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Data Recovery Plan for 2.35 Acres of Land within LA 144329 in the Griffin/Grant Triangle Neighborhood, Santa Fe, New Mexico

Jessica A. Badner and
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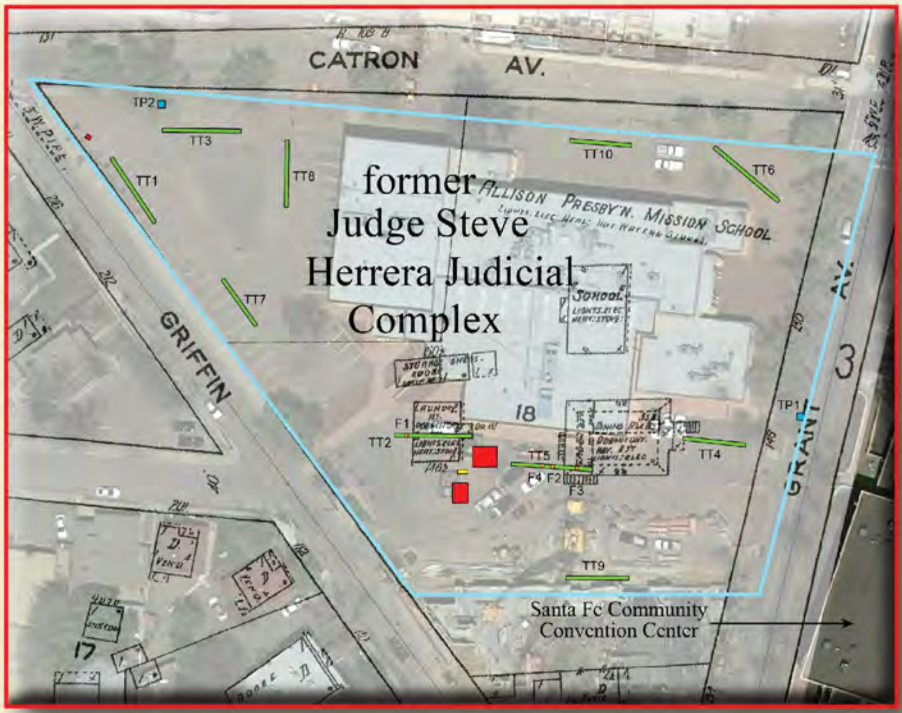

Office of Archaeological Studies

Museum of New Mexico

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Data Recovery Plan for 2.35 Acres of Land within LA 144329 in the Griffin/Grant Triangle Neighborhood, Santa Fe, New Mexico

BY

JESSICA A. BADNER AND JAMES L. MOORE

Prepared for:
Santa Fe County Public Works Department / Projects Division

Eric Blinman, Ph.D., Principal Investigator

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Administrative Summary

At the request of Mr. Brad Isaacson of the Santa Fe County Public Works Department/Projects Division, the Office of Archaeological Studies (OAS) is submitting a research design and excavation plan for a portion of LA 144329, recommended as eligible for listing on the *National Register of Historic Places* under Criterion D for its ability to inform 1) upon life in a Santa Fe household during the Spanish Colonial period, and 2) on an institutional school setting during the American Territorial period. This portion of LA 144329 overlaps with a proposed demolition and construction project for a Santa Fe County Administrative Campus located on 2.35 acres (102,373 sq ft) of Santa Fe County land within the Griffin/Grant Triangle Historic Neighborhood of Santa Fe, New Mexico. This property, at 100 Catron Street, is the former Judge Steve Herrera Judicial Complex, which housed the Santa Fe County Courthouse and was originally constructed in 1937 to serve as the Harvey Junior High School. The property is located within LA 144329, a previously recorded archaeological site that lies within the Santa Fe Historic District (LA 4450; *State Register of Cultural Properties* No. 260, September 29, 1972; *National Register of Historic Places,* July 23, 1973). The Santa Fe County Public Works Department proposes to demolish the existing building and reduce the grade of the surrounding area by up to 13 ft as part of the construction of an administrative campus.

The purpose of this study will be to investigate intact cultural deposits present within the project area as determined by a testing program that explored a 2 percent sample of the Santa Fe County parcel. Test excavations revealed a midden or field deposit associated with the eighteenth-century occupation of the project area by the Esquivel family and late nineteenth-century structural remnants that are linked to the Presbyterian Mission School, which was founded in 1867. No intact prehistoric cultural deposits or human remains were encountered within the project area, although scattered prehistoric artifacts were recovered in the historic fill deposits, presumably from the extensive multiple prehistoric components that have been documented at LA 1051, immediately to the east of the project area.

Based on the testing results, OAS will focus data recovery efforts on portions of the project area where intact eighteenth- and nineteenth-century cultural deposits have been documented. Mechanical equipment will be used to remove disturbed surficial deposits, reopen previously excavated trenches, and to provide initial exposures of deposits in untested areas of the site. Areas with known intact cultural resources will be subject to hand excavation. Areas within the Judge Steve Herrera Judicial Complex building that were built on grade (i.e., that lack basements or crawl spaces) will be tested prior to building demolition. Although no human remains or intact prehistoric deposits were encountered during testing, a single prehistoric burial was encountered during utility monitoring at the southwest limits of LA 144329 (outside of the Santa Fe County parcel). For this reason, and based on the proximity of the site to LA 1051, with its extensive Coalition- and Classic-period components, OAS is requesting a site-specific burial excavation permit for this project. Following the completion of intensive investigations under this plan, OAS will monitor demolition activity that includes subsurface disturbance of the parcel.

Archaeological investigations will begin following the approval of these site-specific permits. Intensive excavations are scheduled for completion in October 2016. Monitoring of demolition within the Santa Fe County portion of LA 144329 will be complete by May 2017. Report preparation will integrate the results of monitoring, and a draft report will be submitted for review by May 2018. Artifacts and excavation documents will be submitted to the Archaeological Research Collections of the Museum of Indian Arts and Culture by May 2018.

NMCRIS Activity No.: [pending]
MNM Project No.: 41.1040 (Santa Fe County Administrative Campus)
NM (Project-Specific) Excavation Permit No.: SE- [pending]

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1 Introduction

At the request of Mr. Brad Isaacson of the Santa Fe County Public Works Department/Projects Division, the Office of Archaeological Studies (OAS) is submitting a research design and excavation plan for a proposed demolition and construction project located on 2.35 acres (102,373 sq ft) of Santa Fe County land within the Griffin/Grant Triangle Historic Neighborhood of Santa Fe, New Mexico (Figs. 1.1a, 1.1b). The Santa Fe County Public Works Department proposes to demolish the existing building and reduce the grade of the surrounding area by up to 13 ft as part of new construction.

Situated on this property, at 100 Catron Street, is the former Judge Steve Herrera Judicial Complex, which housed the Santa Fe County Courthouse (Fig. 1.1c). The building was originally constructed in 1937 to serve as the Harvey Junior High School. Multiple remodeling and construction episodes transformed the building into the Judge Steve Herrera Judicial Complex. (The courthouse functions were relocated to a newly constructed facility, at 225 Montezuma Avenue, in early 2013.) The existing building lacks historic integrity and is not listed as contributing to the encompassing Santa Fe Historic District (LA 4450; State Register of Cultural Properties No. 260, September 29, 1972; National Register of Historic Places, July 23, 1973). The project property is located adjacent to the First Presbyterian Church property, which was investigated by Southwest Archaeological Consultants (NMCRIS No. 92572; Viklund and Huntley 2005). That investigation resulted in the definition of LA 114329, based on the presence of multiple prehistoric and historic components (Fig. 1.2).

From December 10–14, 2012, OAS conducted a testing program to determine if buried cultural deposits were present within the Santa Fe County property (NMCRIS No. 125998). OAS accomplished this task through the mechanical excavation of 10 test trenches and the hand excavation of two test pits (Fig. 1.3). This equated to roughly a 2 percent excavation sample (1,400 sq ft) of the current project area (69,651 sq ft). Test excavation units revealed a midden or field deposit associated with the eighteenth-century occupation of the project area by the Esquivel family and late nineteenth-century structural remnants linked to the Presbyterian Mission School, which was founded in 1867. No prehistoric cultural deposits or human remains were encountered within the project area (Barbour and Wening 2014).

Based on these findings, OAS expanded the definition of LA 144329 to include the Santa Fe County property. OAS recommended LA 144329 as eligible for listing on the *National Register of Historic Places* under Criterion D due to its ability to inform on life in a Santa Fe household during the Spanish Colonial period and as an institutional setting during the American Territorial period. Because eighteenth- and nineteenth-century cultural deposits were not uniformly distributed across the project area, OAS recommended that the northeast and central portions of the area, where intact cultural deposits from those periods had been documented, be subject to data recovery. OAS recommended that all other areas with mixed deposits be monitored during demolition and construction. This document is a plan for data recovery, monitoring of construction activity, and associated research required for proposed mitigation of the project area.

This document begins with a discussion of the environmental and cultural settings followed by a brief history of the Griffin/Grant Triangle Historic Neighborhood. Next, previous archaeological research conducted in the immediate vicinity of the project area is summarized. Research questions are followed by proposed field methods.

As the project area is within the City of Santa Fe Historic Downtown Archaeological District, all proposed fieldwork would follow the guidelines included in the Archaeological Review District Ordinance (adopted October 12, 1987).

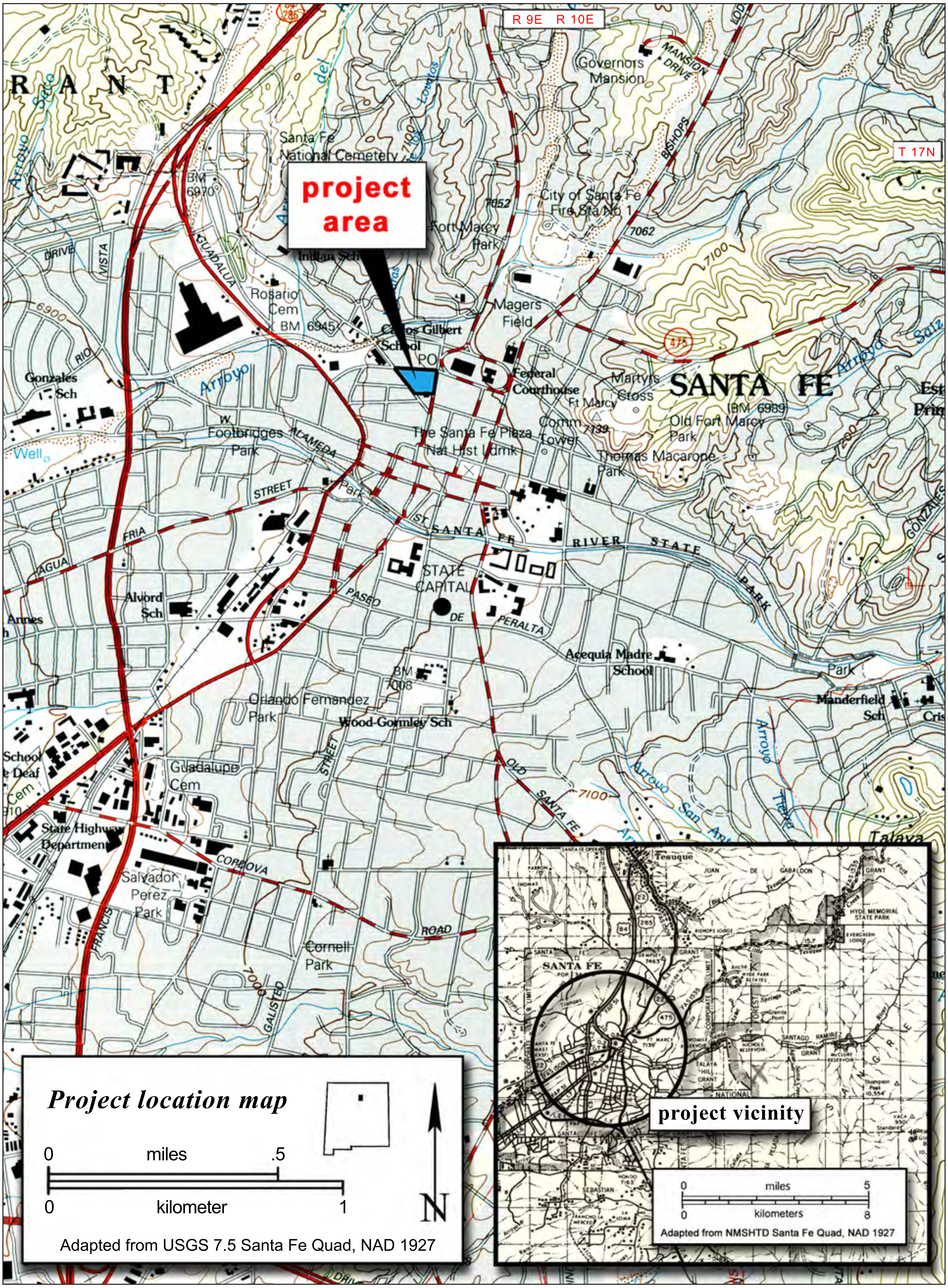

Figure 1.1a. Project vicinity and location map.

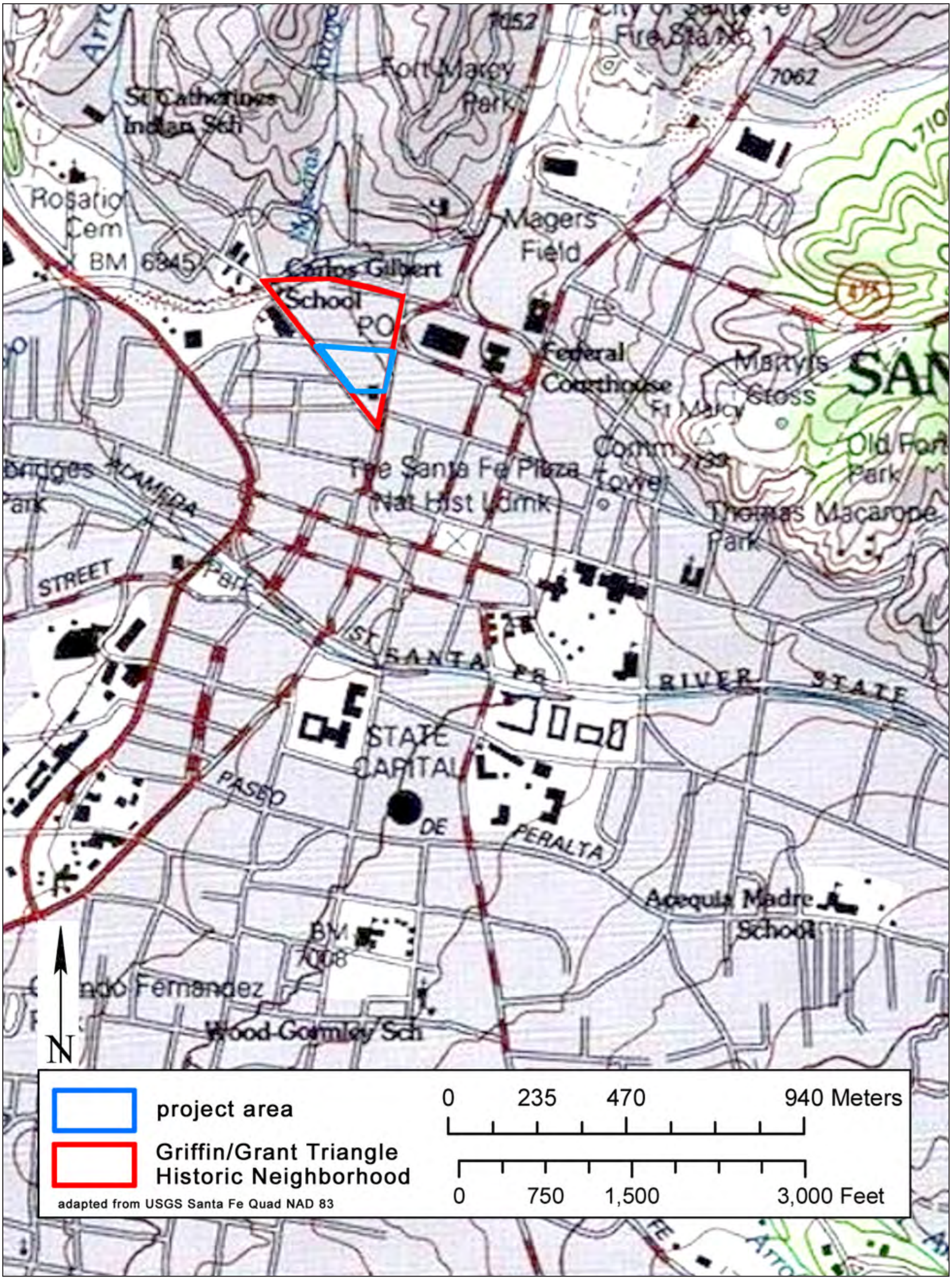

Figure 1.1b. Project location map, detail.

Figure 1.1c. The former Judge Steve Herrera Judicial Complex.

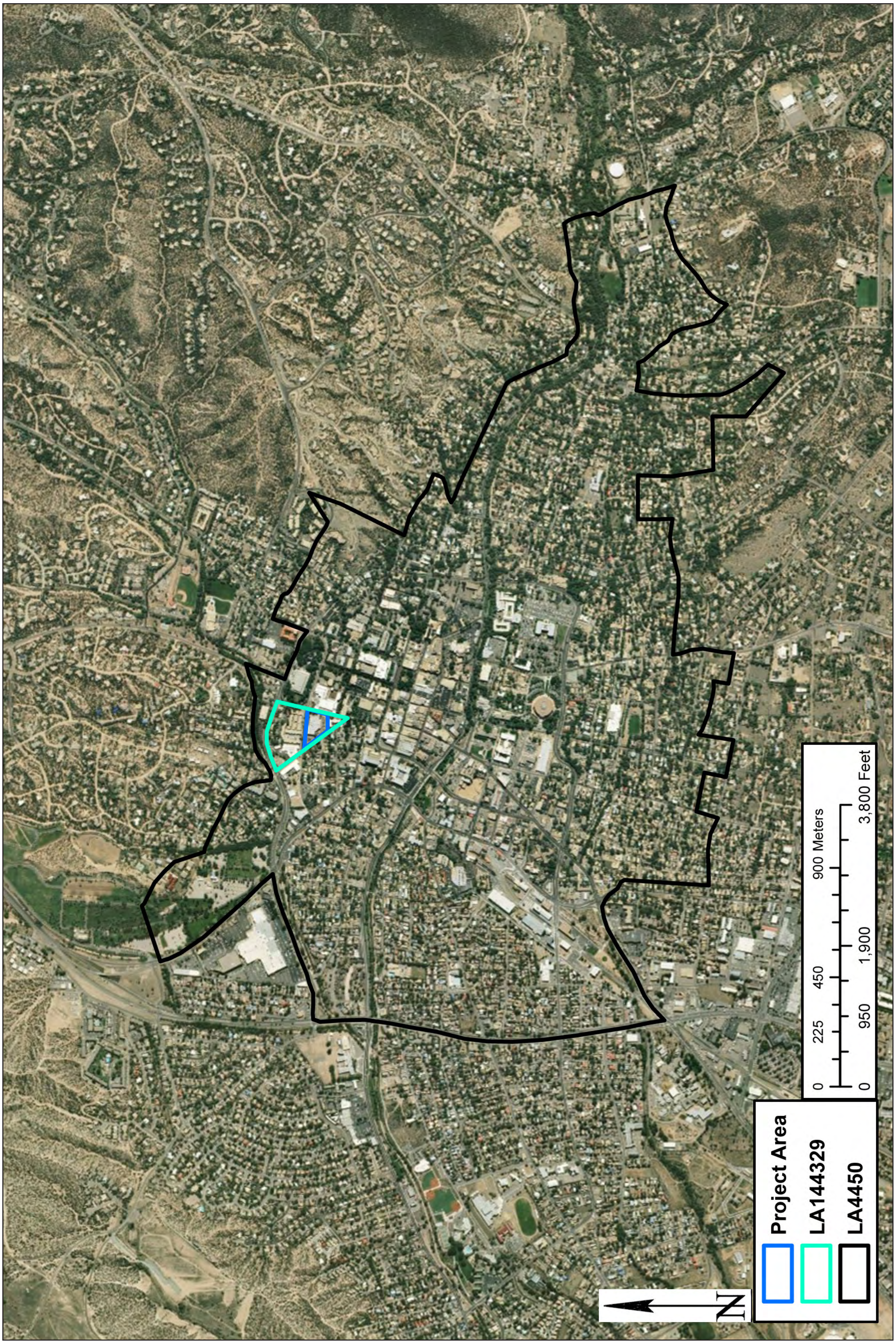

Figure 1.2. Map showing location of LA 4450 and LA 144329.

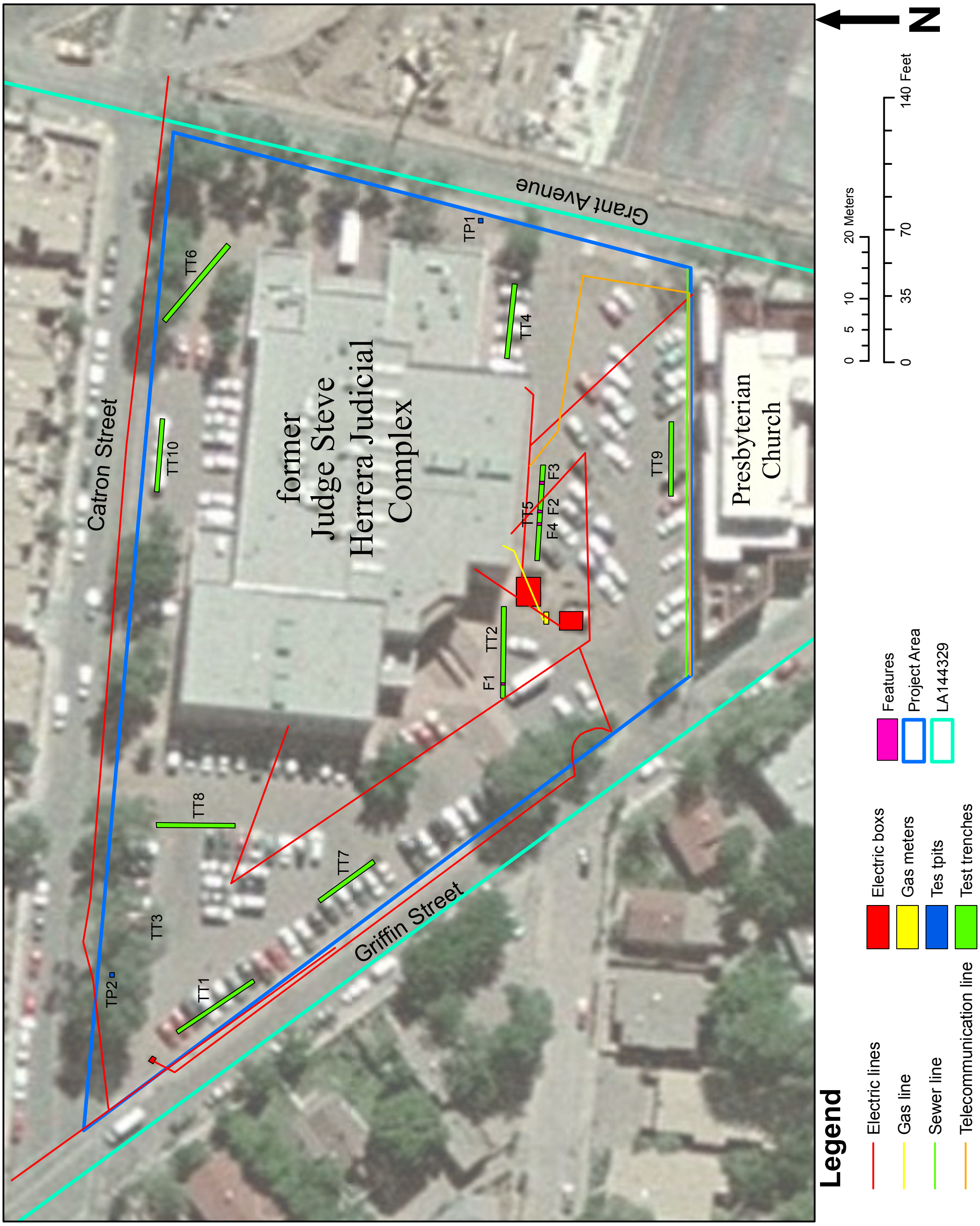

Figure 1.3. Project area map, at the former Judge Steve Herrera Judicial Complex, showing location of utilities and Test Pits, Test Trenches, and Features.

2 Environmental Setting

Adapted from Stephen C. Lentz (2004)

Physiography

Santa Fe is on a fault zone within a subdivision of the Southern Rocky Mountain physiographic region known as the Española Basin, one in a chain of extensional basins comprising the Rio Grande rift, which extends from southern Colorado to southern New Mexico (Kelly 1979:281). This basin, which is considered an extension of the Southern Rocky Mountain Province (Fenneman 1931), is enclosed by alternating uplands of mountain ranges and uplifted plateaus; the Rio Grande flows along the long axis of the feature (Kelly 1979:281). The northern boundary of the Española Basin is the eroded edge of the Taos Plateau. The Sangre de Cristo Mountains form the east boundary, and the southern boundary is marked by the Cerrillos Hills and the northern edge of the Galisteo Basin. The La Bajada fault escarpment and the Cerros del Rio volcanic hills denote the southwestern periphery. The basin is bounded to the west by the Jemez volcanic field, and the Brazos and Tusas Mountains form the northwestern boundary. Elevations along the Rio Grande through the basin vary from 1,845 m in the north to 1,616 m in the south, and altitudes in the surrounding mountains reach 4,013 m in the Sangre de Cristos, 3,522 m in the Jemez Mountains, and 2,623 m in the Brazos and Tusas (Kelly 1979:281).

The project area occupies a nearly level terrace on the north side of the Santa Fe River at an elevation of approximately 2,125 m. This area is part of an ancient alluvial fan upon which most of Santa Fe resides. The terrace soils developed in reworked, mixed alluvial deposits of the Tertiary/Quaternary period Santa Fe formation (Folks 1975).

Geology

The Rio Grande rift was established during the late Oligocene epoch (ca 30 million years BP), when a cycle of crustal down-warping and extensional faulting succeeded a period of regional uplift (Kelly 1979:281). As the subsidence of the Española Basin continued through the Miocene and Pliocene epochs (ca. 3 to 25 million years ago), erosion from the Nacimiento, Jemez, and Brazos uplifts to the north and northwest and from the Sangre de Cristo uplift to the east provided most of the sediments for what is known as the Santa Fe group, the prominent geologic unit within the Española Basin. Other sources of sediment in this geologic unit included ash from volcanic fields in the Jemez, Brazos, and Sangre de Cristo Mountains. Sub-units of the Santa Fe group, such as the Tesuque Formation, consist of deep deposits (over 1 km thick) of poorly consolidated sand, gravel, and conglomerate, and mudstone, siltstone, and bedded volcanic ash (Lucas 1984).

Alluvial deposits of ancient and modern gravels are found in arroyos and on adjacent terraces. Tertiary volcanic deposits, Cenozoic sediments, and Precambrian rock are exposed in surrounding areas. These sediments and deposits provide most of the materials needed for lithic tool production. In particular, chert is available in the Ancha formation (Kelley 1980:11–12) and sandstone, siltstone, andesite, basalt, and silicified wood occur in other nearby formations. The most commonly used chert in the study area outcrops in the Madera limestone formation and occurs in local gravel deposits. Small amounts of obsidian are found scattered along the basalt-capped mesas west of Santa Fe (Kelley 1980:12).

The project area is within the inner valley of the Santa Fe River, or Santa Fe Airport physiographic surface (Spiegel and Baldwin 1963:56). The major soil association is Bluewing gravelly sandy loam (Folks 1975:15–16). This soil occurs on 0 to 5 percent slopes and may coexist with Pojoaque and Fivemile soils. These well-drained soils developed in alluvium of mixed origin along terraces and floodplains. The gravelly sandy loam has rapid permeability with medium runoff; these factors present a severe erosion hazard.

Climate

Santa Fe has a semiarid climate. Latitude and altitude are the two basic determinants of temperature; however, altitude is the more powerful variable in New Mexico. In general, mean temperatures decline faster with increased elevation than with increased latitude. Cold air drainage is a common and well-known feature of New Mexico valleys. Narrow valleys create their own temperature regimes by channeling air flow: the usual patterns are warm, up-valley winds during the day and cool, down-valley winds at night. In contrast, shifts in temperature over broad valley floors are influenced by local topographic relief (Tuan et al. 1973).

The Santa Fe weather station is at an elevation of 2,195 m. The mean annual temperature reported by the Santa Fe station is 10.5 degrees C (Gabin and Lespearance 1977). The climatological data further indicate that the study area conforms to the general temperature regime of New Mexico, that is, hot summers and relatively cool winters.

The average frost-free period (growing season) at Santa Fe is 164 days. The latest and earliest recorded frosts, respectively, occurred on May 31 (in 1877) and September 12 (in 1898) (Reynolds 1956:251). Although a frost-free season of 130 days is sufficiently long to grow most indigenous varieties of maize by means of dry farming (Schoenwetter and Dittert 1968; Hack 1942), the unpredictability of late spring and early fall frosts creates agricultural risk. The best agricultural strategy is to plant late enough that seedlings will not erupt above the ground until after the last frost, but early enough that they will be able to fully mature prior to the first killing fall frost.

Precipitation in Santa Fe can fluctuate widely. A maximum of 630 mm of precipitation was recorded in Santa Fe in 1855, compared to a minimum of 128 mm in 1917 (Reynolds 1956). The amount of precipitation is even more variable in any given month in successive years. Late summer is the wettest season in the annual cycle of the Santa Fe area, whereas June is one of the driest months. Precipitation records from Santa Fe indicate that more that 45 percent of the mean annual precipitation falls between July and September (Gabin and Lespearance 1977). Although October is drier than September, it is the fourth wettest month of the annual cycle. Significant precipitation (7.6 percent of the annual total) also falls in Santa Fe during this month. Late summer and fall moisture is derived from the Gulf of Mexico, when air masses from this region push inland to bring the economically important monsoons (Tuan et al. 1973:20). Summer rains tend to be violent and localized. They saturate the ground surface at the beginning of a storm, and much of the moisture is lost to runoff.

Flora

The project area currently functions as a parking lot for the (former) Judge Steve Herrera Judicial Complex (Fig. 1.1c). However, historical local flora and fauna are typical of Upper Sonoran grasslands. Piñon-juniper grassland, which supports a variety of plant and animal species, is the most common habitat. The characteristic vegetation includes piñon, juniper, prickly pear, cholla, yucca, and several species of muhly and grama grass (Pilz 1984). The piñon-juniper community thins as it descends from the Sangre de Cristo foothills and grades into short grass plains containing scattered juniper midway between the foothills and the Santa Fe River (Kelley 1980:12). The open, grass-covered valleys contain grama grass, muhly, Indian rice grass, galleta grass, soap weed yucca, one-seed juniper, Colorado piñon, occasional Gambel's oak, and small stands of mountain mahogany. Arroyo bottoms contain various shrubs such as four-wing saltbush, Apache plume, rabbit brush, big sagebrush, and wolfberry. The riparian/wetlands habitat is found only along perennial streams such as the Rio Pojoaque and Rio Tesuque. Modern vegetation includes willow, cottonwood, salt cedar, rushes, and sedges (Pilz 1984). In the wider valley bottoms, ditch irrigation is practiced.

Fauna

Fauna found historically within the project area include coyote, badger, porcupine, black-tailed jackrabbit, desert cottontail, spotted ground squirrel and many species of birds. Mule deer and black bear are known to occur, but in low numbers (Pilz 1984). Use of the area by these animals may have been more common before the twentieth century (Carroll 1984:2). Plains animals such as buffalo and pronghorn may also have been present or available within a few days' travel.

3 Cultural Setting

Adapted from Matthew J. Barbour (2012:20–29), Steven A. Lakatos (2011), and Timothy D. Maxwell and Stephen S. Post (1992:12–20)

This cultural overview is adapted from several reports on several nearby archaeological projects conducted by the OAS in recent years. The prehistoric context is derived from the results of archaeological data recovery efforts at the Santa Fe Judicial Complex (Lakatos 2011). Much of the historic section incorporates data first synthesized by Maxwell and Post (1992:12–20) during a study of the Old Pecos Trail and is complemented with a more in-depth look at early twentieth-century Santa Fe by Barbour (2012).

Prehistoric Period: Overview

9500 BC–AD 1600

Two general developmental/chronological frameworks are commonly used to order and classify archaeological sites and materials in the Northern Rio Grande region. One is the Pecos Classification (Kidder 1924; see Cordell 1984:55–59); the other is what Peckham (1984) referred to as the Rio Grande Classification, which was developed by Wendorf (1954) and Wendorf and Reed (1955). Although several other frameworks have been presented for specific sub-regions and to refine various temporal phases (e.g., Dickson 1979; McNutt 1969; Wetherington 1968), this study follows the Rio Grande Classification.

The Rio Grande chronological framework, as defined by Wendorf and Reed (1955), begins with a pre-ceramic period, which includes occupations dating from the Paleoindian period (ca. 11,200 BC) through the end of the Archaic period (ca. AD 400–600). The beginning of the Pueblo period is identified by the appearance of corn, pottery, and regularly patterned pit structures. The Pueblo sequence chronology spans the years from AD 600 to 1600 and is sub-divided into the Developmental (AD 600–1200), Coalition (AD 1200–1325), and Classic (AD 1325–1600) periods.

The Developmental period in the Northern Rio Grande spans between AD 600 and 1200. This period is further subdivided into the early Developmental (AD 600–900) and late Developmental (AD 900–1200) phases. The early Developmental corresponds temporally with the Basketmaker III and Pueblo I periods of the Pecos Classification, and the late Developmental with the Pueblo II and early Pueblo III periods of the Pecos Classification. The Coalition (AD 1200–1325) period follows the Developmental period and corresponds with the late Pueblo III period. The subsequent Classic period (AD 1325–1600) and historic (post-contact) period AD (1600–1912) are associated with the Pueblo IV and Pueblo V Pecos periods, respectively.

Paleoindian Period: 9500–6000 BC

The earliest well-defined occupation of the American Southwest was by mobile big-game hunters referred to collectively as Paleoindians. Evidence of Paleoindian occupation in the Northern Rio Grande region is rare and typically consists of diagnostic projectile points and butchering tools found on the modern ground surface or in deflated settings (Acklen et al. 1990). More recently, two Clovis period components have been reported in the Jemez Mountains (Evaskovich et al. 1997; Turnbow 1997), and late Paleoindian material has been reported along the eastern flank of the Rio Grande west of Santa Fe (Dello-Russo 2010). Data recovery at one Clovis period component identified two medial Clovis point fragments associated with a single thermal feature and tool manufacture debitage (Evaskovich et al. 1997). Identification of Paleoindian occupations within a montane setting may suggest a seasonal subsistence adaptation from a focus on lowland resources in the winter and to a highland adaptation in the summer or, perhaps, a response at the time to drier environmental conditions in lowland settings. An increased focus on hunting smaller game and gathering wild plants compared to previous periods may also reflect changes in climate toward the end of the Paleoindian period (Haynes 1980; Wilmsen 1974).

The paucity of reported Paleoindian remains around Santa Fe may be attributed to low visibility of these remains rather than a lack of occupation. Paleoindian remains may be masked by later Archaic and Puebloan occupations. Poor visibility of these remains may also be attributed to geomorphological factors. Surfaces or strata containing Paleoindian remains may be deeply buried and only visible in settings where these geological deposits are exposed (Cordell 1979), or those strata may have eroded away Finally, given the land-use patterns in the area over the last 400 years, it is no surprise that Paleoindian sites have not been reported in the Santa Fe area.

Archaic Period: 6000 BC–AD 600

The term "Archaic" applies to the broad-spectrum hunting and foraging populations exploiting the local topography and wild food sources. Most Archaic sites in the region date from the Bajada phase (4800–3200 BC) to the En Medio phase (800 BC–AD 400), identified by distinctive projectile point types, scrapers, knives, and grinding stones. However, relatively few Early and Middle Archaic period sites have been identified. Most have been reported from along the Santa Fe River and its primary tributaries south of town (Post 2001, 2010) and from the piedmont northwest of town (Lakatos et al. 2001). These occupations were represented by a variety of thermal features, shallow house foundations, and scattered lithic, ground stone, and fire-cracked rock artifacts. The variety of feature types combined with evidence for dwellings and patterned artifact distributions indicates the annual reoccupation of favorable camp locations adjacent to a range of subsistence resources during this time (Post 2008).

Consistent with the broader regional data, evidence supports an increase in occupation of the Santa Fe area during the Late Archaic period (Acklen et al. 1990; Lang 1997a; Post 1996, 2001, 2010). This increase in occurrences may be attributed to changes in settlement and subsistence patterns identified during the Armijo phase (1800–800 BC; Irwin-Williams 1973). Settlement changes include evidence of seasonal aggregation, longer periods of occupation, and the exploitation of a broader range of environmental settings, while changes in subsistence practices include the adoption of horticulture, identified at a limited number of sites south of La Bajada Mesa around the Albuquerque area. In the Santa Fe area, Armijo-phase sites have been identified in the piedmont and along the Santa Fe River (Post 1996; Schmader 1994). These sites range from small foraging camps to larger base camps with shallow structures. Radiocarbon dates, obtained from thermal features, suggest these sites were occupied between 1750 and 900 cal BC (Post 1996; Lakatos et al. 2001; Schmader 1994).

En Medio phase (800 BC–AD 400) sites are the most numerous Archaic-period sites reported in the Santa Fe area. These sites are found in riverine, piedmont, foothill, and montane settings (Acklen et al. 1990; Kennedy 1998; Post 1996, 1999, 2010; Schmader 1994). En Medio phase sites range from isolated occurrences to limited-activity sites to base camps with well-defined structures, intramural and extramural features, and patterned artifact distributions. Increased diversity in settlement patterns and site types suggest population increase, longer or reduced time between occupations, and truncated foraging range.

Although many of these sites contained structures, formal features, and grinding implements, evidence of horticulture was absent. Excavation of En Medio sites from the Las Campanas Project (Post 1996) recovered diagnostic projectile point types with dates that range between AD 500 and 850 (Irwin-Williams 1973; Thoms 1977). This temporal observation and the paucity of sites with evidence of horticulture indicate that Archaic subsistence strategies (generalized foraging) may have extended into the early or middle AD 900s north of La Bajada (Dickson 1979; McNutt 1969; Post 1996). No Archaic period sites are found in the immediate vicinity of the project area.

Early Developmental Period: AD 600–900

Most reported early Developmental sites are south of La Bajada Mesa, primarily in the Albuquerque area, with a few reported at higher elevations along the Tesuque, Nambe, and Santa Fe River drainages (Peckham 1984; Skinner et al. 1980; Wendorf and Reed 1955). Pueblo sites dating prior to AD 900 are relatively rare in the Santa Fe area; after that date, Pueblo occupations became increasingly more numerous. These occupations are typically represented by limited-activity areas and small residential settlements situated along low terraces overlooking primary and secondary tributaries of the Rio Grande. These locations may have been chosen for their access to water and arable farming land (Cordell 1979). Terrace locations may also have provided access to environmental zones with a wide range of foraging resources (Anschuetz et al. 1997).

Early Developmental residential sites typically consisted of one to three shallow, circular pit structures with little or no evidence of associated surface structures (Peckham 1954, 1957; Stuart and Gauthier 1981). Excavation data indicate a suite of construction characteristics for these early structures. Typically, structures were excavated up to 1 m below ground surface and were commonly 3 to 5 m in diameter. Walls were sometimes reinforced with vertical poles and adobe (Lakatos 2006). Walls, floors, and internal features commonly lacked plaster. Ventilators were commonly located along the east to southeast wall of the structures. Common floor features included central hearths, ash-filled pits, deflectors, ladder sockets, and four postholes. Less common floor features included sipapus, warming pits, and pot rests, as well as subfloor pits of various sizes and depths (Hammack et al. 1983; Peckham 1957).

Ceramics associated with early Developmental sites include plain gray and brown wares, red-slipped brown wares, and San Marcial Black-on-white. These types persist through the early Developmental phase, with the addition of neck-banded types similar to Alma Neckbanded, Kana'a Gray, Kiatuthlanna Black-on-white, La Plata Black-on-red, and Abajo Red-on-orange through time (Wendorf and Reed 1955). The accumulation of pottery types and surface textures over time, as opposed to sequential replacement of types and textures over time, appears to be characteristic in the Rio Grande region during the Developmental period (Wilson 2003). Decorated pottery at early Developmental-period sites may suggest cultural affiliation with people to the west and northwest. However, early Developmental assemblages also contain red and brown pottery, suggesting interaction with Mogollon populations to the south and southwest (Cordell 1979). Although cultural affiliations may seem more secure in assemblages clearly dominated by specific ware groups, cultural affiliations are difficult to determine at early Developmental sites that are only dominated by various frequencies of gray, brown, and white wares.

Late Developmental Period: AD 900–1200

Late Developmental sites have been identified from the Albuquerque area to the Taos Valley. This period is marked by an increase in the number and size of residential sites, habitation of a broader range of environmental settings, and the appearance of Kwahe'e Black-on-white ceramics (Cordell 1979; Mera 1935; Peckham 1984; Wendorf and Reed 1955; Wetherington 1968). Late Developmental populations expanded into higher elevations, settling along the northern Rio Grande, Tesuque, Nambe, and Santa Fe River drainages (Allen 2004; Ellis 1975; McNutt 1969; Peckham 1984; Skinner et al. 1980; Wendorf and Reed 1955). Commonly located along low terraces overlooking primary and secondary tributaries of these rivers, these locations provided access to water, arable farming land (Cordell 1979), and a variety of foraging resources (Anschuetz et al. 1997). Although late Developmental sites are more common at higher elevations than early Developmental sites, there is little evidence for late Developmental occupation of the Pajarito Plateau (Kohler 1990; Orcutt 1991).

Reported late Developmental-period sites typically consist of a residential unit comprising one to two pit structures, sometimes associated with a surface structure having 5 to 20 rooms, and a shallow midden (Ellis 1975; Peckham 1984; Stubbs 1954; Stuart and Gauthier 1981; Wendorf and Reed 1955). These residential sites occur as single units or in clusters of units referred to as communities (Anschuetz et al. 1997; Wendorf and Reed 1955).

Surface structures were commonly constructed of adobe, with some rock incorporated into the adobe walls or upright slabs used as wall foundations or footers (McNutt 1969; Stubbs 1954). Walls were constructed with multiple courses of adobe, with or without rock, wattle and daub (jacal), or combinations of these techniques. Contiguous rectangular rooms often lacked floor or wall features, and floors were unplastered, with a few reported examples of adobe, cobble, or slab floors. Sub-rectangular and D-shaped rooms have also been reported but were apparently less common (Ahlstrom 1985; Boyer and Lakatos 1997; Ellis 1975; McNutt 1969; Stubbs 1954; Skinner et al. 1980).

Variety in size, shape, depth, and construction techniques is typical of late Developmental pit structure construction. Circular pit structures were the most common, followed by sub-rectangular structures. Pit structures ranged from 30 cm to 2 m below ground surface and between 3 and 5 m in diameter. Walls of subsurface structures varied from the unplastered surface of the original pit excavation to construction techniques using multiple courses of adobe, with or without rock, wattle and daub, upright slabs used as foundations, adobe reinforced with vertical poles, or combinations of these techniques (Ahlstrom 1985; Boyer and Lakatos 1997; Allen and McNutt 1955; Lange 1968; Stubbs 1954; Stubbs and Stallings 1953).

Floors ranged from compact use-surfaces to well-prepared adobe surfaces. Common floor features include central hearths, upright "deflector" stones, ash-filled pits, ventilator complexes, ladder sockets, and four postholes located toward the interior of the structure—perhaps functioning as supports for looms. Other, less common floor features include sipapus, subfloor channels, pot rests, and subfloor pits of various sizes and depths. Ventilators were constructed by connecting the exterior vent shaft to the interior of the structure with a tunnel or a narrow trench. This trench was subsequently roofed using latillas, effectively creating a tunnel. Exteriors of shallow structures were connected to the interior through an opening in the wall. Ventilators were commonly oriented to the east and southeast (Boyer and Lakatos 1997; Allen and McNutt 1955; Lange 1968; Stubbs 1954).

Utility-ware ceramics associated with late Developmental sites include types with corrugated and incised exteriors in addition to the plain gray, brown, neck-banded and polished/smudged types associated with the early Developmental period. Decorated white wares were both imported and manufactured locally. Common types included Red Mesa Black-on-white, Gallup Black-on-white, Escavada Black-on-white, and Kwahe'e Black-on-white. Less common types included Socorro Black-on-white, Chupadero Black-on-white, Chaco Black-on-white, and Chuska Black-on-white (Allen 1972). Although decorated red wares have been found at late Developmental sites, they are reported in very low frequencies, and appear to have originated from the Upper San Juan, Tusayan, and Cibola regions. Imported ceramic types suggest late Developmental inhabitants obtained limited amounts of pottery from the Mogollon, San Juan Basin, and Upper San Juan regions (Cordell 1979).

An example of a late Developmental site near downtown Santa Fe is the KP site (LA 46300). At this site, Wiseman (1989) identified a single trash-filled and burned structure with a variety of imported and locally produced decorated and utility ware pottery types. Obsidian predominated in the flaked stone assemblage, although local chert types, particularly red jasper, were also reported. The subsistence economy was reflected by a wide variety of plant and animal remains, including corn, squash, bee weed, deer, antelope, and cottontail (Wiseman 1989:139). Tree-ring and two radiocarbon dates indicate that the structure was occupied in the mid to late AD 1000s and that the fill had accumulated in the early AD 1100s.

Coalition Period: AD 1200–1325

Several researchers assert that the Coalition period was marked by three major changes reflected in the archaeological record: an increase in number and size of residential sites; contiguous surface rooms used more often as domiciles than during previous periods; and a shift from mineral paint to vegetal based paint for decorating pottery (Cordell 1979; Peckham 1984; Stuart and Gauthier 1981; Wendorf and Reed 1955). An increase in the number and size of residential sites during this period suggests population increase and the extension of the village-level community organization typical of the late Developmental period. Although there was an apparent increase in the number of Coalition-period sites in upland areas that had limited occupation during the Developmental period, like the Pajarito Plateau, the southern Tewa Basin could have been the source of this population. Coalition-period sites, whether at higher elevations or in the Tewa Basin, were situated along terraces or mesas overlooking the Rio Grande, Tesuque, Nambe, Santa Fe, and Chama River drainages (Cordell 1979; Dickson 1979). These locations provided access to water, arable farming land, and a variety of foraging resources (Cordell 1979).

Coalition-period residential units typically consisted of one to two pit structures associated with 10 to 20 surface rooms, and a shallow midden (Peckham 1984; Stuart and Gauthier 1981; Wendorf and Reed 1955). Surface structures often consisted of small linear or L-shaped roomblocks oriented north–south. These roomblocks were one or two rooms deep, with a pit structure or kiva incorporated into or east of the roomblock (Kohler 1990; Steen 1977, 1982). Sites that exhibited this layout were generally considered to have dated to an earlier part of the Coalition period. Although most Coalition-period sites were relatively small, some are reported to have contained up to 200 ground-floor rooms (Stuart and Gauthier 1981). These larger sites were commonly U-shaped, enclosing a plaza(s) to the east. Generally, large Coalition-period sites with an enclosed plaza(s) are considered to have been a later development (Steen 1977; Stuart and Gauthier 1981).

Various construction techniques have been identified in excavated Coalition-period surface and subsurface structures. The walls of surface and subsurface structures were constructed with adobe, with or without rock, masonry, or combinations of these techniques. On the Pajarito Plateau, adobe construction incorporated unshaped tuff into the adobe walls. Masonry consisted of unshaped or cut tuff block fastened with adobe mortar and sometimes chinked with small tuff fragments (Kohler 1990). Contiguous, rectangular rooms were the most common, with a few reported examples of sub-rectangular and D-shaped rooms (Kohler 1990; Steen 1977, 1982; Steen and Worman 1978).

Variety in size, shape, and depth of pit structure construction was common during the Coalition period. Circular pit structures were most common, followed by sub-rectangular structures. Pit structure depths ranged from 30 cm to 2 m below ground surface and were commonly 3 to 5 m in diameter in size. Walls of pit structures were constructed using the techniques described for surface-room construction. Common floor features include central hearths, "deflector" stones, ash-filled pits, ventilator complexes, and four postholes located toward the interior of the structure. Other, less common floor features include sipapus, entryways, pot rests, and subfloor pits of various sizes and depths. Ventilators were constructed by connecting the exterior vent shaft to the interior of the structure with a tunnel. Exteriors of shallow structures were connected to the interior through an opening in the wall. Ventilators were commonly oriented to the east or southeast (Kohler 1990; Steen 1977, 1982; Steen and Worman 1978; Stuart and Gauthier 1981; Stubbs and Stallings 1953; Wendorf and Reed 1955).

Utility ware ceramics include types with corrugated, smeared corrugated, and plain exteriors. Less common utility ware types include striated, incised, or tooled exteriors. Decorated white wares include Santa Fe Black-on-white, Galisteo Black-on-white, and Wiyo Black-on-white, and very low percentages of Kwahe'e Black-on-white. Few trade wares have been reported from Coalition-period sites compared to sites of previous periods; one that has been found is White Mountain Redware (Kohler 1990; Steen 1977, 1982; Steen and Worman 1978).

The ability to inhabit higher elevations during the Coalition period may have been afforded by changes in precipitation patterns and access to unclaimed farming land. However, innovative methods were needed for producing sufficient crops in these cooler settings (Anschuetz et al. 1997). Intensification of water management and agricultural practices through the use of check dams, reservoirs, and grid gardens, especially during the latter part of this period and during the succeeding Classic period, are examples of this intensification (Anschuetz et al. 1997; Maxwell and Anschuetz 1992).

In the Santa Fe area, large villages, such as the Agua Fria School House ruin (LA 2), LA 109, LA 117, LA 118, and LA 119, were established during the early Coalition period. Other large Coalition sites, such as Pindi (LA 1), Tsogue (LA 742), and Tesuque Valley Ruin (LA 746), appear to have been established during the late Developmental period and to have grown rapidly during the Coalition period (Ahlstrom 1985; Stubbs and Stallings 1953). Near downtown Santa Fe, numerous Coalition-period sites have been recorded.

Excavations at the old San Miguel Church site identified deposits dating to the fourteenth and seventeenth centuries (Stubbs and Ellis 1955). Excavations at LA 132712, near the intersection of Guadalupe Street and Johnson Street, had a Coalition component represented by a trash concentration, pits and burials (Scheick 2003). A Coalition-phase pit structure and associated artifacts were found in the west courtyard of the Federal Courthouse (Scheick 2005). Other sites with Coalition or Coalition-Classic period materials in the downtown area include LA 1051 (Lentz and Barbour 2008; Lentz 2011), LA 114261 (Hannaford 1997), LA 930 (Peckham 1977; Post and Snow 1982), LA 120430 (Post et al. 1998), LA 125720 (C. Snow 1999), LA 126709 (Viklund 2001), and LA 111 (C. Snow and Kammer 1995).

Classic Period: AD 1325–1600

Wendorf and Reed (1955:53) characterize the Classic period as "a time of general cultural fluorescence." Occupation shifted away from the uplands and began to concentrate along the Rio Grande, Chama, and Santa Cruz Rivers, as well as in Galisteo Basin. Large villages containing multiple plazas and roomblocks were built, and regional populations peaked. The construction of large, multi-plaza communities superseded the village level community organization typical of the late Developmental and early Coalition periods. In the Santa Fe area, large villages, such as the Agua Fria School House ruin (LA 2), Arroyo Hondo (LA 12), Cieneguilla (LA 16), LA 118, LA 119, and Building Period 3 at Pindi (LA 1), flourished during the early part of this period. Although these large villages grew rapidly during the early Classic, only Cieneguilla remained occupied after AD 1425.

Regional ceramic trends included the continued use of carbon-painted pottery, commonly referred to as biscuit wares, in the north, such as the Tewa Basin and Rio Chama Valley; the adoption of glaze wares in southern areas, including the Galisteo Basin; and the production of Jemez Black-on-white in the Jemez Mountains. Along with the development of large aggregated sites, Glaze A, a red-slipped, locally manufactured pottery type, was introduced. Although the reasons for the appearance and proliferation of glaze-painted pottery in the area from the Santa Fe River south are ambiguous, many researchers believe it developed from White Mountain Redware. Similarities between types in the two regions are viewed as evidence for large-scale immigration into the Northern Rio Grande from the Zuni region and the San Juan Basin (Mera 1935, 1940; Reed 1949; Stubbs and Stallings 1953; Wendorf and Reed 1955). Other researchers attribute the changes during this period to expanding indigenous populations (Steen 1977) or the arrival of populations from the Jornada branch of the Mogollon in the south (Schaafsma and Schaafsma 1974). For whatever reason, this was a time of village reorganization.

Sites, such as Pindi (LA 1) and Arroyo Hondo (LA 12), experienced reoccupation of older portions of the pueblo during this time (Creamer 1993; Stubbs and Stallings 1953). Intra-community changes are also suggested by decreasing kiva-to-room ratios (Lipe 1989; Stuart and Gauthier 1981) and the revival of circular subterranean pit structures with an assemblage of floor features reminiscent of the late Developmental period (Peckham 1984). More clearly delineated plaza space and "big kivas" (Peckham 1984:280) suggest social organization that required the emphasis of centrally located communal space.

Emphasizing communal space may have been a means to integrate aggregated populations through ceremonial functions. The need to enhance communal space using architectural units may also be related to the introduction of the Katsina Cult into the northern Rio Grande during this time (Schaafsma and Schaafsma 1974). A shift from geometric designs to masked figures and horned serpents in kiva murals (Hayes et al. 1981; Hibben 1975) and the occurrence of shield-bearing anthropomorphic rock art figures (Schaafsma 1992) suggest the acceptance of new ideological concepts. Changes in community structure and settlement patterns during the Classic period may reflect the adaptation to or the adoption of new populations, ideological elements, and organizational systems by indigenous inhabitants.

Few Classic-period sites have been excavated in the immediate vicinity of the project area. One such site is LA 1051, the site of the Santa Fe Community Convention Center (Lentz and Barbour 2008, Lentz 2011). Although excavation data are few, Classic-period structural remains and abundant artifacts have consistently been encountered in the Santa Fe area, suggesting that this temporal component is masked by subsequent land use and development (Deyloff 1998; Drake 1992; Lakatos 2011; Mera 1934; Peckham 1977; Tigges 1990).

Historic Period: Overview

AD 1540–Present

Spanish Contact, Pueblo Revolt, and Reconquest: AD 1540–1692

The first European contact with the northern Rio Grande Valley occurred in the late winter or early spring of 1541, when a foraging party of Coronado's men set up camp near San Juan Pueblo (Hammond and Rey 1953:244, 259). Having heard of Coronado's earlier plundering farther south, these pueblos were hastily abandoned by their occupants. The Spaniards looted the deserted villages (Ortiz 1979:280; Winship 1896:476).

After the Spanish entradas of the mid- and late-sixteenth century, Native American groups underwent numerous changes in lifestyle, social organization, and religion. The introduction of new crops and livestock contributed to major changes in subsistence, as did mission programs, which taught new industries such as metal smithing and animal husbandry. These were meant to wean the Pueblo people away from traditional ways (Simmons 1979b:181). Incursions by Plains groups also caused the abandonment of many pueblos and a contraction of the region occupied by the Pueblos (Chávez 1979; Schroeder 1979). A combination of new diseases to which the Pueblo people had no natural defenses, intermarriage, conflict attendant with the Pueblo Revolt of AD 1680–1692, and the abandonment of traditional lifestyles all contributed to a significant decrease in Pueblo populations over the next few centuries (Dozier 1970; Eggan 1979).

In 1591 San Juan Pueblo was visited by the Gaspar Castaño de Sosa expedition. Castaño de Sosa erected a cross, received obedience to the King of Spain, and appointed a governor, a mayor, and various other administrators (Schroeder and Matson 1965:121, 129; Lentz 1991:7).

With the goals of missionization, territorial expansion, and the acquisition of mineral wealth, the colonizing expedition of Don Juan de Oñate arrived at Ohkay Owingeh (San Juan Pueblo) on July 11, 1598, and proclaimed it the capital of the province. During the winter of 1600–1601 the Spaniards moved across the river to a partially abandoned 400-room pueblo village, which they renamed San Gabriel de los Caballeros. The first Catholic mission church, called San Miguel, was built at the southern end of the village. Soon, New Mexico was divided into seven missionary districts. A Spanish alcalde (magistrate) was appointed for each pueblo, and all were under Oñate's leadership (Spicer 1962:156). In January 1599, in retaliation for the death of Juan de Zaldivar (one of Onate's two nephews), 70 of Oñate's men attacked Acoma Pueblo. After a three-day battle, the Spanish troops prevailed. In retribution, 500 Acoma prisoners over the age of 25 had one foot severed and were sentenced to 20 years of hard labor in the mines of Zacatecas.

The Spanish colony at San Gabriel did not survive the first decade of the seventeenth century. Oñate returned to Mexico in disgrace, and in 1610 the capital was moved from San Gabriel to the current site of Santa Fe (Ortiz 1979:281; Pearce 1965:146; Spicer 1962:157). There is some scholarly debate regarding exactly when Santa Fe was initially founded (see Ivey 2010). Bandelier (1893) and Twitchell (1963) have argued that Santa Fe was founded by Oñate in 1605. However, the most recent interpretations of the archival documents suggest the settlement was initially established by Oñate's Captain Juan Martinez de Montoya sometime between 1605 and 1608. Early in 1610, under the orders of the Viceroy, Peralta organized the Villa de Santa Fe as a royally chartered town (Hammond 1927).

During the next 20 years, churches were built in all the pueblos. Native American secular and church officers were also established in each village. These included governors, alcaldes, and fiscales (tax collectors). During the 1620s, the villages were peaceful, population grew, and conversions to the Catholic Church increased. By 1630, 50 Franciscan missionaries were working in 25 missions, and a school was operating in each (Spicer 1962:158).

In 1676, a series of events led to the Pueblo Revolt of 1680. Forty-seven Pueblo religious leaders were jailed and flogged in Santa Fe for their adherence to traditional Pueblo beliefs. Among them was the San Juan moiety chief, Popé, under whose leadership the Pueblo Revolt was subsequently planned and carried out (Spicer 1962:162–163). Twenty-one of the Franciscan friars in the territory were killed, along with 400 Spaniards. Santa Fe was besieged by an alliance of Pueblo forces, and on August 21, 1680, Governor Otermín was forced to surrender and evacuate the city (Hackett and Shelby 1942:11, 56–57; Lentz 2004). Coincidentally, a similar insurrection successfully ousted the Spanish from the Isthmus of Tehuantepec, Mexico, that year.

The Pueblos held firm to their independence for 12 years. During the winter of 1681–1682, an attempted reconquest by Governor Otermín was turned back. Otermín managed to sack and burn most of the pueblos south of Cochiti before returning to Mexico. Taking advantage of inter-Pueblo factionalism, the definitive reconquest was initiated in 1692 by Don Diego de Vargas (Dozier 1970:61; Simmons 1979b:186).

Later Spanish Colonial Period: AD 1692–1821

During this period, Spain, under Hapsburg (until 1700) and Bourbon (1700–1821) rulers, was changed from a world empire to a second-tier political and economic power as its European land holdings dissolved, its New World riches were spent, and the social hold of its missionization effort was diminished (Kamen 2003). At the height of its empire early in the eighteenth century, Spain had economic ties covering three-quarters of the known world. The empire was based on economic superiority gained through alliances with the rich bankers and royalty of the Italian city states, with the Flemish, and with its neighbor and sea power, Portugal. New Spain and New Mexico were affected by imperial trends as the structure of the government, the focus of the economy, and pressures on the imperial borderlands changed. New Mexico and Santa Fe were on the frontier of the Spanish Empire and at the end of the Camino Real, the main communication and transport route for public, governmental, and ecclesiastic institutions and individuals. Pressured until 1789 by the French and English advances into the North American interior, Santa Fe soon felt the social and economic pressures brought on by the growing pains of the United States and its rapid institution of Manifest Destiny. These pressures exerted tremendous influence on New Mexico as Mexico gained its independence from Spain in 1821.

Government and Military. During the eighteenth century and into the early nineteenth century, Santa Fe functioned as the provincial capital of Nuevo Mexico in New Spain. The greater territory and military were administered by the governor and his appointed officials (Jenkins and Schroeder 1974; Kessell 1989; Weber 1992). After 1735, the governor ruled under the *Audencia* of Mexico and the Viceroy of New Spain (Westphall 1983:16–17). Locally, Santa Fe was governed by an *alcalde mayor* and *cabildo* or town council (Hordes 1990; Snow 1990; Twitchell 1925). The alcalde and cabildo were responsible for carrying out the daily operation of the local government, fulfilling the legal requirements of land petitions as assigned by the governor, and collecting taxes and tithes for the church. These individuals, who were citizens and soldiers, controlled the social and economic well-being and development of the community and surrounding area (Bustamante 1989; Westphall 1983). After 1722, the alcalde mayor in Santa Fe appointed two *juezes repartidores*, one for each side of the river, to inspect farmlands and acequias and to allot water based on need (Baxter 1997:19). Beginning in 1776 and continuing into the 1800s, the *presidio* system was revamped along with the military importance of Santa Fe and New Mexico. Until the late 1780s, the Santa Fe presidio and the improved and expanded presidio system provided protection against continued Indian raiding of Spanish and Pueblo villages. With a major decrease in the raiding following Governor Juan Bautista de Anza's treaty with the Comanches, the military served as a buffer against French, English, and later American incursions from the north and east (Moorhead 1974; Simmons 1990; Weber 1992). During this time the Spanish governmental organization in Mexico changed three times, but New Mexico remained primarily under its governor who also remained the military commanding officer.

Settlement and Economy. Following Don Diego de Vargas's Reconquest (1692–1696), both pre-Pueblo Revolt and new settlers returned to Santa Fe and the Rio Grande Valley. They allegedly returned to a villa that had been partially destroyed after the escape of Governor Otermín and the surviving colonists, soldiers, and missionaries. The fact that settlers temporarily moved into the Tano pueblo that occupied the former *casas reales* suggests that most of the residences had been destroyed or rendered uninhabitable. Early priorities for the returning colonists and administration were the rebuilding of the *casa reales* and the *acequia* system, the re-allotting of grants to former *encomenderos* and landholders or their surviving family members, and the expansion of the pre-Revolt settlement (Kessell 1989; Simmons 1979a). With the termination of *encomienda,* settlers were expected to be more independent and self-sufficient and to properly compensate the Indians for their labor and goods (Westphall 1983:7). For defensive purposes, settlers were encouraged to settle lands near Santa Fe. However, the quality and quantity of suitable farm land, combined with the practice of living close to their fields, resulted in an elongated and dispersed settlement pattern along the Santa Fe River and adjacent to acequia-irrigated fields as depicted in the 1766–1768 Urrutia map (Simmons 1979a:105–106; Moorhead 1975:148–149).

Presumably, all families were eligible for the typical town lot, which in the seventeenth century was defined as two lots for house and garden, two contiguous fields for vegetable gardens, two others for vineyards and olive groves; four *caballerias* of land; and the water necessary for irrigation, if available, thus obligating the settlers to establish residence for 10 consecutive years without absenting themselves (Hammond and Rey 1953:1088). Land documents from the eighteenth century clearly show that house and garden lots were common and that they were bought and sold regularly, once the 10-year residency requirement had been fulfilled (Tigges 1990). The extent to which vineyards and olive groves were actually introduced is unclear and has not been addressed archaeologically or well-documented historically.

Arable land within the *villa* was scarce by the middle 1700s. Individual or family grants within the city league that included the full four *caballerias* of land or explicit access to the *ejido* or common land parcels for livestock grazing were relatively few. Only 24 are shown on William White's undated *Sketch Map of Grants within the Santa Fe Grant* reflecting land ownership in the early 1890s and coinciding with land claims filed with the Court of Private Land Claims (Westphall 1983:237). Based on William White's 1895 map *Showing Owners of Land within the Santa Fe Grant Outside of City Limits*, the long-lot land subdivision pattern is clearly evident. These long lots were the basis of the small-scale agro-pastoral economic tradition that typified eighteenth- and early nineteenth-century land use within village or urban settings such as Santa Fe. The residences, which may be termed *ranchos* or *rancherias*, were much smaller in scale than *haciendas* (Simmons 1979a; Payne 1999:100–109). They were sufficient for subsistence but did not lead to economic advantage or prosperity. Long-lots allowed access into the *ejido* or common lands for other natural resources, such as wood, game, and stone for construction (Wozniak 1987:23–25). Acequia irrigation that supported intensive wheat and corn cultivation was the backbone of successful settlement in New Mexico (Ackerly 1996; Baxter 1997; Snow 1988; Wozniak 1987).

Class and Community. During the eighteenth century, Santa Fe and New Mexico were inhabited by a diverse population. It was a socially stratified society with the governor, high-ranking officials, and officers of the presidio in the upper echelon. The middle class contained the farmers and artisans, who were slightly more prosperous than the common people and the soldiers of the presidio (Bustamante 1989:70). Other divisions within *Hispano* society reflected a diverse, mixed, and perhaps somewhat discriminatory and arbitrarily defined caste system (Brooks 2002; Bustamante 1989; Frank 2000). Economically based social stratification was present, but the majority of the population consisted of small-landholders of Hispano, *mestizo*, *genizaro,* or *indio* castes. The Urrutia map shows the area south of the Santa Fe River and between San Miguel church and the Guadalupe Church area as the Barrio de Analco, in which the population was partly composed of Tlaxacalan Indians from Mexico. Men were soldiers, farmers, shepherds, and laborers with a few skilled blacksmiths, educators, and medical professionals. During this time, churches and secular *cofradias* remained the main avenues by which social and economically defined groups would cooperate and act as a community (Frank 2000). Until the building of the Sanctuario de Guadalupe in the early 1800s, worship and service would have been connected with the Parroquia or would have occurred at San Miguel chapel. With addition of the Sanctuario, the area assumed a more communal organization mediated through church membership and lay organizations (Sze and Spears 1988:37).

By the beginning of the nineteenth century, Spain's hold on Mexico and the northern territories had diminished significantly. Recognizing that the citizens of New Mexico could not partake in the normal political, economic, and social activities of the declining empire, Spain allowed New Mexico to operate in virtual independence, except for the most important activities (LeCompte 1989; Westphall 1983). The positive effect was that New Mexico could determine much of its social and economic future. The negative effect was that the economic problems, compounded by limited sources of money, limited access to durable goods, and slow responses to military and administrative issues, created a stagnant economic environment. In addition, pressure from the United States to open economic ties, applied through small-scale economic reconnaissance, increased in frequency between 1803 and 1821.

With Mexico's independence from Spain in 1821, New Mexico became a frontier province and economic avenue to the commercial markets and production centers of the United States. Two major changes instituted by the new government had important consequences in northern New Mexico. These were the establishment of normal economic relations with the United States through overland trade on the Santa Fe Trail and the abolition of the caste system, which meant that everyone was a Mexican citizen.

Government. The political structure of Santa Fe experienced only minor change with the switch to a Mexican administration (LeCompte 1989; Pratt and Snow 1988). The abolition of the caste system meant that any citizen had an equal opportunity to hold a public office. Governors were still appointed by Mexico and the governor continued to be the military commander. He was also responsible for collecting tariffs and regulating the Santa Fe Trail commerce. The town council and alcalde still oversaw the town business. Santa Fe was divided into six parishes that formed the nucleus through which issues could be advanced to the council and discussed throughout the community.

Economy. In 1821, with Mexico's independence, the New Mexican frontier was opened to trade with the United States. The Santa Fe Trail, extending from Santa Fe, New Mexico, to Independence, Missouri, became a major trade route for European goods from the east (Jenkins and Schroeder 1974; Simmons 1989). England also opened formal trade relations with Mexico. Due to these improved trade relations, large volumes of Euroamerican manufactured goods were available and filtered north on the Camino Real. By the 1830s, the dominant source of manufactured goods was the Santa Fe Trail, eclipsing the Camino Real in importance. Trade between the U.S. traders and Mexico did continue with a special focus on the northern Mexican silver mining region (Scheick and Viklund 2003:14). Americans not only traded in New Mexico, but also became involved in the transfer and allotment of large illegal land grants from Mexican officials (Westphall 1983).

The opening of the Santa Fe Trail and the effect that it had on northern New Mexico's economy has been explored by many researchers (LeCompte 1989; Pratt and Snow 1988; Boyle 1997). With the opening of the Santa Fe Trail, New Mexico still remained predominantly an agro-pastoral economy. Most villages and towns barely felt the effects of the increase in commercial and consumer opportunity, except that basic household and work items were more readily available. While not widespread immediately, but with greater effect through time, the Santa Fe Trail trade provided access to durable and manufactured goods in quantities and at lower costs than had been available from Camino Real commerce. Seemingly basic household goods, such as window glass, dishware, and hand tools, were available to anyone that could afford to buy them or who could open a line of credit based on projected farm and ranch production. The beginnings of a more viable cash economy meant that wage labor added to the available options for supporting a family. It also meant that with cash available, land that could not sustain a family's needs could be sold.

Society in Transition. Mexican independence from Spain resulted in limited changes to the family- and church-based social structure of Santa Fe and New Mexico. The abolition of the caste system and the granting of equal citizenship to all Mexicans and New Mexicans potentially allowed for changes in the social status of local and provincial office-holders or officials, but there is not strong evidence for such changes in Santa Fe. General historical descriptions indicate that under Mexican rule, Santa Fe and New Mexico continued to have considerable autonomy resulting in strong organizations that governed religion and other aspects of Hispanic organization (LeCompte 1989:83; Abbink and Stein 1977:160; Frank 2000). Abolition of the caste system and full citizenship had little effect on Hispanic populations, but had serious consequences for the Pueblo Indians who had enjoyed special status relative to land holdings under Spanish rule. Their lands could now be sold and were subject to the vagaries of land transactions (Hall 1987).

Perhaps, the strongest force for social change in Santa Fe resulted from the opening of the Santa Fe Trail. This officially opened New Mexico to influences and settlement by populations from the United States and added a new layer of cultural diversity to the social setting that would eventually shift the balance of the social and economic relations in Santa Fe and along the Rio Grande.

American Territorial Period: AD 1846–1912

New Mexico's Territorial-period quest for statehood was one of the longest endured by any state of the Union. Following the U.S. acquisition of new southwestern and western territories, there was a disorderly and turbulent rush to own or control land, mineral and natural resources. The struggle for control created a political, economic, and social order that still affects how New Mexico functions as a state today. Two authoritative accounts of this period are Larson's *New Mexico's Quest for Statehood: 1846–1912* (1968) and Lamar's *The Far Southwest* (1966). Much of the following summary is derived from those sources.

Santa Fe Trail and Pre-Railroad Times (AD 1846–1879)

On July 30, 1846, rumors that the United States would invade Mexican territory became a reality as Kearny proclaimed his intention to occupy New Mexico. After possible secret negotiations with General Manuel Armijo, the Army of the West arrived in Santa Fe on August 18, and New Mexico was surrendered to the United States (Jenkins and Schroeder 1974:44). Between 1846 and the ratification of the Treaty of Guadalupe Hidalgo on March 10, 1848, the U.S. Army continued to occupy New Mexico, and a civilian government was installed, including a governor (initially appointed by General Kearny) and a territorial assembly.

New Mexico changed politically when it was designated a territory of the United States under the Organic Act of 1851 (Lamar 1966:13). The act set up the territorial governorship, from which important appointments were made in the territorial administration. The territorial legislative assembly dealt with issues on a local level, while the territorial governor's job was to ensure that federal interests were served (Lamar 1966:14). The center of government remained in Santa Fe, as it had been during the Spanish and Mexican administrations.

Between 1848 and 1865, the economy continued to focus on Santa Fe Trail trade, with the inclusion of routes from Texas (Scurlock 1988:95–97). Santa Fe continued to be the economic and political center of the territory. In addition to the mercantile trade, the establishment of military forts such as Fort Union and Fort Stanton expanded the economic markets (Jenkins and Schroeder 1974:50; Scurlock 1988:76–88). Local economies continued to be agrarian and pastoral. The large ranches supplied cattle and wool to the eastern markets and, until the end of the Civil War, to Mexico. A full-scale cash and wage economy was not yet in place as New Mexico was still isolated from the rest of the United States by long distances and hostile Indian tribes (Abbink and Stein 1977:167; Fierman 1964:10).

Changes in the social structure were gradual before the Civil War. Early migration by Anglo-American and European entrepreneurs was slow because industries such as mining had only been established on a small scale. As the terminus of the Santa Fe Trail, Santa Fe attracted immigrant Jewish and German merchants, who brought eastern European business experience into the new territory. These merchants replaced the early traders and established formal businesses (Jenkins and Schroeder 1974:63). Early merchants were not satisfied with dealing only in goods and participated in growing land speculation in Spanish and Mexican land grants.

Between 1865 and 1880, the trends that began with establishment of the territory were amplified. Before 1860, U.S. attention was focused on the sectional conflict and the resulting Civil War. New Mexico was a Union territory, and for a brief period in 1862 the Confederates occupied Santa Fe without a shot being fired from the cannons of Fort Marcy, which overlooked Santa Fe. However, when the Confederate contingent attempted to move north to the Colorado gold mines they were engaged, defeated, and exiled from the territory (Jenkins and Schroeder 1974:50–51).

With the end of the Civil War, attention was turned to the settlement of the new territories and their potential for economic opportunity. Military attention turned to pacification of the Native American tribes that roamed New Mexico outside the Rio Grande and its tributaries (Jenkins and Schroeder 1974:51–56). The new western territories were perceived as a place where lives ruined by the Civil War could be renewed. Eastern professionals with all kinds of expertise were encouraged by associates to come to New Mexico, where the political and economic fields were wide open (Lamar 1966). Much of this migration centered on Santa Fe, which continued to be the economic and political center of the territory.

The newcomers joined forces with and embraced the *patron* system, thereby gaining acceptance into the existing cultural setting. These alliances were referred to as "rings." The rings were informal organizations of lawyers, cattlemen, mining operators, land owners, merchants, and government officials (Larson 1968:137). Their common goal was to provide a favorable environment for achieving economic and political aims. The most well-known was the Santa Fe Ring, which included territorial governors, land registrars, newspaper owners, lawyers, and elected and appointed officials. Important persons in New Mexico history belonged to the Santa Fe Ring, including Stephen Elkins (Secretary of War and U.S. Senator), Thomas Catron (territorial delegate and U.S. Senator), L. Bradford Prince (U.S. Senator and territorial governor), Francisco Chavez (president of the Territorial Assembly), and M. W. Mills (territorial governor), to name a few (Larson 1968:142–144). The Santa Fe Ring crossed party lines and was extremely fluid in its membership; disloyalty resulted in ostracization and often in political or economic ruin. Opposition to the ring was suppressed by law and violence, as demonstrated by the Lincoln and Colfax County wars in the 1870s (Larson 1968:137–140).

The alliances between the new political and economic entrepreneurs and the old power structure came to dominate the territorial legislature, which through time passed an increasing number of laws benefiting the new structure to the detriment of the Spanish and Native American populations (TANM Roll 102, Frames 78–95). The new westerners often had contacts in Washington through which they influenced territorial political appointments and disbursement of economic aid (Lamar 1966:169–170).

Perhaps the greatest lure in the New Mexico territory was land. Ownership of large tracts of land was intensely sought by Santa Fe Ring members, a pattern typified by Thomas Catron, who was one of the largest landholders in the United States by 1883, only 16 years after arriving in the territory (Larson 1968:143). To land speculators, most of New Mexico was unsettled and unused. This was an illusion promoted by the frontier subsistence economy of low-density, land-extensive farming and ranching that had prevailed before the Territorial period. Lack of transportation to markets, conflicts with Indians, and a general lack of funds had retarded New Mexico's cattle, lumber, and mining industries. Under the Spanish land grants, non-arable land was a community resource and was therefore not over-exploited. It was the community land that land speculators obtained, to the detriment of New Mexico's rural economy and social structure (Van Ness 1987).

New Mexico's economy changed after the Civil War because of increases in the number of military forts and the growing Anglo-controlled mining and ranching industries. A mercantile system that had focused on Mexican and California trade now supplied the military and transported precious ores from the gold and silver mines of the Santa Rita and Ortiz mountains to national markets. A marginal cash economy grew as the federal government spent money on military forts and the Indian campaigns. The Santa Fe, California, and Texas trails were the main routes for goods. The Chihuahua trade died after the Civil War (Jenkins and Schroeder 1974:61–62).

The Early Railroad Era (AD 1879–1912)

Between 1879 and 1912, political power was concentrated in the Santa Fe Ring, which consisted of several Santa Fe politicians (see Dean 2010). The group controlled territorial and local political appointments through a system of patronage and effectively blocked legislation proposed by its opponents. In 1885, Edmund G. Ross was appointed territorial governor and was asked to end the political and economic control of the Santa Fe Ring, a task he was unable to complete.

National attention on New Mexico focused on the continued abuses of the land grant situation. Between 1870 and 1892, the Santa Fe Ring was able to manipulate land grant speculation to their advantage. Surveyors general were usually appointed with the blessing of the ring and were often involved in land deals with ring members (Westphall 1965). William Julian was appointed surveyor general and given the job of halting the land grant abuses, which he carried out in spectacular if not a little overzealous fashion. His inclination was to deny all claims as fraudulent and recommended very few to Congress for confirmation. The grants within and on the periphery of Santa Fe were at both ends of the spectrum. Julian recommended the Sebastián de Vargas Grant, located on the southeast boundary of Santa Fe, for confirmation, even though it lacked the proper documents (Court of Private Land Claims [CPLC]). On the other hand, the Salvador Gonzáles Grant, within the northeast corner of the Santa Fe Grant, became the focal point for a national lambasting by Julian (1887) of the abuses of the land grant situation. To the Santa Fe Ring, Julian was an obstructionist, who used his position to advance personal vendettas (Bowden 1969).

At stake in the land grab were millions of acres that would leave private control and enter the public domain if they could not be confirmed as part of a land grant. Julian and Ross believed the public domain should be available to small landholders (Lamar 1966). The Santa Fe Ring supported large-scale ranching and mining interests. Because Santa Fe was the political and economic center of the territory the land around it was valuable, and large tracts not legitimately included in the Spanish land grants were falsely claimed.

From 1880 to 1912, economic growth in the Santa Fe area began to lag as other areas of the state—Las Vegas, the Mesilla Valley, and Albuquerque—grew in importance. Much of the economic slowdown can be ascribed to the lack of a through railroad (Elliott 1988:40). Santa Fe was no longer an important economic center; it had become just a stop at the end of a spur on the Atchison, Topeka and Santa Fe Railway. Although it was also the terminus of the Denver and Rio Grande Railway, which had local and regional significance, that route had little national importance because it did not tie in directly to the east–west transportation corridor (Pratt and Snow 1988:419).

In a move to spur economic growth a concerted effort was made to advertise Santa Fe and New Mexico as a tourist and health destination (Spude 2010). Sanatoriums sprang up all across New Mexico, even in remote locations such as Folsom, in the northeast corner of the state. The trip on the Denver and Rio Grande Railway was described as an excellent remedy for lung problems (Nims 1881; Williams 1986:129–131). Two notable sanatoriums in Santa Fe were St. Vincent Sanatorium, established in 1883, and Sundermount Sanatorium, started in 1906 (Lewis 2010). John Gaw Meem was treated at Sundermount in 1920–1921 and was lead architect on remodeling and additional construction at St. Vincent's in 1954.

New Mexico's unique cultural heritage was recognized as an important tourist draw. Preservation and revival of traditional examples of architecture and native crafts and ceremony were encouraged. Large-scale tourist corporations such as the Harvey Corporation invested heavily in Native American crafts. Tourism and economic development became a dichotomy of economic goals. The tourist industry emphasized the old and romantic, while the economic development interests portrayed New Mexico as booming and vital, embodying the modern values embraced by the eastern establishment (Wilson 1981:105–159).

Spude (2010:339) notes that during this time Santa Fe went through a period of "Americanization," where progressive minded citizens strove to reform government, social and cultural values, and the very appearance of their city. These reforms included the incorporation of the city in 1891, the installation of a sewage system, the paving of roads, new laws governing trash disposal, closing saloons on Sundays, and prohibitions against many forms of gambling. While Santa Fe may not have exhibited the growth of many other large western cities, Santa Fe maintained economic stability. The city acquired many federal and territorial expenditures and jobs. Attempts to move the capital to Albuquerque in the early 1880s were defeated, which proved critical to the long-term economic stability of Santa Fe (Lamar 1966). Another choice made by legislators interested in Santa Fe's economic growth was to locate the penitentiary in Santa Fe. As a trade-off, Albuquerque, Las Cruces, Las Vegas, and Socorro received colleges. The penitentiary was viewed as economically more valuable than schools.

New Mexico was delayed in its quest for statehood by eastern politicians who viewed the small population, the arid climate, and a Spanish-speaking majority as liabilities. Most New Mexicans favored statehood but had different conditions under which they would accept it. Some citizens feared statehood because of the potential for increased taxation, domination by one ethnic group over another and the loss of federal jobs under a state-run system. These factors, combined with political factionalism in New Mexico, resulted in the struggle (Larson 1968:302–304).

On January 6, 1912, New Mexico was admitted into the Union as a state. After statehood, the patterns that were established in the Territorial period continued. New Mexico experienced only slow population growth, with most settlement concentrated along the Rio Grande corridor and in the southeast around Roswell. More than half the state land had a population density of fewer than five people per square mile (Williams 1986:135), partly because of the large area that was part of the National Trust and could not be settled. The major industries continued to be mining, ranching, lumber, farming within the Pecos and Rio Grande irrigation districts, and tourism (Jenkins and Schroeder 1974:77).

The Prohibition Era (1920–1933)

In the United States, the term Prohibition refers to the period 1920 to 1933, during which time the sale, manufacture and transportation of alcohol for drinking was banned nationally by the Eighteenth Amendment to the U.S. Constitution (Hakim 1995:16–20). After much pressure by the temperance movement, the U.S. Senate passed the Eighteenth Amendment on December 18, 1917. The "Volstead Act," the popular name for the National Prohibition Act, passed Congress over President Woodrow Wilson's veto on October 28, 1919. The Eighteenth Amendment was certified as ratified on January 16, 1919, having been approved by 36 states, including New Mexico, and went into effect on a federal level on January 16, 1920 (Skilnik 2006).

The Prohibition, or dry movement, began in the 1840s, primarily through various religious denominations, but didn't become a strong force in state and local politics until the 1880s, after the Civil War had ended, and after the Women's Christian Temperance Union (WCTU) was founded in 1873 and the Carrie Nation Prohibition Group around 1881 (Kyvig 2004:3–4). They identified saloons as politically corrupt and drinking as a personal sin and were opposed by other groups who denounced the idea that the government should define morality. The Progressives won, however, when the Eighteenth Amendment went into effect.

In New Mexico, heavy drinking was a staggeringly pervasive fact of life, with some men drinking throughout the day. New Mexico voters and legislators were therefore attempting to pass their own prohibition against alcohol during the time of the general movement nationwide. The WCTU and other Prohibition supporters quickly gained ground after the start of World War I. An editorial in the *Santa Fe New Mexican* argued, "If we are to win this war we cannot do it if we stay 'pickled.' We should vote 'dry' for our country's sake." (Silverman 2006: 34–38).

New Mexico voters passed Article XXIII on November 6, 1917, by a margin of three to one, with every county but Rio Arriba and Taos voting for Prohibition, and on October 1, 1918, New Mexico became the 26th dry state (Silverman 2006). This milestone was overshadowed by news of the war and the arrival of a flu pandemic that closed all public gathering places.

Although it was highly controversial, Prohibition was supported by diverse groups, including Progressives, the Ku Klux Klan, women, southerners, people in rural areas, and African Americans. The law, however, proved difficult to enforce because, while alcohol was illegal in the United States, it was not illegal in surrounding lands such as Canada, Mexico, and the Caribbean, where alcohol was either consumed by visiting Americans or illegally imported to the United States. Chicago became notorious as a haven for disobeying Prohibition during the time known as the Roaring Twenties, with Bugs Moran and Al Capone making millions of dollars from illegal alcohol sales through speakeasies and the bootlegging business from Canada to Florida (Kyvig 2004:163–186).

As with other areas of the nation, New Mexicans never really stopped drinking. Cheap booze, created in homemade and commercial stills and smuggled up from Mexico by rumrunners, remained readily available. New Mexico also had its illegal drinking establishments, although not on as large a scale as Chicago. Historian David J. McCullough described one Santa Fe speakeasy, circa 1927:

> One of the more notable establishments was housed in a three-story building.…The quality of the drinks and the décor of the rooms changed on each floor. The first floor was for "poorer people" who wished to quench their thirst with "white mule."…The second floor was for those slightly more affluent who wished to ascend to "Second Heaven."…Only those with a "fat wad" could make it to the third floor where good quality booze was sold.

To add to the problem of enforcing the state's Prohibition, New Mexico Legislators at the time were hard drinkers and refused to pass legislation that would give the anti-alcohol laws any teeth. When the Eighteenth Amendment went into effect, 1,520 Federal Prohibition agents (police) were given the task of enforcing the law. Some of those officers later rated New Mexico as worse than average in fighting illicit liquor sales (Silverman 2006).

As Prohibition became increasingly unpopular, especially in the big cities, repeal of Prohibition was eagerly anticipated. On March 23, 1933, President Franklin Roosevelt signed into law an amendment to the Volstead Act, known as the Cullen-Harrison Act, which allowed certain kinds of alcoholic beverages to be manufactured and sold (Skilnik 2006). The Eighteenth Amendment was then repealed with the ratification of the Twenty-first Amendment on December 5, 1933. This Amendment gives states the right to restrict or ban the purchase or sale of alcohol, which has led to the confusion of laws that allow some counties and towns within a state, but not others, being able to sell alcohol.

Overturning the New Mexico legislation was a challenge. Attempts at reform were made in 1927 and 1929 to no avail. The temperance movement remained strong, but the anti-temperance movement began to gain prominent citizens, in addition to saloon owners, as supporters. It took a few years, but they were finally able to bring a repeal measure to the State Legislature. New Mexico voters finally ratified the State repeal measure in September 1933, and Prohibition ended. New Mexico then ratified the Twenty-first Amendment on November 2, 1933 (Silverman 2006).

Many social problems have been attributed to the Prohibition era, in New Mexico as well as across the United States including a profitable, often violent, black market for alcohol and racketeering. Stronger liquor surged in popularity because it was more profitable to smuggle. The high cost of enforcing Prohibition and the lack of tax revenues on alcohol negatively affected the local, state, and federal treasuries of government. Additionally, only half the breweries that had existed before Prohibition were able to reopen, and several historians credit Prohibition with destroying the fledgling wine industry in the United States (MacNeil 2000:630–631).

The Great Depression Era and the New Deal (1929–1941)

A great depression is defined as a period of diminished economic output with at least one year where output is 20 percent below the trend (Kehoe and Prescott (2007). The beginning of the Great Depression in the United States is associated with the stock market crash on October 29, 1929, known as Black Tuesday, and it lasted until the onset of the war economy of World War II, beginning around 1939. It caused a widespread economic downturn, affecting countries worldwide, some as early as 1928 (Engerman and Gallman 2000). Cities and countries around the world were hit hard, especially those that were dependent upon heavy industry. International trade sharply declined, construction virtually halted in many countries, and crop prices in farming and rural areas fell by 40 to 60 percent. Demand plummeted, and there were few alternate sources of jobs (Cochrane 1958).

In the U.S. however, optimism persisted even following the 1929 Wall Street Crash. John D. Rockefeller insisted that "depressions had come and gone" in his 93 years, and that "prosperity has always returned" (Schultz and Tishler 1999). In fact, the stock market turned upward in early 1930, and government and business actually spent more in the first half of 1930 than in early 1929 (Vronsky and Westerman 1998). Consumers who had lost heavily in the Crash, however, were wary and cut back their spending by 10 percent. Even though credit was ample and available at low rates, people were reluctant to add new debt by borrowing. By May 1930, prices in general began to decline. Wages, however, held steady in 1930, then began to drop in 1931. Furthermore, a severe drought hit the agricultural heartland beginning in the summer of 1930. Industries hardest hit by economic conditions were agriculture, due to low commodity prices, and mining and logging where unemployment was high with few other jobs available. As the American economy declined, other countries were affected either positively or negatively, depending upon their internal strengths or weaknesses. By late 1930, a steady decline had set in; it reached bottom by March 1933 (Vronsky and Westerman 1998).

There are several theories as to what can catapult a usually mild and short recession into a depression, a full discussion of which is beyond the scope of this chapter. As for the Great Depression, however, debt is seen as one of the causes. People and businesses that were deeply in debt when price deflation occurred or when demand for their product decreased often defaulted. Massive layoffs occurred, leading to over 25 percent unemployment. As debtors defaulted on debt and worried depositors began massive withdrawals, banks began to fail. Capital investment and construction then slowed or completely ceased, resulting in banks becoming even more conservative in their lending. A vicious cycle developed and the downward spiral accelerated.

A sharp decline in international trade after 1930 is also thought to have helped worsen the depression, particularly for countries significantly dependent upon foreign trade (Kindleberger 1973:291–308). Others argued that the Great Depression was caused by monetary contraction, the consequence of poor policy making and inaction by the American Federal Reserve System and the continuous crisis in the banking system (Bernanke 2000; Krugman 2007; Griffin 2002). Some argue that part of the reason the Federal Reserve did not act to limit the decline of the money supply was due to the laws at the time regulating gold (Wueschner 1999). At the beginning of the Great Depression, Herbert Hoover was President. His Secretary of the Treasury, Andrew Mellon, advised Hoover that shock treatment would be the best response to deal with the economic problems:

> Liquidate labor, liquidate stocks, liquidate the farmers, and liquidate real estate… That will purge the rottenness out of the system. High costs of living and high living will come down. People will work harder, live a more moral life. Values will be adjusted, and enterprising people will pick up the wrecks from less competent people. [Hakim 1995]

Hoover rejected that advice because he believed that government should not directly aid the people. He insisted instead on "voluntary cooperation" between business and government (Hoover 1979:3–9) and stricter government regulation of existing laws.

Enter Franklin D. Roosevelt: Inaugurated in 1933, he primarily blamed the excesses of big business for causing an unstable bubble-like economy. He wanted to restructure the economy, and so the New Deal was designed as a remedy by empowering labor unions and farmers and by raising taxes on corporate profits, among other strategies (Vietor 1994). Part of the initial reforms of 1933 (called the "First New Deal" by historians), the National Recovery Administration (NRA) and the Agricultural Adjustment Act (AAA) were meant to highly regulate and to stimulate the economy (Kyvig 2004:236–238). The two concepts were apparently incompatible, however, as the economy continued to stagnate. By 1935, the "Second New Deal" added Social Security, a national relief agency (the Works Progress Administration [WPA]), and the National Labor Relations Board, which influenced the growth of labor unions (Kyvig 2004:269–270). Unemployment fell from 25 percent to 14.3 percent in the period from 1933 to 1937. But then a short-lived recession in 1937–1938 caused unemployment to jump to 19 percent. Roosevelt also responded to the 1937–38 deepening of the Great Depression by abandoning his efforts to balance the budget, and by launching a $5 billion government spending program (an effort to increase mass purchasing power) in the spring of 1938. It was not until the military draft of World War II, the decontrol of the wartime command economy and a sharp reduction of taxes and regulations in 1946, that consumer goods were finally allowed to be created and unemployment fell to levels under 10 percent.

A few of the New Deal regulations were declared unconstitutional by the U.S. Supreme Court early on, including the NRA in 1935 and AAA in 1936. In a bipartisan wave of deregulation, most New Deal regulations were later abolished or scaled back in the 1970s and 1980s (Vietor 1994).

The citizens of New Mexico benefited greatly from many of the New Deal programs. New Mexico was one of the most destitute states in the Union even prior to the onset of the Depression (Arrington 1969:311–316). In the early 1930s, many New Mexicans were struggling financially, causing a shortfall in the state's tax base, which led to the inability to serve the state's most vulnerable citizens (Coan 1925; Forrest 1989). By the height of the Depression approximately 50 percent of New Mexicans were unemployed and only 1 percent of the state's irrigable land was actually under cultivation (Welsh 1985:20). The need for jobs was so great that the New Mexico Federation of Labor proposed limiting employment on government construction projects to one wage earner per family. Governor Arthur Seligman applied for a small amount of federal aid, initially from the Reconstruction Finance Corporation and later from other programs, seeing it not only as a way to employ out-of-work New Mexicans, but also as a way to improve New Mexico's infrastructure. He believed that plenty of men would be willing "to work for a dollar a day and their board and keep" to provide something beneficial to the state (Seligman 1933).

New Mexico's state government–sponsored capital improvements were insignificant compared to the projects completed through New Deal programs. New Mexico ranked fifth among all states in per capita expenditure of New Deal money from 1933–1939 (Kammer 1994:2). Conchas Dam (located 35 miles north of Tucumcari) is a consummate example of the New Deal in New Mexico and involved essentially every New Deal program created by the Roosevelt administration, from the 1935 Federal Emergency Relief Act (ERA) to the Civilian Conservation Corps (CCC), the WPA, and the Public Works Administration (PWA). The Conchas Dam construction project was specifically justified as a means to bring wage-paying jobs to an area of great unemployment. Labor-intensive methods, such as handmade adobes and hand-quarried local sandstone blocks, were employed during the construction of an entire town that had to be built prior to the start of construction on the dam itself (Schelberg and Everhart 2008:134). The town was created by constructing virtually every facility and amenity imagined as being associated with life in the 1930s (Kramer 1941).

The project, as first proposed in 1931 and at a cost over $11,600,000, was rejected by Congress and the U.S. Army Corps of Engineers as not economically justified. It was not considered economically viable until 1935 and only then with the possibility of using ERA relief workers. Ultimately 2,500 people worked on the Conchas Dam, many for as little as $0.25 per hour and within limits of 20 hours per week so that more people could be hired. Even with the low wage, there was a continuous waiting list of applicants. In accordance with ERA provisions, 90 percent of the employees were listed on relief rolls and 10 percent on the Civil Service Commission registry. Of the former, 80 percent were from New Mexico and 20 percent from the Texas panhandle. Most skilled workers were from California and the Midwest as there were no skilled workers in New Mexico (Welsh 1985:22–32; Kammer 1994:64).

In addition to Conchas Dam, one of the lasting New Deal legacies for New Mexico was the establishment of Spanish-Pueblo Revival and Territorial Revival as the appropriate regional architectural styles for state government buildings; they remain in use to this day (Kammer 1994:32). Clyde Tingley, as Albuquerque Mayor from 1932–1934, became familiar with the New Deal programs by bringing Civil Works Administration (CWA) projects into Albuquerque, including 17-acre Roosevelt Park, near UNM, and Tingley Beach, adjacent to a Rio Grande flood-control channel (Kammer 1994:27–28). After Tingley became governor, from 1934 to 1938, he maintained a special relationship with President Roosevelt and wholeheartedly embraced the New Deal with the goal of improving New Mexico by expanding governmental services—a fundamental tenet of the New Deal. Under Tingley's guidance, the WPA put thousands of New Mexicans back to work on projects, which resulted in unprecedented public capital improvements (Kammer 1994:26–41). During his years as governor, the projects included 2,916 miles of road improvements, 277 new schools, many highway district buildings, institutional buildings and hospitals, public parks, water and sewer systems, and several dams (Kammer 1994:76).

Conchas Dam remains today, but provisions of the lease required that the construction town was to be demolished once the dam was completed and any salvaged materials were to be sold to other U.S. Army

Corps Districts or government agencies. Neither adobe nor sandstone could be profitably sold or transported great distances. Therefore, much of the demolition was done carefully by hand by the CCC, and the materials were then reused by the CCC to construct the Army Corps's administration building and five houses for personnel operating the dam. As of 2007, the administration building and the houses are still in use, and the land that the town sat on has reverted to private ownership (Schelberg and Everhart 2008:144).

Other buildings and structures around New Mexico that were built by CCC crews and other New Deal programs include 30 structures at Bandelier National Monument, the National Park Service building on Old Santa Fe Trail, the 1934 Don Gaspar Bridge, the Supreme Court Building in Santa Fe, and six structures for the New Mexico School for the Deaf (Weideman 2008).

While the New Deal is well known for the construction projects undertaken throughout the country, it is less well known that there were also artist and writer projects established by the WPA (as re-named in 1939, Work Projects Administration) to provide support for the humanities. Many of New Mexico's best-known artists were involved in these endeavors, to their benefit and for the benefit of many locations throughout New Mexico. More than 65 murals with varied subject material were created in New Mexico during the Depression. In addition to these murals, more than 650 paintings, 10 sculptural pieces, and numerous indigenous Hispanic and Native American crafts were sponsored by the WPA (Collector's Guide 2008).

In terms of benefit from New Deal programs, New Mexico was one of the highest-ranked states, especially with regard to building and conservation funding. The programs of the New Deal essentially created the existing New Mexico state government structures, confirmed the architectural style of the government buildings, and did much to introduce New Mexico to the modern era (Schelberg and Everhart 2008:145).

The Proud Decades (1941–1960)

President Roosevelt's New Deal Programs were credited with pushing New Mexico to modernize. State agencies had to be created for New Mexico to take advantage of the Federal Government's offers of financial aid. By 1939, New Mexico's economy was already deeply in trouble with farm, livestock, and taxable property values tumbling for almost a decade. As with much of the country, New Mexico's economic rebound was intimately associated with World War II and the militarization of the state. Agriculture also received a strongly needed boost as the demand for food surged.

During World War II, New Mexico was home to 8 major air bases, 13 bombing and gunnery ranges, 4 army hospitals, 3 prisoner of war camps, 11 National Guard armories, and 7 specialized military locations (Hoffman n.d.). Its citizens had compiled an impressive and unique record of military service, although contributions by Hispanic and Native Americans received little public recognition. A partial explanation in the case of the Navajo Code Talkers was the secrecy that cloaked this program until the 1980s. In 1942, 29 Navajo volunteers from boarding schools in Shiprock, Fort Defiance, and Fort Wingate were organized into the first unit of Code Talkers. Structuring the code was not a simple task. Military terms had to be translated into images and the images into Navajo spoken language, which allowed messages to be radioed among combat command posts. First employed in 1942 on Guadalcanal, the code was used throughout the war years and was never broken by the enemy (Paul 1998).

In 1940, the 111th Cavalry Unit of the New Mexico National Guard was redesignated the 200th Coast Artillery Regiment and the 158th was reorganized as the 104th Anti-tank Battalion (Reed 2010). These units, as well as the 21st Engineer Regiment, were called to active duty for one year of training. In August 1941, the 200th shipped out to Fort Stotsenberg in the Philippines and was responsible for downing seven aircraft during the Japanese attack of December 8th despite having to use outdated and faulty ammunition (Reed 2010:389–391). A segment of the 200th was subsequently assigned to the 515th Coast Artillery Regiment, which was charged with providing aircraft protection for Manila, the Philippine capital. These units all participated in the four-month Battle of Bataan and are credited with delaying the Japanese advance and thereby preventing the invasion of Australia (Reed 2010).

On April 9, 1942, 47,000 surviving American and Filipino soldiers surrendered to the Japanese. The American "Battling Bastards of Bataan" were to subsequently receive numerous medals and commendations from the United States and Philippine governments for their heroic performance under terribly adverse conditions. During the 65-mile "Bataan Death March," 16,950 American and Filipino service men died, with many more succumbing during their years of imprisonment at Camp O'Donnell. Of the 1,800 New Mexicans who took part in the Bataan campaign, only one-half returned home at the end of the war (Reed 2010:383). Many of these were to die during the following year of war-related injury and illness.

On the European front, the New Mexico National Guard's 104th Anti-Tank Battalion, was sent to Oran in North Africa in February 1943 for advanced training. In January 1944, the battalion landed in Italy and participated in the fighting that led to breaking the Gustav Line and the Allied forces' entry to Rome in June of that year. One month later, the 104th assisted with clearing enemy forces from the Arno River, which allowed penetration into northern Italy. The spring of 1945 saw the 104th cross the Po River and enter Treviso in what was the final phase of the war in Italy. In total, the men of the battalion received eight Silver Stars, three Legions of Merit, and sixty Bronze Stars. One hundred thirty-five Purple Hearts were awarded, 30 posthumously.

The Albuquerque Army Base, subsequently designated as an Air Force Advanced Flying School, was the site for the training of bombardiers and the filming of the 1943 movie *Bombardier* starring several of Hollywood's biggest names. During 1942–43, the actor Jimmy Stewart was in Albuquerque instructing trainees to pilot AT-7, AT-9, and B-17 aircraft. He went on to command the 703rd Bomb Squadron and flew several combat missions in the war against Germany (http://en.wikipedia.org/wiki/James_Stewart).

The Twentieth Combat Engineering Battalion compiled for itself a commendable record, participating in the invasion of Sicily on July 10, 1943, and, later in the year, the invasion of Paestum, Italy. Journalist Ernie Pyle, who called New Mexico his adopted state, documented the Twentieth's activities throughout the Italian campaign, writing: "it was good to get back to those slow-talking, wide and easy people of the desert, and good to speak of places like Las Cruces, Socorro, and Santa Rosa." Pyle also praised the cartoonist Bill Mauldin, who hailed from Mountain Park, New Mexico, for his sensitive portrayal of the men fighting and dying on the battlefield. After the war, Mauldin went on to a distinguished career as a newspaper cartoonist. In 1962, he moved to Santa Fe and sculpted a bronze statue of his "Cavalry Sergeant" cartoon, which is still on display at the New Mexico Veterans Memorial Visitor Center and Museum. In 2010, he was honored with a commemorative stamp by the U.S. Postal Service. Ernie Pyle did not survive the war he covered so brilliantly.

New Mexico history is inseparably linked to the Manhattan Project, conducted, in part, between 1942–1946 at Los Alamos, which culminated in the development and assembly of the world's first atomic bomb (Diggins 1988:48–53). The project was named after the borough of New York City where the early operations were conducted and was a massive undertaking involving more than 30 sites in the United States and Canada and thousands of scientists and engineers from around the world. The project director, J. Robert Oppenheimer, summarized the motivation of the participants: "Almost everyone knew that this job, if it were achieved, would be a part of history. This sense of excitement, of devotion, and other patriotism in the end prevailed." Oppenheimer recalled the difficulty recruiting personnel who could not be told anything about the where, what, and why of the job (Sullivan 2004). "The notion of disappearing into the desert for an indefinite period and under quasi-military auspices disturbed a good many scientists and the families of many more." After the U.S. Army purchased the site at Los Alamos, there followed a rush to construct laboratories, barracks, apartments, and all the supporting structures required for the new town (Merlan 1997). The only mailing address for all residents was P.O. Box 1663 Santa Fe, and this same address appeared on the birth certificates of all children born at Los Alamos in that era. Soft coal fueled the town, soot and dust covered everything. When it rained, the streets and yards were mired in mud. Water control was strictly enforced, and new arrivals were advised to soap their bodies before entering the shower and hope that the water turned on. Some residents kept horses and rode the countryside; others took advantage of the outdoors by hiking.

The first and only nuclear test, code-named "Trinity," took place on July 16, 1945, near Alamogordo (Merlan 1997). The two other weapons, code-named "Little Boy" and "Fat Man" were released over Hiroshima and Nagasaki, respectively. Causing massive destruction and loss of life, the bombs forced the surrender of Japan and averted the need for an invasion of the Japanese mainland which, it is claimed, would have resulted in an even greater number of Japanese casualties, as well as the deaths of many thousands of American servicemen.

Despite the tight security at Los Alamos, three spies were identified. Klaus Fuchs arrived with a delegation of British scientists and was subsequently convicted of spying for the Soviet Union. Theodore Hall was never tried for spying and subsequently emigrated to Great Britain. Also convicted was David Greenglass, the brother of Ethel Rosenberg. His testimony was instrumental in the conviction of Julius and Ethel Rosenberg, who were executed for spying for the Soviet Union. Finally, KGB files, opened many years after the war, raised the possibility of a fourth spy, code-named Perseus.

After the war ended, Los Alamos National Laboratory continued with the development of nuclear weapons. Operation Crossroads tested the effect of the atomic bomb on naval vessels, and Operation Sandstone in 1948 evaluated newly designed nuclear weapons. The laboratory continues to be actively engaged in weapons and other research projects (Eidenbach et al. 1996).

The White Sands Missile Range, located just west of Alamogordo and the site of the "Trinity" test, comprises 60 percent of the area covered by the White Sands dunes, the remaining 40 percent being the White Sands National Monument (Welsh 1995). Part of the land was designated the Alamogordo Bombing Range during World War II, and after the first atomic bomb test, a press release issued by the U.S. Army claimed that an ammunition magazine had exploded. Late July saw the arrival of 300 freight-car loads of V-2 rocket components taken from the German Pennemuende Rocket Center on the Baltic Sea. Toward the end of 1945, German scientists headed by Wernher Von Braun arrived to conduct the rocket research project at White Sands Proving Ground, code-named Paperclip. On April 16, 1946, the first missile was launched. In 1958, the White Sands Proving Ground was officially designated the White Sands Missile Range. Then in 1985, the original "Trinity" launch site and blockhouse were designated a National Historic Landmark by the National Park Service.

One regrettable consequence of the attack on Pearl Harbor was Executive Order 9066, signed on February 19, 1942, which authorized the round-up of 120,000 Americans of Japanese origin who lived along the West Coast of the United States and their internment in relocation centers (Reed 2010). Two-thirds were American citizens. Twenty-three thousand Canadians of Japanese origin were also relocated by the Canadian government. The justification offered for this disenfranchisement of American citizens was the threat to national security. General John Dewitt, in command of West Coast defenses, stated "The Japanese race is an enemy race and while many second and third generation Japanese born on U.S. soil, possessed of U.S. citizenship, have become "Americanized" the racial strains are undiluted" (Reed 2010). As it turned out, not only were there no instances of proven collusion between Japanese Americans and the government of Japan throughout the war, many Japanese Americans volunteered to fight. The 442nd Infantry Regiment of the 34th Army Division, which was composed entirely of Japanese men born in the United States, became the most highly decorated unit of the war.

Santa Fe and Fort Stanton were both sites for detention camps administered by the U.S. Department of Justice (Reed 2010). Other facilities were administered by the U.S. Army, the Wartime Civilian Central Agency, and the War Rehabilitation Authority. In March 1942, the first of the detainees arrived at the Santa Fe facility. During the war years, 4,555 detainees were housed in a 28-acre site located in the current Casa Solana neighborhood (Reed 2010:400). High-risk prisoners, mainly Issei, men born in Japan who immigrated to the United States, were often transferred to U.S. Army camps such as the facilities in Santa Fe and Lordsburg. Lower risk persons were permitted to join their families in relocation camps or to reside outside the West Coast Military Zone. In general, while the detainees in Santa Fe resented their internment, they were treated with respect and no serious problems emerged. Prisoners at Lordsburg complained of persecution and mistreatment by the Army. The Santa Fe internment camp closed in April of 1946 (Reed 2010:400–401).

During this time, Santa Fe was also home to the U.S. Army's Bruns Hospital (Reed 2010:397–398). In March 1943, a tract of land southeast of the city was set aside for the facility, which opened its doors April 19, 1943. Named after Colonel Earl Harvey Bruns, a leading authority on pulmonary disease and thoracic surgery, the hospital treated 1,352 patients in the first year of operation and employed 1,000 civilians and 600 military personnel. By 1934, the Bruns Hospital complex had grown to 196 buildings. Outdoor facilities included a handball court, volley ball court, badminton court, shuffleboard, clock golf, tennis court, horse shoes, football field, and softball field.

Bruns was one of 51 general hospitals built during WWII for the Army, but it was never intended to be a permanent facility (Reed 2010:398). The buildings were constructed of either wood or plasterboard, like so many in Los Alamos during the Manhattan Project. However, the facility has continued to be used up until the present day. Today, the facility functions as the College of Santa Fe.

Well into the 1940s, New Mexico, Arizona, Maine, Mississippi, and Washington excluded Native Americans from voting. Article VII, Section 1, of the New Mexico Constitution (enacted in 1912) stated that "Indians not taxed may not vote." It was not until 1948 that this exclusion was challenged, in a lawsuit against the state that was brought by Isleta Pueblo member Miguel Trujillo, Sr. On August 3, 1948, a federal court in Santa Fe struck down this constitutional provision, ruling New Mexico had discriminated against Native Americans who did pay state and federal taxes except for private property on reservations (Bronitsky 2004).

The era from 1940 to 1960 saw a major shift in the basic economic sectors for Santa Fe County. Expressed as a percentage of the total work force, there was a decline in agricultural workers from 12 to 2 percent and mining/manufacturing workers from 12 to 5 percent; government employees increased from 14 to 21 percent while tourism/arts staff rose from 10 to 12 percent (Wilson 1997:331). Over the same period, the number of hotels and lodging rooms increased from 21 and 740 to 31 and 1,150, reflecting the growing importance of tourism to the city's economy. A principal attraction of Santa Fe was its distinctive architectural styles. In 1958, the city, determined to avoid the glass and steel high-rise structures springing up in cities around the country, passed an ordinance stating that all new and rebuilt buildings, especially those in designated historic districts, must demonstrate Spanish Territorial or Pueblo style architecture with flat roofs and other features indicative of the area's traditional adobe construction (Wilson 1997). It should not be assumed that this decision was made without prolonged and, at times, harsh disagreements among the residents of the city. Later houses built of lumber, concrete, and other common materials but with stucco exteriors have sometimes been referred to as faux-adobe. Rancorous debate over architectural style of planned state government structures continues today.

Santa Fe Today

In Santa Fe, the absence of a major spur into the national railroad lines proved to be a detriment to industrial growth. Instead, development in Santa Fe focused on its state and federal administrative centers and the tourism and art trade (Pratt and Snow 1988; Wilson 1981). Today, Santa Fe is the centerpiece of a tourism industry that brings more than $1 billion into the state every year. Municipal ordinances and efforts of the art and anthropological community to preserve Santa Fe's cultural heritage from the 1920s and 1930s have made it a desirable location for second residences and professional people who supply services to the national markets. The lack of industry that had retarded Santa Fe's growth was turned into a positive situation. Without heavy industry and the accompanying population density, a tranquil quality of life became a draw for people seeking to escape the increasingly crowded and polluted cities. As part of the quality of life and the uniqueness of Santa Fe, its multicultural heritage continues to be emphasized.

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4 History of the Griffin/Grant Triangle Historic Neighborhood

Adapted from Corinne P. Sze and Beverly Spears (1988:94–97)

The Griffin/Grant Historic Neighborhood is a triangular area bound by Paseo de Peralta on the north, Grant Avenue on the east, and Griffin Street on the west (Sze and Spears 1988:95). The 1766 Joseph Urrutia map of Santa Fe depicts one structure within the neighborhood (Fig. 4.1). David Snow posits that this structure was owned by the Esquivel family (Snow 2011:14). It was presumably constructed sometime between 1693 and 1716 by Buenaventura (Ventura) de Esquivel (Chavez 1992:173). Ventura was the son-in-law of Antonio Lucero de Godoy, who owned a large estate immediately to the east of the Griffin/Grant Historic Neighborhood (see Lentz and Barbour 2011). Unlike the Godoy family, the Esquivels did not lose their land to construction of the Spanish Presidio in 1789. Historic records indicate the Neuman family, connected to the Esquivel family through marriage, were living at the residence in 1844, just prior to the Mexican American War (Snow 2011:14).

Following the establishment of American hegemony, the Baptist Church saw fit to construct a mission within the neighborhood in 1854 (Fig. 4.2; Sze and Spears 1988:95). This mission was constructed of adobe bricks in a combination of Gothic and Grecian styles (Davis 1982:166). However, the Baptists abandoned the mission at the onset of the American Civil War and sold the property to the Presbyterian Church in 1867. The Presbyterians demolished the adobe structure in 1882, replacing it with a red brick building (Sze and Spears 1988:85). This later red-brick structure would be remodeled by John Gaw Meem in 1939 in his signature Pueblo Revival Style (Sherman 1983:112).

Following acquisition of the Baptist land by the Presbyterian Church 1867, the Reverend David F. McFarland and his wife began the Presbyterian Mission School. Classes were initially taught in their home, but were later moved to an old adobe structure just north of the Presbyterian Church along Grant Avenue. This old adobe building is believed to be the same structure that was built by the Esquivel family at the turn-of-the-eighteenth century (Fig. 4.3). Between 1886 and 1889, a three-story, red-brick dormitory for girls was built behind the school (Fig. 4.4) and a new classroom building was established in 1890 (Fig. 4.5; Sze and Spears 1988:95). Following the renovations, the school was renamed first the Santa Fe Industrial and Boarding School for Mexican Girls (1890), then the Allison School (ca. 1900), and then later still, the Allison-James School (1913). The last name change occurred when the school was combined with the Presbyterian James School for boys. The primary campus for this institution was located north of Paseo de Peralta, outside the Griffin/Grant Triangle, where the Plaza del Monte retirement community now stands (Sze and Spears 1988:103).

The classroom and dormitory along Grant Avenue (Fig. 4.6) were torn down in the 1930s and replaced with the secular Harvey Junior High School in 1937 (Sze and Spears 1988:95). This structure was built in the Territorial Revival Style and was later acquired by Santa Fe County in 1980. The building functioned as the Judge Steve Herrera Judicial Complex until that facility relocated in 2013.

Since 1886, much of the neighborhood north of the Presbyterian Mission Church was owned by Thomas B. Catron. Catron owned two houses in the neighborhood. These consisted of a single-story adobe constructed with an interior courtyard and a two-story American-style structure with a pitched roof (Fig. 4.7; Sze and Spears 1988:95). The 1910 New Year's edition of the *New Mexican* proclaimed the two-story Catron home, at 210 Grant, to be one of the finest residences in the Territory. However, the building was torn down in 1964 (Fig. 4.8) and replaced with the El Seville Apartments. These apartments were subsequently replaced with the El Corazon de Santa Fe condominium community in 2005.

Figure 4.1. Detail of the 1766 Joseph Urrutia map of Santa Fe.

Figure 4.2. First Protestant [Baptist] church in Santa Fe, ca. 1880–1890 (photo: Ben Wittick; courtesy Palace of the Governors Photo Archives, NMHM/DCA, neg. no. 015855).

Figure 4.3. Presbyterian Mission School, ca. 1870s-1880s, Santa Fe (courtesy Palace of the Governors Photo Archives, NMHM/DCA, neg. no. 120338).

Figure 4.4. Presbyterian Mission School dormitory, ca. 1884–1892, Santa Fe (photo: Dana B. Chase; courtesy Palace of the Governors Photo Archives, NMHM/DCA, neg. no. 110511).

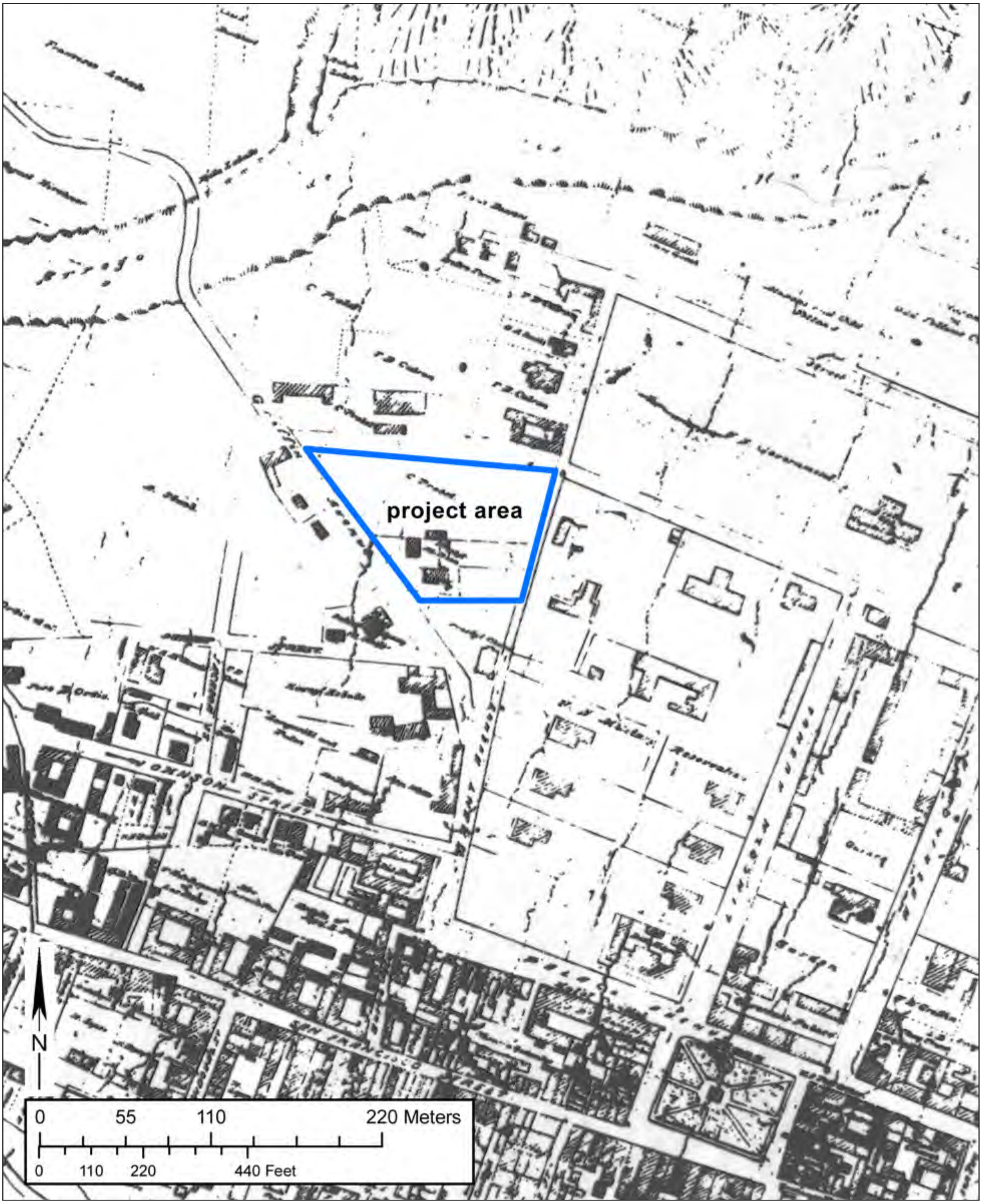

Figure 4.5. 1884–1885 Hartmann Map of Santa Fe, detail.

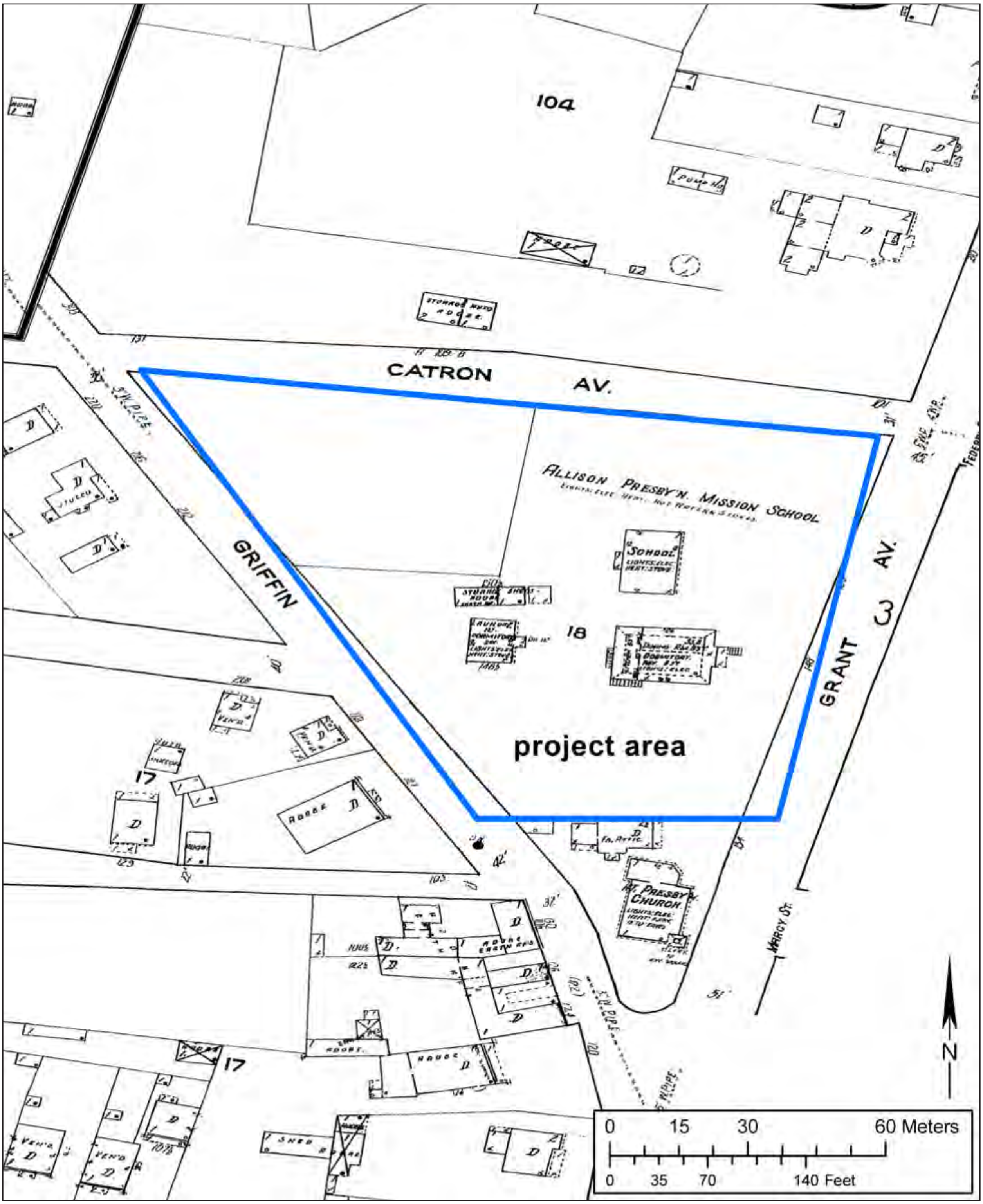

Figure 4.6. June 1921 Sanborn Fire Insurance Map, detail.

Figure 4.7. Catron house on Grant Avenue, in the center background; photo taken during Dress Parade, Fort Marcy, February 22, 1897 (courtesy Palace of the Governors Photo Archives, NMHM/DCA, neg. no. 001727).

Figure 4.8. Dismantling of the Catron house on Grant Avenue, 1964, Santa Fe (courtesy Palace of the Governors Photo Archives, NMHM/DCA, neg. no. 029077).

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5 Previous Archaeological Investigations

Matthew J. Barbour and Jessica A. Badner

A check of the New Mexico Cultural Resources Inventory System (NMCRIS) database was performed by Matthew Barbour, Susan Moga, and Mary Weahkee, on November 15, 2012. NMCRIS lists 84 previously recorded archaeological resources within a 500 m buffer of the current project area (Fig. 5.1). These archaeological sites are presented in Table 5.1. The project area is wholly within LA 144329, but no previous archaeological investigations have been conducted within the area currently proposed for test excavation. LA 144329 and four other previously recorded archaeological sites located within a two-block radius are discussed below.

Previous Excavations within Two Blocks of LA 144329

LA 1051: Santa Fe Convention Center

LA 1051 is located immediately east of the current project area. It represents a large multi-component site excavated in 2005–2006 (Lentz 2011; Lentz and Barbour 2008, 2011). Prehistoric features dated at the site, using ^{14}C and archaeomagnetic samples, suggest occupation during the Developmental, Coalition, and Classic periods. These features include pit structures, hearths, middens, and human burials. Collectively, the prehistoric archaeological manifestations point to a large-scale pueblo residing at the site, possibly the Ogapohoge of Tewa oral history.

Historic components included a Spanish Colonial hacienda owned by the Godoy family, midden deposits linked with the Spanish Presidio, and Fort Marcy's hospital, officer's quarters, and enlisted men's barracks. A plan map of features excavated at LA 1051 (Lentz and Barbour 2011: Figure 1.4) indicates the presence of an extensive midden deposit (Feature 25) at the intersection of Grant Avenue and Federal Place, as well as building rubble, a well, a privy, a Spanish Colonial refuse pit, and sparse scattered prehistoric features within 35 m of the curb that bounds Grant Avenue. All the prehistoric and historic components, with the possible exception of the Developmental period, were robust and yielded thousands of artifacts. Much of the site, outside of the Convention Center footprint, remains buried and largely intact.

LA 114208

LA 114208 is located two blocks to the southeast of the current project area. The site was recorded during the monitoring of a pipeline trench at the southwest corner of Sheridan and Marcy Streets. "Several sherds" were discovered by Stuart Peckham in 1989 (LA 114208 site information on file with ARMS). The ceramic types and counts of these sherds were not documented and no report was prepared.

LA 114252: 217 Johnson Street

According to the NMCRIS Map Server, LA 114252 is located within the current project area (this site was mistakenly identified as LA 144252 in Barbour and Wening 2014). However, an examination of the LA Site Record found that the site was recorded along Johnson Street, two blocks to the south. LA 114252 was recorded by Linda Tigges on October 24, 1990, after an anonymous caller reported that a human burial and complete pot had been found during hand excavation along the footings of the residential structure located at 217 Johnson Street. By the time Tigges' arrived, the remains and pot had been stolen. However, she noted the presence of a large midden containing Santa Fe Black-on-white sherds. Ostensibly, this site may date

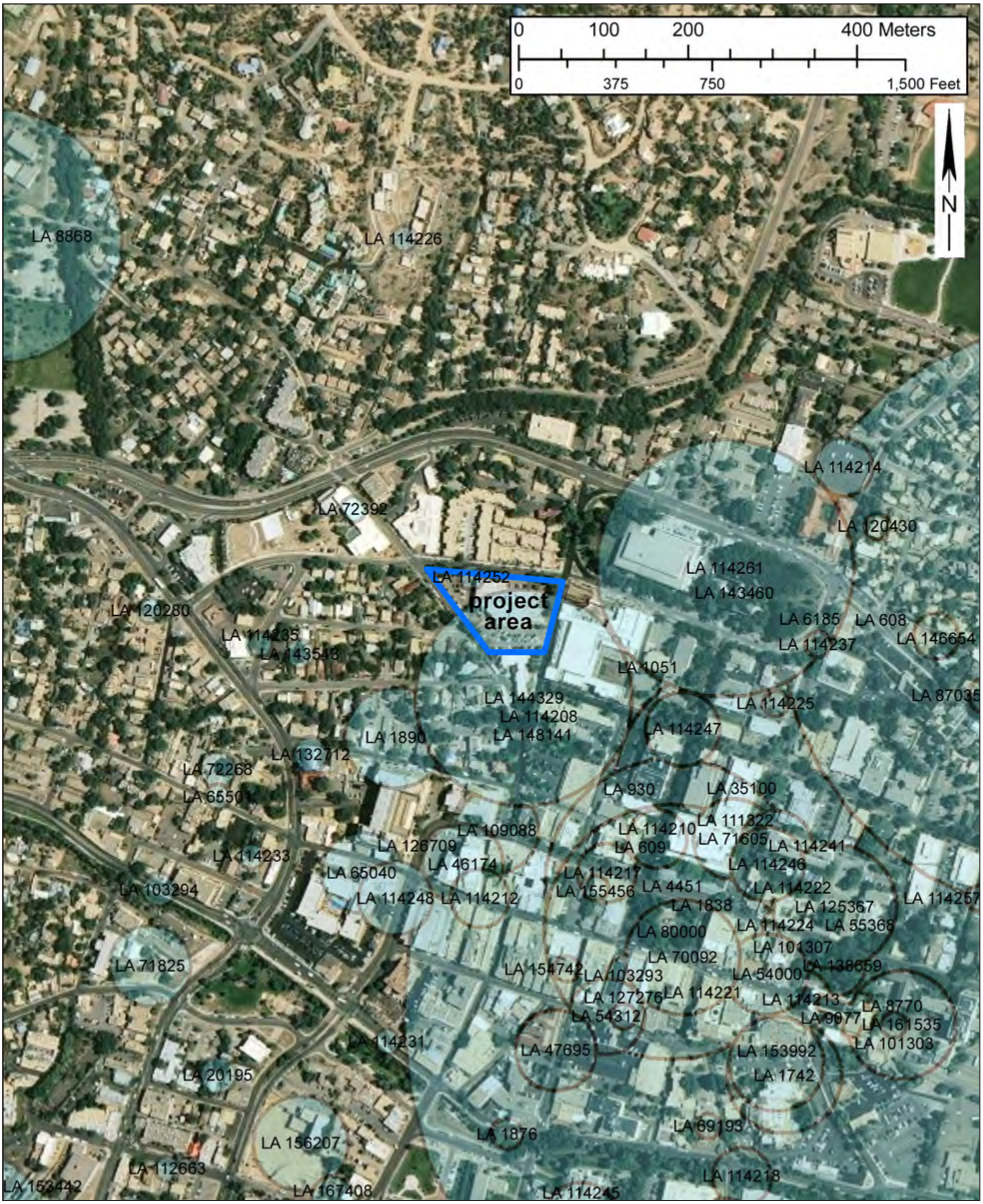

Figure 5.1. NMCRIS search map.

Table 5.1. Archaeological resource inquiry results of NMCRIS search.

LA NO.	REGISTER LISTING		TEMPORAL PERIOD	SITE TYPE	AREA (SQ M)	UTM (NAD 1983)			ELEVATION (FT)
	NATIONAL	STATE				ZONE	NORTHING	EASTING	
608	Y	Y	both	structural	0.0	13	3950042	415565	7080.0
609	N	N	historic	nonstructural	30000.0	13	3949773	415050	6980.0
930	Y	Y	both	structural	0.0	13	3949841	415037	7000.0
1051	N	Y	both	structural	0.0	13	3949986	415059	6990.0
1742	–	–	historic	structural	0.0	13	3949503	415220	6040.0
1838	N	Y	historic	nonstructural	0.0	13	3949575	415269	7000.0
1876	N	Y	prehistoric	structural	0.0	13	3949434	414892	6980.0
1890	–	–	prehistoric	structural	0.0	13	3949903	414760	6960.0
4451	Y	Y	historic	structural	30000.0	13	3949727	415088	7000.0
6185	–	–	historic	structural	8.0	13	3950043	415250	7000.0
8770	–	–	historic	structural	0.0	13	3949573	415310	6980.0
8868	N	Y	historic	structural	0.0	13	3950496	414286	6960.0
9077	–	–	historic	structural	0.0	13	3949573	415302	680.0
20195	Y	Y	historic	structural	750.0	13	3949503	414550	6070.0
35100	N	Y	both	structural	30000.0	13	3949843	415170	7000.0
46174	–	–	historic	structural	3000.0	13	3949753	414840	6990.0
47695	–	–	prehistoric	structural	3000.0	13	3949533	414950	7000.0
54000	–	–	historic	structural	0.0	13	3949623	415200	7000.0
54312	–	–	historic	structural	5040.0	13	3949573	415010	6989.0
55368	–	–	historic	structural	62.0	13	3949683	415310	7000.0
65040	–	–	historic	nonstructural	3000.0	13	3949743	414720	7000.0
65501	–	–	prehistoric	structural	0.0	13	3949833	414550	6900.0
69193	–	–	historic	structural	300.0	13	3949443	415130	7000.0
70092	–	–	historic	structural	7500.0	13	3949643	415100	7000.0
71605	–	–	historic	structural	0.0	13	3949783	415160	6900.0
71825	Y	Y	historic	structural	3000.0	13	3949633	414470	6955.0
72268	–	–	both	structural	0.0	13	3949865	414550	7000.0
72392	–	–	historic	structural	12.0	13	3950173	414710	7000.0
80000	Y	Y	historic	structural	30000.0	13	3949673	415087	6990.0
87035	–	–	historic	nonstructural	750.0	13	3949953	415460	7020.0
101300	–	–	both	structural	300.0	13	3949673	415210	6990.0
101303	–	–	historic	structural	0.0	13	3949563	415350	7000.0
101307	–	–	both	nonstructural	0.0	13	3949653	415230	6990.0
103293	–	–	historic	structural	0.0	13	3949623	415030	6980.0
103294	–	–	historic	structural	0.0	13	3949723	414480	6940.0
109088	–	–	historic	structural	0.0	13	3949793	414880	6800.0
111322	–	–	both	structural	0.0	13	3949783	415130	6990.0
112663	–	–	historic	structural	0.0	13	3949393	414490	6970.0
114208	–	–	prehistoric	nonstructural	0.0	13	3949943	414930	6980.0
114210	–	–	historic	structural	0.0	13	3949783	415070	6980.0
114212	–	–	historic	nonstructural	0.0	13	3949713	414860	6960.0
114213	–	–	historic	nonstructural	0.0	13	3949593	415240	6990.0
114214	–	–	historic	nonstructural	0.0	13	3950223	415290	7000.0

Table 5.1. (continued)

LA NO.	REGISTER LISTING		TEMPORAL PERIOD	SITE TYPE	AREA (SQ M)	UTM (NAD 1983)			ELEVATION (FT)
	NATIONAL	STATE				ZONE	NORTHING	EASTING	
114216	–	–	unknown	nonstructural	0.0	13	3949323	415150	7000.0
114217	–	–	unknown	structural	0.0	13	3949743	415010	6980.0
114218	–	–	historic	nonstructural	0.0	13	3949383	415170	7010.0
114221	–	–	historic	structural	570.0	13	3949623	415090	6980.0
114222	–	–		nonstructural	0.0	13	3949723	415230	6990.0
114224	–	–	historic	nonstructural	0.0	13	3949683	415210	6990.0
114225	–	–	both	structural	27.0	13	3949943	415210	6990.0
114226	–	–	historic	nonstructural	0.0	13	3950493	414770	710.0
114231	–	–	historic	structural	0.0	13	3949543	414750	6970.0
114233	–	–	historic	nonstructural	0.0	13	3949763	414590	6960.0
114235	–	–	historic	structural	0.0	13	3950013	414600	6960.0
114237	–	–	historic	structural	4.0	13	3950013	415260	7010.0
114241	–	–	historic	structural	2376.0	13	3949773	415210	7000.0
114245	–	–	historic	structural	0.0	13	3949333	414980	6990.0
114246	–	–	historic	structural	0.0	13	3949753	415200	6990.0
114247	–	–	prehistoric	nonstructural	0.0	13	3949913	415100	6990.0
114248	–	–	historic	nonstructural	0.0	13	3949713	414760	6960.0
114252	–	–	both	structural	0.0	13	3950093	414850	6980.0
114255	–	–	historic	structural	0.0	13	3949713	415210	6990.0
114257	–	–		nonstructural	0.0	13	3949713	415450	7010.0
114261	–	–	both	structural	37210.0	13	3950103	415150	6985.0
120280	–	–	both	nonstructural	0.0	13	3950053	414470	6950.0
120430	–	–	both	structural	1.0	13	3950153	415330	7040.0
125367	–	–	historic	structural	0.0	13	3949703	415280	7000.0
126709	–	–	historic	structural	3437.0	13	3949763	414820	6960.0
127276	–	–	historic	structural	368.0	13	3949573	415030	6980.0
132712	–	–	both	structural	0.0	13	3949883	414660	0.0
138659	–	–	historic	structural	0.0	13	3949633	415280	0.0
143460	–	–	prehistoric	structural	81.0	13	3950074	415161	7000.0
143543	–	–	historic	nonstructural	680.0	13	3950002	414647	6978.0
144329	–	–	both	nonstructural	0.0	13	3949950	414912	0.0
146403	–	–	historic	structural	693.0	13	3949369	414294	6959.0
146654	–	–	both	structural	0.0	13	3950023	415400	0.0
148141	–	–	historic	nonstructural	3.0	13	3949926	414923	7000.0
153442	–	–	historic	structural	0.0	13	3949129	414094	0.0
153992	–	–	historic	structural	0.0	13	3949517	415211	0.0
154742	–	–	historic	structural	283.0	13	3949629	414963	6984.0
155456	–	–	historic	structural	0.0	13	3949725	414997	0.0
156207	–	–	both	structural	10682.0	13	3949423	414648	6975.0
161535	–	–	historic	structural	4859.0	13	3949563	415359	6910.0
167408	–	–	historic	structural	0.0	13	3949359	414686	0.0

to the Coalition period. However, eighteenth- and nineteenth-century historic materials, such as Powhoge Polychrome, were also encountered. No report was produced on the findings.

LA 148141: Griffin Street burials

LA 148141 is located one block to the south of the current project area (Abbott et al. 2006). It represents a human burial found on March 6, 2005, in a municipal utility easement. Sherds found with the burial included Santa Fe Black-on-white and Wiyo Black-on-white, suggesting that it dated to the Coalition period. This interpretation was further supported by a ^{14}C sample collected just above the human remains. However, Historic-period cultural materials dating to the American Territorial period were also collected from the trench.

Located 4 m to the north of Burial 1 (NMCRIS No. 92111), which was excavated in 2005 (Abbott et al. 2006), Burial 2 (NMCRIS No. 127574) was encountered in a utility trench excavated for PNM in 2012 (Tatum and Badner 2015). Burial 2 was a collection of incomplete disarticulated human remains; the individual had been previously reburied within a disturbed pocket of a midden stratum (Akins 2015). The presence of Santa Fe Black-on-white ceramics dates the midden, and by inference, Burial 2, to the Rio Grande Coalition period (AD 1200–1350). The recovered midden assemblage and mottled sand and clay observed in the burial soil matrix suggests that remains may have originally been interred within a natural deposit similar to homogeneous sand recorded at the lower LA 148141 midden boundary, or perhaps beneath the midden deposit. If this is the case, the remains could be contemporaneous with, or perhaps predate, a burial discovered 71 mm (200 ft) to the northeast, at LA 144329.

Burial 2 may be contemporaneous with Burial 1 as reported at LA 148141 by Abbott (Abbott et al. 2006). Burial 1 was placed in a shallow pit excavated into Santa Fe River deposits located beneath the midden deposit that was also recorded by OAS for PNM (Tatum and Badner 2015) and associated with Santa Fe black-on-white, indented corrugated and Smeared indented corrugated pottery (Abbott et al. 2006:29). Both burials were fragmentary, but osteological analysis indicates that the remains were from two distinct individuals (Akins 2015).

Previous Excavations at LA 144329

LA 144329: NMCRIS No. 92572, First Presbyterian Church

LA 144329 was designated an archaeological site in 2004 during investigations of the First Presbyterian Church property immediately to the south of the Santa Fe County property (Viklund 2004). The historic extent of the property controlled by the Presbyterian Church includes both the current church and the former mission school. The Presbyterian Mission School is believed to have once been located within the Santa Fe County project area.

Archaeological investigations into the land still held by the Presbyterian Church in 2004—directly south of the current project area—encountered intact cultural deposits dating to the Spanish Colonial and American Territorial periods. Colonial deposits are presumably associated with the Esquivel house located on the 1766 Joseph Urrutia map of Santa Fe. However, foundations to the house were not encountered and are presumably located within the current project area. American Territorial deposits were linked with the Presbyterian and Baptist churches that occupied the property.

In previous reporting, Barbour and Wening (2014) assumed the presence of a Coalition-era ceramic component based on testing at the First Presbyterian Church property coupled with results of nearby excavations at LA 1051. Subsequent reporting by Viklund and Huntley (2005) contained more detailed artifact analysis, including Native American ceramic analysis that provided a more complete characterization of cultural deposits. They also report a historic trash midden (Stratum XXII), a 20 cm thick deposit exposed in Test Unit 15 that pinches out to a 4 cm thick heavily stained intact occupational surface. This surface was encountered approximately 1.3 m below surface from which Southwest Archaeological Consultants, Inc., excavated a "few lithics, several faunal bones, and a few early historic Native American sherds from the ash" (Viklund and Huntley 2005:165). Synthetic reporting of strata associated with this earliest intact deposit located along the east side of the First Presbyterian Church assigns a date of 1750–1760 (Viklund and Huntley 2005:167). Artifact counts in the two excavation units associated with Stratum XXII indicate rising frequencies of bone, Native American ceramics associated with decreasing amounts of historic artifacts, and somewhat stable lithic/ground stone counts at 60 cm below datum and lower. Overall, native ceramic frequencies from this context were historic, comprising 382 of 478 sherds. Ceramic analysis indicates that lower levels of Stratum XXII (60–80 cm below datum) contained most of the earliest ceramic types (Tewa Micaceous, AD 1700s; Tewa Micaceous slipped, 1650–1700; and a single Sankawi Black-on-cream jar, AD 1550–1650) in low frequencies, with Powhoge Polychrome dating between 1760 and 1780 dominating the assemblage (Viklund and Huntley 2005:118). Prehistoric native ceramics recovered from this context were predominantly made up of indeterminate Rio Grande white and grey wares followed by very low frequencies of Tesuque corrugated, Abiquiu Black-on-white, Rio Grande red ware, Wiyo, and Santa Fe Black-on-white ceramics. Based on this analysis, it may be inaccurate to attribute a discrete Coalition or Classic component to this deposit, despite proximity to nearby and dense prehistoric cultural deposits documented across the street at LA 1051.

PNM Monitoring: NMCRIS No. 127574

In 2012, OAS monitored a utility trench installed by PNM along Griffin Street, from its intersection with Grant Street to within approximately 25 ft of Paseo de Peralta. A perpendicular trench was extended from this excavation 75 ft to a junction box located in the former Judge Steve Herrera Judicial Complex. The results of Griffin Street monitoring exposed two features, which were assigned to LA 144329. They were assigned to this site because of their proximity to the southwestern site limits as defined in the original excavations at the First Presbyterian Church (Viklund and Huntley 2005).

Feature 1 (LA 144329) was a large pit discovered within the bounds of the Judicial Complex parking lot approximately 8 m from the west property boundary. The feature measured 1 m east–west by 12 m north–south and extended outside of the trench limits. Cultural deposits consisting of alternating layers of sand, coal, ash, coal "clinkers," domestic animal bone, and historic refuse reflect multiple opportunistic trash-dumping episodes during the late U.S. Territorial and early Statehood periods, as indicated by Euroamerican ceramic seriation. Twenty artifacts were collected from this feature for analysis, including diagnostic metal, glass, Euroamerican ceramics, nine native ceramic sherds, and an obsidian biface fragment that may have been associated with the early Hispanic population of the area or could have been intrusive. Archaeological testing conducted on LA 144329 encountered similar large trash deposits that dated to the Ft. Marcy period (1846–1895) (Barbour and Wening 2014; Lentz and Barbour 2011).

Feature 2 (LA 144329) was an isolated, disarticulated human burial (Burial 1) located outside the current project area (Tatum and Badner 2015).

A tentative Rio Grande Coalition–period (AD 1200–1350) date was assigned to the interment based on the presence of Santa Fe Black-on-white ceramics, and it may be roughly contemporaneous with another human interment, discovered 71 m (200 ft) to the southeast. Cultural temporal affiliation with LA 144329 is indeterminate. Though Viklund and Huntley (2005) note the presence of Coalition-era artifact content, they attribute the earliest intact deposits at LA 144329 to Spanish Colonial occupation ca. 1750 or later (Viklund and Huntley 2005:64, 165, and 167). The Feature 2 burial is disarticulated, indicating it could be associated with disturbed deposits at that location, and its first cultural association was likely with a widely dispersed Coalition-era deposit that was most reliably recorded at LA 1051.

6 Results of Test Excavations

Jessica A. Badner, adapted from Karen Wening and Matthew J. Barbour (2014)

Test excavation of the former Judge Steve Herrera Judicial Complex was conducted through the mechanical excavation of 10 test trenches and the hand excavation of two test pits, representing 2 percent of the project area (Fig. 1.3). Testing indicated that areas to the south and east of the court building have the most intact cultural strata with the highest potential to inform on historic activities in the area. Test Trenches 4, 6, and 7, in conjunction with Test Pit 1, yielded intact eighteenth- and nineteenth-century Spanish Colonial deposits. Test Trenches 2 and 5 contained architectural features affiliated with the late nineteenth-century Presbyterian Mission School and associated structures. The architectural foundations and walls associated with the girls' dormitory of the Presbyterian Mission School and the storage building west of the dormitory were found in Test Trenches 2 and 5 (Features 1–4). All of these features were constructed below or in conjunction with mixed late nineteenth- to early twentieth-century deposits, though at variable depths.

Test Trenches 1, 3, 8, 9, and 10 and Test Pit 2 displayed significant evidence of disturbance and have little archaeological potential; these areas were recommended for monitoring. Table 6.1 summarizes testing results in trenches with intact cultural strata or features and provides a quick reference to stratum by depth and temporal component. The following is an excavation summary and concentrates on intact cultural strata; the reader is referred to Barbour and Wening (2014) for a more detailed narrative description of each deposit.

The area within the footprint of the former Judge Steve Herrera Judicial Complex was not tested. Plans from the building construction phases indicate that areas with basements and crawl spaces have penetrated to depths that probably have removed intact cultural deposits. However, portions of the building were built with concrete floors on grade, and intact cultural deposits may be present below the building floors in these areas.

Intact Eighteenth- and Nineteenth-Century and Spanish Colonial–Period Deposits

Test Trenches 4, 6, and 7, in conjunction with Test Pit 1, yielded intact eighteenth- and nineteenth-century Spanish Colonial deposits in a dispersed area. For ease of discussion and because excavation will be conducted in segments to accommodate construction requirements, deposits are discussed by location.

Southeast Site Area

Test Trench 4. Test Trench 4 was located on the southeast side of the former Judge Steve Herrera Judicial Complex, and measured 11.6 m long by 1 m wide and was 1.5 m deep. The trench was oriented east–west and contained four distinct strata (Figs. 6.1, 6.2), which included a 10 cm thick layer of asphalt and a 20–65 cm mixed and disturbed late nineteenth- to early twentieth-century deposit containing brick construction debris and sand lensing.

Midden deposits were identified below 65 cm. Stratum 4.3 was an intact Spanish Colonial–period midden deposit containing butchered bone, native ceramics, and charcoal. The dark reddish-brown (Munsell 5YR 3/2) sandy loam soil extended from 65–120 cm bgs. Stratum 4.3 was thickest in the center of the trench (55 cm), narrowing to about 20 cm in the east end, and about 30 cm in the west end. An auger test in the bottom of the trench encountered sterile coarse-grained alluvial sand and gravel to a depth of 1.79 m.

Test Pit 1. Test Pit 1 was a 1 by 1 m test pit located at the southeast corner of the former Judge Steve Herrera

Table 6.1. LA 144329, summary if cultural deposits recorded during testing.

Unit	Depth (cm bgs)	Strat. or Feat. [F]	Temporal Component	Soil	Color	Description
Intact Predominately Eighteenth-Century and Spanish Colonial Deposits						
Trench 4	0-20	4.1	twentieth century	asphalt	–	–
	20–65	4.2	mixed, disturbed late nineteenth to early twentieth century	sandy loam	7.5YR 4/3 reddish brown	Brick construction debris and one plain buff-ware sherd.
	65–120	4.3	intact Spanish Colonial midden		5YR 3/2 dark reddish brown	Stratum 4.3 was thickest in center of trench (55 cm, but narrowing to ca. 20 cm in east end and ca. 30 cm in west end. Small lens of concentrated brick fragments occurred at 1.15 m bgs.
Test Pit 1	0–10	100.1	twentieth century	landscaping gravel	5YR 6/4 light reddish brown	Level 1 consisted of modern landscaping gravel underlain by geotextile cloth.
	10–36 cm	100.2	late nineteenth to early twentieth century	construction debris	7.5YR 4/2 dark brown	Construction debris: sparse fragments of coal, brick, burned shale, and mortar. Sparse charcoal flecks. Cultural materials included Euroamerican and native ceramics, bone, glass, metal, lithics, and modern trash.
	38–42	100.3	Territorial; Presbyterian Mission School	sandy loam	10YR 5/2 gray	Associated with mission school activities, and dates to Territorial period. Coal, ash, burned shale, and large charcoal pieces, abundant bone fragments increased in Level 4 (30–40 cm bgs), possible dumping episode. Glass and metal fragments also found in this stratum.
	42–64	100.4	Territorial (possibly intact)	sandy loam	5YR 4/3 reddish brown	Ashy coal and clinker-laden layer overlay stratum. Charcoal and ash flecking decreased with depth. Sediments were more compact than Stratum 100.3, but became less compact in Level 6 (50–60 cm bgs). More intact than Stratum 100.3, and yielded bone, glass, metal, and native and Euroamerican ceramics.
	64–100	100.5	Spanish Colonial and Mexican; may be associated with Esquivel residence	sandy loam	7.5YR 4/4 dark brown	Sherds from the Puname district found in stratum, suggesting ties with Middle Rio Grande or Zia. Levels 7–10 flecked with charcoal. Artifacts included glass, metal, lithics, and native and Euroamerican ceramics, peaked in Level 6 and 7 (50–70 cm bgs), and declined in Level 8 (70–80 cm bgs) and Level 9 (80–90 cm bgs). Level 7 was transitional, exhibiting sediment with mixed characteristics of Strata 100.4 and 100.5, shifting from soft, sandy loam to silty loam. Artifacts, particularly bone, increased again in Level 10 (90–100 cm bgs).
	100–110	100.6	sterile	clay loam	5YR 5.4 brown	–
	110–120	100.7	sterile	loose sand	5 YR 4/3 reddish brown	–
	0–30	6.1	late nineteenth to twentieth century	silty loam	7.5YR 3/2 dark brown	Bone, nails, glass, and other historic debris.
	30–90	6.2	late nineteenth century	loamy sand	7.5YR 3/2 dark brown	Intact deposit containing bone and native ceramics, sparse ash flecks and abundant carbonate flecks.

Table 6.1. (continued)

Unit	Depth (cm bgs)	Strat. or Feat. [F]	Temporal Component	Soil	Color	Description
Trench 6	60–90	6.3	indeterminate (possibly eighteenth century)	adobe melt	7.5YR 6/4 light brown	Recorded as eighteenth century but within Stratum 6.2. May represent a horizon not evident in surrounding stratigraphy.
	90–105	6.4	eighteenth century (intact)		7.5YR 4/2 light brown	One Tewa Black sherd found. Organic content was diminished compared to Stratum 6.3.
	105–140	6.5	sterile	slity sand	7.5YR 4/2 brown	High organic and carbonate content.
	140–190	6.6	sterile	alluvial sand	7.5YR 5/4 brown	Sand with poorly sorted gravels.
	120–135	6.7	sterile	sterile silt lens within Stratum 6.5	–	–
Trench 7	0–10	7.1	twentieth century	asphalt	7.5 YR 2/0 black	–
	0–70	7.2	intact Spanish Colonial	sandy loam	7.5YR 4/2 brown	Comments regarding artifacts in testing report seem contradictory; mention presence of late nineteenth-century artifacts. Angular gravels in fill could be evidence of mixing.
	70–90	7.3	sterile	loamy sand	7.5YR 6/4 light brown	Some charcoal flecks.
	90–110	7.4	sterile	sandy loam	7.5YR 5/4 light brown	–
	110–190	7.5	sterile	loam	7.5 YR 6/4 light brown	–
	190–260	7.6	sterile	coarse sand and rounded gravels	–	–
Presbyterian Mission School and Territorial Deposits						
Trench 2	0–10	2.1	twentieth century	asphalt	7.5 YR 2/0 black	–
	10–50	2.2	twentieth century	basecourse	5YR 4/3 reddish brown	Compact orange sand and gravel. Stratum was thicker at east end of trench, measuring 40 cm.
	50–140	2.3	mixed and disturbed late nineteenth to early twentieth century	loamy sand	10YR 3/2 very dark grayish brown	10 percent rounded pea gravels and light calcium carbonate flecking throughout.
	50	2.6	adobe, crushed brick, brick fragments, and sand	brick construction debris	7.5YR 6/4 light brown	Between Strata 2.2 and 2.3. Stratum did not extend entire length of trench, visible only from east edge of F1 to 2 m. Varied in thickness from 2–10 cm, consisted of almost pure sand at east end of trench.
	30–80 at base	F1	mid-nineteenth century Presbyterian Mission School storage building wall foundation	sandstone block with concrete mortar	–	Excavated into Stratum 2.3. Constructed of sandstone blocks laid with concrete mortar, two courses tall and two courses deep. The wall was 50 cm (19.6 in) high and 52 cm (20.4 in) wide. The base of the was at 80 cm bgs.
	140–160	2.4	sterile	alluvial deposit	5YR 4/4 reddish brown	Coarse-grained sand.
	180–210	2.5	sterile	alluvial deposit	7.5 YR brown	Fine-grained sand.
	0–10	5.1	twentieth century	asphalt	7.5 YR 2/0 black	–
	10–32	5.2	twentieth century	base course; compact sand and gravel	5YR 4/3 reddish brown	Base course did not impact underlying F2 and F4.

Table 6.1. (continued)

Unit	Depth (cm bgs)	Strat. or Feat. [F]	Temporal Component	Soil	Color	Description
Trench 5	32–142	5.3	late nineteenth- to early twentieth-century mixed, disturbed fill may be reworked midden deposit	sandy loam	5YR 3/2 dark reddish brown	Artifacts included brick frags, glass, coal clinkers, and a Euroamerican sherd. Abundant charcoal flecking throughout, thin lenses of ash and asphalt in west half. Lower boundary clear but irregular, cuts through Stratum 5.4 in part of west end of trench. F2 and F4 excavated through this stratum into underlying Stratum 5.4. Metal pipe possibly associated with Mission School dormitory encountered at 1.10 m (3.6 ft) bgs.
	32–90 and 142–154 (east)	5.4	sterile; this deposit may be modified by mechanical excavation	silty clay	5YR 4/3 reddish brown	Undulating, discontinuous beneath Stratum 5.3, varied in thickness across length of trench. Upper and lower boundaries were somewhat undulating. Base of F2 in this stratum, and F4 resting at bottom of this stratum. Possibly modified by mechanical excavations.
	Top 14, Base 120	F2	constructed between 1886 and 1889; possible west wall foundation of girls' dormitory	massive foundation, 3 courses of sandstone block, 2 courses thick, concrete mortar	all blocks were of the same dense, light gray sandstone	At the base of the sandstone foundation was a concrete and gravel footing that was wider than the foundation wall, extending east of the sandstone blocks. The concrete footing was 15 cm thick, and ranged in width from 32–42 cm (12.5–16.5 in), becoming wider on the north side of the trench. While the overlying sandstone block foundation was level, the footing was not, sloping slightly to the north.
	41–140	F3	constructed between 1886 and 1889; west basement wall of girls' dormitory	9 courses of brick atop sandstone blocks 1–2 courses thick	coursed brick and concrete mortar over sandstone block foundation	Intact walls were about 40 cm (15.7 in) wide and two to three bricks thick. Fill to east of wall consisted entirely of decomposed concrete, brick fragments, and mortar. Above this was Stratum 5.3. Foundation wider than brick wall, extending about 22 cm (8.6 in) west of wall.
	38 at abuttment of F2 and F4 walls	F4	constructed between 1886 and 1889; foundation support to the west wall staircase of girls' dormitory	1–2 courses of sandstone blocks	sandstone, less uniform than F2, built of lower quality stone	This east–west wall abutted the F2 foundation. Wall width was variable ranging from 17 cm (6.7 in) to 28 cm (11 in). The depth of the wall was poorly defined on the east profile, precluding an accurate measurement of the depth of the base.
	1 to 165–198	5.5	sterile	coarse-grained sand	5YR 4/4 reddish brown	Appears to represent rapid alluvial deposition episode based on unsorted, variably sized gravel.

Figure 6.1. LA 144329, Test Trench 4, south wall.

Judicial Complex. The south and east borders of the test pit were formed by the intersection of two modern concrete sidewalks. The test was hand excavated in 10 cm levels to a total depth of 1.20 m. Seven strata were identified within the test pit (Figs. 6.3, 6.4). Of note was the presence of ceramics from the Puname district in Stratum 100.5, which may be associated with the Esquivel residence (Fig. 4.1).

Stratum 100.1 consisted of modern landscaping gravel containing modern trash and underlain by geotextile cloth. Stratum 100.2 was a dark brown sandy sediment (7.5 YR 4/2) containing construction debris dating from the late nineteenth- to early twentieth-century mixed with cultural materials that included Euroamerican and Native American ceramics, bone, glass, metal, and lithics.

Stratum 100.3 dates to the Territorial period, and was a thin layer between 38–42 cm bgs, containing coal, ash, burned shale fragments, glass, and metal. Large charcoal pieces and bone increased in Level 4 (30–40 cm bgs), a possible indication of a dumping episode. Sediments consisted of sandy loam (10YR 5/2, Gray).

Stratum 100.4 also dated to the Territorial period and extended from 42–64 cm bgs. This layer

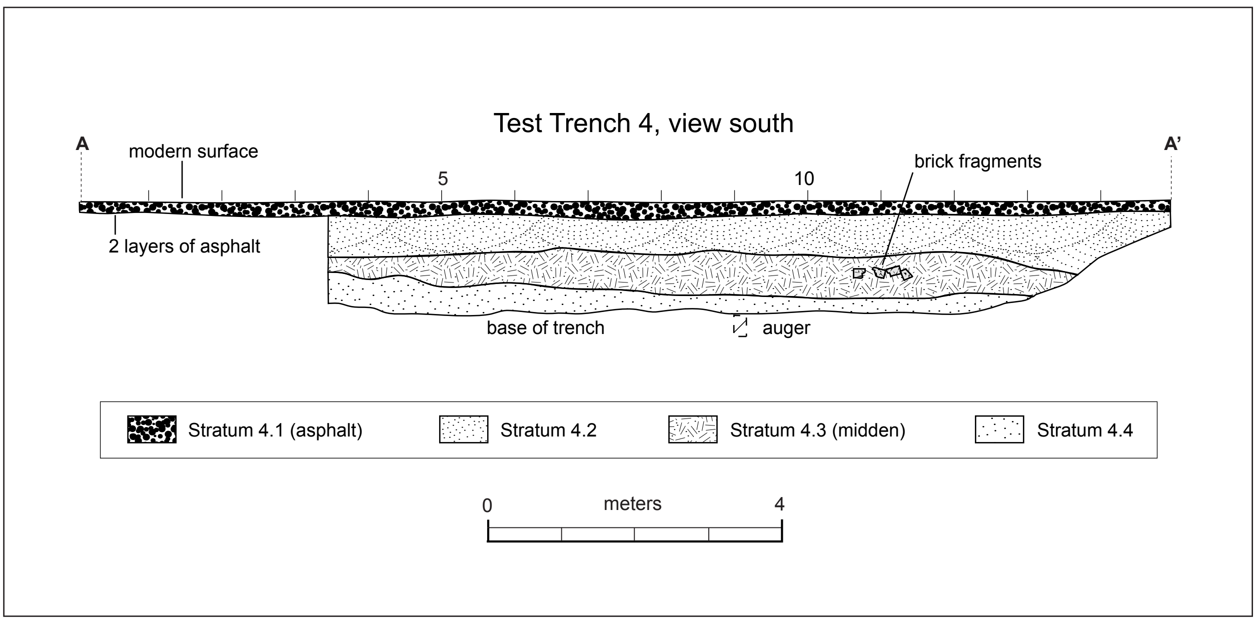

Figure 6.2. LA 144329, Test Trench 4, profile.

Figure 6.3. LA 144329, Test Pit 1, east wall.

was more intact than Stratum 100.3. An ashy coal and clinker-laden layer overlay the sandy loam sediments of this stratum (5YR 4/3, Reddish Brown). Charcoal and ash flecking decreased with depth. Sediments in this stratum were mostly more compact than in Stratum 100.3, but became less compact in Level 6 (50–60 cm bgs). Native American and Euroamerican ceramics, bone, glass, and metal artifacts were found in this layer.

Stratum 100.5 may have been associated with the Esquivel residence, and was dated to the Spanish Colonial and Mexican periods. Native American ceramics originating from the Puname district were found in this stratum, possibly suggesting ties between the Esquivel household and pueblos in the Middle Rio Grande, especially Zia. This layer extended from 64–100 cm bgs, and included Levels 7–10. Sediment consisted of sandy loam (7.5YR 4/4, Dark Brown), and was flecked with charcoal throughout. Cultural material such as glass, metal, lithics, and Native American and Euroamerican ceramics peaked in Levels 6 and 7 (50–70 cm) and declined in Level 8 (70–80 cm bgs) and Level 9 (80–90 cm bgs). Level 7 was a transitional level, displaying sediment with mixed characteristics of Strata 100.4 and 100.5, shifting from soft sandy loam to silty loam. Artifacts, particularly bone, increased again in Level 10 (90–100 cm).

Stratum 100.6 consisted of clay loam with small, rounded pebbles (7.5YR 5/4, Brown). Artifact counts declined significantly, consisting of Native American and Euroamerican ceramics and bone. This stratum extended from 100–110 cm).

Stratum 100.7 was a sterile layer of loose, coarse sand and gravel (5YR 4/3, reddish brown) that extended from 110–120 cm. An auger test was excavated in the center of the test pit from 120–170 cm bgs, and Stratum 100.7 continued to the bottom of the test.

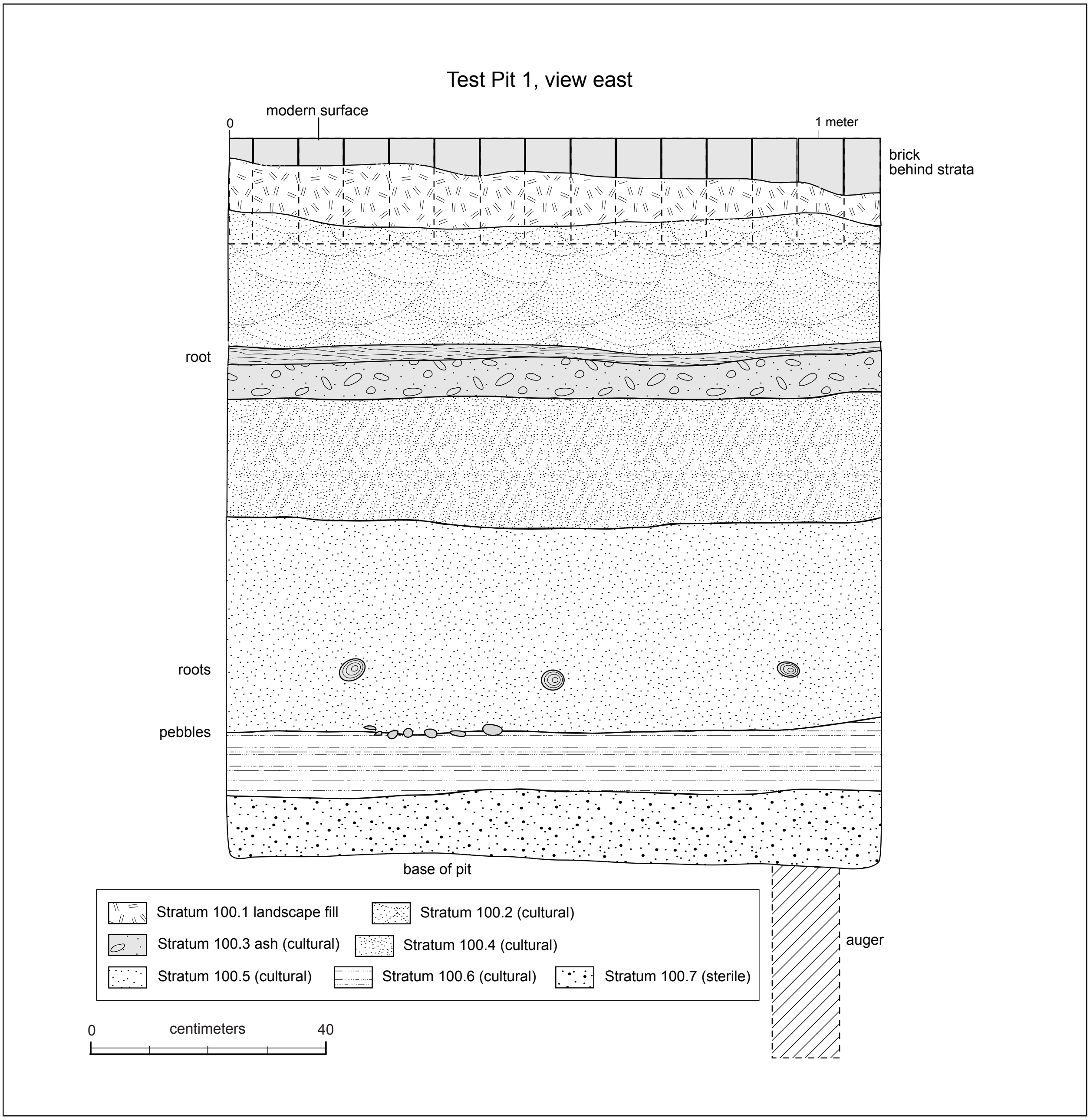

Figure 6.4. LA 144329, Test Pit 1, profile.

North Site Area

Test Trench 6. Test Trench 6 was located northeast of the former Judge Steve Herrera Judicial Complex in an area landscaped with gravel and a brick border. Seven strata were defined in this trench, which was oriented northwest–southeast (Figs. 6.5, 6.6). It measured 16 m long, 1 m wide, and was excavated to a depth of 1.8 m. All seven strata were identified, but to the east, only three strata could be defined: Strata 6.1, 6.2, and 6.6. The boundary between the latter two was poorly defined. The south face of the trench was profiled. Intact cultural deposits were identified in this trench.

Stratum 6.1 dated to the late nineteenth to early twentieth century and was a silty loam (7.5YR 3/2,

Figure 6.5. LA 144329, Test Trench 6, south wall.

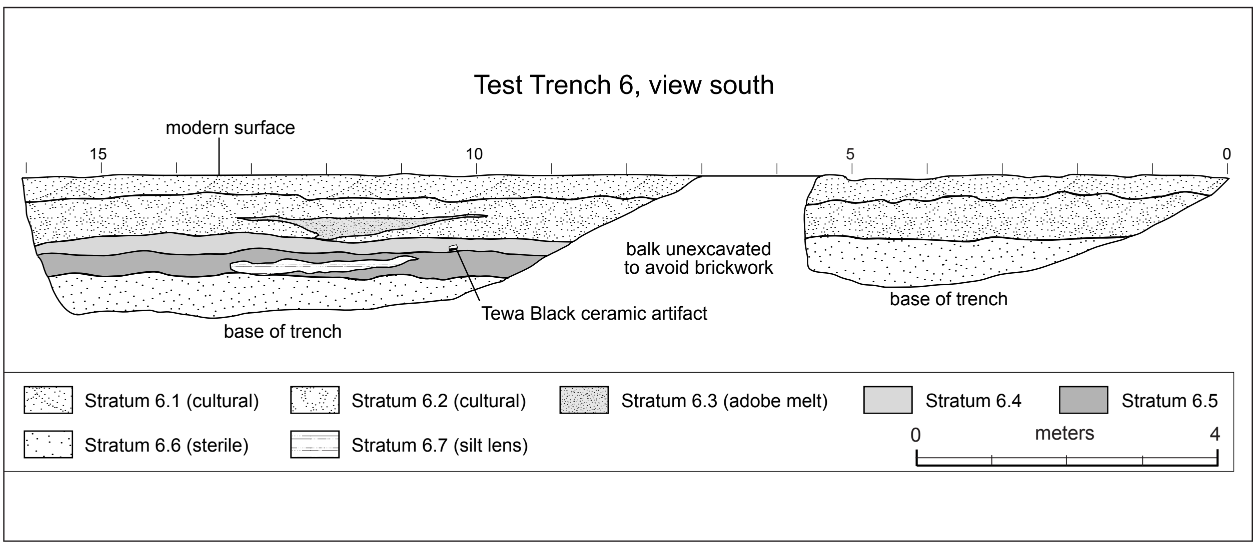

Figure 6.6. LA 144329, Test Trench 6, profile.

Dark Brown) that extended from the modern graveled surface to 30 cm bgs. Cultural material consisted of bone, nails, glass, and other historic debris.

Stratum 6.2 underlay Stratum 6.1 and was an intact late nineteenth-century deposit consisting of loamy sand fill (7.5YR 3/2, Dark Brown). This stratum extended to a depth of 90 cm bgs, and contained cultural materials including bone and native ceramics. Ash flecks were sparsely distributed throughout the fill. Abundant carbonate flecking also occurred throughout.

Stratum 6.3 was an intact lens of melted adobe (7.5YR 6/4, Light Brown) that was reported as dating to the eighteenth century, but was situated within Stratum 6.2, an intact late nineteenth-century deposit. The lens was thin and short in profile, and likely represents the disintegration of a single adobe brick or two and could mark the top of an otherwise undocumented cultural horizon. This layer also had a high organic content. It occurred from 60–90 cm bgs, and was thickest in the far west end of the trench, where it was about 25 cm thick. The lens was 3.2 m long and pinched out at its ends. Sparse carbonate flecking was observed throughout this stratum.

Stratum 6.4 was an intact eighteenth-century deposit consisting of sandy silt and loamy sand containing carbonate grains and flecks (7.5YR 4/2, light brown). It extended from 90–105 cm bgs, and one Tewa Black sherd was found in the fill. Organic content was diminished compared to above Stratum 6.3.

Strata 6.5, 6.6, and 6.7 were noncultural in nature. Stratum 6.5 was a silty sediment, with sand content increasing with depth and an increased organic content and carbonate flecking compared to the overlying Stratum 6.4. This layer extended from 105–140 cm. Stratum 6.6 consisted of alluvial sand with poorly sorted gravel, and extended from 140 cm to the bottom of the trench at 190 cm. Auger tests at the bottom of the trench confirmed sterile strata a depth of 2.3 m. Stratum 6.7 was a 15 cm thick sterile silt lens within Stratum 6.5 at the west end of the trench at a depth of 120–130 cm, with some carbonate flecking occurring.

West Site Area

Test Trench 7. Test Trench 7 was located southwest of the district court building and paralleled Griffin Street (Figs. 6.7, 6.8); it was oriented northwest–southeast. This trench was 10.6 m long by 1 m wide, and was excavated to a depth of 2.6 m. Six strata were identified in it, all of which extended the entire length of the trench. Intact cultural deposits were identified in this trench.

Stratum 7.1 was a layer of late twentieth-century asphalt (7.5YR 2/0, Black) that extended from the surface to a depth of 10 cm. This layer was consistent in its thickness across the length of the trench.

Stratum 7.2 was reported as a possible intact Spanish Colonial deposit ranging from 10–70 cm bps, and consisted of a sandy loam (7.5YR 4/2, Brown). Comments regarding artifacts in the testing report seem contradictory, since they mention the presence of late nineteenth-century bone and coal clinkers. Angular gravel inclusions present within the fill could provide evidence of mixing.

Stratum 7.3 consisted of consolidated loamy sand containing sparse charcoal flecking (7.5YR 6/4, Light Brown). Roots and root pores were dispersed throughout this layer, which began at 70 cm and ended at a well-defined lower boundary at 90 cm.

Strata 7.4, 7.5, and 7.6 were sterile. Stratum 7.4 was a layer of sandy loam and small, rounded pebbles (7.5YR 5/4, Light Brown) that extended from 90–110 cm. Sediments transitioned to a consolidated loam (Stratum 7.5 at 110–190 cm bgs), underlain by coarse sand with rounded cobbles typical of Santa Fe formation deposits (Stratum 7.6), which extended to the bottom of the trench at 2.6 m below surface.

Summary of Spanish Colonial–Period Strata

Cultural deposits in the southeast site area exhibit the top of a potential Spanish Colonial horizon at approximately 65 cm below surface. This potential horizon was encountered at roughly the same depth in both Test Trench 4 and Test Pit 1, which was located in the east-central site area. An intact lens of adobe melt encountered at a depth of 60–90 cm suggests that a potential cultural horizon extends to the northern part of the site that, in a most liberal interpretation, could be associated with the Esquivel house that stood on the property until 1844. Artifact content in Test Pit 1 Stratum 100.5 peaked between 50 and 70

Figure 6.7. LA 144329, Test Trench 7, south wall.

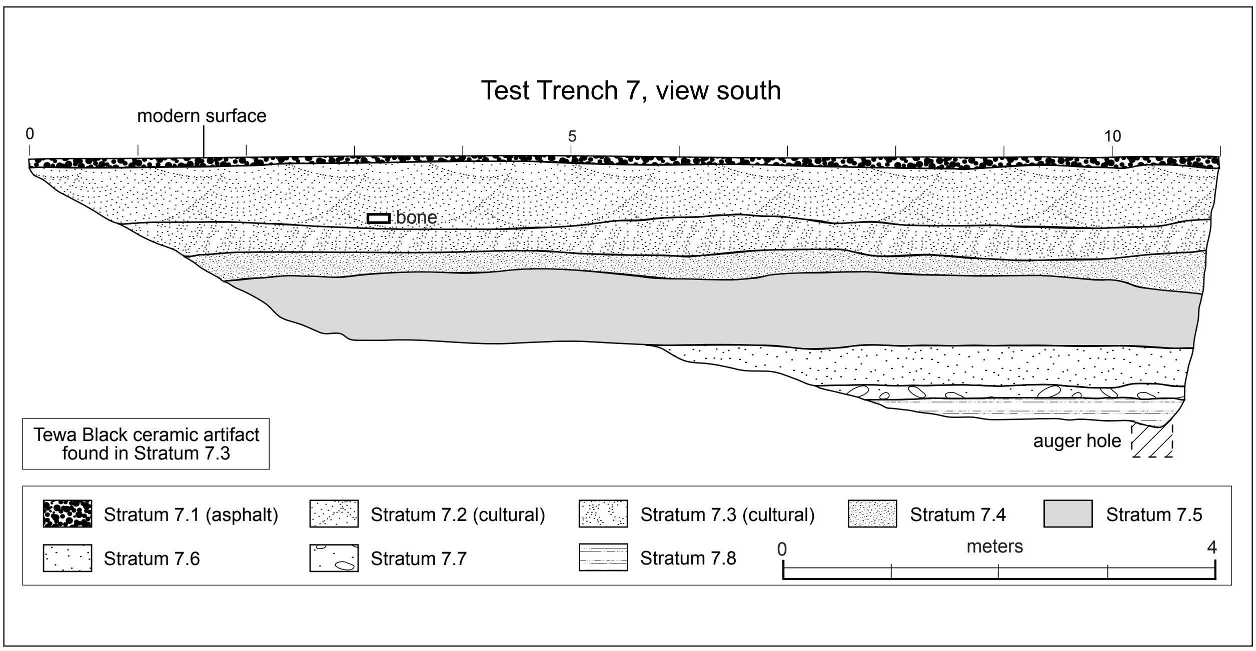

Figure 6.8. LA 144329, Test Trench 7, profile.

cm bgs and increased again between 90 and 100 cm. Although this does not provide clear evidence of an intact cultural horizon across the site, it does provide some evidence of potential stratagraphic continuity. Spanish Colonial deposits in Test Trench 7 in the western site area will need to be evaluated. The occurrence of intact Spanish Colonial deposits directly beneath the parking lot surface is anomalous and should be tested.

Presbyterian Mission School and Territorial-Period Deposits

Test Trenches 2 and 5 contained architectural features affiliated with the late nineteenth-century Presbyterian Mission School and associated structures in the south site area. The architectural foundations and walls of the girls' dormitory associated with the Presbyterian Mission School and the storage building west of the dormitory were found in Test Trenches 2 and 5 (Features 1–4). All of these features were constructed below or within mixed late nineteenth- to early twentieth-century deposits.

South Site Area

Test Trench 2. Test Trench 2 was on the south side of the former Judge Steve Herrera Judicial Complex. The trench was oriented east–west and measured 11 m long, 1 m wide, and extended to 2.1 m. Five distinct strata were identified within the trench (Figs. 6.9, 6.10a). The south face of the trench was profiled, and it contained intact cultural deposits and a feature.

Stratum 2.1 was a layer of asphalt. Stratum 2.2 was a base course for the overlying asphalt and was probably deposited in the mid- to late twentieth century contemporaneous with the asphalt. This layer sloped slightly east, extending from 10–50 cm bgs.

Stratum 2.3 was a very dark gray mixed and disturbed late nineteenth-century to early twentieth-century layer (10YR 3/2, Very Dark Grayish Brown). The fill was loamy sand with 10 percent rounded pea gravels and light calcium carbonate flecking throughout. Small charcoal bits comprised about 5 percent of the fill. Stratum 2.3 extended from 50–140 cm bgs. This layer may have been leveled during construction of the parking lot with which Strata 2.1 and 2.2 were associated, since the overlying base course sloped to the east.

A footing trench for Feature 1 was excavated into Stratum 2.3, and represents the west wall of a storage building associated with the Presbyterian Mission School; the storage space is believed to have been added to the school sometime in the mid-nineteenth century. The wall was constructed of sandstone blocks laid with concrete mortar, and was two courses tall and two courses deep (Fig. 6.9). Feature 1 was 50 cm (19.6 in) high and 52 cm (20.4 in) wide, and extended across the entire width of the 1 m trench. The base of the wall was 80 cm bgs (31.4 in).

Stratum 2.4 was a sterile coarse sand and gravel layer (5YR 4/4, Reddish Brown) that extended from 140–160 bgs. This layer appeared to represent an alluvial deposit.

Stratum 2.5 consisted of very fine-grained alluvial sand (7.5YR 4/4, Brown) that was devoid of gravel. The layer varied from 10 to 25 cm in thickness, and extended from 1.8 m to the bottom of the trench at 2.1 m bgs. An auger test exposed fine-grained alluvial sand identical to Stratum 2.5, which continued to the bottom of the auger test. No cultural materials were encountered.

Stratum 2.6 was a thin, well-defined lens of construction debris consisting of adobe (7.5YR 6/4, Light Brown), crushed brick, brick fragments, and sand that occurred between Strata 2.2 and 2.3 (Fig. 6.9). This stratum did not extend the entire length of the trench, visible only from the east edge of Feature 1 to 2 m. The lens varied in thickness from 2–10 cm), and consisted of almost pure sand at the east end of the trench.

Test Trench 5. Test Trench 5 was on the south side of the former Judge Steve Herrera Judicial Complex, to the east of a fenced electrical area. The 15.4 m long by 1.1 m wide trench was oriented east–west, and was excavated to a depth of 173 cm bgs (Figs. 6.10b, 6.11, 6.12). Five strata were identified in this trench, and three architectural features were documented (Features 2, 3, 4). A modern electric line was encountered at

Figure 6.9. LA 144329, Test Trench 2, south wall and Feature 1, foundation.

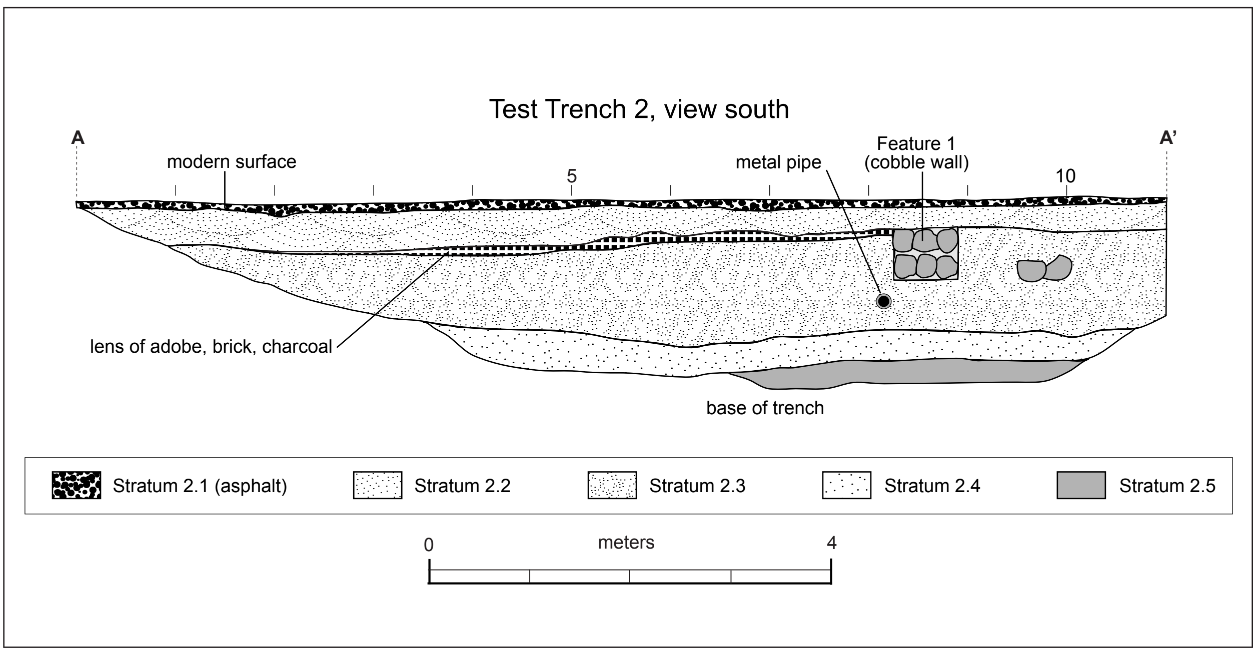

Figure 6.10a. LA 144329, Test Trench 2, profile.

the bottom of Stratum 5.2, but it did not impact underlying Features 2 and 4. The north face of the trench was profiled. This trench contained intact cultural deposits.

Stratum 5.1 was a late twentieth-century asphalt layer. Stratum 5.2 was a late twentieth-century layer of base course that was probably associated with the overlying asphalt. It should be noted that the base course did not impact the underlying Features 2 and 4.

Stratum 5.3 was a mixed, disturbed layer of late nineteenth- to early twentieth-century fill (5YR 3/2, Dark Reddish Brown). Cultural materials included brick fragments, glass, coal clinkers, and one piece of Euroamerican transfer ware. Abundant charcoal flecking was visible throughout, and thin lenses of ash and asphalt were found in the west half of the trench. The fill consisted of sandy loam, with 1 percent gravels ranging from pea-size to 3 cm in diameter. Stratum 5.3 extended from 32–142 cm bgs. The lower boundary was clear but irregular, cutting through underlying Stratum 5.4 in a portion of the west end of the trench. Features 2 and 4 were excavated through this stratum into the underlying Stratum 5.4. A plastic-insulated metal cable was visible in the center of the trench near the top of Stratum 5.3 at 25 cm. The cable bisected

Figure 6.10b. LA 144329, Test Trench 5, overview.

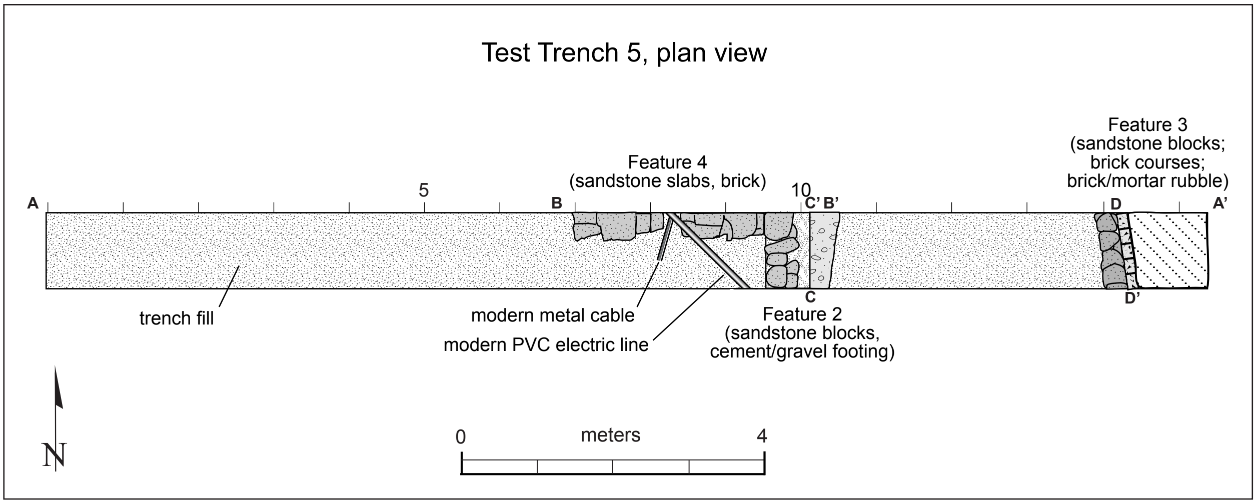

Figure 6.11. LA 144329, Test Trench 5, Features 2, 3, and 4, plan

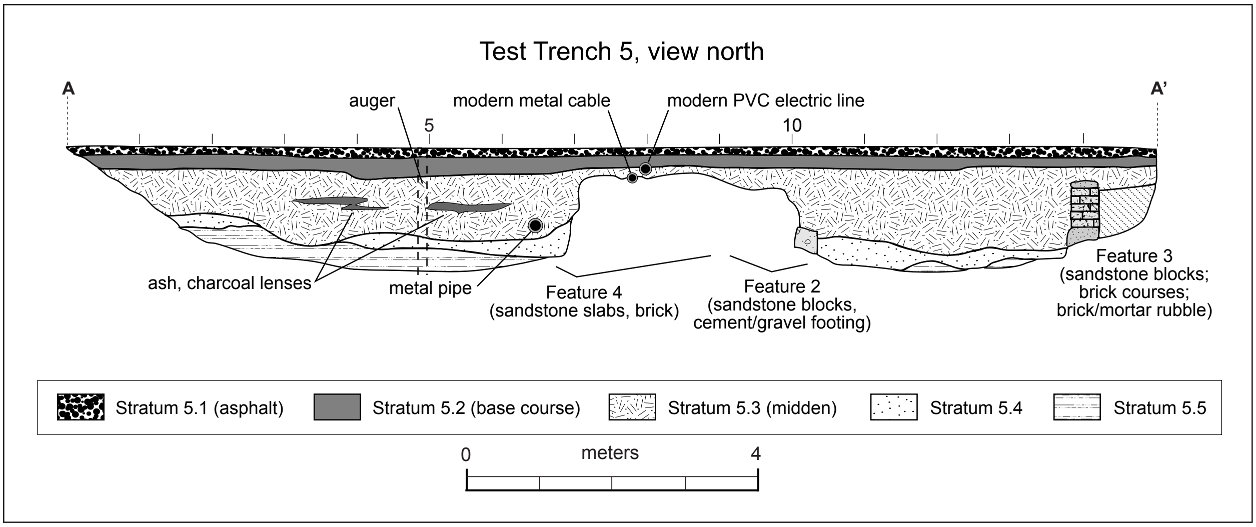

Figure 6.12. LA 144329, Test Trench 5, profile.

the Feature 4 foundation support, but only disturbed an 8 cm wide area of the feature. A metal pipe that was possibly associated with the Presbyterian Mission School dormitory was encountered at 1.10 m bgs.

Stratum 5.4 was a discontinuous layer of sterile, silty clay (5YR 4/3, Reddish Brown) located beneath Stratum 5.3. The upper and lower boundaries of this layer were undulating, and this deposit varied in thickness across the length of the trench. The base of Feature 2 was situated within this stratum, and Feature 4 was resting at the bottom of this stratum. At its shallowest point, Stratum 5.4 extended from 32–90 cm bgs. At the deepest point in the east end of the trench, Stratum 5.4 extended from 142–154 cm bgs. In the east end of the trench, Stratum 5.4 continued to the bottom of the trench.

Stratum 5.5 underlay Stratum 5.4, and consisted of coarse-grained sand (5YR 4/4, Reddish Brown) with a high percentage of unsorted gravels (50 percent) ranging from pea-size to 5 cm in length. This stratum appeared to represent a rapid alluvial deposition episode based on the unsorted, variably sized gravel. The upper boundary was clear but wavy, and the depth of the top boundary varied from 1 m to 1.65 m. An auger test was excavated from the bottom of the trench to a depth of 2.23 m. Sterile, coarse-grained alluvial sand and gravel extended to 1.98 m, with gravels ranging in size from pea-size to 3 cm in diameter. Beneath this, the fill became finer grained, consisting of silty sand and gravel to the bottom of the auger test at 2.23 m.

Feature 2 was likely the west wall foundation of the red-brick girls' dormitory, which was built between 1886 and 1889 (Figs. 6.13, 6.14, 6.15, 6.16). Set into Stratum 5.4, Feature 4 was a massive foundation constructed of coursed sandstone block laid with concrete mortar. Three courses were present, the lowest of which employed 15 cm (5.9 in) thick slabs, the middle course using large blocks measuring 25 cm (9.8 in) thick, and the uppermost course using thin slabs measuring 10 cm (3.9 in) thick. All blocks used in construction were of the same dense, light gray sandstone. The wall was two horizontal courses thick (64 cm/25.1 in) wide. The top one or two vertical courses may have been missing, as much of the top surface was covered with mortar. At the base of the sandstone foundation was a concrete and gravel footing that was wider than the foundation wall, extending east of the sandstone blocks. The concrete footing was very densely packed with angular gravel. It was 15 cm thick, and ranged in width from 32–42 cm (12.5–16.5 in), becoming wider on the north side of the trench. The footing and foundation were oriented slightly northwest–southeast. While the overlying sandstone block foundation was level, the footing was not, sloping slightly to the north. The top of the wall was 14 cm bgs (5.5 in), and the base of the footing was at 120 cm (47.2 in).

Feature 3 appeared to be the west basement wall of the red-brick girls' dormitory (Figs. 6.17, 6.18, 6.19). This north–south oriented wall was located at the extreme east end of Test Trench 5. It was constructed of coursed brick and concrete mortar over an underlying sandstone block foundation. Feature 3 extended across the full width of the trench and beyond to the north and south. Nine courses of brick were laid on top of large sandstone blocks that were either one or two courses thick. Whole bricks were laid end-to-end atop these blocks, and brick fragments broken roughly in half were laid side-to-side perpendicular to the lengthwise bricks. Intact portions of the brick wall were flush with the north and south faces of the trench, which provided a cross-section view of the wall. The intact walls were about 40 cm (15.7 in) wide and two to three bricks thick. Brick fragments were also used in these sections, though mortar and displaced bricks obscured the exact dimensions in some sections.

East of the wall, the fill consisted entirely of decomposed concrete, brick fragments, and mortar. Above this decomposed fill was Stratum 5.3. The entire wall, including bricks and the underlying sandstone block foundation extended from 41–140 cm bgs (16.1–55.1 in). The two bottom courses of brick were not level, but sloped slightly north. As in Feature 2, this wall was oriented slightly northwest–southeast. Also similar to Feature 2, the sandstone block foundation was wider than the brick wall, extending about 22 cm (8.6 in) west of the wall.

Feature 4 was likely the foundation support to the west-wall staircase of the red-brick girls' dormitory. This east–west wall abutted the Feature 2 foundation near the center of Test Trench 5 (Figs. 6.13, 6.20, 6.21). The tops of the Features 2 and 4 walls were level where they abut, at 38 cm bgs (14.9 in). As with Feature 2, this foundation was constructed of sandstone, but the size and shape of the stones was far less uniform than were those used in Feature 2, and the material texture and color was more variable than the blocks used in Feature 2. Generally, the stone was of lower quality in Feature 4, and had not been shaped to the extent of those used in Feature 2. Brick fragments from the superstructure were wedged between the sandstone slabs, but did not appear to have been used as foundation construction materials. Wall width was variable along the 2.44 m length of the feature, ranging from 17 cm (6.7 in) to 28 cm (11 in). The depth of the wall was poorly defined on the east profile, precluding an accurate measurement of the depth of the base. A modern, plastic-insulated metal cable and uninsulated cable bisected Feature 4 at 8.16 m, but only disturbed an 8 cm section of Feature 4. A PVC electric line at this same horizontal point did not bisect Feature 4. Generally, Feature 4 appeared to be of less stable construction than Feature 2. Glass fragments were encountered in the fill above this feature.

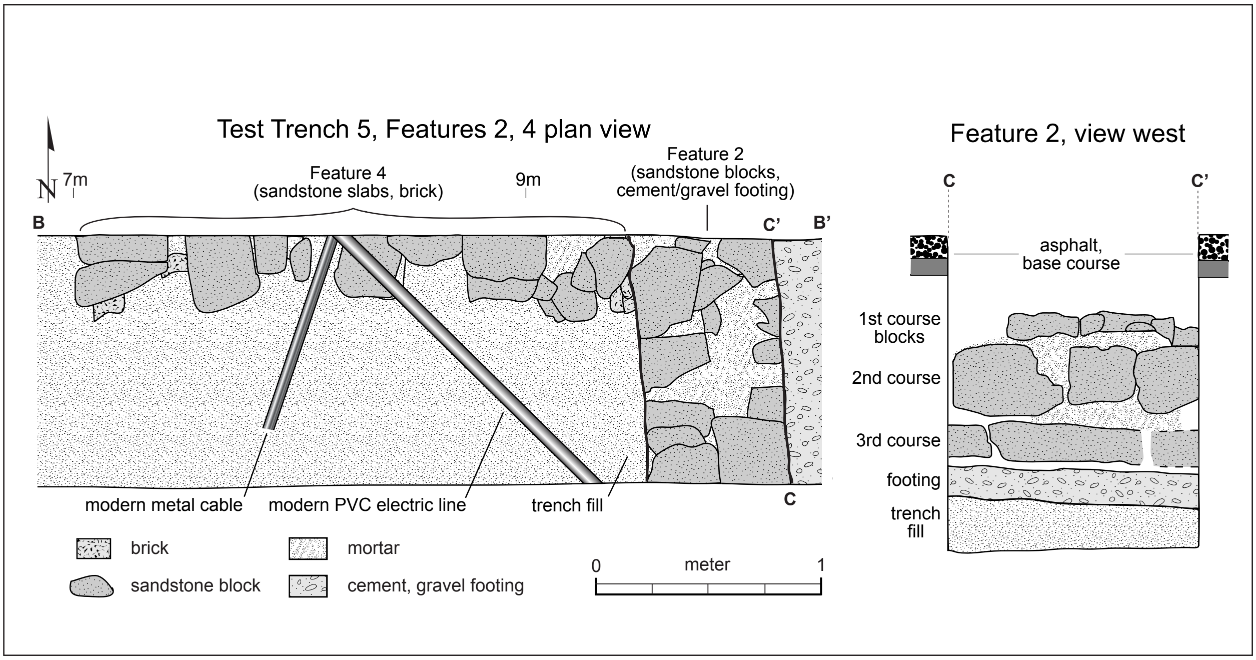

Figure 6.13. LA 144329, Test Trench 5, Features 2 and 4, plan; Feature 2, foundation, profile.

Figure 6.14. LA 144329, Test Trench 5, Features 2 and 4, overview.

Figure 6.15. LA 144329, Test Trench 5, Feature 2, foundation, detail.

Figure 6.16. LA 144329, Test Trench 5, Feature 2, foundation, profile.

Summary of Territorial-Period Deposits

Territorial-era deposits found during testing were most clearly represented by building foundations encountered in Trench 2 and Trench 5 in the south-central project area. Feature 1 was likely the footing to the Presbyterian school storage building. Features 2 through 4 were likely associated with the red-brick girl's dormitory constructed between 1886 and 1889. Strata directly associated with the mission school era were not intact in and around the foundations, and an undulating stratum with clear but irregular boundaries that was encountered in Trench 5 suggests that cultural deposits have been extensively reworked. Stratum 2.6, a layer of construction debris 50 cm below the modern surface that was documented in Trench 2, was potentially associated with the girls' dormitory remodeling in the early twentieth century or with building demolition. Horizons that were potentially associated with the mission school and Territorial period were found in the eastern project area in Test Pit 1. These deposits included Stratum 100.3, which was encountered 38-42 cm bgs, and Stratum 100.4, which was 42–64 cm bgs and may be intact. Further to the north, in Test Trench 4, adobe melt found between 60 and

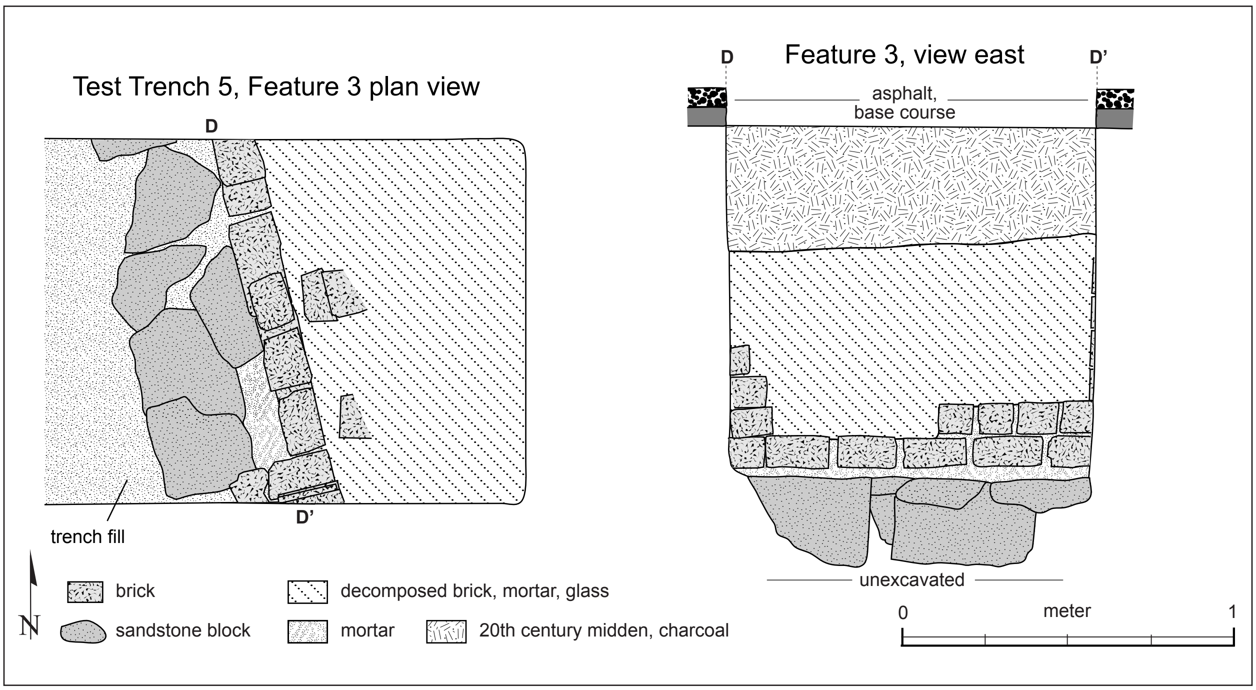

Figure 6.17. LA 144329, Test Trench 5, Feature 3, wall and foundation stub, plan and profile.

Figure 6.18. LA 144329, Test Trench 5, Feature 3, wall and foundation stub, view east.

Figure 6.19. LA 144329, Test Trench 5, Feature 3, wall and foundation stub, view southeast.

Figure 6.20. LA 144329, Test Trench 5, Feature 4, foundation, view east.

90 cm bgs was assigned an eighteenth-century date even though it occurred in a late nineteenth-century deposit.

Areas Recommended for Monitoring

Monitoring was recommended in the northwest quadrant of the site, which was sampled with five test trenches and a hand-excavated test unit, none of which exposed intact stratified cultural deposits. Overall, strata consisted of a layer of concrete and a base course capping extensively reworked cultural deposits. These deposits covered sterile alluvium, which typically transitioned from silt to coarse sand and gravel, both of which were alluvium. Soil descriptions in this section have been abridged from those presented in Wening and Barbour (2014).

Test Trench 1

Test Trench 1 was west of the former Judge Steve

Figure 6.21. LA 144329, Test Trench 5, Feature 4, foundation, detail with PVC electric line, view northeast.

Herrera Judicial Complex building, near the corner of Catron and Griffin Streets. This trench was oriented northwest–southeast, and measured 15 m long by 1 m wide, and extended 1.45 m below the current ground surface (bgs). Five distinct strata were identified within the trench (Figs. 6.22, 6.23). The east face of the trench was profiled. This trench did not yield intact cultural deposits.

Stratum 1.1 was a 10 cm thick layer of asphalt. Stratum 1.2 was a layer of base course that extended to 75 cm bgs. Mixed late nineteenth- to early twentieth-century deposits within this stratum contained brick fragments, coal clinkers, metal fragments, and animal bone.

Stratum 1.3 was a sterile layer of loamy sand beneath Stratum 1.2. At its deepest point, Stratum 1.3 extended from 75 cm bgs to the bottom of the trench at 145 cm bgs, and appeared to represent alluvial deposits. Stratum 1.4 was also sterile alluvium, consisting of coarse sand with a much higher gravel content than Stratum 1.3. An auger test indicated that Stratum 1.4 continued beyond 185 cm bgs. Stratum 1.5 consisted of two 20 cm thick sterile layers of silty clay (7.5YR 4/4, Brown) that occurred between Strata 1.2 and 1.3. The northern lens was 40–50 cm bgs, and the southern lens was 80–100 cm bgs. No gravels were observed within these lenses.

Test Pit 2

Test Pit 2 was at the northwest corner of the project area near the intersection of Catron and Griffin Streets. This test pit measured 1 by 1 m and was hand excavated in 10 cm levels to a depth of 1.23 m. It was bordered on the north and east sides by a modern concrete sidewalk and landscaping curb. Five strata were identified (Figs. 6.24, 6.25). The north face was profiled. Fill in this test pit exhibited a high degree of disturbance from

Figure 6.22. LA 144329, Test Trench 1, east wall.

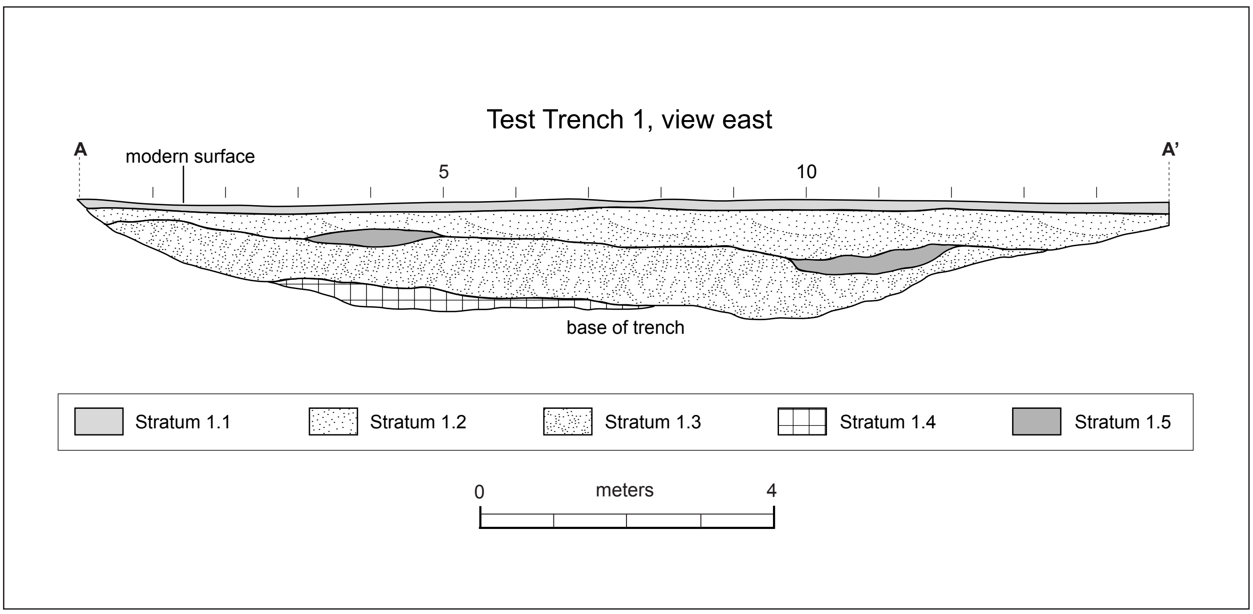

Figure 6.23. LA 144329, Test Trench 1, profile.

modern human activity and bioturbation from large roots. Twentieth-century construction debris was found in all five strata, possibly deriving from the 1937 construction of Harvey Junior High School.

Stratum 200.1 was the modern concrete sidewalk. Stratum 200.2 consisted of a modern, brown (7.5YR 4/4) gravel base course and clayey sand with varying gravel content extending from 10–43 cm bgs. Testing yielded glass, metal, lithics, bone, and native ceramics. Concrete, slag, and charcoal fragments were dispersed throughout the fill, along with construction debris. Artifact frequencies were constant throughout the stratum.

Stratum 200.3 was also heavily bioturbated by large roots. This layer extended from 43–78 cm bgs and consisted of sandy clay and gravel containing construction debris and coal clinkers (7.5YR 5/2, Brown). Cultural materials were found, consisting of glass, bone, metal, lithics, and native ceramics, with the highest frequencies occurring in Level 7 (63–73 cm).

Stratum 200.4 consisted of fine-grained silty sand (7.5YR 5/4, Brown). The mixed construction debris found in the two overlying strata was also found in Stratum 200.4. Charcoal flecking occurred throughout, along with ash, coal clinkers, brick, and tar. Gravel content was decreased in this stratum compared to Stratum 200.3. This layer extended from 78–105 cm bgs.

Mixed construction debris continued into Stratum 200.5. Sediment shifted to coarse sand with a high percentage of large gravels (7.5YR 6/6, Reddish Yellow). Cultural material frequencies dropped significantly in this stratum, which extended from 105–123 cm bgs. An auger test was excavated into the center of the pit from 123–173 cm bgs. Alluvial sand and gravel sediments were encountered to the bottom of the auger test; no cultural materials were found.

Test Trench 3

Test Trench 3 was in the northwest corner of the project area parallel to Catron Street. The trench measured 12.2 m long by 1 m wide, and was excavated to a depth of 1.4 m. Four strata were defined, all of which are nearly identical to those identified in Test Trench 1 (Figs. 6.26, 6.27). Slight differences existed for some of the strata in Test Trench 3, and are described below. The south face of the trench was profiled. No intact cultural deposits were observed.

Figure 6.24. LA 144329, Test Pit 2, north wall.

Stratum 3.1 was late twentieth-century asphalt. Stratum 3.2 was a mixed, disturbed late nineteenth- and early twentieth-century deposit similar to Strata 1.2 and 2.3. The loamy sand fill was very dark gray in color, and contained small charcoal flecking throughout (7.5YR 4/2, Brown). Glass and Euroamerican ceramic fragments were observed in the fill, which extended from 45–82 cm bgs at the deepest point.

Stratum 3.3 was a sterile lightly compacted loamy sand (7.5YR 6/4, Light Brown). The upper boundary of this layer undulated for the entire length of the trench, intermixing with overlying Stratum 3.2. Stratum 3.4 was also sterile, and consisted of coarse alluvial sand and gravel (7.5YR 4/4, Brown). It extended from 110 cm to the bottom of the trench at 141 cm. An auger test was excavated into the bottom of the trench to a depth of 1.91 m.

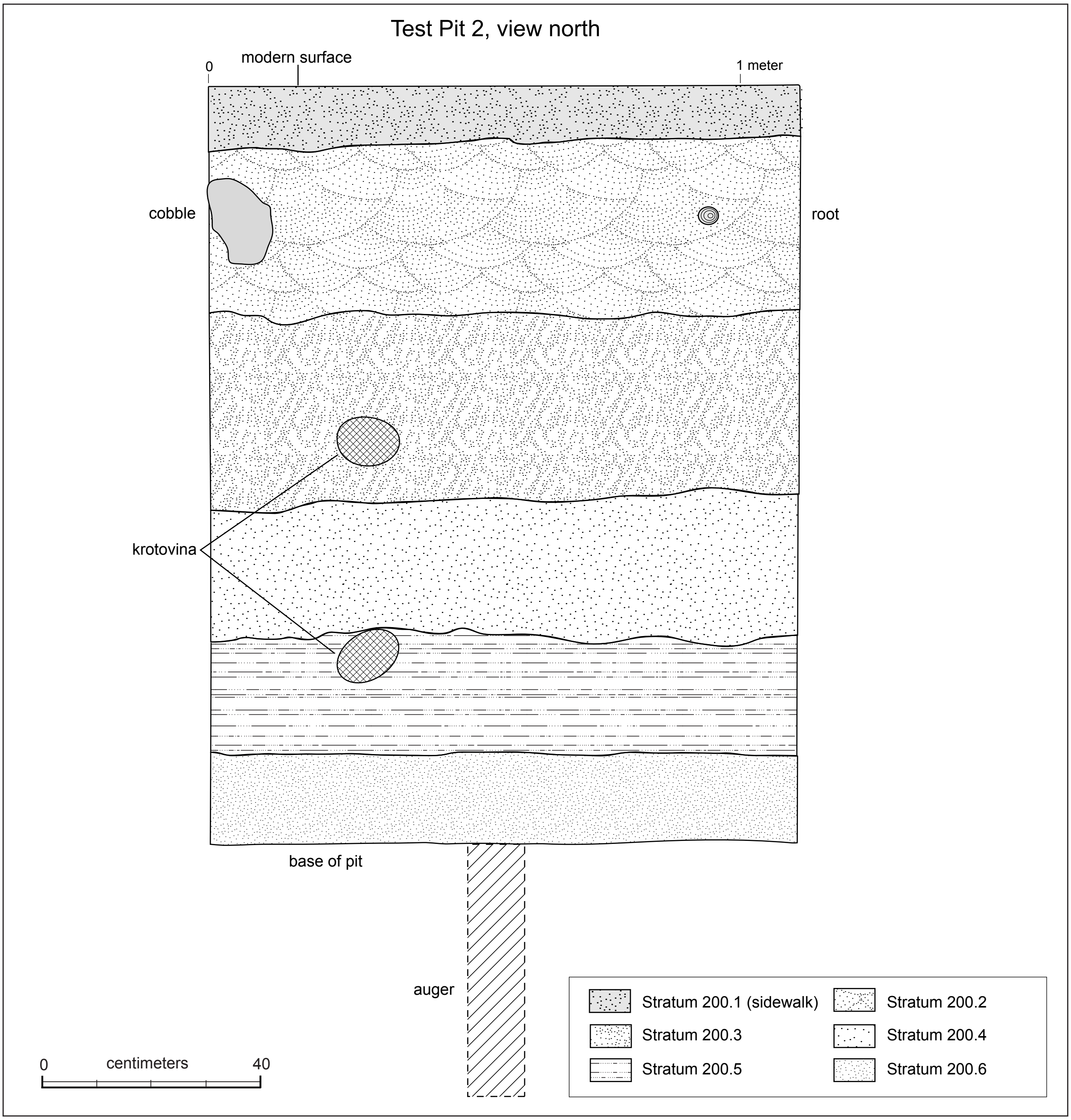

Figure 6.25. LA 144329, Test Pit 2, profile.

Test Trench 8

Test Trench 8 was a north–south oriented trench that was dug on the west side of the county court building. This 12 m long trench was excavated to a maximum depth of 2.1 m, and was 1 m wide. The east face of the trench was profiled (Figs. 6.28, 6.29). No intact cultural deposits were observed in this trench.

Stratum 8.1 was a 20 cm thick layer of asphalt. Stratum 8.2 was a 20 cm thick, disturbed, mixed late nineteenth- to early twentieth-century fill that may have served as base course for the overlying asphalt. Stratum 8.3 was a mixed, disturbed late nineteenth- to early twentieth-century layer of sandy loam (5YR 3/3, Dark Reddish Brown) that extended from 40 to 60–140 cm bgs; in the south end of the trench it began

Figure 6.26. LA 144329, Test Trench 3, south wall.

at 40 cm and ended at 165 cm. A Tewa plain-ware sherd was found in this layer, along with sparse charcoal flecking throughout the fill. A modern plastic drinking straw occurred near the top of this stratum.

Stratum 8.4 was a sterile layer of silty sand that was nearly devoid of gravel (7.5YR 5/4, Brown). The upper boundary of this stratum was deeper in the south end, and continued to the bottom of the trench (165–210 cm bgs). Stratum 8.5 was coarse sand and gravel that were only visible at the north end of the trench (7.5YR 4/4, Brown). No cultural material was observed. This layer began at 1.85 m bgs and continued to the trench bottom, where an auger test showed that it continued to at least 2.6 m bgs.

Test Trench 9

This trench was north of the Presbyterian Church, oriented east–west and parallel to the north wall of the church. The trench was 12 m long, 1 m wide, and 1.8 m deep. Four strata were recorded in the south face profile (Figs. 6.30, 6.31). The mixed, disturbed late nineteenth- to early twentieth-century stratum observed in Test Trenches 1–6 and 8 also occurred in this trench, but were much thicker here than in other trenches. This stratum occupied most of the profile, with a lens of mixed strata occurring in the east end. Modern debris was encountered at 1.18 m bgs, suggesting a high degree of disturbance. This trench did not yield intact cultural deposits.

Stratum 9.1 and Stratum 9.2 were layers of asphalt. Stratum 9.3 was a highly disturbed, mixed late nineteenth- to early twentieth-century sandy loam deposit (7.5YR 4/2, Dark Brown). Cultural materials consisted of brick, charcoal, and green glass. A large fragmentary orange brick coated on one surface with black glaze or sooting occurred at 80 cm bgs. At 1.18 m, a soda can pop-top was found, evidence of the high degree of mixing within this stratum. Black root clasts were sporadically dispersed

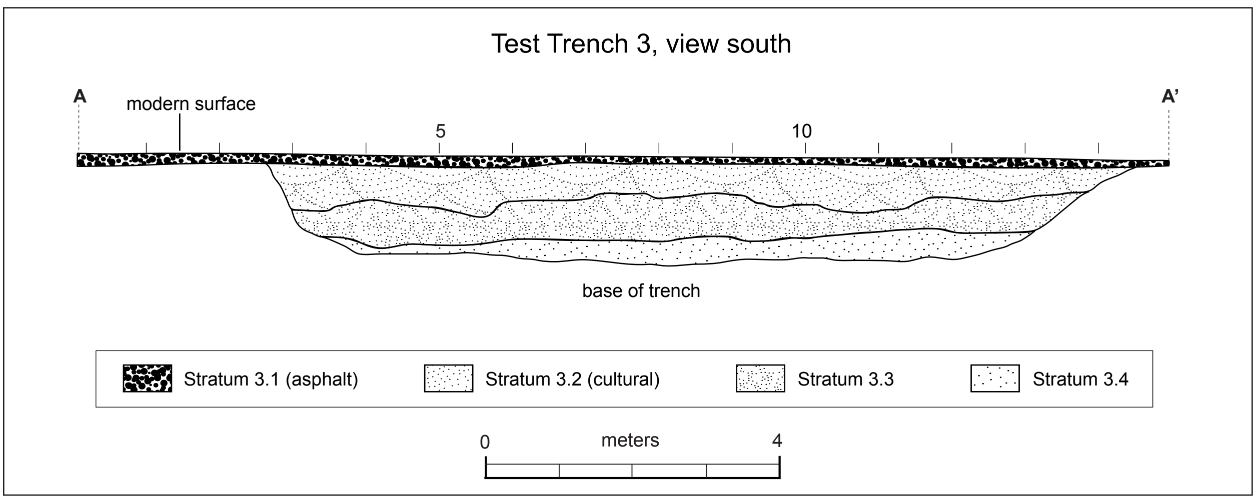

Figure 6.27. LA 144329, Test Trench 3, profile.

Figure 6.28. LA 144329, Test Trench 8, east wall.

in the lower 30 cm of this stratum. Decomposed caliche flecking was observed throughout. A lens of mixed sediment was identified at the east end of the trench, comprised of Strata 9.3, 1.3, and 1.5. Sterile soil was encountered in the lowermost centimeter of this trench only, at a much greater depth than other project trenches. No cultural materials were observed.

Test Trench 10

Test Trench 10 was located along the north side of the former Judge Steve Herrera Judicial Complex, parallel to Catron Street, and was oriented east–west. This trench was 12 m long, 1 m wide, and was excavated to a depth of 1.6 m. Seven strata were identified. The south face was profiled (Figs. 6.32, 6.33). This trench did not yield intact cultural deposits.

Stratum 10.1 was a layer of asphalt. Stratum 10.2 was a mixed, disturbed, late nineteenth- to early twentieth-century layer containing metal, wood, brick, and glass. This sediment was sandy clay loam with 40 percent pea-sized gravels (7.5YR 3/2, Dark Brown), and may have been deposited as a base course for the overlying asphalt. It extended from 10–40 cm bgs.

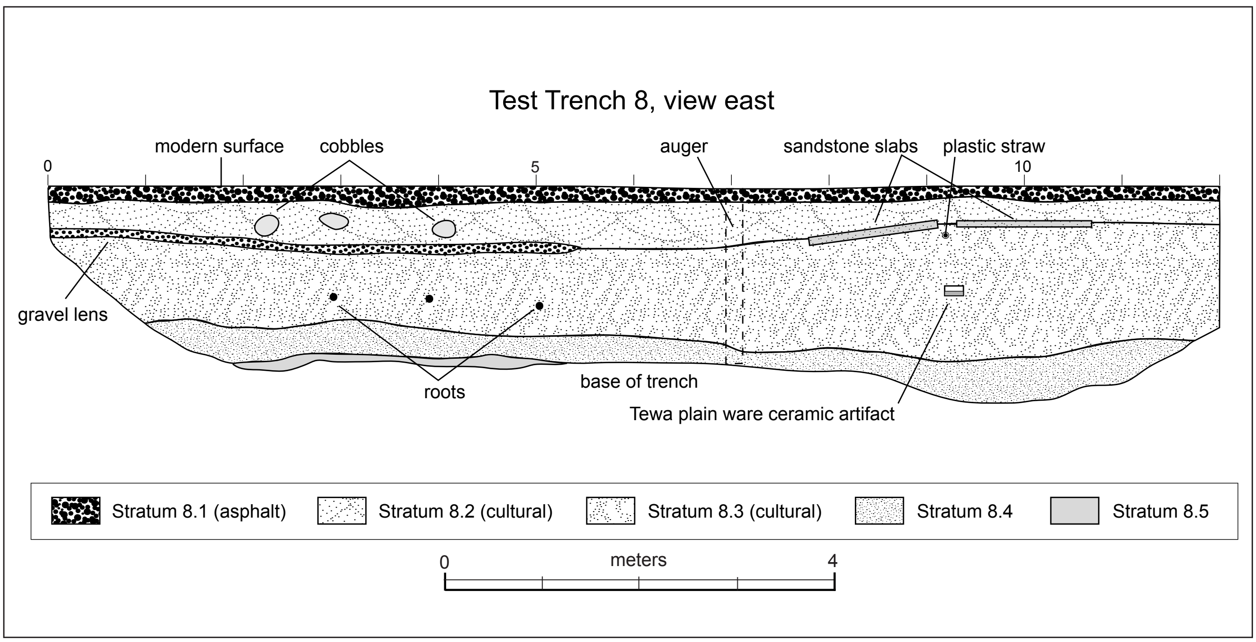

Figure 6.29. LA 144329, Test Trench 8, profile.

Figure 6.30. LA 144329, Test Trench 9, south wall.

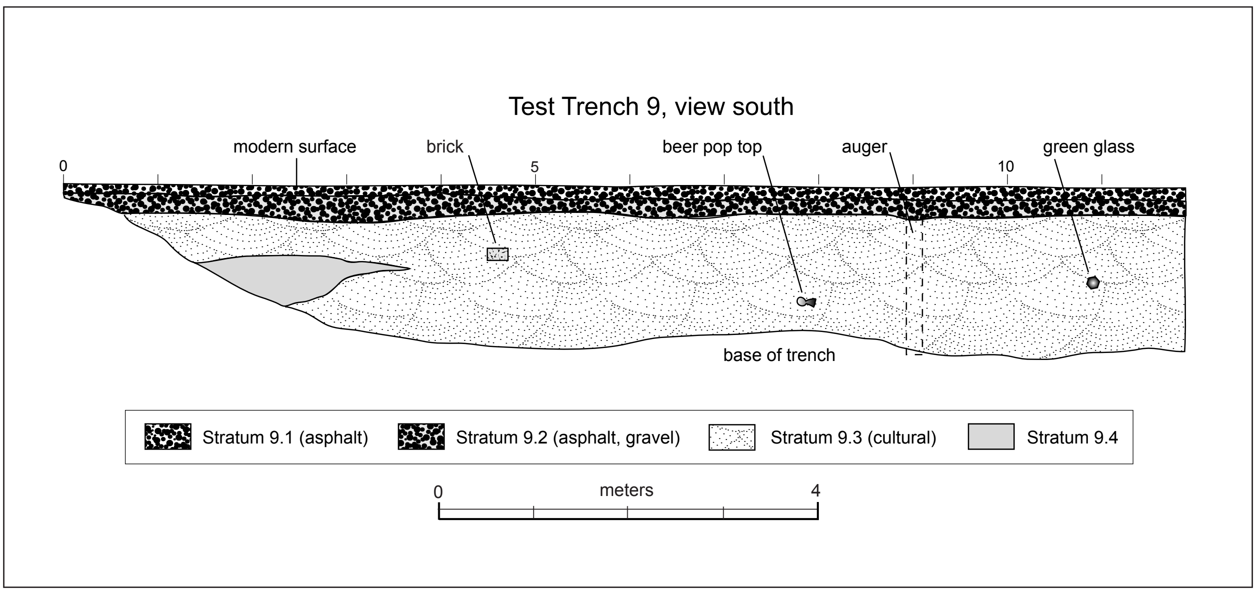

Figure 6.31. LA 144329, Test Trench 9, profile.

Figure 6.32. LA 144329, Test Trench 10, south wall.

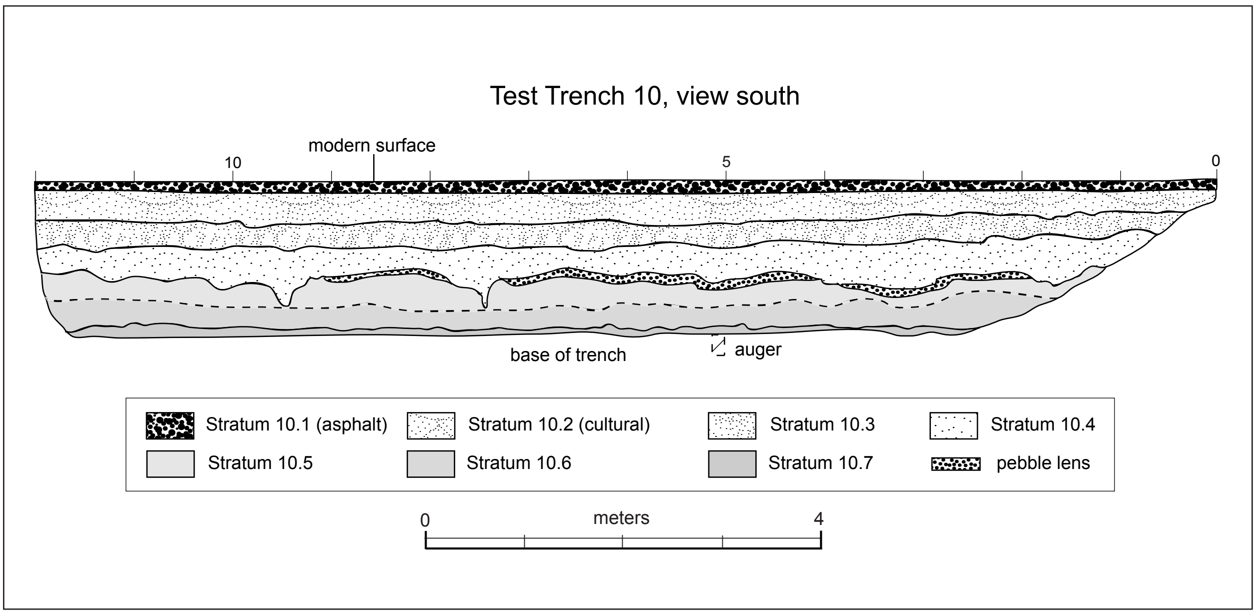

Figure 6.33. LA 144329, Test Trench 10, profile.

Stratum 10.3 to Stratum 10.7 were sterile deposits**.** Stratum 10.3 consisted of sandy clay loam with fine carbonate inclusions and pebbles dispersed throughout (7.5YR 3/2, Dark Brown), and extended from 40–70 cm bgs. Stratum 10.4 was a sterile layer of silty clay loam (7.5YR 3/2, Dark Brown) that extended from 70–100 bgs. Gravels defined the lower boundary of this layer, which was irregular but clearly defined. Stratum 10.5 was sandy clay loam (7.5YR 5/4, Brown) that extended from 100–130 cm bgs. Stratum 10.6 consisted of silty clay loam (7.5YR 4/4, Brown), with many fine root pores dispersed throughout. This stratum began at 130 cm bgs and continued to 150 cm bgs. Stratum 10.7 was a layer of sandy clay loam (7.5YR, 4/4, Brown) with a diffuse upper boundary. It extended from 150 cm bgs to the bottom of the trench at 160 cm bgs. An auger test at the base of the trench showed that Stratum 10.7 continued to a depth of 2.1 m.

Summary and Interpretation

Several strata occurred consistently across most of the trenches. One or two overlying layers of asphalt occurred in all trenches except for Test Trench 6, which was excavated into an area landscaped with gravel. An underlying base course of coarse sand and gravel and mixed late nineteenth- to early twentieth-century debris occurred in Test Trenches 1, 2, 4, 5, 8, and 10. However, this base course was notably absent in Test Trenches 3, 6, 7, and 9, all of which were situated at the edges of the project area.

The thickest and deepest stratum was a dark brown layer of mixed late nineteenth- to early twentieth-century fill containing construction debris such as brick and mortar, and other materials including bone, glass, metal, and Euroamerican and Native American ceramics. Although this stratum was found in all test trenches, it appeared to have been leveled prior to depositing a sand and gravel base course for the asphalt parking lot in some trenches, particularly those on the periphery of the project area. During the leveling and deposition of the base course, this darker stratum may have become intermixed in some trenches. Where the base course was absent, the dark stratum was directly under the asphalt. This was most evident in Test Trenches 7 and 9.

A sterile alluvial sand and gravel layer occurred underneath the cultural deposits, and was found in or beneath all excavated trenches and test pits. This stratum represented a large alluvial deposit that lies under much of the Santa Fe area and predates human occupation in the region (Barbour et al. 2014). While several prehistoric sherds were found in the test pits, no evidence of prehistoric habitation or use was documented within the project area. Of all the investigated trenches, Test Trench 10 had the best potential to provide an example of natural stratigraphy in the area.

Potential horizons associated with Territorial period and Presbyterian Mission School activities may be encountered in the east project area at approximately 40–65 cm below surface. Potential Spanish Colonial deposits may be encountered in the same area and to the north below 65 cm bgs. Adobe melt found in Trench 4 at 60 to 90 cm bgs was thought to represent an eighteenth-century deposit within a nineteenth-century stratum. This adobe lens may mark a horizon between Territorial- and Spanish Colonial–period deposits that was not otherwise distinguished in the profile. No stratified or intact Pueblo deposits were encountered during testing. If they occur in the project area, they are likely limited, ephemeral, and located approximately 1 m below surface, as suggested by discoveries in adjacent areas.

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7 A Data Recovery Plan for the Former Judge Steve Herrera Judicial Complex (LA 144329)

James L. Moore

Introduction: Economic and Political Changes

LA 144329 is a multicomponent historic site with evidence for both Spanish Colonial–period and nineteenth- to twentieth-century occupations. Differences in the structures of artifact assemblages from these components are related to a long series of economic changes that correspond to political events and demography as well as variation in transportation systems. The interplay between political forces, available sources of imported goods, demand for certain goods, and methods of transportation helped shape the economic livelihood and development of New Mexico throughout the historic period. That interplay can be modeled, and used to predict how assemblages from these periods will vary as well as to help explain that variation.

Santa Fe may be an especially good laboratory in which to examine some of these changes because of its unique position as the only capital of the province, territory, and eventually state of New Mexico during the historic period. Besides serving as the political capital, Santa Fe was also the social and economic hub of New Mexico during much of its history. Thus, economic changes would be expected to occur early there and to be readily visible, where they might be delayed and less visible in the hinterlands. While we can discuss and model the series of economic changes that occurred throughout the historic period, we must keep in mind that our data will probably be limited to two periods rather than spanning the entire Spanish and Anglo-American occupations. This necessarily will limit the scope of expected results.

While the historic occupation of Santa Fe has been continuous since its founding around 1610, there have been important periods of political disruption that affected the economy. The first critical disruptive event was the Pueblo Revolt of 1680–1693 (Sando 1979). This short period represents a hiatus in the Spanish occupation of Santa Fe, as the Pueblo Indians and their allies briefly united in rebellion and successfully drove the Spanish from New Mexico. Until the Spanish reconquest and resettlement of New Mexico in 1693, they were supplanted as occupants of the capital by Pueblo Indians, predominantly Tanos who had formerly inhabited villages in the Galisteo Basin (Kessell et al. 1995). The Pueblo occupation of Santa Fe allegedly saw massive changes to the villa including the transformation of houses and government buildings around the plaza into a large, contiguous, multi-storied pueblo (Kessell et al. 1995). The parroquia was burned and leveled, and was being used as a cornfield when Diego de Vargas returned in 1693 (Kessell et al. 1995:495). The Tano pueblo was demolished after the Pueblos were forced from Santa Fe, and the Spaniards rebuilt the capital in 1699.

This short period is difficult to account for, archaeologically, because the material culture reflected in deposits from the Pueblo Revolt period are probably very similar to those produced by the Spanish before and just after that event. Some materials recovered during excavations at the Palace of the Governors in the 1970s are often thought to have originated with the Pueblo occupation of the capital (Seifert 1979), but this remains uncertain because of the aforementioned similarities. Since the Esquivel house may have been built very soon after the Spanish resettlement of Santa Fe (see Chapter 4, this report), some deposits at LA 144329 could be related to that transitional period, similar to midden deposits encountered at the Sisters of Charity Complex (LA 161535), which is also in downtown Santa Fe (Moore in prep. [a]). While such deposits have not yet been defined at LA 144329, if they are found to occur they could help improve our view of life in Santa Fe at that critical time.

With the Pueblo Revolt, the long Spanish Colonial occupation can be neatly divided into three temporally discrete periods: Early Spanish Colonial period (1598–1680), Pueblo Revolt period (1680–1693), and Late Spanish Colonial period (1693–1821). Each of these periods was characterized by different economic patterns tied to the respective political and transportation systems (Moore 2004). The success of the Pueblo Revolt resulted in a major change in the role of the Spanish Empire in New Mexico. The focus during the Early Colonial period was on missionization, and this made the church a major player in the province, both politically and economically (Ellis 1971; Simmons 1979b). The secular population received little official support from the Crown, and this created friction between church and state that got rather nasty at times. While the missions received goods and supplies from Mexico on a regular basis (Scholes 1930, 1935), the Spanish settlers had to rely heavily on locally produced goods (Moore 2001, 2003, 2004). Spaniards exploited the Pueblo Indians as sources of tribute and cheap or free labor during the Early Spanish Colonial period. This also contributed to the friction between church and state, since both entities were exploiting the Pueblos. Caught in the middle of this conflict and resenting the enforced missionization and attempts to supplant their native religions with Christianity by the church as well as requirements that they supply tribute and labor to the secular population, the Pueblos finally successfully revolted in 1680 (Sando 1979).

While the Pueblo Revolt only served to drive the Spanish from New Mexico for a dozen years, it resulted in important and far-reaching changes in the focus of the Spanish government's interest in New Mexico. The encomienda and repartimiento systems were eliminated after the reconquest (Simmons 1979b), so the Pueblos could no longer be legally forced to provide labor, and that role had to be filled by the Spanish themselves. This eventually led to the development of new labor systems, such as the partido system of sheep management (Baxter 1987). Rather than a field for missionization, the function of the New Mexican colony became the protection of more prosperous territories to the south from raids by nomadic Indians (Bannon 1963). This led to a severe reduction in the power of the church, with a concomitant increase in the power and influence of the secular government.

Throughout the Spanish Colonial period the New Mexican economy was based on a stable barter system, and money did not circulate freely (Baxter 1987:69; Frank 2000:141; Thomas 1932:113). Hard specie was concentrated in the hands of a few wealthy families, and was mainly used to pay taxes or purchase goods in Mexico for resale in New Mexico (Simmons 1968; Weber 1982). Documentary and archaeological evidence both suggest that, despite long-held beliefs, New Mexico was better supplied with imported durable goods during the Early Spanish Colonial period than it was during the Late Spanish Colonial period (Moore in prep. [b]). In addition to the mission-supply caravans, seventeenth-century New Mexico was also supplied by independent traders, many of whom obtained their goods from Parral in northern Mexico rather than from Mexico City further to the south (Hendricks and Mandell 2002). With the demise of the mission supply system in the early 1700s, New Mexico had to depend on annual caravans that transported goods to Mexico and back using mule trains (Connor and Skaggs 1977:21). Despite the almost annual nature of these caravans, fewer widely affordable durable goods were apparently available in New Mexico than during the Early Colonial period. While wealthy citizens may have been able to purchase sufficient quantities of durable goods in the Late Colonial period, this was not true for the lower classes, who appear to have been able to afford fewer durable imports than they could during the Early Colonial period.

Thus, we have a situation that is the reverse of conventional wisdom, which held that, other than the missions, New Mexico was very poorly supplied with goods imported from Mexico during the Early Colonial period, with the supply of such goods improving in the Late Colonial period. Fewer durable imported goods appear to have been available through most of the eighteenth century, with supply only improving after peace was made with the Comanches and Apaches in the late 1780s, when New Mexico underwent an economic renaissance of sorts (Frank 2000). Mainly attributable to improved attention to the security and economic condition of New Spain during the reign of Carlos III, the peace that prevailed from about 1790 to 1812, coupled with a relaxation of trade restrictions, led to a boom in the New Mexican economy; the boom ended during the turmoil of the Napoleonic takeover of most of Spain and the beginning of the Mexican Revolution (Frank 2000; Parkes 1960; Weber 1992). In order to obtain goods from Mexico for resale in New Mexico, merchants needed goods to export, and peace was required to produce those exports and get them safely to markets in the south. While not directly participating in the Mexican Revolution, that conflict caused unsettled conditions that severely impacted the markets for New Mexican goods. The short recovery came to an end, once again, because of the effect that the political situation had on the economy.

Throughout the Spanish Colonial period, Spaniards depended on the Pueblos to provide certain commodities that were difficult and expensive to import from Mexico. Chief among these goods was pottery, most of which was obtained through barter. Indeed, Pueblo pottery is the most common durable good found on Spanish sites throughout the Colonial period in New Mexico, with imported pottery generally comprising very small percentages of assemblages (Moore 2001, 2003, 2004). Most durable imports whose source is traceable were manufactured in Mexico, though Chinese porcelain sometimes occurs in Spanish assemblages, having been carried up the Camino Real from Mexico after being imported from China via the Philippines. Goods from northern European sources or manufacturers in the United States are very rare because of Spanish trade restrictions, which required colonies to trade only with other Spanish colonies or with Spain itself (Weber 1982:123). Thus, throughout the Colonial period, goods could only be imported up the Camino Real from the south—a few attempts by French traders to establish ties with New Mexico were frowned upon and actively discouraged by arrest and confiscation.

This period of economic isolation ended with the opening of the Santa Fe Trail in 1821, resulting in another major change in economic patterns that is also traceable to political change. When Mexico won its independence from Spain in 1821, one of the first changes in policy was the elimination of monopolies held by entities in Spain that made them the sole source of certain imported goods such as iron, for which the city of Vizcaya enjoyed a monopoly on production for the New World (Simmons and Turley 1980:18). Though the importation of merchandise over the Santa Fe Trail improved the supply of durable goods in New Mexico to a certain extent, the focus of that trade soon became markets to the south—in Mexico proper, where demand was higher and cash more readily available. Early Santa Fe traders often complained about the lack of cash in New Mexico, and were most often paid with goods through the traditional New Mexican system of barter (Conner and Skaggs 1977).

The final major political change that affected the local economy occurred when New Mexico was annexed by the United States in 1846 during the Mexican War. This acquisition seems to have begun to jolt New Mexico into a cash economy, and further improved the supply of durable goods. However, New Mexico was not fully integrated into the economy of the United States until after the railroad arrived in 1880, providing more rapid and cheaper shipping (Glover and McCall 1988). Analysis of the structure of Spanish assemblages from sites dating between the Early Spanish Colonial and Railroad periods shows that this series of economic and political changes are visible in percentages of durable imports as well as the types and sources of goods being imported (Moore 2004).

Percentages of durable imports in assemblages decrease between the Early and Late Spanish Colonial periods, increase a fair amount in the Santa Fe Trail period (1821–1880), and further increase greatly in the early Railroad period (1880–present). At the same time, we see a decrease in imports from Mexico during the Santa Fe Trail period, and again in the Railroad period. By the 1920s, Spanish assemblages seem to be mostly comprised of goods imported from the eastern United States, though there remains some evidence for the use of traditional goods such as Pueblo pottery and even chipped stone.

Immigrants from the United States arrived in this economic milieu at the beginning of the Santa Fe Trail period, but comparatively few tended to remain as residents until after New Mexico was acquired by the United States. After that date we see increasing numbers of immigrants from the east arriving in New Mexico and causing major changes in consumption patterns with their demands for the types of goods and foods they traditionally consumed. This finally brings us to the second component, which mainly represents the late Santa Fe Trail through early Railroad periods, which could potentially extend into the twentieth century. Rather than reflecting the long-time Spanish occupants of Santa Fe, the Presbyterian Mission School reflects the influx of people from the eastern United States in the late nineteenth century, often blending indigenous characteristics with nontraditional consumption patterns. The new consumption patterns that arrived with the immigrants should contrast with those of the native Spanish, even though the school focused on educating Spanish girls and later boys.

Besides representing an economic pattern different from that of the Spanish occupants of New Mexico through the late 1800s, the Presbyterian Mission also represents an industrial institution providing a variety of services to the community including a church (initially when first built by the Baptist Church), dormitory, and school. Thus, the associated assemblage may contrast not only with those of Spanish households during the Spanish Colonial through late Santa Fe Trail periods, they may also contrast with assemblages from Anglo households occupied at about the same time, as well as with military remains from the Fort Marcy complex.

Research Questions

A few of the potential research questions that can be approached with data recovered from excavations at LA 144329 were mentioned in the last section of this plan, and are stated more explicitly and expanded upon in this section. Other potential research questions are also considered and discussed.

Research Question 1: Examining Building Footprints and the Accuracy of the Historic Record

Thanks to the existence of a series of maps dating between 1766 and 1930, we have a fairly clear picture of when buildings were constructed on the property and how they were arranged through time in relation to buildings that still exist in the immediate vicinity. Though the earliest maps lack the precision of later plans, they are still useful in establishing the approximate locations of buildings in relation to excavation areas. Sanborn maps produced between 1883 and 1930 show the development of buildings on the property, and can be augmented by other historic maps of Santa Fe. Thus, we have an opportunity to study the accuracy and precision of these maps as part of the historical record.

Recent map rectifications conducted for a series of projects in the downtown area using a first-order polynomial rectification on Sanborn Fire Insurance maps to surviving data points (i.e., building corners, curbs and lot lines) on both aerial and city lot maps have demonstrated that Sanborn Fire Insurance maps are accurate depictions of the built environment, but are not necessarily internally precise with regard to the relationship of spaces between buildings or precise building orientations. To be sure, use of aerial imagery introduces error but is the best and most cost-effective tool available for the task. The results of careful rectification of Sanborn and other historic map overlays to the modern cityscape are expected to help determine the locations of any buildings that may be represented by buried foundations not identified during testing, and exposure and documentation of these foundations will permit further evaluation of these historical maps (Fig. 7.1).

It may also be possible to test the potential accuracy of the 1766 Urrutia map of Santa Fe (Fig. 4.1). Projections of the project area onto that map suggest that the remains of the Esquivel house could be present in various locations within project limits (Barbour and Wening 2014:34; Fig. 4.1). Those areas will be carefully examined during data recovery in order to determine whether the foundations to this building might still exist. If so, their actual location can be compared with a rectification of the Urrutia map to the modern cityscape, permitting an assessment of its predictive accuracy.

Data needed to address this research question should be available from building remains known to exist at LA 144329, as demonstrated by test excavations, and others that might be encountered during data recovery and monitoring. These include the girls' dormitory and a storage building located to the west of the dormitory (Barbour and Wening 2014:73). Any currently unknown remains should also consist of foundations left in place when superstructures were demolished, similar to those located during testing. A focus of data recovery and monitoring will be the exposure and delineation of any remaining foundations within areas that will be impacted by construction, and needed data will be provided by the instrument mapping of foundations and a detailed examination and description of foundation construction styles and materials, including extensive photographic documentation.

Research Question 2: Economic and Consumption Patterns at a Nineteenth-Century School

Mixed nineteenth to early twentieth century deposits containing construction debris as well as domestic refuse were found across the site, and appear to have suffered some mixing from later construction episodes (Barbour and Wening 2014:73). By sampling these materials it may be possible to determine the extent of mixing, as well as to provide economic information related to the late nineteenth- to early twentieth-century use of the property by the Presbyterian Church. Several questions can be asked of these types of data. Recent archaeological studies have investigated contemporary and earlier deposits from a number of locations in downtown Santa Fe including the Palace of the Governors, the remains of Fort Marcy under the Santa Fe Civic Center, an early twentieth-century neighborhood under the former Capitol parking lot, a hospital/orphanage complex at the Drury Hotel, and excavations at the Santa Fe Railyard. Data from LA 144329 can be compared with these and other contemporary sites in downtown Santa Fe to see how they resemble or differ from those related to other industrial as well as residential sites. *Is the structure of the dormitory assemblage similar to that of a military establishment, which also combined industrial and residential functions? How does the assemblage compare to that of a hospital/orphanage as well as to those obtained from roughly contemporary residences? Is there evidence that occupants of the dormitory were provided with traditional New Mexican foods as well as those more typical to an Anglo-American diet, or did the latter predominate?* For example, the Spanish in New Mexico mainly consumed sheep and goat meat, with cattle, pigs, and chickens comprising a smaller part of the diet (Trigg 2005:102–103; pers. comm., Nancy J. Akins 2009, 2011, 2014a). Less is known about Anglo meat consumption in this early period. Even in the nineteenth century, Anglos consumed a good amount of sheep and goat, and relative proportions of sheep or goat and cattle were not that different from that of Hispanics (Anglos consumed only 6.2 percent less sheep and goat when only domestic animal counts are considered). Neither group used much pork or chicken (Akins 2014b).

The data needed to address these questions will be available through analysis of artifacts obtained from sampling sediment layers like Strata 100.3 and 100.4, which were found in Test Pit 1 (Fig. 1.3) and contained materials related to the Territorial-period occupation of the mission school. An adequate sample size for the materials from this period is difficult to define at this time, since the horizontal extent of suitable deposits has not yet been determined. Sufficient excavation needs to be performed in deposits of this type to provide an adequate sample of cultural materials, but complete excavation is not feasible because of the costs involved in recovering, analyzing, and curating artifacts. A sample of materials from 10–20 grid units within areas scheduled for data recovery investigations will probably be adequate for these purposes. However, the size of this sample could be adjusted upward if materials dating to discrete occupational periods are located. The actual nature of the Territorial-period deposits also needs to be assessed. Do they represent contemporary sheet trash, or were they redeposited during a later use of the property? Were these materials mixed with earlier deposits during later construction episodes?

Research Question 3: Spanish Colonial Economics

Late Spanish Colonial–period deposits occur as either a sheet midden or materials discarded on a field surface (Barbour and Wening 2014:109). These deposits are thought to represent trash related to the occupation of a nearby residence belonging to the Esquivel family (Snow 2011:14). The associated house, which has not been located, but could be within project limits (Fig. 7.2), is thought to have been built soon after the Spanish reconquest of New Mexico, ca. 1693–1716. The house was presumably occupied by the Esquivel family as late as the early 1840s, with the Newman family (related to the Esquivels by marriage) living there in 1844 (Barbour and Wening 2014:33). Analysis of artifacts recovered during testing suggests a late eighteenth- to early nineteenth-century date for the Spanish Colonial deposits investigated during that phase (Wilson 2014:97). While possible that deposits dating earlier in the eighteenth century also occur at the site, none have as yet been documented.

Several questions can be generated for these deposits, based on an economic model developed for data

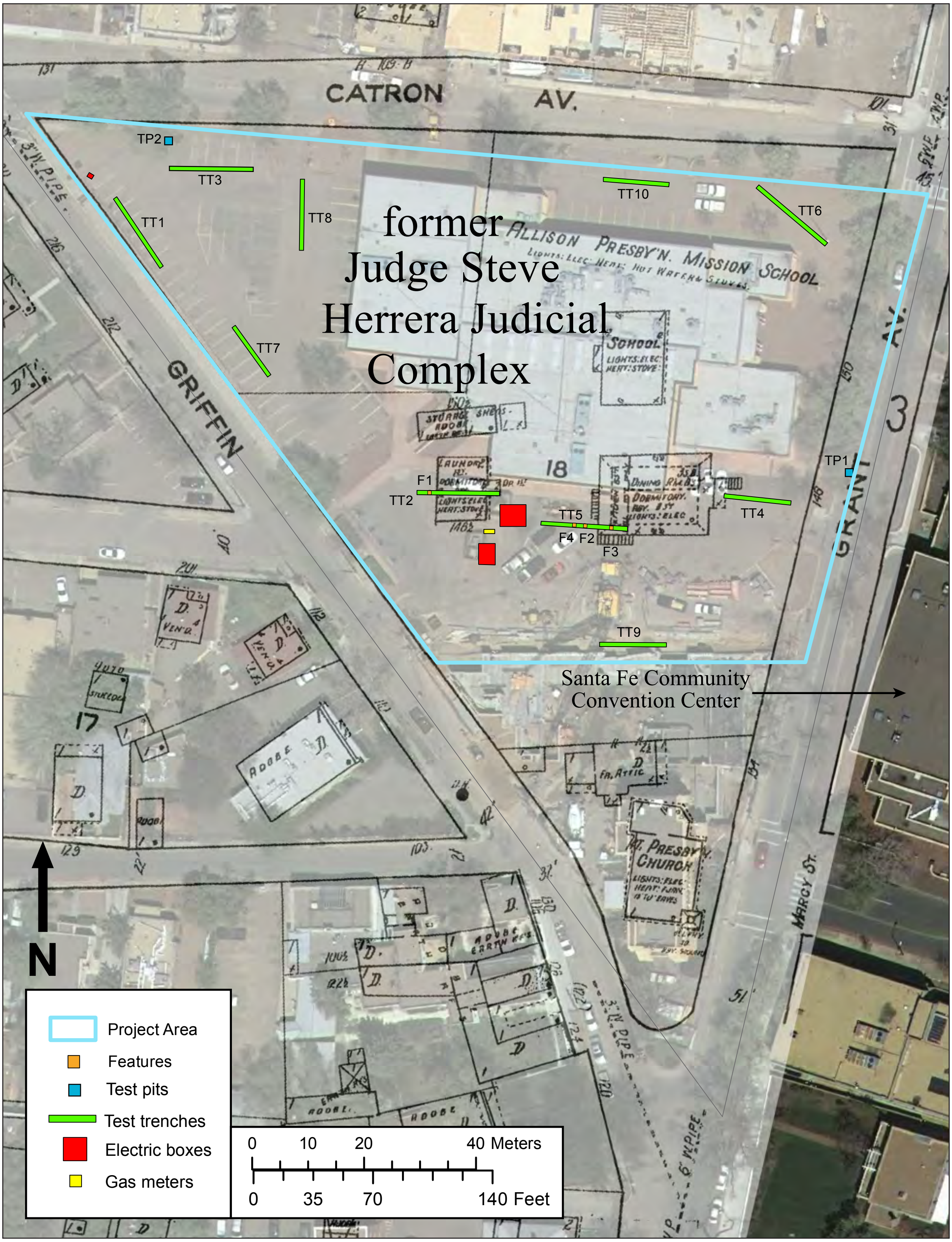

Figure 7.1. Santa Fe Sanborn Fire Insurance map, sheet 2; rectification to the modern Santa Fe cityscape.

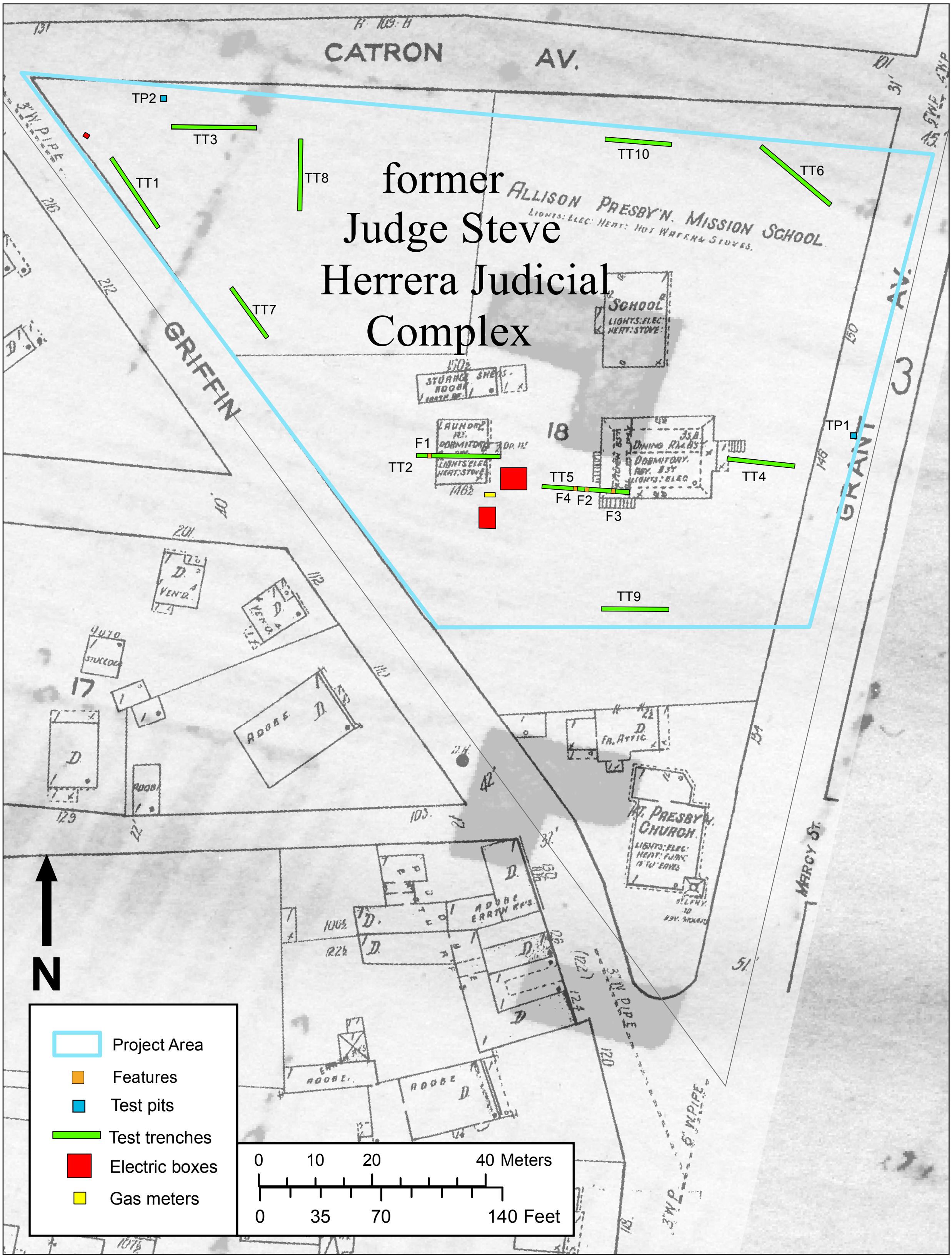

Figure 7.2. Joseph Urrutia 1766 map of Santa Fe and Santa Fe 1921 Sanborn Fire Insurance map, sheet 2; rectification to the modern Santa Fe cityscape.

recovery excavations in the Pojoaque Corridor and applicable to these remains (Moore 2000). This model examines characteristics of Spanish artifact assemblages in relation to the type of transportation systems used and the source from which goods were imported. Improvements in transportation systems are expected to appear in archaeological assemblages as changes in percentages of durable goods. When the New Mexican trade system expanded to include goods imported from the eastern United States, an increase in percentages of durable goods should have occurred, and many goods should reflect non-Spanish Euroamerican manufacture.

Trade throughout the Spanish Colonial period depended on goods obtained from Mexico and transported north by institutions as well as individual entrepreneurs. Goods were initially obtained from Mexico City and later from Parral during the Early Spanish Colonial period, and were transported north in two ways. Best known was the mission supply system in which goods were hauled north in large wagons on a triennial basis. Less is known about independent merchants who also carried merchandise north, though there is some evidence for private freighting by wagon (Chavez 1992:55; Hendricks and Mandell 2002:268–269) and pack animals (Sanchez 1993; Snow 1993). Current analysis of data from Spanish sites in New Mexico suggests that the supply of durable goods was better during the Early Colonial period than it was in the Late Colonial period (Moore 2001, 2003, 2004), and this in turn suggests that methods used for transporting goods north were more efficient during the early period. While the mission-supply caravans continued for a time after the Spanish return in 1693, they were soon eliminated and trade came to depend on annual caravans to the south, with goods transported by mule. Despite the almost annual nature of these caravans, they appear to have been less efficient in supplying goods to the province than were earlier methods. This was partly due to the dangers involved, with hostile Indian attacks usually threatening to interfere with trade. However, the main reason for this disparity may simply have been the fact that New Mexico had little to offer in the way of easily transported exports that could be used to barter for manufactured merchandise in the south, except for sheep, the export of which was often restricted or forbidden (Baxter 1987).

Trade with the United States began almost immediately after Mexico obtained its independence from Spain in 1821, though initially at a rather low level. Until at least the 1850s and probably later, goods flowed into New Mexico from two directions—south and east—and introduced more abundant and cheaper durable imports to the inhabitants. Numerous trade caravans entered New Mexico via the Santa Fe Trail on an annual basis, except for hiatuses before and during the Mexican War, with large wagons used to haul goods from the east. While the ultimate destination for most of these goods was further south in Mexico proper, some traders would stop in New Mexico as well. This system represented a huge increase in efficiency over the traditional method of importing goods on mule back, and increased supplies of imports tremendously, though traditional patterns of consumption were only slightly affected. Trade continued over the Santa Fe Trail until the railroad finally reached the vicinity of Santa Fe in 1880. Not only did the railroad represent a tremendous improvement in transport over the wagon trains of the Santa Fe Trail period, it also affected traditional consumption patterns to a far greater degree than did trade over the Santa Fe Trail.

Evidence of the differences between these economic periods is visible in archaeological assemblages from historic Spanish sites, and demonstrates the effect transportation efficiency had on the supply of durable imports and the use of locally manufactured goods. The Spanish Colonial assemblage from LA 144329 can be used to expand and supplement the database used for this economic analysis, and should provide additional detail on how residents of the capital fit into the economic system. Since Santa Fe served as the economic as well as political capital of New Mexico during the Spanish Colonial period, we expect to see some disparity in percentages of imported goods in assemblages from the capital versus contemporary sites in the hinterlands. Durable imports should comprise a higher percentage of the assemblage from LA 144329 than in sites located outside the capital, if this model is correct in its assumptions. Similar percentages should be evident at contemporary Spanish sites in Santa Fe. In contrast, Late Spanish Colonial period deposits from Santa Fe should exhibit lower percentages of durable imports than are evident in Early Spanish Colonial–period assemblages because of changes in the transport system discussed above.

Data for examining the economic model should be available from known Spanish Colonial–period deposits at LA 144329, as well as other deposits that might be encountered during data recovery. A sample of Spanish Colonial materials will be obtained from any locale where intact deposits are encountered, since materials from a range of temporal periods could be available, feasibly extending from shortly after the reconquest in 1693 to the early Santa Fe Trail period. Analysis of materials from each deposit found should permit the determination of any temporal differences between those deposits that could facilitate a more detailed testing of the economic model through time. Even if deposits from multiple periods are not encountered, the assemblage from LA 144329 can be compared with those from other sites both within and outside Santa Fe, also allowing us to test the economic model. Without knowing the extent of Spanish Colonial deposits, determining what might constitute sufficient samples for this analysis is difficult, and that determination must be made during data recovery excavations. While most intact Spanish Colonial–period deposits are expected to occur in areas scheduled for data recovery, the parts of the property slated for monitoring and the area under the existing building will also be carefully watched for evidence of similar deposits. If such are found, they will be sampled by excavation.

Research Question 4: The Changing Economy in Santa Fe

Significant economic changes should be evident between the Late Spanish Colonial–period occupation of Santa Fe and the late nineteenth- to early twentieth-century occupation as represented by deposits at LA 144329. Besides the changes in transportation systems and sources of imported goods discussed in Research Question 3, this variation is also due to the changing ethnic makeup of Santa Fe, with a large influx of people from the eastern United States beginning after 1846 when New Mexico was annexed by the United States. This variation is expected to be visible in artifact patterns, as well as in the types of foods consumed by the Spanish occupants versus the immigrants, unless the immigrants were completely assimilated into the existing society. Since total assimilation appears to have been rare, we should be able to see the presence of the newer residents from the eastern United States in the trash they left behind.

By comparing patterns of material culture use and function we should be able to discern the degree to which immigrants from the eastern United States either emulated the native Spanish and Indian populations or differed from them. This will help determine the degree of assimilation demonstrated by the immigrants, which is expected to be fairly low. Data generated during further excavations will provide a rather coarse-grained level of comparison between the Spanish period in Santa Fe and an occupation marking the influx of Anglo-American immigrants. However, these comparisons can be brought into finer resolution by using data derived from other archaeological excavations conducted in downtown Santa Fe and northern New Mexico in general, which should provide information from intervening occupational periods as well as more data from the periods represented at LA 144329.

Data needed to address this research question should be available from further excavations in deposits dating to the late eighteenth to early nineteenth century and from the late nineteenth to early twentieth century. By assigning artifacts to functional categories, the types of uses represented in these assemblages can be compared and contrasted. Evidence of food preference differences and similarities between periods can be examined using data derived from the analysis of faunal remains, as well as from macrobotanical and flotation samples.

Research Question 5: Why No Evidence for a Prehistoric Pueblo Occupation?

Prehistoric Pueblo deposits associated with LA 1051 at the Santa Fe Civic Center occur within about 30–45 m of the east boundary of the former Judge Steve Herrera Judicial Complex property. So, why was no evidence for a Prehistoric-period occupation of the project area encountered during test excavations? Ten percent of the native sherds recovered during testing were assigned to types made during the Coalition period, and Wilson (2014:97) suggests that their presence is indicative of some mixing of Historic and Prehistoric materials. Thus, there is a good potential for prehistoric Pueblo remains to occur within project limits, though where and how common they might be cannot be predicted.

This research question is aimed at attempting to determine why no discrete Coalition-period component was found at LA 144329 during testing. Since there is a very high probability that any structural remains associated with this potential occupation were removed during construction in the 1930s, any evidence of this possible occupation should consist of midden deposits and/or extramural features. Several types of data can be used to help address this question. Intact deposits or extramural features would indicate the presence of an earlier component that was difficult to discern during testing. However, the recovery of scattered sherds and other materials associated with an earlier occupation mixed in with later Historic-period deposits would tend to suggest that the prehistoric sherds recovered during testing were simply part of a large halo of materials surrounding LA 1051, located to the east under the Civic Center.

Summary

Five research questions are posed for this study, most of which are economic in orientation. The exceptions are Research Questions 1 and 5. Research Question 1 is aimed at exploring the accuracy and precision of historic maps, and their level of utility in predicting the locations of potential remains of former buildings. Research Question 5 asks whether or not there is evidence for a Prehistoric Pueblo occupation on the property. The ultimate aim of Research Questions 2–4 is the exploration of economic changes in response to variations in transportation and political systems, and to an influx of immigrants from a very different economic system. While wealth structure is not taken into account by this model, it could have an important role and should be explored if the predicted patterns are not upheld by the data recovered by this study. Excavations in portions of the property scheduled for data recovery investigations will provide most of the data used to address these questions, and will be supplemented by data from parts of the site slated for monitoring. Comparative data will be provided by earlier studies of historic sites in Santa Fe, both from the Spanish Colonial period as well as the Santa Fe Trail and Railroad periods.

8 Data Recovery Field Methods

James L. Moore and Jessica A. Badner

This chapter provides a general overview of field methods that will be used during site excavation and monitoring. While the same general methods will be used throughout the project, some variation in specific application will be necessary because of the different goals of data recovery in areas with potentially intact cultural deposits (shown in green in Fig. 8.1) versus those slated for monitoring (shown in red in Fig. 8.1) and the unexamined area under the existing building, which is scheduled for further exploration. Methodology may also vary by the types of features being examined. For instance, the methods used to study building foundations will vary greatly from those used to examine middens. General methods of excavation that will pertain in most situations are discussed first, followed by more specific applications tailored to the needs of the various types of resources that will be investigated.

General Excavation Procedures

Horizontal Proveniencing: The Grid System and Excavation Units

A Cartesian grid system that ties all measurements into the NAD 83 UTM projection will be established, allowing precise placement of excavation areas and features onto overlays of aerial photographs showing the current configuration of buildings on the property. A 1 by 1 m grid system will be imposed over the entire site to facilitate horizontal referencing, with grid lines established at even meter intervals within the UTM system. Individual excavation units will be referenced by the grid lines that cross at their southwest corners, and grid lines will be labeled according to the last three digits in their UTM designation. Thus, a grid line placed along the E345567 UTM line will be labeled as the 567E grid line.

Because most of the excavation area surrounds a large building and line of sight will be impeded, precise locations for a minimum of two datums will be established with a GeoXH 3000 series GPS unit. Potential datum point locations will be post-processed using Pathfinder geo-corrected data, and the most accurate of these points will be designated as the main site datum. Mapping will be conducted primarily with a total station, but a GeoXH GPS unit may also be employed. While a total station will be used to map grid unit and feature locations during data recovery, it may be more expedient to use a GPS for this purpose during monitoring, because mapping datums will be difficult to maintain during that phase of investigation. Though 1 by 1 m grid units may not be the largest unit of excavation under all circumstances, all provenience units will be tied to the established Cartesian coordinate system and given sequential numbers referencing the southwest corner; the units will be mapped with a total station.

OAS will conduct excavations using 1 by 1 m excavation units, non-grid excavation units larger or smaller than 1 by 1 m, and test trenches. Traditional 1 by 1 m excavation units will be employed as the default option for exploratory grid units used to further define stratigraphic deposits and their associated temporal components within the excavation area. OAS will excavate a minimum of 40 sq m within the estimated 34,136 sq ft area recommended for data recovery outside the building. The actual area of excavation may increase depending on the nature and extent of discrete deposits. Using standard excavation methods, samples of materials will be obtained from discrete deposits where temporal differences occur or are suspected. Sample size will vary depending on the deposit's extent and cultural/temporal horizon. Small areas (less than 10 sq m) will be sampled by one to two grid units. Spatially extensive or unbounded de-

Figure 8.1. LA 144329, project area (former Judge Steve Herrera Judicial Complex) depicting areas recommended for archaeological data recovery and monitoring.

posits will be sampled by a minimum of two grid units. Up to 2 percent of deposits in zones containing deposits from previously examined temporal horizons may be excavated to recover further materials, unless a large sample of materials (in the thousands of artifacts) from that time period has already been obtained, in which case the deposit will be mapped and may be removed with mechanical equipment, but not tested.

Non-grid excavation units will be most typically employed when dealing with deposits filling or surrounding large structures because excavation by grid units in structural fill is time consuming and, especially in upper deposits, may provide a finer level of horizontal control than is needed or desired. Larger excavation units—with boundaries described by, but not delineated along the Cartesian grid system—will allow excavation to progress quickly and allow potential for mechanical excavation while emphasizing recording of vertical strata in order to document the sequence of depositional episodes over time. While it is necessary to know what soil stratum is represented, the grid unit location may not be as meaningful in these and other contexts. Using this strategy, excavation can be refined to 1 by 1 m units if, and when, tighter horizontal control is needed—for instance above floors or while sampling refuse or other intact deposits. Non-grid excavation units will also be employed during excavation of features smaller than 1 m in diameter, which will be bisected along north–south or east–west axes and excavated in halves. Thus, excavation units will differ in size and shape depending on the nature of the deposits being investigated.

Test trenches will typically be excavated using mechanical equipment and will be employed to define the extent of large features, to look for deeply buried foundations, and to further examine large areas across the site. Trench length will vary based on the nature of subsurface deposits but will not exceed 1.20 m in depth without an appropriate step back. Based on testing results, OAS anticipates that a minimum of three mechanically excavated trenches will be employed during excavation and will most probably be located between Test Trench 7 and Test Trench 2, to intersect the Test Trench 4 midden area, and along the eastern site boundary between Test Pit 1 and Test Trench 6 (Fig. 1.3).

Vertical Proveniencing: Strata and Levels

Just as the grid system is tied to a main datum, so are all vertical measurements. Thus, the main site datum is also used to reference all vertical measurements. However, in this case, rather than establishing an exact elevation above sea level for the main datum, it is assigned an arbitrary elevation of 10 m below datum. This procedure also allows us to avoid problems inherent in dealing with both positive and negative measurements. Since it is often difficult to use one datum to provide vertical control for an entire site, subdatums will be established when needed. Horizontal and vertical coordinates will be measured for each sub-datum with a total station so that its location relative to the main datum can be plotted.

The treatment of deposits will vary according to their nature. Samples of intact cultural deposits encountered in areas slated for both data recovery and monitoring will be carefully excavated to preserve as much of the vertical relationship between materials as possible. Such care will not be taken with noncultural or mixed deposits encountered in areas designated for monitoring, because the relationship between artifacts in deposits used as artificial fill is rarely meaningful. For example, trash can be discarded in one area and used as infill in another. Artifacts can be plentiful in both contexts, yet they have completely different meanings. Intact refuse is made up of materials that were discarded on purpose, and can often be separated by strata to determine the sequence of deposition, allowing researchers to look for sequential changes in artifact assemblages. Artifacts in infill, or those that have been moved or rearranged by construction activities, rarely have any similar meaning. While intact refuse deposits require careful excavation to preserve the relationship between artifacts discarded at different times, noncultural and secondary deposits tend to be jumbled and mixed, and the relationship between artifacts is almost always obscured because the assemblage was moved from its original context and redeposited. Thus controlled excavation in 1 by 1 m grid units may be unnecessary under some circumstances. While we will always attempt to excavate intact cultural deposits by stratum until they have been adequately sampled, that level of control will only be applied to mixed deposits if it appears that those locations will provide data of potential importance to site interpretation.

In areas slated for data recovery or further exploration, small samples of noncultural or secondary deposits overlying cultural strata—excluding pavement and base course—may be excavated to determine their nature and relationship to underlying deposits in advance of mechanical removal. These deposits will likely be exposed during the routine excavation of exploratory grid units, as discussed above. When mixed deposits are removed with mechanical equipment from large areas, the expanse will be designated as a non-grid excavation unit and elevational control will be maintained with a total station.

Excavation by strata is considered optimal in cultural deposits because soil layers tend to represent specific depositional episodes. While artificial fill is culturally deposited, the types and distribution of artifacts those layers contain have little meaning because the context in which they originated has been lost. Thus, trash deposits that have become artificial fill when moved to level areas during construction no longer retain their integrity and may be removed in bulk.

While testing has already defined soil strata sequences for some of the areas in which further examination is planned during data recovery, additional exploratory grid units will be needed in other parts of the site, especially under the existing building. Mechanically excavated trenches may be used to provide exposures in previously unexplored areas outside the building, with adjacent hand-excavated exploratory grids used to more closely investigate the nature of the deposits. In other previously unexplored areas, exploratory grids may be used alone to examine the nature of subsurface deposits. Hand-excavated exploratory units will consist of 1 by 1 m grid units dug in arbitrary 10 cm vertical levels unless natural stratigraphic divisions are encountered. When natural divisions are found, they will be used to delimit the boundaries of a level. For outside exploratory grid units, including those that were excavated during testing and any further units of this type that might be required during data recovery, soil strata will be used as the primary units of vertical excavation. Exceptions may include noncultural deposits, artificial fill, and cultural strata that are very thick and need to be subdivided to make excavation easier.

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

Recording Excavation Units

The excavation of a grid unit or other area will begin by filling out a form with initial depths and other pertinent data for the location's surface. Ending depths for each succeeding level will be recorded on relevant forms, providing a record of all excavations. Recording forms will be completed for each level, including the surface, and will describe soils, inventory cultural materials recovered, and provide other observations considered relevant by the excavator or site supervisor including depths, stratum, and level. A description of soil matrix will also be provided; it will include information on cultural and noncultural inclusions, presence of building rubble, evidence of disturbance, and how artifacts are distributed if variations are noticed. In addition to narrative description, excavation units will be documented with digital photography and drawn in profile. Photographs will include a sign board showing the unit number and date, a north arrow, and a metric scale. Corresponding stratigraphic profiles will be drawn on metric graph paper.

Recovery of Cultural Materials

Artifacts will be recovered in two ways: visual inspection of levels as they are excavated during monitoring and screening though hardware cloth with variably sized mesh, as described below. Archaeobotanical and adobe samples will be collected in bulk and will be processed in the laboratory rather than the field. Regardless of how cultural materials are collected, they will all be inventoried and recorded in the same way. Collected materials will be assigned a field specimen (FS) number, which will be listed in a catalog and noted on all related excavation forms and bags of artifacts. This will allow us to maintain the relationship between recovered materials and where they were found. All materials collected from an excavation unit will receive the same FS number. Thus, if metal, ceramic, and bone artifacts are recovered from the same level, they will all be designated by the same FS number, as would any samples taken from that level. Architectural or chronometric samples and point-provenienced artifacts that are not associated with specific excavation units will receive unique FS numbers.

Most artifacts will be recovered by systematically screening soil strata. All sediments from 1 by 1 m grid units and features will be passed through screens. Two sizes of screen will be used. Most fill will be passed through 1/4-inch mesh hardware cloth, but 1/8-inch mesh hardware cloth will be used in certain circumstances. While most artifacts are usually large enough to be recovered by 1/4-inch mesh hardware cloth, some that are too small to be retrieved by that size screen can also provide important clues to the activities that occurred at a site. However, there is a trade-off in gaining this additional information. As the size of mesh decreases, the amount of time required to process soil and recover artifacts increases. Sampling is a way to balance these concerns; thus, due to time and labor concerns, smaller mesh will be used only in specific situations. These contexts will include, but are not limited to: rich intact midden deposits, 5 cm levels directly above intact floor surfaces, and fill from small, intact pre-Pueblo Revolt–era features (if any are found). Cultural features larger than 2 m in diameter (middens for instance) will be sub-sampled by screening the equivalent of one grid unit with 1/8-inch mesh. All intact cultural features smaller than 2 m in diameter will be bisected and screened with 1/8-inch mesh. By proceeding in this manner, a sample of smaller cultural materials will be obtained without substantially increasing costs. The use of 1/4-inch mesh should provide the level of infomation necessary to interpret the remains at this site, especially when amplified by a sample passed through 1/8-inch mesh. Should sampling by 1/8-inch mesh show that a substantial number of important, analyzable artifacts are being missed through the use of 1/4-inch mesh, excavators will switch to the smaller mesh.

Artifacts from noncultural strata or mixed deposits encountered during monitoring, including artificial fill, will normally be recovered by visual inspection for analysis, especially if they appear to be temporally diagnostic, complete, or otherwise have potential to expand the database in a meaningful way. While this will not be a statistically valid sample, it will provide more detailed data about site formation processes. In some instances, it may be preferable to recover a sample of artifacts from noncultural strata by screening, which will be performed at the discretion of the site supervisor.

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

Mechanical Excavation

Mechanical excavation using a backhoe or blade may be used in conjunction with data recovery investigations as well as during monitoring. In particular, a blade will be used to expose the surfaces of known foundations for historic buildings, and to aid in our search for the foundations of other building that might exist at LA 144329. A backhoe will be used to excavate exploratory trenches under certain conditions, including to help define the extent of large features like trash middens if hand excavation is considered to be inefficient for this task, to look for deeply buried foundations and to further define stratigraphy. All mechanical excavations will be recorded as non-grid excavation units and mapped with a total station so their locations can be accurately plotted on site plans; documentation will include the dimensions of excavation areas, beginning and ending depths, and a description of soil strata encountered and any cultural materials noted. Any previously unknown features identified by this method will be further examined using standard excavation techniques.

Monitoring

Two sections of the property containing the former Judge Steve Herrera Judicial Complex have been recommended for monitoring because testing failed to discover any potentially important cultural deposits or features in those areas (Barbour and Wening 2014:110). Areas slated for monitoring are shown in Figure 8.1, and consist of a parcel in the northwest to central part of the property, and a parcel along the southern edge of the property with a corridor extending north to the existing building. Since only small percentages of these areas were carefully examined during testing, it remains possible that they contain intact cultural deposits or features. Because of this potential, one or more archaeologists will be present during the removal of sediments from these parcels during grading operations in order to monitor construction activities and watch for potentially important cultural deposits, features, and structural remains. Monitoring will end when pre-occupational strata are reached during grading operations.

In the event that potentially important cultural remains are exposed, the monitoring archaeologist will halt construction activities and the cultural remains will be examined and assessed in order to determine whether more detailed recording and/or excavation are needed. If this is the case, then construction activities in that area will be stopped until excavation and/or recording are completed. The excavation procedures detailed elsewhere in this chapter will be implemented if the cultural resources require controlled excavation. Construction will resume in that area only when recording and/or excavation are finished. As noted earlier, any artifacts observed during monitoring that have the potential to provide further information on site occupation or formation processes will be collected and provenienced.

Explorations under the Former Judicial Complex Building

Most of the Judicial Complex building is set on concrete slabs, with five crawl spaces (ca. 4 ft deep) under parts of the eastern section of the building (Fig. 8.2). The building covers 34,194 sq ft (3176.6 sq m), but the crawl spaces only occupy 12,473 sq ft (1,158.7 sq m), or 36.5 percent of the space under the building. Thus, some of the area under the existing building may be comparatively intact, and cultural deposits potentially extend under parts of it. Since it was not possible to place exploratory grids within the building during the testing phase, that area will be examined during data recovery. This exploration will occur when most data recovery and monitoring excavations outside the building are finished, allowing excavators to build upon information concerning the locations, content, and extent of cultural deposits found outside the building footprint.

To examine the area under the existing building, six to ten exploratory grid units will be excavated below the concrete slabs. Locations for excavation areas will be selected in the field, based on information provided by exterior excavations as noted above, and will focus on zones with the potential to contain portions of known cultural deposits, features, or foundations. When the locations with the highest potential to provide further information have been defined, sections of concrete slab will be removed, opening a zone of sufficient size to allow the excavation of an area that measures at least 2 by 2 m. Excavation will begin with a single grid unit, and based on the results of that exploratory grid unit and its contents, the excavation area may be expanded into part or all of the remaining 2 by 2 m excavation area. Standard excavation techniques, as defined above, will be used. Similar to the procedure followed with deposits outside the building, the content and date of deposits within exploratory grid units under the building will be assessed in order to determine whether a representative sample of materials from the time period represented by those deposits have already been recovered. If such is the case, excavation will end with a single grid unit. However, if that period is not well represented in the previously acquired sample, further grid units will be excavated in order to increase sample size.

Should extensive intact cultural deposits, features, or foundations be encountered that cannot be adequately sampled in a 2 by 2 m area, the client will be consulted to determine how to best gain access for further excavation. Depending on the depth and extent of cultural deposits, options could include removing larger sections of the concrete slab or postponing further excavation until after the building has

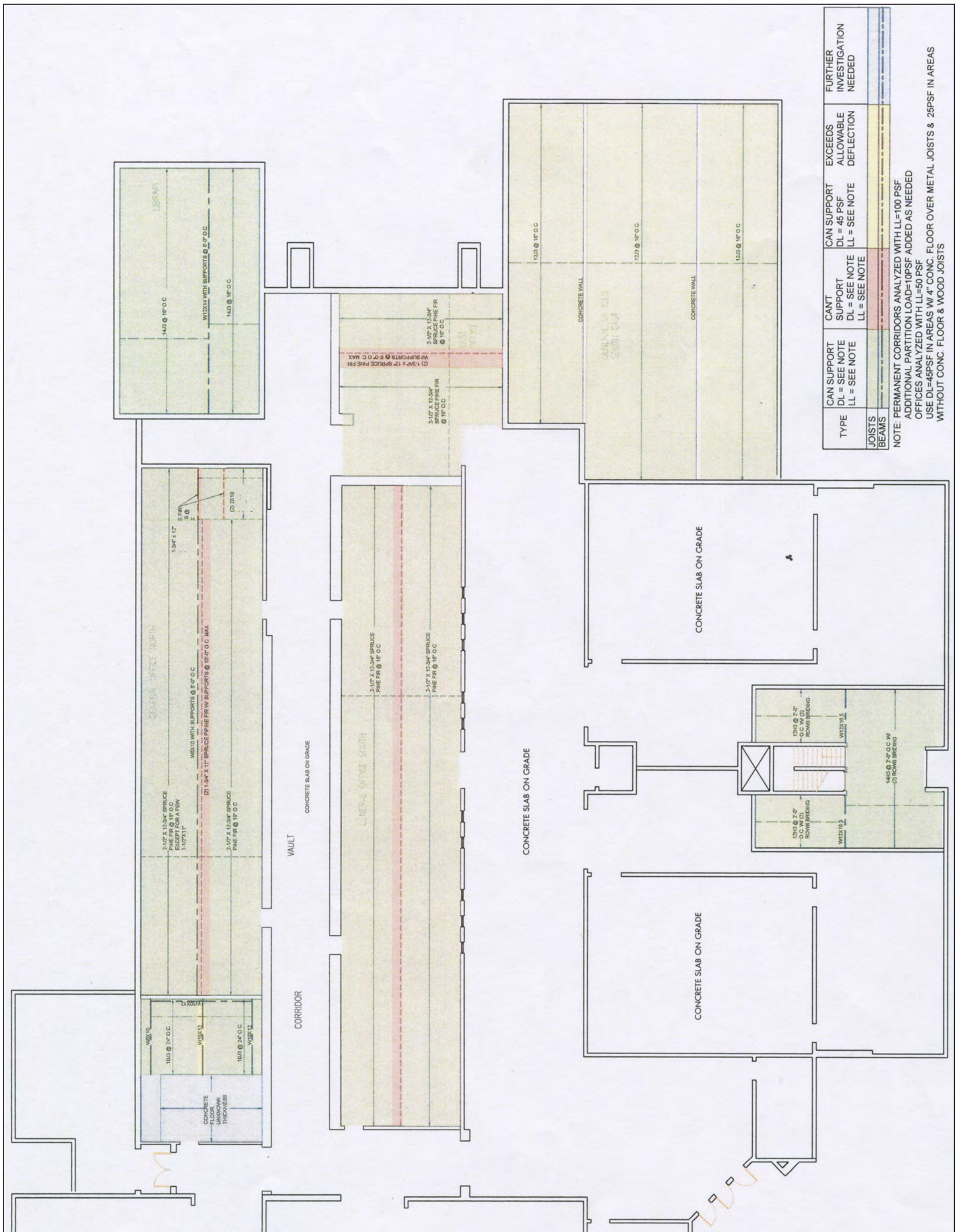

Figure 8.2. Plan of the old Judge Steve Herrera Judicial Complex building showing the location of crawl spaces.

been demolished. Following building demolition, OAS will complete any controlled archaeological excavations that might have been delayed pending access to the subfloor area. When any such investigations are complete, OAS will monitor earth-moving activities for the unexplored area under the existing building. Should any further archaeological deposits, features, or human remains be discovered in this area, further documentation of those remains will be completed, using the criteria discussed above.

Specific Excavation Methods

Since the removal of pavement and grade cutting will be staged across the project area in order to facilitate continued use of parking areas, features and structures may also need to be examined and mapped in stages. The limits imposed by construction staging might serve to delimit sampling in areas containing extensive cultural deposits, but this can only be determined during fieldwork after weighing the size of a sample already obtained by excavation and the possibility of encountering other important data in an adjacent construction area.

The excavation of various parts of LA 144329 will be approached in different ways, even though the mechanics of excavation will be essentially the same. Most excavation will be accomplished using hand tools. However, in some cases mechanical equipment will be used to expedite the removal of noncultural deposits, excavate trenches, expose cultural features, and to facilitate excavation of areas where controlled excavation has exhausted information potential by exceeding the percentage of area designated for excavation in a particular deposit. In particular, mechanical equipment may be used to strip overburden from buried extramural cultural strata, to expose structural foundations, and to explore areas in which structural remnants are expected to exist. Methods of excavation will vary depending upon whether a structure, a feature, or an extramural area is being examined.

Field Examination of Ceramic Samples

Relative dating of cultural deposits and features may be facilitated during fieldwork by the examination of ceramic artifacts recovered during excavation. When deemed necessary by the site supervisor, a ceramic specialist from OAS will be asked to examine bags of pottery recovered during excavation from specific deposits in order to assess the potential date of an assemblage and the level of mixing. This type of examination will aid in determining whether deposits that are currently being examined date to a period similar to that of previously examined deposits or whether an earlier or later period is represented. Information gained by this procedure will help determine whether to further sample a deposit, based on whether materials from that period have already been investigated and the size of the existing sample. This procedure may also help pinpoint the presence of potential prehistoric deposits and help determine the level of any mixing with later materials that might have occurred.

Structures

In the course of construction of the 1937 Harvey Junior High School, now the former Judge Steve Herrera Judicial Complex, the superstructures of most of the buildings that had been on the site were demolished. Only foundations were encountered during testing, and that is all that can be expected for any of the buildings that once stood on the property. To determine the extent of structures found during testing, mechanical equipment will be used to scrape overburden away from the tops of remaining foundation walls. Hand tools may be used to finish exposing foundations, concentrating on defining their total remaining extent so they can be accurately mapped. One to 2 m wide trenches will be excavated at selected locations around the circumference of each structure to expose foundation sections and allow for detailed recording and photographic documentation. This excavation will either be accomplished by mechanical equipment or by hand, depending on the fragility of the foundations. Locations for examining and describing foundations will be selected while in the field, but at minimum, one trench should be excavated on each side of a building foundation. Since the excavation of these trenches will be aimed at uncovering and recording architectural features rather than cultural materials in stratigraphic sequences, they will be oriented to architecture but mapped and recorded within the Cartesian coordinate system. These trenches will not be excavated by level or stratum, and fill removed from them will not be screened to recover artifacts. Although names can be assigned to the known structures at LA 144329, they will also be assigned numeric designations, as will any individual rooms that can be defined.

Structure records will include information on size and dimensions, construction technique, and a general description. Structure foundations will be mapped with a total station, and detailed scaled plans of each structure will be drawn, illustrating the locations of rooms and internal features, artifacts found in direct contact with floors (if any are found), and any other details considered important. A series of digital photographs will be completed for each structure showing its form, individual rooms, construction details, and the relationship of features with other architectural elements.

Features

Features will constitute individual units of excavation, and will be assigned a unique number as they are encountered at a site. Small features (less than 2 m in diameter) may be excavated differently than large features (greater than 2 m in diameter). After defining the horizontal extent of small features, they will be divided in half. One half will be excavated in 10 cm arbitrary levels to define internal stratigraphy, then fill will be screened through 1/8-inch mesh hardware cloth and a stratigraphic profile will be drawn. The second half will then be excavated by stratigraphic unit and fill will be screened through 1/8-inch mesh as well. Hearths will be excavated as a unit and all contents will be collected as a sample for archaeobotanical examination. A second cross-section illustrating the vertical form of a feature perpendicular to its profile will be drawn, and a plan of the feature and a form that describes and details its shape and contents will be completed.

Large features, such as trash middens, will be sampled in 1 by 1 m grid units. The number of exploratory grid units will be kept to a minimum, and as much of the feature as possible will be excavated by soil strata. At least two perpendicular profiles of the excavated area will be drawn, and forms and plans that describe and detail the feature's shape and content will be completed.

A series of digital photographs will be taken during and after excavation of all features. Other photographs showing construction or excavation details may be taken at the discretion of the excavator.

Extramural Excavation Areas

Areas outside structures were often used for a variety of work and recreational activities. Thus, certain zones may be examined to determine whether this type of activity area can be defined. Excavation in extramural areas will proceed by 1 by 1 m grid units. Most soil encountered during these investigations will be screened through 1/4-inch mesh hardware cloth, though a smaller-sized mesh may be used to sample certain areas. Plans of each extramural area investigated will be drawn, detailing the grid units investigated and any features that are encountered. Excavation will continue until the basic size and content of an extramural area are defined.

Collection of Botanical Samples

Botanical samples will only be obtained from contexts with the potential to yield information relevant to this study. For the most part, they will include 2 liter soil samples from trash midden contexts or from within cultural features, and at least one sample will be taken from each stratum defined. Multiple samples from strata may be obtained, with the maximum number being one sample per stratum from each grid unit. Noncultural strata and artificial fill layers will not be sampled for botanical remains. Macrobotanical samples, if observed, will be collected for analysis and identification, and will be provenienced according to the level from which they were removed.

Collection of Chronometric Samples

Features with burned fill will be evaluated for collection of chronometric samples. Radiocarbon samples and/or dendrochronological samples will be collected from intact Spanish Colonial thermal features when sufficient material is available, and fill has been determined by the excavator to be from a primary context. If burned features with oxidized rinds are encountered they will be evaluated for archaeomagnetic sampling by an expert. Samples for optically stimulated luminescence dating (OSL) may be collected from a stratigraphic profile if that stratigraphic sequence has the potential to provide temporal data that will be useful in evaluating relevant site formation processes.

Backfilling of Excavation Areas

When excavation is completed in a portion of the property, that area will be backfilled by mechanical equipment, provided this fits within the construction schedule. All backfilling in areas scheduled for excavation will be coordinated with the property managers and construction personnel. No backfilling will occur in areas excavated during monitoring unless those areas are not scheduled for further construction activities.

Special Situations

Sensitive Materials

Since no evidence for a prehistoric occupation of the site was found during testing, the presence of any formal on-site human burials is considered unlikely. However, the occurrence of human burials on adjacent property and during utility monitoring adjacent to the property indicates a possibility that human remains could occur within project limits and OAS is applying for a site-specific burial excavation permit. Upon any finds of human bone or burials while in the field, OAS will halt all mechanical excavation within 50 ft of the discovery and notify the City of Santa Fe Police Department, Office of the Medical Investigator, and HPD. The consultation procedure is discussed in Appendix 1 along with specific excavation techniques and analytic standards and procedures. If consultation determines that human remains cannot be left in place, OAS will activate its site-specific burial permit and remains will be excavated in accordance with 4.10.11 NMAC, following methods stipulated in Appendix 1 and on file with HPD. The excavation methods used will include defining the burial pit, use of hand tools to expose skeletal materials, mapping and photographing of the position of the skeleton and any grave goods, and retrieval of soil for pollen analysis. Field and laboratory treatment of human remains and other sensitive cultural discoveries will be based on the Museum of New Mexico policy adopted March 20, 1986, “Collection and Display of Sensitive Materials” (SRC Rule 11; Appendix 2). If human remains or other sensitive materials are uncovered, no person will be allowed to handle or photograph them except as part of data recovery efforts. Data recovery–related photographs of sensitive materials will not be released to the media or general public. The preferred final disposition options for any human remains will be on site, as determined in consultation with Santa Fe County, HPD, and appropriate descendant communities.

Unexpected Discoveries

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

9 Euroamerican Artifact Analysis

Adapted from Matthew J. Barbour (2014)

Euroamerican artifacts represent objects that were not available in the American Southwest prior to the establishment of European settlements in the sixteenth century. Assemblages typically include a variety of artifact types such as bottle glass, can or metal fragments, and wheel-thrown ceramics reflecting domestic, commercial, agrarian, and industrial activities and behaviors. Based on the results of prior testing at LA 144329 (Barbour and Wening 2014), Euroamerican artifact content should be abundant in both U.S. Territorial and Spanish Colonial–period contexts.

Analytic Methods

The OAS Euroamerican analysis format and procedures incorporate the range of variability found in sites dating from the sixteenth to the twentieth century throughout New Mexico (Boyer et al. 1994). These methods are loosely based on South's (1977) Carolina and Frontier artifact patterns and the function-based analytical framework described by Hull-Walski and Ayres (1989) for dam-construction camps in central Arizona. This detailed recording format allows for the examination of particular temporal and spatial contexts and for direct comparisons with contemporaneous assemblages from other parts of New Mexico and the greater Southwest. Recorded attributes were entered into an electronic database (Statistical Package for the Social Sciences, or SPSS) for analysis and comparison with similar databases on file at OAS.

Functional in nature, OAS Euroamerican artifact analysis focuses on quantifying the utility of various objects. One benefit of this type of analysis is that "various functional categories reflect a wide range of human activities, allowing insight into the behavioral context in which the artifacts were used, maintained, and discarded" (Hannaford and Oakes 1983:70). It also avoids some of the analytic pitfalls associated with frameworks focused on categorizing artifacts strictly by material type (e.g., glass, metal, ceramic, mineral, etc.).

One weakness of material type–based analyses is that only a limited number of functional categories are represented in a single material class. For instance, metal, while beneficial for examining construction and maintenance materials such as nails and wire, does not consider patent medicines or other bottled goods in the same analysis because they are made from a different material (glass). In addition, variables such as finish, often chosen to analyze glass artifacts, are appropriate for glass containers, but not for flat glass, decorative glass, or other glass items like light bulbs, which can serve different roles within a single spatial and temporal context. The OAS analytic framework was designed to be flexible, documenting not only the qualities of each material type, but also the functional role of particular items.

In functional analyses, each artifact is assigned a hierarchical series of attributes that classify an object by assumed **functional category**, **artifact type**, and its specific role, or **function**, within that matrix. These attributes are closely related and provide the foundation for additional variables that, with increasingly more detail, specify an artifact's particular function. Each category encompasses a series of material types whose specific functions may be different but related. For example, a pickle jar and a meat tin are both assumed to have initially contained food. Both items would be included in the functional category for food, but each container is made from a different **material type**, and each had different function (can versus jar).

In essence, function-based analysis is based on an inventory of different artifact attributes where variables are recorded hierarchically to amplify the functional categories and provide a detailed description of each artifact, when possible. Attributes that commonly provide detailed information about individual artifacts and, in turn, functional categories include material type, date and location of manufacture, and artifact form and portion.

Chronometric data are derived from a variety of descriptive and manufacturing attributes, especially the latter. If an artifact retains enough information to derive beginning or ending dates, those variables are recorded under the **date** attribute. **Manufacturer** records the name of the company that produced a particular object. Together these data can be used to assign specific date ranges to an artifact based on known manufacture periods or the dates of operation for manufacturing companies. A related attribute is **brand name**. Many brand names also have known production periods that can provide temporal information. The manufacturer or brand name is generally listed as **labeling/lettering**; it is used to advertise the product and describe its contents and suggested use.

When evident, manufacture **technique**, such as "wheel-thrown" or "forged," is also recorded. Since some manufacturing techniques have changed over time, this attribute can often provide a general period of manufacture. A related attribute is **seams**, which record how sections of an artifact, particularly cans and bottles, were joined together during manufacturing. Through time, these processes were altered and are reflected in the types of seams used to construct various containers. The type of **finish/seal** is recorded to describe the opening of a container prior to adding the contents and the means of sealing it closed. Like **seams**, many finish/seal types have known manufacturing periods offering general temporal information. In addition, **opening/closure** records the mechanism used for extracting the contents of a container.

For some artifacts, attributes such as **color**, **ware**, and **dimensions** can also provide information on the period of manufacture. The current color of an artifact was recorded if determined to have diagnostic value. A good example is glass, where the relative frequency of various colors in an assemblage can provide some temporal information, since the manufacture and preservative processes have changed over time. **Ware** refers to china artifacts and categorizes the specific type of ceramic represented, when known. Because temporal information exists for most major ware types, this attribute provides relatively more refined dating information compared to seams and color. Dimensions of complete artifacts can also provide chronometric data, especially artifacts like nails or windowpane glass, where thickness or length of the object can be temporally sensitive.

In addition to temporal information, the manufacturing process of particular objects can be used to support functional inferences. **Material** records the type material(s) from which an object was manufactured (e.g., glass, metal, paper, clay). **Paste** describes the texture of the clay used to manufacture ceramic objects and is further defined by porosity, hardness, vitrification, and opacity. **Decoration** and **design** describe the type of technique used to apply distinctive decorative motifs to an object, such as china or glassware.

Several others attributes are used to quantify an object's condition and use-life. For each item, the **fragment/part** variable describes what portion of a particular form is represented. Fragments of objects that refit to complete or partial objects recovered from a single excavation context are recorded together as a **minimum number of vessels** (mnv) of one, and the number of specimens present represented by **count**.

Cultural alteration of an item to extend its use-life is recorded as *reuse*. This variable describes any evidence of a secondary function, and the **condition/modification** variable monitors any physical modifications associated with that secondary use. If environmental conditions have altered the surface of an artifact through either glass patination or metal corrosion, it is recorded as **aging**.

The appearance of an artifact is monitored as **shape**. This variable is generally used to describe the physical contours of complete objects. Finally, quantitative data recorded for most Euroamerican artifacts includes **length/ height**, **width/diameter**, and **thickness**. For this particular study, artifacts may not be weighed.

Research Questions

Data provided by the Euroamerican artifact analysis will be useful in addressing Research Question 2 and 4 (Chapter 7, this report). In particular, the structure of the Euroamerican artifact assemblage from LA 144329 can be compared with the structure of those from other contemporary industrial complexes in Santa Fe in order to determine how it varies from those of military, railroad, and hospital establishments, as well as private residences (Research Question 2). The proportion of Euroamerican artifacts in Spanish Colonial–period assemblages is an important aspect of Research Question 3, because the percentage of durable imports in Spanish assemblages is expected to vary temporally as well as with wealth structure. When compared with the Spanish Colonial assemblage, we may be able to gauge the degree to which Anglo-American immigrants either emulated or differed from local cultural patterns (Research Question 4).

Data derived from this analysis will also provide information in several critical areas, including chronology, activities performed at LA 144329, the functions of deposits and features, trade contacts, and social standing. Since this artifact category, unlike native pottery, for example, can often be assigned fairly accurate starting and ending dates, Euroamerican artifacts may be especially important in pinning down the dates of certain Spanish Colonial–period deposits. This analysis may yield critical information not only concerning the dates of certain deposits, but potentially the length of use of some features. The sources of various artifacts may provide an idea of the scale of the mercantile system represented in each site component, and how it differed from that of the Spanish Colonial period.

10 Faunal Analysis

Nancy J. Akins

Testing at LA 144329 within the former Judge Steve Herrera Judicial Complex recovered a small sample of bone (n = 103), much of which came from stratified deposits dating to the Territorial and Spanish Colonial periods. Although the sample size is small, it is consistent with other Santa Fe deposits dating to the same time periods. Most comparative assemblages with larger samples establish that with only one exception sheep and goat counts are consistently larger than for cattle, regardless of time period.

Analytic Methods

Bone from the data recovery at the former Judicial Complex will be identified using the OAS comparative collection following the established OAS computer-coded format. This format identifies the animal and skeletal element, how and if the animal and part was processed for consumption, and how taphonomic and environmental conditions have affected the specimen. The following describes and defines the variables:

Provenience-Related Variables. Provenience and stratigraphic information are linked to the data file through the Field Specimen (FS) number. During the analysis a lot number identifying a specimen, or group of specimens, that fits the description recorded in that line is assigned.

Specimen Counts. The count indicates how many specimens are described in a line of data. A bone broken into a number of pieces during excavation or cleaning is counted as a single specimen. Use of mechanical equipment and picks to excavate the hard clayey soil, and the often friable condition of the bone resulted in a great many shattered elements. Considerable effort will be taken to reassemble these elements in order to provide a greater level of identification and to keep from inflating the counts of unidentifiable specimens when these pieces were part of a shattered element.

Taxon. Taxonomic identifications are made to the most specific level possible. Identifications that are less than certain are flagged in the certainty variable. Specimens that cannot be identified to the species, family, or order are assigned to a range of indeterminate categories based on the size of the animal and whether it is a mammal, bird, other animal, or cannot be determined. Unidentifiable fragments often constitute the bulk of a faunal assemblage. Identifying these as precisely as possible supplements the information gained from the identified taxa.

Element Characteristics. The skeletal element (e.g., cranium, mandible, humerus) is identified then described by side, age, and the portion recovered. Side is recorded for the element itself or for the portion recovered when it is axial, such as the left transverse process of a lumbar vertebra. Another variable identifies the commercial cut for that particular body part. When modern butchering cuts are observed for domestic ungulates (cattle, sheep/goat, and pig) these specimens are assigned to cuts based on a butchering chart found in Schulz and Gust (1983:48). The cuts used include the head, tongue, neck, chuck, rib, short loin, sirloin, rump, round, hind shank, tail, short rib, short plate, brisket, arm, fore shank, and feet. When an individual specimen can be assigned to more than one cut, the one that held the larger portion is used.
Age is estimated generally and is determined to be: fetal or neonate; immature (up to two-thirds mature

size); young adult (near or full size with unfused epiphysis or young-textured bone); or apparently mature. The criteria recorded that contributes to age assessment includes size, dental development or wear, epiphysis closure, and whether the texture of the bone is compact, as in mature animals, or porous, as in less than mature animals. Age evaluation based on texture alone is not absolute since most growth in mammals takes place near the articular ends, and diaphyseal bone can be compact and dense while the bone near an end retains a roughened or trabecular structure (Reitz and Wing 1999:73). As a result, fragments from the same bone can be coded as different ages and juvenile bone is probably under-numerated. This is particularly true of the bone from the *Executive Office Building* project (Akins 2014b), where most of it was exfoliated or checked; in those cases, "mature" was recorded unless there was explicit evidence that the animal was young. When a part could be aged by epiphyseal fusion or dental wear, the age estimates are recorded in the comment variable.

The portion of the skeletal element represented by a specimen is recorded in detail to aid in discerning patterns related to processing. Indeterminate fragments are generally recorded as either long-bone shaft or end fragments, or as flat bones (small pieces that are probably cranial, vertebra, pelvis, carpals, or tarsals).

Completeness. Completeness refers to how much of the skeletal element is represented by the specimen (analytically complete, more than 75 percent complete but not analytically complete, between 50 and 75 percent complete, between 10 and 50 percent, or less than 10 percent complete). Completeness provides information on whether a species was intrusive and on the degree of processing, environmental deterioration, animal activity, and thermal fragmentation.

Taphonomic Variables. Taphonomy, or the study of preservation processes and how these affect the information obtained, has the goal of identifying and evaluating some of the non-human processes that impact the condition and frequencies found in a faunal assemblage (Lyman 1994:1). Taphonomic processes monitored include those caused by the environment and animals. Environmental alteration includes pitting or corrosion from soil conditions, sun bleaching from extended exposure, checking or exfoliation from exposure or soil conditions, root etching from the acids excreted by roots, polish or rounding from sediment movement, a fresh or greasy look, and damage caused by the soil or minerals

Animal alteration is recorded by source or probable source. Choices include: carnivore (gnawing, punctures, and/or crushing); probable scat; rodent gnawing; carnivore and rodent gnawing; and altered, but the agent is uncertain. Bones recorded as having "probable scat" alteration exhibit rounding on edges; also, portions of the inner and outer tables can be partially dissolved.

Burning. Burning can occur as part of the cooking process, part of the disposal process when bone is used as fuel or discarded into a fire, or after it is buried. Burn color is a gauge of burn intensity. A light brown, reddish, or yellow color or scorch occurs when bones are lightly heated; charred or blackened bone becomes black as the collagen is carbonized; and when the carbon is oxidized, it becomes white or calcined (Lyman 1994:384–388). Burns can be graded, reflecting the thickness of the flesh protecting portions of the bone; they may be dry, and light on the surface and black at the core, or blackened on only the exterior or interior, indicating the burn occurred after disposal when the bone was dry. Graded or partial burns can indicate a particular cooking process, generally roasting, while complete charring or calcined bone does not. Uniform degrees of burning are possible only after the flesh has been removed (Lyman 1994:387) and generally indicates a disposal practice. While a wide range of colors and intensities occur, this information is summarized in the burn-type variable, which identifies the intent rather than a detailed visual description of the specimen. Complete and some graded burns represent discard processes and are recorded as discard. Patterns that suggest the part was roasted (e.g., graded burns that are scorched where the flesh is thick and burned black at the end where there is little or no flesh) are recorded as "roasted." In other cases, the burn appears accidental or intentional (e.g., dry burns or a burned tip) and is recorded as such. Potential boiling is recorded as "boiled" (color change, waxy, rounded edges) or "boiled(?)" when it is less clear.

Butchering and Processing. Evidence of butchering is recorded as a combination of morphology, tool type, and intent. Variables identify substantial cuts, chops, fine cuts (defleshing), impact breaks, spiral breaks, marrow breaks, snaps, and saw cuts. The location of these on the element is also recorded. A conservative approach is taken to the recording of marks and fractures that could be indicative of processing animals for food, tools, or hides since many natural processes result in similar marks and fractures. Spiral fractures were recorded based on morphology, while recognizing there are other causes and that these can occur well after discard. Impacts require some indication of an impact, generally flake scars or evidence of percussion. These were not recorded when they were ambiguous or accompanied by carnivore gnawing.

Comments. The comment section is used to flag specimens with verbal comments. For example, when a more specific age can be assigned it would be recorded as a comment.

Value and Yield. While value and yield information are best suited to modern commercial butchering practices, they can still provide information on assemblages dating to the Spanish Colonial and Territorial periods. The cuts may not have been as standardized but certain parts would still have greater yields and some would be higher valued. How parts were distributed among and within households could provide information on the sources of the trash deposits—individual households or more institutional settings.

"Value" is based on Schultz and Gusts' values (1983:48), which were ranked following contemporary beef prices. Values were added for the head, tongue, and tail resulting in 10 values, with 1 representing the lowest-value cuts. For analysis, these were reduced to five values (lowest, low, moderate, high, highest). "Yield," proposed by Lyman (1987:61–65), is a slightly different system of ranking and is based on cost efficiency rather than economic value. In theory, the upper economic class would be less concerned with yield and more likely to purchase high- and medium-yield cuts regardless of cost, while those at the lower end of the economic spectrum would chose high-yield medium-cost cuts. Again, the yields were divided into five units based on Lyman (1987:62), with a yield of 1 producing the least amount of edible meat. Yields were rated very low, low, moderate, high, and highest.

Data Analysis. Once the LA 144329 data are entered and checked, the provenience, provenience groups, and chronological information will be added. Data will be tabulated and analyzed using SPSS (pc version 11 and 22).

Research Questions

The sample of fauna recovered during testing at the former Judicial Complex was too small to determine any but the most general patterns of domestic animal use. When examined by level (Akins 2014a:87–88), sheep and goat counts were consistently larger than for cattle for all but one level of fill, regardless of time period. The lack of pig, horse, and chicken is not surprising as these often occur in low frequencies in even the largest samples from the Santa Fe area.

Data recovery has the potential to encounter a wide range of deposits containing food debris. This includes those generated by the Spanish Colonial–period Esquivel family and the Territorial-period Presbyterian Mission School (Barbour 2014:109).

The primary research focus for the faunal remains will be identifying and comparing the household and community economics in the time periods represented by deposits at the site. This will utilize a framework that focuses on availability and consumer behavior based in part on the approach outlined by Huelsbeck (1991:62), which emphasizes the impact of social and economic forces on the acquisition and consumption of animal products, as well as on aspects of site structure.

The choice of animals used, the cuts and body parts represented, and the methods used to butcher animals all provide information that can be used to address these goals (Research Questions 2, 3, and 4; Chapter 7, this report). Previous research on Spanish Colonial households and institutions in the Santa Fe area demonstrate the range of resources available. Sheep, goats, cattle, pigs, horses, and chickens, as well as an array of native fauna are found in Spanish Colonial assemblages. Relative proportions differ slightly, but the general pattern is one where sheep/goat provided most of the meat diet and animals were generally raised by the household or acquired as live animals and home-butchered utilizing all parts. Fewer cattle were raised by households and when butchered, were more likely to be shared because of their larger size. More institutional and rural settings produce slightly different results that could indicate differential access to some animals (Akins in prep.). One of the goals for this current project is to examine the fauna from the perspective of a Spanish Colonial household (Research Question 3). Probably the best comparative samples for the Esquivel household deposits will be those from the nearby Baca-Garvisu household. Fauna from that site was overwhelmingly sheep/goat with small amounts of cattle, pig, and chicken (Akins 2011:236–242). Comparing the types of animals, relative proportions, parts utilized, and other information with other Santa Fe assemblages can aid in evaluating the economic and social status of the Esquivel family with respect to others in the community.

An institutional setting, such as the Presbyterian Mission School (Research Question 2), should have a different faunal assemblage. At Fort Marcy, food refuse reflected the rank and ethnic make-up of the soldiers and workers at the fort (Akins 2011:242–250). Yet, contrary to much of the literature regarding later economics, the food refuse for nineteenth- and twentieth-century Anglo and Hispanic households at the Capitol parking facility excavations (Barbour 2012) indicate that both Anglos and Hispanics consumed more mutton then beef, with Anglos consuming more beef than Hispanics. Pork consumption was about equal, while Anglos consumed more chicken and rabbit (Akins 2014b:251; Craw 2012:Fig. 21.2). Use of mutton declined over time. At the adjacent Executive Office Building excavations (Barbour 2014), Hispanic households always preferred mutton over beef, while Anglos had only a slight preference for beef; both pork and chicken use increased with time (Akins 2014b:251). Deposits related to the Mission School could provide information on the students, those who ran the school, and the community that supported the institution. However, given the results of other Santa Fe projects we should not expect clear-cut answers based on diet. Both Anglos and Hispanics consumed large amounts of mutton and we cannot assume the fauna will distinguish ethnic preferences or groups.

Fauna from the data recovery excavations can be evaluated with respect to availability and preference, taking the type of deposit (household versus institution) into account. Changing economic conditions (Research Question 4) will have to be considered from a broader context to avoid confounding differences based on household versus institutional economics.

11 Chipped Stone Artifacts Analysis

James L. Moore

Considering the results of the testing project (Barbour and Wening 2014), we expect to recover chipped stone artifacts, and potentially in large numbers, from Spanish Colonial– and possibly Santa Fe Trail–period deposits at LA 144329. Chipped stone artifacts are fairly common in Spanish sites, occurring as late as the Railroad period (Moore 2004). Rather than evidence for intrusive prehistoric materials, archaeological as well as documentary sources indicate that chipped stone artifacts were extensively used by Spanish settlers as a substitute for more expensive metal tools and as integral components in fire-making kits (Moore 1992, 2001, 2004; Rebolledo and Márquez 2000).

All chipped stone artifacts recovered during data recovery will be examined using a standardized analysis format (OAS 1994a). This format includes a series of mandatory attributes that describe material type and quality, artifact type and condition, cortex, striking platforms, and dimensions. Several optional attributes have also been developed that are useful for examining specific questions. This analysis will include both mandatory and optional attributes.

The primary areas our analysis format explores are material selection, reduction technology, and tool use. These topics provide information about ties to other regions, mobility, and site function. While material selection studies cannot reveal *how* materials were obtained, they can usually suggest *where* they originated. A study of mobility is not integral to this project, but our analysis will provide baseline data useful for evaluating information from other sites. By studying the reduction strategy employed at a site we can compare how different cultural groups approached the problem of producing useable chipped stone tools from raw materials. The types of tools in an assemblage can be used to help assign a function to a site, and to aid in assessing the range of activities that occurred there. Chipped stone tools provide temporal data in some cases, but are usually less time-sensitive than other artifact classes like pottery and wood.

Analytic Methods

Each chipped stone artifact will be examined using a binocular microscope to aid in defining morphology and material type, examine platforms, and determine whether it was used as a tool. The level of magnification will vary between 20X and 100X, with higher magnification used for wear-pattern analysis and identification of platform modifications. Utilized and modified edge angles will be measured with a digital goniometer; other dimensions will be measured with digital calipers and a digital scale. Analytic results will be entered into a computerized database to permit more efficient manipulation of the data, and to allow rapid comparison with other databases on file at the OAS.

Attributes that will be recorded include material type and quality, artifact morphology and function, amount of surface covered by cortex, cortex type, portion, evidence of thermal alteration, dimensions (length, width, thickness, and weight), dorsal scar orientation, platform angle, bulb of percussion, curvature, waisting, and distal termination. Wear patterns and utilized/modified edge angles were examined on all tools.

Material Type. Materials are coded by gross category unless specific sources or distinct varieties are recognized. Codes are arranged so that major material groups fall into specific sequences of numbers, progressing from general material groups to specific varieties that can be linked to specific sources by visual inspection.

Material Texture and Quality. This attribute provides information on the basic flaking quality of materials. Texture subjectively measures grain size within rather than across material types and is scaled from fine to coarse for most materials, with fine textures exhibiting the smallest grains and coarse the largest. Obsidian is classified as glassy by default, and this category is applied to no other material. Quality records the presence of flaws that could affect flaking and includes crystalline inclusions, fossils, visible cracks, and voids. Inclusions that will not affect flaking are not considered flaws. Material texture and quality are recorded together.

Artifact Morphology. This is one of two attributes that provides information on artifact form and use. Artifact morphology categorizes artifacts by their general form such as core flake or early stage biface.

Artifact Function. This is the second attribute that provides information on artifact form and use, and categorizes specimens by inferred use (or lack of use) such as end scraper or non-utilized flake.

Cortex. The amount of cortical coverage is estimated and recorded in 10 percent increments for each artifact—the percentage of dorsal surface covered by cortex is estimated for flakes, while for all other artifact classes the percentage of the total surface area covered by cortex is estimated, since other artifact classes lack definable dorsal surfaces.

Cortex Type. The type of cortex on an artifact can be a clue to its origin. Waterworn cortex indicates that a nodule was transported by water and that its source was probably a gravel deposit. Non-waterworn cortex suggests that a material was obtained where it outcrops naturally. Cortex type is identified for artifacts on which it occurs; when identification is not possible cortex type is coded as indeterminate.

Portion. For flakes and formal tools, the portion represented by each specimen is recorded. Angular debris and cores are considered whole by default, because it is usually impossible to determine whether these categories were broken during or after reduction.

Platform Type. This attribute records the shape of and any modifications to the striking platform on whole flakes and proximal flake fragments.

Platform Lipping. This attribute records the presence or absence of a lip at the ventral edge of a flake platform, and is coded as either present or absent.

Platform Angle. The angle formed by the intersection of the dorsal surface of a flake and its striking platform is recorded as either greater than 45 degrees or less than 45 degrees.

Bulb of Percussion. These only occur on flakes and are recorded as either pronounced or diffuse.

Flake Curvature. Whether or not the ventral surface of flakes is distinctly curved is recorded using this attribute.

Waisted. Soft hammer percussion and pressure flaking can cause the formation of a waist between the platform and main body of a flake, and this feature is often present on biface flakes. This attribute records the presence or absence of waisting on flakes.

Thermal Alteration. When present, the type of evidence for thermal alteration is recorded to determine whether an artifact was purposely or incidentally heated.

Wear Pattern. In cases where debitage or cores were used as informal tools, this attribute records the type of attrition pattern noted.

Edge Angle. The angles of all utilized or intentionally modified edges on tools are recorded.

Length, Width, and Thickness. These attributes are measured in millimeters for all artifacts. On angular debris and cores, length is the largest measurement, width is the longest dimension perpendicular to the length, and thickness is perpendicular to the width and is the smallest measurement. On flakes and formal tools, length is the distance between proximal and distal ends, width is the distance between edges paralleling the length, and thickness is the distance between dorsal and ventral surfaces.

Weight. Weight is recorded to the nearest tenth of a gram.

Research Questions

Data provided by chipped stone analysis will mainly be used to help address Research Questions 3 and 4, as well as several others pertaining to the use and manufacture of this artifact category (Chapter 7, this report). While most if not all of the chipped stone artifacts at LA 144329 were made and used by the Spanish occupants of the site, the possibility remains that some of the chipped stone artifacts will reflect earlier prehistoric occupations of adjacent properties (Research Question 5). Patterns in material selection, reduction techniques, and tool use might be used in trying to differentiate between these temporal groups.

In general, data provided by chipped stone analysis will be used to help examine Spanish Colonial economics and how they may have changed during the occupation of Santa Fe (Research Question 3). In addition, these data will enable us to compare economic trends between occupants of the capital and those in the contemporary hinterland. While most of the chipped stone artifacts recovered from LA 144329 are expected to reflect Spanish Colonial use of the site area, others could also be illustrative of life in Santa Fe following annexation by the United States. In addition to being further evidence of economic change and adaptation, patterns in material selection, reduction techniques, and tool use could be used to differentiate between these temporal groups (Research Question 4).

By combining chipped stone information with other data from the Spanish Colonial component, we will be able to assess the economic condition and degree of acculturation demonstrated by early Spanish occupants of Santa Fe. Comparison of chipped stone artifact data with information from sites of similar type and date may aid in the isolation of specific manufacture or use patterns that are culturally rather than functionally determined. By comparing Spanish chipped stone assemblages with those of local Pueblo groups we may be able to find enough differences in reduction strategy, material selection parameters, tool use, and formal tool manufacturing techniques to allow us to define a signature for Spanish assemblages. In cases of uncertain ethnicity, this could prove useful in helping to determine what group occupied a site. These data will also help in examining how the Spanish approach to flintknapping differed from or was similar to that of the Pueblos, and may provide clues concerning the degree to which the Spanish assimilated Pueblo reduction technology and strategy. Chipped stone assemblages from later contexts (if available) can be compared with those recovered from Spanish Colonial–period deposits. This may help in determining whether the use of chipped stone tools persisted in Santa Fe into the late nineteenth century, or reflect a mixing with materials from earlier periods.

Chipped stone artifacts should have been used for a wide range of tasks at frontier sites, in many cases being substituted for metal tools. In the Santa Fe core the opposite may be true—most chipped stone artifacts should have been used in fire-making activities and not in tasks for which metal tools were better suited. The use of various classes of chipped stone tools should vary with the availability of imported goods, especially those that became available with trade via the Santa Fe Trail and railroad. Are these changes visible in chipped stone assemblages? Better access to metal tools should mean less need for chipped stone substitutes, and should lead to a decrease in the use of chipped stone cutting tools in Santa Fe Trail period and later assemblages. Are these changes also reflected in material selection parameters? Cherts and flints are the primary materials suitable for use in fire-making activities. Other materials would be useful for tasks that required substitutes for tools that were too expensive or rare for general use. As access to manufactured goods improved, we would expect to see a corresponding decrease in percentages of non-cherts used in Spanish chipped stone assemblages.

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12 Ground Stone Artifacts Analysis

James L. Moore

Analytic Methods

Ground stone artifacts at LA 144329 will be examined using a standardized methodology developed by the OAS, which provides information on material selection, manufacturing technology, and tool use. Artifacts will mainly be examined macroscopically, with microscopic analysis being used to examine wear patterns. Analytic results will be entered into a computerized database for analysis and interpretation. Several attributes are recorded for each ground stone artifact, while others are only recorded for certain tool types. Attributes recorded for all ground stone artifacts include material type, texture and induration, function, portion, preform morphology, production input, plan view outline, transverse and longitudinal cross-section shapes, shaping methods, number of uses, number of wear surfaces/edges, evidence of heating, presence of residues, artifact dimensions, and weight. Edges and surfaces that exhibit evidence of use are recorded separately, and the attributes that are recorded for each utilized edge or surface include dimensions, texture, sharpening, transverse and longitudinal contour shape, and microscopic wear patterns. The angles of all modified or utilized edges will be measured to provide information potentially useful in determining function. The type of stroke used to manipulate a mano and the type of base companion stone that was used can be determined by examining wear patterns and contour attributes (Adams 2002:100–114).

The range of activities in which ground stone tools were used can be defined by an examination of functions represented in an assemblage. However, ground stone tools may be used for a number of different purposes during their use-lives because they tend to be large and durable, even after being broken. Attributes that are designed to provide information on the life history of ground stone tools include dimensions, evidence of heating, portion, ground-surface sharpening, wear patterns, alterations, and the presence of adhesions. These attributes can be used to identify post-manufacturing changes in shape and function, and also make it possible to describe the remaining value of an assemblage by identifying the amount of wear or use. This type of information is useful in examining abandonment processes, both for an individual artifact and an entire assemblage. Attributes such as material type, material texture, production input, preform morphology, and plan view outline form provide information on the choice of raw materials for manufacture into finished ground stone tools and the labor cost of producing those tools.

If ground stone artifacts are recovered in situations that suggest pollen washes could recover useful economic data, that procedure will be conducted in the laboratory, necessitating certain precautions. Ground stone tools from trash deposits or intact features that are considered likely to yield data by undergoing this procedure will be placed in plastic bags after removal from the ground and will be lightly brushed to remove loose soil. The first step in laboratory processing will be to brush the entire surface of a tool to remove soil before samples are collected. Grinding surfaces will be scrubbed to collect embedded materials, using distilled water and a toothbrush. The size of the area that is sampled will be measured and noted. Wash water will be collected in a pan placed under the sample and packaged for storage. Samples selected for analysis will receive a short (ca. 10-minute) acetolysis wash. Under certain circumstances, this may help preserve the cytoplasm in some modern pollen grains, allowing recent contaminants to be distinguished from fossil pollen. Pollen samples from ground stone artifacts will be subjected to full analysis to attempt to distinguish economically used wild plants as well as cultigens.

Research Questions

In general, the analysis of ground stone tools should yield both direct and indirect information about subsistence patterns, and may help determine some of the types of foods that were consumed by site occupants. This analysis should provide information useful in examining Research Questions 2–4 (Chapter 7, this report). Pollen washes on suitable specimens can provide information on plant food use, and whether those foods were part of a traditional New Mexican diet (Research Question 3). Ground stone tools represent locally manufactured items rather than imports, and will be useful in assessing the economic model for the Spanish Colonial period (Research Question 3) as well as the Santa Fe Trail– to early Railroad-period economy, and evidence of acculturation to local customs by Anglo-American immigrants (Research Question 4). The morphology of ground stone tools can be used to determine whether they were used in food preparation or for other purposes. Tools that do not have the correct shape for grinding foods will be examined for residues to help define their function. The presence of such tools can help provide subsidiary economic information. Were site occupants making jewelry, were they grinding pigments for painting, or were they sharpening metal tools with grinding stones?

We may also be able to determine how ground stone tools were obtained. In particular, were ground stone tools salvaged from nearby prehistoric sites or were they manufactured for Spanish use? Tool morphology will be especially important in addressing this question. How do the shapes of ground stone tools from Spanish sites compare with those from prehistoric Pueblo sites in the area? If they are identical, we must consider the possibility that these tools were acquired from abandoned sites in the region. If they differ significantly, it is likely that they were manufactured for Spanish use.

13 Native Pottery Analysis

C. Dean Wilson

Analysis of local ceramic artifacts is concerned only with locally produced pottery and does not include Euroamerican wares. "Native pottery" refers to types made or inspired by the ceramic technology long associated with Pueblo groups in the Northern Rio Grande region. While Spanish Colonial– and Territorial-period ceramic assemblages from Pueblo and Spanish settlements in the Northern Rio Grande are dominated by pottery made by Pueblo potters, native types found at sites in this region may also include forms that were inspired by Pueblo pottery traditions but were made by Jicarilla Apache, Navajo, Genízaro, or Hispanic potters residing in this region.

Analytic Methods

Detailed and systematic examination of various attributes is needed to fully determine the timing and nature of the occupations at this site. Ceramic studies may contribute to this by using distributions of ceramic types and attribute classes from dated contexts to examine patterns related to ethnic affiliation, place of origin, form, and use of ceramic vessels. In order to examine these issues, it is necessary to record a variety of data in the form of both attribute classes and ceramic type categories.

Attribute categories used in this study are similar to those employed in recent OAS projects in the Northern Rio Grande. Attribute categories that will be recorded for sherds include temper type, paint type, surface manipulation, modification, and vessel form. Other studies involve more detailed characterizations of selected subsamples of sherds. Such studies will include analysis of refired paste color, petrographic characterizations, design style, and construction methods. All categories employed will be defined and described during analysis. Studies of the distributions of these descriptive attributes will be used to examine various issues discussed below.

Many trends can be examined using ceramic type categories. "Ceramic types," as used here, refers to groupings identified by various combinations of paste and surface characteristics with known temporal, spatial, and functional significance. Sherds are initially assigned to specific traditions based on probable region of origin as indicated by paste and temper. They are then placed in a ware group on the basis of general surface manipulation and form. Finally they are assigned to temporally distinctive types previously defined within various tradition and ware groups.

While a number of historic Tewa ceramic types have been formally defined and described (Batkin 1987; Frank and Harlow 1974; Harlow 1973; Mera 1939), most of these type definitions are based on whole vessels and tend to emphasize decorated types. Historic Tewa decorated types are often distinguished from each other by characteristics such as overall design field or shape that are only observable on complete vessels. Such distinctions are of limited use in studies of pottery from archaeological assemblages, which tend to be dominated by plain-ware sherds. Thus, this analysis will focus on the definition and use of sherd-based categories more suitable for sherd collections.

Sherd-based definitions of historic Tewa types have been used to examine historic archaeological assemblages (Dick 1968; Lang 1997b; Snow 1982). In addition, a number of descriptive categories have been proposed for sherds that exhibit ranges of characteristics that differ from those used to define types from whole vessels. These categories are defined by a range of characteristics that may be ultimately connected to but are not necessarily equivalent to types previously defined for whole vessels. The degree of correlation between vessel and sherd defined categories varies for sherds from vessels of the same type and depends on how much stylistic or decorative information is present. For example, unpainted sherds from a Powhoge Polychrome vessel would be placed into an unpainted historic slipped category, while sherds exhibiting some paint but without distinct decorations would be classified as Tewa Black-on-cream undifferentiated. In such cases, the assignment of sherds to Powhoge Polychrome would be limited to examples with distinct design styles indicative of that type. Still, a broken vessel of a specific pottery type should produce a recognizable pattern of sherds assigned to various formal and informal types. Information on this type of patterning may be derived from looking at how types are assigned to sherds that are eventually reconstructed into whole or partial vessels.

Examination of very basic ceramic patterns may be most efficiently served by creating a small number of ceramic ware groups by grouping types that share characteristics. Such groups include decorated Tewa Polychrome, red-slipped utility, plain utility, black utility, micaceous utility, as well as a non-local group. The use of these basic broad categories allows determination of coarse-grained patterning in ceramic assemblages, as opposed to the more basic patterning available from type distributions.

Research Questions

Data provided by this analysis will be used in addressing questions posed in Research Questions 2–4 (Chapter 7, this report). In addition, data derived from analysis of local ceramics will also be used to examine a series of broader questions concerning pottery manufacture, sequencing, exchange patterns, the cultural affiliation of manufacturers, and functional changes through time. More specifically, the presence of native pottery in late nineteenth- through early twentieth-century deposits can be used to assess the level of mixing with earlier deposits and aid in determining whether any of the native pottery is contemporary with the later deposits (Research Question 2). These ceramic data will also be comparable to those derived from other contemporary industrial establishments in Santa Fe. Native pottery will provide needed temporal data for assessing changes in Spanish economic patterns through time (Research Question 3), and in examining changes in the local economy after the annexation of New Mexico by the United States (Research Question 4). By assessing the prevalence of historic native pottery versus prehistoric pottery, we should be able to determine whether there is evidence of a prehistoric occupation at LA 144329, or if the prehistoric sherds that are recovered simply represent mixing of materials related to the general scatter of Pueblo materials in the downtown area (Research Question 5).Ceramic analysis will also be used to address a series of other, more general questions.

Temporal patterns. Distributions of ceramic types and ware groups can help determine the period of occupation for a particular site or provenience within a site, based on the temporal ranges and frequencies of specific types and groups. Assignment of ceramic dates to historic assemblages is complicated by a general lack of detailed sherd-based ceramic dating studies for Spanish sites in New Mexico. These include widely traded types produced by Pueblo potters as well as native forms produced by various groups, including Spaniards. Many of the ceramic types and groups occurring in Spanish sites in New Mexico tend to have very long temporal spans, crossing several periods as currently defined. Moore (2001) noted trends in the overall frequencies of different native pottery types and used those observations to recognize several ceramic-based dating periods, including the Early Spanish Colonial (1598–1680), Late Spanish Colonial (1692–1821), Santa Fe Trail (1821–1880), and Railroad (post-1880) periods. Trends noted include a decline in frequencies of decorated wares and polished red wares, and an increase in frequencies of polished black wares and micaceous wares (Moore 2001). Other trends include a gradual decline in the frequency of jars and soup plates, and a corresponding increase in percentage of bowls.

Ceramic distributions from various proveniences may provide an opportunity for finer dating resolution of historic sites. Careful comparisons of native ceramics and historic artifacts may also provide information concerning temporally sensitive changes in distributions of native ceramics. Comparisons of pottery distributions from different spatial and vertical units may provide data that will allow us to make finer temporal distinctions. Thus, comparisons of ceramic distributions between levels within a stratigraphic profile may allow documentation of changes that occurred within very short temporal spans, between and within presently defined periods.

Examination of ceramic trends. The assignment of ceramic dates to proveniences will provide an opportunity to examine issues associated with trends in the production, decoration, and use of native pottery at Spanish settlements. Distributions of local ceramics may also provide information concerning the nature of ceramic production technologies and interaction between Spanish and Indian groups, as well as the nature of activities for which this pottery was used by households on the New Mexico frontier.

Pottery exchange and affiliation. The determination of area of production and cultural affiliation will provide important clues concerning the nature of production and acquisition of ceramic vessels, as well as the interaction between various groups. One important issue concerns relative rates of acquisition of native pottery vessels compared with Euroamerican pottery containers produced in Europe, Mexico, and the United States. Thus, the relative frequency of native to European-produced or inspired forms will be compared and may provide clues concerning the relative isolation or self-sufficiency of Spanish settlers.

It may also be possible to examine shifting interaction with more distant Pueblos and other groups through the identification of types produced in other regions. Pottery produced in the Keres area can be identified by distinct basalt temper that sometimes occurs in glaze and Puname matte-painted wares. Pottery produced in the Zuni, Acoma, or Laguna areas may be identified by white paste, sherd temper, and matte mineral paint. Other ceramics that may reflect exchange with other areas include Jemez Black-on-white, Jeddito Yellow ware, Taos micaceous ware, and Navajo ware. It is also important to determine the nature of local pottery production by identifying the area or group associated with the production of pottery found at LA 144329.

Functional trends for historic pottery. Assemblages from Spanish sites in the Northern Rio Grande occupied during the Colonial and Santa Fe Trail periods reflect the isolated and largely self-sufficient economy of the New Mexican frontier. These assemblages tend to be dominated by Indian-made utility wares associated with the storage and preparation of food. Certain sherd characteristics can provide data concerning the forms of ceramic vessels that were used and discarded at these settlements. Overall distributions of sherds assigned to various categories provide clues concerning the types and ranges of activities for which they were used.

Functional trends may be documented through the use of basic ware categories and ceramic groups as well as categories that reflect the shape and portion of a vessel from which a sherd derived. Vessel-form identification is based on rim shape, the presence and location of polish and painted decorations, and other traits indicative of form. It is often easy to identify the basic form (bowl versus jar) of body sherds from prehistoric vessels for many Southwestern regions by the presence and location of *polishing*. However, such distinctions are not as easy to make for plain ware body sherds from historic Northern Rio Grande vessels, because polishing on both sides is common in vessels of a variety of forms. Thus, while body sherds from most decorated vessels can be assigned to basic vessel forms, most plain utility ware body sherds are assigned to a series of descriptive categories representing combinations of surface treatments of unknown functional significance. These categories provide information that may be of functional significance without making more specific distinctions that are difficult to derive from plain ware body sherds alone. Examinations of rim sherds will provide more specific information about vessel form. *Rim diameters* of sherds and vessels will provide information concerning the overall size of vessels reflected by various forms.

Studies of pottery recovered during data recovery will attempt to define the activities that used native pottery in much more detail. The distribution of ceramic classes and artifacts from different features and proveniences may provide data concerning the organization of cooking, serving, and storage activities. Functional distributions will be compared to determine whether different ranges of activities occurred in the components represented at LA 144329. Finally, pottery distributions from dated proveniences will be compared to examine changes in use patterns that may reflect shifting economies.

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14 Archaeobotanical Analysis

Pamela J. McBride

Along with faunal remains, botanical materials provide direct evidence of subsistence practices. Charred seeds reveal what plants were eaten, both domestic and wild. Charcoal from hearths and trash deposits can be used to examine wood-gathering activities. Floral materials contained in adobe bricks can be used to augment other types of botanical data, and samples from corrals provide information on the diet of livestock. These types of data not only tell us what plant foods the site occupants were gathering, growing, or trading for, they also provide important information on what the local environment might have looked like. Good botanical information is also critical to our examination of economic changes between the Spanish Colonial and late nineteenth- to early twentieth-century components at LA 144329.

Analytic Methods

Botanical studies will include flotation analysis of soil samples, species identification and (where appropriate) morphometric measurement of macrobotanical specimens, and species identification of wood specimens from both flotation and macrobotanical samples. Flotation is a widely used technique for the separation of floral materials from soil. This type of analysis takes advantage of the simple principle that organic materials (especially those that are nonviable or carbonized) tend to be less dense than water and will float or hang in suspension in a water solution. The processing of flotation samples entails the immersion of the sample material in a bucket of water. After a short interval to allow heavier particles to settle out, the solution is poured through a screen lined with fabric (approximately 0.35 mm mesh). The floating and suspended materials are dried indoors, then separated by particle size using nested geological screens (4.0, 2.0, 1.0, and 0.5 mm mesh) before sorting under a binocular microscope at 7–45X.

This basic method was been used as long ago as 1936, but did not become widely used for recovery of subsistence data until the 1970s. Seed attributes such as *charring*, *color*, and aspects of *damage or deterioration* are recorded to help determine cultural use versus post-occupational contamination. *Relative abundance of insect parts*, *bones*, *rodent and insect feces*, and *roots* help to isolate sources of biological disturbance in the ethnobotanical record.

All macrobotanical samples are examined individually, identified, repackaged, and catalogued. *Condition* (carbonization, deflation, swelling, erosion, and damage) is noted as a clue to cultural alteration or modification of original size dimensions. When less than half of an item is present it will be counted as a fragment; more intact specimens are measured as well as counted. Corn remains (if present) are treated in greater detail. *Width* and *thickness* of kernels, *cob length* and *mid-cob diameter*, *number of kernel rows*, and several *cupule dimensions* are measured following Toll and Huckell (1996). In addition, the following attributes are noted: *over-all cob shape*, *configuration of rows*, *presence of irregular or undeveloped rows*, and *post-discard effects*.

Research Questions

Besides being used to help address questions in Research Questions 2–4 (Chapter 7, this report), floral studies provide direct evidence of the patterning of daily economic activities, contributing an informative layer of details to the emerging picture of historic occupation in the Northern Rio Grande. Multiple questions can be addressed by examining associated plant remains. With colonization and trade along the Santa Fe Trail, Old World plants were available, as well as maize, beans, and squash from the New World. Comparing floral assemblages across time can produce information about changing dependence on cultigens and wild plants and the integration of Old and New World plants in the diets of Spanish and Anglo settlers. Horses and wagons provided access to a wider range of choices in foods, medicinals, construction materials, and firewood. Floral studies can help define household function and organization by delineating spatial components of specific food processing and preparation tasks. By extension, apportionment of activities in specific parts of a community can be explored: did certain areas or structures in the community have specific functions, or did similar activities take place at all site components?

15 Summary

Jessica A. Badner

The Office of Archaeological Studies (OAS) has submitted this research design and data recovery plan in advance of a proposed demolition and construction project at 100 Catron Street, a portion of the larger proposed Santa Fe County Administrative Campus development. The proposed project is located on 2.35 acres (102,373 sq ft) of Santa Fe County land within the Griffin/Grant Triangle Historic Neighborhood of Santa Fe, New Mexico. The Santa Fe County parcel is within the bounds of a previously recorded archaeological site—LA 144329—which was originally defined during the investigation of a Presbyterian Church parcel immediately to the south (Viklund and Huntley 2005). The site has been recommended as eligible for listing on the *National Register of Historic Places* under Criterion D.

LA 144329 is a multicomponent historic site containing evidence for both Spanish Colonial–period and nineteenth- to twentieth-century occupations. Differences in the structures of artifact assemblages from these components are related to a long series of economic changes that correspond to political events and demography as well as variation in transportation systems. OAS hopes to address research questions related to: 1) examination of building footprints and the accuracy of the historic record; 2) economic and consumption patterns at a nineteenth-century school; 3) Spanish Colonial economics; 4) the changing economy in Santa Fe; and 5) the lack of evidence for a Pueblo occupation. OAS anticipates that the framework for excavation and research proposed in this document will lead to a significant contribution of information concerning the history of downtown Santa Fe.

Planned excavations in the project area are guided by recommendations made by Barbour and Wening (2014), based on archaeological testing of the Santa Fe County parcel conducted in 2012. Those recommendations consider the results of previous excavation and monitoring of the Presbyterian Church parcel immediately adjacent to the south of the project area conducted by Southwest Archaeological Consultants (Viklund and Huntley 2005). Based on testing results, Barbour (2014:109) recommended that data recovery be conducted in an approximately 34,136 sq ft area located along the east, south, and west sections of the property (see Figure 8.1); monitoring was recommended for the remaining project area. These recommendations were based on the excavation of a series of test trenches, the results of which are summarized in Table 6.1. In addition, investigation of a series of excavation units under parts of the existing Judicial Complex building that do not have crawl spaces are recommended in this document. OAS anticipates exposing intact cultural deposits associated with a Spanish Colonial midden, a horizon potentially associated with the Spanish Colonial–period Esquivel residence, building foundations associated with the Presbyterian School constructed between 1886 and 1889, and potential cultural deposits associated with that architecture. Although previous excavations nearby, at LA 1051 (Lentz and Barbour 2008; Lentz 2011), encountered abundant Coalition to early Classic period and earlier Native American deposits, which included a number of human burials, testing at LA 144329 by OAS and Southwest Archaeological Consultants did not encounter prehistoric deposits within the proposed project area. However, because the project is located within an area considered to have a high potential for containing human burials by the New Mexico Historic Preservation Division, OAS has applied for a site-specific burial permit.

In areas recommended for data recovery, OAS proposes the controlled excavation of no less than 40 sq m of area, and no less than an additional 6 sq m of area will be tested under the floors of the existing building (Table 15.1). Excavations will be conducted in a series of hand-excavated 1 by 1 m excavation units deployed to examine intact cultural deposits, structures, and features. Non-grid excavation units excavated either by hand or mechanical equipment will be used to clear larger areas, and will be augmented by mechanical trenching to expose site stratigraphy and historic foundations. OAS will monitor building demolition and fill removal in all other areas, and if potentially important intact cultural deposits or features are encountered, they will be assessed to determine whether further treatment is warranted according to guidelines stipulated for data recovery. Excavation, monitoring, and laboratory analysis will be performed by OAS personnel (Table 15.2). Details of projected excavation areas are shown in Figure 15.1 and Table 15.3.

Table 15.1. Approximate investigation areas of LA 144329.

Parcels within the Griffin/Grant Neighborhood that are within LA 144329				
Area	**Acres**	**Square Meters**	**Square Feet**	**Percent**
Presbyterian Church	0.70	2,850	30,677	23
Santa Fe County	2.35	10,795	102,373	77
Total	**3.05**	13,645	133,050	**100**
Area of proposed Santa Fe County parcel investigations				
Recommended for data recovery	0.81	3,264	35,136	34
Recommended for monitoring	1.54	6,247	67,237	66
Total	**2.35**	10,795	102,373	**100**
Minimum investigation modes within data recovery area				
Controlled hand excavation	0.01	40	431	1
Stripped, trenched, or bladed	0.80	3,224	34,705	99
Total	**0.81**	3,264	35,136	**100**
Minimum investigation modes within monitoring area				
Hand testing beneath building floor	0	6	65	0
Monitoring of demolition	1.54	6,241	67,172	100
Total	**1.54**	6,247	67,237	**100**

Table 15. 2. LA 144329, personnel and organizations.

Fieldwork	
Principal Investigator	Eric Blinman
Project Director	James L. Moore
Field Director	James L. Moore
Field Assistants	Ann Stodder
	Susan Moga
	Karen Wening
	Isaiah Coan
	Mary Weahkee
Equipment Operator	to be determined
Laboratory Analyses	
Artifact Processing	Lynette Etsitty
Chipped Stone	James L. Moore
	Mary Weahkee
Ceramics	Richard Montoya
Ground Stone	Karen Wening
Ornament	Karen Wening
Historic Artifacts	Susan Moga
Flotation Processing	Lynette Etsitty
Flotation and Microbotanical	to be determined
Faunal artifacts	to be determined
Human Remains	Ann Stodder
GIS	Jessica Badner
	Isaiah Coan
Radiocarbon Dating	Beta Analytic

Figure 15.1. Projected locations of hand-excavated grid units, mechanically excavated trenches, and areas to be bladed to expose nineteenth-century foundations, representing the minimum extent of data recovery efforts.

Table 15.3. Projected locations of excavation areas, representing the minimum extent of data recovery efforts.

Data Recovery Area	Type of Area	Minimum Size	Minimum Area	Percent of Data Recovery Area
DR Area 1	Northern Hand Excavation	5 x 2 m	10 m^2	0.98%
	Southern Hand Excavation	5 x 2 m	10 m^2	0.98%
	Mechanically-Excavated Trench	35 x 1 m	35 m^2	3.42%
	Total Minimum DR Area 1 Excavation		**55 m^2**	**5.37%**
DR Area 2	Hand Excavation	5 x 2 m	10 m^2	0.92%
	Mechanically-Excavated Trench	20 x 1 m	20 m^2	1.83%
	Mechanical Blading	15 x 12 m	180 m^2	16.50%
	Total Minimum DR Area 2 Excavation		**210 m^2**	**19.25%**
DR Area 3	Hand Excavation	5 x 2 m	10 m^2	0.75%
	Mechanically-Excavated Trench	33 x 1 m	33 m^2	2.46%
	Mechanical Blading	15 x 10 m	150 m^2	11.20%
	Total Minimum DR Area 3 Excavation		**193 m^2**	**14.41%**
All DR Areas	**Total Minimum Exterior Excavation Areas**		**458 m^2**	**13.26%**
Existing Building	Hand Excavation	6-1 x 1m units	6 m^2	0.30%
	Total Minimum Existing Building Excavation		**6 m^2**	**0.30%**
Total Minimum Excavation Areas, Building Exterior and Interior			**464 m^2**	**8.48%**

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Appendix 1: Human Remains Consultation Procedures

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On state and private land, state law (NMSA § 18-6-11.2, 1989, and HPD Rule 4 NMAC 10.11) requires a permit for excavation of unmarked burials. Human remains on state or private land will be excavated under the 2016 annual burial permit issued to the Office of Archaeological Studies. Following the permit provisions, the intent to use the annual permit, including a legal description of the location of the burial, the written authorization to remove the burial from the landowner, a description of the procedures to be implemented to identify and notify living relatives of the burials, certification that the law enforcement agency having jurisdiction in the area has been notified, a list of personnel supervising and conducting excavations of the human burial, and the NMCRIS LA Project/Activity Number for the permitted excavation will be submitted in writing to the State Historic Preservation Officer (SHPO) before excavation of the burials begins. The local law enforcement agency with jurisdiction over the area will be notified to contact the state medical investigator who will determine if the burial is of medico-legal significance. Within 45 days of completing the permitted excavation, recommendations for the disposition of human remains and funerary objects will be made to the SHPO. These recommendations will take into consideration the comments of living persons who may be related to the burial and the wishes of the landowner. The plan will provide a proposed location for reburial or approved curatorial facilities and an inventory of funerary objects, other artifacts found in association, or collected in the course of excavation. The SHPO, after consulting with the State Office of Indian Affairs, will determine the appropriate disposition of the human remains and associated funerary objects. If a final report cannot be completed with a year of the completion of fieldwork, an interim report will be submitted along with an estimated completion date for a final report.

Excavation Procedures

Excavation of human burials will be consistent with current professional archaeological standards. This generally includes the identification of a burial pit and careful removal of fill within the pit. When possible, half the fill will be removed to provide a profile of the fill in relation to the pit and the burial. The pit, pit fill, burial goods, and burial will be examined and recorded in detail on an OAS burial form with special attention paid to any disturbance that may have taken place. Plans and profiles and photographs will further document the burial and associated objects. Flotation and pollen samples will be taken from all burials. Disarticulated or scattered remains will be located horizontally and vertically and photographed. Any association materials and the potential cause of disturbance or evidence of deliberate placement will be recorded in detail.

Analysis Methods

The human analysis will follow the procedures set out in *Standards for Data Collection From Human Skeletal Remains* (Buikstra and Ubelaker 1994). This comprehensive system collects the maximum amount of comparable information by recording the same attributes using the same standards. A series of 29 attachments and documentation on how these should be recorded include the following information.

1) An inventory sheet codes each element that makes up a skeleton. Diagrams of infant, child, and adult skeletons and anatomical parts allow for the location of observations concerning these parts. Another form codes commingled or incomplete remains.

2) Adult sex is determined by examining aspects of the pelvis and cranium. Age changes are documented on the pubic symphysis using two sets of standards, on the auricular surface of the ilium, and through cranial suture closure.

3) For immature remains, the age-at-death is determined by scoring epiphyseal union, union of primary ossification centers, and measurements of elements.

4) Recording of dental information includes an inventory, pathologies, and cultural modifications. Each tooth is coded and visually indicated for presence and whether it is in place, unobservable, or damaged, congenitally absent, or lost premortem or postmortem. Tooth development is assessed, occlusal surface wear is scored, caries are located and described, abscesses are located, and dental hypolasisas and opacities are described and located with respect to the cemento-enamel junction. Any premortem modifications are described and located.

5) The secondary dentition is measured and dental morphology scored for a number of traits.

6) Measurements are recorded for the cranium (n = 35), clavicle, scapula, humerus, radius, ulna, sacrum, innominate, femur, tibia, , fibula, and calcaneus (n = 46 postcranial measurements).

7) Nonmetric traits are recorded for the cranium (n = 21), atlas vertebra, seventh cervical vertebra, and humerus.

8) Postmortem changes or taphonomy are recorded when appropriate. These include color, surface changes, rodent and carnivore damage, and cultural modification.

9) The paleopathology section groups observations into nine categories: abnormalities of shape, abnormalities of size, bone loss, abnormal bone formation, fractures and dislocations, porotic hyperostosis/cribra orbitalia, vertebral pathology, arthritis, and miscellaneous conditions. The element, location, and other pertinent information is recorded under each category.

10) Cultural modifications such as trepanation and artificial cranial deformation are recorded in another set of forms.

Standards (1994:174) recommends curating the following samples for future analysis on burials that will be repatriated. The middle portion of a femur midshaft (at least 100 g) that can be used for radiocarbon dating, trace element analysis (diet), stable isotope ratios (climate and diet), strontium (population movement), bone geometry (activity patterns), histomorphometry (age and health), and aspartic acid analysis (age and health). Several teeth (the upper central incisor, lower canines and premolars, and lower second molar) for histomorphometric analysis, cementum annulation (root), aspartic acid (dentin), isotope studies (enamel), and future studies of linear hypoplaisas and enamel microwear patterning. Five grams of trabecular bone for DNA extraction, the middle third of a clavicle and rib six for age-at-death, health studies, and morphological age assessments. Finally, two sections of the right femur and one section each of the humerus or CT scans of both to assess the level and type of behavior. No samples will be collected without the express permission of the SHPO and landowner.

References Cited

Buikstra, Jane E., and Douglas H. Ubelaker

1994 *Standards for Data Collection form Human Skeletal Remains*. Arkansas Archeological Survey Research Series No. 44. Fayetteville.

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