MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

Excavation at LA 134297

The Library Addition at Gonzales Elementary School, Santa Fe, New Mexico

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ADMINISTRATIVE SUMMARY

The Office of Archaeological Studies, Museum of New Mexico, conducted a data recovery program at the portion of LA 134297 overlapping the library addition at Gonzales Elementary School, Santa Fe, New Mexico. The data recovery program was conducted at the request of Bill Belzner (Chief Operations Officer, Educational Service Center), Mike Harris (Managing Principal, Harris PinnacleOne, LLC), and Larry Zimmerman (President, B-Z Enterprises, Inc.). Previous archaeological testing revealed a possible thermal feature (Feature 5) within Stratum 11 that was defined as accumulated cultural use-deposits including prehistoric artifacts, charcoal, and animal bone. The data recovery program revealed that Stratum 11 was not a product of accumulated cultural use-deposits, but instead originated from organically dark soil deposits accumulating around a marshy spring (cienega). The soil is similar to cienega deposits found in downtown Santa Fe. The mottled layer contains numerous small pockets of darker alluvium that appear as darker "feature-like" lenses in the backhoe profile—Feature 5 was found to be one of these mottled pockets, not a cultural feature. No other features or use-surfaces were identified. Chipped stone artifacts, faunal remains, ceramics, historic artifacts, and a possible human cranial fragment were mixed as a result of secondary alluvial redeposition and extensive rodent disturbance. Artifacts were redeposited from Developmental, Coalition, and Historic period sources. The data recovery plan determined that the site area overlapping the library addition is not likely to yield information beyond that already documented. No further archaeological investigations within the library architectural footprint are recommended.

MNM Project 41.703 BZ Construction Enterprises Inc.
Archaeological Excavation Permit SE-181
NMCRIS No. 83273

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CHAPTER 1

INTRODUCTION

At the request of Bill Belzner (Chief Operations Officer, Educational Service Center), Mike Harris (Managing Principal, Harris PinnacleOne, LLC), and Larry Zimmerman (President, B-Z Enterprises, Inc.), a data recovery program was conducted on the portion of LA 134297 within the proposed construction zone of a library addition at Gonzales Elementary School, Santa Fe County, New Mexico. The site is on Santa Fe Public Schools land (Fig. 1). Fieldwork, which took place between February 4 and February 15, 2002, was conducted by field directors Charles A. Hannaford and H. Wolcott Toll, assisted by staf f archaeologists Jessica Badner, Tess Fresquez, Dawn Kaufmann, David Norris, and Susan Mogá. Forty-one person-days were expended during the two-week field phase. Tim Maxwell was principal investigator . Figures were drafted by Ann Noble, and the report was edited by Pete Brown.

The data recovery program followed procedures included in the previously approved *Data Recovery Plan for LA 134297 Located at Gonzales Elementary School, 851 W est Alameda, Santa Fe, New Mexico* (Appendix 1). The data recovery program was conducted under Archaeological Excavation Permit SE-181.

Before commencing fieldwork, the *National Register of Historic Places* and the *State Register of Cultural Properties* were consulted. No properties listed on, nominated to, or approved for submission to either inventory were located within the proposed project boundaries.

This report complies with the provisions of the Historic Preservation Act of 1966 as amended.

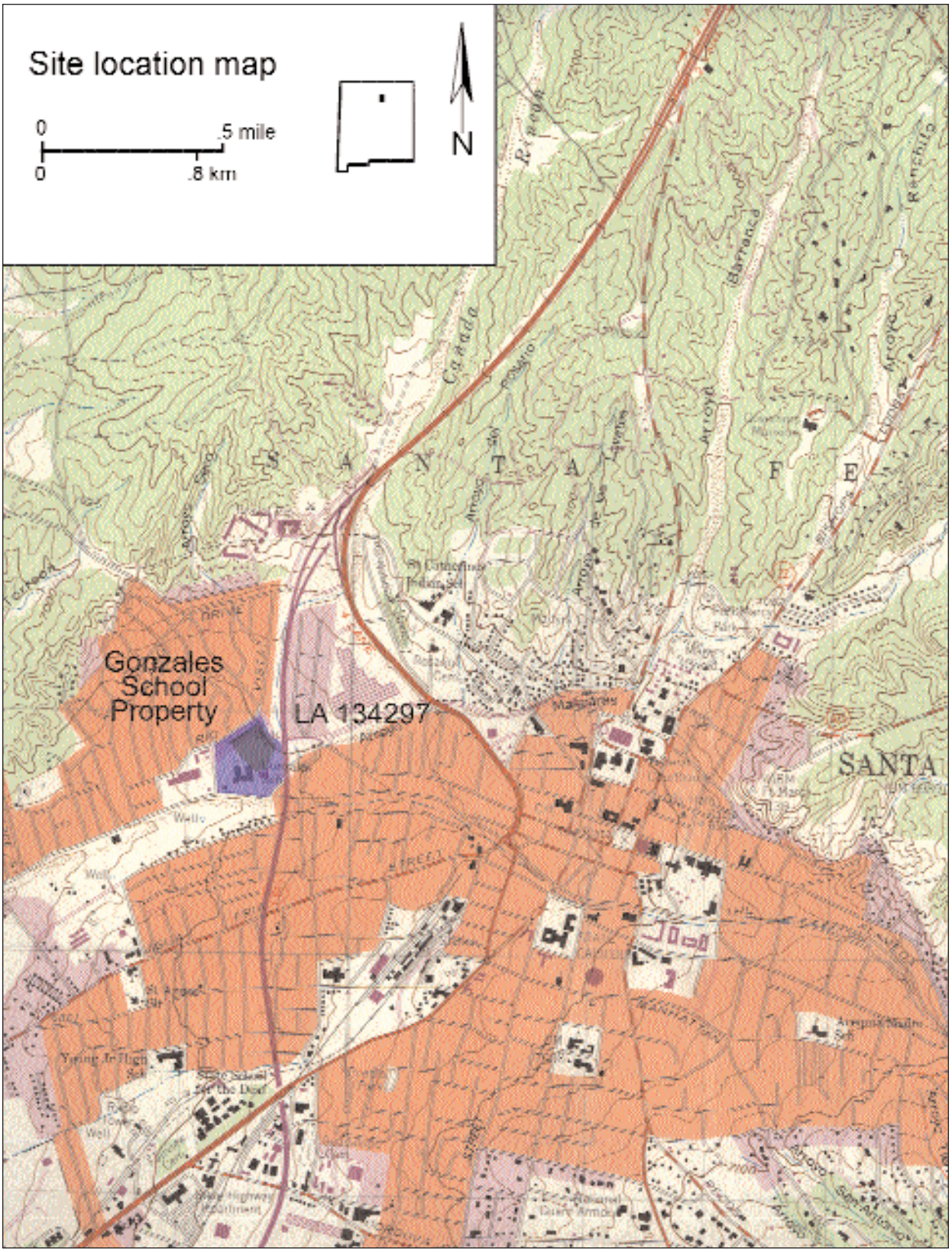

Figure 1. Project vicinity map.

CHAPTER 2

ENVIRONMENT

Pertinent environmental information can be found in the soil survey for the Santa Fe area (Folks 1975), the Cultural Resources Overview of the Middle Rio Grande Valley (Cordell 1979), the Santa Fe Historic Plaza Study I (Tigges 1990), and the initial cultural resource assessment report for the Gonzales Elementary School property (Baletti et al. 2001). Additional environmental discussions can be found in the various archaeological reports from the surrounding area (see Previous Research section in Baletti et al. 200l, and Archaeological Context in Appendix 1 of this report).

The alluviated nature of the site is due to its topographical location near three drainages. The site is situated at an elevation of 2,102 m (6,896 feet) on the nearly level north terrace of the Santa Fe River. The currently entrenched river bed is about 75 m south of the site. The Santa Fe River , which has its headwaters in the Sangre de Cristo Mountains, was the primary regional perennial water supply . The confluence of Arroyo Mascaras with the Santa Fe River is about 75 m east of the site. Arroyo Mascaras is a lar ge secondary tributary of the Santa Fe River with numerous arroyo heads draining the area northeast of Santa Fe. The site is also located at the mouth of Cañada Rincon, which drains the higher terrace to the north and is currently directed into Arroyo Mascaras about 150 m northeast of the site. Depending on seasonal precipitation, these secondary arroyos were susceptible to flooding before urban confinement into their present channels. Similarly , the Santa Fe River was historically subject to major periodic flooding before the creation in the 1880s of reservoirs and flood-control features along the course of the river .

The project area is currently characterized by modern urban introduced vegetation, but the general area is piñon-juniper woodland typical of the Upper Sonoran Life Zone. The confluence of these three drainages would have produced a rather lush riparian environment supporting a wide range of plant and animal life. A reliable water source, concentrated riparian plant and animal life, and arable land along the terraces were important resources to the area inhabitants.

The detailed soil map of Santa Fe County shows that the project area is dominated by the Bluewing Series (Folks 1975:15-16), which consists of level to gently sloping terrace soils of gravelly sandy loam. The mean annual precipitation for this soil series is 12 to 15 inches, and the frost-free season is 160 to 170 days.This is well within the growing season for corn, which ranges from 80 to 135 days (see discussion inTigges 1990:130-141).

CHAPTER 3

ARCHAEOLOGICAL BACKGROUND AND EXCAVATION RESULTS

Archaeological Background

See Appendix 1 for a comprehensive archaeological overview of the surrounding region.

Excavation Results

LA 134297 is defined as a sprawling and potentially complex site covering as much as 4.2 acres (see Appendix 1). The spatially extensive and potentially multicomponent artifact scatter is associated with a statehood period concrete foundation and near-surface charcoal-infused soil stains of unknown temporal association. Artifacts and charcoal-stained soil have been regularly observed on the playground and open spaces surrounding Gonzales Elementary School. During the 49 years that the school has been in operation, teachers and students have collected hundreds of artifacts from the school grounds, including prehistoric sherds and chipped stone artifacts as well as historic ceramics, purple glass, animal bone and various Euroamerican objects. Artifacts suggest cultural-historical associations with Coalition and Classic periods of the Rio Grande sequence, and the protohistoric, Spanish Colonial, Depression, and World War II eras. Known historic use of the property includes ranching/farming, a Civilian Conservation Corps facility, a World War II Japanese American internment camp, and the ongoing activities of the school.

The current excavation project is concerned only with the portion of the site extending into the proposed construction zone of a new library addition at Gonzales Elementary School (Fig. 2). Specifically, the archaeological excavation focused on determining the nature, extent, and integrity of buried deposits previously recorded within the library footprint by Dorshow (2002). These include Feature 5, which was recorded in the east and west profiles of Backhoe Trench 5 along with associated occupational deposits within Stratum 11 (Dorshow 2002:18). Feature 5 measured 1.45 m long by 45 cm thick and was interpreted as a thermal stain most likely representing a fire pit. Two pieces of animal bone and a single chert tertiary flake were scraped from the feature fill during trowel-scraping of the west wall profile. The feature was contained within Stratum 11, described as accumulated cultural use-deposits (Dorshow 2002:7).

Field Methods

The excavation program followed field methods outlined in the data recovery plan (see Appendix 1). Initially, a 1-by-1-m grid system was superimposed over the library-addition footprint. Dorshow's testing phase reference points were not found so a new grid system was established. The grid system was oriented to magnetic north (Fig. 3). The primary datum was located at 50N/50E with an arbitrary elevation of 0 meters. Grids are provenienced from the southwest corner. A secondary datum was subsequently established at 61N/40E with an elevation of 70 cm below the main datum.A line level was attached to this datum and vertical elevations in the main excavation area were taken from this point.

Archaeological investigations began by monitoring the removal of 10 to 30 inches of asphalt and base course from the area of the library footprint and kindergarten playground (see Figure 1-2 in Appendix 1). The asphalt and base course were removed with heavy machinery, and no cultural material or features were noted in either. No additional archaeological investigations were warranted in the area of the kindergarten playground because of the absence of subsurface cultural material. Fill was then removed from Backhoe Trenches 5 and 6, originally dug during the testing phase.

Test Excavation Units

Initially, two 1-by-1-m test excavation units were excavated to evaluate the integrity of the upper fill, which consisted of Strata 5 through 10 as defined during the testing phase (Dorshow 2002:6-8). These strata were recorded as alluvial in origin; Strata 9, 10, and 14 indicated severe flooding.

Excavation unit 60N/39E was situated in the area of Feature 5 found during the testing phase (Fig. 3). The excavation unit was dug to a depth of 1.0 m below the base course, and included Strata 5 through 10 in the

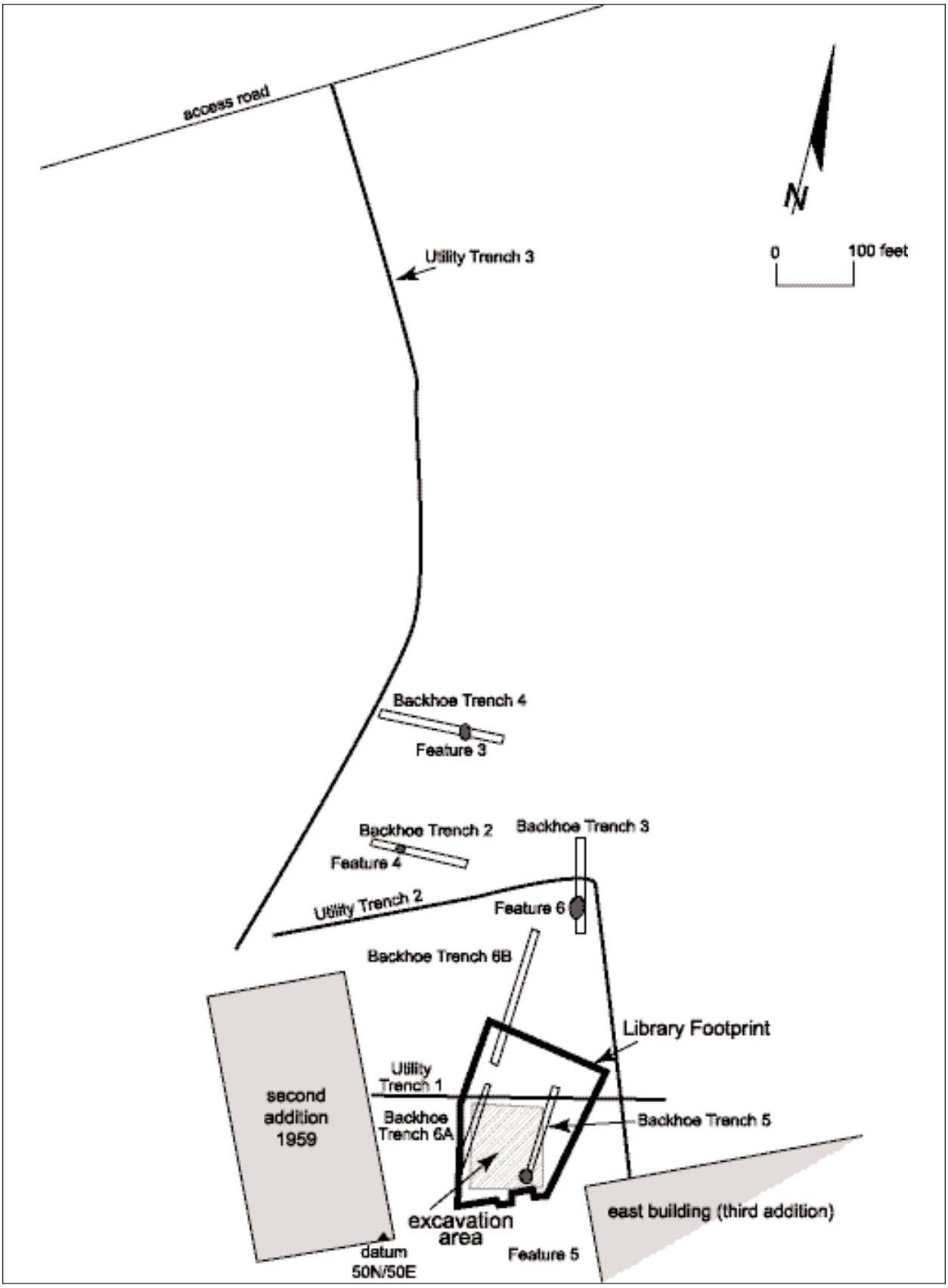

Figure 2. Library footprint and utility line locations.

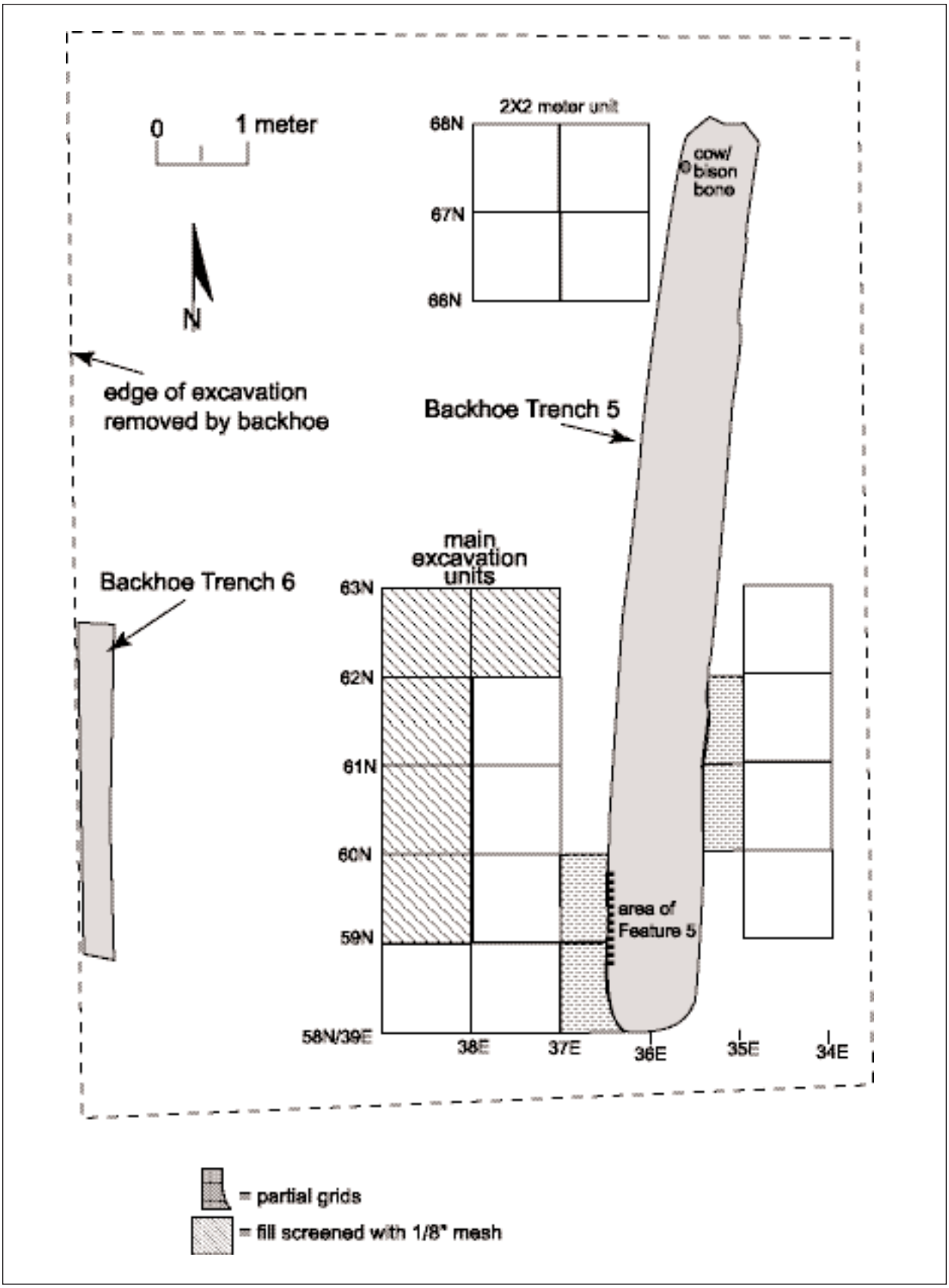

Figure 3. Excavation unit detail.

upper fill (Table 1). The few prehistoric artifacts recovered from the upper fill were thoroughly mixed with recent artifacts. Recent artifacts consisted of construction debris in the form of window glass, plaster and linoleum, along with recent glass beverage bottles and tin can fragments. The excavation unit verified that the upper fill in the vicinity of Feature 5 was a mixed deposit.

Excavation unit 79N/36E was placed about 19 m north of Feature 5 (see Fig. 3). The excavation unit was dug to a depth of 1.0 m below the base course, and included Strata 5 through 10. Prehistoric artifacts were limited to two chipped stone flakes, which were mixed with recent window glass, tin can fragments, and aluminum foil. The excavation unit shows that cultural material is limited in the upper fill, and that it is mixed with recent artifacts.

The two test excavation units revealed that the upper fill contained no evidence of intact features and that artifacts were sparse and mixed with recent debris. The upper strata were mixed by both alluvial activities and apparent previous building demolition. Construction material was restricted to small pieces and the debris was not abundant. There were no remnant foundations and the material may have been redeposited with fill to level the numerous small arroyos crossing the school property. Widow glass, plaster, and linoleum all suggest recent affiliation; some of the window glass extended to a depth of 1.0 m below the surface.

The test excavation units verified that the potential of artifacts in the upper fill to provide significant information was very limited. Heavy equipment was then used to remove about 70 cm to 1.0 m of upper fill from an 11-by-9-m work area around Feature 5. The fill was also removed from a 3-m section of Backhoe Trench 6 and a 10-m section of Backhoe Trench 5 (see Fig. 3).

Primary Excavation Units

Archaeological investigations focused on the primary cultural deposit defined as Stratum 11, which contained the proposed Feature 5 exposed during the testing phase on the east profile of Backhoe Trench 5. Fourteen complete 1-by-1-m units and four partial 1-by-0.5-m units were excavated around the proposed feature (see Fig. 3). The initial five grids were screened with 1/8-inch screen, the remaining units with 1/4-inch screen.

The primary excavation units had similar soil profiles. Stratum 11 averaged about 30 cm thick and was followed by Stratum 14, which was characterized by sterile, coarse-grained sand and gravel of alluvial origin. Stratum 11 was originally defined as accumulated cultural use-deposits including prehistoric artifacts, charcoal, and animal bone (Dorshow 2002:7), but the excavation units revealed that the stratum was actually alluvial rather than of cultural origin. The soil was similar to dark "swamp soil" commonly encountered in downtown Santa Fe. Although the soil appears as dark culturally stained alluvium, there is actually very little charcoal content. The soil more accurately originated not as a result of accumulated use-deposits, but from organically rich deposits accumulating around a cienega. The mottled layer contains numerous small pockets of darker alluvium that appeared as darker "feature-like" lenses in the backhoe profile. Feature 5 was found to be one of these mottled pockets and not a cultural feature. The horizontally deposited north-south beds seen in the Backhoe Trench 5 profile (Appendix 1) were cross-cut from east to west by numerous smaller (1 to 2 m wide) northeast to southwest trending arroyos. Feature 5 was actually accumulated material within one of these smaller arroyos. Stratum 11 does include artifacts, including chipped stone, ceramics, fire-cracked rock, animal bone, metal, and coal (see Table 1). No use-surfaces or features were identified within Stratum 11. Instead of an Archaic cultural affiliation as originally suggested, the presence of sherds, recent animal bone, and metal indicates a mixed deposit including Archaic, Puebloan, and recent material. The deposit is considered to consist of mixed and redeposited contexts. Charcoal flecks were very sparsely distributed throughout the deposit, but no charcoal concentrations or soil oxidation were identified. The presence of fire-cracked rock suggests that features may have been present in the area, but they have been heavily alluviated and no integrity remains.

Following the conclusion that the proposed Feature 5 was not an intact cultural feature, and that Stratum 11 consisted of mixed and redeposited materials, an adjustment was made to the excavation strategy. The fourteen 1-by-1-m excavation units and four partial units were considered sufficient for investigating the area around Feature 5. Because no intact features or activity areas were discovered, the digging of further excavation units in the area was considered unnecessary . Instead of two additional 2-by-2-m units, as proposed in the research design, one additional unit was considered sufficient. These changes to the research design were found agreeable by the staff of the Historic Preservation Division on their site visit of February 14, 2002.

A single 2-by-2 m block consisting of four 1-by-1-m excavation units was excavated at the north end of Backhoe Trench 5, where a cow/bison-sized astragalus was recovered from the base of Stratum 11 in the backhoe profile (see Fig. 3). Soil profiles in these units were similar to those in the primary excavation units three meters south. Stratum 11 was found in each of the grids and continued north outside of the 11-by-9-m work area.

Table 1. Provenience by artifact type.

		Artifact Type										
Grid	Stratum	Chipped Stone	Fire-Cracked Rock	Ceramics	Faunal	Bottle Glass	Window Glass	Linoleum	Plaster	Metal	Coal	**Total**
58N/37E	11	1	-	-	-	-	-	-	-	-	-	**1**
58N/39E	10	-	-	1	-	-	-	-	-	-	-	**1**
59N/35E	11	1	-	-	1	-	-	-	-	-	-	**2**
59N/37E	11	1	-	1	-	-	-	-	-	-	-	**2**
59N/38E	11	1	7	1	-	-	-	-	-	-	-	**9**
59N/39E	11	1	-	1	-	-	-	-	-	-	-	**2**
60N/35E	11	3	-	-	2	-	-	-	-	-	-	**5**
60N/36E	11	-	-	-	2	-	-	-	-	-	1	**3**
60N/38E	10	-	-	-	1	-	-	-	-	-	-	**1**
	11	1	-	-	-	-	-	-	-	-	-	**1**
60N/39E	5	1	-	-	-	2	-	-	-	4	-	**7**
	7	-	-	1	-	3	4	1	-	3	-	**12**
	8	-	-	1	4	4	5	-	12	9	-	**35**
	10	1	-	-	-	-	-	-	-	1	-	**2**
	11	5	-	-	1	-	-	-	-	-	-	**6**
61N/35E	11	3	-	-	1	-	-	-	-	-	1	**5**
	14	-	-	-	1	-	-	-	-	-	-	**1**
61N/36E	11	-	-	-	2	-	-	-	-	-	-	**2**
61N/38E	10	1	-	1	3	-	-	-	-	-	-	**5**
	11	1	-	-	1	-	-	-	-	-	-	**2**
61N/39E	10	2	-	1	-	-	-	-	-	-	-	**3**
	11	3	-	-	6	-	-	-	-	-	-	**9**
	14	-	-	-	2	-	-	-	-	-	-	**2**
62N/35E	11	-	-	-	2	-	-	-	-	-	1	**3**
62N/38E	9	2	-	-	-	3	-	-	-	-	-	**5**
	10	-	-	2	-	-	-	-	-	-	-	**2**
	11	3	-	-	2	-	-	-	-	-	-	**5**
62N/39E	9	-	-	-	-	1	-	-	-	-	1	**2**
	11	6	1	1	3	-	-	-	-	-	-	**11**
	14	1	3	-	6	-	-	-	-	-	-	**10**
66N/37E	11	1	-	-	-	-	-	-	-	-	-	**1**
66N/38E	11	2	-	-	1	-	-	-	-	-	-	**3**
67N/37E	11	-	-	-	2	-	-	-	-	-	-	**2**
67N/38E	11	2	-	-	2	-	-	-	-	-	-	**4**
79N/36E	7	-	-	-	-	-	-	-	-	1	-	**1**
	8	2	-	-	-	-	3	-	-	1	-	**6**
	10	-	-	-	-	-	1	-	-	-	-	**1**
Backhoe	general	2	-	-	5	-	-	-	-	-	-	**7**
Trench	8 5	5	-	1	1	-	-	-	-	-	-	**7**
	11	-	-	-	3	-	-	-	-	-	-	**3**
Total		**52**	**11**	**12**	**54**	**13**	**13**	**1**	**12**	**19**	**4**	**191**

No evidence of features was uncovered. Artifacts consisted of five faunal fragments from medium-sized mammals and five chipped stone artifacts, including a complete obsidian projectile point. The corner-notched projectile point probably dates to the Rio Grande Developmental period. The projectile point and the general sherd assemblage from Stratum 11 support a mixed deposit composed mainly of Developmental and Coalition period components rather than an Archaic occupation, as originally supposed. No other larger bone elements were recovered. Nearly half of the bone recovered from the entire excavation is in the medium-bodied mammal range (probably sheep).

Library Foundation and Utility Trench Monitoring

After completing the excavation project, seven person-days were expended monitoring various utility trenches and the library foundation (see Fig. 2).

Library Footprint

The entire library footprint was excavated by heavy machinery to a depth of 70 cm below the surface, just above Stratum 11. No cultural material was noted during the monitoring.

Utility Trench 1

This utility trench ran east to west and measured 50 cm wide by 1.8 m deep by 36 m long. Stratum 11 was present in the entire trench; it averaged about 40 cm thick, and extended from 80 cm to 120 cm below the surface. Stratum 11 was followed by a thick layer of coarse sand and gravel, and finally large river cobbles at the base of the trench. These large cobbles were probably associated with high-energy alluvial flooding originating from the Pleistocene Santa Fe River. No cultural material was observed in the trench.

Utility Trench 2

This trench extended along the east edge of the project area and then west to the SecondAddition Building. The trench was 50 cm wide, 1.8 m deep, and 73 m long. Stratigraphy was identical to that in Utility Trench 1. Stratum 11 was encountered the entire length of the trench, but no cultural material was observed. This trench came within 2.5 m of the proposed Feature 6 described in the testing phase. Although Feature 6 was not exposed, it is reasonable to assume that it was similar to Feature 5, that is, a natural redeposited alluvial deposit rather than an intact cultural feature.

Utility Trench 3

A long electric-line trench extended from the Second Addition Building north across the playground to a utility pole. The trench was 30 cm wide by 1.5 m deep by 120 m long. Stratum 11 was found to extend 40 m north from the school building, after which only sandy alluvial layers were encountered. This trench provided a long north-south transect across the site area at Gonzales Elementary School. The trench passes within 12 m of the proposed Features 3 and 4 described in the testing phase. No subsurface cultural material was observed. Of interest, both previously described features were recorded within the site area containing Stratum 11. Although these features were not uncovered, they more than likely represent material associated with the dark cienega soil characterizing Stratum 11 rather than cultural features.

Stratigraphy

Subsurface excavation units and utility trenches show that Stratum 11 is a massive deposit measuring at least 60 m north-south and 40 m east-west. The actual extent of the deposit is unknown. The deposit averages about 40 cm thick and extends from about 80 cm to 1.2 m below the surface. The excavation has shown that the deposit did not originate from accumulated use-deposits as originally thought, but from organically rich deposits accumulating around a cienega. The dark brown (7.5YR 3/2) silty loam is typical of the low-energy deposition characteristic of a marshy context. In contrast, Stratum 11 is capped by Strata 7, 8, 9, and 10, which consist of medium and coarse-grained sands originating from higher-energy alluvial flooding. Stratum 11 rests abruptly on Stratum 14, which consists of coarse sand and gravel associated with even higher-energy alluvial flooding. At about 1.80 m below the surface the coarse sand and gravel gives way to large (30 cm and larger) river cobbles characteristic of Pleistocene deposition.

Stratum 11 is very similar to the cienega soils encountered in the plaza area of downtown Santa Fe (Tigges 1990: 75-82). The soil has been termed “black Louisiana gumbo” and “dense, gunky muck” (Tigges 1990: 75). While Stratum 11 was not as black and thick as the downtown cienega deposit, the deposit was very dark compared with the surrounding lighter alluvial

sands, and ranged from silt to thick clay . The stratum was wet and the backhoe often had trouble dumping the thick soil from the bucket. S tratum 1 1 indicates a lost cienega that dried up as the water table lowered.

This marshy landscape along the Santa Fe River and nearby arroyo junctions was undoubtedly important to prehistoric subsistence. The area would have been a source of water and of a concentrated range of plants and animals associated with a riparian environment. No intact features were found during the excavations, but fire-cracked rock suggests the presence of thermal features. The deposit is crossed from northeast to southeast by numerous small runof f arroyos that have mixed, redeposited, and affected the integrity of features at the locality. Artifacts recovered from the deposit may be associated with the Developmental, Coalition, Classic, and Historic periods, but no intact contexts were discovered during the excavations described here.

CHAPTER 4

MATERIAL CULTURE

The data recovery program recovered chipped stone artifacts, ceramics, faunal elements, fire-cracked rock, and recent materials including bottle glass, window glass, linoleum, plaster , can fragments, and coal. In addition, one possible human bone fragment was recovered. The artifacts are all from mixed and redeposited contexts with no surviving integrity . The artifacts are important in terms of representing the range of artifact types present at the site, but the redeposited contexts hinder interpretations. The various artifact categories are discussed in this section of the report. Fire-cracked rock was noted in the field, but not collected. The recent domestic and construction related artifacts are listed, but no additional discussion is presented. The recent materials represent World War II and later artifacts. None of the material can be associated directly with the Japanese internment camp that once occupied the area.

LITHICS

JESSICA BADNER

Fifty-two lithic artifacts were recovered from five strata at LA 134297. The assemblage consisted of one corner-notched projectile point, two possible hammerstones, one chopper-hammerstone, three pieces of utilized debitage, 42 unutilized core-flakes, two biface thinning flakes, and a piece of angular debris. Because the assemblage was small and was recovered from strata that were likely mixed, artifacts were analyzed using an abbreviated from of the *OAS Standard Lithic Artifact Analysis: Attributes and Variable Coding List* (OAS 1994). All artifacts were examined with a binocular microscope at 10× power but attributes such as flake platform width and artifact size were not recorded unless the artifact was a tool.

Table 2. Chipped stone artifact morphology by material type and strat a.

		Strata (No. of Artifacts)					Total	
Morphology Mater	ial Type	5	8	10	11	14	n	%
Unidentified corner-notched projectile point	Obsidian	-	-	-	1	-	1	1.9%
Chopper-hammerstone	Chert	-	1	-	-	-	1	1.9%
Hammerstone	Sedimentary	-	-	-	1	-	1	1.9%
	Quartzite	-	1	-	-	-	1	1.9%
Utilized debitage	Chert	-	-	1	1	-	2	3.8%
Mader	a chert	-	-	-	1	-	1	1.9%
Angular debris	Obsidian	-	-	1	-	-	1	1.9%
Biface flakes	Obsidian	-	-	-	2	-	2	3.8%
Core flakes	Chert	1	2	2	14	1	20	38.5%
Mader	a chert	-	-	-	4	1	5	9.6%
Chalc	edony	-	1	1	5	1	8	15.4%
O	bsidian	-	-	1	4	-	5	9.6%
Q	uartzite	-	-	-	1	-	1	1.9%
Q	uartzitic sandstone	-	1	-	1	-	2	3.8%
Mas	sive quartz	-	-	-	1	-	1	1.9%
Layer total		1	6	6	36	3	52	100.0%

Table 3. Formal and informal chipped stone tools.

Layer	FS	Function	Material	Portion	Length (mm)	Width (mm)	Thickness (mm)	Edge Angle (°)
8	9.1	Chopper-hammerstone	Madera chert	whole	62	69	40	54
8	9.2	Hammerstone	Quartz	whole	44	43	31	na
9/10	17	Unknown (retouched debitage)	Obsidian	lateral/medial	25	10	7	62
11	45	Scraper, possible graver	Chert	whole	46	22	9	22
11	60	Scraper	Madera chert	whole	54	44	20	52
11	19	Hammerstone	Sedimentary	whole	72	70	51	na
14	64	Reworked corner-notched biface	Obsidian	whole	24	18	4	48/44

Material

Table 2 shows artifact morphology and material type by soil stratum. Overall, the dominant material type was chert. Six pieces of Madera-like chert were identified during analysis. Lithic materials were probably locally procured from gravels derived from the Santa Fe and Ancha formations or from alluvial deposits from the Sangre de Cristo Mountains (Post 1996:396). Obsidian made up a little less than 20 percent of the assemblage and was most commonly found in Layers 10 and 11, which had the highest artifact frequency. Obsidian could have been procured in the Jemez Mountains but may also come from Rio Grande gravel deposits (Warren 1979:57).

The assemblage is too small to confidently discuss material distribution between stratigraphic layers, except to observe that the material assemblage from Stratum 11 was the most diverse with 36 artifacts, of which approximately 41 percent were chert, 19 percent were obsidian, and less than 3 percent each were of quartzite, quartzitic sandstone, massive quartz and sedimentary rock.

Artifact Morphology

Eighty-three percent of the assemblage are unutilized core flakes, the majority of which are chert. Most (n=16) core flakes were whole with a roughly even number of proximal (n=9) to distal (n=8), and lateral (n=3) to medial (n=4) flakes. Three core flakes were utilized. Tools are summarized in Table 3.

FS 17 is the lateral/medial portion of a unifacially retouched obsidian flake that may show bidirectional use. A hinge fracture at the distal edge suggests that the flake was broken in manufacture or during use. Possible unifacial wear is visible along the proximal flake edge but the edge itself is very uneven with numerous step fractures, scalloped flake scars and evidence of uneven battering.

FS 45 is a chert core-flake with blade-like morphology. The flake has an angled distal termination with unifacial wear and a small projecting tip that may have been used as a graver or burin. An opposing flake scar at the tip suggests that force was applied to the point, possibly causing a portion to break off.

FS 60 is an axial core-flake of medium- to coarse-grained chert that may have been used as a scraper. Evidence of hard impact and crushing along the lateral and distal edges may be evidence of shaping, later use as a chopping tool, or both. The distal edge of the flake exhibits unifacial wear and rounding. The edge is somewhat uneven suggesting that it may have been used on small, hard media.

Other expedient tools included one chopper-hammerstone, and two possible hammerstones, one of quartzite and one of sedimentary rock.

FS 9.1, a chopper-hammerstone of Madera-like chert, was produced by creating a large axial core-flake, the distal end of which was removed with a single opposing flake to create a bifacial tool. The resulting distal edge is circular in outline and is battered along its length. The dorsal surface of the tool also exhibits evidence of numerous hard impacts on nearly every proximal facet.

FS 9.2 is a possible hammerstone. The small quartzite nodule shows signs of battering, abrasion and numerous metal adhesions along one facet.

FS 19 is a piece of fire-cracked rock that may have been used as a hammerstone. The material is friable and shows evidence of charring and oxidation. Battering is visible along its rounded edge, which has one flake scar. Identification as an artifact is tenuous at best.

Five of the core-flakes are primary flakes. Primary flakes have more than 50 percent ventral cortex indicating that they were likely some of the first removed during core reduction. Two flakes were biface thinning

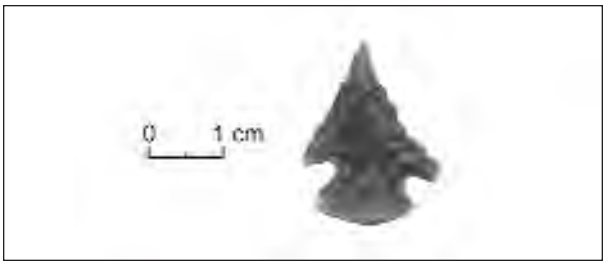

Figure 4. Corner-notched projectile point.

flakes, both of obsidian. Biface flakes are produced during the later stages of biface manufacture and are often long, thin, and curved. Platforms often exhibit opposing dorsal scars. Other distinguishing attributes include dorsal scar orientation, edge outline, thickness, platform type and platform angle.

FS 64 (Figure 4), a small corner -notched obsidian projectile point, was the only formal tool recovered from LA 134297. The middle stage obsidian point was reworked and is asymmetrical as a result. When compared with a typology developed by Christopher Turnbow (1997) to classify projectile points for the OLE project, the projectile point from Layer 1 1 resembles a Trujillo corner-notched artifact in shape. These corner-notched points were predominant in northern New Mexico from the Late Archaic until the Classic period (Turnbow 1997:203-204, 222) but are also found in later contexts. Moore (2003) reports use and discard of small corner-notched points at the Fieldman Site (LA 76138), a seventeenth century farmstead occupied by people from Pecos Pueblo, at which 13 small arrow points were recovered. A combination of a wide possible time range and churned context from which the point was recovered preclude any confident assignment of a precise date range or temporal component. However , predominance of corner -notched points in the Early Developmental period and the transition to side-notched points in northern New Mexico at around A.D. 1 100 (T urnbow 1997:203-204) ar gue that FS 64 is an Early Developmental point.

Synthesis

The lithic assemblage recovered from excavations at Gonzales School provided evidence of primary and secondary core reduction and as well as informal tool use with emphasis on local materials. Biface flakes also supplied limited evidence of possible biface manufacture or maintenance, as did a single obsidian biface that had been retouched. This may be evidence of mixed curated and expedient strategies, whereby local materials not affected by transport costs are used as expedient tools, while less easily available materials such as obsidian are used to produce formal tools. Unfortunately, stratigraphic context does not provide sufficient information to determine whether the chipped stone artifacts from any one layer are associated.

FAUNA

SUSAN M. MOGÁ

A small amount of fauna was recovered from LA 134297 on the Gonzales Elementary School grounds. The majority of the 54 pieces of bone came from redeposited soils. Both wild and domestic species are present in the assemblage, reflecting both the prehistoric and historic use of the site area.

Methodology

A complete analysis was performed on the 54 bones recovered. Bone collected from each layer was assigned a field specimen (FS) number in the field, then a lot number in the lab for individual identification. After each piece was dry brushed it was identified using the comparative collections at the Of fice of Archaeological Studies, then computer-coded using an established coding format that records the taxon, count, age of the animal, element (body part), side, portion of the bone represented, environmental, animal, thermal alterations, and potential processing and modification information.

When specific taxonomic identification was not possible due to extreme fragmentation and weathering of the bone, the specimens were categorized as an indeterminate taxon, based on the size of the animal. The range of unidentified mammals recovered from Gonzales School include: small mammal, medium to large mammal, lar ge mammal, medium to lar ge rodent, small to medium artiodactyl, and medium to large artiodactyl.

Taxa Recovered

Much of the assemblage (T able 4) consists of small to medium artiodactyl bones. Six domestic sheep or goat were identified, so the small to medium artiodactyls are probably sheep or goat. Considering the site's history—it was used as a camp by the Civilian Conservation Corps, and for internment of Japanese Americans—both wild and domestic species are possible.

The commonest species among the recovered taxa is the black-tailed jackrabbit, followed by the cottontail

Table 4. Frequencies and percentages of faunal taxa.

Taxa	Common Name	n	%
Small mammal	Rodent to jackrabbit size	5	9.3%
Medium to large mammal	Dog to sheep and deer size	7	13.0%
Large mammal	Sheep to deer size	4	7.4%
Thomomys bottae	Botta's pocket gopher	1	1.9%
Medium to large rodent	Woodrat size	1	1.9%
Sylvilagus sp.	Cottontail rabbit (probably desert cottontail)	7	13.0%
Lepus californicus	Black-tailed jackrabbit	9	16.7%
Small to medium artiodactyl	Sheep to deer size	8	14.8%
Medium to large artiodactyl	Deer to bison size	4	7.4%
Cf. Bos taurus	Cow 2		3.7%
Ovis/Capra	Domestic sheep or goat	6	11.1%
Total		54	100.0%

rabbit. Botta's pocket gopher, an unidentified rodent, and three indeterminate small mammal bones were also collected. One of the cottontail bones is burned, which may be evidence of prehistoric use of this species.

Large bone fragments from what is probably a cow were recovered from the lower portion of Layer 11. A left astragalus was sawn and the remaining proximal portion of a right radius displays an oblique saw mark. Four unidentified bones categorized as medium to large artiodactyl could also belong to deer, cow, bison, elk or horse. Several medium to large mammal bones and large mammal bones were so fragmented they could only be categorized within the size range of dog to deer.

Taphonomy

Most of the bone in the assemblage (48 of 54 pieces; 89 percent) displays some degree of either animal, environmental, or thermal alteration (Table 5). The most prevalent alteration is environmental damage caused by pitting and corrosion on the bone by movement or acidity of the soils. Roots etched into the bone surface are visible on nine pieces. Thermal activity affects two specimens: a cottontail calcaneum from Stratum 11, and an awl fragment made from a medium to large artiodactyl long bone from Stratum 14. Both bones are heavily charred.

Two specimens are altered by animal activity: carnivore gnawing is visible on a cottontail tibia fragment, and a carnivore tooth puncture is located on the distal shaft of a jackrabbit metatarsal.

Processing and Modification

Evidence of processing was limited in this assemblage (Table 6). Spiral fractures were observed on two femurs, one each from a cottontail and a sheep or goat. The sheep or goat femur also has a chop mark on the proximal shaft. A sheep or goat scapula was chopped with peeling, which occurs when muscle is pulled away from the bone. Portions of bone were cut off of small to medium and medium to large artiodactyl long bone fragments. The medium to large artiodactyl fragment also displays an impact fracture. An astragalus and a proximal radius fragment from a cow were sawn, indicating historic procurement. The astragalus also displays an impact fracture. The awl fragment, which was recovered from redeposited soils in Layer 14, was manufactured from a medium to large artiodactyl long bone. The remnant is nicely formed and polished with numerous striae visible, but the tip and handle are missing. It is heavily burned, ranging in color from dark brown to black.

Discussion

Given the redeposition of soils at this site, and the probability that Stratum 11 (which contained the most bones; Table 7) was once within a swamp zone, it is possible that some or all of the bones in the assemblage were washed into the area by seasonal rains, then remained in situ when the area dried out. The variety of fauna recovered demonstrates both prehistoric and historic faunal use. The amount of fauna recovered and the processing

Table 5. Frequencies of altered faunal taxa.

	Animal Alteration		Burning	Environmental	
Common Name	Carnivore Gnawing	Carnivore Tooth Punctures	Heavy Charring	Pitting and Corrosion	Root Etched
Small mammal	-	-	-	1	2
Botta's pocket gopher	-	-	-	1	-
Cottontail	1	-	1	2	4
Black-tailed jackrabbit	-	1	-	3	3
Small to medium artiodactyl	-	-	-	11	-
Medium to large artiodactyl	-	-	1 (awl fragment)	8	-
Cow -		-	-	2	-
Sheep or goat	-	-	-	7	-
Total	1	1	2	35	9

Table 6. Processing and modification of bone.

	Processing Type						Modification
Common Name	Impact Fracture	Spiral Fracture	Sawn	Portion Cut Off	Peel	Chop	Awl
Cottontail	-	1	-	-	-	-	-
Small to medium artiodactyl	-	-	-	1	-	-	-
Medium to large artiodactyl	1	-	-	1	-	-	1
Cow 1 -			2	-	-	-	-
Sheep or goat	-	1	-	-	1	2	-
Total	2	2	2	2	1	2	1

Table 7. Fauna by strata.

	Stratum				
Common Name	8	9	10	11	14
Small mammal	-	-	-	4	1
Medium o arge amma l m	-	1	3	2	1
Large mammal	3	-	-	1	-
Botta's pocket gopher	-	-	-	1	-
Medium to large rodent	-	-	-	1	-
Cottontail	-	-	-	5	2
Black-tailed jackrabbit	-	-	-	7	2
Small to medium artiodactyl	-	-	3	5	-
Medium to large artiodactyl	1	-	-	2	1
Cow -		-	-	2	-
Sheep or goat[1]	-	-	1	2	1
Total	4	1	7	32	8

[1]Two sheep or goat bones were also recovered from the backhoe trenches.

visible on the bones are insufficient to determine distinct patterns of consumption or procurement. All that can be said is that both wild and domestic animals were found in the project area.

Plant Remains

PAM McBRIDE

The stratigraphic layer of concern at LA 13427 was Stratum 11, composed of dark cienega soil with deposits of alluvial trash. Strata 9, 10 (which overlie Stratum 11), and 14 (underneath S tratum 11) are composed of alluvial deposits with a higher degree of turbulent deposition than Stratum 11. Although carbonized corn cupules, amaranth seeds, and unknown nutshell fragments were recovered from S tratum 11 (Table 8) and are probably cultural, the nature of the deposits makes it impossible to link them with a particular age or cultural af filiation. Unknown stem fragments and hedgehog cactus seeds were recovered from S tratum 14. A wood sample from Stratum 11 produced one piece of piñon wood (Table 9). Wood charcoal from other layers consisted of pine and undetermined conifer from S trata 9/10, undetermined nonconifer from S tratum 10, and one piece of juniper from Stratum 14.

Table 8. Flotation full-sort plant remains by count and abundance per liter .

Stratum	11			14	
FS o.	N 26	40	41	30	65
Provenience	60N/39E	59N/38E	61N/38E	62N/39E	61N/36E
Cultural					
Annuals					
Amaranthus	0.7	-	-	-	-
Chenopodium	-	-	-	1.7	-
Cf. Corispermum	-	-	-	0.6	-
Portulaca	-	-	-	0.6	-
Cultivars					
Zea mays	+ cupule, + unknown reproductive	+ cupule	-	-	-
Other					
Unknown	-	+ nutshell	-	-	+ stem
Perennials					
Echinocereus	-	-	-	-	1.1

Cultural plant remains are carbonized. Plant remains are seeds unless indicated otherwise.
+ Fewer than 10 per liter.

Table 9. Macrobotanical plant remains by count and weight in grams.

Stratum	8	9/10	10	10	11	14
FS No.	9	13	35	39	28	30
Provenience	Backhoe Trench 5	62N/38E	61N/38E	61N/38E	60N/39E	62N/39E
Conifers						
Juniperus	-	-	-	-	-	n=1 0.09)
Pinus	-	n=1 0.09)	(- g	-	-	-
Pinus edulis	-	-	-	-	n=1 0.44)	(- g
Undetermined conifer	-	n=1 (0.09 g)	-	-	-	-
Other						
Unknown	n=4 (26.5 g) plant part	n=9 (43.1 g) plant part	n=3 (2.75 g) plant part	-	-	-
Nonconifers						
Undetermined nonconifer	-	-	-	n=1 (0.68 g)	-	-

Table 10. Ceramic assemblage.

Provenience	Stratum	Ceramic Type	Count	Period
60N/39E	7	Kwahee Black-on-white bowl, tuff temper	1	Late Developmental
	8	Historic Buff Polished, tuff temper	1	Historic
61N/39E	10	Smeared Corrugated jar, sand temper	1	Coalition or Classic
62N/39E	11	Santa Fe Black-on-White bowl, tuff temper	1	Coalition
62N/38E	10	Mica Slipped jar	1	Coalition or historic
59N/39E	11	Plain Corrugated jar, granite temper	1	Late Developmental or Coalition
61N/38E	10	Glaze Polychrome jar rim, latite temper	1	Early historic
59N/38E	11	Indented Corrugated jar, granite temper	1	Late Developmental or Coalition
58N/39E	11	Santa Fe Black-on-white jar, dark clay/tuff temper	1	Coalition
Backhoe	8	Kwahee Black-on-white jar, tuff/sherd temper	1	Late Developmental
Trench 5	8	Tewa Smudged bowl, granite temper	1	Historic
Total			11	

Historically, the fruits of hedgehog cactus were eaten raw, boiled, or dried (Cassette 1935:26, 35-36), and were especially valued for their flavor and high sugar content. The leaves of young pigweed plants were boiled and eaten, or dried for use in the winter; the seeds, which mature in the late summer and early fall, were ground into meal (Cassette 1935). The only thing that can be said about the floral remains is that corn, and possibly amaranth and hedgehog cactus, were resources exploited by occupants of the Gonzales Elementary School area sometime in the past. Wood taxa from local foothills and uplands seem to have been targeted for fuel wood.

Ceramics

The 11 sherds represent types associated with several distinct temporal components, including Late Developmental, Coalition, possibly Classic, and historic periods (Table 10). Four sherds were recovered from Stratum 11 showing Late Developmental and Coalition period temporal affiliations. The presence of these sherds combined with other artifact types shows that Stratum 11 is a mixed deposit and not specifically affiliated with an Archaic occupation as originally thought.

Human Remains

NANCY AKINS

A single piece of bone is most likely from a mature human. The piece is a small (2.8 cm by 1.6 cm, 0.6 cm thick) fragment of cranial case that is heavily pitted on the exterior. The interior resembles the contours found on the frontal bone, and has two small depressions that resemble pacchionian pits. These small pits are the result of erosion of the inner table caused by the enlargement and ossification of arachnoid granulations. They begin small and increase in size and number with age (Mann and Murphy 1990:34). Common locations are along the sagittal suture of the parietals, and the area of the frontal suture on the frontal bone (Gray 1977:60-63).

The piece could be historic or prehistoric and may or may not be Native American. The small piece lacks any diagnostic markers; both the prehistoric and historic faunal bone have erosional pitting to some degree. The fragment was recovered while removing fill from Backhoe Trench 5, which was originally excavated during the testing phase. The fragment was recovered at the south end of the backhoe trench in the vicinity of the proposed Feature 5. The bone most likely originated from Layer 11, but a positive stratigraphic association was not possible because it has both a poor provenience and was recovered from soils showing extreme mixing.

No additional human bone was recovered from formal excavation units positioned along both sides of Backhoe Trench 5. None of the artifacts from the site are believed to be funerary objects.

CHAPTER 5

RESEARCH QUESTIONS

Archaeological excavations at the library addition component of LA 134297 focused on Stratum 11 and Feature 5. Stratum 11 was originally thought to result from accumulated use-deposits associated with a possible Archaic occupation. Feature 5 was described as a large, fire-cracked-rock-filled thermal feature within the stratum. However, data recovery revealed that Stratum 11 was actually associated with a cienega, or marsh deposit, and that artifacts were mixed and redeposited. Likewise, excavations found that Feature 5 was not an intact cultural feature. The poor integrity greatly reduced the data potential of the deposit and precluded address of the proposed research questions.

Chronology

The initial research question outlined in the data recovery plan (see Appendix 1) focused on chronology: When was the library addition component of LA 134297 occupied? The deep cultural deposits exposed in Stratum 11 were originally thought to be older than the Pueblo/protohistoric/historic mix of deposits from the upper strata. The initial guiding assumption was that Stratum 11 was associated with the Archaic period.

The archaeological investigations determined that Stratum 11 was actually a natural cienega deposit. The organically dark soil contains mottled pockets that give the appearance of "feature-like" lenses in the backhoe profile. Feature 5 was found to be one of these mottled pockets with redeposited artifacts giving the appearance of a cultural feature.

Temporally sensitive artifacts recovered from Stratum 11 include a corner-notched projectile point from the Developmental period, sherds from both the Developmental and Coalition periods, sheep and cattle bone from the historic period, and coal from the historic period. The artifacts have been mixed and redeposited by numerous small arroyos crisscrossing the deposit. The alluvial mixing is further compounded by intense rodent activity. Rather than a distinct Archaic deposit, the excavation program determined that Stratum 11 is a dark cienega deposit containing redeposited artifacts originating from several temporal periods. Although lower in the stratigraphic fill sequence, the artifact assemblage from Stratum 11 is similar to the mix of Pueblo/historic period artifacts found in the upper strata.

Subsistence and Technological Organization

The second research question focused on Archaic subsistence and technological organization. Unfortunately, the excavation program determined that Feature 5 was not an intact cultural feature and that artifacts from Stratum 11 originated from mixed and redeposited contexts. Again, the poor integrity of the deposit did not support the data requirements for addressing the research question. The archaeological investigation revealed no evidence of additional intact cultural features, or activity areas within the deposit. All of the recovered cultural material was the result of secondary alluvial, or rodent-related, redeposition rather than from primary cultural contexts. Although not exposed during this excavation, the other nearby "features" recorded during the testing program are more than likely similar manifestations of natural rather than cultural agencies.

The artifact assemblages, however, are intriguing. The lithic artifact assemblage includes a corner-notched projectile point from the Developmental period, suggesting hunting activities. The lithic assemblage includes Jemez obsidian from the Jemez Mountains. Most of the lithic debitage is represented by core-flakes rather than biface flakes. Tools and utilized edges are poorly represented. No ground stone artifacts were recovered from the excavations. The faunal assemblage did not contain any water-sensitive resources that might be expected from the marshy context. The flotation samples included burned corn cupules, amaranth seeds, and unknown nutshell fragments, but again no resources from the marshy context. A single human cranial fragment hints at the presence of human interments. Unfortunately, all of the cultural material is from alluvial redeposited contexts that precludes definitive conclusions on the question of subsistence and technological organization.

The most important aspect of the excavation program was the discovery of a previously unknown cienega, or marsh. The lowered water table has currently drained the marsh, which has become covered by almost

a meter of alluvial sand. However, the dark soil characterizing the marsh is still wet and similar to the "dense, gunky muck" found in the downtown area of Santa Fe (Tigges 1990:75). It was at the margin of this similar marshy context along the Santa Fe River and the secondary channel of the Rio Chiquito that the city of Santa Fe was founded. The size and boundary of this newly found cienega remains unknown. Surrounding utility trenches suggest a size of at least 60 m north-south by 40 m east-west. The presence of this marsh in near proximity to both the Santa Fe River and the junction of the Arroyo Mascaras almost mirrors the downtown Santa Fe context and undoubtedly played a significant role in regional settlement along the middle Santa Fe River. The downtown context provided water and a concentration of water-sensitive plant and animal resources that was attractive to Developmental, Coalition, and finally Spanish Colonial settlement and subsistence activities. The context may have similar implications for settlement and subsistence at LA 134297. Although the temporal period in which the newly discovered marsh was active is unknown, artifacts from the library addition component and the larger Gonzales Elementary School site area show long-term use of the area either directly or indirectly. The deposit is crisscrossed by numerous small arroyos showing that the area was once open and subject to erosion and redeposition. Surrounding dryland in proximity to the marsh can be expected to manifest both prehistoric and historic usage. Much of this land is now obscured by urban development. However, the presence of this forgotten cienega may have direct bearing on why prehistoric artifacts are continually found on the remaining undeveloped and open playground at the Gonzales Elementary School site.

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APPENDIX 1

DATA RECOVERY PLAN FOR LA 134297

DATA RECOVERY PLAN FOR LA 134297 LOCATED AT GONZALES ELEMENTARY SCHOOL, 851 WEST ALAMEDA, SANTA FE, NEW MEXICO

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NMCRIS No. 83273

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FIGURES

INTRODUCTION

On January 28, 2002, Mr. Mike Harris, Managing Principal, Harris PinnacleOne, LLC (HP1), requested that the Office of Archaeological Studies (OAS), Museum of New Mexico, prepare and execute a data recovery plan for the portion of LA134297 within the construction footprint of the library addition to Gonzales Elementary School, located at 851 West Alameda in Santa Fe, New Mexico. Mr. Harris is the consultant construction manager for the Santa Fe Public Schools District. OAS has been contracted for this archaeological study by B-Z Enterprises, Inc., represented by Larry Zimmerman. The current construction phase includes the library addition construction and kindergarten playground construction.

In consultation with the New Mexico Historic Preservation Division (HPD), HP1 had previously contracted with Wetherbee Dorshow of Earth Analytic, Inc. for the cultural resources inventory and assessment and archaeological testing and monitoring of LA 134297, which was known as spatially extensive, potentially multicomponent artifact scatter associated with foundations and near-surface charcoal-infused soil stains that were regularly observed in the playground and space surrounding the elementary school. Cultural-historical associations were Coalition and Classic period of the Rio Grande sequence (Wendorf and Reed 1955), and protohistoric, Spanish Colonial, and Depression and World War II era artifacts and features, as well as the Gonzales Elementary School building. Mr. Dorshow's testing investigations within the proposed footprints for the library addition and classroom addition (Area B) at LA134297 confirmed that the site had multicomponent prehistoric and historic era cultural and temporal associations, and that there were buried intact cultural deposits as deep as 110 cm below the modern ground surface. Further, it was observed that in some areas of Area B these cultural deposits could be stratified. Mr. Dorshow recommended additional investigation of LA 134927, to include writing and execution of a comprehensive data recovery plan. HPD concurred with Mr. Dorshow's recommendation and has instructed HP1 and the Santa Fe Public Schools to proceed with writing and execution of a data recovery plan.

As indicated, LA 134297 is a sprawling and potentially complex site that may cover as much as 4.2 acres, as suggested by Mr. Dorshow (2002). HPD has advised HP1 and Santa Fe Public Schools of the value of having a comprehensive data recovery plan prepared that would address all stages of construction and their potential effect on the buried cultural deposits. HP1 and Santa Fe Public Schools chose to address only the cultural deposits present within Area B: specifically, archaeological excavation for the library addition, and archaeological monitoring of the kindergarten playground construction. Accordingly, this data recovery plan focuses only on the components of LA 134297 that will be affected by the current construction: specifically, Strata VII, VIII and XI, and Feature 5 within Backhoe Trenches 5 and 6A (Dorshow 2002).

LA 134297 is on the unplatted land of the Santa Fe Grant, in Santa Fe County, NMPM; UTM Zone 13, [redacted] The property is owned by Santa Fe Public Schools. Figures 1-1, 1-2, and 1-3 locate LA 134297 within Santa Fe, the Gonzales Elementary School property, and Area B, library addition within the LA 134297 site area. A copy of the site form is provided in Appendix 1-1.

SITE DESCRIPTION

LA 134297 is a spatially extensive, potentially multicomponent artifact scatter associated with foundations and near-surface charcoal-infused soil stains that occur within outdoor space surrounding Gonzales School Elementary School. Based on research of historical document and on archaeological investigations, cultural-historical associations include the Coalition and Classic period of the Rio Grande sequence (Wendorf and Reed 1955), and protohistoric, Spanish Colonial, and Depression and World War II era artifacts and features, as well as the 1953 John Gaw Meem Gonzales Elementary School building and later additions.

Survey assessment and test excavations were conducted at the site by W. Dorshow of Earth Analytic, Inc. in November and December 2001. Test excavations consisted of mechanical auger holes, five backhoe trenches and one hand-excavated test pit. Auger tests were placed east of the library addition. The backhoe trenches and test pits were located within or between the proposed footprints of the library addition. Descriptions of surface artifacts and features, strata and cultural features and deposits are presented in three documents (Baletti et al. 2001; Dorshow 2001; Dorshow 2002). These documents are on file with HPD and will be referred to in the site description and data recovery plan.

The following site setting is taken from Dorshow (2001:23):

> LA 134297 is in the northeast quarter of the Gonzales Elementary School property within the playground area. The site is bounded on the east by a wire fence and on the north by a concrete wall. Artifacts were not found in the heavily disturbed areas outside these barriers. Along the site's east-southeast periphery, the banks of the Arroyo Mascaras revealed no artifacts or features.

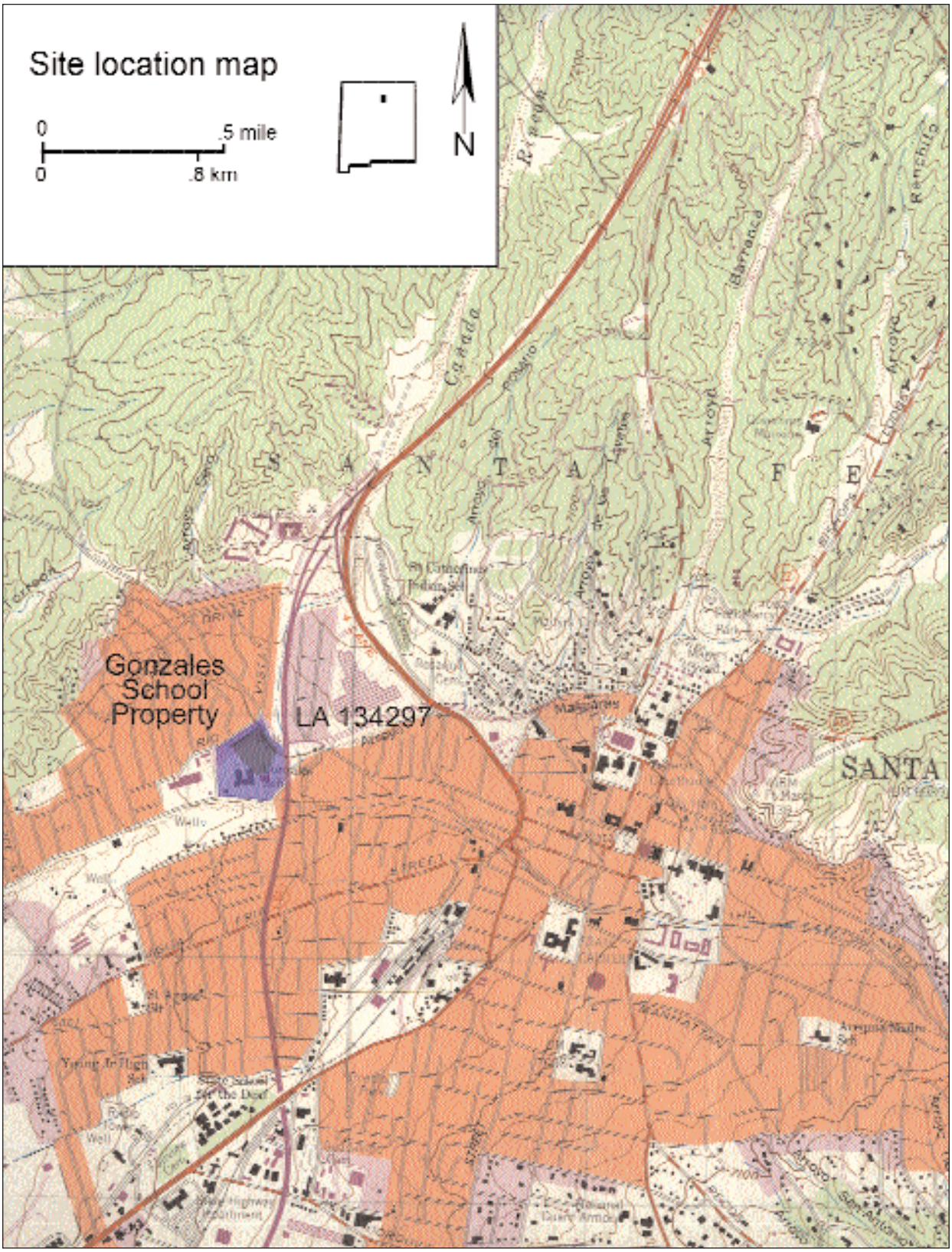

Figure 1-1. General project location.

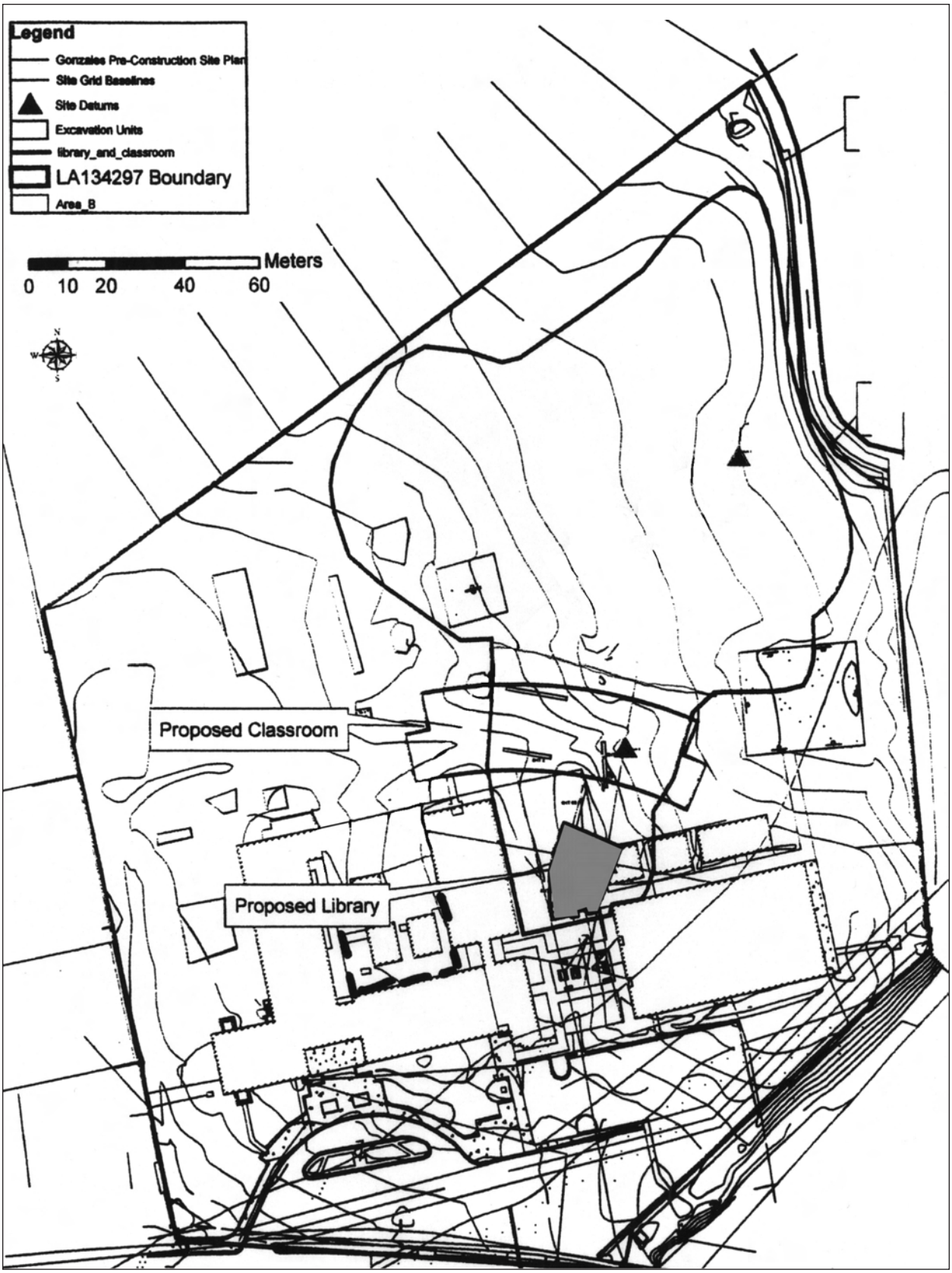

Figure 1-2. Plan of LA 134297.

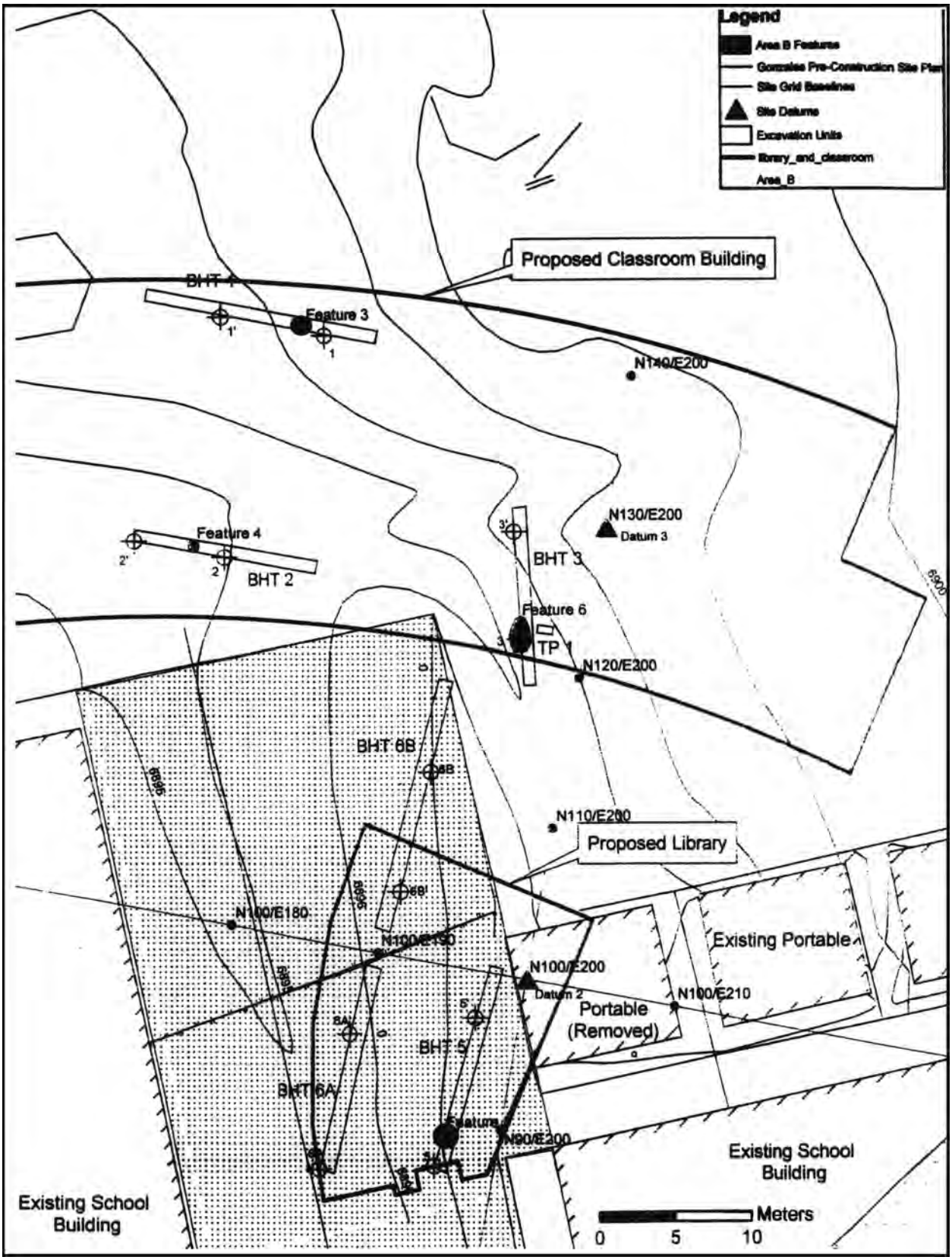

Figure 1-3. LA 134297 Area B map showing library addition and kindergarten playground.

> The site occurs at an elevation of 6900 feet above the mean sea level (AMSL) and slopes gently to the southeast (sic [southwest]). The site has open exposure and occurs roughly 160 m north of the modern, incised channel of the Santa Fe River. Surface visibility ranges from high (76 to 99 percent) in the playground area in the northern two-thirds of the study area, to none in the concrete-covered and landscaped portions. Very little vegetation other than sparse grasses and invasive weeds such as goatheads dot the site area. Mature cottonwoods and other introduced trees occur outside the site boundaries.

Based on the extent of surface artifacts and features, and on archaeological testing and monitoring, LA 134297 covers an area 125 m north-south by 135 m east-west, or an estimated 16,875 square meters (4.17 acres). The unpaved portions of the site have been subjected to maintenance blading for the last 50 years, resulting in the exposure of sherds, lithic artifacts, animal bone, and historic artifacts of Euroamerican manufacture (Baletti et al. 2001). Known historic uses of the property during the twentieth century include ranching/farming, a Civilian Conservation Corps facility, a World War II Japanese American internment camp, and, of course, the construction and ongoing activities of Gonzales Elementary School. These uses are described in Baletti et al. 2001, and will not be further addressed in this document.

Prehistoric and pre-Territorial site occupation is evidenced by sherds, lithics, and animal bone. The predominant identified pottery is Tewa Series polychrome and historic utility wares. This pottery, which includes Tewa Polychrome and polished red and gray wares, was manufactured between A.D. 1650 and 1900. A number of archaeological investigations have been undertaken within the Downtown Historic District in compliance with the Santa Fe Archaeological Review Districts Ordinance (for examples see Post and Snow 2000; Habicht-Mauche 1988; Snow 1998; Viklund and Snow 1997). Pottery from the Spanish Colonial era is often found within a 25- to 50-cm layer in the Santa Fe downtown area and its periphery. Mixed with the historic Pueblo-made pottery are pottery types from the Coalition and Classic periods of the Rio Grande Sequence and protohistoric period (A.D. 1200 to 1650). Often, little stratigraphic relationship is preserved. The floodplain of the Santa Fe River has doubtless been used for various types of farming for centuries. We have little knowledge of prehistoric farming structures, but, as with subsequent uses, they are likely to have been rather ephemeral. During the historic period, subsistence farming, ranching, and tenant farming would have continued (Baletti et al. 2001; Post and Snow 1992; Ballesteros et al. 1985). The historic domestic refuse suggests that seasonal residences did exist in or near the site area. These ephemeral structures (probably no more than one or two rooms made of adobe, jacal, or a combination of the two materials) may have long been plowed under or melted into the upper soil matrix described in the testing report as Strata II, VII, and VIII (see Appendix 1-1 for a stratigraphic list and descriptions).

Not much is known of prehistoric or ancestral Puebloan use of LA 134297, or for that matter of use within the ancient Santa Fe River floodplain between Santa Fe and Cienegitas Pueblo (LA 109) (a distance of 4.3 km). The main exception is LA 48639, which was 2 km west of LA 134297, south of West Alameda, but is now covered by a residential subdivision. LA48639 was described as an extensive, buried, Late Developmental to Classic period deposit in the ancient Santa Fe River floodplain (NMCRIS files, ARMS-HPD). Numerous charcoal-infused stains, fire-cracked rock and a wide distribution of pottery were observed by Stewart Peckham, then of the Museum of New Mexico's Laboratory of Anthropology. LA 48639 is important because it demonstrates the potential for extensive buried deposits within the ancient floodplain setting. It also suggests that these deposits have been subject to mixing by postabandonment fluvial and alluvial episodes.

LA 134297 has a poorly defined ancestral Pueblo component—evidenced by surface recovery of Santa Fe Black-on-white, Abiquiu and Bandelier Black-on-gray, and Sankawi Black-on-cream pottery. However, these pottery types occur in low frequency and only Santa Fe Black-on-white was recovered from the test excavations by Dorshow (2002:22). Because these sherds are mixed with the historic Pueblo pottery, they cannot be confidently associated with the animal bone and lithic artifacts that are also present. The pottery may indicate some degree of seasonal occupation by ancestral Pueblo populations over the course of 400 years. LA 134297's location at the confluence of Arroyo Mascaras and the Santa Fe River may have allowed for floodwater farming, although it may have been risky given the potential water-carrying capacity of the Arroyo Mascaras during summer monsoon thunderstorms.

The ancestral Pueblo and historic components are primarily represented in Strata II, VII, and VIII (See Appendix 1-1 for tables with stratigraphic descriptions and depths). These strata were observed in the hand-excavated test pit. Stratum II was observed in Backhoe Trenches 1 and 3 at depths below surface ranging from 30 to 62 cm (Dorshow 2002:16). Strata VII and VIII were found in all backhoe trenches, except for Backhoe Trench 3. Combined, they occurred from 20 to 169 cm

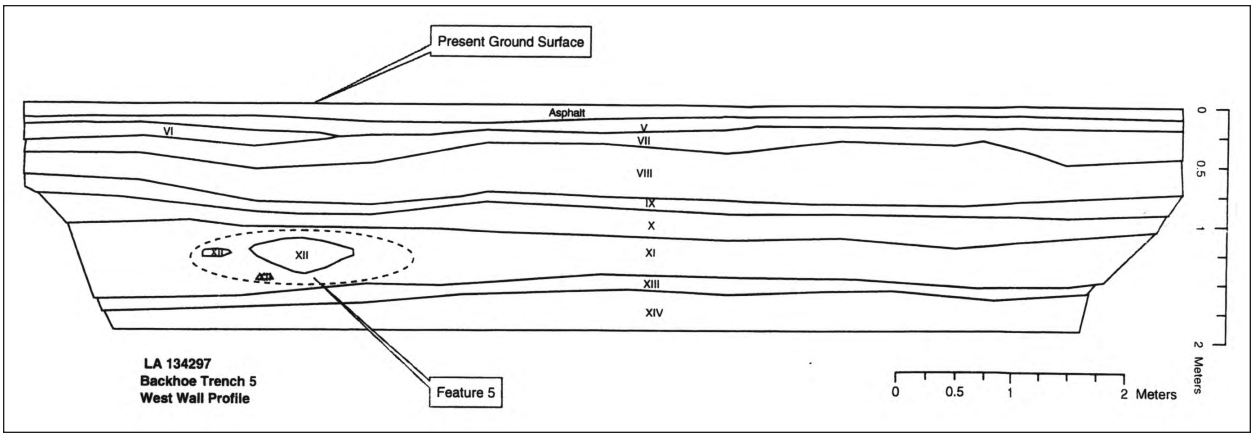

Figure 1-4. Stratigraphic profile of the west wall of Backhoe Trench 5 (after Dorshow 2002).

below the modern ground surface (bmgs); the greatest depth was in Backhoe Trench 6B, and a more common depth for Backhoe Trenches 1, 2, 5, and 6A was 60 to 74 cm bmgs. Strata II, VII, and VIII can be summarized as cumulic A or AC soil horizons consisting of sandy silt or silty sand with massive or laminar structures that are nonplastic, loose to slightly hard, and containing prehistoric, protohistoric, and historic artifacts, and charcoal inclusions. These strata occur as stable but homogenized cultural/natural layers with no visible dense or abundant refuse concentrations observed by the testing. The one exception is Feature 6, which was exposed in the profile of Backhoe Trench 3. Feature 6 was below Stratum XV, which was not identified in other backhoe trenches. However, Stratum XV is at a similar elevation to Stratum VII in the other trenches. Therefore, Feature 6 and Stratum XV may represent an ancestral Pueblo occupation surface or feature.

Of primary concern to this project are the three deeply buried thermal features exposed in the sidewalls of Backhoe Trenches 1, 2, and 5. These thermal features are embedded in Stratum XI at depths ranging between 100 and 130 cm bmgs. Stratum XI is a cumulic A horizon of slightly sandy silt with a massive structure that is slightly plastic and slightly hard. Stratum XI is presented as containing charcoal, animal bone and lithic artifacts, though it appears from the testing results that most of these artifacts are associated with Features 3, 4, and 5. Features 3 and 4 are described in Dorshow (2002:18). They are outside the current library addition project. Feature 5 is in Backhoe Trench 5, which is within the library addition and will be a focal point of this data recovery effort (see Fig. 1-4).

This description of Feature 5 (in which references are made to Fig. 1-4) is taken directly from Dorshow (2002:18):

> Feature 5 is a relatively large thermal stain, likely a fire pit, exposed in the both the east and west walls of BHT 5. Unfortunately, backhoe excavation resulted in the removal of most of the east half of this feature, but the thickness of the feature as exposed in the trench's west wall profiled clearly indicates that a large amount of the feature remains intact. We recovered two pieces of bone and one chert tertiary flake from feature fill during the trowel-scraping of the west wall profile. This feature is lenticular in cross-section, and oval in plan view. The feature measures at least 1.45 m in width and 45 cm in vertical thickness. Although three distinct pockets of Stratum XII sediment are shown in the profile, the matrix in which they are contained also represent feature fill. Basically, the dashed line represents the full extent of XII deposits while the solid lines represent particularly dark, charcoal infused subsets of this feature fill deposit. Feature 5 is fully contained within Stratum XI.

In the Artifacts section of the testing report, Dorshow (2002:22) observes that the only artifacts from contexts deeper than 1 m were small flakes and angular debris made from quartzite, obsidian, and chert. Chert and quartzite occur locally in the Santa Fe River gravel and in the Ancha formation that covers the piedmont north of the Santa Fe River (Lang 1997; Post 1996). Obsidian is nonlocal and had to be transported through human agency to LA 134297. The absence of ceramics and the deep context of the features are strong indicators that they date to the Late or latest Archaic periods (1800 B.C. to A.D. 900).

Test excavations have added significantly to the site description and extended the site limits into areas that were not previously known to contain cultural deposits.

The identification of deeply buried intact thermal features within a distinct stratigraphic layer suggests that additional buried deposits exist outside the backhoe trenches—specifically, within the library addition footprint. These observations have resulted in the determination that LA 134297 has the potential to yield significant information on ancestral Pueblo and Late Archaic settlement and subsistence patterns as they relate to the ancient Santa Fe River floodplain and Santa Fe River basin. The remainder of this document outlines a data recovery plan focused on examining subsistence and settlement during the Late and latest Archaic periods, and on determining if ancestral Pueblo and protohistoric strata retain vertical integrity that relates to occupation history of the site and Santa Fe area.

DATA RECOVERY PLAN FOR LA 134297

LA 134297, as described in the previous section, is spatially extensive and potentially contains stratified and intact buried deposits that may date between 1800 B.C. and A.D. 1950. It has been determined that the site could yield important information on Pueblo and Archaic period prehistory of the Santa Fe area. The site is eligible for nomination to the *National Register of Historic Places* under criterion d (36 CFR 60.4).

Since 1930, the Gonzales Elementary School property has seen extensive construction and modification. The school is currently undergoing a multiphase renovation and new construction project. While Santa Fe Public Schools recognizes the value of a comprehensive plan for addressing the cultural properties contained within Gonzales Elementary School, at this time they wish to address only the buried cultural deposits and features exposed by testing and that may be exposed by systematic excavation within the footprint of the library addition, as shown in Fig. 1-3. In addition, there will be archaeological monitoring of ground-disturbing activities connected with the kindergarten playground construction (see Fig. 1-3). The proposed monitoring is also described in this document.

An important assumption guiding this data recovery effort is that Strata VII and VIII represent cultural layers that are substantially mixed. It is further assumed that extensive excavation of these strata within the library addition would yield little or no increase in our knowledge of post-Developmental period occupation of the site. This assumption will be tested in the field through the excavation of one or two 1-by-1-m excavation units. If the assumption holds true, no further systematic investigation of Strata VII and VIII will be undertaken, and they will be removed from the library addition footprint with mechanical equipment under the supervision of an OAS archaeologist. If the assumption is disproven, then HPD and HP1, Santa Fe Public Schools and B-Z Enterprises, Inc. will be consulted immediately on how to proceed.

This data recovery plan will focus on research questions that can be tackled using data acquired from the examination of features and cultural deposits in the portion of Stratum XI that is found within the area of the library addition. Intersite comparisons and interpretations on a regional level will be offered within the constraints of the data recovered. The data recovery plan will focus on confirming the potential of the site to yield important information, and to recover, through excavation, the significant information from the site prior to construction.

ARCHAEOLOGICAL CONTEXT

Archaeological survey and testing within LA 134297 have identified stratified and potentially intact cultural deposits from Late Archaic to the Spanish Colonial periods (1800 B.C. to A.D. 1821). Within the library addition footprint, limited evidence of the ancestral Pueblo, protohistoric, and Spanish Colonial components were observed. The primary cultural deposit may date to the Late or latest Archaic periods, which here are assigned a date range of 1800 B.C. to A.D. 900 (following Matson 1991, and Post n.d.). The following archaeological context summarizes information from the Late and latest Archaic periods and the Developmental period.

The Late Archaic Period (1800 B.C. to A.D. 1)

The Late Archaic period is divided into two phases in the Oshara Tradition: the Armijo phase (1800 to 800 B.C.), and the En Medio phase (800 B.C. to A.D. 1) (Irwin-Williams 1973). For the Middle Rio Puerco sites northwest of Albuquerque, the Late Archaic is distinguished by seasonal aggregations, as indicated by the dense and extensive occupation floors at the Armijo shelter; by signs of early corn use; and by the presence of a stone tool kit that exhibited a wider selection of plant-processing implements (Irwin-Williams 1973:10). Within the Late Archaic period, temporal distinctions are made based on projectile point styles. The early style associated with the 1800 to 800 B.C. date range has an ovate blade with shallow corner notches and a concave or slightly indented base. The later occupations are associated with triangular -bladed, deep to shallow corner -notched dart points that appear to be developing toward an arrow point style.

The important distinction between the Santa Fe Piedmont Archaic and the trends observed in the Middle

Rio Puerco (Irwin-W illiams 1973, 1979) and the Colorado Plateau (Matson 1991) is the almost complete absence of evidence of agriculture prior to A.D. 850 or 900. Instead, there appears to be an uninterrupted Archaic style occupation that was focused on seasonally available wild plants and game mammals.

Locally, there is abundant occupation evidence from this period in a wide range of environmental settings. Along the margins of the Santa Fe River, near the Santa Fe Airport at Tierra Contenta (Schmader 1994a; Dilley et al. 1998), and along Airport Road (Post 2002), excavated sites have multiple pit structure foundations, diverse thermal features, and a tool assemblages reflecting varying levels of reliance on hunting and gathering. The data from the Tierra Contenta and Airport Road sites reflect repeated seasonal occupations by small groups that coincided with the availability of abundant subsistence resources. Different occupation patterns are evidenced by the presence of shallow pit structures or dense clusters of hearths, roasting pits, and processing and discard areas. Sites with pit structures show evidence of generalized subsistence (Schmader 1994a). These sites could be termed residential base camps (Binford 1980; Hudspeth 1997; Vierra 1985, 1994). Wood charcoal from pit structures and associated features yielded calibrated two-sigma date ranges between 1930 and 830 B.C. The tightest cluster of dates indicates occupations during the ninth and tenth centuries B.C. (Schmader 1994a:92). The Airport Road site, LA 61282, had a cluster of 23 thermal and processing features and a high-density biface manufacture discard area (Post 2002). Faunal remains indicated hunting and processing of deer and antelope at dif ferent times between the twentieth and fifteenth centuries B.C. The clustered spatial distribution of these sites indicates that a periodic, semipermanent water source was available. The occurrence of these sites suggests that populations regularly moved in and out of the Santa Fe area during the second millennium B.C., with site clusters near water sources as well as near the juniper and grass plains and at the edge of the higher elevation piedmont.

Well into the upper elevations of the piedmont overlooking Cañada Rincon was LA 127578 (Lakatos et al. 2001). This site yielded a large, shallow, burned remnant of a pit structure foundation with five intramural thermal features and one possible storage pit, as well as perimeter postholes. The abundant chipped stone was mostly local chert used in core reduction with some biface manufacture. One-hand manos and a metate were in the fill above and on the floor of the structure. The structure was partly filled with chipped stone debris and fire-cracked rock. This seems like unusual behavior between 1505 and 815 B.C. (the calibrated two-sigma date range). There was an associated activity area three meters to the south of the structure, and a fire-cracked rock midden south of the activity area. This formalized site structure pattern is consistent with a planned, long-lasting occupation with anticipated reoccupation (Kent 1999). This site and the Tierra Contenta structures are evidence that populations planned to stay in or near the piñon-juniper woodlands for extended periods. Prolonged late fall occupation of the piñon-juniper woodlands is seen as a possible precursor to the introduction of maize (Wills and Huckell 1994).

The later stage of the Late Archaic (800 B.C. to A.D.) is not as well represented by excavated structures, thermal features, and diverse artifact assemblages. One component from the Tierra Contenta project at LA 54752, Feature 8, yielded a cal. 190 B.C. to A.D. 80 two-sigma date range (Schmader 1994a:92). Feature 8, a shallow, deflated pit structure foundation or activity area, yielded few associated artifacts and very limited charred ethnobotanical remains. This structure remnant was ephemeral and the low artifact frequency indicated a brief occupation. These data combine to suggest that the Late Archaic occupation was shorter and less substantial than the earlier occupations in the Tierra Contenta project area.

Excavation of LA 86148 in the Las Campanas project area revealed a chert chipped stone concentration. This site was set in the piedmont overlooking the confluence of two tributaries of the Arroyo Calabasas (Post 1996). The artifact assemblage consisted of two Late Archaic style dart points, two one-hand mano fragments, an assemblage of core reduction and early and middle stage biface reduction debris and utilized flakes. The lithic artifact assemblage reflected a mixed technological organization geared to hunting and foraging, and plant processing. Absence of a structure or thermal features suggested a briefer, more focused occupation, such as might occur within a logistically or ganized subsistence strategy (Binford 1980; Hudspeth 1997).

The small scale of these two residential camps suggests that residential mobility may have increased during the latter part of the Late Archaic, perhaps in response to less predictable climate and resource availability and abundance. A change in seasonal mobility or territorial extent may partly explain the low frequency of Late Archaic sites between 800 B.C. and A.D. 1. It is also possible that there was shift in settlement locations within the Santa Fe area that has not been detected by archaeological investigations.

The Latest Archaic (A.D. 1 to 850 or 900)

The following discussion explores some of the issues of culture history and adaptation that are part of our grow-

ing understanding of the transition from hunting and gathering to agriculture. In the Santa Fe area and most of the northern Rio Grande, this transition is poorly represented except for a few isolated examples. The scarcity of evidence suggests that this change did not occur until A.D. 850 or 900. Though confusing, this period is a critical part of northern Rio Grande prehistory.

Between 800 B.C. and A.D. 400 to 600, during the latter part of the Late Archaic and into the Basketmaker II in the northern American Southwest, important changes in settlement patterns and subsistence strategies are recognized in material culture and subsistence data, site structure, and site distributions. These changes are commonly attributed to the gradual adoption of cultigens (Wills 1988; Vierra 1985). As a result of a less mobile lifestyle and an increased dependence on cultigens, occupation duration increased, technological organization focused more on expedient tool manufacture, and the construction of more formal facilities, such as pit structures and storage pits (Vierra 1994; Stiger 1986; Fuller 1989; Irwin-Williams 1973; Schmader 1994a). Chipped stone technology, which was dominated by biface manufacture before the En Medio phase, included increasing evidence of local raw material use and manufacture of expedient or less formal tools (Kelly 1988; Andrefsky 1994). To date, how and when these changes occurred in the northern Rio Grande Valley is poorly understood because of the small number of excavated sites with reliable absolute dates. Currently, most explanations and interpretations of upper Middle Rio Grande settlement and subsistence patterns rely heavily on the data from the Middle Rio Puerco Valley (Irwin-Williams 1973; Biella 1992). This situation is further complicated by past research orientations that focused on identifying cultural remains that were comparable to the more "typical" Basketmaker II sites described for the San Juan Basin and Colorado Plateau (Matson 1991), and the expectation that the transition to agriculture occurred in the northern Rio Grande as it did in other areas.

Much interest has focused on the importance of agriculture in defining and distinguishing between the latest Archaic and Basketmaker II cultural adaptations on the Colorado Plateau and within and adjacent to the Middle Rio Puerco and Rio Grande valleys. To most researchers, the combination of cultigens, material culture evidence of increased occupation duration, and the presence of triangular-bladed, corner-notched dart points represents a transition from Archaic hunter-gatherers to a recognizable antecedent to the ancestral Anasazi and Mogollon cultures. When was corn first incorporated into the Archaic hunter-gatherer diet? How did corn come into the future homeland of the ancestral Pueblo populations long known as "The Anasazi" by Southwestern archaeologists? Why was corn incorporated in some areas and not in others? What were the conditions under which agriculture was or could be first accepted as complementary, and eventually a seasonal alternative, to hunting and gathering? In what archaeological/environmental context was early evidence of corn found and what does it mean in terms of seasonal mobility and economy? Hypotheses and theories that offer explanations and answers to these questions rely on combinations of environmental conditions and cultural factors.

Often, early corn is retrieved from archaeological contexts that are disturbed or of questionable integrity, leading to questions about validity of the finds (Wills 1988; Chapman 1980; Matson 1991). Cave sites often yield perishable organic and plant remains that provide a more complete picture of hunter-gatherer economy and subsistence, and are frequently the best source for early corn. Early excavations of cave sites produced assemblages that were used to develop material culture trait lists that may characterize the spatial extent and time depth of a particular aspect of hunter-gatherer economy and organization leading up to and incorporating the adoption of corn (Dick 1965; Haury 1950; Irwin-Williams 1973). While occasionally yielding spectacular results, cave sites represent only one seasonal component of a regional Archaic or Basketmaker II annual settlement and subsistence cycle. As cultural resource management archaeological investigations have repeatedly demonstrated, open-air sites are more abundant, forming an important component of the Late Archaic–Basketmaker II archaeological record. This situation is acutely evident in the northern Rio Grande, where excavated and documented cave sites are virtually absent, with a few notable exceptions (Alexander and Reiter 1935; Ford 1975; Hubbell and Traylor 1982).

Two primary models are offered for the transition from hunting and gathering to agriculture-dependent economy and by inference the changing of Archaic people into Anasazi/Mogollon people (Matson 1991; Berry 1982; Irwin-Williams 1979). One model proposes that maize and maize production came from Mexico with or through the Basin and Range populations of Cochise Culture Archaic populations sometime between 1200 and 500 B.C. In this model, migrating Cochise populations moved north into the western and central Colorado Plateau after 1800 B.C., filling a void left by earlier San Jose or Armijo populations, as they are defined by Irwin-Williams (1979). These Cochise-like Archaic people brought maize and were responsible for its rapid spread and the eventual formation of early Basketmaker II villages or settlements of the Long House Valley, Prayer Rock District and Durango District of the west-

central Colorado Plateau. Maize and agriculture were imported or brought to the area by migrating populations by 500 B.C.

Irwin-Williams' model of the transition to and adoption of agriculture is based on excavations in the Middle Rio Puerco valley (Irwin-W illiams 1973, 1979; Matson 1991), which revealed the presence of maize during the late Armijo or early En Medio phases (1200 to 800 B.C.). This early occurrence of maize was followed by an unbroken occupation sequence that exhibited a settlement and subsistence pattern that was the equivalent of the Basketmaker III period defined for the Colorado Plateau. This unbroken sequence was proposed as evidence for in situ development of the Anasazi culture in the Middle Rio Puerco valley , a separate cultural manifestation from the Cochise Archaic tradition antecedent to the Mogollon Culture. The source of maize within the Oshara model undoubtedly was Mexico, but the mechanism by which it was transported into the Oshara area is not known. If maize moved gradually up the Rio Grande from the southern Basin and Range region, one would expect to find earlier corn to the south with gradually later dates to the north. Currently, there is no such assemblage of early-date maize sites in the Rio Grande corridor to support this hypothesis. Trade or marriage between fringe Colorado Plateau groups and southern Basin and Range populations could have resulted in exchange of seeds and planting technology. When combined with suitable environmental conditions, these technologies produced the evidence of corn use found in the Middle Rio Puerco valley archaeological record. Acquisition of seeds and agricultural technology through trade or marriage would allow for the lar ge distances between earlier and later maize-bearing sites.

Matson (1991:203-207) evaluates the likelihood of both models based on the archaeological evidence. He surmises that for the Oshara in situ model, agricultural development should result in archaeological sites and assemblages that are distinct from Cochise Culture Basin and Range sites. Dif ferent Southwestern Pueblo groups would have evolved from dif ferent Archaic origins, resulting in slightly dif ferent styles of agricultural adoption and concomitant dif ferences in material culture. Instead, Matson (1991:204) sees close similarities between Oshara and Basin and Range sites and assemblages, suggesting similar Archaic origins for the later ancestral Pueblo groups of theAnasazi and Mogollon culture areas. He believes that: "The migration model presents the various shades of Anasazi, and Mogollon, and Hohokam as evolving from the same basic source, and fits well with some recent thinking on the origin of the Hohokam." (Matson 1991:205) Basically, Archaic groups inhabiting the Colorado Plateau and its fringes (such as the Middle Rio Puerco and the northern Rio Grande corridor) were replaced by or coexisted with northward-migrating Cochise Basin and Range populations. The knowledge and technology needed to grow corn may have been available to northern Rio Grande populations and, in fact, the northern Rio Grande may have been seasonally occupied by early part-time horticultural Archaic populations. However, other nonhuman or environmental conditions may have forestalled or obviated the transition to agriculturally supplemented subsistence.

While Matson (1991) considers the Basin and Range or "migration model" as having the closest agreement with the archaeological record, supporters of Irwin-Williams' (1973) in situ model of the Middle Rio Puerco would be less in agreement. If the perspective is moved to the east into the Rio Grande valley, the transition from hunting and gathering to agriculture is less clear (if that is possible). Currently, there is minimal evidence for the early introduction of corn or for the transition from the Late or latestArchaic to the Basketmaker II and Basketmaker III settlement and subsistence patterns so clearly evident on the Colorado Plateau.

This problem is recognized by Matson (1991:70-71) for the Rio Rancho to Alameda phase sequence that was defined by Reinhart (1968) for the area adjacent to the Puerco and in the nearby north valley of Albuquerque. Matson considers the Rio Rancho phase archaeological evidence as "the furthest afield, of f the Colorado Plateau on the outskirts of Albuquerque, New Mexico …, and in many ways it is the weakest candidate for Basketmaker II." (1991:70) Matson cites the informal nature of the shallow pit structure, the absence of storage features and an antechamber , and no direct evidence of maize use as "… possessing compelling few similarities to, and a number of significant dif ferences from, other Basketmaker II material." (1991:71) If the Rio Rancho phase sites are Basketmaker II, as Matson defines it, then they need better dating and more conclusive evidence of maize use.

Reinhart (1967:466-468) was comfortable equating his Rio Rancho phase materials with the Basketmaker II sites of the Durango and Los Pinos area. He recognized similarity in the projectile point styles with the Cochise San Pedro materials and cites the dwellings and associated intramural and extramural features as evidence of a more sedentary occupation. Though direct evidence of corn was not found, the metates were characterized as the "long-stroke" variety commonly associated with corn grinding. Similarities between the Rio Rancho phase materials and the Cochise San Pedro reaffirms how difficult it is to define the latest Archaic and Basketmaker II age materials of the middle and northern Rio Grande in terms of the Basketmaker II-III transition.

In Reinhart's developmental scheme (1967:469), the Rio Rancho phase sites were antecedent to the Alameda phase sites. The Rio Rancho–Alameda phase site continuum was interpreted as an unbroken developmental sequence that culminated in Anasazi-like architectural and material culture traits. Again, Matson (1991) contends that, because Reinhart's Rio Rancho phase sites do not exhibit sufficient similarity to Basketmaker II sites of the Durango and Los Pinos area, they may instead represent a different ethnic or linguistic group. The fact remains that the Rio Rancho phase sites did yield projectile point styles that could be comfortably classified as indicative of the Cochise or Oshara traditions. Regardless of the early evidence, there is no doubt that by A.D. 700 the Rio Rancho area was well inhabited by agriculturally dependent and, perhaps, seasonally mobile populations (Reinhart 1967; Frisbie 1967; Schmader 1994b). With material culture traits similar to the Anasazi and Mogollon sites to the south and west, settlement could have been by descendants of people who migrated from the south, or a mixing of resident and migrant populations that eventually moved north and peopled the northern Rio Grande.

Farther north at the Cochiti Dam and Reservoir at the foot of La Bajada Hill, a large-scale, multiyear salvage excavation project was completed by the University of New Mexico's Office of Contract Archeology in the 1970s. Survey and excavation identified 90 nonstructural artifact scatters with hearths, for which Late Archaic or Basketmaker II period dates were suggested (Biella and Chapman 1977:201). If these sites were of Late Archaic or Basketmaker II age, they represented the first recognizable and most intensive use of the Cochiti Reservoir area, because there were no conclusively identified Early to Middle Archaic sites or components. The Cochiti Reservoir analysis examined variability in site placement relative to diverse biotic resources. It was expected that site locations would reflect variability in residential group sizes, variability in activity performance, and variability in tool manufacture relative to raw material distribution (Chapman and Biella 1979:386-393).

Estimates of residential group size were based on the number of and spatial relationship between hearths, and on the spatial distribution of hearths relative to artifacts. There was a consistent co-occurrence of hearths, fire-cracked rock, milling stones and chipped stone that suggested mini-camps used by a single commensal group. The artifact distributions formed arcs enclosing 3 to 4 m of open space; the hearths were at the apex of the arc associated with fire-cracked rock concentrations. Intact ground stone artifacts were commonly associated with the hearths. Contrary to the expectation for settlement concentration, sites with multiple hearths (suggesting larger-group occupation or multiple occupations) correlated poorly with areas of potentially higher vegetative diversity. In fact there was little correspondence between potential for vegetative diversity and site clusters.

Investigation of variability in activities focused on a functional dichotomy of base camp and location (Chapman and Biella 1979:388). Base camps had a hearth with ground stone and chipped stone debris. Base camp assemblages consisted of a full range of core reduction debris distributed in the discard arc outside the hearth area. Smaller core reduction and biface manufacture debris was clustered near the hearth, with larger debris forming the discard arc. The unpatterned distribution of tools and manufacture debris indicated that manufacture and processing activities were not spatially segregated. Locations were predominated by early stage core reduction debris that was distributed in a circular pattern reflecting single occupation or activity. Chipped stone assemblages lacking discarded or broken tools suggested generalized activities and brief occupations during which expedient tools only were used sparingly.

Technological variability was strongly influenced by locally abundant and suitable lithic raw material (Chapman and Biella 1979:391). Most tools were made from local material using a core-flake reduction technique. Obsidian mainly occurred as formal tools that were worn out or broken. Core reduction debris often exhibited waterworn cortex, indicating that it was obtained from river gravel sources. There was little evidence of formal tool production or gearing up using local material (Andrefsky 1994; Kelly 1988). This suggests that the small mobile commensal groups commonly moved between areas where raw material for tools was available. Abundant raw material also permitted a less efficient and more expedient technology that generated considerably more waste than finished or used products.

Chapman (1979:72) summarizes the archaeological evidence of the Late Archaic period at Cochiti Reservoir as a:

> …picture of short-term residential occupations by very small complements of commensal groups, which characterize the Late Archaic adaptation within the Cochiti Reservoir locale. Considerable redundancy for site location is evident in all aspects of subsistence-related behavior, including strategies of food resource processing and consumption; strategies of raw material selection for tool manufacture; reduction trajectories involved in tool manufacture; and the character of site space utilization.

Archaeological evidence of seasonal movement within and between dif ferent environmental zones was scarce because floral and faunal remains were poorly preserved or absent (Chapman 1979:73). The Late Archaic Cochiti Reservoir inhabitants appear to have been residentially mobile, because the sites, except for hearths, lacked permanent structures or facilities. The distance between moves could not be determined, though it was probably determined by the distance between seasonally abundant resource patches. The lack of evidence of gearing up or of an intense biface manufacturing industry suggests that the group(s) moved to areas where raw material was available. The limited evidence of biface production also suggests that anticipated activities and tool needs between base camps could be supported by flake tools, existing formal tools, or by minimally reduced cores or nodules of material available from the river gravel.

Site survey data as of 1994 for the Santa Fe area are presented in Post (1996). These data are not the most current, but they provide a basic background on Archaic site settings and site structure. All sites are open-air lithic artifact scatters with or without hearth complexes or fire-cracked rock concentrations. Site clusters in the Airport Road area (Hannaford 1986; Schmader 1994a), southwest of Santa Fe, along the Cañada de los Alamos to the south of Santa Fe (Lang 1992), and along the Santa Fe River suggest that certain lowland locations were repeatedly occupied for short periods by small groups over a long period of time. Basketmaker II sites are reported in all environmental zones from the Santa Fe River Valley to the foothills of the Sangre de Cristo Mountains. Because the Santa Fe River Basin and the surrounding montane and piedmont environments of fer considerable resource diversity , it is possible that Late Archaic–Basketmaker II groups were the first to occupy the area year-round. A strategy exploiting closely spaced changes in elevation was suggested by Chapman (1980) from the Cochiti Reservoir data. This spatially less extensive settlement pattern is in direct contrast to large-area mobility patterns suggested for San Juan Basin Late Archaic–Basketmaker II populations (Elyea and Hogan 1983; Vierra 1994; Fuller 1989).

Most of the sites from the Santa Fe area were identified as limited or temporary base camps and limited activity sites. Characteristics typical of these two site types are few or no processing facilities and equipment, a low-density artifact scatter or small artifact cluster , and very few unbroken tools. Brief occupations are inferred from low artifact counts and limited artifact variability. A number of characteristics that would suggest longer, more permanent settlement are lacking from site surface characteristics. Facilities and equipment are usually associated with longer occupations or planned reoccupations (Binford 1980; Vierra 1985; Elyea and Hogan 1983; Camilli 1989; Nelson and Lippmeier 1993). Formal tools are minimally reported, and can be considered personal gear , carefully curated and rarely deposited at limited activity sites (Binford 1979; Kelly 1988). Reuse of a limited base camp or activity area may result in overlapping or refurbishment of features and a higher artifact density (Camilli 1989). Reoccupation may result in a more scattered feature and artifact distribution, but higher artifact counts. Most sites exhibit low surface artifact density with evidence of multiple occupations resulting in spatially extensive sites with low artifact densities.

Excavations within the last five years have furnished evidence of longer duration occupation and frequent reuse or reoccupation of desirable locations. Sites with pit structure foundation remnants have been excavated in the Tierra Contenta area in southwest Santa Fe (Schmader 1994a), in the vicinity of the National Cemetery in northeast Santa Fe (Kennedy 1998), north of the Santa Fe River in the Las Campanas area (Post 1996), and in the Santa Fe piñon-juniper piedmont below the Tano Divide (Post 2000). These shallow , roughly circular , basin-shaped structures often have intramural hearths, sometimes with multiple remodeling episodes, and a suite of extramural roasting pits and hearths. Increased attention to placement of activity and discard areas reflects longer occupation and perhaps organization that facilitated annual or semiannual reoccupation. These sites have yielded radiocarbon dates ranging between 200 B.C. and A.D. 900, suggesting that seasonal occupation of pit structures may have continued and may have coincided with the earliest Pueblo settlements recorded for the Santa Fe area and the northern Rio Grande region (Kennedy 1998; Post 1996; Schmader 1994b).

Developmental Period (A.D. 600-1200)

The Developmental period (Wendorf and Reed 1955) is divided into Early (A.D. 600 to 900), Middle (A.D. 900-1000), and Late (A.D. 1000 to 1200) subperiods (Dickson 1979). This temporal framework roughly corresponds to the Pecos Classification system developed by Kidder (1924). Early Developmental overlaps with the latest Archaic in the northern Rio Grande where ancestral Pueblo subsistence and architectural patterns of pit structures and greater reliance on agriculture are not well documented before A.D. 900. The Developmental period is included in this section because the LA 134297 deposits could conceivably date to this time.

Early Developmental period sites are uncommon in the northern Rio Grande (Wendorf and Reed 1955:138;

Stuart and Gauthier 1981). Archaeological survey at Cochiti Reservoir found only 12 sites that could be assigned to this period (Biella and Chapman 1977:203). McNutt (1969:70) located no Early Developmental period components north of La Bajada and White Rock Canyon. In the eastern Galisteo Basin only five components may date to this period (Lang 1977; Scheick and Viklund 1989). One explanation for the late development of a sedentary agriculture-based adaptation is that hunting and gathering suf ficiently supported Northern Rio Grande populations into the A.D. 800s. Another is that climate was not conducive to agricultural production until after A.D. 800 (Peckham 1984). This continued focus on hunting and gathering may be partly attributed to the rich resource diversity of the northern Rio Grande Valley, forestalling an early reliance on small-scale farming (Cordell 1979:2; 1989:314).

As discussed for the Late Archaic period, excavation data from sites along Cañada de los Alamos suggest use of the Santa Fe to support a residential lifestyle elsewhere (Lang 1992; Post 1998). Low-frequency artifact scatters with a relatively high proportion of hunting-related implements are indicative of a logistically organized subsistence strategy . If populations living outside the Santa Fe River drainage, presumably at lower elevations where agricultural production was more predictable, came into the area to hunt, then logistical or ganization would have been the most ef ficient strategy. An assumed logistical or ganization is partly supported by the dominance of obsidian at the Cañada de los Alamos sites. Transport and use of nonlocal material indicates knowledge of local material availability, anticipated needs and uses of raw material, and the making of a decision to carry obsidian on the foray to support the anticipated activities. As more dates from the A.D. 400 to 800 period sites lacking pottery are reported, a better understanding of Early Developmental period subsistence or ganization should be possible.

Successful farming of the Pojoaque River valley may have occurred by the early to middle A.D. 800s. Farming was successfully practiced in the Albuquerque area to the south by the early A.D. 400s (Cordell 1979; Reinhart 1967). In the Santa Fe area temperature and precipitation may have been too unpredictable to sustain an agriculturally focused economy before A.D. 800. North of the Santa Fe River , small villages were established along the Tesuque and Nambe Rivers after A.D. 800 (Wiseman 1995; Lent et al. 1994). These areas are at lower elevations, have predictable water supplies, and presumably could sustain agriculture. It is possible that small family-sized agriculturally sustained groups did occupy the Santa Fe River drainage at this time, but that the sites have not been found.

During the Middle Developmental period (A.D. 900 to 1000), site frequency increased in the Northern Rio Grande area. Excavations in the Santa Fe and Tesuque river valleys revealed pithouses associated with contiguous surface rooms, and perhaps a kiva (Honea 1971; McNutt 1969:58). The pottery was mineral painted in the Red Mesa style, and neckbanded utility wares occurred. These sites do not necessarily suggest that population increased, but may reflect a change in the settlement and subsistence pattern to a more sedentary lifestyle. Sedentary occupations tend to leave more visible structural remains and artifact accumulations. The general settlement pattern was still one of low population density. Few sites dating to this period have been identified for the Santa Fe area.

The Late Developmental period (A.D. 1000 to 1200) is roughly contemporaneous with the late Pueblo II and early Pueblo III of the Pecos Classification. In the northern Rio Grande there is an increase in site numbers and size that suggests population growth (W endorf and Reed 1955:140-141). Site size in the northern Rio Grande area ranges from 1 to 100 rooms. Some researchers suggest that the increased population represents overflow from the Anasazi heartland (Cordell 1979). This hypothesis is partly based on the predominant pottery type, Kwahe'e Black-on-white, which was originally identified by Mera (1935) as a local Rio Grande variant of Chaco-style pottery. Kwahe'e Black-on-white is a mineral-paint pottery that features hatchured and solid design elements. It has been suggested that the spread of this decorative style coincided with the growth of the Chaco system in the San Juan Basin in northwestern New Mexico (Toll et al. 1992).

Known sites near to the south of the project area include LA 114 (Arroyo Negro), LA 15969 (Wiseman 1978), and a minor component at Pindi Pueblo (LA 1) (Stubbs and S tallings 1953). The Pindi Pueblo component shows that some lar ge Coalition period sites had their origins in this period (S tubbs and S tallings 1953:14-15). Late Developmental components are reported on Fort Marcy Hill, suggesting settlement focused on the swampy , riparian environments of the upper Santa Fe River.

Arroyo Negro (LA 114) was originally recorded by Mera in the 1920s. It has seven small (less than 10 rooms) to medium (1 1-25) room blocks constructed of adobe with cobble foundations (Peckham 1974; ARMS file). In 1934, S tallings collected 95 tree-ring samples from pothunted rooms and four kivas (Smiley et al. 1953:27-29). The tree-ring dates indicate occupation between A.D. 1050 and 1 150, with less reliable A.D. 950 to 1000 dates for Kiva C. Two construction episodes occurred between the A.D. 1050s and A.D. 1130 to 1145 (Smiley et al. 1953:29). Identified pottery

types at LA 114 included Kwahe'e Black-on-white, Santa Fe Black-on-white, Socorro Black-on-white, and Wingate Black-on-red.

LA 15969 was identified by Wiseman (1978:8) on top of the gravel terrace overlooking the north prehistoric floodplain of the Santa Fe River. The site included a U-shaped 14-room structure with a kiva. It is estimated to have been occupied between A.D. 1100 and 1150, making it contemporaneous with the later occupation of LA 114.

The Late Developmental component at Pindi Pueblo (LA 1) had two jacal structural remnants, a pithouse, and sparse refuse (Stubbs and Stallings 1953:9). The refuse was in the central portion of the site on a knoll. Identified pottery types included Red Mesa Black-on-white, Kwahe'e Black-on-white, and Puerco and Wingate Black-on-red (Stubbs and Stallings 1953:14). Stubbs and Stallings observed that the pre-Pindi material was very sparse, and that the deposit ranged from 2 to 50 cm deep (1953:15). These deposits were underneath the later Coalition period occupation.

In the Las Campanas study area, Late Developmental period sites and isolated occurrences were rare. Only seven Late Developmental period sites were identified; six of these were mixed and had evidence of more intensive use during later periods (Post 1996:442-443). This low number of sites suggests that Late Developmental period foraging activities that might have resulted in the discard of pottery were limited to areas that were closer.

RESEARCH QUESTIONS AND DATA NEEDS

Chronology

When was the library addition component of LA134297 occupied? The deep, cultural deposits and features exposed in Stratum XI are stratigraphically lower than the ancestral Pueblo/protohistoric/historic mix observed in Stratum VII and above. Therefore, an initial and guiding assumption for this study is that Feature 5 and other features that may be encountered within Stratum XI may date to the Archaic period or before A.D. 900. This assumption will be tested through the recovery of chronometric samples and temporally diagnostic artifacts. As is discussed below, fire-cracked-rock-filled thermal features are not temporally diagnostic, and occur in a variety of functional contexts.

Feature 5, as described in the Site Description, is a large, fire-cracked-rock-filled thermal feature. Its morphology is similar to features excavated along the Northwest Santa Fe Relief Route (LA61286, LA 61293, and LA 61315 [Post 2000; Post n.d.]) and at the Santa Fe Cemetery (LA 75497 [Kennedy 1998]). Radiocarbon dates from these features and associated sites range from 900 B.C. to A.D. 1005. Extensive but not exhaustive excavation of these sites demonstrates that fire-cracked rock features rarely occur in isolation, and more commonly occur in clusters. Fire-cracked-rock-filled features also occur in association with pit structure foundations, other thermal features and unburned pits, and midden deposits. While excavation data from the Northwest Santa Fe Relief Route show some tendency to increased complexity in site structure through time within the Late and latest Archaic, this is not a consistent pattern (Post 2000; n.d.). The archaeological context presented in this document does suggest an interval between 900 B.C. and A.D. 1 when occupations may have been shorter and structurally less complex. Before and after this roughly nine-hundred-year period, the sites exhibit a full range of site structure variability from small-scale to highly organized and spatially complex.

Feature 5 within the library addition may occur in isolation, but it is more likely that it will be associated with other thermal features, pits and even pit structure foundations. Even if the cultural deposits within Stratum XI occur at the same stratigraphic level, they may be separated temporally by hundreds of years. In fact, in this relatively active geomorphological setting, fire-cracked-rock-filled features may preserve better than unfilled pits because the rocks will hold soil and retard erosion. Therefore, Feature 5 and similar features that may be exposed by excavation may mark the location of temporally and spatially discrete occupations. Whether there is only one feature or a feature cluster, dating a sample of these features will be paramount. Furthermore, dates obtained from these features will be important for developing a research framework for other cultural deposits and features within LA 134297 that may require excavation in the future.

Data Needs

Excavation may result in the recovery of a wide range of chronometric samples. These may yield absolute dates or they may involve relative dating, such as through the use of projectile point typologies. Absolute dates are desirable because they are objective, although each technique carries strengths and weaknesses in both precision and accuracy. Absolute dating methods that may be used in this project include dendrochronology, archaeomagnetism, radiocarbon assays, and obsidian hydration measurements.

Dendrochronology produces extremely precise and accurate dates when appropriate samples are available. Ideal samples should have 15 to 20 years of growth

rings, a sensitivity to climate variation that allows the sample to be matched with the regional chronology of climatic variation, qualities of outer surface that allow the outer ring to be interpreted as the death year of the tree, and an archaeological context that supports a linkage between tree death and the cultural behavior that is the target event of the dating effort. Tree-ring dating is most reliable when multiple samples are collected from structural remains where timbers were cut to length. Although construction timber reuse and stockpiling can cause inaccuracies (Graves 1983; Crown 1991), patterns of dates from multiple samples usually reveal the presence of remodeling or reuse of wood (Ahlstrom 1989). Although wood samples from nonarchitectural contexts can be dated, samples from fuel wood in hearth contexts risk the same "old wood" problem that affects radiocarbon samples (Schiffer 1987:309-312; Smiley 1985). The prospect of obtaining both datable and accurate tree-ring samples from LA 84318 is not bright given the apparent nonarchitectural nature of the features. Although dendrochronology is not considered a good prospect for LA 84318, any sample with tree-ring dating potential will be collected.

Archaeomagnetism does not have either the potential precision or accuracy of tree-ring dating, but it does have other advantages. Heating allows the field orientations of magnetic particles in earth or rock to become reoriented to the prevailing geomagnetic field when the particles cool (Sternberg 1990; Wolfman 1990). Since the geomagnetic field is constantly changing, features that are burned and cool will retain a distinctive magnetic orientation that is determined by the date of the cooling. Whereas tree-ring dating works best at recording the dates of construction events, archaeomagnetic dates apply to the final use of burned features. Archaeomagnetism is one of the only dating techniques that can inform about abandonment events. Archaeomagnetic samples are collected from burned cultural features or contexts, the orientation of the sample is measured in the laboratory, and the geomagnetic pole recorded by the feature is compared with the regional pattern of polar movement through time. Problems with archaeomagnetism stem from both measurement factors and interpretation factors, both of which can affect the precision and exclusivity of date interpretations. The precision of a given result is determined by the coherence of the orientations of the individual specimens (usually eight) that make up the sample. Variables affecting coherence include the type, size, and density of magnetic minerals in the earth, the temperature of the burn, and any sources of postburning disturbance of the feature. Even a very coherent result may have imprecise or multiple date interpretations based on the intersection of the result's oval of confidence with the polar curve for the region. A time of particularly slow polar movement can result in a broad date range, or a region of the pole that is transected by several segments of the polar curve will result in multiple possible date ranges. When an archaeomagnetic sample results in multiple date ranges, independent dating evidence will be required to determine which of the possible date ranges is correct. The greatest advantage of this technique is that the sampled material us usually unambiguously related to the component being dated, but potential ambiguity of the technique requires that it be used in conjunction with other methods of chronological determination.

Radiocarbon dating has similar limitations to the first two methods, but it has the advantage that carbon is one of the most abundant sample materials in archaeological contexts (Taylor 2000). Plants incorporate carbon into their tissues through photosynthesis, drawing on the pool of carbon in the atmosphere. Radioactive isotopes of carbon are produced by cosmic radiation in the upper atmosphere, resulting in a relatively constant proportion of carbon-14 in the atmospheric pool. When plant tissue is no longer actively incorporating carbon, the amount of radioactive carbon declines at a rate consistent with the relatively short half-life of the isotope. The measured amount of radioactive carbon in a sample, the expected amount given the assumed atmospheric pool concentration, and the half-life value of the isotope can be used to calculate a radiocarbon age for the sample. Precision of radiocarbon age estimates is determined by the measurement error associated with determining the radioactive isotope contents. However, the assumption of a constant value for the carbon-14 pool concentration has been shown to be inaccurate, and the radiocarbon age of a sample can only be translated into a calendric age estimate by comparison with carefully derived calibration curves (Stuiver and Reimer 1993). These curves reflect fluctuating pool values, increasing dating accuracy but affecting both precision and exclusivity of radiocarbon date interpretations. A single precise date expressed in radiocarbon years can yield an imprecise calendar date or multiple possible calendar date ranges.

Independent of the technical aspects of dating, radiocarbon samples are not unambiguously associated with cultural contexts. Although unburned organic materials deteriorate in most archaeological sites, charcoal is inert, and once it is produced, it is only subject to physical damage. Most charcoal results from heating and cooking fuel, but it can also result from the burning of structures and artifacts. Individual pieces of charcoal rarely carry any qualities that can be unambiguously related to a particular cultural event. The integrity of potential samples is, therefore, dependent on feature contexts. If samples are collected from potentially dis-

turbed contexts, the resulting dates can only be interpreted in relation to other independent dates. Other problems with radiocarbon dating are the "old wood" issue previously mentioned for dendrochronology and cross-section effects. Long dead (dry) wood tends to be harvested for fuel; on Southwestern landscapes, standing dead trees may be sources of fuel for centuries after their death (Smiley 1985). In addition, slow growing species such as piñon and juniper can incorporate centuries of growth into small branches (cross-section effect). These qualities can result in erroneously early radiocarbon dates, even though the sampled material is unambiguously associated with a particular cultural feature and behavior. To lessen the potential risks of these problems, the charcoal selected for dating can be sorted by species and plant part. Small twigs or branches contribute less to cross-section ef fects because they incorporate fewer years of growth and they persist for shorter periods on standing dead trees. Annual plants and perennial shrubs are better material for radiocarbon dating because they incorporate carbon over fewer years and are not likely to survive on the landscape a long time after dying. Care in collecting, selecting, and characterizing radiocarbon samples will increase their relevance to particular cultural contexts, but the other limitations of the technique and date interpretation will constrain use and interpretation in some contexts.

Obsidian hydration can augment archaeological dating efforts, but accuracy limits are inadequately characterized by the error estimates of the hydration rind thickness and hydration rate (Beck and Jones 2000). Hydration rind formation is dependent on the obsidian composition, the moisture and environment of the sample, changes in those environmental variables, and time. Most of the variables that determine hydration rates must be estimated rather than measured, and there is no means of confirming an assumed model of environmental history. Care in sample selection can ensure that the measured rinds reflect artifact surfaces that were first exposed as part of the human behavior being dated, but the translation of rind formation into an age estimate for the sample cannot be conclusively related to chronologic information from other dating methods. Obsidian hydration dating is best used to establish relative chronologies within or between sites where depositional environments and environmental histories can be argued to be similar. Obsidian hydration dating will be considered for LA 84318 only in conjunction with sourcing and only where it can contribute to the understanding of relative chronology within the site.

Stylistic variation in ceramic vessels and lithic tools has resulted in the definition of temporally diagnostic artifact types. The variation encapsulated by pottery type definitions is usually sufficient to provide date estimates within 100- to 200-year periods or better (especially if based on pottery assemblages [Blinman 2000]). Variation in some lithic tools can provide similar resolution in more recent time periods, but resolution is less precise in the Archaic period. The problem with using sherds and projectile points as individual temporal markers is that they may have long use-lives; they are also susceptible to cultural and natural forces moving them within the archaeological and systemic contexts. Projectile points or sherds may be picked up and used several times before finally entering archaeological deposits, creating a discontinuity between their production date and the date of the provenience where they are recovered. Also, their small size makes them susceptible to postdepositional movement within deposits. For these reasons, single artifacts will not be considered as conclusive temporal markers. Stylistic dates for archaeological components will be based on multiple occurrences of temporally diagnostic projectile points or other tool complexes. Similarly, ceramic dates will be considered reliable if based on assemblages that are large enough to both infer age and to assess the potential for mixing or contamination.

Subsistence and Technological Organization

The limited test excavation data suggest that direct and indirect evidence of Late or latest Archaic subsistence and technological or ganization can be recovered from Feature 5 and other features that may be encountered. Data recovery will focus on subsistence strategies geared to exploiting biotic resources of different ecological zones as well as to the ongoing search for evidence that cultigens contributed to Late or latest Archaic economy before A.D. 900.

It is generally accepted that Late Archaic subsistence in the northern Rio Grande involved exploitation of temporally and spatially incongruous resources (Hudspeth 1997; Post 2000). The Late or latest Archaic subsistence pattern emphasized a broad spectrum of edible plants and small and medium-size mammals, and it employed technological organization appropriate to specialized or generalized strategies. The abundance and distribution of food resources combined with access to critical nonfood resources strongly influenced location of residential sites, length of occupation, and the strategy that was used to obtain and process resources. Distribution, abundance, and range of seasonally available resources af fected the settlement pattern, subsistence strategy and technological or ganization, whether they were residentially or logistically oriented (Binford 1979, 1980; Hudspeth 1997; Sassaman 1998). The archaeological record at the site level of Archaic hunter-

gatherers consists of artifacts and features and associated biotic remains that directly reflect resource processing and consumption, or indirectly the technological organization that supported these activities.

The very limited evidence available from Feature 5 within LA 134297 library addition is intriguing. It suggests that direct and indirect evidence is present. These potential data sources are discussed relative to other excavations of contemporaneous sites in the Santa Fe area.

Unusual for Archaic sites in the Santa Fe area is the occurrence of animal bone, which was found in association with or from within Feature 5. Animal bone is rare except in the isolated example of the Airport Road site, LA 61282 (Post 2002), where hundreds of burned and unburned small- and large-mammal bone fragments were recovered from thermal features and discard areas. Their recovery from LA 61282 suggested a heavy emphasis on hunting with less emphasis on foraging and plant processing, of which there was ample indirect evidence. In contrast to LA 61282, faunal remains were recovered in low frequency from Las Campanas and Northwest Santa Fe Relief Route sites (Post 1996; 2000). At Las Campanas, for example, 51 bones were recovered from seven Archaic period contexts that reflected consumption of animal species common to the piñon-juniper piedmont (Mick-O'Hara 1996). The near-surface provenience of most of the bone may have affected its preservation. At LA 134297, recovery rates may be higher if refuse deposits were capped by slow-moving alluvial deposition and if the bone is burned. While a small/large-mammal faunal assemblage may be expected, higher diversity may result from proximity to the Santa Fe River.

The heavily charcoal-infused soil within Feature 5 may yield archaeobotanical remains. Charred economic plant species continue to be the best indicators of foraging strategies and exploited environments. However, excavations along the Northwest Santa Fe Relief Route caution that archaeobotanical remains may not be abundant (McBride and Toll 2000; n.d.). Variability in economic species relative to different thermal feature types is suggested by the Santa Fe Relief Route results, but they are not conclusive (Post n.d.). Again, the proximity to a riparian setting may produce a wider range of economic plant species that are rare or absent in piedmont contexts. Also, floodplain proximity raises the possibility that cultigens will be recovered. Considerable effort has been spent on the attempt to recover cultigens from thermal features in the Santa Fe area (Toll and McBride 1996; McBride and Toll 2000; McBride and Toll n.d.). To date no evidence has been found that they were ever used, let alone occasionally used or cultivated.

The primary indirect evidence of subsistence is chipped and ground stone, which can provide the basis for inferences about technological organization as it applies to tool production, use and maintenance. The recovery of chipped stone debris from stratigraphic profile scraping suggests that it may be abundant.

Typically, Late or latest Archaic assemblages in the piedmont north of the Santa Fe River had low frequencies (less than 500 chipped stone artifacts) of chipped stone debris. Usually, they reflect expedient core reduction with limited emphasis on formal tool production and maintenance. This is interpreted as a technological organization geared to plant gathering and processing, rather than hunting and game exploitation (Lang 1997; Post 1996; Post 2000).

At LA 134297, different hunting and gathering strategies may be reflected in the artifact assemblage (Binford 1979; Kelly 1988; Parry and Kelly 1987). If abundant plant resources were available, then tool production and use would have focused on gathering and processing. Presumably, a lithic artifact assemblage mostly geared to plant gathering and processing would have more expedient or generalized tools and fewer tools and manufacture debris from hunting. Conversely, if plant gathering could not fulfill subsistence needs and hunting was more important, artifact assemblages and features should reflect hunting and de-emphasize plant gathering and processing. Residential occupations that occurred from the late spring to the early fall when plant and animal resources were available should have assemblages that reflect mixed activities. Late fall to early spring occupations occur when plant foods are less abundant to nonexistent, in which case an increased reliance on game mammals should be reflected in the artifact assemblage.

Data Needs

Subsistence and technological organization at the site level can be examined using floral and faunal remains, features, the artifact assemblage, and their spatial relationships. Samples and artifacts will be recovered and features excavated to maximize the potential for obtaining information on resource processing and consumption, and on the technological organization of these activities. Direct and indirect evidence of subsistence activities should be present at LA 134297.

Floral remains may be present in very low abundance. Contexts where they might occur are hearths, storage pits and midden deposits. At least 2 liters of fill from all hearths or roasting pits will be collected for processing. If more than 10 features are encountered, samples may be scanned rather than subjected to a full-sort analysis. An underexplored method for recovering economic plant data is the collection and analysis of phy-

toliths from or near features. Soil samples will be collected so that potential for phytolith analysis can be further explored.

Thermal features may also yield fragmentary faunal remains, although past experience shows that they may not be abundant. Collecting a lar ge sample of the hearth fill should increase the chance that faunal remains will be recovered from the flotation. Additionally faunal remains may be recovered from cultural deposits that are associated with Feature 5 and other features that may be exposed. Faunal remains are a direct link to the range of species, as well as ecological zones, that were exploited.

Chipped stone as an indicator of subsistence activities relies heavily on analytically defined technological trajectories for core reduction, tool production, use, and maintenance. As mobile hunter-gatherers, Late Archaic groups may have employed situation-dependent lithic technologies. Distance from residential sites and the source of suitable material for production of tools needed for anticipated tasks would have heavily influenced stone tool technology (Andrefsky 1994; Kelly 1988; Binford 1979). Models proposed by Binford (1979) and Kelly (1988) will be used to evaluate the LA 134297 assemblage. Consideration will be given to the ef fect that reliance on local versus nonlocal raw materials has on technological or ganization. The chipped stone assemblage will be examined in terms of reduction strategy, assemblage diversity , tool use, and maintenance. These data should reflect the on-site subsistence activities and the position of the site within a lar ger system.

The presence of ground stone, such as manos and metates, can be used to infer processing activities. Metates, which are lar ge, nonportable items, would be expected at residential sites or temporary base camps that were used for more than a day . Metates at temporary base camps might indicate caching in anticipation of future visits (Binford 1979). Manos are smaller and more portable and may have been discarded at temporary base camps or limited activity sites. In an area where cobbles are abundant, a mano would not be an indispensable piece of personal gear (Binford 1979). Manos are indicators of food processing, but they may not be indicators of the duration of site occupation or of intent to reoccupy a site.

Lancaster (1983) has demonstrated that dif ferent mano and metate shapes provide optimal grinding for certain types of seeds or grains. Manos and metates from LA 134297 can be examined from the perspective of functional differentiation. Use of manos for food processing, storage, or immediate consumption may be examined using Lancaster's assumptions.

More recently Nelson and Lippmeier (1993) have suggested that ground stone design reflects land use and subsistence practices. Employing assumptions about texture and durability , they suggest that dif ferent types of ground stone were produced for long-term or intensive use, or for brief, expedient or sporadic use. Examination of ground stone attributes using part of their model may yield patterns that reflect changes in subsistence activities and strategy.

Features, such as hearths, structures, or storage pits will provide more direct evidence of subsistence. Feature size and form may reflect food processing. A wide range of features would be expected from prolonged residential occupation. Less intensive occupation or specialized subsistence activities may leave a more restricted feature assemblage. More specialized functions may be reflected in formal feature morphology, such as well-defined pit, cobble lining or abundant fire-cracked rock content. Feature 5 and other features that are encountered will be excavated and recorded to yield the maximum information about construction, morphology, and use history.

FIELD AND LABORATORY METHODS

Field Methods

Fieldwork should be a cooperative, well-coordinated and openly communicated effort between OAS, HP1, B-Z Enterprises, Inc., and HPD. As outlined in the following, this will require the use of standard archaeological hand-excavation techniques, mechanical excavation, archaeological monitoring, and consultation with HPD. The latter will be especially true if the archaeological record substantially varies from what is expected.

We anticipate that the following work plan and field methods will be used at LA 134297:

1. The asphalt cover will be removed from the library addition and kinder garten playground areas. This activity will be monitored by OAS archaeologists. If cultural deposits or features are found within the kindergarten playground area, work in that area will be halted and HPD will be consulted on how to proceed. This activity will entail the use of mechanical excavation equipment by B-Z Enterprises, Inc.

2. Following removal of asphalt from the library addition footprint. Backfill will be mechanically removed from Backhoe Trenches 5 and 6A. In Backhoe Trench 5, the area extending 2 m north of the southern end, which contains Feature 5, will be removed by hand.

3. The upper 20 to 30 cm of basecourse and imported fill will be removed by mechanical equipment from

the library addition footprint. This depth will reach but should not penetrate Stratum VII, which is the mixed ancestral Pueblo/protohistoric/historic deposit.

4. Horizontal control will be established by superimposing a 1-by-1-m grid system across the library addition footprint. If Dorshow's reference points can be found they will be used. Otherwise, the grid system will be established with a new main datum. The grid system will be oriented to true north. Vertical control will be maintained relative to the main datum as below datum or as absolute elevation.

5. Stratigraphic control will be established by examining Backhoe Trench 5 and 6a side walls. Dorshow's strata will be confirmed by comparing the visible stratigraphy with the report descriptions. The investigation will focus on Stratum XI.

6. The assumption that there are no stratified deposits within the visually homogeneous Strata VII and VIII will be tested. One 1-by-1-m unit will be hand-excavated into and through Strata VII and VIII. Excavation will proceed in 10-cm levels within each stratum. All soil will be screened and the artifacts recovered. Artifact types from each level will be examined to determine if there is vertical stratification of pottery types or cultural materials that would suggest the deposit is intact or is more substantial than was determined by the testing program. If strata appear to be temporally stratified, a second 1-by-1-m unit will be excavated following the same procedures. If the distribution pattern does not hold up, there will be no further hand excavation of Strata VII and VIII within the library addition. If there is integrity to Strata VII and VIII and the deposit will yield substantially more information about later occupations, then HPD will be consulted on how to proceed.

7. If Strata VII and VIII are determined to lack integrity and additional data potential, then heavy equipment will be used to remove all overburden within the library addition footprint area to the top of Stratum X, which overlies Stratum XI and is 15- to 20-cm thick. An OAS archaeologist will monitor the mechanical excavation for unanticipated cultural deposits or features.

8. Once the overburden is removed from the 8-by-8-m area, the 1-by-1-m grid system will be superimposed over this area. A 5-by-5-m area will be gridded with Feature 5 at or near the center. Hand-excavation will proceed into and through Stratum X, removing it as a single unit. Even though Stratum X has been identified as a natural layer, it will be screened with 1/4-inch mesh. Stratum XI will then be systematically removed in 10-cm levels, exposing Feature 5 and any other features that are present. Five excavation units within Stratum XI will be screened through 1/8-inch mesh. If this sample fails to yield small chipped stone debris, animal bone fragments or macrobotanical specimens, then 1/4-inch mesh will be used for the remaining excavation of extramural area. If small chipped stone, animal bone fragments, and macrobotanical samples are consistently recovered, then use of 1/8-mesh will continue through the excavation of Stratum XI. In situ artifacts, especially tools and ground stone, will be point-provenienced.

   If features are exposed at the edge of the 5-by-5-m area, in consultation with HPD, HP1, and B-Z Enterprises, Inc., the mechanically excavated area may be extended to the horizontal limit of the library addition construction limit. Additional features will be systematically searched for unless there is evidence that a substantially greater number of features are present than can be addressed by this excavation plan. In this case, an amended plan will be developed that will allow excavation to proceed in as timely and cost-effective manner as possible.

   If Feature 5 is the only cultural feature or intact cultural deposit within the 5-by-5-m excavation area, or one or two features are exposed in the core of the excavation area, then two additional 2-by-2-m excavation areas will be placed within the library addition footprint. The 2-by-2-m units will be systematically hand-excavated. If no additional features or evidence of an intact cultural deposit are encountered, then excavation will halt. If features are associated with an intact cultural deposit or surface, excavations will be expanded to determine the nature and extent of the deposit. If a substantial cultural deposit or cluster of features is indicated, HB1, B-Z Construction Enterprises, Inc., and HPD will be consulted to amend the work plan.

9. Defined features will be excavated by hand using standard archaeological hand tools. All fill will be screened through 1/8-inch mesh. Half of the feature will be excavated in arbitrary 10-cm levels. The exposed cross-section will be profiled and the soil levels described using a Munsell Color Chart and standard geomorphological terms. The remaining half of the feature will be excavated in natural levels. Ethnobotanical samples will be collected from

feature fill for water-screening and ethnobotanical analysis. In this way, seeds or small twigs may be recovered that can be used for AMS dating. Any oxidized patches or thermal burns will be protected, until archaeomagnetic samples can be collected. All sample locations will be plotted on a feature plan.

Once defined features are completely excavated, feature maps and profiles will be drawn and tied into the grid system and site elevations. Drawings will include a scale, north arrow, and key to abbreviations and symbols. Written description will be on standard forms that will include provenience, dimensions, soil matrix, artifact, construction, time frame, excavation technique, and other data. Photographs will record the feature excavation progress and the final excavated form. Photographs will include a metric scale, north arrow, and mug board with the LA number, feature number, and date. All photographs will be recorded on a photo data sheet.

10. Excavation documentation will consist of field notes and grid forms compiled by the excavator. The forms will contain locational, dimensional, stratigraphic, and contextual information. General notes outlining excavation strategy and rationale, field interpretations, and decisions will be kept by the project director and site assistants.

    Artifacts recovered from each provenience will be bagged and labeled by unit, stratigraphic or arbitrary level, date, and excavator's name. A specimen number will be assigned to all bags by provenience and a running field artifact catalogue maintained for each site. Materials necessary for immediate preservation of fragmentary and unstable faunal and ethnobotanical remains will be used. Large lithic artifacts will be bagged separately to minimize bag wear. Very small flakes and angular debris will be placed in vials or bags within the artifact bag, so they are not lost during cleaning.

11. Radiocarbon samples will be collected from features and other possible cultural contexts. Samples will be ranked according to their context and data potential. If burned seeds or wood are encountered, up to 20 g will be collected for radiocarbon analysis. All samples will be collected with a dry, clean, trowel or tweezers and placed immediately into a bag or aluminum foil. Archaeomagnetic samples will be collected according to the processing laboratory standards.

    Sample locations will be plotted on plan and profile drawings of features and proveniences. The sample bags will be labeled with the provenience designation, feature number, location within the feature, and stratigraphic position. The samples will also be recorded on specimen forms with labeling information, environmental data, contextual information, and any other comments that may be useful to the laboratory analyst.

12. It is highly unlikely that human remains will be encountered. If they are, the guidelines of *Policy on Collection, Display and Repatriation of Culturally Sensitive Materials* (Appendix 1-2) will be followed.

13. Site boundaries, physical and cultural features, test excavation locations, and proposed project and site limits will be recorded with a transit, stadia, and tape. A scaled map will be produced showing these data.

14. Upon completing the excavation, OAS will call and inform the HPD archaeologist. If the HPD archaeologist is satisfied with the verbal summary of the completed effort, then work will cease.

15. OAS will submit a preliminary clearance letter describing the effort and summarizing the results within 48 hours. A final report will follow within one year of completion of the field phase.

Laboratory Methods

Prior to artifact analysis, all recovered materials will be cleaned, and any materials requiring conservation will be treated. Collected samples of charcoal and ethnobotanical remains will be processed and prepared for shipment to the appropriate laboratory. The specialists involved will be consulted for special preparations required before shipment. Working copies of field maps and feature drawings will be prepared and made available to the specialists.

The lithic artifact analysis will follow the guidelines of the *Office of Archaeological Studies Lithic Artifact Analysis Manual* (OAS 1994). To aid in addressing the research goals of cultural affiliation and site structure, analysis will emphasize morphological and functional attributes, including material reduction, manufacture and maintenance, tool use, and attribute percentages.

Macrobotanical remains from collected samples will be analyzed at the OAS by the staff ethnobotanist, Mollie S. Toll. The analysis will identify plant resources used prehistorically, and will aid in the study of resource procurement, subsistence, and site function. Any pollen

samples will be analyzed by Rick Holloway , and the results integrated with other flora-derived data to study both subsistence strategies and seasonality of use.

In the event that faunal remains are recovered from the features, they will be analyzed at the OAS laboratory by Nancy J. Akins. Specimens will be analyzed for species, sex, age, portion, condition, evidence of butchering, and evidence of taphonomic processes. Faunal remains are important indicators of resource procurement and site function. The detail of the analysis will be dependent on the abundance and condition of the recovered faunal remains.

In the event that ground stone artifacts are recovered, ground stone analysis will follow the guidelines of the *Office of Archaeological S tudies Gr ound S tone Artifact Analysis Manual* (OAS 1991). Analysis will emphasize tool manufacture and maintenance, tool use, and the recovery of pollen from artifact surfaces that can be used in the study of resource procurement, subsistence, and site function.

In the event that ceramics are recovered, they will be analyzed in the OAS laboratory by C. Dean Wilson. Ceramics will be analyzed for pottery type and vessel form. The primary focus of ceramic analysis will be age, cultural af filiation, function, use-life and discard, and source of manufacture.

Upon completion of the attribute data, the coded data will be computerized. S tatistical manipulation will be performed geared toward examining and contrasting patterns in artifact distribution that reflect technological organization. Results will be illustrated with graphs, tables, charts, and maps. Artifacts with attributes important to site interpretation will be illustrated for the report.

Specialized dating techniques will be conducted by contracted specialists: Beta Analytic, Inc will conduct radiocarbon dating; Jef f Cox at the OAS Archaeomagnetic Laboratory will perform archaeomagnetic analysis. The purpose of these analyses will be to obtain the most accurate range of dates possible for cultural strata and features.

Research Results

The final report will be published in the Museum of New Mexico, Of fice of Archaeological S tudies' *Archaeology Notes* series. The report will present all important excavation, analysis, and interpretive results. Included will be photographs, maps, and tables. Raw data such as field notes, maps, photographs, and artifact catalogues will be given to the S tate Historic Preservation Division, Archeological Records Management System, currently located in the Laboratory of Anthropology in Santa Fe. The artifact collection will be curated in the Museum of New Mexico's Archaeological Research Collections or a repository of Santa Fe Public Schools choice.

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APPENDIX 1-1

TABLES WITH STRATIGRAPHIC DESCRIPTIONS AND DEPTHS, AND THE LA FORM FOR LA 134297

Table 1-1. Representative elevations of stratigraphic units across excavation units.

	Centimeters Below Modern Ground Surface (cm bmgs) (BT = Backhoe Trench)											
	BT 1		BT 2		BT 3		BT 5		BT 6A		BT 6B	
Stratum	Top	Base	Top	Base	Top	Base	Top	Base	Top	Base	Top	Base
Asphalt	-	-	-	-	-	-	0	10	0	9	0	10
I	0	30	0	38	0	25	-	-	-	-	-	-
II	30	45	-	-	25	62	-	-	-	-	-	-
V	-	-	-	-	-	-	10	24	9	24	10	28
VI	-	-	-	-	-	-	18	27	40	46	-	-
VII	30	45	0	38	-	-	24	45	24	40	28	77
VIII	45	59	38	62	-	-	45	74	24	53	77	169
XV	-	-	-	-	62	76	-	-	-	-	-	-
XVII	-	-	-	-	76	83	-	-	-	-	-	-
IX	59	65	62	71	76	92	74	84	44	69	169	192
X	65	72	62	71	76	92	84	95	44	69	169	192
XI	72	116	71	116	92	135	95	151	69	100	192	231
XII	-	-	100	112	-	-	98	145	-	-	-	-
XIII	116	162	116	131+	135	150+	151	163	100	144	231	248+
XIV	162	171+	-	-	-	-	163	184	120	168	-	-
XVII	-	-	-	-	-	-	-	-	-	-	19	160

After Dorshow 2002.

Table 1-2. Detailed stratigraphic data.

Stratum	Hz	Texture	Structure	Plasticity	Consistence (Dry)	Color Range (Dry)	Comments
I	AC_1	silty sand	granular	nonplastic	loose	10YR 5/4	very loose, disturbed
II	AC_2	sandy silt	massive/laminar	nonplastic	loose to slightly hard	10YR 5/4-4/4	correlates with Stratum VII; protohistoric to historic period artifacts are common; diffuse charcoal infusions
III	designation replaced by Stratum VIII						
IV	designation replaced by other strata						
V	-	sandy gravel	granular	nonplastic	compacted	yellow-brown	engineered base course
VI	-	slightly sandy silt	massive	slightly plastic	loose to slightly hard	10YR 4/4-3/4	discrete dumping episodes; relatively recent
VII	AC_3	silty sand	granular/laminar	nonplastic	slightly hard	10YR 5/4-4/4	correlates with Stratum VII; protohistoric to historic period artifacts are common; diffuse charcoal infusions
VIII	A_1	silty sand	massive	slightly plastic	slightly hard	10YR 4/3-3/3	protohistoric to historic period artifacts are common; accumulated cultural use-fill in a cumulic A soil horizon; frequent charcoal inclusions
IX	C	sand to slightly silty sand	granular	nonplastic	slightly hard	10YR 6/6-5/6	clean alluvial deposits (overbank flooding)
X	C	slightly sandy silt	massive	slightly plastic	slightly hard	10YR 4/4-3/4	clean alluvial deposits (overbank flooding)
XI	A_2	silty loam	massive	slightly plastic	slightly hard	10YR 3/2-2/2	prehistoric artifacts, charcoal, and animal bone are common; represents accumulated cultural use-deposits formed in a cumulic AC soil horizon
XII	-	silty loam/feature fill	massive	slightly plastic	slightly hard	10YR 2/2	feature fill; cult. Modified XI deposits; charcoal infused with abundant fire-cracked rock
XIII	A_3	slightly silty sand	massive to subangular blocky	nonplastic	slightly hard	10YR 4/4-3/4	less than 1% small pebbles
XIV	C	sandy gravel	granular	nonplastic	slightly hard	10YR 4/4	alluvial deposits; 10 to 30% gravel
XV	C_3	sand/silt microstrata	granular/laminar	nonplastic/slightly plastic	slightly hard	variable-light brown	alternating bands of sand and silty sand alluvial deposits; more clay than IX/X
XVI	-	variable: disturbed fill	-	-	slightly hard	variable	disturbance fill
XVII	-	clayey silt/feature fill	-	plastic	slightly hard	10YR 2/2	Feature 6 occupation surface

After Dorshow 2002.

LABORATORY OF ANTHROPOLOGY SITE RECORD

1. IDENTIFICATION & OWNERSHIP

LA Number: 134297 (contact ARMS for site registration) ☒ **Site Update**? (complete at least Sections 1-4)

Site Name(s): _____

Other Site Number(s): EA 48.1 _____ _____

Agency Assigning Number: _____ _____ _____

Current Site Owner(s): Santa Fe Public Schools

Site Type: Non-Structural **Occupation Type:** Prehistoric/Historic

2. RECORDING INFORMATION

NMCRIS Activity No.: 76443 **Field Site Number:** EA 48.1

Site Marker? ☒ (specify ID#): EA 48.1

Recorder(s): Berenika Byszewski, Brenda Baletti, Wetherbee Dorshow

Agency: Earth Analytic, Inc. **Recording Date (dd-MMM-yyyy):** 5-OCT-2001

Site Accessibility (choose one): ☒ accessible ☐ buried (sterile overburden) ☐ flooded ☐ urbanized ☐ not accessible

Surface Visibility (% visible; choose one): ☐ 0% ☐ 1-25% ☐ 26-50% ☒ 51-75% ☐ 76-99% ☐ 100%

Remarks: Surface visibility ranges from high (76-99%) in the playground area in the northern part of the study area, to none in the concrete-covered and landscaped portions.

Recording Activities:
- ☒ sketch mapping
- ☐ instrument mapping (e.g., total station mapping)
- ☐ surface collection (controlled or uncontrolled)
- ☒ in-field artifact analysis
- ☒ other activities (specify): GPS Mapping
- ☒ photography
- ☐ shovel or trowel tests; probes
- ☒ test excavation
- ☐ excavation (data recovery)

Description of Analysis or Excavation Activities: Backhoe Trench Testing

Photographic Documentation: Yes

Surface Collections (choose one):
- ☒ no surface collection
- ☐ uncontrolled surface collection
- ☐ collections of specific items only
- ☐ controlled (sample: <100%)
- ☐ controlled (complete: 100%)
- ☐ other method (describe): _____

Records Inventory:
- ☒ site location map
- ☒ sketch map(s)
- ☐ instrument map(s)
- ☒ excavation, collection, analysis records
- ☒ photos, slides, and associated records
- ☐ other records: _____
- ☒ field journals, notes
- ☐ NM Historic Building Inventory form

Repository for Original Records: Earth Analytic Inc.

Repository for Collected Artifacts: _____

3. CONDITION

Archaeological Status: ☐ surface collection ☒ test excavation ☐ partial excavation ☐ complete excavation

Disturbance Sources: ☒ wind erosion ☒ water erosion ☐ bioturbation ☐ vandalism ☒ construction/land development

☒ other source (specify): **Bi-annual grading episodes associated with the playground**

Vandalism: ☐ defaced glyphs ☐ damaged/defaced building ☒ surface disturbance ☐ manual excavation

☒ mechanical excavation ☐ other vandalism (specify): _____

Percentage of Site Intact (choose one): ☐ 0% ☐ 1-25% ☒ 26-50% ☐ 51-75% ☐ 76-99% ☐ 100%

Observations on Site Condition: In general the site is in moderate to poor condition. Mechanical and construction activities, alluvial erosion, and human impacts represent the greatest disturbances on-site. Large amount of sediment appear to have been moved around by heavy machinery in the school yard. This area is bladed twice a year to eliminate goatheads and level the ground for various playground activities. Artifacts become exposed after blading and human collection is extensive (personal communication, Principle Mike Lee). There is evidence of vehicular use on the interior perimeter of the property boundary that extends into the site boundary on the southeast. Three portable buildings, apparently not presently in use, are located on the northern part of the playground, along with some metal debris. There is a gradual (1-5 percent grade) slope to southwest across the entire property, and alluvial damage appears to be severe after heavy rain, capable of moving large amounts of loose sediment across the playground. The water and sediment appear to wash off of the playground and through a severe erosional channel that crosses the property moving west, then south down the drainage/road on the west side of the school toward West Alameda. On the northeast boundary of the property at Camino de las Crucitas is a cut-bank that reaches a meter in height as a result of successive blading and alluvial episodes. Despite the major disturbances on site, artifacts continue to appear on the surface and the historic foundations are partially intact. The large amount of artifacts present on the surface even after the major impacts described above indicates there is a high percentage of probability that more undisturbed subsurface archaeological deposits remain at this site.

4. RECOMMENDATIONS (for Performer/Recorder use only)

National Register Eligibility (choose one): ☐ eligible ☐ not eligible ☒ not sure

Applicable Criteria: ☐ (a) ☐ (c) ☐ (b) ☒ (d)

Basis for Recommendation: LA 134297 is a Classic to Historic Pueblo artifact scatter and a recent historic structural site that has been highly disturbed over the years. Despite the fact that the disturbances discussed above have impacted this site, portions of it remain visible on the surface, including one thermal feature that is currently exposed. For years, grading of the playground has continually exposed artifacts and features, and though construction on the property has destroyed some of them, they continue to be revealed. The presence of further intact subsurface cultural deposits is almost certain. This site has the potential to provide information regarding prehistoric and early historic settlement or land use patterns in the Santa Fe River valley. It is therefore potentially eligible for nomination to the State Register of Cultural Properties and the National Register of Historic Places.

Assessment of Project Impact: Originally, the first phase of the project was to entail the temporary placement of portable classrooms and paths on and around LA134297. Clearly the land moving efforts involved in this endeavor would endanger on-site cultural resources. In consultation with Santa Fe Public Schools and Harris PinnacleOne, we have come up with a plan to completely avoid impacts to the site area. Although we recognize and fully respect that the final determination of the site's eligibility status is the purview of Ms. Glenna Dean of the Historic Preservation Division, we recommended this avoidance strategy to alleviate the potential need for significance testing. (See Below)

Treatment Recommendations We recommend a strategy of total avoidance of on site cultural resources. First, we propose to systematically collect all exposed surface artifacts to preserve these materials from future uncontrolled collection. Second, archaeologists will monitor the placement of a fence along the south boundary of the existing dirt road that runs along the inside of the property's north boundary. The fence will parallel the north property boundary at a distance of no greater than 10 m. As shown in Figure 12, the east half of this fenced-in roadway corridor will be covered with compacted sand/gravel fill to protect the site's north-northwest margins. Archaeologists also will monitor the placement of protective fencing along the site's south boundary. Additionally, archaeologists will monitor construction-related excavations in areas just outside the surface-defined southern and southwestern boundaries to assure the protection of potential buried cultural deposits in these sensitive areas. Based on our assessment and these recommendations, we suggest that cultural resources clearance be granted for the first phase of the Gonzales Elementary School Renovation Project. Should future phases of construction at the school include potential impacts to the site area, the issue of site significance and treatment strategies will have to be readdressed.

5. SHPO CONSULTATIONS (for SHPO and Sponsor use only)

Sponsor NR Determination: ☐ eligible ☐ not eligible ☐ not determined **Applicable Criteria:** ☐ (a) ☐ (b) ☐ (c) ☐ (d)

Sponsor Staff: _____ **Date (dd-MMM-yyyy):** ____ ____ ____ (day / month / year)

Sponsor Remarks: _____

SHPO NR Concurrence: ☐ eligible ☐ not eligible ☐ not determined **Applicable Criteria:** ☐ (a) ☐ (b) ☐ (c) ☐ (d)

HPD Staff: _____ **Date (dd-MMM-yyyy):** ____ ____ ____ (day / month / year) **HPD Log No:** _____

Register Status: ☐ listed on National Register ☐ listed on State Register ☐ formal determination of eligibility

State Register No.: _____

SHPO Remarks: _____

6. LOCATION

Source Graphics:

☒ USGS 7.5' (1:24,000) topo maps ☐ rectified aerial photos [Scale: _____]

☐ other topo maps [Scale: _____] ☐ unrectified aerial photos [Scale: _____]

☐ GPS unit GPS accuracy (choose one): ☐ < 1.0 m ☐ 1-10 m ☐ 10-100 m ☐ >100 m

☐ other source (describe): _____

UTM Coordinates (@ center of site; at least one set of coordinates required):

Map-based Coordinates Datum: NAD27 **Zone:** 13 **E:** 413591 **N:** 3950058

GPS-based Coordinates Datum: NAD27 **Zone:** **E:** _____ **N:** _____

Directions to Site: See attached map **In highway R-O-W?** ☐

Town (if in city limits): Santa Fe **State:** NM **County:** Santa Fe

USGS Quadrangle Name	Date	USGS Code
Santa Fe	1952, rev 1993	_____
_____	_____	_____

NMCRIS 2000 vers. 1/00

PLSS Meridian	Unplatted	Township	Range	Section	¼ Sections			Protracted?
New Mexico	☒	T ____	R ____	__	____	____	____	☐
New Mexico	☐	T ____	R ____	__	____	____	____	☐
New Mexico	☐	T ____	R ____	__	____	____	____	☐
New Mexico	☐	T ____	R ____	__	____	____	____	☐

7. PHYSICAL DESCRIPTION

Site Dimensions: 123 x 85 meters **Basis for Dimensions** (choose one): ☐ estimated ☒ measured

Site Area: 7,041 sq m **Basis for Area** (choose one): ☐ estimated ☒ measured **Elevation:** 6,900 feet

Site Boundaries Complete? (choose one): ☒ Yes ☐ No (explain): ____

Basis for Site Boundaries: ☒ distribution of archeological features & artifacts ☐ modern features or ground disturbance

☐ property lines ☐ topographic features ☐ other (specify): ____

Depositional/Erosional Environment: ☒ alluvial ☐ aeolian ☒ colluvial ☐ residual ☐ no deposition (on bedrock)

☒ other process (describe): Deposition related to bi-annual grading episodes in the playground area

Stratigraphy & Depth of Archeological Deposits (choose one): ☐ unknown/not determined

☐ no subsurface deposits present ☒ subsurface deposits present ☐ stratified subsurface deposits present

Estimated Depth of Deposits: > 1 meter

Basis for Depth Determinations: ☒ estimated ☐ shovel/trowel tests ☐ core/auger tests ☐ excavations

☐ road or arroyo cuts ☐ rodent burrows ☐ other observations (describe): ____

Observations on Subsurface Archeological Deposits: Based on profiles of the arroyo and area drainages fine grained sediments extend more than 1 meter in overall depth.

Local Vegetation (list species in decreasing order of dominance):

Overstory: Cottonwoods

Understory: Various grasses and decorative shrubs, invasive weeds (goatheads, etc.)

Vegetation Community (choose one or two): ☐ forest ☒ woodland ☐ grassland ☐ scrubland ☐ desert scrubland ☐ marshland

☒ other community (specify): Riparian bosque associated with Santa Fe River

Topographic Location:				
☒ bench	☐ dune	☐ low rise	☐ ridge	
☐ alluvial fan	☐ blowout	☐ flood plain/valley	☐ mesa/butte	☐ rockshelter
☐ arroyo/wash	☐ canyon rim	☐ foothill/mountain front	☐ mountain	☐ saddle
☐ badlands	☐ cave	☐ hill slope	☐ open canyon floor	☐ talus slope
☐ base of cliff	☐ cliff/scarp/bluff	☐ hill top	☐ plain/flat	☐ terrace
☐ base of talus slope	☐ constricted canyon	☐ lava flow (malpais)	☐ playa	

☐ other location (describe): ____

Observations on Site Setting: EA 48.01 is located in the northeast section of Gonzales Elementary School property in the school yard (See Figure 2). The site is bound to the east by a wire fence and on the north by a concrete wall. Artifacts were not found outside these barriers, most likely due to the fact that there is substantial development, in the form of a housing complex and a road, outside the property boundary. The Arroyo was inspected and no artifacts were found. In the south and west of the property, erection of buildings and playsets, as well as the lack of frequent blading, have probably contributed to the lack of surface artifacts. The playground has a slight (1-5 percent grade) slope to the southwest. On-site soils are a silty sand, with some small river pebbles included in the matrix. Frequent blading combined with general playground activities have produced a loose 1-3 cm surface sediment over extremely hard-packed soil.

8. ASSEMBLAGE DATA

Assemblage Content (all components):

Lithics:
- ☒ lithic debitage
- ☐ chipped-stone tools
- ☐ diagnostic projectile points
- ☐ non-local lithic material
- ☐ stone-tool manufacturing items (cores, hammerstones, etc.)
- ☐ ground-stone tools
- ☐ other stone tools

Prehistoric Ceramics
- ☐ whole ceramic vessels
- ☒ diagnostic ceramics
- ☒ other prehistoric ceramics

Historic Artifacts:
- ☒ diagnostic glass artifacts
- ☒ other glass artifacts
- ☐ diagnostic metal artifacts
- ☐ other metal artifacts
- ☐ whole ceramic vessel
- ☐ diagnostic ceramics
- ☒ other historic ceramics

Other Artifacts and Materials:
- ☐ bone tools
- ☒ faunal remains
- ☐ macrobotanical remains
- ☐ perishable artifacts
- ☐ ornaments
- ☐ figurines
- ☐ mineral specimens
- ☐ architectural stone
- ☐ burned adobe
- ☐ fire-cracked rock/burned caliche

☐ Other items (specify): _____

Assemblage Size (all components):

artifact class	estimated frequency: 0	1s	10s	100s	1000s	>10,000	*Counts (if <100)
lithic artifacts (choose one): (include debitage)	☐	☒	☐	☐	☐	☐	5
prehistoric ceramics (choose one):	☐	☐	☒	☐	☐	☐	45
historic artifacts (choose one):	☐	☒	☐	☐	☐	☐	8
total assemblage size (choose one):	☐	☐	☒	☐	☐	☐	62

Dating Potential: ☒ radiocarbon ☐ dendrochronology ☐ archeomagnetism ☐ obsidian hydration

☒ relative techniques (e.g. seriation, diagnostics, etc.) ☐ other methods (specify): _____

Assemblage Remarks: Archaeologists identified a total of 33 artifacts on-site, including 27 ceramics, 3 pieces of clear, flat window glass, 1 piece of porcelain, 1 piece of purpled glass, and one longbone, cut on both ends. The ceramic assemblage includes two Biscuit A wares (Abiquiu Black on Gray) which date to the early Classic period (A.D. 1325-1600), specifically 1350-1425 (Adler and Dick 1999). Several tuff tempered unpainted utility wares likely dating to the same period are also present. Additionally, there is one Tewa Polychrome sherd, two sand and mica tempered gray wares. Tewa Polychrome was produced in the Tewa Basin (northern Rio Grande) between 1650 and 1725 (Oppelt, 1988). Mica tempered wares were also produced by the Tewa during this period. Two unknown glaze on yellow sherds are also present. Glaze wares were produced in northern Rio Grande Valley between the early A.D. 1300s and A.D. 1700 (Adler and Dick 1999). The artifact manufacturing dates for the ceramics identified suggest an occupation period for this site between A.D. 1350 and 1425, and 1650 and 1725. Purpled glass was manufactured prior to 1917. The modern historic component of this site cannot be dated more specifically by any artifacts present on-site.

Testing collected 47 specimens of artifacts and ecofacts. Of these, 29 were prehistoric and historic artifacts. The sherds were similar to those identified during survey. A new addition was the 5 chert flakes, previously unrecorded on the site, although students and teachers on the site had previously collected numerous examples.

9. CULTURAL/TEMPORAL AFFILIATIONS

TOTAL NUMBER OF COMPONENTS DEFINED: 2

COMPONENT #1 (EARLIEST)

Cultural Affiliation: Pueblo _____

Basis for Temporal Affiliations (choose one): ☐ not applicable ☐ based on associated chronometric data or historic records
☒ associated diagnostic artifact or feature types ☐ based on analytically derived assemblage data or archeological experience

***Period of Occupation:** (*see NMCRIS Guidelines for valid periods, default occupation dates, and phase/complex names)

	Period Name	Begin Date	End Date
Earliest Period:	Classic		
Latest Period (if any):	Historic	1350-1425	1650-1725

Dating Status: ☐ radiocarbon ☐ dendrochronology ☐ archaeomagnetism ☐ obsidian hydration
☒ relative techniques (e.g. seriation, diagnostics, etc.) ☐ other methods (specify): _____

Basis for Cultural/Temporal Affiliation: The ceramic assemblage includes two Biscuit A wares (Abiquiu Black on Gray) which date to the early Classic period (A.D. 1325-1600), specifically 1350-1425 (Adler and Dick 1999). Several tuff tempered unpainted utility wares likely dating to the same period are also present. Additionally, there is one Tewa Polychrome sherd, two sand and mica tempered gray wares. Tewa Polychrome was produced in the Tewa Basin (northern Rio Grande) between 1650 and 1725 (Oppelt, 1988). Mica tempered wares were also produced by the Tewa during this period. Two unknown glaze on yellow sherds are also present. Glaze wares were produced in northern Rio Grande Valley between the early A.D. 1300s and A.D. 1700 (Adler and Dick 1999). The artifact manufacturing dates for the ceramics identified suggest an occupation period for this site between A.D. 1350 and 1425, and 1650 and 1725.

Component Type: Artifact Scatter with Features

Remarks: _____

***Associated Phase/Complex Name(s):** Classic and Historic Pueblo

COMPONENT #2

Cultural Affiliation: Unknown Historic

Basis for Temporal Affiliations (choose one): ☐ not applicable ☒ based on associated chronometric data or historic records
☐ associated diagnostic artifact or feature types ☐ based on analytically derived assemblage data or archeological experience

***Period of Occupation:** (*see NMCRIS Guidelines for valid periods, default occupation dates, and phase/complex names)

	Period Name	Begin Date	End Date
Earliest Period:	Territorial/Early Statehood		
Latest Period (if any):	WW II	1900	1950

Dating Status: ☐ radiocarbon ☐ dendrochronology ☐ archaeomagnetism ☐ obsidian hydration
☒ relative techniques (e.g. seriation, diagnostics, etc.) ☒ other methods (specify): **Historic Records**

Basis for Cultural/Temporal Affiliation: Archival research

Component Type: Features/artifact scatter

Remarks: _____

***Associated Phase/Complex Name(s):** Historic

10. FEATURE DATA

(see NMCRIS User's guide for a list of valid feature types)

Feature Type	Reliable ID ?	# Observed	Assoc. Comp. #s	Feature ID, Notes
Concrete Foundation	Yes	1	2	Feature 1 is a concrete foundation. There are two walls footings and a small concrete slab visible on the surface. One wall runs southwest-northeast for twenty-three meters. It is fifteen centimeters wide. At the southwest end of the wall there is junction with another wall running northwest-southeast. This wall, perpendicular to the other wall, is twenty-five centimeters wide and nine meters long. Two meters northeast of the south terminus of this wall, parallel to the first wall, is a half meter square slab of concrete. No artifacts were found associated with this structure.
Ash Stain	Yes	1		Feature 2 is a small ash stain, possibly a hearth. Measuring 14 by 7 cm, the stain is oval, and very dark gray. It is located in an area that has been both bladed and trampled by children playing. Despite heavy disturbance, the feature remains at least partially intact and subsurface deposits are unquestionably present. No artifacts are located in or around the feature, though there are several artifacts present within a ten meter radius and in such a highly disturbed context, artifacts associated with the feature may have migrated, or been removed.
Fire Pit	Yes	3	1	Feature 3 is an irregularly shaped firepit with abundant fire-cracked rock, charcoal flecking and charcoal-infused sediment measuring a minimum of 100 by 50 cm in plan view and is at least 10 cm thick. The upper contact of the feature occurs at about 90 cm bpgs and the lower boundary is approximately 100 cm bpgs. Although the backhoe caused the removal of the upper 2 to 5 cm of feature fill within the trench confines, the remainder of the feature is intact. No artifacts were recovered during documentation of this feature, but the presence of fire-cracked rock and concentrated charcoal clearly indicates a cultural origin. A single flake was recovered near Feature 3 during wall-cleaning activities. Feature 4 is a firepit capped with one large boulder (30 by 15 by 12 cm) and filled with abundant fire-cracked rock and charcoal mottled sediment (See Figure 3; Figure 14). The feature measures a minimum of 75 by 60 in plan view and is at least 20 cm thick. The upper contact of the feature occurs at about 110 cm bpgs and the lower boundary is approximately 130 cm bpgs. Feature fill is a dark grayish brown silty loam with a moderate density of small charcoal chunks and

				charcoal flecking. In cleaning up the feature for photography, we recovered two flakes and one piece of burned bone from feature fill. As with Feature 3, this firepit is not bordered by observable oxidation. . Feature 5 is a relatively large thermal stain, likely a firepit, exposed in both the east and west walls of a backhoe trench. Though, disturbed by the backhoe trench, intact portions are in the trench walls. We recovered two pieces of bone and one chert tertiary flake from feature fill during trowel-scraping of the west wall profile.
Occupation Surface	Yes	1	?	Feature 6 is an occupation surface exposed in a backhoe trench as a layer of charcoal infused clayey silt. One flake was recovered from this occupational deposit during trench wall cleaning. Unlike Features 3, 4, and 5, this feature is higher in the stratigraphic sequence, ranging from 50 to 57 cm bpgs. The feature measures at least 175 cm on a north-south axis and is approximately 7 cm in maximum thickness.

Feature Remarks: Discussion with principal Mike Lee, and teacher Susan MacIntosh indicate that among the local residents, there are rumors that this structure is the remains of a stable or watchtower associated with the Japanese Internment Camp (1942-1945). However, maps, aerial photos, and archival research all indicate that the camp was located northwest of the Gonzales Elementary school property, and that these buildings were not associated with the camp. In the 1952 aerial photos, three buildings are visible in the area of the concrete foundation. In fact, when the aerial photos were georeferenced and the GPS position of the foundation was added to the image, one of the buildings in the photo was in roughly the same shape and location as the feature encountered on the ground. Unfortunately, archival research did not provide any information regarding what the function of these structures may have been or who may have owned them. The possibility does exist that the foundations may have been part of buildings associated with one or both of the facilities described above, however, specific documentation is lacking. Feature 2 is a very dary gray oval ash stain that was at least partially intact. It was not possible to attribute Feature 2 to either component. Feature 3 is a fire pit that given the absence of observable oxidation, this feature likely represents a relatively low-temperature thermal event. The absence of internal stratigraphy suggests a single occupational use-episode. The same can be said for the Featyre 4 fire pit. Based on its depth, Feature 4 likely represents the oldest feature in the documented Area B assemblage. Feature 5, is likey a firepit as well, but is very disturbed within the backhoe trench. Unfortunately, backhoe excavation resulted in the removal of most of the east half of this feature, but the thickness of the feature as exposed in the trench's west wall profile clearly indicates that a large amount of the feature remains intact. The northeastern edge of Feature 6 (occupational surface) was removed during backhoe excavation, but the feature clearly extends beyond the trench's west wall. Once the feature was recognized, the backhoe was kept from removing sediments below the feature's depth in the remainder of the backhoe trench.

11. REFERENCES

Written Sources of Information: _____

Additional Sources of Information: _____

APPENDIX 1-2

RULE NO. 11: POLICY ON COLLECTION, DISPLAY, AND REPATRIATION OF CULTURALLY SENSITIVE MATERIALS

Rule No. 11

POLICY ON COLLECTION, DISPLAY, AND REPATRIATION OF CULTURALLY SENSITIVE MATERIALS

Adopted: 01/17/91

I. INTRODUCTION

The policy of the Museum of New Mexico is to collect, care for, and interpret materials in a manner that respects the diversity of human cultures and religions. Culturally sensitive materials include material culture as well as the broader ethical issues which surround their use, care, and interpretation by the Museum. The Museum's responsibility and obligation are to recognize and respond to ethical concerns.

II. DEFINITIONS

A. "Culturally sensitive materials" are objects or materials whose treatment or use is a matter of profound concern to living peoples; they may include, but are not limited to:

1. "Human remains and their associated funerary objects" shall mean objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later;

2. "Sacred objects" shall mean specific items which are needed by traditional religious leaders for the practice of an ongoing religion by present-day adherents;

3. Photographs, art works, and other depictions of human remains or religious objects, and sacred or religious events; and

4. Museum records, including notes, books, drawings, and photographic and other images relating to such culturally sensitive materials, objects, and remains.

B. "Concerned party" is a museum-recognized representative of a tribe, community, or an organization linked to culturally sensitive materials by ties of culture, descent, and/or geography. In the case of a federally recognized Indian tribe, the representative shall by tribally authorized.

C. "Repatriation" is the return of culturally sensitive materials to concerned parties. Repatriation is a collaborative process that empowers people and removes the stigma of cultural paternalism which hinders museums in their attempts to interpret people and cultures with respect, dignity, and accuracy. Repatriation is a partnership created through dialogue based upon cooperation and mutual trust between the Museum and the concerned party.

D. The Museum of New Mexico's Committee on Sensitive Materials is the committee, appointed by the Director of the Museum of New Mexico, that shall serve as the Museum of New Mexico's advisory body on issues relating to the care and treatment of sensitive materials.

III. IDENTIFICATION OF CONCERNED PARTIES

A. The Museum shall initiate action to identify potentially concerned parties who may have an interest in culturally sensitive material in the Museum's collections.

B. The Museum encourages concerned parties to identify themselves and shall seek out those individuals or groups whom the Museum believes to be concerned parties.

C. The Museum's sensitive materials committee shall review all disputed individual claims of concerned-party status in consultation with the

tribe, community, or organization which the individual(s) claim to represent.

The Museum's sensitive materials committee shall assist, when necessary, in designating concerned parties who have an interest in culturally sensitive materials contained in the collections of the Museum of New Mexico.

D. The Museum shall provide an inventory of pertinent culturally sensitive materials to recognized concerned parties.

E. The Museum shall work with concerned parties to determine the appropriate use and care of and procedures for culturally sensitive materials which best balance the needs of all parties involved.

IV. IDENTIFICATION AND TREATMENT OF CULTURALLY SENSITIVE MATERIALS

A. Within five years of the date of adoption of this policy, each Museum unit shall survey to the extent possible (in consultation with concerned parties, if appropriate) its collections to determine items or material which may be culturally sensitive materials. The Museum unit shall submit to the Director of the Museum of New Mexico an inventory of all potentially culturally sensitive materials. The inventory shall include to the extent possible the object's name, date, and type of accession, catalogue number, and cultural identification. Within six months of submission of its inventory to the Director of the Museum of New Mexico, each Museum unit shall then develop and submit a plan to establish a dialogue with concerned parties to determine appropriate treatment of culturally sensitive items or materials held by the unit.

B. As part of its treatment plans for culturally sensitive materials, the Museum reserves the right to restrict access to, or use of, those materials to the general public. The Museum staff shall allow identified concerned parties access to culturally sensitive materials.

C. Conservation treatment shall not be performed on identified culturally sensitive materials without consulting concerned parties.

D. The Museum shall not place human remains on exhibition. The Museum may continue to retain culturally sensitive materials. If culturally sensitive materials, other than human remains, are exhibited, then a good-faith effort to obtain the advice and counsel of the proper concerned party shall be made.

E. All human skeletal remains held by the Museum shall be treated as human remains and are *de facto* sensitive materials. The Museum shall discourage the further collection of human remains; however, it will accept human remains as part of its mandated responsibilities as the State Archaeological Repository. At its own initiation or at the request of a concerned party, the Museum may accept human remains to retrieve them from the private sector and furthermore may accept human remains with the explicit purpose of returning them to a concerned party.

IV. REPATRIATION OF CULTURALLY SENSITIVE MATERIALS

A. On a case-by-case basis, the Museum shall seek guidance from recognized concerned parties regarding the identification, proper care, and possible disposition of culturally sensitive materials.

B. Negotiations concerning culturally sensitive materials shall be conducted with professional discretion. Collaboration and openness with concerned parties are the goals of these dialogues, not publicity. If concerned parties desire publicity, then it will be carried out in collaboration with them.

C. The Museum shall have the final responsibility of making a determination of culturally sensitive materials subject to the appeal process as outlined under Section VII A.

D. The Museum of New Mexico accepts repatriation as one of several appropriate actions for culturally sensitive materials only if such a course of action results from consultation with designated concerned parties as described in Section III of this policy.

E. The Museum may accept or hold culturally sensitive materials for inclusion in its permanent collection.

F. The Museum may temporarily accept culturally sensitive materials to assist efforts to repatriate them to the proper concerned party.

G. To initiate repatriation of culturally sensitive materials, the Museum of New Mexico's current deaccession policy shall be followed. The curator working with the concerned party shall complete all preparations for deaccession through the Museum Collections Committee and Director before negotiations begin.

H. Repatriation negotiations may also result in, but are not limited to, the retention of objects with no restrictions on use, care, and/or exhibition; the retention of objects with restriction on use, care, and/or exhibition; the lending of objects whether permanently or temporarily for use to a community; and the holding in trust of culturally sensitive materials for the concerned party.

I. When repatriation of culturally sensitive materials occurs, the Museum reserves the right to retain associated Museum records but shall consider each request for such records on an individual basis.

VI. ONGOING RECOVERY OR ACCEPTANCE OF ARCHAEOLOGICAL MATERIALS

A. In providing sponsored archaeological research or repository functions, the Museum shall work with agencies that regulate the inventory, scientific study, collection, curation, and/or disposition of archaeological materials to ensure, to the extent possible under the law, that these mandated functions are provided in a manner that respects the religious and cultural beliefs of concerned parties.

B. When entering into agreements for the acceptance of, or continued care for, archaeological repository collections, the Museum may issue such stipulations as are necessary to ensure that the collection, treatment, and disposition of the collections include adequate consultation with concerned parties and are otherwise consistent with this Policy.

C. In addition to the mandated treatment of research sites and remains and in those actions where treatment is not mandated, defined, or regulated by laws, regulations, or permit stipulations, the Museum shall use the following independent guidelines in recovering or accepting archaeological materials:

1. Prior to undertaking any archaeological studies at sites with an apparent relationship to concerned parties, the Museum shall ensure that proper consultation with the concerned parties has taken place.

2. When so requested by concerned parties, the Museum shall include an observer, chosen by the concerned party, in the crew of an archaeological study.

3. The Museum shall not remove human remains and their associated funerary objects or materials from their original context nor conduct any destructive studies on such remains, objects, and materials except as part of procedures determined to be appropriate through consultation with concerned parties, if any.

4. The Museum reserves the right to restrict general public viewing of in situ human remains and associated funerary objects or items of a sacred nature and further shall not allow the public to take or prepare images or records of such objects, materials, or items, except as part of procedures determined to be appropriate through consultation with concerned parties. Photographic and other images of human remains shall be created and used for scientific records only.

5. The Museum reserves the absolute right to limit or deny access to archaeological remains being excavated, analyzed, or curated if access to these remains would violate religious practices.