NMCRIS Activity No. 137895

MUSEUM OF NEW MEXICO
OFFICE OF ARCHAEOLOGICAL STUDIES

Archaeological Reconnaissance of the Sanbusco Campus of the New Mexico School for the Arts, Santa Fe, New Mexico

Richard H. Montoya and Eric Blinman

WITH CONTRIBUTIONS BY
SUSAN M. MOGA AND C. DEAN WILSON

NMCRIS Activity No. 137895

ARCHAEOLOGY NOTES 491
SANTA FE 2017 NEW MEXICO

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 137895	2a. Lead (Sponsoring) Agency: City of Santa Fe	2b. Other Permitting Agency(ies):	3. Lead Agency Report No.:

4. Title of Report: Archaeological Reconnaissance of the Sanbusco Campus of the New Mexico School for the Arts, Santa Fe New Mexico

Author(s): Richard H. Montoya and Eric Blinman

5. Type of Report
☐ **Negative** ☒ **Positive**

6. Investigation Type
☐ Research Design ☐ Survey/Inventory ☒ Test Excavation ☐ Excavation
☐ Collections/Non-Field Study
☐ Overview/Lit Review ☒ Monitoring ☐ Ethnographic study ☐ Site specific visit
☐ Other

7. Description of Undertaking (what does the project entail?): The project consisted of archeologically monitoring 18 mechanically excavated trench segments and the hand excavation of two test pits. Five features were located in the trenches. Total excavations equaled 2595 sq ft (240 sq m).

8. Dates of Investigation: 3/22/17 – 4/3/17

9. Report Date: 4/24/17

10. Performing Agency/Consultant: Office of Archaeological Studies
Principal Investigator: Eric Blinman
Field Supervisor: Richard H. Montoya
Field Personnel Names: Richard H. Montoya, Karen Wening, and Vernon Foster

11. Performing Agency/Consultant Report No.:
Archaeology Notes 491

12. Applicable Cultural Resource Permit No.:
NM-17-027-M

13. Client/Customer (project proponent): Santa Fe Planning Group, Inc.
Contact: Scott Hoeft
Address: PO Box 2482, Santa Fe, NM 87504
Phone: 505-412-0309

14. Client/Customer Project No.:

15. Land Ownership Status *(Must be indicated on project map):*

Land Owner	Acres Surveyed	Acres in APE
New Mexico School for the Arts	.059 (monitored)	
TOTALS	.059	

16 Records Search(es):

Date(s) of ARMS File Review 3/16/17.	**Name of Reviewer(s)** R. Montoya	
Date(s) of NR/SR File Review 3/16/17.	**Name of Reviewer(s)** R. Montoya	
Date(s) of Other Agency File Review	**Name of Reviewer(s)**	**Agency**

17. Survey Data:

a. Source Graphics

☐ **NAD 27** ☒ **NAD 83** **Note: NAD 83 is the NMCRIS standard**

☐ **USGS 7.5' (1:24,000) topo map** ☐ **Other topo map, Scale:**

☒ **GPS Unit** **Accuracy** ☐ **<1.0m** ☒ **1-10m** ☐ **10-100m** ☐ **>100m**

b. USGS 7.5' Topographic Map Name **USGS Quad Code**

Santa Fe	35105-F8-TF-024

c. County(ies): Santa Fe

17. Survey Data (continued):

d. Nearest City or Town: Santa Fe

e. Legal Description:

Township (N/S)	Range (E/W)	Section	¼ ¼ ¼
			, , .
			, , .
			, , .
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			, , .
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			, , .
			, , .
			, , .

Projected legal description? ☐ **Yes** ☐ **No** ☒ **Unplatted**

f. Other Description (e.g., well pad footages, mile markers, plats, land grant name, etc.):

18. Survey Field Methods:

Intensity: ☐ 100% coverage ☐ <100% coverage

Configuration: ☐ block survey units ☐ linear survey units (l x w):

☐ other survey units (specify):

Scope: ☐ non-selective (all sites recorded) ☐ selective/thematic (selected sites recorded)

Coverage Method: ☐ systematic pedestrian coverage ☐ other method (describe)

Survey Interval (m): **Crew Size:** **Fieldwork Dates:**

Survey Person Hours: **Recording Person Hours:** **Total Hours:**

Additional Narrative:

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.): The project was located in an urban area with asphalt and concrete covering the entire area.

20. **a. Percent Ground Visibility:** 0%, due to the asphalt and concrete in the area.
b. Condition of Survey Area (grazed, bladed, undisturbed, etc.):

21. CULTURAL RESOURCE FINDINGS ☒ **Yes, see next report section**
☐ **No, Discuss Why:**

22. Required Attachments (check all appropriate boxes): All of the information below is included in the attached report.	**23. Other Attachments:**
☒ **USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn** ☒ **Copy of NMCRIS Mapserver Map Check** ☒ **LA Site Forms - new sites (*with sketch map & topographic map)*** ☒ **LA Site Forms (update) - previously recorded & un-relocated sites (*first 2 pages minimum)*** ☐ **Historic Cultural Property Inventory Forms** ☐ **List and Description of isolates, if applicable** ☐ **List and Description of Collections, if applicable**	☐ **Photographs and Log** ☐ **Other Attachments** ***(Describe)*:**

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Responsible Archaeologist:

Signature _____ **Date** 6/29/2017 **Title (if not PI):**

25. Reviewing Agency:	**26. SHPO**
Reviewer's Name/Date	**Reviewer's Name/Date:**
Accepted ( ) Rejected ( )	**HPD Log #:**
Tribal Consultation (if applicable): ☐ **Yes** ☐ **No**	**SHPO File Location:** **Date sent to ARMS:**

CULTURAL RESOURCE FINDINGS
[fill in appropriate section(s)]

1. NMCRIS Activity No.:	**2. Lead (Sponsoring) Agency:**	**3. Lead Agency Report No.:**
137895	City of Santa Fe	

SURVEY RESULTS:
Sites discovered and registered: 4
Sites discovered and NOT registered: 0
Previously recorded sites revisited (*site update form required*): 0
Previously recorded sites not relocated *(site update form required):* 0
TOTAL SITES VISITED: 4
Total isolates recorded: 0 Non-selective isolate recording? ☐
HCPI properties discovered and registered: 0
HCPI properties discovered and NOT registered: 0
Previously recorded HCPI properties revisited: 0
Previously recorded HCPI properties not relocated 0
TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 0

MANAGEMENT SUMMARY:

IF REPORT IS NEGATIVE YOU ARE DONE AT THIS POINT.

SURVEY LA NUMBER LOG
Sites Discovered:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

Previously recorded revisited sites:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

MONITORING LA NUMBER LOG *(site form required)*

Sites Discovered (*site form required*) **:** **Previously recorded sites *(Site update form required):***

LA No.	Field/Agency No.	LA No.	Field/Agency No.
187629, 187630, 187631, 187632			

Areas outside known nearby site boundaries monitored? Yes ☒, No ☐ If no explain why:

TESTING & EXCAVATION LA NUMBER LOG (*site form required)*

Tested LA number(s)	Excavated LA number(s)

Administrative Summary

At the request of Sanbusco LLC, the Office of Archaeological Studies (OAS) has conducted an archaeological reconnaissance program of the first phase of the transformation of the Sanbusco Center into the New Mexico School for the Arts (NMSA). The reconnaissance of this phase is focused on 123,558 square feet of extramural space that surrounds the existing Sanbusco buildings, all on private land. Reconnaissance was conducted as part of the archaeological clearance permitting process of the Santa Fe City Code (14-3.13), which in this case requires a minimum of 2472 square feet (2 percent) of investigation, of which at least 18 square feet (1.67 square meters) must be hand excavation. The cumulative length of backhoe trenches was 259.4 m (851 feet). Trench width was planned to be 3 feet; measured width was close to 1.0 meters, for a range of sampled space of 2553 to 2790 square feet. Hand excavation was conducted in two 1 by 1 m test units, for total coverage of approximately 25 square feet.

No previously defined archaeological sites fall within the project area, although 1998 monitoring of an area now incorporated within the northwestern portion of the Sanbusco buildings did result in the observation of Spanish Colonial era refuse. The project area is south of historically documented residences along Agua Fria Street (the modern trace of the historic El Camino Real de Tierra Adentro), and it is at the northern periphery of the Santa Fe Railyard and its historic features. The current Sanbusco buildings are the legacy of a series of lumber and hardware commercial establishments.

Reconnaissance encountered five features, three to the south of the Sanbusco buildings and two to the north. Four of the five features are coal and clinker disposal pits, and the three southernmost pits are clearly railroad related. The northernmost coal and clinker disposal pit may be domestic or commercial in association and is west of a relatively extensive area of historic domestic trash, with possible commercial trash as well. The domestic trash appears to have accumulated in the 1880–1920 period and is weighted toward the earlier portion of that period.

On the basis of the features (two of which are clustered), four archaeological sites have been defined by the reconnaissance effort. The two southernmost sites (LA 187629 and LA 187630) are railroad coal and clinker disposal locations. OAS recommends that they be considered non-significant, although it would be useful to monitor any future ground disturbing activity so that the north–south extent of the two sites could be determined. The northwestern site, LA 187631, is the possible domestic and commercial coal and clinker disposal pit. It too is recommended as non-significant, although monitoring to determine north–south extent would be useful. LA 187632 is the large northeastern historic refuse pit. The site is recommended as significant based on its potential to contribute to our understanding of domestic and commercial economies during the early railroad period in Santa Fe. OAS recommends that the site be considered for data recovery should future subsurface disturbance be planned for this area of the NMSA campus.

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1 ⇊ Introduction

Sanbusco LLC is renovating the old Sanbusco Center and adjacent buildings into a permanent campus for the New Mexico School for the Arts (NMSA) in Santa Fe, New Mexico (Figs. 1.1 and 1.2). The first phase of renovations is scheduled to begin in late May of 2017, with an estimated year of construction activity extending into 2018. Design concerns regarding the renovations are being addressed within the consultation and permitting framework of the Westside Guadalupe Historic District. Archaeological concerns regarding renovations also fall within the consultation and permitting framework of the Historic Downtown Archaeological Review District.

Not all areas of the NMSA campus will be subject to Phase 1 renovation in 2017. There are no plans for renovation of the commercial properties at the northwestern portion of the property or of the current parking area to the east of Guadalupe Avenue (Fig. 1.3). The existing Sanbusco buildings' footprints have been excluded from archaeological consideration given prior subsurface disturbance and minimal additional subsurface disturbance within the footprints as part of the planned 2017–2018 NMSA construction. All quantifications noted in this plan assume that the total area of investigation is that of the western extramural portion of the NMSA campus (123,558 square feet).

Although building footprints are excluded from Phase 1 archaeological reconnaissance considerations, utility upgrades alone are expected to result in more than 1000 linear feet (approximately 3800 square feet) of subsurface disturbance within the extramural areas of the NMSA campus. Areas of surface grading are also planned for parking and drainage reconfiguration. This total area of ground disturbance triggers the archaeological clearance permitting process of the Santa Fe City Code (14-3.13), which requires archaeological reconnaissance and reporting prior to the granting of construction permits. Reconnaissance is usually pursued by a sequence of hand excavations and mechanical trenching that sample 2 percent of the lot coverage area. Results of archaeological reconnaissance, including recommendations of significance and treatment, are reported to ARC for review prior to the granting of a clearance permit for construction.

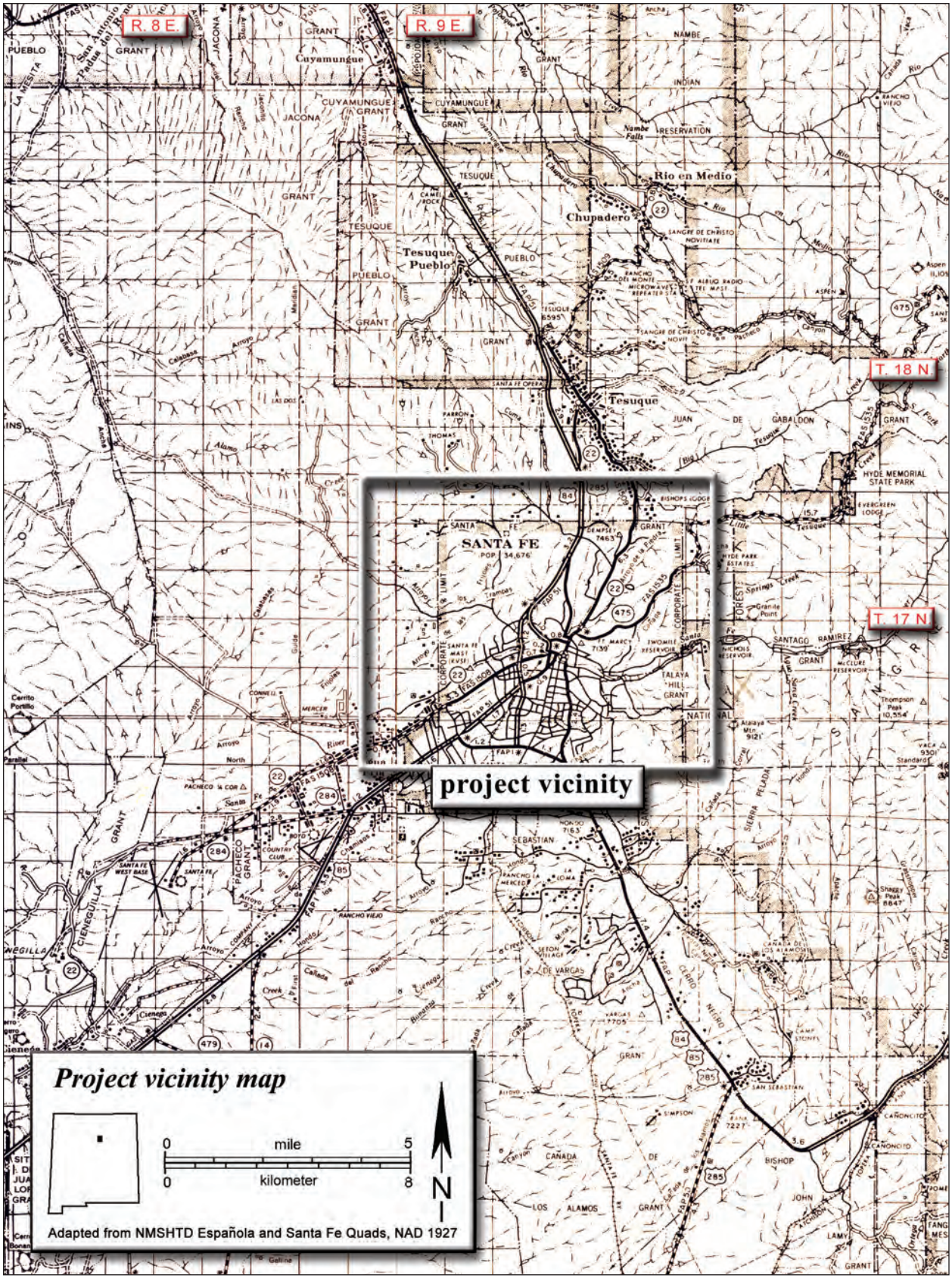

Figure 1.1. New Mexico School for the Arts project vicinity map.

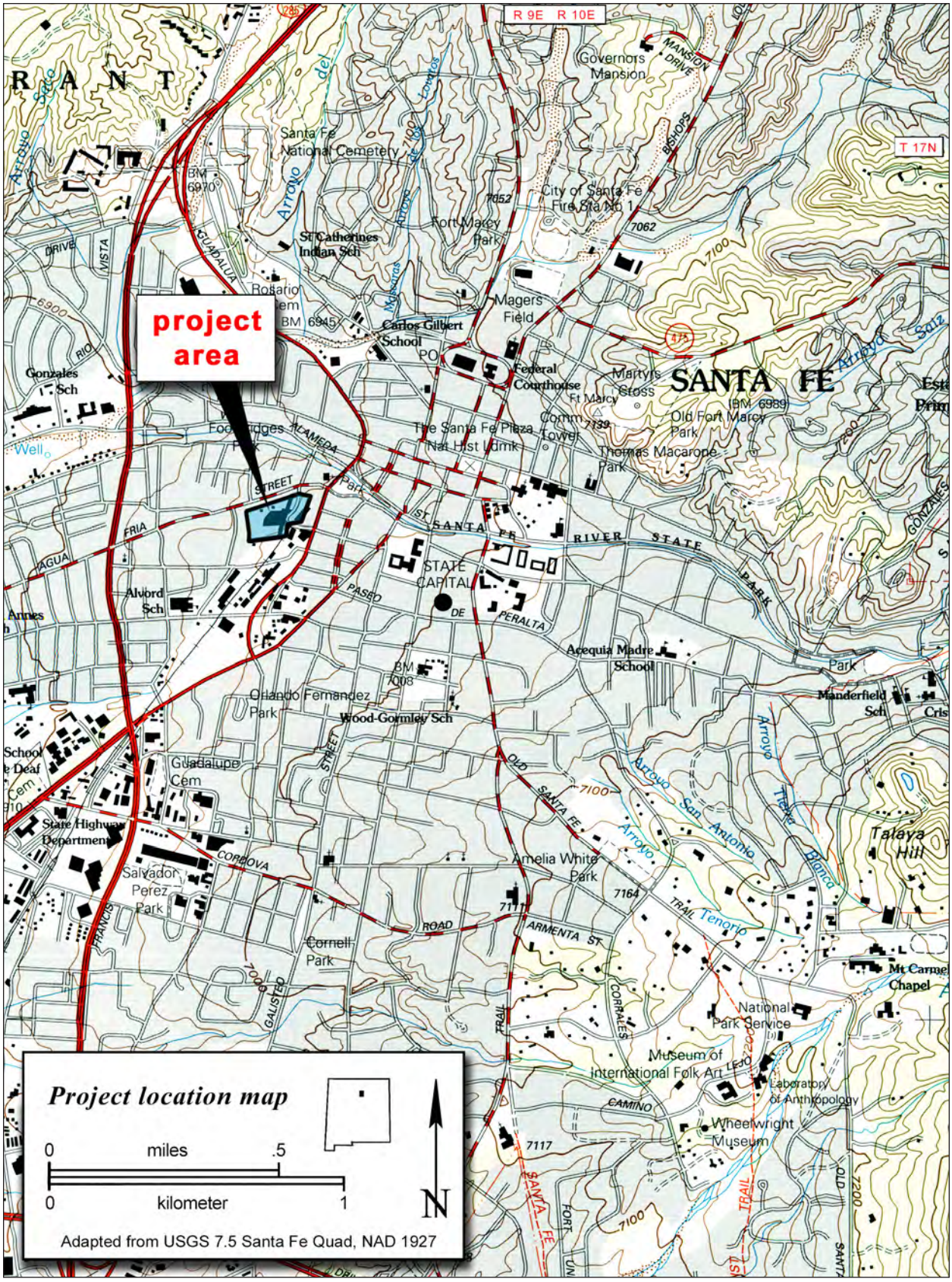

Figure 1.2. New Mexico School for the Arts project location map.

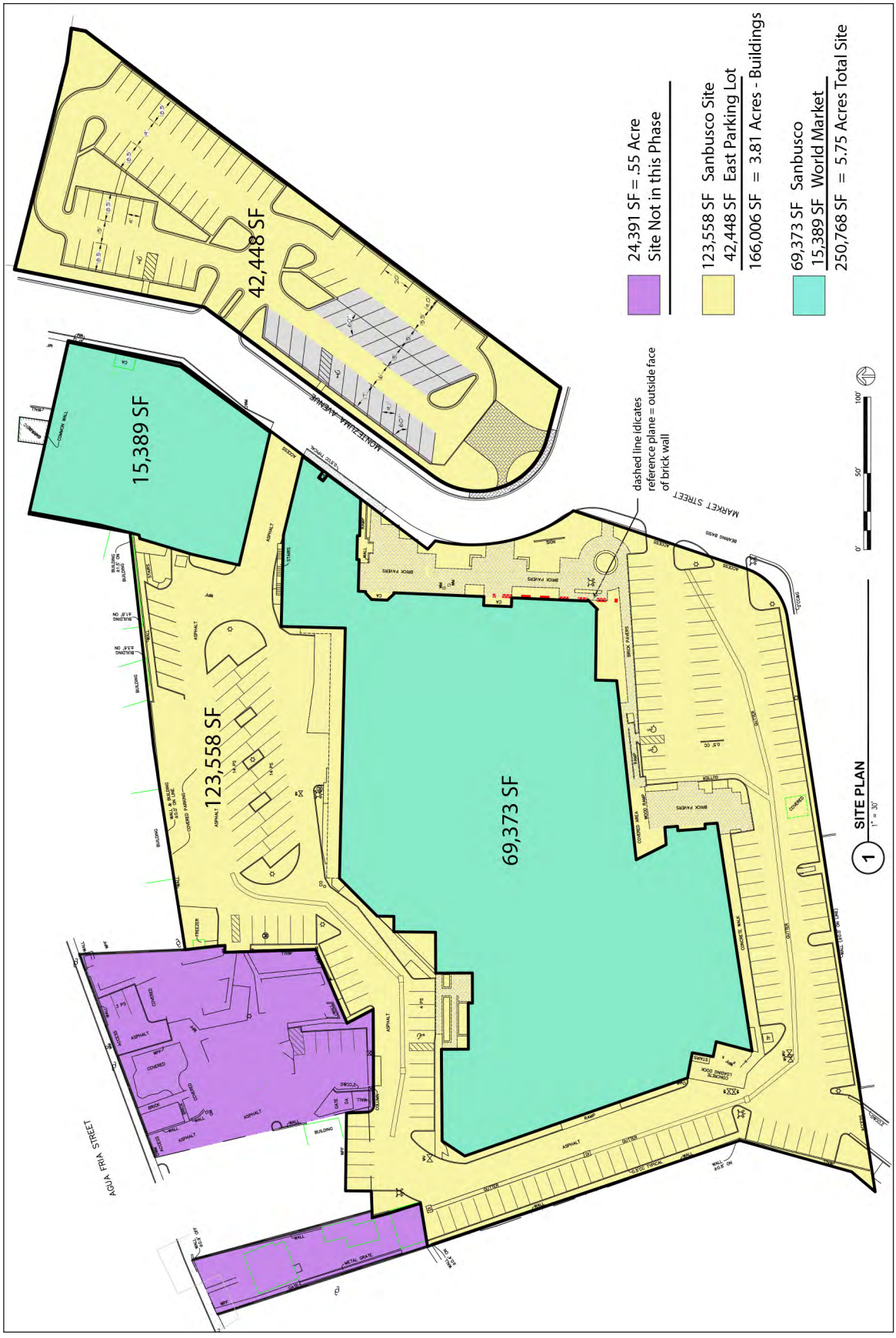

Figure 1.3. New Mexico School for the Arts site plan.

2 ⇓ Exisisting Conditions and Prior Reconnaissance in the Phase I Area

Prior subgrade excavations have occurred within the Phase 1 reconnaissance area. The disturbance was associated with 1998 additions to the west portion of the Sanbusco buildings (the former Borders bookstore). Excavations included construction features and an archaeological reconnaissance test unit (Fig. 2.1).

Two areas of subgrade storm water infiltration facilities occupy most of the northwestern portion of the Phase 1 project area. As-built documentation was not available for the 1998 work. However, civil engineering plans for the construction were provided by Walker Engineering, along with a Smith, Williamson, and Associates topographic sheet of 1998 conditions. The area of the water infiltration system penetrates to a depth of at least 34 inches (86 cm) below the current parking grade, with an unknown depth of leveling cut or fill used to establish the pre-1998 parking surface. During 1998 construction, up to 4 feet (1.22 m) of leveling fill was added at the margins of the 1998 parking area to expand the parking area to its current configuration.

At the time, the archaeological reconnaissance (Deyloff 1999) focused on the area of proposed 1998 construction. It is located almost exclusively beneath the current Sanbusco building footprint and is outside Phase 1 investigations here. One backhoe trench (Trench 5, Feature 104; Deyloff 1999:35-39) is located within the current Phase 1 project area (see Fig. 2.1). This 3.2 by 2.6 m excavation unit reached a depth of 0.65 m, at which point strata dominated by Santa Fe River cobbles was encountered. The northwest profile of the Trench 5 excavation (Fig. 2.2) is interpreted as disturbed and relocated mixed deposits with limited amounts of historic refuse, including glass. No artifacts were recovered from Trench 5, which is just north of a residence at 544 Agua Fria Street.

The depth of the 1998 Trench 5 identified culturally sterile alluvial cobbles at 65 cm depth. The 85 cm depth of the infiltration areas presumably reached or approached the elevation of non-cultural alluvial deposits. However, natural topography slopes beneath the existing parking lot level, and there is a chance that undisturbed cultural deposits may be located beneath as much as 4 feet (1.22 m) of construction fill at the margins of the infiltration structures. Due to the extent and fragility of the existing infiltration system, this possibility cannot be evaluated as part of the current reconnaissance project. The risk of damage to the infiltration system precludes any archaeological trenching in these areas of NMSA Phase 1 development. However, based on the disturbed nature of the 0.65 m of fill documented in the 1998 Trench 5, it is unlikely that intact cultural deposits are present in the north/ northwestern portion of the project area.

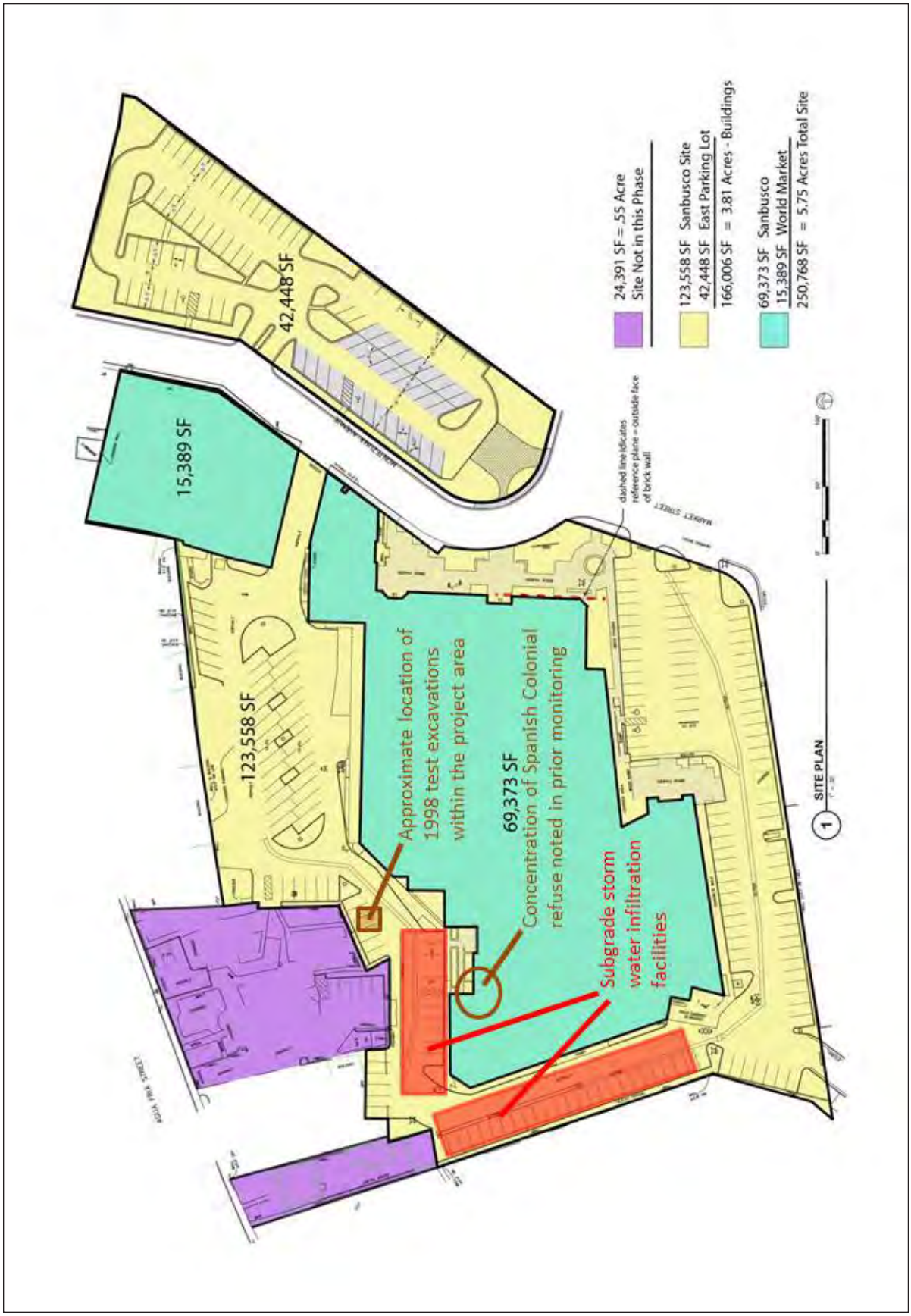

Figure 2.1. Areas of prior subsurface excavation within the Phase 1 area.

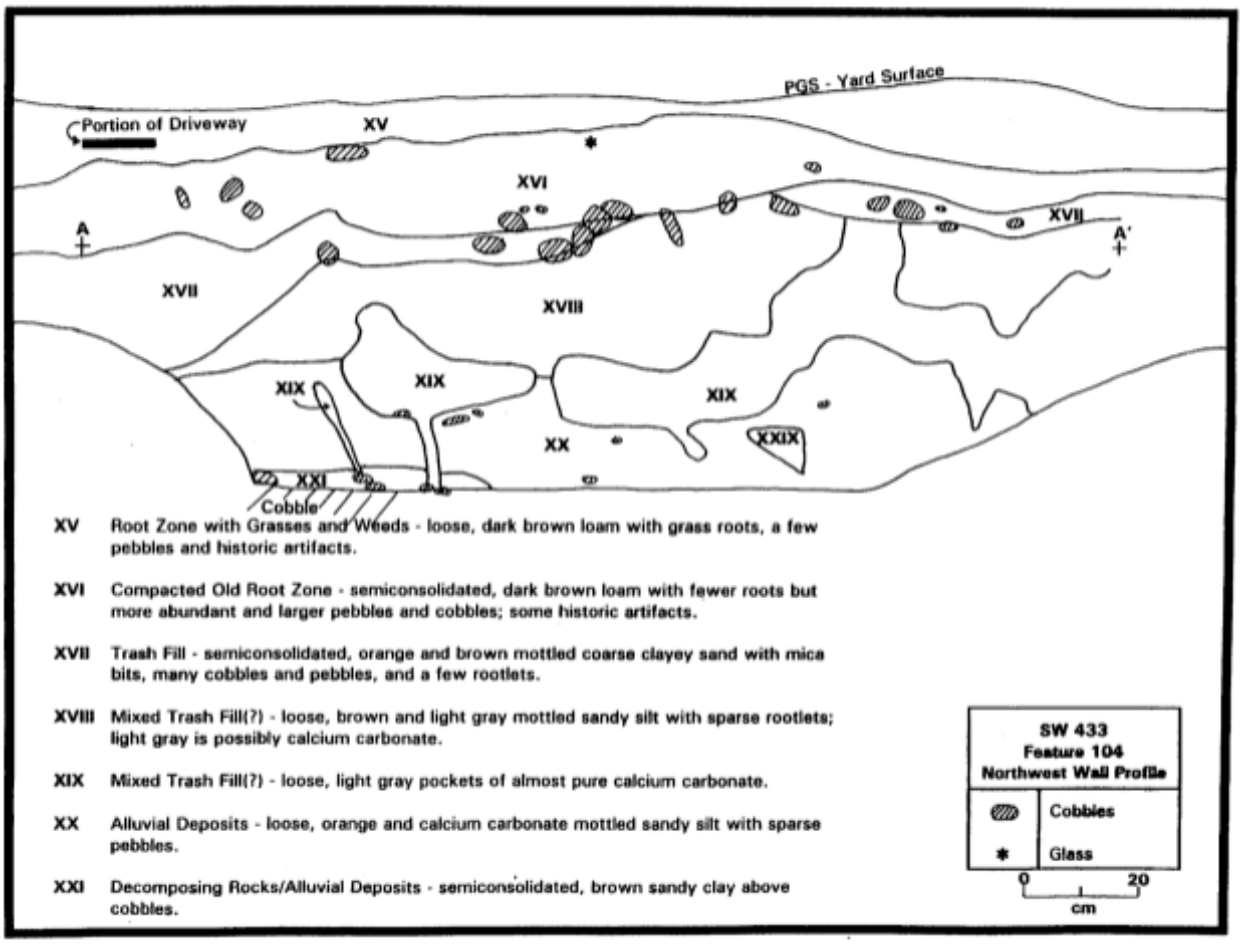

Figure 2.2. Stratigraphic profile of northwest wall, Trench 5, 1998.

3 ⇓ Archaeological Reconnaissance Design and Construction Plans

In addition to the pre-existing conditions described earlier, the proposed construction plans for Phase 1 developments provide the opportunity to design the archaeological reconnaissance effort. Preliminary trenching plans for NMSA campus utility upgrades are extensive (Fig. 3.1). The trenches in the draft plan that extend into Market Street, Montezuma Avenue, and the eastern parking area have been removed from Phase 1 construction plans and will not be implemented until the time of any future developments. One proposed pipe-bursting pit is located on private land adjacent to and west of the NMSA property. This pit has not been included in calculations of the sampled area. If this pit is utilized during construction, excavation will be monitored independent of the reconnaissance effort.

The utility trenching plan defines areas that will be disturbed during Phase 1 construction. In order to minimize overall subsurface impact of reconnaissance trenching, the decision was made to structure as much of the reconnaissance trenching as possible around the construction trenching plan. The construction plan calls for trenches 3 feet in width. This has been adopted as the standard for the reconnaissance trenching effort. Proposed utility trenches rarely coincide with paths of existing utilities, although there are many crossings of existing utilities. In order to minimize the risk of damage to existing utilities and maximize the quality of reconnaissance observations, the utility-aligned trenching skipped over pre-existing utilities. These skips are not included in total reconnaissance area calculations.

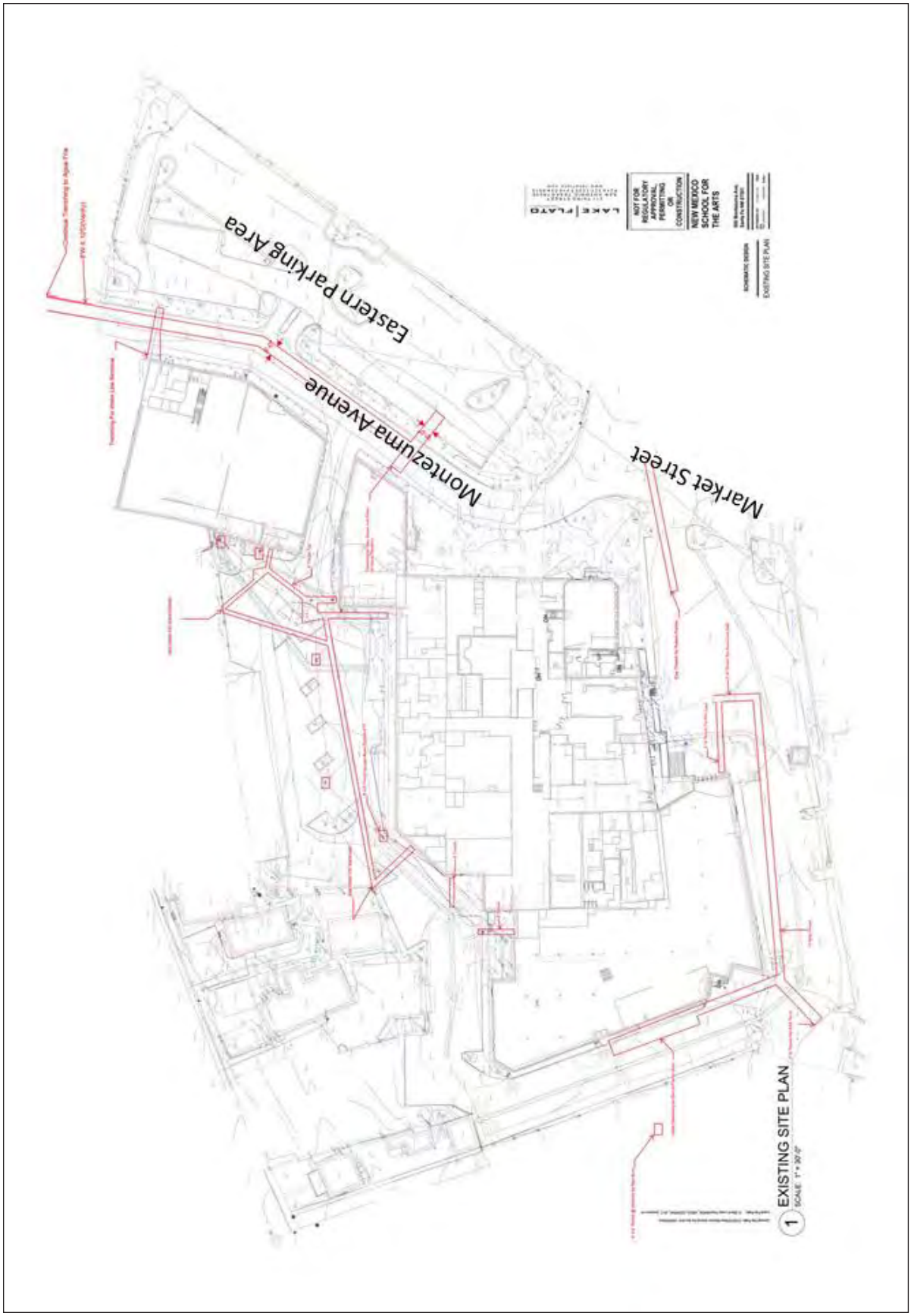

Figure 3.1. Preliminary trench locations for NMSA utility upgrades.

4 ⸸ Archaeological and Cultural Properties in the Vicinity of the Project Area

Boundaries of the Downtown Historic District and registered cultural properties and archaeological sites in the project area are shown in the Appendix, Fig. A.1 (NMCRIS Map Server accessed Jan. 19, 2017).

Sites and cultural properties within 500 m of the NMSA campus are listed in Appendix Table A.1. No archaeological sites have been defined within 100 m of the project area. Cultural properties located within 100 m and archaeological resources just beyond the 100 m buffer zone around the proposed project area appear in Appendix Table A.2.

Despite the lack of formal site designations, monitoring observations within the NMSA campus (see Fig. 2.1) have revealed a significant amount of Spanish Colonial era refuse (Deyloff 1999). The amount and temporal integrity of the refuse is sufficient to warrant definition of a site should reconnaissance observations during this project find additional evidence of the component.

5 ⸸ Physical Environment and Historical Background

Numerous recent archaeological projects in the downtown area have provided reports on the local history and environment of the area. Environment and cultural history for this preliminary report have been adapted from Maxwell and Post 1992, Lentz 2005, Wenker 2005, Hannaford 2007, Barbour 2011, and Lakatos 2011.

Environment

Local topography alternates among nearly level plains, rolling terraces, and steep, rocky slopes. The main tributary drainage here is the Santa Fe River. Other major tributary drainages include Arroyo de la Piedra, Arroyo Ranchito, and Arroyo Barranca, among others. These tributaries have wide, level floodplains, while smaller tributary arroyos have cut deeply into the alluvial plain. Much of the riparian zone adjacent to the Santa Fe River has deposited rich soils ideal for agriculture.

Geology

Santa Fe is located in a fault-zone feature within the structural subdivision of the Southern Rocky Mountain physiographic zone known as the Española Basin. The Española Basin is one of a chain of six or seven basins comprising the Rio Grande rift, which extends from southern Colorado to southern New Mexico (Kelley 1979:281). Considered an extension of the Southern Rocky Mountain Province (Fenneman 1931), this basin is surrounded by uplands of alternating mountain ranges and uplifted plateaus. The Rio Grande flows along the long axis of the feature (Kelley 1979:281).

The northern boundary of the Española Basin is composed of the eroded edge of the Taos Plateau. The Sangre de Cristo Mountains form the eastern edge of the basin, 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 basin's southwestern periphery. The Española Basin is bounded to the west by the Jemez volcanic field. The Brazos and Tusas Mountains form the northwestern boundary. Elevations along the Rio Grande through the basin vary from 1845 m (6053 ft) in the north to 1616 m (5301 ft) in the south. Altitudes in the surrounding mountains reach 3994 m (13,103 ft) in the Sangre de Cristo Mountains, 3522 m (11,555 ft) in the Jemez Mountains and 2623 m (8605 ft) in the Brazos and Tusas Mountains (Kelley 1979:281).

The Rio Grande rift was established during the late Oligocene epoch (ca. 30 million years BP) when a cycle of down-warping and extensional faulting succeeded a period of regional uplift (Kelley 1979:281). As the subsidence of the Española Basin proceeded through the Miocene and Pliocene epochs (ca. 3 million to 25 million years ago), erosion from the Nacimiento, Jemez, and Brazos uplifts to the north and northwest, and from the Laramide Sangre de Cristo uplift to the east and northeast, provided most of the sediment for what is known as the Santa Fe group, the prominent geologic unit within the Española Basin (Folks 1975). Formations within the Santa Fe group, such as the Tesuque Formation, consist of deep deposits (more than 1 km thick) of poorly consolidated sands, gravel and conglomerates, mudstones, siltstones, and volcanic ash beds (Folks 1975; 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. When combined with these alluvial deposits, they provide most of the materials needed for flaked stone artifact production. In particular, chert is available in the Ancha formation (Kelley 1979:11–12). 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 to the west of Santa Fe (Kelley 1979:12). A detailed soil map shows that the project area is dominated by the Bluewing Series (Folks 1975:15–16), which mostly consists of level to gently sloping terrace soils of gravelly sandy loam. The project area is at an elevation of 2130.5 m (6990 ft).

Climate

Santa Fe has a semi-arid 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 the local relief (Tuan et al. 1973).

The Santa Fe weather station is at an elevation of 2195 m (7201 ft). The mean annual temperature reported by the station is between 48.6° and 49.3° C (Gabin and Lesperance 1977). 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 lasts 164 days. The earliest and latest recorded frosts occurred on Sept. 12, 1898, and May 31, 1877, respectively (Reynolds 1956:251). Although a frost-free season of 130 days is sufficiently long to allow for the growing of most indigenous varieties of maize through dry farming (Schoenwetter and Dittert 1968; Hack 1942), the unpredictability of late spring and early fall frosts creates agricultural risk.

Precipitation in the Santa Fe area 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 for 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 than 45 percent of the mean annual precipitation falls between July and September (Gabin and Lesperance 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 in October. Late summer and fall moisture is derived from the Gulf of Mexico, when air masses from the region push inland, bringing economically important monsoons (Tuan et al. 1973:20). Summer rains tend to be violent and localized. This saturates the ground surface during the beginning of a storm and results in the loss of much of the resulting moisture through runoff.

Flora

Local flora is typical of Upper Sonoran grasslands. Piñon-juniper grasslands, which support a variety of plant and animal species, are the most common habitat. 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 shortgrass plains midway between the foothills and the Santa Fe River (Kelley 1979:12). The open valleys contain grama grass, muhly, Indian ricegrass, galleta grass, soapweed yucca, one-seed juniper, Colorado piñon, occasional Gambel's Oak, and small stands of mountain mahogany. Arroyo bottoms contain various shrubs, including four-wing saltbush, Apache plume, rabbitbrush, 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. This includes the area north of the present study area.

Fauna

Fauna native to the project area includes coyote, badger, porcupine, black-tailed jackrabbit, desert cottontail, spotted ground squirrel, prairie dogs, and many species of birds. Mule deer and black bears are known to occur in low numbers (Pilz 1984). Use of the area by elk and black and grizzly bears may have been more common prior to the turn of the century (Carroll 1984:2). Plains animals,

such as buffalo and pronghorn antelope, may have also been present or within a few days access.

Cultural Overview

Human occupation of New Mexico begins at least with the Paleoindian period and is continuous through the arrival of European colonists, marking the transition between the prehistoric to historic periods.

Prehistoric Period

The record of prehistoric occupation begins with the Paleoindian period, transitioning to the Archaic period as the glacial environment transitions to postglacial. No Paleoindian sites are defined for the immediate Santa Fe area, but ice age fauna, radiocarbon dates appropriate for Paleoindian landscape surfaces, and discoveries of Clovis points in the greater region suggest that early components eventually will be found in the area. The record of Archaic occupation is relatively better known from the Santa Fe area (e.g., Post 2010), but sites are sparse and are not expected within the project area. Population density and archaeological evidence increase with the adoption of agriculture and a Formative way of life, and the archaeological record falls within the framework defined by Wendorf and Reed (1955).

Developmental Period

Sites from the Developmental period in the northern Rio Grande are comparable to the late Basketmaker III and Pueblo I periods of the Pecos classification. A growing number of Developmental sites are being recorded in the Rio Grande valley. These tend to be small with a ceramic assemblage composed primarily of Lino Gray, San Marcial Black-on-white, and various plain brown and red-slipped wares. The majority of the documented early Developmental sites are in the Albuquerque and Santa Fe districts (Frisbie 1967; Reinhart 1967; Peckham 1984). The settlement of the Rio Grande drainage has typically been attributed to immigration from either the southern areas (Bullard 1962; Jenkins and Schroeder 1974) or from the Four Corners/San Juan area (Judge 1991; Stuart and Gauthier 1988:49; Lekson and Cameron 1995:185) and—although direct evidence is meager—from the Mesa Verde area (Ortman 2009).

Archaeological sites in the Santa Fe area with Developmental components include:

(1) Pindi Pueblo (LA 1) is located in the Agua Fria area of south Santa Fe. Although primarily a Coalition period site, the site has an ephemeral Developmental period component represented by a single *jacal* room and a pithouse (Stubbs and Stallings 1953:225). Kwahe'e Black-on-white ceramics were recovered, and a tree-ring date of 1218+vv was recovered below the jacal structure (Robinson et al. 1972:38).

(2) LA 618, a pithouse site with extramural features, is located on East Palace Avenue, behind the old Fischer brewery, and dates to the late Developmental period (Elliott 1988:17). Other Developmental sites near downtown Santa Fe include the KP Site (LA 46300). This site is near the project area on top of a ridge along the north side of the Santa Fe River valley near Fort Marcy. Here, a single trash-filled burned structure was tested (Wiseman 1989). The pottery types recovered during testing included Red Mesa Black-on-white, Kwahe'e Black-on-white, "Chaco II" (Red Mesa, Rio Grande variety?) Black-on-white, Escavada Black-on-white, Gallup Black-on-white, Chaco Black-on-white, Puerco Black-on-red, Cebolleta Black-on-white, Socorro Black-on-white, and Los Lunas Smudged. Obsidian chipped stone predominated, although local chert types, particularly red jasper, were also found. Eleven tree-ring and two radiocarbon dates indicated that the occupation of the structure occurred in the mid- to late 1000s and the accumulation of fill in the early 1100s. Tree-ring cutting dates of AD 1116, 1117, and 1120 are associated with the Kwahe'e Black-on-white pottery. A wide variety of plant remains were recovered, including corn, squash, and beeweed. Fauna consisted of deer, antelope, and cottontail (Wiseman 1989:139). Not far from the KP Site, Mariah Associates recorded evidence of a Pueblo II (middle Developmental) village near Fort Marcy Hill (Acklen et al. 1994).

(3) At Ogapogeh, Pueblo de Santa Fe (LA 1051), in downtown Santa Fe, several pits from the early Developmental period were exposed. These contained cultigens radiocarbon dated to between AD 350 and AD 650, possibly some of the earliest domesticated *Zea mays* and squash in the northern Rio Grande (Lentz 2011:35–39).

Coalition Period

The Coalition period in the northern Rio Grande is marked by substantial increases in the number and size of habitation sites coincident with population coalescence and expansion into previously unoccupied areas. This includes a shift from mineral pigment to organic paint (primarily Santa Fe Black-on-white) in decorated pottery. In the beginning, the period was distinguished by an increase in the number of village sites, suggesting an overall increase in population, and the replacement of semi-subterranean structures with surface dwellings consisting of rectangular rooms arranged in small roomblocks. Although above-ground pueblos were built, pit-structure architecture continued into the early phases of this period. Rectangular kivas, which are incorporated into roomblocks, coexisted with subterranean circular structures (Cordell 1979:44). Frisbie (1967) notes the shift away from less optimal upland settings and a return to the permanent water and arable land adjacent to the major drainages.

In the northern Rio Grande, the Coalition period is characterized by two interdependent trends in population and settlement reflected in population growth. Whether this growth was due to immigration or indigenous population expansion is not fully understood. The Chama, Gallina, Pajarito Plateau, Taos, and Galisteo Basin districts, which had been the focus of little Anasazi use prior to AD 1100 to AD 1200, were settled during the Coalition period (Cordell 1979). In excess of 500 Santa Fe Black-on-white sites are listed for the Pajarito Plateau, although many of these sites are poorly documented (New Mexico Cultural Records Information System [NMCRIS], Archaeological Management Section, Historic Preservation Division). Representative sites of the Coalition period include LA 4632, LA 12700, and Otowi, or Potsuwii (LA 169). Artifacts used to identify early Coalition sites include slab metates, side-notched projectile points, Santa Fe Black-on-white ceramics, and a variety of indented corrugated gray wares (Lang and Scheick 1989:5). Anschuetz and Scheick (1999) identified four significant Coalition habitation settlement clusters in the Santa Fe Basin: (1) the Santa Fe downtown area at the contact between the Sangre de Cristo Mountains foothills and the lower piedmont; (2) the Rio Santa Fe Valley near present-day Agua Fria; (3) the Arroyo Hondo locale at the southern limits of the contact between the mountain foothills and the lower piedmont; and (4) the lower Rio Santa Fe Canyon in the Bocas de Centau locale upstream of La Bajada Mesa escarpment. Each of these clusters is near a sizable spring (Anschuetz and Scheick 1999). A Coalition pit structure, LA 143460, was recorded in downtown Santa Fe at the Federal Courthouse building. This structure, probably contemporaneous with the Coalition component at nearby LA 1051, yielded problematic chronometric dates (Scheick 2005:238). Overall, though, this site appears to have been occupied around the eleventh century and is probably part of Ogapogeh village.

Coalition populations made extensive use of an extremely broad range of environmental settings, including a wide variety of resource extraction and processing activity loci, agricultural fields and features, and small dwellings in the environs of large villages close to major drainages.

A Coalition component, LA 608–609, was investigated under Fort Marcy Hill and the Cross of the Martyrs (Acklen et al. 1994). Near Pindi Pueblo, the Agua Fria Schoolhouse site has a significant Coalition period component dating to between AD 1175 and AD 1325 (Lang and Scheick 1989).

A significant Coalition component dating to between AD 1175 and AD 1275 was investigated at Ogapogeh, Pueblo de Santa Fe (LA 1051), at the current Santa Fe Convention Center location (Lentz 2011). Substantial evidence was documented for ceremonial closures and ritual activities for the structures and features dating between AD 1175 and AD 1275. In the late thirteenth century, LA 1051 was abandoned by Coalition populations (Lentz 2011:39–110).

Classic Period

The Classic period postdates the abandonment of the San Juan Basin by sedentary agriculturalists. This is characterized as a time when regional populations may have reached their maximum size, and large communities with multiple plaza and roomblock complexes were established (Wendorf and Reed 1955:13). The Classic period in the northern Rio Grande coincides with the appearance of locally manufactured red-slipped and glaze-decorated ceramics in the vicinity of Santa Fe, Albuquerque, Galisteo, and the Salinas area after AD 1315 and with biscuit wares in the Pajarito Plateau, the Tewa

Basin, and the Chama areas slightly later (Mera 1939; Warren 1979).

Sites of the Classic period are characterized by a bimodal distribution—large communities associated with agriculturally focused smaller structures (e.g., fieldhouses) on the one hand and seasonally occupied farmsteads on the other. These sites contrast with the preceding Coalition period, during which a greater range of site types characterized the settlement pattern and the population had not yet aggregated into large communities.

The first glaze-painted pottery, called White Mountain Redware, was made in the Acoma and Zuni areas; types included are: Wingate Black-on-red (AD 1050–1200); Puerco Black-on-red (AD 1000–1200); and St. John's Polychrome (AD 1175–1300). Rio Grande copies of the Zuni area Nutria-phase polychromes began with the introduction of Los Padillas around AD 1300. Investigations of the large biscuit-ware pueblo sites on the Pajarito Plateau include initial studies by Adolph Bandelier (1882), Hewett (1953), and Steen (1977).

In the Santa Fe area, the Galisteo Basin saw the evolution of some of the Southwest's most spectacular ruins. Many of these large pueblos were tested or excavated by N. C. Nelson in the early twentieth century (Nelson 1914, 1916). Possibly the first stratigraphic excavation in the United States was executed by Nelson on the roomblocks and midden of San Cristobal Pueblo (LA 80). Large sites in the Galisteo Basin, such as Galisteo Pueblo, San Lazaro Pueblo, San Cristobal Pueblo, San Marcos Pueblo, and Pueblo Blanco, are summarized by Smiley, Stubbs, and Bannister (1953). The School of American Research conducted extensive research at Arroyo Hondo (Lang 1977). The majority of Classic-period sites in the Galisteo Basin was established in the early 1300s and was of short duration. By the late 1400s, this area appears to have experienced a substantial decline in population. This has been attributed to environmental instability.

The late phase of the Classic period is bracketed by Coronado's explorations of 1540 and the founding of Santa Fe in 1605 or 1610 (Chavez 1979; Snow 1999) and is characterized by population decline. Many farmsteads and fields were abandoned following droughts in the AD 1400s and early 1500s. Population centers shifted to areas along the major river valleys. In the Santa Fe area, few pueblos remained occupied even into the 1500s. Pindi had been abandoned relatively early (AD 1349; Stubbs and Stallings 1953), and Arroyo Hondo (Schwartz and Lang 1973) and Agua Fria Schoolhouse had both been abandoned by AD 1425 (Lang and Scheick 1989). Cieneguilla was abandoned in the late 1400s or early 1500s, although some researchers believe it was re-occupied, possibly until 1680 (Schroeder 1979; Elliott 1988). At approximately 500 rooms, the pueblo was the largest in the area at that time.

Classic-phase pit structures and features dating between AD 1365 and AD 1435 were encountered at Ogapogeh, Pueblo de Santa Fe (LA 1051), in downtown Santa Fe. This site appears to have functioned as a centrally located integrative center for surrounding Classic period villages (Lentz 2011). Abandoned in AD 1435, its Classic-period population may have relocated to the Tano Basin. After the first Spanish explorations (*entradas*) of the mid- to 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 introduced unfamiliar ideologies and new European-styled industries. Incursions by Plains groups caused the abandonment of many pueblos and a constriction of the region occupied by the Pueblo Indians (Chavez 1979; Schroeder 1979). Exposure to new diseases to which the Pueblo groups had no natural defenses, intermarriage, numerous casualties during and after the 1680 Pueblo Revolt, and the abandonment of traditional lifestyles all contributed to a significant decrease in Pueblo populations over the next few centuries (Dozier 1970; Eggan 1979; Simmons 1979).

The first European contact with the northern Rio Grande valley occurred in the late winter or early spring of 1541 when a foraging party made up of Francisco Vázquez de Coronado's men set up camp near Ohkay Owingeh (San Juan Pueblo). Having heard of Coronado's earlier plundering further south, the pueblo occupants hastily abandoned their homes, and the Spaniards looted the deserted villages. After scouting and ransacking several more pueblos—including Zuni, Hopi, and Acoma—in a futile attempt to find gold, Coronado returned to New Spain. Two friars left behind were promptly martyred. In another instance, several unfortunate clergymen left behind by the 1581 Chamuscado expedition at Puaray, near Bernalillo,

suffered similar fates (Hammond and Rey 1953:244, 259; Eggan 1979; Simmons 1979:178).

In 1591, San Juan Pueblo was visited again, this time by the Gaspar Castaño de Sosa expedition. Castaño de Sosa erected a cross at the pueblo, received obedience to the King of Spain, and appointed a Tewa governor, a mayor, and other administrators (Schroeder and Matson 1965:121, 129).With the goals of missionization, territorial expansion, and the acquisition of mineral wealth—i.e., gold and silver—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 and 1601, the Spaniards moved across the river to a partly abandoned 400-room pueblo roomblock that they renamed San Gabriel de los Caballeros (Ellis 1989).

The first Catholic mission church, called San Miguel, was built at the southern end of the village (Stubbs and Ellis 1955; Ellis 1989). Soon, New Mexico was divided into seven missionary districts. A Spanish magistrate was appointed for each pueblo, and all the pueblos were subsumed under Oñate's leadership (Spicer 1962:156; Ellis 1989; Lentz and Goodman 1992). In December of 1598, Juan de Zaldivar, a nephew of Oñate, rode to Acoma Pueblo for the purpose of trading for food and other goods. Threatened by reports the Spaniards' potentially warlike intentions, and antagonized by the soldiers' attitudes toward the Pueblo women, the Acomas attacked the group, killing 12, including Juan de Zaldivar.

In January 1599, under Oñate's orders, a Spanish expedition led by Juan's brother, Vicente, retaliated against the Acomas by siege and cannonade. Most of the village was burned. More than 600 people were killed, and approximately 500 others were imprisoned. The prisoners of war were forced into slavery and the right feet of 20 men over the age of 25 were amputated. Zaldivar transported eight women to Mexico, where they were put to work as servants or prostitutes. Others were dispersed as slaves to other colonizers. By 1620, the survivors of the Acoma massacre had rebuilt their community (Garcia-Matson 1979:456–457; Goodman 2010:19–20).

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 by Oñate's successor, Don Pedro de Peralta (Ellis 1989; Snow 1999; Lentz and Goodman 1992).

Over the next 20 years, churches were built in all of the area's pueblos. Native American secular and church officers were established in each village. These officers included governors (*gobernadores*), magistrates or mayors (*alcaldes*), tax collectors (*fiscales*), and other pueblo officials. During the 1620s the villages were peaceful, and the number of conversions to the Catholic Church increased. By 1630, 50 Franciscan missionaries were working in 25 missions, and a Catholic school was operating in each (Spicer 1962:158; Noble 1989; Hordes 1990; Lentz 2004:8–9).

Historic Period

Although the impact of the European colonization of the Americas was probably felt in New Mexico in advance of the presence of Europeans, and although sixteenth century exploration resulted in the first historic records of the region, the initiation of the historic period is most conveniently placed at the initiation of permanent settlement at the beginning of the seventeenth century.

Spanish Colonial Period in Santa Fe

In 1609, Oñate's successor, Don Pedro de Peralta, received orders from the Viceroy of New Spain to relocate the capital of New Mexico to a location near the Santa Fe River at the foothills of the Sangre de Cristo Mountains. It was intended that the town be planned along the lines of the Reales Ordenanzas of 1573: a compilation of royal laws issued by King Philip II of Spain containing precise guidelines on how a Spanish colonial town should be laid out in the New World. Peralta may not have scrupulously adhered to these specifications. The founding of La Villa Real de Santa Fe included the construction of irrigation ditches (*acequias*), fields, and domestic and administrative buildings. The small plaza-focused, fortified town had at its center the Casas Reales, a constellation of government offices, a military post, and governor's quarters; the final configuration is known today as the Palace of the Governors. East of the Plaza, facing west, was a solid adobe church named Our Lady of the Assumption. South of the Plaza, across the river, was the Barrio de Analco, which was comprised of the

residences of the Mexican Indians who accompanied Oñate on his colonizing mission and of other Indians of mixed tribal derivations (genizaros). Serving this community's spiritual needs was the Chapel of San Miguel (Stubbs and Ellis 1955; Hordes 1990; Snow 1999).

In the seventeenth century, Santa Fe likely resembled a typical Mexican town on the northern frontier of the vast Spanish empire. Despite its isolation, the town was provisioned once or twice a year with merchandise hauled 1600 miles along the Camino Real from Mexico City. What could not be obtained from Spanish sources was grown or built. Farming and ranching were the main industries, and Pueblo craftsmen were recruited to build churches and residences; supply vegetables, meat and firewood; and provide local imitations of European ceramics for storage and dinnerware. Until 1680, Santa Fe grew at a fairly steady pace (Noble 2008:vii; Lentz 2011). However, throughout the 1600s and as late as 1715, the town and its surrounding settlements were frequently attacked by marauding native groups. During this period, settlers built defensive towers (*torreones*) and guard posts (e.g., La Garita, in northeastern Santa Fe) and sought refuge in fortified communities like Agua Fria, La Cienega, and Chimayó (Lentz 2011:31).

Pueblo Revolt of 1680

The year 1676 marked the start of a series of events that ultimately 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 by nearly all of the pueblos, including Hopi, Zuni, and Pecos. Only the southern Tiwa pueblos and the Piros did not participate. Twenty-one of the 33 Franciscan friars in the territory were killed, along with 400 Spaniards. In August of 1680, Santa Fe became the site of a well-planned siege by an alliance of Pueblo forces. On August 18, a fierce battle raged on the plaza on each side of a critical irrigation ditch (the Acequia Madre) directly in front of the Palace of the Governors (Lentz 2004:70). Once the water supply to the Palace was cut off by the insurgents, Governor Antonio de Otermín surrendered. On August 21, 1680, the Spaniards were allowed to evacuate the city without any further resistance (Hackett and Shelby 1942:11, 56–57; Noble 1989; Hordes 1990).

The Pueblos held firm to their independence for 12 years. In the winter of 1681–1682, an attempted reconquest by 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 *reconquista* was initiated in 1692 by Don Diego de Vargas. Far from "bloodless," as many accounts suggest, a coalition of Pueblo fighters was besieged, starved, and eventually slaughtered on Black Mesa. Seventy Pueblo leaders were executed (Twitchell 1925; Hackett and Shelby 1942; Dozier 1970; Simmons 1979:186).

Reconquest

After de Vargas regained control of the province in 1692, the Spanish government granted free title to tracts of land to encourage the resettlement of the New Mexico province. By 1696, northern New Mexico had been re-occupied, and a number of Hispanic colonists lived on approximately 140 land grants. The pueblos were granted their own "Pueblo Leagues." These were frequently encroached upon by Spanish colonists, and later, by Anglo-American settlers (Noble 1989; Hordes 1990).

Soon after 1698, Hispanic pioneers, such as Sebastian Martín and his family, settled north of Santa Fe along the upper Rio Grande, or the Rio Arriba. In the 1700s, this large area, which stretched to Taos, was the northern frontier of Spanish settlement. Life there was difficult and dangerous, with frequent Navajo, Ute, Apache, and Comanche raids, in addition to droughts, storms, and epidemics. In 1747, many of the northern frontier settlements were abandoned due to frequent attacks by Utes. Settlements such as Los Luceros were not re-occupied until 1750, and even then, guards had to be assigned to the residents (Lentz 2011:13).

One of many Spanish settlers to occupy the northern Rio Grande was Don Ignacio Roybal, who, in 1793, settled on the Pojoaque Pueblo land grant at Jacona. He began building an irrigation ditch, the Acequia Larga de Jacona, which encroached on the San Ildefonso Pueblo League to the west. This flagrant Spanish intrusion on Native American lands remains one of the longest standing water-rights cases in U.S. history (Hall 1987).

In 1695, the second villa decreed in New Mexico by the Spanish government was established 2 miles east of present-day Española. Founded by Don Diego de Vargas, it was named La Villa Nueva de Santa Cruz de la Cañada. Thus, Santa Fe became the first official villa in 1610, Santa Cruz the second in 1695, and Albuquerque the third in 1706 (Twitchell 1925; Pearce 1965; Hordes 1990; Snow 1999).

Mexican Period (1821–1846)

With the signing of the Treaty of Cordova on August 24, 1821, Mexico secured its independence from Spain, and New Mexico became part of the Mexican nation. New Mexico remained one of the "internal provinces" attached to the *comandancia* of Chihuahua, where the area joined Chihuahua and Durango to form the Internal State of the North. On January 31, 1824, the Internal State was dissolved and New Mexico reverted back to Mexican territory. The Treaty of Cordova decreed that all Indians residing in New Mexico be granted full Mexican citizenship. The *encomienda* system, a program of indentured servitude, was abolished. The concept of genizaros—displaced Native Americans who had lost their tribal identity through capture—was suspended. Perhaps more importantly, the brief Mexican Period saw the opening of the Santa Fe Trail and expanded trade networks brought new settlers and goods into the area for industrial manufacture. The Santa Fe Trail was the first American trans-Mississippi pathway to the West and the only route that entered into another country (Simmons 1988; National Park Service 1990; Lentz 2004).

In the early fall of 1821, William Becknell set out from Franklin, Missouri, carrying a small load of goods to trade with the Native Americans of the Rocky Mountains. He made his way across Raton Pass where he was met by Mexican troops. Instead of being taken prisoner for entering the territory illegally, he was escorted to Santa Fe to dispose of his goods. Trade became centered in Santa Fe, and goods overflowed into the Mexican provinces, where many merchants found lucrative markets for their wares. Trade with Santa Fe in turn brought Mexican silver coins, furs, wool, and raw materials to the north. Josiah Gregg brought the first printing press to New Mexico in 1834. Despite the increase in trade, conflicts with local Native Americans, and a lack of adequate finances continued to plague New Mexico.

It is not known if conditions in Santa Fe improved under Mexican rule. However, the opening of free trade routes with U.S. industrial centers provided an economic boost to the area. Several civic projects were undertaken to beautify the town. The Mexican Period ended abruptly with the annexation of New Mexico by the United States, an event that went largely unnoticed by most of the population outside of Santa Fe (Simmons 1988; Elliott 1988:34–35; Hordes 1990; Snow 1999; Lentz 2004, 2011).

Territorial Period (1846–1912)

The short-lived Mexican period ended when General Stephen Kearny accepted the surrender of Acting Governor Juan Bautista Vigil y Alaríd. The U.S. flag was run up over the Palace of the Governors on August 18, 1846. Through the Treaty of Guadalupe Hidalgo, enacted February 2, 1848, the Mexican War ended, and U.S. dominion in New Mexico was established.

In 1850, New Mexico was officially made a territory of the United States. Under Territorial U.S. laws, Pueblo Indians were afforded the same rights as all U.S. citizens. In Santa Fe, the U.S. military made plans for Fort Marcy, erecting earthen embankments on top of what is now known as Fort Marcy Hill. Constructed in preparation for any local resistance to the American presence, the fort was never occupied, although it appears to have been placed at that location to enforce U.S. hegemony over the former Mexican province.

Instead, the complex of barracks, buildings, and corrals constructed just north of the plaza became known as Fort Marcy. The fort was officially decommissioned in 1895 but was used intermittently by the military until 1906, when the Fort Marcy Hospital became Santa Fe High School (Barbour 2011:73–145; Lentz and Barbour 2011:63–145).

During the American Civil War, the Army of the Confederacy fought to gain control of the Santa Fe Trail in northern New Mexico. The Confederacy's strategy was to take over the proposed Southern Pacific Railroad route near the Mexican border. Uniting the Confederacy with transportation routes to the ports and gold fields of California would have bolstered the economy of the southern states and given the Confederate Army military and political power over most of the country. The

Confederates also planned to annex a portion of Mexico. According to strategists, the vast territory would add to the South's slave-based economy, which would stretch from the Pacific to the Atlantic (Barbour 2011; Lentz and Barbour 2011).

In February and early March of 1862, the Confederate Army, under the command of Brigadier General Henry Sibley, successfully defeated Union troops at Valverde, in New Mexico. The Confederate Army briefly controlled a portion of New Mexico along the Rio Grande from El Paso to Santa Fe and occupied Fort Marcy in March 1862. Sibley planned to capture Fort Union, east of Santa Fe. In its role as the protector of the Santa Fe Trail, Fort Union served as the headquarters and supply depot of the Department of New Mexico and played a key role in maintaining control over the entire territory.

The Battle of Glorieta, which took place along the Santa Fe Trail in Glorieta Pass, resulted in the Union Army taking control of New Mexico (Swanson 1988). During the decisive battle, both armies assembled at the opposing ends of Glorieta Pass. On the morning of March 28, 1862, both sides advanced simultaneously and a pitched battle was fought in the woods at Pigeon's Ranch, near Pecos. Although the battle itself was a Confederate victory, Sibley conceded defeat after receiving word that a Union detachment had diverged, crested Glorieta Mesa, and destroyed the Confederate supply train at Johnson's Ranch. Confederate forces retreated from New Mexico, returning to Texas with one-third of Sibley's original troops. The Battle of Glorieta forced the Confederacy to abandon their plans to conquer the West, and the Union Army retained control of a main military supply route: the Santa Fe Trail (Swanson 1988; National Park Service 1990).

Following the Civil War, livestock became the dominant industry in the western valleys and in the Llano Estacado, east of the Pecos River. Undaunted by Comanche, Navajo, Ute, and Apache raids, New Mexico cattle and sheep industries thrived as new markets opened in the eastern United States. In the 1870s, conflicts between cattlemen, sheep ranchers, and homesteaders resulted in the Lincoln County range wars, which ended only after the intervention of federal troops during the administration of Governor Lew Wallace. Opportunities in land speculation led to the formation of the Santa Fe Ring, a group of attorneys, businessmen, ranchers, and promoters who controlled both economic and political life in the territory. Many prominent New Mexican citizens played a role at this time; these included Lawrence Murphy, John Chisum, John Tunstall, and Thomas B. Catron. Gunmen like Frank McNab and Billy the Kid were employed as "enforcers" (Mullin 1968).

Opened at the beginning of the Mexican Period, the Santa Fe Trail brought a minor economic boom to Santa Fe. The arrival of the railroad signaled the demise of the famous trade route. The first train of the Atchison, Topeka and Santa Fe Railway arrived in Las Vegas, New Mexico, on April 4, 1879. Though Santa Fe citizens prepared themselves for a boom, bad planning meant the main line of the railroad bypassed the city. The train stopped instead at a depot at Lamy, more than 20 miles from Santa Fe. The lack of accessibility gradually brought about a general business decline, and, after 1880, Santa Fe lost its prominence as a social and economic center. In 1883, in an effort to revitalize the economy, the town council created a fictitious celebration, the Tertio-Millennial. Although not nearly as successful as its sponsors had hoped, the Tertio-Millennial made Santa Fe a tourist destination (Barbour 2011:414).

In 1869, a French Franciscan priest, Jean Baptiste Lamy, began construction of the St. Francis Cathedral on the adobe remains of the previous 1806 "fifth" Parish church. Archbishop Lamy brought a strong stabilizing presence to Santa Fe society, which had been previously known for its unruly "Wild West" atmosphere. Lamy died in 1884, two years before the cathedral was completed.

New Mexico failed to obtain statehood in 1850, 1867, 1870, and again in 1889. Finally, on January 6, 1912, President William Howard Taft signed a bill making New Mexico the 47th state of the Union.

History of Project Area (Adapted from Glenda Deyloff 1999)

Due to the fact that the project area is on the south side of the Santa Fe River, a considerable distance from the plaza, very little documentation exists that describes activities that took place there during the first two centuries of the Spanish Colonial Period. The location of the project area, a significant distance from the center of town, as well as the network of irrigation ditches, strongly suggests that the area was used for agricultural purposes during this period.

The observation of late sixteenth or early seventeenth century refuse during monitoring within the NMSA campus (Deyloff 1999) suggests the presence of a Spanish Colonial residential component in the vicinity. This early use as yet has no documentary support, and the first documented ownership dates to the late 1730s or early 1740s. Evidence is in the form of 1742 land grant documents given to two families. The land was bounded on the north by either the Camino Real (presently Agua Fria Street) or a "very old acequia" adjacent to the Camino Real and on the south by the "*camino de los carros*" or "wagon road" to Albuquerque (presently Cerrillos Road).

It is difficult to place the original tracts of land in relation to one another due to inconsistencies in contemporary documentation. There are separate documents that describe the 1742 grant, issued to Tomas de Tapia, as having two distinct neighbors to the east. The June 2, 1742 petition for the grant identified the east boundary as "the lands of Phelipe-Pacheco," but the act of possession, dated the next day, places "the boundary marker of Phelipe Tafoya" as the east mark (New Mexico Records Center and Archives [NMRCA], Spanish Archives of New Mexico [SANM], Series I, No. 962, June 2–3, 1742). Tafoya had petitioned the governor of New Mexico for his grant on May 26, 1742, but he was not placed in possession of the grant until June 2 of that year. The Pacheco property was cited as the east boundary of the Tafoya grant, but Tapia's property was never mentioned (NMRCA, SANM I, No. 961, May 26–June 2, 1742).

Based on subsequent documentation, it appears Phelipe Tafoya possessed the large tract that eventually included the project property. Baptismal, marriage, census, and land transfer records indicate the people who inherited or purchased the subdivided lands from this family owned property that later was transferred to Charles Dudrow in 1882.

The Tafoya's intent to use the land for agricultural purposes is clear in his petition for the grant from the governor of New Mexico. Phelipe Tafoya registered "a place of cultivated land… deserted and unpopulated, in which can be raised two bushels of wheat and one of corn…" (NMRCA, SANM I, No. 961). *Jose de Urrutia's map of Santa Fe* (1766) (Fig. 5.1), *Lt. Jeremy F. Gilmer's Plan of Santa Fe* (1846–1847) (Fig. 5.2), and the 1877 Plat of Santa Fe Map (Fig. 5.3) confirm continuous usage over time, showing scattered homes but mostly fields in the project area.

Records do not indicate whether Tafoya and his household maintained a residence on the project property. In his 1771 will, Tafoya distinguished his grant lands from the house (location not specified) brought to the marriage by his second wife, Teresa Fernandez de la Pedrera. His bequest of the grant lands to his son-in-law and grandson makes reference only to "a piece of farmland" but not to a house or other structures. The property pertaining to Fernandez consisted of a house, land, 30 head of cattle, 200 sheep, and 3 yoke of oxen. Tafoya's total declared livestock holdings numbered 41 head of cattle, 11 oxen, and 700 sheep under the care of individuals in Rio Abajo. In addition, Tafoya cited a mill, located apart from the house, which possibly could have been located on one of the three acequias on the property in the larger area of the project vicinity (NMRCA, SANM I, No. 881).

By the time of his death in 1771, Phelipe Tafoya had risen to the ranks of *alcalde mayor* of Santa Fe and war captain and lieutenant governor of New Mexico. Some sources indicate he also practiced medicine (Chavez 1954). In his will, he divided the property he had received by royal grant in 1742, between his grandson Joseph Martin (also cited as Martines), and son-in-law, Juan Diego Romero, who was married to Tafoya's daughter, Gertrudis. Each received 173 *varas* of farmland (measured east to west), which ran from the Camino de los Carros on the south to the old acequia madre on the north (which marked the boundary of the lands of the Gardunos). Tafoya's will made no mention of either the east or west boundaries or of any structures that might have existed on the property (NMRCA, SANM I, No. 995).

The north portion of the property inherited by the Romero family eventually came into the possession of Juana Trinidad Torres, born in 1811, the daughter of Christoval and Felipe Torres, and granddaughter of Martin Torres and Maria Pacheco (AASF, Reel 16, Frame 1062). In the 1823 census, Juana Trinidad Torres was living in this area, but no mention exists of Francisco Torres who in 1824 conveyed land to Clemente Esquibel and who was listed as a neighbor in the 1817 deed from Josefa Sena to Clemente Esquibel (NMRCA SANM I, No. 266) (Olmstead 1975:164). This land was sold for

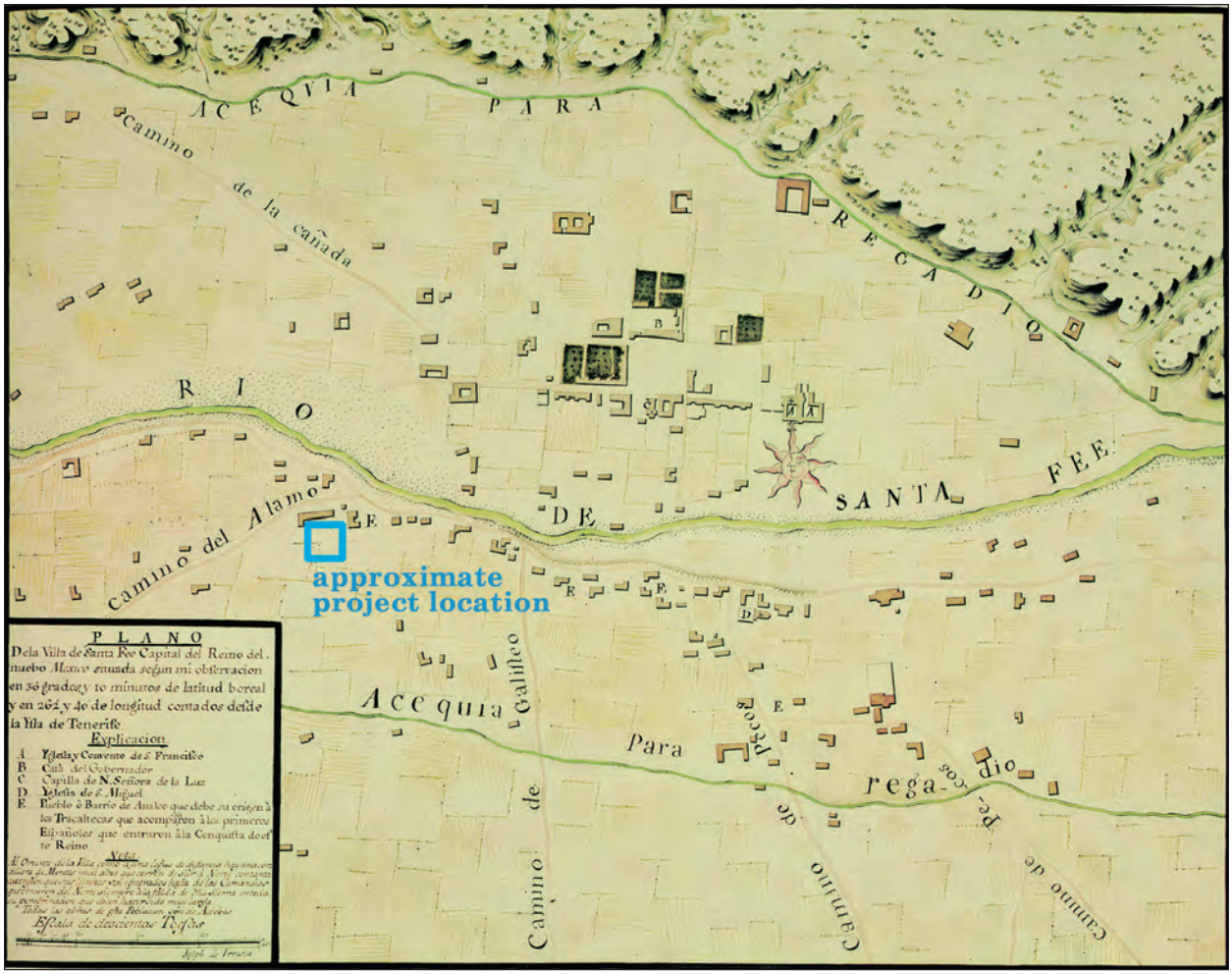

Figure 5.1. Jose de Urrutia's map of Santa Fe (1766) with approximate location of the NMSA campus.

74 *pesos*. It was agricultural land in the vicinity of Nuestra Senora de Guadalupe Church. By 1823, during the Mexican Period, census and tax records list 57 families in the *barrio*. Residents' occupations are listed as farmers, laborers, masons, cobblers, tailors, shepherds, and silversmiths (Sze and Spears 1988:37). The land was bordered on the north by the land of the buyer and the house of the seller, on the south by the arroyo that divided the land of Jose Antonio Rendon, on the east by the land of Eulojio Rendon, and on the west by the Torres' heirs. The land measured 128 varas east to west and 153.5 varas north to south. This land might have been further downriver, but this could not be verified.

It is known that that in 1817 Clemente Esquibel obtained land from Josefa Sena (NMRCA SANM I, No. 263). The parcel measured 72 varas from east to west and 55 varas from north to south. It bordered on the land of Geronimo Esquivel on the east, on the land of Francisco Torres on the west and with the land of the buyer on the south and north. Esquibel also bought another piece of land, also recorded in this document, which was 41.5 varas that bordered on the east with the house of Martin Sais; on the north with the river; and on the south with the land of Geronimo Esquivel and the buyer. The price was 12 pesos in coin and several trade items, including corn. These lands are described as "tillable," and Clemente Esquibel had the right to put a structure on these lands, although it is unclear if he did so.

It appears Clemente Esquibel was consolidating land that might correspond to the project property. Esquibel had a daughter named Dolores, born around 1816 (Olmstead 1975:164). On April 21, 1855, Maria Dolores Esquibel conveyed land to Charles Muller Lerouge. This land was only a house

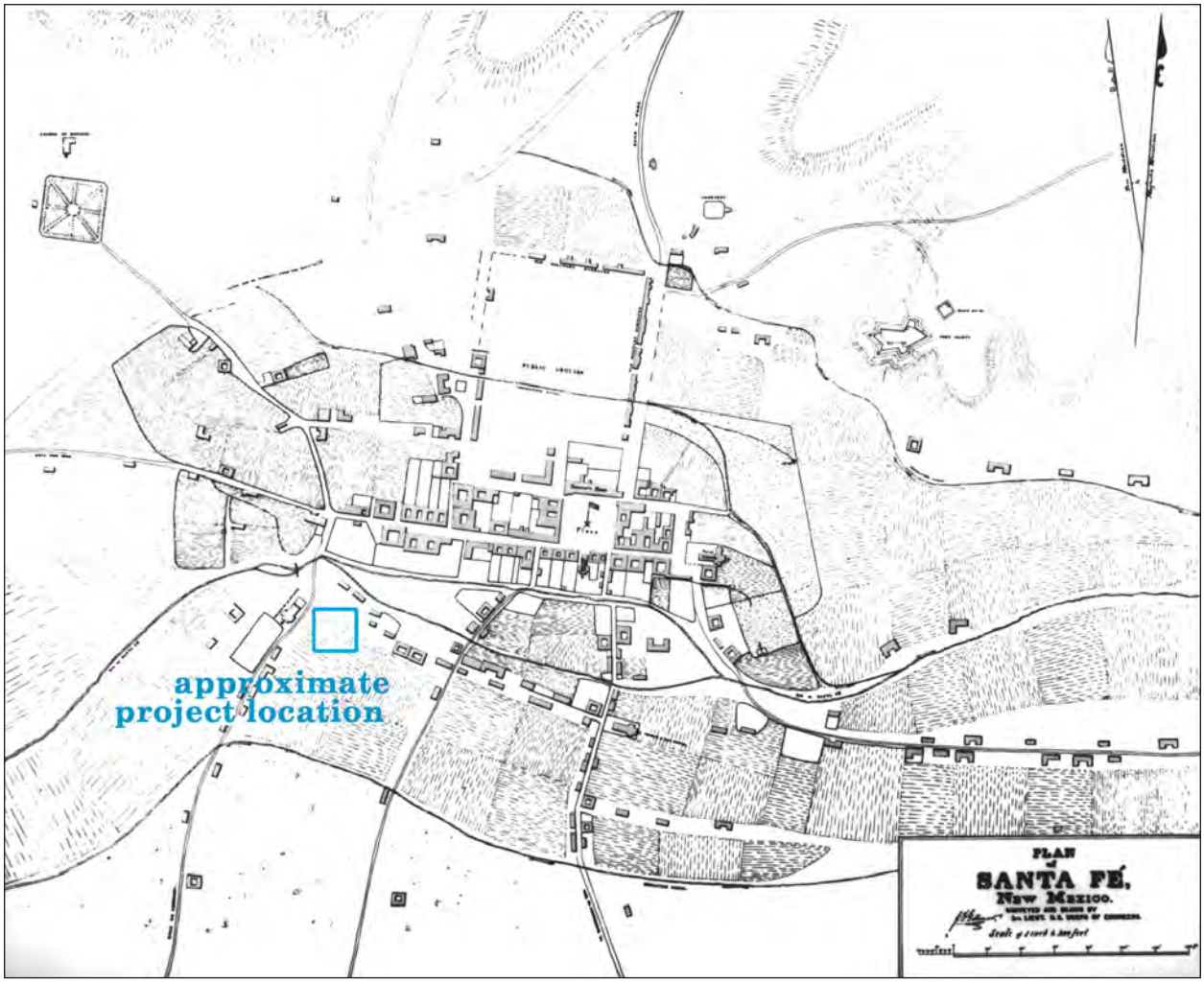

Figure 5.2. Lt. Jeremy F. Gilmer's Plan of Santa Fe (1846–1847) with approximate location of the NMSA campus.

lot that contained a three-room house and sold for $30. The property was on the south side of the Guadalupe Church on the main road to Agua Fria. The house of Antonio Sanchez bordered it on the east, the property of Jesus Romero on the south, and the common yard on the west (NMRCA Santa Fe County Deed Book F, pp. 422–23 [microfilm]).

In a deed dated January 19, 1860, Charles Lerouge and his wife Rita conveyed land to Fivis E. Kavanaugh for $150. The lot measured 464 ft north to south and 526 ft east to west. It was bordered on the south by the arroyo, on the north by the public road to Agua Fria, on the east by the land of Guadalupe Esquibel, and on the west by the land of Esquipula Quintana (Santa Fe County Deed Book C, pp. 233–34). This land could easily have been part of the tract that Clemente Esquibel first consolidated.

In a deed dated April 4, 1868, Juana Torres conveyed land to Jose Felix Brittan (Santa Fe County Records, Sp. Deed Book E, p. 442). The neighbor to the west was Refugio Esquibel de Martin. The census of 1860 shows Altagracia Martin, born between 1825 and 1830, lived on this plot. She was married to Roque Martin, a shoemaker. Her daughter Refugio was born in approximately 1843. The census also mentions the presence of other children who could be the children of Refugio (Maria, 4 years old; Juan, 2; and Juan Jose Abran, 3 months). Other members of the household include Benito Esquibel and Juan Martin. Their relationship with the others in the household is unclear (U.S. Federal Census, 1860, Santa Fe County).

By 1880, Refugio's child Juan lived in a separate household and had married Ruperta Warrick de

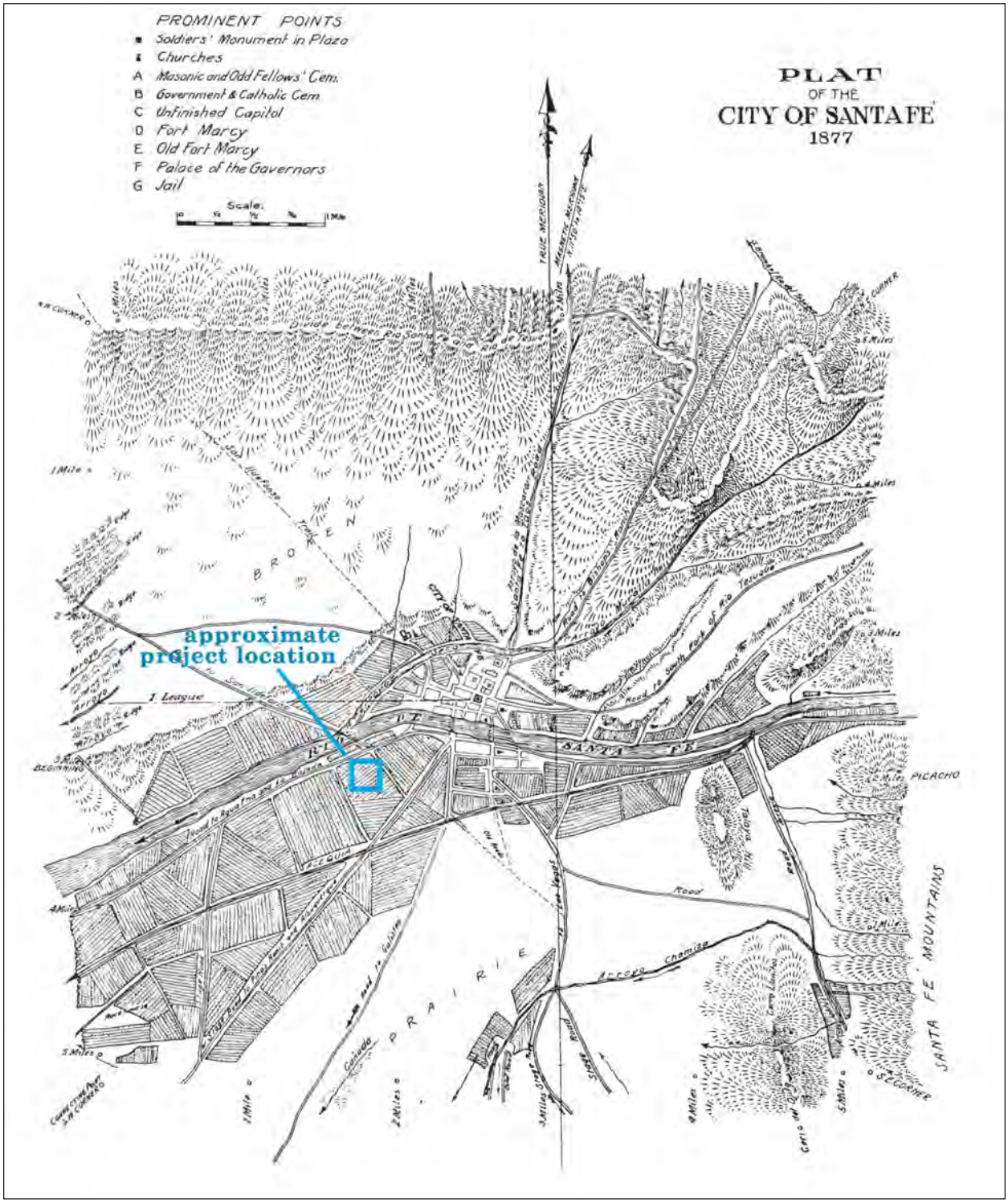

Figure 5.3. 1877 Plat of Santa Fe Map with approximate location of the NMSA campus.

Kavanaugh. In 1882 Refugio Aguilar, Abraham Kavanaugh, Juan Kavanaugh, his wife Ruperta de Warrick de Kavanaugh, and Maria Kavanaugh de Bustamente and her husband Andres Bustamente conveyed to Charles Dudrow a piece of land in the west part of Santa Fe and south of the Santa Fe creek for $454. The property adjoined the northwest corner of the AT & SF Railroad depot grounds. On the north, the land was bordered by the wagon road going to Agua Fria, on the west by the property of Francisco Quintana, on the south by R. H. Longwill and the northwest end of the AT & SF Railroad yards, and on the east by land owned by Dudrow and Samuel Bear as well as by the Houck Beer Bottling Company and land owned by Albino Bustamante, who was deceased. This land, according to the deed, formed the west portion of the lot that Lerouge had conveyed to Fivis Kavanaugh in 1860. Research indicates it might be the east, rather than the west portion of the Lerouge-Kavanaugh conveyance. The land measured approximately 121 yards on the east boundary, 70 yards on the north, and 99 yards on the west and 43 yards on the south. Because the deed conveyed the land and all appurtenances, it might have contained structures. This configuration conforms to the shape given on the map labeled "Map of the Depot Grounds and Right of way on the Santa Fe Branch of the NM and SPRR" (City of Santa Fe Planning Dept.; Santa Fe County Deed Book C, pp. 31).

The expansion of the railroad throughout the western United States during the 1870s brought faster and more economical shipping of a variety of goods and merchandise (Snow 1991:54). Predicting an economic boom for Santa Fe, leading local citizens and businessmen fervently welcomed the train's arrival (Snow 1991:54). In anticipation of the railroad's arrival, several of Santa Fe's leading citizens, attorneys Thomas B. Catron and William Berger, Antonio Ortiz y Salazar, Luciano Baca, Abraham Staab, and physician Robert Longwill, platted a subdivision east of the depot grounds known as "Valuable Building Lots" (Sze and Spears 1988:63). Land speculation along the railroad's arrival in 1880 changed the character of this area. The Barrio de Guadalupe neighborhood, north and west of the depot, became an even more densely populated residential area, while the Railroad District, including the depot area and blocks east and south, took on a commercial character intermixed with residences.

Charles W. Dudrow contributed to the growth of both the Barrio de Guadalupe neighborhood and the Railroad District. On January 13, 1882, Dudrow and Samuel Baer bought the project property from Juan Kavanaugh, Ruperta Warrick de Kavanaugh, Refugio Aguilar, Abraham Kavanaugh, Maria Kavanaugh, and Andres Bustamante (Santa Fe County deed Bok L, pp.31). Samuel Baer later sold his share of the property to Dudrow on January 30, 1889 (Santa Fe County Deed Book T, pp. 278). In the 1880s, the Santa Fe Depot and railyard were to the southeast of the current project area and the land owned by Longwill, one of the original railyard speculators, bordered the property on the south. To the east were two lots, one owned by Albino Bustamante, the other by A.L. Houck, who operated the Houck Beer Bottling Co. Land owned by Francisco Quintana formed the west boundary and Agua Fria Street the north boundary (Santa Fe County Deed Book L, pp. 31). By 1908, Dudrow had opened Dudrow Lumber Company on the east and south portions of his northwest property, and he and his wife Cora built their house facing Agua Fria Street, presently 546 Agua Fria Street. This residential lot is in the Barrio de Guadalupe neighborhood (Sze and Spears 1988:36). Between 1908 and 1912 (Figs. 5.4 and 5.5), Dudrow Street was one of the new streets created in the area (Sze and Spears 1988:40).

The exact date of Charles Dudrow's death is unclear but it certainly occurred before 1911. In that year, the Santa Fe Lumber and Transfer Co. leased the lumber yard from Dudrow's heir, Charles Dudrow Jr. At that time, Charles Jr., was a minor, requiring that his guardian, Josephine W. Kinsell, co-sign the lease. Following a vain search for Cora Dudrow (Charles Jr.'s mother) and any other possible heirs, the court officially awarded Charles Dudrow Jr., and his guardian legal and sole ownership of the Dudrow Lumber Company on February 23, 1921 (Santa Fe County Deed Book R-MS, pp. 564). Three years later, Dudrow and Kinsell sold the lumber yard to Santa Fe Builders Supply Co. (Santa Fe County Deed Book S-MS, pp. 514). Santa Fe Builders Supply Co. operated in the same place for more than 60 years, until the owners sold to Sanbusco Investments in 1985 (Joseph Schepps, personal communication, 1998).

The Dudrow residence and associated lot were sold to Romulo and Ina Lopez in 1913 (Santa

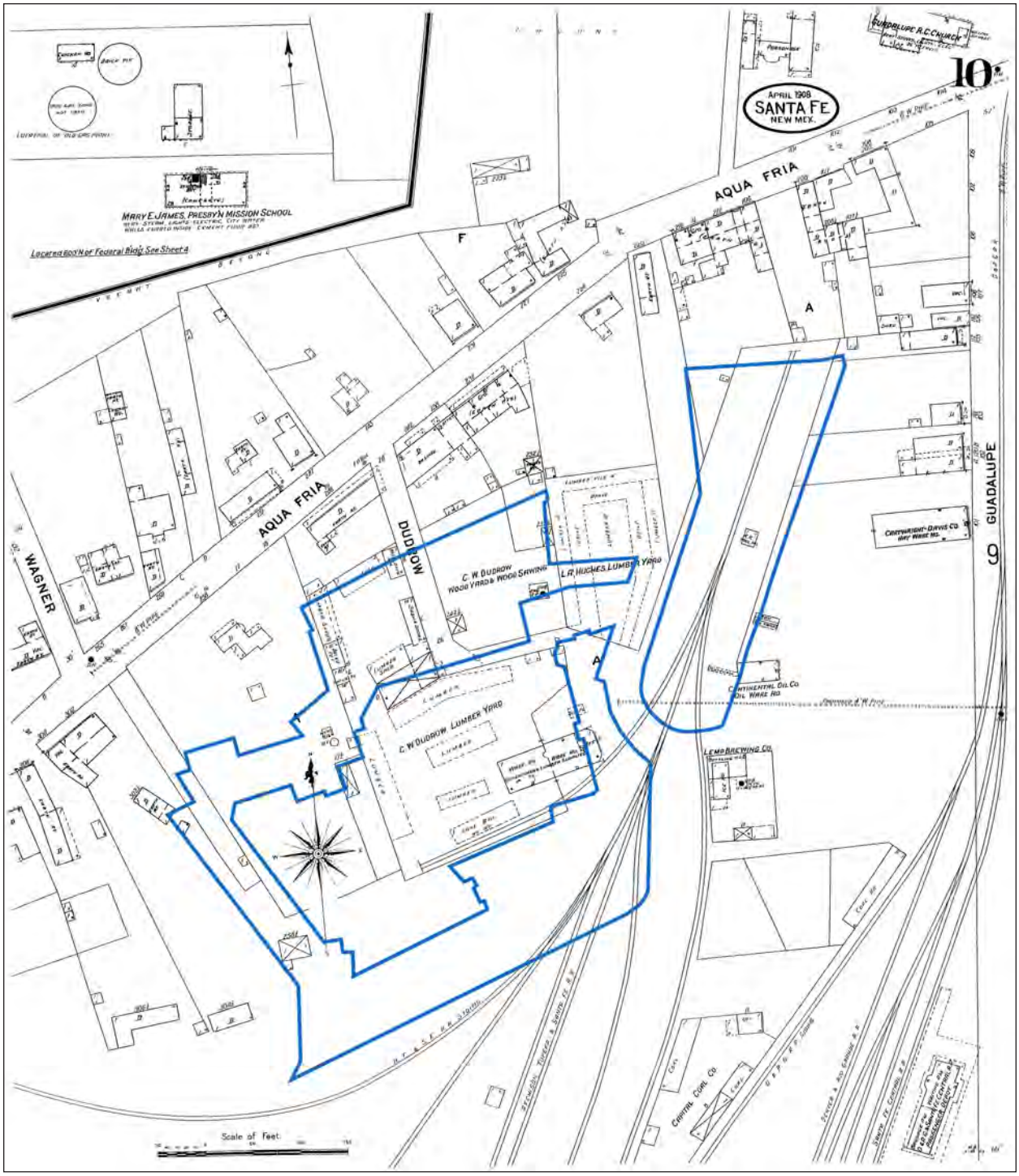

Figure 5.4. Sanborn Fire Insurance Map, Sheet 10 (1908) with approximate location of the NMSA campus.

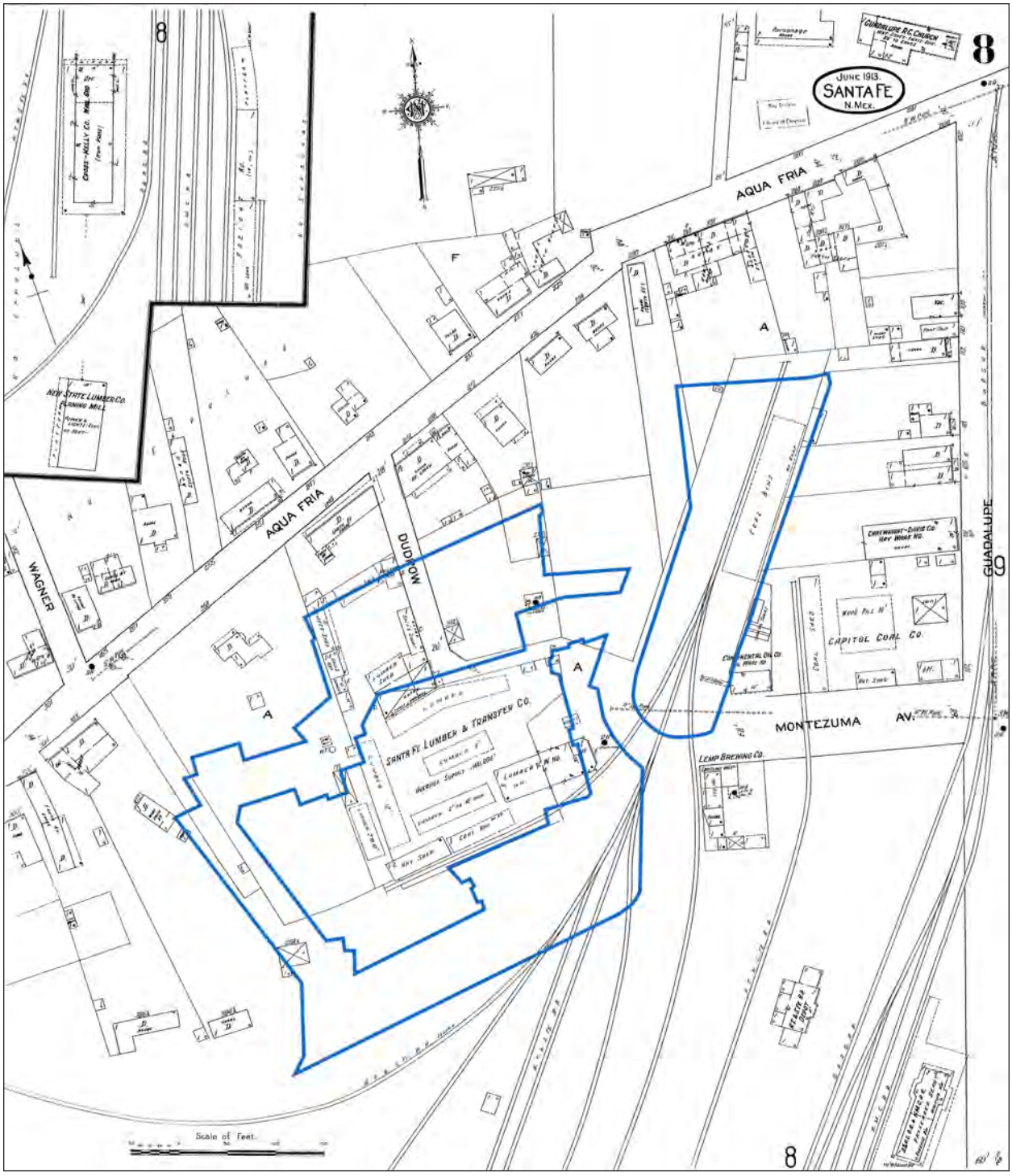

Figure 5.5. Sanborn Fire Insurance Map, Sheet 8 (1913) with approximate location of the NMSA campus.

Fe County Deed Book Q-3, pp. 372). The couple subdivided the large lot into three smaller lots. Later, each contained at least one house and a shed. Julian and Marina Martinez bought the lot 2 years later in 1915 (Santa Fe County Deed Book M-2, pp. 215). They kept the property for 5 years before selling to Mrs. William Hesch in 1920 (Santa Fe Count Deed Book M-4, pp. 81). Hesch kept the middle lot with the Dudrow house and sold the east lot to Manuel Pino in 1924 (Santa Fe County Deed Book 10, pp. 151).

Just west of the project area, in the vicinity of 544 Agua Fria, is a lot that contained the same three structures from at least 1930 (Fig. 5.6) to the present. The *Santa Fe Historic Structures Survey Map and Report* designates the three structures as buildings 587, 588, and 589. A gap occurs in the documents between Manuel Pino's purchase in 1924 and Apolonio and Manuelita Pino's ownership in 1930. It seems reasonable to speculate that since Manuel and Apolonio have the same last name, and there is no transfer of deed recorded, the transfer of ownership probably was through inheritance.

Regardless, Apolonio and Manuelita Pino lived in the building designated 587 with their daughter Louise (Luisa) from 1930 to at least 1933. Apolonio operated a grocery store in building 588 during the same period according to Santa Fe City directories of 1930–1931 and 1932–1933. By 1936, Manuelita was widowed, living alone, and operating the grocery store. She continued to live at 544 Agua Fria Street (building number 587) until 1973, while allowing Eloy Baca to operate the grocery store (building number 588) from 1940 to 1951, when it apparently closed. From 1973–1992, a series of tenants inhabited building number 587 with intermittent vacancies. No documentation exists for the use of building 589 until 1940 when the first of a series of tenants occupied it. Apolonio and Manuelita Pino's heirs, Mary Pino de Martinez and Luisa Pino de Trujillo, sold the buildings and lot at 544 Agua Fria Street to the present owners, Sanbusco Investments on December 30, 1992 (Santa Fe County Deed Book 885, pp. 346).

The project area on the Sanbusco property was used for agricultural and pastoral purposes from the earliest documented occupation in the eighteenth century. Seventeenth-century use of the general area was similar. Apparently, settlement in the area began slowly and accelerated through the early 1800s, with lands being subdivided among the heirs of the original families or sold to new residents. Documented uses for Sanbusco's parking lots include agriculture, lumber storage, and the present parking lots.

Immediately south of the NMSA campus is the majority of the Santa Fe Railyard. Extensive archaeology was carried out by OAS and included the residential community and infrastructure associated with the Atchison, Topeka and Santa Fe Railway and the New Mexico Central Railway (Badner et al. 2014). Spanish Colonial refuse components, acequias, fields, and mercantile activities were documented, in addition to railroad related features. These excavations provide context for the hardware and building supply focus of the northern end of the railyard that coincides with the NMSA campus.

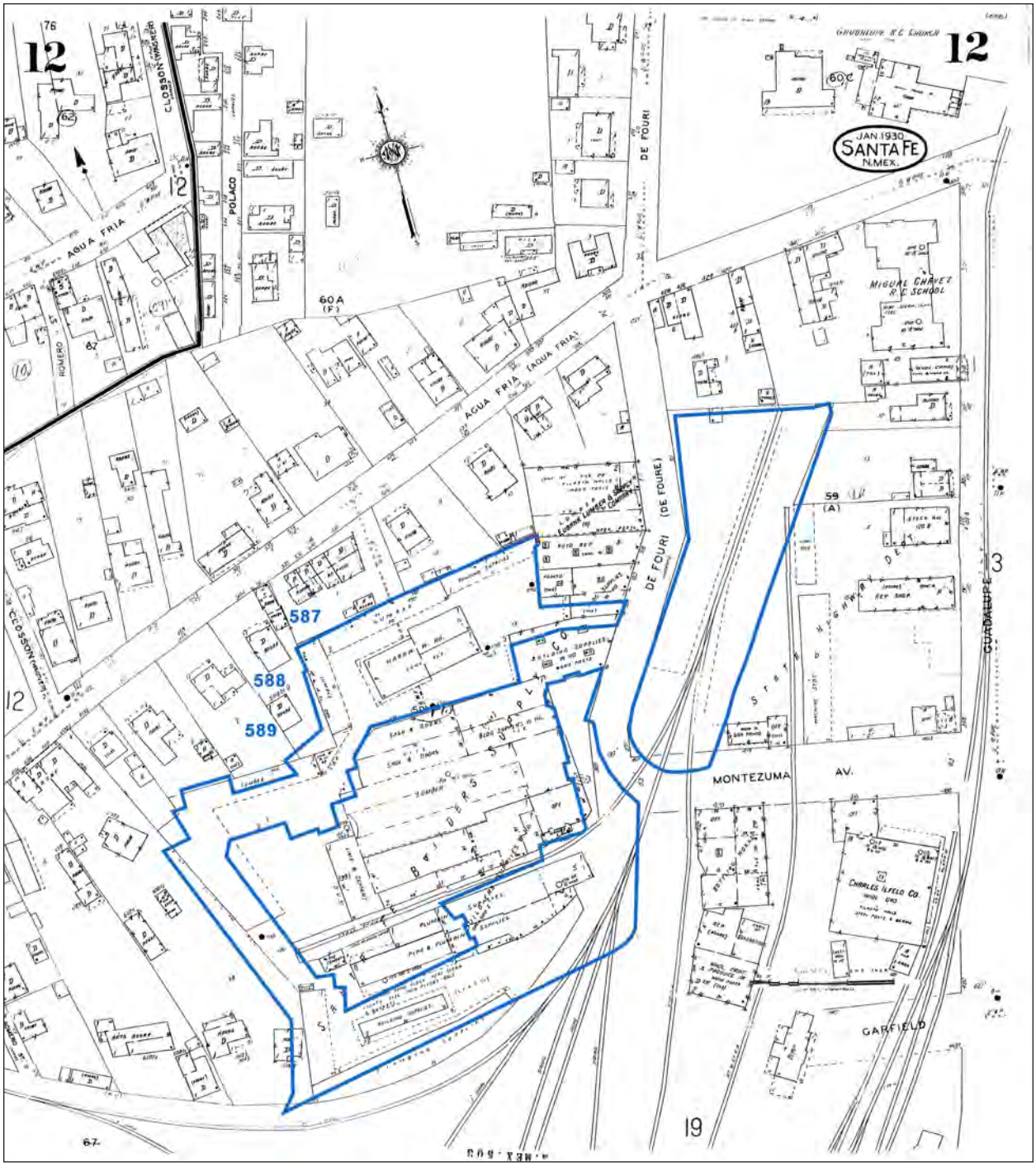

Figure 5.6. Sanborn Fire Insurance Map, Sheet 12 (1930) with approximate location of the NMSA campus.

6 ⇓ Field Methods and Personnel

Field methods were designed to comply with standards for reconnaissance as described in Santa Fe City Code (14-3.13). All activities were on private land, and no previously designated archaeological sites were present within the project area. As a result of these two criteria, no State of New Mexico permitting was required for the mechanical or hand investigations. No human remains were encountered, and there was no need to activate the OAS unmarked human burial permit (ABE-17-027).

In order to characterize whether there were any previously unknown cultural resources within the NMSA campus development, Santa Fe City Code requires at least 2 percent of the available surface area of the lot be examined. By agreement between Sanbusco LLC and the City of Santa Fe Historic Preservation Division, the definition of the "lot" for the purposes of this reconnaissance is limited to Phase 1 of the NMSA development, exclusive of the footprints of existing buildings (for a total area of 123,558 square feet). A 2 percent sample of this area is 2472 square feet, of which at least 18 square feet must be hand excavated. Santa Fe City Code (14-3.13) specifies that hand excavation be conducted prior to mechanical excavation, but OAS sought and received concurrence from the City of Santa Fe Archaeological Review Committee (ARC) at its February 8, 2017, meeting that selection of areas for hand excavation could follow mechanical trenching in order to gain the most information about any cultural resources encountered within the Phase 1 area of the NMSA development.

Mechanically Excavated Trenches

Archaeological trenching was explicitly designed to coincide as much as possible with the planned installation of upgraded utility services as part of the NMSA construction (see Fig. 3.1). Areas of cross utilities were not utilized for archaeological reconnaissance, resulting in the segmenting of trench alignments when trenching had to skip over crossing utilities. Utility trench alignments were augmented by judgmentally placed trenches to more fully characterize the different areas of the Phase 1 development (Fig. 6.1). Also, areas of Phase 1 could not be investigated because two pre-existing storm water infiltration facilities (see Fig. 2.1) constitute prior subsurface disturbance and there was concern that mechanical trenching in the vicinity might damage the infiltration facilities. A 1998 reconnaissance trench outside, but in the vicinity of, the infiltration features (Trench 5, Deyloff 1999) did not encounter any intact cultural deposits.

A backhoe with a 3-foot wide bucket was used for all trenching operations, resulting in completed trenches up to 1.1 m (3.6 feet) wide (Table 6.1). One or two archaeological monitors observed mechanical excavations, examined mechanically excavated back dirt, and examined trench stratigraphy by hand scraping sections of trench wall. Richard H. Montoya, an archaeologist on the New Mexico SHPO Directory of qualified archaeologists, monitored all mechanical trenching. Montoya was supervised by James M. Moore, an OAS Project Director permitted by ARC in the City of Santa Fe, and Eric Blinman, principal investigator for the project. Vernon Foster, OAS archaeologist, assisted Montoya as necessary. Functionally or temporally diagnostic artifacts were opportunistically collected from trench back dirt or from stratigraphic or feature cross sections exposed in the trench wall. After excavation, trench segments were faced with hand tools, and trench walls were examined for exposed cultural deposits and features. Trenches were most closely examined in areas where artifact content or changes in soil color or texture indicated that cultural deposits may be present. Stratigraphic profiles of the trench walls were drawn at intervals to characterize the overall fill sequence, and any features or areas of stratigraphic variability were documented in detail. Trench locations were

Figure 6.1. Location of archaeological reconnaissance trenches at the NMSA campus.

Table 6.1. Backhoe trench summary, NMSA project site.

Trench Segment	Length (m)	Width (m)	Depth (m)
1.1	8.7	0.95	1.22
1.2	15.4	1.1	1.22
1.3	29.7	1	1.32
2	24.1	1.01	1.32
3.1	19.3	1.08	1.28
3.2	28.5	1.1	1.32
4	11.3	1.08	1.28
5	9.6	1.06	1.28
6.1	17.8	1	1.28
6.2	8.6	1.08	1.28
7	3.6	1	1.28
8	8.7	1	1.24
9.1	3.1	1.04	1.28
9.2	7.8	1.08	1.24
9.3	10.2	1	1.26
9.4	10.1	1	1.22
10.1	23.9	1	1.26
10.2	19	1	1.28
Total	**259.4**	**18.58**	**22.86**

documented by Global Positioning System (GPS) observations and confirmed by comparison of GPS coordinate mapping with aerial imagery of the project area. Trenches were mechanically backfilled and compacted as soon as archaeological recording was completed.

Features identified during trench excavations were assigned sequential numbers, mapped, and recorded. Mechanical trenching was temporarily suspended when the presence of a feature was suspected, and trenching resumed only after a preliminary assessment of the nature of the feature. Features identified during trenching or stratigraphic profiling were documented in detail and photographed; artifact samples were collected from the trench wall when appropriate. No burned or charred deposits were encountered that were determined to be appropriate for the collection of either chronometric and flotation samples.

Five large features (2 m and greater in size) were encountered within the excavation trenches; no small features were encountered. The features were documented using standard OAS feature forms, scaled drawing, and photography. After each feature number was assigned, the artifact content, stratigraphy, morphology, construction methods, and age were investigated and recorded. Profiles of the features were drawn and photographed. No burned or charred deposits were encountered that could not be dated by associated artifacts or context. No intact midden or refuse deposits were encountered that warranted consultation with City of Santa Fe Historic Preservation staff. Those features that did have refuse were considered candidates for the locations of hand excavation units. Detailed stratigraphic profiles and excavation units did not exceed safe working depth as determined by OSHA specifications.

Hand Excavated Units

At least 18 square feet of the reconnaissance area is required to be investigated through hand excavated units. Per discussions with City of Santa Fe Historic Preservation staff and the ARC, hand excavated units were placed in areas where intensive artifact recovery would help refine the interpretation of specific cultural deposits. Due to incomplete as-built knowledge of the detention system, exploration of subsurface deposits in the vicinity cannot be carried out with mechanical trenching. This is in the vicinity of the monitoring discovery of early seventeenth century refuse (Dayloff 1999).

Documentation Standards

All field recording was conducted on standard OAS feature and excavation forms intended to satisfy the provisions of State of New Mexico General Permit NM-17-027-M. Standard OAS data recording includes sediment descriptions using a Munsell Soil Color Chart and standard geomorphological descriptors, notes on artifact variety and frequency, evidence of disturbance, horizontal and vertical locations and associations, excavation technique, and temporal associations. Written descriptions are recorded on standardized forms. All profile or elevation drawings include a scale, north arrow, and key to abbreviations and symbols. Trench and other locations are plotted using GPS coordinates and are shown on an aerial photograph, topographic map, and other graphics related to the project.

Excavation records include photographs of the trenches and exposed cross sections of cultural features and deposits. Photographs have a metric scale, north arrow, and label board with the project name, feature number, and date. Recovered artifacts and samples from each stratigraphic unit or feature were assigned field specimen (FS) numbers that

were recorded on related excavation forms and bags and listed in an FS catalogue.

Artifacts and samples collected during the investigation have been catalogued, processed, and analyzed or characterized by OAS personnel or qualified subcontractors. The collection belongs to Sanbusco, LLC and final disposition decisions will be deferred until the nature and size of the collection is known. Sanbusco, LLC has expressed a desire for an exhibition component to be installed within the school after completion of archaeological investigations. Sanbusco, LLC and NMSA have been informed that permanent curation with the Archaeological Research Collections of the Museum of New Mexico is an option.

Schedule

Archaeological work was initiated on March 22, 2017, in conjunction with trench excavation by Sanbusco, LLC contractors. Hand excavation was completed on April 3, 2017. Artifact processing, analysis, and report preparation was initiated during the final days of fieldwork in order to complete this draft report in time for submittal for consideration at the May 4, 2017 meeting of the ARC.

If additional treatments are required, completion of the final reconnaissance report will be deferred until treatments are completed. A preliminary report on treatment results will be prepared as an interim document, submitted to Sanbusco, LLC and then to ARC for review within three months of the completion of treatments. When analyses and interpretations of treatment results are completed, they will be combined with the reconnaissance results into a single final comprehensive archaeological synthesis of the NMSA campus. A draft copy of the report will be submitted to NMSA for review. The draft report will be submitted to ARC within 6 months of the completion of any required treatments.

Once any comments have been addressed, a final report will be produced by OAS within six months of review. Sufficient copies of the final report will be produced to fulfill the client's distribution needs and code requirements.

7 ⇓ Reconnaissance Results

Reconnaissance results are presented as: 1) descriptions of the strata encountered during trench monitoring; 2) the nature of each trench segment; 3) descriptions of five defined features; 4) descriptions of hand excavations; and 5) results of artifact analyses and characterizations. Interpretations as summarized appear with recommendations in the section following the results and artifact descriptions.

Strata

"Non-cultural" Strata

This category is defined by composition or "intactness" that reflects the potential to contribute to the reconstruction of the history or prehistory of the NMSA campus area. These strata include modern deposits and deposits that have been disturbed by modern activity, as well as non-cultural or pre-cultural deposits. Although some strata appear in only limited areas of the reconnaissance trenching, others occur in multiple trenches widely distributed across the project area.

Stratum 1 was base course located below the asphalt in all the backhoe trenches (1–10.2) across the project area. It consisted of 10YR 4/4 dark yellowish-brown, semi-consolidated layer with inclusions of a high amount of angular gravel and coarse sand. There was no modern trash or artifacts in the stratum. It ranged in thickness from 2 to 32 cm and was approximately 10 cm below the ground surface (bgs).

Stratum 2 was possible redeposited fill present in Backhoe Trenches 1.1, 1.2, 1.3, 2, 3.1, 4, and 5. It consisted of 10YR 3/2 very dark grayish-brown, semi-consolidated silty loam with inclusions of gravel and modern trash (plastic straws, plastic ties, Styrofoam, etc.). It was located below Stratum 1 and ranged in thickness from 6–42 cm and was approximately 12–32 cm bgs.

Stratum 3 was present in Backhoe Trenches 1.2, 1.3, 2, and 3.1. It consisted of 10YR 3/3 dark brown, semi-consolidated silty loam with inclusions of 5 percent gravel, sparse charcoal flecks and modern trash (plastic, etc.). It was located below Stratum 2 and ranged in thickness from 8–20 cm and was approximately 30–60 cm bgs.

Stratum 4 was present in Backhoe Trenches 1.2 and 3.1. It consisted of 5YR 3/3 dark reddish-brown, sandy clay with the lower boundary very well defined. There were no gravels, charcoal flecks, or modern trash present in this stratum. It was located below Stratum 3 and ranged in thickness from 7–10 cm and was approximately 42–54 cm bgs.

Stratum 5 was present in Backhoe Trenches 1.2 and 1.3. It consisted of 7.5YR 3/3 dark brown, very compacted, sandy, clayish loam with inclusions of charcoal flecks, 5 percent irregular gravel, pieces of red brick, and modern trash. It was located below Stratum 4, ranged in thickness from 6–12 cm, and was approximately 48–74 cm bgs.

Stratum 6 was present in Backhoe Trenches 1.1 and 1.2. It consisted of 7.5YR 3/3 dark brown, extremely compacted, silty, sand with inclusions of gravel, pieces of red brick, coal, and tar. It was located below Stratum 5, ranged in thickness from 2–20 cm, and was approximately 60–84 cm bgs.

Stratum 7 was present in Backhoe Trenches 1.1, 1.2, 1.3, 2, 3.1, 3.2, 4, 6.1, and 6.2. It was the dominant lower stratum on the south side of the building and consisted of 7.5YR 4/4 brown, silty clayish loam very uniform in texture and color. There were no gravel or charcoal flecks present in this stratum, and it is more than likely a culturally sterile stratum. It was located below Strata 2, 3, 6, 8, 10, 11, and 13, ranged in thickness from 36–76 cm, and was approximately 50 cm bgs. The bottom of the stratum continued past the base of the trench in the majority of the trenches.

Stratum 8 was present in Backhoe Trenches 1.1 and 6.1. It consisted of 10YR 4/3 brown consolidated silty, clayish loam with inclusions of 2–3 percent large gravel, small cobbles, and occasional coal pieces. It was located below Strata 1 and 2, ranged

in thickness from 10–54 cm, and was approximately 20–60 cm bgs.

Stratum 9 was present in Backhoe Trenches 1.1 and 1.3. It consisted of 10YR 6/3 pale brown, loose to semi-consolidated, silty loam with small gravel and fine sand. It was located below Strata 2 and 5, ranged in thickness from 4–6 cm, and was approximately 40–78 cm bgs.

Stratum 10 was present in Backhoe Trenches 1.2, 1.3, and 3.2. It consisted of 10YR 2/1 black, semi-consolidated, very fine silty charcoal-infused loam with crushed coal pieces. It was more than likely railroad debris related to the railyard. It was located below Strata 6 and 9, ranged in thickness from 2–10 cm, and was approximately 38–82 cm bgs.

Stratum 11 was present in Backhoe Trenches 3.1 and 6.1. It consisted of 10YR 4/3 brown mixed with 10YR 3/2 very dark grayish-brown, loose to consolidated silty loam with inclusions of coal/clinkers and small gravel. It was located below Strata 1 and 3, ranged in thickness from 20–30 cm, and was approximately 24–66 cm bgs.

Stratum 12 was present in Backhoe Trench 3.1. It consisted of 10YR 4/3 brown, consolidated silty loam with inclusions of 3–5 percent gravel and laminated soils. The laminated soils were 10YR 6/4 light yellowish-brown, fine sand; 10YR 4/2 dark grayish-brown silty loam; and 10YR 4/3 brown, silty loam with gravel. The laminated soils may represent different episodes of fill in the area or surfaces. It was located below Stratum 4, ranged in thickness from 30–36 cm, and was approximately 54–86 cm bgs.

Stratum 14 was present in Backhoe Trenches 3.2 and 4. It consisted of 10YR 5/4 yellowish-brown, semi-consolidated, silty slightly clayish loam with inclusions of specks of caliche. The stratum was very similar to Stratum 7, only it was less clayish and contained caliche. It was located below Stratum 7, had a thickness of 54 cm, and was approximately 74–126 cm bgs. The stratum extended below the base of the trench, so it is unknown how thick it is and to what depth bgs it goes.

Stratum 15 was present in Backhoe Trench 3.2. It consisted of 10YR 3/2 very dark grayish-brown, loose silty loam with inclusions of coal, charcoal, gravels, roots, pieces of concrete, rotted wood, and small pieces of round Styrofoam. The Stryofoam pieces appear to be the type used in potting soil. Fill is mixed with Strata 7 and 14 and appeared to be redeposited fill for trees that were dug out. Stratum 15 was located below Stratum 10, ranged in thickness from 8–70 cm, and was approximately 44–118 cm bgs.

Stratum 16 was present in Backhoe Trenches 3.2, 5, and 6.2. It consisted of 10YR 5/6 yellowish-brown, loose to semi-consolidated, sandy alluvial deposit with a high amount of coarse sand, gravel, and small cobbles with inclusions of caliche specks. It was located below Strata 2 and 7, had a thickness of 94 cm and was approximately 36–126 cm bgs. The stratum extended below the base of the trench, so it is unknown how thick it is and to what depth bgs it goes.

Stratum 19 was present in Backhoe Trench 7. It consisted of 10YR 3/2 very dark grayish-brown, semi-consolidated silty, clayish fill with inclusions of common charcoal and coal. The stratum is railroad debris related to the railyard, and it did not contain any artifacts other than coal and charcoal. It was located below Stratum 1, ranged in thickness from 6–10 cm, and was approximately 34–44 cm bgs.

Stratum 20 was present in Backhoe Trench 7. It consisted of 10YR 4/3 brown, consolidated clayish fill with no charcoal or gravels. It was located below Stratum 19 and ranged in thickness from 24–26 cm and was approximately 42–68 cm bgs.

Stratum 21 was present in Backhoe Trench 7. It consisted of 10YR 5/4 yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. The stratum is an alluvial deposit similar to Stratum 16, only with more sand. It was located below Stratum 20, had a thickness of 58 cm, and was approximately 68–124 cm bgs. The stratum extended below the base of the trench, so it is unknown how thick it is and to what depth bgs it goes.

Stratum 22 was present in Backhoe Trench 8. It consisted of 10YR 4/4 dark yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles derived from Stratum 21. This was mixed with a dark grayish-brown silty loam with pieces of red brick, concrete, old ceramic sewer pipe, and a few pieces of animal bone. Stratum 22 was redeposited fill from previous excavations in the area. It was located below Stratum 1, ranged in thickness from 86–96 cm, and was approximately 28–124 cm bgs. The stratum extended below the base of the trench, so it is unknown how thick it is and to what depth bgs it goes.

Stratum 23 was present in Backhoe Trench 9.1. It consisted of 10YR 4/4 reddish-brown, consolidated, silty, clayish loam with no gravel and sparse charcoal flecks. It was located below Stratum 20, ranged in thickness from 8–10 cm, and was approximately 46–56 cm bgs.

Stratum 25 was present in Backhoe Trench 9.4. It consisted of 10YR 3/4 dark yellowish-brown, semi-consolidated, silty, clayish loam with very sparse charcoal flecks and 5 percent gravel. The stratum appears to be an old base course for the area. It was located below Stratum 1, had a thickness 6 cm, and was approximately 28–34 cm bgs.

Cultural Strata

These strata are characterized as cultural because they are substantially in situ, can be related to refuse deposition, or are defined by architectural or feature surfaces.

Stratum 13 was present in Backhoe Trench 3.1. It consisted of 10YR 3/2 very dark grayish-brown, loose fill of coal and clinker pieces. This stratum represented the feature fill from Feature 1 and was railroad debris from the nearby railyard. It was located below Stratum 12, had a thickness of 46 cm, and was approximately 86–128 cm bgs. The stratum extended below the base of the trench within Feature 1, so it is unknown how thick it is and to what depth bgs it goes.

Stratum 17 was present in Backhoe Trench 6.1. It consisted of 10YR 3/2 very dark grayish-brown, semi-consolidated, silty, clayish loam. It was mottled with 10YR 4/3 brown silty loam with inclusions of small cobbles, 1 percent small gravel, coal and clinkers, and a few pieces of glass. This stratum represented the fill of Feature 2 and was railroad debris from the nearby railyard. It was located below Stratum 1, ranged in thickness from 8–40 cm, and was approximately 28–68 cm bgs.

Stratum 18 was present in Backhoe Trench 6.1. It consisted of 10YR 5/2 grayish-brown, loose, silty, clayish loam with inclusions of 5 percent small gravel, and a high amount of coal and clinkers with a few pieces of glass. It was similar to Stratum 17 except it contained more coal and clinkers. This stratum represented the fill of Feature 3 and was railroad debris from the nearby railyard. It was located below Stratum 1, ranged in thickness from 20–65 cm, and was approximately 24–92 cm bgs.

Stratum 24 was present in Backhoe Trench 9.3. It consisted of 10YR 3/2 very dark grayish-brown, consolidated clayish fill with inclusions of coal pieces, gravels, sparse historic artifacts, and small cobbles. The stratum appears to be a railroad era lens that is continuous with no defined edges; therefore it was not a feature. It was located below Stratum 1, ranged in thickness from 24–26 cm, and was approximately 36–64 cm bgs.

Stratum 26 was present in Backhoe Trench 10.1. It consisted of 10YR 2/1 black, loose, silty, slightly sandy, charcoal-stained loam with inclusions of 1 percent pea gravel and very small pieces of coal and clinkers with no artifacts. This stratum was represented in the fill of Feature 4 and was railroad debris from the nearby railyard. It was located below Stratum 1, ranged in thickness from 9–18 cm, and was approximately 32–52 cm bgs.

Stratum 27 was present in Backhoe Trench 10.1. It consisted of 10YR 4/3 brown, consolidated, clayish fill, with inclusions of sparse coal pieces and small gravels. This stratum was represented in the fill of Feature 4 and was redeposited Stratum 20. It was located below Stratum 26, ranged in thickness from 10–26 cm, and was approximately 32–75 cm bgs.

Stratum 28 was present in Backhoe Trench 10.1. It consisted of 10YR 4/4 dark yellowish-brown, consolidated, clayish fill, with inclusions of sparse small gravel. This stratum was represented in the fill of Feature 4. It was located below Stratum 27, ranged in thickness from 6–9 cm, and was approximately 52–82 cm bgs.

Stratum 29 was present in Backhoe Trench 10.2. It consisted of 10YR 3/3 dark brown, consolidated, silty, clayish fill, with inclusions of 1 percent small gravel, common charcoal flecks, occasional coal pieces, and historic artifacts. This stratum was represented in the fill of Feature 5. It was located below Stratum 1, ranged in thickness from 5–65 cm, and was approximately 30–100 cm bgs.

Stratum 30 was present in Backhoe Trench 10.2. It consisted of 10YR 5/3 brown, consolidated, silty, clayish fill, with inclusions fine sand, 1 percent small gravel, sparse charcoal flecks, small cobbles, red brick pieces, and historic artifacts. This stratum was represented in the fill of Feature 5 and appears to be redeposited Stratum 21 mixed with cultural deposits. It was located below Stratum 29, ranged in thickness from 5–25 cm, and was approximately 50–80 cm bgs.

Stratum 31 was present in Backhoe Trench 10.2. It consisted of 10YR 3/2 very dark grayish-brown, consolidated, silty, clayish loam with inclusions of small cobbles, common charcoal flecks, and historic artifacts. This stratum was represented in the fill of Feature 5. It was located below Stratum 30, ranged in thickness from 15–30 cm, and was approximately 75–105 cm bgs.

Trench Descriptions

Trenches were numbered sequentially and were subdivided into segments in which continuous recording was interrupted by crossing utilities that required suspension and then resumption of trench excavation.

Trench 1.1

Trench 1.1 was located on the south side of Sanbusco and east of BHT 1.2 (see Fig. 6.1). The trench measured 8.70 m long by .95 m wide and was 1.22 m deep. The trench fill contained a total of six strata (Strata 1, 2, 7, 8, 9, and 10) (Fig. 7.1). No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was located 8 cm below the ground surface (bgs), and the bottom of the stratum was 14 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravel and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Strata 8 and 9. The top of the stratum was located 12 cm below the ground surface, and the bottom of the stratum was 40 cm bgs.

Stratum 7 was a silty clayish layer that dominated the trench fill and was located below Strata 8 and 10. The top of the stratum was 50–66 cm bgs, and the bottom of the stratum continued to the base of the trench 126 cm bgs.

Stratum 8 was a consolidated silty clayish loam with gravel and small cobbles and was located below Stratum 2 and above Stratum 7. The top of the stratum was 38 cm below the ground surface and the bottom of the stratum was 48–66 cm bgs.

Stratum 9 was a loose to semi-consolidated silty loam with occasional small gravel and fine sand that was located below Stratum 2 and above Stratum 10. The top of the stratum was 40 cm bgs, and the bottom of the stratum was 46 cm bgs.

Stratum 10 was a railroad era deposit that consisted of a semi-consolidated layer of charcoal-stained silty loam mixed with coal pieces and clinkers and was located below Stratum 9 and above Stratum 7. The top of the stratum was 44 cm bgs, and the bottom of the stratum was 50 cm bgs.

Trench 1.2

Trench 1.2 was located on the south side of Sanbusco and west of BHT 1.1 (see Fig 6.1). The trench measured 15.40 m long by 1.10 m wide and was 1.22 m deep. The trench fill contained a total of eight strata (Strata 1, 2, 3, 4, 5, 6, 7, and 10) (Fig. 7.2). No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was located 10 cm bgs, and the bottom of the stratum was 24 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravels and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Stratum 3. The top of the stratum was 22 cm below the ground surface, and the bottom of the stratum was 30 cm bgs.

Stratum 3 was a dark brown, semi-consolidated silty loam with inclusions of 5 percent gravel and sparse charcoal flecks with modern trash (plastic) and was located below Stratum 2 and above Stratum 4. The top of the stratum was 32 cm bgs, and the bottom of the stratum was 44 cm bgs.

Stratum 4 was a dark reddish-brown, sandy clay and was located below Stratum 3 and above Stratum 5. The top of the stratum was 42 cm bgs, and the bottom of the stratum was 54 cm bgs.

Stratum 5 was a dark brown, very compacted, sandy, clayish loam with inclusions of charcoal flecks, 5 percent irregular gravel, and pieces of red brick with modern trash and was located below Stratum 4 and above Stratum 6. The top of the stratum was 48 cm below the ground surface, and the bottom of the stratum was 63 cm bgs.

Stratum 6 was a dark brown, extremely compacted, silty, sand with inclusions of gravels, pieces of red brick, coal and tar. It was located below Stratum 5 and above Strata 7 and 10. The top of the

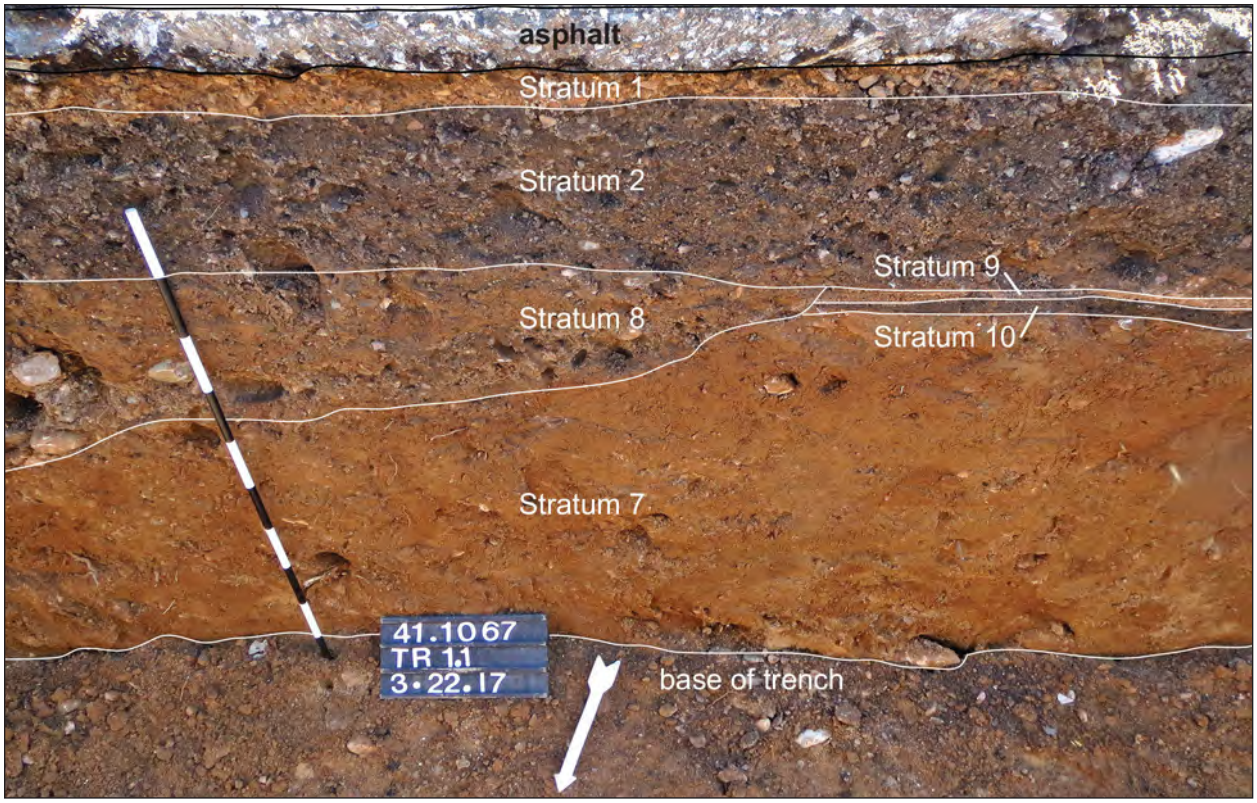

Figure 7.1. Trench 1.1, representative stratigraphy.

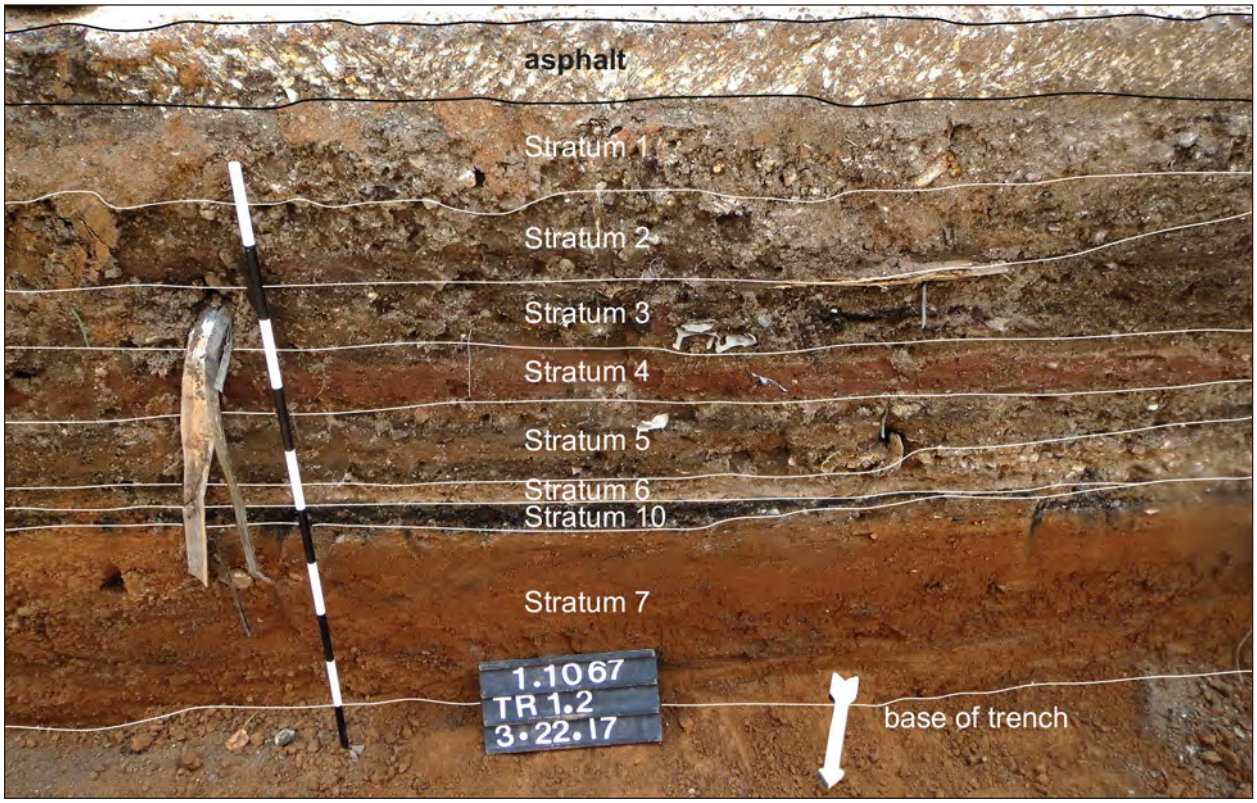

Figure 7.2. Trench 1.2, representative stratigraphy.

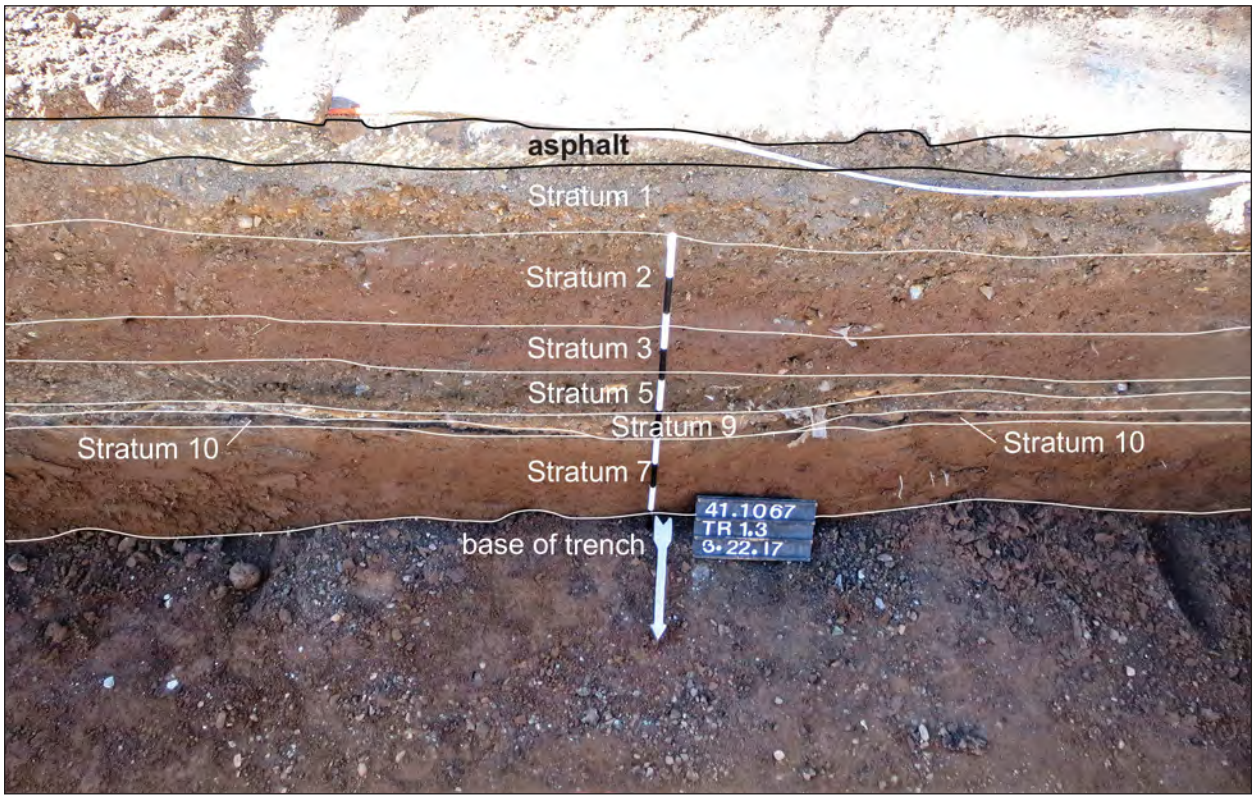

Figure 7.3. Trench 1.3, representative stratigraphy.

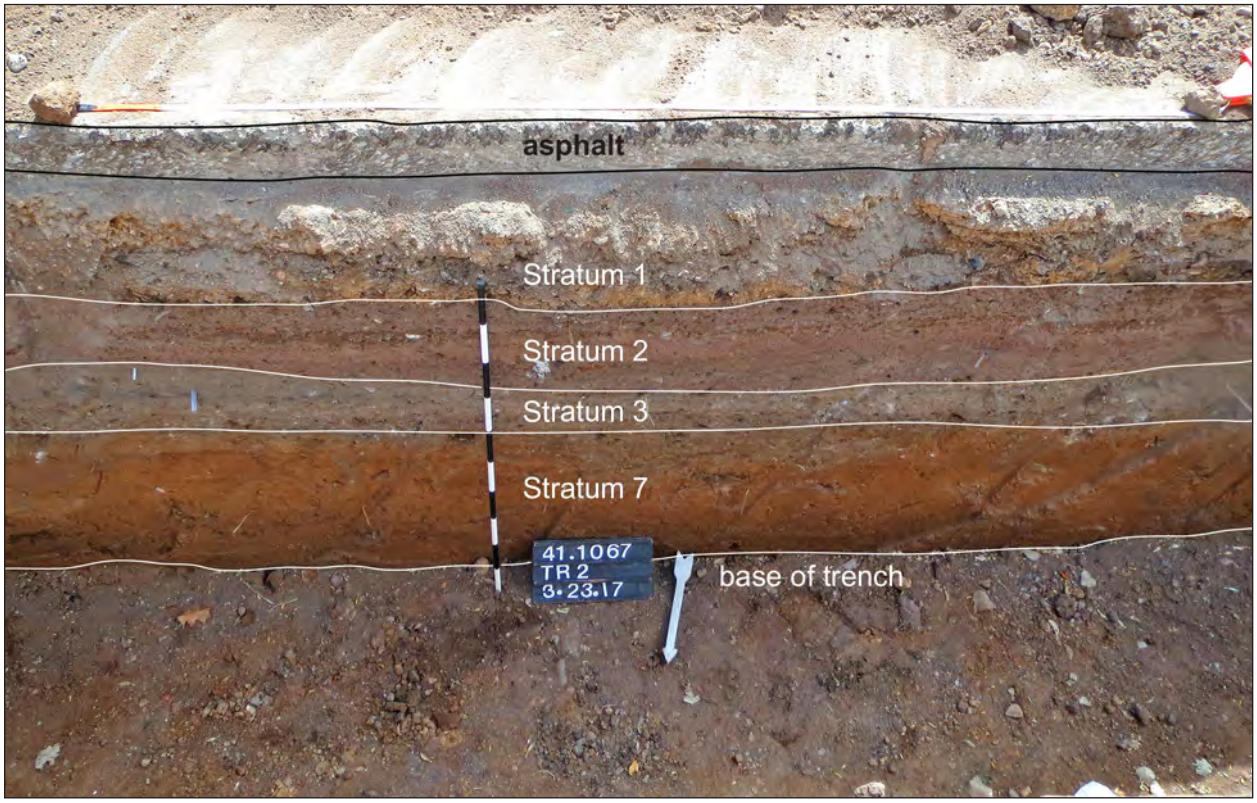

Figure 7.4. Trench 2, representative stratigraphy.

stratum was 60 cm below the ground surface, and the bottom of the stratum was 84 cm bgs.

Stratum 7 was a brown, silty clayish layer that dominated the trench fill and was located below Strata 6 and 10. The top of the stratum was 66 cm below the ground surface, and the bottom of the stratum continued to the base of the trench 122 cm below the ground surface.

Stratum 10 was a black railroad era deposit that consisted of a semi-consolidated layer of charcoal-stained silty loam mixed with coal pieces and clinkers and was located below Stratum 6 and above Stratum 7. The top of the stratum was 62 cm below the ground surface, and the bottom of the stratum was 66 cm bgs.

Trench 1.3

Trench 1.3 was located on the south side of Sanbusco and west of BHT 1.2 (see Fig. 6.1). The trench measured 29.70 m long by 1 m wide and was 1.32 m deep. The trench fill contained a total of seven strata (Strata 1, 2, 3, 5, 7, 9, and 10) (Fig. 7.3). The southern wall of the western edge of the trench was backfill from the water line to the south. No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm below the ground surface (bgs), and the bottom of the stratum was 28 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravels and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Stratum 3. The top of the stratum was 28 cm below the ground surface, and the bottom of the stratum was 60 cm bgs.

Stratum 3 was a dark brown, semi-consolidated silty loam with inclusions of 5 percent gravel and sparse charcoal flecks with modern trash (plastic) and was located below Stratum 2 and above Stratum 5. The top of the stratum was 57 cm below the ground surface, and the bottom of the stratum was 70 cm bgs.

Stratum 5 was a dark brown, very compacted, sandy, clayish loam with inclusions of charcoal flecks, 5 percent irregular gravel, and pieces of red brick with modern trash and was located below Stratum 3 and above Stratum 9. The top of the stratum was 68 cm below the ground surface, and the bottom of the stratum was 76 cm bgs.

Stratum 7 was a brown, silty clayish layer that dominated the trench fill and was located below Stratum 10. The top of the stratum was 80 cm below the ground surface, and the bottom of the stratum continued to the base of the trench 128 cm bgs.

Stratum 9 was a pale brown, loose to semi-consolidated, silty loam with small gravel and fine sand and was located below Stratum 5 and above Stratum 10. The top of the stratum was 74 cm below the ground surface, and the bottom of the stratum was 78 cm below the ground surface.

Stratum 10 was a black railroad era deposit that consisted of a semi-consolidated layer of charcoal-stained silty loam mixed with coal pieces and clinkers and was located below Stratum 9 and above Stratum 7. The top of the stratum was 78 cm below the ground surface, and the bottom of the stratum was 82 cm below the ground surface.

Trench 2

Trench 2 was located on the south side of Sanbusco and south of BHT 1.3 (see Fig. 6.1). The trench measured 24.10 m long by 1.01 m wide and was 1.32 m deep. The trench fill contained a total of four strata (Strata 1, 2, 3, and 7) (Fig. 7.4). The western edge of the trench contained white and gray PVC conduits that had been previously installed. No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 12 cm below the ground surface (bgs), and the bottom of the stratum was 33 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravels and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Stratum 3. The top of the stratum was 33 cm below the ground surface, and the bottom of the stratum was 62 cm bgs.

Stratum 3 was a dark brown, semi-consolidated silty loam with inclusions of 5 percent gravel and sparse charcoal flecks with modern trash (plastic) and was located below Stratum 2 and above Stratum 7. The top of the stratum was 60 cm below the ground surface, and the bottom of the stratum was 79 cm bgs.

Stratum 7 was a brown, silty clayish layer that dominated the trench fill and was located below Stratum 3. The top of the stratum was 70 cm below the ground surface, and the bottom of the stratum continued to the base of the trench 128 cm bgs.

Trench 3.1

Trench 3.1 was located on the south side of Sanbusco and east of BHT 2 (see Fig. 6.1). The trench measured 19.30 m long by 1.08 m wide and was 1.28 m deep. The trench fill contained a total of six strata (Strata 1, 2, 3, 4, 7, 11, 12, and 13) (Fig. 7.5). Strata 4 and 12 are not in this profile but are in the Feature 1 profile. Feature 1 was located in this trench segment and was a coal/clinker pit.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 8 cm below the ground surface (bgs), and the bottom of the stratum was 22 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravels and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Stratum 3. The top of the stratum was 20 cm below the ground surface, and the bottom of the stratum was 46 cm bgs.

Stratum 3 was a dark brown, semi-consolidated silty loam with inclusions of 5 percent gravels and sparse charcoal flecks with modern trash (plastic) and was located below Stratum 2 and above Stratum 11. The top of the stratum was 54 cm below the ground surface, and the bottom of the stratum was 64 cm bgs.

Stratum 4 was dark reddish-brown, sandy clay and was located below Stratum 2 and above Stratum 12. The top of the stratum was 37 cm below the ground surface, and the bottom of the stratum was 54 cm bgs.

Stratum 7 was a brown, silty clayish layer that dominated the trench fill and was located below Stratum 13. The top of the stratum was 82 cm below the ground surface, and the bottom of the stratum continued to the base of the trench 124 cm bgs.

Stratum 11 was a very dark grayish-brown, loose to consolidated silty loam with inclusions of coal/clinkers and small gravel and was located below Stratum 3 and above Stratum 13. The top of the stratum was 60 cm below the ground surface, and the bottom of the stratum was 78 cm bgs.

Stratum 12 was a brown, consolidated silty loam with inclusions of 3–5 percent gravel and laminated soils. The laminated soils were 10YR 6/4 light yellowish-brown, fine sand; 10YR 4/2 dark grayish-brown silty loam; and 10YR 4/3 brown, silty loam with gravel. The laminated soils may represent different episodes of fill in the area or surfaces. It was located below Stratum 4 and above Stratum 13. The top of the stratum was 54 cm below the ground surface, and the bottom of the stratum was 89 cm below the ground surface.

Stratum 13 was a very dark grayish-brown, loose fill of coal/clinker pieces. This stratum represented feature fill from Feature 1 and was railroad debris from the nearby railyard. It was located below Stratum 12 and continued past the base of the trench. The top of the stratum was 84 cm bgs, and the bottom of the stratum was 128 cm below the ground surface.

Trench 3.2

Trench 3.2 was located on the south side of Sanbusco and east of BHT 3.1 (see Fig. 6.1). The trench measured 28.50 m long by 1.10 m wide and was 1.32 m deep. The trench fill contained a total of six strata (Strata 1, 7, 10, 14, 15, and 16) (Figs. 7.6, 7.7, and 7.8). No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 12 cm below the ground surface (bgs), and the bottom of the stratum was 38 cm bgs.

Stratum 7 was a brown, silty clayish layer that dominated the trench fill and was located below Strata 10 and Strata 15. The top of the stratum was 42 cm below the ground surface, and the bottom of the trench was 74 cm below the ground surface.

Stratum 10 was a black railroad era deposit that consisted of a semi-consolidated layer of charcoal-stained silty loam mixed with coal pieces and clinkers and was located below Stratum 1 and above Strata 7, 15, and 16. The top of the stratum was 38 cm bgs, and the bottom of the stratum was 44 cm below the ground surface.

Stratum 14 was a yellowish-brown, semi-consolidated, silty slightly clayish-loam with inclusions of specks of caliche. It was located below Stratum 7. The top of the stratum was 74 cm below the ground surface, and the bottom of the stratum continued to the base of the trench 126 cm bgs.

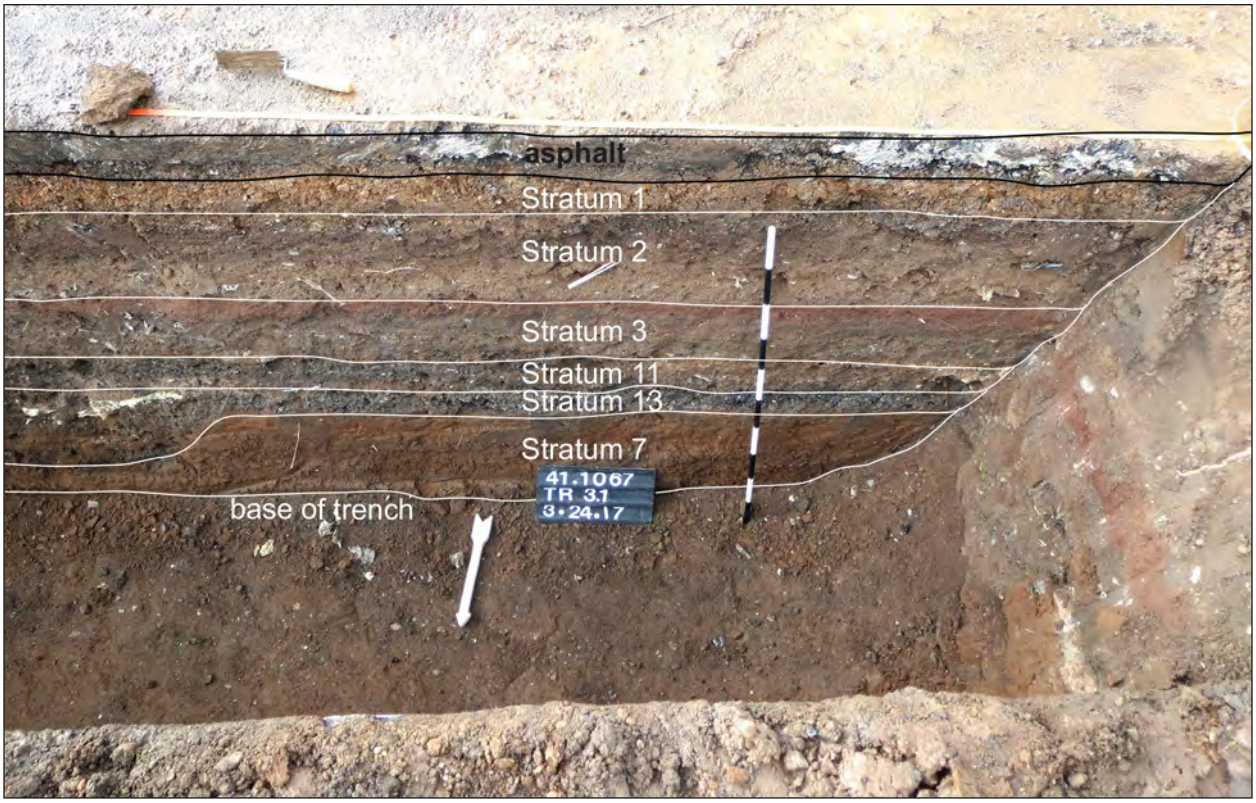

Figure 7.5. Trench 3.1, representative stratigraphy.

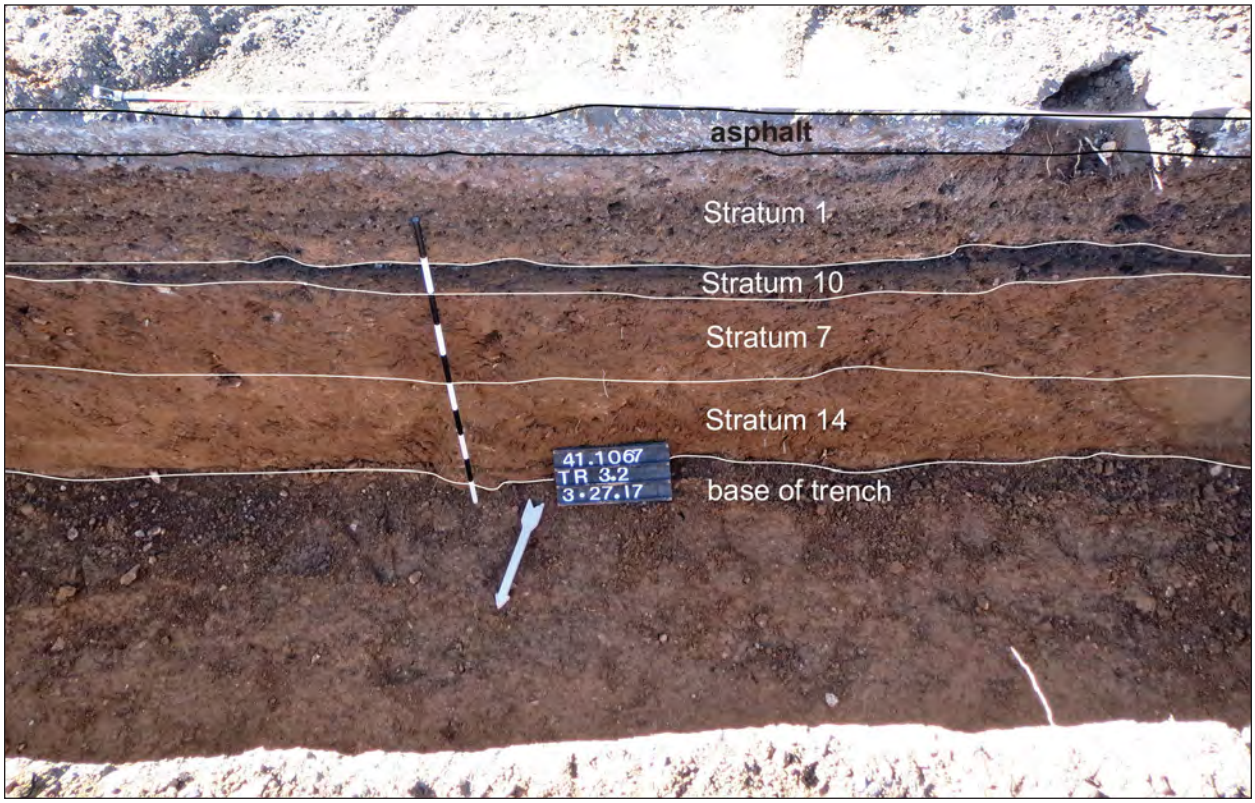

Figure 7.6. Trench 3.2, representative stratigraphy.

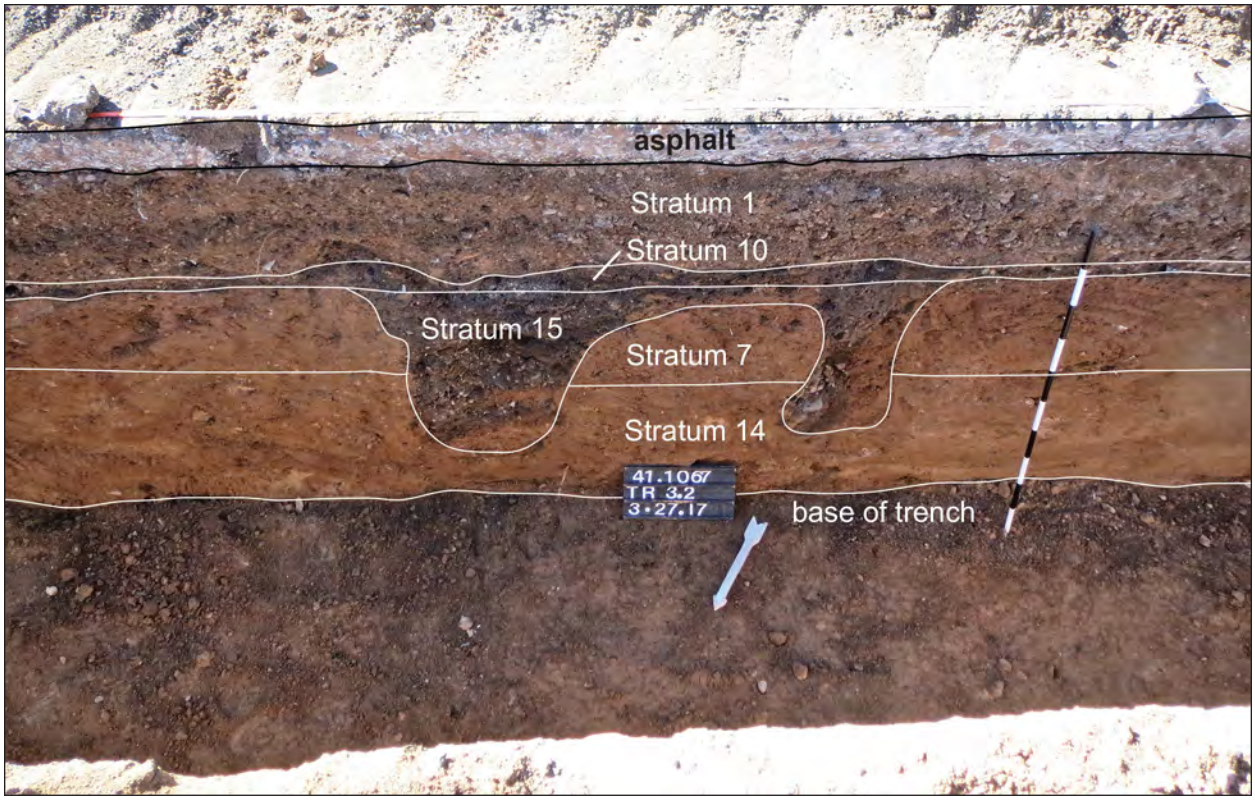

Figure 7.7. Trench 3.2, pepresentative stratigraphy with tree-planting holes.

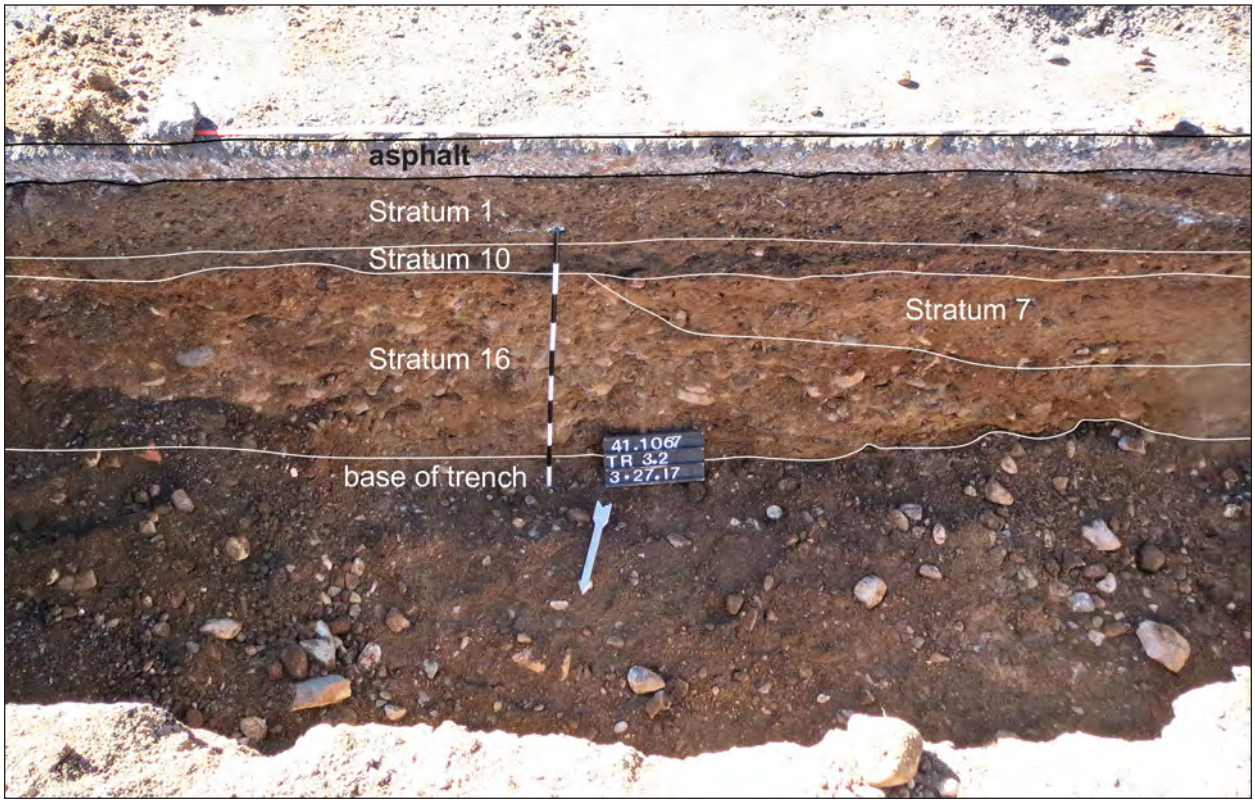

Figure 7.8. Trench 3.2, representative stratigraphy with Stratum 16.

Stratum 15 was a very dark grayish-brown, loose silty loam with inclusions of coal, charcoal, gravel, roots, pieces of concrete, rotted wood, and small pieces of round Styrofoam. Fill is mixed with Strata 7 and 14 and appears to be redeposited fill for trees that were dug out. The Stryofoam pieces also appear to be the type used in potting soil. It was located below Stratum 10 and above Strata 7 and 14. The top was 44 cm bgs, and the bottom was 118 cm bgs.

Stratum 16 was a yellowish-brown, loose to semi-consolidated, sandy alluvial deposit with a high amount of coarse sand, gravel, and small cobbles with inclusions of caliche specks. It was located below Strata 7 and 10. The top was 36 cm bgs, and the bottom continued to the base of the trench 128 cm bgs.

Trench 4

Trench 4 was located on the south side of Sanbusco, north of BHT 1.1 and northwest of BHT 5 (see Fig. 6.1). The trench measured 11.30 m long by 1.08 m wide and was 1.28 m deep. The trench fill contained a total of four strata (Strata 1, 2, 7, and 14) (Fig. 7.9). An irrigation PVC pipe bisected the upper fill of the trench. No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top was 10 cm bgs, and the bottom was 20 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravels and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Stratum 7. The top was located 20 cm bgs, and the bottom of the stratum was 60 cm bgs.

Stratum 7 was a brown, silty clayish layer below Stratum 2. The top was 60 cm below the ground surface, and the bottom was 120 cm bgs.

Stratum 14 was a yellowish-brown, semi-consolidated, silty, slightly clayish-loam with inclusions of specks of caliche located below Stratum 7. The top of the stratum was 100 cm below the ground surface; the bottom of the stratum continued to the base of the trench 128 cm bgs.

Trench 5

Trench 5 was located on the south side of Sanbusco, southeast of BHT 4 and northwest of BHT 1.1 (see Fig. 6.1). The trench measured 9.60 m long by 1.06 m wide and was 1.28 m deep. The trench fill contained a total of three strata (Strata 1, 2, and 16) (Fig. 7.10). Near the southern part of the trench were the remnants of an older utility trench in the profile wall. The edges were very sharp and the fill in the trench was redeposited. No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm bgs and the bottom of the stratum was 26 cm bgs.

Stratum 2 was a very dark grayish-brown, semi-consolidated silty loam with inclusions of gravel and modern trash (plastic straws, plastic ties, Styrofoam, etc.) and was located below Stratum 1 and above Stratum 16. The top of the stratum was 36 cm bgs, and the bottom of the stratum was 50 cm bgs.

Stratum 16 was a yellowish-brown, loose to semi-consolidated, sandy alluvial deposit with a high amount of coarse sand, gravel, and small cobbles with inclusions of caliche specks. It was located below Stratum 2. The top of the stratum was 50 cm below the ground surface, and the bottom of the stratum continued to the base of the trench 128 cm bgs.

Trench 6.1

Trench 6.1 was located on the south side of Sanbusco and east of BHT 6.2 (see Fig. 6.1). The trench measured 17.80 m long by 1.00 m wide and was 1.28 m deep. The trench fill contained a total of five strata (Strata 1, 7, 8, 11, 17, and 18) (Fig. 7.11). Strata 17 and 18 are not in this profile but are in the profiles for Features 2 and 3. Feature 2 and 3 were located in this trench segment and were coal/clinker pits related to the railroad. Near the east edge of the backhoe trench two separate gray conduits were encountered that might be unmarked electrical lines. Excavations did not continue past the top of the conduits, which were 60 cm below the ground surface.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was located 10 cm bgs, and the bottom of the stratum was 20 cm bgs.

Stratum 7 was a brown, silty clayish layer located below Stratum 2. The top of the stratum was 60 cm bgs, and the bottom of the stratum was 120 cm bgs.

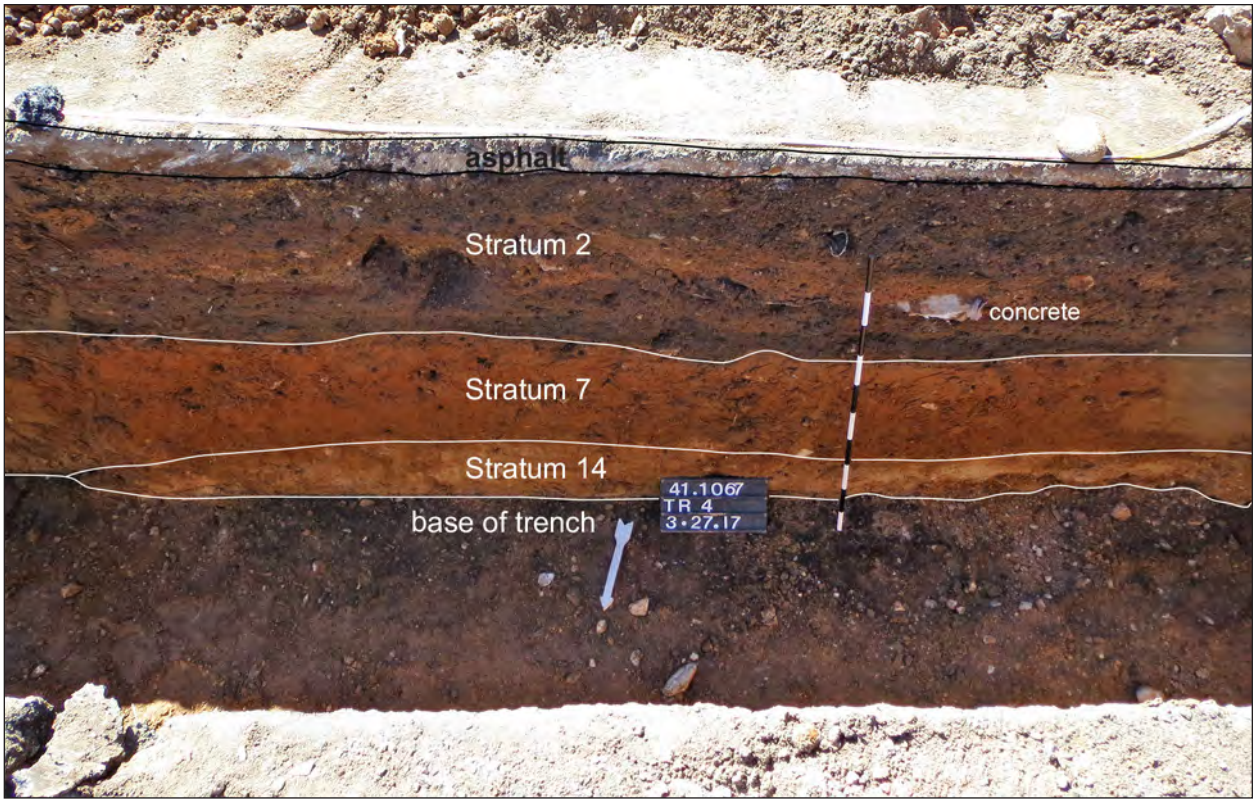

Figure 7.9. Trench 4, representative stratigraphy.

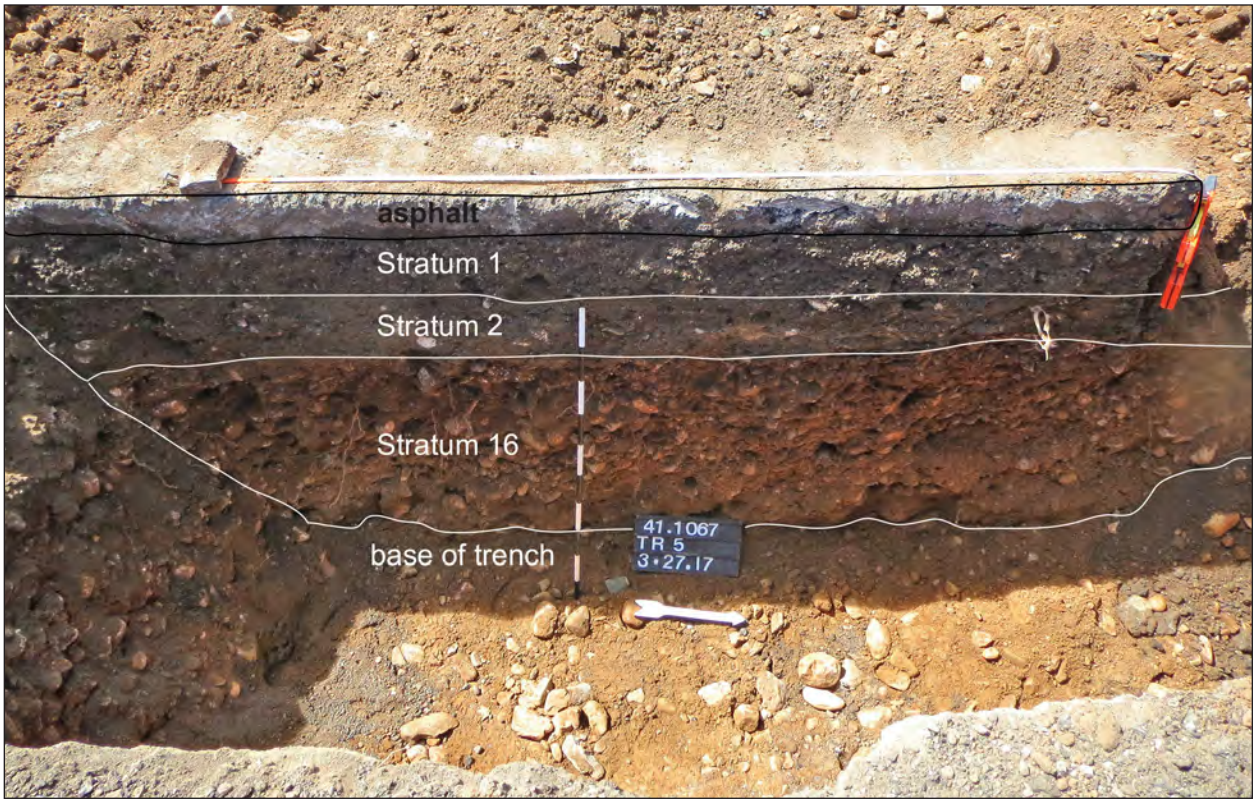

Figure 7.10. Trench 5, representative stratigraphy.

Stratum 8 is not in this profile but is in the Feature 3 profile. It was a consolidated silty, clayish loam with gravel, small coal pieces and small cobbles and was located below Stratum 1 and above Stratum 7. The top was 28 cm bgs, and the bottom was 44 cm bgs.

Stratum 11 was a very dark grayish-brown, loose to consolidated silty loam with inclusions of coal/clinkers and small gravel and was located below Stratum 3 and above Stratum 13. The top of was 60 cm bgs, and the bottom was 78 cm bgs.

Trench 6.2

Trench 6.2 was located on the south side of Sanbusco and west of BHT 6.1 (see Fig. 6.1). The trench measured 8.60 m long by 1.08 m wide and was 1.28 m deep. The trench fill contained a total of three strata (Strata 1, 7, 8, and 16) (Fig. 7.12). No features or cultural materials were located in this trench segment. A concrete slab 3 m long and 60 cm below the ground surface was located in the trench. It was not associated with anything, so its use is unknown. It appears to be excess concrete that may have been poured on top of Stratum 16. An old metal pipe to the west of the concrete bisected the trench.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm bgs.

Stratum 7 was a brown, silty clayish layer below Stratum 2. Stratum 7 was not in the profile but was present in the trench.

Stratum 8 was a consolidated silty clayish loam with gravel, small coal pieces, and small cobbles and was located below Stratum 1 and above Stratum 16. The top of the stratum was 20 cm bgs, and the bottom of the stratum was 74 cm bgs.

Stratum 16 was a yellowish-brown, loose to semi-consolidated, sandy alluvial deposit with a high amount of coarse sand, gravel, and small cobbles with inclusions of caliche specks. It was located below Stratum 8. The top was 68 cm bgs, and the bottom continued to the base of the trench 120 cm bgs.

Trench 7

Trench 7 was located on the north side of Sanbusco and east of BHT 8 (see Fig. 6.1). The trench measured 3.60 m long by 1.00 m wide and was 1.28 m deep. The trench fill contained a total of four strata (Strata 1, 19, 20, and 21) (Fig. 7.13). No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 12 cm bgs, and the bottom of the stratum was 36 cm bgs.

Stratum 19 was a very dark grayish-brown, semi-consolidated silty, clayish fill with inclusions of common charcoal and coal. Stratum was railroad debris related to the railyard and did not contain any artifacts. It was located below Stratum 1 and above Stratum 20. The top of the stratum was 34 cm bgs, and the bottom of the stratum was 44 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel and was located below Stratum 19 and above Stratum 21. The top of the stratum was located 41 cm bgs, and the bottom of the stratum was 68 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. It was located below Stratum 20. The top was 68 cm bgs, and the bottom continued to the base of the trench 124 cm bgs.

Trench 8

Trench 8 was located on the north side of Sanbusco and west of BHT 7 (see Fig. 6.1). The trench measured 8.70 m long by 1.00 m wide and was 1.24 m deep. The trench fill contained two strata (Strata 1 and 22) (Fig. 7.14). The south end of the trench contained two PVC conduits that bisected the trench about 36 cm below the ground surface. No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm bgs, and the bottom of the stratum was 38 cm bgs.

Stratum 22 was yellowish-brown, loose sand with a very high amount of gravels and small to large cobbles derived from Stratum 21. This was mixed with a dark grayish-brown silty loam with pieces of red brick, concrete, old ceramic sewer pipe and a few pieces of animal bone. Stratum was redeposited fill from previous excavations in the area and was located below Stratum 1. The top was 28 cm bgs, and the bottom continued to the base of the trench 126 cm bgs.

Trench 9.1

Trench 9.1 was located on the north side of Sanbusco and west of BHT 9.2 (see Fig. 6.1). The trench measured 3.10 m long by 1.04 m wide and

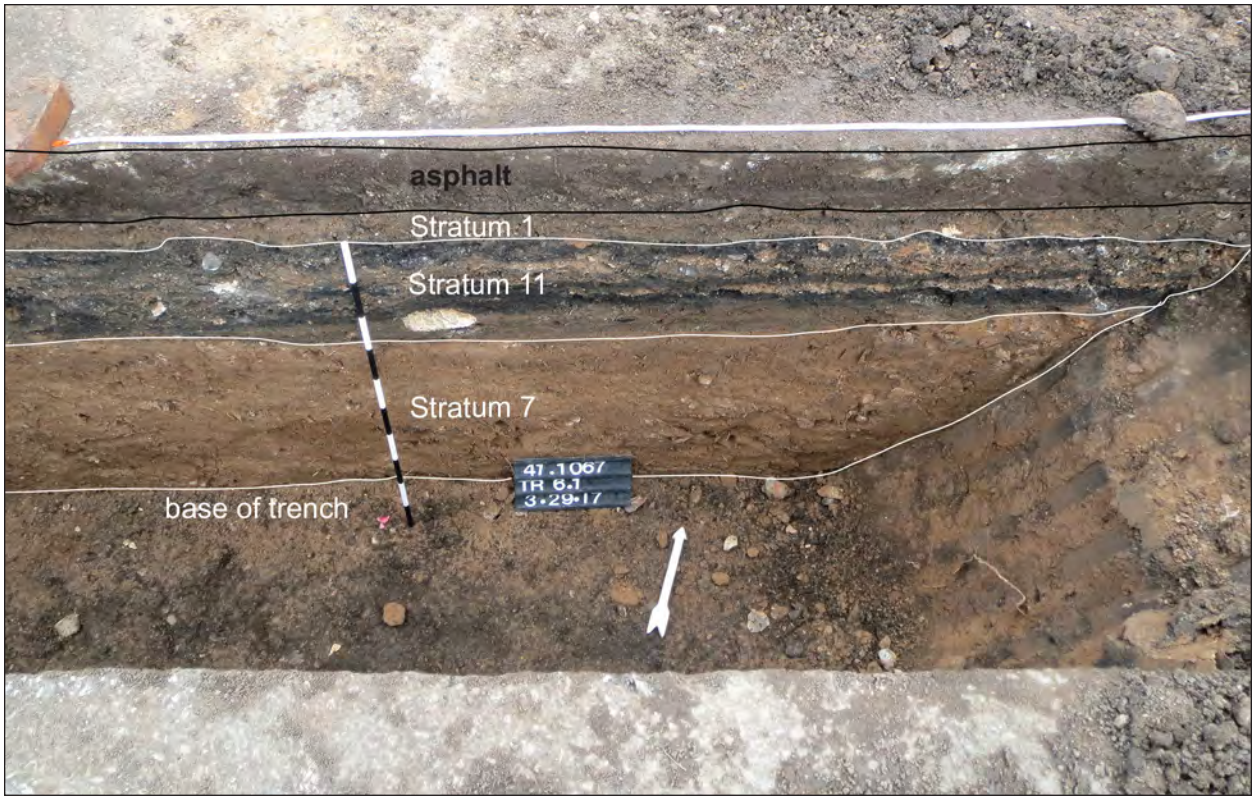

Figure 7.11. Trench 6.1, representative stratigraphy.

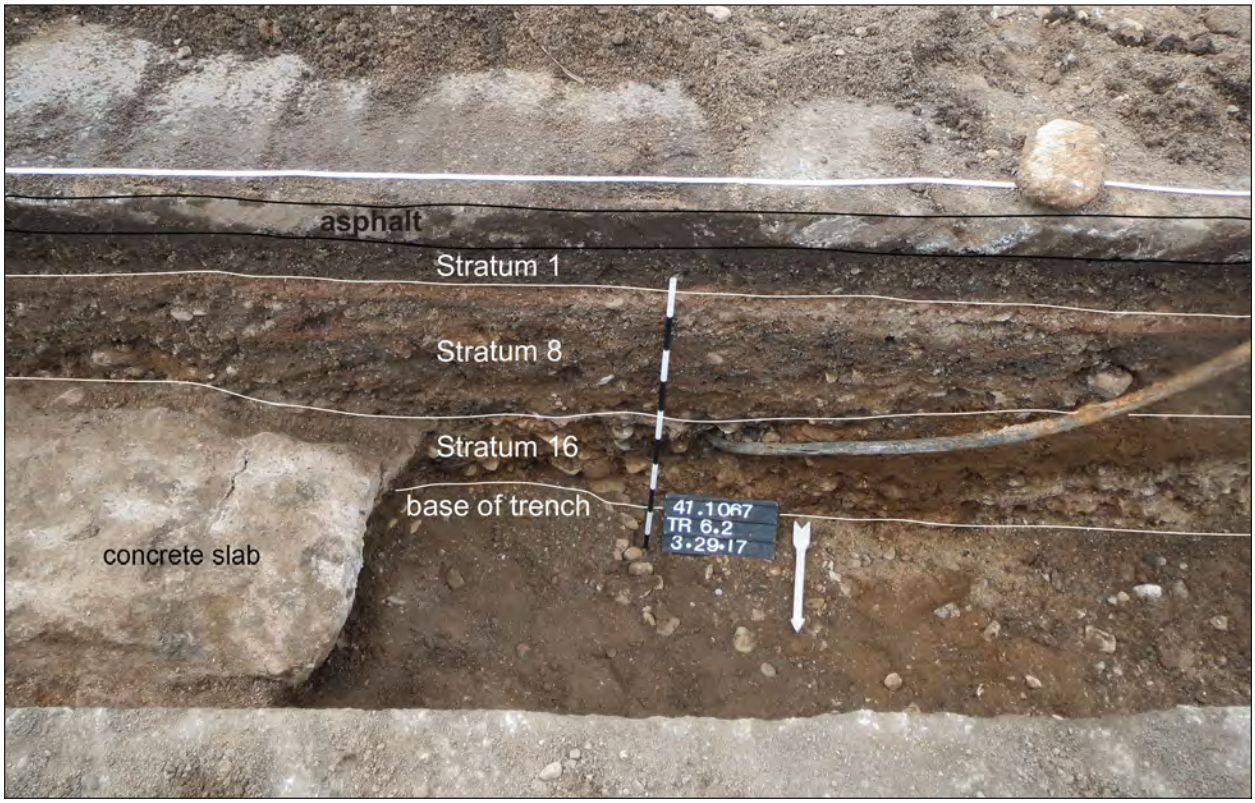

Figure 7.12. Trench 6.2, representative stratigraphy with portion of concrete mass.

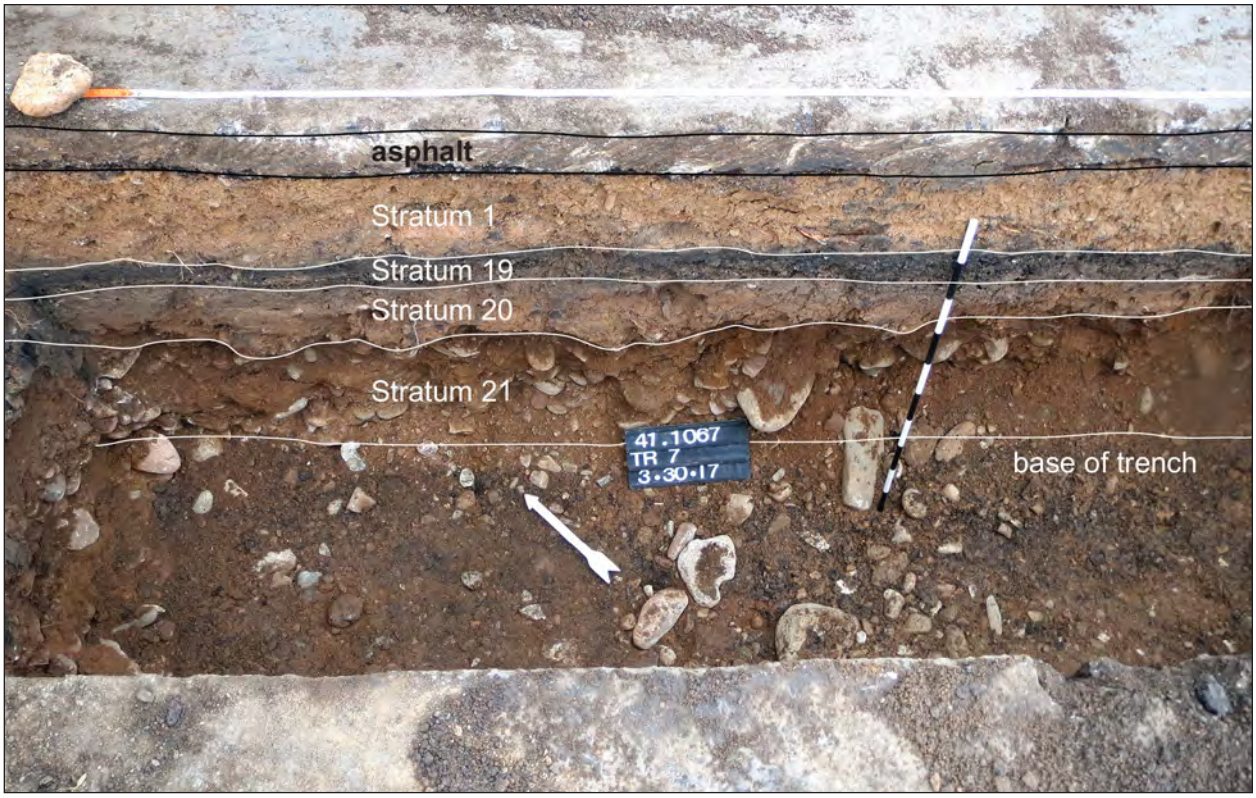

Figure 7.13. Trench 7, representative stratigraphy.

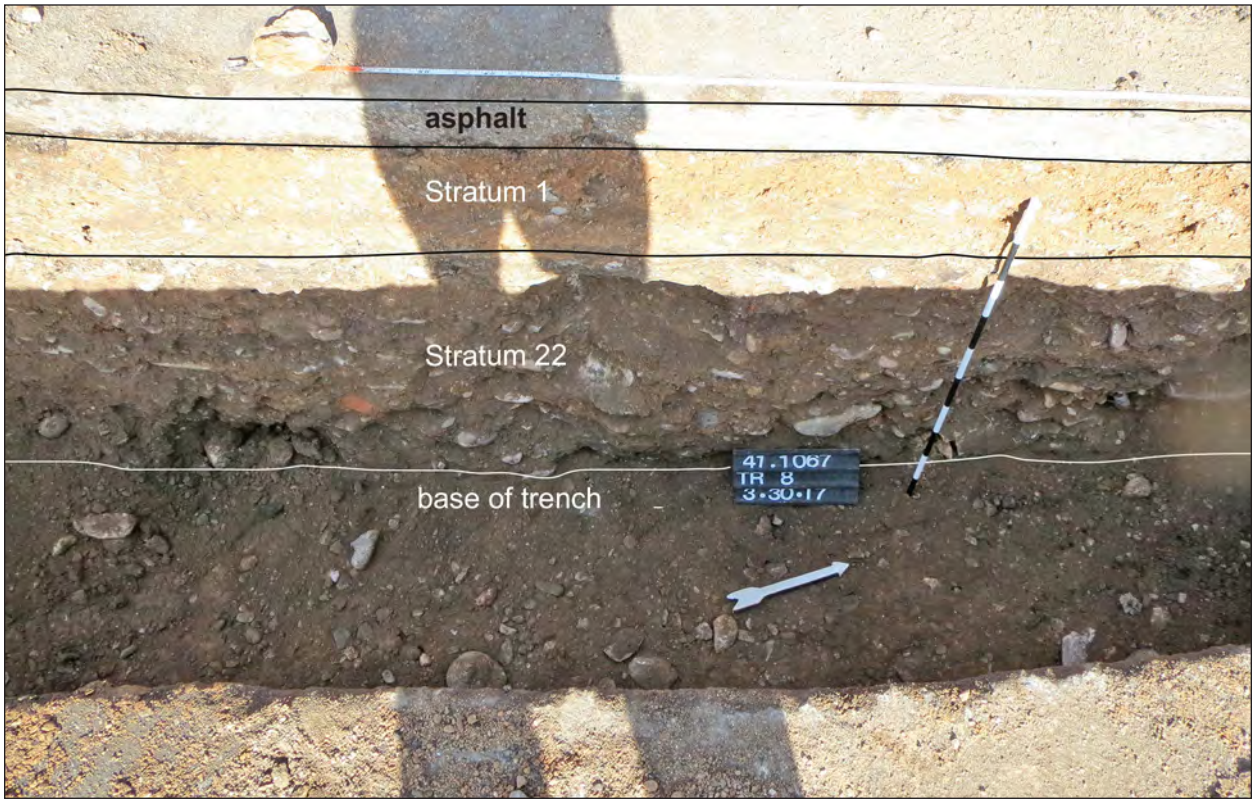

Figure 7.14. Trench 8, representative stratigraphy.

was 1.28 m deep. The trench fill contained a total of four strata (Strata 1, 20, 21, and 23) (Fig. 7.15). There was a water line near the west edge of the trench. No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 centimeters bgs, and the bottom of the stratum was 30 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel and was located below Stratum 1 and above Stratum 23. The top of was 26 cm bgs, and the bottom was 48 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravels and small to large cobbles. It was located below Stratum 23. The top of the stratum was 54 cm bgs, and the bottom of the stratum continued to the base of the trench 128 cm below the ground surface.

Stratum 23 was a reddish-brown, consolidated, silty, clayish loam with no gravel and sparse charcoal flecks and was located below Stratum 20 and above Stratum 21. The top was 46 cm bgs, and the bottom was 56 cm bgs.

Trench 9.2

Trench 9.2 was located on the north side of Sanbusco and east of BHT 9.1 (see Fig. 6.1). The trench measured 7.80 m long by 1.08 m wide and was 1.24 m deep. The trench fill contained three strata (Strata 1, 20, and 21) (Fig. 7.16). No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm bgs, and the bottom of the stratum was 34 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel and was located below Stratum 1 and above Stratum 21. The top of the stratum was 24 cm bgs, and the bottom of the stratum was 43 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. It was located below Stratum 20. The top was 32 cm bgs, and the bottom of the stratum continued to the base of the trench 124 cm bgs.

Trench 9.3

Trench 9.3 was located on the north side of Sanbusco and east of BHT 9.2 (see Fig. 6.1). The trench measured 10.20 m long by 1.00 m wide and was 1.26 m deep. The trench fill contained four strata (Strata 1, 20, 21, and 24) (Fig. 7.17). No features were located in this trench segment and a few pieces of glass and nails were observed in the back dirt.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm bgs, and the bottom of the stratum was 40 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel and was located below Stratum 24 and above Stratum 21. The top of the stratum was 62 cm bge, and the bottom of the stratum was 81 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. It was located below Stratum 20. The top of the stratum was 70 cm bgs, and the bottom of the stratum continued to the base of the trench 126 cm bgs.

Stratum 24 was a very dark grayish-brown, consolidated clayish fill with inclusions of coal pieces, gravel, sparse historic artifacts, and small cobbles. This stratum appears to be a railroad era lens that is continuous with no defined edges; therefore it was not a feature. It was located below Stratum 1 and above Stratum 21. The top of the stratum was 36 cm bgs; the bottom was 64 cm bgs.

Trench 9.4

Trench 9.4 was located on the north side of Sanbusco and east of BHT 9.3 (see Fig. 6.1). The trench measured 2.90 m long by 1.00 m wide and was 1.22 m deep. The trench fill contained four strata (Strata 1, 20, 21, and 25) (Fig. 7.18). No features or cultural materials were located in this trench segment.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 10 cm bgs, and the bottom of the stratum was 34 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel and was located below Stratum 25 and above Stratum 21. The top of the stratum was 34 cm bgs, and the bottom of the stratum was 44 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. It was located below Stratum 20. The top of the stratum was 44 cm bgs, and the bottom of the stratum continued to the base of the trench 122 cm bgs.

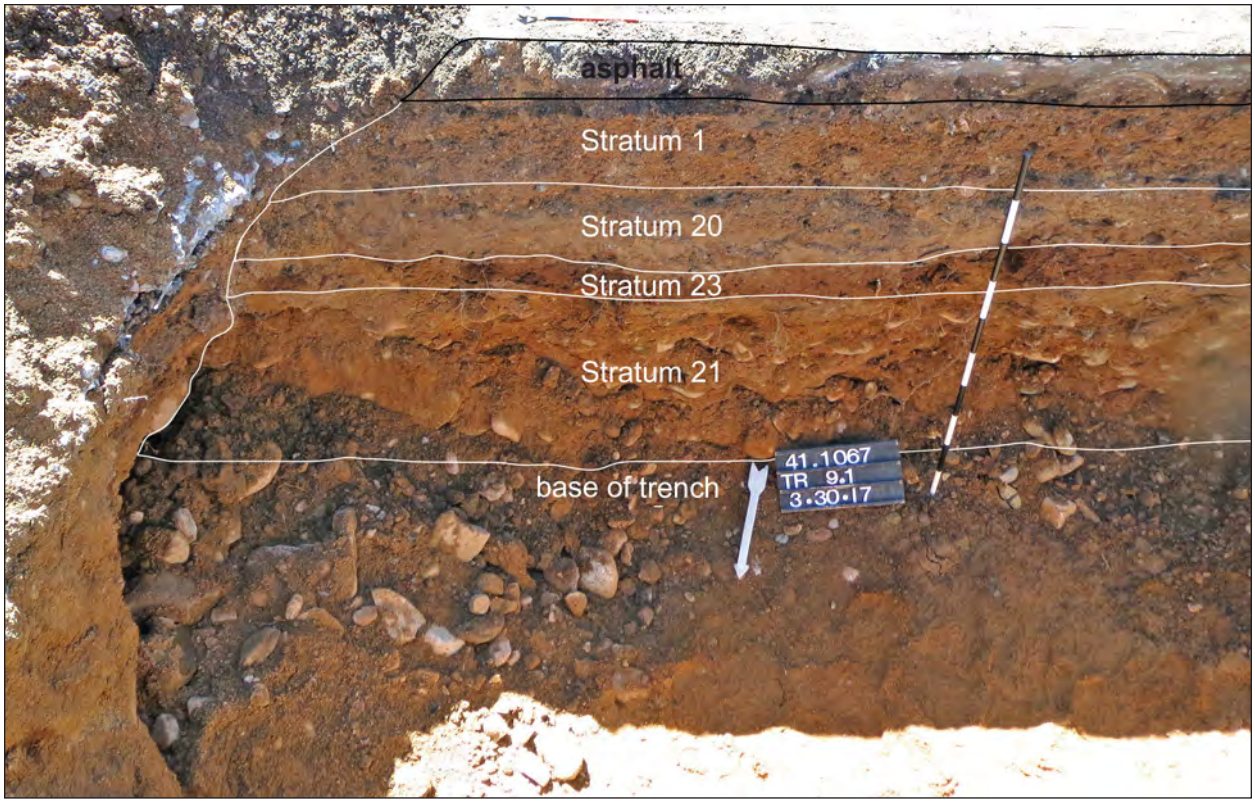

Figure 7.15. Trench 9.1, representative stratigraphy.

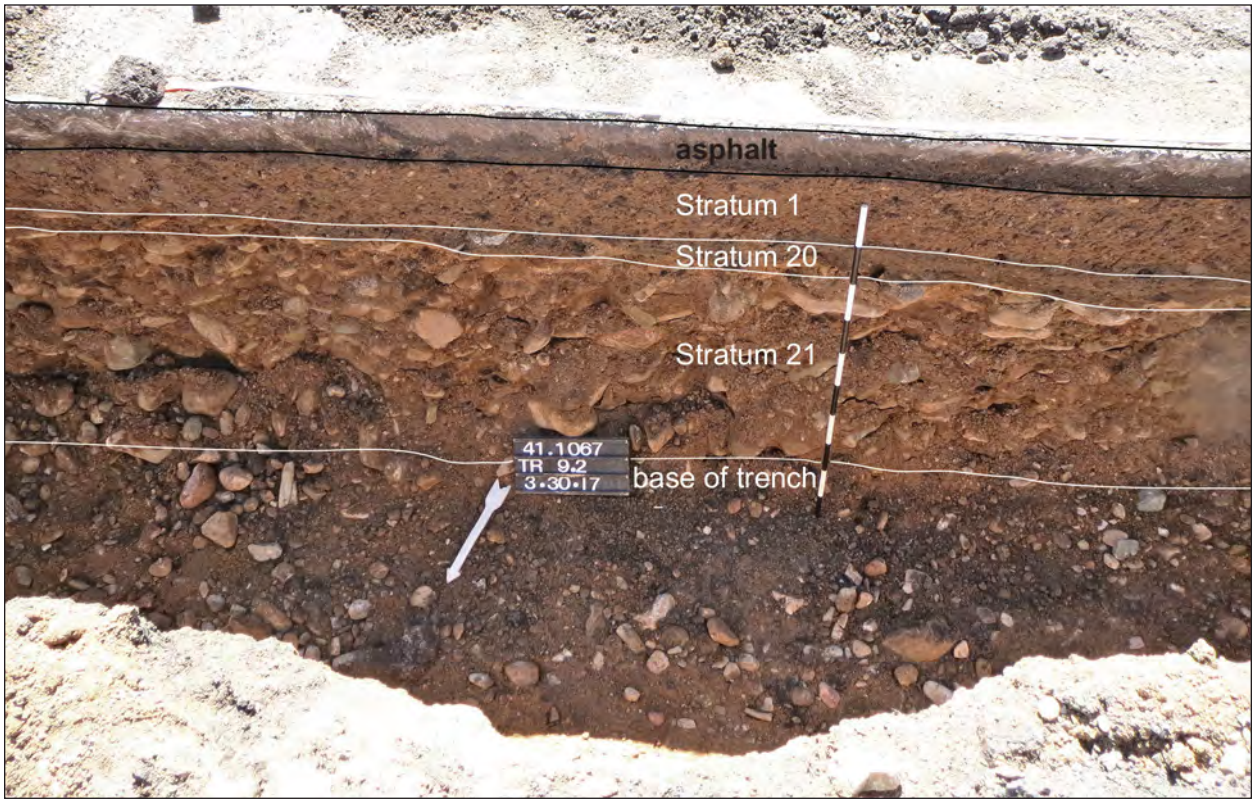

Figure 7.16. Trench 9.2, representative stratigraphy.

Figure 7.17. Trench 9.3, representative stratigraphy.

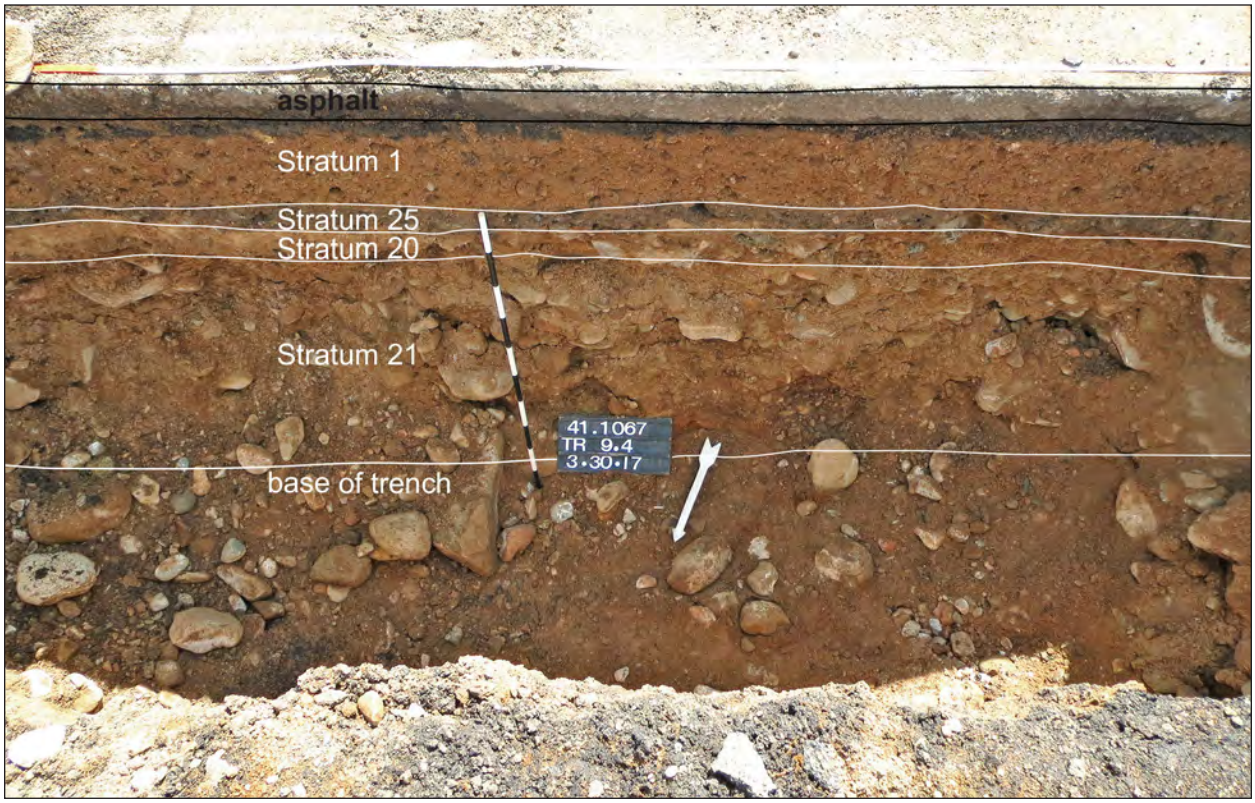

Figure 7.18. Trench 9.4, representative stratigraphy.

Stratum 25 was a dark yellowish-brown, semi-consolidated, silty, clayish fill with very sparse charcoal flecks and 5 percent gravel. Stratum 25 appears to be an old base course for the area and was located below Stratum 1 and above Stratum 20. The top of the stratum was 28 cm bgs, and the bottom of the stratum was 40 cm bgs.

Trench 10.1

Trench 10.1 was located on the north side of Sanbusco and west of BHT 10.2 (see Fig. 6.1). The trench measured 23.90 m long by 1.00 m wide and was 1.26 m deep. The trench fill contained seven strata (Strata 1, 19, 20, 21, 26, 27, and 28) (Fig. 7.19). Strata 26, 27, and 28 are not in this profile but are in the profile for Feature 4. Feature 4 was located in this trench segment and was a charcoal stained pit with no artifacts. Feature 4 was probably related to the railroad. There was also a water line that bisected the eastern edge of the trench.

Stratum 1 was the base course placed beneath the asphalt. The top of the stratum was 12 cm bgs, and the bottom of the stratum was 36 cm bgs.

Stratum 19 was a very dark grayish-brown, semi-consolidated silty, clayish fill with inclusions of common charcoal and coal. Stratum was railroad debris related to the railyard and it did not contain any artifacts. It was located below Stratum 1 and above Stratum 20. The top of the stratum was 32 cm bgs, and the bottom of the stratum was 42 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel located below Stratum 19 and above Stratum 21. The top was 42 cm bgs, and the bottom was 68 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. It was located below Stratum 20. The top was 62 cm bgs, and the bottom of the stratum continued to the base of the trench 126 cm bgs.

Trench 10.2

Trench 10.2 was located on the north side of Sanbusco and east of BHT 10.1 (see Fig. 13). The trench measured 19.00 m long by 1.00 m wide and was 1.28 m deep. The trench fill contained six strata (Strata 1, 20, 21, 29, 30, and 31) (Fig. 7.20) Strata 29, 30, and 31 were related to Feature 5 and Stratum 20 was located west of the profile used for this figure. Feature 5 was located in this trench segment and was a twentieth century trash midden. The east end of the trench had some disturbance of an excavated modern pit with redeposited Stratum 21.

Stratum 1 was the base course that was placed beneath the asphalt. The top of the stratum was located 10 cm bgs, and the bottom of the stratum was 35 cm bgs.

Stratum 20 was a brown, consolidated clayish fill with no charcoal or gravel that was located below Strata 1 and 29 and above Stratum 21. The top of the stratum was 35 cm bgs, and the bottom of the stratum was 60 cm bgs.

Stratum 21 was yellowish-brown, loose sand with a very high amount of gravel and small to large cobbles. It was located below Strata 20, 29, and 31. The top of the stratum was 55 cm bgs, and the bottom of the stratum continued to the base of the trench 128 cm below the ground surface.

Stratum 29 was a dark brown, consolidated, silty, clayish fill, with inclusions of 1 percent small gravel, common charcoal flecks, occasional coal pieces, and historic artifacts. This stratum was represented in the feature fill from Feature 5. It was located below Stratum 1 and above Strata 21, 30, and 31. The top of the stratum was 30 cm bgs, and the bottom of the stratum was 100 cm bgs.

Stratum 30 was a brown, consolidated, silty, clayish fill, with inclusions fine sand, 1 percent small gravels, sparse charcoal flecks, small cobbles, red brick pieces, and historic artifacts. This stratum was represented in the feature fill from Feature 5 and appears to be redeposited Stratum 21 mixed with cultural deposits. It was located below Stratum 29 and above Stratum 31. The top of the stratum was 50 cm below the ground surface, and the bottom of the stratum was 80 centimeters bgs.

Stratum 31 was a very dark grayish-brown, consolidated, silty, clayish loam, with inclusions of small cobbles, common charcoal flecks, and historic artifacts. This stratum was represented in the feature fill from Feature 5. It was located below Stratum 30 and above Stratum 21. The top of the stratum was 55 cm bgs, and the bottom of the stratum was 105 cm bgs.

Feature Summaries

Five features were defined during reconnaissance trenching.

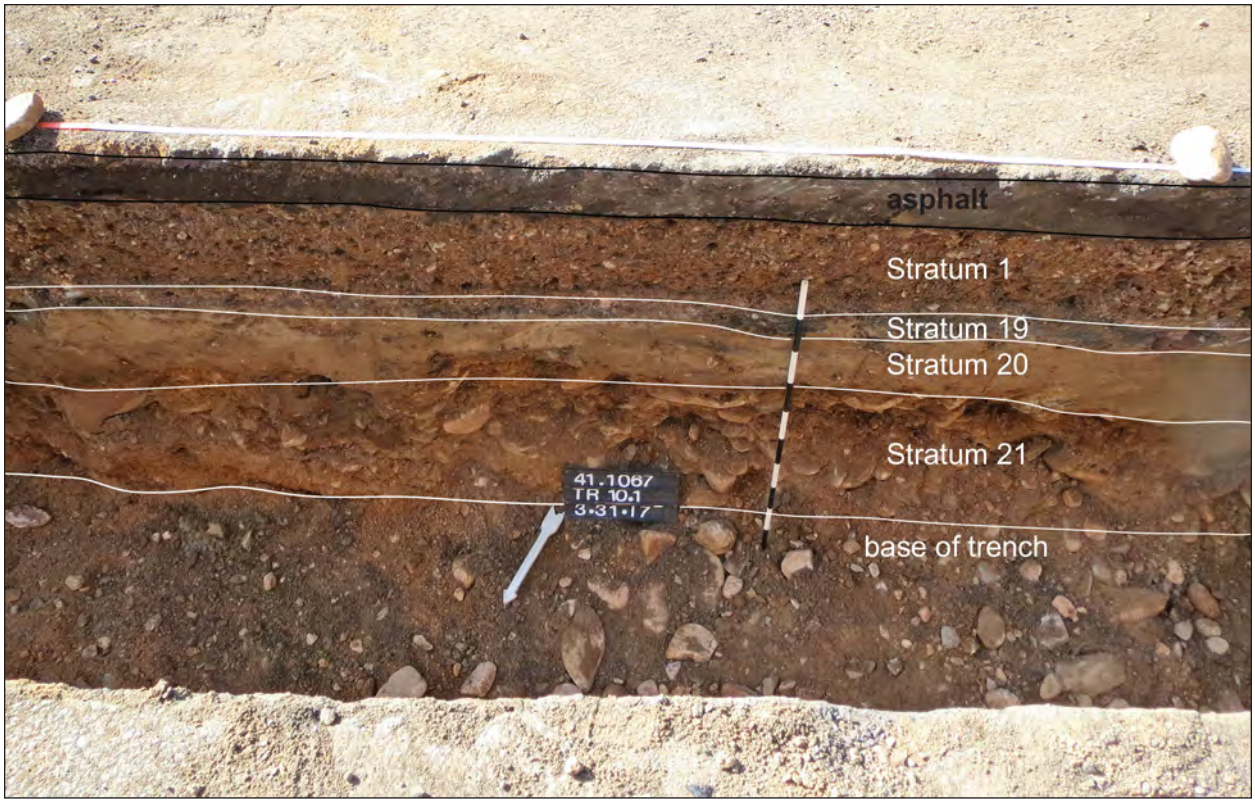

Figure 7.19. Trench 10.1, representative stratigraphy.

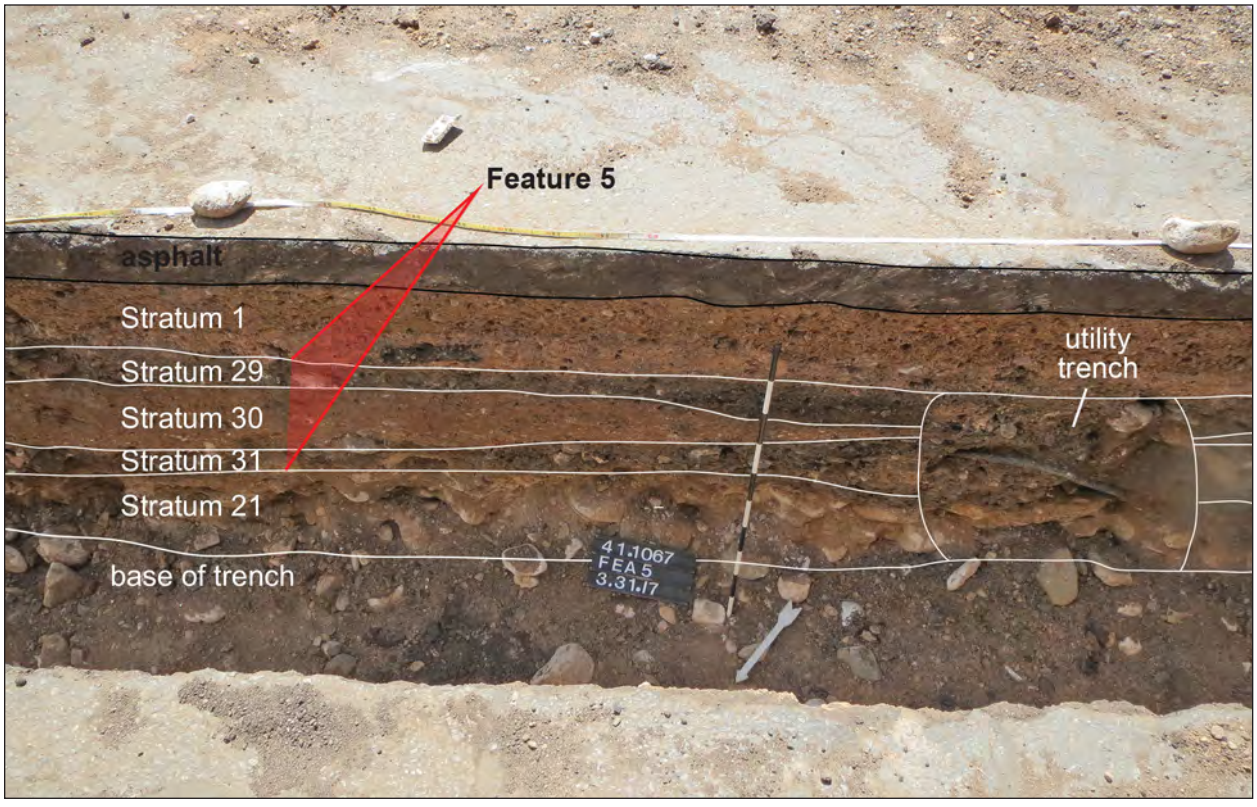

Figure 7.20. Trench 10.2, representative stratigraphy.

Feature 1

Feature 1 was identified on the south side of the Sanbusco buildings within Trench 3.1. The feature was 10.40 m long by 1.08 m wide. The top was 60 cm bgs and the bottom was 128 cm bgs.

Strata: Stratum 13 was the feature fill throughout the feature and was present in Backhoe Trench 3.1. It consisted of 10YR 3/2 very dark grayish-brown, loose fill of coal/clinker pieces and a few pieces of glass. This stratum represented the feature fill from Feature 1 and was railroad debris from the nearby railyard. It was located below Stratum 12, had a thickness of 46 cm, and was approximately 60–128 cm bgs. The stratum extended below the base of the trench so it is unknown how thick it was and to what depth bgs it went.

Description: Feature 1 was a basin-shaped coal and clinker refuse pit encountered in the middle of the trench extending east in Trench 3.1 and was present on both sides of the trench. The feature was not located in Trench 1.2, which is just a few meters to the north, indicating that most of the feature extended south. The eastern boundary of the feature was truncated by a previously excavated utility trench; the western boundary slowly thinned out. The feature was constructed by excavation of a pit into Stratum 7. Once the pit was excavated, expended coal and clinkers were placed in the pit (Fig. 7.21).

Feature 2

Feature 2 was located on the south side of the Sanbusco buildings in Trench 6.1. The feature as visible within the trench was 4.20 m long by 1 m wide. The top of the feature was 28 cm bgs and the bottom was 68 cm bgs.

Strata: Stratum 17 was the feature fill throughout the feature and was present in Backhoe Trench 6.1. It consisted of 10YR 3/2 very dark grayish-brown, semi-consolidated, silty, clayish loam. It was mottled with 10YR 4/3 brown silty loam with inclusions of small cobbles, 1 percent small gravel, coal/clinkers, and a few pieces of glass and red brick. This stratum represented the feature fill from Feature 2 and was railroad debris from the nearby railyard. It was located below Stratum 1 and ranged in thickness from 8–40 cm and was 28–68 cm bgs.

Description: Feature 2 was a basin-shaped coal and clinker refuse pit near the eastern edge of Trench 6.1 and was present on both sides of the trench. The south portion of the feature was smaller in length (2.08 m) compared to the north portion (3.84 m). This would indicate that the feature does not extend too far south while it extends more to the north and an unknown distance. The western boundary of the feature was truncated by a previously excavated utility trench filled with modern trash and concrete, while the eastern boundary sloped up to end at Stratum 1. The feature was constructed by a pit being excavated into Stratum 7. Once the pit was excavated, it was filled with expended coal and clinkers. A few pieces of glass and red brick were also disposed of in the pit (Fig. 7.22).

Feature 3

Feature 3 was on the south side of the Sanbusco buildings in Trench 6.1. The dimensions within the trench were 3.40 m long by 1 m wide. The top was 24 cm bgs and the bottom was 92 cm bgs.

Strata: Stratum 18 was the feature fill throughout the feature and was present in Backhoe Trench 6.1. It consisted of 10YR 5/2 grayish-brown, loose, silty, clayish loam with inclusions of 5 percent small gravels and a high amount of coal and clinkers with a few pieces of glass. It was similar to Stratum 17, only it contained more coal and clinkers. This stratum represented the feature fill from Feature 3 and was railroad debris from the nearby railyard. It was located below Stratum 1 and ranged in thickness from 20–65 cm and was approximately 24–92 cm bgs.

Description: Feature 3 was a basin-shaped coal and clinker refuse pit encountered near the western edge of Trench 6.1 and was present on both sides of the trench. The feature lengths in both sides of the trench were very similar. The western boundary of the feature continued into the unexcavated portion of the trench, while the eastern edge had a diffused boundary with Stratum 8 where the feature sloped upwards. The feature was constructed by a pit being excavated into Stratum 7. Once the pit was excavated, expended coal and clinkers along with a few pieces of glass were disposed of there (Fig. 7.23).

Feature 4

Feature 4 is located on the north side of the Sanbusco buildings and was recognized in Trench 10.1. Its

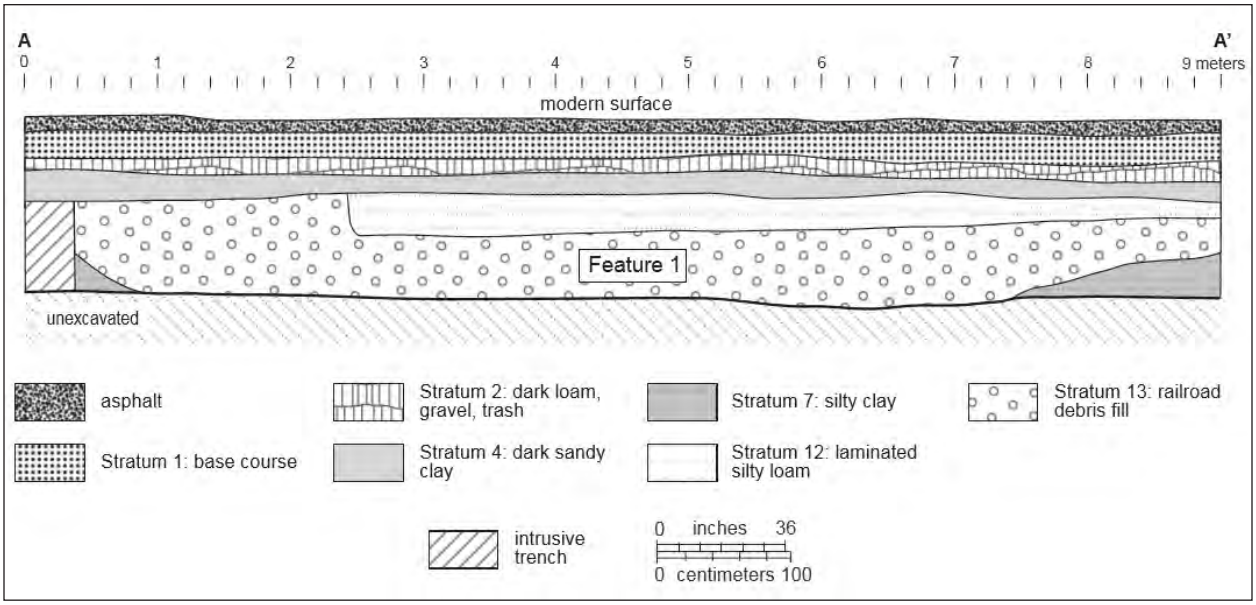

Figure 7.21. Feature 1, profile.

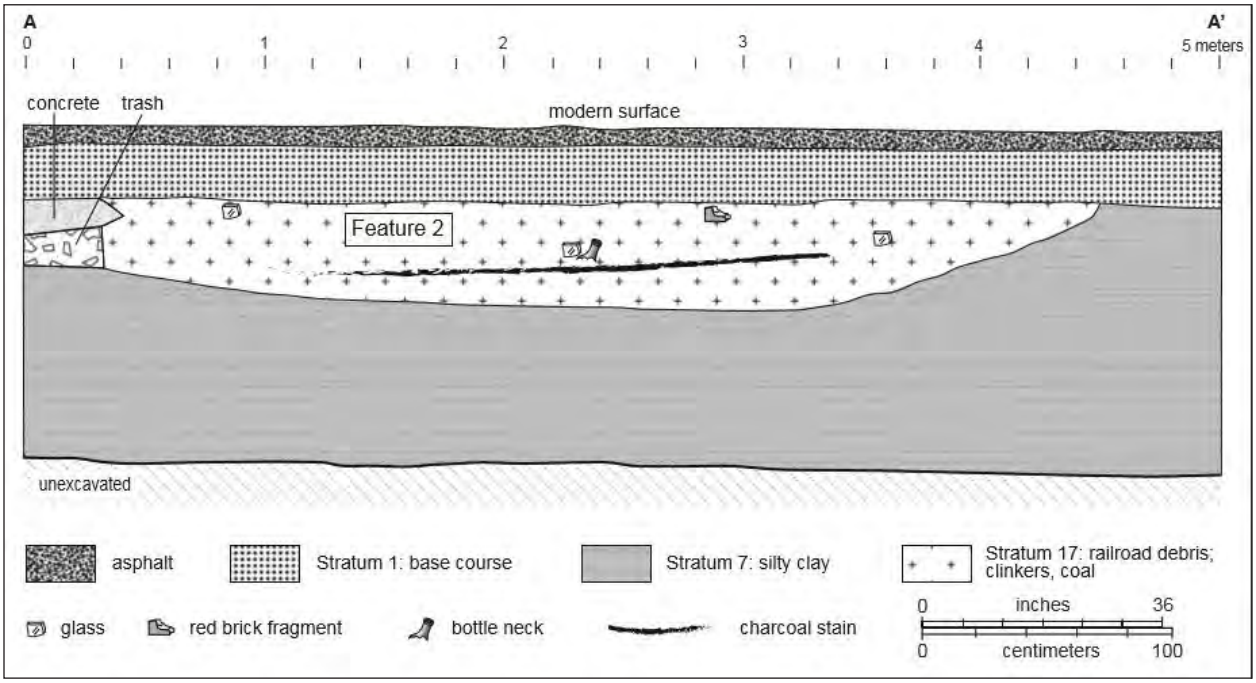

Figure 7.22. Feature 2, profile.

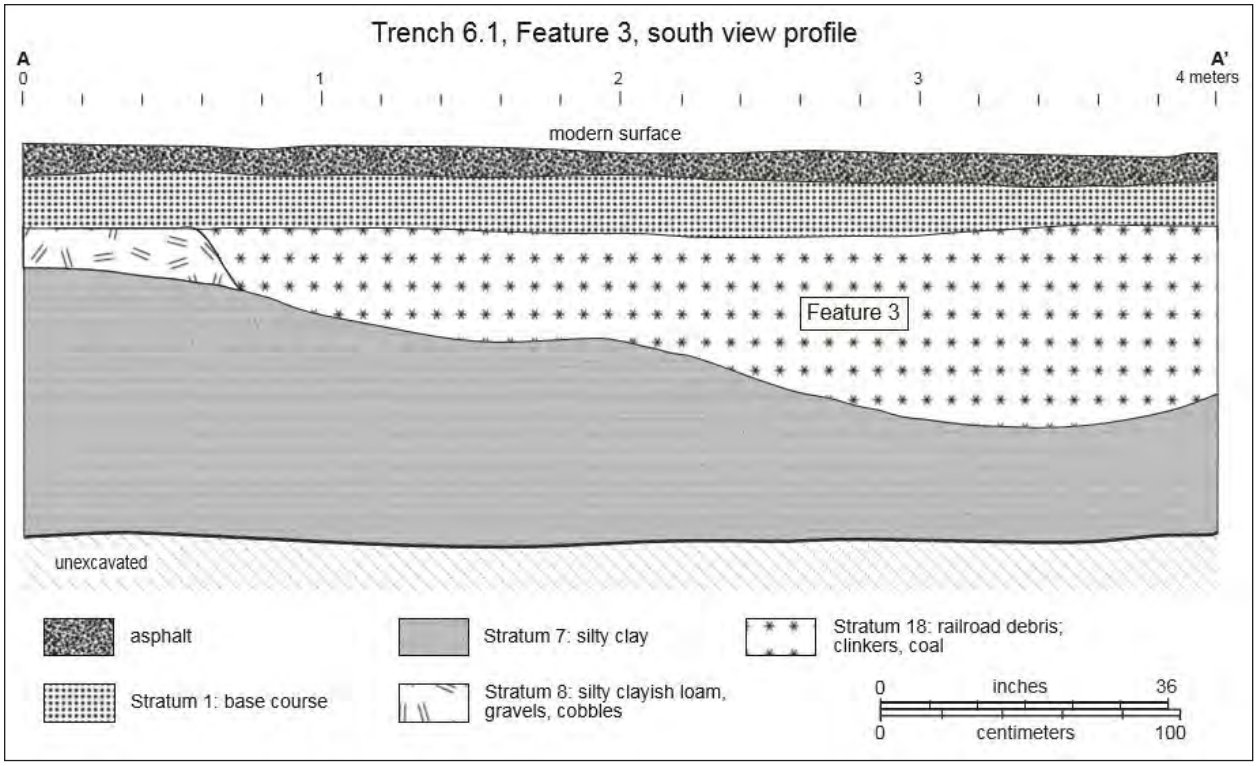

Figure 7.23. Trench 6.1, Feature 3, profile, south view.

dimensions within trench are 2.00 m long by 1 m wide. The top of the feature was 32 cm bgs and the bottom was 82 cm bgs.

Strata: Stratum 26 was one of three feature layers and was present in Backhoe Trench 10.1 (Fig. 7.24, see also Fig. 33). It consisted of 10YR 2/1 black, loose, silty, slightly sandy, charcoal-stained loam with inclusions of 1 percent pea gravel, and very small pieces of coal/clinkers with no artifacts. This stratum was represented in the feature fill from Feature 4 was railroad debris from the nearby railyard. It was located below Stratum 1 and ranged in thickness from 9–18 cm and was approximately 32–52 cm bgs.

Stratum 27 consisted of 10YR 4/3 brown, consolidated, clayish fill, with inclusions of sparse coal pieces and small gravels. This stratum was represented in the feature fill from Feature 4 and was redeposited Stratum 20. It was located below Stratum 26 and ranged in thickness from 10–26 cm and was approximately 32–75 cm bgs.

Stratum 28 was, stratigraphically, the earliest of the three feature deposits in Backhoe Trench 10.1. It consisted of 10YR 4/4 dark yellowish-brown, consolidated, clayish fill, with inclusions of sparse, small gravels. It was located below Stratum 27 and ranged in thickness from 6–9 cm and was approximately 52–82 cm bgs.

Description: Feature 4 was a basin-shaped coal refuse pit encountered near the western edge of Trench 6.1 and was present on both sides of the trench. The feature lengths in both sides of the trench were very similar. The western boundary of the feature continued into the unexcavated portion of the trench, while the eastern edge had a diffused boundary with Stratum 8 where the feature sloped upwards. The feature was constructed by a pit being excavated into Stratum 7. Once the pit was excavated, expended coal/clinkers were disposed of in the pit in the upper fill. The lower strata represented different episodes of fill laid in the pit.

Feature 5

Feature 5 was identified within Trench 10.2 on the north side of the Sanbusco buildings. Within the trench, the dimensions were 12.05 m long by 1.05 m wide. The top of the feature was 30 cm bgs and the bottom was 105 cm bgs.

Strata: Stratum 29 was one of three feature

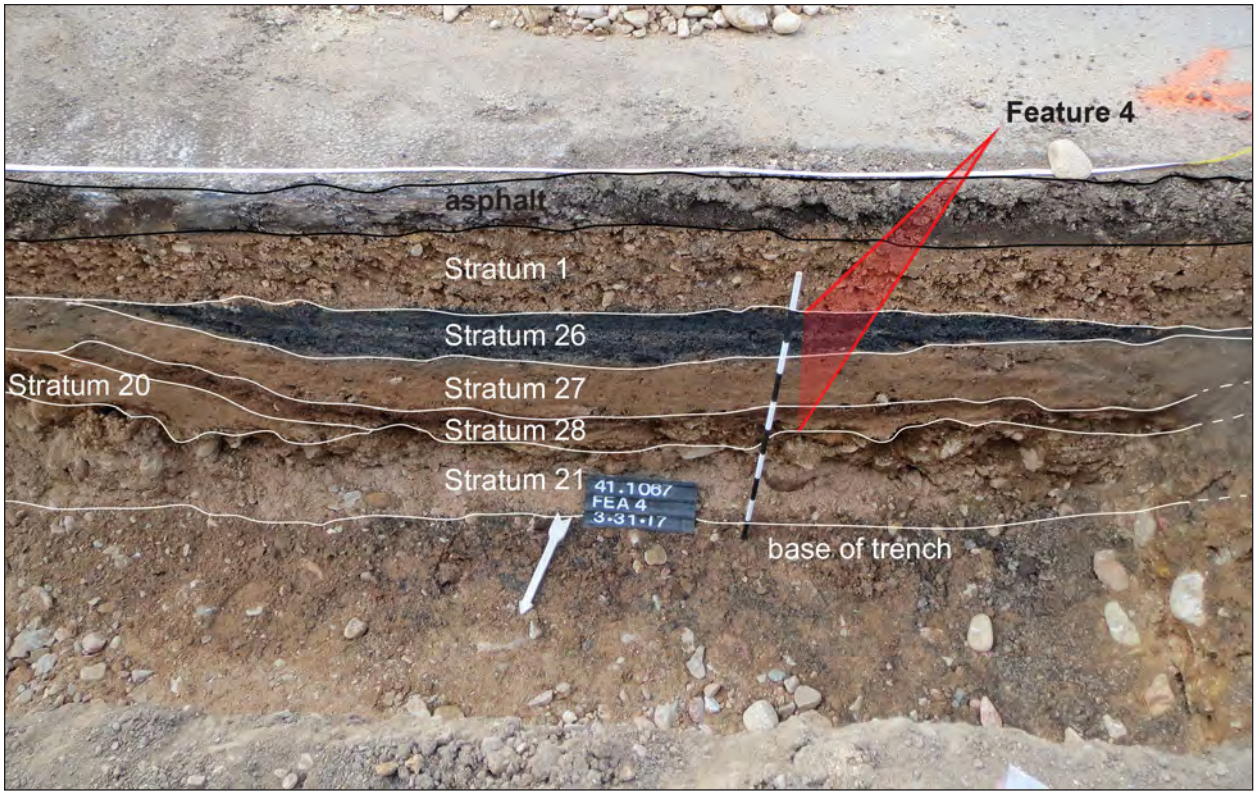

Figure 7.24. Feature 4, profile.

deposits present within Backhoe Trench 10.2 (Fig. 7.25). It consisted of 10YR 3/3 dark brown, consolidated, silty, clayish fill, with inclusions of 1 percent small gravel, common charcoal flecks, occasional coal pieces, and historic artifacts. This stratum was located below Stratum 1 and ranged in thickness from 5–65 cm and was 30–100 cm bgs.

Stratum 30 consisted of 10YR 5/3 brown, consolidated, silty, clayish fill, with inclusions fine sand, 1 percent small gravels, sparse charcoal flecks, small cobbles, red brick pieces, and historic artifacts. This stratum was represented in the feature fill from Feature 5 and appears to be redeposited Stratum 21 mixed with cultural deposits. It was located below Stratum 29 and ranged in thickness from 5–25 cm and was approximately 50–80 cm bgs.

Stratum 31 was, stratigraphically, the earliest of the three feature deposits. It consisted of 10YR 3/2 very dark grayish-brown, consolidated, silty, clayish loam with inclusions of small cobbles, common charcoal flecks, and historic artifacts. This stratum was represented in the feature fill from Feature 5. It was located below Stratum 30 and ranged in thickness from 15–30 cm and was 75–105 cm bgs.

Description: Feature 5 was a long basin-shaped historic trash midden encountered from the western edge toward the middle of Trench 10.2 and was present on both sides of the trench. Artifacts recovered from the feature had a mean date of 1880—the height railroad era. The feature lengths in both sides of the trench were very similar. The western boundary of the feature continued until it sloped upward and had a distinct edge, while the eastern edge was truncated by a previously excavated utility trench. The feature was constructed as a pit being excavated into Stratum 21. Once the pit was filled with refuse from nearby residents, it was eventually capped by the base coarse (Stratum 1) for the parking area

Hand Excavations

Two 1 by 1 m test units (totaling 21 square feet in area) were excavated to explore Feature 5. Both units were excavated by stratum and screened with ¼-inch hardware cloth. A few buckets from each stratum were screened with ⅛-inch hardware cloth to observe if there was any difference in the artifact content. There was no discernable difference in the

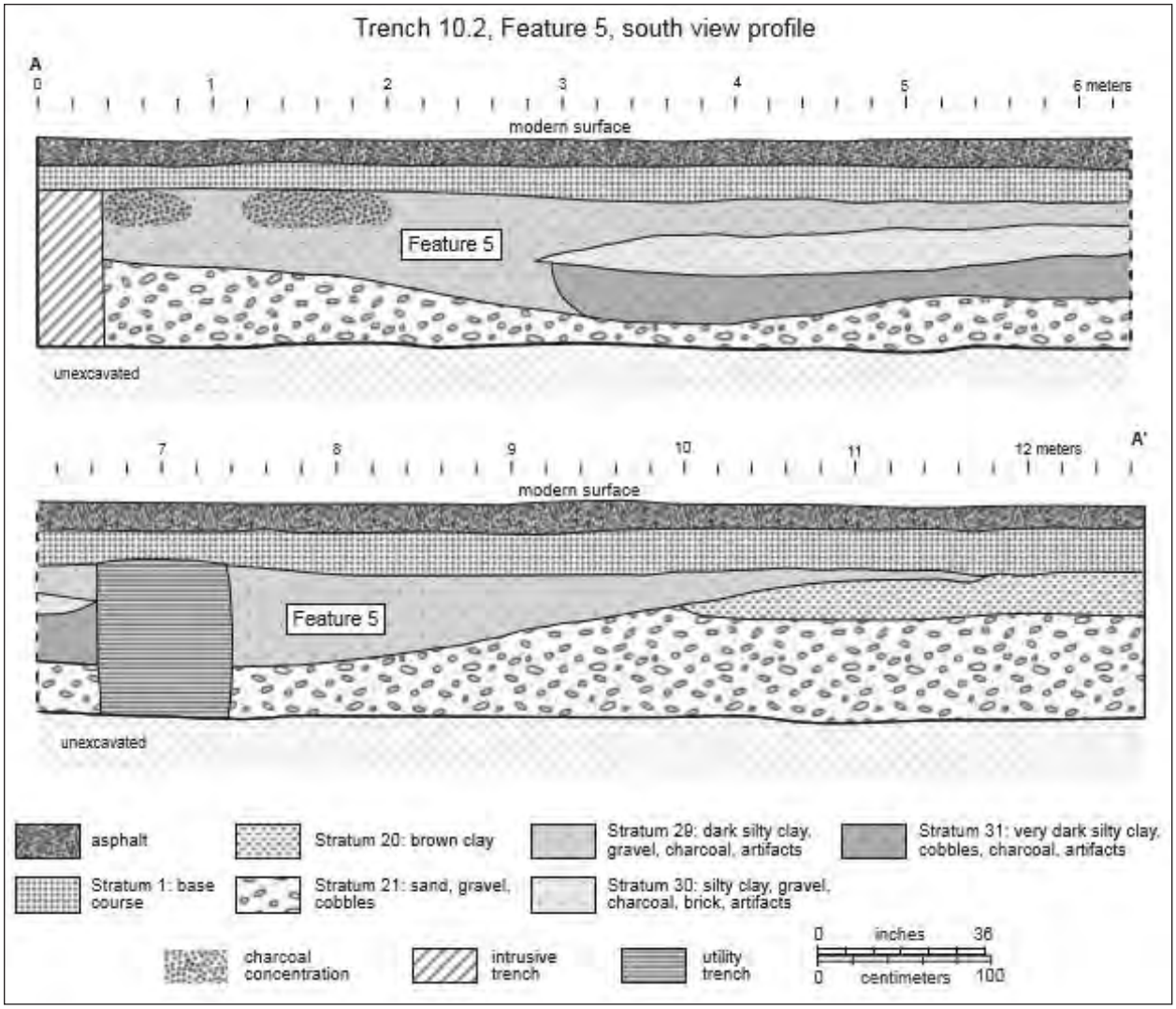

Figure 7.25. Feature 5, profile, south view.

range of artifact types, so most of the screening was done with ¼-inch mesh. All artifacts were collected. Excavation Unit 1 was located near the eastern edge of the feature, while Excavation Unit 2 was further west. More than 3200 artifacts were collected.

Excavation Unit 1

Unit 1 was excavated into the south wall of Trench 10.2 approximately 3 m from the east end of the feature (Fig. 7.26). The top 12 cm of fill (asphalt and base course, see Fig. 7.25) was removed mechanically, and a total of 56 cm of fill was excavated by hand from 12–68 cm bgs. The unit was excavated by strata, but the strata were given level numbers. Level 1 was comprised of Stratum 29, with a thickness of 24 cm of fill that yielded approximately 340 artifacts. Level 2 was comprised of Stratum 30, with a thickness of 19 cm of fill that yielded approximately 500 of artifacts. Level 3 was comprised of Stratum 31, with a thickness of 13 cm of fill that yielded approximately 400 artifacts. Metal, glass and animal bone made up the majority of the artifacts. Euroamerican and Native American ceramic fragments were present but not abundant. There were a few pieces of milled lumber likely related to the lumber yard, a few pieces of plaster, and a piece of slag.

Excavation Unit 2

Unit 2 was also excavated into the south wall of Trench 10.2, about 4 m from the west end of the

Figure 7.26. Unit 1 after excavation, south view.

Figure 7.27. Unit 2 after excavation, south view.

feature as exposed within the trench (Fig. 7.27). The top 7 cm of fill (asphalt and base course, see Fig. 7.25) was removed mechanically, and total of 37 cm of fill was excavated from 7–44 cm bgs. The unit was excavated by stratum, but there was only one stratum present (Stratum 29). Approximately 2000 artifacts were recovered from Stratum 29. Artifact content was much higher in this excavation unit than in Unit 1, and there were major differences in material frequencies. There was an extremely large quantity of rusted nail fragments and glass fragments along with animal bones. European-American ceramic fragments and Native American ceramic fragments were also present but were rare in this unit. A single small mica fragment was also recovered from this unit.

8 ⇓ Artifact Descriptions

Rare or unique artifacts are mentioned in excavation unit descriptions. Euroamerican artifacts, Native American pottery, and animal bone are described in this section.

Euroamerican Artifacts
Susan M. Moga

Euroamerican artifacts were, numerically, the largest artifact category (n = 2784). Most were recovered from the two hand excavation units within Feature 5, and the remainder was recovered from general monitoring proveniences during the reconnaissance trenching. The artifacts were analyzed following the methods outlined by Boyer et al. (1994) for OAS. OAS reference libraries and reference collections were used during the analysis, along with Internet searches for specific types and makers.

The analysis system is functionally based, and each artifact is assigned to one of OAS's 12 functional categories: Economy and Production, Food, Indulgences, Domestic, Furnishings, Construction and Maintenance, Personal Effects, Entertainment, Leisure and Education, Transportation, Communication, Military and Arms, and Unassignable. A wide range of human activities can take place in each of these categories, and categories cross cut material types.

Descriptive attributes are also recorded for each artifact. These attributes include: material type, aging, frequency, manufacturer, brand, technique, bottle finish, ceramic paste and ware types, color, decoration, design, and measurements of intact artifacts. These attributes are entered into a digital database, Statistical Package for the Social Sciences (SPSS), for analysis and comparison within the assemblage.

Euroamerican Artifact Categories

Artifacts were retrieved from two hand excavation units within Feature 5, a very large historic midden area. The artifacts from each excavation unit were divided into levels that represent discrete strata. Diagnostic artifacts were also collected from the general fill in the vicinity of Feature 5 (Table 8.1). The overall collection includes the following functional categories.

Unassignable Items: Artifacts that could not be assigned to a category because they were lacking specific attributes were classified as unassignable (n = 988).

The majority of these items are usually glass bottle fragments that could fall under several categories including food, indulgences, chemicals, cleaning products, and toiletries or other personal hygiene products. Other unassignable items are often metal or leather objects.

Indulgences (n = 11) are luxury items consumed for pleasure and recreation and not a necessity for human existence.

A few wine, liquor and champagne bottles were specifically identified from the midden (Feature 5). Numerous amber glass bottle fragments were recovered and were probably beer bottles, but other items such as bitters, whiskey, mineral water, and chemical bottles were also bottled in amber colored glass, so they had to be categorized as unassignable.

Domestic artifacts (n = 170) encompass a wide range of items—from dinnerware, eating utensils, cooking implements, glassware, canning, storage, cleaning, sewing objects, and child care.

Mostly white ware and ironstone with some porcelain dinnerware were present in the NMSA assemblage. These fragments were machined molded and displayed colorful floral patterns with gold gilding along the rims. A few pieces of crockery were collected; crocks were usually used for food storage. Two glass goblets were broken, but the stems were still present and revealed the pieces' identity.

Furnishing items (n = 25) are not only furniture, but also heating, cooking, lighting, appliances, and storage and ritual objects.

Artifacts recovered from the midden (Feature

5) were infrequent, but consisted of a broken terra cotta flower pot, several pieces from a glass scalloped decorative object, and fragments from other unknown decorative objects.

Construction and Maintenance is the largest category of Euroamerican artifacts in the NMSA assemblage (n = 1525). Fragments of light green window glass were present (n = 166), but were inadequate when compared to the amount of fragmented sheet metal (n = 627) and nails recovered. Square nails (n = 637) (1820–1900) were more frequent than round nails (n = 91) (1890+). The nails and sheet metal were heavily encrusted with rust. A few other nondescript metal objects were also collected.

This category encompasses a wide variety of items listed under each of the following types: tools, hardware, building materials, electrical, storage, fencing, plumbing, water, gas, lubricants, solvents, and tentage.

Personal Effects: All personal items are included in this category. These items range from clothing to shoes and boots, jewelry, grooming and personal hygiene items, medicine and health, money and tokens, religious objects, and other miscellaneous personal objects.

The personal effects (n = 61) recovered from the midden included several broken patent medicine bottles (n = 5), bitters (n = 2), liniment (n = 3), and tonic (n = 7) bottles. One metal shank button and pieces of either leather boots or shoes (n = 43) were also found.

Entertainment, Leisure, and Education: This last category contains the "leisure activities" of life: toys, musical instruments, games, books, stationery items, arts and crafts items, photography, pets, and outdoor sports.

Only four artifacts from the NMSA project were assigned to this category, and they all appeared to be child oriented: a porcelain, hand-painted doll's head (1860–1900); a rubber balloon (no date); and two porcelain miniature dishes (1800+).

Results of Archaeological Investigations

Euroamerican artifacts collected during the excavation of the Feature 5 midden were divided into two excavation units (Unit 1 and Unit 2). These units were excavated by levels that made up a natural stratigraphic unit. Grab samples of diagnostic artifacts came from the general fill. The Euroamerican artifacts in these units will be summarized below.

Unit 1: In Level 1 (Stratum 29) a variety of domestic ceramic dinnerware fragments were present. A maker's mark from the Haviland & Co. (1892–present) of New York was present on a base fragment. David Haviland, a New York businessman went to Limoges, France to send a shipment of Limoges porcelain to the United States. A successful journey and decades later, the family operated company is still in business today (Kovel and Kovel 1986:213). Unknown bottle types of various colors were also collected, along with a leather shoe fragment and a decorative piece of glass. The Construction and Maintenance category was represented by broken green glass windows (n = 14), wire nails (n = 73), and sheet metal fragments (n = 12).

In Level 2 (Stratum 30) most of the same Euroamerican artifact types were present. However, unassignable glass bottles dramatically increased in frequency (n = 282) when compared to Level 1. Window glass (n = 45) was more prevalent as were sheet metal fragments (n = 315). Once sheet metal is rusted, the weight of the earth can cause fragmentation that makes counts less meaningful. Two pieces of identifiable leather shoe or boot pieces were analyzed and another 70 pieces could only be accounted for as scrap leather. These fragments were probably from a local shoe or boot industry. A positive identity was not known.

Level 3 (Stratum 31) showed a decrease in overall artifact frequencies (n = 95). A small stash of domestic white ware dishes were found (n = 34) with gilding and hand-painted designs. A portion of a severely rusted 2 inch high cast iron skillet (1865+) represented an essential trail and household commodity out West (Fig. 8.1).

Unit 2: Excavation Unit 2 consisted only of Level 1 (Stratum 29). However, all seven categories were represented with varying frequencies of artifacts. The unassignable category contained 495 pieces of broken bottle glass. More than 100 fragments were amber colored (1880+) and may have been beer bottles; 157 clear bottle fragments (1880–1930) represent a large array of unknown vessel types. Broken white ware dinnerware (n = 50) was molded; many pieces revealed either hand-painted or transfer designs under a clear glaze. Indulgences were present

Table 8.1. Euroamerican artifacts recovered at the NMSA campus.

Category	Function	Material	Count	Technique	Begin Date	End Date	Ware	Color	Decoration
General Fill									
Indulgences	Beer Bottle	Glass	1	Hand Blown	1875	1890	–	Amber	Embossed
	Beer Bottle	Glass	2	Hand Blown	1880	–	–	Amber	–
	Beer Bottle	Glass	1	Hand Blown	1879	1907	–	Amber	Embossed
	Beer Bottle	Glass	1	Hand Blown	1880	–	–	Amber	–
Domestic	Crock	Ceramic	2	Wheel	1890	–	Stoneware	Yellow	–
	Vessel, Indet.	Ceramic	8	Mold	1840	1930	Ironstone	White	–
	Bowl	Ceramic	1	Mold	1840	1930	Ironstone	White	–
	Lid, Indet.	Ceramic	1	Mold	1840	1930	Ironstone	White	–
	Saucer	Ceramic	5	Mold	1830	–	White ware	White	–
	Saucer	Ceramic	2	Mold	1800	–	Porcelain	White, Multiple	Gilded
Furnishings	Flower Pot	Ceramic	1	Wheel	–	–	Terra cotta	Terra cotta	–
Construction/ Maintenance	Window Glass	Glass	9	Flat, Sheet Machined	1917	–	–	Green	–
Personal Effects	Tonic bottle, unidentifiable	Glass	1	Hand Blown	1880	–	–	Amber	Embossed
	Shoe or boot	Leather	35	Nailed	–	–	–	Brown	
	Bitters Bottle	Glass	1	Automatic Bottle Machine	1862	1900	–	Amber	Molded/Cast
	Bitters Bottle	Glass	1	Hand Blown	1850	–	–	Amber	
Entertainment/ Leisure	Miniature Dish	Ceramic	2	Mold	1800	–	Porcelain	White, Multiple	Hand-Painted
Unassignable	Bottle, Indet.	Glass	4	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	3	Hand Blown	1880	1920	–	Aqua	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	20	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	2	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	4	Hand Blown	1880	–	–	Amber	–
General Fill Total			**108**						
Unit 1, Level 1, Stratum 29									
Domestic	Vessel, Indet.	Ceramic	23	Mold	1830	–	White ware	White	–
	Vessel, Indet.	Ceramic	9	Mold	1840	1930	Ironstone	White	–
	Plate	Ceramic	15	Mold	1892	–	Porcelain	White, Multiple	Gilded, molded w/decal under glaze
	Saucer	Ceramic	3	Mold	1880	–	Porcelain	White, Multiple	Gilded, painted
Furnishings	Decorative object	Glass	1	Mold	1880	1930	–	Clear	Molded/ transfer print
Construction/ Maintenance	Window Glass	Glass	14	Flat, Sheet Machined	1917	–	–	Green	–
Construction/ Maintenance	Nail, Indet. Wire	Iron	73	Drawn	1890	–	–	Brown	–
	Metal sheet fragments	Iron	12	Flat, Sheet Machined	1888	–	–	Brown	–
	Spike	Iron	1	Drawn	1890	–	–	Brown	–
Personal Effects	Shoe or boot	Leather	1	Nailed	–	–	–	Brown	–
Unassignable	Bottle, Indet.	Glass	19	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	3	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	1920	–	Purple	–

Category	Function	Material	Count	Technique	Begin Date	End Date	Ware	Color	Decoration
Unassignable	Bottle, Indet.	Glass	11	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	13	Hand Blown	1880	1920	–	Aqua	–
	Bottle, Indet.	Glass	5	Hand Blown	1880	–	–	Olive	–
	Bottle, Indet.	Glass	19	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	2	Hand Blown	1850	1920	–	Amber	–
	Jar	Glass	3	Mold	1870	–	–	White Milk Glass	–
Total			**229**						
Unit 1, Level 2, Stratum 30									
Domestic	Vessel, Indet.	Ceramic	3	Mold	1830	–	White ware	Yellow	–
Furnishings	Decorative object	Glass	1	Mold	1880	1920	–	Aqua	–
	Decorative object	Glass	3	Mold	1870	–	–	White Milk Glass	–
Construction/ Maintenance	Window Glass	Glass	21	Flat, Sheet Machined	1917	–	–	Green	–
	Window Glass	Glass	17	Flat, Sheet Machined	1917	–	–	Clear	–
	Window Glass	Glass	7	Flat, Sheet Machined	1917	–	–	Green	–
	Metal sheet fragments	Iron	20	Flat, Sheet Machined	1888	–	–	Brown	–
	Nail, Indet. Wire	Iron	1	Drawn	1890	–	–	Brown	–
	Metal sheet fragments	Iron	315	Flat, Sheet Machined	1888	–	–	Brown	–
	Nail, Indet. Wire	Iron	6	Drawn	1890	–	–	Brown	–
	Nail, Common	Iron	11	Cut	1820	1900	–	Brown	–
Personal Effects	Shoe or boot	Leather	5	Cut and punched	–	–	–	Brown	–
	Shoe or boot	Leather	1	Cut and punched	–	–	–	Brown	–
	Shoe or boot	Leather	1	Nailed	–	–	–	Brown	–
Unassignable	Bottle, Indet.	Glass	12	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	2	Hand Blown	1880	1920	–	Aqua	Embossed
	Bottle, Indet.	Glass	3	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	4	Hand Blown	1880	1920	–	Green	–
	Bottle, Indet.	Glass	7	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	48	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	18	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	14	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	13	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	161	Hand Blown	1880	1920	–	Aqua	–
	Decorative object	Metal Alloy	5	Cut, stamped, shaped	–	–	–	Silver	–
	Scrap	Leather	70	Tanning	–	–	–	Brown	–
	Decorative object	Ceramic	1	Mold	1830	–	White ware	Yellow	Molded/Cast
Total			**770**						
Unit 1, Level 3, Stratum 31									
Domestic	Vessel, Indet.	Ceramic	31	Mold	1830	–	White ware	White	
	Vessel, Indet.	Ceramic	3	Mold	1830	–	White ware	Blue, cobalt	Gilded, painted
	Skillet	Cast Iron	2	Cast	1865	–	–	Brown	–

Category	Function	Material	Count	Technique	Begin Date	End Date	Ware	Color	Decoration
Construction/ Maintenance	Metal sheet fragments	Iron	50	Flat, Sheet Machined	1888	–	–	Brown	–
	Rod	Iron	1	Cut	–	–	–	Brown	–
	Nail, Indet. Wire	Iron	8	Drawn	1890	–	–	Brown	–
Total			**95**						
Unit 1 Total			**1094**						
Unit 2, Level 1, Stratum 29									
Indulgences	Wine Bottle	Glass	1	Hand Blown	1880	–	–	Olive	–
	Champagne Bottle	Glass	1	Hand Blown	1880	–	–	Olive	–
	Liquor Bottle, Indet.	Glass	1	Automatic Bottle Machine	1860	1920	–	Amber	–
	Indulgence Bottle, Indet.	Glass	3	Automatic Bottle Machine	1870	1920	–	Amber	–
Domestic	Vessel, Indet.	Ceramic	18	Mold	1830	–	White ware	White	–
	Cup or bowl	Ceramic	8	Mold	1830	–	White ware	White	–
	Vessel, Indet.	Ceramic	2	Mold	1830	–	White ware	White	–
	Cup	Ceramic	1	Mold	1830	–	White ware	White	–
	Cup	Ceramic	2	Mold	1830	–	White ware	White	–
	Vessel, Indet.	Ceramic	3	Mold	1840	1930	White ware	White	–
	Casserole Dish	Ceramic	4	Mold	1840	1930	White ware	White	–
	Vessel, Indet.	Ceramic	2	Mold	1800	–	Porcelain	White	–
	Crock	Ceramic	1	Wheel	1890	–	Stoneware	Tan	–
	Plate	Ceramic	1	Wheel	1868	1938	White ware	White	–
	Cup	Ceramic	3	Mold	1830	–	White ware	White, Multiple	Hand-Painted
	Bowl	Ceramic	2	Mold	1830	–	White ware	White, Multiple	Hand-Painted
	Bowl	Ceramic	1	Mold	1830	–	White ware	White, Multiple	Hand painted w/clear glaze
	Vessel, Indet.	Ceramic	1	Mold	1830	–	White ware	White, Brown	Transfer under glaze
	Vessel, Indet.	Ceramic	1	Mold	1830	–	White ware	White	Molded/Cast
	Vessel, Indet.	Ceramic	1	Mold	1830	–	White ware	White, Brown	Paint under glaze
	Goblet	Glass	1	Hand Blown	–	–	–	Yellow	–
	Glass lid	Glass	1	Mold	1869		–	Clear	–
	Decorative Object	Glass	2	Mold	1880	1930	–	Clear	Molded/Cast
	Decorative Object	Glass	4	Mold	1880	–	–	Pink	Molded/Cast
	Goblet	Glass	1	Hand Blown	1880	1930	–	Clear	Molded/Cast
	Vessel, Indet.	Glass	2	Hand Blown	1880	1920	–	Aqua	–
Furnishings	Decorative object	Glass	4	Mold	1880	1930	–	Clear	Molded/Cast
	Decorative object	Glass	15	Mold	–	–	–	Pink	Molded/Cast
Construction/ Maintenance	Window Glass	Glass	1	Flat, Sheet Machined	1917	–	–	Aqua	–
	Window Glass	Glass	8	Flat, Sheet Machined	1917	–	–	Green	–
	Window Glass	Glass	89	Flat, Sheet Machined	1917	–	–	Green	–
	Metal sheet fragments	Iron	230	Flat, Sheet Machined	1888	–	–	Brown	–

Category	Function	Material	Count	Technique	Begin Date	End Date	Ware	Color	Decoration
Construction/ Maintenance	Hinge, Strap	Iron	1	Cast	–	–	–	Brown	–
	Nail, Indet. Wire	Iron	3	Drawn	1890	–	–	Brown	–
	Lock, Padlock	Metal Alloy	1	Assembled (from parts)	–	–	–	Brown, Gray	–
	Nail, Common	Iron	626	Cut	1820	1900	–	Brown	–
Personal Effects	Patent Medicine Bottle	Glass	1	Hand Blown	1880	1930	–	Clear	–
	Patent Medicine Bottle	Glass	1	Hand Blown	1880	1920	–	Aqua	–
	Patent Medicine Bottle	Glass	3	Hand Blown	1880	1920	–	Aqua	–
	Tonic bottle, unidentifiable	Glass	2	Hand Blown	1880	–	–	Amber	Embossed
	Tonic bottle, unidentifiable	Glass	4	Hand Blown	1880	1920	–	Aqua	Embossed
	Liniment Bottle	Glass	3	Hand Blown	1875	–	–	Aqua	Embossed
	Button, Shank	Copper	1	Machined	–	–	–	Brown	
Entertainment/ Leisure	Doll	Ceramic	1	Mold	1860	1900	Porcelain, Parian	Black	Hand-Painted
	Balloon	Rubber	1	Unidentifiable	–	–	–	Brown	–
Unassignable	Bottle, Indet.	Glass	3	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	7	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	24	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	4	Hand Blown	1880	–	–	Yellow	–
	Bottle, Indet.	Glass	3	Automatic Bottle Machine	1929	–	–	7 Up, Green	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	4	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	–	–	Olive	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	8	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	2	Hand Blown	1880	–	–	Amber	–
	Bottle, Indet.	Glass	4	Hand Blown	1880	1920	–	Aqua	–
	Bottle, Indet.	Glass	1	Hand Blown	1880	1920	–	Aqua	–
	Bottle, Indet.	Glass	157	Hand Blown	1880	1930	–	Clear	–
	Bottle, Indet.	Glass	62	Hand Blown	1880	–	–	Green	–
	Bottle, Indet.	Glass	15	Hand Blown	1880	–	–	Yellow	–
	Bottle, Indet.	Glass	94	Hand Blown	1880	1920	–	Aqua	–
	Bottle, Indet.	Glass	106	Hand Blown	1800	–	–	Amber	–
	Jar	Glass	1	Mold	1870	–	–	White Milk Glass	–
	Bottle, Indet.	Glass	7	Hand Blown	1880	–	–	Amber	–
	Decorative object	Metal Alloy	9	Stamped	–	–	–	Silver	Architectural
	Tubing	Iron	2	Extruded	–	–	–	Brown	–
	Rod	Lead	1	Cast	–	–	–	Gray	–
	Grommet	Rubber	1	Mold	–	–	–	Black, White	–
Unit 2 Total			**1582**						
Table Total			**2784**						

but were few in number. They included pieces of champagne, liquor, and wine bottles. A hand-blown yellow glass goblet had the cup portion intact, but the stem was broken. It was applied.

Personal effects included hand-blown aqua and clear medicine bottles. Identification was not possible on these fragmented bottles, but another aqua panel fragment was embossed with: "Giles Liniment" (1875). The liniment was a combination of iodide and ammonia that "cures soreness and stiffness of the joints and muscles" and is suitable for "family and animals" (Fike 1987: 134). Two entertainment items were present. One was a broken porcelain doll head. The hair on the head was haphazardly painted black. Porcelain dolls in American dated between 1860 and 1900. The other toy was a rubber balloon. A few decorative objects, made of clear and pink glass, were molded in a shell-like design. It was difficult to define their function, and they may only have been thick glass candy dishes.

Once again, green window glass (n = 89) was present along with large numbers of metal sheet fragments (n = 230) and a massive "dump" of rusted square nails (n = 626). Only a few nails were bent; the remaining nails were straight. This appeared to have be an intentional dump as opposed to accumulated demolition debris. Other Construction and Maintenance artifacts included an intact rubber grommet, a rod, some metal tubing, and an intact metal padlock (Fig. 8.2).

General Fill: Only visibly diagnostic artifacts (n = 108) were retrieved from the piles of general fill. Some of these artifacts could be traced to their manufacturer and brand names. Two amber beer bottle bases were embossed with "LGCo" (Fig. 8.3), the Lindell Glass Company (1875–1890) of St. Louis, Missouri. This company produced large quantities of beer bottles for "export style" beer (www.glassbottlemarks.com). Cunningham's & Co. (1879 Cunningham's & Co. 1907) of Pittsburgh, Pennsylvania specialized in beer and beverage bottles (J. Toulouse 1971:119–120). Most interesting was the upper portion of a "Drakes Bitters" amber glass bottle molded in the shape of a log cabin (Fig. 8.4). These bottles were produced by the Whitney Glass Works of New Jersey between 1862 and 1900. The bitters concoction made of bark, roots, herbs, and St. Croix Rum was known to "strengthen the system… enliven the mind…and (make) weak men strong…"

Other items collected from the general fill were an assortment of broken white ceramic dinnerware; a child's porcelain tea set; and aqua, green, clear, and amber colored fragments of unknown glass bottle types. Some green window glass/glazing pieces were also collected. A fair portion (n = 35) of shoe or boot leather fragments were present; some heel portions displayed metal nails.

Interpretations

Euroamerican artifacts (n = 2784) recovered from the Feature 5 midden at the New Mexico School for the Arts site has a mid-range range date of 1880. With only two test units, it is difficult to know the depth and breadth of the midden contents. Despite the construction debris deposited in the midden, it seems unlikely to have been from a razed structure because more construction materials would have been present. Broken windows were present in all levels, but it could have been window glass from a local hardware store, which may also explain the copious amounts of apparently unused nails dumped in the midden. Once a midden is established, locals in the neighborhood will utilize it as a trash dump for personal needs.

Very few manufacturer or brand names were recovered from this relatively large assemblage, but enough were found to give the assemblage a little spice, with the exotic bitters and liniment bottles. These historic concoctions made some people very wealthy. This was all due to the high alcohol content of these so-called cocktails. In 1874, when Mark Twain was in London, he wrote his wife that he took a bitters cocktail "before breakfast, before dinner, and just before going to bed…and everything happy and jolly, as it should be" (Finger Lakes Distilling 2017).

Animal Bone
Eric Blinman

Animal bone from the excavations has been categorized rather than analyzed for the purposes of this preliminary report. All bone was derived from Feature 5, including a general fill collection, collections by level from Unit 1, and the single level collection from Unit 2. Categories used in characterization were bird, sheep/goat, and cattle.

General Fill: The bones in the general fill

Figure 8.1. Portion of a severely rusted cast iron skillet recovered from Unit 1, Level 3.

Figure 8.2. Intact metal padlock recovered from Unit 2, Level 1.

provenience were collected as they were observed, and under those conditions it should be expected that the assemblage be biased toward larger bones and cattle. This appears to be the case, as roughly half of the approximately 40 bones are from cattle. Most of these show signs of having been saw-cut during butchery, with the exception of several neck bone elements. The sheep/goat bone category shows no examples of saw-cut butchering, and there is a greater diversity of body parts. A single bird humerus (chicken) is the only non-ungulate bone in the collection.

Unit 1: Level 1 yielded approximately 100 bones, most of which were small fragments of sheep/goat. No sheep/goat bones have been saw-cut, while nearly half of the larger cattle bones are saw-cut. The cattle body part distribution is unusual in that it includes eight large vertebra and pelvis fragments that exceed the mass of the much more numerous sheep/goat bones. Sheep/goat bones represent all body parts, from lower legs to teeth.

Level 2 yielded only sheep/goat bones. The total number of bones was small (n = 30), but the absence of cattle contrasted with the other proveniences of Feature 5. All of the sheep/goat bones lack saw cuts.

The number of bones recovered increased in Level 3 to 46. Cattle bone dominates the mass of the assemblage, most of which are saw-cut. Vertebra fragments are present as are cut lengths of long bones. The sheep/goat category is more numerous in fragment count, but is less than half the mass of the cattle bone. All body parts are represented in the sheep/goat remains, and all butchery was done by chopping.

Unit 2: All but one bone appears to be classifiable as either sheep/goat or cattle. The single exception is a fragmentary bird pelvis that is chicken-sized. The sheep/goat bones are all broken with no saw cuts. Cranial pieces, including upper and lower jaws, are common as are leg bone fragments and a few tail vertebrae. The range of cattle bone is more limited and included both chopped and saw-cut butchery marks. Body part representations are far less diverse but include one articulable set of foot bones (less the terminal phalanges). The bone and body part frequencies of the sheep/goat category suggest a large number was processed and discarded at this location, while the mass of body parts from the smaller number of cattle bone may represent a larger contribution to the diet.

Table 8.2. Feature 5, ceramic type frequencies.

Pottery Type	Frequency	Percent
Tewa Polychrome Ware		
Powhoge Polychrome	1	2.9
Indeterminate White Ware		
Indeterminate Historic Pueblo Decorated	1	2.9
Tewa Plain Ware		
Tewa Buff Undifferentiated	5	14.7
Tewa Polished Black	3	8.8
Smudged Interior Mica Slipped Exterior	2	5.9
Tewa Polished Red	2	5.9
Tewa Micaceous Ware		
Unpolished Micaceous Slip	3	8.8
Plain Tan Mica Polished	17	50
Total	**34**	**100**

Native American Ceramic
C. Dean Wilson

A total of 34 sherds were recovered during excavations of Feature 5 of the NMSA campus reconnaissance. The sherds were assigned to eight ceramic types (Table 8.2).

Twenty of these (59 percent) of these are from a single vessel characterized as "Plain Tan Mica Polish," which was derived from a relatively squat jar with a rim radius of 8 cms. The paste of this vessel is very hard and appears to have been fired to a high temperature. Paste color is tannish brown with a gray core. The exterior is unpolished but highly smoothed and tan brown, with a few dark gray fire clouds. The surface is covered with a gold-colored mica slip. The interior is well polished and brown, with only a few mica fragments visible on the interior paste surface. This vessel resembles forms known to have been produced by Tewa and Northern Tiwa potters during the late nineteenth and early twentieth century. Such vessels appear to have been of little interest to early scholars and collectors and may reflect the occasional production of cooking pots even after they had been largely replaced by metal containers (Anderson 1999). Other ceramic categories, represented by very small numbers of sherds identified during this analysis, include Powhoge Polychrome, Indeterminate Historic Polished Decorated, Tewa Buff Undifferentiated, Tewa Polished Black, Smudged Interior Mica Slipped Exterior, Tewa Polished Red, and Unpolished Mica Slip.

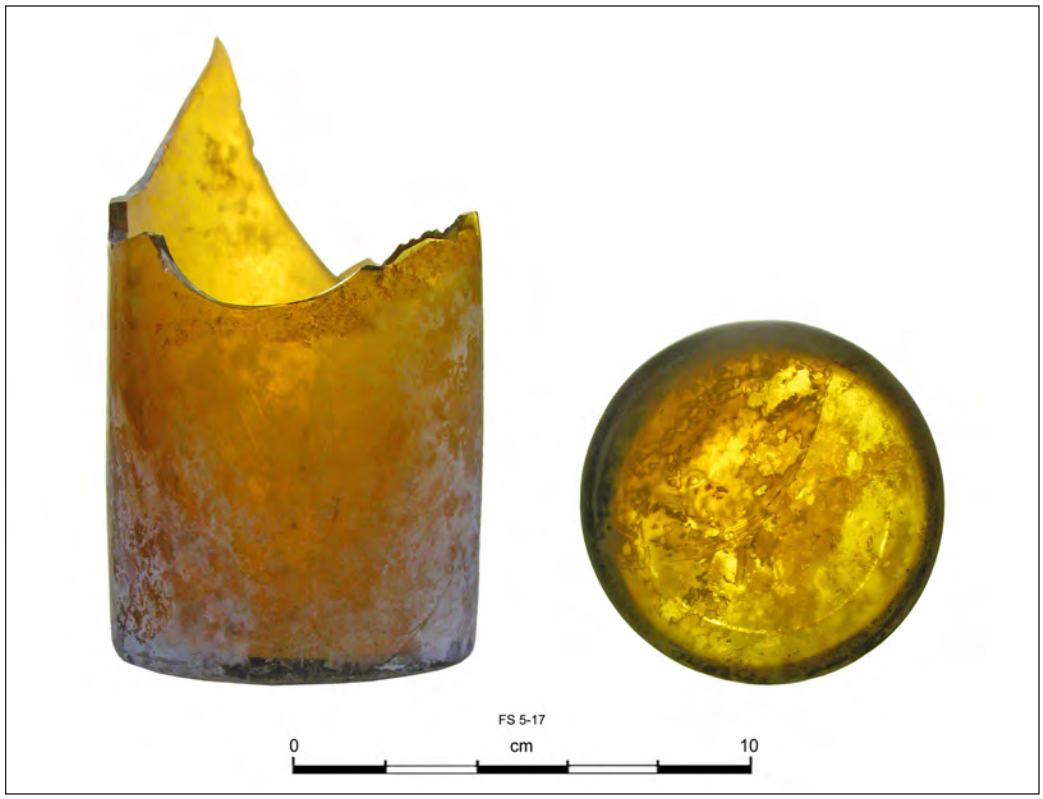

Figure 8.3. Amber beer bottle bases produced by the Lindell Glass Company, recovered from general fill.

Figure 8.4. Upper portion of a "Drakes Bitters" amber glass bottle, recovered from general fill.

These types appear to reflect a combination of pottery that includes forms produced for the "tourist trade" as well as for everyday use that may be associated with a Hispanic component dating sometime during the late nineteenth to the turn of nineteenth/twentieth century (Batkin 1987; Frank and Harlow 1990; Harlow 1970, 1973; B. Toulouse 1977). This indicates a component dating to the railroad period as normally defined. Other evidence of this relatively late association is reflected by the thick walls and soft pates of the single Tewa Polychrome sherd as well as some of those assigned to Tewa Plain Ware types.

Tempers noted for micaceous utility wares include sand, granite with abundant mica, highly micaceous residual paste, and vitric tuff. Those noted for plain ware types include fine tuff and ash; fine tuff, ash, and sand; and vitric tuff. The single Tewa Polychrome sherd was tempered with fine tuff or ash, while the other white ware sherd was tempered with vitric tuff. This combination of temper appears to be indicative of pottery produced by potters in Tewa villages to the north, although pottery from Cochiti Pueblo to the south as indicated by vitric tuff may also be represented.

The determination of associated vessel form for many of the body sherds examined is difficult, given both jars and bowls produced during this period were commonly polished on both the interior and exterior surface (Wilson 2011). Still, it is likely that most if not all the micaceous sherds were derived from "cooking jars." While one rim and one body sherd from a Tewa Polished Black vessel were from a jar, the remaining body sherds from Plain Utility Ware types could not be assigned to a specific form. Both sherds apparently derived from polychrome vessels are from jars. It is possible most of these sherds were derived from jar forms commonly produced during this time for both use in daily activities as well as the tourist market.

9 ⇓ Site Definitions and Recommendations

Reconnaissance observations at the NMSU Phase 1 campus have defined five features within four discrete areas (Fig. 9.1). These have been defined as four sites.

LA 189629 is defined based on the coal and clinker disposal pit (Feature 1) along the south side of the south parking lot. The feature does not appear in the backhoe trench to the north (Trench 1.2), and it is probable that the disposal pit extends south toward the Sanbusco southern boundary. This site is recommended as non-significant in terms of the potential to yield more information through data recovery. However, it would be valuable to determine the extent of the feature in terms of understanding the layout of this portion of the Santa Fe Railyard. We recommend that any ground disturbing activity outside of the existing reconnaissance trench be monitored for the purpose of determining the extent of the feature and site.

LA 189630 is defined by Features 2 and 3. These features are also railroad-related coal and clinker disposal pits. The full extent of these pits is unknown, but they appear to either be bisected by the trench. Feature 3 may extend more to the north of the trench. The features that constitute this site are recommended as non-significant in terms of the potential to yield more information through data recovery. However, it would be valuable to determine the extent of the features in terms of understanding the layout of this portion of the Santa Fe Railyard. We recommend that any ground disturbing activity outside of the existing reconnaissance trench be monitored for the purpose of determining the extent of the features and site.

LA 187631 is defined by the presence of Feature 4 to the north of the Sanbusco buildings. It is a coal and clinker refuse pit that may or may not be railroad related. Its proximity to homes along Agua Fria Street and its marginal position to the lumber and hardware mercantile operation that became Sanbusco could mean that disposal was related to heating for either domestic or commercial purposes. This site is recommended as non-significant in terms of the potential to yield more information through data recovery. However, it would be valuable to determine the extent of the feature in terms of understanding the layout of this portion of the Sanbusco neighborhood. We recommend that any ground disturbing activity outside of the existing reconnaissance trench be monitored for the purpose of determining the extent of the feature and site.

LA 187632 is a large domestic refuse disposal area defined during reconnaissance as Feature 5. The proximity of the feature to homes along Agua Fria Street is consistent with the content of the refuse, with some materials (masses of rusted nails) possibly related to the commercial activity on the Sanbusco property. The dates of the historic artifacts (see Table 2) suggest that the refuse pit was used from 1880–1920, probably most intensively during the early part of that period. Historic documents reflect the homes were, for a time, owned by the owners of the lumber and hardware commercial enterprise that is the focus of Sanbusco, so co-mingling of commercial and domestic refuse is not unexpected. Artifacts were recovered from stratigraphic units defined by hand-excavated areas toward the east and west ends of the feature. Samples of interpretable materials were small, but there were suggestions of temporal (stratigraphic) variation in consumption patterns that resulted in refuse deposition.

OAS recommends that LA 187632 be considered significant for its potential to contribute additional information to our understanding of the historic Agua Fria-Sanbusco complex at the beginning of the railroad period of Santa Fe's history. If additional ground disturbance is planned for this area, OAS recommends that the extent of LA 187632 (Feature 5) be determined and its refuse systematically sampled to determine whether there is patterned spatial and temporal variation in economic and consumption behavior.

References Cited

Acklen, John C., John A. Evaskovich, and Christopher A. Turnbow
1994 *Results of Archaeological Investigations of Old Fort Marcy, Santa Fe County, New Mexico*. MAI Project 1141. Mariah Associates, Albuquerque.

Anderson, Duane
1999 *All that Glitters: The Emergence of Native American Micaceous Art Pottery in Northern New Mexico*. School of American Research Press, Santa Fe.

Anschuetz, Kurt F., and Cherie L. Scheick
1999 The Pre-Columbian Archaeology of the Geographic Subdivisions. In *A Study of Pre-Columbian and Historic Uses of the Santa Fe National Forest: Competition and Alliance in the Northern Middle Rio Grande*, ed. Cherie L. Scheick. Southwest Archaeological Consultants, Santa Fe, and Santa Fe National Forest, Albuquerque.

Badner, Jessica A., Matthew J. Barbour, and Chris T. Wenker
2014 *From Acequias to Industry, the Archaeology of Neighborhood and Inftrastructure at the Santa Fe Railyard*. Archaeology Notes 422. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Bandelier, Adolph A.
1882 *The Southwestern Journals of Adolph F. Bandelier, 1880–1882*, ed. Charles H. Lange and Carroll L. Riley. University of New Mexico Press, Albuquerque.

Barbour, Matthew J.
2011 The American Territorial (1846–1912) and the New Mexico Statehood (1912–Present) Periods. In *Settlers and Soldiers: The Historic Component at El Pueblo de Santa Fe (LA 1051)*, ed. Stephen C. Lentz and Matthew J. Barbour, pp. 73–145. Archaeology Notes 410. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Batkin, Jonathan
1987 *Pottery of the Pueblos of New Mexico, 1700 to 1900*. Colorado Springs Fine Arts Center, Colorado Springs.

Boyer, Jeffrey, Charles Hannaford, Guadalupe Martinez, and Adisa Willmer
1994 *Historic Artifact Analysis Standardized Variable and Attributes Codes*. Archaeology Notes 24d. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Bullard, William Rotch, Jr.
1962 *The Cerro Colorado Site and Pithouse Architecture in the Southwestern United States Prior to AD 900*. Papers of the Peabody Museum of Archaeology and Ethnology 44(2). Harvard University, Cambridge.

Carroll, Charles H.
1984 Norton-Tesuque 115 kV Transmission Project Cultural Resources Technical Report. Ms. on file, Public Service Company of New Mexico, Albuquerque.

Chavez, Fray Angélico
1954 *Origins of New Mexico Families in the Spanish Colonial Period*. Historical Society of New Mexico, Santa Fe.

1979 Genízaros. In *Handbook of North American Indians, Vol. 9, Southwest*, ed. Alfonso Ortiz, pp. 198–200. Smithsonian Institution, Washington, DC.

Cordell, Linda S.
1979 *A Cultural Resources Overview of the Middle Rio Grande Valley, New Mexico*. USDA Forest Service, Albuquerque, and Bureau of Land Management, Santa Fe.

Deyloff, Glenda
1999 *An Early Eighteenth-Century Occupation Along the Camino Real: Results of Archaeological Investigations and Archival Study of Sanbusco and*

544 Agua Fria Street, Santa Fe County, New Mexico, ed. Cherie L. Scheick, Program Director. Southwest Archaeological Consultants, Inc., Santa Fe.

Dozier, Edward P.
1970 *The Pueblo Indians of North America*. Holt, Rinehart and Winston, New York.

Eggan, Fred
1979 Pueblos: Introduction. In *Handbook of North American Indians, Vol. 9, Southwest*, ed. Alfonso Ortiz, pp. 224–235. Smithsonian Institution, Washington, DC.

Elliott, Michael L.
1988 *The Archaeology of Santa Fe: A Background Report*. Planning Department, City of Santa Fe.

Ellis, Florence H.
1989 *San Gabriel del Yungue: As Seen by an Archaeologist*. Sunstone Press, Santa Fe.

Fenneman, Nevin M.
1931 *Physiography of the Western United States*. McGraw Hill, New York.

Fike, Richard E.
1987 *The Bottle Book*. Peregrine Smith Books, Salt Lake City.

Folks, James J.
1975 *Soil Survey for the Santa Fe Area, New Mexico*. U.S. Department of Agriculture, Soil Conservation Service.

Frank, Larry and Francis H. Harlow
1990 *Historic Pottery of the Pueblo Indians 1600–1880*. Schiffer Publishing, Ltd., West Chester Pennsylvania.

Frisbie, T. R.
1967 The Excavation and Interpretation of the Artificial Leg Basketmaker to Pueblo I Sites Near Corrales, New Mexico. Master's thesis, University of New Mexico, Albuquerque.

Gabin, Vickie L., and Lee E. Lesperance
1977 *New Mexico Climatological Data. Precipitation, Temperature, Evaporation, and Wind, Monthly and Annual Means, 1850–1975*. W. K. Summers and Associates, Socorro, New Mexico.

Garcia-Matson, Velma
1979 Acoma Pueblo. In *Handbook of North American Indians, Vol. 9. Southwest*, ed. Alfonso Ortiz, pp. 450-456. Smithsonian Institution, Washington, DC.

Goodman, Linda J.
2010 An Ethnohistorical Examination of LA 89019, 149868, and the Surrounding Comita-Cubero-McCartys Area. In *Data Recovery at Three Archaeological Sites for the Acomita Interchange Improvements Project*, ed. Stephen C. Lentz, pp. 17–67. Archaeology Notes 417. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Hack, John T.
1942 The Changing Environment of the Hopi Indians of Arizona. Papers of the Peabody Museum of American Archaeology and Ethnology 35(1).

Hackett, Charles W., and Charmion C. Shelby
1942 Revolt of the Pueblo Indians of New Mexico and Otermín's Attempted Reconquest, 1680–1682, Vols. 8 and 9, Coronado Cuarto Centennial Publications: 1540–1940. University of New Mexico Press, Albuquerque.

Hall, G. Emlen
1987 The Pueblo Grant Labyrinth. In *Land, Water and Culture: New Perspectives on Hispanic Land Grants*, ed. Charles L. Briggs and John R. Van Nes, pp. 67–138. University of New Mexico Press, Albuquerque.

Hammond, George P., and Agapito Rey (translators and editors)
1953 *Don Juan de Oñate Colonizer of New Mexico, 1595–1628*. Coronado Cuarto Centennial Publications, University of New Mexico Press, Albuquerque.

Hannaford, Charles
2007 T*he First Judicial District Courthouse Complex: Archaeological Investigations at LA 156207 in Santa Fe, Santa Fe County, New Mexico*. Archaeology Notes 390. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Harlow, Francis H.
1970 History of Painted Tewa Pottery. *In The Pottery of San Ildefonso Pueblo*, ed. K. Chapman, pp 37-51. University of New Mexico Press, Albuquerque.

1973 *Matte Paint Pottery of the Tewa, Keres, and Zuni Pueblos*. Museum of New Mexico Press, Santa Fe.

Hewett, Edgar L.
1953 *Pajarito Plateau and Its Ancient People*. Revised. ed. B. B. Dutton. School of American Research Press, Santa Fe, and University of New Mexico Press, Albuquerque.

Hordes, Stanley M.
1990 The History of the Santa Fe Plaza, 1610–1720. In *Santa Fe Historic Plaza Study I, with Translations from Spanish Colonial Documents*, ed. Linda Tigges, pp. 3–36. Santa Fe City Planning Department, Santa Fe.

Jenkins, Myra E., and Albert H. Schroeder
1974 *A Brief History of New Mexico*. University of New Mexico Press, Albuquerque.

Judge, W. James.
1991 Chaco: Current Views of Prehistory and the Regional System. In *Chaco and Hohokam: Prehistoric Regional Systems in the Southwest*, ed. P. L. Crown and W. J. Judge, pp. 11–30. School of American Research Press, Santa Fe.

Kelley, Vincent C.
1979 Geomorphology of the Española Basin. In *New Mexico Geological Society Guidebook: Santa Fe County* (30th Field Conference), pp. 281–288. University of New Mexico Press, Albuquerque.

Kovel, Ralph and Terry Kovel
1986 *Kovel's New Dictionary of Marks*. Crown Publishers, Inc., New York.

Lakatos, Steven A.
2011 *Data Recovery Results from the First Judicial District Courthouse Complex, LA 156207, Santa Fe County, New Mexico*. Archaeology Notes 424. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Lang, Richard W.
1977 *Archaeological Survey of the Upper San Cristobal Arroyo Drainage, Galisteo Basin, Santa Fe County, New Mexico*. Contract Archaeology Program Report 37. School of American Research, Santa Fe.

Lang, Richard W., and Cherie L. Scheick
1989 *Limited Excavations at LA 2, the Agua Fria Schoolhouse Site, Agua Fria Village, Santa Fe County, New Mexico*. Research Series 216. Southwest Archaeological Consultants, Santa Fe.

Lekson, Stephen H., and Catherine M. Cameron
1995 The Abandonment of Chaco Canyon, the Mesa Verde Migrations, and the Reorganization of the Pueblo World. *Journal of Anthropological Archaeology* 14:184–202.

Lentz, Stephen C.
2004 *Excavations at LA 80000, the Santa Fe Plaza Community Stage Location, Santa Fe, New Mexico*. Archaeology Notes 343. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

2005 *El Pueblo de Santa Fe (LA 1051): Archaeological Testing of the Proposed Santa Fe Civic Center*. Archaeology Notes 355. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

2011 *Ogapogeh, The White Shell Water Place: The Prehistoric Component at El Pueblo de Santa Fe (LA 1051*). Archaeology Notes 438, Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Lentz, Stephen C., and Matthew J. Barbour.
2011 *Settlers and Soldiers. The Historic Component at El Pueblo de Santa Fe (LA 1051)*. Archaeology Notes 410. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Lentz, Stephen C., and Linda J. Goodman
1992 *Archaeological Testing and a Brief Ethnohistory of San Gabriel de Yunge Owinge, San Juan Pueblo, New Mexico*. Archaeology Notes 102. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Lucas, Mary Beth
1984 Norton-Tesuque 115 kV Transmission Project Earth Resources Technical Report. Ms. on file, Public Service Company of New Mexico, Albuquerque.

Maxwell, Timothy D., and Stephen S. Post
1992 *An Archaeological and Historical Study of Old Pecos Trail*. Archaeology Notes 58. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Mera, H. P.
1939 *Style Trends of Pueblo Pottery in the Rio Grande and Little Colorado Cultural Areas from the Sixteenth to the Nineteenth Century.* Laboratory of Anthropology Memoirs 3, Museum of New Mexico, Santa Fe.

Mullin, N. Robert.
1968 *History of the Lincoln County War*. University of Arizona Press, Tucson.

National Park Service
1990 *Santa Fe National Historic Trail Comprehensive Management and Use Plan*. U.S. Department of the Interior, National Park Service, Denver.

Nelson, Nels C.
1914 Pueblo Ruins of the Galisteo Basin, New Mexico. *Anthropological Papers of the American Museum of Natural History* 15(1). New York.

1916 Chronology of the Tano Ruins, New Mexico. *American Anthropologist* 18(2): 159–180.

Noble, David G.
1989 *Santa Fe: History of an Ancient City*. School of American Research Press, Santa Fe.

2008 *Santa Fe: History of an Ancient City*. Revised. School for Advanced Research Press, Santa Fe.

Olmstead, Virginia L.
1975 *New Mexico Spanish and Mexican Colonial Censuses, 1790, 1823, 1845*. New Mexico Genealogical Society, Albuquerque.

Ortman, Scott G.
2009 Depopulation of the Mesa Verde Region Debated. *American Archaeology*, Vol. 4, Issue 1.

Pearce, Thomas M.
1965 *New Mexico Place Names: A Geographical Dictionary*. University of New Mexico Press, Albuquerque.

Peckham, Stewart L.
1984 The Anasazi Culture of the Northern Rio Grande Rift. In *New Mexico Geological Society Guidebook: Rio Grande Rift, Northern New Mexico,* ed. W. Scott Baldridge, Patricia Woo Dickerson, Robert E. Riecker, and Jiri Zidek pp. 275–286. New Mexico Geological Society Thirty-Fifth Annual Field Conference, October 11–13, 1984.

Pilz, Wayne P.
1984 KV Transmission Project Biotic Resources, Technical Report. Ms. on file, Public Service Company of New Mexico, Albuquerque.

Post, Stephen S.
2010 *7,000 Years on the Piedmont: Excavation of Fourteen Archaeological Sites along the Northwest Santa Fe Relief Route, Santa Fe County, New Mexico*. Archaeology Notes 357. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Reinhart, Theodore R.
1967 Rio Rancho Phase: A Preliminary Report in Early Basketmaker Culture in the Middle Rio Grande Valley, New Mexico. *American Antiquity* 32:458–470.

Reynolds, S.
1956 Climatological Summary, New Mexico: Temperature 1850–1954; Frost 1850–1954; and Evaporation 1912–1954. Technical Report 5. New Mexico State Engineer's Office, Santa Fe.

Robinson, William J., J. W. Hannah, and B. G. Harrill
1972 *Tree Ring Dates from New Mexico I, O, U, Central Rio Grande Area*. Laboratory of Tree-Ring Research, University of Arizona, Tucson.

Scheick, Cherie L.
2005 *Coalition Period Remains Under the West Alcove, U.S. Federal Courthouse, Santa Fe, New Mexico*. Report No. SW 477C. Southwest Archaeological Consultants, Santa Fe.

Schoenwetter, James, and Alfred E. Dittert
1968 Archaeological Investigations at the Arroyo Hondo Site: Third Field Report 1972. School of American Research, Santa Fe.

Schroeder, Albert H.
1979 Pueblos Abandoned in Historic Times. In *Handbook of North American Indians, Vol. 9, Southwest*, ed. Alfonso Ortiz, pp. 236–254. Smithsonian Institution, Washington, DC.

Schroeder, Albert H., and Dan S. Matson
1965 *A Colony on the Move: Gaspar Castaño de Sosa's Journal, 1590–1591*. School of American Research, Santa Fe.

Schwartz, D. W., and R. W. Lang
1973 *Archaeological Investigations at the Arroyo Hondo Site*. School of American Research, Santa Fe.

Simmons, Marc
1979 History of Pueblo-Spanish Relations to 1821. In *Handbook of North American Indians, Vol. 9, Southwest*, ed. Alfonso Ortiz, pp. 178–193. Smithsonian Institution, Washington, DC.

1988 "Misery" as a Factor in New Mexican Colonial Life. *Archaeological Society of New Mexico Papers* 14:227–230.

Smiley, Terah L., Stanley A. Stubbs, and Bryant Bannister
1953 A Foundation for the Dating of Some Late Archaeological Sites in the Rio Grande Area, New Mexico: Based on Studies in Tree-Ring Methods and Pottery Analyses. *Laboratory of Tree-Ring Research Bulletin No. 6* 24(3), University of Arizona, Tucson.

Snow, Cordelia Thomas
1991 Land Use at the Station Grounds in Santa Fe, New Mexico, From 1880 to 1991. In *Archaeological and Historical Research of "La Otra Banda"* by Cherie L. Scheick, pp. 51–88. Southwest Archaeological Consultants, Inc., Santa Fe.

1999 Archival research. In *Preliminary Results of Archaeological Investigations and Archival Study at 60 East San Francisco Street, Santa Fe, New Mexico*, ed. Glenda Deyloff, pp. 14–35. Southwest Archaeological Consultants Research Series 442. Santa Fe.

Spicer, Edward
1962 *Cycles of Conquest.* University of Arizona Press, Tucson.

Steen, Charles R.
1977 *Pajarito Plateau Archaeological Survey and Excavations*. Los Alamos Scientific Laboratories, Los Alamos, New Mexico.

Stuart, David E., and Rory P. Gauthier
1988 *Prehistoric New Mexico: Background for Survey*. Historic Preservation Bureau, Santa Fe.

Stubbs, Stanley A., and Bruce T. Ellis
1955 *Archaeological Investigations at the Chapel of San Miguel and the Site of La Castrense, Santa Fe, New Mexico*. Monographs of the School of American Research, No. 18, Santa Fe.

Stubbs, Stanley A., and W. S. Stallings Jr.
1953 *The Excavation of Pindi Pueblo, New Mexico*. Monographs of the School of American Research and the Laboratory of Anthropology, No. 18, Santa Fe.

Swanson, Betsy
1988 The Battles of Glorieta Pass. In *Pecos, Gateway to the Pueblos and Plains*, ed. J. V. Bezy and J. P. Sanchez, pp. 32–39. Southwest Parks and Monuments Association, Tucson.

Sze, Corrine P., and Beverly Spears
1988 *Santa Fe Historical Neighborhood Study*. Santa Fe City Planning Division, Santa Fe.

Toulouse, Betty
1977 *Pueblo Pottery of the New Mexico Indians; Ever Constant, Ever Changing*. Museum of New Mexico Press, Santa Fe.

Toulouse, Julian Harrison
1970 *Bottle Makers and Their Marks*. Thomas Nelson. New York.

Tuan, Yi Fu, Cyril E. Everard, Jerold G. Widdison, and Ivan Bennett
1973 *The Climate of New Mexico*. Revised. New Mexico State Planning Office, Santa Fe.

Twitchell, Ralph Emerson
1925 *The Story of New Mexico's Ancient Capital: Old Santa Fe*. Rio Grande Press, Chicago.

Warren, A. Helene
1979 The Glaze Paint Wares of the Upper Middle Rio Grande. In *Archaeological Investigations in Cochiti Reservoir, New Mexico, Vol. 4, Adaptive Change in the Northern Rio Grande Valley*, ed. Jan V. Biella and Richard C. Chapman, pp. 187–216. Office of Contract Archeology, University of New Mexico, Albuquerque.

Wenker, Chris T.
2005 *Santa Fe Railyard Archaeological Testing: Preliminary Report.* Archaeology Notes 352. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.

Wendorf, Fred, and Erik Reed
1955 An Alternative Reconstruction of Northern Rio Grande Prehistory. *El Palacio* 62:131–173.

Wilson, C. Dean
2011 Historic Indigenous Ceramic Types. In *Settlers and Soldiers: The Historic Component at El Pueblo de Santa Fe (LA 1051)*, ed. S. C. Lentz and M. J. Barbour, pp. 223-335. Office Archaeology Notes 410, Office of Archaeological Studies, Santa Fe.

Wiseman, Regge N.
1989 *The KP Site and Late Developmental Period Archaeology in the Santa Fe District*. Laboratory of Anthropology Notes 494. Office of Archaeological Studies, Museum of New Mexico, Santa Fe.