MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

DATA RECOVERY AT LA 2690 (NMQ 29122), FORT WINGATE RUIN

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ARCHAEOLOGY NOTES 275

SANTA FE 2000 NEW MEXICO

ADMINISTRATIVE SUMMARY

The Archaeological Site Stabilization and Preservation Project (ASSAPP), Office of Archaeological Studies (OAS), Museum of New Mexico, has conducted a site evaluation of LA 2690 (Fort Wingate Ruin, NMQ 29122), McKinley County, New Mexico, on Navajo Nation Tribal Fee land. The OAS has been working under contract with the NMSHTD to identify endangered archaeological sites within highway rights-of-way. Within the scope of this project, the New Mexico State Highway and Transportation Department (NMSHTD) proposes to stabilize areas within the boundaries of the site and within the NMSHTD right-of-way that have been affected by past highway construction and by erosion. Funding for this project is provided through the Enhancement Program of the Intermodal Surface Transportation Efficiency Act of 1991.

NMSHTD Project No. TPE-7700 (14), CN 9163
MNM Project No. 41.596 (Archaeological Site Stabilization and Protection Project)

Submitted in fulfillment of Joint Powers Agreement J0089-95 between the New Mexico State Highway and Transportation Department and the Office of Archaeological Studies, Museum of New Mexico.

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INTRODUCTION

The Archaeological Site Stabilization and Preservation Project (ASSAPP), Office of Archaeological Studies (OAS), Museum of New Mexico, has completed a site evaluation of LA 2690 (Fort Wingate Ruin; NMQ 29122), McKinley County, New Mexico, on Navajo Nation Tribal Fee land (Fig. 1 and Appendix 1[removed from copies for general circulation]). The OAS has been working under contract with the New Mexico State Highway and Transportation Department (NMSHTD) to identify cultural properties within existing highway rights-of-way and to propose management actions if the preservation of those properties is threatened by past or present highway-related activities. Funding for this project is provided through the Enhancement Program of the Intermodal Surface Transportation Efficiency Act of 1991 (NMSHTD Contract J00089; Project No. TPE-7700(14); MNM Project No. 41.596). Properties have been included in the ASSAPP based on recommendations from NMSHTD staff, land management agencies, and the public. Each property has been visited to determine if it qualifies for protection under applicable state or federal laws and to determine whether any factors affecting preservation are within the control and responsibility of the NMSHTD. Treatment of cultural properties that are part of planned construction projects are coordinated through the normal NMSHTD environmental evaluation procedures.

On March 22, 1996, John Ware (Principal Investigator ASSAPP 1995-1998) and Stephen C. Lentz (Project Director) determined that LA 2690 (NMQ 29122) met the criteria for inclusion in the inventory of sites requiring stabilization. On February 3, 2000, Yvonne Oakes (Principal Investigator, 1999-present), Stephen C. Lentz and Mike Pope, Project Technical Engineer for the NMSHTD, District 6, identified specific areas within the right-of-way in which cultural materials were destabilized through erosion. The degree of slope was measured and the dimensions of the area requiring stabilization were recorded. On March 12, 2000, the site was evaluated by Grady Stem, a landscape architect with the NMSHTD. It was decided that the area of the site within the right-of-way could best be preserved through a program of revegetation. Recommendations were made at that time that are included in the "Proposed Action" section of this document, below.

Work performed by the ASSAPP is conducted in compliance with Section 106 of the National Historic Preservation Act (36 CFR Part 800) , Executive Order 11593 (1972), and the Environmental Policy Act of 1969 (91. Stat 852). LA 9075 is listed on the *State Register of Cultural Properties* (7/20/78) and the *National Register of Historic Places* (10/10/80). The OAS proposes to excavate a small trench to anchor netting for erosion control. Disturbance resulting from this activity is expected to be minimal, but the possibility of recovering small quantities of cultural materials exists. Therefore, this document has been prepared to provide for the recovery of those materials and suggest management strategies. Yvonne Oakes served as principal investigator, figures were drafted by Ann Noble and the report was edited by Robin Gould.

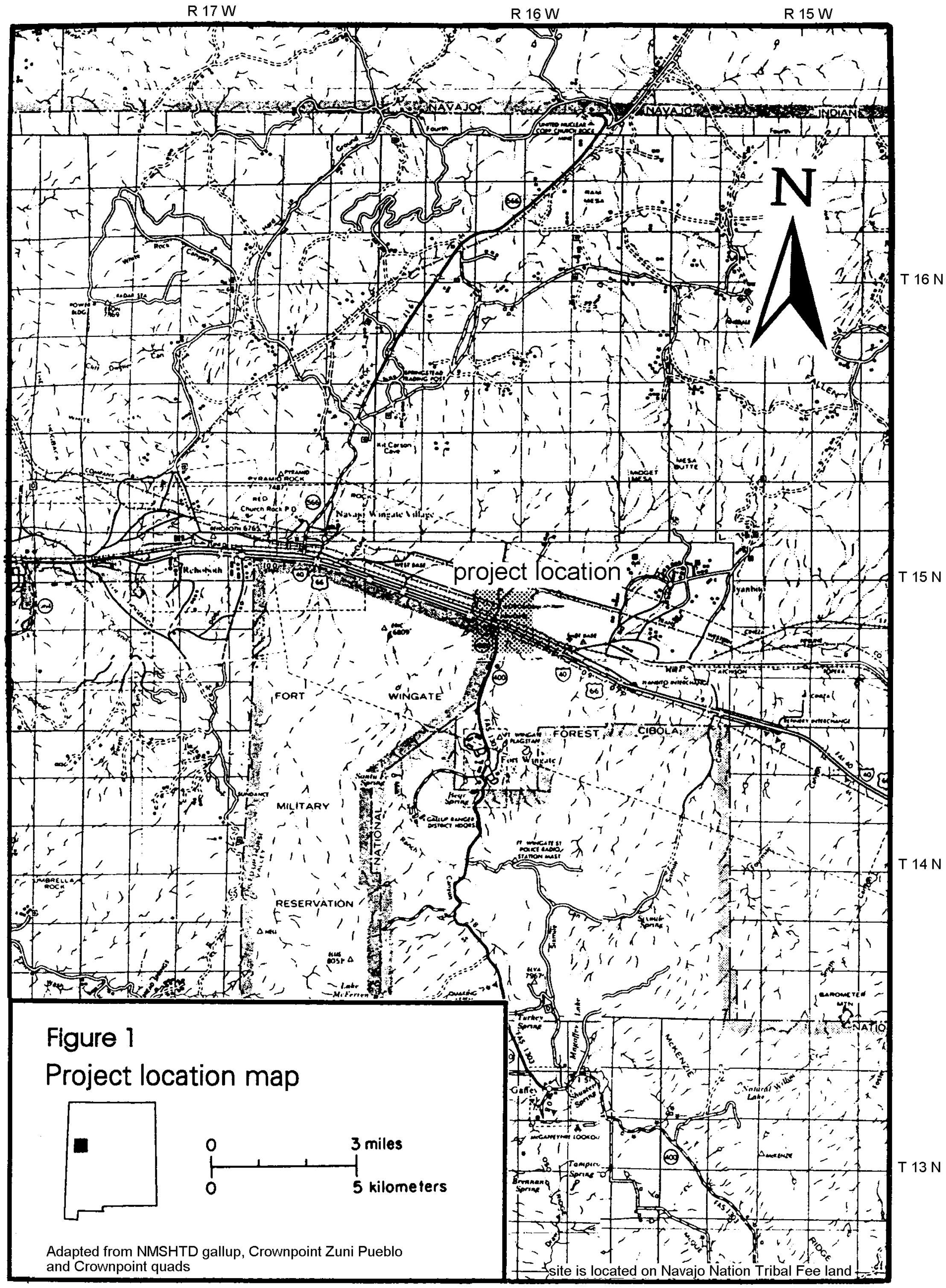

Figure 1
Project location map

Adapted from NMSHTD gallup, Crownpoint Zuni Pueblo and Crownpoint quads

ENVIRONMENT

The project area is on a segment of I-40 that crosses a number of ecological zones and topological features. It skirts the southern side of the South Fork of the Puerco River Valley, west of the foothills of the Zuñi Mountains. This area is characterized by a valley bottom of alluvial flats with occasional ridges (Warren 1970:1). Elevation in the vicinity of the project is 2,050 m (6,780 ft). Piñon-juniper woodland occurs on the upper elevations to the south, with juniper scrub extending along the ridges that project into the valley. Lower elevations are dominated by sage and mixed grasses. Soils within the valley bottom consist of fine alluvial silts and clays with channels cutting through the older alluvium.

Geology and Geomorphology

The South Fork of the Puerco River is in a wide, flat-bottomed valley running roughly northeast to southwest from the Continental Divide into Arizona, where it joins the Little Colorado River. The valley floor is characterized by alluvial flats broken along the southern edge by a series of ridges projecting into the valley. This valley is the result of alluvial erosion cutting through sedimentary deposits that form the northern portion of the Zuñi Uplift (Kottlowski 1959, fig. 1), east of the Nutria Monocline (Jenkins and Keller 1986:140). South of the river valley this erosional process is also a factor in the creation of the foothills of the Zuñi Mountains (Smith et al. 1959:34).

Primarily of Triassic and Jurassic age (Smith et al. 1959:34), these foothills form the southern boundary of the valley. They are comprised of Fort Wingate sandstone and Grants sandstone deposits of the upper Moenkopi above a Permian karst of San Andres limestone (Cooley 1959:66; Smith 1956), and sandstones of the Chinle formation (Gadway 1959:82). The steeply sloping nature of the Zuñi Uplift deposits is revealed in these Chinle formations, which form the foothills of the Zuñi Mountains and then slope under the South Fork of the Puerco River Valley floor (Smith et al. 1959:34).

Cliffs form a broken wall along the northern side of the South Fork of the Puerco River Valley. A portion of these cliffs form the feature known as the "Red Rocks," and are comprised of material associated with the Zuñi Uplift (Fitzsimmons 1959:112-113). These cliffs are composed of Jurassic sedimentary deposits. Lukachuki sandstone forms the base of the cliffs, and the dominant red portion of the cliffs is comprised of Entrada sandstone. Above this material is Todilto limestone, the banded material of the Chaves formation, and Brushy Basin deposits (Gadway 1959:82). Remnant Cretaceous deposits of Dakota sandstone cap portions of the cliffs (Fitzsimmons 1959:113; Gadway 1959:82).

This area is in the southeastern portion of the San Juan hydrological basin. Seeps and springs from the San Andres-Glorieta Aquifer occur along the base of the cliffs north of the South Fork of the Puerco River. Springs associated with this aquifer are common within the upper valleys of the Zuñi Mountain foothills to the south (White and Kelley 1986:333). The project area is drained by the South Fork of the Puerco River.

Three major periods of alluviation followed by arroyo cutting occurred during human prehistory. The first episode of alluviation took place from 11,000 to 7500 B.P. Alluviation from this period is the by-product of a wet and warm environment as evidenced by soils containing the bones of *Bison* *occidentalis* and Paleoindian projectile points. This was followed by the Altithermal interval, from 6000 to 4500 B.P., a period of erosional weathering, arroyo cutting, channel filling, and soil formation (Cooley 1959). A second period of alluviation occurred from 4000 to 2000 B.P., characterized by floodplain aggradation and channel filling (Sears 1925). The third period of alluviation occurred on the Colorado Plateau from A.D. 1200 to 1800. The heavy arroyo cutting found within most modern floodplains appears to be primarily the result of overgrazing combined with a weather pattern shifting toward heavy summer showers (Hewett 1982:38-39). Modern arroyos cut by the Puerco River and its tributaries are as much as 10 m (30 ft) deep (Warren 1970:1).

Soils within the project area are classified as Haplargids-Torripsamments and Camborthids-Torriorthents. Both of these soil associations are calcareous, highly erodible, and characterized by materials weathered from sedimentary shale and sandstone deposits. The main difference between these two soil associations is their relative depth and the terrain in which each occurs.

Haplargids-Torripsamments soils are well-drained, deep, and comprised of coarse to moderately fine sediments. They occur mainly on nearly level to gently rolling landscapes (Maker et al. 1974:81). Camborthids-Torriorthents soils are similar in composition but occur in deep to shallow deposits in areas of moderate to steeply rolling landscape, as well as areas of breaks and escarpments (Maker et al. 1974:83-84).

Climate

The climate of west-central New Mexico is characterized as semiarid and arid continental with low humidity. The area experiences moderate to strong winds, and most precipitation is in the summer. Warm summers and cold winters are the norm, with large diurnal temperature variations (Tuan et al. 1973:26).

The mean annual precipitation recorded at Fort Wingate, adjacent to the project area, is 32.7 mm (12.9 inches) (Maker et al. 1974, table 5; Tuan et al. 1973:18). Precipitation falls in two distinct seasonal periods. April-May and November are the driest months of the year (Maker et al. 1974:78; Tuan et al. 1973:26). The project area is in the summer rain shadow of the Zuñi Mountains, part of the Mogollon complex of mountains and mesas (Tuan et al. 1973:36). This serves to limit the amount of rain the area receives. Although most precipitation is during July-August, the area receives only 75 percent of that received to the south of the Zuñi Mountains (Tuan et al. 1973:36). The resulting moisture deficits make modern-day farming uneconomical within the general project area (Maker et al. 1974:81).

Two major shifts in precipitation took place during human prehistory. The first episode of increased precipitation began approximately 9000 B.P. with the collapse of the Laurentide Ice Sheet in eastern Canada. This had previously deflected global westerly air currents to the south, restricting the influx of moist warm air originating from both the Gulf of California and the Gulf of Mexico, from penetrating the central portion of the continent (Davis 1989:3).

Climatic changes since the end of the Altithermal have been the result of shifts in the position of the jet stream. A 65-mile shift to the north of northern winds allowed greater access to the Southwest by moisture-bearing southern winds, leading to increased precipitation in the century following A.D. 1000. This increase peaked in mid-century. The situation was then reversed between A.D. 1100 and 1200, when southern winds were pushed out of the area by northern winds moving south. Rainfall decreased to an intermittent level during this period, with frequent drought (Knight

1982:51).

Yearly temperatures for the project area average 9.2 degrees C (48.6 degrees F), with an average day-to-night difference of 30 degrees F (Knight 1982:510; Gabin and Lesperance 1977:207)). The local growing season averages 150 days, with a range of 110 to 205 days (Maker et al. 1974, table 5; Tuan et al. 1973, figs. 37, 38). The first killing frost usually takes place within the first week of October (Tuan et al. 1973, fig. 40), and the last frost occurs in the first week of May (Tuan et al. 1973, fig. 39).

Flora and Fauna

The project area is within the mixed grass vegetation zone (Castetter 1956:267-269). Dominating plant species within this area are galleta grass, blue grama, hairy grama, little bluestem, and Indian grass. Sage, snakeweed, rabbitbrush, and greasewood also occur.

Other restricted flora zones, though not within the project area, occur within the general area and contributed to the vegetational diversity exploited by local prehistoric populations. The piñon-juniper community is in the upland, canyon, and mesa-top areas of the Zuñi Mountain foothills (Castetter 1956:274-275; Maker et al. 1974:79). Higher elevations within the Zuñi Mountains contain ponderosa pine (Maker et al. 1974:79). Extensive riverine plant communities are present near the project area along the South Fork of the Puerco River. Vegetation within this community includes native plants such as sedges and cottonwoods, as well as invasive nonnative species such as tamarisk.

Faunal populations vary according to habitats that correspond to plant communities. The number of plant communities near the project area suggests a range of fauna greater than that characteristic of any single specific vegetation zone. Species characteristic of the project area include jackrabbit, cottontail rabbit, prairie dog, and associated small rodents, including varieties of squirrels, mice, rats, and gophers. Larger species include porcupine, skunks, raccoon, badger, coyote, deer, and bobcat.

CULTURAL RESOURCES OVERVIEW

Investigators interested in a detailed reconstruction of the cultural history of west-central New Mexico are referred to the following publications: Gumerman and Olson (1968), Weaver (1978), Nelson and Cordell (1982), Scheick (1983), and Kauffman (1985). Below is a brief synthesis of the major cultural developments associated with the project area.

Paleoindian Period

The Paleoindian period (11,000-5500 B.P.) was first recognized in 1926 at the Folsom site in northeastern New Mexico (Wormington 1947:20). A series of Paleoindian traditions have since been defined beginning with Clovis and continuing through Plano (Stuart and Gauthier 1981:294-300). Originally defined on the plains of eastern New Mexico, the Paleoindian cultural area has been expanded to include virtually all of North America. Though originally believed to be dependent on big-game hunting, the importance of plant gathering and small-animal hunting to Paleoindian subsistence is now recognized (McGregor 1965:120; Willey 1966:38; Jennings 1968:78-79; Cordell 1979:19-21, 1982; Stuart and Gauthier 1981:31-33).

Paleoindian sites have rarely been documented in the Gallup area but may be buried under alluvial deposits (Cordell 1982). Distinctively shaped Paleoindian projectile points have been found in the general Gallup region (Sessions 1979:45; Acklen and Moore 1982; Judge 1982:21-22; Anderson and Gilpin 1983:53; Banks and Del Bene n.d.:16).

Archaic Period

The Archaic period in the northern Southwest (5500 B.C.-A.D. 400) is generally referred to as the Oshara tradition (Irwin-Williams 1973). This period is characterized by distinctive projectile points and lithic artifact scatters that may include grinding implements and fire-cracked rock but that lack ceramics. Archaic subsistence adaptations are based on a highly mobile broad-based economy characterized by a combination of seasonally scheduled hunting and gathering activities (Banks and Del Bene n.d.:23-24; Post 1987:7).

The Oshara tradition is divided into five phases: Jay (5500-4800 B.C.), Bajada (4800-3200 B.C.), San Jose (3200-1800 B.C.), En Medio (1800 B.C.-800 B.C.), and the Armijo (800 B.C.-A.D. 400) (Irwin-Williams 1973). The first four phases are nonagricultural, with a hypothesized increasing dependence on gathered plants, as evidenced by increased numbers of grinding implements. The cultivation of maize as a primary food source occurs during the Armijo phase. However, subsistence continues to be based on hunting and gathering. Relatively few Archaic sites are known to exist in the peripheral areas of the San Juan Basin, including the project area (Cordell 1982).

Cultural manifestations known as Basketmaker II further north are usually described in western New Mexico (including the project area) and eastern Arizona as Late Archaic with the addition of corn usage (Wilson and Blinman 1991). This form of cultural development appears to occur first in the elevated perimeter of the San Juan Basin, including the project area (Stuart 1981:157).

A second Archaic tradition, the Cochise culture, developed in southwestern New Mexico and southeastern Arizona. The material culture of the Cochise is similar to that of the Oshara tradition, differing primarily in its projectile point type sequence (Beckett 1973). The Cochise culture may have extended as far north as the Puerco River Valley and the southern periphery of the San Juan Basin. The project area is within this proposed area of cultural overlap. Although no sites associated with the Cochise culture have been recorded for the general project area (Beckett 1973:125), Cochise culture projectile points do occur within the San Juan Basin (Vogler 1982:158).

Anasazi Pueblo Period

The Anasazi Pueblo period in the San Juan Basin extends from A.D. 500 to 1300. Temporal divisions of Anasazi culture based on ceramics are Transitional Basketmaker (pre-A.D. 500), Basketmaker III (A.D. 500-700), Pueblo I (A.D. 700-900), Pueblo II (A.D. 900-1100), and Pueblo III (A.D. 1100-1300).

The beginning of the Anasazi period in the southern Colorado Plateau is marked by the adoption of pottery between A.D. 200 and 500 (Burton 1991; Wilson and Blinman 1991). Sites dating within this time period are associated with brown wares constructed of alluvial clays. Later sites reflect a technological and cultural shift to gray and white wares constructed of geologic clays (Wilson et al. 1992). These early ceramics are associated with shallow pit structures clustered in small homesteads with associated small surface storage rooms.

Basketmaker III is a period of increased population density and apparent cultural homogeneity, reflected in the number and layout of sites. These sites consist of homestead clusters of deep pit structures with their associated surface storage rooms and extramural features (Judge 1982:38; Post 1987:9).

The development of surface habitation structures and the development of Kana'a neckbanded pottery defines Pueblo I (Cordell 1982:66-67). Site locations are primarily in upland settings, away from floodplains and river bottoms (Weaver 1978:37). Clusters of room blocks appear during this period, though the use of pit structures continues.

The Pueblo II period is a time of both an increase in population (reflected in the number of sites) and an increased diversity in site types and settings. This period represents the greatest extent of the Anasazi across the landscape (Cordell 1982:66-67).

Interaction between the local population of the valley of the South Fork of the Puerco River and the elements of the Chaco phenomenon occurred during the Pueblo II period. Construction of the Chacoan outlier known as Fort Wingate Ruin (LA 2690, NMQ 29122) occurred during the late Pueblo II period (Peckham 1958:161-163). This site may have been built over an existing Pueblo I structure (Peckham 1958:163), presumably as part of the Chacoan expansion taking place within the San Juan Basin at that time (Vivian 1990). The substance of this interaction between the local population and the Chacoan phenomenon is open to conjecture (Toll 1985; Sebastian 1988; and Vivian 1990).

The Pueblo III period is said to extend from A.D. 1100 to 1300. This period is characterized by fewer but larger sites. This population aggregation may be tied to political centralization. Pueblo III sites consist of large room blocks, with great kivas, interior kivas, and satellite communities (Gumerman and Olsen 1968:122-124; Weaver 1978:38-39; Cordell 1982:69-73; Anderson and Gilpin 1983; Eschman 1983:383-384).

Previous archaeological work in west-central New Mexico shows a differentiation in ceramic affiliation taking place during the Pueblo III period (Acklen 1982; Lang 1983). Areas peripheral to the southern and southwestern portions of the San Juan Basin appear to be tied ceramically to different cultural areas over time (Nelson and Cordell 1982; Lang 1983; Scheick 1983). It is suggested this change in affiliation was connected with the regional abandonment of the area after A.D. 1300 (Weaver 1978:38; Nelson and Cordell 1982:983). The Puerco River Valley appears to remain within the Chacoan cultural sphere until A.D. 1300. In contrast, sites maintained into the A.D. 1300-1350 period tend to exhibit connections with the population centers at Manuelito Canyon to the west (Nelson and Cordell 1982:983).

Protohistoric and Historic Navajo Periods

The protohistoric Athabascans of the Southwest (Apaches and Navajos) appear to have originated in the northern plains. They remained a homogeneous group sharing a relatively uniform language prior to their arrival into the Southwest and their differentiation into separate cultural entities (Young 1983:394). Though language differentiation has taken place, even today the language differences between the Navajo and different Apache groups remain at the dialect level (Young 1983).

The timing of this Athabascan (including Navajo) arrival into the Southwest is still subject to debate. Klukhohn and Leighton (1962:32) believe the Navajos arrived in New Mexico by A.D. 1000. Opler (1983) prefers a date of no later than A.D. 1400. Gunnerson (1956) believes the Navajos reached the Southwest by 1500 and were in contact with the Pueblos by 1525. Navajo Athabascan occupation of northwestern New Mexico was first documented by the Spaniards between 1540 and 1626 (Scheick 1983).

All Athabascans were considered Apaches by the Spaniards, who referred to the Navajos as the "Apaches de Navajo" as late as 1733 (Hester 1962:78, table 13). Navajo subsistence during this period (known as the Dinetah phase and dated from A.D. 1350 to 1700) was based on hunting and gathering, supplemented with limited agriculture (Brugge 1983:491; Reed and Horn 1990:283, 293). Navajo contact with the Pueblos and Spaniards involved trade and Navajo raiding of Pueblo and Spanish settlements (Hester 1962).

Improved relations between the Navajos and Pueblos contributed to the success of the Pueblo Revolt of 1680 (Brugge 1983:491). Pueblo refugees fleeing the returning Spanish in 1692 were aided and harbored by the Navajos, particularly in the Gobernador and Largo Canyon regions, and remote portions of the upper San Juan (Hester 1962).

Navajo movement out of the Gobernador-Largo Canyon areas to Chacra Mesa and the southern San Juan Basin took place between 1700 and 1760. Increased pressure from the north by raiding Utes was a major factor in this population shift toward the south and west away from the San Juan Valley (York 1983:522). Cultural modification of the Navajos occurred as Puebloan and Spanish cultural traits were adopted (Hester 1962:95-96; Brugge 1983:493; Gilpin 1983:527-547). Sheep and goat raising was practiced among the Navajos by 1706 (Hill 1940:396). By 1776-80, Navajos were living in the Gallup area (Hester 1962:79, fig. 24).

The eighteenth century saw improved relations between the Navajos and the Spaniards as they united to fight the increasingly aggressive Utes. In time, however, pressures created by increasing Spanish settlement led to increased hostility and conflict. Slaving expeditions against the Navajos by the Spaniards led to Navajo attacks on Spanish settlements. Sporadic warfare beginning in 1800 continued between the Navajos and a succession of Spanish, Mexican, and United States governments until 1864.

Defeat of the Navajos in 1864 resulted in the physical removal of approximately 2,400 Navajos from northwestern New Mexico to a reservation at Bosque Redondo, near Fort Sumner on the Pecos River. The Navajos were allowed to return to northwestern New Mexico and northeastern Arizona in 1868 (Gilpin 1983:532; Roessel 1983:510; York 1983:522).

Navajo subsistence based on livestock herding became the norm after 1868, and expansion into commercial herding occurred after 1905 (Gilpin 1983:534). Although some families were displaced by the coming of the Atlantic and Pacific Railroad to the Gallup area in 1880 (McNitt 1962), the railroad created opportunities for commercial herding that expanded after 1905 (Gilpin 1983:543). Dependence on the boom-and-bust cycle of the livestock markets ended with the advent of wage labor opportunities brought on by the beginning of World War II (Gilpin 1983:536).

Euroamerican Occupation

The Euroamerican occupation of the project area was limited to a few resident traders prior to the construction of Fort Fauntleroy in 1860. The fort (renamed Fort Lyon in late 1860) served as a base of operations for U.S. troops in their campaigns against the Navajos (Giese 1991:3). Colonel Kit Carson successfully led a force of U.S. troops with Ute and Pueblo auxiliaries against the Navajos in 1863-64. The defeat of the Navajos in 1864 and their subsequent removal from the area to Fort Sumner resulted in the closing of Fort Lyon in 1864 except for caretaker personnel (Giese 1991:3-4). With the return of the Navajos in 1868, Fort Lyon was renamed Fort Wingate (after abandoned old Fort Wingate near Grants) and reoccupied to maintain a presence near the Navajos.

Until 1880, the Euroamerican occupation of this area of New Mexico was limited to military personnel, Indian agents assigned to local reservations, and assorted missionaries, traders, ranchers, and suppliers associated with reservations or military posts (Scheick 1983).

Land grants were made to the Atlantic and Pacific Railroad in 1880, and construction began the same year (McNitt 1962). Proximity to the railroad enabled ranchers in the area to move their livestock to markets to the east. Fort Wingate Station was built adjacent to the entrance to the fort for the convenience of military personnel.

Fort Wingate was closed in 1911. It reopened in 1918 under the operation of the Army Ordinance Department, which began using it to store munitions. Part of the fort was turned into a school for Navajos (Giese 1991:4). Though the school is still in operation, Fort Wingate was closed by the government in 1991.

PREVIOUS WORK IN THE PROJECT AREA

A number of sites have been recorded in the project area (Table 1).

Table 1. Recorded Sites in the General Area of LA 2690 (NMQ 29122)

LA Number	Topography/Ecozone	Culture	Period	Site Type	Reference
Church Rock Quadrangle					
LA 2691	Valley bottom/grassland	Anasazi	P II	Masonry room block	Wendorf et al. 1956
LA 2688	Hilltop/grassland	Anasazi	P II	Masonry room block	Wendorf et al. 1956
LA 2692	Arroyo/grassland	Anasazi	P II	Sherd scatter	Wendorf et al. 1956
LA 1432	Valley bottom/grassland	Anasazi	P II	Pit structure	NMCRIS*
LA 59265	Valley bottom/grassland	Anasazi	P II	Sherd scatter	Jacklin 1986
LA 59258	Valley bottom/grassland	Navajo	Recent	Sweat lodge	Jacklin 1986
LA 59259	Hillslope/grassland	Unknown	Unknown	Fire-cracked rock	Jacklin 1986
LA 59257	Alluvial plain/grassland	Navajo	Recent	Fenced grave	Jacklin 1986
LA 59256	Ridge slope/grassland	Anasazi	P II	Sherd scatter	Jacklin 1986
Ciniza Quadrangle					
LA 80680	Terrace/woodland	Anasazi	P II	Sherd scatter	NMCRIS
LAS 2726	Floodplain/woodland	Anasazi	Unknown	Sherd scatter	Wendorf et al. 1956
LA 6367	Slope/grassland	Anasazi	P II-P III	Masonry room block	Alexander 1964
LA 2687	Hilltop/grassland	Anasazi	P II	Masonry room block	Wendorf et al. 1956
LA 75991	Slope/woodland	Anasazi	P II	Sherd and lithic scatter	Redmond 1990
LA 79660	Slope/woodland	Anasazi	P I-P II	Sherd and lithic scatter	NMCRIS

*New Mexico Cultural Resource Information System, Historic Preservation Division

Hester and Olsen conducted the earliest archaeological surveys in the general project area in 1953 for El Paso Natural Gas (Wendorf et al. 1956). This project resulted in the recording of the sites clustered near the present McGaffey Interchange. One site was partially excavated by Peckham in 1957-58 before the construction of I-40 (Peckham 1958). A number of small surveys have been conducted in the general area (Alexander 1964; Nelson 1987; Redmond 1990). The largest recent survey conducted within the general project area was in the Iyanbito area (Jacklin 1986). It encompassed a large area north of I-40, but only five of the sites recorded are within 0.5 miles of the project area.

LA 2690 (Fort Wingate Ruin, NMQ 29122) was recorded by the Laboratory of Anthropology in 1953 and assigned a Pueblo III date based on ceramics (Wendorf et al. 1956:280-281). A kiva, small room block, and a great kiva were excavated by Peckham in 1957-58 (Peckham 1958:161-162). He dated the site to the early Pueblo II period but believed there might also be an earlier Pueblo I component (Marshall et al. 1979:294; Peckham 1958:162). These features were later removed by the original construction of I-40.

Between August 11 and August 16, 1994, the OAS (Bullock 1996) monitored 396.66 m (310 ft) of fence replacement.

SITE DESCRIPTION

LA 2690 (NMQ 29122) is situated on a low, isolated sandstone ridge in the Red Mesa Valley, directly north of the south fork of the Puerco River. It is located between old U.S. 66 and I-40. The site consists of a two-story room block in a “C” configuration. A one-story curved enclosure wall, consisting of a single row of rooms, forms the fourth side of a plaza. One-story rooms are present on each side of the large room block in asymmetrical additions. Ceramics observed at the site date it to the Pueblo II-Pueblo III period. The main component is Bonito phase. The site extends into the right-of-way, although most of it is outside the right-of-way and is intact (Bullock et al. 1993).

The Great Kiva was located along the extreme western margin of the village. It was excavated as part of the Highway Salvage Project, reportedly in only six days. The average diameter of the kiva wsa 12 m, with no adjoining peripheral walls or rooms. Numerous features were recorded, incuding a hearth, a foot drum (vault), an encircling masonry bench, and four pilasters (cf. Peckham 1958). Associated ceramic artifacts including Escavada, Gallup, and Chaco Black-on-white, and Wingate and St. Johns Polychrome, suggesting an early to middle Pueblo III occupation. It was completely destroyed during the construction of I-40.

The current site dimensions are 160 m north-south by 340 m east-west, an area of 23,800 sq m.

PROPOSED STABILIZATION ACTION

The purpose of the Archaeological Site Stabilization and Preservation Project (ASSAPP) is to identify cultural properties within existing NMSHTD highway rights-of-way and to propose management actions if the preservation of those properties is threatened by past or present highway-related activities. Therefore, this document should not be viewed as a conventional data recovery plan but as a management document outlining a specific site stabilization program.

A specific area within the right-of-way has been destabilized through erosion (Fig. 2). This area measures 50 m (164 ft) by 6 m (17 ft) for a total of 300 sq m (3, 229.3 sq ft). Architecture is present in the right-of-way in the form of disturbed room blocks. Disturbance to midden areas and to artifact concentrations was also noted.

It was determined that the most efficient means of stabilizing the affected portion of the site was to install permanent netting and to seed. The netting will require a 15.24 by 15.24 cm (6-by-6 inch) by 50 m (164 ft) trench to anchor the netting. Possible options also include building a low dry-laid retaining wall at the southern edge of the site. This wall may be constructed of either railroad ties or concrete barriers.

Care will be taken not to disrupt any of the intact cultural resources at LA 2690 (NMQ 29122) either inside or outside of the NMSHTD right-of-way.

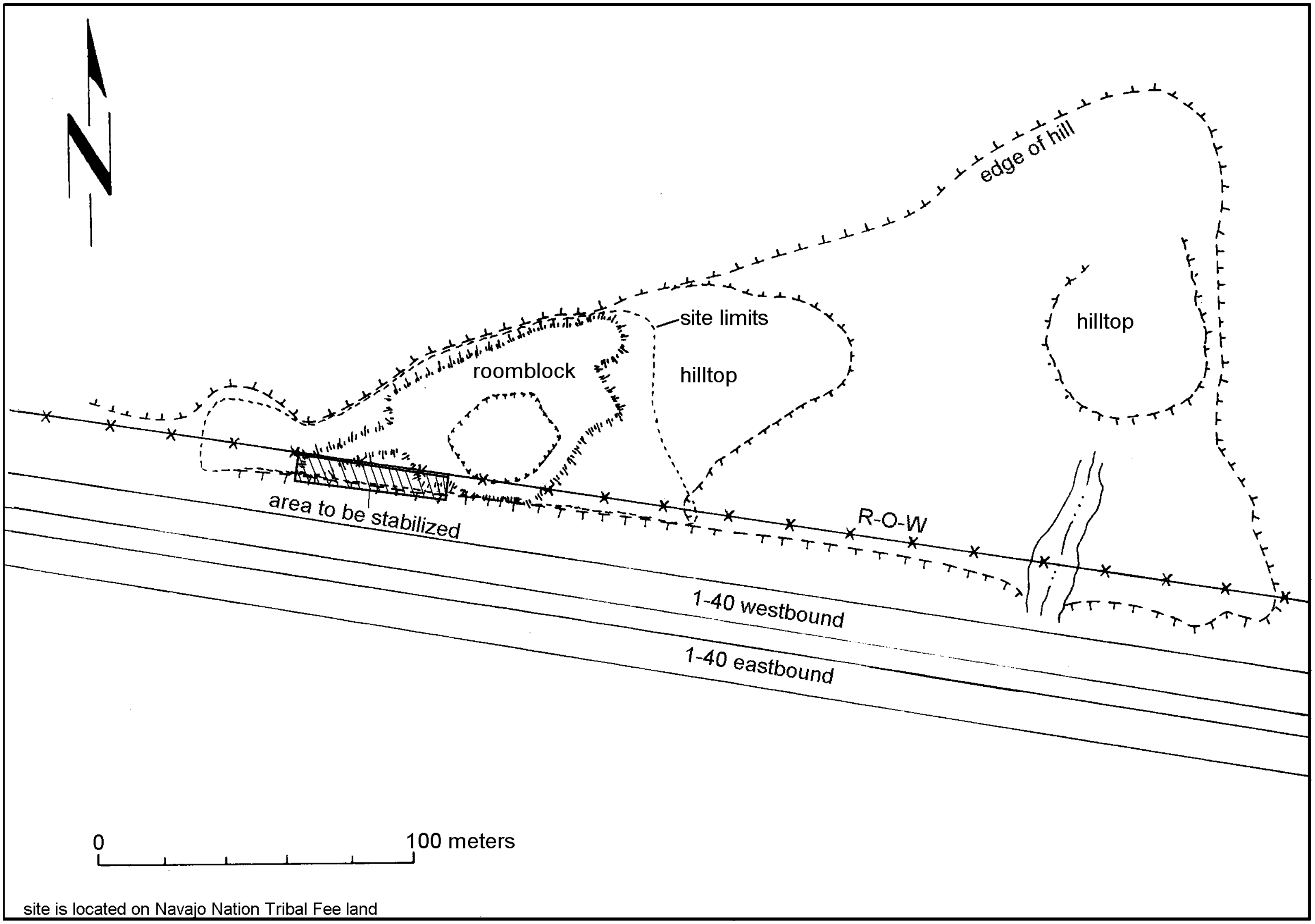

Figure 2. LA 2690 (NMQ 29122), site map.

METHODS

Excavation Techniques

The area required for stabilization is a shallow trench measuring 50 m (164 ft) by 6 m (17 ft) for a total of 300 sq m (3, 229.3 sq ft). In order to excavate the designated area, a main datum will be set in place at the west end of the site, where the trench will originate. Horizontal and vertical controls will be maintained by using an east-west baseline and a line level. All subsurface stratigraphy will be drawn and photographed. All excavated fill will be screened through ¼-inch mesh hardware cloth. Trowels and shovels will be the primary excavation implements, and more delicate hand tools, such as dental picks and brushes, will be used when appropriate.

Mapping

A contour map of the site will be generated using an Electronic Distance Measurer (EDM), a laser Total Station, or a transit and a stadia rod. Contours, features, site boundaries, piece-plotted artifacts, and excavation areas will be mapped.

Features

It is unlikely that any features will be encountered. But if they are, they will be drawn and photographed. Features will be excavated by halves to expose a profile of individual strata. The fill will be screened through c-inch mesh hardware cloth. Flotation samples will be collected in 1-liter specimens.

Laboratory Analyses

All collected artifacts will be cleaned, sorted, and examined in the laboratories of the Office of Archaeological Studies. Analyses within each artifact material class will be conducted by standards established by the Office of Archaeological Studies.

Disposition of Recovered Artifacts

Funerary objects will be treated following the *Navajo Nation Policy for the Protection of Jischaa': Gravesites, Human Remains, and Funerary Items* (see Appendix 2). Unless otherwise stipulated by landowners or land managers, all other recovered artifacts will be curated in the Archaeological Research Collections at the Museum of New Mexico, Laboratory of Anthropology. As a division of the Museum of New Mexico, the Office of Archaeological Studies maintains a curation agreement with the Archaeological Research Collection.

Laboratory analysis will be conducted by the staff of the Office of Archaeological Studies and qualified professional consultants. The types of cultural materials and brief descriptions of the kinds of information desired from each are presented below. Analytical techniques to be used in the data recovery phase of this project are outlined in the testing results portion of this report.

Ceramic Artifacts

Distributions of various ceramic data from LA 2690 (NMQ 29122) will provide information concerning the dating of sites and contexts, as well as the examination of trends in the affiliation, production, exchange, and use of pottery vessels. Only a small sample of ceramic artifacts is expected to be recovered from LA 2690 (NMQ 29122). It will first be necessary to determine the temporal association and integrity (in terms of mixing of material from different temporal components) of the ceramics from a given provenience. Data from undated or highly mixed proveniences will contribute very little to our understanding of various changes and trends.

The first level of analysis involves a "rough sort" recorded on sherds from all proveniences and includes basic data required for the dating and evaluation of the integrity of sherd collections. Sherds from intact dated contexts will be analyzed and described in greater detail during an "intensive analysis." This will include categories and attributes recorded during rough sort as well as recording additional attributes allowing for the examination of various trends and patterns. An attempt will be made to implement the more detailed analysis on sufficient samples of sherds from as many distinct temporal components as possible.

Ceramic analysis will involve recording information concerning the context of recovery, typological classification, descriptive attributes, and quantitative data. Contextual data include information concerning the site, field specimen (FS) number, and associated provenience. Sherds from each FS exhibiting unique combinations of typological and attribute classes will be assigned to a distinct lot number, and data describing these sherds will be recorded on a distinct data line. Sherds from each lot will be bagged separately along with a tag indicating the associated site, field specimen number (FS), and lot number. Quantitative data recorded for each data line include sherd counts and weight in grams.

Each sherd will be assigned to a typological category reflecting a series of hierarchical decisions made during analysis. First, an item is placed into a spatially distinct ceramic tradition or series on the basis of temper, paint, and technological characteristics. Next, it is put into a ware category based on surface manipulation or decoration. Last, it is assigned to a specific type using temporally sensitive surface manipulations or design styles.

Descriptive attribute categories are selected to provide detailed descriptions of the associated ceramic collections as well as the investigation of a wide range of research issues. Descriptive categories that may be recorded during various levels of analysis include vessel form, temper, paint pigment, surface manipulation, slip, modification, paste color, and various stylistic attributes.

Vessel form categories are assigned to all sherds and vessels based on observed shape. Sherds are incomplete subsamples of the original parent vessels, and the resolution of vessel form characterization depends on sherd size and portion of vessel represented. Vessel form categories utilized will include information concerning both vessel shape and vessel part. Examples of categories that will be employed include bowl rim, bowl body, jar body, jar neck, wide mouth (cooking/storage) jar rim, and narrow mouth jar olla rim. *Rim radius* will be measured in order to obtain information concerning the relative size of vessels.

The identification of *temper type* is critical for the identification of nonlocal ceramics as well as the examination of patterns of ceramic production. Temper categories are identified by examining freshly broken sherd surfaces through a binocular microscope. These characterizations of temper are limited, but broad tempering categories can be identified by ranges in the color, shape, fracture, and reflectivity of tempering particles. These categories reflect material sources available and used as tempering agents in different geographic areas. Temper types expected to be identified during the present study include various classes of igneous rock including tuff, ash, andesites, and diorites; crushed sandstones; and crushed potsherds.

Paint pigments are distinguished by surface color and characteristics (Shepard 1971). Pigment use in this area is known to have changed over time, and categories that may be encountered include organic, iron oxide mineral, organic mineral polychromes, mineral polychromes, clay, and glaze pigments.

Surface manipulation refers to surface treatments including textured treatment (such as corrugations and polishing) and will be recorded for each surface. *Slip* refers to the presence of a separate clay applied to the vessel surface to produce a distinctive effect. Categories recorded for each surface will include information concerning the presence, relative thickness, and color of slips. *Modification* includes information concerning the modification of sherds or vessels through use, shaping, or repair.

Reconstructible vessels (where a third or more of the original vessel is present) will also be analyzed separately. Vessel analysis will involve recording previously discussed attributes as well as the dimensions of each vessel.

Lithic Artifact Analysis

Chipped stone artifacts will be studied to provide data on material procurement and selection, activities, and alterations to enhance flaking quality. Certain attributes will be studied on all chipped stone artifacts. Material type and texture will provide data on selection and source, and in particular whether materials were procured nearby or from distant locations. The type of cortex present will also be used as an indicator of material origin–while some types suggest procurement at the source, others indicate secondary deposits. In conjunction with other studies, these data will provide information on mobility and ties with other regions. Chipped stone artifacts will be classified by morphology and presumed function, which will provide a basic categorization of activities employing chipped stone tools as well as a basis for more intensive analyses. They will also be examined for evidence of thermal alteration to enhance flakeability, a process that is tied to reduction strategy and the suitability of materials for reduction. The flakeability of some materials can be improved by heating, and this can be an important aid in strategies, aimed at formal tool production, while it is less important in strategies based on informal tool use.

A range of other attributes will also be examined, depending on artifact morphology. Information on group mobility and tool production can be derived from an analysis of the reduction strategy employed. The reduction process produces three basic by-products: debitage, cores, and formal tools. Debitage and cores are the immediate by-products of this process, while formal tools are by-products that were modified to produce a specific shape. While the former categories provide information about the reduction strategy employed, the latter provide data on tool-using activities. Thus, different attributes will be examined for each of these broad categories.

Debitage and cores will provide information on reduction strategies. Attributes used for this analysis will include debitage type, amount of cortical surface, artifact portion, and size. Cores will be morphologically identified by the direction of flake removals and number of striking platforms, providing basic information on how they were reduced. Flakes are debitage that were purposefully removed from cores and can provide critical data on reduction technology. Hence, several attributes will be analyzed on this class of artifact including platform type and modification, platform lipping, direction of dorsal scarring, and distal termination.

Formal tools will be identified by morphology and wear patterns. Informal tools will be identified by the presence of marginal retouch or use-wear patterns along one or more debitage edges. A binocular microscope will be used to identify and classify retouch and wear patterns on all tools, and utilized or retouched edge angles will be measured. All evidence of edge modification will be recorded for informal tools, while evidence of use or modification unrelated to production will be recorded for formal tools. These attributes will provide information on activities employing chipped stone tools.

Ground Stone Analysis

Ground stone artifacts will be tabulated and discussed in morphological and material classes. The possible correlation of the technological attributes of this class of artifact and specific processing activities will be discussed if adequate samples are recovered. If ground stone artifacts are found within intact, discrete settings, fill samples will be recovered for pollen or botanical analysis, and the ground stone artifact will be carefully bagged for pollen wash.

Several types of information are available from this class of artifact. In the absence of floral remains, certain varieties of ground stone tools can be used to infer plant food processing. While trough metates and two-hand manos suggest maize processing, basin metates and one-hand manos are more indicative of the processing of wild plant foods. Analysis of pollen samples from ground stone artifacts retrieved from floors or buried activity areas can provide information about the range of plant foods exploited. Wear patterns are often indicative of function, and can be used to suggest activities such as hide processing for which other indications might be lacking.

Faunal Remains

Faunal analysis will concentrate on identification of species, age, and bone elements to assist in documenting food procurement and consumption patterns. Evidence of processing, such as burning or roasting and cut marks, will also be recorded. These data will help determine season of occupation, hunting and food processing and consumption patterns, and may provide information on the local environment at the time of occupation.

Floral Remains

Plant remains will be identified to the specific level when possible and will be compared with floral data from other sites to help provide a clearer picture of plant use during the period(s) of occupation. Floral remains will also aid in determining seasonality. The discovery of both edible and nonedible parts from domesticates will be indicative of local production, while the lack of all but edible parts might suggest that domesticates were raised elsewhere and imported to the site. Both pollen and macrobotanical remains will be useful in reconstructing the local environment at the time of occupation. Botanical and charcoal samples will be collected by identified strata. Pollen samples will be collected in tandem with all flotation samples. Radiocarbon samples will be collected wherever possible.

Human Remains

Human remains and funerary objects will be treated following the *Navajo Nation Policy for the Protection of Jishchaa': Gravesites, Human Remains, and Funerary Items* (Appendix 2).

Traditional Cultural Properties Consultation

It is standard OAS policy to conduct a Traditional Cultural Property inventory for all archaeological projects that may be of concern to Native American groups. Traditional Cultural Property (TCP) investigations are a part of the Section 106 review process. According to the National Park Service National Register Bulletin Number 38 *(Guidelines for Evaluating and Documenting Traditional Cultural Properties)*, the *National Register of Historic Places* contains a wide range of historic property types, reflecting the diversity of the nation's history and culture. Buildings, structures, and sites; groups of buildings, structures, or sites forming historic districts; landscapes; and individual objects are all included in the register if they meet the criteria specified in the National Register's Criteria for Evaluation (36 CFR 60.4).

A traditional cultural property can be defined generally as one that is eligible for inclusion in the *National Register of Historic Places* because of its association with cultural practices or beliefs of a living community that are rooted in that community's history and important in maintaining the continuing cultural identity of the community. Because of the difficulty in recognizing a traditional cultural property, the existence and significance of such locations often can be determined only through ethnographic research.

On June 17, 1999, revised regulations (36 CFR part 800) governing the Section 106 process were implemented. This called for expanded requirements for tribal consultations and participation. The NMSHTD currently operates under a substitution agreement between the Advisory Council on Historic Preservation and the New Mexico State Historic Preservation Officer under 36 CFR Section 800.7.

The OAS/ASSAPP project area (LA 2690, NMQ 29122) is on Navajo Tribal Fee land. This area has already been the subject of a Traditional Cultural Properties survey conducted by the OAS (Bullock et al. 1993). To determine if there were any Native American concerns, the Navajo, Zuni, Acoma and Hopi tribes were consulted. No traditional properties of historical importance were recorded within the project area.

Published Report

A report containing a summary of the test excavations, laboratory analyses, and stabilization procedures and recommendations for site management will be produced upon completion of fieldwork and laboratory study. At the completion of a major undertaking, the results will be published in the *Archaeology Notes* series. Attached to the report will be updated site record forms for the New Mexico Cultural Resource Information System, managed by the Historic Preservation Division, Archeological Records Management Section.

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APPENDIX 2. NAVAJO NATION POLICY FOR THE PROTECTION OF JISHCHAA’: GRAVESITES, HUMAN REMAINS, AND FUNERARY ITEMS