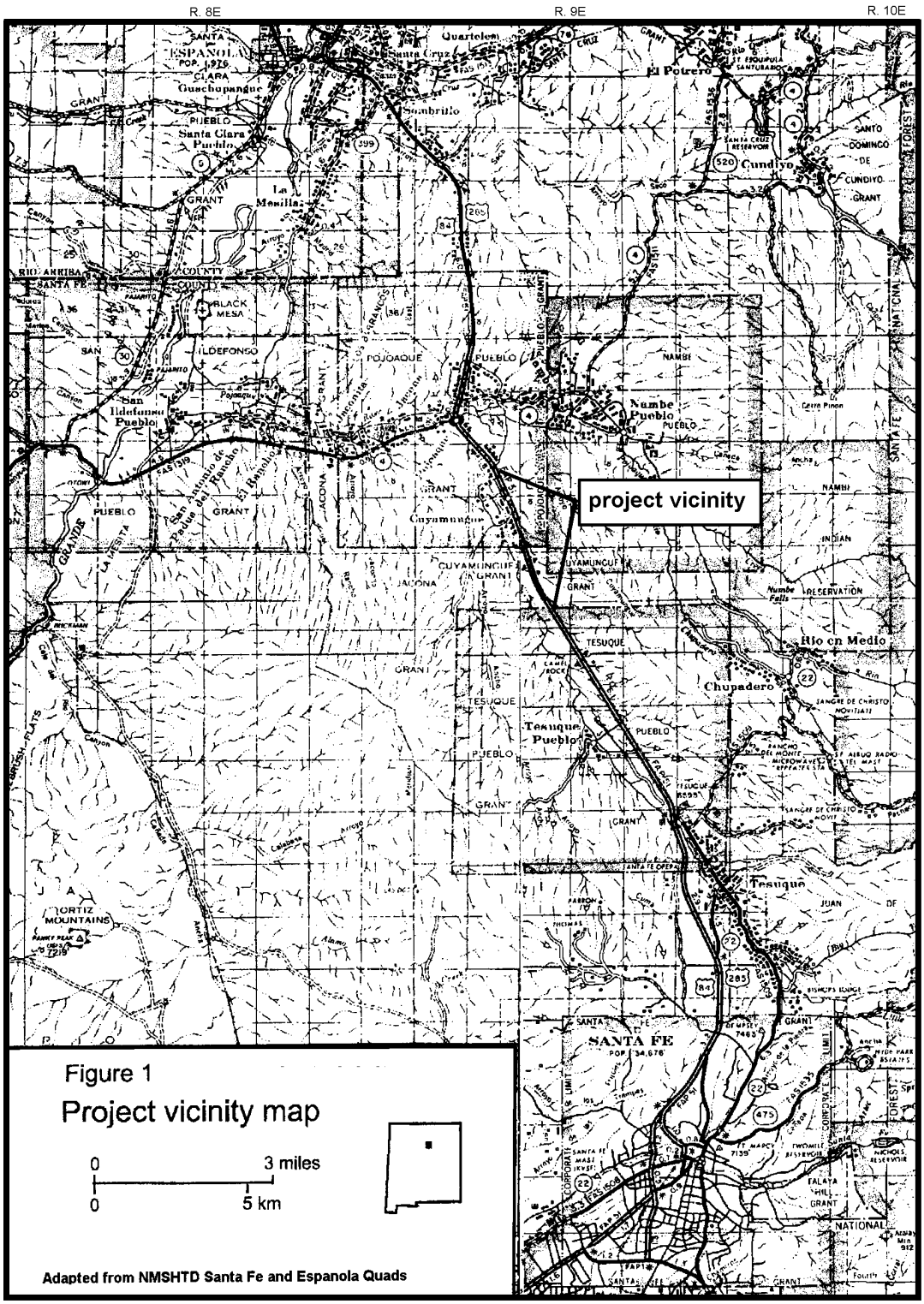
INTRODUCTION

At the request of the New Mexico State Highway and Transportation Department (NMSHTD), the Office of Archaeological Studies (OAS) of the Museum of New Mexico conducted test excavations and prepared a data recovery plan for two historic sites along U.S. 84/285 between Pojoaque and Tesuque in Santa Fe County, New Mexico. That plan was submitted to the NMSHTD as *Archaeology Note* 268 (Moore 2000); it discusses the results of testing at LA 160 and LA 4968 and presents a research orientation and plan for implementing that orientation during data recovery. Following submission of this plan, LA 160 sustained extensive damage from construction-related activities. This necessitated an assessment of those damages and modification of the data recovery plan to take changes to the physical condition of the site into account.

LA 160 is located along U.S. 84/285 between Pojoaque and Tesuque in Santa Fe County, New Mexico (Fig. 1). The land on which LA 160 sits is owned by the Pueblo of Pojoaque, and therefore comes under the administrative jurisdiction of the USDI Bureau of Indian Affairs (BIA). Because of our recent work at LA 160, the BIA recommended to the NMSHTD that the OAS complete the assessment of construction-related damages to LA 160 (letter of January 20, 2000 from K. Chicharello to F. Conley). The OAS was contacted by the NMSHTD on January 27, 2000 (letter from F. Conley to T. Maxwell), requesting that we execute this undertaking.

The field assessment of damages was completed between January 31 and February 3, 2000, by James L. Moore, assisted by James Quaranta. This stage of investigation was conducted under the same permit as was the testing phase (ARPA Permit No. BIA AAO-99-002). Prior to initiation of field work, we informed the office of Lt. Governor George Rivera of the Pueblo of Pojoaque that we would be conducting further investigations at LA 160 (phone conversation of January 31, 2000).

This document contains a summary of the findings of the damage assessment, and amends the data recovery plan submitted to the NMSHTD as *Archaeology Note* 268 (Moore 2000). Changes to that plan, which are developed in this report, pertain only to LA 160. Since LA 4968 did not sustain any damages, no alterations to the proposed treatment of that site are made. This document represents an amendment to the data recovery plan for LA 160, and therefore we do not detail aspects of the physical or cultural environment. Those topics are discussed in the original plan (Moore 2000). The damages sustained at LA 160 also necessitate changes to the plan for implementing our research orientation during field investigations. However, the basic research orientation developed for the examination of LA 160 and LA 4968 is not altered, and stands as presented in *Archaeology Note* 268 (Moore 2000). Thus, that part of the original data recovery plan also is not repeated in this document.


R. 8E
R. 9E
R. 10E
T. 19N
T. 18N
T. 17N
project vicinity
Figure 1
Project vicinity map
0
3 miles
0
5 km
Adapted from NMSHTD Santa Fe and Espanola Quads

DESCRIPTION OF LA 160

Introduction

LA 160 is located near the north edge of the project area (reconstruction of the Santa Fe to Pojoaque corridor of U.S. 84/285), and falls within a wide zone that will contain an interchange when the project is completed. Testing was initiated by the OAS to examine the part of LA 160 within the proposed right-of-way, and to assess the depth and extent of any remains found in that area. When that area was damaged by construction-related activities, an assessment of the extent of those damages was undertaken by the OAS and is the focus of this report. The section of the site within project limits probably comprises less than 10 percent of its total area, though this is uncertain since the full extent of LA 160 has never been accurately determined. Previous studies have usually been confined to surface examination, although part of the site was excavated but never reported upon. Unless otherwise noted, records discussed in this section are on file at the Archeological Records Management Section of the New Mexico Historic Preservation Division.

Previous Studies of LA 160

LA 160 was first recorded in the 1930s by H. P. Mera of the Laboratory of Anthropology. His site plan shows a fairly large structure in the form of a reverse-h measuring about 35 m east-west by 31 m north-south, with a smaller detached structure (about 15-by-9 m in size) a few meters to the east. If this is the same structure identified by later surveys of the site, it is outside but directly adjacent to the proposed right-of-way. Mera's field notes indicate that he recognized LA 160 as a historic residence, since mostly historic Tewa series pottery types were recorded. However, a few Biscuit B sherds were apparently also seen.

In preparation for construction along U.S. 84/285 in 1959, Stewart Peckham of the Laboratory of Anthropology excavated a four-room structure at LA 160. This examination has never been formally reported. According to a photocopy of a section of NMSHTD project plans included in the LA 160 site file, this structure was on the east side of the current right-of-way, opposite the area examined by this project. Although Peckham's study has never been reported, his notes indicate that the structure dated to the last half of the nineteenth century. Local informants identified the structure as the post office for the former settlement of Valdez, but this identification is questionable. Dike (1958-1959) indicates that only one post office was associated with a community named Valdez during the American Territorial period (1846 to 1912), and it was in Taos County. In addition, Peckham's notes indicate that an horno was associated with the structure in addition to domestic refuse. Thus, this structure probably represents a residential locale.

The next examination of LA 160 occurred in 1962 as part of the Highway Cultural Inventory Project, which was a statewide survey of sites within highway rights-of-way. The documentation from this examination describes LA 160 as a prehistoric site dating ca. A.D. 1100 to 1500 that might contain multiple eroded pithouses. A note to this effect was entered on Mera's survey card. The sketch map associated with this examination places LA 160 in the correct location. Considering that no historic pottery types were identified by this study, we must conclude that the archaeologist found none on the surface or had little or no knowledge of historic native pottery types and misidentified the assemblage.

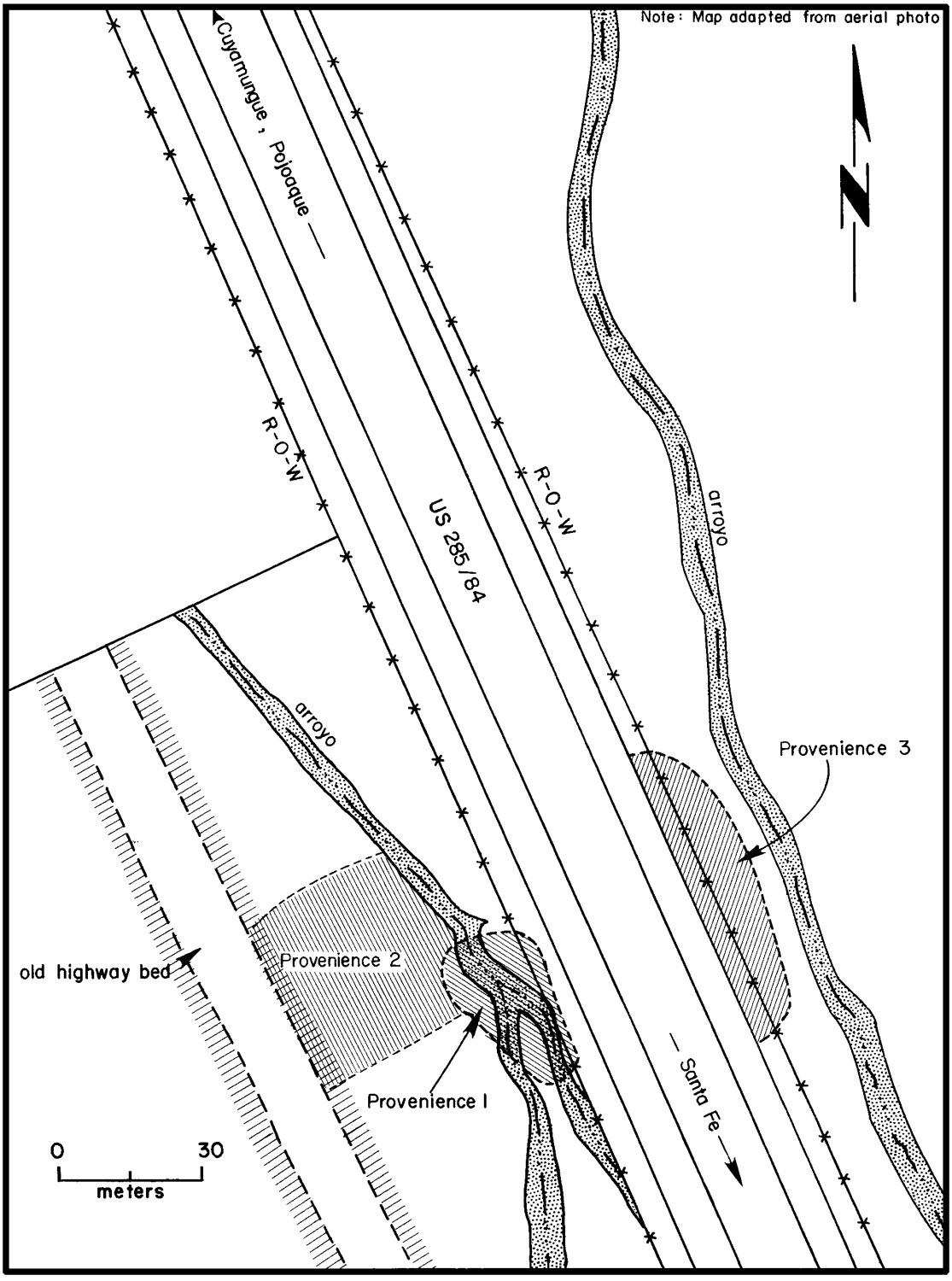


Figure 2. Sketch plan of LA 160 (from Moore 1989, based on Haecker 1987).

LA 160 was again recorded in 1987 in preparation for the construction of a port-of-entry along U.S. 84/285 by the NMSHTD (Haecker 1987). This study recognized the site as a historic Spanish residence, and assigned it a seventeenth- to eighteenth-century date. A data recovery plan was prepared for portions of LA 160 within project boundaries (Moore 1989), but was never carried out because the planned port-of-entry was canceled before excavation began. Haecker's field notes suggest the presence of a structural mound (40-by-30 m in size) between a shallow arroyo and an abandoned road bed west of the current highway (Provenience 2 in Fig. 2). Southeast of the mound he noted a midden containing numerous artifacts (Provenience 1 in Fig. 2). A scatter of artifacts was identified on the east side of U.S. 84/285 (Provenience 3 in Fig. 2), but Moore (1989) concluded that they did not represent intact cultural deposits. Indeed, this artifact scatter appears to be the location of Peckham's 1959 excavations.

Subsequent examination in preparation for the aforementioned data recovery plan verified the presence of the structure and midden, which at that time appeared to be an eroding trash pit. Based on these studies, LA 160 was recommended for the Archaeological Site Stabilization and Protection Program, another examination of sites within highway rights-of-way conducted by the OAS for the NMSHTD. However, a site update form from that study indicates that LA 160 is not eligible for examination under the guidelines of that project because there are no obvious cultural remains within the current highway right-of-way.

Another study of LA 160 was completed in preparation for the current highway project (Hohmann et al. 1998). This examination again defined LA 160 as a Spanish Colonial residence. However, more recent historic materials were also noted across the site which seem to date to the twentieth century. A fairly large structural mound was observed (51-by-30 m), consistent in location with the one seen by Haecker. The possible midden observed during earlier studies was also identified.

LA 160 was examined by Peter McKenna of the Bureau of Indian Affairs in 1999. McKenna mapped the structure and midden noted by earlier investigators, and extended site limits nearly to the Rio Tesuque with the inclusion of several other potential structures and trash areas. In this study the structural mound measures 45-by-15 m, which is much smaller than others have suggested. McKenna's examination of vegetation patterns on aerial photographs suggested that other major structural remains, potentially a Spanish plaza settlement, might be located directly south of the known structural mound. Several other possible structures were defined on the same basis. This led to concerns that LA 160 might be much larger than recognized by previous researchers, and that it would represent a major effort during data recovery.

Test excavations at LA 160 concentrated on the portion of the site within the proposed right-of-way for the reconstruction of U.S. 84/285 (Moore 2000). Even so, this study provided a more detailed analysis of the site than did any of the earlier examinations. Figure 3 presents a plan view of the tested portion of LA 160 within the proposed highway right-of-way. Three areas containing sheet trash deposits were identified. These deposits correspond to the location of the trash midden observed during earlier studies. They may represent a single related series of deposits that were subsequently cut by erosional channels and separated into the three areas now visible. Conversely, the erosional channels may represent landscape features that were present at the time of deposition. In the latter case, there may be some temporal variation in assemblages from the trash areas, indicative of disposal at somewhat different times.

While the identification of potential structures outside proposed project limits was not accomplished during this investigative phase, the stands of Russian knapweed within that area,

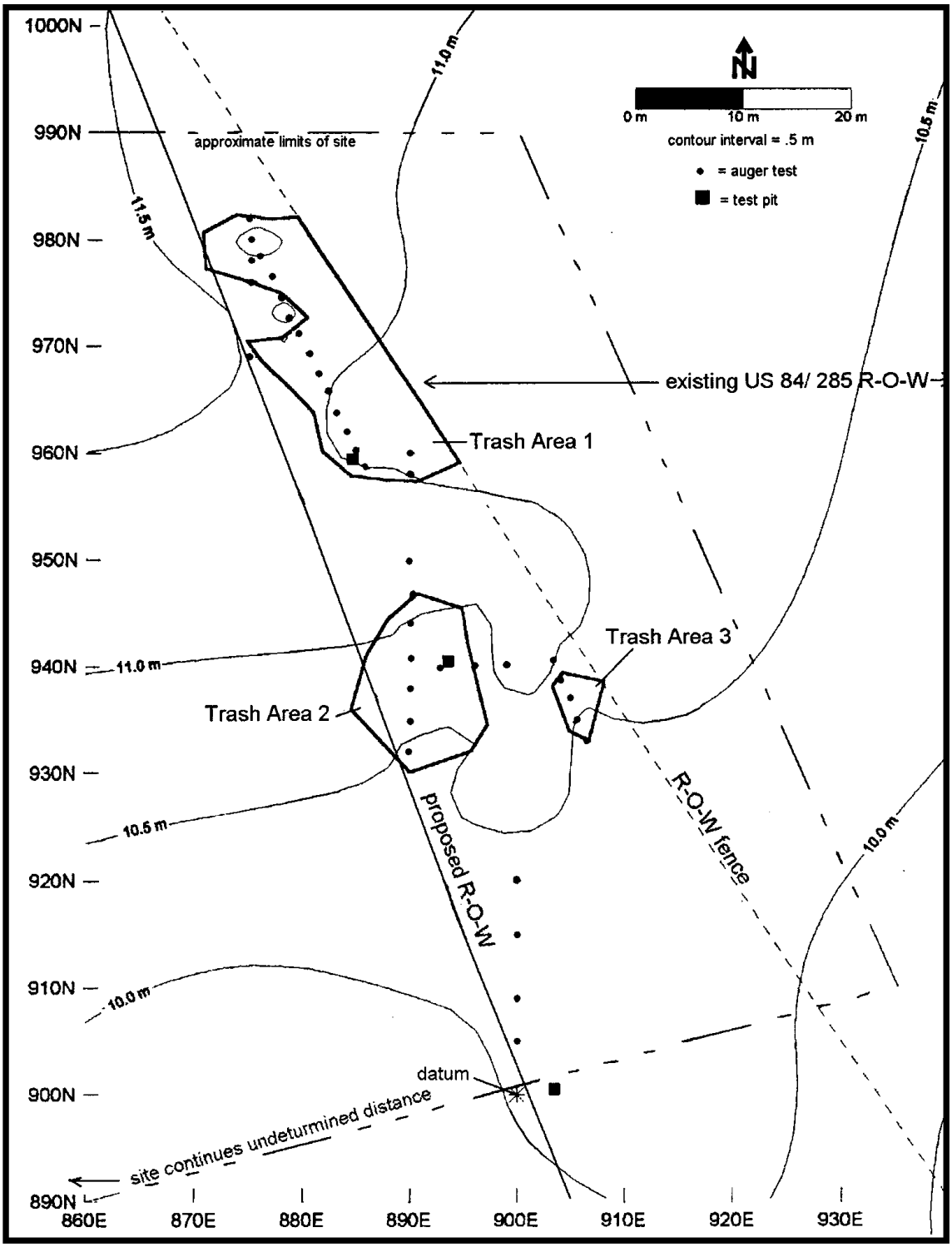


Figure 3. Plan of the tested portion of LA 160.

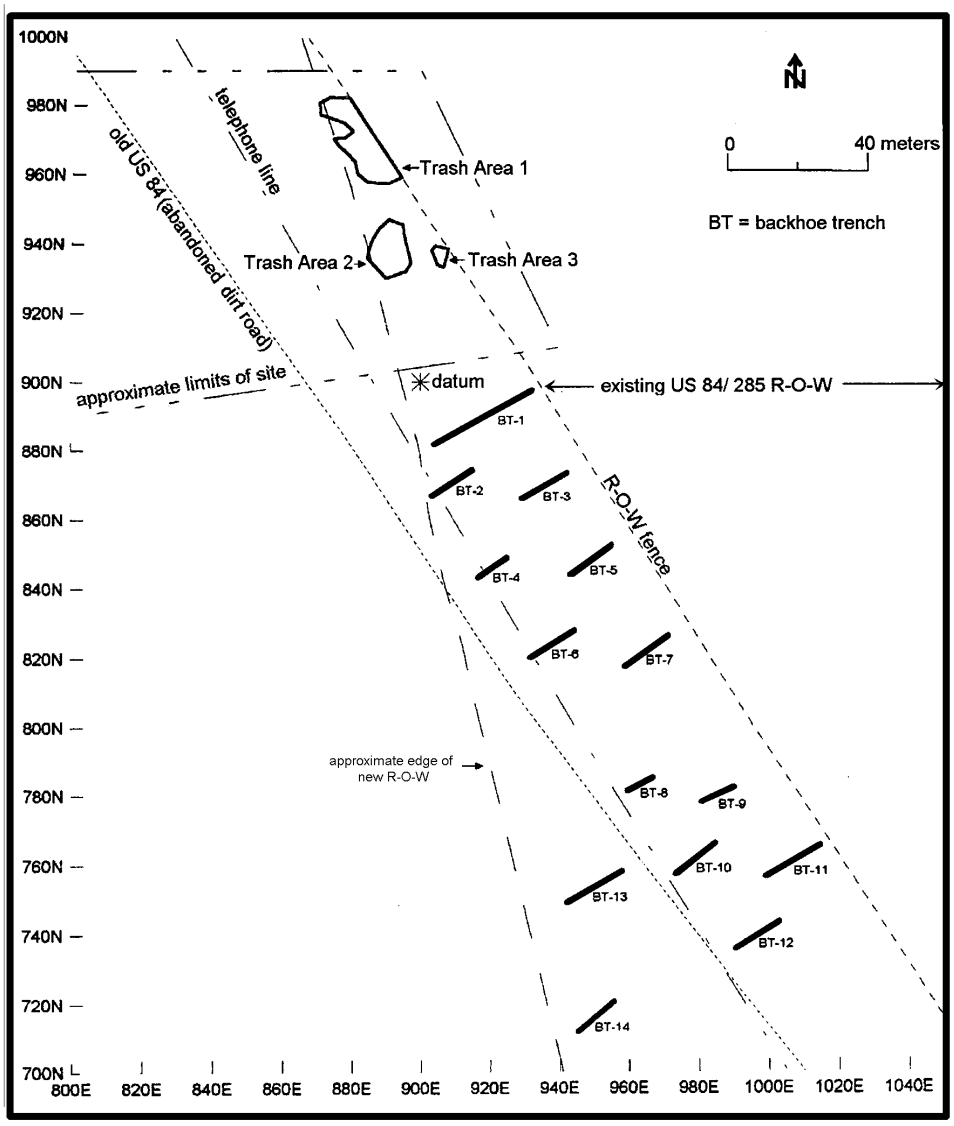


Figure 4. Plan of the total area examined during testing at LA 160 showing the locations of mechanically excavated trenches.

which McKenna thought might represent structural remains, were examined. Fourteen mechanically excavated trenches were used to investigate this area, which extended 180 m southeast from the probable edge of LA 160 within the proposed right-of-way (Fig. 4). No structures, cultural features, or cultural deposits were encountered within this area, suggesting that LA 160 does not extend south of the approximate site boundary within proposed project limits (see Fig. 4).

Preliminary analysis of artifacts recovered during testing suggested that the Spanish Colonial period date previously assumed for LA 160 may be incorrect. Comparison of the native ceramic assemblage from this site with those from other Spanish sites excavated in New Mexico and dating between the early Spanish Colonial and Railroad periods suggested that the portion of LA 160 examined during testing dates to the Santa Fe Trail period (1821 to 1880) or later (Moore 2000). The recovery of few Euroamerican artifacts acquired through trade with the eastern United States could indicate that this part of the site dates to the early part of the Santa Fe Trail period (ca. 1821 to 1850). Conversely, sample error or the economic condition of site residents could also have been responsible for the paucity of Euroamerican artifacts, and a somewhat longer time span could be applied to these

remains (ca. 1821 to 1880).

To summarize, LA 160 has been examined by archaeologists on at least nine occasions. With the exception of Peckham's excavation, the section of LA 160 recorded by the various surveys is situated on the west side of U.S. 84/285. The Mera, Haecker (1987), Hohman et al. (1998), and McKenna studies all identified a mound that seems to represent the remains of a melted adobe structure. Though each researcher provides a different size for this mound, the relative consistency of measurements suggests that it is the same feature in each case. Haecker (1987), Moore (1989, 2000), and Hohman et al. (1998) indicate that trash deposits occur to the east and southeast of this mound. In addition to the probable structure and midden, Haecker (1987) and Hohman et al. (1998) felt that the wide gully, which separates these features, represents the remains of an acequia. Haecker (1987) based this conclusion on the straightness of this section of channel, which he considered unnatural. McKenna suggests the presence of numerous other structures that were not identified by earlier studies, based on the pattern of Russian knapweed distribution.

Description of the Site

As can be seen from the previous discussion, descriptions of cultural remains at LA 160 differ according to the archaeologist doing the recording. In order to provide the most detailed description of LA 160 possible, it is necessary to summarize from the more recent examinations of the site including Haecker (1987), Moore (1989), Hohmann et al. (1998), McKenna's unpublished notes, and the results of testing at the site (Moore 2000).

Haecker (1987) indicates that LA 160 measures 120-by-80 m, and includes a structural mound, midden, and scatter of artifacts on the east side of the highway. Moore (1989) essentially agrees with these dimensions, though he questions the association of remains on the east side of the highway. Hohmann et al. (1998) suggest that the site measures 210-by-185 m, extending it to both the west and south to include the limits of an associated artifact scatter, but not the structure excavated by Peckham. In these descriptions the only features mentioned are the structural mound and one or more trash areas.

The most detailed examination of LA 160 was the unpublished survey completed by McKenna. Dimensions derived from his sketch map indicate that the site measures 225 m southwest-northeast by 85 m northwest-southeast. In addition to the probable structure and midden observed by the other studies, McKenna identified five other possible structures, trailing off toward the southwest and distinguished by slight mounding in heavy stands of Russian knapweed. Artifacts are also scattered across this area, and cluster in several locations.

Structure 1 is a crescent-shaped mound that measures about 45-by-15 m and is directly adjacent to the edge of the proposed right-of-way. This mound was identified by every examination of the site. The remaining structures are west of the abandoned road in Figure 2, and are not shown on this plan. Structure 2 is a crescent-shaped mound measuring 26-by-6 m. The other structures are represented by rectangular mounds measuring 16-by-6.5 m (Structure 3), 15-by-12 m (Structure 4), 7-by-5 m (Structure 5), and 12-by-5 m (Structure 6).

Other than the abandoned gravel road that probably represents the old route of U.S. 84/285, at least four other linear features cross LA 160. The configuration of these features suggests that all represent segments of unimproved roads that are no longer in use. However, it is also possible that they are segments of abandoned acequias. Several structures and linear features were cursorily

examined during testing. In most cases, stands of knapweed were so dense around potential structural mounds that their true nature could not be determined. The linear features were clear of undergrowth, and appear to be abandoned roads rather than acequias.

Several areas containing fairly dense scatters of trash were also noted during this cursory examination. Most of the trash scatters contain modern refuse deposited less than 50 years ago, but in some areas clusters of earlier native pottery were also observed. In one instance a scatter of native pottery is partly overlapped by a more recent dump. The structure of this scatter suggests that two separate periods of trash disposal are represented.

The densest scatter of cultural materials was in the midden identified by Haecker (1987) and defined as Trash Areas 1 through 3 during testing (Moore 2000). Haecker's description indicated the presence of hundreds of native sherds, a few chalcedony flakes, fragments of ground stone, and a few pieces of bone. As noted earlier, this area is cut by two erosional channels, creating the three separate feature areas. Moore (1989:2) suggested that the distribution of artifacts on the ground surface and in the gully banks of what is now defined as Trash Area 1 represented one or more trash-filled pits of unknown depth. Testing showed that this was not the case. No evidence of trash pits was found in this area, even with extensive augering (Moore 2000).

The differences noted in Trash Area 1 between the 1989 and 1999 studies by the author were striking. Several examinations of this area in 1989 supported Haecker's (1987) description. Numerous ceramic, chipped stone, and bone artifacts were seen in Trash Area 1, and some sherds were quite large. The occurrence of cultural materials in the banks of the erosional drainage cutting through this area supported the idea that these remains represented an eroding trash pit. The situation had changed completely by the time testing was conducted in 1999. Indeed, it was difficult to identify the area thought to contain the eroding trash pit. Few artifacts were noted on the surface, and there was no longer any evidence of cultural remains in the banks of the erosional channel. As noted above, augering through this area also failed to locate a trash pit, and only sheet trash deposits were identified. Since we examined the same area during both studies, this phenomenon was quite perplexing. Perhaps the only good explanation for it is that a trash pit was present in this location, but was severely eroded during the 1987 and 1989 examinations, and was completely eroded by the time the site was tested in late 1999.

Results of Testing

The results of the testing phase are used here as a benchmark against which changes caused by construction-related damage to the part of LA 160 within proposed project limits can be measured. Testing indicated the presence of cultural deposits in three areas (Fig. 3). The report produced for that study presents rough estimates of the areal extent of each trash area. Feature sizes are more accurately calculated here in order to present a more precise estimate of damage to the site and vary from those presented in the testing report (Moore 2000).

The approximate extent of Trash Area 1 was defined by 18 auger holes in 3 transects, and the presence of cultural deposits in this area was verified by a test pit at 959N/884E. Testing indicated that Trash Area 1 measures at least 27.5 m northwest to southeast by 10.0 m southwest-northeast. This feature covered 232 sq m, and most cultural deposits appeared to be confined to the upper .25 to .30 m of fill.

Two transects containing 10 auger holes provided an estimate of the approximate size of Trash

Area 2, and the presence of cultural deposits was verified by a test pit at 940N/893E. Probable cultural deposits occurred to a depth of about 1.00 m in two auger holes, although they ended at a much shallower depth in most others. This probably indicates the presence of one or more small trash-filled pits in addition to thinner sheet trash deposits. The auger holes that produced the deeper deposits were in Grids 947N/890E and 941N/890E. Testing indicated that Trash Area 2 measured 17.0 m north-south by 12.0 m east-west. This feature covered 136.24 sq m, and contained one or more trash-filled pits in addition to sheet trash deposits in the upper .25 to .45 m of fill.

The presence of potential cultural deposits in Trash Area 3 was signaled by a surface scatter of artifacts, and was verified by a transect containing five auger holes. Cultural materials were encountered to depths of .1 to .2 m in three auger holes. The similarity of strata in these tests with those found in Trash Areas 1 and 2 indicated that cultural deposits were likely, and further examination through the excavation of a test pit was considered unnecessary at that time. During testing, Trash Area 3 measured at least 7.5 m northwest-southeast by 5.0 m southwest-northeast. This feature covered 35.48 sq m and contained cultural deposits in the upper .2 m of fill.

Testing confirmed the existence of three trash areas containing cultural deposits within the proposed right-of-way. It also showed that this part of LA 160 is confined to the north end of an area in which an interchange is scheduled to be constructed. The full extent of the site was not defined during this phase of investigation, but it was clear that the remains within proposed project limits were not as areally extensive as was initially thought. Because deposits with the potential to provide information important to the history of this area were located, more intensive examination through archaeological data recovery was recommended.

ASSESSMENT OF DAMAGES AT LA 160

Background

The areal extent of LA 160 within the proposed right-of-way was established during testing. As discussed above, a series of mechanically excavated trenches was used to define site limits, and indicated that cultural features did not extend as far south as McKenna's reconnaissance suggested. Requiring a location in which to stockpile spoil dirt produced by construction along U.S. 84/285 occurring at the time of testing (the Pojoaque South segment), the NMSHTD proposed using the southern part of the proposed interchange on the west side of U.S. 84/285 for this purpose. During a meeting at LA 160 in which the feasibility of this plan was considered, the author discussed the location of site limits with Michael Dussinger of the NMSHTD and Peter McKenna of the BIA. Since LA 160 was confined to the northern part of the interchange on the west side of the highway, the use of the southern part of the interchange for the stockpile was considered feasible, as long as LA 160 could be protected from inadvertent damage. With this need in mind, Mr. Dussinger selected a location for a protective fence that provided a 75-m-wide buffer zone between the north edge of the materials stockpile area and LA 160. Mr. McKenna provisionally agreed with this plan. It is our understanding that the correspondence required for clearance was prepared, and the necessary consultations were completed.

The use of the part of LA 160 within proposed project limits for access to the spoils stockpile area was initially noted on Saturday, January 8, 2000. Unfortunately, it could not be reported until Monday, January 10, 2000. We made our first inspection of the situation on the latter date, and observed construction-related traffic driving across that part of the site. At the time, most of the traffic seemed to be limited to large trucks transporting spoil dirt to the stockpile area. However, a small amount of grading may have been done before our visit. There was no evidence to suggest that the protective fence had ever been built. We were informed that the NMSHTD instructed the district office responsible for overseeing this work to halt the traffic across LA 160 on the morning of January 10, 2000.

Traffic across LA 160 did not stop until after 3:00 p.m. on January 11, 2000. Indeed, when we arrived at the site for a meeting with the NMSHTD scheduled for that time, we noticed a grader on the site, which had been leveling the area to facilitate the truck traffic, and had been stopped by representatives of the NMSHTD shortly before our arrival. This episode of grading appears to have been responsible for 50 percent or more of the damage to the section of LA 160 within the proposed right-of-way. Much of the sheet trash defined during testing appeared to have been used to fill and level the shallow erosional channels that separate the three trash areas. Other cultural fill was displaced into a long narrow earth mound that was scraped up during the last pass by the grader. A protective fence was erected at the north end of the materials stockpile area by January 12, 2000, and access to LA 160 was shut off by a temporary gate.

Assessment Procedures

The first step in assessing the damage to LA 160 was the relocation of control points that were established during testing. While most control points within the proposed right-of-way were damaged or displaced by construction-related activities, those that were placed outside that area to facilitate mapping of the entire site were unaffected. It was especially fortunate that the main site datum at

900N/900E was not damaged or displaced. Using the remaining control points, we re-established two of the main mapping datums within the proposed right-of-way—940N/890E and 960N/890E—and determined the degree to which construction-related activities had affected their elevations.

During testing, the locations and elevations of a series of points were established and used to produce site plans. Data were available for two types of points-—those along the periphery of the three trash areas and the locations of auger tests. These points were replotted using a transit and stadia rod, allowing comparison of elevations from before and after the area was damaged and providing data on the amount of soil movement. In addition to this, the area within the proposed right-of-way between LA 160 and the materials stockpile was also mapped.

Three test pits were excavated to provide more direct information on the amount of cultural fill remaining in parts of the trash areas. Excavation was conducted using the techniques presented in Moore (2000). To amplify these data, selected areas within dirt piles left by construction activities were screened to determine their artifact content. Approximately .1 cu m of soil was screened in each case, allowing an estimate of the number of artifacts available per cubic meter in the remaining spoils piles.

Updated Description of the Portion of LA 160 within the Proposed Right-of-Way and the Adjacent Affected Area

A plan of the part of LA 160 within proposed project limits and the area between the site and the materials stockpile that was affected by construction-related activities is shown in Figure 5. The boundaries of this area are the current right-of-way fence along the southbound traffic lanes of U.S. 84/285 on the east, a temporary two-strand barbed wire fence along the edge of the proposed right-of-way edge on the west, a protective fence along the north edge of the materials stockpile area on the south, and a temporary gate on the north. Shorter dirt barriers were erected .3 to 1.0 m inside the fences along the east and west perimeters of this area. These barriers are approximately .5 m high and consist of wire mesh fixed to metal posts with a fabric liner on the interior side. Shallow (.15 to .20 m deep) trenches were excavated along the inside edges of the barriers, and the soil removed from them was used to anchor the fabric liners.

The section of LA 160 within the proposed right-of-way comprises approximately the northern third of the affected zone, as shown in Figure 5. Except for strips between the exterior fences and dirt barriers along the east and west perimeters of this area, all vegetation has been removed and the ground surface has been altered by vehicular traffic and grading. A long, sinuous dirt mound (see Fig. 5) runs nearly the length of this area, and represents spoil from the last grader pass that was not subsequently spread out.

Results of the Study

Investigations conducted during both the testing and damage assessment phases concentrated on three areas containing subsurface sheet trash deposits (Fig. 5). By re-establishing the locations

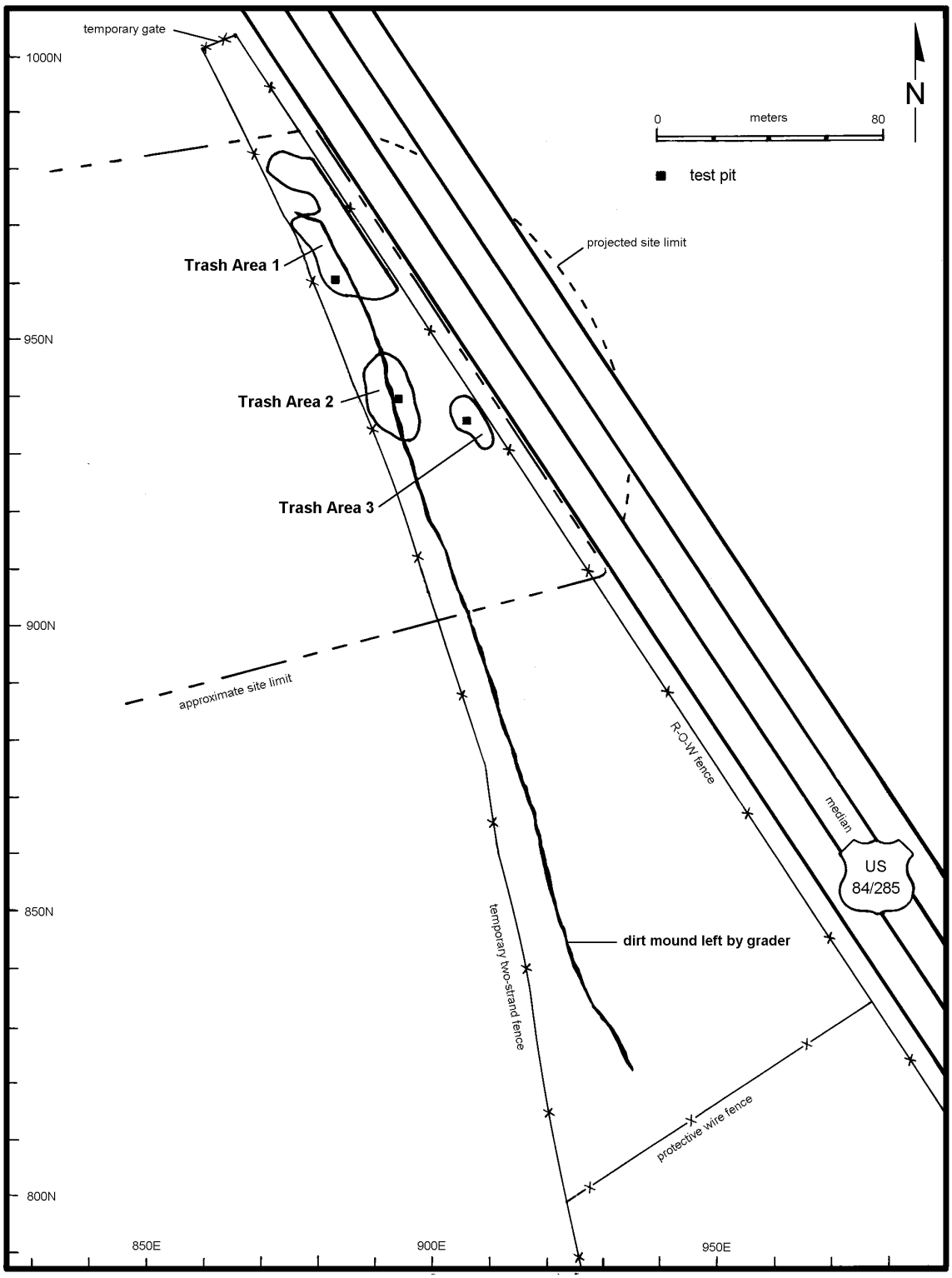


Figure 5. Plan view of the portion of LA 160 within proposed project limits, and the adjacent area affected by construction-related activities.

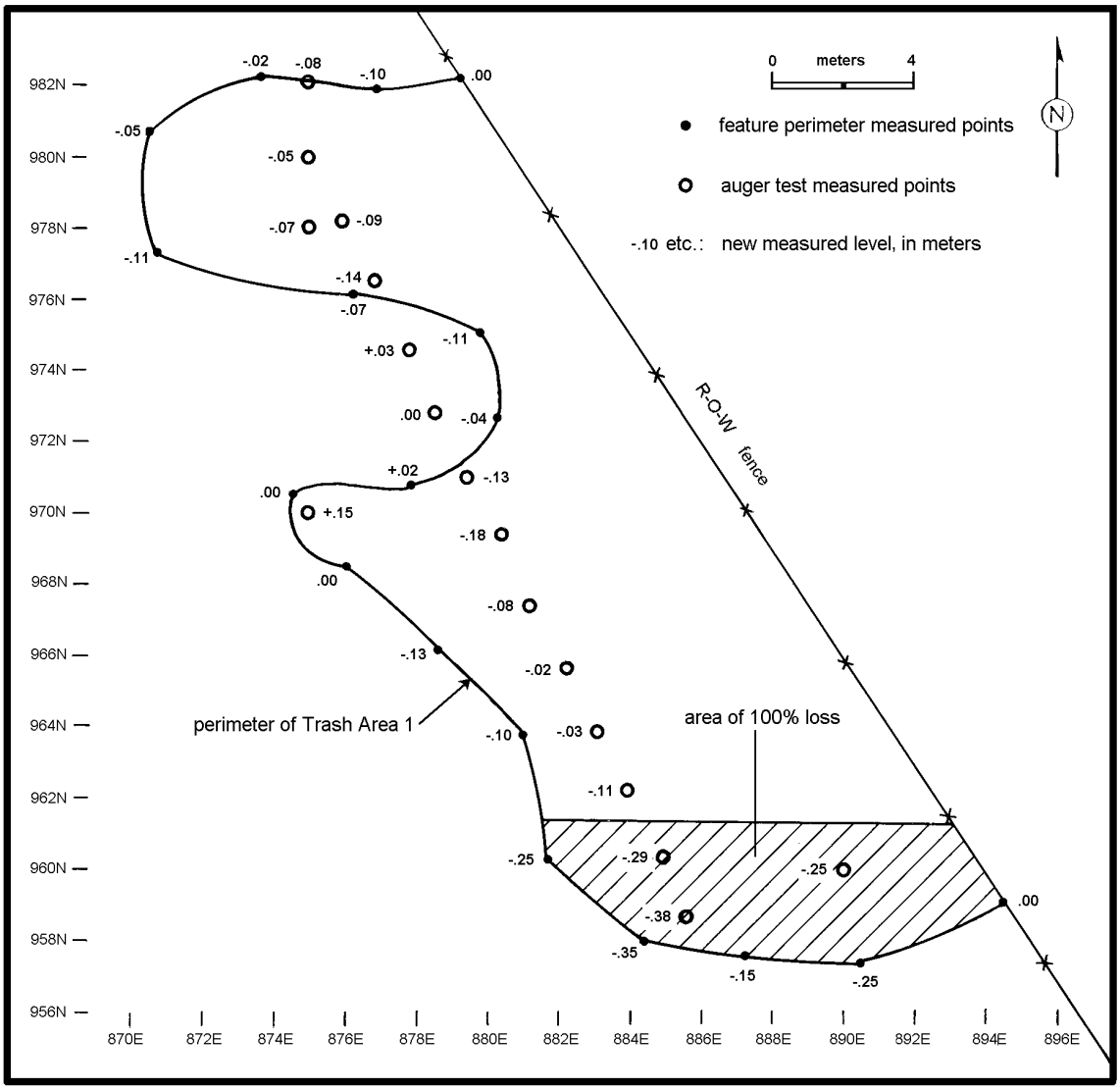


Figure 6. Plan view of Trash Area 1 showing variation between elevations at measured points.

of auger holes and points used to map trash area perimeters during testing, we were able to compare elevations and calculate the amount of soil loss or gain caused by construction-related activities. It should be noted that, while our observations were as accurate as possible, they were not to surveyor's standards. Thus, our results represent an estimate rather than exact measures of change.

Figure 6 presents a plan view of Trash Area 1, showing variation between elevations taken during testing and damage assessment for measured points. Figures 7 and 8 present profiles of this area derived from measurements taken along auger transects during testing and damage assessment. The plan and profiles of this area indicate that the least amount of damage was done to the northern part of the feature, with some surface soil being removed from high points and at least partly redeposited in lower areas. The most extensive damage was done to the southern part of the feature, where an area along the edge of an erosional drainage was deeply cut and used to fill the shallow drainage.

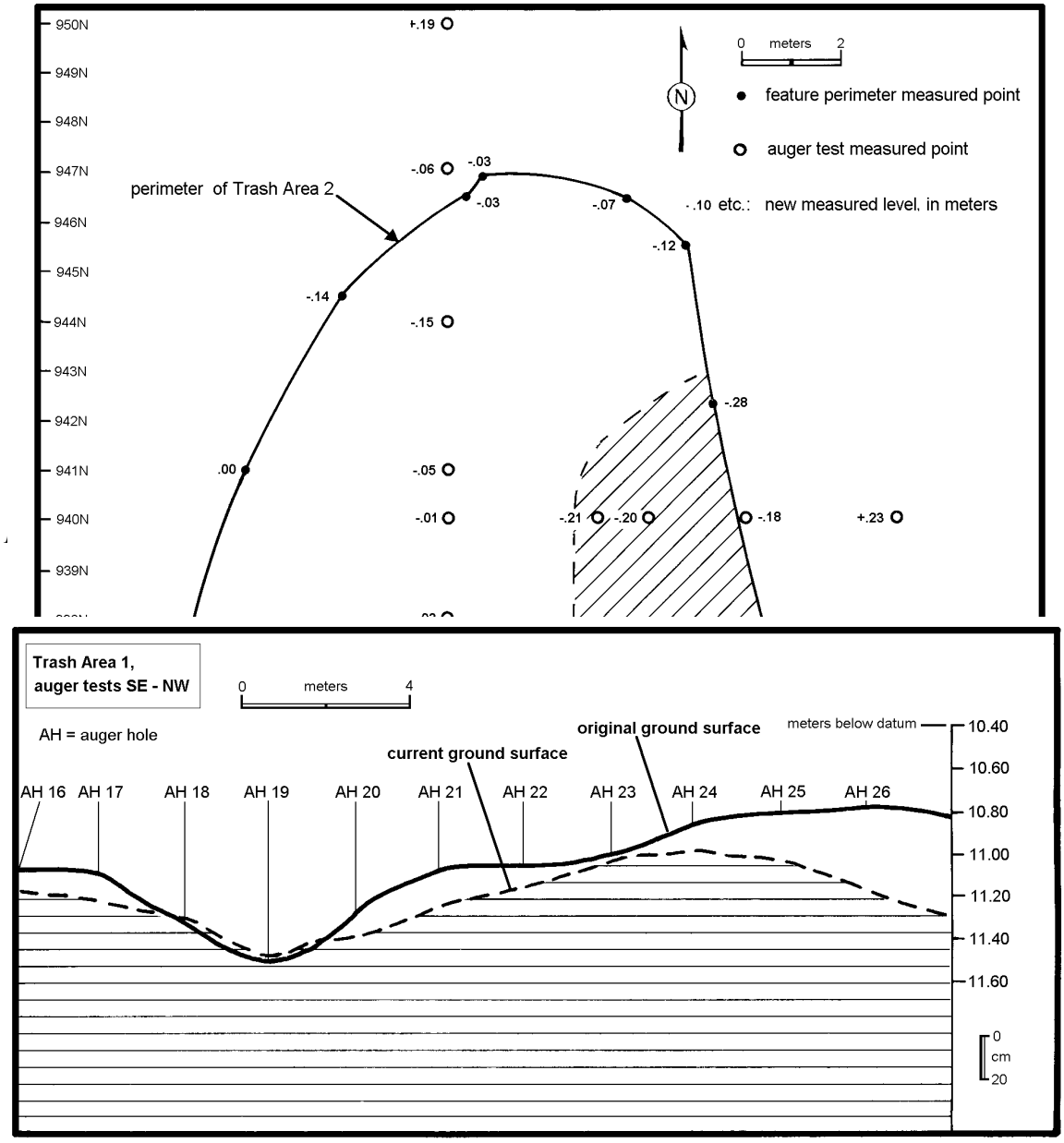


Figure 8. Profile running through Trash Area 1 from southeast to northwest.

A test pit was excavated in the southern part of Trash Area 1 at 960N/884E. This location was selected because it was adjacent to a grid excavated during testing (959N/884E). Numerous artifacts were recovered from the upper .25 to .30 m of fill in 959N/884E. As Figure 6 illustrates, this zone was essentially removed from the southern part of Trash Area 1. Two .1 m levels were excavated at 960N/884E during the damage assessment. While a few flecks of charcoal were noted in the upper .04 to .05 m of fill, the only artifacts recovered from this grid were a native sherd, a fragment of metal, and four pieces of glass. The glass is brown in color and appears to be of modern derivation, so only two artifacts that may be associated with the original trash deposits were recovered from the upper few centimeters of fill. Most of the cultural deposits in the hatchured part of Trash Area 1 in Figure 6 have been removed, with an average of .27 m of soil having been bladed away.

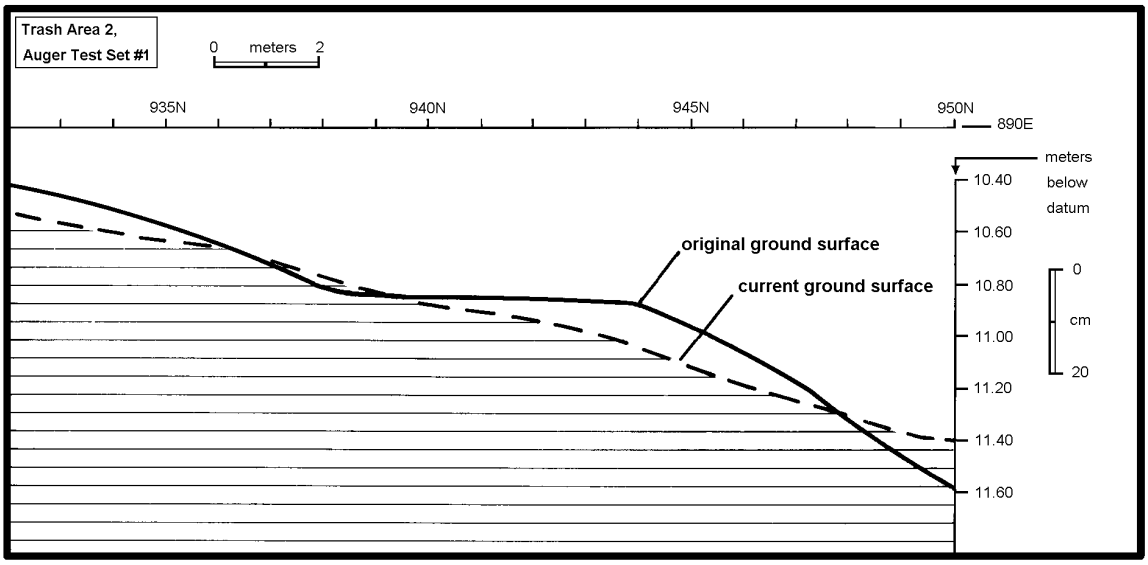


Figure 10. Profile along the 890E line in Trash Area 2.

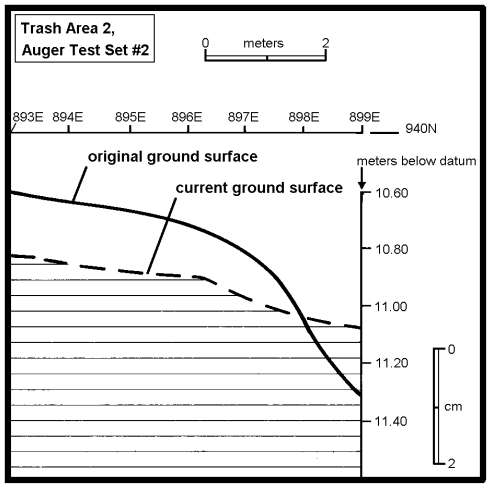


Figure 11. Profile along the 940N line in Trash Area 2.

While no test pits were placed elsewhere in Trash Area 1, the amount of soil lost outside the hatchured zone in Figure 6 seems to have been considerably less. Indeed, more artifacts were visible on the new surface than were seen during testing, and distinct charcoal stains are now present. An average of approximately .08 m of soil appears to have been removed from the north part of Trash Area 1. The results of testing indicated that trash deposits in this feature were between .25 and .30 m thick. The hatchured zone in Figure 6 covers 39 sq m of the feature, and the loss of cultural deposits in that area was essentially total. The amount of loss in the remaining 193 sq m of this feature is between 26.7 and 33.0 percent. By combining these figures, we estimate that between 39.0 and 44.3 percent of the cultural deposits in Trash Area 1 were removed by construction-related activities.

Figure 9 presents a plan view of Trash Area 2, showing variation between elevations taken during testing and damage assessment for measured points. Figures 10 and 11 are profiles of this area derived from measurements taken along auger transects during both phases of investigation. The least amount of damage seems to have occurred in the northern and western parts of this feature, with some surface soil being removed from high points and at least partly redeposited in low areas. The most extensive damage was done to the southeast quadrant of the feature, where a slightly mounded area along the edge of a small drainage was deeply cut and used to partly fill that channel.

A test pit was excavated in the southeast part of Trash Area 2 at 939N/893E. This location was selected because it was next to a grid that was excavated during testing (940N/893E). Numerous artifacts were recovered from the upper .20 to .25 m of fill in 940N/893E during testing. As Figure 9 shows, this zone was mostly removed from the southeast quadrant of Trash Area 2. Two .1 m levels were excavated at 939N/893E during damage assessment. While charcoal was common in the upper

.05 to .08 m of fill, no artifacts were recovered from this grid. The charcoal-bearing deposits appear to correlate with the lower levels of cultural fill in 940N/893E, which either represent the bottom of those deposits or a bioturbated zone in which charcoal and a few artifacts were moved downward into sterile clay. Most of the cultural deposits appear to have been removed from this part of Trash Area 2, and the average amount of soil loss in this area is .21 m.

Though no test pits were placed elsewhere in Trash Area 2, the amount of soil lost outside the hatchured zone in Figure 9 appears to have been less severe. More artifacts are now visible on the surface than was previously the case, and at least one distinct charcoal stain was observed. We estimate that an average of .06 m of soil was removed from the northern and western parts of Trash Area 2. Testing indicated that trash deposits in this feature were originally between .30 and .45 m thick, with most artifacts confined to the upper .30 m. The hatchured zone in Figure 9 covers 36.76 sq m, and at least 71.3 percent of the cultural deposits were removed from that area. The amount of

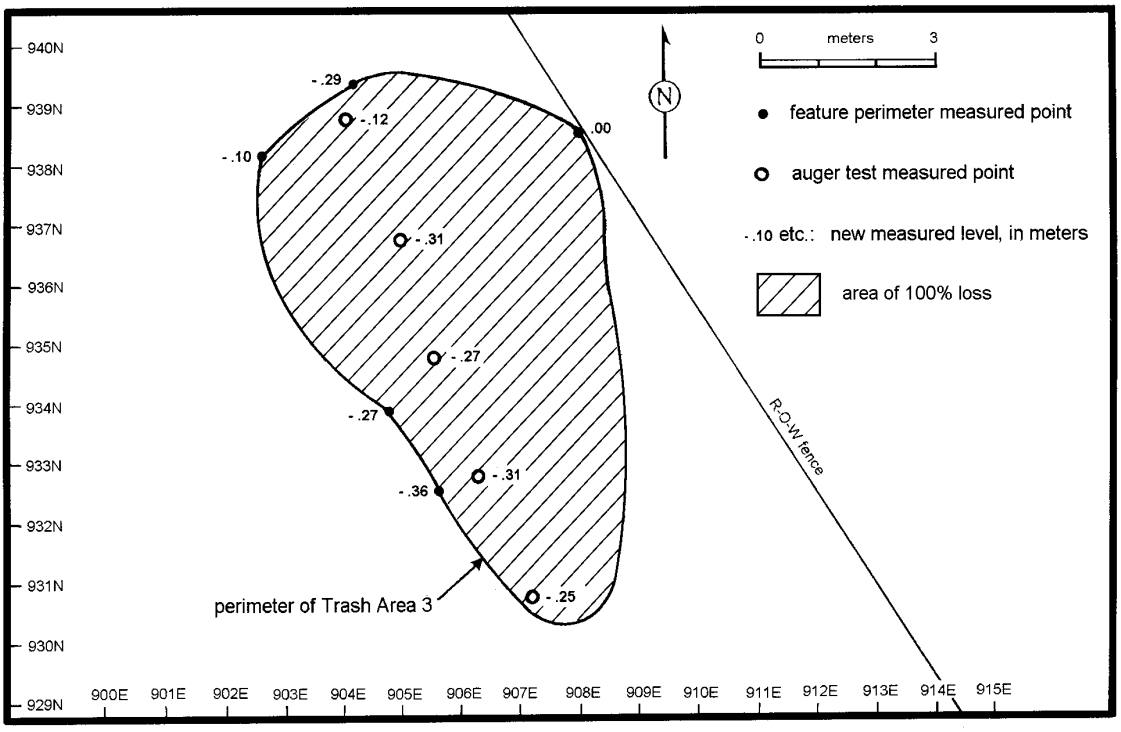


Figure 12. Plan view of Trash Area 3 showing variation between elevations at measured points.

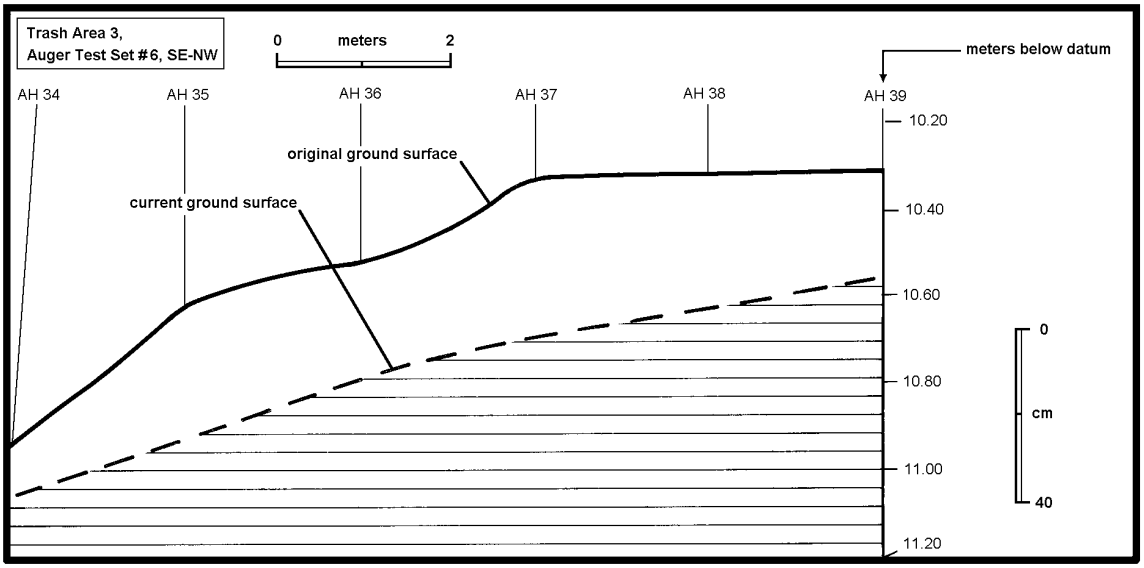


Figure 13. Profile across Trash Area 3 from southeast to northwest.

loss in the remaining 99.48 sq m of Trash Area 2 was between 13.3 and 20.0 percent. By combining these figures, we estimate that between 22.6 and 33.8 percent of the cultural deposits in Trash Area 2 were removed by construction-related activities.

A plan view of Trash Area 3 is presented in Figure 12, and shows variation between elevations taken during testing and damage assessment for measured points. Figure 13 is a profile of this area derived from measurements taken along auger transects during those phases of investigation. These figures indicate that the entire feature was extensively damaged. Cultural materials were recovered

from the upper .20 m of fill in auger holes during testing. The average soil loss from this area, as shown in Figures 12 and 13, was greater than this.

A test pit was excavated in the southeast part of Trash Area 3 at 934N/905E. This location was selected because an auger hole placed in this grid during testing yielded the deepest cultural materials found in the feature. Because of the similarity of deposits in this feature to those encountered in Trash Areas 1 and 2 during testing, more detailed examination was considered unnecessary at that time. Two .1 m levels were excavated at 934N/905E during damage assessment. The upper .05 m of fill appeared to have been mixed during blading, with some recent plastic wrap occurring just below the surface. No charcoal or artifacts associated with the occupation of LA 160 were recovered from this level. One historic native sherd was found in the second level, but no charcoal was noted. Since several pockets of loamy sand were observed in this level, the sherd was probably intrusive from the trash deposits, having been carried downward by bioturbation. All of the cultural deposits appear to have been removed from Trash Area 3, where the average amount of soil loss is .25 m. In contrast with the other trash areas, no charcoal staining was noted on the current surface of this feature.

Assessing the Total Amount of Damage to the Portion of LA 160 Within Project Limits

Because each trash area varied in size, depth of cultural fill, and amount of deposits lost, we cannot simply average the loss percentages listed above to determine the total amount of damage to the part of LA 160 within project limits. Table 1 presents data that can be used to determine the amount of damage. The *estimate level* is divided into low and high ranges, which are derived from the estimated thickness range determined during testing for deposits in specific trash areas. The low end estimate considers the average thickness of deposits to have been at the thinner ends of the range, while the high end estimate considers the depth of deposits to be at the thicker ends of the ranges. We then determined the proportion of the total areal extent of cultural deposits represented by each trash area, which is shown in the *percentage of total cultural deposits* category. By multiplying this figure by the estimated percentage of soil loss discussed for each trash area earlier, we were able to determine the *proportional amount of loss.* Adding these figures provides the *total percentage lost.*

Table 1. Data Used to Estimate the Total Amount of Damage to Cultural Deposits in the Portion of La 160 Within Project Limits

Estimate level	Feature	Percentage of total cultural deposits	Proportional amount of loss	Total percentage loss
Low end	Trash Area 1	57.47	22.41	38.80
	Trash Area 2	33.75	7.60	
	Trash Area 3	8.79	8.79	
High end	Trash Area 1	57.47	25.46	45.66
	Trash Area 2	33.75	11.41	
	Trash Area 3	8.79	8.79	

We estimate that a minimum of 38.8 and 45.7 percent of the cultural deposits in the part of LA 160 within proposed project limits was removed or otherwise damaged by construction-related

activities. The latter category includes material removed from the trash areas, which remains nearby. As the profiles imply, some of the soil removed from the mounded areas between drainages was deposited in those channels, partly filling them. In addition, a long mound of dirt left by the last pass of the grader contains numerous artifacts in areas adjacent to cultural deposits. Screening the equivalent of .1 cu m of soil from two locations along the dirt mound provided data enabling us to estimate that there are 140 to 170 artifacts per cubic meter of soil in portions of the dirt mound adjacent to the trash areas. Artifacts in similar quantities may also be available from soils deposited in drainage channels.

Unfortunately, while artifacts recovered from the disturbed deposits can provide some ancillary information concerning the occupation of LA 160, their data potential is severely limited by the loss of their original provenience. Thus, artifacts from these deposits cannot be used to examine potential temporal or economic differences inherent in different trash areas, because they can no longer be linked to any individual feature. Thus, while artifacts in the spoil dirt can help to address some general questions, they cannot be used for more detailed comparisons. This is particularly unfortunate in the case of Trash Area 3, which appears to have been completely removed by construction-related activities.

Summary and Conclusions

Construction-related activities in the part of LA 160 within project boundaries severely damaged historic sheet trash deposits that had the potential to provide important information on the history of the Tewa Basin. The smallest sheet trash deposit—Trash Area 3—sustained the greatest amount of damage, and all cultural deposits in that feature appear to have been removed. The largest deposit—Trash Area 1—sustained the next greatest amount of damage, with 39.0 to 44.3 percent of the fill in that feature having been displaced. The second largest deposit—Trash Area 2—sustained the smallest amount of damage, with between 22.6 and 33.8 percent of cultural fill in that feature having been removed.

Considering the trash areas proportionately provides an estimate of between 38.8 and 45.7 percent loss of cultural deposits from the part of LA 160 within project limits. While some artifacts from those deposits remain in spoils piles near the trash areas, they now have only a very limited data potential.

A RECONSIDERATION OF QUESTIONS POSED IN THE ORIGINAL DATA RECOVERY PLAN

The original data recovery plan (Moore 2000) posed a series of questions that would be addressed by a more intensive phase of investigation at LA 160. Two levels of questions were developed. First were general research questions aimed at examining and comparing the historic sites in a frontier theory framework. The second level was site-specific. While some of the latter questions were tentatively addressed with data recovered during testing, none were conclusively answered. Considering the damage that has occurred to features within the proposed right-of-way, some modifications to both sets of research questions may be necessary. Discussions of research questions are summarized from Moore (2000).

General Research Questions for the Historic Sites in this Study

As stated in the original data recovery plan for this project (Moore 2000), it is no longer considered sufficient to determine who lived at a historic site and when. Documentary research and interviews with local inhabitants still remain critical aspects of historic archaeology, since they often provide data on site occupants, their social status, and when they lived at a site. However, rigorous analysis of artifact assemblages like that performed for prehistoric sites allows us to ask new questions of the data. The records provide information on certain aspects of Spanish life in New Mexico, but critical data are often missing. Spanish wills and estate inventories list the most important belongings of people, but rarely include inexpensive yet extremely commonplace objects like the chipped stone tools and fragments of locally made ceramic vessels that are most often recovered from archaeological sites. Artifact categories like these allow us to examine the process of acculturation in a frontier setting, and track the changes that occurred as the frontier shifted or modes of transport became cheaper and more efficient.

The main question being asked of the historic sites in this study is relatively simple, but its implications are complex. Succinctly stated, the main question that was asked is:

What can these archaeological remains tell us about the process of acculturation on the Spanish and American frontiers?

This general question opens the door to more specific lines of inquiry concerning the New Mexico frontier. New Mexico was on the Spanish Colonial frontier between 1598 and 1821, and this helped structure the basic economy of the province. Imported goods moved to New Mexico over the Camino Real, and tended to be expensive because of distance and difficulty of transport. Thus, economic status determined who could afford the best goods and who had to make do with substitutes. This situation began changing in 1821 when Mexico gained its independence from Spain and ended restrictions on foreign trade. Goods soon began moving to New Mexico over the Santa Fe Trail, and this undoubtedly disrupted the local economy, since these goods tended to be cheaper and more plentiful than those imported from Mexico. Radical change occurred when the United States annexed New Mexico in 1847. This event seems to have cut off most trade to the south with Mexico, significantly altering commercial patterns. The arrival of the railroad in 1880 resulted in yet another period of economic change as New Mexico became more closely tied to the economic core in the eastern United States. Manufactured goods became easier to acquire, and the more efficient mode

of transport reduced costs.

Because access to manufactured goods was limited in Spanish Colonial times, many important commodities had to be done without or replaced. While the situation improved somewhat with the opening of the Santa Fe Trail, transport remained difficult and goods continued to be comparatively expensive for poor people to acquire. Replacement of needed but unavailable or unaffordable goods was accomplished in two ways—trade with nearby Indians, and local manufacture of substitutes. Previous studies have focused on two areas of substitution—ceramics and chipped stone tools.

Local manufacture of ceramics is generally presumed to mean production by Indian potters. While Snow (1984) admits that pottery making by genízaros or mestizos was a possibility, he feels that Pueblo and Athabaskan potters dominated this industry in New Mexico because pottery-making was a very low status occupation in the New World, and was only undertaken by a Spaniard in dire need of economic support. Thus, Snow completely rejects Hurt (1939) and Hurt and Dick's (1946) arguments for a Hispanic ceramic tradition, even though evidence was found for pottery manufacture at Spanish Colonial sites at Cochiti Reservoir (Warren 1979).

In contrast, Carrillo (1987, 1997) asserts that a well-established Hispanic ceramic tradition existed from a fairly early date. Wares produced by Hispanic (or Hispanicized) potters were similar to those made by Pueblos and Athabaskans, but are in many ways distinguishable from them. Similarities in decorative style and manufacturing techniques suggest that pottery-making skills were acquired from local Indians, and are representative of the acculturation process.

If Hispanic ceramic manufacture did occur it was probably more common on the frontier than in the core. The isolated nature of frontier villages, their lack of wealth, and difficulties of transport may have combined to make ceramic production a necessity of frontier life. The opposite may have been true in the core where comparatively more wealth, easier access and transport, and more concern for the outward trappings of social status probably united to severely limit Hispanic ceramic production. In considering the category of locally produced earthenwares, it is likely that the proportion of Indian to Hispanic manufactured pottery was higher at core area sites than at those on the frontier.

While Hispanic pottery manufacture may have occurred sporadically during the Spanish Colonial period, a review of the pottery-producing Spanish villages listed by Carrillo (1997) suggests that most Hispanic pottery manufacture occurred after 1821, the beginning of the Santa Fe Trail period. Thus, this phenomenon may have had economic roots. Economic disruption caused by trade over the Santa Fe Trail may have further impoverished the Spanish lower classes, forcing some to seek alternative means of acquiring needed goods. At the same time, the Pueblos were no longer totally dependent on Spanish merchants for manufactured goods, perhaps increasing the price of their pottery or decreasing the amount manufactured. This would have provided an entry into a craft that could provide some income, yet had not been heavily exploited by the Spanish before this time. Thus, Hispanic pottery manufacture, as a cottage industry, may be closely linked to the expansion of trade networks and the resultant disruption of the traditional system caused by the opening of the Santa Fe Trail.

Chipped stone artifacts are common at Spanish sites in the Southwest, and tend to reflect an array of activities including fire-making, hunting-warfare, and the manufacture and maintenance of tools made from perishable materials (Moore 1992). The ubiquity of this artifact class at Spanish sites dating from the early Spanish Colonial period through the early railroad period is evidence that chipped stone artifacts are not necessarily indicative of historic Pueblo or Plains Indian occupation, nor is their presence in so many assemblages evidence of earlier occupations or contamination from

nearby prehistoric sites. The association of chipped stone artifacts with Spanish occupations is demonstrated by the presence of tool types indicative of fire-making activities mixed with debitage, cores, and occasional formal tools in stratified deposits at confirmed Spanish residences. Sites that fall into this category include the La Fonda Parking Lot site (LA 54000) in Santa Fe, the Pedro Sánchez site (LA 65005) near San Ildefonso, and the sites of La Puente (LA 54313) and the Trujillo House (LA 59659) near Abiquiú (Moore 1992, n.d.; Moore et al. n.d.). Use of chipped stone tools by Hispanics in New Mexico was undoubtedly related to the shortage and high cost of metal tools, and the irregular and undependable supply system. Chipped stone tool manufacture and use appear to represent the assimilation of native technology to supplement or replace metal tools.

It should be noted that lithic technology was not absent from the traditional Spanish lifestyle—gunflints and strike-a-light flints were integral components of firearms and fire-making kits. However, chipped stone tools were not normally used for other purposes. The use of other varieties of chipped stone tools is probably attributable to acculturation, and their substitution for metal tools was undoubtedly conditioned by wealth and access. Such substitutions are expected to have been considerably more common on the frontier than in the core.

Changes in economic patterns should be visible in material culture remains from sites occupied during these periods. Earlier examinations of economic trends through time in Spanish sites have mainly focused on the late Spanish Colonial and Railroad periods, because few sites that are convincingly dated to the Santa Fe Trail period have been excavated. Thus, LA 160 (and LA 4968) should provide critical data on the material culture of Spanish sites during this period that is crucial to our understanding of changing economic patterns in New Mexico as a consequence of the opening of trade barriers during the Mexican Territorial period.

By comparing the assemblage from LA 160 with those from other Spanish sites in northern New Mexico (including LA 4968) we hope to be able to isolate variation attributable to settlement on the frontier versus occupation of the economic core. If our assumptions are correct, several propositions should hold true:

1. Evidence of variation in wealth and degree of access to manufactured goods should result in a higher proportion of European goods to locally produced goods at sites in the core versus those on the frontier.

2. Within the category of native-made ceramics, the ratio of pottery made by Hispanic potters to that produced by Indian potters should be higher at sites on the frontier than at sites in the core.

3. Chipped stone tools other than gunflints and strike-a-light flints should be more common at frontier sites than at sites in the core.

The model can be tentatively accepted if these propositions are upheld. If they are not, three possibilities must be considered: (1) the model is incorrect, (2) the variables being studied are not sensitive enough to measure local acculturative processes, and (3) trade over the Santa Fe Trail caused a complete disruption of the traditional economic pattern. If the model is wrong, factors other than variation in access to manufactured goods and distribution of wealth may be responsible for the assimilation of native technologies and the ability to acquire imported goods, and other acculturative processes must be considered. If the variables are not sensitive enough to measure the acculturative effects of residence on the frontier versus the core, the possibility that they are controlled by more general conditions must be considered. In other words, it is possible that they reflect life in New Mexico as a frontier to New Spain, and represent the acculturative process at a coarser grained level.

Disruption of traditional economic patterns by trade with the United States might be traced by comparing evidence of acculturation and differential access to manufactured goods for the Spanish Colonial period to sites from the Santa Fe Trail period.

Providing that sufficient numbers of artifacts associated with the occupation of LA 160 can be recovered from the remaining trash deposits and spoil dirt at the site, we should still be able to address these questions. Fortunately, unless the various trash areas date to widely differing periods of occupation (which was not indicated by testing), the entire assemblage from this site would have been used in addressing this line of inquiry. Thus, even though the part of LA 160 within proposed project limits has sustained significant damage, this should not completely inhibit our ability to address the general research questions posed for this part of the Santa Fe to Pojoaque Corridor study.

However, damage to the site will have some affect on this part of the study. While considerable numbers of artifacts appear to be retrievable from spoil dirt adjacent to the trash areas, more recent trash from the surface of the site is now mixed with earlier materials. Some of these artifacts will not be difficult to separate, but others will be hard to differentiate. Before this part of the site was damaged, most of the later artifacts would have been found on or just below the ground surface. Now they are completely mixed with earlier deposits. Lacking provenience data, very conservative analytic standards will have to be applied to this assemblage in order to remove as much recent contamination as possible. This could affect the accuracy of our analytic results, and thus the dependability of our data. Proportions of various artifact classes may be skewed, since materials that could have been manufactured during multiple economic periods might have to be eliminated as contaminants, because they cannot be reliably linked to the period of site occupation.

Thus, while we should still be able to address the set of general questions concerning frontier economic processes, this ability may be somewhat restricted because of contamination induced by the damage to LA 160. It will be difficult to accept our analytical results at face value, and the validity of our results may be reduced. Ethnohistoric data will assume a much greater importance in our analysis, especially in providing occupational dates and evidence of the economic position of site occupants. Comparison with other sites occupied at about the same time by persons of similar economic status may provide a check on our results, providing suitable comparative data are available.

Site-Specific Research Questions for LA 160

Two sets of site-specific questions were posed for LA 160—those pertaining to the dates and extent of known features within project limits, and those related to the various categories of artifacts that we expected to recover. From a cultural resource management viewpoint, the former category contained some of the most important questions generated. Some of those questions were partly answered during testing, but others could not be fully considered at that time because of data limitations, and were scheduled to be addressed with the more detailed information available from excavation. Unfortunately, damage to the part of LA 160 within project limits may have affected our ability to adequately address those questions.

Similarly, the movement of cultural deposits from their original locations and their redeposition in erosional channels and spoils piles will affect our ability to assign artifacts to specific proveniences. In other words, we will no longer know where the bulk of the artifact assemblage originated. This will affect our ability to adequately answer some of the research questions posed for

the various artifact types expected to be recovered from LA 160. Each site-specific question is considered separately below and readdressed, taking into account the effects of damage to the physical condition of LA 160.

Site-Specific Questions

The first 10 questions were posed in the testing site report for LA 160 (Moore 2000). The final question in this section was developed in the discussion of testing results in the same report.

Question 1. Are historic trash deposits present within project limits? Testing showed that three trash areas existed within project limits at LA 160. Unfortunately, all were damaged by construction-related activities before data recovery began. This has affected the data potential of each feature. Damage assessment indicated that there was a net loss of 39.0 to 44.3 percent of cultural fill in Trash Area 1, 22.6 to 33.8 percent in Trash Area 2, and 100 percent in Trash Area 3.

Although much of the fill removed from these features is still present at LA 160, it has been displaced and can no longer be attributed to specific trash areas. Thus, much of the data potential has been lost, especially in the case of Trash Area 3, which no longer exists. As noted earlier, there has been an overall net loss of 38.8 to 45.7 percent of *known* trash deposits in these features.

Question 2. If historic trash deposits are present within project limits, what is their vertical and horizontal extent? Testing not only established the presence of three areas containing historic trash deposits within project limits at LA 160, it also provided data on the areal extent and thickness of those deposits. These dimensions were revised following the damage assessment, and were presented in the last chapter. The dimensions of Trash Area 3 have been totally altered, because all associated deposits were removed from that area. The greatest alteration to the other features was to their vertical extent. Nearly all deposits were removed from the southern 17 percent of Trash Area 1, as were between 26.7 and 33.0 percent of cultural fill elsewhere in that feature. At least 71 percent of deposits were removed from the southwest quadrant of Trash Area 2 (27 percent of feature), as was 13.3 to 20.0 percent of cultural fill elsewhere in that feature. Because testing suggested that artifacts were most numerous in the upper .2 m of fill in these features, both have suffered a considerable loss of data potential.

Question 3. If cultural deposits are present, are they in trash pits as suggested by Moore (1989)? Testing suggested that while one or more small trash pits may exist in Trash Area 2, they are not as extensive, nor are they in the location that Moore (1989) thought they might be. Construction-related damage to LA 160 does not appear to have affected these features, nor did it reveal the presence of any additional trash pits.

Question 4. Does the mound identified by nearly all archaeological studies of LA 160 represent structural remains or is it a natural feature of the landscape? Neither the testing nor damage assessment studies provided information that would allow consideration of this question. The nature of this mound will be addressed during data recovery and, since it is outside the proposed right-of-way, it was not affected by construction-related damages to the site.

Question 5. Do the vegetative patterns identified by McKenna on aerial photographs represent structural remains or are they natural? Could they instead represent areas in which the surface has been disturbed rather than structures? Mechanically excavated trenches revealed that heavy patches of Russian knapweed within the proposed right-of-way did not represent the remains of structures, nor were they areas where the surface was disturbed. They are simply vegetative patterns

that bear little, if any, relationship to the presence or absence of cultural remains. Thus, concentrated stands of this plant do not accurately predict the location of cultural structures or features. This question was adequately addressed during testing, and no contrary information was acquired during the damage assessment.

Question 6. What is the nature of the five low mounds identified by McKenna? Do they represent the remains of structures or are they natural features of the landscape? This question could not be addressed during testing or damage assessment. However, observations made during damage assessment when much of the vegetation that had previously obscured the mounds was gone suggested that they may indeed represent structural remains. This possibility will be addressed through surface examination during data recovery. Since these features are outside the proposed right-of-way, they were not damaged by construction-related activities.

Question 7. Could the presence of underlying prehistoric remains have led to the erroneous identification of LA 160 as a prehistoric site during the 1962 survey? Testing yielded no evidence of pre-Spanish remains at LA 160, though a few prehistoric sherds were noted on the surface in areas outside project limits. Thus, there do not appear to be any underlying prehistoric remains in the section of LA 160 within the proposed right-of-way. This question was adequately addressed during testing, and no contrary evidence was discovered during the damage assessment.

Question 8. What is the relationship between the late nineteenth-century structure excavated by Peckham and the rest of the site? Is the Spanish Colonial period date that has traditionally been assigned to this site correct, or is LA 160 a later settlement dating to the same period as Peckham's structure? Analysis of the assemblage recovered during testing provided a tentative date for the part of LA 160 within the proposed right-of-way. Rather than representing a Spanish Colonial period occupation as most previous studies have suggested, this site appears to date to the Santa Fe Trail period. This is fairly consistent with dates for Peckham's four-room structure, which was excavated at the site in 1959. The larger assemblage that will be provided by data recovery at LA 160 should allow us to refine our date, and to determine whether the two areas represent parts of the same settlement. Damage to the part of the site within project limits may affect the reliability of artifact dates because it has introduced contaminants. Thus, we may need to place more reliance on documentary information, if such is available.

Question 9. What is the nature of the wide gullies that bisect LA 160? Are they the remains of acequias, or simply segments of unimproved roads? This question could not be adequately addressed during testing, and these landscape features were effectively eradicated by construction-related activities at LA 160. While some information may be obtained from aerial photographs or from similar features in adjacent unaffected areas, few useful data pertaining to these features remain within the proposed right-of-way.

Question 10. What is the relationship (if any) between subsurface remains at LA 160 and deposits of what has been assumed to be later trash from the twentieth century? This question could not be addressed during the testing or damage assessment phases. Materials recovered from trash areas and spoils piles during data recovery should allow us to address this question during that phase of investigation, but potential contaminants may inhibit our ability to accurately address this problem.

Question 11. Do the three trash areas defined during testing represent individual features or are they part of a single deposit of sheet trash that was subsequently cut by erosional channels? Our ability to answer this question has been severely affected by construction-related damage to LA 160. The best way to address this question was to perform a detailed comparison of assemblages from

all three trash areas. Since Trash Area 3 is now gone and the main artifact-bearing levels from the others have been moved, we may never be able to confidently answer this question. Minute differences in the dates of these features could have indicated that the erosional features were in place at the time the middens were in use and therefore reflect old landscape features. Conversely, if no differences in date were found or fragments of a particular artifact were recovered from different trash areas and linked, the erosional channels most likely would have developed after the site was abandoned.

Research Questions Posed for the Artifact Assemblages

The following questions are condensed from discussions in the original data recovery plan (Moore 2000). Each question is followed by a consideration of the effects of damage to the site on our ability to address them.

Question 12. What information can the chipped stone assemblage provide concerning the processes of acculturation and economic change on the New Mexico frontier? Fortunately, our ability to address this question at a coarse-grained level should not be greatly impaired by the damages to LA 160. However, comparison of assemblages from the three trash areas will not be possible, so if minute variations in feature dates exist, we will not be able to account for them.

Question 13. What data can ground stone tools provide concerning the range of plant foods consumed at LA 160? What information can this class of artifact provide concerning material procurement and selection, the range of activities that occurred at LA 160, and how ground stone tools were altered through time? Our ability to address the first part of this question is severely limited by the damage to LA 160. Any ground stone artifacts that have been moved from their original locations can no longer provide direct data on food consumption. Besides the probability of recent contamination, we also will not know how they were oriented in the deposits, and thus how reliable analytical results might be. We should still be able to address the other lines of inquiry for this part of the assemblage with data available in the remaining deposits as well as materials that may have been moved by construction-related activities.

Question 14. What ceramic production and functional trends can be seen in the native ceramic assemblage from LA 160? Who was producing the pottery used at this site? If the part of LA 160 within project limits was occupied during only one economic period, our ability to address these questions should be unaffected. However, if the occupation spanned more than one period we will not be able to adequately address these questions because most of the assemblage will probably be obtained from soils that were redeposited by construction-related activities.

Question 15. What can the faunal assemblage tell us about the availability of this class of food and consumer behavior? We should still be able to examine these questions to some degree. However, a study of faunal distributions in relation to site structure, as was originally proposed, will no longer be possible.

Question 16. What information can the Euroamerican assemblage provide concerning site chronology, activities performed there, site functions, trade contacts, and social standing? How were Euroamerican goods used to replace traditional or locally manufactured products? Much of the information needed to address these queries should still be available, but its applicability will be more limited because of damage to the site. Site chronology can be estimated based on the array of Euroamerican artifacts available for this analysis, but will now provide few data concerning temporal variation between trash areas. Potential variability in site function, activities performed, and

how traditional goods were replaced by imports can probably no longer be traced between features.

Question 17. What changes did trade with the eastern United States cause in the range of plants used by the inhabitants of LA 160? Some data applicable to this question should still be available, but now will be more limited considering the amount of deposits that were lost.

Changes in Our Ability to Address the Research Questions

As can be seen from the above discussion, construction-related damages to LA 160 will have some affect on our ability to address the research questions raised in the original data recovery plan (Moore 2000). We should be able to address the set of general questions with the data remaining at LA 160, though our ability to do so may be somewhat impaired because of contamination introduced by construction-related activities. This could affect the size of the assemblage that can be reliably assigned to the main occupation of the site, and hence its comparability with other assemblages from northern New Mexico. Since comparability is an important aspect of the data sets being generated by this study, this may be a serious problem.

Six of the eleven site-specific questions were at least partly answered during testing. However, because of the damage to LA 160, we have had to modify our answers to Questions 1 and 2. While trash deposits are still present within the proposed right-of-way, the vertical dimensions of these features have changed, as have the horizontal dimensions of at least one trash area. The damage assessment provided no further information that could be used to address Questions 3, 5, or 7. Questions 4, 6, and 10 could not be answered during testing or damage assessment, and our ability to gather data to address these questions should not have been impaired by the damage to LA 160.

We were also unable to answer Questions 8, 9, and 11 during testing or damage assessment, and our ability to do so may have been impaired by the damages to LA 160. Contaminants introduced by construction-related activities may make it more difficult to accurately compare assemblages from the part of LA 160 within project limits to the materials recovered by Peckham in 1959. Since the erosional channels within project limits, which are of questionable origin, have been virtually eradicated, they no longer have any data potential. Finally, the same processes have made it impossible to determine whether the trash areas represent a single sheet deposit or three discrete features.

Our ability to address the artifact-specific questions generated in the original data recovery plan (Moore 2000) may be somewhat impaired by the damage to LA 160. Since the main artifact-bearing levels have been mostly removed from the three trash areas, it will be more difficult to assign accurate dates to individual features and compare their assemblages in any detail. This will cause few problems if the trash areas reflect a single, relatively discrete period of trash disposal. However, if there are temporal differences between features we will lose our ability to define changes in material culture through time. Assemblage data should still be useful, but at a coarser-grained level.

REVISED PLAN FOR INITIATING DATA RECOVERY AT LA 160

Introduction

Because of the damages to LA 160 from construction-related activities that were described in the last chapter, the plan for recovering data from this site as developed in Moore (2000) can no longer be fully implemented. The research orientation that was developed in that plan does not need to be changed, it is only the specifics of how certain data are to be recovered that need modification. Differences between the new plan and the original plan for implementing data recovery at LA 160 are significant enough that the entire discussion is presented below, with the necessary modifications made.

Data Recovery Field Methods

The same general methods will be used to examine both LA 160 and LA 4968, but since all sites have unique characteristics it will be necessary to tailor our investigative techniques to individual cases. This may include why certain areas are selected for excavation, how zones around features are treated, and whether or not mechanical equipment is used. The biggest difference in treatment will be in the intensity of data recovery efforts at individual sites. However, it is not anticipated that the mechanics of excavation will vary to any large degree. This discussion provides a general overview of the techniques that will be used during data recovery. For more comprehensive coverage see Boyer and Moore (1999).

Most field investigations at LA 160 will be confined to the area within proposed right-of-way limits. However, in order to fully document this site, some activities will occur outside that zone. LA 160 will be completely mapped, with all visible features and structures being documented. Since only a small part of the site is within proposed project limits, this activity will entail surface examination of areas outside the construction zone. In addition, limited testing will be conducted in the main mound just outside project limits. This examination is needed to establish whether that mound represents a residential structure, and to help determine its relationship to trash deposits within project limits. Small surface collections will also be taken outside project limits from trash areas near other potential structures to help establish their temporal relationship to remains within proposed project limits. All examinations of areas outside project limits are being done at the request of both the BIA and the NMSHTD.

General Excavation Procedures

Horizontal Proveniencing: The Grid System

The first step in excavation will be to re-establish the Cartesian grid system used during testing and damage assessment. The main site datum will be used to reference all horizontal measurements, and will only be moved if it is damaged in the time between phases of investigation. As noted above, a complete plan of LA 160 will be prepared, illustrating the locations of excavation areas and all visible structures and features. Surface collection and excavation units will be tied to the Cartesian grid

system. These units will be provenienced according to the grid lines that intersect at their southwest corners. For example, a grid that has the 110N and 115E grid lines crossing at its southwest corner would be labeled 110N/115E.

Grids may not be used for excavation under certain circumstances because they are not always the most efficient unit for this purpose. This is particularly true in structures and small features, where excavation by grids may provide a higher level of horizontal control than is always needed or desired. It is also very time consuming, which is an important consideration in cultural resource management. When a series of strata reflecting a sequence of depositional episodes through time is present in a structure, vertical control is often more important than horizontal control. While it is necessary to know which soil stratum is represented, the grid location may not be as meaningful. Of course, both horizontal and vertical controls are important when deposits reflect specific cultural activities. Thus, excavational units may differ in size depending on the nature of the deposits being investigated.

It must also be remembered that grids are artificially imposed over sites. They are simply a construct used to provenience cultural materials and features so that their original relationship can be preserved for later study. Rarely do features conform to a grid system. When features are large it may be desirable to excavate by grid to provide detailed data on the placement of materials within them. However, excavation in grids is often awkward in small features, especially when they extend into one or more grids. Thus, features, rather than the grids in which they occur, will usually be treated as independent excavation units.

Large features at LA 160, like the trash areas defined during testing, will be excavated by grid to maintain control over the proveniencing of cultural materials and to examine how artifact density may vary across these features. This procedure will also make it possible to examine the remaining deposits within the trash areas for evidence of internal temporal differentiation. Smaller features, such as small trash pits, will generally be excavated as single units with no regard to grid placement.

Vertical Proveniencing: Strata and Levels

Just as the grid system will be tied to the main site datum, so will all vertical measurements. All measurements will be made in meters below datum to avoid the problems encountered when dealing with both positive and negative measurements. In order to accomplish this, the main datum was assigned an arbitrary depth of 10 m below datum (mbd). This system will continue to be used during data recovery. Since it is often difficult to use one datum to provide vertical control for an entire site, subdatums will also be established. Horizontal coordinates will be measured for each subdatum so that its location relative to the main datum can be plotted. The elevation of each subdatum will also be measured relative to the main datum. Thus, since the main datum is arbitrarily assigned an elevation of 10.00 mbd, a subdatum that is 1.50 m lower will have an elevation of 11.50 mbd.

Vertical treatment of deposits will vary according to their nature. Cultural deposits will be carefully excavated to preserve as much of the vertical relationship among materials as possible. Such care will not be taken with noncultural deposits, since the relationship between artifacts found in sediments that were deposited by natural processes and those that have had their location altered by mechanical means is rarely meaningful. For example, abandoned structures were sometimes used for trash disposal, filling with debris discarded by the inhabitants of houses that were still occupied. Conversely, others were simply left open to the elements, filling naturally with a combination of wind-blown soil and colluvial sediments. Cultural materials will usually be present in both cases, yet they have completely different meanings. Trash represents materials that were purposely discarded,

and can often be separated by strata to determine the sequence of deposition. This will often allow researchers to look for minute changes in the artifact assemblage. Artifacts in naturally deposited strata rarely have any similar meaning. Cultural deposits require careful excavation to preserve the relationship between artifacts discarded at different times. Noncultural deposits tend to be jumbled, and the relationship between artifacts is almost always obscured because they were moved from their original context and redeposited.

Thus, accurate vertical controls may be unnecessary in some cases. While we will always attempt to excavate cultural deposits by stratum, that level of control will only be attempted in noncultural strata if it appears that it will provide data of potential importance to site interpretation. Excavation by strata is considered optimal in cultural deposits because soil layers tend to represent specific depositional episodes.

Before it is possible to delimit the extent and nature of soil strata it is usually necessary to examine them in cross section. This requires the excavation of exploratory units, which will consist of 1-by-1-m grids dug in arbitrary .1-m vertical levels unless natural stratigraphic divisions are encountered. When natural divisions are found, they will be used to delimit the boundaries of a level. Outside exploratory grids, soil strata will be used as the main units of vertical excavation. Exceptions may include noncultural deposits and cultural strata that are very thick and need to be subdivided to make excavation easier, or cultural strata that are difficult to distinguish between.

Two methods will be used to track vertical excavation units: strata and levels. Soil strata will be assigned unique numeric designations as they are encountered, and descriptions of each will be recorded on individual forms. Since the surface represents an arbitrary layer with no thickness, it will be designated Stratum 0. In order to track the sequence of strata from one area to another, each vertical excavation unit will also be assigned a level number, beginning with the surface. Again, since the surface is an arbitrary level with no thickness, it will be designated Level 0. The first vertical excavation unit to be dug will be labeled Level 1, the second Level 2, and so on. Since stratum and level numbers represent two completely different series, stratum numbers may not be in sequence as excavation proceeds downward in an excavational unit, but level numbers will always be in order.

Recording Excavation Units

The excavation of a grid or other unit will begin by completing a form for the surface that provides initial depths and other pertinent data. Ending depths for each succeeding level will be recorded on relevant forms, providing a record of all excavations. Recording forms will be completed for each level of excavation, including the surface, and will describe soils, inventory cultural materials recovered, and provide other observations considered important by the excavator or site supervisor including depths, stratum, and level. A description of soil matrix will also be provided, and should include information on cultural and noncultural inclusions, presence of building rubble, evidence of disturbance, and how artifacts are distributed if variations are noticed.

Recovery of Cultural Materials

Most artifacts will be recovered in two ways: visual inspection of levels as they are excavated, and screening though hardware cloth with variably sized mesh. Other materials will be collected in bulk samples that can be processed in the laboratory rather than the field. Regardless of how cultural materials are collected, they will all be inventoried and recorded in the same way. Collected materials will be assigned a field specimen (FS) number, which will be listed in a catalog and noted on all

related excavation forms and bags of artifacts. This will allow us to maintain the relationship between recovered materials and where they were found. All materials collected from an excavation unit will receive the same FS number. Thus, if chipped stone, ceramic, and bone artifacts are recovered from the same level in a certain grid, they will all be designated by the same FS number. Any samples taken from that level will also receive the same number. Architectural or chronometric samples that are not associated with specific excavation units will receive unique FS numbers.

Most artifacts will be recovered by systematically screening soil strata. All sediments from exploratory grids and features will be passed through screens. Two sizes of screen will be used. Most fill will be passed through ¼-inch mesh hardware cloth, with ⅛-inch mesh hardware cloth being substituted under certain circumstances. While most artifacts are usually large enough to be recovered by ¼-inch mesh hardware cloth, some that are too small to be retrieved by that size screen can also provide important clues about activities that occurred at a site. However, there is a trade-off in gaining this additional information. As the size of mesh decreases, the amount of time required to process soil and recover artifacts increases. Sampling is a way to balance these concerns. Rather than establishing specific guidelines for sampling by ⅛-inch mesh screens, it is considered better to leave this up to the discretion of the site supervisor. However, as a minimum, all soil in certain types of features (such as hearths and ash pits) should be screened through ⅛-inch mesh, as should all soil at floor or living surface contacts. Other potential applications of this recovery method include culturally deposited strata and activity areas.

In general, only a sample of noncultural deposits are screened. Since artifact content and placement in sediments deposited within structures and features by colluvial or eolian processes rarely provide detailed information concerning site occupation, complete recovery and accurate provenience documentation are usually unnecessary. However, the type of noncultural soils that will be most commonly encountered at LA 160 were deposited by different processes and mainly consist of soils that were removed from trash areas and used to partly fill adjacent erosional channels or were left in mounds by mechanical equipment. These deposits will be examined in some detail. Proveniencing will either be by grid or by the general area in which they occur, at the discretion of the site supervisor. All soils removed from these deposits will be screened in order to recover as many artifacts as possible. Sampling may be used if deposits are areally extensive. While this procedure will not provide us with data applicable to discrete trash areas, it will expand the number of artifacts recovered and provide more detailed information about lifestyle.

Other cultural materials, primarily botanical in nature, will be recovered from bulk soil samples. In general, sediments for flotation analysis will be collected from culturally deposited strata and features, and should contain at least 2 liters of soil, if possible. Macrobotanical materials like corn cobs, piñon shells, etc., will be collected as individual samples whenever found. All botanical samples will be cataloged separately, and noted on pertinent excavation forms.

Site-Specific Excavation Methods

The excavation of various parts of LA 160 will be approached in different ways, even though the mechanics of excavation will be the same. All excavation will be accomplished using hand tools. Methods of excavation will vary depending upon whether a structure, a feature, or an extramural area is being examined.

Structures

No structures are within project limits at LA 160. However, a large mound occurs just outside the proposed right-of-way near the trash areas defined during testing. Every examination of LA 160 has considered this mound to be the remains of a structure, and since it is near the trash areas that will be examined by this study, there is a high probability that it is related to those features. In order to determine the nature of the mound and its relationship to the features within the proposed right-of-way, a more detailed examination is needed than is possible using surface observation alone. These data will be provided by limited subsurface probes in the mound.

The probable structural mound will be examined by excavating in no more than two areas. A maximum of two grids will be opened in each area selected for this examination. Excavation will proceed using the methods defined above, with the first grid serving as a probe to define stratigraphy and the second excavated according to the stratigraphic units that are found. This procedure will allow us to determine whether the mound does indeed represent the remains of a structure, and will hopefully provide artifacts that can be used to assess whether it and the adjacent trash deposits are temporally related.

Features

Features will constitute individual units of excavation. As they are encountered at a site, features will be assigned a unique number. Small features (less than 2 m in diameter) may be excavated differently than large features (greater than 2 m in diameter). After defining the horizontal extent of small features like hearths and pits, they will be divided in half. One half will be excavated in 10-cm arbitrary levels to define internal stratigraphy, and a profile will be drawn. The second half will then be removed by strata. All soil removed from small features will be screened through ⅛-inch mesh hardware cloth. A second cross section illustrating its vertical form perpendicular to the profile will be drawn, and a plan of the feature and a form that describes and details its shape and contents will be completed.

Large features, such as trash middens, will be excavated by grid. The number of exploratory grids will be kept to a minimum, and as much of the feature as possible will be excavated by soil strata. A sample consisting of one or more grids (at the discretion of the site supervisor) will be screened through ⅛-inch mesh hardware cloth; otherwise ⅛-inch mesh will be used. At least two perpendicular profiles will be drawn, and forms and plans that describe and detail their shape and contents will be completed. Large features that are not treated in this way will be excavated using the same methods applied to small features. The method of excavation selected for a particular feature will be left up to the site supervisor. All features will be photographed using 35 mm black-and-white film before and after excavation, when possible. Other photographs showing construction or excavation details may be taken at the discretion of the excavator.

Ethnohistorical Investigations

The use of ethnohistorical investigations in our examination of LA 160 will not be affected by changes to the physical condition of the site. We will still attempt to identify documents pertinent to the occupants of this site, and knowledgeable local inhabitants will be interviewed. Combining the disciplines of archaeology and history should provide fruitful results. While it is doubtful that archaeology can provide names for site occupants, their ethnicity, or hard dates for the period of occupation, accurate information on these topics may be available from documentary sources. If such information can be derived through ethnohistorical inquiries, we will be able to more accurately assess the applicability of the archaeological data to our model, and thus the usefulness of the model itself.

Special Situations

Sensitive Materials

Discovery of burials during data recovery seems unlikely. LA 160 appears to have been associated with residences occupied in the early to mid-nineteenth century, and on-site burials are unlikely. Related interments should be in cemeteries, and we can assume that no human remains will be found. However, if human remains should be discovered, standard archaeological excavation techniques will be employed to remove them after consultation with appropriate review authorities has been completed. They include definition of the burial pit, use of hand tools to expose skeletal materials, mapping and photographing of the position of the skeleton and any grave goods, and retrieval of soil for pollen analysis.

Field treatment of human remains and other sensitive cultural discoveries will be based on the Museum of New Mexico policy adopted March 20, 1986, "Collection and Display of Sensitive Materials" (SRC Rule 11). If human remains or other sensitive materials are uncovered, no person will be allowed to handle or photograph them except as part of data recovery efforts. Data recovery related photographs of sensitive materials will not be released to the media or general public. Should human remains be encountered, local law enforcement officers and the State Historic Preservation Officer will be notified and necessary consultations will be completed before the remains are excavated. Interested parties including the Catholic Archdiocese and relatives (if found) will be informed, and will be consulted concerning disposition of the remains and any grave goods.

Unexpected Discoveries

There is always a risk of finding unexpected deposits or features during an archaeological excavation, and the project outlined in this plan is no exception. The procedure that will be followed in the event of an unexpected discovery will vary with the nature and extent of the find. Should human remains be found, appropriate consultations will be completed, and they will be treated according to the procedures outlined above. Small features, structures, or cultural deposits that were not located during testing will also be excavated according to the procedures outlined above. On the other hand, finds that have the potential to significantly alter the scope and intent of this plan will require consultation with the NMSHTD, the State Historic Preservation Division, and other agencies involved in permitting.

SUMMARY AND CONCLUSIONS

Damages to LA 160 caused by construction-related activities were extensive, and necessitated changes to the original plan submitted to discuss the recovery of data from the part of this site within project limits. All three of the trash areas defined within this zone during testing sustained damage, but to varying degrees both within and between features. Overall, nearly half of the sheet trash deposits identified in this part of the site were removed by mechanical equipment and redeposited in shallow channels and a long narrow mound of dirt. While cultural materials can still be recovered from the redeposited sediments, their data potential has been seriously compromised.

This report has described the damages to LA 160, summarizing their affect on the potential of the data still available in this part of the site to provide information on the history of the Pojoaque area, as well as how this has affected the array of questions generated for this investigation. Some modification of field methods will be needed, and have been discussed. LA 160 still has the potential to provide important information on the history of the Pojoaque area and economic trends in New Mexico in general, though that potential has been somewhat reduced. Ancillary studies, including ethnohistorical investigations and a re-examination of materials recovered from the site in 1959 by Peckham may now provide the lion's share of data. However, an examination of material remains within project limits at LA 160 remains an integral part of this study.

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