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United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

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This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

Late Prehistoric Cultural Developments along the Rio Chama and Tributaries in North-Central New Mexico

B. Associated Historic Contexts

Puebloan Adaptations in the Rio Chama Region during the Period A.D. 1300-1600.

C. Geographical Data

The geographical limits of the area where properties included within this multiple property group exist includes lands shown on the Abiquiu, Canjilon SE, Canones, Chili, El Rito, Ghost Ranch, La Madera, Lyden, Medanales, Ojo Caliente, Polvadeva Peak, San Juan Pueblo, Vallecitos, and Valle Grande Peak USGS 7.5 minute topographic quadrangle maps, in Rio Arriba and Taos Counties, New Mexico. This area encompasses about 875 square miles and includes lands under Bureau of Land Management, U.S. Forest Service, Corps of Engineers, State of New Mexico, Indian, and private control.

☐ See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Signature of certifying official — Date

State or Federal agency and bureau

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register — Date

E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

Name of Context

Puebloan Adaptations in the Lower Rio Chama Region During the Period A.D. 1300-1600.

Introduction

The Rio Chama Region in north-central New Mexico is one of several late prehistoric culture areas in the upper Rio Grande region. The late prehistoric residents of this area are generally considered to have been ancestors of the modern residents of the Tewa Pueblos, San Juan, San Ildefonso, Pojoaque, Nambe, and Tesuque.

The Lower Rio Chama Region is defined here to include the Lower Rio Chama itself, and major named and unnamed tributaries such as the Rio Ojo Caliente, Rio del Oso, El Rito, and Canones Creek. This area is covered by 11 USGS 7.5′ topographic quadrangle maps: the Abiquiu, Canjilon SE, Chili, El Rito, La Madera, Lyden, Medanales, Ojo Caliente, San Juan Pueblo, Vallecitos, and Valle Grande Peak quads, in Rio Arriba and Taos Counties, New Mexico (Figure E.1). These quads encompass an area of about 460,000 acres.

This multiple-property group is organized in the following manner. First there is a discussion of the environmental setting of the study area. Then a discussion of previous research and a culture-historical overview of the study area from preceramic to historical times is presented. A discussion of possible explanations of cultural developments in this region follows. These sections present the historic context to which all the property types (discussed later) belong by virtue of their place in time and space. Seven property types are defined, based on the results of thousands of acres of survey in the study area. Sites belonging to these property types represent all known sites dating to the period indicated in the study area. Since sites belonging to these property types will be nominated on the basis of their actual or potential information producing value, the classes of important information present at sites of the each given type are discussed.

A large portion of the data and much of the text presented in this multiple property nomination was collected and written by John Beal of Southwest Archaeological Consultants during the preparation of a preliminary planning document and draft National Register nomination (Beal 1987). Beal's data cover a somewhat larger area and a longer time period than that selected for purposes of this nomination, but it is felt that those data were useful for presenting a regional overview of the prehistoric cultural resources of the area and time period selected for this nomination. All the data were edited and updated where necessary, and put in a form useful for purposes of completing this nomination.

Environmental Setting

Although the Chama River originates in the mountains of north central New Mexico and southern Colorado, we are concerned only with that portion traversing the geographic breach between the volcanic Jemez Mountains and the sedimentary Tusas, or Brazos Mountains. Between these ranges, riparian environments are evident along the river and its major tributaries, badlands of eroded and sparsely vegetated sediments extend away from the watercourses, shrub forests of juniper and pinon cloak the mesas at the valley fringes, and dark forests of spruce, fir and aspen mark the highlands. Elevations range from 1,713 m (5,620 ft) above sea level at the confluence of the Chama and the Rio Grande to 3,292 m (10,800 ft) at the rim of the Valle Grande near the southern extremity of the study area. Within the study area, the average elevation for the Chama River is 1,768 m (5,800 ft).

☒ See continuation sheet

Access to the lower Chama River is by two primary routes, both of which may be integral to past occupation of the Chama Valley. From the east, the upper Rio Grande Valley offers easy and gradual entrance to the valley at the confluence of the Rio Grande and Chama rivers. From the west, access is through deep canyons and high divides (2,438 m or 8,000 ft) which separate the valley from the San Juan Basin.

Geology: The study area used in Beal's (1987) analysis lies within the Abiquiu/El Rito Embayment, located between the San Juan Basin/Nacimiento Uplift on the west and the Rio Grande trough on the east (Budding et al. 1960). The area is one of "high mesas and low plains intricately dissected by the Rio Chama and its tributaries" (Budding et al. 1960:78). A wide range of sedimentary and igneous strata are exposed along the margins of the river; most pronounced are the basalts that cap the northern foothills of the Jemez Mountains.

Triassic sedimentary rocks of the Chinle formation are exposed in the Chama River Canyon, which forms the western margin of the study area. Both Poleo sandstone and Salitral shale are also evident there (Dane and Bachman 1965). However, almost all of the deposits in the region are of Tertiary age and include extrusive igneous rocks of Sierra Negra basalt (Budding, et al. 1960:85) and Bandelier tuff, which caps the mesas and highland areas. The Santa Fe formation, composed of conglomerates, gravels, sand, siltstones, clay and volcanic ash (Kottlowski 1953), is pervasive also. These latter deposits reach a depth of 1,478 m (4,800 ft) (VTN Environmental Sciences 1978:1-65) and cover much of the study area exclusive of elevated mesas, bordering mountains and the floodplains of local watercourses (Dane and Bachman 1965).

Quarternary terrace gravels and alluvium cover the drainage floodplains and terrace benches. Almost all of these deposits are composed of cobbles and pebbles of granite, gneiss, schist and quartzite. Their composition suggests igneous and metamorphic origin, probably the Brazos Mountains of extreme northern New Mexico (Budding et al. 1960:87). The shallow mantle of silt and fine sand covering these deposits is probably wind laid and derived locally from decomposing sedimentary rocks.

Soils: Three primary soil groups are represented: Pojoaque-Rough Broken Land, Green River-El Rancho-Werlow, and Penistaja-Valent. The Pojoaque-Rough Broken Land group coincides with terraces and dissected uplands bordering the lower Chama and is composed of sandy and clay loams, igneous materials and coarse gravels (NMSU 1973, 1974). This soil group is marked by variability in texture and depth. Green River-El Rancho-Werlow soils range from fine loamy sand to calcareous, sandy clay loam and coincide with the floodplain of the Chama River and the margins of El Rito Creek, the Rio Ojo Caliente and the Rio del Oso. Depths of 1.5 m (5 ft) or more are not uncommon, making it the most suitable for agriculture (NMSU 1973). The Penistaja-Valent soil group is composed of fine sandy loams, clay loams and fine aeolian sediments and usually occur on level to gently sloping up lands on the north and south margins of the study area. The Penistaja-Valent soils group is found between the Pojoaque-Rough Broken Land group and a fourth, less well-represented, group (Basalt Rock Land group) composed of basalt outcrops, and stone and rocky soils. The Basalt Rock Land group primarily occurs on the slopes of higher mesas and mountains bordering the study area.

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Climate: The lower Chama River area has a semiarid climate; Weather Bureau records for the Abiquiu meteorological station indicate an average annual precipitation of 24.6 cm (9.7 in). The greatest proportion (up to 60%) of this moisture occurs during the summer rainy season from May through September. Daily high temperatures at Abiquiu (the center of the study area) average 73 F. in summer and 35 F. in winter (Corps of Engineers 1976). Diurnal/nocturnal temperature variations of 40 F. are not uncommon during the winter or summer months. Hot summers have highs in the 90 F. range, while low winter temperatures may approach 0 F. Frost-free days average approximately 160 (Tuan et al. 1969). Significant in the calculation of frost-free periods are exposure, cold air drainage patterns, and potentials for temperature inversions.

The lower Chama Valley is oriented northwest to southeast and thus is subject to cold air drainage from the surrounding uplands and cold winter winds from the northwest. To some degree, these conditions are lessened by sheltered areas on the terraces north of the river floodplain, which provide southerly exposure. Providing there is sufficient moisture for plant growth, the study area is suitable for horticulture.

Vegetation: The lower Chama River Valley and surrounding areas exhibit a wide diversity of vegetative zones. However, the riparian zone along the permanent and intermittent watercourses is the most significant from a horticultural perspective. There, cottonwood (Populus fremontii), willow (Salix sp.), salt cedar (Tamarix) and Russian olive (Elaeagnus augustifolia) form an overstory for grasses and herbs. In contrast to the lushness of the riparian community, most terrace and upland areas are characteristic of the Upper Sonoran zone. Within this zone, vegetation includes varying densities of pinon (Pinus edulus), juniper (Juniperus monosperma and scopulorum), sagebrush (Artemisia spp.), saltbush (Altriplex canescens), rabbitbrush (Chrysothamnus nauseousus), snakeweed (Gutierrezia sarothrae) and other woody species. Interspersed among the larger plants are grasses (wheat grasses, three-awns, gramas and muhly) and various forbs (asters, globemallow, phlox, russian thistle). Further from the Chama River, particularly to the south, is the Transition zone composed of Ponderosa pine (Pinus ponderosa) and Gambel's oak (Quercus gambelii) with a grass understory. On the south flank of the project area, vegetative species of the Hudsonian life zone occur at elevations above 2,438 m (8,000 ft). Spruce (Picea englemannii), fir (Pseudotsuga menziesii), aspen (Populus tremuloides), and various woody shrubs and berries compose the dominant cover.

Each of the life zones can be reached easily by foot in a single days journey from the banks of the Chama River (ca. 22-26 km or 10 - 12 mi). However, it should be noted that the Upper Sonoran zone is the most predominant vegetational zone within the area and is typified by pinon-juniper woodland and open sage grasslands.

Fauna: Just as the vegetational environment of the Chama River region is varied, so are the faunal species. Species range from black bear and elk (formerly) in the higher elevations to mule deer, beaver, pronghorn antelope and mountain sheep at lower altitudes. Deer, antelope and mountain sheep were common in the area historically, but today only various species of rabbit, rodents and other small mammals remain in any numbers. Carnivores common to the area included cougar, coyote, bobcat and wolf (VTN Environmental Sciences 1978). As the result of competition with livestock during the past 200 years, many of the larger ungulates and carnivores (including the omnivorous black bear) now exist in significantly reduced numbers or are absent from the area altogether.

Avian species are all well represented throughout the Chama Valley. Thrashers, doves, quail, geese, owls, swallows, larks, sparrows and various species of ducks may be observed during different seasons of the year. Raptors include several species of hawk and both the bald and golden eagle. Reptiles and amphibians are numerous as well, particularly within the riparian and Upper Sonoran vegetative communities. Snakes and lizards populate the latter zone, while salamanders, toads and frogs are more common in the former. The area's permanent watercourses support populations of suckers, catfish and trout. (Complete listings of all faunal resources within the Chama drainage system may be found in Findley et al. 1975 and VTN Environmental Sciences 1978).

Economic Resources

In addition to the potentials for hunting and horticulture, other human subsistence and technological resources are present in the physical environment. The following discussion identifies some of the potential environmental resources for human populations which may have affected the nature of their occupation and their location within the study area.

Subsistence resources are defined as those that could have contributed directly to the diet of past Chama Valley residents. In addition to faunal food sources, a wide variety of plant foods were available. Edible species found in the more common riverine and pinon-juniper zones, along with their specific use correlates, are indicated in Table E.1. Ethnographic data suggest that these species were important during 1) the pioneering stages of settlement, 2) times of crop failure, 3) late winter and spring food shortages, and 4) the movement of population groups from one location to another.

Technological resources include materials used in the manufacture of tools or housing, or that may have been modified by humans for specific functions. Categories of technological resources and their potential uses are presented in Table E.2.

As is apparent by this information, a large number of potentially valuable resources occur within the area of the Lower Chama River and its tributaries. The following two chapters provide background information for when and how the local environment was exploited by prehistoric people. Data is derived from archeological and historic research.

TABLE E.1 Edible Plant Species

Scientific Name	Common Name	Plant-part Utilized	Preparation	Seasonal Availability
Amaranthus	Amaranth, Pigweed	Greens	Boiled, dried for winter use	Early Summer
Astragalus spp.	Milkvetch	Pods, ("fruits")	Raw, boiled, dried for winter use	Fall
		Roots	Scraped and eaten raw, ground	July-August (Rainy Season)
Chenopodium fremontii	Lambsquarter	Greens	Raw, boiled	Early Summer
Chrysothamnus nauseasus	Rabbitbrush (?) flower heads	Unspecified	Unspecified	Early Fall
Cleome serrulata	Rocky Mountain Beeweed	Greens and pods	Boiled, greens often dried for winter use	Early Summer-Midsummer
		Seeds	Ground or cooked, sun-dried before use	Fall
Descurainia pinnata	Tansymustard	Greens	Boiled	Spring
		Seeds	Parched and ground	Late Summer
Other *Eriogonum* spp.	Eriogonum	Greens	Boiled	Midsummer
Halianthus annuus L.	Common Sunflower	Seeds	Raw, roasted and/or ground	Early Fall
Juniperus *monospermae sarg.*	One-seed Juniper	Berries	Raw, boiled or dried, ground	Fall
Lycium pallidum	Tomatillo, wolfberry	Berries	Raw, boiled, or dried for winter use	Late Summer
Mammilaria spp.	Pincushion, Ball cactus	Whole plant	Spines are burned off	Late Summer
Mantzelia multiflora	Evening Star	Seeds	Ground	Summer

Opuntia Polycantha	Prickly Pear	Fruits	Raw, boiled or roasted	Late Summer
		Young joints, or stems	boiled, sun-dried and ground or stored for winter use	Spring
Opuntia Whipplei	Cholla	Fruits	Raw, boiled or roasted	Late Summer
		Young Joints or stems	Boiled, sun-dried and ground, or stored for winter use	Spring Early Summer
Otyzopsis hymenoides	Indian Ricegrass	Seeds	Parched and ground	Midsummer-Late Summer
Oxytropis spp.	Oxytropis	Seeds	Parched and ground	Late Summer-Early Fall
Pinus edulis Englem.	Piñon	Nuts	Raw, more often raosted and maybe ground, also stored for winter use	Fall
Portulaca oleraceae L.	Common Purslane	Greens	Boiled or dried for winter use	Midsummer
		Seed	Ground	Late Summer
Quercus gambilii	Gambel Oak	Acorns	Raw, boiled, roasted, dried and ground	Fall
Rhus trilobata	Skunkbush Three-leaved Sumac	Berries	Raw, cooked, or dried and ground, may be stored for winter use	Summer
Sporobolus cryptandrus	Sand Dropseed	Seeds	Parched and ground	Late Summer
Yucca baccata	Broadleaf Yucca Soapweed, Blue Yucca	Fruits	Raw, boiled, baked or dried, cooked and stored for winter use	Sept.-Oct.

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		Stems and young leaves	Boiled, or raw	Late Spring
		Flower buds	Roasted	Late Spring
Yucca navajoa	Narrowleaf Yucca	Young flowering stems	Raw or cooked	Late Spring

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TABLE E.2. Technological Resources and Use Correlates

	Resources
Stone For Construction	River Terraces, sandstone outcrops volcanic tuff deposits
For Tools	River terrace cobbles, quarries on Pedernal mountain (chert), nodules among volcanic deposits (Polvadera Peak obsidian).
Bone For Tools	Native fauna.
Wood For Construction	Piñon-Juniper and Ponderosa vegetative zones, as well as cottonwood and willow along water courses.
For Tools	Same as above.
Fiber Multiple Uses	Local plants including yucca from the piñon-juniper zone and various roots or bark from native plant species
Clays For Pottery	Natural deposits along watercourses and associated with sedimentary rocks at the valley margin.
Arable Land	Primarily within the floodplains of the Chama River and its major tributaries. River terraces above the floodplain also appear to have been used as dry farms.

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Previous Research

The first mention of archeological remains to the north and west of the Rio Grande Valley was alluded to by Velez de Escalante. Escalante, whose notoriety derives from explorations as far as central Utah in 1776, referred to abandoned ruins on his journey. Specifically: "The Tehuayo (San Juan River country of northwestern New Mexico) . . . is nothing else than the land by way of which the Tihuas (Tiwa), Tehaus (Tewa) and other Indians transmigrated to this kingdom (New Mexico, particularly the Rio Grande Valley)" (Velez de Escalante 1778). He supported this statement by referencing similarities in village plan, pottery design and manufacture, and traditional beliefs evident among the historic pueblos of New Mexico. Unwittingly, Velez de Escalante was the first to raise the issue of Rio Grande Puebloan origins, a problem that has not yet been resolved.

Nearly 100 years after Spaniards journeyed into the periphery of Spains' new world holdings, H. C. Yarrow visited Poshuingue ruin near present day Abiquiu in 1874. As a member of Wheelers 40th Parallel Expedition, Yarrow, like Escalante before him, explored and described the land and resources. His account of Poshuingue (Poshu) provides measurements, comments on local resources, and discusses the recovery of mortuary remains for scientific study (Yarrow 1879). Although not complete, his description is accurate enough for identification of the ruins; the location of Poshuingue is indicated on expedition maps.

In 1885, pioneer southwesternist Adolph Bandelier explored the Lower Chama Valley. He visited, described and sketched maps of [redacted] and Sapawe on [redacted], Bandelier described both Abiquiu and Poshuingue ruins (Bandelier Journals for August 25-31, 1885). Of particular interest in the journals is the mention of "upper ruins" at Abiquiu and acknowledgement of Yarrow's previous visit to Poshu. With Bandelier's observations, the pace of archeological documentation and discovery quickened. In 1906, Edgar Hewett (School of American Archeology, School of American Research/Museum of New Mexico) published descriptions and maps of ten abandoned pueblos in the Lower Chama drainage (Hewett 1906). Among these ruins were five that had not been described previously: Ku, Te'ewi, Tsiping, Yunque and cobble outlines [redacted]. Although the latter were documented by Hewett as ruined habitations, other visitors suggest the cobbles are remains of extensive prehistoric garden plots (cf. Bandelier August 26, 1885; Hibben 1937:17; Gauthier 1981).

Four years, later, in 1910, J.P. Harrington (Bureau of American Ethnology) conducted field investigations to discover Tewa names for geographic locations and points of interest in the north-central portion of the Rio Grande Valley and its major tributaries (Harrington 1916). In the course of interviews with members of San Juan, Santa Clara, San Ildefonso, Nambe and Tesuque pueblos various important landmarks were identified. Abandoned ruins, along with traditional beliefs concerning them, were also documented and traditional Tewa names assigned to each ruin. (The forms used in this document come from Harrington's Tewa designations as used currently.) Of the fifteen ruins noted by Harrington, eight were

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undocumented: Mariana, El Rito, Tsama, Kap, Fupore, Pesedeuinge, Nute' and Ponsipa'akeri. As indicated by Fupore ruin, although usually quite accurate, in some instances Harrington's ethnogeography may not have been substantiated by field visits. Echoing Velez de Escalante, Bandelier and Hewett, Harrington reinforced the time depth of Tewa occupation in the vicinity of the Rio Chama/Rio Grande confluence (Harrington 1916:38).

Also in 1910, the School of American Archaeology (later the School of American Research) conducted some excavations [redacted]. These excavations apparently occurred at Posi (LA 632), and at least one other site. The only documentation on these excavations is in the form of the 1910 annual report of the school, two letters from Sylvanus Morley, who supervised the actual digging, to Edgar Hewett, head of the school and a map in the site survey room of the Historic Preservation Division showing the locations of test trenches and test pits at Posi. The artifacts from these excavations are presumably in the Museum of New Mexico collections.

In the second decade of the twentieth century, scientific excavations began in the lower Chama Valley. Although surface collection techniques were used by Yarrow and perhaps others, J.A. Jeancon (El Paso County Pioneer Association of Colorado, Bureau of American Ethnology) was apparently the first archeologist to conduct excavations in the region. In 1911, with the assistance of four Santa Clara Indians and two anglo field associates, 60 rooms of Pesedeuinge (Pesed)[redacted]were excavated (Jeancon 1912). Jeancon returned to the Chama in 1919 to conduct excavations at Poshuingue (Poshu) where he and another crew of Santa Clara workers cleared 130 rooms (Jeancon 1923). His work provided accurate description, informant data, and other information pertinent to both Pesed and Poshu excavations. Jeancon, as did Bandelier and Hewett, speculated on the interrelatedness of Chama River pueblos with those of the Pajarito Plateau and the San Juan country. In the latter case he stated "Poshu marks one of the steps in connecting the Rio Grande country with country farther west, possibly even the San Juan drainage" (Jeancon 1923:76).

Following a ten year hiatus during the 1920's, two investigators affiliated with the Museum of New Mexico began new studies along the lower Chama River. Between 1929 and 1933, Robert Greenlee and H.P. Mera revisited many of the known sites, and Greenlee conducted excavations at Tsama pueblo (Greenlee 1930a,b; Mera 1934). Twelve rooms at Tsama were excavated under Greenlee's supervision (Greenlee 1930b) and in a companion piece to that work he reiterated and redescribed Chama River pueblo ruins (Greenlee 1930a). Three previously undescribed sites were included: [redacted] (possibly [redacted]

Over a period of several years, H.P. Mera visited the larger pueblos along the Chama and throughout the north-central Rio Grande. Those investigations resulted in the identification of the 'Biscuit ware area', whose definition is based on ceramic materials and general village plan (Mera 1934:2). The Chama subdivision of the Biscuit ware area includes the [redacted] (Mera 1934:3). Mera's primary contribution, however, is a seriation of recognizable ceramic types for the period between A.D. 1200 and 1600. Using Kidder and Amsden's Pecos chronology (Kidder 1932), he established beginning and ending dates for specific ceramic types relative

to other types. As a result, Mera and later investigators were able to differentiate between occupational periods within and between sites. Although these 'periods' are not correlated with actual calendrical dates, seriation of ruins in the Biscuit ware area provides an order of occupation. The resulting seriation suggests a gradual contraction of the Biscuit ware area toward villages on the Rio Grande between A.D. 1400 and 1600.

At approximately the same time as Mera's and Greenlee's studies, Frank C. Hibben (University of New Mexico) conducted an aerial survey along the Chama and excavated Riana Ruin. Hibben segregated ruins along the river and its tributaries on the basis of general ground plan and ceramic characteristics. The latter trait (ceramics) includes elements of Mera's definition of Biscuit ware chronology and resulted in the recognition of three distinct periods of puebloan occupation and/or construction. These periods are described below with their distinctive traits:

1. Wiyo ruins - A small quadrangle with one opening. A single kiva of stone masonry construction with quadrangular outbuildings. Examples - Riana Ruin, Palisade Ruin, Kap.

2. Biscuit ware ruins - Large in size and built around quad-rangles or plazas of adobe construction with boulder foundations and a large number of kivas. Examples - Tsiping, Abiquiu, Poshuingue, Tsama, Sapawe, Cerro Colorado, Pesedeuinge, Ku, Te'ewi, Hupobi, Pose'uinge, Nute, Ponsipa'akeri and Yunque.

3. Tewa Polychrome and historic ruins - Quadrangles broken into houseblocks and pseudostreets of adobe construction with mission buildings. Examples - Nute', Howiri, Yunque, Mariana.

Tree-ring dates from Riana Ruin indicate its initial construction circa A.D. 1335 and abandonment shortly after 1348 (Hibben 1937:49; Stallings 1937:54). Chronometric dates from later excavations at Palisade Ruin (Peckham 1959) and Kap (Luebben 1953) suggest occupation there during the first half of the fourteenth century. At Kap, the presence of pithouse remains suggested to Luebben that pithouses preceded surface room construction.

Te'ewi, a Biscuit ware ruin at the confluence of the [redacted] were partially excavated during 1950-51. Both studies were conducted by the Laboratory of Anthropology, Museum of New Mexico with cooperation from the National Park Service, the University of New Mexico and the Soil Conservation Service. Each site is located on patented land and the approval and cooperation of local landowners was necessary.

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Eighteen rooms and four subsurface structures (kivas or pithouses) were excavated at Kap, also known as Leafwater Pueblo (Luebben 1953:9). Excavations at Te'ewi exposed 27 rooms, four kivas and several outlying shrine features (Wendorf 1953:36). Both pueblos appear to have been occupied during the thirteenth century; however, Kap was abandoned circa A.D. 1400 (the end of Wiyo period), while Te'ewi continued with new construction until approximately A.D. 1500. Significant findings of these studies are as follows:

1. "It seems probable that this apparent sudden increase in population (between 1350 and 1400) was due to the aggregation of small groups living in adjacent areas into larger units located within the valley proper" (Wendorf 1953:9).

2. " . . . there is little evidence which might indicate a migration from any distant area" (Wendorf 1953:94).

3. "It is tempting to suggest that a major calamity befell the area, perhaps the appearance of nomadic raiders or internecine warfare (after A.D. 1500), since excavations . . . have produced evidence of hasty abandonment" (Wendorf 1953:94).

4. "It seems probable that the survivors of the Chama Pueblos moved eastward to the Rio Grande . . ." (Wendorf 1953:94).

Before the end of the 1950's, Palisade Ruin was partially excavated prior to [redacted] (Peckham 1974). Twenty-seven rooms and one kiva were exposed in 1958. Chronometric dates from the Wiyo period ruin indicate occupation circa A.D. 1312-1315, and architectural traits suggest planned construction by a relatively large group (Beal 1980:93). Overall occupation was short, yet abandonment appears to have been unhurried (Peckham 1959:15).

During the 1960's, an archeological field school sponsored by the University of New Mexico conducted survey and excavation at Sapawe[redacted] Descriptive field reports (Snow 1963) are the only available records at this time; however, a final project report was in preparation by Dr. Florence Ellis prior to her death. Also during this period, an additional archeological survey in the Chama Valley was conducted for the New Mexico Highway Department (Ingram 1962). A number of small pueblos, activity sites with hearths, chipped stone concentrations; ceramic scatters, shrines, and historic (Hispanic) buildings were documented.

Between 1975 and 1980, areas along the lower Chama drainage and its tributaries were investigated a number of times. [redacted], excavations at Ponsipa'akeri were begun by Occidental College and continued for two summers (Buge' 1978, 1979). A total of seven rooms, a portal and kiva trench were exposed, and several hundred individual cobble terrace areas were identified [redacted] from Ponsipa'akeri north to Howiri. The Laboratory of Anthropology, Museum of New Mexico,

under contract with the New Mexico Highway Department, supervised excavations at Howiri during 1978 and 1979. Widening of the US 285 and NM 96 intersection, where the site is located, prompted the excavation of 15 rooms and several plaza locations (Fallon and Wening 1987). Significant advances were made with respect to identifying both pre-Pueblo occupations and horticulture and subsistence activities. Surveys and excavations in the [redacted] contributed to understanding the extent and intensity of the Archaic occupation that occurred hundreds of years before the first Wiyo ruins (Schaafsma 1975, 1976). These studies also identified historic Indian encampments (Schaafsma 1978) and developed the first comparative base for discussions of ethnic identity for the historic period. In the central portion of the study area, linear surveys in advance of transmission line construction resulted in the documentation of nonhabitational activity sites and supposed agricultural loci (Powell 1977; Fiero 1978; Lang 1979). In one case, excavations at a garden location of [redacted] provided the first qualitative information on horticultural potentials associated with cobble-bordered terraces (Lang 1980).

As is apparent, the focus of archeology for more than 100 years has been the large architectural remains of the Pueblo occupation; only in the past 20 years have less substantial sites been recognized. Many of these sites relate to Pre-Pueblo occupation, nevertheless, a significant portion of these can be associated with the villages and towns of the fourteenth and fifteenth centuries. These sites can contribute significant information despite their small size and nondistinctive material remains and may provide data for understanding the founding, maintenance and abandonment of the Chama pueblo ruins.

Cultural - Historical Overview

Pre-Pueblo

Small human populations may have frequented the study area during the late Paleoindian period (ca. 9000 B.C.). Although no diagnostic artifacts from this period have been recovered from the immediate vicinity of the lower Chama River, the presence of Folsom, Clovis and Meserve projectile points in the Piedra Lumbre Valley suggests a transitory, early occupation (Ellis 1975:22; Schaafsma 1976). Sites containing these projectile points have not been excavated, and it is entirely possible that these artifacts may be curate items deposited by later, better represented groups. Nevertheless, given the recovery of distinctive projectile points and the identification of Paleoindian sites in adjacent areas, particularly the Rio Grande Valley (Judge 1973), Paleoindians probably visited the area. The fact that these sites are located in valleys or plains suggests that the Chama River drainage probably offered little attraction for hunters pursuing now extinct horses, mammoth, bison and camel. In the study area, the amount of grassland that could support these fauna is restricted; such faunal populations were probably small and thus easily over-hunted.

Whereas the project area may have offered little attraction to big game hunters during the late Pleistocene, the situation may have changed with increasing regional desiccation between 8600 and 5000 B.C. (Mehringer 1967; Irwin-Williams 1979:31). During this period, the extent of the grasslands which supported those large mammals was reduced, and changes occurred in subsistence economics of human groups. A move toward broadly based foraging and hunting is indicated (Irwin-Williams 1967, 1973), and some doubt exists as to the continuity of local populations between the Paleoindian and Archaic (ca. 6000 B.C. - A.D. 600) periods (cf. Cordell 1978:25). Evidently, the decline and migration and/or extinction of many large animals forced human populations to exploit a larger number of environmental zones over wider geographic areas for subsistence. During the late Archaic (3000 B.C. to A.D. 400), evidence for human occupation increased significantly within the study area.

Although diagnostic projectile points from the early Archaic developmental phases (Jay- 5500 - 4800 B.C. and Bajada - 4800 - 3300 B.C.) have been recovered occasionally (Schaafsma 1976:147; Lang 1979:20-22), these are rare and appear in contexts that suggest either transitory occupation or collection by later peoples. Nevertheless, significant evidence of middle and late Archaic occupation has been recovered from the study area. The San Jose phase (3500 - 1800 B.C.) is well represented in the Piedra Lumbre Valley (Warren 1974; Schaafsma 1975, 1976), along the lower Chama in the vicinity of the Ojo Caliente (Powell 1977: Lang 1979), and in the Rio Grande. Later phases of the Archaic sequence are represented as well - the Armijo (1800 - 800 B.C.) (cf. Schaafsma 1976) and the En Medio/Basketmaker II (1800 B.C. - A.D. 400) (Schaafsma 1976; Lang 1979). Throughout the later Archaic period (3500 B.C. - A.D. 400), relatively small populations practiced hunting and foraging, perhaps based on seasonal movements from one environmental zone to another throughout the year (cf. Schaafsma 1976:43-62). Beginning in the Armijo phase, horticultural activities may have been incorporated into the subsistence base (cf. Lang 1979:6); nonetheless, occupant groups remained transhumant throughout the period.

A large number of nondiagnostic lithic sites are known for the region, some of which may reflect late Archaic or Puebloan occupations (cf. Whiteaker 1976). To some degree, the vagueness associated with the late Archaic/Developmental Puebloan transition (ca. A.D. 400) in the study area may be the result of few surveys, lack of recognition by archeologists working in the area prior to 1974, and the concealment of such remains by later Puebloan remains.

Pueblo

With the exception of transitory Basketmaker III/Pueblo I visits, the Chama region seems to have been unoccupied by humans for nearly 900 years. Pithouse architecture reminiscent of the Basketmaker/Pueblo I period has been identified under adobe rooms at Kap (Leafwater), a 'Biscuit ware' pueblo. However, ceramics associated with the pithouses suggest their construction and occupation in the thirteenth century (Luebben 1953:32-33). For all intents, the lower Chama River supported little or no appreciable population between A.D. 400 and 1250.

Puebloan habitation sites first appear in the study area during the late 1200s or early 1300s (Hibben 1937). Termed Wiyo or 'biscuitoid' ruins, these sites reflect a fully developed Puebloan presence without the developmental stages identified for the intervening period in other areas (cf. Wetherington 1964; Frisbie 1967; Reinhart 1968; Blevins and Joiner 1977; Cordell 1977). As a result, the origins of local populations are widely debated by regional archeologists.

Three representative sites from this period, Palisade, Riana and Kap (Leafwater), have been excavated. Each was founded circa A.D. 1300 or shortly thereafter. The ruins are relatively small (as judged by larger, later communities), encompassing from 20 to 100 rooms. Two of the three sites were occupied for short periods during the first half of the fourteenth century (Riana ca. 1335 - 1348, Palisade A.D. 1312 - 1315). Kap, on the other hand, was occupied for a much longer period of time (A.D. 1300 - 1400) and is more developed in overall size and quadrangular plan. Although Hibben (1937) has identified 'diagnostic' traits associated with these sites, none exhibit all the characteristics. For example, masonry construction is evident at all of the sites, yet adobe walls are more common at Palisade and Kap. Single kivas are also markers of this period, but only Riana and Palisade ruins have kivas in central plaza locations. Interestingly, each of these sites evidences a combination of aggregate and accretional growth as suggested by wall junctions (Hibben 1937; Luebben 1953; Peckham 1959). Thus, a combination of planned unit construction (by a group) and discrete additions (by individuals) appears to be indicated. Further, areas of aggregate construction occur within the earliest room group at both Riana and Palisade. Excavations at Kap were not extensive enough to reveal a construction sequence. These data imply the sites were initially founded by a group rather than a nuclear family, pointing to a possible large-scale immigration from adjoining areas.

The potential for immigration is significant in the context of archeological remains postdating A.D. 1300. Ceramic and tree-ring dating methods indicate that at least eight major sites were occupied between A.D. 1300 and 1350 (cf. Bugé 1978, 1979; Dougherty 1980; Luebben 1953; Robinson, et at. 1973; Stallings 1937; Wendorf 1953). In addition to the three Wiyo sites discussed, five Biscuit ware ruins - Tsiping, Te'ewi,

Hupobi, Ponsipa'akeri and Sapawe - were encompassed also by these developments. Obviously, Wiyo sites are those that failed to develop into Biscuit ware sites. It is similarly apparent that both site classes are chronologically related and reflect progressive stages of regional development.

For the past 200 years, various theories, propositions and speculations concerning the origins of Chama Valley pueblo residents have been advanced (V. de Escalante 1778; Jeancon 1923; Stuart and Gauthier 1981; Wendorf and Reed 1955). The absence of indicators supporting in situ Puebloan development suggests that the founders probably came from somewhere outside the valley. It has been proposed that seed populations may have come from " . . . the high upland country bordering the Chama Valley" (Wendorf 1953:94). This assertion implies a population coalescence rather than an increase from outside sources. Presumably, the Gallina country west of the study area was the donor area, since the 'high uplands' to the north and south are not known to have supported Puebloan populations, and the Rio Grande Valley to the east is not a high upland. In any event, potential sources for Chama Valley population between A.D. 1250 and 1500 came from either the west, east or both.

Developmental period sites are known for the Rio Grande Valley from around Taos (Green 1976; Loose 1974; Morenon, et al. 1976; Wetherington 1964) and just south of Albuquerque (Frisbie 1967; Mera 1940; Oakes 1978; Wiseman 1976). Likewise, the Gallina country west of the Chama River has a substantial number of sites dating to the twelfth and thirteenth centuries (cf. Dick 1976; Ellis 1974, 1975; Green 1964; Seaman 1976). Further west, Chacoan and Mesa Verdian populations are believed to have been moving south and east after A.D. 1130 and 1200, respectively (Stuart and Gauthier 1981). Any one or a combination of these sources could have contributed to the founding of early fourteenth century habitation sites along the lower Chama River. What is disconcerting is the general homogeneity of ceramic, architectural and artifactual traits between sites for this period in the study area. If migrating groups from different areas were responsible for local sites, then observable differences and variations in the architectural and artifactual remains would be expected. At present, these do not exist.

For 200 years, population levels along the lower Chama River increased as suggested by the founding and occupation of at least 15 pueblos with 100 rooms or more. In several instances, large multiplaza sites with 500 or more rooms apparently were occupied simultaneously. Following initial construction during the early 1300s, more substantial and widespread building is indicated between A.D. 1370 and 1450 (Stallings n.d.). Most building occurred not at previously occupied sites but in new locations along the Chama proper and its major tributary streams: the Ojo Caliente, El Rito and Rio del Oso. While some earlier sites (1300s) were abandoned during this time, others remained populated and grew in size. The late sites spanned the period from A.D. 1400 to 1500 and are referred to as the Tewa Polychrome ruins (Hibben 1937) because of their diagnostic ceramics. During this time, extensive cobble-bordered rectangles and excavated depressions were located on river terraces between and adjacent to pueblos. Initially, these were thought to be long abandoned habitations, outlined but incompleted pueblos (cf. Bandelier 1885; Hewett 1906), or shrines (Jeancon 1912). Later investigators have concluded that these cobble features were associated with dry farming (Anschuetz and Maxwell 1986; Bugé 1981:3-4; Hibben 1937:17; Lang 1979) Recent studies indicate that these 'fields' are extensive (Bugé 1981; Gauthier 1981), implying high labor expenditures for construction and maintenance and further emphasizing the importance of dry farming for supporting the local population.

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Tree-ring established construction dates indicate intense building between A.D. 1407 and 1445 (Stallings n.d.). It is presumed that the highest population density occurred during this time. Following A.D. 1440, construction decreased significantly; only two sites (Te'ewi and Posi) have tree-ring dates indicating new construction or building repairs (Stallings n.d.). Apparently, the last half of the fifteenth century marked an abrupt decline in the local population and was followed by virtual abandonment of the lower Chama circa A.D. 1500-1525 (Ellis 1975; Mera 1934). That the Chama Valley was abandoned by 1598 is indicated by Onate's establishment of the capitol of New Mexico at the confluence of the [redacted] in that same year (Hammond and Rey 1953). Coronado's expedition 57 years earlier also had failed to find evidence of Puebloan occupation in the Chama (Schroeder 1972). There is limited evidence to suggest that Tewa people revisited some sites after the first Spanish contact (A.D. 1540 - 1541); this evidence includes the recovery of sheep bones from deposits at Sapawe and a metal fitting from the ruins of Tsama (Ellis 1975). Also, Tewa herders may have grazed their animals in the [redacted] at the west margin of the study area after the Spanish arrival (cf. Schaafsma 1978; Wozniak 1986).

Historic

Spanish observers documented other groups in the study area after A.D. 1600. In 1601, Espinosa mentioned nomadic hunters living near the Rio Grande pueblos who raided villages (Hammond and Rey 1953:639). In 1629, 'rancherias' of nomadic, raiding Indians were found within one day's walking distance of the Santa Clara pueblo along the Rio Grande. Father Zarate Salmeron referred to these raiders as 'Apaches de Nabahu' (Reeve 1956:299). However, the ethnic identity of these supposedly Apachean peoples remains unresolved and is the subject of considerable professional disagreement (cf. Schaafsma 1978; Wozniak 1986).

Prior to 1714, no known Spanish communities were located [redacted] Chamita, on the lower river a few miles above the Rio Grande, was settled at this time, and European populations slowly expanded northwest in a pattern of scattered ranches inhabited by extended family groups (Swadesh 1974:32). By 1743, Jose de Riano owned a large ranch at the mouth of Canones Creek; these holdings later became part of the Polvadera and Piedra Lumbre Land Grants. In the 1730s and 1740s, Spanish settlements on the Chama were attacked repeatedly by Indians. Initially, the Utes were blamed for the attacks; however, later (punitive) Spanish military expeditions determined Comanches were responsible.

In 1754, government authorities moved 'detribalized' Indians from Hopi, Zuni, Santa Clara and Isleta to present-day Abiquiu in an effort to control raiding. These Indians were used as a protective buffer for villages downriver and were granted lands in exchange for militia service (Swadesh 1974:40). Villages "by design of Spanish authorities placed in locations where they would receive the brunt of enemy attacks" were commonplace during this period of New Mexico history (Dozier 1970:85). Continued hostilities with the Utes and Comanches limited settlement throughout the eighteenth century. The threat of Indian attack also may have halted herding for several years in various locations (Abert 1846:460). Settlements above Abiquiu were not founded until after 1846 and the beginning of American involvement in military affairs (Schroeder 1965:63).

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Interpretive Framework

Occupation Prior to A.D. 1300 in the Chama Valley

Even though sites dating to the Archaic period are known from survey and excavation (cf. Lang 1979; Schaafsma 1975, 1976; Whiteaker 1976), early Puebloan sites (P I-early P III) remain undocumented. Various investigators believe early pueblos do exist, but substantiating evidence is lacking. Undoubtedly, the construction and occupation of large, multiroom pueblos in the fifteenth century must have been preceded by earlier (presumably smaller) habitations. Their presence is supported circumstantially by the absence of distinctive and readily identifiable architecture and material culture that would suggest immigration. Consequently, the presence of an indigenous population has been advocated by Chama region archeologists for sometime. The following discussion presents evidence for occupation of the Chama Valley prior to A.D. 1300, in hopes that a better understanding of the archeological antecedents of fourteenth century Chama River occupation may result, regardless of the strength or weakness of arguments for population coalescence or immigration.

Evidence supporting an indigenous population is meager because none of the published or unpublished descriptions identify sites with ceramics earlier than the Santa Fe Black-on-white period (ca. 1175-1300). If local populations were responsible for the fourteenth century sites, we would expect appreciable quantities of earlier ceramics (e.g., Kwahe'e, Red Mesa, or Gallina Black-on-White) to occur. However, both surveys and excavations invariably produce Wiyo Black-on-white and Biscuit ware sherds (ca. A.D. 1250), occasionally tempered with fragments of Santa Fe Black-on-white. Consequently, there is little material culture evidence for a local population prior to this time.

There is also a virtual absence of pre-A.D. 1300 habitation structures, although this could be due to limited excavations. However, surveys have failed to locate and describe sites from the Developmental period (A.D. 600-1200). A single site, Kap (Leafwater Ruin, LA 300), contains subterranean and semi-subterranean structures beneath later surface rooms which would tend to suggest an earlier occupation. Luebben (1953) located four of these structures and identified two as kivas, and two as pithouses. The distinction between kivas and pithouses is not completely clear but seems to have been based on the "presence of a suprafloor ventilator, a firepit and a supposed flat roof" (Luebben 1953:20). In comparison, "actual evidence of ceremonial use" (Luebben 1953:24) was not employed to distinguish the pithouses from the kivas. As Luebben implies in several passages, the differences between these structure types were more perceived on his part than based on physical characteristics.

Further complicating the problem of kiva definition is the deviation of Leafwater 'kivas' from those of the Rio Grande and San Juan Basin. Ranging from generally round to ovoid and sub-rectangular, the subsurface structures at Leafwater Ruin exhibit peculiarities in the arrangement of interior features. Firepits, while commonly adobe rimmed, invariably occur adjacent to walls rather than in the center of the structure. In the two structures that have ventilators, the ventilators project from the southwest and southeast. Wall niches and subfloor pits are common; however, one has only a single firepit, while the other three contain milling bins and metate rests, among other features. Two of the structures are joined by a low earthen platform which suggests use as a single structure. These arrangements differ substantially from the south or southeast oriented ventilators, deflectors, ladder landings, ash pits,

firepits and sipapu complexes of the Developmental kivas in the Rio Grande Valley (cf. Lange 1968; Peckham and Reed 1963) and the highly formalized features of the mid-twelfth century Mesa Verdian and Chacoan kivas (cf. Lekson 1982; Hayes and Lancaster 1975; Vivian and Matthews 1965). Unless a major structural change in kivas is evidenced by the Leafwater examples, they probably did not serve ritual functions. The few excavated kivas from Chama River pueblos (cf. Hibben 1937; Peckham 1959; Wendorf 1953) lack interior feature arrangements that might support such radical changes in kiva morphology.

Luebben observes that the two structures he calls pithouses, "may have been used as dwellings while the remainder of the pueblo was constructed" (1953:24). It can be suggested that this same function can be assumed for the other excavated structures, and that these are the only documented evidence for Puebloan structures prior to the advent of stone or adobe surface rooms in the Chama drainage. The presence of twelfth and early thirteenth century artifactual remains, particularly ceramics, would further support this argument; however, artifact collections from the subsurface structures at the Leafwater site did not differ from those recovered from the surface rooms. We must assume, therefore, that the pit structures and surface rooms date to the same general ceramic period, and that either the construction period between surface and subsurface rooms was short or that subsurface structures continued to be used after the surface rooms had been completed and occupied.

Similar subsurface structures may be associated with other large pueblos in the Chama drainage. However, comparative and corrobative evidence is limited by 1) the relative absence of reported excavations 2) questions as to the depth of excavations below surface room floors and 3) the potential for pit structure depressions to be masked by later occupations. Nevertheless, within the limited sample of known structures, no evidence of occupation prior to Santa Fe/Wiyo Black-on-white times (ca. A.D. 1220-1250) is indicated. Kwahe'e Black-on-white (the precursor of Santa Fe Black-on-white that has been associated with Chacoan ceramics through design similarities [Mera 1935]) has not been documented in any appreciable quantities from the Chama area. To a degree, this is expected, if later deposits cover early remains. Even though site assemblages lack earlier ceramic types, logical deduction suggests the following:

> If an indigenous population was present in the Chama area prior to construction of the larger surface pueblos, then this population must have been small and widely scattered. Further, there is no substantial evidence indicating that these inhabitants entered the area significantly earlier (ca. 50-75 years) than those who constructed larger sites.

If the above is true, from where did the builders of large sites come? As presently understood, Puebloan occupation began with pit structures located above the Chama floodplain in the middle reaches of the lower Chama drainage (Medanales area). Circumstantial evidence from the Leafwater Ruin suggests that both single and two-room habitation units were constructed at the margins of what would later become roomblocks. These habitations do not resemble the pit structures or kivas documented from the upper Rio Grande valley, Gallina highlands, or the San Juan Basin at that time (ca. A.D. 1250). Assuming that these were constructed by separate and distinct peoples from groups who occupied the former areas, are specific trait links evident? Regardless of the ground plans and interior features, they may reflect a generalized commonality with other forms of subterranean shelter to the west and east. For example, in outline, none are significantly different from those observed in the eastern sector of LA 6455 (the Alfred Herrera Site) in the Cochiti district 40km to the southeast (Lange 1968:77). Regrettably, ceramic dates for these pit structures suggest an occupation circa A.D. 1400-1425 (Honea 1968:126), too late for direct comparison

with the Leafwater sample. However, it is important to note that LA 6455 structures have rectangular or sub-rectangular ground plans, short ventilators oriented toward the plaza rather than to a specific direction, and interior features (particularly firepits) located adjacent to walls rather than in central locations. Also significant is the presence of a contemporaneous circular kiva with a south oriented ventilator and unitized firepit-ashpit and deflector complex in the same sector of the site as the other subterranean structures.

Thus, there is some evidence to suggest construction and use of 'Leafwater-like' pit structures in the Rio Grande Valley into the 1400s. In addition, these structures coexisted with the more commonly recognizable kiva forms at the same site during that period. LA 6455, although later in time than LA 300 by at least 50 years, also has surface rooms located behind (north of) pit structures. Few of the surface rooms have hearths or other features (bins, etc.) that might indicate habitational use. Therefore, Lange suggests they served as storage units (1968:80). Apparently, site residents did not 'live' in surface rooms, although they were available, but preferred the earth-sheltered architecture. Early occupants of LA 300 may have shared this preference. In each documented case, pit structures occur on the 'plaza side' of later roomblocks; although in three instances the pit structures are superimposed by room walls. These walls were constructed after core rooms had been built. Given that wall abutments reflect room block growth sequences, rooms directly 'behind' each of the structures could have been constructed and used while the subsurface structures were still occupied. Further, these rooms served as the core for additional construction for aboveground rooms. Supporting evidence lies in the similarity of ceramic remains recovered from both rooms and pit structures. These provide a possible link between the Rio Grande Valley and the early occupation of the Chama area in general site arrangement and structure use. Similar site arrangement and structure function is not evident for the excavated Gallina sites (Hibben 1937; Green 1964; Pattison 1968).

About A.D. 1200-1250, populations in the Gallina country, west of the lower Chama (35km), occupied communities of individual pit and surface structures. However, a few communal dwellings with attached rooms are evident, primarily cliff dwellings. The types and arrangement of intramural features are distinct when compared to Leafwater structures. As a result, the data indicate that 'early' pit structures on the Lower Chama are not attributable to Gallina populations from higher elevations. Nevertheless, thirteenth century Gallina sites may offer some insight into regional demographic conditions which may have affected settlement in the Chama drainage.

The Gallina Culture was recognized as a discrete archeological complex in the late eleventh century (cf. Hibben 1940; Green 1962; Pattison 1968). It is generally agreed that the Rosa phase of the Upper San Juan River was the precursor of the Gallina culture and that significant architectural and material cultural traits were shared by both occupations (Hall 1944; Lange 1956; Green et al. 1958). Archaeologist generally agree that the Rosa phase predates the Gallina by roughly 150 to 200 years and that it occurs 80 km away from the Gallina heartland. A few sites lie between the two areas. These sites provide evidence of specific characteristics that bridge this time span (Peckham 1963). By the beginning of the thirteenth century, Gallina sites occur as loosely associated individual dwelling and storage units dispersed over elevated landforms. It has been suggested that many isolated habitations may have been located adjacent to the floodplains of local watercourses and then concealed by deposition and/or washed away (Seaman 1976).

During the thirteenth century, Gallina settlements underwent several unique architectural changes. Communities founded after circa A.D. 1200 tend to evidence adjoining surface structures that create small blocks of rooms. The Carricito site (Green 1964) is a good example where between five and seven surface structures attach to form two

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room alignments; each structure appears to have been built individually. The rooms were used as domiciles complete with storage bins, firepits and other features. Two stone towers, flanking the north and west slopes of the ridge, are associated with the site also. Towers, some still standing to heights of more than 3 m, are a hallmark of post A.D. 1200 Gallina communities. Although various functions have been proposed, the towers were probably used as a composite watch point, communal storage facility and defensive redoubt (cf. Green 1962, 1964; Hibben 1937, Lange 1956). Cliff dwellings are another trait of late Gallina development. Pattison (1968) notes that Gallina cliff houses have yielded ceramic and dendrochronological dates between A.D. 1245 and 1270. All of these indicators suggest Gallina communities adopted defensive and communal living during the thirteenth century, whereas previous communities had been more individualistic. Obviously, a perceived threat of some sort precipitated these changes. The precautions adopted by these people may be explained by conditions further west in the San Juan Basin and along the San Juan River.

During the eleventh and twelfth centuries, the central San Juan Basin and the San Juan River area were densely populated, and occupation characteristics suggest a wide spread social and commercial network. This Chacoan Phenomenon (Judge 1979) is defined by: 1) large, apparently preplanned, communities of stone (Lekson 1982); 2) outlying stone community houses located in areas with exploitable natural resources and indigenous populations in small hamlets (Marshall et al. 1979; Powers et al. 1983); and 3) interconnecting 'roads' extending from large, centrally located towns on the Chaco and San Juan rivers to the outlying community houses (Kincaid 1983). These and other traits ascribed to the Chacoan Culture are believed by many to be manifestations of a highly organized and controlled economic, social and perhaps religious network managed by hierarchically arranged social groups (cf. Peebles and Kus 1977; Altschul 1978; Judge 1979). Between A.D. 900 and 1100, one of the hallmarks in the San Juan region was the growth of large population centers (such as Chaco Canyon, Salmon Ruin and Aztec Ruin), as well as increased population resulting in densely occupied communities adjacent to these areas (cf. the La Plata River drainage, the Red Mesa Valley and the Chuska Valley) (Morris 1939; Peckham and Wilson 1965; Scheick 1986).

Presumably, these communities were capable of self-sufficiency through local production or trade networks when the economy was good. However, the Chacoan economic and social system probably relied upon basic subsistence resources which were not always readily available or easily distributed (cf. Witter 1976; Powers et al. 1983: 341-42). For example, arable lands (including sufficient moisture for plant growth) and forests (lumber for building) qualify as resources of limited distribution. It should be noted also that the Chacoan system functioned in an environment which fluctuated considerably, leaving yearly production potentials questionable (Mathien 1985). As a result, maintaining large communities and outlying settlements, as well as possible religious centers, required both tight scheduling of resources and high predictability in seasonal and yearly resource fluctuations. It has been argued that the proposed hierarchial arrangement of Chacoan culture relates specifically to ameliorating the effects of unequal resource distribution across the region (Judge 1977). As a logical extension of this argument, roads, communal storage facilities and an active trade network are posited or documented from the archeological record.

Whereas the administrative centers in Chaco Canyon were abandoned during the latter half of the twelfth century, areas formerly at the margins of the interactive network apparently experienced population increases and/or continued Puebloan occupation. This suggests that former residents of the San Juan Basin were relocating in response to deteriorating conditions. Again, it appears that populations remained relatively static or stable in areas toward which the Chacoan network had expanded in the preceding years. Apparently, these peripheral regions were less affected

by climatic fluctuations. Given the circumstantial data, after A.D. 1130 increasing numbers of former central San Juan Basin residents began to move toward the peripheral communities where economic relationships had been established previously. However, as a result of administrative center abandonment, the network linking all former participants began to deteriorate. Presumably, efforts to retain the network degenerated and refocused to smaller sub-regional interaction systems since maintenance of the road system, intermediate collection and distribution centers in the central basin, and the distances involved in trade were an impossible burden during a period of declining productivity. The fragmentation, rather than collapse, of the Chacoan network is supported by the continued presence of densely populated areas which originally occupied the periphery of the system. The San Juan River, Cebolleta Mesa, and Zuni areas continued to support large populations. Substantial evidence also suggests that these regions incorporated aspects of the system. As late as the 1260s in the San Juan drainage, Aztec and Salmon ruins experienced construction episodes. These large sites continued to form the nucleus of relatively dense communities composed of smaller sites extending along the San Juan floodplain. In the Cebolleta Mesa region, a number of very large, spatially close towns exhibit considerable material culture homogeneity, evidence of trade, and perhaps population exchange with Mogollon groups to the south. Thus, various portions of the network retrenched and continued on a smaller scale. Significantly, the new centers to the south were flexible and strong enough to become the direct precursors of Historic pueblos. The San Juan River fragment population is traced less easily into the present.

Although water resources were consistent, the San Juan population apparently was limited by other factors. First, though water from perennial sources may have been available, high volume water technology was unknown. Consequently, increasing populations concentrated along the river where relatively narrow strips of floodplain were sub-irrigated naturally, thus placing demands on production. When precipitation increased, as was the case circa A.D. 1200-1220, populations moved from the river margins into tributary drainage systems (Beal 1984). When moisture decreased, these peripheral areas were abandoned. During the twelfth through fourteenth centuries only one period of long-term, above-average summer and annual precipitation occurred in the northwest plateau country. This period occurred between A.D. 1194 and 1211, correlating well with an increase in occupation of tributary drainages of the San Juan River (cf. Beal 1984, 1986). Otherwise, the residents of San Juan communities were limited to floodplain horticulture, isolated from southern groups with whom contacts had become increasingly difficult since the 1150s, and increasingly experiencing subsistence stress in a restricted and generally inhospitable horticultural environment. For the remainder of the thirteenth century, when annual moisture levels were above average, summer moisture levels were below average and vise versa.

Significantly, the last construction episodes at Salmon and Aztec ruins occurred in the A.D. 1250s and early 1260s when annual precipitation was low, but summer precipitation (most important to farmers without access to limited floodplain land) was above average. Throughout the post-A.D. 1150 period in the San Juan region, increasing population density and decreasing production potentials probably would have caused immigration. In all likelihood, those abandoning the river would move in small, rather than large, groups because of the roughness of the terrain, limited natural food resources, and scarce waterholes or springs. Small groups of travelers would be less of a threat to established communities in highland areas, such as the Gallina country, and probably would have little affect on the indigenous population. However, there is reliable evidence to suggest that after A.D. 1260 the San Juan was rapidly depopulated and vacant by A.D. 1300. Since there is evidence of dramatic changes in community size in the Cebolleta Mesa area and along the Rio Puerco to the east at this time, a general south and eastward movement is indicated.

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In contrast with the relatively gradual movement of people conjectured for the late twelfth and thirteenth centuries, populations remaining in the San Juan region circa A.D. 1250 probably vacated the area in larger groups. (Particularly when population levels at riverside communities shrank below levels necessary for the performance of ritual activities, maintenance of long-standing reciprocal economic and labor relationships, and isolation from other Puebloan communities became pronounced.) Logically, abandonment of the San Juan region would have consisted of relatively large immigrant groups moving south and east. Lacking both the time and resources necessary for sustaining their former lifeway, foraging and intermittent raiding would have marked their final exodus. Therefore, under those circumstances a defensive posture among the Gallina peoples occupying highland areas (still productive horticultural zones) south and east of the San Juan River is not unexpected. Also significance is the construction of cliff dwellings and evidence for armed conflict in this same area. Both chronological and physical evidence suggest that some Gallina villages with towers and storage facilities were decimated by outside forces between A.D. 1240 and 1280. Whereas some of the communal storage structures were burned and many of the dwellings abandoned due to conflageration, others appear to have been vacated with little attempt to salvage belongings. From the data, we might infer that Gallina habitation and storage areas may have been ransacked for usable food products, then abandoned. There is also some informally documented evidence suggesting the raiders were Puebloans. Pueblo-style projectile points were recovered in association with skeletal remains in at least one tower/redoubt that burned with all defenders (Hibben 1940).

The preceding argument establishes reasonable support for major upheavals west of the Lower Chama River in the years preceding the founding of large pueblos in the study area. The chronological framework described has no major gaps, and the evidence implies several 'waves' of immigration through the Gallina area as evidenced by terminal dates for many Gallina sites. Shortly before A.D. 1300, the former residents of the San Juan Basin, along with elements of Gallina population, may have occupied the wester margin of the current study area. Like the San Juan country, the Lower Chama has permanent water sources in addition to floodplain lands. Unlike the San Juan, the Chama had no large indigenous population and competition for horticultural areas would have been minimal. Also, the period between A.D. 1295 and 1335 coincides with a period of above normal precipitation in the Rio Grande (Rose et al. 1981). Thus, any new populations entering the Chama at this time would have found an environment similar to that of the San Juan, but less subject to frost and other weather-related hazards prevalent in the Gallina country. Low (if any) population, combined with an abundance of natural wood, animal plant and geologic resources, made the area attractive to settlement.

Initial settlements are most expected on the western margin of the study area, likely in [redacted]. There, archeologists have investigated three sites, all of which produced tree-ring dates in the early fourteenth century. Tsiping, Palisade and Riana ruins yielded wood samples indicating construction episodes at A.D. 1312-1325 (Tsiping), A.D. 1312-1325 (Palisade) and A.D. 1335-1336 (Riana). Other sites possibly occupied during the early fourteenth century (as suggested by ceramics) include Leafwater, Te'ewi, Hupobi, Ponsipa'akeri and Sapawe. Each of these ruins is located on terraces above large floodplains adjacent to permanent watercourses. Regrettably, tree-ring dates identifying construction episodes at these sites are few and may not represent the earliest portions of the village. However, Sapawe, Te'ewi and Hupobi yielded tree-ring dates suggesting construction episodes in the 1330s, 1350s and 1380s, respectively. None of these dates are based on the presence of bark on samples. Thus, date clusters from these time periods may be significantly later than indicated. Both tree-ring and ceramic evidence suggest that some of the sites on the lower Chama were founded in the late thirteenth century, specifically Tsiping, Te'ewi and Leafwater.

Settlement and Initial Occupation

As previously discussed, little evidence exists that supports the presence of a sizeable indigenous population in the project area prior to A.D. 1300. Both ceramic and tree-ring data indicate Chama pueblos were begun at the end of the thirteenth century (Stallings n.d.; Mera 1934; Hibben 1937; Wendorf 1953). Excavations at sites yielding dates from the early 1300s indicate an initial site construction pattern of a linear series of contiguous rooms. Labor for the construction of these large pueblos would probably require the participation of a large group as opposed to a simple nuclear family. A degree of cultural, or at least artifactual, homogeny is indicated for the founding populations and is based on the lack of variability in artifact forms and architectural remains.

The question of beginning dates for many of the large sites supporting populations into the early 1500s is significant in the history of Chama River Pueblos. Several investigators have posited early findings for Sapawe (Ellis 1975), Ponsipa'akeri (Bugé 1979), Howiri (Fallon and Wening 1987), Te'ewi (Wendorf 1953) and others. Nevertheless, the only concrete, nonceramic evidence for the development of an early Chama River population is at the west edge of the study area at Riana, Tsiping and Palisade ruins. There, tree-ring dated wood fragments from architectural proveniences suggest the pueblos were founded in the first half of the fourteenth century (Stallings 1937:54, Peckham 1974:12; Dougherty 1980:81). These dates and their associated ruins may indicate one of two possibilities central to the presence of Puebloan people in the Chama Valley. First, these sites may actually mark the location and time of initial Anasazi occupation and suggest a western origin for later resident groups. Second, these sites may represent and archeological 'high water mark' and reflect the greatest westward extent of populations centered at sites farther east. While the first possibility is attractive because of potential routes of population movement, proximity to assumed population sources, and direct temporal affinities with the final abandonment of the San Juan country, substantial circumstantial evidence exists that supports the second possibility.

First, none of the western sites was particularly long lived; Tsiping was occupied until circa A.D. 1400, the others were abandoned by A.d. 1350. Neither Palisade nor Riana ruin evidenced the range of interior features and abundance of living debris expected for a year-round, permanent population with diverse age-sex ranges. Rather, the populations apparently occupied the sites for short periods of time and were variable in both size and composition. Although each site is somewhat defensively positioned (a high location, boundary walls or palisades, compact ground plan, etc.), neither produced the hearths, milling bins, and specialized storage or processing features that would indicate a permanent community. The presence of ceremonial architecture (kivas) might be considered contrary to this interpretation; however, a number of recent investigations have shown that kivas are not necessarily indicative of permanent year-round habitations (Scheick 1983; Beal 1984, 1986). Kivas are, perhaps, better indicators of the length of time spent at a particular site, the age-sex range of the user group, and the ritual and familial ties between the residents.

Second, only Tsiping progressed through the pioneer stage of occupation and became a larger population center; the other sites were abandoned and not reoccupied. Although Tsiping was occupied longer than Riana and Palisade, it does not exhibit the occupational longevity of other post-A.D. 1350 sites along the river and, in addition, is the farthest removed from probable field areas. When these factors are combined with the 'defensive' position of the site, the characterization 'outpost' seems most appropriate. Why an outpost? Material culture and architecture associated with the site bear strong resemblance to contemporaneous sites in the lower Chama Valley and the Pajarito Plateau. Kiva sizes, shapes, orientations and locations are compatible with those from Pajarito. Although the Lower Chama settlements have cavate rooms and different ground plans, the architecture at Tsiping may have been modified because of the exigencies of mesa top construction and the availability of building stone (tuff). As a result, the limited data support both founding and later residential population ties with the east and southeast rather than the west.

Based on the available evidence, relatively homogenous and cohesive population groups from the Pajarito Plateau and perhaps the northern Rio Grande were the first to settle along the Chama River. Nevertheless, we can identify certain traits of this population which are not specifically Rio Grandian. Such traits include maintenance of a black-on-white ceramic tradition (Mera 1934), use of large or "great" kivas in some communities (Jeancon 1923, Wendorf 1953; Dougherty 1980), adoption of organic ceramic paint, and use of 'western' ceramic designs (Wendorf and Reed 1955). Previous investigators have used these traits as criteria for identifying immigrants entering the Rio Grande (Mera 1935; Reed 1949a; Riley 1952; Wendorf and Reed 1955). However, interpretations and conclusions based on these traits are questionable because of the possibility that they may have been individually adopted through diffusion as readily as population movement. If immigration is assumed, then large numbers of diagnostic traits associated with specific groups should be identifiable in the archeological record. If we include the idea of a 'filtering process' in the identification and/or explanation of the probable economic, social and temporal characteristics of San Juan country abandonment, then total trait transferal is less expected and a better understanding of the elements influencing which particular trait may be present in another area is possible. The sequential movements and abandonments associated with Anasazi populations prior to A.D. 1300 may have been the filtering mechanism that significantly influenced the type and form of transmitted cultural traits. Thus we might expect a higher degree of cultural homogeneity than observed in other areas.

Filtering and Indices of Population Diversity

Under most conditions, homogeny suggests similarities in origin and composition. The following discussion correlates the seeming homogeny within the Chama archeological record with the dynamics of population movement and origin described in earlier sections. Whereas some cultural traits are easily replaced or modified to fit new or different environmental conditions, others are not as easily altered. Perhaps the former can be illustrated by changes in architectural styles and types of tools used. To a large degree, changes in the form or patterns associated with these items of material culture are limited by the local environment. For example, raw materials may be scarce or absent, making substitutions necessary. Thus, the local technology is adopted or a new technology, based on local resources, developed. Less likely to change are the conceptual aspects of a cultural heritage. These traits (based on arrangements or

patterns rather than specific artifactual indices) are easily transported and implemented in new natural or social environments. We might expect indicators of conceptual heritage in the following archeological situations: village plan, ceramic design, manipulative technology (such as ceramic paint, cranial deformation) and ritual architecture. Pueblo ruins along the Chama River offer an exceptional opportunity to explore the dynamics of filtering and trait transmission.

As previously discussed, unique variations in the physical record of a culture would become less pronounced under conditions of migration. Methods of housing, tool manufacture and use as well as distinctive ritual structures, paraphernalia and activities would be the most susceptible to change through contact with different natural and human environments. As a result, we would expect that any immigrant groups should appear generally homogenous in the archeological record. This should be most pronounced in housing and tools used in subsistence activities since each requires a cooperative group effort as well as responsiveness to natural environmental factors. We also might anticipate a nondenominational approach to architecture; partly as reinforcement of group solidarity and partly because of the absence of labor and the resources necessary to support multiple ritual orders. These traits are well-established parts of the Chama River occupation.

Given that conceptual traits are portable and assuming the presence of an immigrant population, then observable occupational traits should corroborate assumptions concerning trait retention and transmission. For example, the concept of a village plan or arrangement is not likely to change dramatically unless specific environmental factors require it (as with Tsiping). With this in mind, we note that the Chama ruins usually have well-defined habitation structures and semi-enclosed or enclosed plaza areas. Only after nearly 200 years of local occupation does this pattern change. A similar conceptual stronghold occurs in the retention of carbon-painted, black-on-white ceramic styles not indigenous to the Rio Grande. Lang (1982:180) has observed that both Wiyo Black-on-white and Biscuit wares (Abiquiu and Bandelier Black-on-white) characteristic of thirteenth and fourteenth century Chama ruins share traits with western sources. For example, Gallina Black-on-white shares similarities in finish and design with Mancos and Mesa Verde black-on-white types of the San Juan region. This is significant because Gallina traits such as carbon paint and Mesa Verde designs are also found on Santa Fe Black-on-white, another widespread type in earlier Chama ruins. A Gallina influence also is observed for Wiyo Black-on-white, a type common to early sites (cf. Riana, Palisade, Poshu, etc). Paint types, surface finish, and design features of these ceramic types suggest their origins in both Mesa Verdian and Zuni-Acoma ceramic traditions (Lang 1982:180). These characteristics culminate in the Biscuit wares, descended directly from Wiyo Black-on-white. Biscuit wares compose the vast majority of decorated wares from Chama area pueblos.

If the influence of the San Juan area is actually represented in ceramics from Galisteo through Santa Fe, Wiyo and Biscuit wares, and the earliest well-represented ceramics from Chama sites are Wiyo, then the introduction of these ceramic traits can be dated to circa A.D. 1200 (cf. Breternitz 1966; Lang 1982). Obviously, these ceramic developments did not originate in the Chama Valley because populations are not known to have inhabited the valley at that time. Likewise, there is no evidence supporting Santa Fe or Wiyo black-on-white manufacture in the San Juan, Acoma-Zuni or other areas. The northern Rio Grande Valley is the only area where these types occur in large enough numbers to imply or support production. Thus, ceramic traits associated with Chama Valley ruins must have gone through an initial

period of filtering prior to the appearance of western traits in local proveniences. In which case, filtering elements affecting Chama River ceramics may well be time (temporal separation from origination dates of Galisteo and Santa Fe black-on-white types is roughly 100 years), distance (from initial production areas for these types; Galisteo Basin and Pajarito Plateau, respectively) and cultural selection (the factors which dictate adoption, use and maintenance of specific designs or technical procedures). As the transmission of those traits spans more than a century, it seems unreasonable to assume that complete transmission of specific traits would be more common than a combination of traits as far as ceramic materials are concerned. Further, the transmission process appears to have taken place throughout the Pajarito Plateau and the Rio Grande, particularly the Santa Fe and Espanola districts (cf. Lang 1982).

Additional physical evidence for conceptual trait transmission is provided by Reed (1949b). He identified two types of cranial deformation in mortuary remains. The first is lambdoidal deformation which is common in the Rio Grande during black-on-white ceramic periods (Reed 1949b:106), is possibly associated with Chacoan populations (Reed 1949b:108), and is inconsistently present among San Juan River populations (Reed 1949b:108). The second is vertical occipital deformation and is attributed to a western influence centered in the Cibola, Salado and Sinagua culture areas and derived from Mogollon origin (Reed 1949b:117). In New Mexico, populations in the Zuni area evidence a greater incidence of occipital deformation than elsewhere. This particular trait surfaces in the Rio Grande region circa A.D. 1300, the same time that ceramic and population changes became pronounced. At the least, this circumstance implies an increasing influence and contact with the Zuni-Acoma and Puerco River peoples (of the west), if not actual movement of individuals between the areas. The fact that occipital deformation is predominant in the Rio Grande after A.D. 1300 tends to support the movement of western populations into the region during that time. In short, cranial deformation traits are primarily conceptual in transmission and rely very little on surrounding environmental factors. Changes in this practice should occur when initiated and supported by a significant population element with a tradition of occipital modification. The few skeletal remains reported from Chama River ruins have significantly more vertical occipital deformation than lambdoidal flattening (Jeancon 1923: plate 65; Reed 1953:106).

Presumably, traits which overtly set one population group apart from another would not be emphasized. Such distinctions could potentially alienate segments of the population and compromise group cooperation. Traits which did not jeopardize a group's conceptual image of themselves would likely be fostered and gradually adopted by others outside of the trait tradition. The adoption of carbon paint in ceramic production is an excellent example of an non-threatening change. The use of organic paint probably was adopted rapidly by a large proportion of the population because of the substantially lower amount of preparation effort involved in its acquisition (cf. Lang 1982:177). This scenario may be an accurate characterization of the first half of the thirteenth century, beginning in the Jemez area and spreading rapidly through the Pajarito, Santa Fe and Espanola areas. By the same token, minimization of overt differences in ritual beliefs and organizations might be expected within a population composed of a number of different cultural heritage groups intent on settling in a new location. A tendency for these groups to adopt indigenous religious architectural styles might be expected, particularly if a cohesive group was desired. Nonetheless, certain modified forms of religious architecture foreign to a region might be introduced and adopted if they served to cement intragroup relations. The 'great kiva', a western trait traced to the Chaco, San Juan and the Zuni-Acoma areas, may be one such introduction (Vivian and Reiter

1960). As previously indicated, several Chama River settlements evidence these structures, although none have been excavated and described in detail. Great kiva-like structures are present at Tsiping, Poshuingue, Cerro Colorado, and possibly Sapawe, Te'ewi, Ponsipa'akeri, Hupobi and Posehuinge. The distinguishing characteristics used to identify these structures are variable but primarily based on overall size (10 m diameter or greater). Generally, these buildings are semi-subterranean and may be associated with peripheral rooms or earthen berms on some or all sides. In the Chama communities, these structures are the only apparent ritually oriented buildings (Poshu) and/or occur with other structures classed as big and little kivas (Ellis 1952).

Survey and archival information indicate that single kivas occur most often at sites founded during the first half of the fourteenth century (Jeancon 1923; Hibben 1937; Peckham 1974) or are totally absent (Luebben 1953; chapter 6), as at Kap (Leafwater Ruin). After A.D. 1350, the total number of all kiva types increases, as suggested by pueblos occupied into the A.D. 1400s with between 4 and 15 kiva depressions. Lacking data from excavations, the actual time of this increase in ceremonial structures cannot be established; however, it would appear to follow the establishment of Chama Valley communities. This implies a resurgence of ritual activities among local populations following the pioneering stage of Chama River settlement. To some degree, this is partly supported by the identification of 'ceremonial rooms' within the room blocks as well as the increase in the number of kivas. At some sites (Posehuinge, Tsiping, Hupobi and perhaps Sapawe), the use of great kivas, ostensibly as a community integrative mechanism (Vivian and Reiter 1960; Marshall et al. 1979), may have continued until abandonment. At other sites, such structures were never employed. However, each pueblo occupied into the fifteenth century has at least two, and generally more, identifiable kiva depressions.

Kiva descriptions exist for four structures. Each has a complex series of interior features including loom holes, caches, subfloor cists and 'drum'; however, the number and types of features associated with the kivas documented from Riana and Palisade ruins (pre-A.D. 1350) are markedly different. Therefore, the elaboration, and perhaps the diversity, suggested by kivas, kiva features, and the presence of ceremonial rooms after the mid-fourteenth century may indicate a resurgence of individual group rituals and the implementation of conceptual traits constrained by earlier economic and social environments.

Conflict and Innovation Within Established Communities

Following the establishment of communities along the Chama in the early portion of fourteenth century, we would expect various adjustments and evidence of change as the communities became established. This should be apparent in the archeological record, and in fact, there is evidence that social and economic restraints were decreasing at sites dating after A.D. 1400.

Most illustrative of this process is the increase in and diversity of ritual activities as suggested by the different sized kivas and the presence of distinct ceremonial rooms. Apparently, residents of the new communities re-instituted aspects of their previous ritual behavior and activities following an initial period of adjustment. Too few ceremonial structures have been excavated to provide physical trait lists which might be associated with previous areas of residence (i.e., the San Juan or Zuni-Acoma areas). However,

the data do suggest the presence of different ritual groups (kiva groups, medicine societies, etc.) in the large pueblos. Further, the varying sizes of the ritual structures are believed to reflect use by different groups with distinct functions, responsibilities and concerns (cf. Hawley 1950; Wendorf 1953:50). Regardless of the unifying affects of religion, the existence of separate groups indicates factionalism among site occupants and thus the potential to cause conflicts.

Several Chama communities were apparently the victims of conflict. Te'ewi, Pesedeuinge, Poshuingue, Riana, Palisade, Kap and Tsama have burned room blocks, unburied skeletal remains and/or mass internments in nontraditional burial places. While the burning of individual habitations may have been accidental, the destruction of significant portions of a large site is suspect. Riana, Palisade, Peseduinge and Tsama underwent disastrous fires. Jeancon (1911) documented vast quantities of charred corn as well as other perishables and utilitarian items within Pesedeuinge. Based on the large numbers of ceramic vessel fragments found in the plaza areas, Jeancon (1923) posited that Poshuingue may have been abandoned as a result of conflict. Descriptive documents for Tsama are lacking; however, Greenlee's tests (1930b) provided evidence of burning primarily in the south room block of the enclosed quadrangle. There, most of the housemound is discolored from burning (this is visible on the surface). Kap pueblo yielded a number of perishable specimens that indicate rooms were burned, suggesting that either the occupants were careless with fire or that the rooms burned as the result of a conflict. Finally, both Palisade and Riana were burned (Hibben 1937; Peckham 1974). At Riana, burned human remains were recovered from floor proveniences, underscoring probable violence. On the other hand, Palisade ruin, though burned, failed to furnish such evidence.

For the most part, sites with substantial fire damage generally date to the period between A.D. 1350 and 1450. At the two sites from which published mortuary data is available (Jeancon 1923; Wendorf 1953), there are suggestions of social strife. At Poshuingue, one individual was found face down on a room floor disposed in a position indicating collapse rather than burial. Definite indications of internal conflict were identified at Te'ewi where a single burned kiva yielded the remains of 24 individuals, "all males and mostly very young men" (Reed 1953:104). Skeletal remains were dispersed throughout the structure in a way that suggests the individuals were killed, thrown into the kiva, and the structure burned. Are these the remains of a ritual group which fell into disfavor and were subsequently 'removed' from the community? Although the specific circumstances surrounding the burning of communities and the apparent murder of some of the residents may never be known, these may imply the consolidation of a culture and the period during which this took place.

Other changes or adaptations also are reflected in the Chama archeological record. For example, at some time around A.D. 1400 some of the large pueblos were abandoned (particularly Tsiping and Kap), and new homes were probably established in nearby Chama Valley communities. Also, around A.D. 1400 a unique subsistence adaptation appears consisting of the use of rock-bordered, gravel-mulched garden plots on dry upland mesas and terraces between large communities. Whereas the actual implementation of dry farming may have been precipitated by large populations centered in towns with access to limited amounts of arable land, the actual mechanisms used apparently did not originate in the Rio Grande area. Terrace systems, both for surface water and soil control, are better documented among earlier culture

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groups to the west. The Gallina people used rock-bordered terraces in the high mesa country during the A.D. 1100s and 1200s (Dick 1976). Mesa Verde and Kayenta horticulturalists also used stone-bordered soil and water/moisture control features prior to A.D. 1200 (Ambler and Andrews 1964; Hayes 1964). Likewise, Chacoan populations practiced horticultural activities and architecture on discrete plots served by ditch and headgate structures (Lagasse et al. 1984). Similar features appear along the Chama River during a period of increased population density (in communities) and distribution (along the Chama and its tributaries), thus suggesting the implementation of a retained conceptual trait that was perhaps modified for use under new circumstances. The number of documented cobble-bordered horticultural plots indicate this was probably successful for the Chama population.

Simultaneously (A.D. 1450), significant changes took place within another conceptual trait. Before, community arrangements had been characterized by rather compact, and well-defined habitation and utility spaces. The enclosed quadrangle was apparently the preferred room arrangement until roughly A.D. 1450. Sites occupied through the fifteenth and into the early sixteenth centuries (cf. Sapawe, Pose, Howiri, Ponsipa'akeri, Nute') deviate from this arrangement. Increasingly, room-blocks were situated so as not to geometrically enclose space or adjoin other architecture. Street-like arrangements similar to the ground plans of Historic Pueblos became popular and later site occupations are best represented by these unjoined room blocks (Fallon and Wening 1987). The change may be directly attributed to an easing of inter- and intra-community tensions. We also might assume from the increasing openness of puebloan communities that the pioneering and adjustment phases of regional settlement were over and further conflicts were most likely to be internally generated rather than precipitated by outside forces.

The few reported excavations in post-A.D. 1450 communities preclude further identification of the effect of additional conflicts and innovations in these communities. Likewise, the lack of reported excavations precludes uncovering the reasons for abandonment of the Chama River circa A.D. 1525. Regardless, there appears to be a concrete connection between the Chama River communities and the Rio Grande pueblos first identified by Coronado in A.D. 1541.

F. Associated Property Types

I. **Name of Property Type** The adaptation of the prehistoric residents of the Chama

II. **Description**

Detailed descriptions of these property types and their significance are found in the following section.

A printout and electronic compilation on diskette of previously recorded sites lying within the study area defined here as the Chama Region was prepared by HPD staff on October 25, 1990. The data search was performed on the basis of USGS 7.5 topographic quadrangle map name. Eleven quads were searched: Abiquiu, Canjilon SE, Chili, El Rito, La Madera, Lyden, Medanales, Ojo Caliente, San Juan Pueblo, Vallecitos, Valle Grande Peak. All previously recorded archeological sites lying in those quads were selected. The raw data on diskette were analyzed by Peter Eschman (Office of Contract Archeology).

III. **Significance**

Sites in the Chama Region are considered significant at the state level, although a few sites may be nationally significant. Criterion "d" (36CFR 60.4) is the principal National Register criterion under which most of the sites in the Chama Region would qualify for nomination to the Register. Since this criterion involves the information a site has already yielded or its potential to yield information important in history or prehistory, it is necessary to discuss and describe the classes of information available from such sites, and why such information is important. Significance for each property type is addressed in the following property type descriptions.

IV. **Registration Requirements**

The following eight problem domains can be defined for the Chama Region:

1. Origins of the Chama Region Phenomenon - a key research problem concerns the source of the population increase that occurred during the A.D. 1200s. Some have attributed this increase to immigration from declining Anasazi population centers such as Chaco Canyon and Mesa Verde, or from the Gallina area. Other researchers attribute the population increase to in situ development. Hypotheses relating to this problem could be tested by excavating carefully selected sites with early components.

2. Subsistence - Pueblo subsistence in the Chama Region involved diverse agricultural strategies that evolved to buffer the resident populations from the high variability in rainfall and temperature that occurs in this region. In the riverine environment along the margins of the Rio Chama and its permanent triburaries, like the pattern observed elsewhere in the Upper Rio Grande area, farming strategies may have included low intensity irrigation. On the edges of the terraces bordering the floodplain, water catchment devices and cobble-rowed terraces and grid gardens are found. On the flatter areas, the gravel-mulched garden areas indicate that dry farming, or perhaps more accurately, rainwater farming, was a successful agricultural strategy. Excavations and spatial analyses of agricultural sites in the Chama Valley could provide important information concerning the subsistence strategies that evolved in the region.

[X] See continuation sheet

[X] See continuation sheet for additional property types

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I. (continued)

region to their environment resulted in the formation of numerous archeological sites. After a review of the literature and existing site data, the following property types have been defined:

1. Aggregated Pueblo Sites
2. Communal Pueblo Sites
3. Small Structural Sites
4. Agricultural Sites
5. Non-Structural Sites
6. Shrines
7. Rock Art Sites

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II. (Continued)

There is something of a conceptual problem in dealing with ARMS files and translating the information they contain into property types. ARMS files contain no discrete classificatory categories which classify sites by functional types that would easily lend themselves to defining National Register property types. ARMS files contain information about each site recorded in terms of feature set per component.

By way of definition for purposes of this introductory discussion, sites are physical locations containing artifacts or archeological features. A component may be temporal or cultural, i.e., separate cultural groups occupying the same site, or the same cultural group occupying a site in more than one distinct time period. Features are non-portable archeological remains such as architecture, hearths, artifact scatters, agricultural fields, and so on. Features such as artifact scatters are distinct from the individual artifacts of which they are comprised. Most sites at least have an artifact scatter, but this is often not mentioned if architectural features are present. Any individual site recorded in the ARMS files may contain several components each with its own distinct feature set, or, even more complicated, with certain shared features.

In total, there were 739 total sites of all cultural groups and time periods recorded within the previously defined study area. There were 816 total components at the 739 sites. There were 410 sites for which the time period was either unknown or not entered. Of the remainder, there were 124 sites with 136 components dating to the period A.D. 1300-1600, the period which is the focus of this nomination. The number of sites is not actually an even number because there were multicomponent sites with components that date outside the A.D. 1300-1600 range, but have been rounded up to the nearest whole number for purposes of this discussion.

Table F.1 Distribution of sites of given property types in the Chama Region dating to the period A.D. 1300-1600.

Property Type	Frequency
Aggregated Pueblo	13
Communal Pueblos	9
Small Structural	14
Non-structural Sites	56
Agricultural Sites	27
Shrine Sites	2
Rock Art Sites	3

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IV. (Continued)

3. Social Organization - human societies organize themselves differently to respond to the demands their physical and cultural environments place on them. Clues to prehistoric social organization can be found in the way which they distributed themselves across the landscape, and wrested their subsistence. Another indication of social organization is the way space is utilized within their sites.

4. Technology - technology provided the interface between prehistoric populations and their environment. The level of complexity of a society is largely determined by the technology available to them. More socially complex cultures tend to exhibit more advanced technology. Chama Valley populations developed variations on the common Rio Grande Pueblo technology in response to the unique opportunities and constraints provided by their physical and cultural environment.

5. Demography - the apparent rapid increase in the size of the population inhabiting the Chama Valley during the A.D. 1300s, the expansion and growth of population during the late-A.D. 1300s and 1400s, and the decline and abandonment of the area in the mid- A.D. 1500s is one of the most puzzling aspects of this area. Detailed studies at Chama Valley sites could provide more accurate estimates of the population in the Valley and changes in population through time.

6. Trade and Alliance Networks - no culture develops in a vacuum, and the prehistoric residents of the Chama Regions were part of several trade and alliance networks that included trade in ceramics, obsidian, turquoise, and shell. These networks tended to shift through time as old enemies became allies and vice versa. Ethnohistoric and archeological studies could provide important information concerning the shifts in trade and social networks.

7. Warfare and Conflict - high population densities and the arrival of aggressive non-agriculturalists in the Southwest during the late 1400s and 1500s must certainly have placed heavy social pressures on the populace of the Chama Region. Internecine conflict and harrassment by the nomads may have contributed to the abandonment of the region. Archeological evidence of warfare is notoriously hard to acquire, but could be found by examination of previously excavated skeletal materials, or in fine-tuned excavations of pueblo sites.

8. Religion, Ceremony, and World View - it has always been difficult to reconstruct religious or ceremonial activities and world view from material culture remains. In the case of the prehistoric reidents of the Chama Region, historical documentation, and old and modern ethnographies can provide evidence to augment what we can learn from archeological excavations of kivas, shrines, and studies of rock art.

The previously defined property types could be expected to yield information useful for answering research questions associated with the domains. Table F.2 illustrates the information potential of each property type with regard to the previously defined problem domains.

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Table F.2 Data Potential for Chama Valley Property Types

Property Type *	Origins	Sub-sistence	Social Organi-zation	Tech-nology	Demo-graphy	Trade and Alliance Networks	Warfare and Conflict	Religion and World View
Aggregated Pueblo Sites	X	X	X	X	X	X	X	X
Small Pueblo Sites	X	X	X	X	X	X	X	X
Small Structural Sites	X	X	X	X	X	X	X	
Agricultural Sites		X	X	X				
Non-Structural Sites	X	X	X	X				
Shrines			X					X
Rock Art Sites			X	X		X	X	X

F. Associated Property Types

I. Name of Property Type Aggregated Pueblo Sites

II. Description

The term "pueblo", Spanish for "town", is a general term applied to almost all prehistoric above-ground architectural remains in the Southwest. For present purposes, pueblos are defined as those above-ground architectural features with more than five rooms. Pueblos usually consist of one or more roomblocks containing multiple rooms with common walls, like an apartment complex. Walls are usually built of either stone or adobe. Pueblo roofs are usually flat and constructed by laying vigas, or logs used as roofbeams, across the walls and laying latillas, or small sticks, perpendicular to the vigas, then overlaying with earth. Pueblo rooms served a variety of functions, including shelter, work areas, sleeping units, storage, and ceremonial functions. Pueblo sites may have one or more plazas, or rectangular area enclosed by structures; and one or more kivas, or semi-subterranean ceremonial chambers (usually round). Pueblos with less than 100 rooms, at least one plaza, and at least one possible kiva are termed communal pueblos here. Aggregated pueblos are defined as those pueblo sites with more than 100 rooms in multiple roomblocks, with multiple plazas, and kivas. Aggregated pueblos also exhibit one large depression or semisubterranean feature known as a big kiva.

III. Significance

Aggregated pueblo sites in the study area are likely to be significant for research for the following reasons. Aggregated pueblo sites are the largest prehistoric sites known in the Chama Region. The full range of domestic activities related to pueblo life were performed here. Archeological evidence from a well-preserved aggregated pueblo site could thus be used to answer an almost infinite universe of research questions related to subsistence, demography, social organization, technology, economics, religion, and trade. Although virtually every aggregated pueblo site in the area has suffered some pothunting damage, most aggregated pueblo sites in the Chama Region retain substantial data potential. The construction of aggregated pueblos in the Chama Region was conditioned by social or environmental factors. The inhabitants of these sites may have been relying on the "strength in numbers" theory by constructing their habitations close together in a defensible location.

IV. Registration Requirements

a) National Register criterion: d

b) Areas of significance: prehistoric archeology, historic aboriginal archeology

c) Data requirements: An aggregated pueblo site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion d.

[x] See continuation sheet

[x] See continuation sheet for additional property types

II. (Continued)

The Chama Region contains several examples of what are termed aggregated pueblos. Table F3 lists the 13 aggregated pueblos known to exist in the Chama Region. Hupobi and Tsiping have been previously nominated to the National Register. Most aggregated pueblos appear to have started out as smaller planned constructions that then grew through accretion into very large sites. Some researchers have used the terms Coalition Pueblos and Classic Pueblos to distinguish between the very large pueblos that were occupied into protohistoric or even historic times from the small pueblos that were built and abandoned prior to A.D. 1350. However, investigations at aggregated pueblos has revealed that most such sites have Coalition Period components lying beneath the later manifestations.

Table F.3 Aggregated Pueblos in the Chama Region

Site Name	LA	Owner*	Rooms	Kivas	Big Kiva	Dates
Posi	632	BLM/Priv	2127	13	Y	1300-1550
Ponsipa' Akeri	297	BLM	1654	5	Y	1300-1400
Hupobi	380	BLM	920	4	Y	1300-1500
Ku	253	BLM	560	3	Y	1400-1500
Poshu	274	SFNF	1417	2	Y	1400-1500
Tsiping	301	SFNF	650	15	Y	1300-1400
Pesede	299	SFNF	300	?	Y(?)	1350-1450
Cerro Colorado	307	CNF	350	2	Y	1350-1450
Sapawe	306	Priv/ UNM/CNF	2440	10	Y	1300-1525
Howiri	71	Priv	1739	8	Y	1400-1525
Te'ewi	252	Priv	1257	11	Y	1250-1500
Tsama	908/909	Priv	975	2	Y	1300-1400
Nute	298	Priv	244	?	?	1350-1500

* BLM - Bureau of Land Management, SFNF = Santa Fe National Forest; CNF = Cibola National Forest; UNM = University of New Mexico; Priv = Private

III. (Continued)

The defensive nature of some of the Chama Region sites has long been noted. As to who they were defending themselves against, one can only speculate. The A.D. 1200s seem to be too early for Athabaskan (Navajo and Apache) raids on pueblos or fields. Plains Indians straying far from their traditional lands to the east are a remote possibility. There may have been conflict among the residents of this area and the puebloan residents of nearby areas resulting in perceived danger and the architectural response of the aggregated pueblos.

Population in the Chama Region appears to have increased rapidly, perhaps to the point that banding together in larger groups provided an adaptive advantage. Environmental factors during the period A.D. 1350-1550 may have favored larger-scale more intensive cooperative agricultural technology under a more centralized control rather than single family horiculture. This could be reflected in utilization of larger field areas, construction of a greater number of more elaborate water/soil control facilities, and crop and field rotation.

Nearly all these sites were either abandoned or had small, rapidly dwindling resident populations by A.D. 1550. Most researchers suggest that drought conditions brought about this abandonment, which appears to have been rapid, though orderly at most sites. Some researchers have suggested warfare between the pueblos and the newly arrived Athabaskan groups, or inter-pueblo conflicts as a factor contributing to the abandonments (cf. Wendorf 1953:93).

The remains at these sites should be exceptionally well preserved. Subsurface contexts should generally reflect natural site formation processes. Previous excavations at pueblo sites have shown that there are likely to be well-preserved vegetal and skeletal remains, which could provide important information concerning demography and subsistence. Material culture remains at pueblo sites can provide important information concerning trade and contacts with other Indian groups. Since pueblo sites were occupied year-round, they should contain a full range of material culture remains that reflect technology, subsistence, social organization, deomography, and trade relationships.

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IV. (Continued)

1. A site must contain undisturbed deposits sufficient to demonstrate culturally meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.

2. A site must contain structures, features, or artifactual materials that will permit inferences regarding human activities and site function.

3. A site must contain structures, features, or artifactual materials that will permit inferences regarding settlement characteristics.

4. A site must contain either macrobotanical, microbotanical, or faunal remains indicative of subsistence practices.

5. A site must contain datable wood, charcoal, baked clay, or obsidian that will permit chronological placement.

6. A site must contain intact architectural features that permit analysis of floor space, floor features, and other spatial organizational characteristics.

7. A site must contain intact burials with human remains and other items that can be analyzed to provide information about pathologies, genetic relations, or social status of the individuals.

F. Associated Property Types

I. Name of Property Type Communal Pueblo Site

II. Description

The term "pueblo", Spanish for "town", is a general term applied talmost all prehistoric above-ground architectural remains in the Southwest. Pueblos usually consist of one or more roomblocks containing multiple rooms with common walls, like an apartment complex. Walls are usually built of either stone or adobe. Pueblo roofs are usually flat and constructed by laying vigas, or logs used as roofbeams, across the walls and laying latillas, or small sticks, perpendicular to the vigas, then overlaying with earth.

III. Significance

There are several known communal pueblo sites in the study area (see Table F.4). They are likely to be significant for research for the following reasons. Communal pueblo sites are places where the entire suite of day - to - day activities in which the prehistoric residents of the area took part, such as kiva ceremonies, occurred. For the most part, communal pueblo sites in the Chama Region have escaped serious pothunting damage. Several have been excavated by archeologists, and have already yielded important information. The remains at the unexcavated sites should be exceptionally well preserved. Subsurface contexts should for the most part accurately reflect natural site formation processes.

IV. Registration Requirements

a) National Register criterion: d
b) areas of significance: prehistoric archeology, historic aboriginal archaeology
c) data requirements: A communal pueblo site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion d

[x] See continuation sheet

[x] See continuation sheet for additional property types

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II. (Continued)

For present purposes, communal pueblos are defined as those above-ground architectural features with more than 25 rooms and less than 100 rooms. Sites with 100 or more rooms are termed aggregated pueblos (described previously). Sites with between five and twenty-five rooms are considered to be small structural sites. Sites with less than five rooms are considered to be fieldhouses and grouped with agricultural sites.

Most communal pueblo sites in the Chama Region presently appear as large, well-reduced mounds of earth, building stones, and materials from the collapsed roofs. Most communal pueblos consist of a quadrangular mound, or roomblock. An indication of the number of stories of pueblo sites can be obtained from the height of the mounds. A single story room block is generally reduced to a mound a meter or so high. Mounds of greater than two meters are usually interpreted as indicating a roomblock with two or more stories.

Communal pueblos were built in such a way as to partially or completely enclose a central area. These central areas, which were used as work spaces and locations for community activities, are known as plazas. A communal pueblo also contains at least one large round depression, usually interpreted as a kiva; which were ceremonial chambers where religious activities took place.

Because communal pueblos were places where the full range of puebloan domestic activities occurred; one usually finds a high frequency of material cultural remains associated with the architectural features present on the ground surface. These cultural remains consist for the most part of broken pottery, stone tool waste material, and broken tools such as manos and metates.

III. (Continued)

Table F.4: Some Communal Pueblo Sites in the Chama Region (after Beal 1987)

Site Name	LA	Owner*	Rooms	Kivas	Dates
Arroyo Gavilan	66288	BLM	100	?	1300-1500
Palisade	3505	CE	48	1	1312-1320
Riana	920	CE	23	1	1335-1350
Leafwater	300	Priv	100	2	1300-1400
Buena Vista II	6611	Priv	62	1	1375-1450
Buena Vista I	6610	Priv	52	3	1375-1450
Abiquiu Canyon	55882	Priv	30	2	1400-1475
Frijoles Creek	55883	Priv	14	?	1400-1500

*BLM = Bureau of Land Management, Taos Resources Area; CE = U.S. Army Corps of Engineers; Priv = Private

Previous excavations at communal pueblo sites have shown that there are likely to be well-preserved vegetal and skeletal remains, both of which can provide important information concerning subsistence and demography. Material culture remains at communal pueblo sites can provide important information concerning trade and contacts with other Indian groups. Since communal pueblo sites were occupied year-round, they should contain a full range of material culture remains that reflect technology, subsistence, social organization, demography, and trade relationships.

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IV. (Continued)

1. A site must contain undisturbed deposits sufficient to demonstrate culturally meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.

2. A site must contain structures, features, or artifactual materials that will permit inferences regarding human activities and site function.

3. A site must contain structures, features, or artifactual materials that will permit inferences regarding settlement characteristics.

4. A site must contain either macrobotanical, microbotanical, or faunal remains indicative of subsistence practices.

5. A site must contain datable wood, charcoal, baked clay, or obsidian that will permit chronological placement.

6. A site must contain intact architectural features that permit analysis of floor space, floor features, and other spatial organizational characteristics.

7. A site must contain intact burials with human remains and other items that can be analyzed to provide information about pathologies, genetic relations, or social status of the individuals.

F. Associated Property Types

I. Name of Property Type Small Structural Sites

II. Description

Small structural sites are defined here as sites with single roomblocks and less than 25 rooms. These sites differ from the aggregated and communal pueblos described above in that they are smaller and lack kivas, plazas, shrines and other specialized features of the larger sites. Small structural sites usually consist of one adobe, jacal, or masonry roomblock containing multiple rooms with common walls, like an apartment complex. The roofs of small structural sites are usually flat and constructed by laying vigas, or logs used as roofbeams, across the walls and laying latillas, or small sticks, perpendicular to the vigas, then overlaying with earth.

III. Significance

Small structural sites are likely to be significant for research for the following reasons. They are places where most of the day - to - day activities in which the prehistoric residents of the area took part, especially domestic and subsistence activities, such as food preparation, agriculture, preparation of stone tools, basketry, and pottery used in hunting and gathering and other activities. For the most part, small structural sites in the Chama Region have escaped serious pothunting damage.

IV. Registration Requirements

a) National Register criterion: d

b) areas of significance: prehistoric archeology, historic aboriginal archaeology

c) data requirements: A small structural site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion d.

[X] See continuation sheet

[X] See continuation sheet for additional property types

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II. (Continued)

Most small structural sites in the Chama Region presently appear as well- reduced mounds of earth, building stones, and materials from the collapsed roofs. Scatters of cultural remains are not usually dense and consist for the most part of broken pottery, stone tool waste material, and broken tools such as manos and metates. Small structural sites are places were small groups of people lived and worked for short periods of time, they show little evidence of long-term occupation.

III. (Continued)

The cultural remains at small structural sites should be exceptionally well preserved. Subsurface contexts should for the most part accurately reflect natural site formation processes.

Previous test excavations at small structural sites have shown that they are likely to be well-preserved vegetal and skeletal remains, both of which can provide important information concerning subsistence and demography. Material culture remains at small structural sites can provide important information concerning trade and contacts with other Indian groups. Small structural sites should contain material culture remains that reflect technology, subsistence, social organization, demography, and trade relationships.

IV. (Continued)

1. A site must contain undisturbed deposits sufficient to demonstrate culturally meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.

2. A site must contain structures, features, or artifactual materials that will permit inferences regarding human activities and site function.

3. A site must contain structures, features, or artifactual materials that will permit inferences regarding settlement characteristics.

4. A site must contain either macrobotanical, microbotanical, or faunal remains indicative of subsistence practices.

5. A site must contain datable wood, charcoal, baked clay, or obsidian that will permit chronological placement.

6. A site must contain intact architectural features that permit analysis of floor space, floor features, and other spatial organizational characteristics.

7. A site must contain intact burials with human remains and other items that can be analyzed to provide information about pathologies, genetic relations, or social status of the individuals.

F. Associated Property Types

I. Name of Property Type Agricultural Sites

II. Description

The property type agricultural sites includes sites with a variety of features related to agricultural practices in the area. Bugé (1981) defined several feature types he observed during his research in the area. These feature types include large rectangular stone outlined fields, large cleared fields, small stone outlined fields, gravel mulched fields, floodwater irrigated fields, terraced fields, check dams, floodplain fields, fieldhouses, and dugouts. The following summary follows Buge's descriptions closely.

III. Significance

Agricultural sites could provide microbotanical or macrobotanical information regarding the types of crops grown at particular locations. Irrigation features relate to more intensive agricultural utilization of the study area. If such features were to be found in some abundance (they are not at the present), then a more centralized social organization would be suggested. Thus such sites could provide important information regarding social organization and land-use. The distribution of such sites across the study area can provide important information regarding the land-use patterns in the Chama Region.

IV. Registration Requirements

a) National Register criteria: d
b) areas of significance: prehistoric archeology
c) data requirements: an agricultural site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion "d".

1. A site must contain undisturbed deposits sufficient to demonstrate culturally meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.

2. A site must contain structures, features, or artifactual materials that will permit inferences regarding human activities and site function.

3. A site must contain structures, features, or artifactual materials that will permit inferences regarding settlement characteristics.

4. A site must contain either macrobotanical, microbotanical, or faunal remains indicative of subsistence practices.

[x] See continuation sheet

[x] See continuation sheet for additional property types

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II. (Continued)

Large rectangular stone outlined fields are generally found on portions of terraces in the area with less than a 5% slope. Exposure is generally to the west or southwest. These fields measure an average of 30 m on a side. They are outlined with cobbles which extend 15 or more cm above the present ground surface. The interior of the outlined area often appears somewhatelevated above the surrounding ground surface. This may be the result of erosion since the abandonment of the field, and not a constructed feature. The soil within the field is a sandy loam, rich in organic matter, and with few stones. In large areas, a series of these types of fields were constructed with common borders. The function of these features may have been partially to retard erosion, but perhaps primarily to demarcate the field area.

Large cleared fields are similar to the large rectangular stone outlined fields except that they are located on soils that contain much more gravel. The walls outlining these fields contain some large stones, but consist primarily of piles of gravel that were apparently removed from the interiors of the fields.

Small stone outlined fields are the most frequent type of agricultural feature that Bugé encountered in the Ojo Caliente Valley. These types of features are most often found on the margins of the terraces, most often with western or southern exposures, but occasionally with eastern exposure.

Clusters of these types of features seem to have constructed as units, with a large area defined first by outlining an area with rows of cobbles, then subdividing into smaller units. They are of varying size depending on the the contours and slope of the land, with some examples as small as 30 by 100 cm.

Gravel mulched fields are similar to large rectangular stone outlined fields. They differ in that the interior of the construction is raised above the surrounding ground by the application of a layer of gravel that is removed from borrow pits that are often located on the edge of the terrace. The function of the gravel mulching could have been both to keep soil temperature more stable (i.e., to reduce extremes of both high and low temperatures), and to retard evapotranspiration.

The borrow pits associated with the gravel mulched fields are the features Bandelier (1892:46) termed dugouts. Some have speculated that these features may have served as temporary habitations after the construction of a brush superstructure. This would seem to be maladaptive behavior in that it would be exceedingly difficult to keep the depressions from filling with runoff during summer thunderstorms without more substantial wall and roof construction. Buge terms these features fieldhouses, a term reserved here for more substantial constructions.

Dugouts are interpreted here as borrow pits first, secondarily as small reservoirs for pot irrigation of the nearby gravel mulched fields. The dugouts could also have been used for raising crops with high moisture requirement. Another possible use would be for starting seedlings early in the spring to be transplanted later. These small depressions could easily be covered at night and protected from frost.

II. (Continued)

Floodwater irrigated fields are rectangular stone outlined grids separated by small irrigation ditches. This type of feature is rare, but is usually located on the margins of the side drainages off the Rio Ojo Caliente where periodic runoff could easily be diverted.

Terraced fields are fields located on the steep slopes of the river terraces, and consist of narrow levelled ledges bounded by rows of boulders running perpendicular to the direction of the slope. These types of fields are rare in the study area, but there are a series of them near the site of Hupobi.

Floodplain fields would have been located along the margins of the Rio Chama, the Rio Ojo Caliente, the Rio del Oso, and other permanent streams in the area. Most of the area is now under cultivation and evidence of Indian use of these lands is thus no longer extant. However, these types of fields have been reported along the Rio del Oso in the vicinity of Pesedeuinge (Jeancon 1911).

Fieldhouses are traditionally defined as small one or two rooms structures located near field areas. Bugé (1981), following Bandelier (1892), suggests that the dugout type borrow pits on the edges of the terraces near gravel mulched fields may have been roofed with brush superstructures and used as fieldhouses. Since these dugout features even today continue to collect a lot of runoff, it is difficult to imagine their use as a shelter. The usual way archeologists use the term fieldhouse is to describe a small one or two room roofed structure with stone or adobe walls and an interior hearth located near a field area. The term is not usually used to describe a temporary shelter located near a field area.

There is some doubt whether very many true fieldhouses meeting these criteria were constructed in the study area. At least two reports have discussed the presence of fieldhouses around the site of Sapawe (Skinner 1965; Tjaden 1979). However, neither report includes data from excavations of these alleged fieldhouse features. Both investigators apparently assume that rockpiles in field areas with a few artifacts around them are in fact fieldhouses. This assumption could be better supported if excavation data were available.

F. Associated Property Types

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I. **Name of Property Type** Non-Structural Sites

II. **Description**

The property type non-structural sites includes artifact scatters, campsites, lithic and other resource procurement zones, and rockshelters. Such sites are common in the study area during the time period under consideration. They represent external nodes of the puebloan subsistence system. These limited activity sites were not occupied for long periods of time, but used either a single time or sporadically over a period of time.

III. **Significance**

The significance of non-structural sites lies in the information they contain. The artifacts associated with such sites could provide important information on the technological responses of the residents of the area to their environment. The hearths at such sites could provide chronometric dates through radiocarbon, tree-ring, or archeomagnetic dating. Macrobotanical and flotation analysis could provide important information on subsistence technology in the Chama region during the period under consideration, and how it changed through time.

IV. **Registration Requirements**

a) National Register criteria: d

b) areas of significance: prehistoric archeology, historic aboriginal archaeology

c) data requirements: a non-structural site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion "d".

[x] See continuation sheet

[x] See continuation sheet for additional property types

II. (Continued)

Artifact scatters are clusters of broken and whole artifacts such as potsherds, lithic debitage and tools, and ground stone metates and manos; alone or in combination. Artifact scatters in the absence of hearths usually indicates a limited daytime usage of the area as a worksite. Campsites usually include an artifact scatter in association with one or more hearths, and indicates overnight usage of the area, perhaps as a camp for hunting or collecting.

Lithic and other resource procurement zones includes quarry sites such as the Cerro Pedernal flint mines. Resource procurement zones could include clay or adobe quarries, pinyon collecting areas, and hunting areas.

IV. (Continued)

1. A site must contain undisturbed deposits sufficient to demonstrate culturally meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.

2. A site must contain features and/or ecofactual or artifactual materials that will permit inferences regarding human activities and site function.

3. A site must contain features and/or ecofactual or artifactual materials that will permit inferences regarding settlement characteristics.

4. A site must contain either macrobotanical, microbotanical, or faunal remains indicative of subsistence practices.

5. A site must contain datable wood, charcoal, baked clay, or obsidian that will permit chronological placement.

6. A site must contain intact features that permit spatial organizational characteristics.

F. Associated Property Types

I. Name of Property Type Shrine Sites

II. Description

Shrines in the Chama Region include a variety of unroofed structures with one or more entries. Usually these features are rings of stone varying from one meter up to fifteen meters in diameter. Ethnographic evidence suggests that such features were used in ritual ceremonies associated with pueblo religious activities often involving offerings of sacred corn meal, prayer sticks, and other items. Most of the large aggregated pueblo sites include a large shrine, but for administrative purposes, the features included under this property type are isolated (more than 400 m away from habitation sites).

III. Significance

The significance of shrine sites to archeologists lies in the information they contain. Their location and topographic setting can provide important information concerning pueblo religion and world-view. Their structure could indicate their use as solstice markers or for making other astronomical observations. Artifacts and pollen or macrobotanical remains could provide information about the nature of the ceremonies performed at the site.

IV. Registration Requirements

a) National Register criteria: d

b) areas of significance: prehistoric archeology, historic aboriginal archaeology

c) data requirements: a shrine site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion "d".

1. A site must contain undisturbed deposits sufficient to demonstrate culturally meaningful spatial relationships among artifacts, features, floral remains, and faunal remains.

2. A site must contain features, and/or ecofactual or artifactual materials that will permit inferences regarding human activities and site function.

3. A site must contain features, and/or ecofactual or artifactual materials that will permit inferences regarding settlement characteristics.

4. A site must contain intact architectural features that permit analysis of spatial organizational characteristics.

☒ See continuation sheet

☒ See continuation sheet for additional property types

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II. (Continued)

Shrine sites are found in a variety of locations in the Chama Region. A well- known shrine termed a "world-quarter" shrine (Douglass 1912, 1917) is located on top of Tschicoma Peak, at 11,512 feet, the highest mountain in the Jemez range. Most extant isolated shrines are located on the terraces above the drainages in the area. Many shrines, such as the one at Tschicoma, are still in use by the Tewa Indians. Because of their significance to the modern Pueblos, active shrines are not included under this property type.

F. Associated Property Types

I. Name of Property Type Rock Art Sites

II. Description

Rock art sites consist of either pictographs (figures painted onto rock), or petroglyphs (figures pecked, ground, or scratched onto rock), or both. Most rock art sites are found on cliffs or other bedrock exposures, or in rock shelters. The Chama Region exhibits a large number of rock art sites, panels, and isolated figures.

III. Significance

Our understanding of the function of rock art in Southwestern societies is based on studies of the rock art of still-living cultures, ethnographic studies of living Southwestern pueblo groups, and archaeological remains. Studies of rock art provide some of the few insights into Pueblo religious activities and beliefs.

Rock art is also, of course, the artistic expression of individuals who were products of a society about which we know little. The distinctive Rio Grande rock art style which developed during this period is fully represented in Chama Region rock art.

IV. Registration Requirements

a) National Register criteria: d

b) areas of significance: prehistoric archeology, historic aboriginal archaeology

c) data requirements: a rock art site must have the potential to yield data in one or more of the following categories in order to qualify for the National Register under criterion "d".

1. A site must have interpretable rock art figures (either pictographs, petroglyphs, or both) datable to the period indicated and attributable to the Rio Grande Style.

2. The site must be sufficiently free of vandalism to permit analysis of the figures present.

[X] See continuation sheet

[ ] See continuation sheet for additional property types

II. (Continued)

Most of the known rock art sites in the Chama Region dating to the period under consideration consist of figures classified as belonging to the Rio Grande Style. This style of rock art is defined by Schaafsma (1975:129, 1980:254ff) as consisting largely of petroglyphs "Characterized by large outline designs which are highly stylized and very decorative." Common figures include mask depictions, box-like anthropomorphs, shield-bearers, shields, cloud terraces, crosses, stars, pecked handprints, spirals, concentric circles, kokopelli, and various zoomorphs; especially eagles and snakes. Very little detailed recording or analysis has been conducted at rock art sites in the Chama Region.

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

(a) Archeological research on the Chama Region began in the Late 1800s with explorations associated with the U.S. Geographical Survey (Holmes 1878; Yarrow 1879) and continued during the 1800s with the visits of Adolph Bandelier. Bandelier conducted reconnaissance level survey, and published the first culture history of the area with site descriptions and sketches in his so-called Final Report (Bandelier 1890, 1892), later amplified with publication of his annotated journals (Lange and Riley 1966, 1970; Lange et al. 1984). Hewett (1906) published descriptions and site diagrams for a number of sites in the region. Harrington (1916) published Tewa names for most of larger pueblo sites and other landmarks.

The Chama Region was the focus of a series of investigations by J.A. Jeancon. He discussed the Rio del Oso sites of Ku and Pesede (Jeancon 1911). Jeancon conducted the first "scientific" excavations in the area at Pesede (Jeancon 1912) and at Poshu (Jeancon 1923).

[X] See continuation sheet

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[X] See continuation sheet

Primary location of additional documentation:

- [X] State historic preservation office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Specify repository: _____

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G. (Continued)

During the late 1920s and early 1930s, several of the sites in the region were investigated by Museum of New Mexico researchers. Robert Greenlee (1930 a,b) conducted excavations at Tsama. An archeological survey was conducted by Harry P. Mera as part of a series of much larger investigations he conducted in northern New Mexico (Mera 1934). At approximately the same time, Frank Hibben of the University of New Mexico conducted a series of investigations that included the excavation of the Riana Ruin (Hibben 1937).

In one of the early salvage type archeological investigations, the Leafwater site and Te'ewi were partially excavated by Fred Wendorf and Ralph Luebben (Wendorf 1953). Stew Peckham excavated the Palisade Ruin during the 1950s (Peckham 1974). During the 1960s, the University of New Mexico Field Schools under the direction of Florence Ellis conducted a series of excavations at Sapawe. During the 1970s, a series of investigations were conducted prior to the [redacted] (Schaafsma 1975, 1976). The site of Howiri was partially excavated during 1978-1979 (Fallon and Wening 1987). During the period 1978-1981, a series of investigations under the direction of David Buge were conducted at Ponsipa (Buge 1978, 1979). Test excavations were conducted in 1988 at Hupobi, Ponsipa, Posi, and Poshu by Jonathan Haas and Winifred Creamer, then of the School of American Research in Santa Fe (Creamer and Haas 1989).

Other recent archeological investigations in the area have been related to cultural resource managment objectives. Thousands of acres have been archeologically surveyed, resulting in the identification of hundreds of archeological sites dating to the time peried under consideration here.

(b) The result of all the surveys and limited excavations in the area has been the accumulation of data of variable quality on several hundred sites. The data were researched for preparation of this nomination by compiling a data base consisting of site numbers, locational data, environmental data, and descriptive information regarding site type, features, artifacts present, probable dates, and size. These data were analyzed to produce breakdowns of sites by type, date, elevation, environmental zone, condition, and landforms. These breakdowns produced the definitions of the property types contained herein, and the data requirements for determinig the eligibility of specific properties.

The historic context for this nomination was prepared by conducting extensive library and archival research into the prehistory and history of the area. The geographical and chronological bounds of the historic context were determined through this research.

(c) The typology of significant property types is based on functional and morphological site types in common usage in the area for the relevant time periods. These types were utilized because they are in common usage and provide for convenient comparisons to sites in other areas.

(d) The requirements of integrity for the listing of related properties were derived both from the preparers' extensive personal knowledge of sites in the area and from information recorded on site froms, maps, and photographs of the sites.

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