# AN ARCHEOLOGICAL RECONNAISSANCE OF A LATE BONITO PHASE OCCUPATION NEAR AZTEC RUINS NATIONAL MONUMENT NEW MEXICO

JOHN R. STEIN AND PETER J. McKENNA

Plate I. Overview of Aztec Ruins National Monument and Terrace Community.

# An Archeological Reconnaissance of a Late Bonito Phase Occupation near Aztec Ruins National Monument, New Mexico

John R. Stein
Peter J. McKenna

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Division of Anthropology
Branch of Cultural Resources Management
Southwest Cultural Resources Center
National Park Service
Santa Fe, New Mexico

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Acknowledgements

The Aztec Reconnaissance, albeit a brief foray into the prehistory of the San Juan Drainage, was a long time on the drawing board. Many years had elapsed since the request for an updated General Management Plan of Aztec Ruins National Monument. Meanwhile, intensive energy development and urban growth was steadily encroaching on the historic scene around the Monument. By chance, an unanticipated series of events preceded the Aztec fieldwork. Stein had scarcely been notified of his role in the project when an overflight of the area was arranged by John Roney of the Bureau of Land Management. The purpose of the flight was to assess the condition of Morris 41, but it was agreed that other major prehistoric structures including Morris 39, The Holmes Group, the Aztec Ruins, Kello Blancett and Flora Vista would also be flown. The flight was scheduled for early light when long shadows would enhance the subtle signatures of the prehistoric landscapes and the not-so-subtle signs of backhoe and bulldozer damage. Using San Juan Valley Archaeological Project 1973 imagery, Roney had already identified a number of sites on the benches behind the Aztec Ruin. Even with this background, Roney and Stein were ill prepared for the extensive landscape of great houses, great kivas, and prehistoric roads which were illuminated by the early morning sun. Later that day, a tour of the Monument boundary by John Stein and Bob Powers was aided by Superintendent Barry Cooper's keen observation that Mound A was a tri-wall structure and not an amorphous rubbish heap as it was usually characterized; the form and inter-relationships of the Aztec Complex began coming together. Largely because of the efforts of John Roney and Barry Cooper, Stein was able to enter the field with an expanded vision of the Aztec Ruins.

If the Aztec Reconnaissance can be considered successful, it is due to the cumulative contributions of a number of individuals. Superintendent Cooper, again, deserves credit for his fine logistical and liaison work that allowed the reconnaissance to go smoothly. Bob Powers has freely shared his knowledge of the San Juan Region and was instrumental, along with John Roney, in documenting other large ruins in the Animas Valley. Jim Bradford assisted in the April phase of the reconnaissance and provided invaluable decorum and advise to a team green in the ways of bureacratic and public protocols. Dabney Ford, Archeologist at Chaco Canyon, field checked loose ends the reconnaissance had located on imagery but had been unable to visit. We are indebted to Dabney Ford and Scott Andre on a number of fronts. Scott and Dabney, residents of La Plata, provided a link with the community of Aztec where memories of Earl Morris and a much more pristine Anasazi landscape are still strong. In the end, oral historical information will play a major role in reconstructing the Aztec Complex. In addition to their professional contributions, Dabney and Scott deserve high praise for their convivial hospitality when they found Stein an extended house guest during a memorable January blizzard that prematurely ended the January portion of the reconnaissance. There are others, of course,

who provided information and directions including Dana Hartman and James Brown at the Monument, who led us to the quarrys of Tucker Canyon. Doug Dykeman shared his extensive knowledge of the archeology of the La Plata and San Juan drainages. Finally, we wish to thank Jonathan Reymen, who, in 1981, introduced John Stein to the archeology of the Animas Valley through site visitations to Flora Vista, the Old Indian Race Track, Kello Blancett Ruin, and the Airport Mesa Road which proved a timely and invaluable background to the area.

Deserving special recognition are those individuals who provided the one thing any survey cannot live without: sites. Mrs. Hubbard, Mrs. McWilliams, Dr. Brown, and Mr. and Mrs Dien all graciously allowed us access to their property and actually made the findings of the reconnaissance possible. To them especially we extend an apology for the tardiness of this report on the first phase of our survey and hope we can do better in the future.

The reader will undoubtedly note that the following report has undergone a minimum of professional editorial scrutiny. This reflects the preliminary character of the report (and findings) and also serves to preserve the "spontaneity" of much of the material discussed. Nonetheless, during a protracted period of updating, the report was reviewed and brought to final form through the efforts of several individuals. Key among these were Jim Bradford and Scott Travis of the National Park Service, Dennis Gilpin of the Navajo Nation, and Steve Lekson of the Arizona State Museum. Our reviewers graciously suppressed their amusement while untangling the grammatical knots and typographical errors. In their wisdom, they also left us plenty of rope to hang ourselves with and we have prepared the knot in earnest. The authors accept sole responsibility for the contents of the report and if we must swing, then swing we must.

In closing, the authors wish to remember the late Earl Morris whose insights and eloquence continue to shape our interpretation of prehistory. In his lifetime, Earl left few stones unturned, yet nowhere in his notes did we specifically find reference to the extensive developments of Aztec North or Kello Blancett. To us, this is one of the great mysteries of Southwestern Archeology.

Preface

This report, covering a reconnaissance survey of cultural resources in the immediate vicinity of Aztec Ruins National Monument, is the result of four days fieldwork by John R. Stein in January 1987, and by James E. Bradford and Peter J. McKenna in late April 1987. In addition to this field reconnaissance, Stein examined aerial photographs taken in 1974 in conjunction with Eastern New Mexico University's San Juan Valley Archaeological Project. These aerials, taken before the current development of residences and natural resource extraction facilities in the monument area, were instrumental in identifying structures and features peripheral to the main prehistoric buildings in the vicinity of Aztec Ruins.

Stein (1987) prepared a draft of his findings, but left the National Park Service before the manuscript or project could be completed. Inclusions to this expanded version of Stein's report are the discussions concerning the interpretive perspective, descriptions of the buildings and features, an expansion of the topical overview section on the survey, and some overall reorganization. As with any reconnaissance, the exact character, temporal, and physical relationships of the cultural resources are preliminary, and await the results of formal survey. While this report, in our opinion, contains some fascinating, new aspects about the nature of archeology in the Aztec area, its primary purpose is as a background to a formal survey of cultural resources near Aztec Ruins, and the subsequent evaluation of those resources in a framework of contemporary archeology in the Animas Valley as well as with other communities throughout the San Juan Basin that have been identified as Chacoan outliers.

John R. Stein
Archeologist, Navajo Nation
June 1988

Peter J. McKenna
Archeologist, NPS
June, 1988

## Introduction

This reconnaissance survey of Ansazi ruins was in response to a planned update of the General Management and Development Concept Plan for the Aztec Ruins National Monument. These plans recognize the need to evaluate the adequacy of the present monument boundaries with respect to other significant archeological resources in the area and to update the level of documentation of ruins within the monument boundary. The urban growth of the Aztec area has threatened the "historic" scene at the monument by actual and foreseeable residential growth, by alterations to the associated prehistoric landscape during the development of resource extraction and residential sites, through artificially elevated ground water levels which accelerates the deterioration of prehistoric buildings, and with increased visitation levels which are beyond the capabilities of monument facilities present. Ultimately, the General Management Plan must address the question of possible boundary expansion both with regard to adequate protection for the current resources of the monument, and in respect to significant cultural resources adjacent to the monument if Aztec is ever to be the focus of interpreting the "outlier" system of the Chaco Phenomena. Such decisions require information on the cultural resources of the Aztec Ruins area and the Animas Valley. The purpose of this report is to begin gathering that information and to present the results of an aerial and terrestrial reconnaissance intermittently made between December 1986, and late April 1987 in the immediate vicinity of Aztec Ruins National Monument.

Aztec Ruins National Monument consists of about 27 acres encompassing the core of an extensive Anasazi ceremonial center. The two major buildings within the monument are virtually identical in scale and plan with the celebrated structures of Chaco Canyon. The community associated with this ceremonial complex has not been fully identified, much less studied. Reconnaissance of prehistoric structures in the vicinity suggest that this community is represented by a variety of building types which are organized into a highly formalized settlement arrangement that shows change through time.

The approach taken in this report is necessarily descriptive because of the preliminary nature of the work. Nevertheless, an attempt is made to integrate sites found in the reconnaissance into a settlement pattern associated with the Aztec Ruins, evaluate that community with regard to settlement patterns noted at other Chacoan communities, and to assess the relationship of buildings in the Aztec Ruins community within a cultural landscape framework.

What follows is a discussion in ten sections which examines past work, reports the results of the survey, and provides topical overviews and some interpretation based on the most visible aspects of the built environment. First a brief discussion of the physical setting of the Aztec Ruins and the reconnaissance area is presented. Likewise, a brief historical background for work at Aztec was necessary to understand the legacy of past research and reasons for the ruins long interpretation from an isolationist perspective. The discussion of previous research covers the major work and positions taken at Aztec itself, in the Animas Valley, and in relation to Chacoan outliers.

This is an exploratory summary of what are felt to be key issues in interpreting the Aztec Ruins. The summary is not intended as developmental arguments for any particular model. The interpretative perspective employed for this reconnaissance, cultural landscapes, is briefly introduced and discussed insofar as it is useful to interpreting reconnaissance level archeology. Summaries of the individual buildings are presented and provide the backbone to the discussion of various issues such as site conditions, material culture, classes of buildings, and miscellaneous related subjects which cross-cut the simple location and description of sites. Other big ruins in the Animas Valley are discussed in relation to Aztec in a preliminary examination of other possible community centers in the immediate area. A speculative argument concerning the nature of the Aztec Complex and Chaco style building design is presented as part of the interpretation of the cultural landscape. The conclusions provide a summary of major points in the paper and discuss the chronic issue in the northern San Juan: Chaco versus Mesa Verde. Finally, recommendations are made as to what must to be done to complete the survey of lands adjacent to Aztec Ruins National Monument, acquire information needed to interpret Aztec's place in the local archeological framework and to evaluate Aztec within the broader domain of the Chacoan system.

## Setting

Aztec Ruins are situated on the north bank of the Animas River at the northwestern edge of the town of Aztec, New Mexico (Figure 1). At this location the river valley is a little more than 1.6 km in width. Flanking the valley to the north of the ruin is a bank of cobble terraces trending northeast-southwest. The crest of this terrace rises to over 30 m above the valley floor, levels, then gently climbs, grading into broken badlands. The elevation at the Aztec Ruins is 5640' while the prehistoric developments along the cobble terrace range from 5700 to 5900' with elevation increasing from southwest to northeast in the survey area.

The Aztec Ruins and vicinity lie within the Upper Sonoran Life Zone. Flora characteristic of this zone include sage (Artemsia tridentata), rabbitbrush (Chrysothamus sp.), yucca, (Yucca baccata), single-seeded juniper (Juniperus monosperma), pinyon (Pinus edulis), and a variety of grasses such as Blue Gramma (Bouteloua gracilis), Prairie Junegrass (Koeleria cristata), Alkali Sacaton (Sporbolus airoides), and Indian Ricegrass (Oryzopsis hyminoides). This array of flora is unevenly distributed over the limited area of the reconnaissance survey. The southwestern end of the survey may be characterized as primarily sage and Blue Gramma. East of Farmer Arroyo the elevation rises quickly to 5900' with pinyon and juniper parklands occuring on upper slopes. Blue grass is present but a variety of other grasses occur, undoubtedly in part a function of differential grazing in the survey area. Fauna include deer, and a variety of smaller animals such as cottontail and jack rabbits, skunks, porcupines and foxes. The usual inventory of Upper Sonoran Life is agumented by the riverine environment with a full complement of more mesic vegetation,

migratory fowl including ducks, and hawks, and a variety of song birds (see Corbett 1962:61-64; Schart 1977 for a full discussion).

The Aztec Ruins vicinity is underlain by sandstone of the Nacimiemento Formation, a soft, porous, massive sandstone that outcrops along the Animas several kilometers southeast of Aztec and about 1.6 km north of the northern terraces flanking the Animas by Aztec. This formation is usually overlain by a thin sandy to sandy loam residuum or cobble deposits along the Animas Valley. The cobble terrace north of Aztec is made up of mixed gravels and cobbles deposited by Pleistocene melt waters from the mountains (see Dane and Bachman 1965; Hunt 1978). Cobbles in the terrace provide readily available source of material for flaked and ground stone implements as well as structural fabric.

The physical geography of the Aztec Ruins area is marked by a contrast between the elevation of the cobble terrace north of the monument and the broad, relatively flat valley bottom (Plate II). Two arroyos, Estes on the west and Farmer on the east, bracket the Aztec Ruins along a most conspicuous portion of the cobble terrace. Continuous with the land mass to the north, this terrace is distinctive because it slopes gently to the south from a point about 800 m north of the terrace edge, and is covered with a thin mantel of soil supporting grasslands. North of this point a distinct change occurs, with exposed shale badlands hosting a sparse pinyon and juniper scrub woodland.

Approximately 1.6 km northeast of the Aztec complex and just above the confluence of the Rio de Los Animas and Farmer Arroyo, the river swings into the northern gravel bench. Here the ascent to the upper surface of the terrace is very precipitous. Located atop the bench are three massive buildings of Bonito style construction, segments of apparent roadways, a great kiva, an isolated large kiva, and three other possible great kivas. This complex overlooks the confluence of the Farmer Arroyo and the Animas River. The configuration of this development suggests that Farmer Arroyo may have been a major access to the Animas Valley.

The prehistoric development above the Farmer/Animas confluence extends southwest at least to the point overlooking Estes Arroyo (Figure 1). Limits of the terrestrial reconnaissance were defined by this concentration of ruins which were bounded by natural breaks in landform and vegetative cover. In all, 2.4 km of the cobble bench backing the massive structures on the floodplain was the site of a planned community during the Chaco era.

In the vicinity of the Aztec Ruin, the floodplain of the Los Animas is quite fertile and has been intensively farmed since the late nineteenth century. Photographs of the ruins prior to excavation clearly indicate that the land was tilled up to the walls of the great buildings. Even the space between the East and West Ruins was apparently under cultivation. To the south, field clearing stopped at the retaining wall of the West Ruin, where a modern irrigation ditch impacted the "buttresses" (Morris 1928:418). The "trash mounds" flanking the West Ruin have been removed (see Earthworks). At the East Ruin, Mounds H and G suggest that at least a portion of the prehistoric landscape may be intact. The number and extent of prehistoric features which were destroyed or lie beneath the fields may never be known.

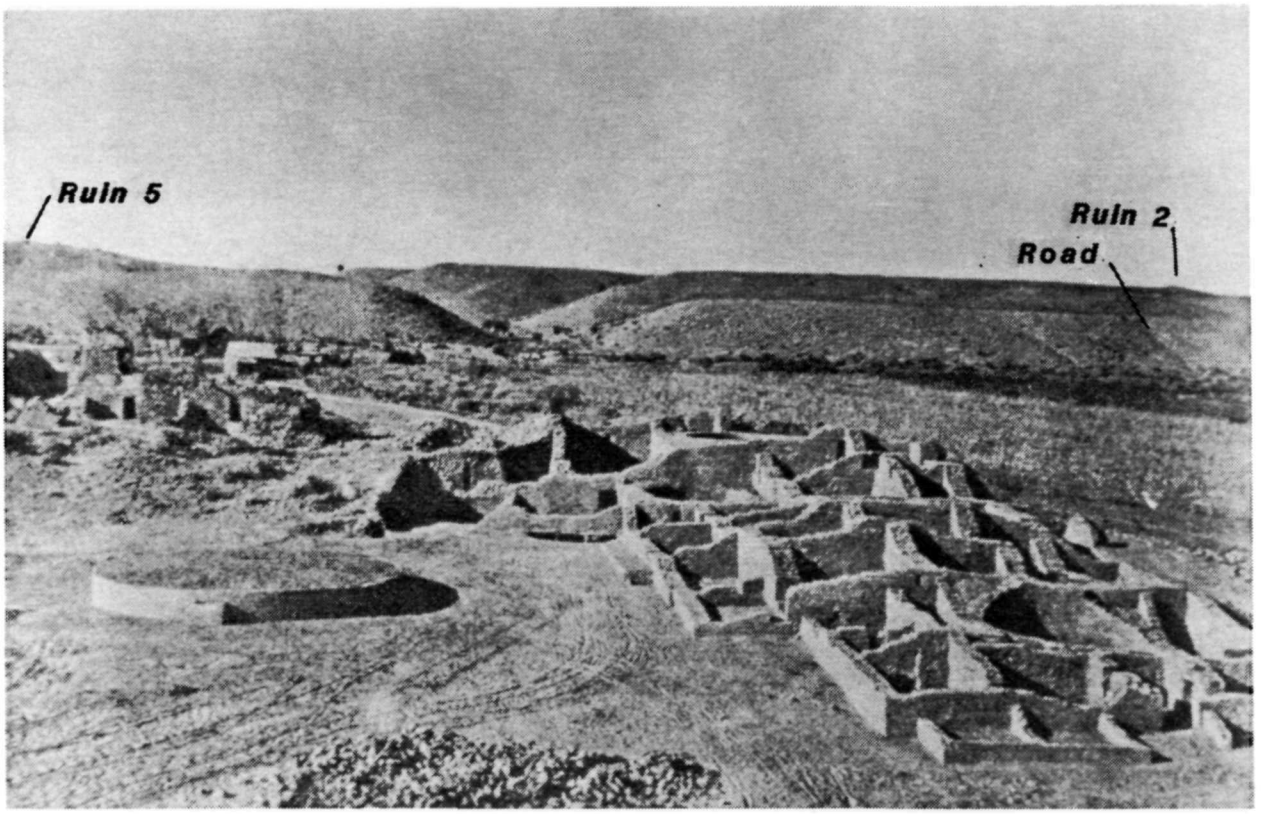



Plate II. Aztec West Ruin Showing Prehistoric Roads Ascending Terrace to Aztec North (after Morris 1928:14).

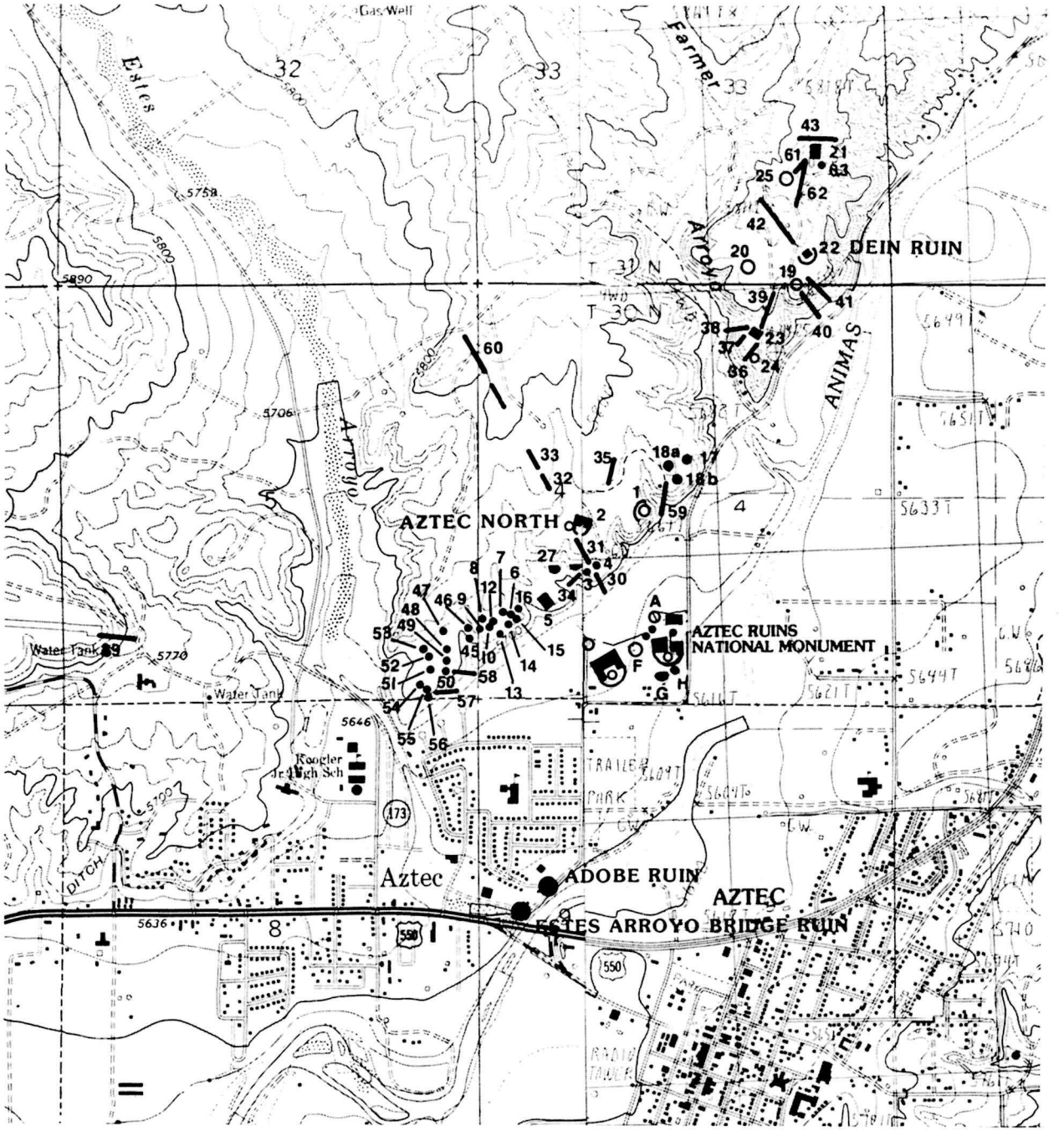



Figure 1. Site Locations, Aztec Reconnaissance.

Anecdotal information from early settlers is mentioned by Morris (1928:10) revealing that the fields surrounding the ruins were rich in archeological materials, which suggests numerous buildings in the bottomlands around Aztec Ruins. It is highly probable that a wealth of undisturbed material exists beneath the plow zone.

Today the development of the town of Aztec is supplanting the fields and pastures (Plate 1). Trailer courts encroach on the southern boundary of Aztec Ruins National Monument while utility poles and gas storage tanks dot the skyline to the north. Traffic has increased to the point of necessitating plans for a major expansion and alteration of flow and access patterns around the monument. And at the very edge of this tide is the last archeological remnant of a once florishing Anasazi community.

## Historical Background

The large sites of the Animas Valley are first mentioned by Miera in his 1777 colonization recommendations to the King of Spain, "The second presidio ... should be found on the junction of the river of Nabajoo (San Juan) with that of Las Animas... There still remain in those meadows vestiges of irrigation ditches, ruins of many large and ancient settlements of Indians, and furnaces [kivas] where apparently they smelted metals." (Bolton 1950:245). Intermittant exploratory work continued in the later half of the nineteenth century when in 1859 the ruins were described by J.S. Newberry (in Morris 1928:8), and Lewis Henry Morgan (1881) published a 1879 description and ground plan. Full exploration of the ruin began when the major excavations conducted at the West Ruins by Earl H. Morris (1928) were sponsored by The American Museum of Natural History. Schart (1977) summarizes the major work accomplished within the monument, which includes the excavations carried on by Earl Morris, excavation of the Hubbard Tri-wall by Vivian (1959), and sporadic excavations undertaken in the guise of stabilization by Steen (1938), Richert (1964), and others.

Initial local interest in the Aztec Ruins began in the late 1870s with the discovery of intact rooms, some of which contained burials and accompanying grave goods. This led to some short-lived ransacking of Aztec West. A decade later the popular picnic spot had come under the protective hand of John R. Koontz who guarded the site he referred to as the "Aztec Ruins" against further destruction. Land the Aztec Ruins occupied had passed to the equally vigilant H.D. Abrams when the American Museum of Natural History entered the picture in 1916.

The American Museum of Natural History was part of the tide of developing eastern-based interest in the monuments of the southwest. The institution capitalized on the growing popular and scientific awareness of regional chronologies and cultural patterns in the southwest. Further, the Museum had a vested interest in the area, having sponsored the work of Pepper (1920) at Pueblo Bonito, and Nelson (1916) in the Galisteo Basin along the Rio Grande. Excavations at Aztec were the Museum's bid to keep their hand in the popular

pie of Southwestern archeology and thereby satisfy Museum patrons. Those patrons and the public were caught up in the furor over lost civilizations, the place of Pueblo Indians in American prehistory, and the intrinsic interest in the large ruins of the southwest (Lekson n.d.). With this attitude it became perfectly justifiable to include Aztec as one of three mammoth, almost simultaneously sponsored, southwestern excavations which included Alfred Kidder (Peabody Institution) at Pecos, and Neil Judd (Smithsonian Institution) at Pueblo Bonito in Chaco Canyon, New Mexico.

Nels Nelson of the American Museum had just completed his important stratigraphic studies in New Mexico's Galisteo Basin with the able assistance of a Colorado graduate student, Earl Morris. Nelson convinced the American Museum that the Aztec Ruins were the site of choice for the Museum's continued southwestern investigations because of the ruins size and relatively unlooted condition. He likewise convinced the Museum that Earl Morris was the man for the job. Morris undertook the only systematic and long-term excavations of Aztec at the West Ruin in 1916 through 1921 with more limited work lasting through 1927. In 1923 the West Ruin was declared a National Monument while the eastern portion, containing the East Ruin, Earl Morris Ruin, and other tri-wall structures, was added in 1928. For a full accounting of the milestones in the history and excavation of the Aztec Ruins, recent publications by the Listers are recommended (F.C. Lister and R.H. Lister 1968, R.H. Lister and F.C. Lister 1987).

## Previous Research

Previous research concerning Aztec falls within two realms; that related directly to the Aztec Ruins and regional surveys and overviews. Primary, direct research on Aztec itself is limited and will be treated only briefly. This reconnaissance, being more concerned with the archeological community in which the Aztec Ruins were set, requires going beyond the narrow and artificial confines of the monument boundaries to ascertain the overall characteristics of prehistoric settlement in the Animas Valley.

### Work at Aztec

Prior to Morris' report(s) (1928) on his work at Aztec, "research" itself consisted largely of actual digging as reported in popular press articles, mostly for American Museum patrons through the Museum's organ The American Museum Journal or Natural History. Nelson (1917) initially described the Aztec Complex, the structure and major features of the West Ruin, recognized its planned construction and coined the term "great house". He also identified an associated community "...of one hundred ruins, some situated in the valley and some on the terraces above" (ibid:87). Morris responded with a report on the rich material finds being uncovered at Aztec (1917a). Both articles were richly illustrated, Nelson's clearly connecting Aztec with the architectural

wonders at Chaco and Morris' with prime specimens of material culture including sandals, tchamahias, awls, and fine pottery. These two articles were combined for a popular southwestern regional publication, El Palacio (Morris 1917b). Morris (1919) and Wissler (1919) annually updated progress as the work continued, detailing further important finds in material culture and elaborate burials which were beyond Morris' expectations for a "provincial" Mesa Verde culture. The last of these popular articles was devoted to underscoring the monumental nature of the Aztec Complex with the addition of the East Ruin and Earl Morris Ruin to the monument (Wissler 1927).

Wissler's encouragement of Morris (Lister and Lister 1968:48) resulted in Earl's broadening concern for anthropological issues beyond the mechanics of excavation. Morris (1921) began outlining his version of regional chronology. This chronology, predating dendrochronlogy, focused on broad cultural characteristics through time periods believed to be sequential. The unilinear trend toward increasing complexity proposed by Morris eventually did not completely hold, but the proposal established Morris' priority to research in the area. For a full understanding of Morris' work at Aztec and the influences affecting his later research, the reader should consult Lister and Lister 1968.

Morris' excavations at Aztec were reported in a series of compiled papers entitled "The Aztec Ruins" in 1928. These papers discussed the history and background to excavation of the ruins including lengthy descriptions of various classes of material culture. The earliest paper (the 1919 "The Aztec Ruin" in Morris 1928), compares Aztec West with Pueblo Bonito and other Bonito style ruins in Chaco Canyon and presents Morris' views on regional chronology (repeated in Morris 1921) where the Anasazi occupations of the San Juan area are seen to precede major occupation in the Rio Grande Valley. Morris' description of the Great Kiva was not only the first such description of this architectural form, but provided a microcosm for Morris' interpretation of San Juan culture history. The Great Kiva was seen as the apogee of San Juan Anasazi ceremonial architecture, a result of population aggregation and increased cultural complexity (Morris 1928:136, 418). As the highest form of architectural expression, Morris saw the great kiva as the epitome of Anasazi symmetry, and the key to interpreting the architectural orientation of entire sites (Morris 1928:134-35). The great kiva was Morris' first published evidence of "Chacoan" construction and occupation preceding the "Mesa Verdean". Although this stratigraphic relationship was also clear in the east wing of Aztec West, it was not identified until 1920, five years after excavations had begun. By 1924 Morris had found 186 burials at Aztec, all but five or six of these from the Mesa Verde period. Included in these Mesa Verde period burials were three or four which might be considered status burials: "The Warrior" in the west wing, two individuals vandalized prehistorically in Room 111 north of Kiva L, and one or two other individuals in the east wing. Materials accompanying these burials rivaled those found in Pueblo Bonito (Pepper 1909, 1920) while some groups of abandoned rooms showed use as cemeteries without the comparatively rich material accompaniment. The work in the small buildings, the "Annex", west of Aztec West reconfirmed the priority

of Chacoan construction in the Animas Valley, and extended that construction to small houses as well. The remainder of Morris' notes provide descriptions of fill, features, and primary artifacts in the 190 or so excavated rooms.

Morris' work demonstrated that Aztec West, at least, was a planned construction. Excavations in the Annex, in conjunction with work on the great kiva and the southern retaining wall, all pointed to extensive movement of dirt in the construction of an earthen platform preparatory to building the West Ruin (Morris 1928:136, 255-56, 414-18). The original builders were held to be the local population, with some of that population being of Chacoan affiliation (Morris 1928:418-419). These peoples were succeeded by a thirteenth century "Mesa Verde" occupation, apparently after a period of abandonment and occupational hiatus. The Mesa Verde period occupants remodeled the interior of Aztec West through the use of more plastic fabrics, but their alterations did not affect the general architectural plan dictated by the massive sandstone walls. Although there is considerable remodeling in the later occupation, the feature overlays often mirror (not destroy) similar features and dedicated space on lower floors, suggesting a general functional continuance in use of the architectural design.

At some point Morris tested the East Ruin (1939:40). His test showed no subfloor "Chacoan" ceramic component similar to that found at Aztec West. Richert's (1964) 1957 stabilization excavations of 13 rooms on the east side of the West House in the East Ruin led him, along with some strong hints from Morris and Gladwin, to interpret the East Ruin as a Mesa Verdean structure. Richert's report is a classic in self-fulfilling prophecy; by searching for and finding "Montezuma Phase" attributes throughout the building, by misrepresenting what may be considered key points in Morris' (1928) work toward those conclusions, and by quoting Morris' (1939) remarks from simple testing as concluding gospel. On the basis of the dendrochronology before Richert, Robinson and others (1974:59-60) refute his construction sequence and place the construction of the East Ruin coeval with or immediately after that of Aztec West (A.D. 1110-1120), with late dates reflecting a similar remodeling episode in the mid-1200s. Likewise, architectural similarities between the East and West Ruins led Powers and others (1983:154) to suggest that construction of the East Ruin began as that of the West Ruin ended in the early twelfth century. That the jury is still out on the issue of timing for the construction of the East Ruin is shown by a recent assessment of the building as part of the Mesa Verde period (Ahlstrom 1985:330-331).

Other archeological work in the monument includes the excavation of the Hubbard Mound and some peripheral features and rooms in the area of that tri-wall structure (Vivian 1959), the excavation of a small trash mound in front of the visitors center in conjunction with landscaping (Maxon 1961), and several letter reports of stabilization (in Schart 1977:40-41) with some more substantial reports by Nordby (1979a,b) involving excavations of drainage lines. Nordby's work is of interest because it is one of the few sources that provides quantitative data tabulation of material culture, it shows additional architectural remodeling in the west wing of the West Ruin not disclosed by

Morris (the Kiva N group), and that some building(s) of the Annex articulated with the northwest corner of Aztec West.

Maxon's excavation of a refuse mound in front of the visitor center was done in the name of park beautification. His excavations revealed the mound was prehistoric (Mesa Verde period) and not recent excavation backdirt. It probably represented a remnant of Morris' southwest trash mound (Morris 1928:414). The southwest mound at Aztec West, including Maxon's small remnant, have been completely removed.

Vivian's excavation of the Hubbard Tri-wall was a cleanup operation in the footsteps of T.B. Onstatt. The Hubbard Tri-wall was initially proposed to be of Mesa Verde period (ca A.D. 1200-1300) construction (Vivian 1959:53), but a reexamination of the stratigraphy, associated ceramics, other dated tri-walls in the region, and revised ceramic assemblage sequences recognized at Salmon Ruin (Franklin 1980) has led Lekson (1984b) to estimate the tri-wall's construction in the A.D. 1130s.

The thrust of all this more recent scrutiny on the Aztec Ruins Complex has been to establish its construction within a relatively short span of time, possibly the 25 years between A.D. 1110 and 1135. Certainly by A.D. 1150 the Aztec Ruins complex, as it now stands, was probably in place and completely functional.

Work in the San Juan/Animas Region

Archeological study in the Animas Valley has had a long, if sporadic, history. While Aztec Ruin, as Miera's early comments adumbrate, attracted early attention and speculation, the less obvious ruins were largely overlooked by all except the pothunters. Morris, for one, was well acquainted with the small houses of the Animas Valley, having excavated at least 20 such structures before he began work at Aztec (1915:671). Reconnaissance surveys at the turn of the century were concerned with identifying and describing building types, as well as clusters and patterns of buildings in a general manner, or with promoting particular projects. Early surveys by Prudden (1903) and Moorehead (1908) in particular identified buildings beyond the great houses of the region.

Prudden (1903:224) promoted the concept of riverine-based archeological "districts" and the use of more substantial ruins as indices of population clusters (ibid:230). In identifying several house forms Prudden introduced the now famous concept of the (Prudden's) "unit-type" pueblo, and large "communal" pueblos (ibid:233-235). Prudden's reconnaissance particularly noted the abundance of small cobble-masonry unit pueblos along the La Plata and San Juan Rivers in contrast to their absence, aside from a small group near "Buena Vista", in the Animas Valley (ibid:250-256). Prudden, like others, was transfixed by the Aztec and Salmon Ruins. Ruins east of the Animas Valley and Bloomfield were believed scarce.

Moorehead's (1908) survey followed, and was more specific to the Animas and La Plata Valleys. This survey showed a greater awareness of a community of

buildings around the principle ruins, including Aztec. Moorehead recognized greater variety of, and relationships between, archeological resources associated with Aztec Ruins including a community of "bowlder ruins", quarries with processing tools on what is now Airport Mesa, the equality in rank-size between the West and East Ruin at Aztec, and, again, the apparent greater population density of the La Plata Valley. Prudden's and Moorehead's observations on population density (or relative numbers of sites) between the Animas and surrounding drainages, while not based on systematic survey, have the benefit of being made before the modern development of the river bottom, a disclaimer frequently offered by more recent surveys when the anticipated high number of sites is not found.

Morris, likewise, was well aware of the small cobblestone and adobe houses that dotted the Animas Valley, having excavated many before he started work at Aztec, with one in particular situated in a cluster of eight near the mouth of Farmer Arroyo (1915:666-667). Again, in his report on the La Plata District, Morris comments, "The number of small Mesa Verde settlements . . . once present in the length of the Animas Valley, I would hesitate to estimate, but I do know that there were scores of them, some situated within a stone's throw of the Aztec Ruin . . ." (1939:40). Morris' one observation on these houses was that many of them were built on previously unoccupied ground. The potting of these structures continued to be his entertainment during his years of work at Aztec (Lister and Lister (1968:54-55). Morris' observations were later echoed by his old friend, Sherman Howe, in the local press (Howe 1947).

Systematic archeological activity has never occurred in the Animas Valley, Morris' reported (1939) work concentrating in the La Plata Valley. Nevertheless, several large recent archeological projects have been peripherally involved with the Animas Valley and contract work continues to make halting inroads on what is, practically, an archeological vacuum. The San Juan Archaeologial Society (SJAS) has intermittently conducted survey in the area, Stuart Peckham's Shiprock/Chuska Valley survey located some sites near the confluence of the Animas and San Juan, pipeline surveys identified more in the same area (Cassidy and Bullard 1956:6-15; Cattanach 1956:198-204) (including LA 2609 a Chacoan outlier known as "The Jacquez Ruin"), and the San Juan Valley Archeological Project (SJVAP) based at Salmon Ruin surveyed and tested a variety of sites in the mid-1970s (McKenna 1976; Whalley 1980). Regional surveys of the Chacoan system likewise peripherally touched on the cultural resources of the Animas Valley (Marshall et al. 1979; Powers et al. 1983:151-156).

A recent examination of the Laboratory of Anthropology site files for this project revealed very few or very minimally described site locations for the Animas Valley and marginal highlands between Cedar Hill, New Mexico and the confluence with the San Juan River at Farmington, New Mexico. Although identified sites in the area range from Archaic through Depression Era Euro-American, the majority are Pueblo II through Pueblo III (ca. A.D. 900-1300) sites (Table 1). The number of Anasazi "sites" in the Animas Valley has recently been increased through the labors of Tom Orbesen of Aztec, New

Table 1. Inventory of Animas Valley sites from Cedar Hill to the confluence with the San Juan River.

| | San Juan Confluence | | | Animas Valley | | | | Period |
|---|---|---|---|---|---|---|---|---|
| | South | North | n | South | North | n | N | N |
| Archaic | | | | 1 | | 1 | 1 | 1 |
| BMIII habitation | | | | 2 | | 2 | 2 | 2 |
| BMIII-PI habitation | | | | | 4 | 4 | 4 | 6 |
| camp | | | | | 2 | 2 | 2 | |
| PI habitation | | | | 1 | | 1 | 1 | 1 |
| PII habitation | 1 | | 1 | | 1 | 1 | 2 | 2 |
| PII-III habitation† | 8 | | 8 | 3 | 8 | 11 | 19 | 50 |
| field house | | | | | 1 | 1 | 1 | |
| refuse scatter | | | | | 2 | 3 | 3 | |
| quarry | | | | | 4 | 4 | 4 | |
| shrine | | 1 | 1 | 2 | 19 | 21 | 22 | |
| burial | | | | 1 | | 1 | 1 | |
| PIII habitation | 1 | | 1 | 3 | 8 | 11 | 12 | 14 |
| sherd scatter | | | | 1 | | 1 | 1 | |
| burial | | | | | 1 | 1 | 1 | |
| Anasazi esoteric* | | | | 1 | | 1 | 1 | 3 |
| camp | | | | | 2 | 2 | 2 | |
| Navajo camp | | | 1 | 2 | | 3 | 3 | 5 |
| refuse scatter | | | | 2 | | 2 | 2 | |
| Euro-American habitation | | | | 1 | | 1 | 1 | 2 |
| ditch | | | | | 1 | 1 | 1 | |
| Unknown camp | | | | | 1 | 1 | 1 | 5 |
| hearth | | | | | 3 | 3 | 3 | |
| lithic scatter | | | | 1 | | 1 | 1 | |
| Total | 10 | 1 | 11 | 21 | 59 | 80 | 91 | |

† 3 sites with multiple, individual roomblocks
* The Old Indian Race Track

Mexico who has conducted a personal survey for "shrines" along the high points bordering the valley bottom. These features appear as single or multiple low cobble piles or rings from 3 to 10 m in diameter at bench or mesa edges overlooking the Animas Valley. These shrines have no associated artifacts, a situation contrary to many shrines more confidently identified as Anasazi throughout the San Juan Basin (Hayes and Windes 1974; Mike Marshall p.c. 1987), making problematical the temporal and cultural affiliation of these features. Site records in the LA-ARM files show the majority of the remaining Anasazi sites to be indistinct cobblestone and/or adobe small house mounds, usually of about 10 rooms or less. Available literature on the few of these sites formally reported is extremely limited, both in number and scope because of the nature of site samples identified during compliance work (LA 46,574 as DCA-83-448 in Reed 1983; LA 37,503 as SJC 948 in Hooton 1983; LA 49,484 as SJC 1079 in Hooton 1984; LA 5603 in Gomolack 1983; LA 45,761 as OCA:107:32 in Donaldson 1983).

Two interesting concentrations of prehistoric development can be identified from the LA-ARM files. The first, of course, is the Aztec Ruins complex (LA 45). The second is highland developments on the south side of the river between the Kello Blancett Ruin and the town of Aztec. Here have been identified on three consecutive west to east mesa remnants, the famous "Old Indian Race-Track" (LA 9050), the Gillentine Site consisting of an extensive houseblock and great kiva complex (LA 6286), and an isolated pueblo with possibly two great kivas on the eastern most mesita (LA 5626). The Old Indian Race Track is a series of four arcate, north-south aligned parallel rows of (apparently) dry-laid cobbles roughly 250 m long and 45 m wide, variously interpreted as a race track or a calendrical device (Hewett 1976; Reyman 1984). Anasazi buildings near LA 9050 were all characterized as "Mesa Verdean" but not further described. The Gillentine site is situated on a highpoint east of LA 9050, now shown on topographic maps as developed for radio towers. As originally surveyed by Henry A. Jackson (SJAS-1958), the site map suggests two great kivas and a roomblock are present, but a more recent map by Tom Orbesen suggests massive roomblocks accompany these kivas with outlying buildings also present. Other large buildings have been identified near the mouth of the Animas, particularly LA 2513 (Cassidy and Bullard 1956:13) described as a semicircular building of cobblestone construction with 3 towers 1.8 m to 2.7 m in diameter. The area has been developed, including an airstrip and housing, but may also have been the location of considerable prehistoric building.

There are six previously recorded sites in the immediate vicinity of the Aztec Ruins, four of these within the reconnaissance area. LA 5603, surveyed by Beth Dickey (SJAS-1958), is located on the cobble terraces immediately north of Aztec Ruins National Monument. Originally this "site" referred to six small housemounds, probably Building 5 and some of the smaller housemounds (6-18) discussed in this report, although the sketch map is ambiguous at best. At the request of Mrs. Hubbard, A.R. Gomolack (1983) surveyed this area in conjunction with well pad developments and firmly affixed LA 5603 to a ruin designated and discussed herein as Ruin 2. LA 57,479 is a "shrine" on the eastern flank of

Farmer Arroyo which "...looks remarkably like a ring for a campfire" (Orbesen 1986 LA-ARM survey form). Two buildings at the extreme east side of the reconnaissance area were surveyed in the mid-1970s by SJVAP. LA 13,433 and 13,434, described herein as Buildings 21 and 22. LA 13,433 is situated on a panoramic highpoint overlooking the entire prehistoric development along the bench to the southwest. LA 13,434, the Dein Ruin, is located on the edge of the cobble terrace and is the focal building in a prehistoric complex including great kivas, road alignments, and earthen berms.

Other sites are located in the bottomlands surrounding the Aztec Ruins. Across the road from the southeast corner of the monument boundary is LA 1674, a Pueblo III refuse scatter for which no real site file exists; it probably is the remnant of a building. The Estes Arroyo Bridge Site (LA 15,185) was partially excavated by Morris (1944:438) who was, in part, investigating adobes as a construction fabric in the Aztec area. LA 15,185 was formally surveyed by Charlie Steen in conjunction with the development of the Aztec water system. Steen felt the Estes Arroyo Bridge site was a considerable building, containing about 100 rooms, and was of the Mesa Verde period. Morris' point (1944:438), however, was that adobe brick constructions were a technique of the Chacoan period, and, in fact, the majority of his A.D. 1090s dates came from samples taken at an Estes Arroyo Bridge Site kiva. Today, the tattered remains of the Estes Arroyo Bridge Site are hidden behind a highly visible whitewashed cobblestone wall at the beginning of the monument entrance road. Steen identified several other Mesa Verde period structures in Aztec in conjunction with his waterline survey, but the rather consistent finding of earlier occupations under later buildings suggests these sites may also be earlier than is normally credited. Morris' Adobe Ruin (1944), located about one-eight of a mile northwest of LA 15,185, and his salvaged Mesa Verde house near Farmer Arroyo (1915) have never been formally identified for the LA-ARM files.

Until this reconnaissance began, missing from the LA files was information on the ruins of Kello Blancett (LA 59,967) on the Animas River, and Old Fort (LA 61,051) at the confluence of the Animas and San Juan, both prehistoric buildings reputedly rivaling Aztec West in size. Information on other possible great houses, Flora Vista (LA 2514, Cassidy and Bullard 1956:13) and LA 8619 (ca. 4 km east of the Animas/San Juan confluence) was likewise minimal and somewhat contradictory. Given that these buildings constitute the most conspicuous archeological resources in the Animas Valley, and that the LA-ARM file represents the most complete record of archeological sites in New Mexico, it is apparent that there are major gaps in our understanding of the archeology in the Aztec vicinity. This lack of knowledge is doubly ironic in light of the tremendous amount of archeological research/energy which has been invested in the Aztec vicinity since publication of the archeological assessment (Schart 1977).

At the time of Schart's assessment, major excavations of Chacoan buildings were underway at Chaco Canyon and at Salmon Ruin (ENMU and the San Juan County Museum Association, see Irwin-Williams and Shelly 1980). Because Salmon and Aztec have traditionally been recognized as "Chaco" buildings, both projects

were, in part, concerned with explaining the relationship of San Juan populations with Chaco Canyon. To this end the Salmon Project initiated a survey and testing program in the San Juan, La Plata and Animas drainages (McKenna 1976; Whalley 1980). If the findings of the Salmon Project concerning regional interaction and the role of the Chacoan system are reflected by Whalley, then Chaco influence in the northern San Juan was restricted the establishment of "gateway" communities -- the outliers -- which remained distinct from the local populations and did not fulfill a redistributive role suggested for Chaco by mid-1970s models (see Whalley 1980:105-114). The question of interaction and Chaco-San Juan relations opens a labyrinthal door that we wish to quickly close.

What the Chacoan system was, how it operated, and its demise and/or transmutation is the subject of models and theories too numerous to recount in the present paper. Models (and sons of model) at last count numbered about 20, with a good many hauled out and reviewed with each new archeological reconstruction or research design for the area (for example Winter 1980; Sebastian 1983; Hogan 1986). The most recent ones emphasize adaptive ways and means to mediate against environmental stress. Judge (1979, 1983), in particular, has emphasized the administrative aspects, symbolic and actual in the form of control of elite goods, of a regional redistributive system which was posited to have acted as a successful buffer for the people of the San Juan Basin against environmental unpredictability. Sebastian (1983) argues for a less inclusive buffering system founded on bounded exchange groups, but linked to a regional network of elite exchange which facilitates movement of people in times of stress (cf Vivian 1981). Sebastian's model relies on repayment of obligations incurred through reciprocal exchanges in communities where unequal access to prime resources (lands) creates imbalances in food production; this harkens to Vivian (1970) and Judge (1977) who posit unequal access to key resources as causal to the rise of Chaco proper. Sebastian's views are particularly inviting because they can account for the establishment and maintenance of an outlying community, such as Aztec, as an independent body with good cause for "buying into" and maintaining relations with the Chaco system. The importance of these models to Aztec is that they articulate probabilistic scenarios against which information from Aztec must eventually be compared and evaluated; but this is the subject of another work.

Our knowledge of the extent and complexity of the Chaco system has expanded greatly in the past decade, so much so that it is difficult to look back and remember how major changes in Chaco thought occurred, what discoveries, personalites and projects contributed and how these "discoveries" contributed to the contemporary "party line". The results of this brief reconnaissance illustrates an example of overlooking the obvious and reassures us that there is still much to know about Chaco.

## Interpretative Perspective

Every project enters the field, consciously or unconsciously, with mental baggage conditioned by previous work which contributes to a set of expectations, possibly models, and occasionally "causes". In the American Southwest work has been intensive. This has been particularly so in the San Juan Basin where large-scale surveys, excavations, and overviews have established patterns of settlement, chronologies, and expectations for the archeology of the region (Morris 1939; Vivian 1970; Marshall et al. 1979; Breternitz et al. 1982; Powers et al. 1983; Kincaid 1983, Dykeman and Langenfeld 1987; Fowler et al. 1987, among the many). Amidst this clamor the reconnaissance entered the field with some rather strong opinions on the character of Bonito Phase developments and the Chacoan system. The recognition of prehistoric cultural landscapes is an underlying principle in the literature where settlement was discussed. The archeological literature is not actually couched in terms of cultural landscapes, but this approach is yet another vehicle to perceiving past behavior and change in a cultural ecological framework.

The recognition and description, if possible, of the basic elements which compose the cultural landscape at the Aztec Ruins Community was deemed an appropriate approach given the low intensity of survey. Cultural landscapes compose one level of nonverbal communication that is relatively simple to interpret using broad categories of observational data similar to those acquired during the reconnaissance. The use of the cultural landscape concept is not suggested as a replacement to criteria for recognizing Chacoan structures or communities, but rather as an addendum which broadens and makes more flexible (without loss of cultural resolution) the current criteria (see Loose in Marshall et al. 1979:358; Powers et al. 1983:14-19).

Cultural landscapes are hardly a new concept, being widely employed by cultural geographers, especially of the British school, to describe the evolution of landscape forms through the accumulation of various cultural factors or modifications (see Sauer 1925). Recognition of cultural landscapes, however, has been more common for the historic scene where it is often used as a tool for understanding landscapes as the physical remains of a human ecological system and for cultural resource management (Melnick 1984:1-5; Webb 1987). The concept is equally applicable to the prehistoric scene. Literature on the subject of built environments is too extensive to review in this report, but the writings of Amos Rapoport (1969, 1982) concerning the interpretation of built environments as a nonverbal behavior provides a foundation, as well as extensive additional references, for our purposes. A step in operationalizing these concepts for archeologists has been taken by McGuire and Schiffer (1983).

Rapoport makes points, some of which act as operating assumptions in this report. The first of these is that buildings of traditional cultures (and we hold Anasazi buildings to be "traditional" as used by Rapoport) generally lack differentiation and novelty. Where differentiations occur, however, it usually denotes distinctions between the sacred and the profane, and occasionally

status (status itself is usually a related subset of the sacred/profane distinction, see Rapoport 1969:1-18). The next is that traditional vernacular architecture represents and reflects a variety of user-based meanings which are the result of the interplay of socio-cultural and physical forces in which the socio-cultural factors are primary. The explanation of vernacular buildings and cultural landscapes are not determined by any single variable.

Studies of Bonito Phase architecture have indicated a feedback relationship in terms of architectural features and style, between great houses and small sites (Lekson 1984a:6, 264-269; Truell 1986:306-307) which reflects the vernacular school of Bonito Phase construction. McGuire and Schiffer (1983:281) propose a direct relationship between greater social differentiation and the need for material displays signaling those differences such that structural investments will be greater on those buildings which contain symbolic functions in the ideological or social spheres. In the vernacular tradition those differences are often expressed in terms of scale, height, formalization of design, location, and materials (Rapoport 1982:29-30, 115-117). While the sacred/profane dichotomy has been mentioned as the most common reason (eg. religious) for differentiation of buildings, this is no more compelling an explanation than other "prime movers" of form such as environmental factors of site, material, and climate, or other socio-cultural concerns as defense or economics. The meaning of a cultural landscape depends on the individual culture which brings many factors into consideration in the development of the buildings and community. It is difficult at best with a full spectrum of archeological data, much less the limited information available from a reconnaissance survey, to begin to infer or understand the behavioral correlates of the built environment. Thus, while it may be possible that cosmological or "ideational" factors play a role in settlement design (see Fritz 1978), these aspects of cultural landscape planning should be weighted equally with other design issues (solar gain, visibility, slope, communication) that may result in alignments or the specific symmetrical arrangement of buildings.

Assigning meaning to cultural landscapes is possible at a very pragmatic level using simple observational data without the need for more complex, overly abstract models based on linguistics (Rapoport 1982:35-53, 87-121), which is especially desirable with archeological data, where many of the non-verbal clues to meaning are not available. Following Hall (1966), Rapoport (1982:87-101) outlines three dimensions by which meaning can be communicated; fixed, semifixed, and nonfixed features. Each of these dimensions refer to increasingly (archeologically) ephemeral modes of possible communication from permanent features to placement of various movable displays and the actual nonverbal interactions of people themselves. The nonverbal actions of people, the "nonfixed features", are, of course, beyond archeological recall. The use of fixed and semifixed features are the rule in archeology and in survey fixed features are paramount; an unfortunate limitation as it is this domain where assigning meaning is most difficult (op cit. 90).

Meaning, in vernacular construction, is usually subtle, but is conveyed by contrast and redundancy in sets of observable features. Among the possible categories available for interpretation on a reconnaissance survey are physical elements (fixed features) involving shape, size, scale, height, materials, the use of space through enclosing elements, barriers or other peripheral features, the type of order or disorder present, perceived density, the natural or man-altered use of topography and aspects of location involving prominence, centrality, and general selection in natural setting. Excavation would provide some data in the semifixed feature realm such as emplacement of displays or temporary barriers such as screens, processing features, the location and variety of fields, color schemes, and the distribution of stylistic attributes in material culture. Among the possible fixed features, recognition of planning is important because it is a key to the ranking of site or building locations and to the accessibility aspect of those units. Especially highly observable contrastive aspects include such features as height, size, centrality, and spacing. The archeologically derived meaning from observation and description of such basic contrastive sets will undoubtedly be limited, but at the same time the ends will not exceed the means.

Lest our opinion of Bonito style construction be diluted in a bath of formal architectural terminology we need to make clear that we feel that two schools of construction were taking place; vernacular residence and a vernacular public architecture. We make this distinction because too often the use of the term "vernacular" conjures of images primitive huts, if not hovels, of mud and sticks, and this is simply not the case. While Aztec Ruins, Salmon, or Kin Bineola are within the vernacular tradition--similar elements, plan, basic technology, and design to contemporary 'residences'--the scale and formality of construction speaks to a "higher style" within the tradition. Classifications which emphasize dichotomies such as "vernacular" and "high style" do so at the peril of artifically relegating developmental "styles" into one camp or the other; such may be the case with Bonito style public architecture.

Finally, throughout the text a few terms have been used which require some minimal definition. We sporadically employ the term 'siting' to designate positioning of a building because it invokes broader implications that 'location' including site preparation prior to construction and the intentional consideration of existing and intended man-man and man-land relationships. The use of vernacular design or style, the flexible, unpretentious, and pragmatic construction and arrangement of buildings dictated by and understood within a cultural tradition (Rapoport 1969:4-6), is held to be the universal style of construction in the reconnaissance. There are differences, of course, and those scaled up buildings with more formalized features are alluded to as 'Bonito-style' or 'high-style' although, again, it is not intended to suggest these structures are equivalent to Rapoport's usage which admits construction of original creations by specialists such as cathedrals, banks, or civic centers.

The Reconnaissance Survey

Prior to fielding the survey work, steroscopic and aerial black-on-white photography at a nominal scale of 1:30,000 was acquired for the San Juan, Animas and La Plata drainages through the courtesy of the Bureau of Land Management in Albuquerque. Although the results of the survey have not been synthesized, this aerial photography, taken by SJVAP in 1973, stands as an archival documentation of the Farmington area prior to the oil boom. This was the imagery used to provide the "base" for this study, and will ultimately be a primary resource for future archeological endeavor in the area, particularly if the road system is ever to be reconstructed. The preliminary identification of buildings and all peripheral features, particularly roads, was undertaken with this imagery, and the majority of identified features were ground checked during the reconnaissance.

Pedestrian field-checking involved walking from structure to structure or linear feature as recognized on the imagery. Although we are confident all the main prehistoric constructions on the cobble terrace have been located and ground checked, the terrace has not yet been systematically covered by on-ground survey sweeps.

Buildings and features were assigned temporary field numbers from 1-56 and are so referenced throughout this report. To facilitate description, only major buildings will be discussed, with the nearest associated features identified by number and feature type. Three groups of buildings were recognized from southwest to northeast in the survey area: Residence West, Aztec North, and the Farmer Complex (Figure 2). These ruin groups each share features internally common in terms of construction, ancillary embellishments, site spacing, and topographic setting. Of the aerial signatures identified as possibly cultural only one, #26, in the Farmer drainage north of Buildings 21 and 25, proved to be a mare's nest (Dabney Ford p.c. 1987).

Building 1

Building 1 is an isolated great kiva about 13 m in diameter. Cobble berms, suggesting possible rooms, are found around the entire circumference. The kiva depression is about .75-1.0 m deep with the rooms/berm somewhat less than 50 cm high, making for a very visible structure. This great kiva is overlooking a deep arroyo on a bench point just northeast of Mound F at the Aztec Ruins.

Building 2 (LA 5603)

Building 2 is the heart of the north bench complex and is the center of the most sophisticated developments behind the Aztec Ruins. Ruin 2 is by far the largest and most formal building in the reconnaissance area. The building superficially resembles Tsin Kletsin on Chaco's South Mesa, but even by the most conservative estimates is considerably larger. The general aspect of the ruin is to the south, with independent azimuths of 90 and 100 degrees having

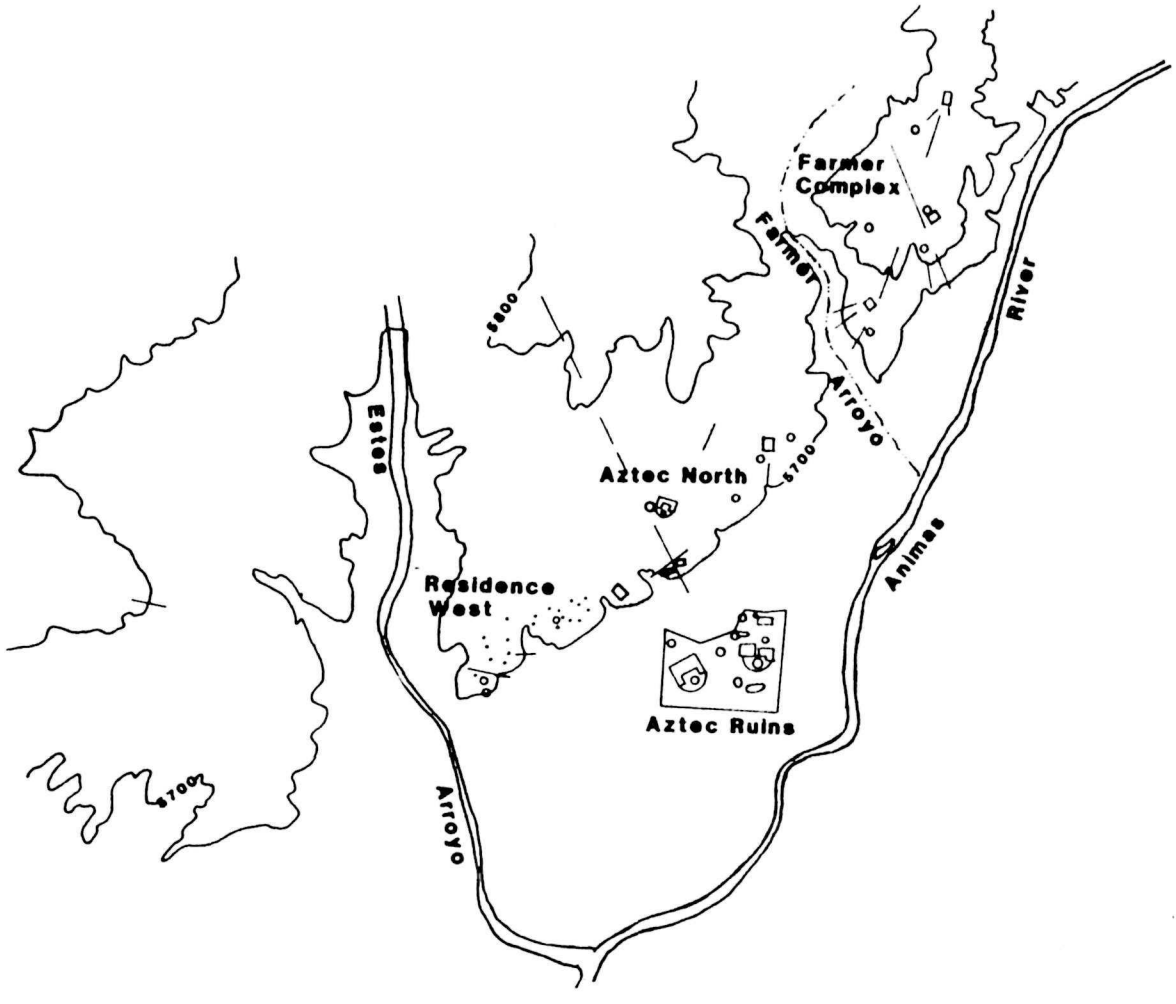



Figure 2. Sketch of Development above Aztec - Residence West, Aztec North, and Farmer Complex.

been taken along the back wall of Ruin 2--these are based on approximations of where the wall actually lies.

The ground plan is that of a squared [ with a row of cobblestone rooms forming a plaza enclosing arc to the south of the main roomblock. The main roomblock appears to be primarily of single story adobe construction eroded into a low (2-3m), but substantial mound. The main roomblock has been independently estimated at three different sizes ranging from an extreme of 70 m (E-W) by 50 m (N-S) to a more conservative 53 m (E-W) by 37 m (N-S). Estimates of architectural mass are 2904, 1760, and 1765 sq. m., which, given an average of 16 sq. m. per room, would suggest room counts of 182, 110, and 79 rooms in the main housemound; a minimum of 15-20 more are found in the front arc of cobblestone rooms. Given that architectural mass includes space taken by walls and in-field estimates of about 100 rooms, the estimate of 110 rooms for the entire building may be reasonable.

The eastern and western wings of the structure extend into the plaza and are linked by the arcate row of cobble rooms at their exterior walls. This plaza fronting arc has a gateway, or plaza entrance, centered in the arc about 3-6 m wide. The wings of the roomblock form an upper courtyard, apparently raised above the general plaza level, which may contain at least two more kivas and numerous features. The easternmost wing has an old depression in the center of the block which may be a kiva, but more likely represents past pothunting.

Two great kivas are associated with the building. The smaller, about 13 m in diameter is located in the southeast quarter of the enclosed plaza, while the larger, estimated between 15-20 m diameter is situated along the exterior of the southwestern portion of the fronting rooms. The plaza kiva shows no evidence of peripheral rooms, being heavily alluviated from roomblock structural melt. The exterior kiva, however, has a berm suggesting a series of 2 by 3 m rooms on its west to southwest side; other rooms may be present but are obscured by adobe melt off the adjacent plaza enclosing rooms.

Two plaza features are apparent. One is a nondescript cluster of cobbles about 5 m in diameter about 7 m southwest of the plaza great kiva. The second is a linear arrangement of cobbles about 6 by 3 m extending east from the outer limits of the west wing. This feature may represent two or three rooms which help define and partially enclose the upper courtyard set between the wings.

Ruin 2 has in association several peripheral features. About 65 m to the northeast of the building near the terrace edge is an unnumbered long, low wall of cobbles 35 m long on the east side (perpendicular to the terrace edge), and 27 m long along the southwest segment (bordering the terrace edge). About 22 to 45 m south of Ruin 2, between the building and the edge of the upper terrace on which the ruin is sited, are two concentric berms of cobbles separated by about 12 m. These berms vary in height and mass, but are generally about 5 m wide and up to one meter high. On the south side of the building these berms are broken by the north road from the Aztec ruins, identified as Features 30-33. When this road passes by Ruin 2 it bears on an azimuth of 334 to 348 degrees and is represented by a swale 9 m wide and about 35 cm deep. This road

is visible as a swale on the horizon about 850 m northwest of Ruin 2 at which point it descends into clay badlands where its signature is lost. Finally, on the exterior of Building 2, to the southeast and north, are located isolated rooms. The southeast room being about 4 by 4 m and showing evidence of vandalism, while the northern feature is an amorphous mass of cobbles about 5 m in diameter.

No formal trash mound or refuse scatter was associated with Building 2. Surface trash itself was rare with only 2 Gallup B/w jar sherds observed. This dearth of trash has been attributed to stripping by visitors within the last 25 years (Gomolack 1983).

Buildings 3 and 4

These buildings are located at the edge of the terrace overlooking the Aztec Ruins just about due north of Mound F. Although these buildings are individual structures they are integrally related, being separated only by the north road from Aztec (Feature 30-31). Buildings 3 and 4 appear to be mirror images of one another, with small room extensions from opposing corners of a block-style room block. Building 3 is oriented slightly to the southeast, while Building 4 is oriented slightly to the southwest, the effect being to concentrate the orientation of the building complex down the road and onto the central structure of the Aztec Ruins, Mound F. Building 4 is the larger of the two although this is not as apparent on Table 2. Both buildings appear to be single story.

Building 3 is situated to the west side of the road. The structure probably has about 20 rooms. The building is formally defined by the use of berm(s) to the south and west and by an extension wall from the west side of the roomblock. No kiva was evident.

Building 4 is situated to the east side of the road and slightly north of Building 3. It appears to have about 30 rooms, depending on how the surface evidence is read. The main roomblock is projected to have about 20 rooms with an enclosed plaza to the south. The southern margin of this plaza, which may contain one or two kivas, appears to be bounded by rooms, but Building 4, like 3, is not only heavily eroded but also reveals considerable vandalism. An extensive midden is associated with the southern margin of Building 4.

The bench on which Structure 3-4 are built is slightly lower than the main terrace formation. The area appears to have been heavily modified and sculpted. Road modifications, possible ramps, and earthen and cobble berms are all present in the immediate area. Features 27 and 28, located about 50 and 100 m west of these buildings, appear to be artificially flattened areas which may be associated with an unidentified road going up the arroyo. Feature 34 is visible as a shallow swale about 10 m wide on an azimuth of 235 degrees a few meters north of Buildings 3-4. It intersects with the highly visible north road segment (Feature 31) and appears to align with Building 5 to the southwest. Where the north road passes between the buildings and ascends the terrace to the north it is 10 m wide and from 50 cm to 1.5 m deep and flanked

Table 2. Comparative Architectural Summary on Buildings in the Reconnaissance Area.

| Ruin # | Room Numbers Estimates Field | Calculated* | Building Mass (sq m) | Multi-story | Rooms Across | Mound Height | SS Masonry | Backwall Azimuth | Kivas Domestic | Kivas Great | Trash Mound | Apron | Building Shape |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 100 | 110 | 1760 | | 4-5 | 2-3 m | ? | 90-100° | x | 2 | | | D |
| 3 | 30 | 17 | 270 | ? | na | na | | 66° | | | | | ▭ |
| 4 | 40-50 | 20 | 320 | ? | na | na | x | 90° | x | | x | | ▭ |
| 5 | 60 | 50 | 667 | x | | 3.5 m | x | 75° | x | | x | | ▭ |
| 6 | 5 | 5 | 84 | | | .15 m | | 85° | x | | duned? | x | ▭ |
| 7 | 5 | 4-5 | 72 | | | .75 m | | 115° | | | ? | | ▭ |
| 8 | 25+ | 30 or 22 | 490 344 | ? | 2-4 | 1.0+m | | 78° | x | | duned? | x | L |
| 9 | 15 | 22-23 | 360 | ? | 2-4 | na | | 35° | x | 1 | x | ? | ▭ |
| 10 | 4-5 | 4-5 | 74 | | | .3 m | | 38° | | | | | ▭ |
| 11 | 15+ | 20 | 330 | | | .3 m | | na | x | | | x | L |
| 12 | 1 | 1 | 16 | | | .2 m | | na | | | | | ▭ |
| 13 | 2-4 | 3 | 48 | | | na | | 64° | | | | | ▭ |
| 14 | 20 | 39 or 13 | 630 209 | ? | | 1.5 m | x | 70° | x | | | | ▭ |
| 15 | 10-12 | 10-12 | 167-195 | | | .5 m | | 70° | x | | x | x | L |
| 16 | 3-5 | 3-5 | 48-72 | | | .5 m | | 35° | | | | | ▭ |

Table 2 cont. Reconnaissance Architectural Summary

| Ruin # | Room Numbers Estimates Field | Calculated* | Building Mass (sq m) | Multi-story | Rooms Across | Mound Height | SS Masonry | Backwall Azimuth | Kivas Domestic | Kivas Great | Trash Mound | Apron | Building Shape |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 6-8 | 6 | 96 | | | .75 m | | 105° | | 1 | | | na |
| 18 | 50 | 44 | 705 | x? | | 2.5 m | | 90° | x | 2 | x | ? | [ or □ |
| 21 | 40 | 27 | 438 | | 2-3 | 1.0 m | x | 80-90° | x | 1 | x | | [ |
| 22 | 30-40 | 33-38 | 525-600 | x | | 3.5-4 m | x | 150° | x | 2 | x | | □ |
| 23 | na | 50 | 800 | ? | na | na | na | na | x | 1 | na | na | □ |
| 45 | 10 | 7 | 117 | | 2-3 | .5+m | x | na | x | | x | x | L |
| 46 | 10 | 9-12 | ca 200 | | 2 | .75 m | | na | x | | | x | C |
| 47 | 2 | 1 | 21 | | 1 | .25 m | | 30° | | | | | ▭ |
| 48 | 12-15 | 5 | 78 | | 3 | 1-1.5 m | | 85° | x | | | | ▭ |
| 49 | 10 | 4 | 56 | | 2 | 1-1.5 m | | 85° | x | | | | ▭ |
| 50 | 30 | 16 | ca 250 | ? | 3-4 | 1-1.5 m | | ca 60-70° | x | | potted? | x | L |
| 51 | 24 | 14 | 225 | | 3 | 1.0 m | | 77° | x | | x? | x | ▭ |
| 52 | 24 | 10 | 160 | | 2-4 | na | x | 75° | x | | | | L |
| 53 | 2-3 | 1 | 14 | | 1 | 0.15 m | | 75° | | | | | ▭ |
| 54 | 4-6 | 3 | 44 | | 2 | 0.25-.5 m | | 87° | x | 2? | | x | ▭ |

* calculated from building mass assuming a standard 16 sq m per room.

by berms which measure up to 3 m wide and 50 cm high. The azimuth of the road, taken between the two buildings, is 334 degrees. Earthen berms southwest of Building 3 measure up to 31 m long, 10 m wide, and 1.5 m high. This entire complex needs to be considered in relation to Ruin 2 when interpreting the road-associated cultural landscape immediately north of the Aztec Ruins.

Building 5

Ruin 5 sits atop a high point along the terrace edge across an arroyo and southwest of the Building 3-4 group. It is the southwestern most building of massive construction on the cobblestone terrace north of the Aztec Ruins. The building itself consists of a rectilinear multistoried main house, roughly 35 m (E-W) by 14 m (N-S) with an enclosed southern plaza bordered on the south by a single row of single story rooms or ramada foundations (Figure 3). There are, perhaps, 40 ground floor rooms in the main roomblock, and eight second story rooms. The detached southern block may have as many as 10 rooms, represented by extremely large cobblestone alignments. The entire structure is roughly 50 m (NW-SE) by 35 m (NE-SW). A midden is evident along the cobble slope south and southeast of the southern rooms. The general orientation of the building is to the southeast.

The hilltop on which the building is sited appears to have been modified, the upper surface of the terrace having been peeled back to, in effect, enhance the height of the building from the bottomland approaches. The building site itself is on an enlarged thumb extending from an otherwise narrow ridge connecting this arroyo bounded terrace finger with the main landmass to the north. Large but shallow depressions to the east and southeast of the building testify to the removal of considerable soil from terrace margins now "below" the structure. Behind the ruin is a berm which obliquely transects the ridge spine for 35 m, ending near the northwest corner of Ruin 5 in a small 1 by 1 m square box. This wall and another possible berm at the edge of the terrace are low relief features, perhaps no more than 20 cm high and 1-2 m wide. These berms are more appropriately conceived as space defining walls than as "defensive" constructions.

The plaza or court between the two roomblocks has sufficient space to house one large kiva (ca. 10 m dia.) or two smaller ones. Evidence of kiva depressions are lacking in this court, but filling to grade is possible given the amount of housemass that has decomposed. Two smaller kivas (<5 m dia.) are indicated on the east side of the main house, but again, positive identifications are difficult given the extent of old pothunting disturbances.

Building 6

This ruin shows as a linear roomblock of four-five rooms, about 2 rooms deep at most. A structural apron extends 15 m out from the roomblock, with a kiva centered in front of the building. A sparse refuse midden is evident

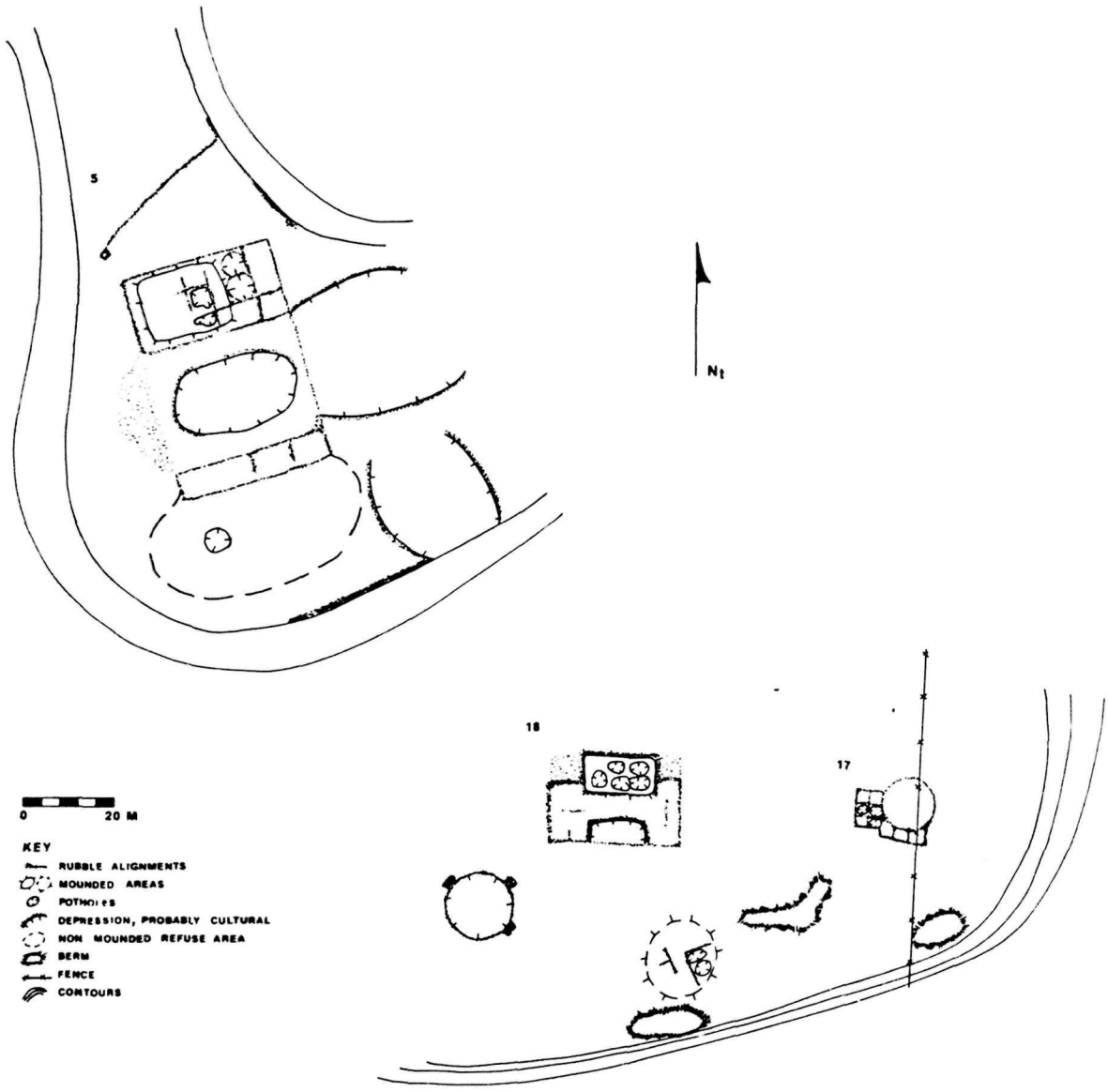



**FIGURE 3 : BUILDINGS 5, 18, AND 17**

about 7 m wide, approximating the shape of the apron on the apron's east and southeastern margin.

Building 7

Structure 7 appears to be a small square building of about four to five rooms with a short wing wall extending east from the center of the housemound. No kiva is evident, but the intervening area between Ruin 6 and 7 where a depression might be expected has been obscured by a cow dust wallow.

Building 8

Building 8 is the largest "residential" structure located away from the terrace edge. The building is a large L-shaped structure roughly 35-22 m (NE-SW) by 14 m (NW-SE), excluding the southwest block. This architectural block creates the L appearance and may house a blocked in kiva with marginal rooms on the east and south sides. The main, north portion of the housemound may be multistoried. Another slight depression suggests a kiva in the court-created shelter of the L. Thinly dispersed trash 10-15 m beyond the court kiva suggests a duned midden may be present.

Building 9

This structure utilizes natural landforms to create bounded space and add definition to the building. The roomblock is roughly rectangular with a slight inset on the southeastern portion that may denote a roomblock affiliated kiva. Approximately 12 m southeast of the roomblock is a flattened 20 m diameter refuse mound marked by ashy soil and thinly scattered mixed refuse. About 18 m northeast of the building is a great kiva delimited by a 12 m diameter depression and a northern alcove room. The rubble mass for this alcove is 7 m (NE-SW) by 4 m (NW-SE) and suggests a single room. The kiva is flanked by a substantial berm with wall alignments on its east side, indicating other peripheral rooms are present if not completely visible, around the kiva's circumference. No trash is directly associated with this great kiva. A natural ridge curves to the southwest from the kiva, "connecting" the great kiva with Building 9's refuse mound. This ridge forms a natural "courtyard" or plaza in front of Building 9 were more kivas (than are apparent) may be located.

Building 10

Building 10 is located about 7 m north of Structure 11. There is a single, 4 by 2 m isolated room about 13 m to the southwest. The linear roomblock has about 4 to 5 rooms. A concentration of cobbles may outline a 6 by 3 m ramada foundation extending north from the northeast portion of the roomblock. A small 75 cm diameter cobble ring just south of the main house may be either an

Anasazi or historic hearth. No kiva or trash midden is evident. The proximity of Building 10 to 11 suggests they may be part of a single structure.

Building 11

This building is apparently a single storied 15-20 room L-shaped unit. The main northern portion of the housemound is distinct, but the southwestern block appears as a low, indistinct rubble mound approximately 8 by 3 m in size and possibly joined to the main block by a wing wall. A kiva depression is apparent in the protected apron/court between the two rubble mounds. No vandalism is evident, and trash is very minimal with no trash midden per se apparent.

Building 12

Building 12 is a single 4x4 room about 8 m east of the north end of the great kiva noted for Building 9. It has been vandalized. No trash or associated features were noted.

Building 13

This is a single, linear roomblock, oriented to the southeast. The three or four rooms probably present are constructed of very large cobbles. A back row of rooms may be fronted by a single room and some activity area features on the south side. No kiva is evident. Artifacts in a nonmounded refuse scatter are located to the south of the house and represent one of the higher density refuse scatters noted in the reconnaissance area.

Building 14

This building is located at the very edge of the terrace with no room for the traditional location of a trash mound. Structure 14 is a large, square ruin, possibly multistoried and oriented to the southeast. Extensive pot hunting obscures the possible subdivision of the roomblock into regular rooms, walled court areas, or enclosed kivas. The field estimate of 20 rooms reflects consideration for what may be blocked in kivas on the east side of the structure. About 18 m northeast of the northeast corner of the ruin is a 1 by 1 m cobble box which may be an old historic hearth. Visible wall alignments in Building 18 suggested rooms in this structure were very uniform and regular.

Building 15

This is a T-shaped building with a main northern roomblock, two rooms deep between 25 and 17 m long and about 6 m wide. Extending southeast from the west central portion of this roomblock is a row of rooms which may extend to the east, forming an enclosed space for a kiva. The overall aspect of the ruin is

to the southeast with a trash mound located on the south and southeast margins of a structural apron which defines a "plaza" area roughly coincident with the long axis of the building.

Building 16

Building 16 is a small linear house mound of 3-5 rooms. No kiva depression is readily visible although one may be present off the southwest margin of the roomblock. Wall alignments are visible. The structure has been vandalized. Artifacts are minimal and are concentrated to the southeast of the housemound.

Building 17

Structure 17 is a great kiva about 50 m northeast of Building 18 (Figure 3). The great kiva is 10-15 m in diameter with a considerable block of rooms to the south and southwest side of the depression. The 6-8 estimated rooms form a structural mass roughly 16 m along the southern margin and 8 m along the southwest kiva periphery. No refuse is directly associated with this great kiva.

Building 18

Field observation on Ruin 18 is quite varied, partly because of the extensive pothunting of the roomblock. The building is either a large squared [-shaped structure of about 30 rooms or a large square-shaped, possibly multistoried ruin of about 35-50 rooms (Figure 3). A possible road segment approaches the building from the southwest part of the terrace, coming, apparently, from the Aztec Ruins Complex. The main building is roughly 30 m (E-W) by 16 m (N-S) with a central high portion of 15 by 9 m which may represent a second story. A possible alternative to multistory construction is the construction of an earthen platform atop which a set of single story rooms was constructed with a lower terrace of one story rooms along the lateral and southern margins. This would require testing for confirmation. Eleven meters to the south of the building is a refuse mound about 15 m in diameter. Wall alignments are evident in this "refuse mound" and it is possible this represents another, smaller building. To the southwest of the roomblock is a shallow depression with some evidence of peripheral berms that may represent a great kiva about 15 m in diameter. Because of surface grading around Building 18, confirmation of this great kiva will minimally require augering. Berms are possibly associated with Building 18 between the ruin and the bench edge, but extensive heavy equipment grading to the west and southwest of the structure have altered the terrace surface sufficiently to make identification of peripheral features difficult.

Building 19

Structure 19 is a solitary great kiva at the terrace edge about 100 m south of Ruin 22 (LA 13434). The structure is about 13-15 m in diameter with a berm of cobbles 50 cm high and about 2 m wide around the circumference. The north side has been impacted by a "turn-about" road and the berm is not so evident in this area. For a summary of associated features with this great kiva see Building 22.

Building 20

This solitary great kiva is 19 m in diameter overlooking Farmer Arroyo about 550 m above the arroyo's mouth. Lateral berms extend 9 m out from the south side of the structure. Although a partial berm may have originally been located on the south side, these extensions appear to be nonstructural and the result of backhoe work.

Building 21 (LA 13,433 The Farmer Arroyo Ruin)

Ruin 21 is a large square [-shaped building set atop a highpoint with a panoramic view of the Animas Valley, the San Juan Basin to the south and the mountainous high country and immediate upland canyon country to the north. The ruin is distinctly positioned in the reconnaissance area for maximum visibility. The structure itself is primarily of adobe construction with some sandstone elements. A lower court is bounded on the south by a significant berm of cobbles, possibly rooms, while an upper court is enclosed by the lateral wings of the main house. The main house itself appears to be single story with about 40 rooms, and at least 1 houseblock kiva situated in the northwest interior portion of the upper courtyard. Other kivas may be expected in the court, although depressions are not clearly visible. This siting maximizes the use of natural topographic features to define site boundaries and access. The building is placed on the hilltop with extreme slopes to all but the south side where roads enter the lower court from the southeast and southwest (Figure 4).

These previously undefined features are visible as swales ranging from about 35 cm to 1 m deep and 8 m wide. The southeast "road" enters the court through a 6 m wide gate in the otherwise continuous court enclosing berm. This segment has probably been enhanced by erosion, but does appear to have flanking berms. Its signature is not evident beyond the immediate hill slope as it has been truncated by modern residential development; backhoe work is not to be ruled out as a possibility for this particular "road signature". Road segments from the southwest, however, are much more certain. A short spur links Building 22 with an isolated great kiva (#25), and a more substantial segment 8 m wide with low berms links Building 21 with an aerially identified possible road segment (Feature 42) some 200 m to the southwest.

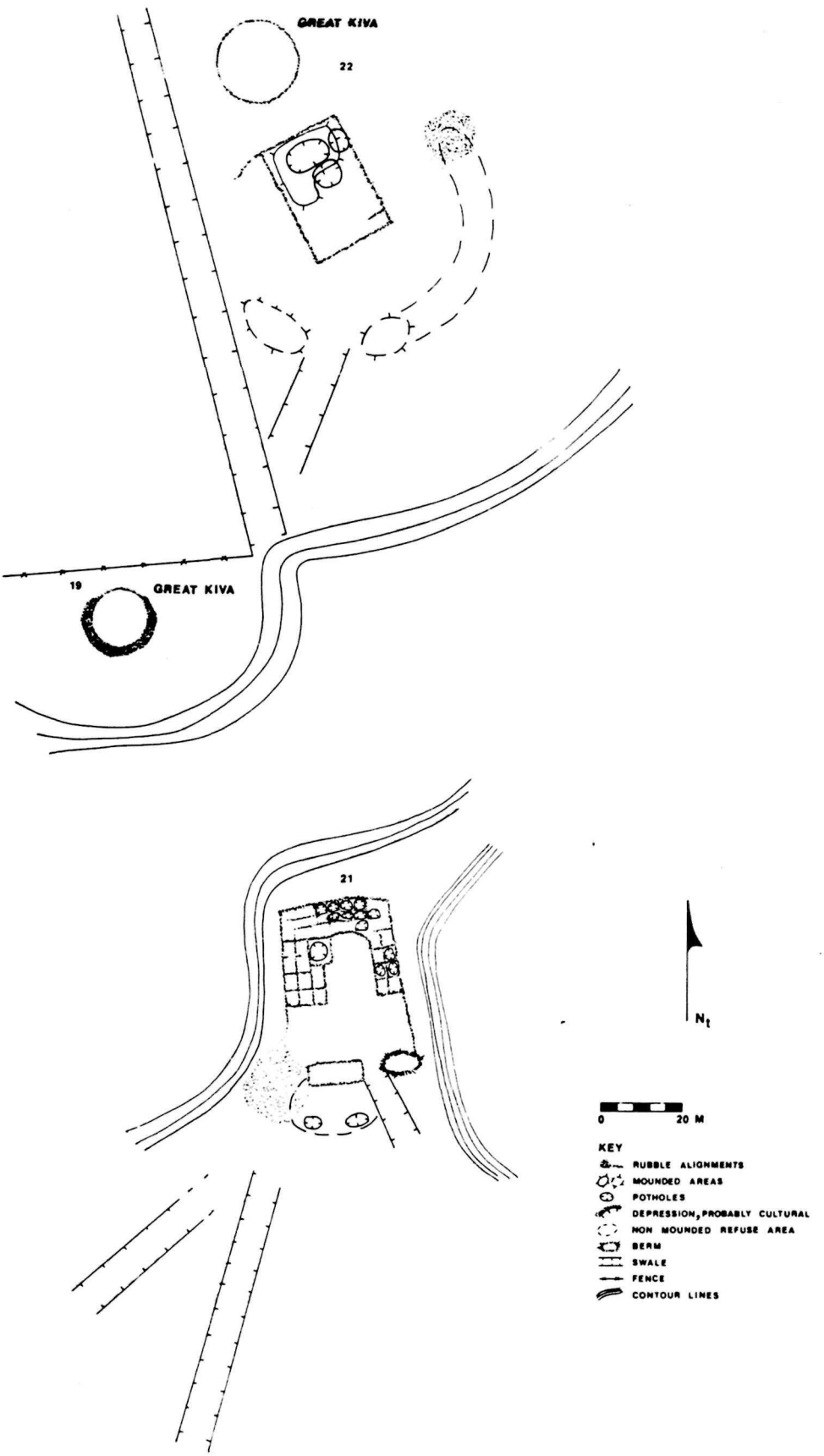



FIGURE 4 : BUILDINGS 21 AND 22

Another aerially identified Feature (#43), a possible crescent-shaped depression on the north side of the building, was not evident on the ground in April, and may represent a photo interpretation of steep, natural slopes in this area. A midden, 13 m long and 11 m wide, borders the southern, exterior margin of the southern, court enclosing cobble berm. Serious pothunting has taken place in both the roomblock and midden areas.

Building 22 (LA 13,434 The Dein Ruin))

Building 22 is a square, block-style structure, in parts possibly a two story construction. The ruin is situated along the terrace edge overlooking the East Ruin and the Earl Morris Ruin. Room orientation, structure, and number (estimated at 30-40) are totally indiscernable due to the intensive vandalism of the housemound. Large cobble foundations around the southern, eastern, and western margin of the housemound suggest there may be more rooms than are suggested by the rubblemound. These foundations also suggest the building form may be more complex than a simple square houseblock.

There is a great kiva, about 20 m in diameter on the north side of the roomblock. No peripheral berms or rooms are evident around this great kiva, but the shallow depression indicates the kiva has been deeply filled and covered. Building 19, another great kiva, is located about 100 m to the south-southwest of Building 22 (Figure 4).

Between Building 22 and 19 passes a road segment, indicated by a low swale (Features 41-42), bearing on an azimuth of approximately 334-345 degrees. As the road tops the terrace it apparently forks, with an 11 m wide segment entering the Building 22 area on an azimuth of about 203 degrees between two berms of trash. An almost continuous berm of trash about 10 m or more out from the roomblock encircles the building from the east southward to the west side.

Two areas of the "midden" seem to be specifically trash concentrations. On the west side of the road approaching Building 22 one mound segment is roughly 15 m long by 7 to 10 m wide. On the east side of the road another concentration of equal width is about 10 m long. On the east side of the housemound is a concentration of cobbles, refuse, and burned roofing clasts indicating either a burned outbuilding in the area or a section of burned housemound which was subsequently removed during rennovation. These refuse areas are some of the materially richest, and possibly deepest, seen in the reconnaissance area.

Although Building 22 is an impressive site, probably one of two or three focal sites on the terrace just east of Farmer Arroyo, it has been extensively vandalized so that much of its surface signature is now unclear.

Building 23

Building 23 is situated near the end of the terrace promontory overlooking the east mouth of Farmer Arroyo. This structure and accompanying features were identified and measured solely with the aid of aerial photographs, the

landowner having not granted access for visitation. This appears to be a large rectilinear building, possibly like Structure 22, measuring approximately 40 m (NW-SE) by 30 m (NE-SW), although the internal arrangement of rooms to enclosed courts, if any, is unknown. Plotting of aerial signatures of buildings onto 7.5' topographic maps and measuring of those plots has provided reasonably close figures to those measures obtained on the ground, suggesting these building dimensions are in the ballpark. The plotted orientation is likewise very similar to that of Building 22, indicating that Structure 23's axis is perpendicular to the terrace edge and may also focus southwest toward the Aztec Complex. Other Features associated with Building 23 are three possible road segments (#36-38) approaching the building up the terrace slope from the southwest and west, and another road segment (#39) heading northeast from the building in the direction of Ruin 21. A great kiva, Building 24, is situated about 50-60 m southwest of the building. This house may have been impacted by the construction of a well-pad immediately to its northeast side.

Building 24

Structure 24 has been tentatively identified as a great kiva. This building was likewise not visited (see comments for Building 23), but the aerial signature suggests a structure between 12 and 16 meters in diameter. A prehistoric road segment (Feature 36) is indicated passing the north side of the kiva and approaching the southwest corner of Building 23. This kiva is sited on the extreme tip of the terrace top overlooking the eastern mouth of Farmer Arroyo.

Building 25

Structure 25 is an isolated great kiva located in a ridge saddle north of Building 22 and southwest of Building 21. This great kiva is between 16 and 20 m in diameter, but is not completely visible due to the current storage of dry goods and hardware around its periphery. It is not possible to determine if alcove or other anterooms exist, although such structures are probably present. No prehistoric trash is associated with Building 25. Building 21 and this great kiva are linked by an unnumbered prehistoric road segment. Another imagery identified linear feature (#42, a road?) passes west of the great kiva running north-south between Building 22 and the badlands to the north.

Building 45

Ruin 45 is an L-shaped building about 15 m (E-W) by 9 m (N-S). A short wing of rooms extends from the southwest portion of the roomblock. A structural apron extends about 12 m to the south from the margins of the roomblock and has a kiva depression roughly 5 m in diameter in its center. Lightly scattered trash is found on the southeast margin of the apron.

Building 46

The roomblock is roughly 20 m (E-W) by 10 m (N-S) with short lateral room extensions to the south from either end of the roomblock. These extensions partially define a kiva depression centered in the structural apron which is evident up to 12 m south of the housemound. Very light trash is located along the east and southeast exterior margins of the apron. The overall site size is about 30 m (NW-SE) by 25 m (NE-SW).

Building 47

This is a one or two room structure about 7 m long by 3 m wide. No midden or pitstructure is indicated with this building. About 10-15 m southeast of the housemound is a light refuse scatter. The overall site size is about 20 m (NW-SE) by 10 m (NE-SW).

Building 48

This simple, single story rectilinear structure is about 3 rooms deep and 4 rooms long in a 13 m by 6 m rubble mound. A D-shaped apron extends 12 m south from the roomblock and contains a centralized kiva. No refuse midden is present. Site size is roughly 25 m (N-S) by 18 m (E-W).

Building 49

Structure 49 is a linear roomblock, about 2 rooms deep with a total of 10 rooms. A structural apron extends south 12 m from the roomblock and appears to have a 5-6 m diameter kiva centered in front of the housemound. An earthen berm, containing trash and cobbles demarks the perimeter of the apron which is about 25-50 cm above the native soil. One or two small isolated rooms are suggested by alignments along the southeast margin of the apron. Other isolated concentrations of cobbles occur to the north and northwest of the roomblock and may represent other peripheral rooms or masonry preparation localities. No trash midden is evident at Building 49 and only light, incidental material was noted in the apron berm. The overall site size is 30 m (N-S) by 30 m (E-W).

Building 50

This rather large building is located at the edge of the terrace and has a number of associated peripheral features. The main roomblock is an L-shaped structure oriented to the southeast. The building probably contains between 20-30 rooms and may support two or three second story rooms in the northern wing. A 4-5 m diameter kiva is indicated in the court area of the structural apron which appears as a 25-50 cm raised earthen platform connecting the southwest wing of rooms with the northeast projecting wing of rooms. the

southwest wing of rooms appears to be two rooms deep and the northern wing about 3 rooms deep. Three middens surround the eastern and southern periphery about 5 m from the structural remains. The first midden, to the east, is about 10 m in diameter. Midden 2 is separated from Midden 1 by an 8 m wide swale and is an oval feature about 12 m (NW-SE) by 9 m (NE-SW). Midden 3, 10-12 m in diameter, is situated 7 m southwest of Midden 2 and may be a slightly higher mounding of a continuous refuse deposit with Midden 2. The swale between Middens 1 and 2 may represent a previously unidentified road segment. The signature of this "road" leads directly down the terrace face heading toward Aztec West. At the terrace edge cobble alignments suggest the presence of long low walls or decomposed berm foundations, both linear features often accompanying roads.

A row of four isolated rooms extends from the center of the "swale" between Middens 1 and 2 into the eastern margins of Midden 2. The easternmost of these rooms is quite clear, being represented by cobble foundations 2 m square, but the remainder are more completely filled and alignment visibility is intermittent. Overall site size is about 45 m (NE-SW) by 20 m (NW-SE).

Building 51

Ruin 51 is a a rectangular, single story building about three rooms deep. There may be some short wing rooms creating a very stubby [-shaped housemound, but structural erosion and vegetation make this unclear. A structural apron is evident up to 25 m south from the roomblock. A 5-7 m diameter kiva depression is centered in this apron about 15 m south of the roomblock, but more than one kiva may be present. On the south side of this apron is a refuse area. Whether or not this refuse is an actual midden (versus sheet trash) is unclear because of extensive pothunting in the area. Overall site size is 34 m (N-S) by 30 m (E-W).

Building 52

Structure 52 is a large single story, short-L shaped roomblock. The building has no apparent structural apron to the south, although at least one 5 m diameter kiva depression is evident centered on the east-central extra-mural area to the south of the roomblock. This portion of the roomblock appears to be only 2 rooms deep, but the western 12 m of the 22 m long housemound is at least 4 rooms deep. Pothunting has been severe in this western section. No trash midden is evident, but thinly scattered trash is located to the east of the building. The overall site dimensions are about 30 m (N-S) by 35 m (E-W).

Building 53

This small building has been severely and recently vandalized. There appears to be a single row of no more than three rooms, the roomblock being 7 m long (NE-SW) by 2 m wide. No kiva depression or structural apron is evident.

Despite all the recent disturbance, no ceramics or lithics were observed. Overall site size is 9 m (E-W) by 7 m (N-S).

Building 54

Structure 54 is a single story, rectilinear building roughly 11 m (NE-SW) by 4 m (NW-SE) with about 6 rooms. A structural apron is evident extending 12 m out from the housemound; a kiva is assumed. The apron is defined by a 2-3 m wide berm of dirt and small cobbles which is raised about 25 cm above the native soil. A very light scatter of trash borders the south to southeast side of the apron.

Associated with Building 54, 17 m southwest of the roomblock, is a small 4 m by 2 m cobble bordered enclosure. Small concentrations of cobbles are centered at either end of the interior of this feature. This enclosure is probably historic and may represent a grave, perhaps a pet grave(s).

The overall site dimensions are 35 m (N-S) by 20 m (E-W).

Building 55

This great kiva is about 13 m in diameter. There appears to be 5-6 cobble rooms on the west side of the structure. Burned clasts in these rooms attest to burning in this portion of the structure, if not the entire kiva. A berm, 2-3 m wide, without other clearly evident wall alignments encircles the rest of the great kiva. Building 55 is so placed as to provide the first unobstructed view at ground level of Aztec West; Aztec West is not visible from Building 54 sited about 37 m to the northwest. No trash is associated with Building 55. Including the encircling berm/rooms the dimensions of Ruin 55 is about 18 m in diameter.

Building 56

This is the second of an apparent pair of great kivas (55-56), and is located about 15 m southeast of Building 55. The great kiva is about 15 m in diameter and has a pair of possible cobble structures, again on the west side of the kiva depression. No trash midden is associated with this kiva. At the edge of the terrace to the east of Buildings 55-56 are some cobble alignments and a possible swale suggesting another unidentified road segment may be articulating with these two buildings.

Overviews of the Reconnaissance Survey

The structures located on the cobble terraces north of Aztec fall into two general categories. There are 24 structures tightly spaced along the bench west of Building 5. These buildings generally represent single story Anasazi vernacular construction. The presence of middens, restricted to certain buildings, suggests a formalized residential use. The structures in the area west of Building 5 probably represent a portion of the Aztec community similar to smaller valley bottom buildings, but certainly very different than the larger, more formal structures east of Building 5 (Figure 5).

The structures east of Building 5 are very different in character. Architectural forms include great houses, large buildings with some great house characteristics, great kivas associated with buildings and in isolation, roads, and landscapes composed of artificial terracing, berms and long masonry walls. The character of these structures contrasts sharply with the residential "community" to the west. Surface evidence suggests massive, multistoried buildings. The siting choice for these buildings indicates a different order of intentional design for their placement compared with those in the western area. Together these buildings form an architectural landscape in which each of the individual structures has purpose and integrity. The benches themselves were modified to accent the architectural embellishments, and there is no haphazard use of the area.

Between the two groups of buildings, however, a diverse, if perhaps not fully complete, complement of structure sizes, shapes and locations were available for use to the Anasazi of the Aztec Community.

This summary of the reconnaissance work focuses on two topics, 1) observations on general physical conditions of the ruins, and 2) the major classes of buildings and nonstructural features encountered. Among the observations on physical conditions common to the ruins are related such issues as stability, integrity and vandalism, some apparent influences on siting choice, design, and possibly size, and, finally, relative chronology as suggested by ceramic assemblage. The second topic focuses on great houses and large buildings, great kivas, residential structures, quarries, shrines, roads, earthworks and a discussion of the East Ruin to clarify what we believe to be murky waters in the interpretation of the Aztec Ruins Complex itself.

Site Conditions

Modern residential construction, natural resource extraction and access roads, grazing, and recreational use of the area have all impacted prehistoric cultural resources in the reconnaissance area. Most of this impact is peripheral and visual in effect, but vandalism, or pothunting, has occurred in varying degrees at many of the structures.

Residential development is most intense in Farmer Arroyo and on the terrace east of the arroyo. Recent development on this terrace has seen the construction of permanent and mobile home sites, corrals, and the various

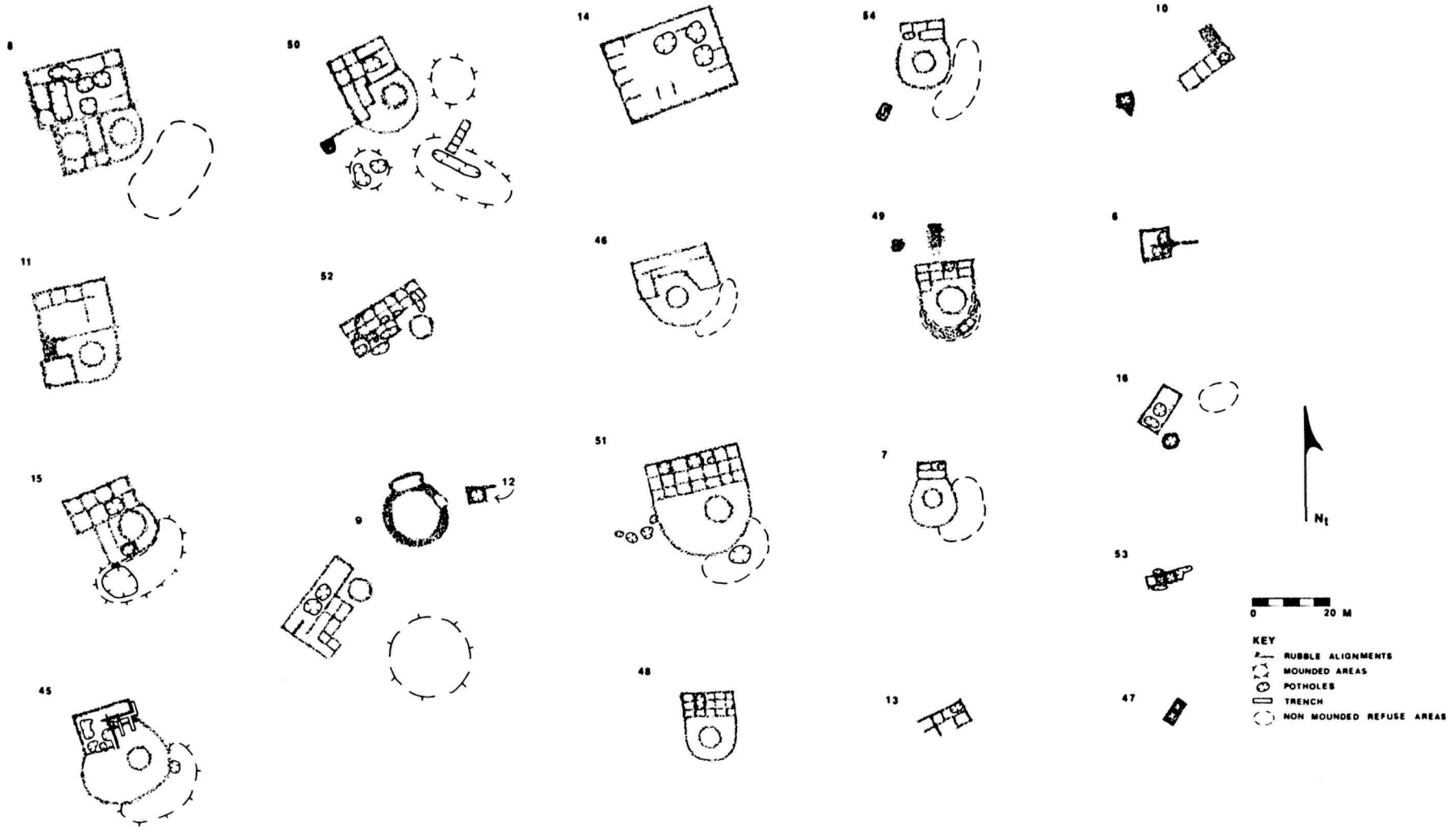



FIGURE 5. AZTEC RECONNAISSANCE - SMALL STRUCTURES

necessary support improvements such as water and sewer lines, and graded roads. Construction of sewer lines in at least one instance has reportedly impacted subsurface prehistoric refuse and features which were not identified in the reconnaissance. West of Farmer Arroyo, residential development has not yet started. A residence previously located in front of Building 18 has been razed, however, and the immediate area graded.

Inspection of the 1974 aerial photography compared with the present resource extraction developments presents a startling contrast. Only one well pad is evident on the terrace east of Farmer Arroyo (and no residential housing) while today there are two large well pads on this small section of terrace near Buildings 22 and 23. Two more new well pads are located on the terrace directly north of the Aztec Ruins beside Buildings 2, and 3-4. Other pads and storage tanks and sheds occur north of these more visible gas pads. Likewise gas lines have been dug across the reconnaissance area impacting road segments and buildings at the terrace edge near Structures 3-4 and 18. Access roads have proliferated since 1974 with new bladed roads and casual two tracks criss-crossing the terrace creating an adverse visual intrusion, and, worse yet, permitting ease of access to the cultural resources.

Gravel quarrying is another resource extraction activity that has taken place. Gravel quarries are found at either end of the reconnaissance area. The eastern quarry is a small wedge of land on the terrace edge just south of Building 22. The second, a more substantial quarry of about 10 acres, is located on the Johnston property at the far west end of the terrace overlooking the eastern mouth of Estes Arroyo and residential Aztec along the Estes drainage. Both these quarries have removed soil and gravel to several meters below the natural terrace surface and absolutely no trace of cultural resources remain.

Grazing intensity is varied in the reconnaissance area. Livestock, of course, impact structures, particularly those with a high adobe content, through trampling, wallowing, and scratching against standing walls should any standing walls exist. Active grazing is taking place directly north of the monument. A pasture borders the monument which has a large stock pond abutting the monument fence and Mound A (a tri-wall). Irrigation of this pasturage and the pond have been repeatedly cited in management documents as raising ground water levels in the Aztec Ruins and thereby adversely affecting prehistoric walls. On the terrace above the pasture, active grazing is also taking place, and here grass has been considerably reduced. The normal sage community has likewise been considerably reduced both through grazing and burning to promote grass. In the far western and eastern part of the reconnaissance area no intense grazing has apparently taken place for several years, and native plant communities appear much more vigorous with healthy stands of sage, mixed range grasses, yucca, and forage forbs which are present but usually quickly consumed by stock.

Recreational use of the area includes some off-road vehicle use, pleasure riding, illegal dumping, target practice, and partying at abandoned well test

localities as evidenced by scattered refuse, primarily beverage containers. For some, recreation also includes pothunting.

Vandalism of sites is widespread but in only a few cases appears to be so acute as to have completely compromised site integrity. Site integrity refers to the continued existence of a building, in a recognizable relationship with any peripheral features, with some expectation that at least half of the original floors, features, construction elements, and cultural fill are still present in an undisturbed context. Buildings 21, 22, 18, 47, and 53 are the worst cases with small houses at 47 and 53 probably totally destroyed. Digging at Building 22 is so severe as to suggest the use of a backhoe. Buildings on Hubbard's land, directly north of the Aztec Ruins, almost all show signs of old pothunting with only Building 5 showing more recent looting. In contrast, the buildings on unfenced land owned by the McWilliams (west of Hubbard's property) have almost all come under recent and intense digging, apparently sometime in late March or early April of 1987. Although it is difficult to judge the extent of the older potholes, most of this vandalism, including the more recent work, appears largely superficial. In addition to the previously mentioned severely dug structures, only Buildings 4, 81, 45, 52, and 53 have clearly impacted floors. While some refuse areas have been haphazardly potted (notably at Buildings 5, 18, 21, 50, and 51), most of the vandalism concentrated on housemounds. No residential or great kivas have been vandalized.

Site Size, Visibility and Orientation

During the course of the reconnaissance a pattern of increased building size was noted in relation to a structure's visibility both within the survey area and especially in respect to the Aztec Complex. Furthermore, building orientation in relation to the Aztec Ruins was, apparently, also an important consideration in construction. These patterns are most marked in Residence West, but hold for the larger buildings east of Structure 5 as reflected by siting choice. Comparative building sizes as measured by "architectural mass" or the area of the housemound, exclusive of courts, middens, berms or other ancillary features, is shown on Table 2 and Figure 3.

Buildings are generally constructed perpendicular to the alignment of the cobble terrace (data for the following is in Table 2). Those sited southwest of the Aztec Ruins have a marked southeasterly orientation to the structures as measured by the axis along the back wall. Those buildings northeast of Aztec tend to be aligned more east-west or southwest, so that the affect of construction perpendicular to the terrace axis is to orient the buildings to the southwest, toward the Aztec Ruins. The Aztec Ruins themselves are so sited as to be visible from structures in the terrace-top community; the East Ruin/ Earl Morris Ruin is visible from the east half of the community (particularly the Farmer Complex), while the West Ruin alone is visible from the extreme west half of the community. Because of the curvature of the terrace and irregularities in topography the siting of a single building the size of Aztec West in the locality of Mound F may not have permitted its full visibility from

the extreme ends of the terrace community. Building orientations with line-of-sight visibility to the Aztec Ruins Complex seems to have been part of the design plan in the siting of the entire Aztec community.

The effect of positioning on building size is less clear and may in fact be unrelated. In Residence West, a ridge divides the area paralleling a central arroyo. Along this ridge are three other large buildings, 8, 9, and 11, of which 8 and 11 occur back from the terrace edge. Building 8, however, is the highest building in the Residence West area and forms the northernmost "boundary" structure in the subunit. Both 8 and 11, together with Structure 9 and its great kiva (located just below [south] Building 11) are visible to Aztec West as well as the remaining structures in Residence West. This conforms with the large building visibility pattern but may be purely coincidental and related to other, more important but unknown siting factors. That buildings along the margin of the terrace are of a different functional order is shown by the presence of formal middens at all such ruins, except Building 14, while structures back from the edge lack such middens (see further discussion under Residential Buildings).

Material Culture

Ceramic and lithic materials were not systematically tabulated during the reconnaissance. There was a general impression that lithics were a distant second to the ceramic complement of refuse, and that nowhere was refuse especially abundant. The common lithic materials were gravel derived cherts and chalcedonies with obsidian observed in minor quantities throughout the survey area. Brushy Basin silicified silstone, often used for tchamahias, was seen in refuse in the Building 50-54 cluster, particularly at Buildings 51-52. No Washington Pass Chert, the most common nonlocal lithic resource associated with the Chacoan distribution system (Cameron 1984), was observed. For an overview of lithic resources and distributional patterns of raw materials including the use of Brushy Basin siltstone see Shelly (1980:21-74,125-159) for a San Juan area perspective from the Salmon Ruin.

A rank ordering of ceramic types was made at each site during the April reconnaissance (Table 3). These identifications suggest a very tight knit assemblage of Mancos-McElmo Black-on-white with overall indented corrugated predominates the ceramic inventory on terrace-top buildings. Very little Mesa Verde Black-on-white was noted, and that mostly on buildings in the Residential West group. Assuming a predominance in local San Juan wares, typological time for this assemblage (after Breternitz et al. 1974) suggests the terrace-top community is largely contemporaneous, probably being constructed on previously unoccupied lands between A.D. 1090 and 1150; essentially coeval with the construction of the Aztec Ruins. The lack of Mesa Verde Black-on-white suggests this portion of the Aztec community, at least, did not see reoccupation during the Mesa Verde period as did the Aztec Ruins complex itself.

Table 3. Rank Order of Principle Ceramic Types in the Reconnaissance Survey.

| Building # | Trash Mound | No Trash Mound | Gallup/ Mancos | McElmo | Mesa Verde | White Ware | White Mnt. Redware | Tsegi Orangeware | Indent. Corrug. | Chuskan Ind. Corrug. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | x | | | | | | | | |
| 2 | | | x | | | | | | | |
| 3-4 | x | | | 2 | | | | | 1 | |
| 5 | x | | 2 | 3 | | | 4 | | 1 | |
| 6 | x? | | | | | x | | | x | |
| 7 | | | | | | x | | | x | |
| 8 | x? | | | 2 | | | | | 1 | |
| 9 | x | | 2 | 3 | | | | | 1 | |
| 10 | | x | | | | | | | | |
| 11 | | | | | | | | x | x | |
| 12 | | x | | | | | | | | |
| 13 | | | 2 | 3 | 4 | | 5 | | 1 | |
| 14 | | | | 2 | 3 | | | | 1 | |
| 15 | x | | 3 | 2 | | | | | 1 | |
| 16 | | | | | | | | | x | |
| 17 | | x | | | | | | | | |
| 18 | x | | 3 | 2 | | | | | 1 | |
| 19 | | x | | | | | | | | |
| 20 | | na | | | | | | | | |
| 21 | x | | 2 | 3 | | | | | 1 | |
| 22 | x | | 3 | 2 | | | | | 1 | |
| 23 | | na | | | | | | | | |
| 24 | | na | | | | | | | | |
| 25 | | x | | | | | | | | |
| 45 | x | | | 2 | | | | | 1 | |
| 46 | | | x | | | 2 | | | 1 | |
| 47 | | | | x | | | | | | |
| 48 | | | | | | | | | x | |
| 49 | lithics only | | | | | | | | | |
| 50 | x | | 3 | 2 | 4 | | 5 | | 1 | |
| 51 | x? | | 3 | 2 | | | | | 1 | x |
| 52 | | | | | | 2 | 3 | | 1 | |
| 53 | | x | | | | | | | | |
| 54 | | | 3 | 2 | | | | | 1 | |
| 55 | | | | | | | | | x | |
| 56 | | | | | | | | | x | |

1-5 = rank order of type, x = single or low item observation

As is reiterated on Table 3, only about a quarter of the buildings on the terrace exhibit formal trash concentrations in a mound form. Three others may have trash mounds, but heavy aeolian deposits or vandalism in the refuse area make mound identification insecure. Trash mounds indicate both intensity and/or length of occupation, imply residential use, and indicate formalized disposal patterns. That such middens are only associated with buildings located on the terrace edge suggests differential use of structures and emphasizes the formalized aspect of midden and refuse placement, particularly in the Residence West area where buildings away from the terrace edge all lack recognizable middens.

Great Houses and Large Buildings

Seven buildings of great house proportions represent two distinct developments. The Aztec North group focuses on Ruin 2 (LA 5603) and includes Buildings 3-4, 5, and 17-18 and solitary great kiva 1. The second group, the Farmer Complex, is composed of Buildings 21, 22, 23 and solitary great kivas 19, 20, 24, and 25 (Figure 2). Both these building groups share four common features, 1) siting on a unified land mass, 2) similar peripheral features of which a key component is intra-complex connective roads, 3) apparent road connection(s) with some component in the Aztec Ruins Complex, and 4) construction of large buildings featuring many attributes of great houses.

In the Aztec North group, Ruin 2 appears as a building of indisputable great house proportions and attributes. Ruin 2 is a slightly larger but virtually identical building in plan and orientation to Tzin Kletzin atop Chaco Canyon's South Mesa. Ruin 2 and 3-4 articulate with the roadway bearing northwest from the main ruin group (see Figures 2, 6). The site on which Ruin 2 rests is heavily modified to accommodate the road and attendant features. Berms, massive low walls, and alignments partition the space south of the building into a series of crescentic arcs. The terrace has been extensively modified in the vicinity of Building 5, and on the bench below Ruin 2, where the North Road passes between Structures 3 and 4 (see Figure 6). Modification of the terrace surface may have served several purposes, leveling perhaps or quarrying. The end result, however, left these buildings "pedestaled" on a natural platform, considerably enhancing their terrace edge verticality. This sculpting of the surrounding terrace is especially evident at Building 5.

Building 2 forms the focus of a bounded development on the terrace edge northwest of the monument. Buildings 5 and 18, both of great house proportions, rest on the terrace edge flanking the central structure. A fourth building, (as yet not ground checked and so not included in the building discussions), also apparently a great house, is located slightly east of the road alignment northwest of Building 2. A spur appears to articulate this building with the alignment (Figure 6). From the vantage point atop Building 5, one is 18.3 m above the West Ruin and parallel with the Hubbard Mound, which, to say the least, is an impressive perspective from which to view the West Ruin. These buildings are bounded by deeply incised drainages which form

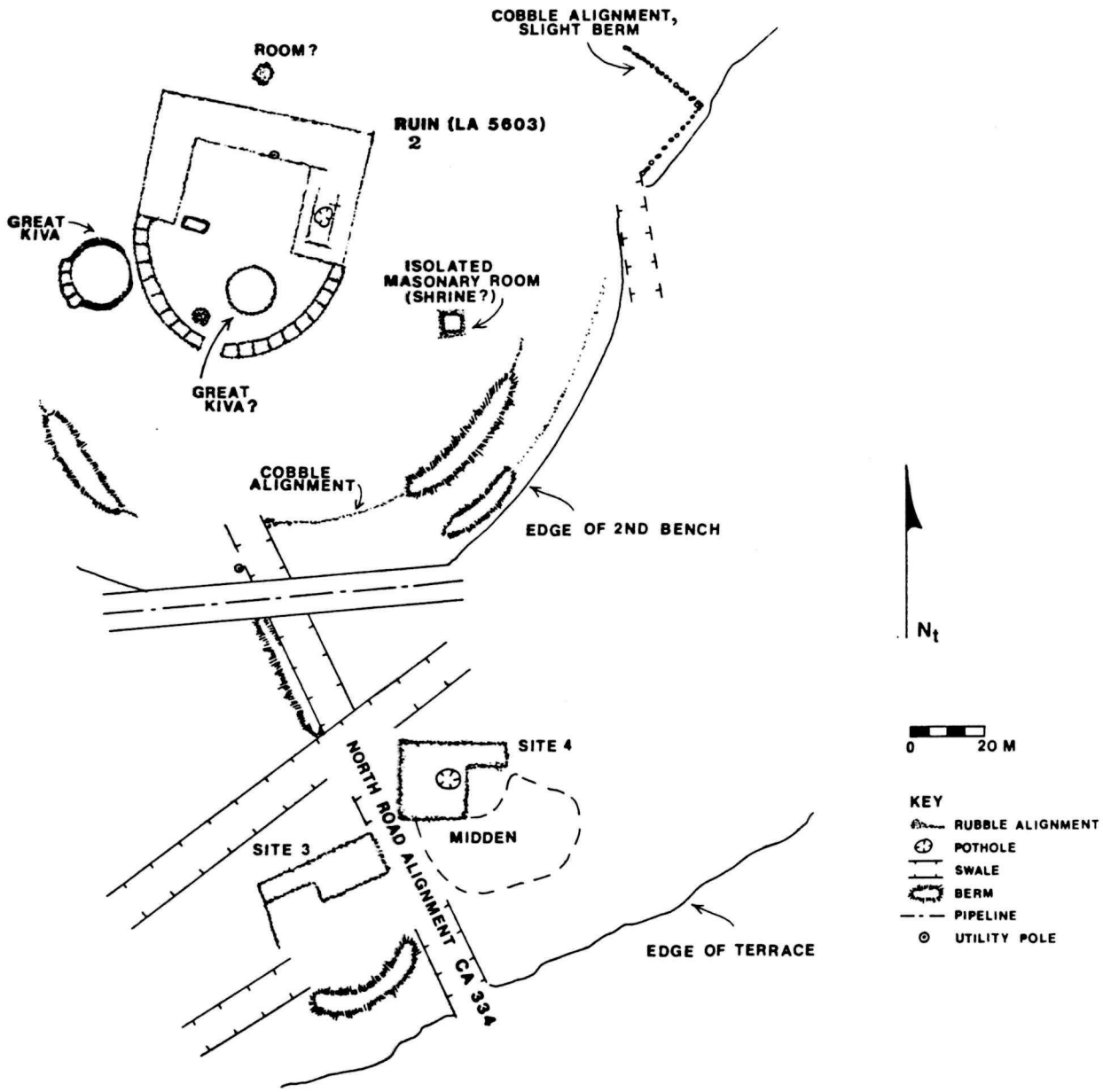



**FIGURE 6 : THE NORTH ROAD AND RUIN 2, FOCUS OF AZTEC NORTH**

natural barriers at Farmer Arroyo and the major arroyo central to the terrace section north of the Aztec Ruins.

The second embellishment of the terrace is centered approximately 1.6 km north-northeast of the monument, north of the confluence of the Animas River and Farmer Arroyo. Three buildings of great house proportions have been identified in this, the Farmer Complex. The Dein Ruin (LA 13,434, Building 22), the focus of this development, is not nearly so large as Building 2, but is quite massively constructed and is also associated with the culturally embellished setting which we have come to expect with buildings of this type (Plate III). Buildings 21 and 23 are sufficiently massive to represent great houses. Building 21 rests on a knife ridge to the north with panoramic view in all directions. Building 23 rests on the point at the ridge directly over the Farmer-Animas confluence, and another large building may have been leveled during residential construction northeast of Building 23.

Buildings 2 and 22, if not all the structures, undoubtedly functioned as "great houses" in some respects if not on the order of the Aztec Ruins themselves. This entire group of large buildings exhibits an order of planned design at various levels. The group is flanked on the east and west by elevated structures (5 and 21) that each exhibit a distinct architectural plan with a bounded court appended to the southern span of the the main building. Individual house buildings between these two sentinels show a regular spacing, and are either in a direct relationship with roads (3-4) as subordinate affiliates with a primary structure, or are the focal building associated with multiple great kivas.

Attributing great house status to all of the large buildings outside the Residential West group may be an over-extension of that term in the sense of Bonito architectural style expectations. The use of vernacular fabrics is an incongruity for those who would place a first order association of Bonito style architecture with massive sandstone edifices. Materials of construction, however, are among the least of the determinates in either structure form or intended use (Rapoport 1969:24-28, 104-125). All these structures seem to have involved planning, major preconstruction siting preparation, use of building forms distinct (if not necessarily of a higher style) in the survey area, some use of fixed peripheral land modifications and features, and an apparent orchestration of siting choices which set each building in this group distinctly apart from the others. What may be occurring with our perception of the Aztec terrace top houses is the result of the continued rapid evolution in building form, size, and plan for both kivas and house types (an aspect of the Bonito Phase) wherein attributes of higher style architecture and vernacular architecture converge to modify building styles at both levels. The end result on the Aztec terraces may have attained a higher level of visibility in a pristine Late Bonito Phase development where earlier forms are not present to require modification, removal, or manipulation by Anasazi or archeologist to achieve end product or perception.

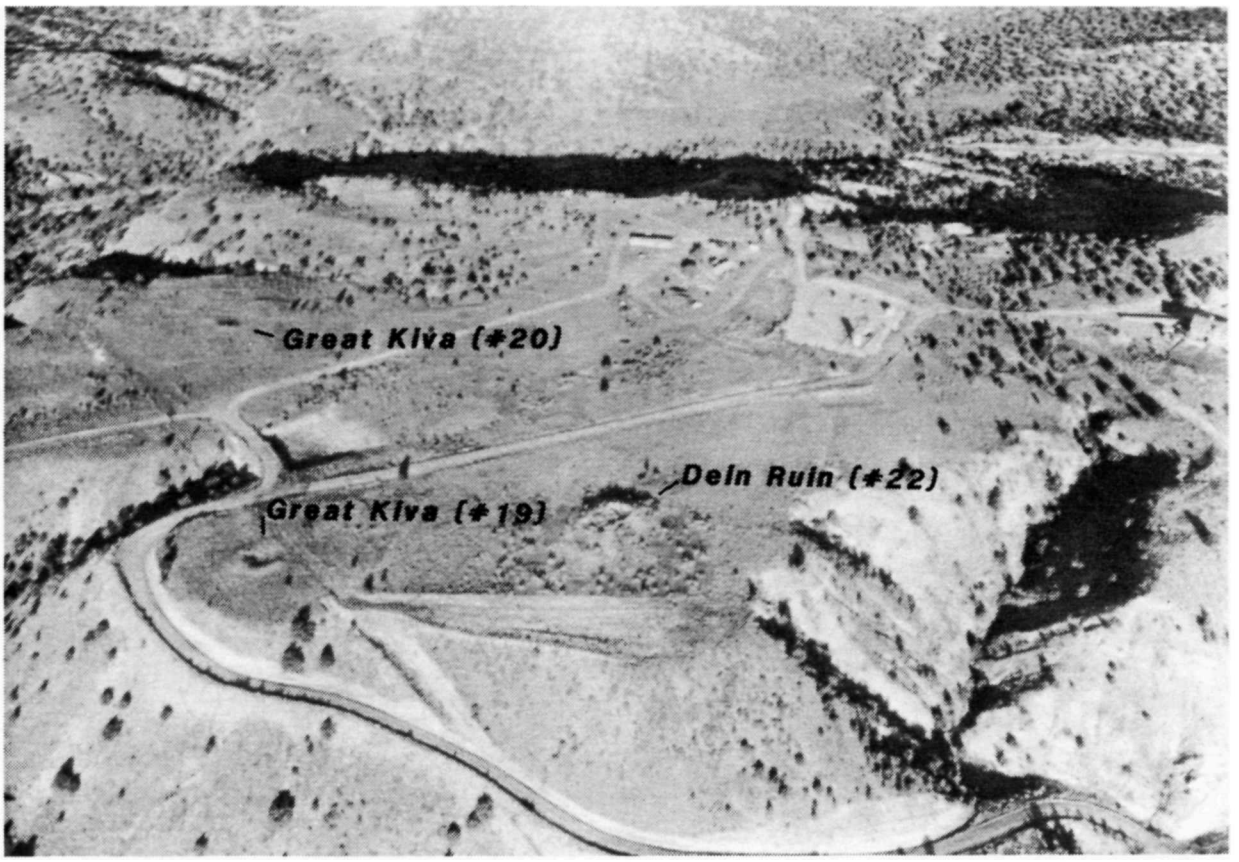



Plate III. Overview of Dein Ruin with Great Kiva at Terrace Edge.

Great Kivas

Approximately 15 great kivas were identified, two at the Aztec Ruins, and 13 in the reconnaissance area (Table 4). Here, great kivas are arbitrarily taken as kivas or kiva depressions over 10 m in diameter (after Marshall et al. 1979:265), but differences in size and placement strongly suggest differences in function. Nevertheless, 15 great kivas would be an outrageous, in fact unprecedented, number of such structures to be located in so small an area; accordingly alternative suggestions will be offered to the "great kiva" interpretation at the end of this section. Two of these "great kivas" (18 and 24) will require ground verification.

The larger great kivas are associated with buildings, particularly Buildings 2, 22, and the Aztec Ruins. The great kivas in the major ruins in the monument included one (prehistorically reused and remodeled) from Aztec West, and one very large one centered in the court of the East Ruin (Morris 1928; Marshall et al. 1979:303). Other great kivas may exist in the monument, for instance between Aztec East and the Earl Morris Ruin.

The smaller great kivas (10-13 m) are more common as isolated structures along the terrace edge or interpersed between buildings in the "residential" cluster west of Building 5 (Figure 7). Associated with each of the two major developments is at least one solitary kiva constructed on the extreme margin of the terrace. These are unique kivas, apparently associated with roads and with an apparent emphasis on visibility from or over the valley bottom below. Buildings 1 and 19 are the best examples of such structures, although great kivas at Buildings 18 and 23 are likewise sited in valley overlook positions. Great kiva 25, overlooking the badlands to the north, appears to be positioned in the saddle as the nearest available siting to Building 21 rather than as an intentionally isolated structure. Three great kivas were located in the Residence West group. These are all solitary structures (hardly isolated), and although one is conceptually linked with Building 9 it too is a separate, self-contained building.

Peripheral rooms around the reconstructed great kiva in Aztec West have often been cited as being unique. The great kiva in the plaza of Aztec East exhibits these rooms as does the great kiva at Morris 41. Although not visible today, archival records from the Chaco Center likewise show that peripheral rooms to great kivas likewise existed at Chetro Ketl (Lekson 1983:45-56) and at Casa Rinconada in Chaco Canyon (cf. Vivian and Reiter 1972:24). Peripheral rooms and berms were also identified in all the great kivas on the terrace. Berms, simply low continuous dirt and cobble mounding around the circumference of the depression, probably represent the collapsed above grade walls of semi-subterranean structures; this is the most common construction for the smaller, solitary great kivas along the terrace edges. All great kivas have these berms, but those for which they are recorded are more substantial, suggesting a masonry superstructure. Peripheral rooms in great kivas on the terrace never seem to completely encircle the kivas, nor are they entirely restricted to "northern" alcove positions. Where alcove-like rooms are found

Table 4. Great Kiva Dimensions and Status.

| Building # | Land Owner | Diameter m | Vandalism | Peripheral Rooms | Peripheral Berms | Isolated kiva | Associated Building # | Road Association |
|---|---|---|---|---|---|---|---|---|
| 1 | Hubbard | 12-13 | no | | x | x | | unknown |
| Plaza | " | 13 | no | unknown | | | 2 | no |
| Exterior | " | 15-17 | no | x | | | 2 | yes |
| 9 | " | 12 | no | x | | | 9 | no |
| 17 | " | 10-12 | yes* | x | | x | 18 | no |
| 18 | " | 15 | graded | | x | | 18 | yes |
| 19 | Jacques | 13 | no | | x | x | | yes |
| 20 | Olson | 19 | yes | unknown | | x | | yes |
| 22 | Dein | 20 | no | x | | | 22 | yes |
| 24 | Hayne | ca 15 | unknown | unknown | | x | 23 | yes |
| 25 | Dein | 16-20 | no | unknown | | x | | yes |
| 55 | McWilliams | 13 | no | x | x | x | | unknown |
| 56 | " | 15 | no | x | | x | | unknown |
| LA45 | NPS | 13-15 | restored | x | | | Aztec West | no |
| LA45 | NPS | 23 | no | x | | | East Ruin | no |

* peripheral rooms only

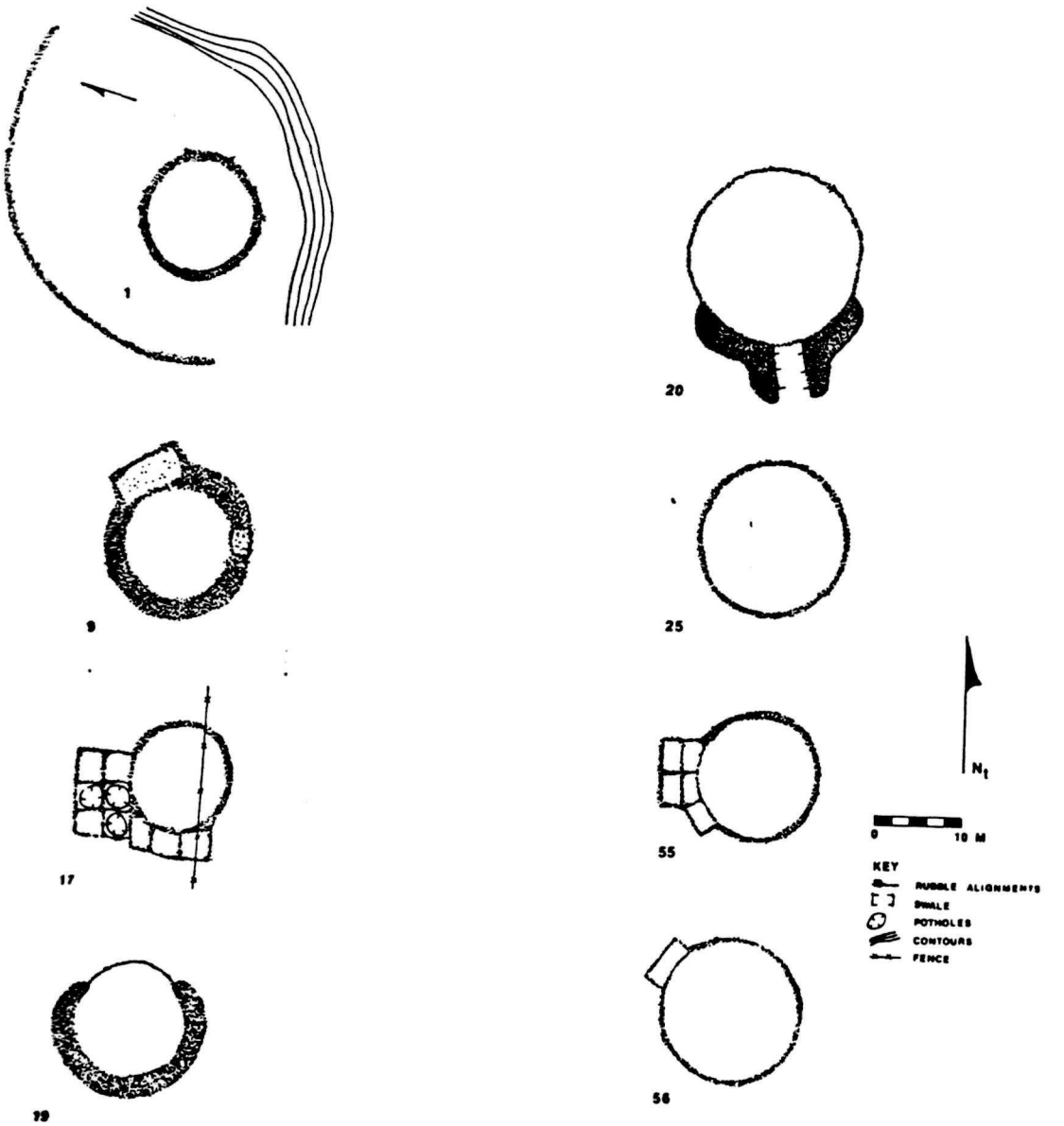



Figure 7. Aztec Reconnaissance Solitary Great Kivas.

they are usually on the opposite side of the great kiva from the direction of the Aztec Complex, and may represent visually discrete placement of storage rooms, entry alcoves, or structural scaffolds for roof-top access ramps, or any combination of these functions. The position of these "alcove" rooms is almost uniformly northwest both on the terrace kivas and at the great kivas in the Aztec Ruins. This conformance in design seems to be dictated by the northeast-southwest trending axis of the terrace where such features are aligned at right angles to the natural topography rather than along a more "traditional" north-south alignment.

It has been suggested that great kiva construction is a function of population, and not simple "community-house" structures, with one great kiva being built for each 150 rooms (Lekson 1984a:51). With an estimated 550-600 rooms in all the buildings along the terrace (Table 2) this would suggest no more than four great kivas would suffice for the projected terrace-top room-based "population". This finding can be viewed in one of several ways. First, not all the "great kivas" may have functioned as the public structures they are usually interpreted as representing, and, indeed, the five or six of the largest great kivas, associated directly with house buildings may be the "public structures" in the group. Even among this restricted group of kivas there is evidence of excess, with more great kivas than are "necessary" given projected room counts for Aztec North and Farmer Complex groups. Clearly a continuum in size is evident between great kiva population and those depressions here interpreted as "residential" kivas", and only excavation will resolve if those structures at the smaller end of the great kiva range served as great kivas or as "large round rooms" (Lekson 1984a:60). A planned differentiation in great kiva forms and function is implied with this great kiva population in the Aztec Ruins Community and may be an aspect of kiva evolution indicative of changes in social forms during the Late Bonito Phase. It is noteworthy that the structure of data for great kiva sizes on the Aztec terrace mirrors that presented by Marshall and others (1979:265) for a much larger, regionally-based great kiva population, where the modal size is between 13 and 14 m in diameter.

If, however, the numbers of great kivas on the terrace is taken as a proxy for population, this suggests a large number of Anasazi houses were probably located within a 3-4 km radius of the Aztec Ruins in the valley bottom which are not accounted for by buildings on the terrace. Using Lekson's 150 rooms as a base figure, the thirteen great kivas on the terrace suggest that about 2,250 rooms should be present in the small house community associated with the Aztec Ruins. A simple projection of expected normal house sizes (as suggested by the terrace structures & LA files) would appear as such:

Total estimated rooms = 2250

| If house sizes/rooms = | 10 | 15 | 20 |
|---|---|---|---|
| Then projected N of ruins = | 225 | 150 | 90 |
| Less terrace house ruins = | 29 | 29 | 29 |
| Valley house ruins N = | 196 | 121 | 61 |

Of course, a greater variety of house sizes is known to surround the Aztec Ruins (the Annex with buildings from 2-9 rooms, and Estes Arroyo Bridge Site at ca 100 rooms), but these estimates serve to alert us that many more structures than are (may be) associated with the Aztec Ruins should be present, and that the majority should be expected in the valley bottom. The terrace-top development is, apparently, a minor part of the community given the great kiva as population-index assumption. Other great kivas are undoubtedly located in the bottom land which have not been identified because of heavy alluviation and construction in unprotected sitings not as favorable to preservation as those located in the Aztec Ruins Complex itself.

To reiterate, great kivas at Aztec Ruins, are constructed into engineered, artifically constructed, elevated earthen platforms. Subfloor excavations would probably reveal construction designed to inhibit capillary action which would adversely affect building stability in subterranean constructions directly into a bottomland environment with relatively high groundwater levels. The use of large cobbles, rather than a finer grade fabric which would promote water transfer, behind sandstone wall veneers in the Aztec West great kiva is one indication that such construction took place (see Morris 1928:116, Figure 2). It must be acknowledged, however, that the cobble elements of construction have more immediate and practical moment in terms of resource availability.

An appropriate caveat to this entire discussion of "great kivas" would be that these large, often shallow depressions, may represent a variety of circular structures, some of which may be great kivas. As mentioned, excavation would be required for confirmation of any of these structures, which at the most prosaic, might be described as "great holes-in-the ground" (Lekson 1987). The northern San Juan has a variety of features unique to the area, one of which is large, isolated circular depressions next to terrace edges. One of these structures occurs in the La Plata Valley near Jackson Lake and is ambiguous enough to be considered either a great kiva, a dance plaza, or other unknown circular esoteric feature (Dabney Ford p.c. 1987). These features are here treated as "great kivas" primarily for ease of discussion and because this was the initial field classification, but it is clear more evidence and study is in order before drawing any conclusions and assigning meaning to their occurrence in the settlement.

"Residential" Buildings

Several factors lead to the interpretive description of structures in the western third of the survey area as "residential". Evidence suggests that not every structure in Residence West is an independently functioning dwelling, indeed, the interdependence of several buildings as a unit is strongly suggested, although the precise relationships between the structures in unknown and may remain ambiguous even given excavation. In comparison with other structures, those in Residence West show a different emphasis in building form,

do not appear as planned, engineered, massively constructed buildings, lack fixed peripheral embellishments, and are, apparently, intentionally sited in a small, tightly defined area which is in marked contrast to the lavish use of open space around the "great houses" (Figure 6).

The buildings in Residence West have all the earmarks of traditional vernacular San Juan Anasazi architecture. They are typically single story constructions of cobble and adobe walls. The building site lacks the prepared earthen platform on which the great houses are apparently constructed. Residential kivas, evidenced by 5-6 m diameter depressions are often situated to the south of the roomblock. Blocked-in kivas are less common, usually being tentatively identified in the larger L-shaped or block-style buildings such as 8 and 14. Open kivas are usually centered in a "structural apron" which consists of a halo of slightly elevated soil, probably from kiva construction and collapse, in an arc south of the kiva and bounded by the ends of the roomblock. These "aprons" probably delimit activity areas as well as serve as drainage buffers around the kiva. Structural aprons are a unique feature to these smaller structures.

The majority of buildings (13 of 21) are simple linear roomblocks and only one, Building 14, appears to be a block-style housemound similar to the majority of great house style buildings. L-shaped roomblocks are the second most common (6 of 21); neither of these house styles occur in Aztec North or the Farmer Complex. None of the "residence" structures have an architectural mass in the great house group. Averaged estimates of building mass for structures 8 and 14 (at 417 and 420 sq. m) place them in the lower end of the great house range where building mass ranges from 438 sq. m (#21) to 1760 sq. m (#2) when Buildings 3-4 are considered as one structure. A bimodal distribution of building sizes on the terrace top community is evident (Figure 8). Figures for architectural mass and estimated number of rooms suggest buildings in Residence West are more diverse which may imply a broader range of functions as would be expected in residential setting (Residence West mass N=21, mean=153.64 sq m, s.d.=132.940, cv=86.5; Great House Mass N=7, mean=674.72, s.d.=506.121, cv=75.0, data on Table 2). By the same token, the high value for the coefficient of variation (cv) clearly indicates that neither group is homogenous which entails all the functional implications that a simple measure of numerous building sizes brings.

Residential structures are tightly spaced and appear to be grouped in related "sets". These sets of buildings usually conform to linear terrace fingers as defined by the major drainages in the subunit. Using the (underlined) terrace-edge structure as the "front" building such linear sets are evident in the 51-52-53, 50-49-48-47, and 45-46 aligned buildings. In the broader expanse of terrace just southwest of Building 5, sets are also suggested, but are not as obviously linearly arranged such as the 15-16-6-7 group and the 14-13-9-10-11-12-8 group, with the latter group taking advantage of sitings along a major terrace ridge in the survey subunit of Residence West (see also discussion in Site Size, Visibility, and Orientation). Although separation between these sets is a little greater, individual buildings within

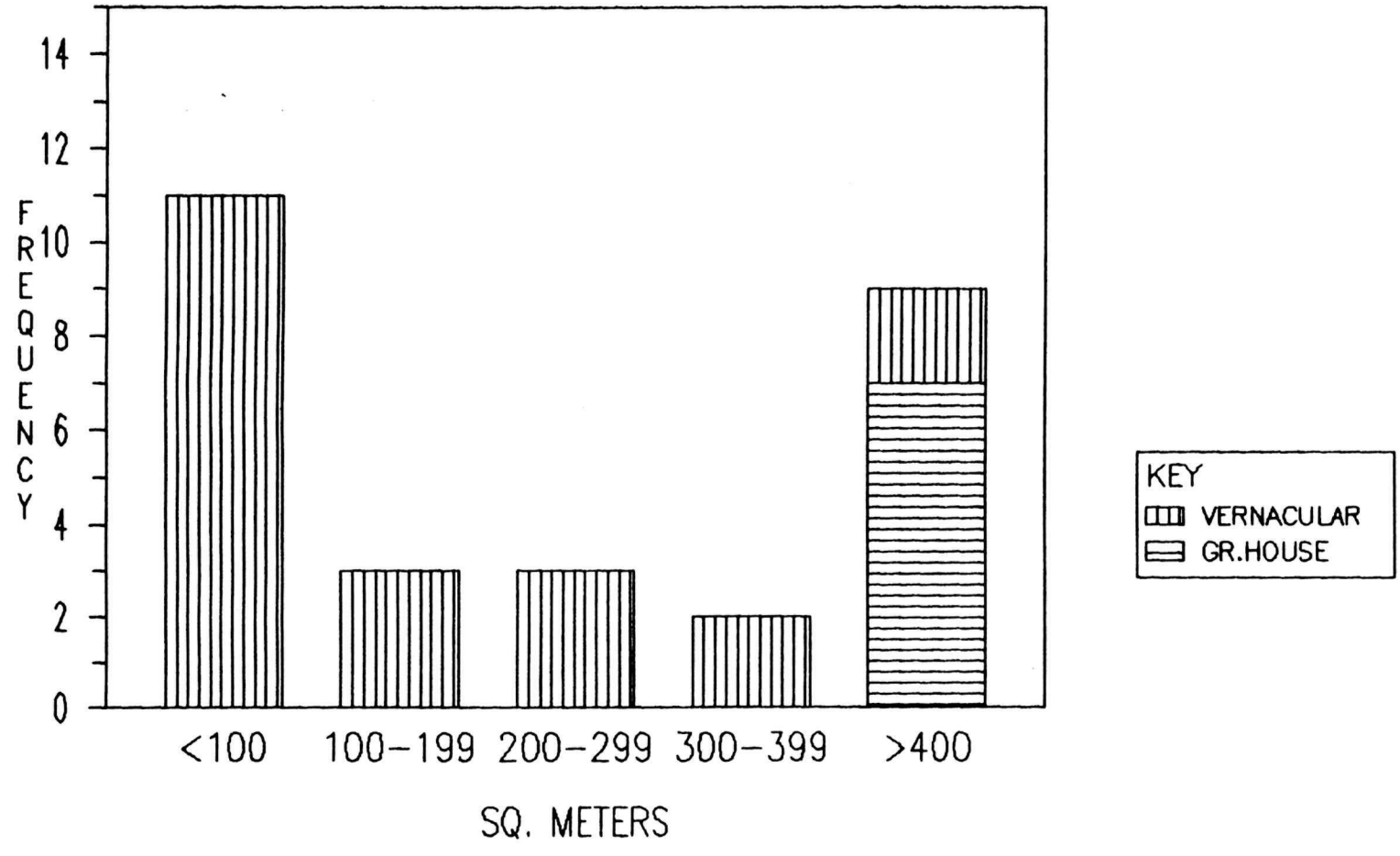



Figure **8**. Size Distribution of Building Mass.

each group may be located within 10 m of one another. A crude estimation of siting space available for each structure in the three reconnaissance subunits would show:

| | Area | sq. m | N of Ruins | sq m/Ruin |
|---|---|---|---|---|
| Residence West: | 500 x 100 m | 55,000 | 23 | 2,391 |
| Aztec North: | 900 x 220 m | 198,000 | 6 | 33,000 |
| Farmer Complex: | 400 x 400 m | 160,000 | 7 | 22,857 |

Also lending support to this idea of interdependent buildings sets in the presence of middens, or some substantial trash deposit, except at Building 14, at all the above "front" structures. The meager incidential surface sherds at buildings lacking middens indicates contemporaneity of all ruins in the subunit and strongly suggests either differential activities between the buildings or intentional placement of refuse at a particular structure in the "set". The routine, formal emplacement of trash at designated buildings is one indicator that these buildings with middens were the structures in Residence West where the greatest variety of, if not the most intense, activity took place.

Quarries

The sandstone fabric commonly used in the Bonito style of architecture is not immediately available in the Aztec area. In the Aztec area sandstone outcrops used as quarries begin to occur about 1.6 km north of the terraces bordering the Animas Valley on the north side. Northwest of Aztec four sandstone quarries have been identified (LA 54,398, 57,017, 57,157, and 57,158). Ceramics are present at three quarries with quarrying tools located at one of these, while the fourth quarry lacked any prehistoric artifacts.

The one quarry with both prehistoric tools and ceramics, LA 57,157, is located on the northwest side of Airport Mesa. John Roney (p.c. 1987) has traced the Airport Mesa Road (herein Segment 29) across the top of the mesa on imagery prior to the airport construction to a point near this quarry. Recent independent terrestrial observation by Tom Orbesen (LA form comments) confirms a prehistoric road segment articulating with this quarry. Local tradition also holds that the major prehistoric roadway pictured in the 1916 (Walter 1916:52) and 1919 El Palacio goes to a quarry in Section 36, northwest of Aztec. However, recent investigations of road systems and road destinations indicate this is an unlikely destination. This road instead ascends the east end of Airport Mesa, and may eventually arrive at outliers in the La Plata Valley. To date no formalized roads are known to proceed exclusively to a natural resource. Roads will occasionally articulate with resources, such as the Ah-shi-sle-pah road at Los Aguages, or roads may be taken for resource areas such as the "quarry" spoil piles at 29SJ 1010, the Poco Site, in Chaco Canyon (Drager and Lyons 1983; Stein and Levine 1983), but none are known to terminate at a resource area. Morris (1928:418) comments on the virtual lack of good building stone at Aztec, noting the reliance on poor quality sandstone as a

veneer over cobble-cored walls, but even this material had to be transported from distant quarries. The green band on the west wall of the West Ruin is a quartzite "graywacke" supposedly from the quarry in Section 36. Modern stone for stabilization at Aztec has been acquired from prehistoric quarries in Section 36, in Tucker Canyon northwest of the monument, and has included the stripping, by Morris, of sandstone masonry from Site 39 in the La Plata Valley.

Another sandstone quarry was inspected in Tucker Canyon about 6.5 km northeast of the Aztec Ruins (Figure 9). Here, a thin lens of sandstone was found outcropping in shale badlands and forming a small bench along the canyon's north side. Two small structures were noted at the north end of this outcrop that had in association hearths and ceramics contemporary with the period of construction at the Aztec Ruins and terrace top community (White Mountain Redware, San Juan Whiteware and grayware). Mauls, heavy grade hammerstones, and possible old spall piles were observed in the quarry area south of these structures. This source is being currently used for stabilization stone at the Aztec Ruins.

Vernacular architecture, such as those buildings on the terrace north of the Aztec Ruins, show extensive use of locally available cobbles and adobe. Cobble quarries were not observed and are unlikely to occur as cobble rocks are readily available on the surface practically throughout the Aztec area. Splitting of cobbles to achieve a smooth wall face probably occurred at each construction site with no initial reduction during gathering, as cobbles occur in easily transportable sizes.

Shrines

Worthy of note is the presence of an isolated square masonry room a short distance east of Building 2 and Building 22. This type of feature is consistently associated with great pueblos where the landscape is highly developed to accommodate roads. It is not known whether these rooms were roofed or not. However, they are placed in a road marginal position. Their function is unknown, but they occur with buildings at great distances and every direction from Chaco Canyon. A possible isolated shrine, located on the east side of the known terminus of the North Road north of Building 2 requires ground verification.

Roads

Aztec Ruins is located approximately 89 km north (357 degrees) of Pueblo Bonito. It is assumed, although not demonstrated, that Aztec lies on the North Chaco Road. The "Great North Road", as it has come to be known, has been physically traced from Pueblo Alto in Chaco Canyon as far as upper Kutz Canyon. Efforts to track the road further have so far been fruitless although the road does in fact drop into Kutz Canyon, via an elaborate stairway (Sofaer and Marshall 1986). A full discussion of the North Road is presented elsewhere (by Stein in Kincaid 1983:Chapter 8) of which the important points may be

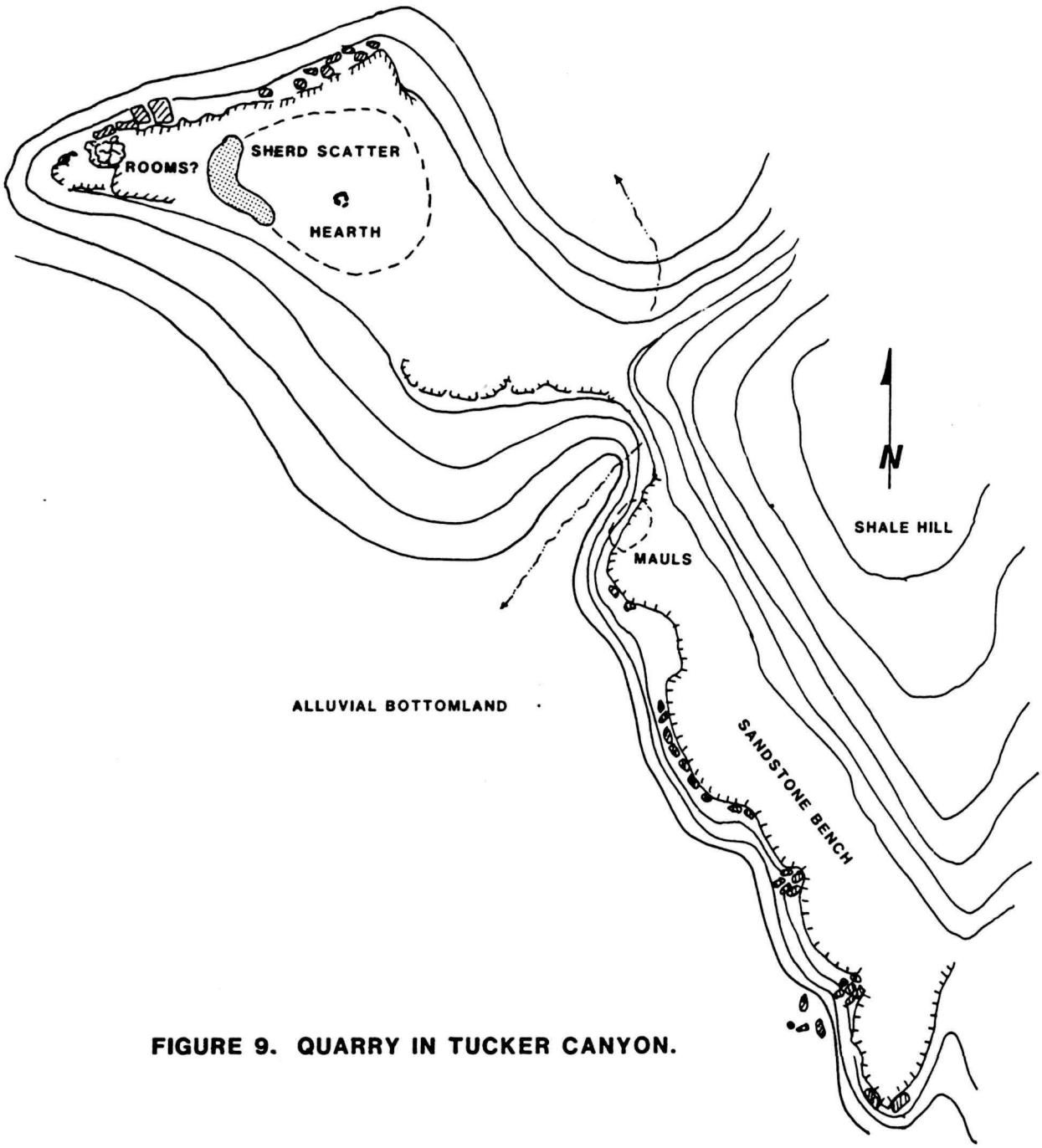



**FIGURE 9. QUARRY IN TUCKER CANYON.**

summarized as follows: 1) the North Road is not the result of long hard use, rather, we can see the road today because it was constructed (see Nials et al. 1983-6:1-15), 2) the precise linearity of the roadway implies engineering (see also Nials et al. 1983). Between Chaco Canyon and Kutz Canyon, the North Road traverses vast stretches of badlands and sage plains which were devoid of Anasazi settlement. Construction of the North Road included the road surface and everything that went with it, including probable support and scion sites such as Kin Indian Ruin, Pierre's Complex and Halfway House (Stein and Levine 1983).

Important for insights into Aztec is the late date of the North Road. Dating these buildings, and artifacts associated with the road surface suggests that engineering and construction of the road, including related architecture, took place as a single event in the late A.D. 1000s through the early 1100s (Kincaid 1983-9:76; Stein and Levine, Appendix C in Kincaid 1983; Windes 1987). Construction dates for Salmon at A.D. 1088 (Franklin 1980:101), Aztec West at A.D. 1110 and 1120 and Aztec East at A.D. 1115-1129 (Robinson et al. 1974) suggest that the construction of these very large outliers was coincident with the formalization of the North Road and concurrent with the largest known construction episode at Chaco Canyon (Lekson 1984a:70). In its final form, the North Road and great buildings it connected embodied the characteristic architectural embellishments of the San Juan-Animas McElmo Phase (A.D. 1115-1140), the proverbial "icing" on the Chaco cake.

The North Road is easily traced across the sage plains to Kutz Canyon, but is then swallowed up by the immense Kutz badlands and effectively disappears. Tracking the road into the San Juan Valley and beyond would be a considerable undertaking, but may not be impossible, especially considering the predictability of road routes, destinations, associated landscape features, and the development of remote sensing "signatures" for road recognition since the early 1970s.

It is highly probable that the North Road from Chaco does, in fact, pass through Aztec. Roads have been described in the Aztec area, in fact a photograph of a segment of the so called "Quarry Road" appeared in El Palacio in 1916 and again in January 1919 (Plate IV). Morris (1915) was of the opinion that this road connected Aztec Ruins with quarries some 4.8 km to the northwest.

Fourteen segments of possible roadways and five road related features were identified through examination of aerial photography. Field inspection in April identified another seven road segments for a total of at least 21 road segments in the survey area. Basically, these represented three systems; 1) the west, as represented by the segment of the Quarry Road on Airport Mesa, 2) the north, which articulates with Structure 2 and probably represents the continuation of the North Road, and 3) the northeast, which articulates with Building 22 (LA 13,434) and may exit the Farmer Complex on a bearing parallel with the North Road.

A crude projection of the western road segment, #29, back toward the Aztec Ruins Complex shows the alignment as passing through, and possibly being part

Plate IV. Airport Mesa Road Segment (#29, after El Palacio 1919).

of, the road segment articulating with Building 50 (#58). A spur of this road (#57) may extend from the bottomland to great kivas 55-56. No other road segments have been identified which pass through or integrate buildings in this western, residential complex. Segment #29, directly projected to the Aztec Complex itself, suggests it enters the complex to the southwest of Aztec West, possibly passing between the now removed southwest trash mound and the building.

The Aztec North Road is represented by linearities identified as #30-33 and #60. Figure 2 shows locations of linearities in which there is some confidence they might be prehistoric roads. Figure 3 is a less conservative sketch of the possible roads around Ruin 2. We consider the road extending north from Mound F at the Aztec Ruins to be the "Aztec North Road" and a confirmed feature. Below Building 2, in the Building 3-4 area, the Aztec North Road was highly formalized, 11.5 m in width, 30 m in length and flanked by berms 3 m in width and 50 cm in relief. Segment 60 is the longest of the individually recognized segments and marks the northernmost identified extent of the road at Aztec North. Road interconnections between buildings are suggested but less securely identified. There are, as yet, no positively identified road segments integrating the three complexes, Residential West, Aztec North, and Farmer Complex.

The northeast road system apparently enters the Farmer Complex at two points, Building 23 and at the Dein Ruin (Building 22, LA 13,434). The main road appears to be represented by segments 41 and 42 which articulate with the Dein Ruin and passes north from the Farmer Complex on a parallel with the Aztec North Road. Formal intrabuilding linkages are strongly suggested by segments 39 and 62 which would articulate with the main road from the Dein Ruin.

Although these road segments are intriguing and suggest a direct linkage with the Aztec Complex, the long term development of the bottomland precludes simple identification of actual road connections between the terrace buildings and the Aztec Ruins using available black-on-white imagery or terrestrial inspection. The most likely candidate in the technological arsenal for actual verification of such linkages is thermal infra-red photography. This imagery is supposedly available, but has not yet been located (see Irwin-Williams 1973:13). Should this imagery become available we have every confidence it will reveal some linearities indicative of roads as well as signatures of other obscured features such as ditches and small houses in the fields around Aztec. Senior residents of the Aztec area are also a likely source of information on the prehistoric roads in the area (Dabney Ford p.c. 1986). The present interpretation represents a first pass through available imagery and a modest beginning at characterizing the road network in the Aztec Complex. The following abbreviated descriptions are to clarify the identifications of separate segments mentioned in the building descriptions.

#27: Aztec North; here is a portion of the slope that has been artifically flattened. From ground examination it appears to be prehistoric and may be in some way associated with a road.

#28: Aztec North; here a platform has been prepared on the slope at the same level as above so as to appear as a continuation of #27.

#29: This feature is a segment of the so called "Quarry Road" shown in the photograph published in the 1919 El Palacio. Morris (1915) mentions this road and suggests its purpose for hauling stone from quarries some 4.8 km distant to the west. The next mention of this road is by Homer Hastings (1960) who expressed concern for its future (as it turned out, a well founded concern). Hastings described the road as approximately 112 m in length and 14.5 m in width, bounded by berms of cobbles. Hastings took exception to the quarry theory, an exception with which we agree. Careful examination of the aerial photography in our possession revealed no further trace of this road. D. Ford (p.c. 1986) has queried Mr. Hastings on this account. According to Mr. Hastings, no trace of the road nor associated features were visible on the mesa top prior to construction of the airport. John Roney (BLM) has traced this road on 1930s imagery across the mesa top to where it passes over the northwest scarp near a sandstone quarry (LA15157)

#30: Aztec North; this is the imaged interpretation of the Aztec North Road as it ascends the terrace slope to Buildings 3 and 4. This road may trifurcate to various features in the Aztec Ruins, and both aerial and terrestrial interpretations need further examination and confirmation.

#31: Aztec North; this segment is perhaps the most visible of the North Road above Aztec. From the vicinity of the Visitor Center, it can be seen as a conspicuous notch. Close examination of this feature on the ground revealed that it could be seen for a distance of over 100 m. From the margin of the crest of the first bench to the crest of the second. On the first bench it passes between Structures 3 and 4 and as it ascends to the second terrace is highly formalized; 11.5 m in width, 1.5 m deep and flanked by pronounced berms. The alignment of this segment (ca 334 degrees) definitely orients it toward Mound F, the central tri-wall structure. It is not clear how the roadway ascends to the first bench--at first it appeared to drop directly from the terrace in the direction of Mound F. After re-examination of the imagery, however, there is a suggestion that alignments from Mound A and Hubbard might converge on the terrace edge and form one road as it passes between Structures 3 and 4 (see comments for #30).

#32: Aztec North; very clear on the 1974 ENMU air photo, not ground verified.

#33: Aztec North; Same as comments for #32.

#34: Aztec North; not visible on the available imagery but clearly visible from the ground perspective. This is a shallow swale ca. 10 m in width on an alignment of 235 degrees. The feature skirts the base of the second terrace behind (north) of Structures 3-4. What this segment does is anyones guess, but it appears to align with the crest of the mound of Structure #5.

#35: Aztec North; a possible linearity on the 1974 imagery, not ground verified.

#36: Farmer Complex; a definite linearity on the 1974 ENMU aerial, this segment passes north of great kiva 20 as it approaches the southern area of Building 23. Not ground verified.

#37: Farmer Complex; this segment approaches the northern area of Building 23, otherwise comments are the same as for #36.

#38: Farmer Complex; Same as comments for #37 (note #36-37 maybe low walls or berms. #38 would access the bench from Farmer Arroyo.)

#39: Farmer Complex; this linearity would connect Building 23 with the Dein Ruin Road in the center of the Farmer Complex. It may go directly to Building 21, linking with #22. Not ground verified.

#40: Farmer Complex; visible on the 1974 ENMU aerial, not ground verified. This segment would directly link great kiva 19 with the valley bottom.

#41: Farmer Complex; this segment traverses the terrace slope and runs between great kiva 19 and the Dein Ruin. It is visible as a swale about 11 m wide where it crests the terrace edge and goes north past the Dein Ruin. This segment has not been ground verified on the terrace slope.

#42: Farmer Complex; this is the imaged linearity extending north from the Dein Ruin which needs verification. Extensive residential and corral facilities now exist in this area and confirmation may not be possible. Visual inspection in April suggests the road may pass further east than this linearity but this also is in an area of bladed modern roads which would preclude confirmation.

#43: Farmer Complex; visible on the 1974 ENMU air photo and visible on the ground. May be more like a "moat" than a road (i.e., like that at Crumbled House). Inspection north of Building 21 in April could not locate this feature along the precipitous slope behind the building.

#57: Residence West; suggested by on-site examination of great kivas 55 and 56 from a slight swale and cobble alignments at the terrace edge. The bearing would be toward Aztec West but the segment requires aerial recognition and terrestrial verification.

#58: Residence West; a clear swale 8 m wide bearing toward Aztec West, which approaches Building 50 between two trash mounds. Subsequent inspection of alignments suggests this segment could be continuous with #29, the famous "Quarry Road". This segment has been recognized on aerial imagery but requires further terrestrial verification.

#59: Aztec North; identified from terrestrial reconnaissance at Building 1, this segment transects the terrace slope and approaches Building 18 from the south on approximate bearing of 182 degrees. This segment would align with Mound F at the Aztec Ruins. It appears as a clear depression, several meters wide, on the terrace slope. Vegetation in the swale suggests it is not a pipeline cut, but, again, this feature requires aerial and terrestrial verification.

#60: Aztec North; this is the northern most end of the Aztec North Road passing by Ruins 2, and 3-4. This segment is visible and clearly traceable as a swale 30-40 cm below grade and marginally enhanced by lateral berms for up to 190 m south of its terminus at the edge of the northern badlands. South of this point the signature is lost in ephemeral drainages, but appears to be flanked by prepared cobble berms where it enters the drainage system. It emerges from the drainage about 250-300 m south of the drop into the badlands, again flanked by low berms. Back azimuths to Ruin 2 were at 151 degrees, close to the general northern bearing of 334 degrees taken for the entire road. This segment requires aerial recognition and further ground checking.

#61: Farmer Complex; this segment was recognized during the April reconnaissance and represents a short spur between Buildings 21 and great kiva 25. This segment shows as a swale about 8 m wide and 35 cm or less deep, and traceable for about 30 m. Flanking berms are not pronounced. Because the slope below Building 21 is rather heavily forested in juniper-pinon, aerial confirmation of this segment, as well as #62 and 63, may prove difficult.

#62: Farmer Complex; this segment approaches Buildng 21 from an azimuth of 197 degrees and appears as a distinct swale 8 m wide with low flanking berms about 15-20 cm high. The signature is traceable from Building 21 across the drainage below great kiva 25 to the bladed road beside a well pad. This feature likewise requires aerial definition and further ground verification. This segment is, however, the most

definitive new linearity recognized during the April portion of the reconnaissance.

#63: Farmer Complex; a possible segment of road that approaches Building 21 from the southeast on a bearing of 150 degrees. It appears as a distinct swale 9 m wide and about 1 m deep with lateral berms that would enter the ruin through a 6 m wide "gate" in the southeast portion of the southern retaining wall for the lower court (see Building 21 discussion). This particular segment has, apparently, been eroded considerably on the slope to the building approach. Its signature on the terrace has probably been lost due to modern residential and orchard development, but if it could be aerially identified on the terrace slope or with the 1973 imagery, this would support verification of this feature as a road.

Earthworks

Recently, it has been determined that sculpted landscapes and earthen masses constitute a major part of the architectural vocabulary of the Bonito Phase (Windes 1987; Lekson 1984a:74; Kincaid 1983: Nials et al. 1983; Stein and Lekson 1986; Stein 1987b). Studies of the Chacoan road system in the southern periphery have demonstrated that earthen architecture in the form of massive berms flanked the roadways as they approached a great house (Nials et al. 1983). Because the roads were already excavated below grade, the enhanced verticality provided by the mounds would have made the approach to a large Bonito style great house an impressive experience. To the south and west of Chaco Canyon, Bonito style buildings in the distant periphery are pedestaled within a "dish" ringed by a massive rampart and broken by "masonry gates" to admit the roads (Stein 1987b; Stein and Lekson 1986). The roads often approach the building from several directions (visually more or less cardinal) much like cowpaths to a water tank, then encircle the building within the rampart. This phenomenon has been intensively examined at Kin Hocho'i in Manuelito Canyon (Stein 1987b) and elsewhere along the Dutton Plateau, Red Mesa Valley and south of the Zuni Plateau (Kincaid 1983; Nials et al. 1983). An excellent example of an extremely formalized version of this architectural concept is the paired mounds south of Pueblo Bonito (Lekson 1984a;74), which would have admitted roads from the south, east, and west of the building.

Analysis of earthen architecture from selected sites has demonstrated that modification of a site may be both intensive and extensive in nature, and that often the earthen component will exceed the scale of the above grade masonry construction. In a word, both the earthen and masonry constructs are complementary forms which are combined into one built environment.

Traditionally, the earthen masses in association with the great Bonito Phase pueblos have been interpreted as "trash middens" after similar deposits commonly found with the lesser residential buildings of the era (Lekson 1984a; Toll 1985:470-482). Early on, these mounds were repeatedly trenched as

"trash", with the intent of establishing chronological/stratigraphic relationships between sites based on ceramic types.

Trenching masked the architectural character of some mounds and precluded interpretation as such until the accumulated evidence was literally too great to deny. Characteristically, the mounds associated with great houses are composed of two components; 1) spoils likely derived from the excavations of below-grade features (i.e., roads), construction debris, and 2) "domestic" trash including abundant ceramic material (Nials et al. 1983; Toll 1985:472). Chacoan trash strata, when present, tend to be distinctive in having a lower relative organic component than later deposits and in being notably "layered" (Windes 1987), suggesting short-term, large-scale episodes of deposition. Burials within the mounds are very rare and virtually all known mounds postdate the mid-eleventh century. Toll (1985:197-201), in a strong warning on the "domestic" character of Bonito Phase great house refuse mounds, suggests the possibility of ritual destruction to account for the incredible quantity of highly fragmented ceramics in the Chacoan mounds. Finally, roads and great house mounds are so associated as to form an extramural architectural vocabulary that defines space, regulates pedestrian flow around buildings, and enhances and orchestrates the initial approaches and contact with the great house itself.

This lengthy introduction to earthen architecture has been offered because it has only recently been introduced into the archeological literature and is at present incompletely documented. Studies south of Chaco Canyon (Stein and Lekson 1986; Stein 1987b; Fowler et al. 1987) indicate that Bonito style buildings are consistently ringed by low mounds of spoils, construction debris and ceramic material. Data from this reconnaissance and elsewhere in the northern sector of the San Juan Basin suggest a stylistic difference in this theme. Although berms and mounds are common north of Chaco, they are often augmented or supplanted by a phenomenon known as "long low walls". Long low walls are discussed by Lekson (1984a:77), and have been identified in Chaco Canyon at Pueblo Alto and Pueblo Bonito. Long low walls are defined as massive (usually implies thick compound or core-veneer construction) and generally less than 1.0 m in height. A good example of a site with long low walls north of Chaco Canyon is the "Old Indian Race Track" (LA 9050) located about 8 km downriver from the Aztec complex on a mesa just south of the Kello Blancett Ruin. In the reconnaissance area, Structure 2 is a great house associated with low berms and long low walls. Like the Old Indian Race Track, these form concentric rings (see Figure 4).

Earthen masses and long low walls, when in association with a Bonito style building serve to bound spaces (i.e., sacred vs. profane?), and to control traffic around or into the building. Both of these architectural forms are road associated. Thus, the significance of the great mounds, berms, and low walls is that they extend the architecture of the great house, bound extramural space and define the roads.

Earl Morris (1928:414) describes three mounds associated with the West Ruin at Aztec - a mound northeast of the structure was a "spall" mound composed of

construction waste and measured about 10 m in diameter and about 75 cm "deep", which may be taken to refer to height above ground. Two mounds were identified south of the building. The westernmost was about 37.5 m north to south and 16.5 m along the east-west axis. The overall height of the mound was 2.5 m. The greater of the two mounds was the easternmost which was located 21 m from the southeast corner of the great house. From the conical crest of the mound, which was about 2.0 m in height, it trailed off to the east as a noticeable ridge for a distance of 22.5 m until it merged with the surrounding fields. Morris implied that the southeast mound overlays an arroyo, the bed of which he found to be 2.3 m below present surface at the monument boundary; it is a strong possibility that the "arroyo" described by Morris is a road. The trash mound at the East Ruin, the Mound E, Morris describes in composition as nearer to "normal" refuse when compared with the Bonito mounds.

Morris (1944) mentions partial removal of a "rampart" parallel to the north wall of Aztec East for barn construction. The rampart was partially composed of broken adobe blocks, and may be partly represented by Mounds C-D. These incidents and early agricultural development around the Ruins in combination with other undocumented bladings and vehicular inroads for stabilization "access" have impacted earthen constructs between and in front of the East and West Ruins. Maxon (1961) excavated what may have been a remnant of the southwest mound at Aztec West in 1960. It was considered an eyesore by monument staff and removed as part of a beautification program. Much of the earthen architecture at the Aztec Ruins Complex has been lost.

The East Ruin

The East Ruin at Aztec is separated from the West Ruin by a distance of 150 meters. Centered between the two massive buildings is Mound F, itself an enormous tri-wall structure. The interval between the two buildings has apparently been farmed judging by an aerial view of the ruins taken in 1934 (Lister and Lister 1968:110F). Disturbance in this area and elsewhere in the vicinity of the West Ruin is documented by Earl Morris in his reports on excavations at the West Ruin (1928) and in correspondence with the Park.

The East Ruin is a massive multistoried building measuring approximately 110 m east-west by 84.5 m north-south. In size, the structure is virtually identical with the West Ruin. Traditionally, however, the East Ruin has been described as the lesser of the two buildings (Morris 1928:413; Richert 1964). This can be partially explained by the fact that the East Ruin is composed of two apparently noncontiguous buildings separated by a narrow causeway, and because it has been traditionally played second fiddle in comparative discussion involving the highly visible, excavated West Ruin. Because the East Ruin has never been systematically mapped or documented it has been convenient to overlook the enclosed plaza, similar to that at the West Ruin, and the great kiva, which, as described by Marshall and others (1979:303), has a probable interior diameter 8 m larger than that of the restored great kiva in the West Ruin. The East Ruin great kiva is the largest in the survey area (Table 4) and

also exceeds all great kiva sizes, except Penasco Blanco 4, from Chaco Canyon (Marshall et al. 1979:269-274). Measurements published for the West Ruin will always include the maximum dimension of the enclosed plaza, while for East Ruin they consistently will not. When these descriptive blinders are lifted, the two buildings are virtually identical in size.

The chronological relationship of the East Ruin to the West Ruin is a point which has often been debated, misinterpreted, and is in need of clarification. In every respect the building conforms to the criteria established for great pueblo architecture of the classic Chacoan era (Lekson 1984a). However, Morris (1939:37) suggested that the East Ruin was constructed during the Mesa Verde occupation of the region (i.e. 13th century) based on the absence of Chaco horizon sherds above what was surface soil before the building was erected. Powers and others (1983:154) and Robinson and others (1974:60) contradict Richert's (1964) interpretation that twelfth century cutting dates ranging from A.D. 1115 to 1129 were reused beams from the West Ruin and point out that many of the rooms excavated in the West Ruin yielded only Mesa Verde Black-on-white and later ceramic types. Powers concluded, and probably rightfully, that construction of the East Ruin began as the West Ruin neared completion, thus the two buildings were essentially contemporary.

Construction of the East Ruin in the A.D. 1120s represents an impressive construction effort very late in the Bonito sequence (McElmo Phase on the Animas River). The placement of structures in the Aztec Ruins group is complex and involves more than just a consideration of the West Ruin. The placement of the East, West and Earl Morris ruins, tri-wall structures, associated earthen architecture, and formal refuse areas are all key elements in understanding the symmetry and design of the Aztec Complex as a planned unit. It might be postulated that completion of the East Ruin fulfilled a design which was conceived a quarter century earlier. Lekson (1984b) concluded that the Hubbard Tri-wall was also likely constructed at the close of the Chaco era during the Late Bonito Phase (ca. A.D. 1100-1175). Lekson's data for the tri-wall construction would place it roughly coeval with the construction of the East Ruin. Thus, it might be suggested that the tri-walls, and possibly the cobble terrace developments described here, represent the finishing touches on a major center.

Morris was correct in his observation that Chacoan ceramics (e.g. Cibola Whiteware) predates the East Ruin, as McElmo Black-on-white was well established by the time construction was initiated. At the time Morris wrote, however, McElmo Black-on-white had apparently not been differentiated from Mesa Verde Black-on-white, and it is the latter type on which arguments for a thirteenth century construction are founded.

## Symmetry, Scale, and Pueblo Bonito as an Architectural Template

One of the casualties in discussing the Aztec Ruins is the mental loss of plurality, and hence scale, in the word "ruins" when the site is brought up.

It is with effort that even the most familiar with Aztec picture the full prehistoric landscape at the Monument as opposed to an immediate vision of the excavated West Ruin, which, on a good day, may also include that funny little building (the Hubbard Mound) out back. This section serves to underscore some of the more significant aspects of the entire Anasazi landscape that make up the Aztec Ruins.

The chief casualty in the mental image is that the East Ruin is also a great house in its own right. The East Ruin is virtually identical in size with the West Ruin. Furthermore, the East Ruin may well not be a Mesa Verde era building, but rather could easily have been constructed during the tail end of the Late Bonito phase ca. A.D. 1115-1140. The great kiva in the plaza of the East Ruin was identified by Morris, yet it is consistently ignored in the literature, in the treatment for management purposes, and in the interpretation of the Aztec Ruins Complex. Like the reconstructed great kiva in the West Ruin, this kiva appears to be ringed by peripheral rooms. The kiva, according to Marshall and others (1979), is 23 m in diameter which is about 8 m larger than the great kiva in the West Ruin.

The East Ruin is a unique ruin - often described as two separate buildings. It is more likely the structure is but one building with a causeway articulating the East Ruin with the Earl Morris Ruin just to the north. This causeway is evident as a low spot between the two major blocks of the East Ruin, a swale shown as an angled break between these roomblocks but this angularity appears to be spurious cartography and needs to be reexamined.

The Earl Morris Ruin is likewise a building of great house proportions and construction style similar to the East Ruin. A building of this magnitude located anywhere else but in the Aztec Complex would be considered an outlier of the largest class. The Earl Morris and East Ruins both contain more obvious in-block kivas than the West Ruin and are similar in their massed, compact style of construction; superfical surface evidence suggests undifferentiated room sizes similar to the latest additions at the West Ruin or other 'McElmo' era houses in Chaco Canyon such as Kin Kletso or New Alto. There is potentially significant information on the structural landscape at Aztec in the obvious relationship between the two ruins when the Earl Morris Ruin corresponds so exactly to the southerly offset of the East Ruin's east block. The Earl Morris Ruin measures about 17 x 54 m, a glance at the map will suffice to illustrate that it correpsonds exactly, both in dimension and orientation to the missing northeast corner of the East Ruin, although separated from it by 75 meters. The alignment of the causeway between the Earl Morris Ruin and the East Ruin great kiva suggests a conceptual, if not physical, architectural link. The great house mass which dominates the east side of the Aztec Ruins seems to have been pulled apart. Why?, is this a mistake in the placement of the East Ruin reconciled midway through construction? A planned cultural statement? The arrangement of the buildings suggests the presence of some significant cultural feature between the East Ruin and the Earl Morris Ruin. Mound E may be more than just a simple trash mound.

Symmetry

In early December 1986 Robert Powers and John Stein visited Superintendent Cooper on returning from a flight over Morris 41 in the La Plata Valley. Superintendent Cooper agreed to give a tour of the monument boundary. Upon reaching Mound A, a heavily vegetated circular mound situated next to the stock pond on Hubbard's property, Superintendent Cooper remarked that the mound on which they were standing had come to be referred to as rubble and trash. Mound A, however, was obviously structural, and, in his opinion, a tri-wall structure. The following discussion is inspired by Superintendent Cooper's undoubtedly accurate observation, although it will require verification.

Placement of Mound A, if it is a tri-wall structure, should be envisioned in the following landscape (see Figure 10):

1) Picture the large tri-wall Mound "F" as the center of the ceremonial landscape. An axis of roughly 340 degrees (i.e., the alignment of the road leaving Aztec to the north) passing through the center of Mound "F" will form a centerline. On this axis, the East Ruin and Mound A form a mirror image of the West Ruin and the Hubbard Mound.

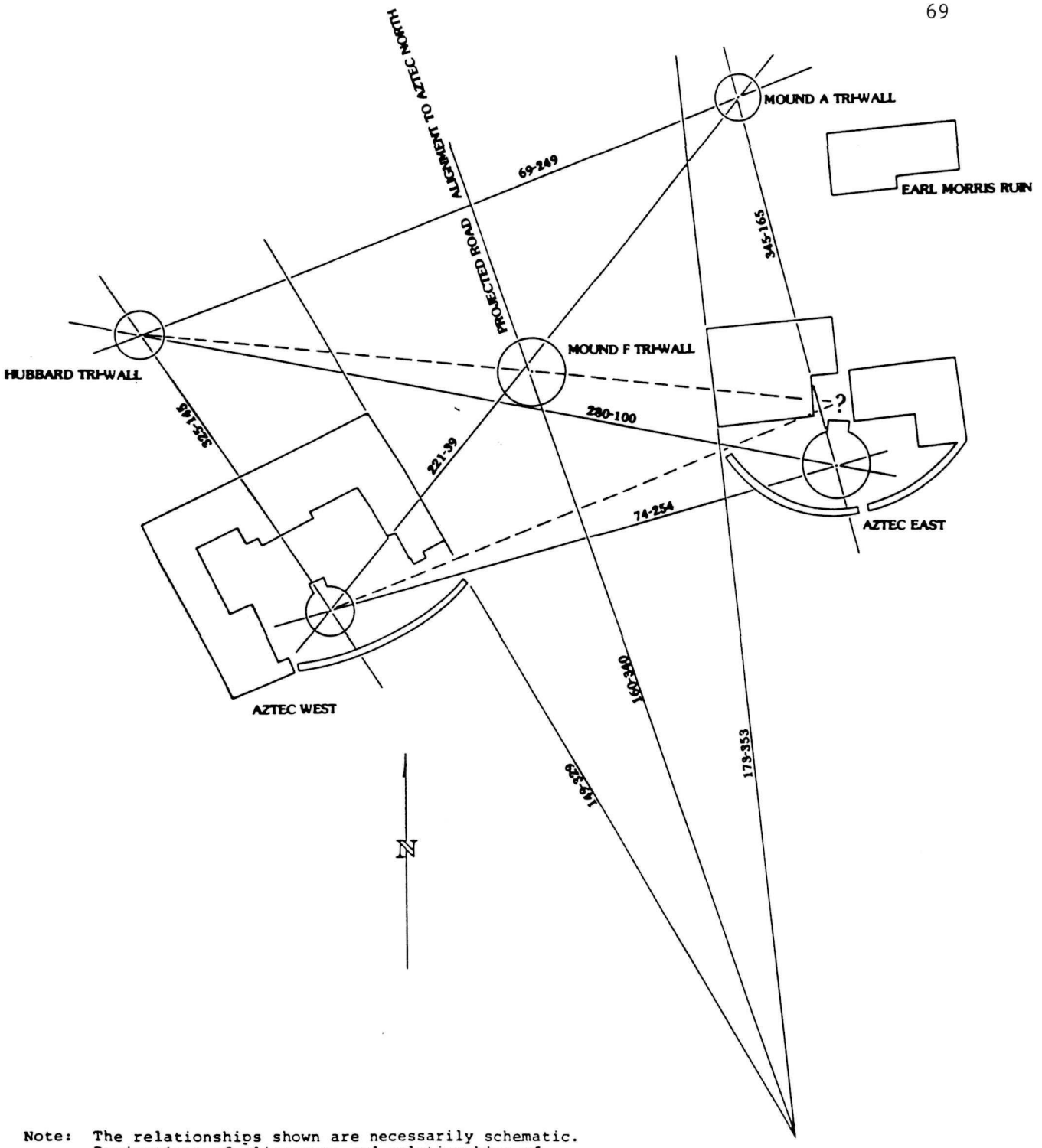
2) Projection of the east wall of the West Ruin and the west wall of the East Ruin (give or take a little) will focus on this axis approximately 320 m to the south. A feature, related to this symmetry is predicted in this locality.

3) The relationship of the great kivas to the two outer tri-walls, Mounds A and the Hubbard Mound, forms a rough rectangle, with a long axis perpendicular to the central axis. Along the north axis, the distance between the Hubbard Mound and Mound A, is 288 m. The south axis, from the center of the great kiva in the East Ruin to the center of the great kiva in the West Ruin is 240 m. From the center of the Hubbard Mound to the center of the great kiva in the West Ruin is 152.5 m. From the center of Mound A to the center of the great kiva in the East Ruin is 168 m. A further relationship is evident in the neat mirrored pairings of above grade and below grade architectural expressions.

The symmetrical relationship of the major components of the Aztec Complex is such that, if traced and folded along an imaginary line running down the road alignment bifurcating Mound F, the East Ruin would fall directly over the West Ruin and Mound A would fall over the Hubbard Mound.

Scale

Figure 11 compares the scale of the largest outliers in the San Juan-Animas drainages - Salmon, Aztec West and Aztec East - with Pueblo Bonito. One is immediately struck by the similarity of these large buildings both in scale and




Note: The relationships shown are necessarily schematic. Projections of alignments and relationships of structures in geographical space reflects an undetermined amount of error. The actual physical alignment of the North Road may trend slightly west of the projected alignment, formalizing a line between the Aztec North great kiva and Mound F. The projected alignment, as shown may instead reflect a line-of-sight between the uppermost story of Aztec North and Mound F.

Figure 10. Symmetry in the Layout of the Aztec Complex (schematic).

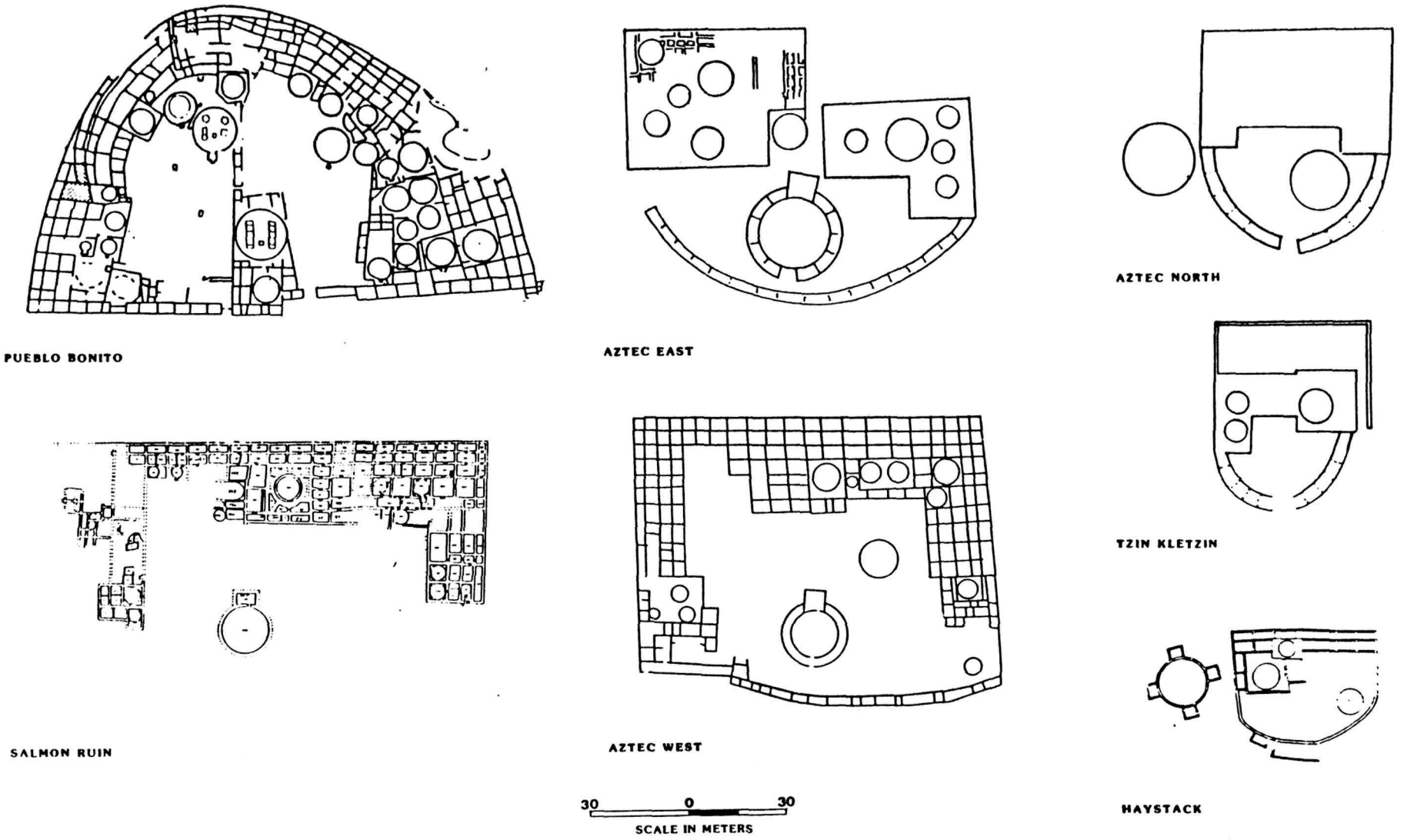



Figure 11. Comparison in Scale: Plan Views of Selected Buildings.

in overall plan. The major differences in these buildings is, we believe, that Pueblo Bonito is the final form of an architectural evolution which took three centuries to complete while the San Juan-Animas buildings were constructed in their entirety in about a decade. In the following argument the reader should attend the relationship of the plaza centered great kiva and the spine or row of rooms which divides the center and Kiva 16 at Pueblo Bonito. Compare the relationship of the great kiva at Salmon to the "tower" kiva in the central roomblock, and the great kiva at Aztec West to Kiva L also elevated in the block (see also Figure 11 herein). The following will be found:

1) The measured relationship between these kivas is essentially the same if not exactly the same.

2) The axis of the great kiva appears to be determined independently of the axis between the two kivas.

3) The orientation of the building is independent of either the axis of the great kiva or the great kiva-orbiter kiva axis.

From the above observations, and assuming that great kivas are an old and venerated expression representing the single most important/sacred architectural feature in the Anasazi world, Stein posits the following observations, theories, and speculations:

1) The system as formalized in the twelfth century probably existed as early as the development of the great kiva.

2) Pueblo Bonito was established as the super-regional center as early as Pueblo I.

3) The focus of the largest Bonito style buildings is the great kiva.

4) The final expression of great house development was a formalized extension/functional elaboration of the great kiva, more specifically as the functional elaboration of the northern alcove.

5) Pueblo Bonito underwent major changes during its complex construction history. Continual elaboration of this building is responsible, in part, for its great size. Architectural design featuring the linkage of great houses and plaza oriented great kivas began in the mid-1000s (Lekson 1984a:143). The final formalized relationship of features in Pueblo Bonito dates to the period from 1075-1115 (Lekson 1984a:70-72, 139-143) when pivotal structural symmetry is organized around the new, partially elevated great kiva and the fully elevated orbiter kiva.

6) Great Kiva A is articulated with Kiva 16 via a spine of rooms which determine the final axis of Pueblo Bonito. This is the latest major construction episode for which there are almost no tree ring dates (Lekson 1984a:139). The distance from the center of Great Kiva A to the center of Kiva 16 is approximately 45 m. The orientation of the spine wall is due north. The axis of the kivas - center to center - is about 45 degrees.

7) The relationship between Great Kiva A and 16 is significant because it was obviously formalized by its connection with a row of single story rooms. The connection is not accidental (true north alignment which apparently establishes the final axis of Pueblo Bonito). That is, the retaining wall with rooms reinforces the "relationship" between the two kivas and at the same time firmly establishes the "axis" of Pueblo Bonito by dividing the building into two more or less equal parts. This relationship is again repeated at Salmon, Aztec East and West, Chetro Ketl, Hungo Pavi and others of the largest class of Bonito style buildings.

8) The final architectural relationship between the great kiva and roomblock-enclosed lesser kiva is illustrated by the consistent proportions between the two structures. The distance between the two kivas is virtually a constant (45-50m). The elevated kiva is always the lesser kiva, but generally larger than the other kivas in the houseblock. Normally the lesser kiva is elevated and "centered" in the roomblock. Thus, the great kiva is consistently below, the lesser kiva consistently above and centered in the structural mass, reflecting again the simple complementary relationship noted earlier for the tri-walls and great kivas.

9) The axis between the kivas is not constant, but varies between buildings. This axis is independent of the axis of the great kiva and is also independent of the orientation/axis of the overall structure. Interestingly, the building mass itself rotates around the upper, orbiter kiva and not the great kiva.

10) The final period of development is coeval with the construction of the North Road (Kincaid 1983) and with construction dates from Salmon (A.D. 1088, Franklin 1980:101) and Aztec West and East (Robinson et al. 1974). The roads, as formalized, converge on Pueblo Bonito, more specifically they converge on Great Kiva A, the housed great kiva in the central spine, a great kiva unique in the Chacoan world. It may well be that Great Kiva A in Pueblo Bonito is the center of the Chacoan world.

Pueblo Bonito as an Architectural Template

It has been noted that the recognition of repetitious simple, basic forms is fundamental to the conveyance of meaning on the architectural landscape. In this instance the obvious contrastive nature of below grade and elevated

chambers, and consistency in size relationships within one class of structure suggests that symbolic qualities are being imbued in the architectural design. How that design is consistently expressed in other buildings is a question. It is here proposed that the standard was caste at Pueblo Bonito that provided a tangible and public model for similar, contemporary building. Only at Pueblo Bonito are the two kivas, Great Kiva A and Kiva 16, of possible instructional import on the same plane. The distance between these kivas is "fixed", at about 45 m, as first built at Pueblo Bonito (Lekson 1984a:139-143), and subsequently at other Late Bonito Phase Chacoan structures.

It follows from this that the distance relationship between the center points of Great Kiva A and Kiva 16 is the "essence" of Pueblo Bonito; that is, the axis of the building pivots on the alignment between these two kivas. The "fixed" distance between Great Kiva A and Kiva 16 at Pueblo Bonito is repeated at similar sized structures such as Salmon, Aztec West, and Hungo Pavi, where it provides a standarized axis which seems to determine scale and design for the building's completion (Figure 12). These slightly later structures appear to be modeled on Pueblo Bonito, that is, they may represent the conceptual essence of Pueblo Bonito in the late eleventh and early twelfth centuries. If this is true, then the axis of the two principal kivas will be important in establishing the orientation of other outlying great houses during the Late Bonito Phase.

Lastly, it can be argued that Aztec West and East are each comparable to Pueblo Bonito in scale. The size of the central Aztec Complex suggests that it may represent the single longest construction event in the Chaco era. It may also have been the last construction event, for with the completion of the East Ruin, Bonito style construction apparently ceased. The tenacity of the Bonito system may be reflected in the element of design. Completion of the East Ruin may have marked the fulfillment of a design conceived and implemented a quarter of a century earlier, possibly blueprinted as on-site foundations.

## Other Big Ruins in the Animas Valley

While on the topic of roads, the logical question is, "Where did they go?". We can guess that the north road may angle towards the Holmes Group or Morris 41. The destination of the west road is unknown, but its ultimate destination is probably not a quarry.

Morris (1939:40) identifies two sites other than Aztec East in the Animas Valley, which he was willing to assign "great house" proportions and there are others in the region (Figure 13). The "Old Fort" he places south of the confluence of the Animas and the San Juan. The other major building, "Flora Vista", is opposite the contemporary town of Flora Vista. Old Fort (LA 61,051) has been recently relocated near the confluence of the San Juan and Animas by John Roney. Old Fort was relocated using Morris' description of the site compared with information acquired during the resurvey of LA 8619, initially believed to be Old Fort. Flora Vista (LA 2514) has sometimes been referred to

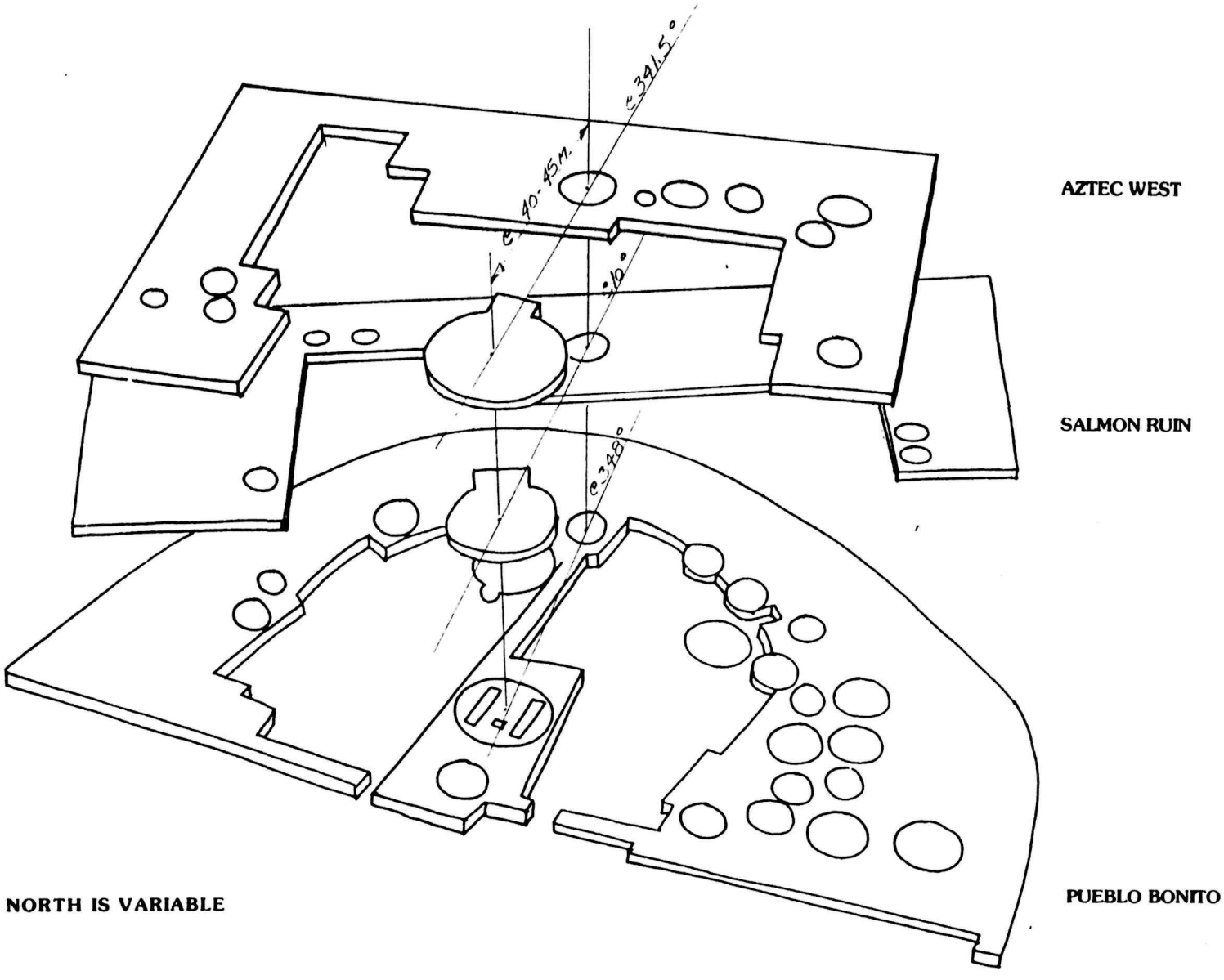



Figure 12. Fixed Distance Design Relationships between Great Kiva and Orbitor Kiva in Late Bonito Phase Construction.

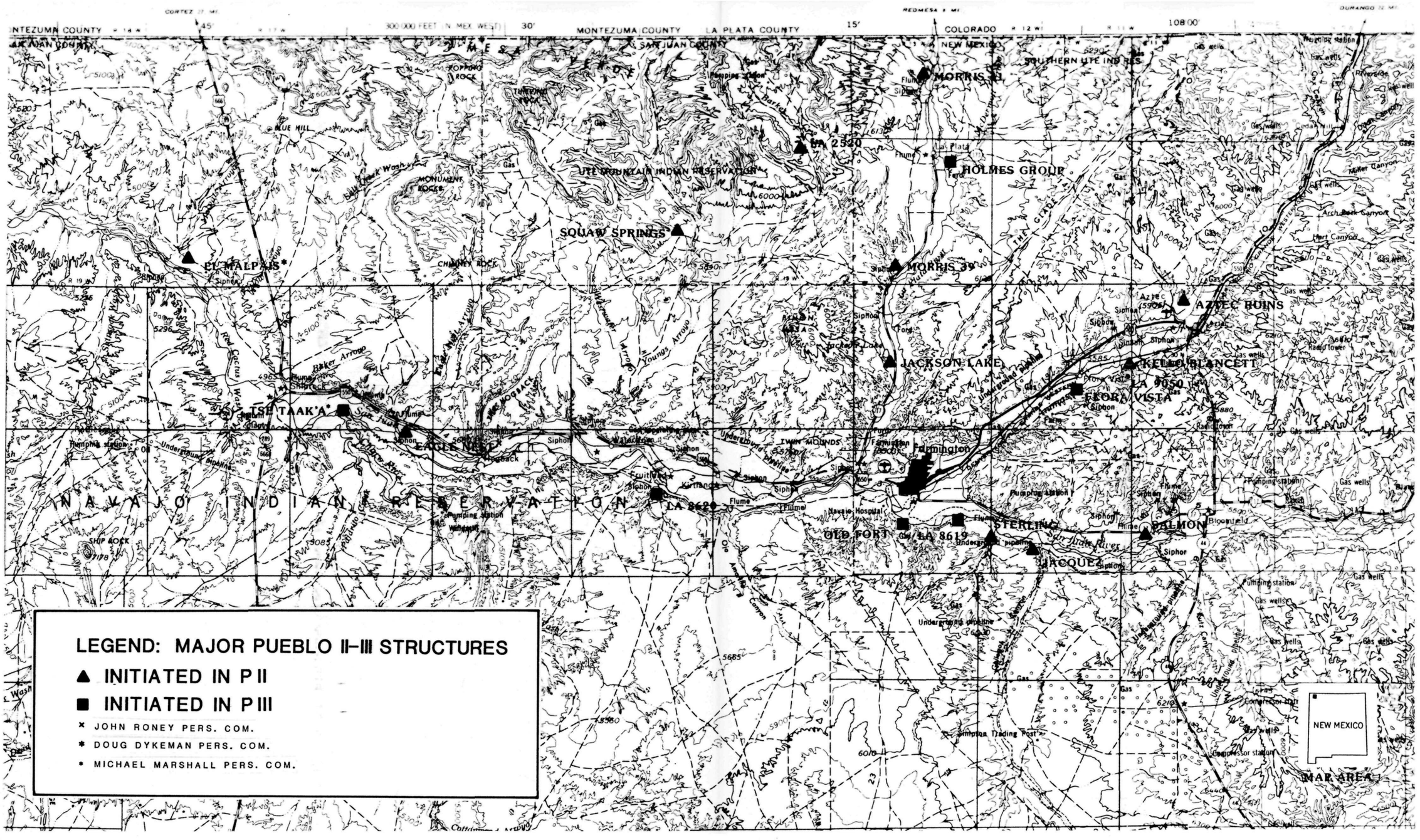



Figure 13. Large Pueblo II-III Sites in the Northern San Juan-Animas Area.

as the "Crouch Mesa Ruin" and is located on the margin of the first bench south of the Animas 200 m north of the center of Section 27, T30N, R12W. This building is big, with one great kiva, and another very large kiva elevated in the roomblock. This structure is located approximately 10 km west-southwest of Aztec Ruins. At a point 4.5 km upriver from the Flora Vista Ruin on the floodplain south of the river is the Kello Blancett Ruin (LA 59,967), situated in fields 200 m north of the highway, and straddling the section line between Section 19, T30N, R11W and Section 24, T30N, R12W. This ruin is really big and is labeled "Aztec Ruins" on the 7.5' topographic map. The high mound relief suggests massive multistory construction which could only be a great house. The Kello Blancett Ruin is located diagonally across the Animas Valley 5 km to the southwest of Aztec Ruins National Monument.

A survey of some of these large ruins in July 1987, related to the Interagency Management Group's seeking a replacement for Morris 41 in the Chaccan Protection Site legislation, yielded some interesting results. Flora Vista, Kello Blancett, and LA 8619 were all visited and evaluated. Maps were prepared, ceramics were identified and tabulated, and the architecture of each ruin evaluated in terms of period and style of construction (Appendix 1). Only Kello Blancett was determined to be a Chaco period building in the Bonito style of architecture. This ruin appears as two large house mounds separated by the Blancett Arroyo. Only the western house mound was examined in detail. Ceramics on both houses were similar, exhibiting primarily a Mesa Verde Black-on-white assemblage, but with sufficient earlier mineral and carbon-painted sherds to indicate construction during the Late Bonito Phase (ca. A.D. 1080-1130) at least. Kello Blancett, although heavily impacted by agricultural development which has leveled any peripheral fixed features in its immediate vicinity, displayed the long rectilinear roomblock with high northern wall indicative of multistory construction. Large kivas and a possible great kiva were enclosed in the roomblock. The initial construction was a sandstone veneer over a cobble core, and, like the Aztec Ruins, later walls were built of cobbles. Earl Morris' usual acumen in picking out large ruins apparently skipped a beat with Kello Blancett, as no mention of this site is to be found in his reports.

Examination of the Flora Vista Ruin suggested a different architectural style prevailed from that associated with the Bonito Phase. Here a large building was apparently formed by contiguous elevated room masses surrounding courts. There are about eight identifiable courts at Flora Vista, but the massive planning and building efforts characteristic of the Bonito style of architecture are not apparent. Walls are made entirely of cobbles and mortar, and the ceramic assemblage is completely associated with the Mesa Verde period. This building appears to be a later construction than the Aztec Ruins or Kello Blancett. It retains some of the elements of design style of the earlier Bonito Phase complexes, such as a large enclosed plaza with controlled access, and the great kiva/orbiter kiva relationship (discussed later), but the configuration of the building and execution of component units is markedly different, at least on the surface evidence. The associated community, and in

fact part of the plaza at Flora Vista, has been sacrificed as rip-rap and fill for the irrigation system on the south side of the Animas River. Bulldozers have pushed smaller ruins to the east, and a portion of Flora Vista, over the bluff (Gary Nielson p.c. 1987; see also Richert 1964).

Examination of LA 8619 showed this to be a complex, multicomponent site, ranging in occupation from about A.D. 800 to 1275. Significant numbers of earlier mineral-painted ceramics of the Cibola and San Juan traditions were present to clearly demonstrate an earlier period of occupation. A great kiva is present at this site and may date to the early 1000s, although its temporal associations are anything but clear. The latest building at LA 8619 appears to be of Mesa Verde period construction, but it has also been identified as a Chacoan outlier (Marshall and Stein 1978; Whalley 1980). For the present this site will be considered as simply a large multicomponent site of long duration but not a Chacoan outlier. Some of the reasons for this are outlined in Appendix 1, but LA 8619 is far enough afield from the Animas Valley to no longer be of concern in this reconnaissance.

The Old Fort (LA 61,059), described by Morris as being located on a conical hill south of the San Juan-Animas confluence and entirely of Mesa Verde period occupation, appears to be just that based on Roney's observations. This ruin exhibits several large kivas, one of which may be a great kiva. Like LA 8619, Old Fort has been heavily vandalized and disturbed by heavy equipment. The Old Fort is another example of the continued construction and occupation of great house scale buildings following the Chacoan period of construction.

Many lesser great house style buildings remain undocumented in the Animas Valley. A modicum of knowledge of the locations (present or former) of these buildings is the key to understanding the scale of the Aztec center (perhaps it was really the Kello Blancett center), the destinations of the roads and ultimately the grand design of the late Chaco system. Particularly suggestive are the extensive developments on the remnant mesas south of Kello Blancett, which contain mutliple buildings, great kivas, and substantial esoteric constructions all grouped as three "sites", LA 9050, 6286, and 5626. Richard Blancett recounts the removal of house mounds and "burial grounds" where the Blancett Arroyo emerges onto the Animas floodplain; but these lowland buildings have all, like those around Aztec, largely been lost.

Two and possibly three of these large buildings formerly existed at the confluence of the Estes Arroyo with the Animas River. Morris (1944) reports on a ruin located on the north bank of the Animas three-eights of a mile south of the west end of Aztec Ruins National Monument. This was a substantial building utilizing adobe block in core-veneer style construction. About one-eighth of a mile further south is a large mound with a retaining wall of white-washed cobbles. This ruin is locally known as the Estes Arroyo Bridge Site, and Steen recorded it as part of his waterline project for the town of Aztec. The massive character of this mound (it used to have a Victorian style house on it) suggests that it too may have been a great house.

Reconnaissance Recollections

Chaco versus Mesa Verde Issue

The public story, at least as presented at the monument, of occupation at Aztec focuses on two archeological cultures. The earlier of these cultures is characterized by a ceramic assemblage featuring the decorated types Mancos, McElmo, Gallup and Chaco-McElmo B/w and is referred to as "Chacoan" after the great buildings at Chaco Canyon. The "Chacoan Culture" evolved from a Basketmaker base throughout the San Juan Basin and terminates at about A.D. 1150. The later archeological culture credited with occupation at Aztec is the so called "Mesa Verde". The Mesa Verde culture is strongly identified with the Cliff Dwellings on the Mesa Verde and associated with a diagnostic pottery, Mesa Verde Black-on-white. Mesa Verde represents the final occupation of the greater San Juan drainage by Anasazi peoples. By the late 1200s the entire region, including Aztec, had been abandoned.

Earl Morris (1928:418) identified the two principal occupations at the West Ruin and credits the "Chacoans" with its construction and initial use based on the architectural characteristics of the great pueblos in Chaco Canyon and material culture found in association with the lower floors. The "refuse mounds" facing the ruin were composed almost entirely of Chacoan era debris. Morris (ibid) describes a significant accumulation of earth and debris separating the "Chaco" from the Mesa Verde occupation. This accumulation suggested a "hiatus", perhaps as long as a century, when the building was unoccupied. The Mesa Verdean occupation, perhaps beginning around the mid 1200s, came to an abrupt end toward the close of that century when all but a section of the west wing was consumed by an intentional fire. In the opinion of Earl Morris (1928:420), the reoccupants of Aztec were initially prosperous but by the final days were reduced to a "dwindling remnant".

Several historical factors must be considered in understanding Morris' account of Aztec's prehistory. First, Earl Morris excavated the West Ruin prior to the development of dendrochronology and during the very beginning of the establishment of regional stratagraphic relationships for the Southwest. Morris correctly identified the sequence of occupation at Aztec but was unable to place absolute dates on events. With the new dendrochronological evidence at hand Robinson and others (1974) have been able to date the major construction of the West Ruin from A.D. 1111 to 1115. Their comparison of dates from West and East Ruins at Aztec suggested that both great houses were constructed in quick succession in the first quarter of the twelfth century. The early 1100s apparently mark a tremendous construction program which essentially formalized the Chaco system (Lekson 1984b). Next, Morris was dealing with a ceramic taxonomy that did not recognize pottery types intermediate to "Mesa Verde" and "Chaco"; McElmo Black-on-white was not recognized as a "type" until the 1930s (Breternitz et al. 1974:41-43; Rohn 1971:145-185) note also Franklin 1980:157). Herein lies the importance of the repeatedly overlooked accumulations of earth and debris' separating the Chaco

from Mesa Verde deposits. Similar deposits at the Salmon Ruins have been discussed as the "Intermediate" occupation which are not only evidence of transition and change, but also of continuous occupation in the large outliers of the northern San Juan (Franklin 1980:129-182; Irwin-Williams 1980).

The recognition of "Intermediate" and "Transitional" occupations (Franklin 1980; Fowler et al. 1987) in the twelfth century in communities around the periphery of the San Juan Basin is an important period of time in the evolution of Chacoan system which has yet to be satisfactorally studied. In the middle San Juan it marked by unmistakable changes in material culture, the intensity of prior levels of "interaction", and possibly in an actual reduction in population (Whalley 1980; Irwin-Williams 1980).

The Chaco versus Mesa Verde issue may be more terminological than real. Both terms are used to identify artifical, archeological cultures for the purposes of discussion and communication. The material correlates which give form to these constructs are strong constellations which give, surficially, concrete meaning to these traditional culture concepts. However, it is not beyond reason to postulate that the Anasazi occupation of the Animas Valley, including the Aztec Ruin, represents a population continuum in the ever shifting strategy for survival in the San Juan Basin. Changes in material culture are clearly apparent, but pale in comparison with the continued investment in public architecture and works strongly suggesting that regional patterns of interaction, established during the Bonito Phase, continued as a viable strategy during the thirteenth century. Again, the continucus evolution of a cultural system seems to be the appropriate emphasis rather that confrontational comparisons stressing population replacement as causal to cultural phenonmena that are in no way contemporary.

## Summary

Reconnaissance work is meant to be somewhat like Hobbes' view of savage life: "short, brutal, and nasty". This particular reconnaissance, unfortunately, has only lived up to two of those expectations. It has afforded some long neglected review and familiarization with archeological issues and findings regarding the Aztec Ruins in particular. It has also permitted some preliminary maunderings on the applicability of cultural landscapes and architectural design in the case of the Aztec community. All this is well and fine, and will be useful in further work at Aztec and in, hopefully, eliciting some informed response. But what remains is to exhume the nuts and bolts of the reconnaissance, to dust off and reappraise exactly what four days of field work has turned up and what this means to us at the present time.

The reconnaissance identified some 37 Anasazi buildings along about 2 miles (3.2 km) of terrace edge immediately north of Aztec Ruins National Monument. This established the existence of an associated community of small sites similar to other outlying communities in the Chacoan system. Thirty of these buildings were puebloan house structures ranging from about two or three rooms to 100 rooms. The other seven were large depressions, possibly representing

great kivas, usually situated some slight distance from a house structure. Prehistoric roads were likewise identified passing through the reconnaissance areas and usually articulated, at some point, with an isolated 'great kiva'. All these preliminary on-the-ground observations of structure definition, relationships, and sizes needs to be reconfirmed by more rigorous survey, possibly the wizardy of remote sensing, and most definately by excavation.

Based on this, more esoteric interpretations follow. A landscape design was apparently implemented that differentiated the use and development of the community portion along the terrace edge. Although this community of smaller buildings also extends to the valley bottom, we know next to nothing of its structure and temporal affiliations along the river. Ruins identified on the benches above Aztec east of Ruin 5 to the point overlooking Farmer Arroyo seemingly represent special function architecture, as illustrated by lack of middens, evidence for extensive modification of the landscape including artifical platforms/terraces, roads, and long low walls. Excessively massive surface structures in association with an abnormal number of great kivas are another indicator of special function in this area of the terrace. The larger of these buildings, principally Building 2 and 22 (LA 13,434), represent a focus for two distinct developments involving large, widely spaced buildings. Conversely, densely packed buildings along the bench margin west of Building 5 appear to be residential based on associated midden debris and less formal, single story architecture.

Twenty-one segments of possible prehistoric roadway have been either identified on aerial photography or on the ground. These segments represent three separate systems from the north, northeast, and northwest of Aztec. The principal system discussed above is visible on photography to a distance of about 1 km from the central tri-wall, Mound F. It is likely, but unverified, that the North Road from Chaco Canyon also articulates with the Aztec Complex; the north road extending through Mound F may be a continuation of that system. The axis of the roadway articulating Ruin 2 with Mound F at Aztec corresponds with the symmetrical center of the Aztec Complex and holds special meaning in terms of overall community symmetry. Presumably this roadway should proceed toward Morris 41, however, a projection of the alignment would place its terminus further north. There is a strong, although undemonstrated, probability that the roadway changes direction at some unspecified point north of Aztec and may, in fact, lead to the Holmes Group in the La Plata Valley. One of the other principal segments is Segment 29, described by Morris and later by Hastings, it is located 2 km west-northwest of the central mound and is a portion of the well-known "Airport Mesa Road".

Lastly, observations within the Aztec Complex itself suggest it embodied the essence of community organizaton and planning, and that reappraisal of its organization and prehistory is warranted. Symmetry of building positions indicates the Aztec complex was designed as a single unit. Consistent symmetrical relationships between core architectural units at Aztec indicate the entire complex is modeled on standards fixed in Pueblo Bonito in Chaco Canyon. This suggests that the "Chacoan" system of economics, labor

organization, and cosmology were implanted in the Animas Valley and continued as a viable, if modified, system beyond the classic "Chacoan" periods. Specifics to this suggestion hold that the construction of Aztec East is likely to be contemporary with Aztec West, and that the construction of the tri-walls and initial bench sites is likely to be coeval with the greater complex.

The extent of the Aztec Complex is not fully known. Agricultural activity beginning in the late 1800s has destroyed the above grade remains of all but the most massive surface structures. Where found in the bottomland, buildings most always have been of the Mesa Verde period. Remaining structures south and east of the monument are now under residential development. For example, the Estes Arroyo Bridge Site is almost certainly a large special function building constructed as part of the Aztec Complex, and between it and Kidder's LA 1674 (off the southeast corner of the monument) there is the suggestion of a rich bank-side development along the Animas which now sports mobile homes of every hue.

Other extremely large sites exist in the Animas Valley. The architectural mass, design, and formal appointments of at least one of these buildings, suggest that it too is of early twelfth century construction. Extensive development of the benches above this center suggests a community plan similar to and rivaling Aztec in scale. Other large buildings show construction and use strictly within the Mesa Verde period. Undoubtedly, one of the keys to understanding the late adaptation along the Animas River, it subsequence collapse, and whatever 'influence' might have been felt from the 'Chacoan' period lies in decoding the interrelationships of these Mesa Verde period structures.

## Recommendations

During the course of general management plan development for Aztec Ruins National Monument, consideration of archeological issues will be, or should be, paramount. The archeological issues in this case center around protection and preservation of the current holdings, and interpretation. The question of adequate monument boundaries is central to both issues as many protection and preservation questions hinge on control of lands surrounding the ruins. The inclusion of a representative segment of the peripheral community is essential to both the protection and interpretation of Aztec within the framework of Chacoan outliers. Interpretation at Aztec needs revitalization in the face of liturgical statements that archeological research at Aztec is essentially complete. Recognition of an expanded Aztec community akin to other Chacoan outliers is assurance that the archeological picture at Aztec is anything but static. To secure information that will be meaningful to planning as well as to the actual future management, protection, possible research, and interpretation we recommend the following actions within and adjacent to the park.

Within the monument several informative projects can be initiated which will extend beyond the scope of the GMP process and should be coordinated through, and preferably controlled by, park staff. A dendrochronology study similar to that currently in progress at Chaco Culture National Historical Park should be initiated. This project would certainly be multiyear in duration, but would provide management with an inventory of all wood in the Aztec Ruins, acquire data for accurate environmental retrodictions in the Aztec area, provide a refined prehistoric building and refurbishment sequence which should permit new interpretative insights into past lifeways, resource availability and use, and an accurate comparative chronology between the East and West Ruin as well as events at Chaco Canyon and the Chacoan outliers. In a similar vein, a project to remap buildings within the Aztec Complex would provide more accurate location and orientation of structures so that inferences dependent on measures of placement, symmetry , and orientation may be more confidently presented. An abutment and masonry style study should be undertaken to understand the growth of the West Ruin and to identify, at this level, possible suites of rooms as well as construction episodes for comparison with contemporary Bonito Phase building activity. Lastly, questionable or controversial features, such as Mounds D and E should be investigated in order that their true character might be determined and proper management procedures follow.

Intertwined with these new undertakings should be an upgrading of our understanding of past work and a renewed commitment to investigating the archeology of the Aztec Ruins and vicinity from different perspectives. We recommend that no further "landscaping" efforts or other alterations of the landscape be done before remapping of the Aztec Complex and the character of all mounds - whether architectural or simple refuse - is as fully determined as possible with minimal resource impacts. Further we recommend that the park make every attempt to obtain copies of Morris' notes and maps in order to develop baseline information about the conditions and features at Aztec before stabilization began by either Morris or the National Park Service. This information is invaluable not only as an interpretative tool, but in considering alterations to fabric which may be required for access or further stabilization. Morris' work is sketchy and his materials, as well as notes, need to be assembled, reexamined and interpreted. Manuscripts in Morris' files, such as his unpublished work on the kivas of Aztec, would be useful interpretive aids, are of equal interest to visitors and professionals, and should be reviewed for possible publication. Lastly, the extensive alteration of the landscape at Aztec and stabilization work require a detailed review of impacts to assess how much and what has actually been disturbed. Overlays showing areas of stabilization by years would be necessary to identifying obliterated features, reconstructing construction sequences and suite identifications as previously mentioned, and for scheduling and projecting new stabilization requirements at the West Ruin.

The survey of lands outside the monument boundaries should continue to focus on the buildings along the Aztec terrace. Euroamerican development of

the bottomlands has sufficiently obscured the prehistoric ruins and features around the monument so that further search and recognition would be time consuming, difficult, and of more questionable value in comparison with the relatively pristine conditions on the terrace. Cooperation with current investigations by other agencies and rigorous archival work should provide sufficient evidence of occupation to permit planning for future testing of the most likely prehistoric localities, should such testing be desired.

The formal survey of the Aztec terrace area should gather standard site information as outlined, minimally, by the State of New Mexico site recording form; recording of features peripheral to buildings themselves, as suggested by this reconnaissance, should be prompted by an addendum form. Controlled samples of ceramics and lithics should accompany the standard site form. The form should be accompanied by scaled, annotated site maps showing all major features, site orientation, and sampling units. Ceramics should be tabulated, minimally, by form and type, and, if time permits, limited attributes should be recorded. These attributes should focus on temper, as a measure of source, some metrics, and elements of design in order that some comparison might be made with other ceramic studies involving communities felt to be associated with the Chacoan system. Likewise, material type, as source information, is an important aspect of lithic data in discussing the Chacoan exchange system. Other limited technical and functional attributes of lithics should likewise be recorded, at least those as suggested by Phagan (1985) for intersite comparisons. Ground stone should be similarly inventoried at each site. A full photo record showing site overviews as well as detailing any major site disturbance or intact features should be made. An area north of the identified buildings should be systematically surveyed to verify aerial interpretation showing no sites in the area. Road alignments should be traced on the ground and sampled for artifact association with transects placed perpendicular to their long axis.

Other aspects of the survey and evaluation of cultural resources in the Aztec area are necessary and do not involve extensive on-ground work or recording time. First, an oral history of the Aztec Complex and the cultural resources of the Animas Valley needs to be conducted as soon as possible. Older members of the community need to be interviewed concerning their knowledge of where ruins were located, particularly in the valley bottom, as well as any recollections of how the Aztec Complex appeared before modern landscaping took place; former Superintendent Hastings, SJAS member Henry A. Jackson, and Mrs. Hubbard alone would be a wealth of knowledge. Archival imagery needs to be sought out and acquired. This aerial documentation would include the 1974 black-on-white photos of the San Juan, Animas and La Plata Valley bottoms, the thermal infra-red of the Aztec Ruins area also taken ir 1974 by Eastern New Mexico University, and a new set of low sun imagery around the Aztec area which would highlight the road remnants and other low-visibility prehistoric features. This latter should be expanded, especially toward Salmon Ruin and the Chacoan outliers of the La Plata Valley as road segments between these points and Aztec are located, or projected. Thermal infra-red around

Aztec, as well as Kello Blancett and Flora Vista Ruins, would permit the identification of surficially altered or obscured housemounds, road segments, prehistoric ditches and other impacted and/or low-visibility features. Finally, the sandstone quarries around Aztec, particularly that is in Section 36 and in Tucker Canyon should be reexamined and formally recorded. A brief reconnaissance of ruins on the mesa tops south of Kello Blancett should be done to provide a comparative base for the contemporary occupation at and around the Aztec Ruins.

Although these recommendations may seem extensive, they are presented in barest outline, and represent the simplest of foundation studies that would provide an assessment of Aztec's place in the Chacoan outlier system. Myriad questions and lines of research which will further illuminate prehistoric life at Aztec, the Animas Valley, and the Anasazi Southwest invariably emerge from this process so that the Aztec Ruins will remain a viable focus of inquiry, learning, and fascination into the future.

## Addendum

During the summer of 1987, when this reconnaissance report was in review, the survey of the Aztec Community took place. That report is in progress, but will take some time. For future reference, the buildings have been assigned site numbers and those numbers are as follows:

| LA # | Reconnaissance Building # |
|---|---|
| 5,603 | 2 |
| 13,433 | 21 The Farmer Arroyo Site |
| 13,434 | 19-22 The Dein Ruin |
| 60,000 | 50 |
| 60,001 | 54 |
| 60,002 | 55-56 |
| 60,003 | 48 |
| 60,004 | 46 |
| 60,005 | 13 |
| 60,006 | great kiva on 9 & single room 10 |
| 60,007 | 11-12 |
| 60,008 | 8 |
| 60,009 | 14 |
| 60,010 | 15 |
| 60,011 | 53 |
| 60,012 | 52 |
| 60,013 | 51 |
| 60,014 | 49 |
| 60,015 | 47 |
| 60,016 | 43 |
| 60,017 | 9 less the great kiva |
| 60,018 | 6, 7, 16 |
| 60,019 | 5 |
| 60,020 | 3-4 |
| 60,021 | 1 |
| 60,022 | 17-18 |
| 60,023 | sherd & lithic scatter, possible camp (PII-III) |
| 60,024 | 25 |
| 60,025 | road segment 60 at north end of survey area |
| 60,026 | not yet assigned |
| 60,027 | Quarry, linear mound in Tucker Canyon |
| 60,028 | Graywacke Quarry in Tucker Canyon |
| 60,029 | Bench Quarry in Tucker Canyon |

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sandstone masonry site (Morris 41?) is noted as the largest ruin in the valley and is associated with possible "Chacoan" burials (different than those obtained at Aztec and elsewhere along the La Plata).

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Morris excavates and reports on a portion of a puddled adobe ruin near the mouth of Farmer Arroyo, northwest of the Aztec Ruins. One of seven ruins cleared from this particular farmer's land, it was one of many cobblestone and adobe small houses in the bottomland near Aztec Ruins. This house was, in part, two stories high, showed interior colored wall plasters similar to those found in the Aztec Ruin (red), and had 24 burials from three rooms and refuse area; ceramics suggest final occupation was during the Mesa Verde period. Morris also describes pottery in terms of common vessel forms and design styles concentrating on minor alterations and adjustments in design which result in different "styles" and on other material remains commonly found in the Animas Valley. Morris remarks that he has already excavated about 20 ruins in the Animas Valley - a year before he begins work on the Aztec Ruin.

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Morris discusses the most spectacular of the material remains including pottery, oranments, sandals, the famous "snow shoes", and other perishable items. Early stories of profitable vandalism are recounted as are the rigors of meticulous fieldwork to secure all objects in the ruin. Lavishly illustrated with artifacts.

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This progress report covers the results of the 1917 field work in all of the east wing, some of the south wing (the arc), and part of the north (central block) wing. Sixty-nine rooms and eight kivas were excavated. Morris notes the variability in internal construction ranging from cobblestone and adobe walls to the classic masonry building which was planned and subsequently constrained "temporary" building. Described are a fire which consumed the pueblo and a burning incident in Kiva D where children and an adult were incinerated. The majority of the east wing had been used as a refuse area. The variety and numbers of exotic items suggests to Morris extensive trading connections.

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Nelson sets the tone of excavation and interpretation for Aztec by the American Museum. He points out the need for irrigation to secure crops in the Animas Valley, the defensive posture of the Aztec Ruin, and the planned, systematic nature of building construction. A long-lived local community is recognized, but aggregation to the Aztec Ruins is posited as the reason for the size of the Aztec buildings. An estimated 500 rooms and 13 kivas are described for the West Ruin. Long distance transport of timber and building stone is cited as evidence of an organized labor force. The goal of the excavation is reconstruction of past life ways and culture history.

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1980 Human Adaptations to a Marginal Environment. In Human Adaptations in a Marginal Environment: the UII Mitigation Project, edited by James L. Moore and Joseph C. Winter, pp. 483-520. Office of Contract Archeology, University of New Mexico, Albuquerque.

Wissler, Clark
1919 Report on the Work at Aztec. El Palacio 6(6):83-84.

Wissler describes work of the 1918 field season. Fifty rooms and three kivas were excavated, mostly in the central roomblock with some along the plaza. Wissler reiterates that the Aztec Ruin represents the culmination of a long period of in-situ cultural development in the Animas Valley. Two distinct periods of occupation were evident.

1927 The Aztec Ruin National Monument. Natural History 27(3):195-201.

Wissler announces the acquisition of the eastern portion of what is now the Aztec Ruins National Monument containing the East Ruin with its accompanying trash mounds, the Earl Morris Ruin, and tri-wall structures Mounds A and F. Old photos of the excavation of Aztec West are featured.

# APPENDIX 1

The following presents notes, ceramic tabulations, and site plans for three large Anasazi buildings in the Animas and middle San Juan valleys that were considered as possible Chacoan outliers during the Interagency Management Group's reconnaissance for northern San Juan outliers in 1987. These are, undoubtedly, not the only large Anasazi ruins along the Animas. Among the areas of high potential for Anasazi occupation is the Farmington Glade. The archeological resources of the Farmington Glade, now largely destroyed by urban growth, need to be at least identified. Larger structures may be damaged, but would still exist, giving some indication of the Glade's Anasazi occupation.

Construction of large Mesa Verde period pueblos at regular intervals of 5-7 km may have occurred along the Animas from the Aztec Ruins to the San Juan River confluence. Such spacing is implied by the Aztec-Kello Blancett-Flora Vista- ? -LA 2513-Old Fort sequence of buildings. LA 2513 was located by Cassidy and Bullard (1956:13) at the tip of the highlands near the confluence of the Animas and San Juan rivers. Between LA 2513 and Flora Vista is a void in our archeological knowledge. If this even spacing of large ruins is real on the Animas, as it was in Chaco Canyon, another as yet unlocated structure should be present in the southeastern quarter of Section 32, T30N, R12 W, Flora Vista Quadrangle. However, speculations involving the spacing of large buildings on the Animas are entirely premature given the general lack of knowledge concerning prehistoric archeology in the Animas drainage.

Table 1. Ceramic counts from the Flora Vista Ruin, LA 2514.

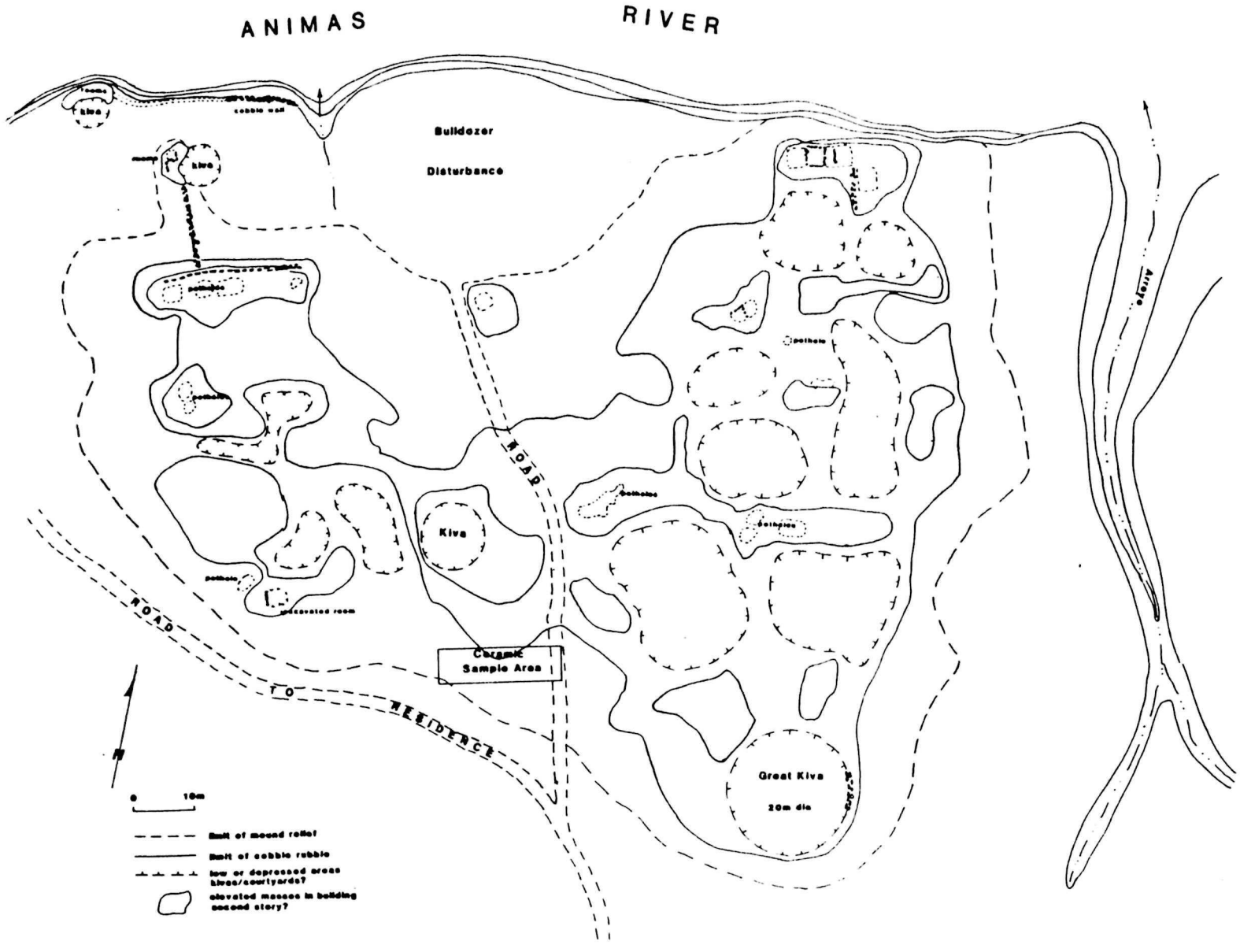
| Ceramic Type | Forms B | J | N |
|---|---|---|---|
| Grayware: | | | |
| indented corrugated | | 110 | 110 |
| Decorated Ware: | | | |
| Gallup B/w | | 1 | 1 |
| Mesa Verde B/w | 28 | 2 | 30 |
| whiteware | 10 | 7 | 17 |
| St. Johns B/r | 1 | | 1 |
| total | 39 | 120 | 159 |

Notes: surface sample area of 20 x 5 m NE-SW along the exterior south-central portion of roomblock just below elevated central kiva. Inspection of site surface ceramics also showed Wingate Polychrome in the assemblage, but generally a uniform distribution of Mesa Verde B/w and associated types (as above) less any mineral painted types. Suggests building and occupation dates between A.D. 1200-1300. Lithics, chipped stone only, from the same sample area numbered 69, mostly from gravel sources available in the area. Bullard and Cassidy (see Pipeline Archeology and LA-ARM files) report the following ceramic figures: Mesa Verde B/w 59, Wingate B/r 1, whiteware 1, indented corrugated 9.

Table 2. Ceramic counts from the Flora Vista Ruin Annex.

| Ceramic Type | Forms B | J | N |
|---|---|---|---|
| Grayware: | | | |
| plain gray | | 18 | 18 |
| indented corrugated | | 56 | 56 |
| Decorated Ware: | | | |
| McElmo B/w | 2 | | 2 |
| McElmo-Mesa Verde B/w | 3 | | 3 |
| Mesa Verde B/w | 1 | | 1 |
| whiteware | 14 | | 14 |
| Wingate B/r | 1 | | 1 |
| total | 21 | 68 | 89 |

Notes: this ceramic sample represents an all observed inventory of ceramics found south of the kiva depression fronting the roomblock. This small building shows as a 10-15 room, rectilinear, single-story houseblock fronted by a central kiva (ca 5-6 m dia.) and beyond the kiva a low berm of small cobbles and dirt, undoubtedly representing fill from kiva excavation. Ceramics are concentrated on this berm and up to about 4 m peripheral to its downslope or south side. The assemblage here suggests a slightly earlier date, ca. A.D. 1175-1225, than the Flora Vista Ruin itself, and may represent a building contemporary with the construction phase of the Flora Vista Ruin, but which was subsequently abandoned. No lithic material was tablulated, but was present.

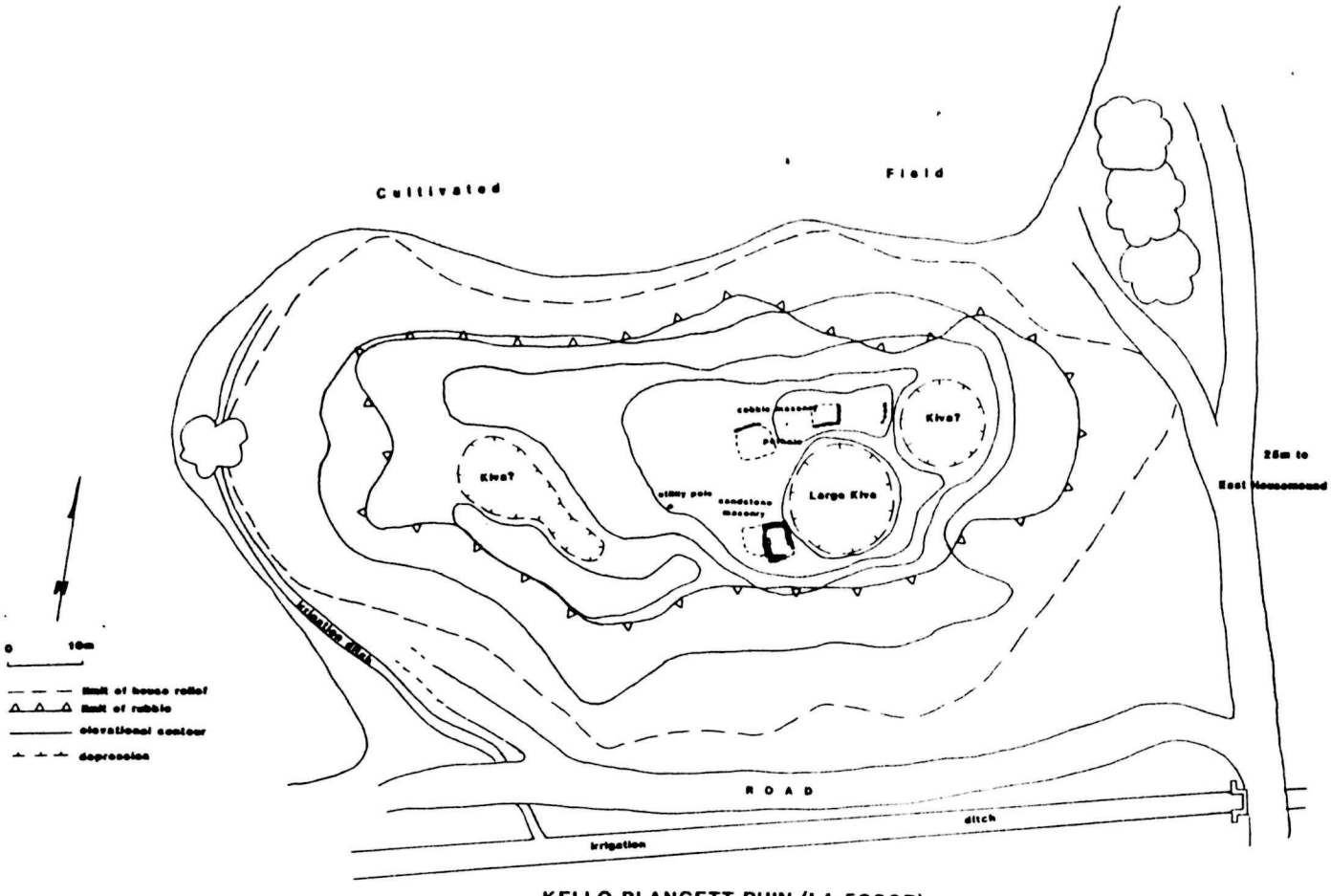



FLORA VISTA RUIN (LA 2514)

Table 3. Ceramic counts from Kello Blancett, LA 59967.

| Ceramic Type | Forms B | J | L | O | N |
|---|---|---|---|---|---|
| Grayware: | | | | | |
| plain gray | | 18 | | | 18 |
| indented corrugated | | 147 | | | 147 |
| Decorated Ware: | | | | | |
| Puerco B/w | | 1 | | | 1 |
| Mancos B/w | | 2 | | | 2 |
| Wetherill B/w | 3 | | | | 3 |
| McElmo B/w | 10 | 5 | 1 | | 16 |
| McElmo-Mesa Verde B/w | 25 | 3 | 1 | | 29 |
| Mesa Verde B/w | 26 | 3 | | | 29 |
| PII-III M/w | 1 | | | | 1 |
| whiteware | 21 | 8 | 2 | 10 | 41 |
| Wingate B/r | 2 | | | | 2 |
| Wingate Poly | 1 | | | | 1 |
| White Mountain Redware | 1 | | | | 1 |
| Tsegi Orangeware | 7 | | | | 7 |
| total | 97 | 187 | 4 | 10 | 298 |

Notes: this ceramic sample represents an all observed inventory of sherds located on the south and east margins of the western roomblock at Kello Blancett. Ceramics were also inspected on the eastern roomblock, but were not tabulated. The assemblage on the eastern housemound is like that of the western housemound, indicating contemporaniety and strongly implying coeval functioning of the two housemounds as a "site" similar to the West and East Ruins at the Aztec Ruins National Monument. No Chuskan component was observed in either the decorated or culinary ceramics. Lithics were observed but not tabulated. The ceramic assemblage suggests an occupation date of ca. A.D. 1090-1300, with construction possibly as early as A.D. 1050. Comments by Grove, surveying Kello Blancett for SJVAP in 1974 (as ENM 5105), notes, but does not tabulate, the presence of McElmo B/w, Gallup B/w, Mancos B/w, Cortez B/w, and Wetherill B/w and assigns it to the PII-III period from A.D. 900-1300. This ruin is contemporary with the construction and occupation of the Aztec Ruins (LA 45).




**KELLO BLANCETT RUIN (LA 59967)**

**Western Housemound**

Table 4. Ceramic counts from LA 8619.

| Ceramic Type | Forms B | J | L | O | N |
|---|---|---|---|---|---|
| Pothole Sample: | | | | | |
| Grayware: | | | | | |
| plain gray | | 209 | | | 209 |
| Lino Gray | | 2 | | | 2 |
| Bennett Gray | | 31 | | | 31 |
| wide neckbanded | | 9 | | | 9 |
| Sheep Springs Gray | | 1 | | | 1 |
| Tocito Gray | | 7 | | | 7 |
| narrow neckbanded | | 78 | | | 78 |
| Gray Hills Banded | | 23 | | | 23 |
| neck corrugated | | 18 | | | 18 |
| Newcomb Corrugated | | 14 | | | 14 |
| Capt. Tom Corrugated | | 1 | | | 1 |
| indented corrugated | | 24 | | | 24 |
| Chuskan indented corrugated | | 3 | | | 3 |
| brownware ? | | 2 | | | 2 |
| Decorated Ware: | | | | | |
| Kiatuthlanna B/w | 1 | | | | 1 |
| Early Red Mesa B/w | 1 | 1 | | | 2 |
| Cortez B/w | 1 | | | | 1 |
| Red Mesa B/w | 5 | 2 | | | 7 |
| Mancos B/w | 2 | 1 | | | 3 |
| PI-II M/w | 22 | 9 | | | 31 |
| Kana'a B/w | 1 | 1 | | | 2 |
| Tunicha B/w | 4 | 1 | | | 5 |
| McElmo B/w | 2 | | | | 2 |
| Mesa Verde B/w | 1 | | | | 1 |
| PI-II Chuskan C/w | 3 | 2 | | | 5 |
| PII-III San Juan C/w | 3 | | | | 3 |
| whiteware | 27 | 46 | | 2 | 75 |
| San Juan Redware | 8 | | | | 8 |
| total | 81 | 485 | — | 2 | 568 |

Table 4 cont., LA 8619.

| Ceramic Type | Forms B | J | L | O | N |
|---|---|---|---|---|---|
| Housemound Sample 1: | | | | | |
| Grayware: | | | | | |
| plain gray | | 3 | | | 3 |
| narrow neckbanded | | 1 | | | 1 |
| Capt. Tom Corrugated | | 1 | | | 1 |
| indented corrgated | | 9 | | | 9 |
| Decorated Ware: | | | | | |
| Early Red Mesa B/w | 1 | | | | 1 |
| Cortez B/w | 1 | | | | 1 |
| Mancos B/w | | 1 | | | 1 |
| PI-II M/w | 1 | | | | 1 |
| Toadlena B/w | 1 | | | | 1 |
| Mesa Verde B/w | 3 | | | | 3 |
| PII-III San Juan C/w | | 1 | | | 1 |
| whiteware | 1 | 2 | — | — | 3 |
| total | 8 | 18 | | | 26 |
| Housemound Sample 2: | | | | | |
| Grayware: | | | | | |
| plain gray | | 5 | | | 5 |
| Bennett Gray | | 1 | | | 1 |
| wide neckbanded | | 1 | | | 1 |
| narrow neckbanded | | 4 | | | 4 |
| Gray Hills Banded | | 2 | | | 2 |
| neck corrugated | | 2 | | | 2 |
| Capt. Tom Corrugated | | 1 | | | 1 |
| indented corrugated | | 3 | | | 3 |
| Decorated Ware: | | | | | |
| Cortez B/w | 1 | | | | 1 |
| Gallup B/w | | 1 | | | 1 |
| whiteware | 1 | 5 | | | 6 |
| San Juan Redware | 1 | | — | — | 3 |
| total | 3 | 25 | | | 28 |
| Housemound Sample 3: | | | | | |
| Grayware: | | | | | |
| plain gray | | 1 | | | 1 |
| Bennett Gray | | 1 | | | 1 |
| wide neckbanded | | 2 | | | 2 |
| indented corrugated | | 11 | | | 11 |
| Chuskan indent. corrug. | | 2 | | | 2 |
| Decorated Ware: | | | | | |
| Mesa Verde B/w | 8 | | | | 8 |
| PII-III San Juan C/w | 1 | 2 | | 1 | 4 |
| whiteware | 1 | | | | 1 |
| Wingate Poly | 1 | | | | 1 |
| White Mountain Redware | 1 | | — | | 1 |
| total | 12 | 19 | | 1 | 32 |

Table 4 cont., LA 8619.

| Ceramic Type | Forms B | J | L | O | N |
|---|---|---|---|---|---|
| Trash Sample 1: | | | | | |
| Grayware: | | | | | |
| plain gray | | 24 | | | 24 |
| Bennett Gray | | 5 | | | 5 |
| wide neckbanded | | 3 | | | 3 |
| Tocito Gray | | 1 | | | 1 |
| narrow neckbanded | | 14 | | | 14 |
| Gray Hills Banded | | 2 | | | 2 |
| neck corrugated | | 6 | | | 6 |
| indented corrugated | | 1 | | | 1 |
| Decorated Ware: | | | | | |
| Early Red Mesa B/w | 3 | | | | 3 |
| Red Mesa B/w | 3 | 1 | | | 4 |
| Mancos B/w | 1 | | | | 1 |
| PI-II M/w | 10 | 4 | | | 14 |
| Kana'a B/w | 1 | | | | 1 |
| PI-II Chuskan C/w | 2 | 1 | | | 3 |
| whiteware | 10 | 10 | | 1 | 21 |
| Deadmans B/r | 1 | | | | 1 |
| San Juan Redware | 3 | | — | | 3 |
| total | 34 | 72 | | 1 | 107 |
| Trash Sample 2: | | | | | |
| Grayware: | | | | | |
| plain gray | | 30 | | | 30 |
| Bennett Gray | | 13 | | | 13 |
| wide neckbanded | | 2 | | | 2 |
| Sheep Springs Gray | | 1 | | | 1 |
| narrow neckbanded | | 10 | | | 10 |
| Gray Hills Banded | | 6 | | | 6 |
| neck corrugated | | 1 | | | 1 |
| Newcomb Corrugated | | 1 | | | 1 |
| indented corrgated | | 7 | | | 7 |
| Decorated Ware: | | | | | |
| Early Red Mesa B/w | | 1 | | | 1 |
| Red Mesa B/w | 1 | | | | 1 |
| Cortez B/w | 2 | | | | 2 |
| PI-II M/w | 6 | 5 | | | 11 |
| McElmo-Mesa Verde B/w | 1 | | | | 1 |
| PII-III San Juan C/w | 1 | | | | 1 |
| PI-II Chuskan C/w | 1 | 1 | | | 2 |
| whiteware | 5 | 11 | — | — | 16 |
| total | 17 | 89 | | | 106 |

Table 4 cont., LA 8619.

| Ceramic Type | Forms B | J | L | O | N |
|---|---|---|---|---|---|
| Peckham's Ceramic Sample: | | | | | |
| Grayware: | | | | | |
| Lino Gray | | | | | 8 |
| Chapin Gray | | | | | 24 |
| Bennett Gray | | | | | 8 |
| Mancos Gray | | | | | 11 |
| Tocito Gray | | | | | 2 |
| Gray Hills Banded | | | | | 4 |
| Moccassin Gray | | | | | 3 |
| Newcomb Corrugated | | | | | 3 |
| Capt. Tom Corrugated | | | | | 2 |
| Mancos Corrugated | | | | | 14 |
| Blue Shale Corrugated | | | | | 2 |
| Mesa Verde Corrugated | | | | | 17 |
| Hunter Corrugated | | | | | 2 |
| Decorated Ware: | | | | | |
| Red Mesa B/w | | | | | 4 |
| Cortez B/w | | | | | 11 |
| Mancos B/w | | | | | 12 |
| Pena B/w | | | | | 1 |
| McElmo B/w | | | | | 6 |
| Mesa Verde B/w | | | | | 4 |
| Great Bend B/w | | | | | 2 |
| La Plata B/r | | | | | 1 |
| San Juan Redware | | | | | 2 |
| Puerco B/r | | | | | 1 |
| total | | | | | 1 |
| | | | | | 145 |

Table 4 cont. Ceramics from LA 8619.

| Ceramic Type | Forms B | J | L | O | N |
|---|---|---|---|---|---|
| Summary of 1987 IMG Counts: | | | | | |
| Grayware: | | | | | |
| plain gray | | 272 | | | 272 |
| Lino Gray | | 2 | | | 2 |
| Bennett Gray | | 51 | | | 51 |
| wide neckbanded | | 17 | | | 17 |
| Sheep Springs Gray | | 2 | | | 2 |
| Tocito Gray | | 8 | | | 8 |
| narrow neckbanded | | 107 | | | 107 |
| Gray Hills Banded | | 33 | | | 33 |
| neck corrugated | | 27 | | | 27 |
| Newcomb Corrugated | | 15 | | | 15 |
| Capt. Tom Corrugated | | 3 | | | 3 |
| indented corrugated | | 55 | | | 55 |
| Chuskan indented corrugated | | 5 | | | 5 |
| brownware ? | | 2 | | | 2 |
| Decorated Ware: | | | | | |
| Kiatuthlanna B/w | 1 | | | | 1 |
| Early Red Mesa B/w | 5 | 2 | | | 7 |
| Red Mesa B/w | 9 | 3 | | | 12 |
| Cortez B/w | 5 | | | | 5 |
| Mancos B/w | 3 | 2 | | | 5 |
| Gallup B/w | | 1 | | | 1 |
| PI-II M/w | 39 | 18 | | | 57 |
| Kana'a B/w | 2 | 1 | | | 3 |
| Tunicha B/w | 4 | 1 | | | 5 |
| Toadlena B/w | 1 | | | | 1 |
| McElmo B/w | 2 | | | | 2 |
| McElmo-Mesa Verde B/w | 1 | | | | 1 |
| Mesa Verde B/w | 12 | | | | 12 |
| PI-II Chuskan C/w | 6 | 4 | | | 10 |
| PII-III San Juan C/w | 5 | 3 | | 1 | 9 |
| whiteware | 45 | 74 | | 3 | 122 |
| Wingate Polychrome | 1 | | | | 1 |
| White Mountain Redware | 1 | | | | 1 |
| Deadmans B/r | 1 | | | | 1 |
| San Juan Redware | 12 | | | | 12 |
| total | 155 | 708 | — | 4 | 867 |

Notes: sampling at this site has been extensive over the past few years with counts by Peckham (1963, LA-ARM file), L. Whalley in 1977-78 (Whalley 1980) and the present sample. Peckham's counts are a grab sample from the general surface, while the other two may be considered "measured" grab samples with controls maintained for the areas sampled, but sample grids were selectively and not randomly located which would have helped ensure unbiased representations. Whalley's sample came from a test grid on the east side of the site (see enclosed map) roughly in the vicinity of the

pothole sample and trash sample 1 in these counts. In this respect Whalley's sample is clearly not representative of the ceramics and occupation at LA 8619. The present sample attempted a broad coverage of the site in both depositional and spatial contexts with differing areas of ceramic profile intentionally included. Because of the abundant trash on the surface at LA 8619, these counts represent but a small sample of the material available.

The derivation of Whalley's information on LA 8619 is important here because her conclusions that the site represents a Chacoan outlier (Whalley 1980:36) are at odds with the current finding. LA 8619 was included as part of Eastern New Mexico University's testing program for "Chacoan" ceramic exchange in the San Juan-Animas-La Plata drainages (as ENM 5030). A map was made (ibid:Figure 25) and included herein, the site was located (ibid:Figure 19), and the testing of the ruin assigned it to the earliest time group in Whalley's time groups as derived from cluster analysis (ibid:70). Whalley placed the occupation of LA 8619 from A.D. 900-1050 based on the ceramic sample and the presence of "Type II" masonry (Whalley's masonry types shown in Figure 14). Whalley gives no sample frequencies, but rank ordering of decorated ceramics suggest the following trend from most to least abundant (ibid:Tables 5, 7): Cortez B/w, Red Mesa B/w, McElmo B/w, Mancos-Gallup B/w, Piedra B/w, Mesa Verde B/w. Cortez and Red Mesa B/w are clearly the most abundant of the decorated ceramics, although the exact proportion is unclear, because the raw data are not given. These types also represent the main group of identifiable ceramics in Peckham's and the present counts.

Another index of comparison is Whalley's counts for Chuskan culinary at LA 8619 (ibid:Table 8). Whalley shows 12.9% of the utility ware is of Chuskan origin. Relative frequency of Chuskan material in the utility assemblage from the other samples shows the following: pothole - 17.0%, trash 1 - 14.3%, trash 2 - 30.0%, housemound 1 - 7.1%, housemound 2 - 21.1%, housemound 3 - 17.6 %, Peckham - 23.0%, summary count - 19.5%. These figures indicate that a strong Chuskan component is present, usually running between 15 and 25 percent of the culinary assemblage, and that the relative abundance varies over the site probably in respect to differing temporal and depositional components.

Peckham places the site at PI-III. The present counts suggest the site to date from A.D. 800-1300 (also PI-PIII). Whalley indicates dates of A.D. 900-1050. Inspections of all tabulations suggest a multicomponent site as do the more recent maps and notes.

Why has Whalley assigned this ruin status as a Chacoan outlier? In large part this has to do with Whalley's perception of ceramic meaning and attempting to perceive a larger phenomena using a supportive attribute as a primary index. Ceramics cannot be used as the dues ex machina for identifying Chacoan structures and outlying members of the Chacoan system. Whalley's criteria for identification of potential outliers is admittedly weak in both theory and execution as the ceramic material is being taken as the barometer of "Chacoan interaction" (ibid:3-5). Whalley's thesis is a typological study which correlates "nonlocal" ceramics (as defined in a typological framework) with Chaco exchange. An abundance of nonlocal ceramics are taken as an indicator of heavy participation in the Chacoan exchange system, and by extension for "outliers" or key nodes in the exchange system. In this view Chaco is a "trade center" (ibid:7-9) and all

trade stems from Chaco as the hub of the exchange system. This view has been repeatedly shown to be too simplistic (the literature is too vast to list) and not verifiable, but persists.

The second issue has to do with epistomology - in this case how one recognizes or understands an exchange system in terms of pots. The typology used by Whalley is the traditional southwestern system which is based on polythetic sets. One of the inclusions in this "set" is the admission of diverse tempering materials and paste conditions for each type. Identification of various production areas, which is what Whalley proposes to be monitoring (by identifying different types) for the recognition of "exchange", is poorly reflected in this type of study. Rather than a typological study, which fails to separate ceramics on the basis of "source", a provenience study would have been more appropriate. There are, of course, cultural sources, as reflected in the "type" concept, and there are actual geographical sources, as reflected by independant measures such as geological inclusions; the former are so elastic as to be totally elusive while the latter (although possibly very large) are at least concrete. Provenience studies concentrate on identifying primary additives and some key paste conditions that may identify or at least separate differences in ceramic source. This is particularly crucial in regions of high geological diversity such as the San Juan-Animas-La Plata area where sources of markedly distinct rocks (temper), and clays (paste bodies) overlap. The alternative is to arbitrarily call such types as Red Mesa B/w "intrusive" and associate their presence with Chacoan exchange, thereby creating a "system" with no demonstrable foundations. The one tangible measure of ceramic mobility is Whalley's data on Chuskan culinary ware in the study area and at LA 8619, but a rigorous examination of various modes of exchange is not presented or modeled so that no particular mode of commodity movement is indicated, muchless a demonstration of participation in a "Chacoan redistributive system".

A final point in the issue of outlier status is timing. A good bit of the foregoing has been peckish chiding for attempting to recognize outliers from ceramic types, but it is the virtual omission of key Bonito Phase types from the ceramic profile at LA 8619 that sounds a warning. The peak of the Chacoan system, with all the putative exchange of goods, was during the Classic Bonito Phase (A.D. 1020-1120) when Gallup B/w, Chaco B/w, and Chaco-McElmo B/w were the "index" types. All other Bonito style architecture in the San Juan area has been shown to have been from the late portion of this phase into the Late Bonito Phase and to have ceramics representative of the period. Such index ceramics fail to appear at LA 8619, and this would seem to require some explanation as to why such a vital link in the system between the San Juan and La Plata drainages should be initiated and then abandoned during the height of the system; indeed during the very period when great houses were being constructed in the northern San Juan. All other Bonito style structures in the San Juan region exhibit a ceramic component from the late eleventh and early twelfth centuries, although it is usually heavily overlain by Mesa Verde period deposits. Sufficient earlier deposits are exposed that this period, if present, should have been more strongly reflected in the ceramic identifications.

A point of debate was whether LA 8619 represented "Old Fort" as described by Morris (1939:40).

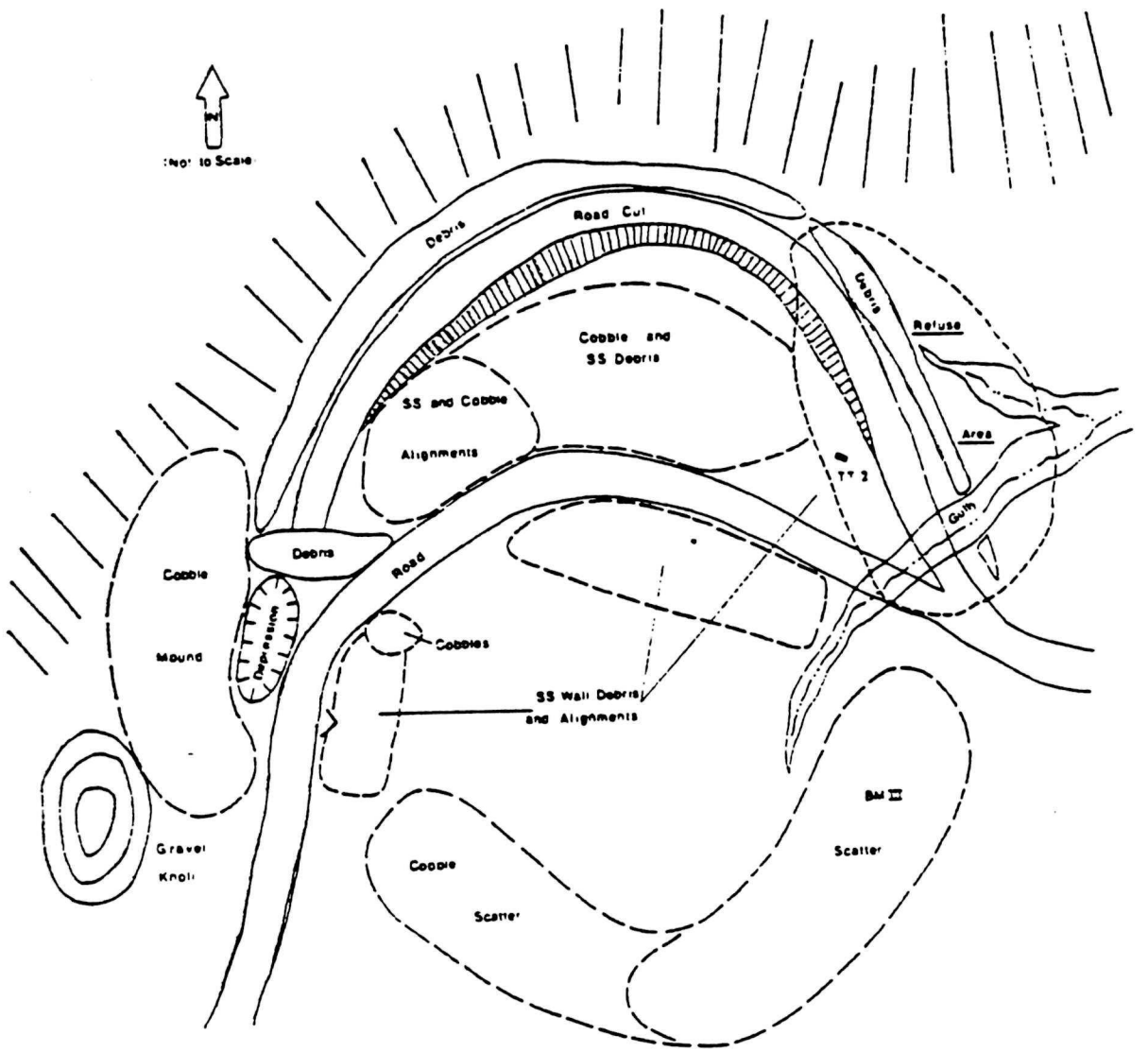
> " In the length of the Animas Valley there are three Mesa Verde habitations, aside from the West Pueblo at Aztec ... . [East Pueblo at Aztec, Flora Vista] while the third, known as Old Fort, occupies the benches of a conical hill south of the confluence of the Animas and the San Juan. The latter reaches to bed rock, and nowhere can be found a sherd of anything but typical Mesa Verde pottery, thus proving that the Old Fort was built during the Mesa Verde dominance of the district."

A very broad regional view might place LA 8619 near the mouth of the Animas and San Juan (it is 2.5 miles upstream). Morris, however, certainly knew the differences in pottery types and his disclaimer of earlier ceramics at Old Fort must be given weight. There is entirely too much earlier ceramic material at LA 8619 for this site to be Old Fort. Tom Bolack Jr., however, likes to talk about the "Fort" at the far west end of the Bolack property which is both Mesa Verdian in occupation and nearer the Animas-San Juan confluence; this may indeed be Old Fort.

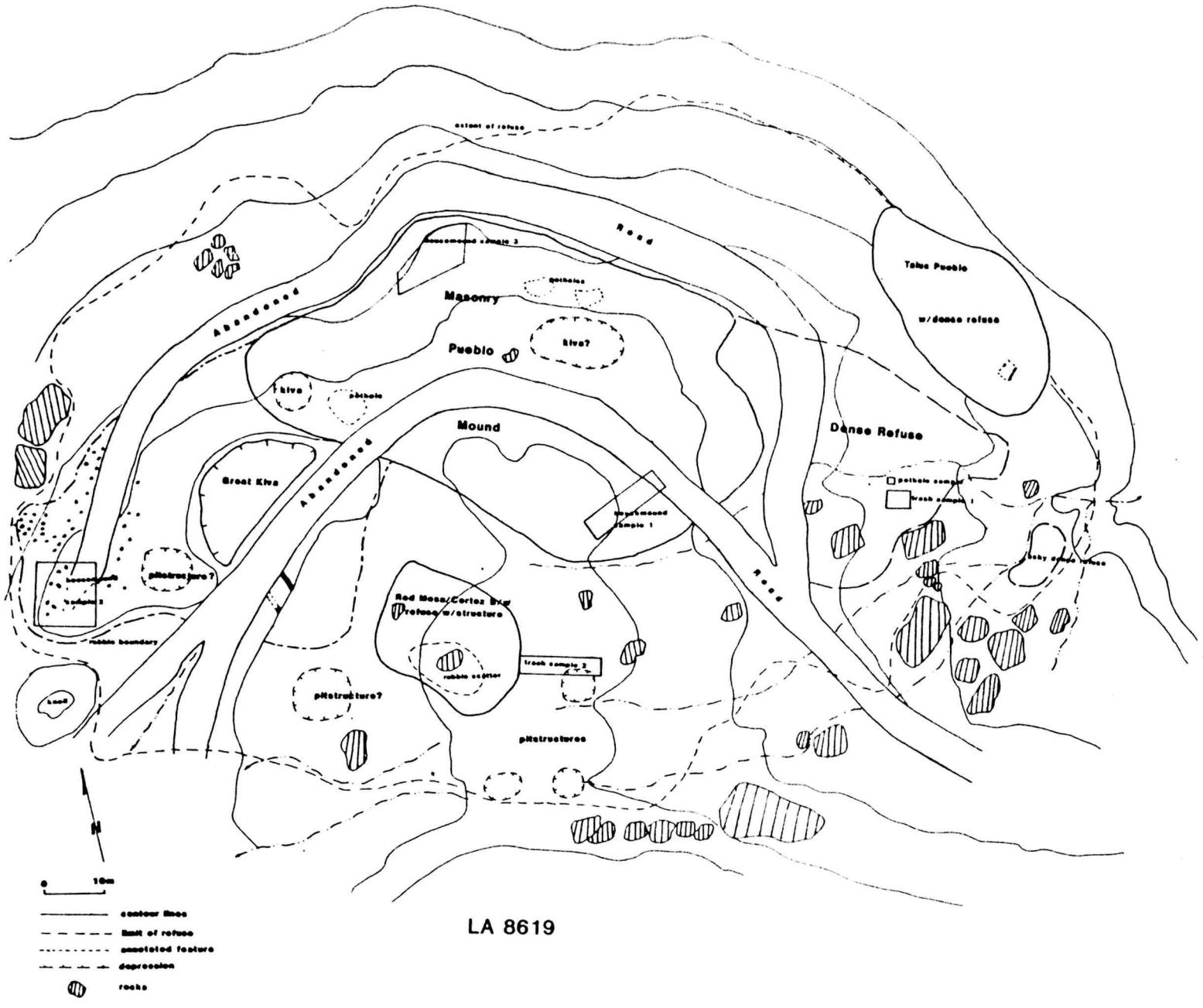
The SJVAP survey apparently failed to discern a Mesa Verde period occupation and building at LA 8619 or a great kiva; these were both recognized in Peckham's survey and the present survey. Based on the present samples, ceramics show a relatively close association with buildings of various periods. Mesa Verde B/w is most associated with a rather large Mesa Verde period structure roughly centered on the crest of the hill and, superimposed over the more extensive earlier occupation. Mesa Verde B/w is the predominate decorated type on all "housemound" transects except #2, located to the west of the great kiva, where 900s and early 1000s sherds were more common. Mesa Verde B/w is located on the more visible sandstone and masonry roomblock and extending down the slope, north toward the San Juan River. Heavy concentrations of 800s, 900s, and early 1000s ceramics are found on the eastern slopes of the site where extensive refuse deposits are found. Another transect, trash sample 2, located in the midden on the southeast edge of the site, likewise showed similar early ceramics, and was associated with an extensive midden and pitstructure depressions. This relatively discrete distribution of ceramics with associated structures has been noted in other sites of long occupation in the Basin (Morris 1939:39; Windes 1982) and is one reason that limited sampling of such extensive sites will fail to monitor the range and variation of ceramics present.

Vandalism and heavy equipment disturbance is extensive at LA 8619 which makes determination of architectural style, plan, and design difficult at best. The overall impression of the site, however, was of a late Mesa Verde period structure built atop an earlier occupation. The main structure, admittedly badly damaged, did show massive construction, but did not show the classic rectilinear form of Late Bonito style architecture commonly seen in the San Juan drainage (e.g. Salmon, Sterling, Aztec, Jaquez, Morris 41). Walls appeared to be thick compound sandstone

masonry probably a single story in height. No fixed peripheral features or roads were noted. Again, given the amount of disturbance in the vicinity, this is not suprising. Aerial photographs from various years should be consulted before such features are dismissed. Excavation would be necessary to fully establish the sequence of building and relationships between various structures and occupational periods.




Whalley's Map of ENm 5030 (LA 8619)


SAN JUAN
RIVER
Masonry
Pueblo
kiva
Mound
Great Kiva
Dense Refuse
Tabo Pueblo
w/dense refuse
Road
Abandoned
pithouse?
pithouses?
10m
contour lines
limit of refuse
excavated feature
depression
rocks

LA 8619

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