

MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

ARCHAEOLOGICAL TESTING OF LA 101135, A HISTORIC SITE WITHIN PARCEL 1 OF THE GLORIETA PASS BATTLEFIELD, CAÑONCITO, SANTA FE COUNTY, NEW MEXICO

by

Adisa J. Willmer

with a contribution by

Linda Mick-O'Hara

Submitted by

Timothy D. Maxwell

Principal Investigator

ARCHAEOLOGY NOTES 132

ADMINISTRATIVE SUMMARY

In March 1989, the Office of Archaeological Studies tested LA 101135, a historic site located in the village of Cañoncito, Santa Fe County, New Mexico. It is situated on the west side of the I-25 frontage road. The site is within Parcel 1 of the Glorieta Pass Battlefield. The resource is included in the *New Mexico State Register of Cultural Properties* and the *National Register of Historic Places*. It is also designated a National Historic Landmark. A limited testing program was conducted for the New Mexico State Highway and Transportation Department (NMSHTD) to identify the extent of cultural material revealed during the excavation of a drainage system. The drainage ditch was installed to help control water erosion in the vicinity of Our Lady of Light Church, located southwest of the project area. The church is on the *New Mexico State Register of Cultural Properties* and also within Parcel 1 of the Glorieta Pass Battlefield. The project area is within highway right-of-way acquired from private sources and private property.

LA 101135 is a historic habitation site that includes the remains of a historic house, associated corral, outbuildings, a well complex, and a historic trash scatter. This site appears to date from late 1800s into the present. Subsurface deposits within the highway right-of-way include a shallow midden and the remains of a historic structure. Informant interviews and archaeological research at this site revealed that the structure was previously razed and all that remains is a single foundation wall made of adobe and sandstone.

The structure has little architectural integrity, and the shallow nature of the trash deposits do not warrant further excavation of the site because they are unlikely to yield important information on the local history. We therefore do not recommend further cultural resource studies at this location.

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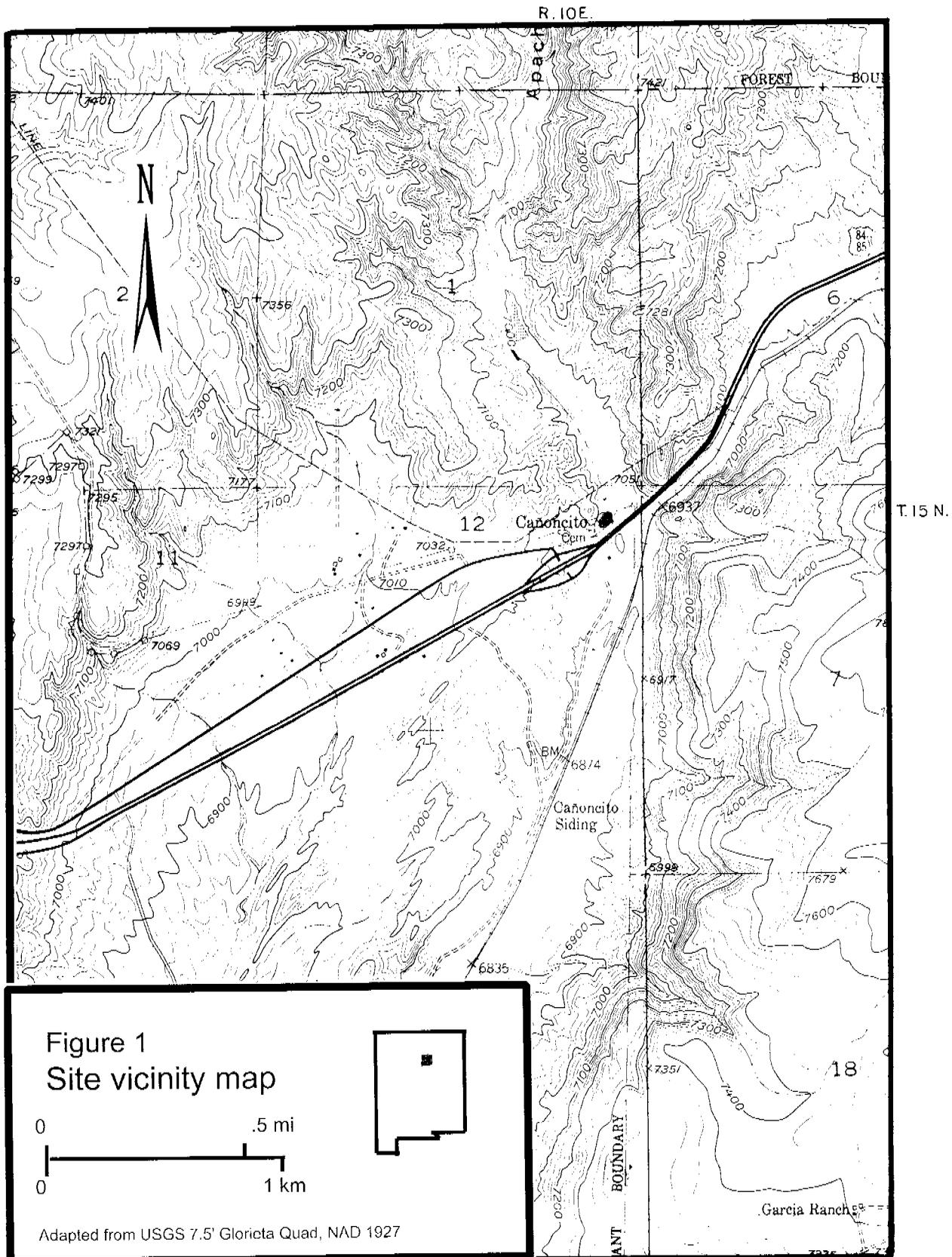
INTRODUCTION

In March 1988 the New Mexico State Highway and Transportation Department (NMSHTD) identified cultural material during the excavation and cultural resource monitoring of a drainage system that was installed to help control water erosion in the vicinity of Our Lady of Light Church, Cañoncito, New Mexico. The church is on the *New Mexico State Register of Cultural Properties* and the *National Register of Historic Places*. It is also designated a National Historic Landmark. The cultural materials uncovered revealed the presence of a historic site (LA 101135). LA 101135 is located within Parcel 1 of the Glorieta Battlefield.

From March 27 to 30, 1989, Office of Archaeological Studies archaeologists Adisa J. Willmer, Stephen C. Lent, and Byron Hamilton tested a portion of LA 101135. The project area was within the highway right-of-way of the I-25 frontage road and on private property located at Cañoncito, New Mexico (Fig. 1). David A. Phillips, Jr., served as principal investigator. The report was edited by Robin Gould, and figures were produced by Ann Noble.

LA 101135 is a historic habitation site and encompasses the remains of a house, associated corral, outbuildings, well complex, and a light scatter of historic trash. Testing was conducted in and around the subsequent drainage system and included the historic dwelling (Feature 1) and trash area (Feature 2). The unexcavated portion of the site was documented, photographed, and mapped. Examination of the surface and subsurface artifacts suggest that the site was occupied from the end of the Territorial period to modern times (ca. 1870 to present).

Testing of two features showed that the historic structure had little architectural integrity and that the trash deposits were shallow. The results of the testing program are presented in this report. Also included are the site description, a discussion of regional prehistory and history, and information on the local environment. Site location and legal descriptions can be found in Appendix 2.



CULTURAL HISTORY OVERVIEW OF THE REGION

(adapted from Willmer [1990], Lent and Goodman [1990], Lent [1991], and Gaunt [1991])

A brief summary of the major cultural sequences and archaeological work characterizing the project area will be presented here. The reader is referred to Stuart and Gauthier (1981) and Cordell (1984) for a more comprehensive overview on the prehistory of the Northern Rio Grande area, and Pratt and Snow (1988) and Simmons (1979, 1984) for the Historic period. Specific cultural information on the town of Cañoncito and its significance pertaining to the Santa Fe Trail and the Battle of Glorieta are also presented in this section.

Prehistory

Paleoindian Period

Paleoindian occupation of the Northern Rio Grande took place between ca. 15,000 and 5500 B.C. This stage of cultural adaptation is characterized by big-game hunting of now-extinct species of mammoth and bison. Paleoindian remains in the vicinity of the study area have been limited to a few isolated projectile points found in the eastern foothills of the Sangre de Cristo Mountains (Stuart and Gauthier 1981). A few Paleoindian points have been recovered in the Pecos-Glorieta area, on the Las Vegas Plateau, and in the highlands of the Galisteo Basin (Lange 1968).

The low frequency of Paleoindian remains in this region is not fully understood. Nordby (1981) hypothesizes that the area may have lacked the large-game resources characteristic of Paleoindian adaptation. Peckham (1984) believes that the presence of the few Paleoindian artifacts in the Northern Rio Grande area may be due to the fact that these projectile points were found elsewhere, curated by later groups, and introduced into the area.

Archaic Period

The Archaic period (ca. 5500 B.C. to A.D. 400) adaptation generally involved a diversified subsistence strategy. It included both migratory hunting and gathering practices that followed a seasonal pattern of efficient exploitation of selected plant and animal species within a number of eozones. There has been documentation of Archaic sites across much of the Northern Rio Grande region (Cordell 1979; Peckham 1984). Archaic sites, which consist of lithic scatters and sometimes associated hearths, have been documented north and northwest of the project area (New Mexico Cultural Records Information System [NMCRIS] files, LA 65922, Dickson 1979), as well as in high elevations of the Pecos Wilderness and the Santa Fe National Forest (Stuart and Farwell 1983; Wendorf and Miller 1959). Lent (1991) recently found Archaic points on three Puebloan sites near the town of Pecos. Obsidian hydration dates from predominantly Puebloan contexts near Rowe suggest that there was possibly scavenging of materials from Archaic sites, perhaps from sites in the Pecos Valley or mountain area (Morrison 1987).

Anasazi Period

The project area lies in a region between Kidder's Pecos Classification and Wendorf and Reed's Rio Grande Cultural Sequence. Researchers in the Rio Grande area, in particular Wendorf and Reed (1955), have perceived the developments in that area as departing from the traditional Pecos Classification proposed by Kidder (1927). The chronological sequence for the Rio Grande has been broken down into the Developmental period (A.D. 600-1200), the Coalition period (A.D. 1200-1325), and the Classic period (A.D. 1325-1610).

The Developmental Period (A.D. 600-1200). This period is subdivided into three phases, the Early, Middle (Red Mesa), and Late (Tesuque), in the Santa Fe District or what is also referred to as the middle Northern Rio Grande region. The early phase of the Developmental period dates from A.D. 600 to 900 and may be correlated with the Basketmaker III and Pueblo I periods of the Pecos Classification. Early Developmental habitation sites are characterized as small villages of shallow, circular pithouse structures, rectilinear surface storage cists, and associated ceramic and lithic scatters that consist mainly of Lino Gray, San Marcial Black-on-white, and various plain brown and red-slipped wares. In the Santa Fe area, a total of eleven early phase sites have been recorded (Lange 1968; Dickson 1979; NMCRIS files). In the Pecos area, early Pueblo period pithouses (LA 14154) were documented and dated approximately A.D. 800 (Stuart and Gauthier 1981) and are located within the boundaries of the Pecos National Historical Park.

The Middle or Red Mesa phase of the Developmental period corresponds with the Pueblo II period. It lasted from A.D. 900 to 1000 and was marked by the transition from pithouses to contiguous-walled adobe surface pueblos. Red Mesa Black-on-white ceramics are the dominant ceramic type found on Middle phase sites. Within the Santa Fe District, sites from this phase consist of a "pre-Pindi" pithouse structure beneath Room 164 at Pindi Pueblo (Stubbs and Stallings 1953:25) and the "pithouse occupation in the area B" of the Tesuque Bypass site described by McNutt (1969:56). Middle Developmental phase sites recorded near the project area were documented during the Arroyo Hondo survey (Dickson 1979); a total of nineteen sites were recorded on the surface.

The Late or Tesuque phase of the Developmental period dates from A.D. 1000 to 1200 (early Pueblo III). Wendorf and Reed (1955) ascertain that the number and size of sites in the Northern Rio Grande gradually increased during the Developmental period after A.D. 900 and reached a peak during the Late phase. Late phase sites characteristically range from small, ten- to twelve-room pueblos, to fairly large communities of over 100 rooms and contained up to four kivas. The diagnostic ceramic type of Late Developmental phase sites is a local indigenous ware with mineral paint, Kwahe'e Black-on-white. Sites from this phase in the Santa Fe area include: the "Kwahe'e Complex" at the Tesuque Bypass site (McNutt 1969); the jacal structure beneath Rooms 173 and 175 at Pindi Pueblo (Stubbs and Stallings 1953:24-25); LA 6462 near Cochiti Pueblo (Lange 1968); and 19 to 25 sites found during the survey of the Arroyo Hondo project (Dickson 1979:31).

Coalition Period (A.D. 1200-1325). The Coalition period is divided into two phases, the Early or Pindi phase and the Late or Galisteo phase. The beginning of the Coalition period in the Northern Rio Grande was marked by a technical change in black-on-white pottery, in which carbon paint replaced mineral paint. Kwahe'e Black-on-white design element was retained, but a new ware emerged called Santa Fe Black-on-white. Coalition period sites were marked by a substantial

increase in the number and size of the habitation sites and the systematic expansion into previously unoccupied areas of higher elevation. Masonry construction became common in the late phase of this period, especially in the Galisteo area; however, it did not fully replace puddled adobe structures found at some of the major pueblos in the Santa Fe District (Stubbs and Stallings 1953). A change in religious architecture was also noted within the Late Coalition period. Rectangular kivas incorporated into existing room blocks coexisted for the first time with circular subterranean structures (Cordell 1979:44). And finally, the late period was marked by the appearance of Galisteo Black-on-white, a ceramic type that shows close affinities with Mesa Verde Black-on-white.

Many Coalition period sites exist in the Santa Fe area. In the vicinity of the study area, in the Arroyo Hondo area, over 30 Coalition phase sites were recorded (Dickson 1979). In the Pecos area, population size increased and resulted in the development of large communities such as Loma Lothrop (LA 277), Dicks Ruin (LA 276), Forked Lightning Ruin (LA 672), Rowe Ruin (LA 108), and the black-on-white phase component of Pecos Pueblo (LA 625), over which the Classic period pueblo at Pecos was later built. These Coalition (early Pueblo III) sites are thought to be ancestral sites of Pecos Pueblo occupants.

Classic Period (A.D. 1325-1610). This period has been defined by Wendorf and Reed (1955:13) as a "time of general cultural florescence." Populations reached their highest levels, large communities with multiple plaza and room block complexes were established, and the elaboration of material culture appeared to reach a peak. The beginning of the Classic period, in the Northern Rio Grande, coincides with the appearance of two zones of specialized ceramic production: a northern biscuit ware area and a southern glaze ware area (Mera 1934; Warren 1980).

Most Classic period sites were established by the early 1300s, but by the late 1400s there was a substantial decline of population. Sites in this period are characterized by a bimodal distribution, suggested by the presence of very large communities associated with small, agriculturally related fieldhouses. This contrasts with the preceding Coalition period, in which a greater range of site types characterized the settlement pattern.

In the Santa Fe area, particularly in the Galisteo Basin, some of the most spectacular Southwest pueblos proliferated: San Cristóbal Pueblo (LA 80), Pueblo Blanco (LA 40), San Lázaro (LA 91 and 92), and Pueblo Galisteo (LA 26), to name just a few.

North of the project area, in the Arroyo Hondo area, Classic period sites flourished in the beginning of the period and then exhibited a partial abandonment around A.D. 1400. LA 12, Arroyo Hondo Pueblo, consisted of 24 room blocks around 12 plazas at its peak. The pueblo was abandoned permanently by A.D. 1425 and the sustaining area virtually emptied by the mid to late 1400s. A few sites were still occupied into the late 1500s, but by the end of the Classic period these sites were also abandoned.

By A.D. 1450, Pecos Pueblo was the only inhabited village in the Pecos area. The Classic period pueblo consisted of a fortified complex of multistoried buildings around a main plaza. Pecos Pueblo was at its largest and most prosperous by the mid-Classic period (Late Pueblo IV to early Pueblo V) and was a major trade center between the Plains Indians to the east and the northern Pueblo cultures.

Historic Period

Spanish Occupation of New Mexico

The historic occupation of the Rio Grande Valley began with the first Spanish *entradas* of the sixteenth century (Exploration period, 1540 to 1598), in particular Coronado's expedition in 1540 and Juan de Oñate's colonizing expedition in 1598. By the time of Spanish contact and exploration, the Santa Fe area was largely abandoned, and the aboriginal populations relocated along the middle Rio Grande. In the Pecos region, Pecos Pueblo was still inhabited and continued to play the role as a trade center between the Pueblo and Plains Indians.

Colonization Period (A.D. 1598-1680). Juan de Oñate established the first successful colony in New Mexico at San Juan Pueblo in 1598. Oñate was removed from the governorship, and around 1610, Santa Fe was founded by Pedro de Peralta. In the Santa Fe area, population was concentrated in the vicinity of Santa Fe's plaza with scattered ranchos located to the north and the south (the Rio Arriba and Rio Abajo areas, respectively). Subsistence during the Historic period involved farming within the Santa Fe and Pecos valleys and sheep herding in the nearby grass-covered plains. Many churches were built by the Franciscan friars using forced labor from the nearby pueblos in an attempt to convert the Indians to Christianity. The churches were frequently built on the rubble of the pueblo's ceremonial kivas. In the early 1620s, at Pecos Pueblo, the Spanish missionaries destroyed a number of kivas and built a monumental church and associated *convento* just south of Pecos Pueblo's North Quadrangle (Hayes 1974). Severe social, religious, and economic repression of the Pueblo Indians by the Spanish led to the Pueblo Revolt of 1680.

Spanish Colonial Period (1692-1821). The Pueblo Revolt left New Mexico unoccupied by Hispanic populations until Vargas's reconquest in 1692. By 1696, the Spanish had reoccupied the Santa Fe area, and some 140 land grants in the middle and upper Rio Grande Valley were conferred (Maxwell 1988).

Though failing in its attempt to throw off the Spanish yoke, the Pueblo Revolt caused many changes. The hated *encomienda* system of tribute was never reestablished, and the missionary practice of forced labor was scaled down (Simmons 1979). The new Spanish population grew rapidly and soon surpassed that of the Pueblos. Relations between Spanish and Pueblos became considerably more cordial. The post-Revolt Spanish colonists tended to be small farmers and herdsmen, living in scattered communities that did not demand the amount of forced native labor previously seen during the pre-Revolt economic system.

Spanish settlements were loose clusters of ranchos, sometimes grouped together into defensive plazas. The increased number of colonists created a great demand for land in the Rio Grande core area, and a drop in the Pueblo population caused a shortage of cheap labor. These trends resulted in a shift from large land holdings to smaller grants (Simmons 1979). Into the early 1800s the royal government continued to subsidize New Mexico, but it then served as a buffer against the enemies of New Spain (Bannon 1963) and there was little concern with Christianization.

The Santa Fe Trail

In the late eighteenth century, while the Spanish land grants were being established in the Santa Fe and Pecos river valleys, numerous expeditions brought explorers and traders into New Mexico. At this time, New Mexico was still a territory of Spain, and the Spanish government maintained tight control over its frontier communities. Spain's colonial borders were closed to any type of commerce with foreigners to the east. Spain's new frontier settlements were supposed to have exclusive economic ties with Mexican communities to the south via the Camino Real from Chihuahua.

The Mexican and American Territorial Periods (1821-1912). When Mexico gained independence from Spain in 1821, the borders of New Mexico were opened and trading with the United States began by means of the Santa Fe Trail. The Santa Fe Trail was the first American trans-Mississippi pathway to the west and also the only route that entered into another country (Simmons 1988; National Park Service 1963). The trade, centered in Santa Fe, eventually overflowed into the Mexican provinces where merchants found lucrative markets for their wares.

Historians have referred to William Becknell as the "Father of the Santa Fe Trail" because he, his companions, and their mule trains of merchandise were the first Easterners to travel from Missouri to Santa Fe on what became the Santa Fe Trail. In the autumn of 1821 they were the initial Americans to engage in commerce with the Republic of Mexico. The Santa Fe Trail is considered the first and last highway of commerce; it differed markedly from trails farther north whose traffic was composed mainly of settlers, ranchers, farmers, and miners who were trying to reach the Pacific in quest of new homes and opportunities. With time, the trail became a well-traveled route. Santa Fe trade drew Mexican silver coins, furs, wool, and raw material into the United States. It also precipitated a minor economic boom in Santa Fe, which had previously been a depressed frontier area (Simmons 1984, 1988).

The 25 years (1821-1846) in which Mexico controlled the western end of the trade along the Santa Fe Trail are generally regarded as the height of the period of use. During that period many of the most dramatic events associated with the trail's history occurred. These included the initial survey of the route in 1825, the first experiments with military patrols, rocky diplomatic negotiations with Mexico, the travels of Josiah Gregg, whose book, *Commerce of the Prairies*, first publicized the Santa Fe Trail and the American West, as well as an assortment of Indian fights and weather disasters (Simmons 1984).

In 1846, during the first year of the Mexican-American War, General Stephen Watts Kearny led his army along the Santa Fe Trail's mountain route and conquered New Mexico. It is believed to be at or near Cañoncito that Mexican Governor Manuel Armijo fortified Glorieta Pass in anticipation of Kearny and his American army. However, by the time that Kearny reached that point, Armijo had disbanded his forces and returned to Chihuahua because his officers were not willing to fight. General Kearny marched into Santa Fe without any resistance and raised the American flag at the Palace of the Governors (Bauer 1988).

Bringing Santa Fe under the rule of the United States changed the character of the commerce of the trail. The route no longer benefited from international ties. Forts were added to the trail to guard against Indian attacks, and military freight trains became a new business. Diverse travelers now used the Santa Fe Trail. Where once the trail had been populated by merchants and their ox-driven caravans, the late 1840s saw the trail traveled by U.S. Army soldiers, government

officials, gold seekers bound for California, Catholic priests and nuns, Protestant missionaries, and Old World immigrants (Simmons 1984; Almaraz 1988)

By the 1870s, the railroad industry was building new rail lines across Kansas into the Southwest. As each new section was added to the railroad system, only portions of the Santa Fe Trail were being traveled. In 1879, when the train line reached Las Vegas, New Mexico, only 65 miles remained of the Santa Fe Trail's original wagon route to Santa Fe. The railroad reached Santa Fe in 1880. This marked the end of the Santa Fe Trail as a major commerce highway (Simmons 1984).

The Santa Fe Trail, including its two main routes, was over 1,200 miles long. The original route started in Franklin, Missouri, and went southwest through Kansas where the trail followed the Kansas River. At what is now the town of Cimarron, in western Kansas, the trail split into two routes; the Cimarron Cut-off crossed the Oklahoma Panhandle entering New Mexico northeast of Clayton, while the Mountain Branch headed west along the Arkansas River into Purgatory, Colorado, then south through the Raton Pass into New Mexico. These two routes then converged at La Junta (now Watrous), New Mexico. This later became the site of Fort Union. The Santa Fe Trail headed south and west from La Junta. San Miguel del Vado was the first Mexican settlement encountered by traders prior to the founding of the town of Las Vegas in 1835. The town consisted of a fortified plaza located near a ford (*vado*) in the Pecos River and served as the port of entry for New Mexico. It was also the location of the Mexican customs house (Pratt and Snow 1988).

The Santa Fe Trail left San Miguel and headed north and west into the mountains. The first travelers would have seen Pecos Pueblo still inhabited by a few families. However, after 1838 the pueblo and mission ruins served as a landmark and campsite for Santa Fe Trail travelers (Pratt and Snow 1988). Sometime in the mid-1830s, the Catholic priest at Pecos left and took up residency at the church at San Miguel. Trail ruts are still visible on a portion of the Pecos National Historical Park. The main trail lies to the west of the mission across the Glorieta Creek. Some spur trail ruts to the village of Pecos pass the ruins today on the eastern side of the mission (Metzger 1990).

After Pecos Pueblo, the next settlement encountered was the small village of Pecos, 2 miles north. Also located in this area were three ranches that would become important sites for their role in the Civil War battle of Glorieta: Kozlowski's Ranch (whose main occupation was in the 1840s), near Pecos Pueblo; Pigeon's Ranch (1850s) located further west, at the entrance to Glorieta Pass, and Johnson's Ranch (1858), on the west side of Glorieta Pass. The most easily accessible route through the mountain range for Santa Fe Trail travelers was Apache Canyon. After passing through Pecos and Apache Canyon, the trail swung west through Arroyo Hondo and north to Santa Fe (National Park Service 1963; Pratt and Snow 1988).

Kozlowski's Ranch and Stage Station is presently located on Greer Garson's Forked Lightning Ranch along NM 63. The modern headquarters incorporates some of the original walls of Kozlowski's structure. Captain Napoleon Kozlowski, a Polish immigrant and officer with the Missouri Volunteers, came to New Mexico in 1846 and later acquired land on the Santa Fe Trail. The spot where he settled was located adjacent to a spring (Kozlowski Spring), and with adobe and roof timbers scavenged from the Pecos mission and pueblo, Kozlowski built his ranch house, barn, and corrals. It is possible there may have already been a structure at this location, perhaps dating to 1810. Prior to the Civil War, Kozlowski's Ranch served as a regular stage stop and Mrs. Kozlowski would serve meals to passengers on route to and from Santa Fe. In 1862, the ranch was used as the site of the Union Headquarters during the Battle of Glorieta (Simmons 1984).

Pigeon's Ranch, once a 23-room complex, is presently located on NM 50. The ranch was another Santa Fe Trail stop-over established in the 1850s. Alexander Valle, a Frenchman from St. Louis, built the combination ranch and Santa Fe Trail hostelry. Today only three adobe rooms, a rubble mound, and stone corral footings remain of the original structure. During the Battle of Glorieta, Pigeon's Ranch alternately changed hands between the Union and Confederate forces (Simmons 1984). The site served as a makeshift hospital, a morgue (Simmons 1984), and later the burial ground for 31 Confederate soldiers.

Johnson's Ranch and Stage Station is located in Cañoncito at Apache Canyon, west of Pigeon's Ranch (on the Old Pecos Highway). In 1858, Anthony Johnson of St. Louis purchased his ranch and built an adobe and rock residence. Johnson's Ranch became a stop for stagecoaches on the last stretch of the Santa Fe Trail before Santa Fe. Confederate troops occupied the ranch during the Battle of Glorieta and used it as their headquarters and supply depot. It was near Johnson's ranch that the Union troops, under the command of Major Chivington, destroyed the Confederate supply train and forced the Confederates out of New Mexico (Simmons 1984; Swanson 1985).

The Battle of Glorieta

During the American Civil War, the Army of the Confederacy was trying to gain control of the Santa Fe Trail in northern New Mexico. Their strategy was to control the proposed Southern Pacific railroad route near the Mexican border. Uniting the Confederacy with transportation routes to the ports and gold fields of California would have bolstered the economy of the Southern states and given the Confederate Army military and political stronghold over most of the United States. The Confederates also planned to annex a portion of Mexico. This vast territory would have been acquired as a slave-based economy stretching from the Pacific to the Atlantic (Swanson 1988).

In February and early March of 1862, the Confederate Army, under the command of Brigadier General Sibley, successfully defeated the Union troops in New Mexico; they occupied a portion of New Mexico along the Rio Grande from El Paso, Texas, on the Texas-New Mexican border, north to Santa Fe. Sibley then made plans to capture Fort Union, located east of Santa Fe. In its role as the protector of the Santa Fe Trail, Fort Union was the headquarters and supply depot for the Department of New Mexico and was the key to the entire territory. Sibley, however, never did make it to Fort Union nor did he ever have another success in New Mexico. The Battle of Glorieta took place along the Santa Fe Trail within Glorieta Pass. This Union Army victory resulted in Union control over New Mexico. During the same period, Union forces defeated Confederate troops from Kansas to Missouri. This resulted in Union control over lands west of New Orleans (Swanson 1985, 1988).

In late March 1863, Sibley's Texas Rangers advanced toward Glorieta Pass and Fort Union. They were full of confidence because of their victories over the previous month. General Sibley remained in Albuquerque while 300 mounted men, under the command of Major Charles Pyron, advanced from Santa Fe on the Santa Fe Trail. Pyron stopped at Johnson's Ranch and Stage Stop. At the same time, unknown to the Confederates, Colonel John Slough and his Colorado Volunteers came to the defense of Fort Union. Slough decided to take the initiative and advanced a party of his men, led by Major John M. Chivington, west toward the Confederate lines. The Union troops reached Kozlowski's Ranch and Stage Stop, where they camped at the spring (Swanson 1985; Snow and Pratt 1988).

An initial encounter between the Union and Confederate armies occurred in Apache Canyon on March 26, 1862. This fight was the first Union victory in New Mexico and has been referred to as the "First Skirmish of Apache Canyon." Chivington abandoned pursuit and withdrew to Pigeon's Ranch where a hospital was established. Pyron and his Confederate troops retreated to Johnson's Ranch and sent a courier requesting reinforcement from Colonel William Scurry who had several hundred Texas Rangers and a supply train in nearby Galisteo. The next day Chivington fell back to Kozlowski's Ranch where he was met by Slough and his backup troops (Swanson 1985).

Both armies, at the opposing ends of Glorieta Pass, simultaneously advanced on the morning of March 28 and fought the Battle of Glorieta at Pigeon's Ranch. Although the actual battle was a Confederate victory, Scurry conceded to a defeat after he received word that a Union detachment had crested the top of Glorieta Mesa and destroyed the Confederate supply train at Johnson's Ranch. As a result, the Confederate forces retreated from New Mexico, returning to Texas with only one-third of Sibley's original army. The Battle of Glorieta, often called the "Gettysburg of the West," forced the Confederacy to abandon their plans to conquer the West. As a result of these events, the Union Army retained control of one of their main military supply routes, the Santa Fe Trail (Swanson 1985; National Park Service 1990).

The Railroad

By the mid-1870s, three railroad companies were extending their tracks toward New Mexico. In 1880 the Atchison, Topeka and Santa Fe (AT&SF) Railroad Company completed their line from Topeka, Kansas, to Lamy, New Mexico, with a 16-mile branch to Santa Fe. The building of the railroad to Santa Fe marked the end of the Santa Fe Trail as a major commerce highway (Simmons 1984). The era of freight wagons, oxen, and mules crossing vast distances over the rutted plains ceased, and most of the trail passed out of active use. Economic growth associated with the railroad stimulated a period of development in New Mexico, primarily in the larger urban areas (Pratt and Snow 1988).

Statehood to the Present

In 1912, New Mexico became the 47th state of the Union. New Mexico experienced only slow population growth, with most settlements concentrated along the Rio Grande. More than half the state had a population density of fewer than five people per square mile (Williams 1986), partly because a large portion of New Mexico was National Trust Land and could not be settled. The major industries of this time were mining, ranching, lumber, and farming within the Pecos and Rio Grande irrigation districts, and tourism. These industries were well established before statehood and continue to be important today (Jenkins and Schroeder 1974).

HISTORY OF CAÑONCITO AT APACHE CANYON

Cañoncito at Apache Canyon is a small community with a history dating to the Mexican Territorial period (1821-1864). The town appears to have been in existence before 1855 (*National Register of Historic Places* form, Glorieta Pass Battlefield, on file at HPD). Prior to 1855, the present location of Our Lady of Light Catholic Church at Cañoncito (Fig. 2) was used as an informal gathering spot for public meetings, trading, and community functions. Our Lady of Light Catholic Church, also referred to as the Cañoncito Parish Church, was constructed sometime between 1855 and 1891 along the historic Santa Fe Trail. The one-story adobe structure was constructed into a slope on the side of Apache Canyon. The church and associated cemetery has served the needs of the community of Cañoncito for over 100 years. In the church, many weddings, burials, and community and political events have occurred. In 1891, before the property was transferred from Maria de la Luz Borrego to Archbishop Juan Bautista Salpointe, oral tradition states that some kind of structure served the function of the existing church (*New Mexico State Register of Cultural Properties* form SR #1256, on file at the HPD, Santa Fe). Sometime in the late 1800s, a trading post-general mercantile was built across from the existing church. From 1879 to 1880, Cañoncito had a post office (Pearce 1965:26). The town of Cañoncito is still a thriving community today and the church is an important landmark on the landscape as one drives from Santa Fe to Las Vegas, New Mexico.

In 1858, Anthony Johnson of St. Louis purchased his ranch and built an adobe and rock residence (Figs. 3, 4) at the mouth of Apache Canyon (Simmons 1984; Swanson 1985). The ranch was situated very close to the location of Our Lady of Light Church on the Santa Fe Trail (Fig. 5). Johnson's Ranch became a popular stop for stagecoaches on the last stretch of the trail before entering Santa Fe. Also during the 1862 Battle of Glorieta, Johnson's Ranch was used as the Confederate's main headquarters and supply depot (Simmons 1984; Swanson 1985).

Historically, Cañoncito at Apache Canyon was an important spot for military engagements. Strategically located where the Santa Fe Trail emerges from Glorieta Pass, Cañoncito is reported to be the place where, in 1846, Mexican Governor Manuel Armijo and his troops retreated back to Mexico allowing the American Army, under direction of General Kearny, to march on to Santa Fe. Because of this pivotal event, it was in August of 1846 that New Mexico became a territory of the United States. A second military event occurred near Cañoncito during the Civil War--the Battle of Glorieta. A Confederate supply train was destroyed by Union forces just south of Johnson's ranch. The Battle of Glorieta began on March 26, 1862, when the Union and Confederate armies first fought for only a few hours in Apache Canyon (located near Cañoncito). Two days later (March 28) heavy fighting resumed at Pigeon's Ranch. As the battle was in progress, Major Chivington and a few Union troops destroyed the Confederate supply train near Johnson's Ranch. This strategic move forced the Confederates to lose their stronghold and retreat from New Mexico (Simmons 1984; Swanson 1985).

The original Johnson Ranch does not exist today. According to the National Historic Landmark form for the Glorieta Pass Battlefield (on file at HPD in Santa Fe), the site of Johnson's Ranch is immediately south and west of Glorieta Pass gap, near the village of Cañoncito. It states that the ranch was destroyed (date unknown) and only open land remains. It is believed that the test excavations conducted during this project are in the vicinity where Johnson's Ranch once stood.



Figure 2. Our Lady of Light Church, Cañoncito, New Mexico, 1914 (courtesy Museum of New Mexico neg. 8830, photo by Waldo Twitchell).

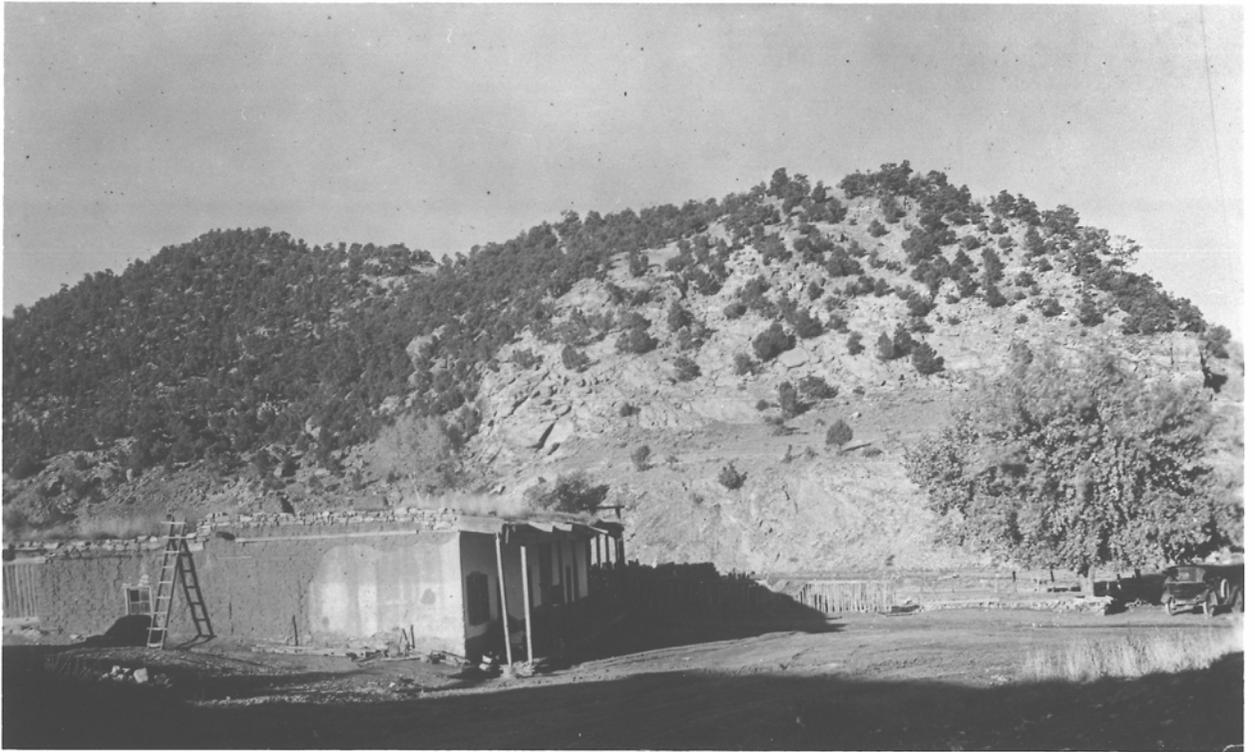


Figure 3. Johnson's Ranch, Cañoncito, New Mexico, 1914 (courtesy Museum of New Mexico neg. 8840).



Figure 4. Johnson's Ranch, Cañoncito, New Mexico, 1914 (courtesy Museum of New Mexico neg. 8837, photo by Waldo Twitchell).



Figure 5. Johnson's Ranch and Our Lady of Light Church, Cañoncito, New Mexico, 1914 (courtesy Museum of New Mexico neg. 8834, photo by Waldo Twitchell).

ENVIRONMENT

Physiography and Geology

(Adapted from Willmer 1990)

The project area is located at the confluence of Apache Canyon and Galisteo Creek, situated in the eastern foothills of the Sangre de Cristo Mountains. This mountain range comprises the southern portion of the Rocky Mountain Province. Northeast of the study area, the peaks of the Sangre de Cristo Mountains rise to an altitude of more than 3,962.4 m (13,000 ft). To the southeast, the Great Plains Province abuts the eastern prong of the Rocky Mountain Province and the northeastern edge of the Basin-and-Range Province. Westward from the foothills, an alluvial plain, or piedmont, is inclined toward the Rio Grande. Elevation within the project area is 6,900 ft. A surface drainage pattern is from northeast to southwest. Topographically, the project area is a series of north-northwest ridges, separated by fault-formed valleys (Thornbury 1965).

The geographic history of the southern Rocky Mountains and the Rio Grande trough began with the Precambrian deformations and ends with the erosional processes of recent history. The formation of the Sangre de Cristo Uplift occurred in the Laramide time (late Cretaceous-early Tertiary). The eastern margin of the uplift is characterized by reverse faults. The southeastern portion of the uplift contains several major north-northeast trending faults that juxtapose Precambrian rocks, which are covered by sedimentary soils. Westward, where the project area is located, the uplift consists of Precambrian rock that juts into sedimentary fill of the Española Basin (Rio Grande Rift). To the south, the Sangre de Cristo Uplift gradually slopes down to the south and southeast with open, upright anticlines and synclines (Woodward and Ingersoll 1979).

Climate

The climate of the project area is semiarid. Daily and annual temperatures fluctuate greatly because of the differences in elevation and topography found in the area. Based on statistics for Santa Fe County, summer temperatures rarely reach above 32.22 degrees C (90 degrees F), usually averaging 15.56 degrees C (61 degrees F), while winter temperatures average 2.78 degrees C (37 degrees F). The mean annual precipitation is 0.56 mm (14.12 in) for the Santa Fe area (Maker et al. 1971).

Soils

The soils within the project area belong to the Travessilla-Rockland-Bernal Association. The Travessilla soils are the specific soils found in the area and consist of a thin surface layer of light brown to light reddish-brown calcareous sandy loam or loam. This soil grades through to a light brown, fine, sandy loam to the underlying sandstone bedrock (Maker et al. 1971).

Flora and Fauna

Vegetation in the area is characterized by an overstory of scattered stands of pinyon, juniper, and a few cottonwoods. Understory vegetation consists of sagebrush, snakeweed, chamisa, rabbitbrush, various species of cactus, and blue gramma grass, sideoats gramma, galleta, western wheatgrass, sand dropseed, Indian ricegrass, ring muhly, alkali sacaton, and three-awn as the principal grasses (Maker et al. 1971).

Common fauna observed in the study area include jackrabbit, cottontail, coyote, mule deer, and a variety of birds, rodents, and reptiles.

FIELD AND LABORATORY METHODS

Field Methods

The first step in testing was to establish a datum to which all horizontal and vertical measurements were tied. In order to define the site boundaries, surface artifacts within and outside of the highway right-of-way were pinflagged by crew members walking parallel transects 3-m wide. The pinflagged artifacts identified the artifact concentrations and the site limits. A transit map was made of the site showing the locations of the features, trash scatter, artifact collection units, trenches (test pits), and any diagnostic surface artifacts that were collected (Fig. 6). The location of the highway-excavated drainage ditch was also plotted on the site map. A sample of the surface artifacts was collected by two dogleash collection units that measured 3 m in diameter. The collection strategy depended on the concentration of artifacts and location of features. Diagnostic surface artifacts were also collected in order to establish a more accurate time frame for the site.

After the site parameters were defined, and the artifact clusters and features were located, several 1-by-1-m and 1-by-2-m test pits were placed within the area of the site that was affected by the highway drainage ditch excavation. A high artifact density area (trash area) and the remains of a structural feature were the portions of the site that were tested.

The test pits were hand-excavated in arbitrary 10-cm levels until sterile soil was reached. The fill was screened through ¼-inch screen mesh and artifacts encountered were collected and recorded according to respective proveniences. Upon completion of each test pit excavation, the strata were described and profiles were drawn and photographed. Features encountered during excavation were recorded in the same manner. Unexcavated components of the site (the corral, outbuildings, and well complex) were documented, photographed, and plotted on the transit map.

Cultural materials recovered during this project are curated at the Laboratory of Anthropology, Museum of New Mexico. Field and analysis records are on file in the New Mexico Cultural Resource Information System (NMCRIS) of the New Mexico Historic Preservation Division.

Laboratory Methods

The artifact assemblage was analyzed by excavation level within each excavation unit. A total of 1,049 artifacts were collected and include animal bone (n = 215), Euroamerican artifacts (n = 829), and historic Tewa Black sherds (n = 5). The artifacts were brushed clean of all adhering dirt prior to analysis. Linda Mick-O'Hara conducted the faunal analysis and Adisa J. Willmer and Samuel Sweezy analyzed all Euroamerican artifacts. The reader is referred to the faunal remains section for laboratory procedures on all bone material collected from LA 101135.

The analytical method used on the Euroamerican assemblage was based on a functional typology. Appendix 1 lists the Euroamerican artifacts by provenience. The functional categories

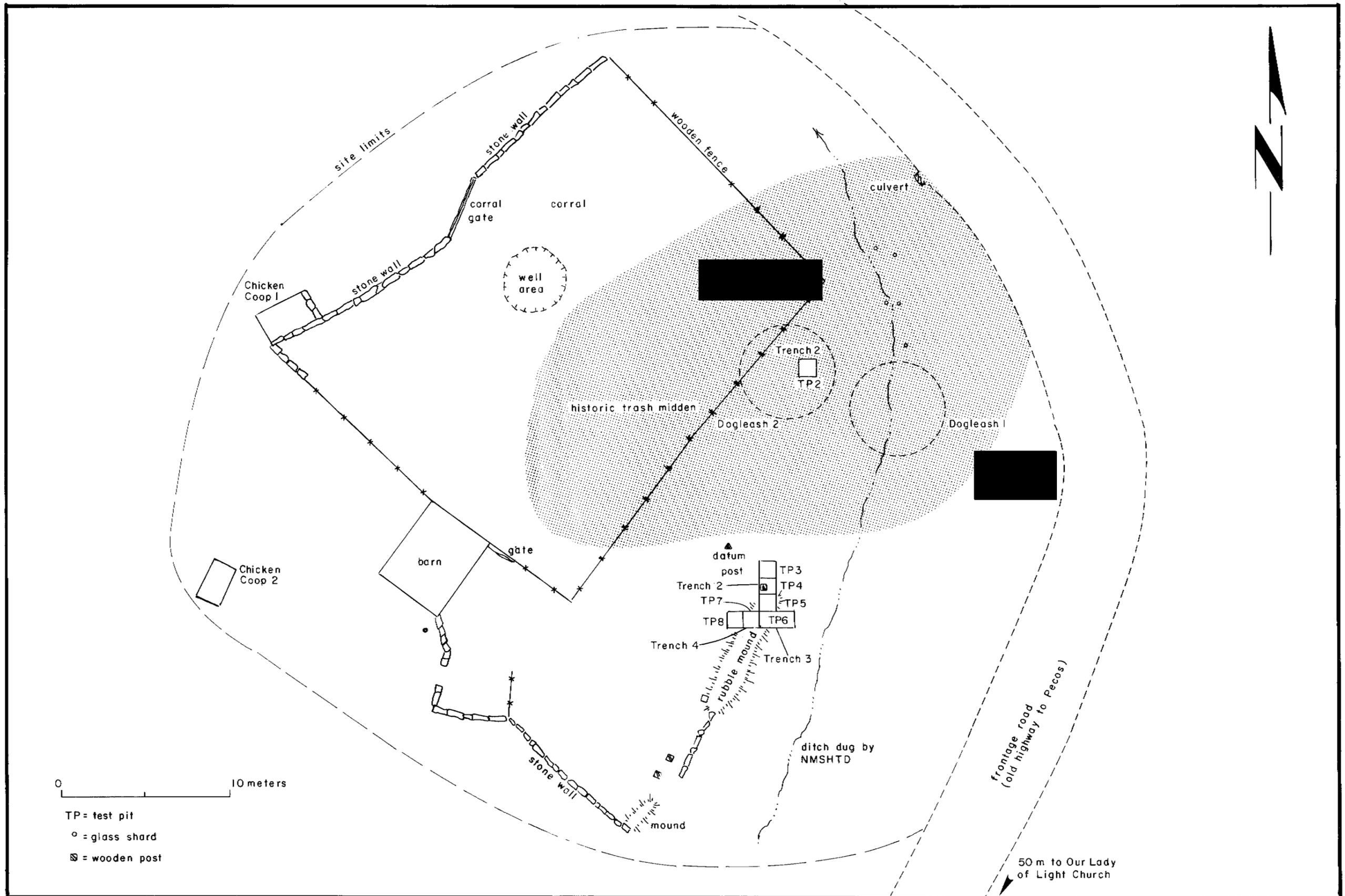


Figure 6. LA 101135 site map.

employed include domestic items, construction/maintenance, food items, indulgences, subsistence/production, household equipment, transportation, personal effects, entertainment, and unassignable items. This procedure was adopted from a program developed by Ward et al. (1977) and expanded by Laboratory of Anthropology personnel (Seamen 1983; Maxwell 1983; Oakes 1983). Within each functional category, artifacts are assigned to specific uses.

Artifact Dating Method

Of 829 Euroamerican artifacts, only 704 items can be used to obtain an approximate date for the site. The datable artifacts were assigned a beginning and an end date based on the historical documentation of the use of makers' marks or the range of assigned dates.

Two dating formulas were used to obtain an approximate date. Oakes (1983), after South (1977), devised a dating technique to produce a mean glass date. This method separated glass color and assigned dates based on color alone: aqua (1880-1930), amethyst (1808-1920), amber (1920-1930), olive (1815-1885), brown (1880 to present), green (1930-present), milk (1890-1960), cobalt/blue (1890-present), and clear (1930 to present). A weighted mean date and a standard deviation were then calculated based on the range of dates for each glass color as well as dates based on makers' marks. South (1977), on the other hand, used a formula for arriving at a mean ceramic date for historic sites. The ceramic assemblage was broken down into ceramic types, and a range of dates was assigned to each category: earthenware (1830-1910), stoneware (white ware) (1820 to present), porcelain (1880 to present). A weighted mean date and standard deviation were then calculated based on the range of dates of ceramic types as well as dates based on makers' marks.

Based on the diagnostic artifacts recovered from LA 101135, a beginning mean date of 1870 ± 38.5 years was calculated. The mean end date is 1978 ± 30.3 years.



Figure 7. Overview of LA 101135.

SITE DESCRIPTION

LA 101135

Location: Cañoncito at Apache Canyon

Legal Description: See Appendix 2

Ownership: Private and highway right-of-way acquired from private sources.

Cultural/Temporal Affiliation: Historic Euroamerican, Late Territorial period to present (A.D. 1870 to recent).

Site Description: This historic habitation site is within Parcel 1 of the Glorieta Pass Battlefield. The site is on the west side of Apache Canyon, at the confluence of Apache and Galisteo creeks, and is located within the village of Cañoncito, New Mexico (Fig. 7). The site covers an area of 58 m (north-south) by 50 m (east-west), totaling 2,900 sq m. It is on the west side of I-25, adjacent to the frontage road. Only a portion of the site was tested. The vegetation on the site consisted mainly of grasses, which included blue gramma grass, western wheatgrass, sand dropseed, and Indian ricegrass. Other vegetation noted on the site was snakeweed, rabbitbrush, and a few cottonwoods.



Figure 8. Cribbed log barn at LA 101135.

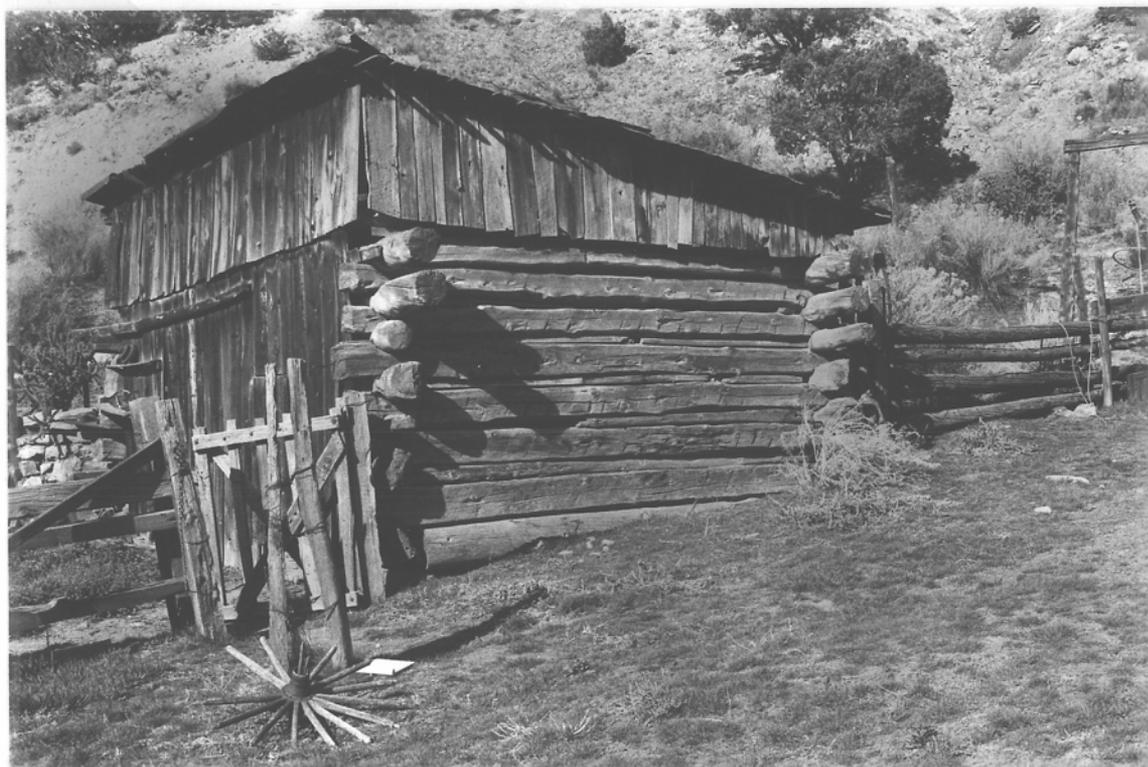


Figure 9. Cribbed log barn at LA 101135.



Figure 10. Chicken coop #1 at LA 101135.



Figure 11. Chicken coop #2 at LA 101135.

LA 101135 encompasses the remains of a house, an associated corral, outbuildings (chicken coops), a well complex, and a light historic trash scatter. According to interviews with people living in the area (the Varela family), the rubble mound (Feature 1), is all that remains of a rock and adobe house. Feature 1 is 15 m long by 0.8 m wide, and 1 m high. Still standing and intact are a cribbed log barn (Figs. 8, 9) and two rock and adobe chicken coops (Figs. 10, 11). A maintained corral composed of wood fences and dry-laid sandstone walls encircles the well located northwest of the rubble mound. The historic trash scatter (Feature 2) extends from the frontage road into the corral area and measures 30-by-22 m (Fig. 6). Based on diagnostic artifacts recovered from LA 101135, the site dates from A.D. 1870 to recent times.

Surface Collection and Test Pit Descriptions

Only a portion of the site falls within the highway-acquired right-of-way, but the landowner gave permission to test in and around the subsequently dug drainage ditch. Two features were investigated: Feature 1, the remaining wall of a structure/house, and Feature 2, the trash area. The other features of the site are not near the drainage system and consequently were not tested.

A sample of surface artifacts was collected by two dogleash units (3 m diameter). The dogleash units were placed within the historic trash scatter (Feature 2) to collect a representational sample of the historic artifacts found throughout the site. Any diagnostic artifacts found on the site were piece-plotted and also collected (n = 7). A total of seven test pits were excavated to determine subsurface cultural deposition. The designation for Test Pit 1 was canceled and the excavation units included Trench 1 (Test Pit 2), Trench 2 (Test Pits 3, 4, and 5), Trench 3 (Test Pit 6), and Trench 4 (Test Pits 7 and 8).

Table 1. Dogleash 1, Artifacts by Functional Groups

Category	Artifact Type	Number	Category (pct.)	Provenience (pct.)
Unassignable	Bottle fragments	27	5.2	26.7
	Glass fragments	28	5.4	27.7
	Metal fragments	3	0.6	3.0
Total		58	11.2	57.4
Domestic Items	Ceramic fragments (whiteware)	38	31.4	37.6
	Ceramic fragments (porcelain)	1	0.08	1.0
Total		39	32.2	38.5
Construction	Window glass fragments	4	2.4	4.0
Total		4	2.4	4.0
Total artifact count		101		

Surface Collections

Dogleash 1. Dogleash 1 is on the edge of the drainage dug by the highway department (Fig. 6). This dogleash falls within Feature 2, the trash scatter. A total of 101 artifacts were collected and include glass fragments and historic ceramic artifacts. Table 1 lists the artifacts by functional category.

Dogleash 2. This collection unit is west of Dogleash 1, also within Feature 2. The dogleash unit overlaps into the corral area. A total of 22 items were collected and include glass fragments and historic ceramic artifacts. Table 2 lists the artifacts by functional category.

Table 2. Dogleash 2, Artifacts by Functional Groups

Category	Artifact Type	Number	Category (pct.)	Provenience (pct.)
Unassignable	Glass fragments	17	33.0	77.3
Total		17	33.0	77.3
Domestic Routine	Ceramic fragments (whiteware)	5	4.1	22.7
Total		5	4.1	22.7
Total Artifact Count		22		

Point-Provenienced Items. Seven items were collected because they could be used to date the site. The artifacts were point-provenienced using a transit. The artifacts were within the historic artifact scatter (Feature 2), mostly in and around the corral. Table 3 lists the point-provenienced surface artifacts by functional category.

Table 3. Point-Provenienced Surface Artifacts, Artifacts by Functional Groups

Category	Artifact Type	Number	Category (pct.)	Provenience (pct.)
Unassignable	Bottle fragments	2	0.4	28.6
	Glass fragments	3	0.6	42.9
Total		5	1.0	71.6
Domestic Routine	Clorox bottle finish	1	0.8	14.2
Total		1	0.8	14.2
Transportation	Railroad spike	1	50.0	14.2
Total		1	50.0	14.2
Total Artifact Count		7		

Test Pit Description

Four trenches (seven test pits) were excavated. Trench 1 was placed within Feature 2, the historic midden. Trenches 2-4 were excavated around Feature 1, a historic structure.

Trench 1 (Test Pit 2). A 1-by-1-m excavation unit was located in the center of Dogleash 1. The trench was placed in a historic midden (Feature 2). The surface artifacts were collected within the dogleash unit (Table 1) and are characteristic of items found in Euroamerican trash areas (glass, ceramic, and metal fragments). Test Pit 1 was excavated in four arbitrary, 10-cm levels until natural deposits with no artifacts were reached. The test pit extended from 1.84 to 2.51 m below datum (mbd). Four natural stratigraphic levels were defined (Fig. 12). Stratum 1 consisted of a brown to dark brown (10YR 4/3) sandy loam with pockets of ash; this layer contained a high density of artifacts. Stratum 2 was a coarse, sandy, charcoal-stained soil, very dark brown to black (10YR 2/2), and decreasing slightly in artifact density as compared to Stratum 1. Stratum 3 was a brown sand (10YR 5/3) with charcoal flecks in the first 10 cm. The artifact density decreases dramatically in this level. Stratum 4 consisted of a brown to dark brown sandy sediment (10YR 4/3) with pebbles and cobbles; no charcoal was found. Four artifacts were recovered in the upper 5 cm of the trench and the lower 25 cm had no cultural material. The artifacts encountered in Test Pit 1 include historic items such as butchered animal bones, metal, ceramics, and glass items (Tables 4, 5). Three historic Tewa Black body sherds were also found. Table 4 lists the Euroamerican artifacts and Table 5 provides a summary of faunal remains found in the midden.

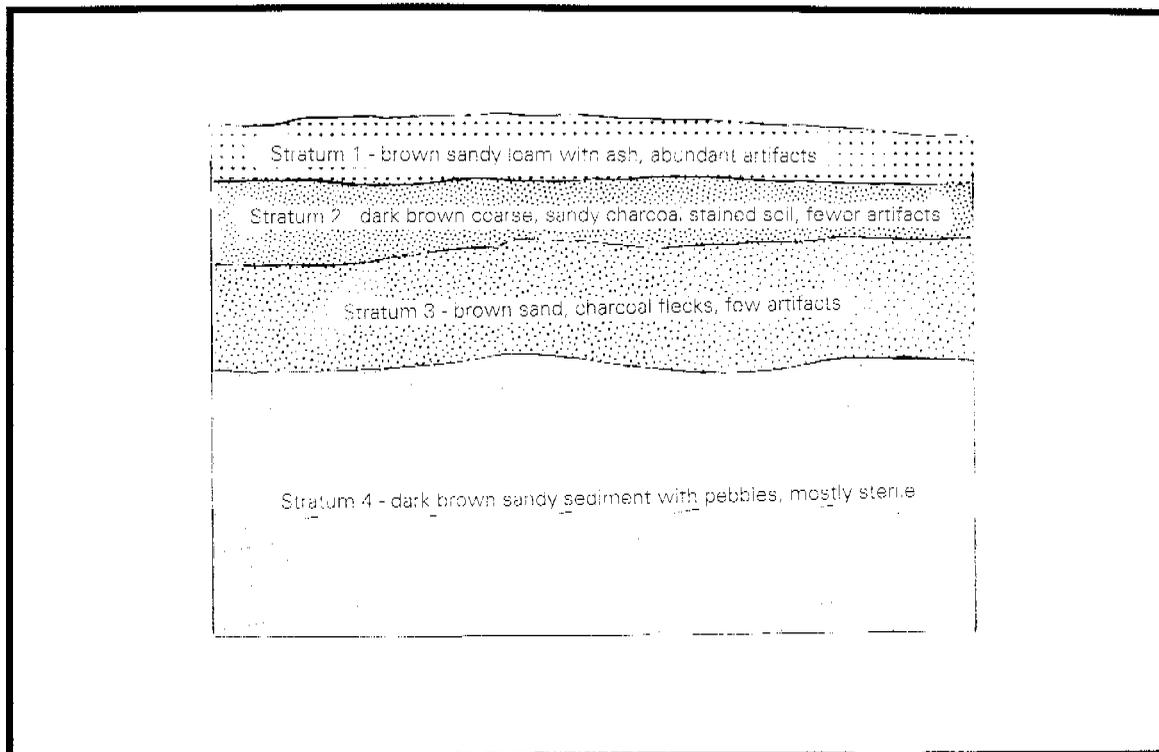


Figure 12. Stratigraphic profile of the north wall of Trench 1 (Test Pit 2).

Table 4. Trench 1 (Test Pit 2), Artifacts by Functional Groups

Stratum	Category	Artifact Type	Number	% of Category
Stratum 1	Unassignable	Glass fragments	3	0.6
		Bottle fragments	141	27.3
		Metal fragments	17	3.3
	Total		161	43.0
	Domestic	Ceramic fragments (whiteware)	31	25.6
		Ceramic fragments (porcelain)	3	2.5
	Total		34	28.1
	Construction	Nails	6	3.6
		Bolt	1	0.6
		Wire fragments	4	2.4
		Window glass fragments	5	3.0
	Total		16	10.0
	Subsistence/Production	22 Gun Cartridge	2	66.7
		Metal gun part, trigger or lock part	1	33.3
	Total		3	100.0
	Foodstuffs	Vegetable can fragments	5	62.5
	Household Equipment	Knife handle	1	50.0
Indulgence	Beer bottle fragment	1	16.7	
Transportation	Tail light cover fragment	1	50.0	
Entertainment	Slate pencil	1	50.0	
Total Artifact Count			222	
Stratum 2	Unassignable	Bottle fragments	70	13.6
		Glass fragments	33	6.4
		Metal fragments	13	2.5
	Total		116	22.5
	Construction	Nails	11	9.1
		Window glass fragments	14	11.5
	Total		25	2.07
	Domestic Routine	Ceramic fragments (whiteware)	1	0.8
	Indulgence	Wine bottle finish and bases	3	50.0
Brandy finish		1	16.7	

Stratum	Category	Artifact Type	Number	% of Category
	Total		4	66.7
Total Artifact Count			146	17.6
Stratum 3	Unassignable	Bottle fragments	2	0.3
	Domestic Routine	Ceramic fragments (whiteware)	30	24.8
Total Artifact Count			32	3.9

Table 5. Summary of the Faunal Remains Identified at LA 101135

Taxon	Frequency	Percent
Medium mammal	57	26.5
Large mammal	38	17.7
<i>Bos taurus</i> (Domestic cattle)	19	8.8
Ovis/Capra (Sheep/goat)	80	37.2
<i>Ovis aries</i> (Domestic sheep)	13	6.0
<i>Capra hircus</i> (Domestic goat)	3	1.4
<i>Sus scrofa</i> (Domestic swine)	2	0.9
Aves (Birds)	3	1.4
Total	215	100.0

Table 6. Trench 2 (Test Pit 3), Artifacts by Functional Categories

Stratum	Category	Artifact Type	Number
Stratum 1	Construction	Metal brace	1
Stratum 2	Unassignable	Bottle fragments	23
		Glass fragments	9
		Metal fragments	33
		Mica fragment	1
		Total	66
	Construction	Nails	5
		Bolt	1
		Spike	1
		Corrugated tin fragments	4
		Window glass fragments	16
		Total	27

Stratum	Category	Artifact Type	Number
	Domestic	Ceramic fragments (whiteware)	3
	Indulgences	Wine finish	1
Stratum 3	Unassignable	Bottle fragments	3
	Domestic Routine	Ceramic fragments (whiteware)	3
	Personal Effects	Rubber button	1

Table 7. Trench 2 (Test Pit 4), Artifacts by Functional Categories

Stratum	Category	Artifact Type	Number
Stratum 1	Unassignable	Bottle fragments	4
		Glass fragments	1
		Metal fragments	1
	Total		6
	Personal Effects	Leather shoe sole	1
Stratum 2	Unassignable	Glass fragments	3
		Bottle fragments	2
	Total		5
	Construction	Window glass fragments	2
		Nails	5
		Wire	1
	Total		8
	Domestic	Whiteware fragments	1

Table 8. Trench 2 (Test Pit 5), Artifacts by Functional Categories

Stratum	Category	Artifact Type	Number
Stratum 1	Unassignable	Glass fragments	1
	Total		1
Stratum 2	Unassignable	Bottle fragments	2
		Metal fragments	1
		Cloth fragments	2
	Total		5
	Construction	Window glass fragments	2
		Nails	2
	Total		4

	Foodstuffs	Vegetable can fragments	1
	Domestic	Earthenware fragments	1
Stratum 3	Unassignable	Bottle fragments	6
		Glass fragments	4
		Metal fragments	2
		Mica fragment	1
		Gypsum fragment	1
	Total		14
	Construction	Window glass fragments	2
		Nails	1
	Total		3
	Domestic	Whiteware fragment	1

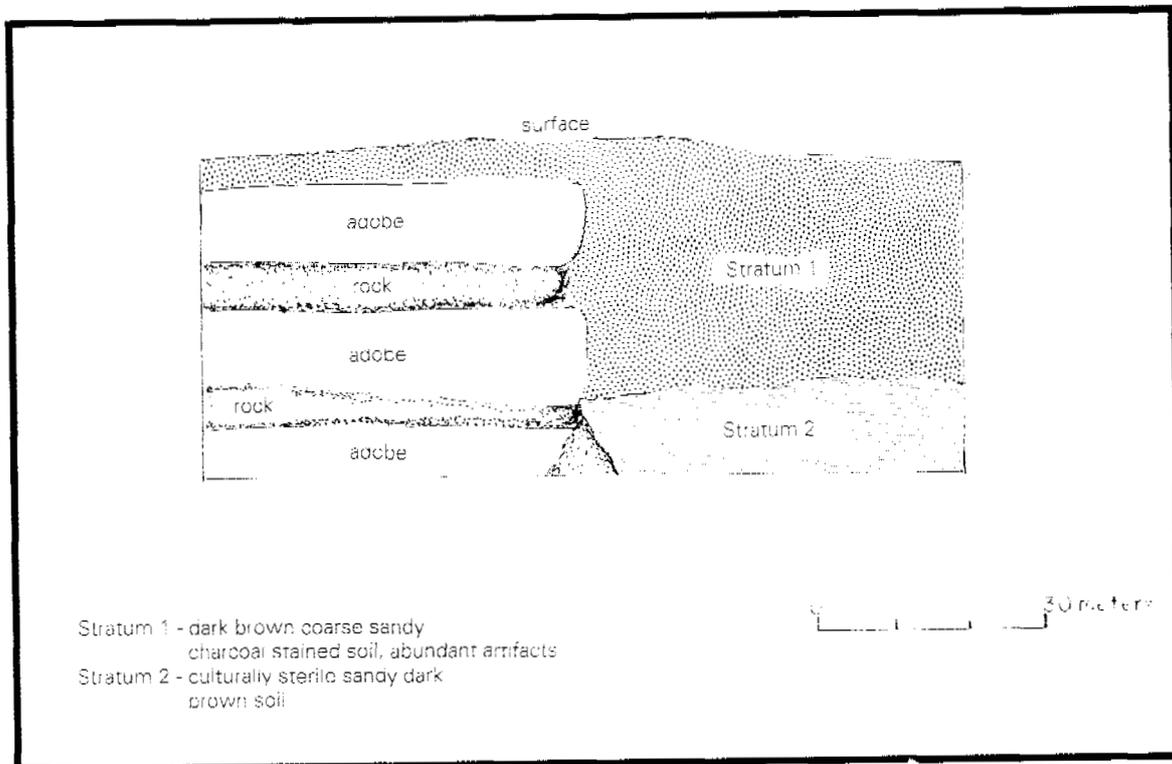


Figure 13. Stratigraphic profile of the south wall of Trench 2 (Test Pit 5).

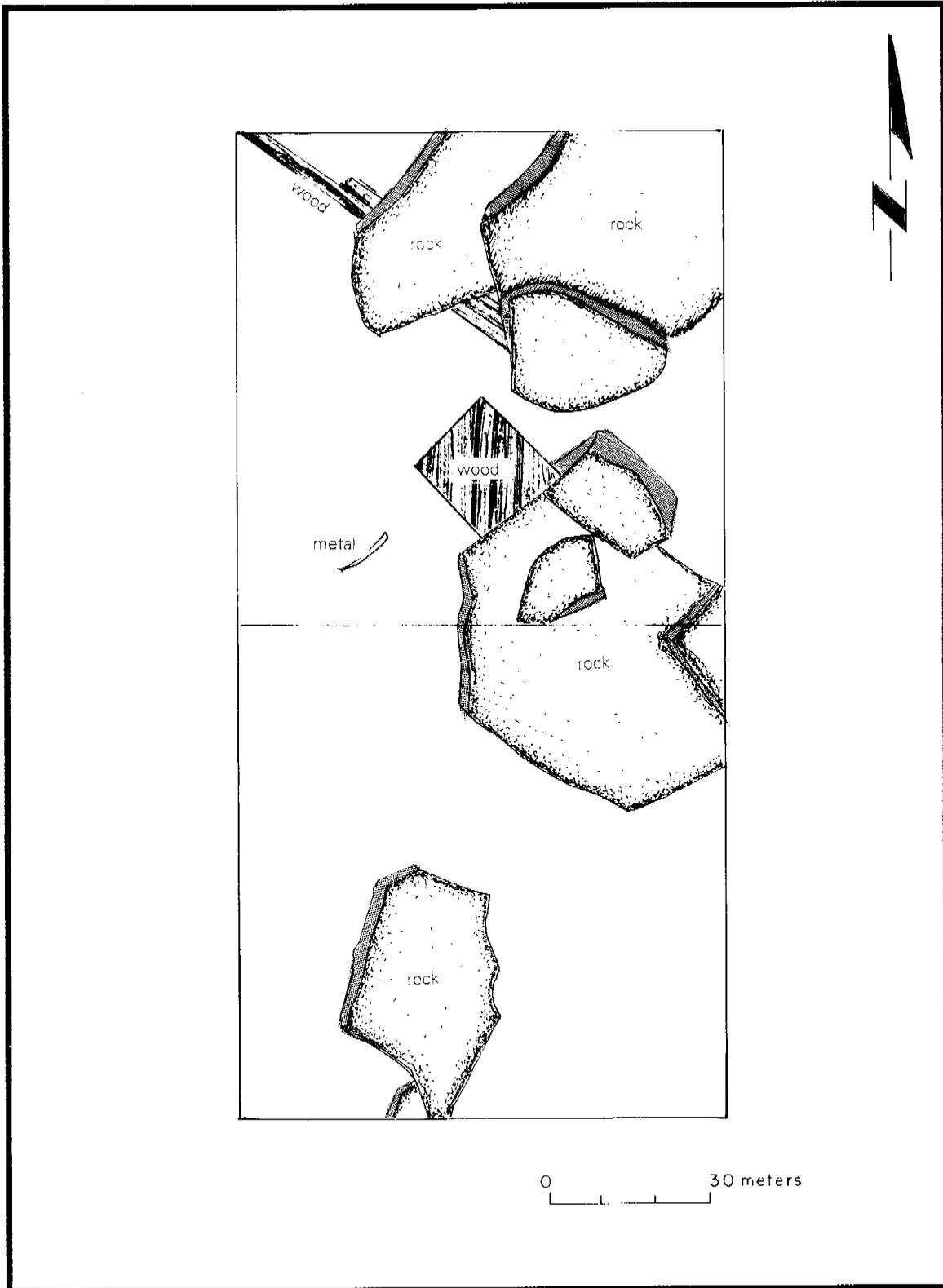


Figure 14. Base of Level 2, Trench 2 (Test Pits 4 and 5), sandstone rocks, possibly base of foundation of Feature 1.

Trench 2 (Test Pits 3, 4, and 5). A 1-by-3-m excavation unit was designed to test a possible corner of a historic masonry rock alignment (Feature 1). The trench was dug in 1-by-1-m test pit units (Test Pits 3, 4, and 5) in a north-south orientation (Fig. 6). Up to three arbitrary levels were excavated, terminating on horizontally laid, flat sandstone slabs. The northern portion of the trench (Test Pit 3) was excavated in three arbitrary levels revealing two natural strata. Stratum 1 was 0-50 cm below ground surface and was composed of coarse, sandy, charcoal-stained soil, very dark brown to black (10YR 2/2). The soil was similar to Stratum 2 of the trash midden and contained an abundance of artifacts (Table 6). Stratum 2 was a culturally sterile sandy soil, brown to dark brown (10YR 4/3). Test Pit 4, located south of Test Pit 3, consisted of sandstone wall slump on the surface and a square wooden stump situated in the southern portion of the excavation unit. This unit was excavated to 33 cm below datum where large, flat, sandstone rocks were encountered. The stratigraphic layers were the same as found in Test Pit 3. Table 7 is the summary of the artifacts uncovered. Test Pit 5 is the most southern unit of Trench 2 and revealed the most northern portion of a rock wall (Fig. 13). Test Pit 5 was excavated in three arbitrary levels to 1.66 mbd and consisted of the same stratigraphic levels as the rest of the trench (Fig. 14). Euroamerican artifacts were encountered throughout the test pit, decreasing in density (Table 8) toward the base of the excavation unit. A total of 153 Euroamerican artifacts were collected from Trench 2.

The section of the wall in Trench 2 lines up with the portion of the wall alignment uncovered in Trenches 3 and 4 (discussed below). The rocks at the base of the excavation unit appear to be foundation supports for Feature 1. The wall alignment runs in a northwest-southeast direction.

Trench 3. A 1-by-2-m excavation unit was designated Test Pit 6. This test pit was placed on the east side of the wall to determine the number of courses in Feature 1. The trench was excavated in five arbitrary levels. Four natural stratigraphic layers were defined in the excavation unit (Fig. 15). The test pit was excavated from 1.71 to 2.24 mbd. Stratum 1 consisted of a dark brown, coarse sand (10YR 5/3) with some wall fall containing sandstone elements and some adobe chunks. Stratum 2 was a coarse brown sand with charcoal (10YR 4/3); some wall fall and adobe pieces were present. Stratum 3 was a layer of roof fall with wood planks (some with paint), adobe chunks, one large piece of plaster, scraps of sheet metal, roofing nails, glass, a metal platter, and bone fragments. The soil was dark brown to black sandy clay (10YR 3/3) with pebbles, a few cobbles, and some charcoal and gypsum flecks. Table 9 lists the artifacts found (n = 76) in Trench 3. Besides the Euroamerican artifacts, one historic Tewa Black body sherd was collected. Stratum 4 had no artifacts present but there were adobe chunks, specks of gypsum, a few charcoal pieces, and pebbles located within the matrix of a brown sandy soil (10YR 5/4). The wall terminated within this stratum.

Trench 3 revealed that the masonry wall was possibly all that remained of a structural foundation. The rock portion of the wall was eight courses of sandstone (1 m high by 0.4 m wide). The rocks had some mud mortar holding the elements together. The roof fall was probably from a porch that was located along the eastern wall of the house. No living surface was encountered within Trench 3. A series of flat rocks were located between Strata 3 and 4, in the southwest corner of the trench. The rocks may be the base of the house or structure.

Table 9. Trench 3 (Test Pit 6), Artifacts by Functional Category

Stratum	Category	Artifact Type	Number
Stratum 1	Unassignable	Bottle fragments	5
	Construction	Window glass fragments	1
Stratum 2	Unassignable	Bottle fragments	4
		Glass fragments	2
		Metal fragments	1
	Construction	Nail	1
Stratum 3	Unassignable	Metal fragments	2
	Construction	Nails	3
		Wire	1
Stratum 4	Unassignable	Bottle fragments	1
		Metal fragments	28
	Construction	Window glass fragments	3
		Nails	20
		Wire	1
	Foodstuffs	Canning jar top	1
	Household Equipment	Food platter	1
	Personal Effects	Pencil fragment	1

Trench 4 (Test Pits 7 and 8). This trench was placed on the west side of the wall alignment to determine if the interior of the structure (Feature 1) existed. The trench was a 1-by-2-m excavation unit, consisting of Test Pits 7 and 8 oriented in an east-west direction (Fig. 6). Test Pit 7 was excavated as a single unit, 1.06 to 1.76 mbd, attempting to follow the masonry wall. An adobe wall was encountered just west of the rock wall. The adobe wall (Fig. 16) was a series of horizontally laid adobe bricks (each 40 cm long by 10 cm wide by 10 cm thick). It is possible that the adobe wall represents an earlier wall because there is a layer of mud plaster and an outer layer of white gypsum plaster present between the adobe and rock walls. The masonry may have been a facing to the adobe element (Fig. 17). On the west side of the adobe there were a few sandstone elements (1.99 mbd) that are probably part of the structure's foundation. In Trench 3, similar sandstone structural blocks are in line with these and occur at the same elevation.

Five stratigraphic layers were present in Test Pit 7 (Fig. 16). Stratum 1 was a loosely consolidated top soil of brown sand (10YR 5/4) with patches of melted adobe. This stratum was culturally sterile. Stratum 2 consisted of a coarse brown sand (10YR 5/2) with some adobe melt; very few artifacts were encountered. Stratum 3 was a thin lens of laminated yellow-brown sand (10YR 5/6) with no cultural material. Between Stratum 3 and 4 was a piece of glass and a sandstone rock. The top of Stratum 4 may have been open to the elements for some period of time, allowing for the eolian sand (Stratum 3) to be deposited. Stratum 4 was comprised of a cultural

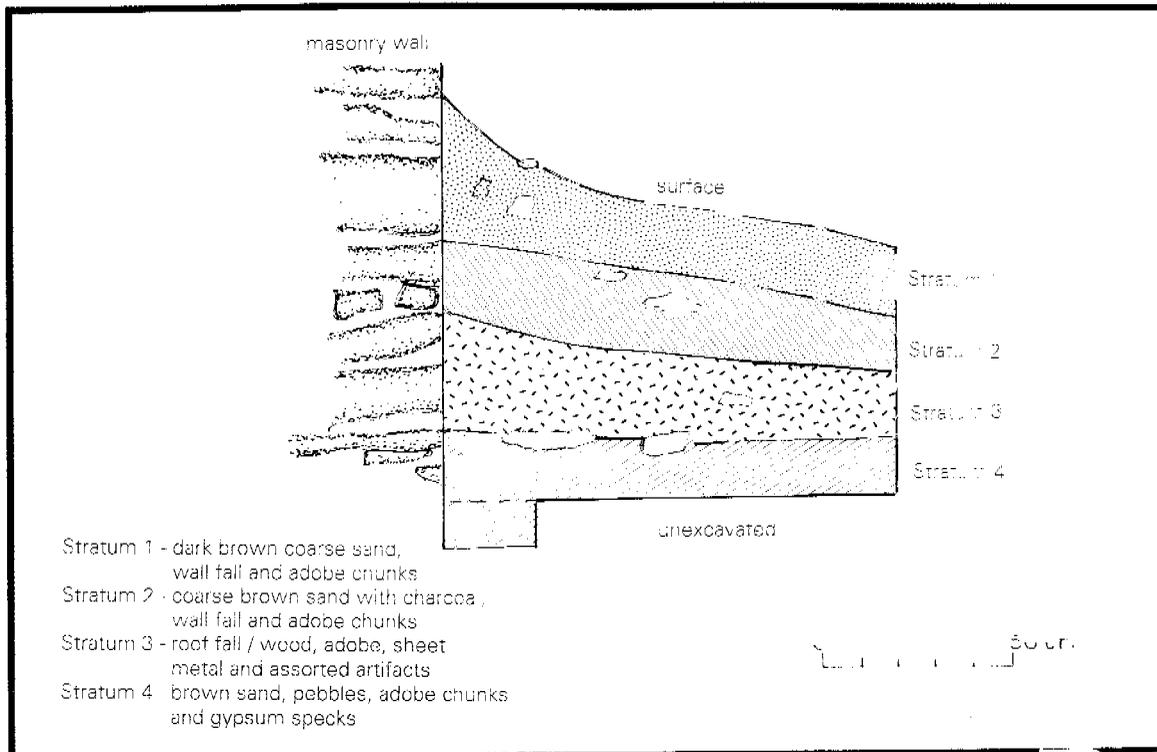


Figure 15. Stratigraphic profile of the north wall, east side of wall, Trench 3 (Test Pit 6).

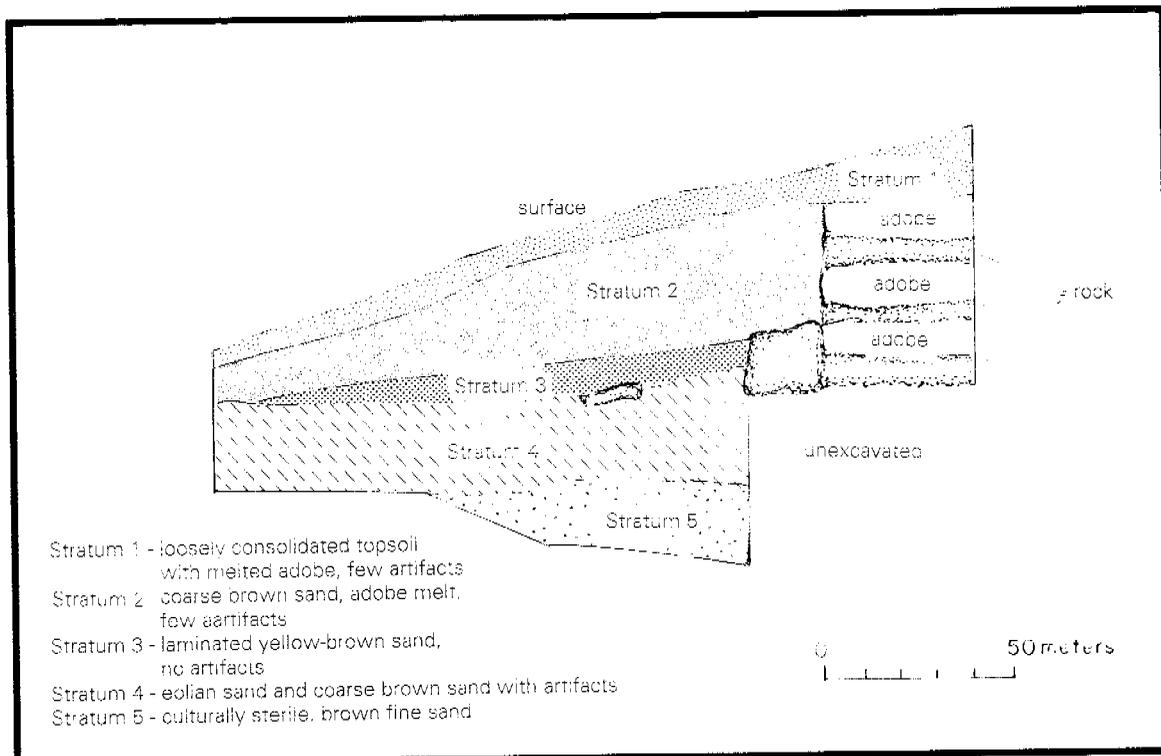


Figure 16. Stratigraphic profile of the north wall, Trench 4 (Test Pits 7 and 8).

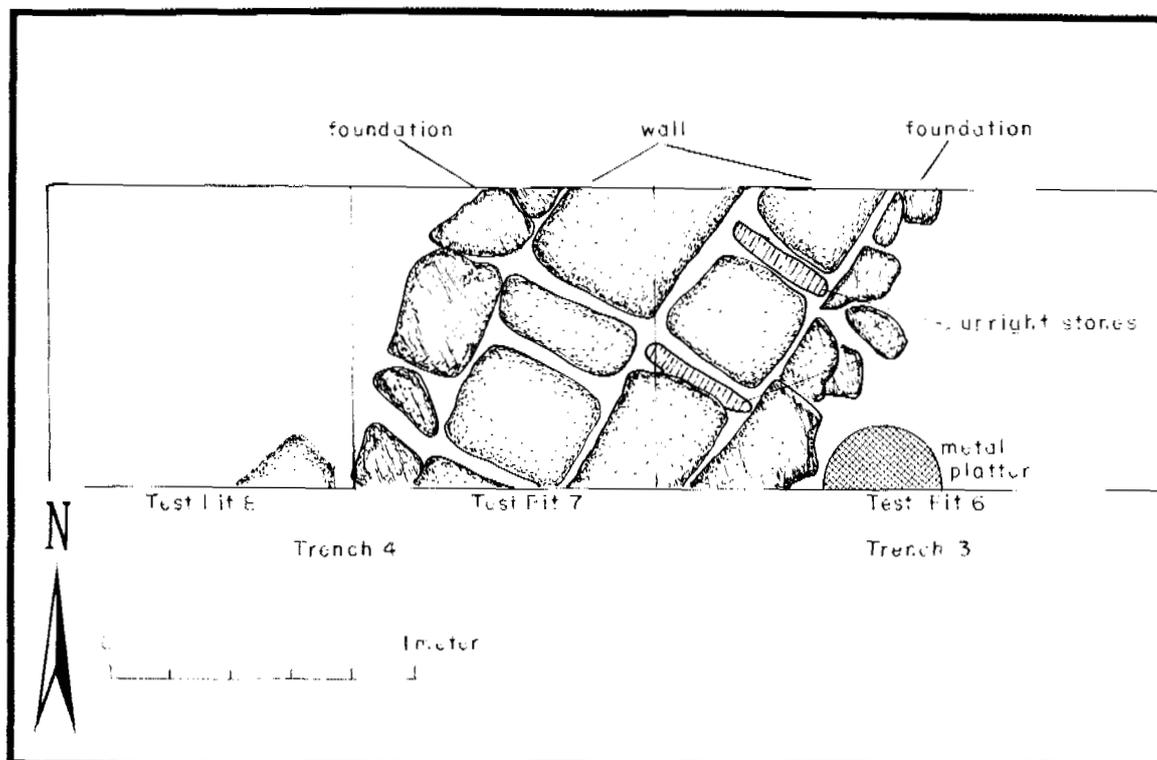


Figure 17. Feature 1, adobe and rock wall (Trenches 3 and 4).

layer of brown coarse sand (10YR 4/3) and Stratum 5 was a culturally sterile level composed of brown, fine-grained sand (10YR 5/3). The density of artifacts ($n = 13$) from Test Pit 7 was low (Table 10).

Table 10. Trench 4 (Test Pit 7), Artifacts by Functional Category

Stratum	Category	Artifact Type	Number
Stratum 1	Construction	Window glass	8
		Nails	3
		Metal pin	1
	Domestic	Whiteware fragment	1

Test Pit 8 was adjacent and to the west of Test Pit 7. This excavation unit was designed to test for the presence of a floor. The test pit was dug as a single arbitrary level from 1.46 to 1.91 mbd, and culturally sterile soil was reached at the base. No floor was present. Stratigraphically, Test Pit 8 is the same as Test Pit 7 (Fig. 16). Artifacts recovered ($n = 54$) were more abundant than in the western portion of Trench 3 (Table 11). One historic Tewa Black rim sherd was also found in this test pit. A total of 67 Euroamerican artifacts were recovered from Trench 4.

Table 11. Trench 4 (Test Pit 8), Artifacts by Functional Category

Stratum	Category	Artifact Type	Number
Stratum 1	Unassignable	Bottle fragment	2
		Metal fragments	12
	Total		14
	Construction	Window glass fragments	21
		Nails	10
		Spike	1
		Bolt	1
		Metal Ring	1
		Corrugated tin fragment	1
	Total		35
	Domestic	Whiteware fragments	2
	Foodstuffs	Apricot pit	1
	Entertainment	Glass marble	1
	Personal Effects	Medicine bottle finish	1

IDENTIFICATION AND ANALYSIS OF FAUNAL REMAINS

by
Linda Mick-O'Hara

The excavation of a midden area (Feature 2) undertaken at LA 101135 resulted in the recovery of 215 pieces of bone. This area was associated with possible structures and could have been a corral or midden area used by the occupants of those structures.

All bone recovered was returned to the laboratory at the Office of Archaeological Studies for processing. Bone was brushed clean of all adhering dirt prior to identification. All identification used comparative specimens housed at the Office of Archaeological Studies, Santa Fe, and at the Museum of Southwest Biology, Albuquerque. In addition, Gilbert's guides to the osteological identification of mammals (1980) and birds (Gilbert et al. 1981), Getty's 1975 edition of *Sisson and Grossman's: The Anatomy of the Domestic Animals* and Boessneck's (1969) differentiation of domestic sheep and goat were used to assist the identification of the primarily domestic species in the assemblage.

All the bone was identified to the most specific taxonomic level possible. Bone was also assigned to skeletal element, portion, and side. The animal's relative age at death was assigned when possible. Any environmental, animal, or thermal alterations to specimens were noted, along with any apparent butchering marks.

This initial identification and analysis resulted in the assignment of 117 pieces of bone (54.4 percent of the total sample) to four domestic species, and one combined genera. The remaining 98 bone fragments (45.6 percent of the total sample) could be assigned only to vertebrate class and size. These were graded by compact tissue thickness and estimated diaphysis diameter into medium or large mammal categories. The results are summarized in Table 5. A brief description of each of the species assignments will be followed by a review of the burning and butchering pattern observed. Some comparisons with specific and general historic samples are presented.

Taxonomic Review

Aves (Birds)

Three specimens were assigned to this class but were too fragmentary for further identification. These specimens are probably fragments from domestic fowl raised and used in the area. The carnivore markings on these specimens could be the result of dogs rummaging through garbage or the actual killing and consumption of birds by carnivores.

Mammals

Bos taurus (Cattle). Cattle were brought into the Southwest during the Spanish *entradas* and colonization (Bakker and Lillard 1972). This taxon could be assigned to 19 bone specimens in the Cañoncito sample. The fragments assigned to large mammals are not assignable to this species

because of their greater degree of fragmentation, possibly as a result of the butchering process. Ten of the specimens assigned to this species were rib sections. Overall axial elements dominate and only four postcranial elements were identified.

Ovis/Capra (Sheep/goat). This combined genera dominates this small assemblage. Eighty bone specimens are in this category. All of these elements exhibit some evidence of processing. This may have resulted in their reduction to a point where species was not identifiable (Boessneck 1969). Reduction of these specimens was primarily accomplished by splitting, although some ribs exhibit snap breaks. If the area of excavation was indeed a corral at one point, some reduction of elements may be the result of trampling by animals kept in the area (Olsen and Shipman 1988).

Ovis aries (Domestic sheep). Thirteen specimens, primarily of low meat utility (Binford 1978), could be assigned to domestic sheep using both comparative materials and drawings from Boessneck (1969). Sheep, along with goats and cattle, were introduced to the Southwest during Spanish colonization (Bakker and Lillard 1972). Historically, sheep were the dominant species used by Spanish farmers and ranchers (Carlson 1969; Algier 1969), though Olsen (1974) found that cattle dominated the faunal assemblage at the San Xavier del Bac Mission site near Tucson.

Capra hircus (Domestic goat). An astragalus, calcaneum, and first phalange could be identified as domestic goat using both comparative materials and element observations (Boessneck 1969). This establishes the use of goat as an occasional food item at the site but in low frequency, similar to those identified by Olsen (1974), Mick-O'Hara (1991), and others for the Southwest.

Sus scrofa (Domestic pig). A partial ulna and one partial tibia could be identified as domestic pig. Domestic pigs were introduced in small numbers during the later Spanish colonization of the Southwest, but their economic and subsistence use was surprisingly low in comparison to the utilization of pig in the eastern United States at the same period (Jolley 1983). The elements recovered were split, probably with an axe. Pigs were probably kept in the area if not often utilized for food.

Taphonomic Factors

Only six specimens from the sample exhibit carnivore gnawing or bite marks, which suggests that few dogs were kept or they were not scavenging the area which was protected by a corral or other structure for a period of time. Weathering, however, was evident on 109 specimens or 50.7 percent of the bone sample. This suggests the elements did remain on the ground surface for a long time after disposal into the trash area, or were churned up, again and again, in a corral context.

Burning and Butchering

Any cut marks or spiral fractures were noted on all elements, but only the dominant patterns in the sheep/goat remains and the cattle remains will be discussed here. The predominant pattern of butchering on these remains was the splitting of all long bones by axe or other heavy implements resulting in an element either split at or near an epiphysis or a spiral fracture from that area toward the element midshaft. The ribs were split transversely and then snapped through near the proximal

end. Axial elements had processes removed in the same way. This butchering pattern was apparent on both the sheep/goat and bovid remains but the sheep/goat remains were less extensively fragmented by the process and thus more identifiable overall. This butchering pattern would result in sections of meat from the sides of these animals along with shoulder and rump portions being separated as units. This would be a common historic pattern of butchering (Lyman 1977).

The use of an axe to butcher domestic animals is a common frontier practice across the United States as noted by Lyman (1977), Jolley (1983), and others. It has been noted that this practice seemed to persist longer in the Southwestern section of this country than in other areas (Hewitt 1975; Mick-O'Hara 1991).

The majority of this assemblage (96.2 percent) exhibits some evidence of thermal alteration. In this assemblage, 157 specimens were tanned and 50 specimens exhibit light to dark discoloration. Both of these categories may be the result of roasting meat, which would cause darker discoloration on bone that was exposed directly to the heat source.

Both the butchering and burning noted on these specimens suggest that these animals were used for local cooking and consumption. These remains, as well as the primary butchering refuse, were disposed in the same dump area.

Conclusion

Historic archaeological site bone assemblages in northern New Mexico and the greater Southwest contain primarily domestic animals. The Spanish colonial picture of settlement was one of colonization by bringing in their own livestock, crops, and technology and fitting these into the existing landscape. LA 101135 shows this pattern of animal use--domestic animals were butchered and used locally. As with numerous assemblages in the northern Southwest, the sheep/goat remains dominate the recovered faunal materials. The predominance of sheep is supported in historic administrative accounts of the area. All aspects of the assemblage indicate that this site was a typical historic occupation of the time period.

TESTING RESULTS

A portion of LA 101135, a historic habitation site, was tested. This site is within Parcel 1 of the Glorieta Pass Battlefield. This resource is included in the *New Mexico State Register of Cultural Properties* and the *National Register of Historic Places*. It is also designated a National Historic Landmark. Feature 1, the remains of a rock and adobe house, and Feature 2, a historic midden area, were the only areas tested. These two features were in the section of the site where the highway department subsequently dug a drainage ditch intended to alleviate erosional problems around Cañoncito's Our Lady of Light Church. Our Lady of Light Church, a religious structure listed on the *New Mexico State Register of Cultural Properties*, is on a hill to the southwest.

Feature 1 is the remains of a rock and adobe wall (15 m long, 0.8 m wide, and 1 m high). The western side of the wall (presumed interior of structure) is constructed of adobe bricks. The interior and exterior of the bricks were coated with adobe mud and then finished with gypsum plaster. The wall was remodeled on the outside with a sandstone and mud masonry construction. A total of eight courses remained of the rock portion of the wall, terminating on large, flat sandstone footings. Excavations on the east side (presumed exterior of structure) of the wall revealed wall fall (Strata 1 and 2) and a layer of roof fall (Stratum 3). The roof fall probably represents the remains of a porch roof. Artifacts found outside of the structure included construction materials such as lumbered wood, roofing nails, window glass, and round and square nails. Also found outside of the structure was a domestic item, a large, metal serving platter. As with the rock portion of the wall, the adobe wall was supported by large flat sandstone footing elements. There was no indication of a floor. Five stratigraphic layers were present on the inside of the structure but only one (Stratum 2) had artifacts present. The artifacts were recovered near the surface and included mostly construction materials (window glass, nails, a spike, bolt, and metal fragments). A few items representing the domestic, food, entertainment, and personal effects functional categories were also recovered. Also found associated with the interior of the structure were two Tewa Black sherds.

Other than the adobe wall, no components of the interior of the structure remain (i.e., no roof fall or floor were present). Presumably, the interior of the structure was totally leveled. Information gathered from interviews with local people have indicated that Feature 1 was once a house. Mrs. Varela, a local informant, remembers living in the house as a small child. She stated that the family moved out of the structure in the 1940s. They then moved into a newer house located next to the church, southwest of LA 101135. The house at LA 101135 was razed and construction materials were used in the building of the second home. This newer structure is presently occupied, and the corral, outbuildings, and well of LA 101135 are currently in use by the occupants.

Feature 2 is a fairly large, shallow trash midden. The trash scatter covers an area measuring 25-by-20 m and is located north of Feature 1. The midden deposits consisted of four stratigraphic layers. Stratum 1 (top soil with ash) and Stratum 2 (charcoal-stained sand) were the levels with the majority of artifacts. The artifacts encountered included historic items typical of a household. The functional categories represented were domestic items, construction materials, subsistence and production items, food remains, household goods, indulgence, transportation, and entertainment categories. Over 90 percent of the bone found at the site came from the midden and included mainly butchered bone. Also found were three historic Tewa Black body sherds.

The artifacts fall within a wide range of functional categories (Table 12). The diversity of items would be expected in a habitation site where many activities take place. Based on datable artifacts, this site appears to date from the late Territorial period to the present (ca. A.D. 1870 to present).

Table 12. Functional Category Classification of the Euroamerican Assemblage

Category	Number	Percent
Unassignable	516	62.2
Domestic Routine	121	14.6
Construction/Maintenance	165	20.0
Foodstuffs	8	1.0
Indulgences	6	0.7
Subsistence/Production	3	0.4
Household Equipment	2	0.2
Transportation	2	0.2
Personal Effects	4	0.5
Entertainment	2	0.2

CONCLUSIONS AND RECOMMENDATIONS

Testing was conducted within a portion of LA 101135, a historic habitation site. The site includes the remains of a house, an associated corral, outbuildings (chicken coops), a well complex, and a light historic trash scatter. Only Feature 1, the remains of a structure, and Feature 2, the trash midden, were tested. Both features were in the vicinity of a drainage ditch that was excavated by the New Mexico State Highway and Transportation Department. LA 101135 is located within Parcel 1 of the Glorieta Pass Battlefield, Cañoncito, New Mexico.

Interviews with local people and archaeological research at LA 101135 have revealed that the structure, Feature 1, was a wall of a previously demolished house. All that remains of the structure is a remodeled foundation wall constructed of adobe and sandstone masonry. Feature 2, the trash deposits, yielded archaeological data used to determine the dates of occupation and types of activities carried out during its occupation.

Based on the limited information gathered during this testing program, it is concluded that LA 101135, is a small ranchlike settlement. Diagnostic artifacts suggests the site dates from the late Territorial period to the present (ca. 1870). The Euroamerican artifacts and the faunal remains found at LA 101135 reflect the many different activities that took place at this historic habitation. It is difficult, however, to gain a clear picture of the daily economy of this household based on limited testing data. The faunal remains suggest that domesticated animals were butchered and consumed locally. It is probable that the raising and consumption of livestock formed an important part of the occupants' subsistence. The functional categories represented by the Euroamerican artifacts show that domestic and construction activities may have occurred at the site.

Locally obtained information suggests that LA 101135 is in the same location as Johnson's Ranch, built in 1858. Anthony Johnson of St. Louis purchased his ranch and built an adobe and rock residence at the mouth of Apache Canyon (Simmons 1984; Swanson 1985). Johnson's Ranch was situated very close to the location of Our Lady of Light Church on the Santa Fe Trail (Mr. and Mrs. Varela of Cañoncito, pers. comm., March 28, 1989). Johnson's Ranch became a popular stop for stagecoaches on the last stretch of the trail before entering Santa Fe. Also during the 1862 Battle of Glorieta, Johnson's Ranch was used as the Confederate Army's main headquarters and supply depot (Simmons 1984; Swanson 1985). Geographically, LA 101135 is located where people claim the Johnson's Ranch and Santa Fe stage stop once stood. It is known that the ranch was not in existence in 1966 when the area became a part of the Glorieta Pass Battlefield, a National Historic Landmark (State Historic Cultural Properties file #49 and National Historic Landmark file at the Historic Preservation Division). Based on the limited archaeological test program it was not possible to conclude that LA 101135 was the location of the 1850s ranch house or that this site is contemporary with the Civil War battle of Glorieta.

There is little architectural integrity remaining of the structure (Feature 1), and the shallow nature of the trash deposits (Feature 2) do not warrant further excavation of the site because they are unlikely to yield information beyond what has already been documented. We therefore do not recommend further cultural resource studies at this location.

REFERENCES

- Algier, Keith W.
1969 The Pueblo Mesta Ordinances of 1556 and 1560. *New Mexico Historical Review* 44(1):5-24.
- Almaraz, Felix D., Jr.
1988 Pecos under the Mexican Eagle. In *Pecos, Gateway to Pueblos and Plains*, edited by J. V. Bezy and J. P. Sanchez, pp. 86-92. Southwest Parks and Monuments Association, Tucson.
- Bakker, E., and R. G. Lillard
1972 *The Great Southwest: The Story of a Land and Its People*. American West Publications, California.
- Bannon, John Francis
1963 *The Spanish Borderlands Frontier, 1513-1821*. Holt, Rinehart, and Winston, Inc., New York.
- Bauer, K. Jack
1988 Pecos under the Mexican Eagle. In *Pecos, Gateway to Pueblos and Plains*, edited by J. V. Bezy and J. P. Sanchez, pp. 94-99. Southwest Parks and Monuments Association, Tucson.
- Binford, Lewis R.
1978 *Nunamuit Ethnoarchaeology*. Academic Press, New York.
- Boessneck, J.
1969 Osteological Differences between Sheep (*Ovis aries Linne*) and Goats (*Capra hircus Linne*). In *Science in Archaeology*, edited by Don Brothwell and Eric Higgs, pp. 331-358. Praeger Publishers, New York.
- Carlson, A. W.
1969 New Mexico's Sheep Industry, 1850-1900: It's Role in the History of the Territory. *New Mexico Historical Review* 44(1):25-49.
- Cordell, Linda S.
1979 *A Cultural Resource Overview of the Middle Rio Grande Valley, New Mexico*. USDA Forest Service, Albuquerque.

1984 *Prehistory of the Southwest*. Academic Press, Orlando, Florida.
- Dickson, Bruce D. Jr.
1979 *The Arroyo Hondo New Mexico Site Survey*. Arroyo Hondo Archaeological Series, vol. 2. School of American Research Press, Santa Fe.
- Gaunt, Joan K.
1991 Cultural History Overview. In *Archaeological Testing at Two Sites along NM 50 between Glorieta and Pecos, and Data Recovery Plan for LA 99029, Santa Fe County, New Mexico*. Office of Archaeological Studies, Archaeology Notes 122, Museum of New

Mexico, Santa Fe.

Getty, Robert

1975 *Sisson and Grossman's The Anatomy of the Domestic Animals*. 5th edition. W. S. Saunders, Philadelphia.

Gilbert, B. Miles

1980 *Mammalian Osteology*. Modern Printing Company, Laramie, Wyoming.

Gilbert, B. Miles, L. D. Martin, and H. G. Savage

1981 *Avian Osteology*. Modern Printing Company, Laramie, Wyoming.

Hayes, Alden C.

1974 *The Four Churches of Pecos*. University of New Mexico Press. Albuquerque, New Mexico.

Hewitt, James M.

1975 The Faunal Archaeology of the Tubac Presidio. In *Excavations at the Tubac Presidio*, by L. O. Shenk and G. A. Teague. Arizona State Museum, Archaeological Series no. 85, Tucson.

Jenkins, Myra E., and Albert H. Schroeder

1974 *Wagon Roads West: A Study of Federal Road Surveys and Construction in the Trans-Mississippi West, 1846-1869*. University of California Press, Berkeley and Los Angeles.

Jolley, Robert L.

1983 North American Historic Sites Zooarchaeology. *Historical Archaeology* 17(2):64-79.

Lyman, R. Lee

1977 Analysis Of Historical Faunal Remains. *Historical Archaeology* 11:67-73.

Kidder, A. V.

1927 Southwestern Archaeological Conference. *Science* 66:480-491.

Lange, Charles H.

1968 *The Cochiti Dam Archaeological Salvage Project, Report on the 1963 Season*. Laboratory of Anthropology Notes nos. 91, 92, and 93. Museum of New Mexico, Santa Fe.

Lent, Stephen C.

1991 *An Archaeological Survey of Cultural Resources along State Road 63 between Rowe and Pecos, San Miguel County, New Mexico*. Office of Archaeological Studies, Archaeology Notes 56, Museum of New Mexico, Santa Fe.

Lent, Stephen C., and Linda Goodman

1990 *Archaeological Testing and a Brief Ethnohistory of San Gabriel de Yunque Ovinge, San Juan Pueblo, New Mexico*. Office of Archaeological Studies, Archaeology Notes 102, Museum of New Mexico, Santa Fe.

- Maker, H. J., J. J. Folks, and J. U. Anderson
 1971 *Soil Associations and Land Irrigation, Santa Fe County*. Agricultural Experiment Station Research Report 185. New Mexico State University, Las Cruces.
- Maxwell, Timothy D.
 1988 *Archaeological Survey of the Proposed Santa Fe Bypass, Santa Fe County*. Laboratory of Anthropology Notes No. 413. Museum of New Mexico, Santa Fe
- McNutt, Charles
 1969 *Early Puebloan Occupation at Tesuque By-pass and in the Upper Rio Grande Valley*. University of Michigan Museum of Anthropology Papers no. 40, Ann Arbor, Michigan.
- Mera, H. P.
 1934 *Ceramic Clues to the Prehistory of North-Central New Mexico*. Laboratory of Anthropology Technical Series. Bulletin 8. Museum of New Mexico. Santa Fe.
- Metzger, Todd R.
 1990 *Ruin Preservation Guidelines*. National Park Service.
- Mick-O'Hara, Linda
 1991 Faunal Remains. In *The Talpa Testing Project: Archaeological Test Excavations along State Road 518 and a Data Recovery Plan for LA 77861, Taos County, New Mexico*, by Jeff Boyer and Daisy Levine. Office of Archaeological Studies, Archaeology Note 27, Museum of New Mexico, Santa Fe.
- Morrison, Kathleen D.
 1987 1984 Rowe Project Site Survey: Preliminary Report. Ms. on file. Archeological Records Management Section, Historic Preservation Division, Museum of New Mexico, Santa Fe.
- National Park Service
 1963 The Santa Fe Trail. In *The National Survey of Historic Buildings, Theme XV: Westward Expansion and Extensions of the National Boundaries, 1830-1898*. National Park Service, Washington, D.C.
 1990 *Santa Fe National Historic Trail Comprehensive Management and Use Plan*. United States Department of the Interior. National Park Service, Denver.
- Nordby, Larry
 1981 The Prehistory of the Pecos Indians. In *Exploration*, edited by D. G. Noble, pp. 5-11. School of American Research, Santa Fe.
- Olsen, Stanley J.
 1974 The Domestic Animals of San Xavier del Bac. *The Kiva* 39(3-4):253-256.
- Olsen, Stanley J., and P. Shipman
 1988 Surface Modification on Bone: Trampling versus Butchery. *Journal of Archaeological Science* 15:535-553.
- Pearce, Thomas M.

- 1965 *New Mexico Place Names: A Geographical Dictionary*. University of New Mexico Press, Albuquerque.
- Peckham, Stuart
- 1984 The Anasazi Culture of the Rio Grande Rift. In *New Mexico Geological Society Guidebook: Rio Grande Rift, Northern New Mexico*, pp. 275-282. 35th Field Conference, Socorro, New Mexico.
- Pratt, Boyd C., and David H. Snow
- 1988 *The North Central Regional Overview: Strategies for the Comprehensive Survey of the Architectural and Historic Archaeological Resources of North Central New Mexico*, vol. 1, *Historic Overview of North Central New Mexico*. Publisher unknown.
- Simmons, Marc
- 1979 History of Pueblo-Spanish Relations to 1821. In *Handbook of the North American Indians*, vol. 9, *Southwest*, edited by Alfonso Ortiz. pp. 206-223. Smithsonian Institution, Washington, D.C.
- 1984 *Following the Santa Fe Trail: A Guide for Modern Travelers*. Ancient City Press, Santa Fe.
- 1988 Way Stop on the Santa Fe Trail. In *Pecos, Gateway to Pueblos and Plains*, edited by J. V. Bezy and J. P. Sanchez. pp. 32-39. Southwest Parks and Monuments Association, Tucson.
- Stuart, David E., and Rory Gauthier
- 1981 *Prehistoric New Mexico: Background Survey*. New Mexico State Historic Preservation Bureau, Santa Fe.
- Stuart, David P., and Robin E. Farwell
- 1983 Out of Phase: Late Pithouse Occupation in the Highlands of New Mexico. In *High Altitude Adaptations in the Southwest*, edited by J. C. Winter, pp.115-158. USDA Forest Service Southwestern Region Report No. 2. Santa Fe.
- Stubbs, Stanley, and W. S. Stallings
- 1953 *The Excavations of Pindi Pueblo, New Mexico*. School of American Research Monograph no. 18. Santa Fe.
- Swanson, Betsy
- 1985 The Glorieta Battlefield. Ms. on file, Office of Archaeological Studies, Museum of New Mexico, Santa Fe.
- 1988 The Battles of Glorieta Pass. In *Pecos, Gateway to Pueblos and Plains*, edited by J. V. Bezy and J. P. Sanchez, pp. 32-39. Southwest Parks and Monuments Association, Tucson.
- Thornbury, William D.
- 1965 *Regional Geomorphology of the United States*. John Wiley and Sons, New York.

Warren, A. H.

1980 Prehistoric Pottery. In *Tijeras Canyon: Analysis of the Past*, edited by Linda S. Cordell, pp. 149-168. Maxwell Museum of Anthropology and University of New Mexico Press, Albuquerque.

Wendorf, Fred, and John P. Miller

1959 Artifacts from High Mountain Sites in the Sangre de Cristo Range, New Mexico. *El Palacio* 66:37-52.

Wendorf, Fred, and Erik K. Reed

1955 An Alternative Reconstruction of Northern Rio Grande Prehistory. *El Palacio* 62:131-173.

Williams, Jerry L. (editor)

1986 *New Mexico in Maps*. 2d edition. University of New Mexico Press, Albuquerque.

Willmer, Adisa J.

1990 *Archaeological Survey of the Ortiz Mine near Cañada de los Alamos, Santa Fe County, New Mexico*. Laboratory of Anthropology Notes No. 512, Museum of New Mexico, Santa Fe.

Woodward, Lee A., and Raymond V. Ingersoll

1979 Phanerozoic Tectonic Setting of Santa Fe County. In *New Mexico Geological Society: Guidebook of Santa Fe County*, pp. 51-58. 30th Field Conference, University of New Mexico printing plant, Albuquerque.

APPENDIX 1. LIST OF EUROAMERICAN ARTIFACTS BY PROVENIENCE. LA 101135

Provenience	Artifact Type	Number	Comment
Surface			
Artifact 1	Aqua glass	1	1 bottle fragment
Artifact 2	Spike	1	1 railroad spike
Artifact 3	Purple glass	2	2 unassignable fragments
Artifact 4	Purple glass	1	1 unassignable fragment
Artifact 5	Purple glass	1	1 bottle fragment
Artifact 6	Brown glass	1	1 clorox bottle. finish and neck
Dogleash 1	Brown glass	27	23 bottle fragments 4 unassignable fragments
	Aqua glass	12	4 window glass fragments 8 unassignable fragments
	Purple glass	13	4 bottle fragments 9 unassignable fragments
	Amber glass	4	4 unassignable fragments
	Green glass	2	2 unassignable fragments
	Milk glass	1	1 unassignable fragment
	Whiteware ceramics	38	13 rim sherds 24 body sherds 1 handle
	Porcelain	1	1 handle
	Unidentified metal	3	3 fragments
Dogleash 2	Brown glass	4	4 bottle fragments
	Aqua glass	3	3 bottle fragments
	Purple glass	9	9 bottle fragments
	Olive glass	1	1 bottle fragment
	Whiteware ceramics	5	5 body sherds
Test Pit 1			
Stratum 1	Brown glass	60	60 bottle fragments
	Aqua glass	31	26 bottle fragments 4 window glass fragments
	Purple glass	22	21 bottle fragments 1 unassignable fragment

Provenience	Artifact Type	Number	Comment
	Amber glass	4	3 bottle fragments 1 unassignable fragment
	Green glass	6	6 bottle fragments
	Clear glass	26	25 bottle fragments 1 unassignable fragment
	Red glass	1	1 automobile tail light cover
	Whiteware ceramics	31	19 body sherds 12 rim sherds
	Porcelain	3	2 rim sherds 1 body sherd
	Nails	6	3 square, common nails 2 round, common nails 1 unassignable fragment
	Bolt	1	1 square headed
	Wire	4	4 fragments
	Can	5	5 crimped can fragments
	.22 Gauge gun cartridge	2	2 rim fire
	Unidentified gun part	1	1 lock or trigger piece
	Knife handle	1	1 bone and metal
	Unidentified metal	17	17 fragments
	Slate pencil	1	1 whole pencil
	Tewa Black ceramic	1	1 body sherd
Stratum 2	Brown glass	53	26 bottle fragments 27 unassignable fragments
	Aqua glass	27	14 bottle fragments 13 window glass fragments
	Purple glass	8	8 bottle fragments
	Amber glass	15	14 bottle fragments 1 unassignable fragment
	Green glass	10	9 bottle fragments 1 unassignable fragment
	Clear glass	8	2 bottle fragments 5 unassignable fragments 1 window glass fragment
	Whiteware ceramics	1	1 rim sherd

Provenience	Artifact Type	Number	Comment
	Nails	11	6 square, common nails 3 round, common nails 2 nail fragment
	Unidentified metal	13	13 fragments
Stratum 3	Brown glass	1	1 bottle fragment
	Green glass	1	1 bottle fragment
	Whiteware ceramics	30	20 body sherd 10 rim sherds
	Tewa Black ceramics	2	2 body sherds
Test Pit 2			
Stratum 1	Metal bar	1	1 brace or support
Stratum 2	Brown glass	4	2 bottle fragments 1 wine bottle finish 1 unassignable fragment
	Aqua glass	18	15 window glass fragments 2 bottle fragments 1 unassignable fragment
	Purple glass	12	12 bottle fragments
	Green glass	1	1 bottle fragment
	Clear glass	14	5 bottle fragments 7 unassignable fragments
	Whiteware ceramics	3	3 body sherds
	Nails	5	1 square, common nail 4 round, common nails
	Bolt	1	1 square headed
	Spike	1	1 round headed
	Corrugated tin	4	4 fragments
	Unidentified metal	33	33 fragments
	Mica	1	1 piece
Stratum 3	Aqua glass	2	2 bottle fragments
	Purple glass	1	1 bottle fragment
	Whiteware ceramics	3	2 body sherds 1 rim sherd
	Button	1	1 rubber button, 4 holed
Test Pit 3			

Provenience	Artifact Type	Number	Comment
Stratum 1	Brown glass	1	1 bottle fragment
	Purple glass	3	3 bottle fragments
	Clear glass	1	1 unassignable fragment
	Unidentified metal	1	1 fragment
	Shoe part	1	1 leather shoe heel
Stratum 2	Milk glass	1	1 unassignable fragment
	Clear glass	4	2 bottle fragments 2 unassignable fragments
	Aqua glass	2	2 window glass fragments
	Whiteware ceramics	1	1 body sherd
	Nails	5	3 square, common nails 2 round, common nails
	Wire	1	1 fragment
Test Pit 4			
Stratum 1	Purple glass	1	1 unassignable fragment
Stratum 2	Brown glass	2	2 bottle fragments
	Aqua glass	2	2 window glass fragments
	Earthenware ceramics	1	1 body sherd
	Nails	2	2 square, common nails
	Can	1	1 base fragment
	Unidentified metal	1	1 fragment, perforated
	Cloth	2	2 unidentified pieces
Stratum 3	Brown glass	4	2 bottle fragments 2 unassignable fragments
	Purple glass	2	2 unassignable fragments
	Aqua glass	2	2 window glass fragments
	Clear	4	4 bottle fragments
	Whiteware ceramics	1	1 rim sherd
	Nails	1	1 square, common nail
	Unidentified metal	2	2 fragments
	Mica	1	1 piece

Provenience	Artifact Type	Number	Comment
	Gypsum	1	1 piece
Test Pit 5			
Stratum 1	Brown glass	1	1 bottle fragment
	Purple glass	2	2 bottle fragments
	Clear glass	2	2 bottle fragments
	Aqua glass	1	1 window glass fragment
Stratum 2	Brown glass	3	3 bottle fragments
	Aqua glass	1	1 bottle fragment
	Clear glass	2	2 unassignable fragments
	Nails	1	1 square, common nail
	Unidentified metal	1	1 fragment, perforated
	Tewa Black ceramics	1	1 body sherd
Stratum 3	Nails	3	1 round, common nail 1 roofing nail 1 unassignable fragment
	Wire	1	1 fragment
	Unidentified metal	2	2 fragments
Stratum 4	Aqua glass	2	2 window glass fragments
	Green glass	1	1 bottle fragment
	Clear glass	1	1 window glass fragment
	Nails	20	6 square, common nails 8 round, common nails 3 roofing nails 3 unassignable fragments
	Wire	1	1 fragment
	Pencil	1	1 copper fitting
	Canning jar	1	1 screw top
	Metal platter	1	1 serving platter of iron with metallic plating
	Unidentified metal	28	26 fragments 2 fragments with perforations
	Test Pit 6		
Stratum 1	Aqua glass	5	5 window glass fragments
	Clear glass	3	3 window glass fragments

Provenience	Artifact Type	Number	Comment
	Whiteware ceramics	1	1 body sherd
	Nails	3	3 round, common nails
	Bolt	1	1 slotted bolt
Test Pit 7			
Stratum 1	Aqua glass	22	21 window glass fragments 1 medicine bottle finish
	Green glass	1	1 bottle fragment
	Clear glass	1	1 bottle fragment
	Cobalt blue glass	1	1 marble
	Whiteware ceramics	2	1 body sherd 1 rim sherd
	Nails	10	2 square, common nails 7 round, common nails 1 roofing nail
	Spike	1	1 unassignable spike
	Bolt	1	1 square headed bolt with nut
	Metal ring	1	1 unassignable ring
	Corrugated tin	1	1 large piece
	Unidentified metal	12	12 fragments (tin)
	Apricot pit	1	1 pit