

**MONITORING AT THE JOSEPH M. MONTOYA  
FEDERAL BUILDING IN THE FEDERAL OVAL  
FOR THE GSA TRANSFORMER REPLACEMENT  
PROJECT, SANTA FE, NEW MEXICO**

**KAREN WENING AND ERIC BLINMAN**



OFFICE OF ARCHAEOLOGICAL STUDIES  MUSEUM OF NEW MEXICO

ARCHAEOLOGY NOTES 490

2017



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**KAREN WENING AND ERIC BLINMAN**

WITH CONTRIBUTIONS BY

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PRINCIPAL INVESTIGATOR  
**ERIC BLINMAN, PH.D.**

ARCHAEOLOGY NOTES 490  
2017



## NMCRIIS INVESTIGATION ABSTRACT FORM (NIAF)

<b>1. NMCRIIS Activity No.:</b> 137080	<b>2a. Lead (Sponsoring) Agency:</b> General Services Administration contracting with Prime Builders	<b>2b. Other Permitting Agency(ies):</b>	<b>3. Lead Agency Report No.:</b>															
<b>4. Title of Report:</b> Monitoring at the Joseph M. Montoya Federal Building in the Federal Oval for the GSA Transformer Replacement Project, Santa Fe, New Mexico.  <b>Author(s):</b> Karen Wening and Eric Blinman		<b>5. Type of Report</b> <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Positive																
<b>6. Investigation Type</b> <input type="checkbox"/> Research Design <input type="checkbox"/> Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Overview/Lit Review <input checked="" type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic study <input type="checkbox"/> Site specific visit <input type="checkbox"/> Other																		
<b>7. Description of Undertaking (what does the project entail?):</b> Monitoring of the excavation of three trenches on the north side of the main post office in downtown Santa Fe.		<b>8. Dates of Investigation:</b> October 5–6 and November 11, 2016  <b>9. Report Date:</b> 2017																
<b>10. Performing Agency/Consultant:</b> MNM/OAS <b>Principal Investigator:</b> Eric Blinman <b>Field Supervisor:</b> Eric Blinman <b>Field Personnel Names:</b> Karen Wening, Susan Moga and Isaiah Coan		<b>11. Performing Agency/Consultant Report No.:</b> Archaeology Notes 490  <b>12. Applicable Cultural Resource Permit No.:</b> SE-309																
<b>13. Client/Customer (project proponent):</b> <b>Contact:</b> Eric Peterson/Prime Builders <b>Address:</b> 8516 Calle Alameda NE, Albuquerque, NM 87113 <b>Phone:</b> 505-924-0455		<b>14. Client/Customer Project No.:</b> NM12-057																
<b>15. Land Ownership Status (<u>Must</u> be indicated on project map):</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 50%;">Land Owner</th> <th style="width: 25%;">Acres Surveyed</th> <th style="width: 25%;">Acres in APE</th> </tr> </thead> <tbody> <tr> <td>General Services Administration</td> <td></td> <td style="text-align: center;">.01</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td style="text-align: right;"><b>TOTALS</b></td> <td> </td> <td style="text-align: center;">.01</td> </tr> </tbody> </table>				Land Owner	Acres Surveyed	Acres in APE	General Services Administration		.01							<b>TOTALS</b>		.01
Land Owner	Acres Surveyed	Acres in APE																
General Services Administration		.01																
<b>TOTALS</b>		.01																

**16 Records Search(es):**

Date(s) of ARMS File Review 8-12-2016	Name of Reviewer(s) Karen Wening	
Date(s) of NR/SR File Review 8-12-2016	Name of Reviewer(s) Karen Wening	
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**


**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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**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)

<b>Coverage Method:</b> <input type="checkbox"/> systematic pedestrian coverage <input type="checkbox"/> other method (describe)		
<b>Survey Interval (m):</b> <b>Crew Size:</b> <b>Fieldwork Dates:</b>		
<b>Survey Person Hours:</b> <b>Recording Person Hours:</b> <b>Total Hours:</b>		
<b>Additional Narrative:</b> No survey was conducted.		
<b>19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):</b> Soils: Bluewing Series; Vegetative community: Urbanized; Elevation: 7020'		
<b>20.</b> <b>a. Percent Ground Visibility:</b> Urbanized; less than one percent <b>b. Condition of Survey Area (grazed, bladed, undisturbed, etc.):</b> Urbanized		
<b>21. CULTURAL RESOURCE FINDINGS</b> <input checked="" type="checkbox"/> Yes, see next report section <input type="checkbox"/> No, Discuss Why:		
<b>22. Required Attachments (check all appropriate boxes):</b> All of the information below is included in the attached report. <input type="checkbox"/> USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn <input type="checkbox"/> Copy of NMCRIS Mapserver Map Check <input type="checkbox"/> LA Site Forms - new sites ( <i>with sketch map &amp; topographic map</i> ) <input checked="" type="checkbox"/> LA Site Forms (update) - previously recorded & un-relocated sites ( <i>first 2 pages minimum</i> ) <input type="checkbox"/> Historic Cultural Property Inventory Forms <input type="checkbox"/> List and Description of isolates, if applicable <input type="checkbox"/> List and Description of Collections, if applicable	<b>23. Other Attachments:</b> <input type="checkbox"/> Photographs and Log <input type="checkbox"/> Other Attachments <i>(Describe):</i>	
<b>24. I certify the information provided above is correct and accurate and meets all applicable agency standards.</b>  <b>Principal Investigator/Responsible Archaeologist:</b>  Signature <u></u> Date <u>7/20/2017</u> Title (if not PI):		
<b>25. Reviewing Agency:</b>  <b>Reviewer's Name/Date</b>  Accepted (    )                      Rejected (    )  <b>Tribal Consultation (if applicable):</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>26. SHPO</b> <b>Reviewer's Name/Date:</b>  <b>HPD Log #:</b> <b>SHPO File Location:</b> <b>Date sent to ARMS:</b>	

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

<b>1. NMCRIS Activity No.:</b> 137080	<b>2. Lead (Sponsoring) Agency:</b> General Services Administration	<b>3. Lead Agency Report No.:</b>
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**SURVEY RESULTS:**

Sites discovered and registered: 0

Sites discovered and NOT registered: 0

Previously recorded sites revisited (site update form required): 1

Previously recorded sites not relocated (site update form required):

TOTAL SITES VISITED: 1

Total isolates recorded: 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)
LA 114261		Y

**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.

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

On Oct. 5 and 6, and Nov. 11, 2016, the Museum of New Mexico's Office of Archaeological Studies (OAS) completed archaeological monitoring of a two-phase transformer replacement project at the Joseph M. Montoya Building at 120 S. Federal Place in Santa Fe, where the main branch of the U.S. Post Office and other federal agencies are currently housed. The Montoya building is on Federal land and is under the control of the General Services Administration (GSA), the responsible Federal agency. The GSA decommissioned and removed the outdated electric transformer installed in 1961-1962 in the basement of the Montoya building and replaced it with new conduit and transformers on the exterior of the building. Monitoring of this project was completed under contract with Prime Builders of Albuquerque, New Mexico, at the request of Steven Kline, Regional Historic Preservation Officer for GSA, based in Fort Worth, Texas, and Theresa Lanctot, GSA Construction Control Representative, based in Albuquerque, New Mexico. Three trenches were excavated on the north side of the Montoya Building to install new conduit. No new vault excavations were required. The project falls within the boundary of LA 114261, the site designation that encompasses the Federal Oval. No features associated with this site were encountered during monitoring, but a redeposited cultural stratum derived from the nineteenth century use of the Federal Oval area as a city dump was recorded in all three trenches and a small utility-locate hole. The character of this stratum at the far north end of the project area suggests that intact refuse deposits related to the city dump may exist north of the excavated trenches.



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# 1 ↘ Introduction

The transformer replacement project area is located on the north side of the Joseph M. Montoya Federal Building on South Federal Place in Santa Fe, NM (Figs. 1.1–1.3). The Montoya building and nearby Federal Courthouse both reside within the Federal Oval, which is registered in the NMCRIS system as LA 114261. The Federal Oval encompasses an area that has been central or peripheral to intensive prehistoric and historic residence and activity from the AD 600s to modern times. Archaeological investigations in and around the Federal Oval have resulted in the recordation of prehistoric sites from the Developmental through Classic periods and historic sites from the Spanish Colonial, Territorial, and Early Statehood periods.

The construction of the Montoya building in 1962 was completed without the benefit of archaeological monitoring and resulted in extensive redeposition of existing cultural resources within the construction footprint. Figure 1.4 is representative of the types of disturbance that occurred during the original construction activity. Footing excavations and basement wall concrete form installations disturbed deposits immediately adjacent to the existing building footprint, and utility access trenches (lower right in the photo) disturbed some approaches to the building from the utility mainlines in the adjacent street (Figs. 1.4.–1.6). It was expected that the excavations would fall within areas previously disturbed during the unmonitored construction of the Montoya building in 1962, which was in fact the case. However, although all sediments within the trenches were redeposited, a concentration of artifacts, charcoal, and ash occurred at the far north end of Trench 3 where it turned east to intersect with the new vault, suggesting that areas to the north and west nearest Paseo de Peralta may be approaching intact portions of a refuse area used by city residents in the nineteenth century.

Monitoring was completed in two phases. The first phase was completed on Oct. 5 and 6, 2016, and involved archaeological monitoring of three

mechanically excavated conduit trenches, Trench 1, Trench 2, and the southern portion of Trench 3. Following this first phase, two new transformers were installed on pads outside the building along with underground cables connected to the PNM main line (Figs. 1.7–1.10). Phase two was completed on Nov. 11, 2016, and involved monitoring the northern extension of Trench 3 to the proposed new vault location.

Though the initial project plans included installation of a 4 ft square, 4 ft tall concrete vault within the barrier near Paseo de Peralta, the PNM crew determined in the field that a new vault was not necessary and that a 21 inch tall fiberglass cover would suffice at this location. As such, the only excavation in the vault area involved the loosening of previously disturbed fill around the old vault to expedite its removal. This loosened fill was replaced around the new fiberglass cover to level it with the surrounding fill. The horizontal dimensions of this area were recorded with a Trimble Geo XT (see Fig. 1.8).

Subsurface disturbance within the trenches was limited to approximately 879 sq ft (24.9 sq m) on the north side of the Montoya building. This area included the three trenches required to install conduit at locations identified in the Electrical Site Plan and Hole 1, a 50 by 50 cm hole at the extreme south edge of the concrete removal area that was hand dug to a depth of 65 cm to locate a previously installed utility. The depth of the conduit trenches ranged from 1.10 to 1.35 m bgs (3.6 to 4.4 ft). The conduit trenches were located entirely within the area of concrete removal with the exception of the far north end of Trench 3, which extended a short distance east into the vault barrier area.

The Montoya building is a Federal building, thus this project is subject to Section 106 compliance under the National Historic Preservation Act. No private property is involved. The responsible Federal agency (GSA) determined that the current undertaking was the type of activity that could potentially affect historic properties. Historic



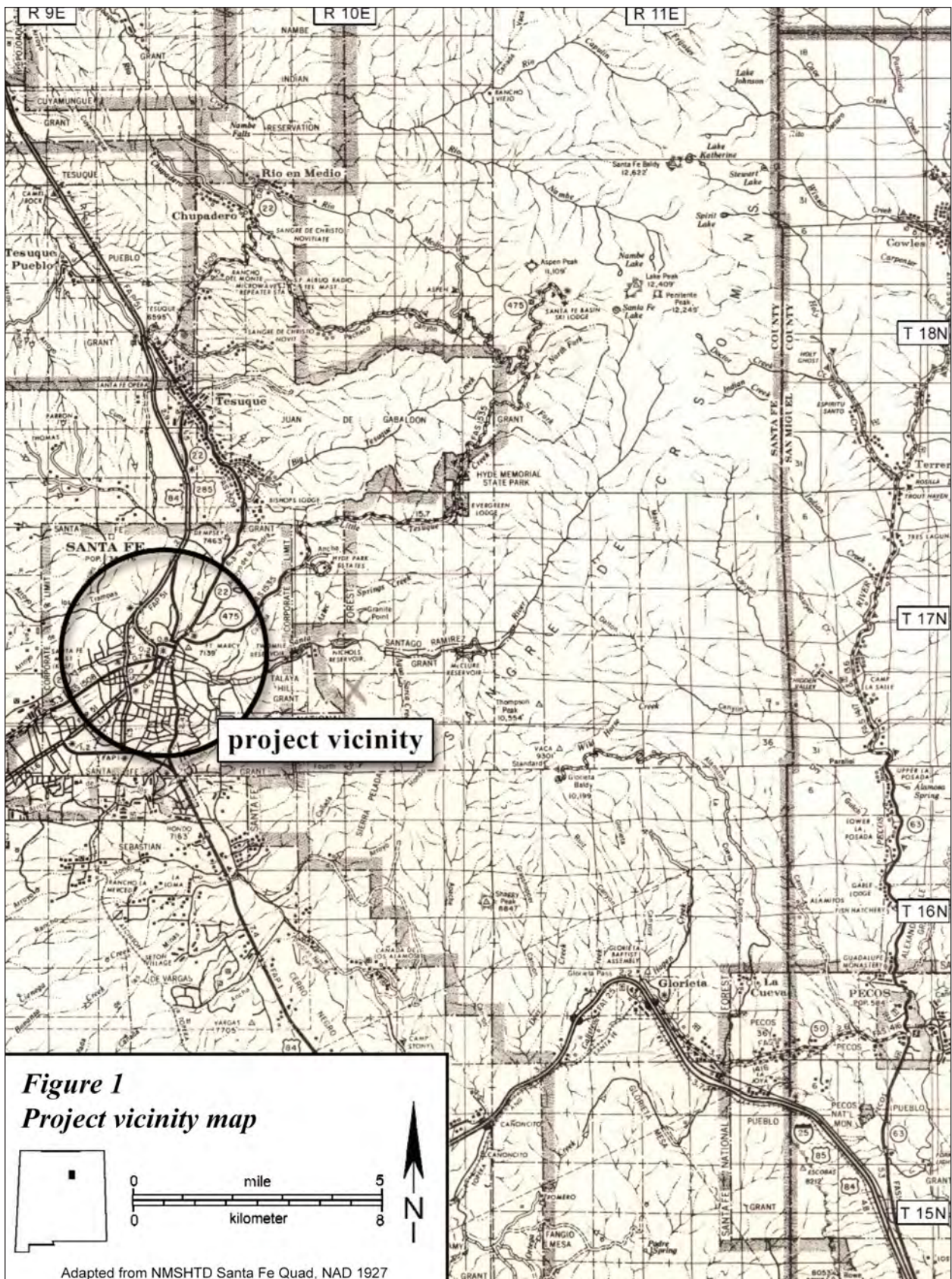


Figure 1.1. Project vicinity map.



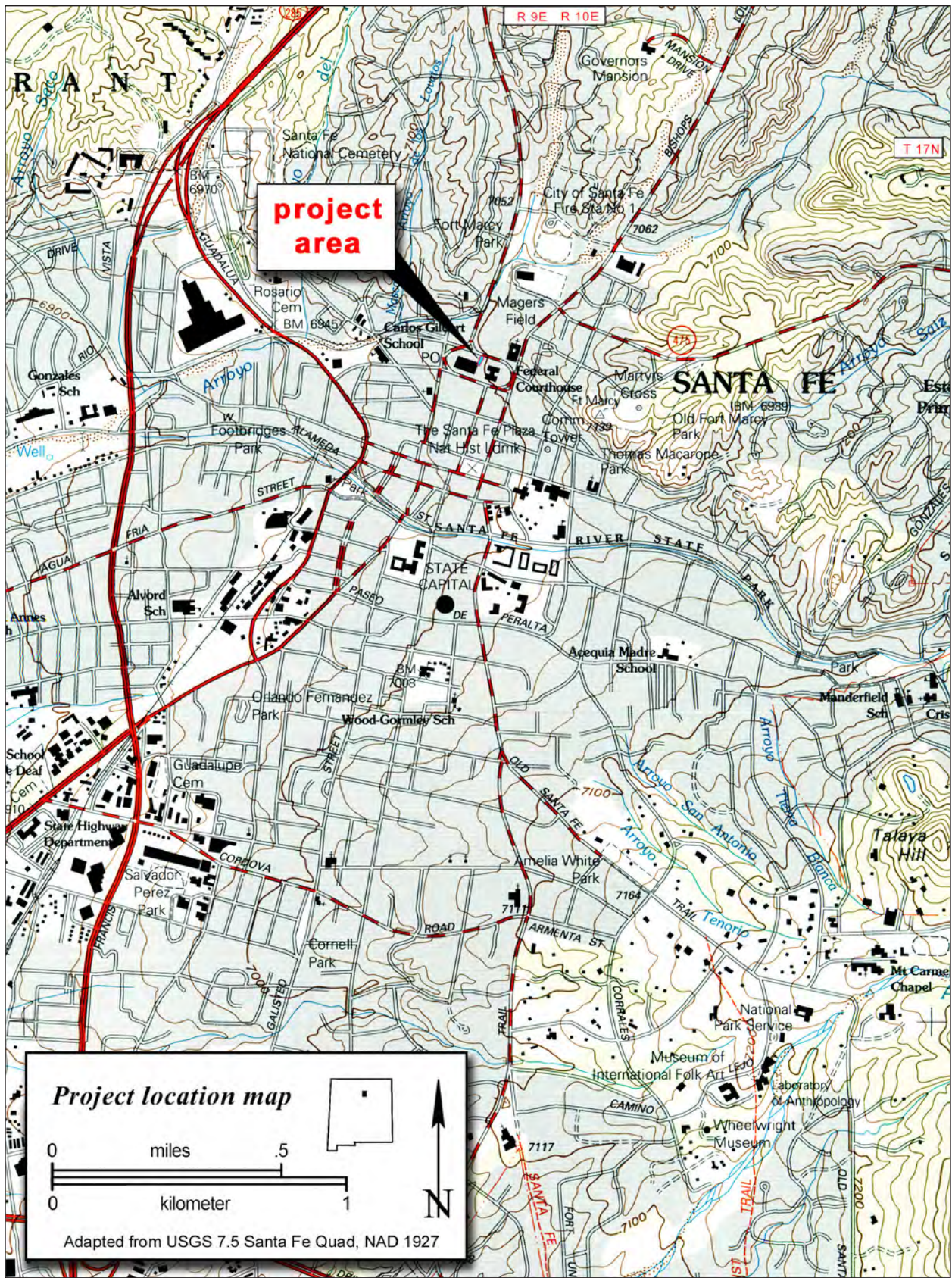


Figure 1.2. Project location map.





Figure 1.3. Project location, detail.



Figure 1.4. Federal Building construction project, 1962.





Figure 1.5. Loading dock at the existing post office, view northwest.



Figure 1.6. Federal Building, pre-excavation, view southwest.

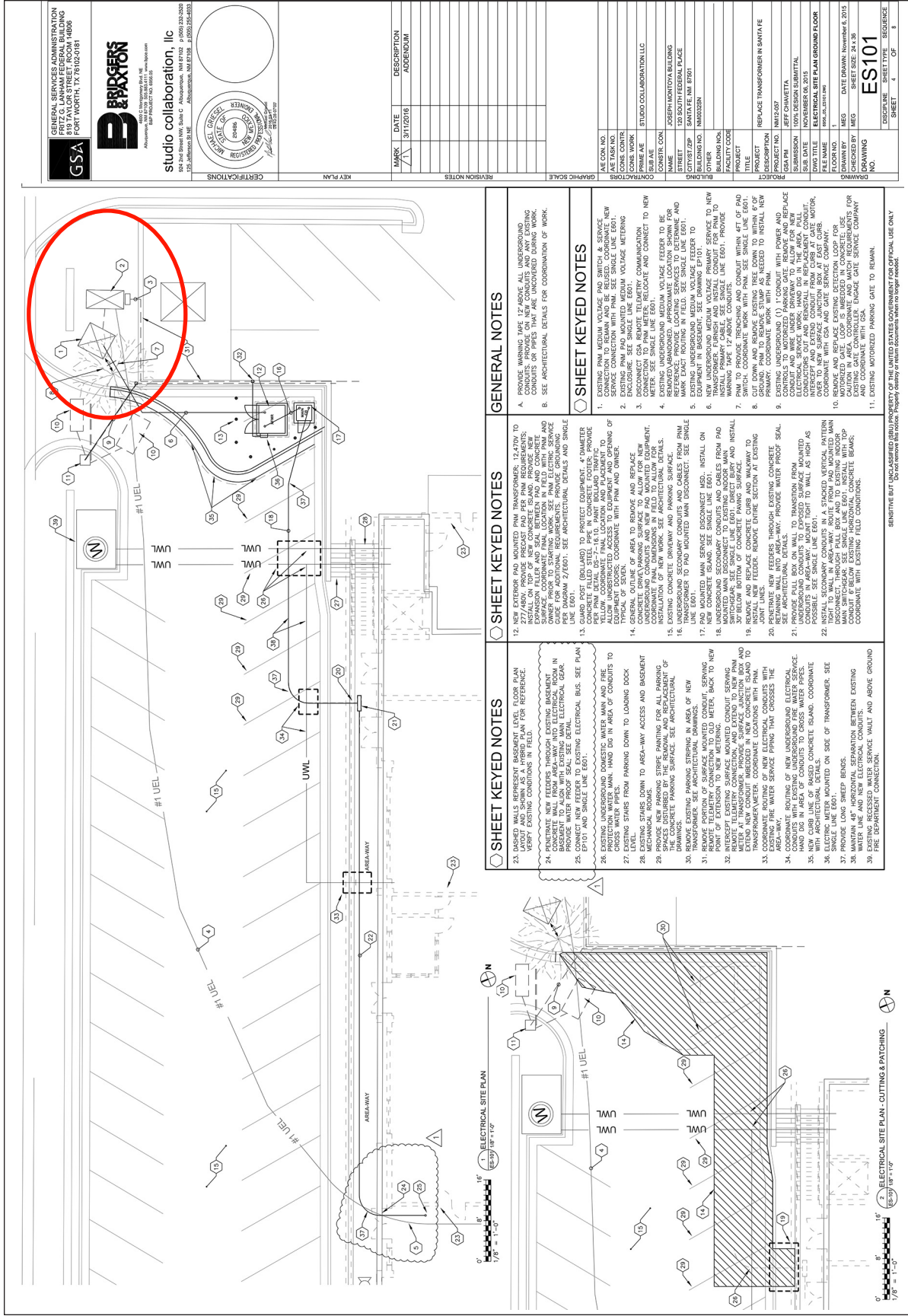


Figure 1.7. Electrical site plan.

<b>GSA</b>		<b>GENERAL SERVICES ADMINISTRATION</b> FRITZ G. LANHAM FEDERAL BUILDING FORT WORTH, TX 76102-0181																																																																																	
<b>BRUBAKERS &amp; PAXTON</b>		Architectural Firm 3500 W. Camp Street, Suite 300 Fort Worth, TX 76102																																																																																	
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Figure 1.8. GIS map with trenches, vault, Hole 1, and profile points.





Figure 1.9. Newly installed vaults, view southeast.



Figure 1.10. Vault replacement cover on north side of project area, view southwest.



properties are those that are either listed in the *National Register of Historic Places* (NRHP) or meet criteria for inclusion in the *National Register*. Section 106 of the *NRHP* requires that the GSA consult with the New Mexico State Historic Preservation Office (SHPO) during this process.

No cultural resource documentation has been undertaken previously at the location. Survey and testing of the proposed project area is not possible, and the area of disturbance from the current project is small. However, since cultural resources, both intact and disturbed, have been previously identified in the vicinity of the project, monitoring of construction activity was recommended and conducted. Eric Blinman served as principal investigator for the project. Monitoring occurred under the supervision of James L. Moore. The principal field monitor was Karen Wening assisted by Susan M. Moga and Isaiah Coan. The monitoring plan was submitted and accepted on Sept. 6, 2016.

This document serves as the final OAS report on the monitoring of this project as per Section 106 of the Historic Preservation Act. It includes a brief cultural, historical, and interpretive context; a description of the project location and purpose; a description of field methods employed during monitoring; a description of the subsurface stratigraphy consisting of natural and cultural layers; artifact analysis conducted; and the characterization of recovered artifacts and samples. No sites or features were identified during excavation. Interpretations and management recommendations for cultural resources encountered are provided within. Once any comments have been addressed, a final report will be produced by OAS within one year of review. Artifacts will be curated with the Archaeological Research Collections of the Museum of Indian Arts and Culture. Sufficient copies of the final report will be produced to fulfill the client's distribution needs and statutory requirements.



## 2 Environmental Setting

Numerous recent archaeological projects in the downtown area of Santa Fe have provided reports on the local environment of the area. This section is adapted from Maxwell and Post 1992, Wenker 2005, Hannaford 2007, Barbour 2011, and Lakatos 2011.

Local topography alternates among nearly level plains, rolling terraces, and steep, rocky slopes. The main tributary drainage is the Santa Fe River. Other major tributary drainages include Arroyo de las Mascaras, 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.

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). This basin, considered an extension of the Southern Rocky Mountain Province (Fenneman 1931), 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. 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 sand, gravel and conglomerates, mudstone, siltstone, and volcanic ash beds (Folks 1975; Lucas 1984).

Alluvial deposits of ancient and modern gravel 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 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 located at an elevation of 2130.5 m (6990 ft).

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 pattern is 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 enough 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; 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, saturating the ground surface during the beginning of a storm and resulting in the loss of much moisture through runoff.

Local flora and fauna are 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 native to the project area include coyote, badger, porcupine, black-tailed jackrabbit, desert cottontail, spotted ground squirrel, prairie dogs, and many species of birds. Mule deer and black bear 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 accessible within a few days travel.

### 3 **Previous Archaeological Investigations in the Project Area**

Previous archaeological investigations in the vicinity of the Montoya building have included multiple projects within the Federal Oval (the area enclosed by Federal Way, Grant Avenue, Paseo de Peralta and Washington Avenue; see Fig. 1.3), monitoring of utility trenches within Federal Way, and extensive investigations south of Federal Way at the location of the Santa Fe Community Convention Center (LA 1051). The findings of these investigations include: layers of archaeological deposits reflecting ancestral Pueblo occupations dating as far back as AD 600; multiple pre-Colonial villages; Spanish colonial structures and features; Fort Marcy military structures and features; and construction-related debris from the Federal Courthouse. These investigations indicate surface deposits are extensively disturbed but that intact features and structures can be preserved below a depth of approximately 14 inches, where modern construction has not yet penetrated.

Prehistoric deposits in the project vicinity have been altered by a succession of historic and modern activities that include the construction of the present Federal Courthouse between 1853 and 1889, the abortive construction of a penitentiary at the site of the existing Montoya building in the mid-nineteenth century, the construction of facilities related to the Tercio-Millennial Exhibition of 1883 (including a racetrack and lake), the sequential construction of a high school and a city hall at the corner of Lincoln and Federal Place in the twentieth century, and the construction of the Montoya building itself in 1963 (Wozniak 1992a:11-12).

No archaeological investigations were conducted before the construction of the existing Montoya building. Based on knowledge of cultural resources in the vicinity, it is likely that structures, features, and deposits of all previous pre-Colonial and post-Colonial deposits were disturbed and removed by the construction. Some of those deposits (basement excavations) would have been removed from the location, while other portions of the deposits would have been used on site to backfill

construction excavation and to contour the surface of the Federal Oval surrounding the building. Artifacts in the redeposited fill reflect the nature of these disturbed archaeological deposits and may include disarticulated human remains if burials were present within the 1963 construction zone.

#### **ARCHAEOLOGICAL SITES IN THE PROJECT AREA**

The project area is within the Historic Downtown Archaeological Review District of the City of Santa Fe, New Mexico (Fig. 3.1). Cultural resource surveys, cultural properties, and known archaeological within a 500 m buffer area around the project area sites can be seen in Figs. A2.1 and A2.2.

The boundaries of three archaeological sites fall within the buffer zone, LA 114261, LA 1051, and LA 143460. The LA 114261 designation refers to the entire Federal Oval (Hannaford 1997:1) and includes excavations conducted for the Montoya transformer replacement project. The boundary of the large multi-component site LA 1051, Ogapogeh, is about 100 m south of the project area. LA 143460, is a Coalition period pit structure, with associated pits, on the west side of the Federal Courthouse. Investigations of these sites are summarized below.

**LA 114261: The Federal Oval.** Archaeological survey and testing of the Grant Park location on the west side of the Federal Oval was conducted by Frank Wozniak (1992a; 1992b) in preparation for a City of Santa Fe landscaping project (NMCRIS 39731 and 41569). This investigation was completed in two phases involving the excavation of eight test trenches and two test pits. Two intact refuse pits containing masonry debris from the 1889 construction of the stone wall and railing that currently encircle the Federal Oval were found at the extreme north end of the park at depths of up to 59 inches. Elsewhere, trenches and test pits yielded a redeposited mix of prehistoric and historic artifacts dating from the Coalition to Classic periods (AD 1200-1450) and to the 1930s and 1950s.



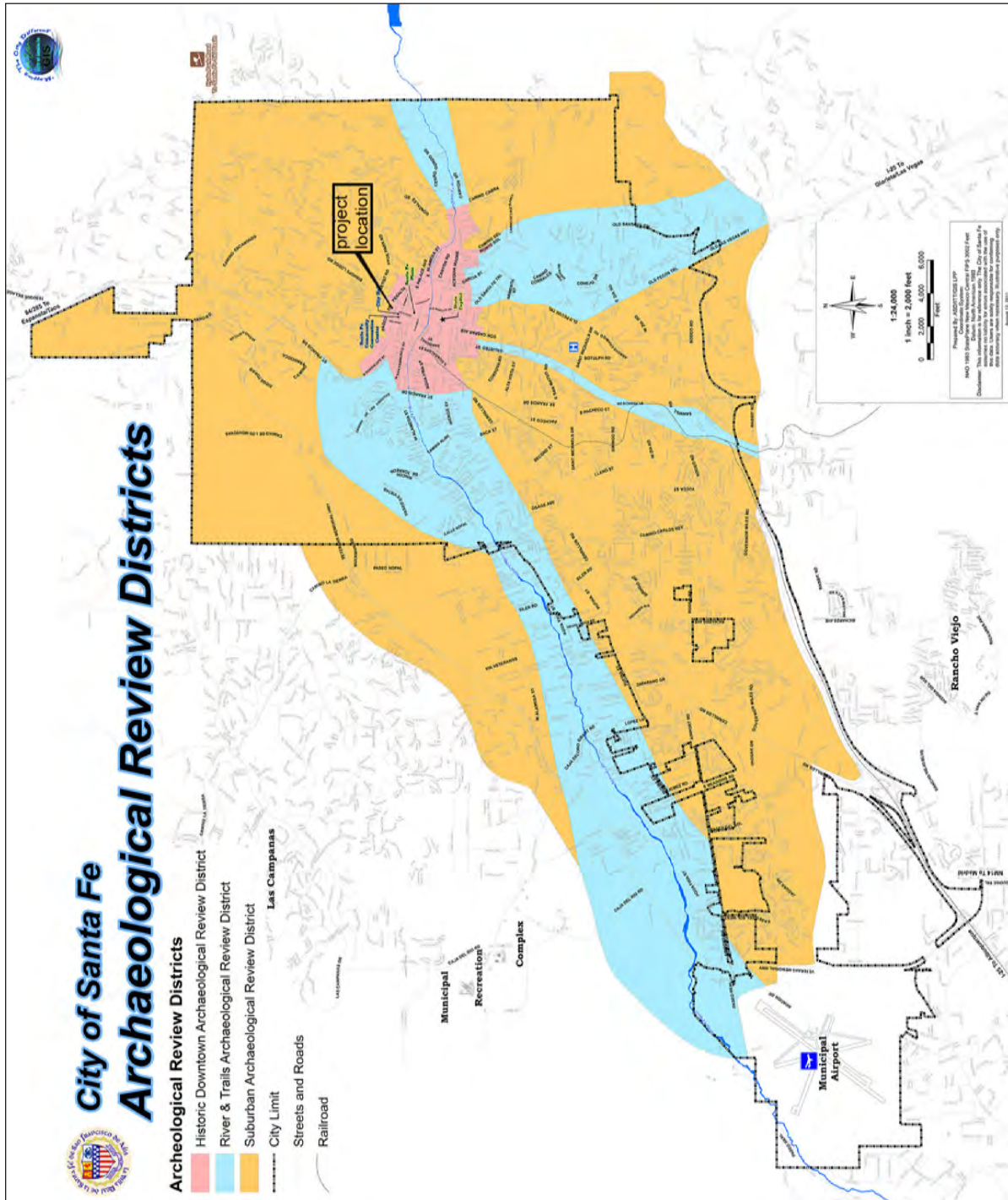


Figure 3.1. Santa Fe Archaeological Review District boundaries.

Hannaford (1997) conducted archaeological survey and monitoring procedures on the east side of the Federal Courthouse prior to the installation of a dry well drainage system and new landscape sprinklers and to the exposure and waterproofing of the stone foundation of the courthouse. Two features were documented. The largest, Feature 1, was a 10 by 20 m, formally excavated pit at the northeast corner of the courthouse that contained mixed Coalition, Spanish Colonial, and Territorial period refuse, most from the latter. Hannaford (1997:14) suggests that the pit represents the artificial pond dug for the Tertio-Millennial Exposition of 1883. Following the exposition, the pit became a convenient location for city refuse. The top of the pit occurred directly below the topsoil and extended to 1.8 m (71 inches) below the ground surface. Pit fill consisted of grayish brown sandy clay interspersed with numerous ash, charcoal, and coal and furnace-clinker lenses.

Feature 2 was a small basin-shaped pit measuring 5 by 5 m that contained debris produced by construction of the Federal Courthouse or penitentiary building. This pit was also immediately below the topsoil and was at least 1 m deep. Other mechanical excavations during this project yielded extremely low artifact counts, most of which were likely associated with LA 1051, a large Coalition period pueblo about 100 m southwest of the proposed transformer replacement project. On the basis of Hannaford's observations, and based on the historic boundary of the Federal Oval (once used as a racetrack), Hannaford proposed that the limits of LA 114261 be expanded to include the entire Federal Oval area. However, formal site limits were not registered in NMCRIS.

**LA 143460.** Southwest Archaeological Consultants conducted a 1 acre survey on the west side of the Federal Courthouse (also within the Federal Oval) that resulted in the excavation of LA 143460, a Coalition period pit structure (AD 1220/1250-1350) with five associated postholes and six shallow, basin-shaped pits (Scheick 2005:59). Floor depth of the pit structure was 1.99 m (73 in), and the structure had been overlain by mixed prehistoric and historic refuse with an uppermost layer of Territorial period refuse (Viklund 2005: 371). Two historic features were excavated: a latrine and a pit containing dressed stone identical to that used for the Federal Courthouse (Scheick 2005:95). This discrete excavation falls within Hannaford's definition of LA 143460.

**LA 1051, Ogapogeh.** The Ogapogeh/El Pueblo de Santa Fe site includes a multi-component Developmental period (AD 350-650), Coalition period (AD 1175-1275), and early Classic (AD 1365-1435) period adobe and masonry pueblo with roomblocks, numerous extramural features, human remains, and several ceremonial structures (Lentz 2011). LA 1051 falls within the larger boundary of SRCP 260, the Santa Fe Historic District, but itself is not a contributing site. The prehistoric component of LA 1051 was succeeded by the Spanish Colonial period occupation (1610-1821), the Mexican occupation (1821-1846), and the Territorial period (1846-1912) occupation (Lentz 2011b).

**LA 35100, El Presidio de Santa Fe (SRCP 260, LA 4450, Locality 34).** Two major archaeological investigations were conducted on the grounds of the presidio in 1982 (Schaafsma) and 2002-2004 (Post, in prep). The presidio boundary originally reached into the southern extent of the Federal Oval during the Spanish Colonial period, but military use of the property shifted south during the Territorial period as part of modifications made by the U.S. Army following General Stephen Kearny's entrance into New Mexico. Excavations yielded architectural, thermal, storage, burial, landscape, and construction and demolition features from the early 1600s to the twentieth century along with hundreds of thousands of artifacts spanning 300 years of Santa Fe history from the Spanish Colonial and Territorial periods.

**LA 174246.** This site was identified during 2012 monitoring of a Public Service Company of New Mexico (PNM) trench that ran north-south along the east side of the Federal Courthouse and extended north across Paseo de Peralta (Lentz 2012; NMCRIS 125469). The site consists of a trash lens of varying thickness (20-50 cm) containing mixed Prehistoric, Spanish Colonial, and Territorial deposits of the type observed during excavations at the Civic Center (LA 1051) as well as during Hannaford's 1997 monitoring project. Diagnostic artifacts suggest materials were redeposited from the large nineteenth century midden piles surrounding Fort Marcy during Santa Fe's 1883 Tertio-Millennial celebration. When preparations were being made for the celebration, an ornamental pond was constructed. Later, the pond was backfilled with refuse from surrounding areas. This included substantial quantities of trash from the nearby fort. The midden deposit was recorded

during Phase I and II monitoring for PNM and was designated Feature 2.1. Diagnostic artifacts included bone, glass, metal, and historic and prehistoric ceramics with total counts in the thousands. The midden was encountered directly below the sod and extended approximately 1 m below the ground surface in some areas. The limits of LA 174246 fall partially within LA 114261 and extend north, outside the Federal Oval.

**LA 608, La Garita.** Though it is outside the 100 m buffer, LA 608 figures significantly in the history of the area. Hannaford (1997:4) describes it as a small Spanish fort built on a rise near the head of Washington Street east of the Scottish Rite Temple. The fort dated from around the Pueblo Revolt to the 1880s and included a mortuary chapel and cemetery. The site was excavated by Bruce Ellis in 1954 and reported in a later issue of *El Palacio* magazine along with related archival research (1978:2–22). The nature and cultural affiliations of the original structures on the hill differ, according to various historic documents researched by Ellis, but multiple kivas and a *torr on* are referenced. Ellis’ (1978:7–8; 17–18) excavations encountered remnants of an elevated wooden scaffolding or walkway with cut dates of 1805 that matched those cited in archival documents related to the construction of a gunpowder storehouse on the hill. Following the excavations, Ellis (1978:17) concluded that the main section of the fort was a high-walled, open courtyard rather than a roofed structure. La Garita was once touted to tourists as an ancient Spanish fortress and jail—a death house for condemned criminals, a place of execution, a Mexican customs house, and a U.S. Army guardhouse. None of these could be corroborated by Ellis’ research (1978:4). The legendary garita was the subject of preservation concerns by both the Historic Society and Santa Fe Board of Trade as early as 1906, but cultural remains are now buried beneath condominiums.

#### NATIONAL REGISTER OF HISTORIC PLACES IN THE PROJECT AREA (ADAPTED FROM TATUM, LENTZ, AND SNOW 2014)

Several culturally and historically significant properties in the immediate vicinity of the project area are listed on the *National Register of Historic Places* and the *State Register of Cultural Properties*. Some are also listed as localities within the larger

encompassing Santa Fe Historic District of SRCP 260 (Table A2.1). These properties include the Federal Courthouse (SRCP 244), the Scottish Rite Temple at 463 Paseo de Peralta (SRCP 924), the Presidio de Santa Fe (SRCP 260, Locality 34; LA 35100), the Padre Gallegos House at 227–237 Washington Ave. (SRCP 62), and the Roque Lobato House at 311 Washington Ave. (SRCP 67; LA 1838).

During a renovation of the Padre Gallegos House, a well was discovered in the interior courtyard. Laboratory of Anthropology staff excavated the well, conducted historic background research on the property, and sketch-mapped, photographed, and collected artifacts on the premises (NMCRIS numbers 31032, 52867, and 53727; Feb. 1967). At the Roque Lobato House, a surface collection was undertaken on the premises in 1969 and included historic ceramics dating between AD 1692 and 1821 (no NMCRIS number). The Scottish Rite Temple was constructed northeast of the Federal Oval between 1911 and 1912.

#### LAND USE HISTORY IN THE VICINITY OF THE FEDERAL OVAL

The history of the Federal Oval is extensively detailed in Viklund, Deyloff, and C. T. Snow (2005:29–50) and is addressed in the *State Register* nomination of the Federal Courthouse (Purdy 1972, SRCP 244) and in Hannaford’s report of archaeological investigations in the eastern area (1997:4–6). That history is summarized here to portray the extensive and intensive use of the property from the Spanish Colonial and Territorial periods and beyond.

The earliest historic use of the property appears agricultural. *Jos  de Urrutia’s Map of Santa Fe* (1766) depicts expansive agricultural fields in the vicinity of the Federal Oval in 1766 (Fig. 3.2), as does *Lt. Jeremy F. Gilmer’s Plan of Santa Fe* (1846–1947), but to a lesser extent (Fig. 3.3). Both maps portray a primary acequia, designated as “acequia para regadio” on the Urrutia map and simply as “irrigation canal” on the Gilmer map. The likelihood of agriculture in this area may be corroborated by the presence of the acequia, which is probably identical to Acequia de la Muralla (Viklund, Deyloff, and C. T. Snow 2005:29). Its route relative to the Federal Oval is evident in later maps produced for the 1977 Santa Fe River Hydrographic Survey (Fig. 3.4). Extant segments are shown in D. H. Snow’s study of Santa Fe acequias (1988:118–119, Appendix 11, Sheet 3), where it is shown flowing



almost to the edge of the northeast corner of the Federal Oval before turning north near the Scottish Rite Temple and continuing west along Rosario Street to St. Catherine School. Its stone lining was intact in several locations upstream east of the project area at the time of Snow's survey (1988:33).

The acequia appears in the foreground of a ca. 1879 photograph of the unfinished courthouse, passing between what is now North Federal Place and the Scottish Rite Temple (D. H. Snow 1988:44, Fig. 21a). D. H. Snow refers to Acequia de la Muralla as likely dating to the seventeenth century (1988:119), referencing a date range of "after 1680 and before 1766" established by the State Engineer in 1983. Acequia de la Muralla may also appear in *J. J. Stoner's Bird's Eye View of the City of Santa Fe* (1882), where a ditch or swale loops around the north side of the Federal building and dips south into the project area before continuing west (Fig. 3.5).

Though land in the area of the courthouse was probably farmed, the great expanse of cultivated fields shown in the earlier Urrutia and Gilmer maps may owe much to "cartographic license," since water provided by the acequia could not have sustained such extensive fields (Plewa 2009:240–241). No structures appear in the area of the Federal Oval on the Urrutia map, suggesting that the original presidio of Santa Fe did not extend that far north. This changed in 1791 when the presidio was greatly enlarged to encompass an estimated 28 acres including public buildings, laundries, troop and officer headquarters, corrals, a garden, a guard room, and a jail. The enlarged presidio may have encompassed the southern extent of what is now the Federal Oval based on its projected location in the 1846 Emory-Gilmer map (Hannaford 1997:4; Viklund, Deyloff, and C. T. Snow 2005:33, 36; Viklund et al. 2005:33). Whether any portion of the Federal Oval was within the presidio is difficult to confirm due to the error factor in the 1846 map; it is also likely that the designation of the property as a Territorial Capitol in 1852 shifted the military boundary south (Viklund et al. 2005:33). In any case, Fort Marcy was permanently abandoned in 1894 (Frazer 1965:100–101).

Ownership of land within the Federal Oval shifted from Mexico to the United States in 1848 under the Treaty of Guadalupe Hidalgo (Purdy 1972:8, SRCP 244). Eleven years later in 1859, the old presidio was refurbished by the U.S. Army and renamed Fort Marcy (Fig. 3.6). The northern boundary was shifted south to exclude the Federal Oval. Lincoln Avenue

was cut north through the original presidio entrance in 1866 to align with the Territorial Capitol, which eventually became the Federal courthouse. At this point, construction on the courthouse had been underway for several years beginning in 1852, but it ended shortly thereafter, resulting in the unroofed shell sitting idle on the property until 1883 when the site was selected for the Tertio-Millennial celebration (Purdy 1972:8). Preparations for this event involved substantial modifications to lands inside the Federal Oval, which up to that point had been used for city refuse and adobe production (Purdy 1972:8). The property was cleared and graded, and a pond was excavated on the north side of the Federal Building (Fig. 3.7). The unfinished courthouse was given a temporary roof, first floor, and exterior stairway. Other new construction included a large exhibition hall paralleling the south side of the property, and a racetrack roughly encircling the oval along what is now North and South Federal Place. Based on the discovery of a formally excavated pit filled with Territorial-era refuse north of the courthouse, Hannaford (1997:14) suggests that the artificial pond may have remained open for some time after the Tertio-Millennial event before being pressed into service as a dumping ground for city refuse.

The location of the Federal courthouse relative to the encircling oval has not remained constant. The 1883 sketch map of the Tertio-Millennial celebration depicts the racetrack as being close to the east side of the building, but the *H. Hartmann Map of the City of Santa Fe* (1886) produced only two years later (see Fig. 3.6) indicates that the oval was extended east to Washington Street. The road alignment south of the courthouse was altered also. According to *Zimmerman's 1883–1903 Plat of the Fort Marcy Military Reservation*, the south edge of the courthouse was about 50 ft from the north edge of what was then known as Federal Street, now South Federal Place (Fig. 3.8). Today, the edge of South Federal Place lies about 66 ft south of the courthouse, suggesting the road was realigned in the intervening period – possibly during or after the Tertio-Millennial event. Dates for the Zimmerman map vary. The New Mexico History Museum lists a date of 1901, but the Texas History Museum cites a potential range of between 1883 and 1903.

At about the same time, construction began on the Federal courthouse. The basement foundation and possibly the first floor of a penitentiary were

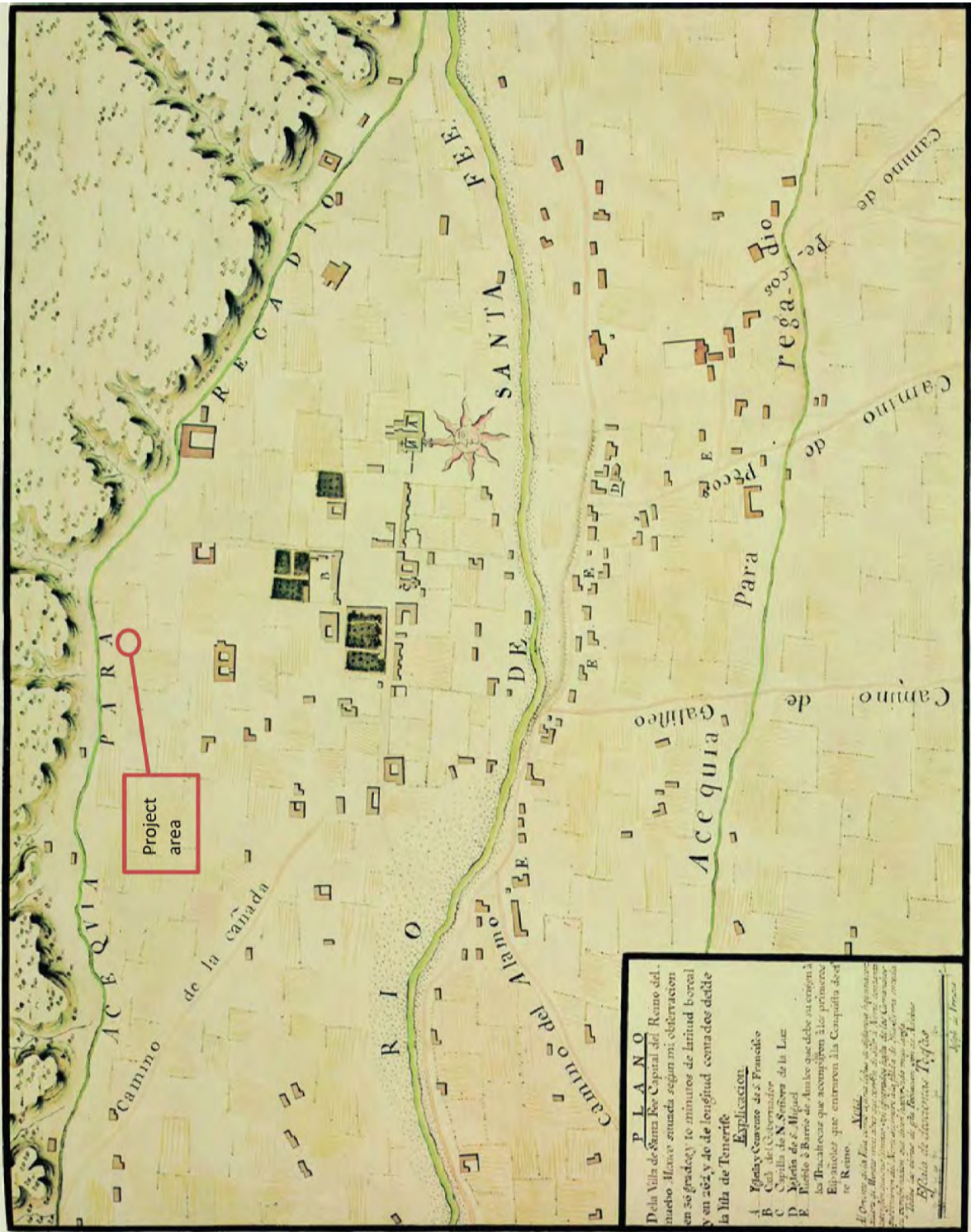


Figure 3.2. Jose de Urrutia's map of Santa Fe (1766), with project location.



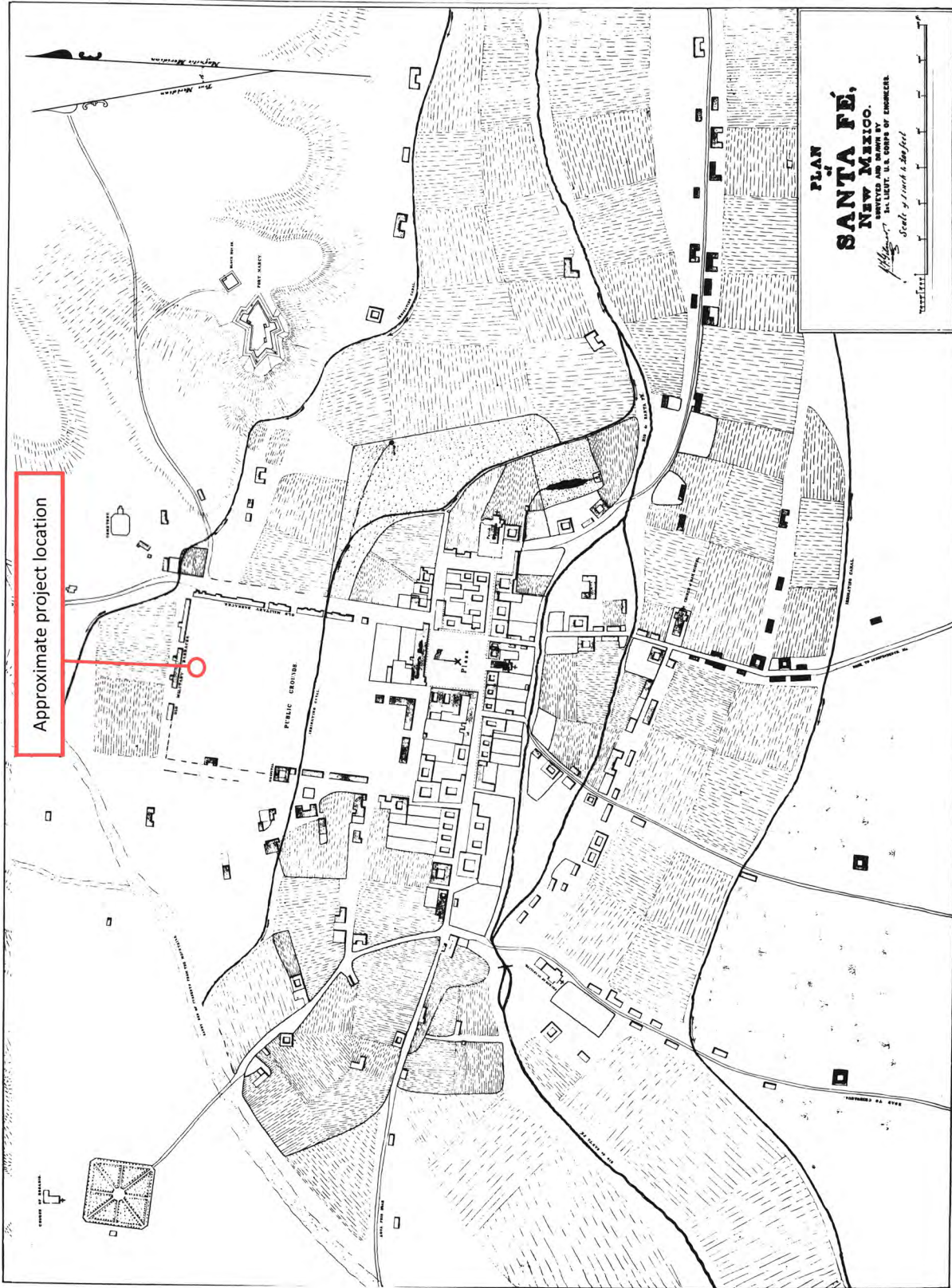


Figure 3.3. Detail of Lt. Jeremy F. Gilmer's Plan of Santa Fe, (1846-1849), with project location.

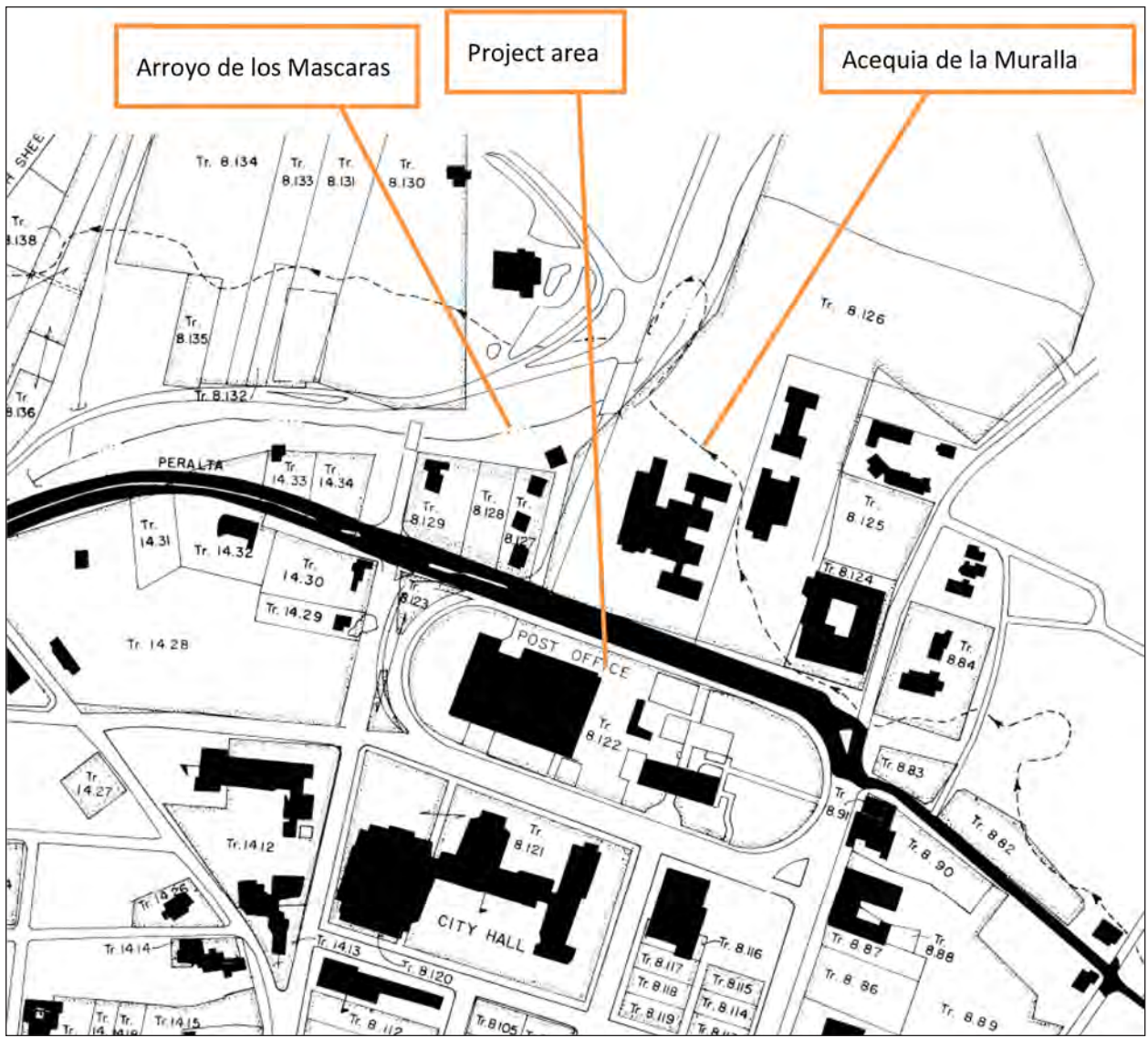


Figure 3.4. Detail of the Santa Fe River Hydrographic Survey (1977), Sheet 3, with project location.



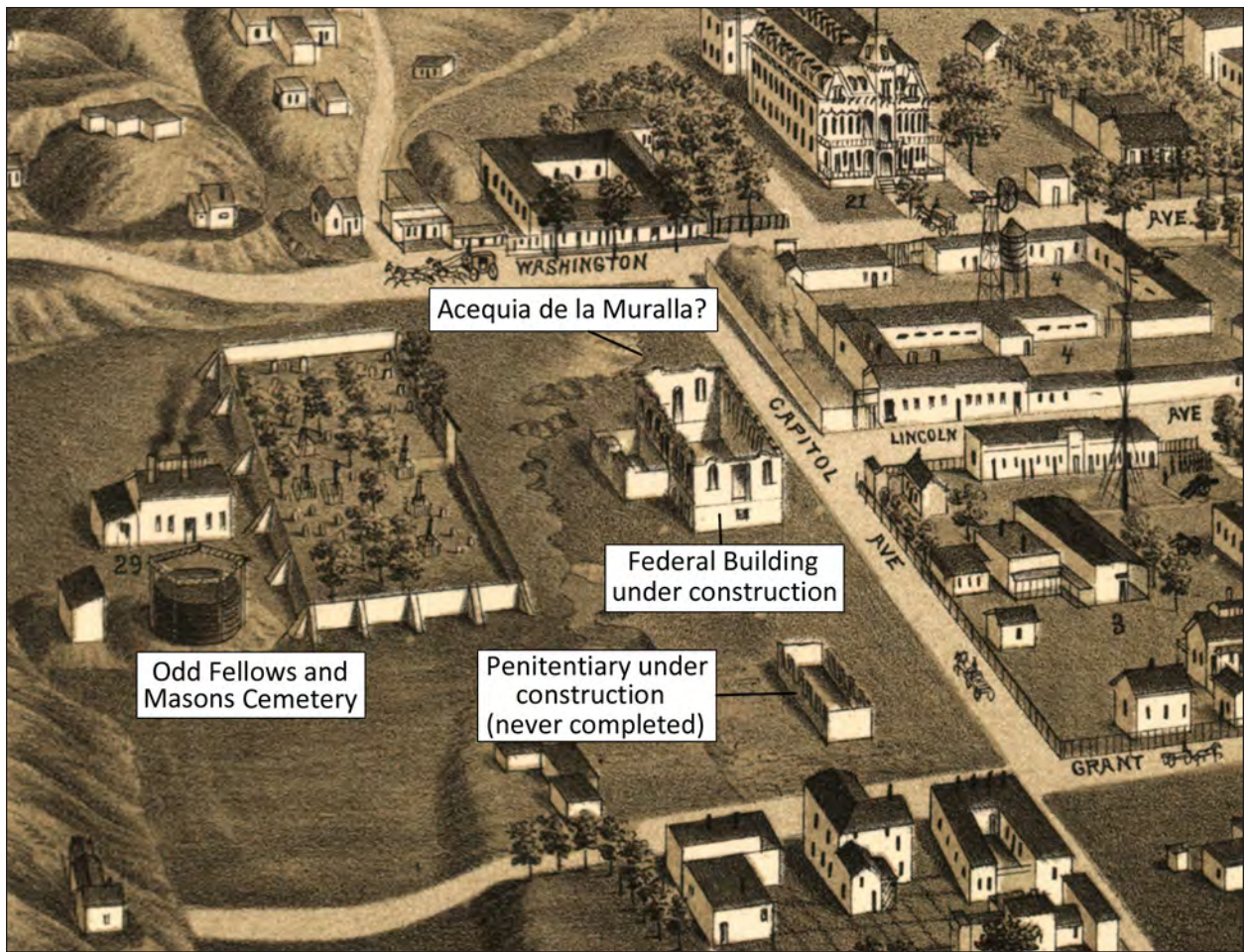


Figure 3.5. Detail of J. J. Stoner's *Bird's Eye View of Santa Fe* (1882), with project location.

built in the area where the Montoya building now stands. The penitentiary was never finished, though the partially completed building does appear in Stoner's map (see Fig. 3.5). North of the Federal Oval, a Territorial period cemetery was established roughly in the present location of the Scottish Rite

Temple (see Fig. 3.5). Hannaford (1997:4) notes that several additional unmarked outlying graves have been found outside of the cemetery near the Montgomery and Andrews Law Office Building. This suggests that other graves may exist as far west as Rosario Cemetery.





Figure 3.6. Old Fort Marcy , H. Hartman Map of the City of Santa Fe (1886), with project location.

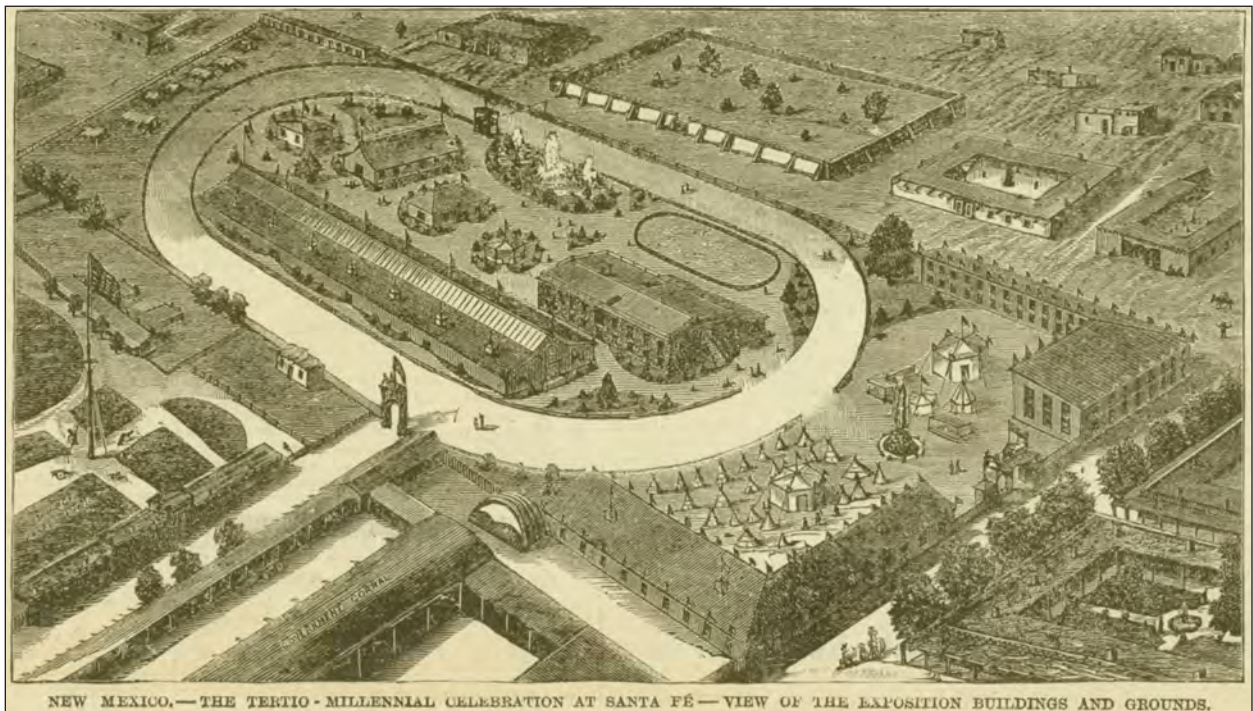


Figure 3.7. Depiction of the project area at the time of the Tertio-Millennial Celebration at Santa Fe, 1883.



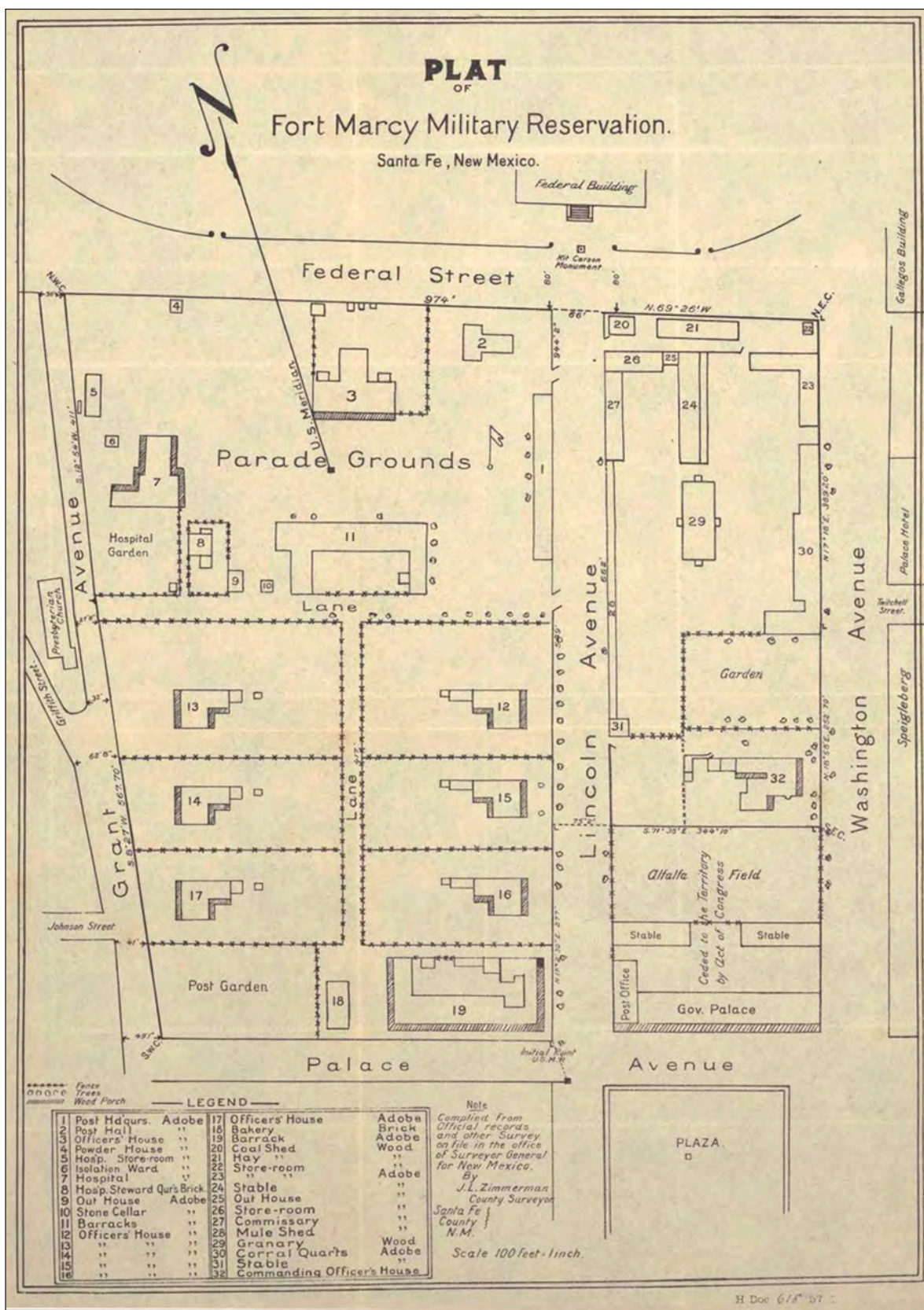


Figure 3.8. J. L. Zimmerman's Plat of Fort Marcy Military Reservation (1883-1903), courtesy, Special Collections, The University of Texas at Arlington Libraries, Arlington, Texas.





## 4 ↘ Monitoring Methods

Since no intact features were encountered during the transformer replacement project, archaeological excavations were not required. Had OAS encountered intact features in any of the trench wall profiles, a 1 by 1 m test unit would have been hand excavated north of the trench in 10 cm levels, and removed soil would have been screened through 1/4-inch-mesh hardware cloth.

The north end of Trench 3 yielded a small concentration of redeposited ash, charcoal, and artifacts. A grab sample of diagnostic artifacts was retrieved and the mechanical removal of the remaining vault fill was monitored for features. If any artifacts had been found they would have been documented according to standard OAS data recording procedures, which include 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, and notes on excavation technique and temporal associations. Written descriptions would have been recorded on standardized forms.

All profile drawings include a scale, north arrow, and key to abbreviations and symbols. Trenches and other locations are plotted using Global Position Systems (GPS) coordinates and are depicted in aerial photographs, topographic maps, and other graphics related to the project. Excavation records include photographs of trenches and exposed cross sections of cultural features and deposits. Photographs include a metric scale, north arrow, and label board with the project name, feature number and date. All field recording is conducted on standard OAS feature and excavation forms under the provisions of General Permit NM-16-027-M. Recovered artifacts and samples from each stratigraphic unit or feature are assigned a field specimen (FS) number that is recorded on related excavation forms and bags and listed in an FS catalogue. Artifacts and samples collected during the investigation are cataloged, processed, and analyzed by OAS personnel or qualified subcontractors. The artifact collection is submitted for permanent curation at the Archaeological Research Collections Unit of the Museum of Indian Arts and Culture in Santa Fe.



## 5 ↘ Monitoring Results

As projected in the monitoring report, the area to be excavated for transformer replacement was located entirely within an area of prior construction disturbance. No intact features, structures, deposits, or human remains were found. Monitoring activities confirmed that only previously disturbed deposits are located within the transformer replacement construction zone. Monitors observed trench excavations, examined mechanically excavated back dirt, and examined and documented trench stratigraphy along hand-scraped sections of trench wall. Representative soil profiles of the three trench walls were drawn to characterize overall fill. Back dirt was not screened since all cultural stratigraphy was redeposited. Since the vault excavation was deemed unnecessary, no profiles were required.

A sample of 109 artifacts were collected from the combined excavations, all of which were from Trenches 1-3 or Hole 1, with the exception of a single deer scapula, which was found on the ground surface inside the old vault. The assemblage consists of glass (n = 33), including a whole ink bottle; Euroamerican ceramics (n = 16); metal (n = 17); bone (n = 39); historic Native ceramics (n = 2); a one-hand mano (n = 1); and a chipped stone flake (n = 1) (Table A1.2). No cultural materials were recovered from Trench 1. All artifacts were analyzed and are discussed in Chapters 6-10.

### NON-CULTURAL STRATA

Three non-cultural strata and one cultural stratum were identified. All three non-cultural strata were impacted to varying degrees by the construction of the Federal Building and other nineteenth and twentieth century disturbances. Two of these, Strata 1 and 3, represent alluvial sediments deposited from upstream sources in the foothills of the Sangre de Cristo Mountains along prominent arroyos washing into the project area as well as Acequia de la Muralla. Stratum 2 may have been brought into the area as construction material from an off-site location.

**Stratum 1** is an alluvial deposit consisting of very fine to coarse grained granitic sand (7.5YR 5/4, brown). The sand was unsorted with the exception of several thin (< 1 cm thick) bands of very fine sand between thick deposits of mixed grain sizes. Gravels were extremely rare (< 1 percent). Stratum 1 likely derives from one or more primary drainages flowing directly into the project area from higher elevations along Arroyo de los Mascaras, Arroyo Barrancas, Arroyo Ranchito, and Arroyo de la Piedra. Acequia de la Muralla also flowed north of the project area between North Federal Place and the Scottish Rite Temple. Stratum 1 appears to have been deposited in episodes of moderate energy based on its thickness, where bedding could be discerned, and its fairly unsorted character. The near absence of any rock content larger than 5 mm suggests the alluvium is not related to flooding episodes.

Where it was intact in the project area, Stratum 1 typically occurred at the base of the profile in the excavated trenches, though its top boundary varied considerably depending on the degree of intrusion from the 1961 Federal Building construction. Stratum 1 was highest and thickest at the intersection of Trenches 2 and 3, where it extended from 35-112 cm bgs. It became increasingly thick at the north end of Trench 3 and trended upward. It was thinnest at the south end of Trench 3, where it was completely bisected by overlying, redeposited Stratum 100. Stratum 1 was extremely unconsolidated and unstable, flaking away from the trench walls almost immediately after exposure, forming a beach-like surface on the trench bottom.

**Stratum 2** consists of yellowish brown (10YR 5/6) sandy clay with 1 percent calcium carbonate bits and 2 percent angular gravel measuring less than 2 mm in length. Its uniform, dark yellow color and discrete, redeposited contexts suggest it may represent construction infill from an off-site location. In Trench 2, it was layered with discrete deposits of Strata 1 and 100 and bisected by a broad, thick deposit of cobble gravel, which extended

south to the post office retaining wall. Its greatest thickness occurred in Trench 2, where it extended between 28 and 98 cm bgs. In Trench 3, Stratum 2 occurred only in the southernmost 3.5 m, where it was discontinuous below the concrete and did not exceed 12 cm in thickness.

**Stratum 3** was an alluvial layer of dark yellowish brown (10YR 4/6) silty sand that comprised the lowest layer in Trench 2, the only location of this stratum. It was below Stratum 1 and extended 80–110 cm below ground surface. No gravel or calcium carbonate inclusions were present.

### CULTURAL STRATA

Stratum 100 was the only cultural layer encountered during the project. It was consistently redeposited with natural strata, historic and modern construction materials, and modern trash in all three trenches, in Hole 1, and in fill surrounding the fiberglass base of the old vault. Stratum 100 was dark yellowish brown (10YR 4/4) silty clay. Rock and gravel content was extremely low (< 1 percent) and consisted of angular granitic materials. All artifacts recovered from excavated areas originated from Stratum 100. The thickest and deepest deposits of Stratum 100 occurred in Trench 1, where deposits occupied the entire profile below the concrete from 28–122 cm bgs. Trench 3 was comparable at the far south end where it extended from 35–135 cm bgs but trended higher and thinner as it extended north. In Trench 2, Stratum 100 was only about 45 cm bgs but became deeper as it extended west toward Trench 1.

All cultural materials recovered during the project originated from Stratum 100. Most of these occurred in the upper 30 cm of Stratum 100 in all trenches. These consisted of Euroamerican ceramics, glass, metal, bone, and historic Native American ceramics. Charcoal and ash inclusions were diffuse in all trenches except Trench 3 North where a concentration of redeposited ash, charcoal, and artifacts occurred at the far north end of the trench closest to Paseo de Peralta. Though Stratum 100 has been redeposited in all excavated contexts, it clearly derives from mid- to late nineteenth century refuse deposits in the area of the Federal Oval and may be intact north of the project area. Most Euroamerican artifacts from Stratum 100 date from the mid- to late nineteenth century (Chapter 6).

### TRENCH DESCRIPTIONS

Three intersecting trenches were excavated for conduit installation on the north side of the Montoya building; all were located within a subtriangular area designated in the Electrical Site Plan. The trenches formed a dogleg connection between the PNM transformer near the south edge of Paseo de Peralta and the north staircase wall of the Montoya building (see Fig. 1.8). Excavation began by removing the 8 inch (20 cm) thick concrete surface of the parking lot by cutting and removing roughly 5 ft square slabs individually with a skid steer (Fig. 5.1). Outside of this removal area, the concrete was left intact. Trenches 1 and 2 were excavated within this removal area. The south end of Trench 3 was inside the concrete removal area and the north end turned east into the fenced-in vault area.

**Trench 1** was the first to be excavated. It was located at the far west side of the project area and oriented north–south, perpendicular to the Federal Building, against a marble retaining wall bordering the southern end of the trench. Construction of the Federal Building and the installation of two east–west utility pipes were the major disturbances in this area. Trench 1 stratigraphy was entirely redeposited.

Trench 1 measured 4.6 by .90 m with a maximum depth of 1.22 m bgs in the southern portion and .65 m in the northern portion. Excavation began at the south end, near the staircase wall of the Federal Building, and continued north. Digging was halted after the discovery of an 8 inch (15 cm) diameter perforated PVC drain pipe at 38 cm bgs. The pipe extended east–west across the width of the trench and continued east to Trench 2, where it had been cut and capped. Here, the pipe, bedding, and geotextile extended from 23–65 cm bgs, the excavation limit. The drain pipe was eventually removed to allow Trench 2 to be connected to Trench 1. A second east–west 6 inch (15 cm) diameter PVC pipe was found 1.06 m north of the drain pipe at 50 cm bgs. This was left in place, though it was not bedded. The unstable fill on the east and west sides of Trench 1, near the marble retaining wall, was removed on the second day of excavation. This resulted in the widening of the original trench from .90 to 1.50 m, after which final overview photographs were taken.

A 1 m long segment of the east face of the trench was profiled. The segment consisted entirely





Figure 5.1. Excavation area after the removal of the concrete parking lot, view east.

of redeposited Stratum 100 from top to bottom, indicating that this area had been completely excavated and refilled during construction of the Federal Building (Figs. 5.2.to 5.4). Stratum 100 in Trench 1 displayed a few areas of highly degraded charcoal, one of which appears to be a krotovina. A few small brick fragments were observed, but no additional artifacts were recovered from this trench. Brick fragments here resembled those recovered from waterline monitoring trenches at the location of the Territorial Penitentiary (Winters 2003:42, Fig. 10), where bricks were produced from 1886–1956.

**Trench 2** was oriented east–west, parallel to the Federal Building staircase wall. It measured 14.3 by .85 m and varied in depth from 1.10–1.20 m bgs. Trench 2 intersected with Trench 3 at its east end and Trench 1 at its west end. The construction of the Federal Building; the installation of two water lines, one of which was capped; and one perforated drain pipe were the primary disturbances to stratigraphy in this trench.

Excavation began at the far eastern end at the west wall of Trench 3. This was a variation of the original plan to begin digging at the west end

brought about by the discovery of the perforated drain pipe in Trench 1, which extended into Trench 2. Digging instead shifted to the east end, pending approval to remove the pipe, which occurred later the same day.

Trench 2 stratigraphy consisted of numerous discrete dumping and remixing episodes of Strata 1, 2, 3, and 100, as well as thick, broad deposits of construction gravel. The easternmost 4 m of the north face was profiled since it displayed the most complex stratigraphy (Figs. 5.5. to 5.8). The top layer consisted of very uniform, rounded gravels ranging in thickness from 4–58 cm. In the central area of the profile, a linear extension of gravel dipped down to 92 cm bgs, one of the more prominent indications of redeposition in Trench 2. The gravel area was largest near the center where a broad, deep deposit extended completely across the width of Trench 2 and south to the retaining wall of the post office loading dock. Due to its highly unconsolidated nature, much of the gravel in this central area collapsed into the trench following excavation (Fig. 5.9).

Strata beneath the gravel varied depending on



Figure 5.2. Backhoe Trench 1, view east.

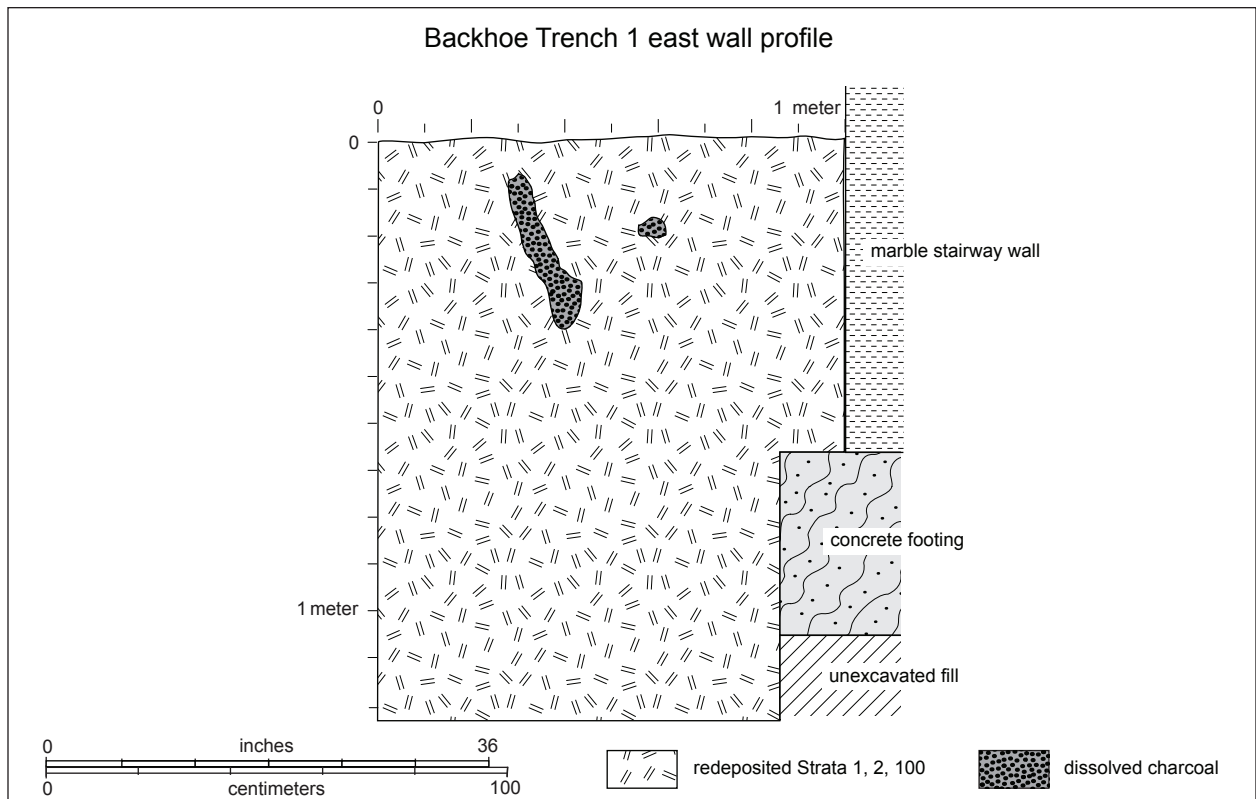


Figure 5.3. Backhoe Trench 1, east wall profile.





Figure 5.4. Backhoe Trench 1, post-excavation, view east.

the location. At the east end of the trench, Stratum 100 directly underlaid the gravel, in the central area, Stratum 1, and at the west end, Stratum 2. The thick alluvial sand of Stratum 1 occupied the bulk of sediment in Trench 2, though it was consistently redeposited with lenses of Strata 2, 3, and 100. Stratum 1 was thickest and deepest at the east end where it extended from 33–114 cm bgs. It was almost completely truncated at the west end by discrete lenses of redeposited gravel and Strata 2 and 100. Stratum 2, which may represent construction sand, extended from 30–92 cm bgs at the far west end of the profile. Stratum 2 was truncated by the gravel and redeposited lenses of Strata 1 and 100.

During the excavation of Trench 2, an old east-west trench boundary associated with the 1961 construction of the Federal Building was encountered. The old trench boundary ran down the lengthwise center of Trench 2 and consisted

of Stratum 100, inside the old trench, and Strata 1 and 2, on the exterior (Fig. 5.10). The old trench was quite narrow, running parallel to the existing retaining wall only about 45 cm to the north. Though it paralleled the existing wall, it was not visible along the entire length of Trench 2. Its east end was located 35 cm from the east end of Trench 2 and continued 3.75 m west, at which point it could no longer be discerned, having possibly been removed during the installation of the perforated PVC pipe at the west end of Trench 2.

At approximately 6.65 m west of the east end of Trench 2, two pipelines bisected the trench along a north-south axis; both were probably installed during construction of the Montoya building. The easternmost of the two was a 6 inch steel pipe encountered at 1.10 m bgs; the westernmost was a textured cement pipe that appeared to be made of Transite, at 1.02 m bgs (Fig. 5.11). Transite is a brand

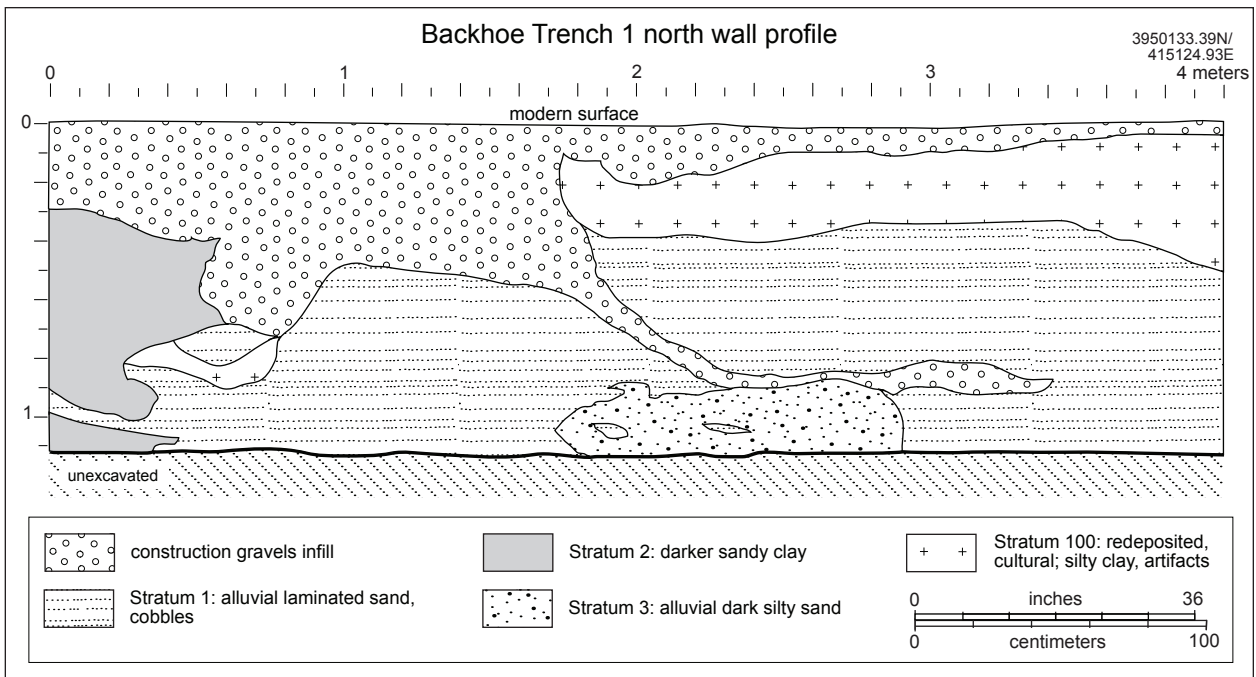


Figure 5.5. Backhoe Trench 2, north wall, profile.

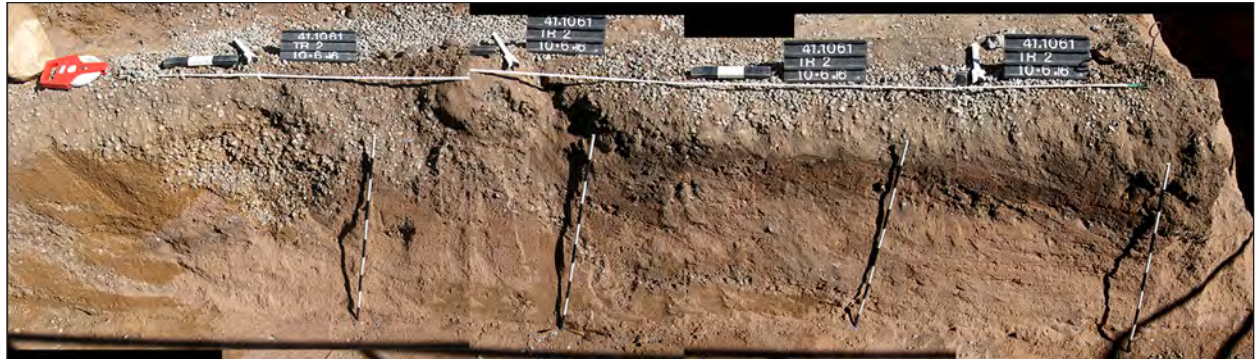


Figure 5.6. Backhoe Trench 2, north face.

of cement-asbestos pipe commonly used for water and sanitary sewer lines and was produced in the decades following World War II. According to the company website (<https://www.jm.com/de/our-company/history-heritage-berkshire-hathaway/company-history>), the Johns-Manville Company of Denver, Colo., was a leading manufacturer of Transite pipe in the mid-1970s. The insulating quality of asbestos was a primary impetus for its widespread industrial use in Europe during the nineteenth century. Asbestos fibers were in particularly high demand for numerous military applications in the U.S. during World War II.

These wartime applications were later adapted to suit a variety of residential and industrial uses, asbestos-cement piping among them (Virta 2011:5, 11). Though use of the material peaked worldwide in 1977, it waned much earlier in the U.S. due to increased public concern regarding health risks (Virta 2006:3). Asbestos use had just begun to decline at the time that the Federal Building was constructed.

The concrete-asbestos pipe encountered in Trench 2 was capped with a poured concrete slab measuring 63 cm long and 22 cm thick. Only a portion of the width was exposed (32 cm) as the



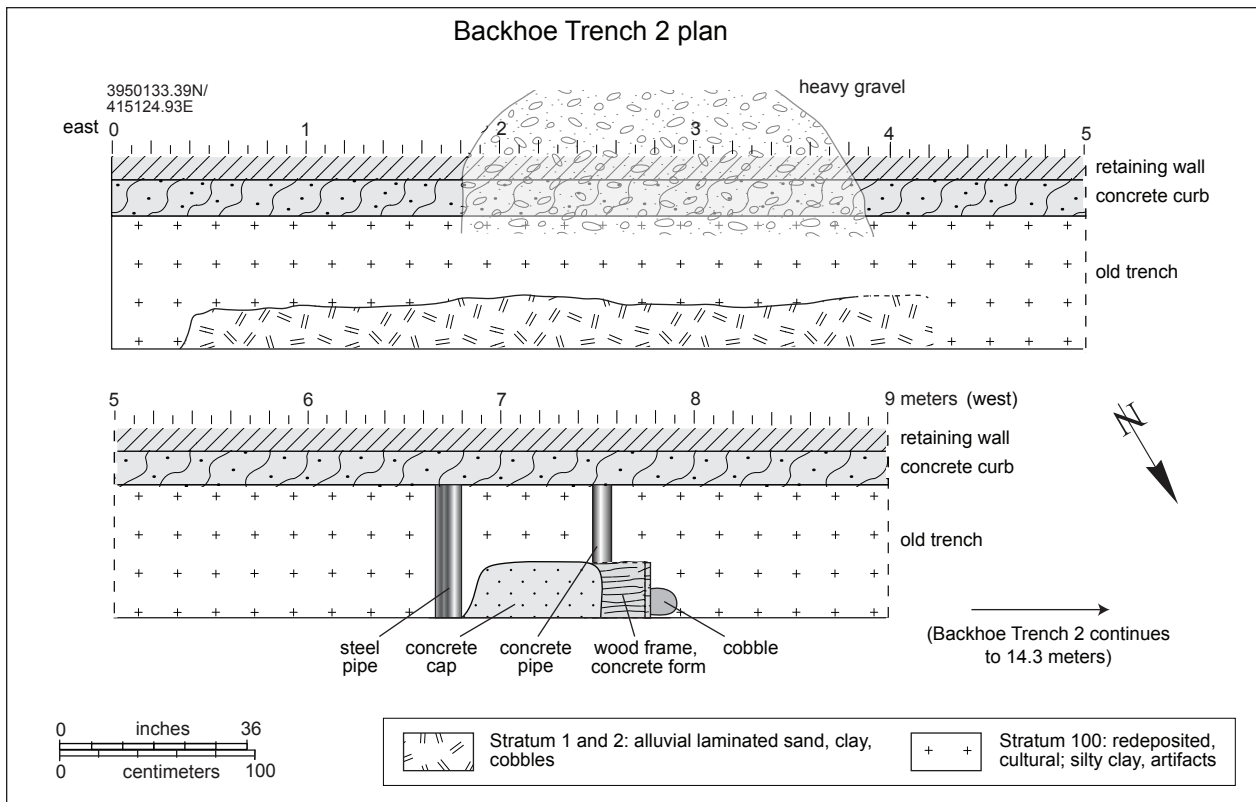


Figure 5.7. Backhoe Trench 2, plan.



Figure 5.8. Backhoe Trench 2, post-excavation, view east.

slab extended north beyond the trench boundary. Adjacent to and beneath it was a rectangular concrete slab poured into a wooden form (32 by 26 by 15 cm). Much of the wood form had rotted, but remaining portions, along with the dimensions of the slab, suggest it was produced from standard 2 by 6 inch milled lumber. A large cobble was wedged under the west edge of the slab, possibly to stabilize the wood form prior to the pouring of the concrete. The south edges of both concrete caps were flush but their top surfaces were offset by 30 cm (72 and 102 cm bgs, respectively). The pipelines and concrete caps were left in place as the installation of new electric conduit did not require their removal.

A total of 39 artifacts originated from Trench 2, all from redeposited contexts. These consist of metal (n = 8), Euroamerican ceramics (n = 4), glass (n = 14), bone (n = 10), a single Madera chert flake, a one-hand mano, and one modern ceramic pipe fragment. Brick and pen tile fragments were noted but not collected. Sparse charcoal inclusions occurred throughout Stratum 100, where all of the artifacts originated. Most of the Euroamerican artifacts from this trench





Figure 5.9. Backhoe Trench 2, gravel deposit, view south.



Figure 5.10. Backhoe Trench 2, boundary of the 1962 construction trench, view west.





Figure 5.11. Trench 2, capped waterlines, ca. 1961.

are associated with construction or maintenance activity. The remainder are linked to domestic activity and indulgence items. The chert flake could derive from either prehistoric or historic contexts, as chipped stone tools were used in both periods. Fauna was primarily represented by commercially cut beef bones (n = 8). Hand-butchered sheep/goat bones were much fewer in number (n = 2).

**Trench 3** straddled the concrete removal area and the unpaved vault area for a total length of 18.24 m. Its southernmost 13.5 meters fell within the concrete removal area, and its northeast section was in the unpaved vault area. Trench 3 intersected Trench 2 near its southern end (see Fig 1.8). Trench 3 was .90 m wide and ranged in depth from .88 m at the far north end to 1.35 m at the south end. The construction of the Federal Building, post office parking lot, and two previous utility installations were the primary disturbances in this area. Utilities that bisected the trench at the north end included a primary electric cable, installed during 1962 construction that extended east-west across the trench at 84 cm bgs, and a copper waterline. The

electric lines had been pulled through a 6 inch gray PVC conduit encased in red concrete. The removal of these lines was required so that digging could continue northward. This involved smashing the red concrete casing and PVC conduit with the backhoe and severing the electric lines. The copper waterline paralleled the north wall of Trench 3 where it turned east to intersect with the new vault. The copper waterline was encountered at 52 cm bgs.

The excavation of Trench 3 occurred on two days. The south end was excavated Oct. 6 and the north on Nov. 11. On Oct. 6, digging began at the south end of Trench 3, adjacent to the retaining wall of the post office loading dock, and ended about 1 meter south of the barrier enclosing the PNM transformers. The southernmost 2 m of the east face of Trench 3 were profiled (Figs. 5.12 to 5.14). The top layer consisted of the concrete curb from 0–28 cm bgs. Beneath the concrete was a discontinuous layer of Stratum 2, the dark yellow sand layer that could potentially represent construction material. Stratum 2 was only present in the southernmost 3.5 m of Trench 3 where it ranged in thickness from 2–10



Figure 5.12. Backhoe Trench 3, east face.

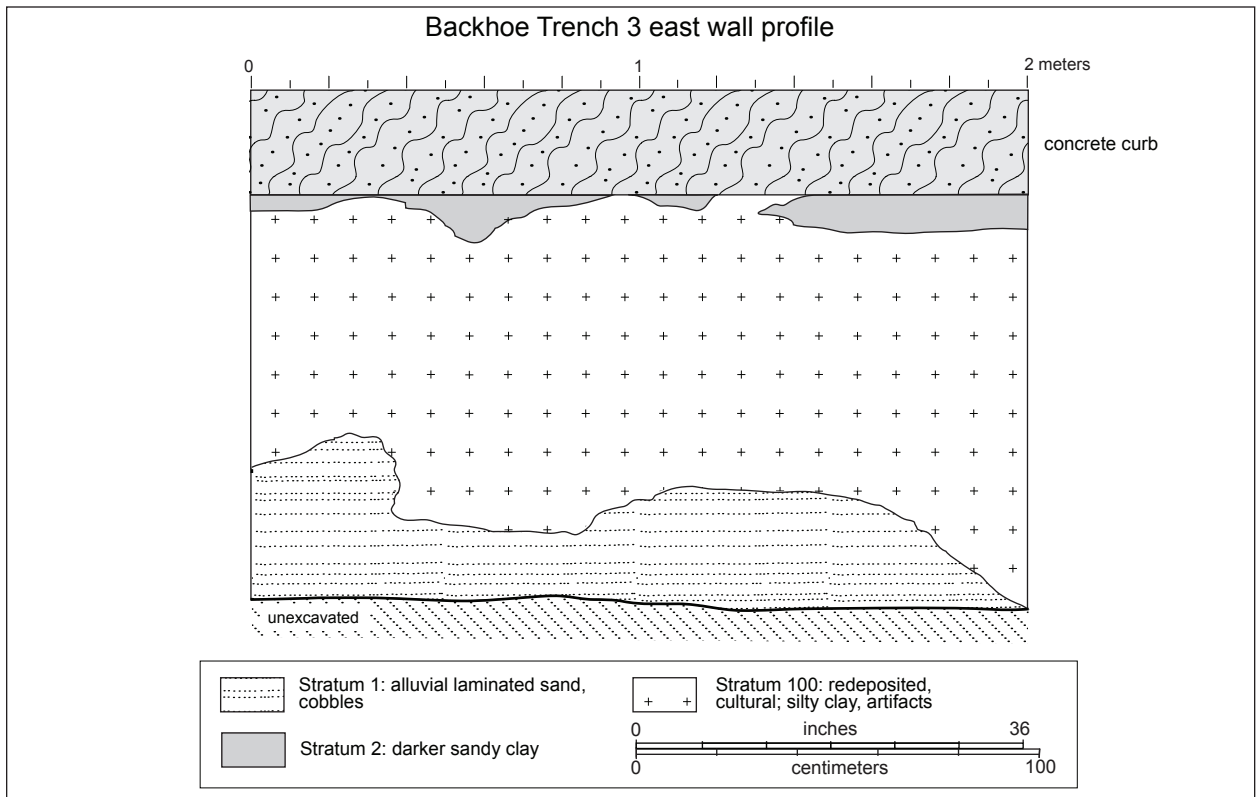


Figure 5.13. Backhoe Trench 3, east wall profile.





Figure 5.14. Backhoe Trench 3, overview, view south.

cm and extended from 28–38 cm bgs at its thickest point.

Beneath this was a deep admixture of Stratum 100 and underlying Stratum 1 that extended from 28 cm bgs to various depths along the length of the trench. At the far south end, Stratum 100 completely truncated underlying Stratum 1 down to 135 cm bgs. Further north, its lower boundary ranged from 91–118 cm bgs within the profiled area. Generally, Stratum 100 trended down from north to south in Trench 3; Stratum 1 trended up from south to north. Stratum 1 had clearly been truncated during the excavation and redeposition of Stratum 100 can be associated with the construction of the federal building or possibly the penitentiary in the mid-1800s. This was particularly evidenced by the partially truncated bedding of Stratum 1 in the profile.

The north end of Trench 3 was excavated on Nov. 11 (Fig. 5.15). Stratigraphy at this end was more complex than at the southern end and consisted of discrete overlain deposits of Strata 1 and 10 (Figs. 5.16 and 5.17). Encased within one layer of Stratum 100 was a redeposited lens of concentrated charcoal and

ash that yielded most of the artifacts from this end of the trench. The charcoal and ash contained lenses of underlying Stratum 1 also positioned directly over redeposited layers of Stratum 1 and 100, indicating that it was not intact. However, refuse, charcoal, and ash were more concentrated here than at any location in the project, suggesting intact refuse deposits could exist north and west of the trench boundary. This was the only excavation that yielded concentrated ash and charcoal, which elsewhere was extremely diffuse or absent altogether. The relationship between the various layers in the profile suggest that the entire refuse deposit (Stratum 100) was truncated down into the alluvial sand of Stratum 1 and dumped back in. This resulted in two types of redeposit: areas of discrete pockets or layers of single strata and areas that were completely mixed, precluding any identification of individual strata.

Artifacts from Trench 3, North and Trench 3, South (n = 53) consist of Euroamerican ceramics (n = 8), glass (n = 13), metal (n = 6), historic Native ceramics (n = 2), and bone (n = 24) mixed with light modern refuse. All artifacts were recovered from redeposited Stratum 100 contexts.





Figure 5.15. Backhoe Trench 3, north end, pre-excitation, view east.



Figure 5.16. Backhoe Trench 3, north end, view west.

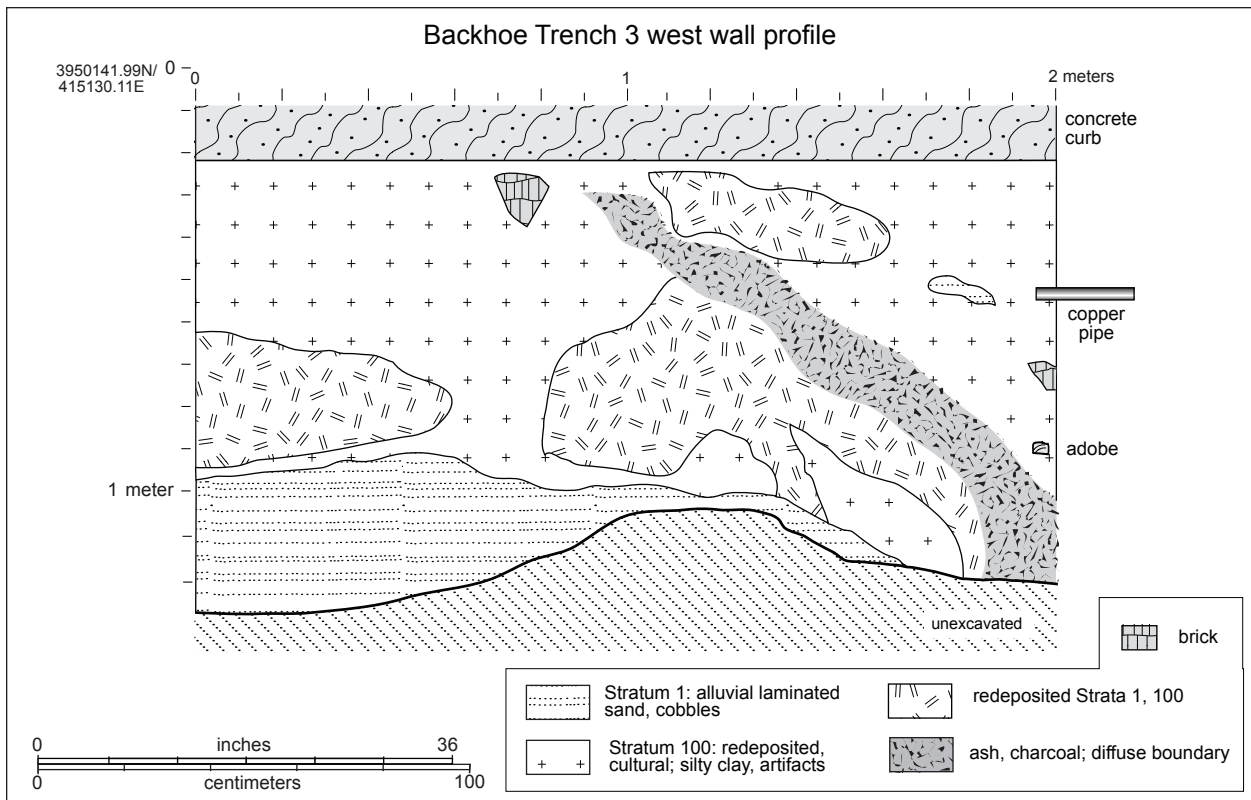


Figure 5.17. Backhoe Trench 3, west wall profile.

Most Euroamerican materials fell into one of two categories: domestic refuse or construction-related activities. Transportation, entertainment, and personal effects items were represented by one or two artifacts each. One Powhoge Black-on-white jar sherd and one thick-walled Plain Buff ware sherd of indeterminate vessel type were recovered from the south end of Trench 3, the only trench to yield Native historic ceramics. Both ceramic types date from the late eighteenth to early twentieth centuries. Most of the fauna consisted of retail beef cuts (n = 20). The four sheep/goat bones were either unaltered waste parts, such as feet, or had been defleshed by hand, suggesting home butchering refuse.

In the south end of the trench, artifacts were concentrated in the upper 30 cm of fill, but in the north end, they were concentrated between 90 and 100 cm bgs. Also, the deeper materials were fairly concentrated, whereas shallower artifacts were

comparatively dispersed—another indication that intact portions of the nineteenth century midden exist north of the project area.

**Hole 1** was located near the center of the south edge of the concrete removal area. It was a 50 cm square hole hand-dug to a depth of 65 cm bgs to locate an existing utility line (see Fig. 1.8). All fill within the hole consisted of redeposited Stratum 100. Artifacts were collected separately from Hole 1 as it was located outside the boundary of Trench 2 but still inside the concrete removal area. Hole 1 yielded 17 artifacts consisting of glass (n = 5), Euroamerican ceramics (n = 5), metal (n = 3), and bone (n = 4), most of which were concentrated in the upper 30 cm of fill. Domestic, construction/maintenance and indulgence items were nearly equally represented in the Euroamerican assemblage. Most of the fauna consisted of retail beef cuts (n = 3). A single unmodified sheep/goat skull part was also recovered.





## 6 Euroamerican Artifact Analysis

Susan M. Moga

Sixty-six Euroamerican artifacts were recovered from Trench 2 (n = 26) and Trench 3 (n = 27) and Hole 1 (n = 13) at the Federal Building Transformer location in downtown Santa Fe, New Mexico (Tables 6.1 and 6.2). The artifacts were analyzed following methods outlined by Boyer et al. (1994) for the Office of Archaeological Studies. The analysis was functionally based and the artifacts were assigned to one of OAS's 12 functional categories, which consist of Economy and Production, Food, Indulgences, Domestic, Furnishings, Construction and Maintenance, Personal Effects, Entertainment, Leisure and Education, Transportation, Communication, Military and Arms, and Unassignable. There is a wide range of human activities that can take place in each of these categories. Other descriptive attributes were also recorded for each artifact, including: material type, aging, frequency, manufacturer, brand, technique, bottle finish, ceramic paste and ware, color, decoration, design, and measurements of intact artifacts. These attributes were entered into a digital database, Statistical Package for the Social Sciences (SPSS) for analysis and comparison within the assemblage. All artifacts in the assemblage come from Stratum 100, a reworked refuse deposit derived from the mid- to late nineteenth century use of Federal Oval land as a city dump.

### TRENCH 2

Euroamerican artifacts recovered from Trench 2 came from five categories. Each of these categories are described independently.

Unassignable artifacts cannot be assigned to a category because they are lacking specific attributes. Most unassignable items are usually broken glass bottle fragments that can be food, indulgences, chemicals, cleaning products, toiletries, or other personal hygiene products. Unassignable broken bottle parts (n = 8) from Trench 2 (Stratum 100) are a variety of colors: aqua, green, olive, and amber. All the fragments date from 1880 to present, with the

exception of aqua glass, which was discontinued in 1920.

Domestic items (n = 3) include a white porcelain cup fragment (1800+), an unknown ironstone vessel (1840-1930), and an unknown clear glass vessel fragment (1930+). These items represent a domestic household.

Entertainment objects (n = 2) are stationery supplies. Two brown salt-glazed stoneware fragments from separate bulk ink bottles were collected. They date from 1850-1880. Ink was purchased in 16-27 oz. bulk bottles and poured into small glass conical shaped, refillable ink bottles that looked attractive on desk tops (Munsey 1970:120-121).

Indulgences (n = 5) are limited to wine and beer. A brown glass punt base (1880+) represents a wine bottle. The remaining broken bottles are amber colored glass beer bottles. Two of the fragments have oil and brandy finishes (1880-1920). All of these glass items are hand blown.

The Construction and Maintenance (n = 8) category has the highest frequency of Euroamerican artifacts in Trench 2. The exact function of several items are unknown, but it has been deemed appropriate to place them in the Construction and Maintenance category. These items include a length of iron pipe, an iron rod, and a metal sheet fragment. The two known hardware items are a round wire nail (1890+) and a masonry nail (1819+). All of these objects are heavily rusted.

### TRENCH 3

Euroamerican artifacts (n = 27) retrieved from Trench 3 come from six categories: Most Unassignable items (n = 10) are broken glass bottle fragments that could be assigned to a number of categories. In Trench 3, all the glass bottle fragments are amber in color (1880+) with the exception of a single aqua fragment (1880-1920).

The Personal Effects (n = 1) category has only one aqua glass medicine bottle (1880-1920). Only

Table 6.1. Federal Oval project, Trenches 2 and 3, Euroamerican artifacts.

Category	Function	Material	Count	Begin Date	End Date	Mean	Finish	Paste	Ware	Color	Decoration	Design
<b>Trench 2</b>												
Domestic	Cup	Ceramic	1	1800	-	-	-	Porcelain	Porcelain	White	Clear glaze	Plain/None
	Vessel, indet.	Ceramic	1	1840	1930	1885	-	Refined Earthenware	Ironstone	White	Clear glaze	Plain/None
Entertainment	Vessel, indet.	Glass	1	1930	-	-	-	-	-	Clear	-	-
	Bulk ink bottle	Ceramic	1	1850	1880	1865	-	Stoneware	Stoneware	Brown	-	-
Unassignable	Bulk ink bottle	Ceramic	1	1850	1880	1865	-	Stoneware	Stoneware	Brown	-	-
	Bottle, indet.	Glass	1	1880	-	-	-	-	-	Green	Embossed	Alphabetic
	Bottle, indet.	Glass	1	1880	1920	1900	-	-	-	Aqua	-	-
	Bottle, indet.	Glass	2	1880	-	-	-	-	-	Olive	-	-
	Bottle, indet.	Glass	3	1880	-	-	-	-	-	Green	-	-
	Bottle, indet.	Glass	1	1880	-	-	-	-	-	Amber	-	-
	Wine bottle	Glass	1	1880	-	-	-	-	-	Brown	-	-
Indulgences	Beer bottle	Glass	1	1880	-	-	-	-	-	Amber	-	-
	Beer bottle	Glass	1	1880	-	-	-	-	-	Amber	-	-
	Beer bottle	Glass	1	1880	-	-	-	-	-	Amber	-	-
	Beer bottle	Glass	1	1880	1920	1900	Oil	-	-	Amber	-	-
	Beer bottle	Glass	1	1880	1920	1900	Brandy	-	-	Amber	-	-
Construction & Maintenance	Pipe	Iron	1	-	-	-	-	-	-	Brown	-	-
	Metal sheet fragment	Iron	1	1888	-	-	-	-	-	Brown	-	-
	Wire	Metal alloy	1	1867	-	-	-	-	-	Brown	-	-
	Nail, wire	Iron	2	1890	-	-	-	-	-	Brown	-	-
	Nail, masonry	Iron	1	1819	-	-	-	-	-	Brown	-	-
	Rod	Iron	2	-	-	-	-	-	-	Brown	-	-
<b>Subtotal</b>			<b>26</b>									
<b>Trench 3</b>												
Domestic	Vessel, indet.	Ceramic	1	1800	-	-	-	Porcelain	Porcelain	White	-	-
	Vessel, indet.	Ceramic	1	1830	-	-	-	Refined Earthenware	Whiteware	White	Clear glaze	Plain/None
	Decorative object	Glass	1	1870	-	-	-	-	-	White milk glass	-	-
	Soup tureen	Ceramic	1	1800	-	-	-	Porcelain	Porcelain	White & brown	Hand-painted	Banded
	Soup plate	Ceramic	1	1840	1930	-	-	Refined Earthenware	Ironstone	White	Clear glaze	Plain/None
Plate	Ceramic	1	1840	1930	-	-	Refined Earthenware	Ironstone	White	Clear glaze	Plain/None	

Table 6.1 (continued)

Category	Function	Material	Count	Begin Date	End Date	Mean	Finish	Paste	Ware	Color	Decoration	Design
Domestic	Vessel, indet.	Ceramic	1	1830	-	-	-	Refined Earthenware	Whiteware	White	Clear glaze	Plain/None
	Vessel, indet.	Ceramic	1	1830	-	-	-	Refined Earthenware	Whiteware	White	Clear glaze	Plain/None
Unassignable	Vessel, indet.	Glass	1	1880	1930	1905	-	-	-	Clear	Molded	Geometric
	Bottle, indet.	Glass	2	1880	-	-	-	-	-	Amber	-	-
	Bottle, indet.	Glass	2	1880	-	-	-	-	-	Amber	-	-
	Bottle, indet.	Glass	1	1880	-	-	-	-	-	Amber	-	-
	Bottle, indet.	Glass	1	1880	-	-	-	-	-	Amber	-	-
	Bottle, indet.	Glass	1	1880	1920	1900	-	-	-	Aqua	-	-
	Bottle, indet.	Glass	3	1880	-	-	-	-	-	Amber	-	-
	Patent medicine bottle	Glass	1	1880	1920	1900	Applied Double Ring	-	-	Aqua	-	Panelled
Entertainment	Ink bottle	Glass	1	1880	1910	1895	Bead	-	-	Green	-	-
Construction & Maintenance	Chain link	Iron	1	-	-	-	-	-	-	Brown	-	-
	Metal sheet fragment	Iron	1	1888	-	-	-	-	-	Brown	-	-
	Pipe	Iron	1	1877	-	-	-	-	-	Brown	-	-
	Metal bar	Iron	1	1877	-	-	-	-	-	Brown	-	-
Transportation	Horseshoe w/caulks	Iron	1	1835	-	-	-	-	-	Brown	-	-
	Horseshoe	Iron	1	1835	-	-	-	-	-	Brown	-	-
<b>Subtotal</b>												
<b>Total</b>			<b>27</b>									
			<b>66</b>									

Indet. = Indeterminate.



Table 6.2. Federal Coal, Hole 1, Euroamerican artifacts.

Category	Function	Material	Count	Begin Date	End Date	Mean	Paste	Ware	Color	Decoration	Design
Domestic	Bowl	Ceramic	1	1800	-	-	Porcelain	Porcelain	White	Glaze, Clear	Plain/None
	Vessel, indet.	Ceramic	2	1830	-	-	Refined Earthenware	Whiteware	White	-	-
	Vessel, indet.	Ceramic	1	1840	1930	1885	Refined Earthenware	Ironstone	White	-	-
Unassignable	Soup tureen	Ceramic	1	1800	-	-	Porcelain	Porcelain	White & Brown	Hand-Painted	Banded
	Bottle, indet.	Glass	1	1880	1920	1900	-	-	Aqua	Molded	None
	Bottle, indet.	Glass	1	1880	-	-	-	-	Amber	-	-
Indulgences	Bottle, indet.	Glass	1	1880	1904	1892	-	-	Amber	-	-
	Champagne bottle	Glass	1	1880	-	-	-	-	Green	-	-
	Beer bottle	Glass	1	1880	1886	1883	-	-	Amber	Embossed	Alphabetic
Construction & Maintenance	Nail, masonry	Iron	1	1819	-	-	-	-	Brown	-	-
	Metal sheet fragment	Iron	1	1888	-	-	-	-	Brown	-	-
<b>Total</b>			<b>13</b>								

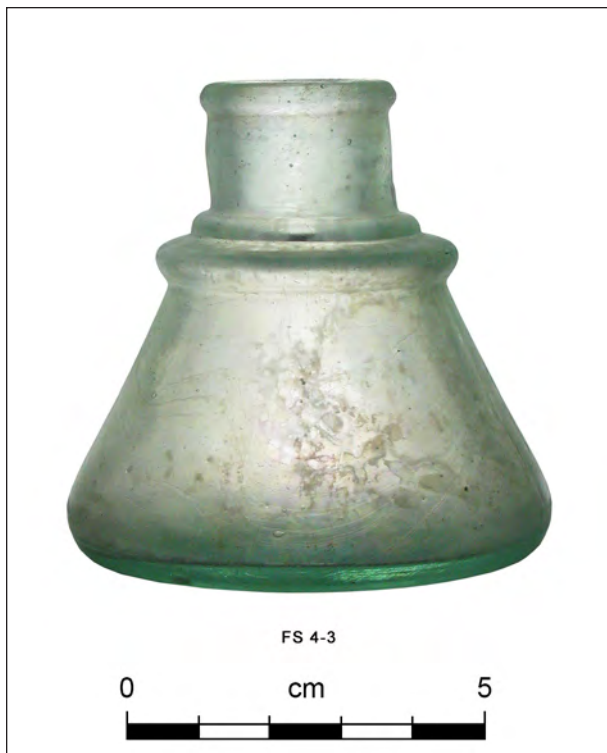


Figure 6.1. Ink bottle (FS 4) found in Backhoe Trench 3.

the upper portion of the bottle is present. It has an applied double ring finish, and the bottle displays a portion of the paneled body. It is devoid of any embossing regarding a brand name.

The Entertainment (n = 1) category consists of an intact, light green glass ink bottle with a bead finish (Fig. 6.1). The hand-blown bottle with one seam is 2 inches in height with a 2 oz. capacity. These universal conical styled bottles were designed to minimize tipping while dipping quills and pens into the ink container (Munsey 1970:120-121).

The Domestic category (n = 9) has several unidentifiable vessel fragments (n = 4). Two fragments are porcelain (1800+), one fragment is plain, and the other displays a hand-painted brown band with brown leaves. The remaining four pieces consist of ironstone (1840-1930) and white ware (1830+). These pieces are white with a clear glaze. One piece of broken white milk glass (1870+) is classified as a decorative object as it was difficult to define its purpose.

The Construction and Maintenance category (n = 4) contains three objects of unknown function. They include an iron metal bar (1877+), a length of metal pipe (1877+), and a section of sheet metal

(1888+). One very large link from an iron chain is also present.

The Transportation category (n = 2) has two highly rusted, iron horseshoes. One shoe is small and was initially thought to be a mule shoe. Standard horseshoe charts proved it to be for a small horse rather than a mule.

## HOLE 1

Thirteen artifacts were collected from Hole 1, all of which originated from the upper 30 cm of Stratum 100. Euroamerican artifacts from Hole 1 are assigned to four categories.

The Domestic Category (n = 5) consists of dinnerware including a broken white porcelain bowl, a portion of a hand-painted, porcelain soup tureen (1800+), and three unidentified vessel fragments of white ware (1830+) and ironstone (1840-1930).

Unassignable items (n = 3) consist of three broken glass bottles, one aqua (1880-1920), and two amber (1880+). One of the amber bottles is represented by a base and body with evidence of a three-piece mold dating from 1880-1904.

Indulgences (n = 2) are infrequent, but present. The kick-up base of a hand-blown champagne bottle dates from 1880. The base from an amber beer bottle is embossed with a manufacturer mark from Louisville Glass Works of Kentucky (Fig. 6.2) who produced hand-blown beer bottles. The glassworks went through a series of owners, stockholders, and name-changes until its final operation date of 1886 (Toulouse 1971:323-324).

The Construction and Maintenance category (n = 3) has one masonry nail (1819+), a small section of sheet metal, and a metal bar, the last two dating from 1888.

## SUMMARY AND CONCLUSIONS

The Euroamerican artifact assemblage from the Federal Oval Transformer project consists of artifacts from numerous functional categories that reflect a variety of human activities. This small assemblage reveals an 1865 domestic environment. Dinnerware, stationery items, beer and wine bottles, medicine bottles, hardware supplies, and animal transportation all suggest domestic use of the dump. Most are ordinary items used on a daily

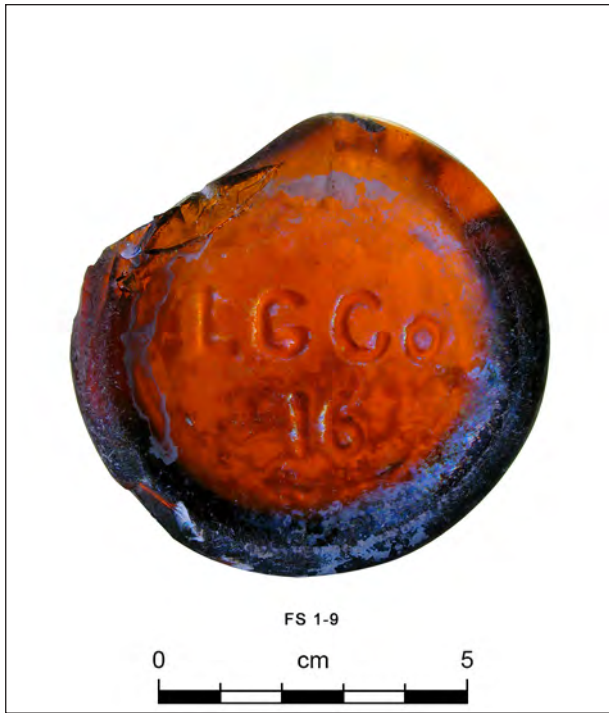


Figure 6.2. Amber beer bottle base (FS 1), found in Hole 1.

basis. There are no items of extravagance with the possible exception of the few porcelain dinnerware pieces.

All artifacts are from the disturbed soils of Stratum 100, a mid- to late nineteenth century refuse layer associated with the use of the Federal Oval as a city dump. These Territorial era refuse deposits were reworked repeatedly during construction of the Federal Courthouse, structures linked to the Tertio-Millennial Celebration, the Federal Building, and recent modern infrastructure, resulting in redeposition of all cultural materials recovered from the 2016 monitoring project.



## 7 Faunal Analysis

Ashley Stabenow and Karen Wening

Thirty-nine faunal artifacts were recovered from the Federal Oval Transformer project (Table 7.1). The assemblage consisted of cattle (n = 32) and sheep/goat (n = 7). Fauna was recovered from Trench 2 (n = 10); Trench 3, South (n = 11); Trench 3, North (n = 13); Hole 1 (n = 4); and from the ground surface inside the old electrical vault at the north end of the project (n = 1).

Most of the bone has been butchered using various combinations of sawing, cutting, chopping, and breaking (n = 27, 69 percent). These methods are identified by the impressions left by butchering tools (Akins 2014:236). Akins (2014:236) notes that axes or cleavers result in a V-shaped mark at the point of impact and break through the bone. Cleavers were used to split carcasses and to cut relatively soft bones such as those from pork and mutton. Hand-saws leave a flat face with irregular heavy striations plus finer striations between. Marks from band saws are similar but are more regular in depth and spacing of striations. Akins (2014:236) notes that “band saws or butcher’s saws were invented around 1808 but were not widely used until around 1850 when durable steel bands became available.” Beef bones were usually sawn; carcasses were usually divided into sides with carcass splitting cleavers (Gust 1983:343).

In addition to changes in tool use, what was purchased commercially changed. Initially, larger portions were purchased and further reduced in home kitchens. As markets became more commercial, smaller cuts were purchased and needed little cutting or chopping (Bowen and Manning 1994:93).

Faunal remains from the Montoya Building retain marks that suggest most of the butchering was commercially done. Of the 36 different butcher marks identified, 23 are saw marks, 7 are knife cuts, and 6 are cleaver marks. Band-saw cuts are indicated by evenly spaced striations on cut surfaces rather than by irregular cuts resulting from hand-sawing. Also, many cattle bones display partial cuts or marks left by the saw skidding across the bone, an event that would be more likely to occur with a band saw. One-quarter of the sawn bone snapped in two after a partial cut

was made. Knife and cleaver cuts result from hand-butchering to flesh bone and split carcasses. Most butchering utilizes a single method, and less than one-quarter is processed with multiple methods.

Seventy-five percent (n = 24) of the cattle are butchered, and 43 percent (n = 3) of the sheep/goat are butchered. However, nearly all of the cattle bones are commercially cut (n = 20, 83 percent), while sheep/goat bones are exclusively hand butchered (n = 3, 43 percent). Cattle butchering is evident in a variety of cuts including short rib, brisket, round steak, fore shank, and sirloin. Very few cattle waste parts, such as feet, are present (n = 2). Sheep consist of rib (n = 4), head (n = 1), and waste parts, such as feet (n = 2).

### HOLE 1

Faunal remains from Hole 1 (FS 1) consist of cattle (n = 3) and sheep/goat (n = 1). All three of the cattle bones are sawn and two others display knife-defleshing or chop cuts. These marks are consistent with steak or chop cuts and rib cuts.

### TRENCH 2 (N = 10)

Remains from Trench 2 consist of cattle and (n = 8) and sheep/goat (n = 2). All fauna comes from redeposited contexts. All but one cattle bone are butchered. Cut marks indicate most bones are sawn; defleshing and deep chop cuts are also present.

Two fragments of the same fractured sheep/goat rib have been recovered. Faint knife cut marks are observable on the medial surface of the larger fragment. Cattle fauna consist of an innominate, scapula, vertebra, femur, tibia, feet, and two ribs. All but the foot bone are fragmentary. The innominate is saw-cut through the ilium just above the acetabulum. It is extremely weathered. The vertebra appears to be saw-cut sagittally through the spinal process, although weathering makes positive identification somewhat difficult. The femur is saw-cut and displays modification from scavenging by carnivores.

Table 7.1. Federal Oval project, faunal remains.

Location	Species	Element	Processing	Cut	Comment	Count
<b>Hole 1</b>	cow (juvenile)	tibia	sawn, defleshed	–	–	1
	cow	lumbar vertebra	sawn	–	–	1
	cow	rib	saw, chopped	–	–	1
	sheep/goat	zygomatic	none	–	–	1
<b>Trench 2</b>	sheep/goat	rib	defleshing	–	–	2
	cow	pelvic	sawn	–	–	1
	cow	astalagus	none	waste	–	1
	cow	scapula	sawn	–	–	1
	cow	rib	defleshing	–	–	1
	cow	rib	sawn	–	–	1
	cow	thoracic vertebra	possibly sawn	–	–	1
	cow	femur	sawn	–	carnivore marks	1
	cow	tibia	deep chop	–	–	1
<b>Trench 3, South</b>	sheep/goat	metatarsal	defleshing	waste	carnivore marks	1
	sheep/goat	ribs	none	–	–	2
	sheep/goat	metatarsal	none	waste	–	1
	cow	rib	sawn, defleshed	–	copper residue	1
	cow	metacarpal	chopped, defleshed	–	–	1
	cow	rib	none	–	–	1
	cow	rib	none	–	–	1
	cow	pelvic	none	–	–	1
	cow	long bone	none	–	–	1
<b>Trench 3, North</b>	cow	sacral vert	sawn	possible sirloin	–	1
	cow	scapula	sawn	–	–	1
	cow	pelvic	sawn	–	–	1
	cow	femur	sawn	–	–	1
	cow	atlas	defleshed	–	–	1
	cow (juvenile)	thoracic vertebra	none	–	carnivore marks	1
	cow	rib	sawn & broken, chopped	short rib	carnivore marks	1
	cow	rib	sawn & broken, chopped	short rib	–	1
	cow	rib	sawn & broken, chopped	short rib	carnivore marks	1
	cow	rib	sawn, broken, defleshed	short rib	–	1
	cow	rib	sawn	short rib	iron stains, weathered	1
	cow (juvenile)	rib	sawn	brisket	–	1
	cow	pelvic	sawn, defleshed	steak or chop cut	–	1
<b>Inside old vault</b>	cow	humerus	sawn	foreshank cut	copper stains, light weathering	1
<b>Total</b>						<b>39</b>

The tibia exhibits the deep chop marks characteristic of a cleaver or axe that cut and splintered the bone along one edge of the fragment. The other edges of the fragment exhibit green breaks. Copper residue is present on the interior surface of the fragment. Both rib fragments probably represent short rib cuts, based on the presence of hand-saw and deep chop marks. Of the 36 different butcher marks identified, 23 are saw marks, seven are knife cuts, and six are cleaver marks. All exhibit copper and iron residue. The cattle foot bone is likely a discarded waste product.

### **TRENCH 3, SOUTH (N = 11)**

Faunal remains from Trench 3 consist of cattle (n = 7) and sheep/goat (n = 4). All are recovered from reworked deposits. Only four are butchered, the most notable being a sirloin cut from a juvenile cow. All others are unmodified.

The seven cattle bones are represented by ribs (n = 3), pelvis (n = 1), sacral vertebra (n = 1), feet (n = 1), and long bone (n = 1) fragments. One of the ribs is saw-cut with lengthwise striations possibly created by saw teeth scraping across the surface of the bone or during defleshing. The cut is consistent with rib or short rib butchery. Metal staining from copper or brass is present on the surface. The second rib fragment is fractured near the rib head and shows some signs of weathering and root stippling. The third appears to be an extremely weathered lateral portion. The pelvic fragment is unmodified, very weathered, and porous. The sacral vertebra is from a juvenile animal. It is sawn along the medial plane as is typical of sirloin butchery. The metacarpal displays parallel marks from saw teeth scraping parallel to the bone during processing. The long bone is tentatively identified as cattle, exhibits spiral fracturing, and is completely covered in root stippling.

The four sheep/goat remains consist of two metatarsals (feet), one of which is whole, and two refit rib fragments. The whole foot bone displays knife cut marks and evidence of carnivore scavenging. The rib is extremely weathered.

### **TRENCH 3, NORTH (N = 13)**

Faunal remains recovered from Trench 3, North consist entirely of cattle. All are recovered from redeposited contexts. Body parts consist of ribs (n = 6), scapula (n = 1), pelvic fragments (n = 2),

vertebrae (n = 2), femur (n = 1), and humerus (n = 1). All exhibit butchering marks, with the exception of one vertebra from a juvenile.

Five of the ribs display the sawn-and-broken or chopped cuts consistent with short ribs. One represents a brisket cut from the humerus of a juvenile animal. A round steak cut was produced from the femur, and another steak cut is indicated by one of the sawn pelvic fragments. A few bones are partially sawn and broken. Copper or iron stains are visible on three butchered bones, and teeth marks from carnivores occur on three bones.

Juvenile animals are represented by two bones. The scapula fragment exhibits two cuts representing false starts on the lateral surface. One of the vertebra, an atlas, is somewhat weathered and exhibits crushing on some edges as well as a single knife cut mark. The second vertebra is unfused at the anterior and posterior epiphyses of the vertebral body indicating it originates from a juvenile individual. Two marks consistent with scavenging are present. One of the saw-cut pelvic fragments retains a small copper stain, and another is iron-stained and root-stippled. The humerus, representing the brisket cut, seems to have been initially butchered with a saw but finished by splitting the fragment from the majority of the humerus. Of the six rib bones, one retains long striations that indicate a saw may have raked down the bone during cutting.

### **ELECTRICAL VAULT INTERIOR (N = 1)**

The existing electrical vault inside the fenced in area at the north end of the project area was removed. On the ground surface inside the vault, a single cattle scapula was found. It is saw-cut through the neck and spine of the scapula near the distal end and through the blade near the proximal end. A single knife cut mark is present on the medial side. The spine and central portion of the blade exhibit crushing. The anterior edge of the fragment displays copper and iron residue as well as an unidentified blue-gray substance on the surface.

### **DISCUSSION AND CONCLUSIONS**

Several archaeological projects in and around the Federal Oval document the use of the project area for city refuse dumping in the nineteenth century (Hannaford 1997; Scheick 2005; Wozniak 1992a,



1992b). Though this land was selected as the location for the new Federal Courthouse as early as 1866, the building sat unfinished for nearly 30 years while the area continued to be used for refuse and adobe production (Purdy 1972:8). According to Purdy (1972:8), both of these activities ended when the area was selected as the site for the Tertio-Millennial Celebration in 1883. The choice of the lot for this event spurred an ambitious cleanup of the area that included clearing and grading (Purdy 1972:8). If the area was no longer used for refuse after the 1883 event, most of the refuse deposits should predate the 1883 event. Much of the accumulated refuse in the area was used to backfill the artificial pond built for the Tertio Millennial event, including Spanish Colonial period materials (Hannaford 1997:13). These earlier materials were not encountered during the current project. Rather, the fauna reflects nineteenth century domestic refuse, particularly in the high percentage of retail beef cuts that comprise the majority of the fauna, while home-butchered sheep/goat parts are much fewer in number. This distribution is typical of residential refuse in the late nineteenth century when the consumption of beef increased and the use of commercial band saws for butchering was commonplace.

Since all of the fauna was recovered from redeposited contexts, temporal changes in beef and mutton consumption cannot be discerned, but the ubiquity of retail-cut beef suggests at least some portion of the refuse reflects use in the last quarter of the nineteenth century. However, though fauna was recovered from disturbed contexts, it almost certainly

derives from intact deposits related to the nineteenth century use of land within the Federal Oval for city refuse. This is particularly true for those from Trench 3, North, which is the most proximate to potentially intact deposits. Cattle and sheep are common in nineteenth century residential assemblages, though their proportions differ depending on ethnicity. Akins (2014:242–243) compares and contrasts faunal assemblages from Hispanic and Anglo households in the Capitol Complex area that date from the late nineteenth to twentieth centuries. Akins notes that overall consumption of beef increased over time for both Hispanic and Anglo families, but was more prevalent for Anglos. Hispanic families also ate more beef but continued to raise and butcher sheep and goats.

The high proportion of retail beef cuts in the Federal Oval assemblage may indicate that the dump was primarily used by Anglos, or that retail beef cuts were more likely to be deposited at a city refuse area. The sheep/goat bones in the assemblage are entirely butchered by hand and are few in number, possibly because waste products from domestic processing were more likely to have been buried in domestic refuse pits rather than transported to a city dump. Numerous domestic refuse pits were encountered in the Capitol Complex neighborhood project, where they were most often linked with Hispanic families (Craw 2012:282–283; Akins 2014:253). Also, a city refuse site may have been the most likely location for waste produced by professional butchers, which would result in higher proportions of commercially cut beef.

## 8 Ceramic Analysis

C. Dean Wilson

Two sherds were recovered during the Federal Building Transformer Replacement project, both from redeposited Stratum 100 in Trench 3, South. One is a Powhoge Black-on-white jar sherd, and the other is a thick-walled Plain Buff ware sherd of indeterminate vessel type. Both of these ceramic types date from the late eighteenth to early twentieth centuries. The development of these styles is detailed in a study of historic ceramics from excavations conducted for the Executive Office Building in downtown Santa Fe (Wilson 2014:276–280), portions of which are reproduced here.

Many of the changes resulting in the distinct characteristics of modern Pueblo decorated pottery that have so impressed collectors, historians, and archeologists alike were largely influenced by a series of dramatic demographic and economic changes occurring from the late eighteenth to the early nineteenth centuries. Based on historic documents and material evidence, Ross Frank (1991; 2000) characterized the first part of the span during which Powhoge Polychrome was produced in the Tewa province as a time of dramatic change in the relationship between the Hispanic villagers whom he refers to as “*vecinos*” and various Pueblo groups. Distinct developments documented for this period are assumed to have been influenced by events that included the cessation of hostilities with surrounding nomadic Indian groups and population reduction related to a smallpox epidemic that changed the Pueblo/Hispanic settler demographic balance (Frank 2000).

The increasing production and expanding trade of Pueblo Indian pottery under the influence of the Hispanic population seems to have affected the style and quality of decorated pottery forms. By the late eighteenth century, the production of pottery with traits typical of Powhoge Polychrome had become firmly established. Most characterizations

of Powhoge Polychrome, and of contemporaneous types produced in other Pueblo provinces, as described by Frank (1991; 2000), are based on previously discussed trends noted for complete storage jars housed in museums and private collections. Stylistic trends include the replacement of cloud feathers and other formalized designs occurring on earlier types with less organized decorative motifs.

Changes in decorative styles during this period correspond to elements of contemporary religious items produced by Hispanic artisans at the end of the late eighteenth century. These new design styles appear to reflect the transformation of earlier styles into new modes of representation acceptable to both Pueblo potters and Hispanic consumers. The increased sloppy execution of pottery decoration and imperfect shaping and firing of vessels notable in decorated pottery of this time has been interpreted as an indication of time-saving compromises made to meet the expanding vecino market (Frank 1991; 2000).

Following the arrival of the railroad in Santa Fe, decorative motifs on traditional Pueblo designs and technologies were encouraged by collectors and curators. Such a shift in consumer tastes, coupled with subsequent requirements for Pueblo pottery design, seem to have been foreshadowed by the forms of Powhoge Polychrome jars taken from Tewa villages by collectors, a factor that may have partly served as a model for the later production of jars. This resulted in the production of pottery forms made explicitly to cater to the tastes of tourists and collectors and also may have encouraged the revival of earlier pottery forms and styles, such as were manifested in the production of elaborately decorated polychrome jars. These were deemed to represent excellent examples of the Pueblo artistic tradition worthy of collection and display.





## 9 Chipped Stone Analysis

Mary Weahkee and Karen Wening

One chipped stone artifact was recovered from the Federal Building Transformer Replacement project: the medial portion of a flake (2.0 by 3.4 by .5 cm). The material type is Madera chert, which is sourced in the Sangre de Cristo Mountains east of the project area. The dorsal surface of the flake exhibits waterworn cortex, indicating that the tool stone was procured from a secondary source. This could be any one of several principal drainages flowing into the project area from the mountains, including Arroyo de las Mascaras, Arroyo de las Barrancas, and Arroyo de la Piedra, all of which derive from the Sangre de Cristo Mountains. Two lateral edges of the flake exhibit unidirectional wear, one of which is additionally rounded. Unilateral wear suggests it was used for scraping activity on one edge; the

rounded unilateral edge indicates multipurpose scraping and cutting.

The flake was recovered from Trench 2 in redeposited contexts of Stratum 100. Given this disturbed context, the flake cannot be confidently assigned prehistoric or historic status, particularly since the largest proximate site, LA 1051, reflects intensive multicomponent occupation and use of the area during the Coalition, Classic, and Spanish Colonial periods. Chipped stone tools and debitage of Madera chert were recovered from mixed Spanish Colonial and prehistoric contexts at LA 1051. Most formal tools in these contexts were assigned prehistoric status, but strike-a-light flints, and flakes struck from them, were the most common tool type recovered from historic contexts at LA 1051 (Moore and Bird 2011:260–261).



## 10 ↴ Ground Stone Analysis

Karen Wening

One ground stone artifact was recovered from the Federal Building Transformer Replacement project, a whole one-hand mano (11 by 8.1 by 5.4 cm). The tool is formed from a rounded, oval cobble of local tan-colored metaquartzite. It is heavily abraded on two opposing biconvex surfaces, both of which display linear striations across the width axis. The use surfaces are worn nearly to a polish and bear no evidence of rejuvenation. Battering and crushing wear occurs sporadically around the perimeter of the mano and is especially pronounced at both ends and along one side. Also, scattered impact scars appear on one ground surface near the end suggesting use as a hammerstone.

Metaquartzite is available in abundance in the Santa Fe area. It is sourced high in the Sangre de Cristo Mountains where extensive outcrops occur in the Hondo Group of the Ortega Formation (Bauer 2004:193; Robertson and Moench 1979:165). The cobble form of the LA 114261 metaquartzite indicates that it was procured from a secondary source. The most likely source of metaquartzite

cobbles in the project area is the Santa Fe River, where such rocks were observed during fieldwork. This and numerous other smaller, west-flowing drainages sourced in the mountains transport tool stone into the project area, including Arroyo de las Mascaras, Arroyo de las Barrancas, and Arroyo de la Piedra, all of which derive from the Sangre de Cristo Mountains. Metaquartzite cobbles also occur in the Santa Fe River and as far west as the Rio Grande (Koning et al. 2002:76).

The mano was recovered from the backdirt of Trench 2 in a redeposited mix of Strata 1, 2, and 100, indicating that it was not in situ. Stratum 100 probably derives at least partially from repeated reworking of sediments from multiple prehistoric sites in the area, particularly those of LA 1051 and LA 143460, but this does not necessarily link the mano to prehistoric contexts. Use of ground stone tools by native groups continued well into historic times, indicating that the mano could have been used to process food or produce flakes from a core in post-contact periods.





## 11 ↘ Summary and Recommendations

### Karen Wening

The replacement of the transformer at the Joseph M. Montoya Building involved the monitoring of three utility trenches and a small utility-locate hole on the north side of the building. No new excavation was required for the installation of the new PNM vault northeast of the building. All three utility trenches contained a reworked mixture of three natural and one cultural stratum. This remixing was most evident in Trenches 1, 2, and 3, South, where multiple deposition episodes of natural and cultural strata could be discerned. In Trench 3, North, nearest to Paseo de Peralta, cultural materials were far more concentrated and comparatively less disturbed, possibly indicating that the intact boundary of the Territorial period dump lay just north of the trench.

All artifacts collected from the excavations originate from this redeposited mix. Euroamerican artifacts and historic Native ceramics from the combined excavations reflect mid- to late nineteenth century domestic refuse. Faunal remains consist mostly of commercially cut beef bones and a minority of hand-butchered sheep/goat bones. Retail beef cuts are increasingly evident in city refuse areas from the late nineteenth century on. Home-processed sheep and goat remains continue to appear in both city and home refuse areas into the early decades of the twentieth century but are increasingly replaced by commercially produced

beef cuts. The chipped stone and ground stone artifacts could be associated with prehistoric or historic activity in the project area, but they could not be confidently assigned to either by redeposited context alone.

The Federal Oval is located within and adjacent to areas of intensive prehistoric and historic occupation and activity that conservatively date from the Coalition period through the modern era. Cultural deposits related to these activities have been repeatedly reworked from at least the time of the Spanish Colonial period and perhaps, most intensively, from the Territorial period on, during construction related to the Federal Courthouse, the Tertio-Millennial Celebration, and the existing Federal Building and modern infrastructure. Previous archaeological investigations in the Federal Oval encountered cultural features and materials associated with Coalition through Statehood activity. The 2016 monitoring project encountered primarily Territorial period materials. These likely derived from residential use of the area for refuse before, and possibly after, the Tertio-Millennial event. As intact cultural deposits related to the Territorial period midden in the Federal Oval may exist just north of the project area, monitoring is recommended for future excavations in the vicinity of Trench 3, North, particularly to the north and west.



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