MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

Data Recovery and Site Stabilization at LA 2690/NMQ122 (Fort Wingate Ruin)

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ADMINISTRATIVE SUMMARY

Between August 25 and 30, 2000, the Archaeological Site Stabilization and Preservation Project (ASSAPP), Office of Archaeological Studies (OAS), Museum of New Mexico, completed a data recovery program at LA 2690/NMQ122 (Fort Wingate Ruin), McKinley County, New Mexico, on lands owned by the Navajo Nation and held in trust by the Bureau of Indian affairs. The OAS works under contract with the NMSHTD to identify endangered archaeological sites within highway rights-of-way. During this project, the ASSAPP/OAS performed limited data recovery by excavating a 50 m by 15 cm trench and stabilized the site by revegetating eroded areas within the boundaries of the site and within the NMSHTD right-of-way.

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 Protection and Preservation Project (ASSAPP), Office of Archaeological Studies (OAS), Museum of New Mexico, conducted a data-recovery program and site-stabilization project at LA 2690/NMQ122 (Fort Wingate Ruin). The site is located on Navajo Nation Tribal Fee land in McKinley County, New Mexico (Figure 1 and Appendix 1). The OAS works 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 was 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 are included in the ASSAPP based on recommendations from NMSHTD staff, land management agencies, and the public. Each property is 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 normal NMSHTD environmental evaluation procedures.

On March 22, 1996 John Ware (ASSAPP Principal Investigator, 1995-1998), and Stephen C. Lentz (OAS Project Director) determined that LA 2690/NMQ122 met the criteria for inclusion in the inventory of sites requiring stabilization. On February 3, 2000, Yvonne Oakes (OAS Principal Investigator), 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 which served as guidelines for the subsequent data recovery and protective measures.

Work performed by the ASSAPP is conducted in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800), Executive Order 11593 (1972), and the National Environmental Policy Act of 1969 (91 Stat 852). LA 2690 is listed in the *State Register of Cultural Properties* (07/20/78), and in the *National Register of Historic Places* (10/10/80). Between August 25 and 29, 2000, the OAS excavated a small trench used to anchor netting for erosion control. The site was revegetated and mulch blankets were installed in eroded areas within the right-of-way. Yvonne Oakes served as principal investigator; Frank Burke and Phil Alldritt assisted; figures were drafted by Rob Turner, and the report was edited by Pete Brown.

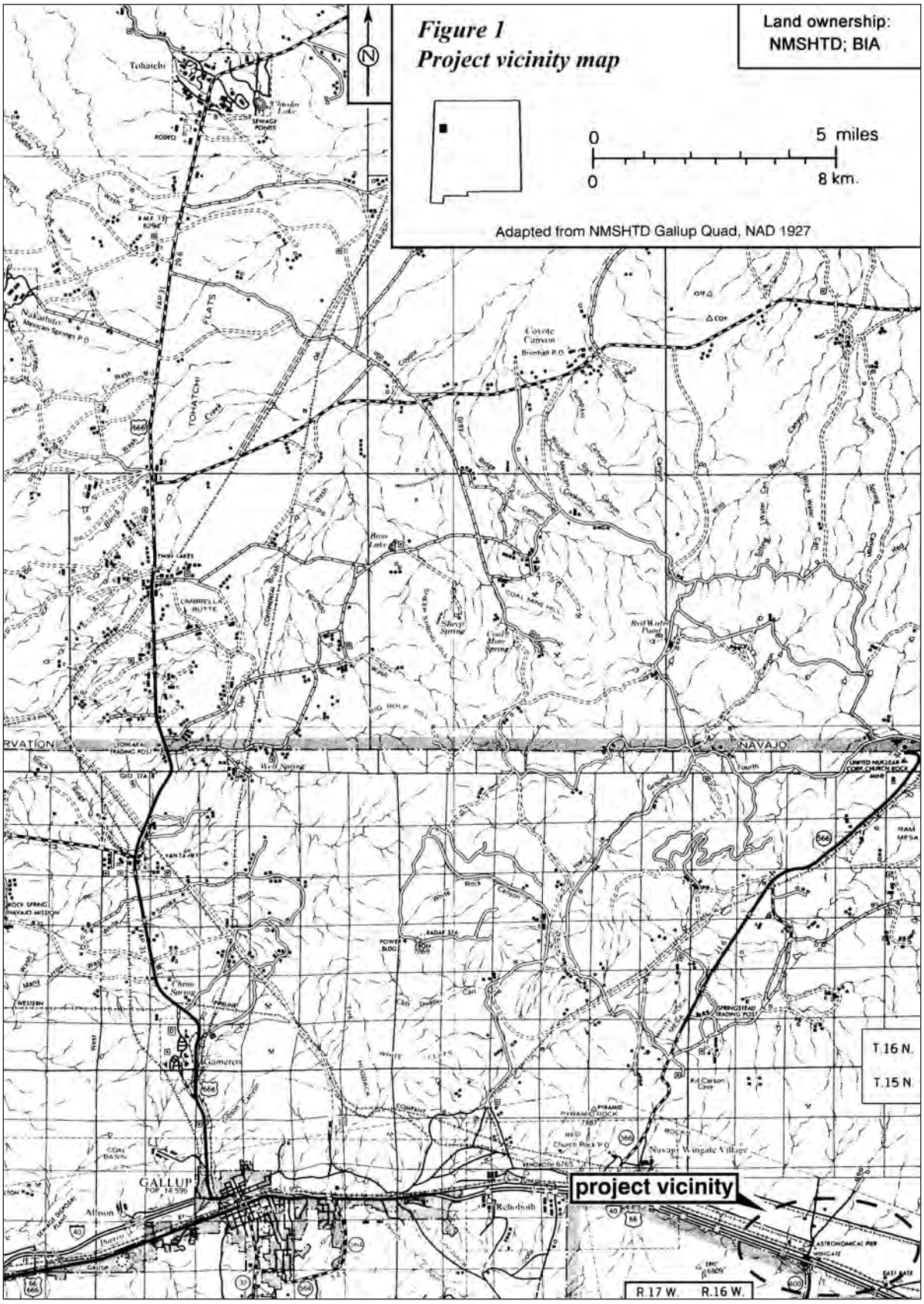

Figure 1. Project vicinity map.

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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 (6,726 feet). Piñon-juniper woodland can be found on the upper elevations to the south; juniper scrub extends 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 alluvial erosion contributed to the creation of the foothills of the Zuñi Mountains (Smith et al. 1959:34).

These foothills are primarily of Triassic and Jurassic age (Smith et al. 1959:34), and form the southern boundary of the valley. They are composed of Fort Wingate sandstone and Grants sandstone deposits of the upper Moenkopi above a Permian karst of San Andres limestone (Smith 1959; Cooley 1959:66), 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).

Along the northern side of the South Fork of the Puerco River Valley is a broken wall of cliffs (composed of Jurassic sedimentary deposits), a portion of which forms the feature known as the "Red Rocks," which are composed of material associated with the Zuñi Uplift (Fitzsimmons 1959:112-113). Lukachuki sandstone forms the base of the cliffs; the dominant red portion of the cliffs consists 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 are found 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 was from 11,000 to 7500 B.P. Alluviation from this period is the by-product of a wet and warm environment, evidenced by soils containing the bones of *Bison occidentalis* and Paleoindian projectile points. This was followed by the Altithermal interval (6000 to 4500 B.P.), a period of erosional weathering, arroyo cutting, channel filling, and soil formation (Cooley 1959). The second period of alluviation occurred from 4000 to 2000 B.P., and was 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 (33 feet) deep (Warren 1970:1).

Soils within the project area are classified as haplargids-torripsamments and camborthids-torriorthents. Both of these ustic soil associations are calcareous, highly erodible, and characterized by materials weathered from sedimentary shale and sandstone deposits. The main differences between these two soil associations are their relative depth, and the terrain in which each occurs.

Haplargids-torripsamments soils are well-drained, deep, and composed 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 in 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 occurs 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 (1.3 inches) (Tuan et al. 1973:18; Maker et al. 1974:Table 5). 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), which limits 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 in 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 northerly shift 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 became intermittent during this period, and drought was common (Knight 1982:51).

The average annual temperature in the project area is 9.2 degrees C (48.6 degrees F); the average day-to-night temperature difference is 30 degrees F (Gabin and Lesperance 1977:207; Knight 1982:510). 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). Dominant 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 non-native 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.

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CULTURE HISTORY OVERVIEW

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

Paleoindian Period

The Paleoindian period (11,000 to 5500 B.P.) was first recognized in 1926 at the Folsom site in northeastern New Mexico (Wormington 1947:20). A series of Paleoindian traditions has since been defined, beginning with Clovis and continuing through Plano (Stuart and Gauthier 1981:294-300). The Paleoindian cultural area was originally defined on the plains of eastern New Mexico, but 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; Wilmsen 1974:115; Cordell 1979:19-21; Cordell 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. to 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 which 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 to 4800 B.C.), Bajada (4800 to 3200 B.C.), San Jose (3200 to 1800 B.C.), En Medio (1800 to 800 B.C.), and Armijo (800 B.C. to A.D. 400) (Irwin-Williams 1973). The first four phases are nonagricultural, and an increasing dependence on gathered plants has been hypothesized, as evidenced by increased numbers of grinding implements. The cultivation of maize as a primary food source occurs during the Armijo phase, but 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 further north as Basketmaker II are usually described in western New Mexico (including the project area) and eastern Arizona as Late Archaic with the addition of corn cultivation (Wilson and Blinman 1994). This form of cultural development appears to occur first in the elevated perimeter of the San Juan Basin, including the project area (Stuart 1982:157).

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 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 to 700), Pueblo I (A.D. 700 to 900), Pueblo II (A.D. 900 to 1100), and Pueblo III (A.D. 1100 to 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 1994). Sites dating to 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. 1996). 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 roomblocks appear during this period, though the use of pit structures continues.

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

The local population of the valley of the South Fork of the Puerco River interacted with elements of the Chaco phenomenon during the Pueblo II period. The Chacoan outlier known as Fort Wingate Ruin (LA 2690/NMQ122) was constructed 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; Vivian 1990).

The Pueblo III period, characterized by fewer but larger sites, is estimated to extend from A.D. 1100 to 1300. This population aggregation may be tied to political centralization. Pueblo III sites consist of large roomblocks with great kivas, interior kivas, and satellite communities (Gummerman 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 1982). 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 1982; Scheick 1983). It is suggested that 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 to 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 were a homogeneous group with a relatively uniform language before they arrived in the Southwest and differentiated 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 (1974:32) 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; A.D. 1350 to 1700) was based on hunting and gathering, supplemented by 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).

Navajos moved out of the Gobernador-Largo Canyon areas to Chacra Mesa and the southern San Juan Basin 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 1780, 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 greater 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 1863-1864. 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.

4
PREVIOUS WORK IN THE PROJECT AREA

Several sites have been recorded in the project area (Table 1). 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 1957-1958 before the construction of I- 40 (Peckham 1958). Several 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. Between August 11 and August 16, 1994, the OAS (Bullock 1996) monitored 396.6 m (1301 feet) of fence replacement.

LA 2690/NMQ122 (Fort Wingate Ruin) 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 roomblock, and a great kiva were excavated by Peckham in 1957-1958 (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.

LA 2690/NMQ122 consists of a two-story roomblock 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 roomblock in asymmetrical additions. Ceramics observed at the site date it to the middle or late Pueblo II period. 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).

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.

Table 1. Recorded sites in the general area of LA 2690/NMQ122.

LA Number	Topography/Ecozone	Culture	Period	Site Type	Reference
Church Rock quad					
LA 2691	Valley bottom/grassland	Anasazi	P II	Masonry roomblock	Wendorf et al. 1956
LA 2688	Hilltop/grassland	Anasazi	P II	Masonry roomblock	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 quad					
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 roomblock	Alexander 1964
LA 2687	Hilltop/grassland	Anasazi	P II	Masonry roomblock	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

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 *National Register of Historic Places* 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 800) governing the Section 106 process were implemented, which expanded the 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 800.7.

The OAS/ASSAPP project area (LA 2690/NMQ122) is on Navajo Nation land, and 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 cultural properties of historical importance were recorded within the project area.

5
EXCAVATION, STABILIZATION, AND IN-FIELD ANALYSIS

On February 3, 2000, Yvonne Oakes (OAS Principal Investigator), Stephen C. Lentz (OAS Project Director), 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 (landscape architect wit the NMSHTD). It was decided that the area of the site within the right-of-way could best be preserved by a program of revegetation. The specific area within the right-of-way that had been destabilized through erosion was identified (Fig. 2); it measured 50 m (164 feet) by 6 m (20 feet) for a total of 300 square meters (3,229 square feet). Architecture is present in the right-of-way in the form of disturbed roomblocks. Disturbance to midden areas and to artifact concentrations was also noted.

Excavation

To stabilize the site with mulch blankets, a 15.2 by 15.2 cm (6 by 6 inch) by 50 m (164 feet) trench was required to anchor the top of the netting (Fig. 2). Between August 25 and 27, 2000, Stephen C. Lentz, Frank Burke, and Philip Alldritt excavated a trench according to the specifications and dimensions listed above (Fig. 2). The 50 m long trench was excavated parallel to the right-of-way fence, and 35 cm (13.8 inches) south. A datum (Datum A) was established along the fence line. Only hand tools were used. The backdirt was screened through 1/4-inch wire mesh. Thirteen sherds were recovered.

Stabilization

As described above, it was determined that the most efficient means of stabilizing that portion of the site was to install permanent netting, and to seed. Between August 28 and 30, 2000, Stephen C. Lentz and Philip Alldritt stabilized the site. An area of 268 square meters (2889 square feet) was raked, seeded, and watered. The side was seeded with a mixture of blue grama, sideoats grama, Indian ricegrass and alkali sacaton. Four Curlex® mulch blankets were stapled to the slope in the configuration shown in Figures 2 and 4.

In-Field Analysis

On August 29 and 30, 2000, C. Dean Wilson performed an in-field analysis of ceramic artifacts at selected locations across the site (Fig. 2), and analyzed the ceramics from the excavation. Analysis of the sherds from the right-of-way indicate a Pueblo II and late Pueblo II or early Pueblo III component, whereas previous analyses indicated a late Pueblo III component at LA 2690/NMQ122 (Marshall et. al. 1979; Peckham 1958). These results, albeit preliminary, represent an important departure from the accepted chronology of Chacoan developments in this area (see Section 6).

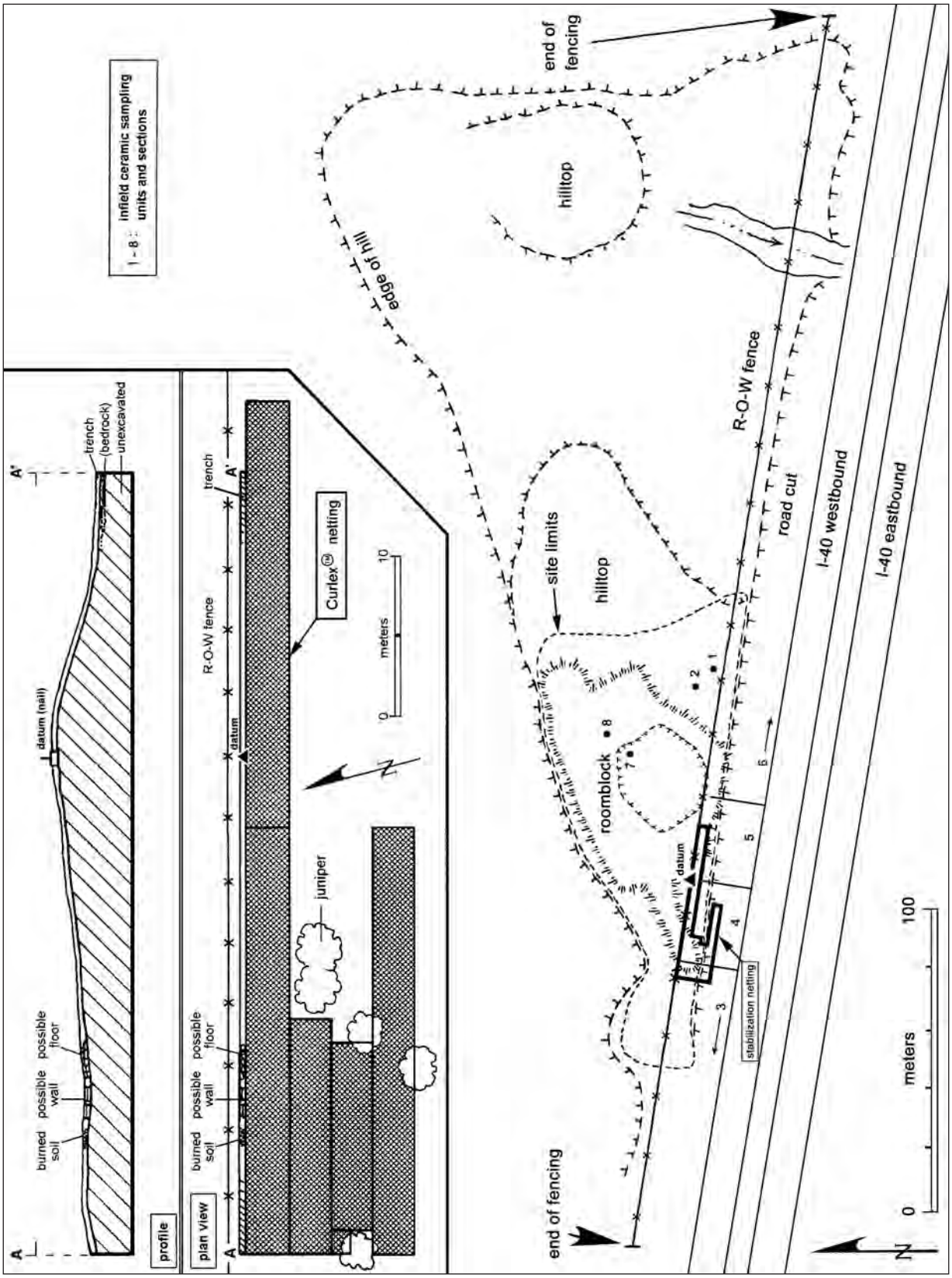

Figure 2. LA 2690/NMQ122 (Fort Wingate Ruin) site map.

6
CERAMIC ANALYSIS

DEAN WILSON

As part of stabilization project at LA 2690/NMQ122, pottery sherds from selected locations were analyzed to better determine the relationship between pottery assemblages from areas in the right-of-way and from other parts of the site. The pottery samples analyzed were recovered from areas between the right-of-way fence and highway, and from selected areas outside the right-of-way.

Pottery examined during the present study was found in eight surface sampling areas (Fig. 2, Table 2), and recovered from the 50-m trench dug to anchor the netting described in Section 5 (14 sherds analyzed in the lab; Table 3). Information was recorded relating to all surface sherds found between the right-of-way fence and the highway (268 sherds from Sampling Areas 3, 4, 5, and 6; Table 2). Sampling Area 3 extends from 25 m west of datum to the west end of the ceramic concentration. Sampling Area 4 covers the area from the datum to 25 m west. Sampling Area 5 extends from the datum to 25 m east. Sampling Area 6 spans the area 25 m east of the right-of-way to the easternmost end of the ceramic concentration.

Sherds were also analyzed from ceramic concentrations in four sampling areas outside the right-of-way: 149 sherds from Sampling Areas 1 and 2 in the extensive midden deposit to the east of the datum and site; and 63 sherds from Sampling Areas 7 and 8 located along the room block just north of the datum. Field analytical data for these sherds consisted of coding information concerning ceramic typological categories and vessel form. Sherds were not collected during analysis; they were examined in situ and left where they were found. Temper was not recorded, and most of the pottery was assigned to very basic descriptive categories based on temporally sensitive attributes and design styles.

Sherds that were not polished, slipped, or painted on either surface were assigned to gray ware types based on exterior surface treatments. Gray type categories identified during this analysis include Plain Gray Body, Corrugated Body, Wide Neckbanded, and Clapboarded Gray. Sherds exhibiting at least one polished, slipped or painted surface were assigned to white ware types. White ware types identified during the present study include Red Mesa Black-on-white, Chaco Black-on-white, Escavada Black-on-white, Naschitti Black-on-white, Chuska Black-on-white, Indeterminate Chuska White Ware, Mineral Painted White, Organic Painted White, and Polished White. Red ware types identified include Indeterminate White Mountain Red Ware and Wingate Black-on-red. The only other information was the basic form (jar versus bowl) of the vessel from which the sherd derived.

Ceramic distributions at LA 2690/NMQ122 provide information relating to the occupation of this large site, which includes a room block that has been previously characterized as one of the most southern Chacoan outliers (Powers 1983). This site was first recorded by Wendorf of the Laboratory of Anthropology in 1953, when it was assigned to a Pueblo III period occupation based on associated pottery types (Wendorf et al. 1956). A great kiva, located in the highway right-of-way, was excavated by Peckham (1958). This kiva was completely destroyed during highway construction. Associated pottery included Escavada, Gallup, and Chaco Black-on-white, as well as Wingate Black-on-red and St Johns Polychrome, suggesting an early to middle Pueblo III occupation. The site was also recorded by Bullock et al., and attributed to a Pueblo II and Pueblo III period occupation (Bullock et al. 1993).

Examinations conducted during the stabilization of LA 2690/NMQ122 indicated that the occupation of this site may have been earlier and longer than originally thought. Pottery distributions noted for the east midden indicate that plain gray wares are the dominant utility wares associated with lower frequencies of neckbanded gray and still lower frequencies of corrugated gray types. White wares appear to be largely limited to sherds derived from Red Mesa Black-on-white vessels (Table 2). This combination of types appears to reflect an assemblage dating to the early Pueblo II period, and probably dates to sometime in the tenth or early eleventh centuries (Windes 1977; Toll and McKenna 1987).

Examinations of the pottery from the two sampling areas on the room block indicated very different ceramic distributions than those noted in the middens to the east. Gray wares are dominated by corrugated forms. The dominant decorated pottery is represented by White Mountain Red Ware types such as Wingate Black-on-red. The only white ware noted at these proveniences was Escavada Black-on-white. These proveniences indi-

Table 2. Distributions of pottery types from sampling areas at LA 2690/NMQ122.

	SA 1		SA 2		SA 3		SA 4		SA 5		SA 6		SA 7		SA 8	
Type	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Plain gray body jar	28	45.2%	36	41.4%	6	28.6%	24	42.1%	21	27.6%	42	36.8%	3	16.7%	11	24.4%
Corrugated jar	7	11.3%	5	5.7%	5	23.8%	11	19.3%	9	11.8%	25	21.9%	12	66.7%	20	44.4%
Wide neckbanded jar	4	6.5%	8	9.2%	-	-	1	1.8%	4	5.3%	5	4.4%	-	-	-	-
Clapboarded jar	6	9.7%	17	19.5%	-	-	3	5.3%	7	9.2%	9	7.9%	-	-	2	4.4%
Red Mesa Black-on-white bowl	7	11.3%	10	11.5%	2	9.5%	2	3.5%	8	10.5%	14	12.3%	-	-	-	-
Red Mesa Black-on-white jar	-	-	7	8.0%	7	33.3%	2	3.5%	16	21.1%	12	10.5%	-	-	-	-
Chaco Black-on-white bowl	-	-	-	-	-	-	-	-	2	2.6%	-	-	-	-	-	-
Gallup Black-on-white bowl	-	-	-	-	-	-	-	-	-	-	1	0.9%	-	-	-	-
Escavada Black-on-white bowl	-	-	-	-	-	-	1	1.8%	2	2.6%	-	-	-	-	3	6.7%
Naschitti Black-on-white bowl	-	-	-	-	-	-	-	-	1	1.3%	-	-	-	-	-	-
Chuska Black-on-white bowl	-	-	-	-	-	-	-	-	1	1.3%	-	-	-	-	-	-
Indeterminate Chuskan bowl	-	-	-	-	-	-	-	-	-	-	1	0.9%	-	-	-	-
Mineral-painted white bowl	2	3.2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic-painted white jar	-	-	1	1.1%	-	-	2	3.5%	-	-	-	-	-	-	-	-
Polished white bowl	7	11.3%	3	3.4%	1	4.8%	1	1.8%	2	2.6%	5	4.4%	-	-	5	11.1%
Polished white jar	1	1.6%	-	-	-	-	3	5.3%	2	2.6%	-	-	-	-	-	-
Indeterminate White Mountain Red Ware	-	-	-	-	-	-	-	-	1	1.3%	-	-	2	11.1%	-	-
Wingate Black-on-red bowl	-	-	-	-	-	-	7	12.3%	-	-	-	-	1	5.6%	4	8.9%
Total	62	100.0%	87	100.0%	21	100.0%	57	100.0%	76	100.0%	114	100.0%	18	100.0%	45	100.0%

cate an occupation dating the late Pueblo II or early Pueblo III, spanning the late eleventh and early twelfth centuries (Toll and McKenna 1987).

Sherds from the area between the right-of-way fence and the road indicate a mixture of pottery associated with these two components. Ratios of plain to corrugated gray wares fall between those noted at areas sampled in the eastern midden and room block. Decorated wares such as Red Mesa Black-on-white and Naschitti Black-on-white indicate material associated with the early Pueblo II component at this site. Types associated with a late Pueblo II or early Pueblo III occupation include Wingate Black-on-red, Chaco Black-on-white, Gallup Black-on-white, and Chuska Black-on-white. The much smaller sample of 14 sherds recovered from trenches dug for stabilization seems to indicate a similar mixture of components.

Analysis of the sherds from the right-of-way indicate a Pueblo II and late Pueblo II or early Pueblo III component, whereas previous analyses indicated a late Pueblo III component. The early Pueblo II component is best represented by the large number of sherds scattered in the easternmost midden deposits of LA 2690/NMQ122, although the preliminary examination of pottery from this site indicates that Red Mesa Black-on-white is present in most of the site including areas in the room block. Evidence of the later component seems to be dominant in much of the roomblocks to the north. Pottery found in the right-of-way reflects a mixture of the two components.

This information contrasts with earlier reports characterizing these deposits as dating to the late Pueblo III period. The absence of later decorated types such as Mesa Verde Black-on-white, Tularosa Black-on-white, or St Johns Polychrome indicates a lack of pottery from a late Pueblo III occupation. If earlier temporal characterizations are correct, then a late Pueblo III great kiva was present in what is now the right-of-way. Another possibility is that at least some of the pottery classified here as Wingate Black-on-red may have been earlier classified as St Johns polychrome, resulting in a late Pueblo III assignation.

It is also possible some of the sherds noted outside the sampling could possibly represent St Johns Polychrome, and thus a later Pueblo III occupation may still be represented. Earlier classifications may have also interpreted the high frequency of White Mountain Red Ware types as reflecting a Pueblo III occupation. Most of the White Mountain Ware types date to the earliest part of the sequence during the late Pueblo II or Pueblo III period, and it is possible that the higher frequency of White Mountain Red Ware pottery from this site, compared with other sites in the Colorado Plateau, may reflect the location of the site near or within the area where early White Mountain Red Ware pottery was produced.

Table 3. Type distributions recovered during excavations associated with right-of-way stabilization.

	Field Sample No. (Values are No. of Sherds Recovered)					Total	
Type	FS 1	FS 2	FS 3	FS 5	FS 6	No.	%
Plain gray body jar	-	1	-	-	-	1	7.1%
Corrugated jar	1	1	1	1	-	4	28.6%
Red Mesa Black-on-white jar	1	-	-	-	1	2	14.3%
Pueblo II white bowl	1	1	-	-	-	2	14.3%
Pueblo II white jar	1	-	-	-	-	1	7.1%
Polished white bowl	-	-	1	-	-	1	7.1%
Polished white jar	1	-	-	-	-	1	7.1%
Indeterminate White Mountain Red Ware bowl	-	-	1	-	-	1	7.1%
Wingate Black-on-red bowl	-	-	-	-	1	1	7.1%
Total	5	3	3	1	2	14	100.0%

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CONCLUSIONS

To summarize, the purpose of the 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. LA 2690/NMQ122 was found to be an endangered site due to erosion created by the construction of I-40. The site was evaluated and management recommendations were made. The site was partly excavated and stabilized. The results of the ceramic analysis show a very different temporal interval for this site than had been ascribed by past researchers, and further investigations are warranted. The site was stabilized by planting vegetation designed to control erosion within the highway right-of-way (Fig. 3). These remedial measures should ensure that Fort Wingate Ruin remains in stable condition for some time. However, should its status change, different stabilization options may need to be considered. In conclusion, these remedial activities comply with the requirements outlined in the NNHPD-CRCS Class C permit, and the conditions agreed upon between the Navajo Nation and the OAS.

Figure 3. Photograph of stabilized site.

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