Archeological and Architectural Investigations at Brown's Sheep Camp (5LA5824), A Multicomponent District in the U.S. Army Pinon Canyon Maneuver Site, Las Animas County, Colorado

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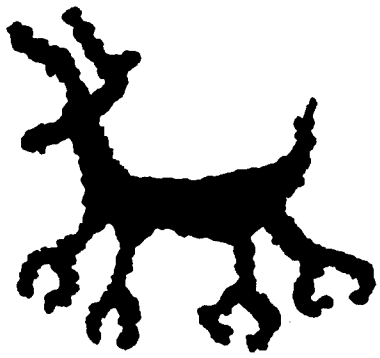

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13. ABSTRACT *(Maximum 200 words)*

A 1992 remote sensing survey by the Interagency Archeological Services Division at the Brown's Sheep Camp site (5LA5824) located three anomalies which were interpreted to have potential as cultural features. Following up on this survey, archeologists and an architectural historian from the NPS Midwest Archeological Center (MWAC) returned to the site in 1995. The purposes of the study were threefold:1) determine whether the anomalies were of cultural derivation; 2) further document the standing structures to aid the U.S. Army in future preservation efforts at the site; and, 3) determine whether evidence existed to allow an association of site structures with the 1870s era Hogback Stage Station. Results of this work proved two of three remote sensing anomalies to be associated with structures, the third being of unknown origin. The architectural survey, however, did locate structural and construction features which identified an adobe structure as constructed circa 1884 to the late 1890s. This temporal affiliation allows the building to be associated, at a minimum, with the early ranching era at Brown's Sheep Camp. Archeological investigations were unable to provide evidence for the site being utilized as a stage station.

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Technical Abstract

In 1992, a geophysical survey was conducted at the Brown's Sheep Camp site (5LA5824) by the Interagency Archeological Services Division. This survey located three anomalies which were interpreted to have potential as cultural features. Then in 1995, archeologists and an architectural historian from the National Park Service Midwest Archeological Center returned to the site. The purposes of the study were threefold: (1) to determine whether the anomalies were of cultural derivation; (2) to further document the standing structures to aid U.S. Army preservation efforts at the site; and (3) to determine whether evidence existed to allow an association of site structures with the 1870s-era Hogback Stage Station. Archeologists excavated twelve 1-m^2 test units and five shovel probes at anomaly locations in order to examine the below-ground characteristics of three standing structures. The architectural investigation utilized both invasive and non-invasive methods to record characteristics of seven standing structures. As a result, two of three remote-sensing anomalies proved to be associated with structures, the third being of unknown origin. In addition to structural documentation, the architectural survey located structural and construction features within the Main Dwelling, an adobe structure that had been constructed between approximately 1884 and the late 1890s. This temporal affiliation allows the building to be associated, at a minimum, with the early ranching era at Brown's Sheep Camp. Archeological investigations were unable to provide evidence for the site being utilized as a stage station.

Popular Abstract

In 1992, the Interagency Archeological Services Division of the National Park Service used several remote-sensing techniques at the Brown's Sheep Camp site (5LA5824) in an attempt to locate buried archeological features (building foundations, pits, etc.). This work identified three areas for further investigation. Following up on that study's findings, archeologists and an architectural historian from the Midwest Archeological Center, also a unit of the National Park Service, returned to the site in 1995. Their goals were to: (1) see whether the three locations had buried archeological features; (2) record information on the site's standing structures which could be helpful in the U.S. Army's future preservation work at the site; and (3) learn whether or not evidence for the 1870s-era Hogback Stage Station existed. As part of their results, two of three remote-sensing anomalies were found to be associated with former ranch buildings. The architectural survey also discovered that a portion of one building was an adobe structure constructed between approximately 1884 and the late 1890s. This suggested that, at a minimum, the building was built during Brown's Sheep Camp's early ranching period. Neither the architectural or archeological investigations found evidence for the site being utilized as a stage station.

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Foreword

The historical archeological investigations reported in this manuscript are an important part of the Fort Carson Cultural Resources Management Program whose goal is to maintain the largest possible area for military training while protecting significant cultural and environmental resources. The current study is part of an integrated program that takes a long-term systematic approach to meeting identification, evaluation, and resource protection requirements mandated by the National Historic Preservation Act. This project is a valuable addition to our knowledge of the history and resources of Las Animas County, Colorado. Under a cooperative agreement, the National Park Service, Midwest Archeological Center, provides assistance in meeting Fort Carson's cultural resources goals.

Fort Carson began cultural resources studies on the Pinon Canyon Maneuver Site in 1983, immediately following the purchase of these lands. The program takes a multidisciplinary approach, combining archeological theory and historical methods with geological, geomorphological, botanical, and statistical techniques and procedures in order to focus its efforts to locate, evaluate, and protect significant cultural properties. Professional studies and consultations with Native American tribes have identified over 700 properties that are eligible for nomination to the National Register of Historic Places. The cultural resources of Fort Carson and the Pinon Canyon Maneuver Site represent all major prehistoric and historic cultural periods recognized in the Great Plains and Rocky Mountains. Sites of the Paleoindian, Archaic, Ceramic, and Protohistoric periods are present, as are sites from the Fur Trade era, 19th century Hispanic and Euroamerican settlement, early 20th century homesteading and ranching, and World War II and Cold War era military sites.

The Cultural Resources Management Program is in the Directorate of Environmental Compliance and Management (DECAM). The directorate is tasked with maintaining Fort Carson's compliance with federal, state, and local environmental laws and mandates. The DECAM holistic management philosophy holds that all resources are interrelated. Decisions affecting one resource will impact other resources. The decisions we make today will affect the condition of Department of Army lands and resources for future training, research, and recreation. Mission requirements, training resources, wildlife, range, soil, hydrology, air, and recreation influence management decisions. Integrating compliance and resource protection concerns into a comprehensive planning process reduces the time and effort expended on the compliance process, minimizes conflicts between resource protection and use, allows flexibility in project design, minimizes costs, and maximizes resource protection.

Federal laws protect the resources on the Pinon Canyon Maneuver Site and Fort Carson. Theft and vandalism are federal crimes. Protective measures ensure that Army activity does not inadvertently impact significant cultural and paleontological sites. Fort Carson does not give out site location information nor are sites developed for public visitation. Similar resources are located in the Picketwire Canyonlands where public visits can be arranged through the U.S. Forest Service, Comanche National Grasslands in La Junta, Colorado.

Fort Carson endeavors to make results of the resource investigations available to the public and scientific communities. Technical reports on cultural resources are on file at the Fort Carson Curation Facility (Building 2420) and the Colorado State Historic Preservation Office and are available through the National Technical Information Service, Springfield VA. Selected reports have been distributed to public libraries in Colorado. Three video programs produced by Fort Carson are periodically shown on Public Broadcasting Stations. Fort Carson continues to demonstrate that military training and resource protection are mutually compatible goals.

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I. Introduction

In September of 1995, a team from the National Park Service's Midwest Archeological Center (MWAC) undertook archeological and architectural investigations at Brown's Sheep Camp (5LA5824). The site is a complex of historic structures that has been determined eligible for nomination to the National Register of Historic Places as a historic district (De Vore n.d.). The district lies within the southwestern boundary of the U.S. Army's Pinon Canyon Maneuver Site (PCMS) near Trinidad, Colorado (Figure 1).

Brown's Sheep Camp incorporates a number of structures associated with the headquarters of a major late-nineteenth-century sheep-raising enterprise and twentieth-century cattle operation. It was first homesteaded by Underwood Rogers in 1882 but was sold shortly thereafter to S.T. Brown as a sheep ranch. Judge Julius Gunter married Brown's daughter at the turn of the century and inherited the ranch in 1914. Gunter, who became Governor of Colorado in 1916, built the camp into one of the largest sheep ranches of the area. The association of the site with Governor Gunter is one of the reasons it is eligible to be listed on the National Register.

The site may also be associated with the mid-1870s Hogback Stage Station. This station was established at the western end of the hogback by the Barlow and Sanderson Southern Overland Mail and Express Company in 1871 in conjunction with a new stage road which ran along the north margin of the hogback. Traces of the stage road are still visible at the base of the hogback today. Despite these associations, however, neither the architectural nor the archeological investigations found evidence to support the Brown's Sheep Camp site's use as a stage station.

Environment

Shelford (1963:328, 330) places the PCMS region in the short-grass grassland of the Northern Temperate Grassland, *needlegrass–pronghorn–grama grass* biome (Figure 2). He characterizes the biome by the presence of perennial grasses and (historically) a population of large grazing mammals and burrowing animals. The principal grasses in the short-grass grassland are *Bouteloua gracilis* (blue grama), *B. hirsuta* (hairy grama), *Buchloe dactyloides* (buffalo grass), and *Hilaria jamesii* (galleta). Sage (*Artemisia* sp.) occurs as well. Historically, the dominant animal was the bison. This animal, along with other grazing species, maintained the mixed-grass prairie. Other dominant species were the pronghorn antelope, buffalo wolf, coyote, fox, badger, black-tailed jack-rabbit, skunk, and weasel. Prominent rodents include the grasshopper mouse, pocket gopher, pocket mouse, Richardson's ground squirrel, and prairie vole. Common birds are the horned lark, western meadowlark, lark bunting, and (historically) the prairie chicken. Principal reptiles are the plains garter snake, the western rattlesnake, and the bullsnake. Grasshoppers are the most outstanding of the insect groups (Shelford 1963:345–346).

For an excellent detailed overview of landforms and environment of the PCMS locality, the reader is directed to Schuldenrein (1985). However, the specific area of concern for the present report is the southwestern margin of the PCMS at a gap in the western end of a prominent landform known the "Hogback." The hogback is a sandstone and shale ridge which has been pierced by a massive basaltic dike. The dike is about nine miles in length and has a maximum width of about one-half mile. The Brown's Sheep Camp site is located about 800 ft northwest of the gap. At its highest point, the hogback rises 260 ft above the surrounding plain. Vegetation in this area is grasses and low shrubs, with patches of piñon–juniper savanna on the crest of the hogback. To the north of the site is a high dissected plain of short-grass grassland.

The Brown's Sheep Camp site is located on the Van Bremer Arroyo floodplain. The nearest permanent source of water is the Van Bremer Arroyo itself, which drains into the Purgatoire River. The stream

carries flowing water the year around for most years and was one of the prime location factors for Brown's Sheep Camp. Immediately south of the arroyo, a hogback dramatically rises 80 meters above the surrounding prairie.

Historical Background

Prior to the 1860s, the general PCMS area was the home of Native Americans. During the nineteenth century, Comanche bands predominanted, although various bands of the Apache are known to have occupied the area earlier. Some use of the region was made by the Ute, Assiniboine, and Cheyenne as well. Though the Spanish and—after 1821—the Mexican governments claimed this territory as their possessions, the fierce Comanche (and Apache before them) guarded their territory jealously, harassing incursions and preventing colonization by Americans and Spanish. The only Euroamericans in this area prior to 1850 were Spanish and American military exploration parties, (typically) American fur trappers and traders such as those at Bent's Fort near present-day La Junta, or (again, typically) American merchants carrying goods to or from Santa Fe, New Mexico (Murray 1979).

With the conclusion of the Mexican–American War in 1848, however, this situation began to change. A few cattle ranchers drifted into the region in the 1850s, but settlement increased dramatically during the following decade. Most commonly, settlers were of Hispanic heritage and came from nearby New Mexico. Many of these settlements were villages of the traditional "plaza" variety; i.e., a group of individuals who were related to one another and led by the senior male head (the patron) of an important family (Murray 1979:41–46).

The early economy of the region was agrarian and focused on subsistence farming as well as the raising of sheep and/or cattle. Haynes and Bastian (1987:Chapt. 1, pp. 13–14) indicate that sheep ranching predominated during the 1860s and 1870s, with grazing throughout the PCMS. Sheep ranchers tended to be New Mexicans. The ranchers were integrated into the newly established Mexican communities through kinship ties. Early cattle ranchers tended to be non-Hispanics and most were from Texas. In contrast to the highly organized Hispanic communities, the (largely) Euroamerican cattlemen tended to be more independent and, until the establishment of cattlemen's organizations in the 1870s, demonstrated very little structure socially (Murray 1979:46). Some communities, of course, reflected aspects of both cultural heritages.

Lack of easily accessed markets kept the population of the region small until the mid-1870s, when a number of events radically altered its economic complexion. The two major events that led to expansion of the regional economy and consequently increased its attractiveness for settlement were the construction of a viable railway system and the demand for coal on the part of mining communities to the north and west.

Early Euroamerican settlement of the region was marked architecturally by structures built in the Hispanic Adobe tradition (Adams 1974). Both Hispanics and Anglos used adobe to build homes and major outbuildings. Adobe is especially suited to the relatively treeless area. It is a cheap and easy to manufacture hard building material which is constructed principally of local mud with straw as a binding agent.

Through the early 1870s, commercial transportation was based on animal-drawn conveyances; and for the most part, the routes of travel in the PCMS area followed or paralleled the Santa Fe Trail. This limited form of transport restricted access to both nearby and distant markets. Communication between communities was based upon the U.S. mail, with letters and packages conveyed by contract carriers and stage lines (Murray 1979:57–58).

One of the early stage lines operating in the PCMS area was the Barlow and Sanderson Overland Mail and Express Co. (Hardesty et al. 1995). This business won the mail contract in 1866 carrying mail from Bent's Fort to Santa Fe. Early routes by-passed the PCMS but in 1871, the company established a new route with four stops within the boundary of the maneuver area. The last stop, a waterhole at the west end of the Hogback, was Hog Back Station (Haynes and Bastian 1987:Chapt. 1, p. 13).

In 1876, the Atchison, Topeka, and Santa Fe Railroad (A.T. & S.F.) built a standard-gauge line into Pueblo, and that same year, the Denver and Rio Grande Railway Co. (D. & R.G.) reached the railroad town of El Moro. Nevertheless, Barlow and Sanderson continued to run through the PCMS at least through part of 1876. The line was finally abandoned in September due to the drop in passenger traffic. Then in 1878, the railway was extended to connect Pueblo and El Moro to the San Luis Valley, to Denver, and over the Raton Pass to points south (Haynes and Bastian 1987:Chapt. 1, p.15).

The railroad brought the pace of development for the Raton region as a whole to a fever pitch. The economy began to change and expand, and with the economic revolution came irreversible social transformations (Murray 1979:58). Most of the large-scale development focused on coal mining in or near the established towns at the foot of the mountains. Mining required a large labor force, and so the regional population boomed. Suddenly there were relatively large and accessible markets for the ranchers and farmers living in the PCMS area, since the railroads brought contact with the distant markets of the East. The expanding labor force in towns around the regional coal mines resulted in the development of local sources for selling regional agricultural products.

The railroad also brought new materials and formal architectural influences from outside the region. With the influx of Anglo settlers, regional building traditions were modified. Anglo and Hispanic traditions were conjoined to create a new "Territorial Style." In essence, the Territorial Style combined several elements of classical design with traditional Hispanic building forms. Territorial influences included the application of simple wood pediments above windows and doors, gabled or bowed (boxcar) roofs, large windows with several window lights, wood flooring, and the replacement of logs or ax cut structural elements with sawn lumber.

Many builders were influenced by pattern-book architecture and the Anglo sod houses of the Great Plains. Even with these influences, however, buildings still reflected the knowledge and skill of their individual builders. On ranches, Hispanic foremen often constructed buildings based on the knowledge and skills available to them, and on what their Anglo employers told them to construct (Haynes and Bastian 1987). Much of the architecture of the PCMS during the latter part of the nineteenth century was a highly vernacular blend of Hispanic and Anglo building forms and traditions.

In the PCMS area, the cattle industry was the primary business pursuit, and it remains so to this day. Early ranching ventures placed little investment capital in land, emphasizing the expansion of cattle herds instead. Although the industry followed the general patterns of economic rise and decline demonstrated by the Plains area as a whole, there were conditions unique to the area which ameliorated the devastating hardships and business collapse which occurred in the more northern portions of the country. Murray (1978:61–66) identifies these conditions.

1. Early settlers gained control of the best sites for ranching operations quickly upon their arrival and especially sought after those lands with access to or control of water.

2. Hispanic ranchers were able to quickly adapt to the Anglo economic system and were not displaced from the range.

3. Water sources and large areas of public domain were fenced much faster than in the Northern Plains. Murray's impression is that the range was cut up into well-defined ranches by 1882, a situation that did not occur until ten or fifteen years later in Wyoming and Montana.

4. Better control over the land and water allowed ranchers to invest in higher quality cattle earlier than northern ranchers.

5. The milder climate made the business much less risky.

Sheep ranching developed in parallel with the cattle industry but managed to avoid the boom–bust cycle the cattle ranchers experienced. In addition, the sheep ranchers had a strong Hispanic sheep-raising tradition. This and the early control of grazing lands helped both the Anglo and Hispanic ranchers to move to mixed sheep and cattle operations earlier and more peacefully than in other western locations (Murray 1978:65–66).

The increasingly industrial population of the early-twentieth-century Front Range towns and the nation as a whole maintained a steady demand for agricultural products. Consequently, prices for farm and ranch products remained high. This was certainly the case during World War I, the war bringing rapid increases in farm and ranching commodities. The prosperity of the time brought with it the heaviest period of settlement for the PCMS in the history of the area. Most of the new settlers were dry-land farmers.

Prosperity also brought a greater ability for ranchers and farmers to purchase manufactured goods. By the onset of the war, the automobile and light truck had largely displaced the stagecoach on mail routes. They also provided greater access to the town markets and a general decrease in the social isolation experienced by ranchers during the late nineteenth century. The increased mobility also allowed homesteading in areas which previously had been quite remote (Murray 1978:92–94).

This economic trend ended with the 1921 recession and the ensuing disastrous reductions in demand and prices for wheat, beef, mutton, wool, and hides. Hard times were generally the situation for the next two decades, resulting in foreclosures and consolidation of holdings throughout this period. A few farmers were able to survive by switching to cattle and sheep ranching. Smaller ranches were incorporated into larger ranches. This general wholesale abandonment of smaller holdings accounts for many of the numerous small historic archeological sites in the general vicinity of Brown's Sheep Camp today. During the 1940s and 1950s, most of the PCMS ranchers who had raised sheep sold their flocks and turned to cattle ranching (Friedman 1985:108–132; Haynes and Bastian 1987:Chapt. 1, pp. 18–19; Murray 1978:101–102).

Previous Cultural Resource Investigations

No historical archeological investigations were undertaken in the PCMS area prior to its acquisition by the U.S. Army in 1983. Once that occurred, however, it was necessary for the U.S. Army to identify and assess the significance of its cultural resources. This process was initiated in 1983 and 1984, when the University of Denver (D.U.) undertook archeological survey and test excavations in three management areas of the PCMS. Hundreds of archeological sites were recorded over the next couple of years, among which were 198 with historic components. Although draft reports were prepared by the D.U. team (Lintz 1985; Anderson et al. 1986) no final report on this work was completed by that team. Instead, the D.U. data was incorporated into reports prepared by other institutions and companies.

An evaluation of the D.U.-recorded historic sites was undertaken by Paul Friedman as a part of the 1983 to 1985 Powers Elevation history and oral history investigation of the PCMS (Friedman 1985). The purpose of Friedman's work was to establish a framework from which to understand historic sites in the maneuver area. Friedman's archival research identified 95 historic sites. Most of these were ranches and homesteads, but the list also included small numbers of sites related to stage stations, roads, towns, cemeteries, and school houses. One of these was Brown's Sheep Camp. In addition, Friedman noted that the D.U. survey had identified historical archeological sites identical in function to those identified

during his archival research. The D.U. sites also included stone and/or wooden features, rock shelters, and rock art, all of which represent temporary activities and/or camps associated with the raising of livestock.

In 1985, Gilbert/Commonwealth, Inc., contracted with the National Park Service to undertake an architectural overview of the PCMS (Haynes and Bastian 1987). Forty-nine sites were subsequently evaluated, most of which were homestead and ranch sites. Again, the Brown's Sheep Camp site was described and recommended as one of seven sites eligible for nomination to the National Register of Historic Places (Haynes and Bastian 1987:Chapt. 5, pp.17–26).

In 1987, Larson–Tibesar Associates of Laramie, Wyoming, conducted an archeological survey in the PCMS (Andrefsky and Sanders 1987; Hilman 1988). The final report (Andrefsky et. al 1990) synthesized that work and all previous archeological efforts within the PCMS.

In 1989, standing structures at Brown's Sheep Camp were documented by a team from the National Park Service (NPS) Historic American Building Survey (HABS). That team was uncertain as to the exact construction dates for the structures but identified a three-room building at the west edge of the complex, listed as HABS No. CO-90-A, as the "Original Residence." The investigators suggest that it may have been erected in 1882 by Underwood Rogers prior to selling the property to Samuel T. Brown (McFadden and Wiatr 1989:2).

The first and only archeological work undertaken specifically at the Brown's Sheep Camp site prior to the present study was a 1992 remote-sensing survey. This survey was undertaken as part of a National Park Service remote-sensing training course sponsored by the Interagency Archeological Services Division. The exercise employed low- and high-altitude aerial photography, ground-penetrating radar, magnetometer, electrical resistance meters, and a conductivity meter. These methods consistently located anomalies in three locations which were interpreted to have potential as cultural features (Bevan 1992; Davenport et. al 1992; De Vore et. al 1992; Heimmer 1992; Somers 1992; Walker 1992; Weymouth 1992).

II. The Archeological Investigation

The present project is a direct by-product of the 1992 NPS remote-sensing training. The archeological portion of these investigations was primarily directed toward "ground-truthing" (locating and identifying) remote-sensing anomalies, obtaining data relating to structure ages, and determining whether physical evidence existed to support a possible association of one or more of the Brown's Sheep Camp structures with the 1870s Hogback Stage Station.

Investigative Methodology

The size and shape of test units utilized at Brown's Sheep Camp varied according to the task at hand. Where information was sought regarding building construction and age, testing incorporated 1-x-1-m units. Shovel probes were utilized to quickly explore larger areas. Excavation proceeded in 10-cm levels. As the ground surface at Brown's Sheep Camp is relatively flat, depth measurements were given as centimeters below the surface (cmbs), e.g., Level 1, 0–10 cmbs. This was done by attaching a string to the highest corner of the test unit and using a line level to measure the depth below the ground surface in centimeters Features were mapped in plan view and in profile, and units were dug until sterile fill was encountered. Artifacts were recovered by passing excavated fill through ¼-in hardware cloth. They were then provisionally cataloged in the field (Field Number), and each number was associated with a group of objects from each excavation level within each test unit. These objects were then resorted and renumbered (PCMS Number) at the MWAC Archeological Laboratory in Lincoln, Nebraska using the system described in the PCMS manual (Dean 1992).

Site mapping was implemented using a Sokkia Set3C transit with an attached SDR electronic data collector. The remote-sensing mapping datum was located southwest of the "Bunkhouse" (HABS No. CO-90-C) at the southeast corner of Remote-sensing Grid 1. The remote-sensing team had established this point as N1000/E1000, and this grid reference was retained by the 1995 investigation team. Once this point was reestablished (Figure 3), a length of orange-painted rebar was driven into the ground and used as the primary mapping datum for the site as a whole. Using a Brunton compass and a fiberglass tape, an old spike driven into the ground 20 m to magnetic north of the datum point was used as a backshot point. All mapping references were made using magnetic north. Both the rebar and spike were left in place at the end of the field exercise.

Throughout the course of mapping and testing, four temporary datums were generated and utilized for mapping specific site elements not visible from other datum locations. At the end of each work day, the mapping data was dumped into an IBM 386–compatible laptop. Maps were generated using Sokkia MAP 5.0. At the end of the fieldwork, these basic maps were dumped as .DXF files into a IBM 486–compatible computer, from which the final maps were produced using AutoCAD 10 and AutoCAD LT software.

Testing the Anomalies

Ground-truthing of anomalies identified by 1992 remote-sensing surveyors required subsurface investigations in three remote-sensing or RS Grids (Figure 3).

RS Grid 1

Test Excavations. In RS Grid 1, an electrical-resistivity survey had identified a 6-x-12-m rectangular area of high resistance. The long axis of this anomaly was oriented northeast to southwest (Figure 4). Resistivity soundings across this area indicated that the anomaly was probably a loam soil

located near the surface and extended to a depth of about 1 m. Based on the resistivity soundings, surveyors estimated that the area of high resistance probably represented a cultural feature. They also noted, however, that the area of higher resistivity could equally have been the product of other natural contrasts; the area might contain rock, or be porous or dry (Bevan 1992:2–5).

Ground-penetrating radar (GPR) transects through Grid 1 identified soil changes which were interpreted as a possible structure wall. This element was suggested to lie 15 cm below the surface on the westerly edge of the anomaly. The GPR survey had also indicated a sloping soil change at the south edge of the anomaly. This was interpreted as a possible floor or ramp feature (De Vore et al. 1992:9). The location generally corresponds to the approximate position of a structure identified on a 1951 ACSC aerial photograph of the site, leading surveyors to tentatively identify the anomaly as the possible subsurface remnants of a demolished structure (Bevan 1992:5).

The initial step in ground-truthing this anomaly was to re-establish RS Grid 1, a 20-x-20-m area located between Structure A, the Original Residence (HABS No. CO-90-E), and Structure C, the Bunkhouse (HABS No. CO-90-C). The southeast corner of this grid was positioned at N1000.0/E1000.0. Once this had been done, the crew was able to identify the approximate locations of the hypothetical structure's corners using the 1992 anomaly map as a guide. These were measured out from known locations, and the anomaly corners were marked with pinflags. As anomaly boundaries were only approximate, it was determined that four 2-m-long by 0.50-m-wide trenches positioned 90 degrees to the axes of the anomaly edges would be the best approach to quickly locate structural feature boundaries if they existed. Test units were placed over the approximate middle of each side of the hypothetical boundary of the rectangular feature (Figure 4). These were numbered counter-clockwise beginning with the southernmost test unit from 1 to 4. In addition, the possible wall feature identified during the ground-penetrating radar survey was at N1012.5/E987.0, the center of Test Unit 4.

Since this anomaly was so regular in shape and its presence was confirmed by a variety of methods, the crew was fairly confident that a structural feature would be identified here. They were surprised, however, to find that cultural materials were restricted to the first 5 cm of fill. Wood fragments and an occasional nail were encountered at the base of the organic topsoil. A light-colored hardpan was encountered in all units immediately below the topsoil or wood fragment layer. Although the topsoil was quite muddy with rainy conditions, the hardpan beneath proved to be virtually impervious to moisture.

In short, the loamy fill predicted by remote-sensing surveyors was not observed in any of the trenches, and no features were identified which could be interpreted as walls or any other portion of a structure. Instead, there was surficial evidence for several roads passing through this area. Vehicles had left a lasting impression on the ground surface, despite the fact that the tracks had remained virtually unused since the site's acquisition by the Army in 1982. It is possible that the remote-sensing techniques recognized the margins of these compacted lanes. The MWAC team's inability to identify the structure shown on the aerial photograph can not be explained unless one assumes the structure had no foundation and sat on the ground surface.

Artifacts. Despite the lack of evidence for a structural feature, a number of cultural objects (n=182, plus numerous uncounted of wood fragments) were recovered (Table 1). All but four of these are essentially surface objects in that they were obtained either on the ground surface or in the first 10 cm below the surface. One object, a jackrabbit sacrum, probably represents a natural intrusion into the site. The remaining four objects were recovered 1–2 cm below the first 10-cm arbitrary level

A prehistoric component at Brown's Sheep Camp is represented by one unutilized tertiary flake (Field No. 8; PCMS No. 16), a biface fragment (Field No. 22; PCMS No. 36), a piece of shatter (Field No. 58; PCMS No. 107), and a Late Prehistoric projectile point (Field No. 1002; PCMS No. 294). This extremely light scatter of prehistoric material was noted only in this portion of the site. Since the objects are surficial (aside from the shatter), it is impossible to determine whether one or more occupations are

represented. Nevertheless, the projectile point is of chronological significance. The specimen is 2.12 cm (0.84 in) long, 1.03 cm (0.40 in) maximum width at the shoulders, and 0.35 cm (0.14 in) thick. It has an expanding stem and a finely serrated triangular blade. An impact scar occurs on the tip. Overall, the form corresponds to descriptions for the Scallorn arrow point (Bell 1960:84–85). These are also similar to Category P58 projectile points from the Pinon Canyon Area (Lintz and Anderson 1989:184–187). It is nearly identical to the projectile point illustrated by Lintz and Anderson (1989) as Figure 4.36, point R from 5LA3538. In the Pinon Canyon area, such points are associated with Plains Woodland. Absolute radiocarbon dates cited by Lintz and Anderson(1989:186) from sites where similar points have been recovered range from 390 BC ± 85 to AD 1380 ± 60. The bulk of the absolute dates cited fall between circa AD 700 and AD 1200.

A historic component is represented in the collection by 177 objects. A functional classification for artifacts used in this study is loosely based upon the classification developed by Sprague (1980–1981). Functional associations (Table 2) for these objects include personal health (n=1, 0.6%); food, food storage, and food preparation (n=18, 10.2%); architecture (n=110, 62.1%); as well as agriculture and animal husbandry (n=11, possibly 15 if electrical materials are considered to be associated with fencing; 6.2–8.5%). There are 33 (18.6%) objects of unidentified function. This array of objects indicates that domestic activities were not characteristic of the area enclosed by RS Grid 1. The relative abundance of architectural objects, however, would reinforce the possibility of a structure once existing at this location.

In addition to their generalized functional associations, some artifacts bear technological or formal evidence that has chronological implications. RS Grid 1 artifacts that bear such evidence include flat glass, some curved glass, nails, and ceramics.

With regard to flat glass, pane size and thickness increased somewhat regularly through the greater portion of the nineteenth and early twentieth centuries. The trend toward greater thickness was brought to a halt after automation and governmental regulation standardized window thicknesses in 1924 (Moir 1982:37; Roenke 1978:38–39).

Flat glass was analyzed to determine an approximate date for building construction. Moir's (1982) study of window glass suggests there may be some regional specificity of dates due to regional variations in window glass manufacture and supply. This led him to develop regression formulas for both the southern and northeastern United States. His southern sample was drawn almost exclusively from Texas, a considerable distance from the Pinon Canyon area. The northeastern sample was drawn from sites even more spatially distant. These factors may influence the accuracy of the dating method in the southern Colorado area. As there has been no regression formula developed for the central portion of the United States, both of Moir's regression formulas were utilized.

Dates derived from the regression formula may be useful where one follows four basic precautions (Moir 1982:15–17). When dating a site as a whole, one should obtain small samples from a number of locations rather than use a large sample from one location. One should also review other artifact categories to be sure that a structure was built between 1810 and 1920. Moir further cautions that one should take great care to remove bottle glass, the latter characterized by curved forms or distinctive coloration. He also determined that flat glass thicker than 3.2 mm probably did not represent window glass and should be excluded from the sample being analyzed. Finally, the use of regression analysis requires a fairly substantial number of specimens in order to be considered reliable. Moir indicates that he has successfully dated sites with samples as low as 20 or 30 sherds, although 50 or more specimens provide much more reliable results (Moir 1982:15).

For the southern United States, the coefficient developed by Moir is based upon data from 28 sites dating from circa 1810 to 1920. The regression coefficient derived by Moir for the northeastern part of the United States utilized data from sixteen sites or structures occupied between 1812 and 1915.

Moir's regression coefficients are

[SOUTHERN SITES] ID = 77.38(TH) + 1727.3; [NORTHEASTERN SITES] ID = 89.78(TH) + 1702.7

where ID is the initial date of construction and TH is mean thickness measured to the nearest 0.01 mm (Moir 1982:23–29).

No flat glass specimens had to be deleted from the RS Grid 1 sample for being over 3.2 mm thick, and the sample size (n=100) was also well above the advised minimum. As per Schoen (1990), an average of three thickness measurements for each glass fragment was used in the computation. Sample size, average thickness, and calculated dates using Moir's methodology are provided in Table 3. The upshot is that flat glass dates for RS Grid 1 are essentially post–World War II.

Several curved glass artifacts have characteristics of some temporal significance. An aqua medicine bottle panel fragment (Field No. 1470; PCMS No. 295) was recovered on the surface of RS Grid 1. The only manufacturing characteristic on the fragment is a basal mold mark, a characteristic which bears little diagnostic information in and of itself. Of more utility is a raised (molded) mark "[script:]....h's/ [motif:pennant] ....RK" on the panel remnant. Enough of the label is present to identify the complete the mark as "[script:] Rawleigh's/[motif:pennant] TRADE MARK," a product of the W.T. Rawleigh Co. of Freeport, Illinois. That company started manufacturing medicines in 1889 and continues to do so to this day (Fike 1987:240). A clear bottle version of this specimen has been attributed to 1905–1917 (Bowyer et al. 1995:6–42, 6–48). An aqua bottle would likely date from an earlier period, that color vessel often preceding clear glass containers. One may conclude a possible association with the 1890s or early 1900s.

Glass color has been variously regarded as having or not having chronological implications (e.g., Jones et al. 1985, Munsey 1970, Fike 1987). Color alterations that are caused by exposure to the sun, however, do appear to be of some utility in this regard. Five curved glass fragments from RS Grid 1 are sun-colored. One curved glass fragment (Field No. 15; PCMS No. 26) of an unidentified vessel is sun-colored purple, a by-product of exposing glass clarified with manganese to the ultraviolet light of the sun. Manganese was used as a clarifier by the American glass industry from circa 1880 to 1914 (Munsey 1970:55). Four fragments (Field No. 20; PCMS No. 33) are sun-colored yellow. Such glass, originally clear, was clarified using selenium, the glassmaker's alternative to manganese. Selenium was in common use from 1916 through 1930 at which time arsenic was selected to decolor glass (Munsey 1970:55).

Nails recovered from Brown's Sheep Camp are of two general types: cut nails and wire nails. Cut nails are rectangular in cross section and made by cutting wedges from sheets of metal. Initially, they were made by hand, but for the majority of the nineteenth and all of the twentieth centuries they have been manufactured by machine. Cut nails were the predominant nail type for most of the nineteenth century. Wire nails are round in cross section and, as the name implies, are manufactured from wire. This nail type rapidly displaced the cut nail after 1886. It was at this time that machinery was introduced which allowed wire nails to be manufactured much faster and considerably cheaper than the cut nail. By the turn of the century, builders virtually ceased using the cut nail (Gillio et al. 1980; Nelson 1962). Only wire nails were (n=8) were recovered from RS Grid 1. This suggests the historic component is associated with a post-1900 temporal affiliation.

One of the ceramic fragments (Field No. 14; PCMS No. 23) is decorated with flow blue transfer print. The pattern element is undistinguished and not determinable. Flow blue has had a long period of production (circa 1840 to present), and it has had two periods of high popularity. One of these was circa 1840–1860, a date far too early for this site's occupation. During a later period of popularity (circa 1900), the ceramics are distinguished with raised rim designs and gold edging (Derven 1980:125, 138). Although the fragment from Brown's Sheep Camp is not a rim element, it is most likely the specimen is derived from the later period. Together, the artifacts from RS Grid 1 point to the materials' deposition sometime after 1900 but prior to the beginning of World War II.

RS Grid 2

Test Excavations. Using the 1992 remote-sensing maps, RS Grid 2 was reestablished as a 10-x-10-m square positioned immediately north of Structure G, the Commissary (HABS No. CO-90-G) and west of Structure B, the Horse Barn (HABS No. CO-90-B). Its southeast corner was located at 1027.0N/1028.6E.

Procedures similar to those used in RS Grid 1 were used to test RS Grid 2. Again, review of a 1951 aerial photograph by the remote-sensing crew suggested a building at this location. The 1992 resistance survey identified a somewhat amorphous anomaly in the north-central portion of the grid. This feature was suggested to be approximately 7.5 m by 6 m in size and near the surface. Its resistance reading suggested that it was of different material than the shallow anomaly identified in Grid 1 (De Vore et al. 1992:10; Weymouth 1992:5).

MWAC's 1985 test of RS Grid 2 was guided by the field crew's observations about this area prior to and during the reestablishment of Grid 2 as well as the 1992 anomaly characteristics. The anomaly in RS Grid 2 was rather amorphous in contrast to the more regularly-shaped anomaly of RS Grid 1, and its margins could not be relocated and marked in the same way. Also, as the north boundary of RS Grid 2 was being reestablished, it was observed that the ground on the south side of the line (within the grid) was soft, while the ground north of the line was firm. A general rise over the grid location was noted as well. These characteristics were interpreted as denoting possible traffic lanes (hard ground at the grid margins) and a structural location in the area of soft ground inside the grid itself.

On the basis of these observations and the 1992 anomaly map for RS Grid 2, a 1-m^2 test unit (Test Unit 1) was placed in the northeast quarter of the grid over the approximate west margin of an area where resistance readings were highest (over 80 ohms) (Figure 5). Where the goal with the RS Grid 1 tests was to attempt identification of a structure margin, the broader area encapsulated by the test unit in RS Grid 2 was aimed toward locating any kind of structural remnant.

Excavation of Test Unit 1 proceeded in the same manner as that described for RS Grid 1 and the effort was met with positive results almost immediately. At about 16 cm below the surface, a linear water resistant feature was encountered. This was interpreted as an adobe wall segment. To better understand what was going on here, a second 1-m^2 test unit was placed on the east side of Test Unit 1. This revealed a stone concentration at the same level as the adobe wall, the stone overlying fragments of old bottles and iron (Figure 6). Test Units 3 and 4 were quickly opened, but lack of field time prevented the full exploration of the units. Four inches of heavy, wet snow and blowing wind on the last day planned for fieldwork forced units to be backfilled leaving the features in place and only partially explored. Never-theless, testing confirmed the cultural origins of the anomaly in Grid 2 as exposed features were interpreted as elements of a structure.

Artifacts. A relatively large number of objects (n=900) were retrieved during the course of testing RS Grid 2 (Tables 2 and 4). Of these, four jackrabbit bones are considered non-cultural intrusions, the remaining 896 objects being of cultural derivation. Twenty-three (2.6%) of the cultural objects are personal items representing medicine and alcoholic beverage bottles, clothing, and firearms. Items related to food, food storage, and food preparation (n=267; 29.8%) are extremely common. They include soft drink (Pepsi and unidentified brand of root beer) bottle fragments, at least one canning jar, dinner-ware, one or more tin cans, and a cork. Domestic items were minimal (n=2; 0.2%), consisting only of an appliance foot and a caster.

Objects related to architecture and construction are almost as numerous as those associated with food (n=196; 21.9%). These include numerous wood fragments, flat glass, sandstone flakes or spalls, nails, and roofing tacks. Clearly, these artifacts, along with the features exposed during excavation, indicate a structure being here at one time. Charred and partially burned wood fragments suggest the

structure was consumed in a conflagration. The sandstone spalls are most likely derived from the rough shaping of stones at the time of foundation construction. Nails sizes suggest a wooden roof and/or interior walls. Roofing tacks are of the type suitable for attaching tar paper to the roof structure. Some nail shafts bear small-diameter lead washers, suggesting the possibility that they were used to attach corrugated sheet metal roofing to the structure.

Agriculture/animal husbandry is represented by 45 (5.0%) objects. Nineteen are associated with electrical storage and transmission. A paper-covered carbon battery with brass wire connector on its top (Field No. 175; PCMS No. 289) is identical to batteries illustrated in the mail order catalogs for 1895, 1902, and 1908 (Montgomery Ward 1969:214; Sears, Roebuck & Co. 1969:151, Schroeder 1969:205). This may have been part of a system of electrified fencing or small-scale direct-current lighting inside the structure. Most of the remaining objects are fencing elements (wire and staples). Three artifacts are associated with horse tack; e.g., horseshoes and bridle/harness.

The remaining 363 objects (40.5%) are of uncertain function. Incorporated in this broad class are curved (bottle) glass, ferrous metal fragments, a washer, tin foil, a plastic tube, a bolt, nuts, paper, a cotter pin, a bucket ear, and rubber fragments.

In addition to their general functional associations, some artifacts recovered from RS Grid 2 bear technological or formal evidence that has chronological implications. Such objects include flat glass, nails, some curved glass, and firearms cartridges.

Using Moir's dating technique with flat glass required that all the fragments from RS Grid 2 be combined to achieve a suitably-sized sample (n=24). Using the correlation coefficient for the north-eastern United States, the average thickness of the sample (Table 3) equates with a date of 1900. The coefficient for the southern United States derives a date only slightly earlier; ca. 1898.

Sixty-seven nails and nail fragments were recovered in RS Grid 2. Of these, 53 are wire, 4 are cut, and 10 are too corroded to identify their type. The overwhelming preponderance of wire nails supports a post-1890 temporal association for the historic component.

A number of curved glass fragments from RS Grid 2 are sun-colored purple and yellow. As noted earlier, sun-colored purple glass was manufactured between circa 1880 and 1914. Clear glass that turns yellow in the sun was manufactured circa 1916 through 1930. Together, these fragments suggest the structure in RS Grid 2 was probably in place at least by the turn of the twentieth century and continued in use through at least the early 1930s.

A few curved glass specimens are derived from soft drink bottles. A number of these bear fragments of Pepsi Cola and (possibly) Hires Root Beer painted labels. Munsey (1970:52) refers to this type of label as "applied color labeling." According to him, the process of enameling bottles in this manner was invented circa 1920. It was not extensively used until the 1930s, at which time it began to replace raised molded labels. It continues to be used on glass containers through the modern era.

Two curved glass specimens bear imprints derived from the processes used to manufacture glass vessels. The first specimen (Field No. 100; PCMS No. 172) is a reconstructable, clear, one-pint shoo-fly flask. The base of this whiskey bottle displays an Owens cut-off scar. These marks appear as feathery-edged circles and were created by shears that cut off the gob of glass in the Owens bottle-making machines. They typically appear on bottles manufactured from 1904 to the early 1950s (Jones et al. 1985:37–38; Munsey 1970:40). Some fragments of the bottle are sun-colored purple, a characteristic of glass manufacture dating circa 1880 to 1914. This vessel would therefore date to circa 1904–1914.

One curved glass specimen (Field No. 174; PCMS No. 288) from the base of a wide-mouth aqua canning jar displays a valve mark and two vent marks. A valve mark is a small, circular mark caused by

a plunger pushing the bottle out of its mold (Jones et al. 1985:37, 39; Munsey 1970:40–41). Machine-made valve marks are found on the bottom of glass containers manufactured from 1930 to 1940. Vent marks appear as small dots on the glass surface created by small venting holes in the bottle mold. These appear to date from the last third of the nineteenth century through the 1920s (Jones et al. 1985:47). This specimen, therefore, probably dates to the 1920s.

Two firearms cartridges were also recovered from the upper level of Test Unit 2. One of these (Field No. 26; PCMS No. 39) is the brass base of a .410 shotgun shell.

Shells for .410 shotguns were not offered in mail order catalogs up to at least 1910. They do appear in the 1923 Sears, Roebuck catalog, however (Schroeder 1973:790) suggesting that these weapons came into popular usage sometime around World War I. Such weapons continue in widespread usage today. The head of the Brown's Sheep Camp specimen is marked "REMINGTON EXPRESS." The ferrous primer is heavily corroded and may obscure additional marks. It generally matches a description for Remington .410 Express cartridges which had a green, smooth casing and ½-length brass (Steward 1969:46, 48). Although the Remington company was purchased by Winchester Arms Co. and the Union Metallic Cartridge Co. (U.M.C.) in 1888, the Remington name continued to be used either whole or in part with U.M.C. during the subsequent decades (Steward 1969:45). Express brand shot shells would appear to date to the 1930s (Vinson 1968:91).

The second cartridge (Field No. 26; PCMS No. 39) is a brass .25 caliber centerfire casing bearing the headstamp "REM-UMC/25 ACP." According to Barnes (1980:162), the .25 Automatic Pistol was introduced into the United States in 1908 for use with the Browning-designed, Colt-manufactured .25 Vest Pocket Automatic pistol. Dozens of pistols have since been made to chamber this cartridge, and it continues in manufacture to present. The head of the .25 cartridge from RS Grid 2 exhibits a white metal primer and is marked "REM-UMC/25 ACP." According to White and Munhall (1977:126), the REM-UMC designation has been in use since 1911 through present. This and the .410 shell together suggest a post-1930 attribution for the first level in RS Grid 2.

RS Grid 3

Test Excavations. The third remote-sensing survey area tested is located in the corrals east of the Horse Barn (Structure B). A single resistivity profile across the site's corral system identified an area of very low resistivity values at the south end of the transect. The 1951 aerial photograph of the site revealed a low structure in this approximate location. Low resistivity in the vicinity of the corrals may reflect the accumulation of manure from confined animals. The concurrence of such resistivity values with the approximate location of a former structure led 1992 surveyors to interpret the anomaly as a possible building used to feed and confine domestic animals for an extended period.

In the corrals, MWAC testing was focused on a linear rather than a two-dimensional anomaly. The linear nature of this survey required a somewhat different approach to investigating the anomaly. An 18-m (N-S) by 28-m testing grid was established, its southwest corner at coordinate 1030.0N/1080.0E (Figure 7). Then, the approximate position of the 1992 resistivity survey transect line was relocated using maps and coordinates indicated on the 1992 RS survey map. Two 1-m² units were established on the transect line. The southwest corner of TU1 was 3 m from the south end of the transect. The southwest corner of TU2 was 6 m from the south end of the transect in the approximate center of a low resistance area. An east-west shovel probe transect was also established, the first located 4 m east of the remote-sensing line. Four additional shovel probes were placed every 4 m along the east-west transect. Excavation of test units and shovel probes proceeded in the same manner as that described for RS Grid 1. Results once again were positive.

Both 1-m² test units demonstrated that a fairly thick layer of desiccated manure existed on the surface of the site. No cultural layers existed below the manure level in TU1. In contrast to this,

excavation of TU2 demonstrated six strata within the upper 20 cm of fill (Figure 8). Comparison of this unit's strata with the initial test unit suggested that all but the lowest of the six may be of cultural derivation.

Shovel probing proved to be equally productive. Though the first three shovel probes on the east end of the test transect proved negative, the next unit squarely hit a feature. As the hole was expanded, this feature proved to be a post and post hole (Figure 9). The fifth and last probe also hit a feature and this turned out to be a post hole as well. Whether the posts are structural elements or the remains of an old fence line was not determined. Nevertheless, the complex cultural stratigraphy in the second test unit and the identification of two post holes in proximity to that stratigraphy lends support to the identification of the low-resistance anomaly as a shed for housing domestic animals.

Artifacts. Sixty-one cultural objects and two non-cultural intrusions were recovered as RS Grid 3 was tested (Table 5). Artifacts from the surface and first 10-cm levels of test units and shovel probes include a soft drink bottle fragment and other unidentified curved glass, sheep and unidentified mammal bones, sandstone flakes and red painted concrete fragments similar to that occurring on Brown's Sheep Camp building foundations, yellowed Plexiglas similar to that used on the Horse Barn windows, wire nails, ear tags, and fragments of black rubber. Lower levels of test units contained sandstone flakes, a wire nail, a fencing staple, curved glass, and a piece of olive green plastic. No diagnostic materials were recovered from the test units.

The most interesting objects are the ear tags. These are made of red, blue, and green plastic and most are marked "TYRONE/GRAZ. ASSN." A few bear only numbers. The Tyrone Grazing Association purchased Brown's Sheep Camp in 1966 and operated it until 1974 (De Vore n.d.:Section 7, page 3). Robert Hill, currently a PCMS employee, was employed at that time as manager of the association. He has stated (Hunt, personal communication 1995) that colored tags were used by association members to mark their cattle, each color identifying the animals of a particular owner. Numbered tags referred to a specific animal.

Building Tests

The second portion of the archeological investigation focused on three of the site's six adobe structures. The specific goals for this work were to attempt the determination of building construction and modification periods with an overall objective of identifying one or more structures which could potentially be associated with the 1871–1876 Hogback Stage Station. This work was especially directed toward obtaining window glass, nails, and other temporally diagnostic artifacts, as well as to reveal obscured structural details of interest to the team architect. Two 1-m² test units were excavated at each structure, these being placed beneath doors and windows.

Structure A (Original Residence)

This south facing building is at the westernmost edge of the complex. Its southeast corner is located at N1000.66/E973.62. All windows and doors are located on the south and north sides of the structures. Testing in the vicinity of the openings on the south side was prevented, however, by a concrete sidewalk which ran the length of the building. Two 1-x-1-m units were established on the north side, adjacent to the building's foundation (Figure 10). The southeast corner of Test Unit 1 was 2 m west of the building's northeast corner under the north window (window W101) of the building's east room (see Figure 12 for window location). The southwest corner of Test Unit 2 was placed 4.38 m east of the building's northwest corner opposite an interior wall separating the west and middle rooms.

The intent of the test was to obtain temporally diagnostic artifacts which could be associated with the structure and examine the foundations for all three rooms to determine whether they are the same

(and therefore contemporaneous) or different (and therefore of a different age). In addition, TU2 was placed to determine whether another room once existed on the north side of the structure's west room.

Three shovel probes were also excavated into the structure's interior dirt floor to examine the foundation elements, since they were easier to access from the inside. Digging even small holes in the building interior was complicated by the fact that the floors were covered with large amounts of loose dust and bird droppings. This raised serious potential health issues for the excavator. Concerns were addressed by wetting the excavation points with water to settle dust, by having the excavator wear a dust mask, and by excavating for short periods, which allowed the dust to settle before the next hole was dug. All doors and windows were opened to maximize ventilation of the structure interior.

Together, interior and exterior tests revealed that east and west rooms of Structure A are set upon an adobe foundation. This was surprising, given the fact that every other structure in the complex has stone foundations. Interior tests also demonstrated that the east room has a wooden floor. The center room has no foundation at all; the walls simply rest on the ground surface. Evidence for an interior wooden floor was noted in this room, however. All that is left of this floor are pairs of wire nails placed into the top of an east-west board sill. These nail pairs suggest the planks once ran north-south and were about 6½ in wide. Beneath the former wooden floor level is a compact dirt floor. Evidence for another room on the north exterior side of the structure's west room was not forthcoming.

The upper layer of the dirt floor in the west room is a loose fill composed of dirt and bird manure. Beneath this is a very hard layer about 1 to 1½ in thick. White speckles in this layer led to the conclusion that the hard layer is composed of either dirt and lime or dirt and bird manure. A board fragment sits slightly askew in the top of this layer in front of a filled-in north door. Below this is a somewhat softer but still compact layer, and beneath this is about 2 in of loose fill containing straw and plaster board. This led the project architect to believe that all the fill had been deposited after the middle space was walled in. The base of the door sill lies about 3 in below the top of the first hard layer.

Exterior testing resulted in the recovery of 361 artifacts (Table 6). All but six of these were from the surface or the first 10-cm excavation level. Two tertiary chert flakes are from the prehistoric component in this portion of the Brown's Sheep Camp site.

The remaining 359 objects are associated with the historic component. Of these, 3 (0.8%) firearms cartridges may be considered personal items (Table 2). Eight objects (2.2%) are food items or associated with food. The largest functional category of artifacts is architectural (n=161), representing 44.8% of the historic objects recovered. A ferrous nut may be associated with farming equipment and may therefore represent some aspect of agriculture or animal husbandry. The function of the remaining objects (n=186; 51.8%) could not be identified.

Objects with chronological associations include cartridges, flat glass, curved glass, and nails. The three cartridges from Structure A include a .30-30 or .30-30 WCF centerfire recovered on the ground surface, a .22 Long or Long Rifle and a .22 Extra Long from the first 10-cm level of Test Unit A (Table 6). The .30-30 bears headstamp "U.M.C./30-30." White and Munhall (1977:148) indicate this mark was used by the Union Metallic Cartridge Co., Bridgeport, Conn., from its founding in 1867 until its merger with Remington Arms–Union Metallic Cartridge Co. in 1911. The .30-30 Winchester was first marketed in 1895 and continues to be made to date (Barnes 1980:48). The .22 Long or Long Rifle was made from 1871 to present (Barnes 1980:289). Its headstamp "H" is that of Winchester Repeating Arms Co., New Haven, Connecticut, and successors (White and Munhall 1977:23) and has been in more-or-less continuous use since that company's founding to present. The .22 Extra Long (Barnes 1980:289) has a "U" headstamp. This identifies it as the product of one of three companies: Union Metallic Cartridge Co. (1867–1911), Remington Arms–Union Metallic Cartridge Co. (1911–1921), or Remington Arms Co., Inc. (1921 to date), all of Bridgeport, Connecticut (White and Munhall 1977:31). Together, these objects suggest a more-or-less modern date for the upper levels of fill around Structure A.

A substantial portion of the architectural materials was made up of flat glass (n=126 specimens). Moir's correlation coefficients were applied for glass samples from each test unit and for both samples combined (Table 3). Sample sizes in each case were well above Moir's recommended minimum (n=20). The sample from Test Unit 1, incorporating 59 specimens and having an average thickness of 2.27, returned a date of 1906 utilizing the coefficient based on Moir's northeastern U.S. sample. The coefficient based on the southern U.S. sample returned a date of 1903.

Similar application of these coefficients to a flat glass sample (n=67) from Test Unit 2 resulted in dates of 1892 and 1901. Combining the samples, dates of 1899 and 1896 were returned. Clearly, the flat glass sample from Structure A indicates that it was in place, and likely built in the late 1890s or early 1900s.

The only curved glass specimen with determinable chronological associations is a fragment recovered from the surface which has been sun-altered to yellow. As noted earlier, this implies a post-1916 through 1930 time frame.

Nails recovered from Structure A include 17 wire specimens, the head of a cut nail, and 7 specimens which could not be attributed to type. These reinforce the association of the structure to post-1890.

Structure C (Bunkhouse)

The "bunkhouse" is an L-shaped structure whose southeastern corner is located at N1004.99/ E1010.87. Window and door openings occur on every side of this structure. It is composed of two rooms, neither of which communicates with the other by doorway. Both rooms exit to the east. The southern room has its long axis oriented north-south and the northern room's long axis is oriented east-west (Figure 17).

Selection of testing locations was inhibited only by a large concrete patio at the northeast margin of the house (Figure 17). Two 1-x-1-m units were opened immediately next to the foundations of this structure (Figure 10). Test Unit 1 was centered under the north window (window W202; Figure 17) of the north room of the structure. Its southeast corner was 3.64 m west of the building's northeast corner. Test Unit 2 was centered under the west window (window W200; Figure 17) of the south room of the structure. Its southeast corner was 3.87 m north of the building's southwestern corner. These positions were chosen with the goal of obtaining chronologically diagnostic artifacts (particularly window glass) of potential use in dating the two building segments. They were also placed immediately next to the building foundations in order to allow the project architect to access and inspect the foundations of each wing, the goal here being to determine similarities or differences in construction method and building material.

The rooms were discovered to be founded on roughly shaped stones rather than adobe. The type of stone used under each room was different, however. The north room's foundation was of fine-grained sandstone, while the south room was founded on a compact shale. This suggests the rooms were built at different points in time.

A very large number of objects (n=1,417) were recovered from these two small units. One of these was a non-cultural intrusion (Appendix A), a probable jackrabbit bone. A black chert secondary flake from the upper 10-cm level of Test Unit 2 is the sole prehistoric object recovered. The remaining items are associated with the historic component.

An impressive number of artifacts (n=993) were recovered from Test Unit 1 (Tables 2 and 7). All but 78 of these were from the first 10-cm level of the unit. Among the total number of objects from this unit are 21 (2.1%) personal items including four firearms cartridge casings and 17 beer bottle fragments. Food-related objects (n=70; 7.0%)) are associated with food by-products, food storage, and dinnerware.

Architecture/construction is represented by 840 (84.5%) objects, the overwhelming preponderance of which is flat (window) glass (n=824). A light bulb fragment is the sole item (0.1%) of electrical material in the collection. Agriculture/animal husbandry is represented by four fencing staples (0.4%). The functions of the remaining 58 (5.8%) objects from Test Unit 1 remain uncertain.

About half as many objects (n=421) were recovered during the excavation of Test Unit 2 (Table 7). These include four (0.9%) personal items representing clothing, tobacco use, and firearms (Table 2). A single item (0.2%), a furniture tack, is associated with domestic functions. Food-related objects (n=40; 9.5%) include food by-products, food storage, and dinnerware. Architecture is once again the overwhelming majority of objects and includes 302 artifacts (71.7%), 262 of which are flat glass fragments. In addition, a wood and ferrous metal windmill pump rod (not collected and not included in the artifact count from this unit) embedded in the northeast corner of the unit may have been used as a ground stake for a lightning rod. Personal transportation is represented by a single item (0.2%), an automobile tie rod. Agriculture/animal husbandry is denoted by 6 objects (1.4%) associated with fencing and draft or riding animals. Unidentified function objects make up the remaining 67 (15.9%) artifacts from this test unit.

Temporal associations of artifacts were also examined for each test unit. For Test Unit 1, these include a firearms cartridge casing, nails, curved glass fragments, flat glass, and a key from a key-opening reclosure tin can.

Four .22 caliber casings are from Test Unit 1, three (a .22 Short and two .22 Longs) from the first 10-cm level and the fourth (a .22 Short) from the second level. According to Frank Barnes, the .22 Short is the oldest American, commercial, self-contained, metallic cartridge. It has been in continuous production since 1857. The .22 Long was introduced in 1871 and continues to be manufactured to present (Barnes 1980:289). The .22 Short bears the headstamp "P," a mark of the Peters Cartridge Co., Kings Mills, Ohio and their successors the Peters Cartridge Division of Remington Arms Co., Inc., Bridgeport, Connecticut (White and Munhall 1977:28). The .22 Longs have the headstamp "F," the mark of the Federal Cartridge Corporation, Minneapolis (White and Munhall 1977:21). This company continues in operation to present. In short, there is nothing about these cartridges which does not suggest that they are of modern deposition.

Nine nails were recovered in Test Unit 1. These include 6 wire nails in the upper 10 cm of the unit, 2 cut nails in the same layer and 1 cut nail in the 10–20 cmbs level. Together, these suggest a post-1890 temporal frame, although the single example of the cut nail in the lower level may be indicative of an earlier chronological position.

A number of curved glass fragments have characteristics with chronological implications. Two fragments bear remnants of painted labels. As noted earlier in this report, the process of enameling bottles in this manner was invented circa 1920. It was not extensively used until the 1930s, at which time it began to replace raised molded labels. It continues to be used on glass containers through the modern era. One curved glass specimen is sun-altered purple in color. Such materials date circa 1880–1914. Two sherds bear manufacturing marks, one an Owens suction scar and the other a machine-made valve mark. The former appears on bottles manufactured from 1904 to the early 1950s. The latter marks are found on the bottom of glass containers manufactured from 1930 to 1940.

The excavation of Test Unit 1 resulted in the recovery of 824 flat glass fragments (Table 3). Using Moir's coefficient for northeastern United States window glass, the average glass thickness of 2.43 correlates with a date of 1921. His coefficient for southern U.S. window glass results in a date of 1915. This suggests construction of the northern room of Structure C sometime around World War I.

A key (Field No. 40; PCMS No. 65) from Level 1 (0–10 cmbs) is derived from a key-opening reclosure tin can. These cans usually packaged such food products as nuts, candy, coffee, shortening,

and dried milk. Such objects were introduced circa 1910 and were in use through at least the 1970s (Rock 1987:70).

Items with chronological implications from Test Unit 2 include whiteware ceramics, curved glass, flatglass, a firearms cartridge case, and nails. Two burned whiteware ceramic rim fragments from Levels 1 and 2 (Field No. 52; PCMS No. 92 and Field No. 44; PCMS No. 75) are decorated with floral decalcomania and delicate curvilinear repoussé. Majewski and O'Brien (1984:36) attribute ceramics of this decorative type largely to a period between 1880 and 1930. A third piece of whiteware (Field No. 52; PCMS No. 92) displays a blue handpainted band on a flowblue rimsherd. Derven (1980:138) notes this decorative technique was in use earlier in the nineteenth century and experienced a revival circa 1900–1910. Its most likely that this sherd represents the latter era.

Curved glass specimens from Test Unit 2 includes painted curved glass in the first 10-cm level and sun-altered purple glass in the second 10-cm level. The former would date to post-1930 while the latter dates to circa 1880–1914. This suggests at least some chronological differentiation of the fill with depth.

In all, 263 fragments of flat glass were recovered during the excavation of Test Unit 2 (Table 3). Using Moir's coefficient developed from northeastern United States glass samples, the sample from Test Unit 2 has an average thickness of 2.17 mm and equates with a date of 1898. Use of the correlation coefficient derived from southern glass samples returns a date of 1895. Comparison of these dates with those for Test Unit 1 suggests that the southern room of this two-room structure may have been built about 20 years prior to the northern room.

The cartridge case from Test Unit 2 is a .38 Smith & Wesson centerfire recovered from Level 3 (20–30 cmbs). The .38 Smith & Wesson centerfire was introduced in 1877 and continues to be made today (Barnes 1980:177). Its headstamp, "PETERS/.38 S & W," identifies this as the mark of the Peters Cartridge Co. of Kings Mills, Ohio (White and Munhall 1977:119). The company was operated from 1897 to 1934, when it was sold to Remington-UMC (Vinson 1968:91). This level, therefore, likely dates between 1897 and 1934.

Nails from this unit include 17 wire nails and 2 cut nail fragments. Wire nails are from Levels 1 and 2 (0–20 cm) while cut nails occur in Level 2 (10–20 cmbs) only. These indicate a post-1890 association for both levels. Together, these items suggest some temporal variation may exist here with depth.

Structure E (Main Residence)

The placement of test units at Structure E (Figure 10) was strongly influenced by the project architect's study of the structure. That study (see following chapter) concluded that the northern two rooms of this building are the oldest, with the northeast room estimated to be the older of the two. Access to all but the north side of these rooms was prohibited by subsequent additions, however. Test Unit 1 was therefore established at the north wall of the structure as close to its north window as possible. A lilac bush immediately under the window prevented digging immediately beneath the window itself. Again, the goal was to attempt the recovery of temporally diagnostic artifacts which would assist in identifying the age of the original component of the structure. Further consultation with the project architect resulted in the decision that a unit immediately east of Test Unit 1 was desirable, as this might allow us to increase our sample of window glass for the structure. Both units were excavated to a point just below the base of the building's foundation to allow the architect to inspect that structural element.

As Test Unit 1 was being excavated, the archeologist and architect conducted a survey of this building's attic. This space had been sealed off when a ceiling had been installed. Lacking a built access, the space was entered by opening a small hole in the ceiling of the house's southwest room. It was soon discovered that the project architect had been correct in his assessment that the northeastern and northwestern rooms of the structure were the original elements of the building (the architect's

discussion for Structure E details the evidence upon which this conclusion was founded in the following section, "Architectural Investigation"). The roof of the southwestern room additions were discovered to be of standard-size lumber held in place with wire nails, factors which suggest a post-1900 date. In contrast, the original roof over the northeast and northwest rooms is composed of rough-sawn ceiling rafters and widely spaced sheathing of irregular width. The roof over the northern rooms is composed of sheathing fastened to the rafters with cut nails. Further, the earliest layer of roofing felt and shingles were attached only with cut nails.

The exclusive utilization of such fasteners suggests a relatively early date for these two rooms, a conclusion which was reinforced after careful removal of a door surround molding in the northeast room. This revealed the door to have two surround layers identical in size. When the overlying surround was removed, the earlier molding was found to be held in place solely with cut nails. The exclusive use of cut nails is evidence that construction of this portion of the Main Residence may have been initiated during the ranch's homestead period; i.e., between 1882 and 1887.

Eight nails were removed from the Main Residence's attic for analysis. A 10d cut nail was extracted from a rafter over the northwest room. Crawling through a hole in the adobe gable between the northwest and northeast rooms, investigators found cut nails resting in the accumulated dust on the upper surface of the room's ceiling. These were probably dropped during construction of the roof. Seven specimens were collected: one 10d and six 4d nails. The larger nails were used to tie the rafters together, while the smaller nails were used to hold the sheathing.

The cut nail specimens were cleaned in the laboratory with a light acid solution to remove any rust present and to reveal the grain of the metal, if any. These were then examined and classified using variables developed and presented by Edwards and Wells (1993). In their study, cut nails carefully removed from standing historic structures were sorted into types and seriated, resulting in a detailed chronology of cut nail manufacturing technology dating from the early eighteenth century through the early twentieth century.

In each case, cut nails from the Main Residence (Structure E) of Brown's Sheep Camp appear to be of the same type. Shafts are rectangular-square and tapered on two sides, with two burr edges on the same face. This effect is produced by the plates being sheared from opposite sides every other cut. The nail points are flat. All are machine headed, the upper shaft pinched by a header machine. The heads are flat when viewed from the front face and ovoid/rectangular when viewed from the top. Burrs appear immediately under the heads on the shaft sides. Corners of the heads are tipped from the heading process. One or two deep-to-shallow, oblique grooves are impressed into the sides of the head. These are more readily apparent on the larger nails. These grooves do not appear to be a product of face splitting but due to some type of gripping mechanism. In general, the heads and shafts are uniform in size and shape. In addition, the metal has no grain, an indication that the nails are made of steel.

All these characteristics conform with Edwards and Wells' Type 10 nails (Edwards and Wells 1993:58, 60–61). These were in light use circa 1882–1884 and in heavy use from 1885 through 1894. Their use dramatically decreased thereafter, although they apparently continued to be utilized in extremely small numbers to circa 1920. Such dates suggest that cut nails from the attic of the Main Residence (Structure E) are too late to be derived from the 1871–1876 Hogback Stage Station. Instead, they would appear to be related to the construction of the early, or perhaps even the original, ranch structures during the 1880s.

Other artifacts with functional and chronological implications for the occupancy of Structure E were recovered during excavation of Test Units 1 and 2. Together, 260 objects were recovered during the test excavations (Table 8). Among these are a granular black chert flake from Level 3 (20–30 cmbs) of Test Unit 2, which is associated with the dispersed prehistoric component of the site. In addition, a prairie

dog bone from Test Unit 1 is probably of non-cultural deposition. The remaining 258 artifacts recovered from the tests are associated with the historic occupation of the site.

With regard to functional associations (Table 2) of the historic artifacts, personal objects account for only 1.6% (n=4) of the assemblage. Firearms cartridge casings are the only objects in this functional category. Food-related items are somewhat more common with 43 (16.7%) objects. This includes ceramic dinnerware, a modern aluminum can pull tab and bones from domestic animals. Domestic activities are represented only by two fragments (0.8%) of Depression glass. Architecture/construction objects make up slightly more than half (55.0%) of the collection from this area with 142 specimens. Agriculture/animal husbandry and electrical items probably associated with that activity account for 9 objects (3.5%). The function of the remaining 58 objects (22.5%) remains uncertain.

Artifacts with chronological implications include firearms cartridge casings, ceramic dinnerware, curved glass, and flatglass. Four cartridges were recovered from Structure E (Main Residence), Test Unit 2 (Table 8). A .22 BB Cap or .22 CP Cap with no headstamp was obtained from Level 2 (10–20 cmbs). Such cartridges were originally manufactured (1845) for target shooting. The CP Cap had a larger powder charge and, usually, a somewhat larger projectile. Manufacture of both versions by American firms was discontinued circa 1940 (Barnes 1980:288). Cartridges would therefore indicate a pre-WWII association for Level 2 of this unit.

Three cartridge cases were found in Level 3 (20–30) of Test Unit 2. The first of these is a .30-30 or .30 WCF centerfire with headstamp "U.M.C./30-30." As was noted in the discussion for Structure A, cartridges of this type and by this manufacturer probably date to circa 1895–1911. A second casing is a .38-40 centerfire. These were introduced in 1874 and continue to be made today (Barnes 1980:77). The case bears the headstamp "U.M.C./.38 C.F.W.", a mark used by the Union Metallic Cartridge Co., Bridgeport, Conn., from its founding in 1867 until its merger with Remington Arms in 1911 (White and Munhall 1977:148). Therefore, this cartridge may date to circa 1874–1911. The last casing in this level, a .32 Short rimfire, bears the headstamp "H" (see manufacturer discussion above). Manufacture of this cartridge was initiated in 1861 and continued through at least the 1970s. Rifles and pistols using this cartridge were very popular in early 1900s. Apparently, weapons were not manufactured to use it after 1936 (Barnes 1980:293). Taken together, the most likely temporal association for this level (based on the casings) is circa 1895–1911.

One fragment of whiteware ceramic dinnerware from Level 3 of Test Unit 1 is decorated with a flow blue transfer-printed design. The specimen is too small to identify the pattern. However, Derven (1980:138) indicates that this decoration was commonly applied in the 1840s and experienced a revival around the turn of the century. It is most likely that the fragment from Brown's Sheep Camp is associated with the latter date.

Several curved glass fragments exhibit yellowing caused by ultraviolet rays in sunshine. Munsey (1970:55) indicates that this is a by-product of a clarifier utilized by the glass industry between 1916 and 1930.

The flat glass sample from the two test units incorporates 93 sherds, 16 from Test Unit 1 and the remainder from Test Unit 2 (Table 3). Although the sample from Test Unit 1 is somewhat smaller than the suggested minimum, Moir's correlation coefficients were utilized anyway. As a result, that unit's average glass thickness of 2.23 equates with at date of 1903 using the northeastern coefficient and 1900 with the southern. The sample from Test Unit 2 had an average thickness of 2.27, resulting in dates of 1906 using the northeastern coefficient and 1903 using the southern.

Faunal Analysis

An analysis of faunal remains was undertaken by independent archeological consultants Amy Koch and John Bozell (Appendix A). The following represents a brief summary of that report. The faunal collection from Brown's Sheep Camp was reviewed as a unit rather than by provenience due to the relatively small size of the sample even though the preponderance of identifiable elements was recovered from Test Grid 2. Of the 259 bone fragments recovered, only 115 could be identified to genus level or below. Non-domestic fauna represented in the collection include specimens from red-tailed hawk, cottontail rabbit, jackrabbit, and prairie dog. Of these, it is possible that the cottontail and, though less likely, the jackrabbit were consumed. It is equally likely that the specimens were deposited as natural intrusions into cultural deposits.

Domesticated animals represented in the collection include cow, pig, and sheep. Identifiable elements represent, at a minimum, a single cow, one pig, and two sheep. Analysts speculate that the pork and beef were procured commercially, while the sheep were butchered from ranch stock. Bones from these species commonly display butchering marks, most of which were created by saw. One sheep bone was chopped. These cut specimens represent both high- and low-quality cuts. Pork was apparently eaten as stew meat, spare ribs, roasts and/or chops, and hams (both shoulder and butt). Beef was consumed as stew meat, steaks, and round roast. Mutton provided the greatest diversity of cuts and was served as in a broad variety of chops and roasts.

Archeological Summary

Testing at Brown's Sheep Camp revealed that the site has two cultural components. The earliest is prehistoric, with a projectile point and several lithic flakes recovered from tests in RS Grid 1, Structures A (Original Residence), C (Bunkhouse), and E (Main Residence). The relatively miniscule number of objects recovered is suggestive of an extremely light usage of at least the southwestern portion of the Brown's Sheep Camp site. The projectile point style suggests this occupation took place circa A.D. 0–700. It's likely that scattered debris from this occupation continues south and west to the Van Bremer Arroyo. Vegetation density in that direction tends to be high, preventing a quick, easy determination of this hypothesis.

The overwhelming majority of materials is derived from the intensive 100-year-long historic occupation of the site. The goals of this study were two-fold. First, archeological testing was to be employed to ground-truth the three anomalies identified during the 1992 remote-sensing training. A second goal was to determine if there was physical evidence to support a possible association of Brown's Sheep Camp structures with the Hogback Stage Station. In addition, an examination of data returned from each tested area reveals differences in functional emphases and chronology from one area to another.

Test excavations in RS Grid 1 failed to demonstrate features which could be associated with a structure. On the other hand, artifacts recovered in this area suggest that a structure of some sort probably did exist here at one time. The overwhelming preponderance of materials is associated with the twentieth-century historic ranching era. Artifacts from the site suggest that functional emphases in this portion of the site lay with agriculture and animal husbandry, and that the most intensive occupation occurred between the first decade of the century and the end of the Depression era.

In contrast to the investigative results at RS Grid 1, testing confirmed the cultural origins of the anomaly in RS Grid 2. A linear water-resistant feature and stones similar to those noted in extant foundations at the site were encountered. These suggested an adobe wall segment and a possible disrupted stone foundation, both of which were interpreted as structural elements. Based on the size of the anomaly and the features exposed, an estimate of this building's size would be approximately 6 m

east-west by 7 m north-south, or approximately 20 ft by 24 ft. Artifacts recovered from the interior of this structure show strong associations with personal, domestic, and agriculture/animal husbandry pursuits. They also suggest that the occupation most likely occurred from just prior to World War I through perhaps the 1950s. The most intensive use may have been between 1910 and 1940.

Evidence returned during testing at RS Grid 3 (Corral Area) was also positive for a structure of some sort. Posts molds and the layers of desiccated manure correlate well with the remote-sensing team's suggestion that an animal shed once existed here. The relatively small scale tests did not recover artifacts useful in identifying the temporal affiliations of this portion of the site.

The intent of the testing at Structure A, referred to as the Original Residence in the HABS documentation, was to obtain temporally diagnostic artifacts which could be associated with the structure and to examine the foundations for all three rooms to determine whether they are the same (and therefore contemporaneous) or different (and therefore of a different age). In addition, TU2 was placed to determine whether another room once existed on the north side of the structure's west room.

The tests revealed that Structure A was originally built as two rooms probably separated by a breezeway and founded upon adobe. This is the only building in the complex known to have an adobe foundation. The middle room appears to have been closed off sometime later. It had no foundation; the sills of the wall simply rested on the ground surface. There was no evidence for an additional room on the north exterior of the structure's west room. Testing in the building interior revealed evidence for an interior wooden floor in the center room. Fragments of wood exposed in the west room's earthen floor may also be derived from a former wooden floor.

Few artifacts were recovered from the north exterior margins of the structure. Comparisons of functional associations of artifacts here and in other tested areas revealed no clear functional associations for Structure A. Objects recovered from Test Unit 1 suggest that the eastern room of the structure was in place no earlier than 1895. Flat glass dates for that room's window are 1903–1906, while the dates for flat glass from TU2 are 1892 and 1901. Nail forms concur with a turn-of-the-century construction date for the structure. Curved glass dates of post-1916 to the 1930s support the continued occupation of this room/area to at least the Depression era. In short, archeological evidence from this structure does not support its being an early building in the Brown's Sheep Camp complex, certainly not as early as the 1870s, which an association with the stage station requires.

Structure C (Bunkhouse) is composed of two rooms, neither of which communicates with the other by doorway. The southern room has its long axis oriented north-south and the northern room is oriented east-west. Testing goals here were to obtain chronologically diagnostic artifacts (particularly window glass) of potential use in dating the two building segments. They were also placed immediately next to the building foundations in order to allow the project architect to access and inspect the foundations of each wing. This building was found to have rough stone foundations. The stone differs in type, however, suggesting different construction dates for the two rooms. As with Building A, the artifacts from the bunkhouse demonstrate no clear functional associations.

Several categories of artifacts suggest dates for building construction and use. Artifacts from below the north window of the north room suggest that the room may have been in place prior to World War I but had the most intensive use during the Depression era. Flat glass dates of 1915 and 1921 suggest a circa World War I construction date. Artifacts from below the west window of the south room commonly date from the 1890s through the 1930s. Flat glass dates here are 1895 and 1898. If the flat glass dates can be assumed to reliably reflect the installation of windows, they suggest the southern room of this two-room structure may have been in place about 15 years or so prior to the northern room's addition.

At Structure E, the Main Residence, the goal of archeological testing was to attempt the recovery of temporally diagnostic artifacts which would assist in identifying the age of the original component of the structure. This structure was the only one with a component potentially old enough to be associated with the 1870s-era Hogback Stage Station. Artifacts recovered during the test were most strongly associated with food, food storage, and food service. Artifacts with the best chronological associations suggest a strong association with circa 1890–1930s. Flat glass strongly agrees with this, providing four dates between 1900 and 1906. Cut nails recovered from the attic of the northern two rooms of the structure clearly point to the roof's construction as most likely between 1884 and the mid or late 1890s. They are nevertheless of a type too late to be derived from the 1871–1876 Hogback Stage Station. Instead, they would appear to be related to the construction of the early, or perhaps even the original, ranch structures during the 1880s.

Faunal analysts identified meat consumed at Brown's Sheep Camp as including beef, pork, and mutton. They speculate that the pork and beef consumed were procured commercially, while the mutton was acquired by butchering from ranch sheep stock. Specimens represent both high- and low-quality cuts. Pork was apparently eaten as stew meat, spare ribs, roasts and/or chops, and hams (both shoulder and butt). Beef was consumed as stew meat, steaks, and round roast. Mutton provided the greatest diversity of cuts and was served as a broad variety of chops and roasts.

III. Architectural Investigation

Research Goals and Methods

The goal of the architectural research was to verify information presented by McFadden and Wiatr (1989) and De Vore (n.d.) on structures of the Brown's Sheep Camp complex. The focus was on establishing the style, type, and method of construction as well as construction era. This was done through inspection of a broad range of architectural details such as ax-cut versus rough-sawn or dimensioned-lumber, shape and decoration of building hardware, window and door styles, and construction details and techniques, as well as inspection or measurement of nails and window glass to determine dates of construction and modification. In some instances, samples of building materials were collected to return to the MWAC laboratory for further analysis.

The investigation proceeded from baseline dates provided by Steve Chomko (in De Vore n.d.:8). He had estimated late-nineteenth- to early-twentieth-century construction dates for the Original Residence (A), Horse Barn (B), Commissary (G), Bunkhouse (C) and Garage (F), based upon the construction of doors, windows, and hardware present within these buildings.

The building terminology used in this report is defined in Haynes and Bastian (1987). The building structure names follow those used in McFadden and Wiatr (1989); i.e., Structure A, the Original Residence; Structure B, the Horse Barn; Structure C, the Bunkhouse; Structure D, the Barn; Structure E, the Main Residence; Structure F, the Garage; and Structure G, the Commissary.

The work was hampered to a considerable degree by applications of wall and foundation coverings during the modern period. Exterior walls of the Original Residence (A), Horse Barn (B), Bunkhouse (C), Main Residence (E), Garage (F), and Commissary (G) were covered with contemporary chicken wire and one or more layers of Portland concrete stucco. The foundations of Buildings A, C, E, F, and G were either stuccoed with the same materials or encased in poured concrete sills. The mud plastered interior walls of the Bunkhouse, Main Residence, and Commissary were covered with one or more layers of contemporary concrete stucco. These modifications have in many cases obliterated or obscured materials, details of structure, and methods of construction. Finally, the Commissary's attic space was sealed, preventing thorough examination of the building's gable roof construction.

To overcome these obstacles, minor invasive testing ("above-ground archeology") was utilized in the Main Residence (E) and the Bunkhouse (C). Testing involved the removal of small sections of concrete stucco, and in the main residence, a door jamb, some ceiling tiles, and a small section of the east porch floor. Test locations in the Main Residence were repaired with Bondex, a Portland cement and lime patching compound. The exterior appearance and structural integrity of the buildings was not altered during these tests.

Summary of Field Survey

Structure A (Original Residence)

This south-facing building is at the westernmost edge of the complex (Figure 3). Unlike other buildings in the complex, which are oriented with the cardinal directions, Structure A is oriented 16 degrees east of magnetic north. The reason for this difference in building orientation is unknown.

The structure exhibits a mixture of stylistic elements characteristic of Anglo Plains, Hispanic, and Territorial styles (Figure 11). The Anglo Plains architectural style appears predominantly in the building's original segmentally-arched (boxcar) roof and large windows. The boxcar roof remains in

place today, but is out of view since it has been covered with the present gable-pitched roof of corrugated sheet metal. The building's Hispanic vernacular influences appear in its adobe construction, linear floor plan, *alto*, and the brightly colored interior walls (McFadden and Wiatr 1989:5). All exterior walls are covered with pink-painted concrete stucco, a common characteristic of adobe houses in this region. Territorial-style elements are seen in the milled boards of the structure's bowed roof, its wood floors, and its large windows.

The building has three simple, rectangular rooms (Figure 12). Originally, the building was most likely constructed as two enclosed rooms (Rooms 100 and 102) of similar size and construction that were separated by a breezeway and covered by a common roof. The adobe foundations, adobe walls and segmentally-arched (boxcar) roof of both end rooms are identical in construction.

The building's walls are a combination of adobe and wood framing. The major portion of the wood seen in this building is rough-cut with a circular saw. This wood varies greatly in dimension. The adobe blocks are 12" x 10" x 4", and are laid in a single wythe in a common bond pattern. The blocks have a mud mortar. Approximately four courses occur below the original floor line as an adobe foundation.

The wood frame walls of the central room consist of 2"-x-4" framing. The actual stud dimensions vary from full dimension to 1½" x 3½" wide. A sleeper originally supported both the wall joists and wood flooring, laid north-south, which has been removed. No foundation was laid beneath the sleepers, which sit at grade. The exterior siding, now covered with concrete, is of ¾"-thick vertical wood boards over building paper. Wire nails are used throughout.

The building's boxcar roof appears to be original and consists of massive hewn rafters that bear on the adobe walls. Sawn 1"-x-8" planks are bowed over the rafters and fastened with wire nails. The planks support the original roof, which consists of several layers of roofing felt, a single 3½"-thick layer of adobe, and approximately 3½ inches of loose dirt.

A gable roof was later added above the boxcar roof. This roof is constructed of 2"-x-4" rafters notched to fit a 2"-thick plate laid on top of the low adobe parapet. The untrussed rafters are joined with a 1"-x-6" ridgeboard. Widely spaced horizontal board sheathing is covered with corrugated metal roofing. The gable walls were framed and covered with board siding. All the lumber used in this roof is rough-sawn.

Traditional Hispanic roof construction consisted of *vigas* (horizontal rafters), which supported *lattias* (small sticks that supported the dirt roof above), and were either left exposed or covered with *mantas* (ceiling cloths that captured dirt that sifted through the lattias). The whitewashed beams of the three rooms are similar in their finish and exhibit identical notches near their ends, suggesting that they were salvaged. In fact, more than half of the hewn rafters in the structure exhibited small notches in one of their four faces. These notches were approximately 4½" wide, and ran through approximately 4" of the 6"-wide beams. The notches ran to a depth of approximately 1 inch. These notches occurred within 2 feet of the end of the rafter.

The absence of nail holes on the underside of this building's beams, which would have supported mantas, indicates that the exposed sawn lumber planks bowed over the rafters are original. The interior board roof structure is exposed to view and painted. The planks are whitewashed and the beams are painted a light blue. The central room's ceiling is identical in construction and finish to that of the flanking end rooms. Each room has a single electric light fixture in the ceiling.

Walls are covered with painted adobe mud plaster or gypboard. Both east and west rooms were finished with adobe plaster. This plaster was applied in two layers to a depth of approximately 1inch. Several layers of paint cover the plaster, including (from bottom to surface) gray, cream, buff, and dark blue. The north and south walls of the center room (Room 101) are wood frame. The frame walls are

partially finished with unpainted ¼" gypsum board. The gypsum board edges are covered with 2½"-x-¼" wood strips.

One room has a wood floor and two have dirt floors. Several irregularly spaced boards set into the east room's (Room 102) adobe walls near the floor line were likely intended as baseboard nailers. Baseboards were commonly used in conjunction with a finished floor surface. Thus, the nailers indicate that the room was originally finished with a wood floor. The current north-south-oriented wood floor may be original. The adobe walls of the west room (Room 100) have deteriorated, and no evidence of baseboard nailers remains. However, the adobe plaster ends abruptly at a line nearly the same height from the floor as in the east room. Its likely this room also once had baseboards and an associated wood floor. The center room (Room 101) has a dirt floor, but 1"-x-8" baseboards indicate that this room likely also had a wood floor at one time.

Some finished lumber was found in the center room wall framing and siding, the bowed roof sheathing, door moldings, window sashes and doors, surrounds, and on the gable siding.

An *alacena*, an Hispanic-influenced corner cupboard, sits in the southeast corner of the east room. This is a late addition to the building. Its face, constructed of vertical tongue-in-groove beadboarding, reaches from floor to ceiling. Two stacked doors are constructed of vertical boards braced on the inside with two horizontal boards on each door. Neither door had latch hardware. The lower door opens to three shelves, the upper door opens to four shelves.

Each of the building's three rooms has an entrance centered on its south-facing wall. The west room has a door frame in its north wall (D100). This frame is now sealed with adobe block in gray concrete mortar, and is hidden from the exterior by the building's concrete stucco. Communicating doors are present in each interior wall.

All door frames, including those of the communicating room doors, with the exception of the south entrances to the central and west rooms (D100, D101), have the same construction. This consists of 1¾"-thick rough-sawn lumber framing with saw-cut dadoed joints. The dadoed joints occur in the lintel and hold the vertical members of the frame in place. All these openings have 1"-x-4" simple wood surrounds. The east entrance has a badly deteriorated 4"-x-4" sill covered with a patch of thin metal. The central room's entrance has a simple wood sill and the west room's entrance has no sill.

The west room's southern entrance (D103) is unique in that its frame consists of relatively thin (¾" and 1") rough-sawn lumber and its members are joined by a simple rabbet joint. Concrete has been pushed into the space between the adobe block and frame. This entrance bears no evidence of ever having had an interior surround, and is the only exterior entrance to have no surround. The central room's southern entrance (D102) is framed into the wall and has simple wood surrounds on the interior and exterior, and molded door stops.

The building retains only one complete door. This is a four-panel wood door in the middle room's entrance which has been recycled from another structure. A specific range of manufacturing dates has not been determined for these door types; however, they were available in the 1895 Montgomery Ward catalogue and the 1908 Sears catalogue (Montgomery Ward and Company 1969:384; Schroeder 1969:591). Four-paneled doors were not offered in the 1927 Sears catalogue (Sears, Roebuck & Co. 1970:1087).

The alto is a Hispanic design element which allows access to an uninsulated storage space created by the addition of the gable roof. The alto is accessible only by an exterior door constructed of two wood planks (Figure 11, bottom). This entrance has a full surround of 1"-x-4" boards, though the bottom member is now missing. The alto door is fastened with a slide bolt.

There are several windows in the structure which exhibit limited variation in size and method of construction. The windows are large, with the largest having a glazed area of almost ten square feet. Only three of the building's five window openings remain. Windows in the east and west rooms (W101, W102, W104) have the same construction. These consist of 1¾"-thick rough-sawn lumber framing with saw-cut dadoed joints. The dadoed joints occur in the lintel and hold the vertical members of the frame in place. Window surrounds are of simple 1"-x-4" board construction, matching those of the east and west room's entrances.

Only the windows of the central room and the east window of the east room (W100, W102, W103) have exterior surrounds. The window openings on the east, west, and northeast measure 24" x 55". These have or had double-hung, unweighted windows with four lights per sash. The remaining windows have sashes of 26" x 24" and 46" x 20" and do not match the other windows.

Both south entrance doors have simple, 5-knuckle metal ball-top butt hinges. Screen-door hinges are marked "McKinney," the manufacturer's name. McKinney Products Co., formerly McKinney Manufacturing Company, remains in operation today in Scranton, Pennsylvania, as a wholesaler and manufacturer of enameled ware, hardware, barber equipment and supplies, plumbing fixtures, and plumbing parts and supplies (BigYellow 1998; Wood 1982:676).

The hinges of the central room's door are mortised into the recycled door. Those of the east room's screen door are mounted on the exterior faces of the door and entrance casing. These plain hinges are not temporally diagnostic, since they were used throughout the last half of the nineteenth century and up until the present day (Blackall 1890; Sears, Roebuck & Co. 1970:979).

The central room's door is secured with a faceplate box lock. The lock has a round metal knob on the interior and a small metal handle on the exterior. These horizontal rim lever knob locks were manufactured throughout the second half of the nineteenth century and well into the twentieth century. Examples similar to this lock are found in the 1865 Russell and Erwin Catalogue of American Hardware as well as the 1927 Sears Catalogue (Russell and Erwin Manufacturing Co. 1980:23; Sears, Roebuck & Co. 1970:979). Both communicating door frames bear evidence of missing hinges.

The building retains evidence of extensive remodeling. The original breezeway was enclosed and another entrance was created with the construction of the south-facing door in the west room. An alacena (a built in corner cupboard) was constructed in the east room of beaded tongue-in-groove boards. This construction was followed by the creation of a false-tile pattern on the lower halves of the room's four walls. This stenciled patternwork was a formalistic element in Hispanic design that suggests this room may have served as a living room. The gable roof may have been added at about the same time as the interior improvements. The roof was constructed of corrugated iron roofing over rough-sawn lumber framing. The rough-sawn rafters were pointed at their ends, and overhung the walls by about 6 inches. The small hatch in the west gable is an entrance into the alto.

At some point following the construction of the gable roof, the exterior was covered with chicken wire–reinforced Portland concrete sills and wall stucco. The stucco was applied as a smooth white finish coat over a thick gray scratch coat. The mortar in the sealed north-facing door matches that seen on the exterior stucco. It is likely that the north-facing door was patched at this time. A 3'-wide sidewalk was constructed along the entire south façade, and the building was wired for electricity sometime after the gable roof was installed.

The west room is interesting in that it retains a ghost outline of a small adobe *fogon* or fireplace in its northeast corner. Fogons are a typical Hispanic element (Adams 1974). With the addition of the gable roof, the portion of the fogon's adobe chimney that was above the original dirt roof was removed and replaced with a stovepipe. Later, the fogon itself was removed and replaced with a stove.

The east room's walls and ceiling show no evidence of a fireplace. A metal stovepipe in the ceiling indicates that this room once contained a stove. The stovepipe sits approximately 3' from the room's northeast corner, suggesting that it did not replace a fogon. Patchwork roofing indicates that the stove functioned after the gable roof was installed.

The construction of the framing of the interior communicating doors, the uncut adobe block surrounding the frames, and the absence of mud stucco behind the door's casings suggest that these are original construction. The plaster/gypsum board used to finish the central room appears to have been installed when the walls were framed. Gypsum board was not in common use prior to World War II.

A concrete sidewalk along the building's south edge has relief cuts at 4' intervals. Two upright wood posts with an attached metal swinging gate stand approximately 6' southeast of the structure. These features suggest a yard fence once surrounded the building.

The HABS team hypothesized the building was first used as a bunkhouse. Its layout, though atypical for this area, more closely resembles a small and sparsely finished ranch hand's residence than an Anglo residence of its era.

Sometime prior to the site's acquisition by the Tyrone Grazing Association in 1966, the building was converted into a chicken coop. The wood flooring in the central and west rooms may have been removed during this conversion. The west entry door was removed and replaced with chicken wire. The Grazing Association did not utilize the building, and its condition when evaluated suggests that it was not utilized by subsequent owners.

In summary, this building's construction probably does not predate the 1890s. This is evidenced most strongly by the presence of wire nails in window and door frames, flooring, walls, furnishings and roof sheathing. Though many remaining datable materials like the window sashes, doors, and felt roofing could date from the 1860s, all were commonly used well past the turn of the century. As a result, it appears that the HABS title for this structure, "Original Residence," is a misnomer since this structure is not the earliest in the complex. Instead, an element of the "Main Dwelling" appears to predate Structure A by perhaps a decade or more (see discussion below).

Structure B (Horse Barn)

Structure B is situated near the northern edge of the building cluster (Figure 3). It separates the residential area of the complex and driveways from the corrals and cattle chutes that occupy the northeastern portion of the site. A concrete pad sits at the building's southeast entrance. Although originally constructed as a horse barn, Structure B was later renovated to house sheep. Hispanic vernacular influence is seen in the structure's adobe construction. Regional or national architectural traditions are evident in its gable roof (Figure 13).

The building's foundation is composed of squared, coursed sandstone. Three courses are exposed above grade and are painted yellow. Some of the stones may be recycled, as some are finished and others are unfinished. The walls above the stone foundation are composed of adobe blocks. These adobe blocks end at the eave line. Each adobe block is 3 ½" x 8" and is 16" deep. There is no board between the foundation and the adobe blocks. All exterior walls are covered with pink-painted concrete stucco reinforced with chicken wire and nails. This same chicken wire reinforcing is seen in Buildings A and C.

The two-story, rectangular barn has a five-bay structural system (Figure 14). The first floor has a wooden floored central feed alley. Two hay drops measuring 57" x 44" were originally centered above this alley. Only the northernmost of the two remains open. The other has been boarded shut. The alley is flanked by five 6'-x-8' stalls on the west and four on the east. Wide service alleys run around the floor perimeter. A tack rack is bolted to the barn's north wall.

The Horse Barn exhibits a moderately pitched gable roof with 3½"-x-1½" rough-dimensioned rafters. Every other rafter has a 3½" tongue-and-groove tie. The ridgeboard of the structure is composed of the same tongue-and-groove board. The widely spaced sheathing is of various widths of tongue-and-groove boards and some are painted red. The roof is covered with metal corrugated roofing.

The adobe wall is topped with a 2¼"-x-11½" rough-sawn rafter plate 54" above the loft floor. The rafters are notched to fit this plate. Six of the rafters are tied with seven-strand aluminum wire to the loft structure below. The interior walls' adobe plaster was carried up the loft walls and over the lip of the top course to the rafter plate. The gable ends are of various widths of vertical boards and are nailed to the face of the rafter plate.

Two 3½"-x-5½" boards extend from both the north and south gables. These were placed through holes in the gable walls that were bored with a large drill bit. These boards are braced to rough-sawn lumber boards that are wedged between the floor and the ceiling inside. Some holes have been drilled part of the way into one of the boards. They extend about 5' 6" from the wall and were added to the structure before the stucco was applied. The soffits were enclosed after the stucco was applied.

The loft is open, save for two rows of structural members. Two loft doors, one on top of the other, are centered in each gable peak. The loft floor is constructed of recycled tongue-in-groove boards.

The floors surrounding the feed alley are dirt, except for a small area near the southeast corner, which has a poured-concrete pad. The 3½"-x-7/8" tongue-and-groove flooring runs north-south and bears on east-west rafters bearing on the eave walls. The recycled tongue-and-groove flooring is partly painted. The loft floor bows gently to the eave sides, but drops no more than a few inches on either side.

The interior wall surfaces of this barn are adobe mud plaster. The adobe plaster has stone aggregate that measure up to 1½" in size. The interior stucco contains twine or grass roots. The interior mud plaster ends at the loft floor line.

The main floor's columns and the north-south rafters are rough-sawn lumber held with large wire nails. There are many cut nail holes remaining in this lumber. The second story is constructed of 1¾"-x-1 5/8" rough-sawn lumber.

The feed trough and the feed alley are constructed of tongue-and-groove boards. The feed alley walls are painted in an irregular green geometric pattern. These boards are likely recycled and are similar to those used in the Commissary (Structure G) and the Main Residence (Structure E). A sheep tie-up was added after the alley floor was laid. The alley was fenced off after the floor was laid. A washout in the interior of the structure has a wire coat hook leading out of it. Graffiti decorates the interior of the structure. Observed inscriptions include "Emil Gutierrez" from Dec 24, 1905, and "Dan Shall" from 1884 or 1889, both written, and "Brown & CO" from Aug 1916 stamped into the wet adobe mud.

There are a total of five ground-level entrances and four loft entrances. All are on the north and south gable walls. All are constructed of wood and have modern metal barn hardware. The building has two Dutch door entrances on each gable wall (D400, D401, D402, D404) with an additional man-door (D403) centered on the south facade. The two original lower loft doors sit level with the loft floor and end with the top of the adobe wall. Above these loft doors are smaller loft doors. These smaller doors sit on the lintel board of the lower doors. The loft doors are supported by two square timbers that were bolted inside the north and south walls of the barn after it was covered with stucco.

All door openings have a wide rough-sawn double lintel with a dadoed frame and are braced with double rough-sawn planks. The door framing downstairs is attached to the wall braces with wire nails.

The thick adobe walls are splayed to the interior at the door openings. The south lower loft door has no nails bracing the frame to the inset blocks.

The loft doors have vertical clapboard siding. These have milled trim on the interior. The upper south loft door exhibits a modern screw eye and a wrought-iron hook and the lower south loft door has a simple bent-metal barn latch. Additional wrought-iron hardware is present on the barn's interior.

The eave walls have large, uniform windows at regular intervals. These are set approximately 5' above grade. The windows on the east and west sides of the first floor of the barn measure 25" x 23" and are factory-made, spring-pin, two-light windows with shank nails. The window sash joints are simple tongue-and-groove construction and are held together with spikes. Although the windows in this building are different from those in the other buildings, the window frames are the same as those in the north room of Structure C.

The barn, loft, and roof are all part of the original structure. The gable roof, with its weak ridge board (like Structures A and C), is original. The walls were most likely covered with adobe mud at the time of construction, and the interior walls were probably re-mudded sometime during Brown's occupation of the ranch. Some wrought-iron hardware hangs inside the barn. There have been no major structural modifications, even though, at some time, the barn underwent a conversion to hold sheep.

Despite the "1880s" graffiti, Structure B, originally a horse barn, probably does not predate the 1890s and most likely was built in 1905–1910. This is evidenced by the absence of cut nails in the construction of the building. Even though there are some large cut nails in the center two bays of the barn, these are most likely not indicative of the age of the barn, since they occur as remainders in wood recycled from other structures. Barn B exists today in basically its original form.

Structure C (Bunkhouse)

The Bunkhouse is situated about midway between Buildings A and G in the west-central portion of the complex (Figure 3). The building's original, east-facing wing is oriented approximately east-west. This orientation roughly matches that of Buildings B and G. Like Structure A, the Bunkhouse exhibits stylistically diverse architectural elements (Figure 15). Anglo-Plains architecture is evident in its original segmentally-arched (boxcar) roof and large window sizes. The boxcar roof was later covered with the present gable pitched roof. Hispanic vernacular influences appear in the form of adobe construction and occurrence of an alto. Territorial style elements are seen in the milled boards of its roof, wood floors, and large windows. The east-facing building is composed of two rooms arranged in the shape of an "L."

The foundation differs from one portion of the structure to the other. Beneath the north wing, the foundation is of red sandstone. In contrast, the foundation beneath the south wing is made from blue shale. These materials are available locally. Both foundations are covered with a concrete sill. The Bunkhouse walls are of 16"-x-8"-x-3½" adobe blocks laid in a single wythe in a common-bond pattern. The blocks have a mud mortar and are covered inside and out with concrete stucco. The exterior stucco is applied over chicken wire nailed to the adobe block and is painted pink.

The boxcar roof above the north room is supported by three beams that run east-west and bear on the adobe gable walls (Figure 16, Room 201). Two beams are 8" square sawn. The northernmost beam is rounded and looks much like a recycled telephone pole. Sawn 1"-x-12" planks are bowed over the rafters and fastened to them with wire nails. Additional 2"-x-6" rough-sawn boards are laid loosely over the joints. The boards support 2½" of hard-packed dirt covered by 1½" of soft dirt.

One of the beams failed entirely and was repaired by placing support planks along its axis. Additional bracing runs perpendicular to the beams near their center. This bracing is skewed to avoid the north window and is supported by the eave walls.

The boxcar roof is hidden by the later addition of a gable roof. This roof is constructed of 2"-x-4" rough-sawn rafters notched to fit a 2"-thick plate laid on top of the low adobe parapet. The rafters occur at 2' on center and are joined with a 1"-x-6" ridge board. Some have rafter ties of rough-sawn boards. The rafters have an exposed overhang of approximately 10 inches. Corrugated metal roofing is supported by widely spaced, horizontal, rough-sawn board sheathing. The north room's east gable wall is framed and covered with vertical 1"-x-10" boards. This is now covered on the exterior by concrete stucco. An alto allows access to the storage space created by the gable roof.

The roof above the south wing (Room 200) has rafters, sheathing, and roofing similar to the north wing roof. This wing's ceiling consists of 2"-x-8" rough-sawn ceiling joists that support 1"-x-8" rough-sawn attic boards covered with 1" of loose dirt.

The attic boards lie beneath the rafter plate, indicating that the flat ceiling was constructed prior to the installation of the roof framing. The underside of the ceiling is covered with ¼" gypsum board. The roof structure of the north room is painted and exposed to view. The south room's ceiling consists of unpainted ¼" gypsum board with 2½"-x-¼" boards covering the gypsum board joints. The plaster/gypsum board used to finish the south room appears to have been installed when the walls were constructed. Gypsum board, first produced in the single ply (as seen here), was in use as a finish material by 1916.

There is no communicating door between the bunkhouse's two rooms. Interior wall surfaces are covered with unpainted concrete stucco.

Both the north and south rooms have rough-sawn board floors. The north room has rough-sawn wood board flooring, the boards being of various widths. These are approximately ¾" thick and rest on 2"-x-4" rough-sawn sleepers. The south room floor is of similar construction, although the board flooring of the south room is more uniform in width and occurs in lengths up to 16'. No foundation was laid beneath the sleepers of either room, and all sleepers sit at grade.

The building's flooring, sleeper joists, rafters, beams, sheathing, trim, and built-in furnishings are constructed of rough-cut or finished lumber. All are assembled with wire nails.

An alacena sits in the south room's southwest corner. This roughly constructed unit is faced with butt-jointed horizontal and vertical boards which run from floor to ceiling. Two stacked doors were once separated by a drawer. The lower door is missing. The upper door remains and is constructed of vertical tongue-in-groove beadboard braced on the interior with horizontal boards. The lower portion of the unit had no shelves. The upper portion has four shelves.

The building's two entrance doors appear to be commercially manufactured but are different in appearance and construction. The north room has a five-paneled, in-swinging wood door (D200) with a simple wood frame of 2"-x-11" rough-sawn boards. The lintel and vertical members are joined with a simple butt joint. The north door has a simple 1"-x-4" wood exterior surround. In contrast, the south room has a four-paneled, in-swinging wood door (D201) with a 2"-x-7" dimensioned-lumber frame. Its members are joined with saw-cut dadoed joints. The panels are raised. The exterior surround of the south door consists of several scrap pieces of wood nailed to the framing. The door itself also bears evidence of another set of hinges, indicating that it has been recycled. The wood floors of both rooms extend into the openings to form the sills of each door. Although the alto door is missing, the door frame has a simple 1"-x-4" wood exterior surround.

A specific range of manufacturing dates has not been determined for these door types. Doors similar to the south room's four-paneled type were available in the 1908 Sears catalogue (Schroeder 1969:591).

The building has five windows. Each exterior wall has or once had one window. These exhibit a variety of sizes and methods of construction. Removal of a segment of interior wall stucco revealed a sixth window frame in the common wall between rooms (W205). The construction of the windows varies throughout the building. Frame construction is of four distinct types. All frames consist of rough-sawn boards. The windows of the north room are larger than those of the south room. The sills of the north room's windows are simply the bottom member of the frame, while those of the south room's windows are thick concrete. The window on the south facade has 1"-x-4" exterior wood surrounds. The other windows do not have interior or exterior surrounds covering their exposed framing.

All remaining windows appear to have manufactured wood frame sashes. The north-facing window (W202) is an unweighted double-hung window with two-over-four lights. The west window (W201) of the north room is missing. The west window opening of the south room (W200) is double hung with two-over-four lights. The building's south-facing window (W204) is also double hung but was placed in the wall on its side creating a sliding four-over-two-light window. The east window opening (W203) has an unweighted double-hung window with two-over-two lights. This window is approximately half the size of the others.

Both entrance doors are hung with simple five-knuckle, ball-top butt hinges. The north door's pins are loose set. The hinges for both doors are mortised. These plain hinges are not temporally diagnostic, as they were used throughout the last half of the nineteenth century and up until the present day (Blackall 1890; Sears, Roebuck & Co. 1970:979).

The doors are also mounted with faceplate box locks of differing manufacture. The north room's lock has a round metal knob on the interior. Its exterior knob is missing. The south room's lock is missing both knobs. Each has a metal lock catch screwed or nailed to the door frame. Horizontal rim lever knob locks were manufactured throughout the second half of the nineteenth century and well into the twentieth century.

The building's south room is wired for electric light. Exposed cloth-and-paper-covered wiring runs from a light switch near the entrance. A concrete sidewalk joins the two entrances on the east side of the structure and forms a small patio in the crook of the two wings. The sidewalk is finished in the same manner as the sidewalk in front of Structure A.

The building was obviously constructed in several phases. Evidence that the south room was a late addition is found in several places. Portions of the south room's ceiling structure rest on top of the continuous south wall of the north room, for example. The blocked window frame in the common wall also indicates that this was once an exterior wall, as does the presence of adobe mud beneath the concrete stucco on the south surface of the common wall. A visible portion of the south room's west wall reveals no adobe mud finish beneath the concrete stucco.

The top course of adobe in the north room is covered with weathered adobe mud. Portions of this mud cap are covered with the rafter plate. This, plus the thick adobe construction of the alto floor, indicates that the gable roof and resulting alto were late additions to the north room, and covered an original boxcar roof. The intersecting gable roofs above both rooms are seamless, indicating that the alto above the north room was constructed with the addition of the south room. The alacena in the south room, a probable late addition as well, was constructed before the interior was stuccoed with concrete.

At some point, the exteriors of the building were covered with chicken wire–reinforced Portland concrete sills and wall stucco. The stucco was applied as a smooth white finish coat over a thick gray scratch coat.

Walls and ceilings show no evidence of a fireplace. The north room has stovepipes in its southwest and northwest corners. A third stack once ran through the gable roof, 9' west and just off center of the

room's door. The north room's northwest stovepipe was removed before the gable roof was constructed. The central stovepipe functioned after the roof's construction.

A hole in the south room's ceiling indicates that this room once contained a stove. The stovepipe sits approximately 3' from the room's northeast corner, suggesting that it did not replace a fogon. Patchwork roofing indicate that the stove functioned after the gable roof was installed.

Nailers at the base of the walls of the south room indicate that this room once had a baseboard. A line of nail holes 6' from the floor was also observed on each wall of the south room. The holes occur at regular 10"–20" intervals and suggest a chair rail or continuous shelf once circumscribed the room.

Carrillo (James Schneck, personal communication 1995) hypothesizes that this building, like Structure A, was originally used as a bunkhouse. Its layout, though atypical for this area, more closely resembles a small and sparsely finished ranch hand's residence than an Anglo residence of its era.

In summary, this building was likely constructed after 1890. This is evidenced most strongly by the presence of wire nails in window and door frames, flooring, furnishings, and roof structure and sheathing. Though many remaining datable materials like window sashes, doors, and felt roofing could date from an earlier period, all were commonly used well past the turn of the century. Many materials are recycled, suggesting that older salvage was utilized in the new construction.

Structure D (Frame Barn)

Although documentation of the Frame Barn was not required for this project, some information was recorded on this structure. Structure D, the Frame Barn, is located on the southeast edge of the complex (Figure 3). Its wood frame construction is indicative of both regional and national architectural trends (Figure 17).

The structure's foundation is a combination of stone, dirt, poured concrete, and some log stumps. The walls of the barn are constructed of rough-sawn vertical boards that are butted together over a rough-sawn, dimension lumber frame. The vertical boards are covered with horizontal corrugated metal siding.

The roof of the Frame Barn is constructed of rough-sawn 2"-x-6" rafters on 24" centers. Rough-sawn nailers are spaced to cover about half of the roof surface. These nailers are covered with vertical corrugated metal. The rafters are supported by a wall of 2"-x-4" and 4"-x-4" columns set off-center about 11' 6" from the north wall. Some of the rafters are notched for their support columns, although it is unlikely that they ever held much weight, due to the quality of the construction and materials. There is one 10"-x-10" column near the vehicular doors on the east.

A wood plank floor is laid north of the rafter support wall. This floor cuts off 4"-x-6" columns that would have been set on 5' centers. These column remains roughly correspond with sheep doors in the north wall. This may be evidence that the sheep doors were installed sometime after the initial construction of the barn.

The south facade of the structure has two doors and the north has three doors (Figure 18). These doors are all man doors on interior "Z" frames and measure about 4' in width. The east side of the barn has one double vehicle door of the same construction. One door on the north facade has been sealed with metal siding. Also on the north façade are five sheep doors measuring 45" in height. These sheep doors have all been covered with metal sheeting. The east and west gables once had small loft doors in them. These are now covered with corrugated metal. All doors in the structure are outswinging and are of simple board construction. These doors are all simply cut out of the walls. They have barn hinges and are constructed with wire nails.

Instead of glazed windows, Structure D has two small 24"-x-24" hatches about 49" off the floor on the north facade. The south facade has one hatch, the east also has one, and the west has two hatches. These doors may have originally been built for ventilation.

An 8'-diameter bell-shaped brick-and-concrete cistern sits near the northwest corner of the barn. It has a concrete cap supported by wood and a small iron rail. A settlement basin is immediately adjacent to the cistern.

The present roof on the structure is of recent construction and appears to have been installed in the 1980s. The vehicular doors on the east facade of the barn are not original. The date of installation is unknown, but they may have been cut when the garage (Structure F) was remodeled. The wood floor inside the barn was installed at an unknown time.

The Frame Barn was likely constructed around the same time as the Horse Barn, 1905–1910, or slightly later. The frame barn is constructed using only wire nails. Structure D, like Structure B, may have been constructed as a horse barn and converted to a sheep barn at a later date. Like the Horse Barn, the Frame Barn's interior walls are also decorated with graffiti. The earliest observed inscription dates to 1916 and is signed by Emil Gutierrez.

Structure E (Main Residence)

Structure E is the southernmost building of Brown's Sheep Camp's residential complex (Figure 3). The building has the complex's only evident formal landscaping, which includes trees, bushes, and flowers on the north, east, and south sides. Like other structures at the site, the building exhibits elements of several different architectural traditions (Figure 19). Hispanic vernacular influence is seen in its single-story adobe construction, linear floor plan, alacena, and the bright red, blue, ochre, and green paint on the interior walls of the living room, bathroom and bedrooms (McFadden and Wiatr 1989). The building exhibits regional and national architectural traditions in its gable roof, kitchen, bathroom, and Bungalow-style front porch additions.

The single-story building is an irregularly shaped structure with eight rooms. Basically, this is a four-room building arranged in two adobe wings that form an "L," to which are attached several wood frame additions (Figure 20). Most exterior walls, including those of several of the wood frame additions, are covered with stucco. The northern adobe wing and its attached east-facing porch have moderate-pitched gable roofs. The southern wing has a hipped roof of the same pitch. The kitchen and porch additions have shed roofs.

Ceilings are finished with painted Celotex fiber ceiling panels. Floors are covered with rolled linoleum or shag carpet. The walls of the simple, rectangular rooms are covered with painted concrete plaster or wallpaper. All rooms are wired with electric lights and outlets. The building also has telephone service and plumbing. All wiring and plumbing is exposed.

Some finished lumber was found in the door moldings and surrounds, the window sashes, frames and surrounds, and the door sashes, surrounds and doors themselves. Some modern materials within these heavily used elements can likely be attributed to later maintenance and repairs. For example, dimensioned-lumber roof sheathing covers a scorched area in the attic, indicating that the roof was repaired after an attic fire.

There are many windows, most of which are large, encompassing an average area of approximately 11 square feet. The windows exhibit a variety of sizes and methods of construction.

Originally, this building consisted of only the room identified in McFadden and Wiatr (1989) as the living room (Room 305). This room has a shale foundation, over which were laid the adobe blocks of the

wall. Several later additions have obscured or destroyed much of the building's original appearance. The presence of an adobe gable wall above the room's west-facing wall, and a layer of green paint on the west side of this wall indicate that this room once stood alone, and was originally constructed with a gable roof. The roof structure consists of rough-sawn ceiling rafters and widely spaced sheathing and appears to be original. The rafters were joined together at their peak, and excluded the use of a ridgeboard. The presence of a sidewalk along this room's former exterior south wall appears to predate construction of the kitchen and porch. This walk indicates that the building may once have had a south entry.

The living room has modern finishes. The room's ceiling presently sits approximately 7' 1" off the floor, which is raised several inches due to the overlaid carpet and padding. The ceiling consists of beaded tongue-in-groove boards nailed to the rough-sawn ceiling rafters. These boards, painted a cream color, are now covered with roofing felt and rectangular fiberboard ceiling tiles. The floor consists of varnished wood boards, now covered by carpet padding and shag carpet. Simple 1"-x-6" baseboards run around the base of the walls, except in the southwest corner, where the baseboard is molded lumber. The walls consist of several layers of painted adobe plaster. The adobe plaster of north, east, and south walls is now covered with one or more layers of wire mesh–reinforced Portland concrete and plaster, followed by several additional layers of paint. A gas heater presently sits against the west wall. A patch in the ceiling's southwest corner indicates that a stove may once have sat there.

The present east-facing entry (D301) and adjacent window opening (W305) appear to be original elements, based upon their rough-sawn lumber frames and the pattern of the adobe block surrounding them. However, both have been modified with additional dimensioned-lumber framing, surrounds, and hardware. A second surround, identical to the original one, was installed around the door over the original molding when the room was lathed and plastered. The room's north window opening also contains a combination of rough-sawn and dimensioned-lumber framing (W304). Both windows and the door have Craftsman Style window lights. All have simple surrounds.

The first addition was last utilized as the north bedroom (Room 302). This space is immediately west of the living room. This addition was likely constructed by the same individual who constructed the original building, as the construction and finish of its foundation, walls, and roof are identical to that of the living room. It was probably completed before 1890. This addition was protected by extending the original gable roof of the living room to the west.

The room has stained plywood flooring under its shag carpet and pad. The plywood was likely a later addition, possibly installed when the north bedroom and living room were carpeted. An original 7/8"-x-5" baseboard was removed and replaced with chamfered 1¾"-x-5" baseboards. The wall finishes are similar to those found in the living room.

The communicating door to the living room was probably cut when the north bedroom was constructed. A three-inch difference in the door heights of the North Bedroom's two communicating doorways indicates that they were constructed at different times or by different methods. It follows that the south-facing communicating doorway (which enters into the present bathroom) was constructed with the addition as an exterior entrance.

The north bedroom's two windows face north and west. The west window has a concrete sill which sits only 12" off the floor (W302). The sill is unlikely to be original construction, suggesting that the window was either repaired, enlarged, or installed later. The double-hung window has undivided window lights and framed splays. The north-facing window has similar construction but is much smaller (W303).

The south bedroom (Room 300) and bathroom (Room 301) were part of a second adobe addition that was constructed perpendicular to the original east-west-oriented building sometime after 1900. This

addition changed the building's plan from a linear configuration to an L-shaped one. The foundation and wall construction of the south bedroom are similar to the previously built portions of the building.

The hipped roof, however, is more substantial than the previously constructed gabled roofs, incorporating large rough-sawn 2"-x-4" rafters, a ridgeboard, and 2"-x-8" ceiling rafters. Its 1"-x-8" sheathing is similar to that on the original roof. The west-facing gable wall above the north bedroom (302) was removed and re-framed to match the new roof line. The original sawn shake shingles of the new gable roof overhung the walls and rough-sawn rafter sill plate by several inches. These shingles were later covered with red mineral asphalt tab shingles, then with galvanized, ribbed metal roofing.

The ceiling is constructed of painted corrugated metal roofing nailed to the ceiling rafters. This has since been covered with rectangular fiberboard ceiling tiles. A burned spot and patched hole in the ceiling indicates a stove once sat near the east wall opposite the living room stove.

Metal lath and Portland cement plaster were applied directly over the adobe blocks of this room. It is possible that the interior walls of the north bedroom and living room may have been plastered at this time, since the mesh used in all rooms matches. The majority of the wood framing above the adobe walled rooms is rough-cut, and of varying dimension. Circular saw marks were evident in this lumber.

This room opens both to the present bathroom and kitchen. Both doorways are identical in overall height and construction, indicating that they were constructed at the same time. A heavily weathered and sloping sill on the east-facing (to the kitchen) doorway indicates that this was originally an exterior entrance.

The two windows in the south bedroom are very different in materials and methods of construction from those in the living room and north bedroom. The south-facing window (W310) is a double-hung single-light counterweighted window with a square, wood framed jamb, and simple casing. It has a concrete sill. The west-facing window (W300) is shorter but wider, and is not counterweighted. It has rounded splays. Its three-piece lintel is constructed of both dimensioned and rough-sawn lumber. One piece has a dado cut in it, indicating that it was recycled from a different door or window frame. The unique construction of this frame and the presence of gray concrete between its members suggests that this window was a later addition to the room.

The bathroom lacks a privacy wall between it and the passageway between bedrooms (a former wood frame wall had been removed by the time of the 1995 survey). The common wall between this room and the adjoining south bedroom is adobe. If originally intended as a bathroom, it is likely a similar type wall would have completely enclosed the room. A west-facing metal sliding window (W301) above the bathtub was likely installed several decades later. Wire nails are used exclusively throughout this and all subsequent additions.

Later, a third addition consisting of the kitchen (Room 303) and dining room (Room 304) was constructed in the crook of the "L." The exterior walls were originally sided with beaded tongue-in-groove boards. This wood frame addition has a low shed roof that overlaps the steeper slopes of the adjacent hip and gable roofs. Doorways were cut into the living room and bathroom walls. The majority of this addition's east wall is glazed with wood framed sliding or casement windows (W306, W307, W308). A doorway (D303) leads from the kitchen to the enclosed porch on the east.

The fourth addition consists of an enclosed porch attached to the kitchen's east wall (Room 306). This porch is fully glazed with sliding and awning type windows. The walls below the continuous windows of the frame addition are sided with a combination of simple drop and plain tongue-in-groove siding. In addition to the doorway leading into the kitchen to the west, one exterior doorway (D302) exits to the south.

The addition has a low shed roof and a poured-concrete floor. At some point, the north wall of this porch, which was also the south wall of the original construction, was covered with smoothed concrete stucco. The existing concrete slab adjacent to this wall was left in place. The building then underwent a radical change in appearance when its foundation was encased in a thick concrete sill, and its walls were covered with rough-textured, chicken-wire-reinforced concrete stucco.

Sometime around 1942 (McFadden and Wiatr 1989) a fifth and final addition to the building, a Bungalow Style front porch (Room 307), was constructed over the east entry to the living room. This porch has a dropped gable roof with stylized overhung rafters, a poured-concrete floor, and sliding wood frame windows. This porch opens to the east (D300).

The most recent modification to the building appears to be the installation of a 4'-deep sub-grade crawl space on the west side of the house (Figure 20). This space provides access to the bathroom plumbing from the outside. It is enclosed by walls of cinder block and concrete masonry units. It may have been at the time of this modification that the frame wall in the bathroom was removed and the present water heater and cabinet installed. At approximately this time as well, the flooring of both bedrooms was replaced with dimensioned 2"-x-8" lumber and plywood. Some elements of the original floor remain encased in the concrete foundation sill.

The exclusive presence of cut nails in the construction of the roof framing and sheathing above the living room and north bedroom indicates that these portions of the Main Residence probably predate 1890 and are associated with the initial establishment of the ranch. Wire nails used throughout the remainder of the residence date remaining portions to after this date. Although assignation of dates for additions is difficult due to the use of recycled materials, it is clear that the five-cross panel doors in the structure were commercially produced. Similar doors were advertised in the 1908 and 1927 Sears catalogues (Schroeder 1969:597; Sears, Roebuck and Co. 1970:1087).

The metal lath used in construction of the interior walls is small-gauge expanded diamond mesh lath (Sweet's Catalogue Service 1933:560). According to Sweet's 1906 Indexed Catalogue of Building Construction, expanded diamond metal lath used for roof, floor and wall construction was developed as early as 1891, if not earlier, and had nationwide distribution by 1906 (Architectural Record Company 1906:93–94). It is still in use today.

In summary, this building's prominent position and the quality of its construction suggest that its original function may have been a primary residence. Although the HABS investigators named this structure "Main Residence," it clearly deserves the title "Original Residence," since it retains the oldest structure at the site, predating Structure A by perhaps a decade or more. The setting, size, and construction of the original portion of the building suggests that it was constructed as a residence for a prominent individual, possibly the ranch owner or foreman. Its first two additions were strongly influenced by traditional Hispanic materials, design, and methods of construction. Later additions and modifications lose much of this cultural reference and appear to respond more to functional demands. The final addition, the east porch, reflects regional and national architectural trends.

The building was regularly expanded and remodeled from its construction until the 1970s. Each visible addition utilized combinations of recycled and new materials. The quality of materials used are the best of all remaining buildings at the Sheep Camp. This, as well as the building's size, layout and pattern of regular expansion, suggests that it saw continued use as a residence by ranch foremen or owners. The presence of recycled materials in doors, windows, and surrounds suggests that modifications were made by local builders when recycled material was available.

Structure F (Garage)

The Garage, originally a well house, is located at the center of the Brown's Sheep Camp building complex (Figure 3). The south-facing, one-story building has a single room (Figures 21 and 22).

The foundation consists of cut, coursed sandstone and blue shale beneath the east and west walls. The north wall has a poured-concrete sill. The building's south wall has no visible foundation or door sills.

The Garage's walls are constructed of 12"-x-10"-x-3½" adobe blocks laid in a single wythe in a common-bond pattern. The blocks appear to have a mud mortar. Seams appear on both sides of the gable walls at the eave line. These seams suggest that the gable portion of the north and south walls was added sometime after the lower portions of the walls were completed. The exterior stucco is reinforced with chicken wire that is attached to the adobe walls with large wire nails. The exterior walls are covered with pink-painted concrete stucco.

A very low pitched gable roof covers the building. The roof consists of 3"-x-6" rough-sawn rafters on 24" centers. These bear on rough-sawn rafter plates set on the adobe eave walls and on a 12"-x-6" ridge beam. The large ridge beam is supported by wood pillars at both gable walls. The ridge beam bears on a round pillar near the north wall and on a sawn square pillar on the south wall. The ridge beam is flanked by two planks where it intersects the north gable wall. These planks are visible through the exterior stucco. The roof structure is exposed to view on the interior.

The rafters support sheathing of various dimensions. This sheathing, much or all of it recycled, is covered with corrugated metal sheets. The rafters are flush against the gable walls and overhang the eave walls by approximately 10 inches. The overhung rafters are exposed. Fascia boards are present on the gable walls.

The floor of the garage is composed of dirt. The building's interior walls are covered with an adobe mud plaster containing straw and large pieces of aggregate.

Two massive sliding doors cover the entire south facade. These doors provide the only access to the building. Each of the two sliding doors is constructed of rough-sawn vertical tongue-in-groove boards on two inverted "V" frames. These frames are exposed on the exterior sides of the doors. Both doors hang from suspended tracks. The tracks, made by Stanley, are bolted to the door lintel. The doors are secured with contemporary hasps, and they are supported by a framework of three sawn columns and a lintel beam. The columns are braced to the adobe walls with large carriage bolts and cast-iron anchor plates. Vertical planks and wood blocks within the eave walls provide additional support for the columns. The columns have rough-sawn 2" board surrounds.

One window frame is intact on the north wall. This measures 32" x 18½" and sits 58" from the floor. The frame and sill consist of rough-sawn 2" boards, and there is a simple surround on the interior. The window opening is filled with adobe block. The building's concrete stucco covers all evidence of the window from the exterior. No remains of the window or its hardware were evident.

Much of the building's structure and hardware is recycled. The hardware used in the doors and framing is mismatched and inconsistently installed. Several components appear to match railroad track hardware.

The building is wired for electrical lighting, and has the same electrical hardware as seen in Building G.

An 18"-square concrete foundation sits approximately 12" from the building's northwest corner. This foundation sits approximately 4" above the dirt floor and has four carriage bolts embedded in its corners. Two iron pipes protrude from the floor at about the center of the building. These features reflect the garage's former function as a well house.

Other features which are part of the original well house appear on the north side of the garage. A concrete foundation, part of the complex's well in the 1970s, lies partially buried beneath the north wall. This irregularly shaped feature includes a foundation wall that extends northward 8' 9" from the building's north edge, with an adjacent round concrete slab. Both are at grade level. The portion of the foundation that sits immediately adjacent to the existing north wall appears to postdate the remaining north portion of the foundation and the wall stucco. A large iron chain is looped twice around the concrete foundation. An iron hook is attached to the chain's end.

In summary, similarities in the roof and wall construction between the garage and the commissary suggest that at least portions of the garage date to the same era. Cardboard wall sheathing contains graffiti that dates to 1945. This building's central location, square dimensions, and rough interior finish suggest that it was constructed as a utility building. The relatively high location of its lone original window suggests that valuables were stored here.

Structure G (Commissary)

The Commissary is a simple one-room building (Figure 23) located near the northern edge of the complex between Structures B and C (Figure 3). The building's construction varies from that of Structures A, B, C, E, and F. The adobe construction of the Commissary is typical of Hispanic vernacular architecture of the region while the gabled roof indicates an Anglo influence.

The building's walls are of a single wythe of adobe, covered with chicken wire–reinforced concrete stucco (Figure 24). The building's walls and foundation are covered with pink-painted concrete stucco. The adobe sits on a low foundation of cut, coursed blue shale and sandstone. The exterior wall profile is smooth, and lacks any gable wall bulges at the eave lines. This bulge, seen on Structures A, B, and C, is indicative of wood siding beneath the stucco.

The gable roof is apparently original to the structure. This roof's pitch is relatively steep, as compared to the gable roofs of the remaining buildings. The corrugated metal roof is supported by 2"-x-4" rough-sawn rafters that bear on a continuous wall plate. The rafters are notched to fit the plate. Voids between rafters are filled with 2"-thick boards. The steeply pitched roof has a slight overhang, which is boxed with recycled 1"-x-12" boards. A fascia and barge board is constructed of 1"-x-6" rough-sawn boards. No ridgeboard is visible through the exterior stucco.

The ceiling joists are 2"-x-8" rough-sawn wood on 24" centers. These run north-south. Recycled tongue-in-groove boards in 4" and 6" widths are nailed above the joists. Many nails and spikes are partially driven into the exposed joists and boards. The space beneath the roof is sealed. No hatch allows access to the sealed attic. The roof structure is exposed to view and painted. The room has some exposed electrical wiring tacked to its walls and ceiling, and a light switch near the entrance.

The floor of the Commissary is poured concrete. The building's stuccoed interior walls were apparently never finished with adobe mud plaster. The interior surfaces of the adobe walls are covered with a single layer of unpainted concrete stucco. Nailers near the floor line and a distinct line of weathering indicate that baseboards once existed here. Wire nails are used throughout the building.

A roughly constructed set of shelves sits in the northwest corner. The L-shaped unit has a 36"-deep counter with shelving beneath, and a 13"-wide shelf above. The wood used in these shelves is recycled.

Paint patterns visible beneath a later coat of whitewash show that this wood matches that used in the building's door and window surrounds. Similar recycled wood may be seen in Buildings B and E.

The building's one entrance is centered on its south facade. This entrance has a concrete stoop and a wood sill. The entrance has a four-panel wood door. The method of construction for the door's frame is not visible. The interior has a simple surround constructed of recycled, painted 1"-x-4" boards.

The Commissary has two identical 25"-x-27" windows centered on the east and west eave walls, approximately half the size of windows in Buildings A, C, and E. The windows have wood frame two-over-two lights. They sit 54" from the floor and have splayed openings. The frames are of rough-sawn lumber with saw-cut dadoes at the lintel joints. These joints hold the vertical members of the frame in place. Both frames have two or more boards stacked to strengthen the lintel span. Both have protruding 2"-thick wood sills and simple 1"-x-4" wood exterior surrounds. There are no interior surrounds. The west window has spring pins and has been hinged at the bottom to open into the building. The east window is similar in construction but is fixed. The west-facing window has two contemporary metal hinges.

The hardware on the structure's single door is recycled. The door has two hinges, one a simple five-knuckle butt hinge with a ball pin, the other a three-knuckle steeple-pinned butt hinge. Each hinge leaf has scrolled patterns in relief and four scroll holes. Hinges of this type were available in the 1895 Montgomery Ward catalogue (Montgomery Ward and Company 1969:380). Both hinges are mortised into door and frame.

In summary, this building has been little altered. Although much of the wood in this building is recycled, the structure exhibits a significantly higher quality of construction than the residential buildings in the complex. Its concrete floor was poured before the concrete stucco of the interior walls was applied. The concrete stucco was applied directly over the adobe block. The absence of wood siding on the gables, the sealed attic space, and the presence of commercial-grade lumber in the attic floor suggest that the relatively steep gable roof is original construction.

The materials and methods of construction of the Anglo-influenced roof suggest that its construction post-dates those buildings with Hispanic-influenced altos. The Commissary may have been built during J.C. Gunter's 1917–1940 ownership (Haynes and Bastian 1987:2). The concrete stucco and recycled materials match those seen on other buildings, suggesting that the Commissary was constructed at about the same time the complex's buildings were covered with layers of concrete stucco.

The building's location, inaccessibility to thieves, and high windows (difficult to break into and taller than interior shelving) support the suggestion that this building was constructed as a commissary (Haynes and Bastian 1987:5–25; McFadden and Wiatr 1989:1). It is not an original structure to the complex, since it contains no visible methods or materials of construction that predate the 1890s.

Architectural Summary

Many of the modifications made to the buildings at Brown's Sheep Camp appear to have been executed simultaneously. The concrete sills, chicken wire– and nail-reinforced concrete stucco and the exterior paint schemes match for each of the adobe buildings. The use of recycled materials was common to each of the buildings. A green-gray paint scheme has been found on recycled lumber in the Horse Barn (Building B) feed alley walls, the Commissary (Building G) shelving, and an early surround in the Main Residence (Building E) Living Room east entry. The patternwork seen in these boards indicates that they all came from the same structure.

IV. Conclusions

The Midwest Archeological Center's 1995 field season at Brown's Sheep Camp proved to be mostly successful and, in large part, such successes as it achieved was due to the participation of both archeologist and architect. The goals of this study were to "ground-truth" anomalies identified during a 1992 geophysical survey, collect information potentially useful to prospective stabilization and rehabilitation of existing ranch structures, and to determine if there were physical evidence to support a possible association of Brown's Sheep Camp structures with the Hogback Stage Station.

Ground truthing anomalies identified in the 1992 remote sensing training failed to identify a structure predicted in the area between the Original Residence and the Bunkhouse (Grid 1). On the other hand, archeological testing in anomaly locations north of the Commissary (Grid 2) and through the corrals east of the Horse Barn (Grid 3) proved quite successful. A linear water resistant feature interpreted as a segment of an adobe wall was encountered in Grid 2. Testing here also encountered a concentration of rocks next to and at the same level as the adobe feature. The rocks were interpreted as collapsed foundation elements. The fieldwork confirmed the cultural origins of the anomaly and the exposed features were interpreted as elements of a former structure.

Anomalies identified in Grid 3 were also confirmed to be of cultural origin. As predicted by the remote sensing surveyors, a fairly thick layer of desiccated manure was encountered. The test unit placed in the approximate center of the area of low resistance also demonstrated five cultural strata within the upper 20 cm of fill. In addition, shovel probing hit two features interpreted to be posts and post holes. In short, the concentration of manure, complex cultural stratigraphy, and the identification of two post holes in close proximity lends support to the identification of the low resistance anomaly as a shed for housing domestic animals.

The second part of this research focused on the site's adobe structures using both archeological and architectural methodologies. The primary intent was to identify construction periods and modification dates. The goals were to attempt to provide information of potential use to the PCMS for preserving the above ground resources of Brown's Sheep Camp. A secondary goal was to identify, if possible, those structures which had a potential to be associated with the 1871–1876 Hogback Stage Station.

The archeological portion of this work was directed toward obtaining window glass, nails, and other artifacts which may be temporally diagnostic as well as to reveal obscured structural details of interest to the team architect.

The architectural study looked at five adobe structures at the site and generated a detailed description of each. Architectural details such as window and door styles, construction techniques and glass were closely examined with the goal of establishing the style, type and method of construction of the buildings and individual building elements. Datable construction materials and hardware were identified during the course of this work. Minor invasive testing also occurred in a couple of the structures. This involved the occasional removal of small sections of plaster, door jambs, ceiling tiles, and small floor sections to examine structural elements hidden by later additions and remodeling.

Many modifications to the remaining buildings appear to have been executed simultaneously. The concrete sills, chicken wire and nail reinforced concrete stucco and the exterior paint schemes match for each of the adobe buildings. The use of recycled materials was common to each of the buildings. A green-gray paint scheme has been found on recycled lumber in the Horse Barn feed alley walls, the Commissary shelving, and an early surround in the Main Residence Living Room east entry. The patternwork seen in these boards indicates that they all came from the same structure. In short, the information resulting from this study greatly expands upon the original HABS study of these structures. It provides greater insight into the methods of construction at Brown's Sheep Camp and modifications of

structures at the site through time. The data should provide the PCMS with information useful in future preservation actions at Brown's Sheep Camp.

Faunal analysts identified meat consumed at Brown's Sheep Camp as including beef, pork, and mutton. They speculate that the pork and beef consumed were procured commercially while the mutton was acquired by butchering from ranch sheep stock. Cut specimens represent both high and low quality cuts.

The search for a structure potentially associated with the Hogback Stage Station proved unsuccessful. Examination of construction materials revealed that virtually all the structures had materials in them which were old enough to allow a possible association with the station. In all but one structure, however, these materials had been clearly recycled from one or more other buildings. The exception was not Structure A, identified by the HABS team as "Original Residence," but Structure E, the "Main Residence," a low-roofed building which appears on its surface to be a 1920–1930s era Bungalow-style structure. Indeed, it appears the HABS team erred in naming the structures since the oldest standing structure on the site is the small adobe house embedded in the northeast corner of Structure E.

The architect's study of painting patterns on the interior walls, door positions, and other elements in the building's construction indicated that the original structural element in this building was a small, gable-roofed adobe building used during the modern era as a living room. The first addition to this structure is the space identified as the northwest bedroom. Unfortunately, nails recovered from the roof over these rooms demonstrate that the origins of the building lie in the ranch's homestead period; i.e., between circa 1884 and the mid-1890s.

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Table 1. Cultural material recovered in Remote Sensing Grid 1.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Personal Items					
NA	surface	1470/295	medicine bottle	pre-1905	1 aqua-paneled bottle fragment marked "[script:] [Rawleig]h's/[TRADE MA]RK"
Culinary Items					
2	1 (0-10)	14/**24**	stoneware ceramic	------	1 sherd; exterior clear glaze; interior dk. brown glaze
Gustatory Items					
1	1 (0-10)	1/**5**	porcelain	------	1 undecorated sherd
2	1 (0-10)	14/**23**	whiteware ceramic	ca. 1900+	1 flow blue transfer-printed sherd
3	1 (0-10)	7/**15**	whiteware ceramic	post-1860	1 sherd
Food Items					
1	1 (0-10)	3/**11**	bone	------	1 unidentifiable mammal specimen (Appendix A)
		10/**19**	bone	------	2 *Ovis aries* specimens (Appendix A)
		10/**19**	bone	------	3 unidentifiable mammal specimens (Appendix A)
2	1 (0-10)	11/**20**	peach pits	------	5 fragments
3	1 (0-10)	5/**13**	bone	------	1 *Sus scrofa* element (Appendix A)
		5/**13**	bone	------	2 weathered *Bos taurus* elements (Appendix A)

Table 1. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Construction Materials					
1	1 (0-10)	1/**6**	flat glass	------	2 fragments
		2/**9**	wire nail	post-1900	1 8d common
		6/**14**	bolt/pin	------	1 ferrous specimen with ½-in square head; threads absent (oxidized)
	2 (10-20)	4/**12**	wire nail	post-1900	1 8d common
2	1 (0-10)	15/**25**	flat glass	------	4 fragments
	2 (10-20)	13/**22**	wire nails	post-1900	5 specimens; 3 9d common, 1 3d common, 1 6d finishing
		17/**28**	wood screw	modern	1 specimen
		18/**29**	flat glass	------	1 fragment
3	1 (0-10)	9/**18**	flat glass	------	3 fragments
4	1 (0-10)	19/**31**	wood	------	multiple small fragments
		20/**32**	flat glass	------	89 fragments
		21/**35**	wire nail	------	1 5d common
	2 (10-20)	58/**105**	flat glass	------	1 fragment

Table 1. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Agriculture/Animal Husbandry					
1	1 (0-10)	2/**8**	strap hinge	------	1 ferrous hinge leaf with three rivets; probably for box lid
		2/**8**	fencing staple	------	1 ferrous specimen
2	1 (0-10)	12/**21**	pencil	------	1 fragment
4	1 (0-10)	21/**34**	barb wire fencing	------	5 fragments; 4 ferrous wires, 1 barb
		21/**34**	fencing staples	------	3 ferrous specimens
Electrical Materials					
1	1 (0-10)	3/**11**	wire insulation	------	1 black, round, 2-strand fragment
		23/**37**	wire insulation	------	1 black, round, 2-strand fragment
2	1 (0-10)	12/**21**	battery core	------	2 fragments carbon rod
Lithic Tools and By-Products					
3	1 (0-10)	8/**16**	tertiary flake	------	1 black chert
4	1 (0-10)	22/**36**	biface	------	1 butterscotch chert fragment
	2 (10-20)	58/**107**	shatter	------	1 black chert
Survey	Surface	1002/**294**	projectile point	------	1 black granular chert

Table 1. Concluded.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Unidentified					
1	1 (0-10)	1/**7**	curved glass	------	6 fragments; 3 clear & 1 amber bodysherds, 1 clear round base sherd, 1 clear prescription finish
		2/**8**	ferrous metal	------	2 specimens; 'T'-shaped object and fragment
		2/**10**	non-ferrous metal	------	1 zinc(?) sheet metal fragment
2	1 (0-10)	15/**26**	curved glass	1880-1915	1 sun-altered purple (Munsey 1970:55)
		15/**26**	curved glass	------	5 fragments; 4 clear, 1 lt. green
		16/**27**	rubber	------	3 melted fragments
		178/**292**	bucket handle	------	1 ferrous wire bail handle for paint or lard-type bucket
4	1 (0-10)	20/**33**	curved glass	------	9 fragments; 5 clear, 4 sun-altered yellow
		21/**34**	sheet metal	------	3 tinned ferrous fragments
		22/**37**	rubber	------	1 black fragment
	2 (10-20)	58/**106**	curved glass	------	1 clear fragment
Noncultural Intrusions					
4	1 (0-10)	19/**30**	bone	------	1 *Lepus* sp. element (Appendix A)

Table 2. Functional associations of historic cultural objects (based on Sprague 1980-81).

TEST AREA	Personal No.	%	Food-related No.	%	Domestic No.	%	Architectural No.	%	Agriculture* No.	%	Unknown No.	%	ROW TOTAL No.	%
RS Grid 1	1	0.6	18	10.2	0	----	110	62.1	15	8.5	33	18.6	177	100.0
RS Grid 2	23	2.6	267	29.8	2	0.2	196	21.9	45	5.0	363	40.5	896	100.0
RS Grid 3	0	---	12	20.9	0	---	23	38.3	2	3.3	23	38.3	60	99.9
Bldg. A	3	0.8	8	2.2	0	---	161	44.8	1	0.3	186	51.8	359	99.9
Bldg. C:														
TU 1	21	2.1	70	7.1	0	---	840	84.5	4	0.4	58	5.8	993	99.9
TU 2**	4	0.9	40	9.5	1	0.2	302	71.9	6	1.4	67	16.0	420	99.9
Total	25	1.8	110	7.8	1	0.1	1,142	80.7	10	0.8	125	8.9	1,413	100.1
Bldg. E	4	1.6	43	16.7	2	0.8	142	55.0	9	3.5	58	22.5	258	100.1
COLUMN TOTAL	56	1.8	458	14.5	5	0.2	1,775	56.1	83	2.6	789	24.9	3,166	100.1

*Items which appear to be associated with electrical fencing, battery-operated fixtures, or transportation were included in this category.

**A single item (0.2%), an automobile tie rod, representing personal transportation was not included in this table. Note that percentages will differ from text on this account.

Table 3. Flat glass frequencies and derived dates.

Test Area	Test Unit	Number of Frags.	Total Thickness	Average Thickness	North Date	South Date
Grid 1	TU 4	90	271.61	3.01	1972.94	1960.21
	all	100	291.84	2.91	1963.96	1946.48
Grid 2	all	24	52.89	2.20	1900.22	1897.54
Bldg. A	TU 1	59	134.44	2.27	1906.50	1902.95
	TU 2	67	141.93	2.11	1892.14	1900.57
	all	126	276.37	2.19	1899.32	1896.76
Bldg. C	TU 1	824	2003.46	2.43	1920.87	1915.33
	TU 2	263	571.16	2.17	1897.52	1895.21
	all	1087	2574.62	2.36	1914.58	1909.92
Bldg. E	TU 1	16	35.82	2.23	1902.91	1899.86
	TU 2	77	175.23	2.27	1906.50	1902.95
	all	93	211.05	2.26	1905.60	1902.18

Table 4. Cultural material recovered in Remote Sensing Grid 2.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Personal Items					
1	1 (0-10)	28/**42**	curved glass	------	1 clear graduated medicine bottle fragment
		28/**42**	curved glass	modern	15 amber beer bottle fragments; 1 sherd with script C [Coors?] & 1 round basal sherd
	2 (10-20)	88/**152**	shell button	------	4 sew-throughs; 1.03 cm/0.40 in diameter
2	1 (0-10)	26/**39**	shotgun shell	------	1 .410 gauge; headstamp = "REMINGTON EXPRESS;" 1.20 cm/ 0.47 in diameter x 1.27 cm/0.49 in long
		26/**39**	cartridge	------	1 brass .25 centerfire cartridge; headstamp = "REM-UMC/25 ACP"; 0.71 cm/0.28 in diameter x 1.56 cm/0.62 in long x 0.76 cm/.30 in base diameter
		100/**172**	whiskey bottle	1903-1914	1 reconstructable, clear glass shoo-fly flask with Owen's cut-off scar and "24" on base; some fragments sun-altered purple; shoulder marked "ONE PINT"
Gustatory Items					
1	1 (0-10)	28/**42**	soft drink	post-1930	2 clear Pepsi bottle fragments with painted label
		28/**42**			2 clear food jar (snap-on lid) finish fragments
		32/**48**	whiteware ceramic	post-1860	1 sherd
2	2 (10-20)	34/**51**	food jar	------	3 aqua food jar screw-cap finish fragments
		100/**172**	sauce bottle	------	1 clear glass flat hood stopper
		100/**172**	curved glass	------	6 aqua fragments; same vessel as cat. no.174/**PCMS No. 288**
		173/**287**	food jar	late 1920s	2 fragments; 1 aqua quart food jar base with valve mark and two vent marks; 1 bodysherd
		174/**288**	beverage bottle	-------	1 reconstructable (14 fragments) aqua quart beverage bottle base and lower body; no molding or manufacturers' marks
3	1 (0-12)	149/**249**	whiteware ceramic	1900-1910	1 flow blue transfer-printed sherd

Table 4. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Gustatory Items (continued)					
3	2 (12-20)	163/**272**	tin can	------	83 ferrous fragments
		172/**286**	whiteware ceramic	post-1860	1 sherd
4	1 (0-10)	157/**262**	soft drink bottle	post-1930	7 clear Pepsi bottle fragments; 2 with red and blue-on-white painted label; 1 round basal fragment with raised "120.277"; 1crown cap finish fragment
		157/**262**	soft drink bottle	post-1930	1 amber root beer bottle fragment with white-on-orange painted label
		159/**267**	cork	------	1 specimen
Food Items					
1	1 (0-10)	27/**40**	bone	------	7 *Ovis aries* specimens(Appendix A)
		27/**40**	bone	------	19 unidentifiable mammal specimens (Appendix A)
		69/**124**	bone	------	3 unidentifiable mammal specimens (Appendix A)
		69/**124**	bone	------	4 *Ovis aries* specimens (Appendix A)
	2 (10-20)	33/**49**	bone	------	5 *Ovis aries* specimens(Appendix A)
		33/**49**	bone	------	21 unidentifiable mammal specimens (Appendix A)
2	1 (0-10)	75/**133**	bone	------	2 unidentifiable mammal specimens (Appendix A)
	2 (10-20)	85/**148**	bone	------	5 unidentifiable mammal specimens (Appendix A)
		85/**148**	bone	------	1 *Ovis aries* specimen (Appendix A)
		102/**174**	bone	------	9 unidentifiable mammal specimens
		102/**174**	bone	------	8 *Ovis aries* specimens (Appendix A)
3	1 (0-10)	150/**250**	bone	------	2 unidentifiable mammal specimens (Appendix A)
	2 (10-20)	164/**275**	bone	------	9 unidentifiable mammal specimens (Appendix A)

Table 4. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Food Items (continued)					
3	2(10-20)	164/**275**	bone	------	4 *Ovis aries* specimens (Appendix A)
4	1 (0-10)	161/**269**	bone	------	3 *Sus scrofa* elements (Appendix A)
		161/**269**	bone	------	6 unidentifiable mammal specimens (Appendix A)
		161/**269**	bone	------	1 *Ovis aries* specimen (Appendix A)
		161/**269**	bone	------	6 *Sylvilagus floridanus* specimens (Appendix A)
	2 (10-20)	168/**282**	bone	------	1 *Bos taurus* specimen (Appendix A)
		168/**282**	bone	------	25 unidentifiable mammalian specimens (Appendix A)
		168/**282**	bone	------	6 *Ovis aries* specimens (Appendix A)
		168/**282**	bone	------	8 *Sylvilagus floridanus* specimens (Appendix A)
Domestic Items					
1	1 (0-10)	30/**44**	appliance foot	modern	1 white metal; threaded for height adjustment
		30/**44**	caster	------	1 ferrous metal with 1-in-diameter wheel
Construction Materials					
1	1 (0-10)	25/**38**	wood	------	1 sample
		28/**41**	flat glass	------	4 fragments
		29/**43**	limestone flakes	------	5 fragments; prob. derived from shaping foundation stones
		30/**45**	wire nails	post-1900	14 specimens; 2 2d common, 4 3d common, 1 6d common, 5 8d common, 1 8d finishing, 1 10d common
		30/**45**	wire nail	post-1900	1 ferrous ring-shanked 6d specimen with lead washer (for attaching galvanized metal siding/roofing)
		30/**45**	roofing tack	post-1900	2 wire specimens; 1 6d galvanized, 1 4d ferrous
		30/**45**	cut nail	pre-1900	1 20d specimen

Table 4. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Construction Materials (continued)					
1	2 (10-20)	34/**50**	flat glass	------	4 fragments
		35/**53**	wire nails	post-1900	4 shaft fragments
		36/**54**	limestone flakes	------	3 fragments; prob. derived from shaping foundation stones
2	1 (0-10)	68/**123**	wire nails	post-1900	5 specimens; 1 16d common, 2 8d common, 1 7d common, 1 common shank
		68/**123**	cut nail	pre-1900	1 8d common
		68/**122**	paint can	------	4 fragments of ferrous snap-on, 4 in diameter paint can lid
		68/**122**	screw	------	1 ferrous specimen, unidentified type
		70/**125**	flat glass	------	3 fragments
		72/**128**	limestone flakes	------	10 fragments; prob. derived from shaping foundation stones
		73/**129**	wood	------	1 sample
		76/**135**	flat glass	------	3 fragments
	2 (10-20)	87/**151**	wire nails	post-1900	7 specimens; 4 3d common, 3 shaft fragments
		89/**153**	limestone flakes	-----	3 fragments; prob. derived from shaping foundation stones
		90/**154**	wood	------	23 fragments
		103/**175**	wood	------	2 fragments
		177/**291**	wire nails	post-1900	2 specimens; 1 20d common(?), 1 8d common
		177/**291**	cut nail	pre-1900	1 head fragment
		177/**291**	unid. nails	------	8 fragments; 1 head, 7 shaft
3	1 (0-12)	147/**247**	wire nails	post-1900	6 specimens; 1 30d common, 1 16d common, 2 10d common (1 bent 90 degrees at 1¾ in from head), 1 5d dome-headed common, 1 3d common
		147/**247**	cut nail	pre-1900	1 shaft fragment
		147/**247**	tack	post-1900	1 wire 2d specimen
		151/**251**	wood	------	1 charred board fragment
		152/**252**	flat glass	------	4 fragments

Table 4. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Construction Materials (continued)					
3	2 (12-20)	163/**273**	unid. nails	------	2 shaft fragments
		165/**276**	flat glass	------	3 fragments
		171/**285**	wood	------	1 sample
4	1 (0-10)	162/**271**	wire nails	post-1900	9 specimens; 2 6d common, 1 4d common, 2 3d common, 4 shaft fragments
		162/**271**	roofing tack	post-1900	1 6d galvanized common wire
	2 (10-20)	166/**278**	flat glass	------	3 fragments
		167/**281**	wire nail	post-1900	1 3d common
Electrical Materials					
1	1 (0-10)	31/**46**	electrical wire	------	1 specimen with red rubber insulation; approx. 0.76 cm/0.30 in diameter
2	1 (0-10)	74/**131**	electrical wire	------	6 red rubber insulation fragments
	2 (10-20)	37/**55**	wire insulation	------	2 red rubber fragments
		175/**289**	carbon battery	ca. 1900-1910	1 paper covered battery; approx. 15.3 cm(6 in) x 2.58 cm (6.55 in) diameter. Rectangular brass connector at top
4	1 (0-10)	159/**265**	electrical wire	------	5 red rubber insulation fragments
		159/**267**	cloth tape	------	1 specimen
	2 (10-20)	170/**284**	electrical wire	------	3 red rubber insulation fragments

Table 4. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Agriculture/Animal Husbandry					
1	1 (0-10)	30/**45**	horseshoe nail	------	1 specimen
		30/**44**	fencing staples	------	8 ferrous specimens; 6 1½ in specimens, 1 shaft; 1¾ in specimen
		30/**44**	wire	modern	1 pc. ferrous wire used to hold barbwire to metal post
2	1 (0-10)	68/**123**	horseshoe nail	------	1 nail head
	1 (0-10)	68/**122**	fencing staples	------	3 ferrous specimens
3	1 (0-12)	147/**246**	fencing staples	------	5 ferrous specimens
		147/**246**	wire	------	1 specimen used to hold wire to metal fence post
4	1 (0-10)	160/**268**	rivet	------	1 copper rivet; raised star in center of head
		162/**270**	fencing staples	------	5 ferrous specimens
Unidentified					
1	1 (0-10)	30/**44**	sheet metal	------	1 ferrous specimen
		30/**44**	wire	------	2 fragments
		31/**47**	rubber	------	1 black fragment
		28/**42**	curved glass	1880-1915	1 sun-altered purple fragment
		28/**42**	curved glass	------	31 clear fragments
	2 (10-20)	34/**51**	curved glass	1880-1915	2 sun-altered purple fragments
		34/**51**	curved glass	------	10 fragments; 8 clear, 1 clear base, 1 amber
		34/**51**	curved glass	1915-1930	3 sun altered yellow fragments
		35/**52**	sheet metal	------	13 tinned ferrous fragments
2	1 (0-10)	68/**122**	nut	------	1 ferrous specimen, 5/8 in square, for use with ¼-in-diameter bolt
		70/**126**	curved glass	------	25 fragments; 21 clear, 3 amber, 1 milk glass
		71/**127**	washer	------	1 ferrous metal washer, 0.3 in interior diameter

Table 4. Continued.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Unidentified (continued)					
2	1 (0-10)	74/**130**	rubber	------	1 hard black fragment
		74/**132**	rubber	------	1 flexible black fragment
		77/**136**	metal	------	1 ferrous fragment; possible nail/staple shaft
	2 (10-20)	76/**134**	curved glass	------	3 fragments; 2 clear, 1 lt. green
		81/**144**	curved glass	------	25 fragments; 11 lt. green, 1 amber (round bottle base fragment), 12 clear, 1 aqua
		86/**149**	curved glass	-----	30 fragments; 1 amber, 1 aqua, 28 clear
		87/**150**	metal	------	9 ferrous fragments; possible nail/staple shafts
		104/**176**	paper	------	1 fragment
		176/**290**	rod	------	1 ferrous 3/8-in-diameter specimen threaded on both ends
3	1 (0-10)	9/**17**	curved glass	------	7 fragments; 5 clear, 2 amber
		146/**245**	rubber	------	8 black fragments
		147/**246**	sheet metal	------	7 ferrous fragments
		147/**246**	wire	------	1 ferrous fragment
		147/**246**	cotter pin	------	1 ferrous specimen
		152/**253**	curved glass	1916-1930	3 sun-altered yellow fragments
		152/**253**	curved glass	1880-1915	1 sun-altered purple fragment
		152/**253**	curved glass	------	23 fragments; 4 amber, 7 aqua, 11 clear, 1 lt. green
		163/**274**	curved glass	------	2 clear fragments
	2 (10-20)	165/**277**	curved glass	1880-1915	1 sun-altered purple round bottle base fragment (Munsey 1970:55)
		165/**277**	curved glass	1916-1930	1 sun-altered yellow fragment
		165/**277**	curved glass	------	3 fragments; 1 aqua, 2 clear
		169/**283**	rubber	------	16 fragments; 13 black, 3 red
4	1 (0-10)	157/**262**	curved glass	1916-1930	32 fragments; 5 amber, 1 aqua, 1 milk glass, 23 clear, 2 sun-altered yellow

Table 4. Concluded.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Unidentified (continued)					
4	1 (0-10)	158/**263**	rubber	------	14 fragments; 13 black, 1 red
		159/**266**	tin foil	------	2 fragments
		159/**266**	plastic	------	1 tube fragment
		162/**270**	bolt	------	1 badly rusted 4-in bolt
		162/**270**	bucket ear	------	1 ferrous specimen
		162/**270**	sheet metal	------	25 ferrous (bucket?) fragments
		162/**270**	shaft sleeve	------	1 ferrous, ½-in interior diameter, ¾-in exterior diameter
		162/**270**	nut	------	1 1-in-square ferrous specimen for ½-in-diameter bolt
		162/**270**	wire	------	2 ferrous fragments
4	2 (10-20)	166/**279**	curved glass	1916-1930	20 sun-altered yellow fragments; 1 round bottle base fragment
		166/**279**	curved glass	-----	21 fragments; 4 amber, 1 milk glass, 1 aqua, 15 clear (1 with screw-thread finish)
		167/**280**	metal	------	5 ferrous specimens
Noncultural Intrusions					
4	1(0-10)	161/**269**	bone	------	2 *Lepus* sp. elements (Appendix A)
	2 10-20)	159/**264**	bone	------	1 *Lepus* sp. element (Appendix A)
		168/**282**	bone	------	1 *Lepus* sp. element (Appendix A)

Table 5. Cultural material recovered in Remote Sensing Grid 3 (Corral).

Test Unit	Level (cm)	Field Cat./ PCMS No.	Identification	Period	Description/Comment
Gustatory					
2	1 (0-10)	124/**206**	soft drink bottle	modern	1 Coca Cola bottle fragment
Food Items					
1	1 (0-10)	109/**182**	bone	------	1 unidentifiable mammal specimen (Appendix A)
2	1 (0-10)	122/**204**	bone	------	2 *Ovis aries* specimens (Appendix A)
		122/**204**	bone	------	7 unidentifiable, weathered mammal specimens (Appendix A)
Construction Materials					
1	1 (0-10)	111/**184**	limestone flakes	------	3 fragments
		126/**208**	concrete	------	1 fragment with red paint
2	1 (0-10)	123/**205**	nails	------	7 highly rusted specimens; 1 30d common, 1 5d common, 1 30d shaft, 1 head, 3 shaft fragments
		125/**207**	plastic	------	1 clear (yellowed) Plexiglas fragment similar to plastic used as glazing in horse barn windows
		127/**211**	nails	-----	7 highly rusted specimens; 1 8d common, 1 4d common, 4 shaft fragments
3	1 (0-50)	121/**203**	limestone flakes	------	3 fragments
		131/**215**	wire nail	post-1900	1 11d common
Agriculture/Animal Husbandry					
2	1 (0-10)	125/**207**	ear tags	------	1 complete (blue), 10 fragments (3 blue, 2 red, 1 orange, 4 aqua). One side of loop tag marked "TYRONE/GRAZ. ASSN." Other side of loop is blank or has a number.

Table 5. Concluded.

Test Unit	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Agriculture/Animal Husbandry (continued)					
2	2 (10-20)	127/**210**	fencing staple	------	1 ferrous specimen
Unidentified					
1	1 (0-10)	110/**183**	curved glass	------	2 clear fragments
		112/**185**	curved glass	------	1 clear fragment
		126/**209**	rubber	------	1 black fragment
2	1 (0-10)	124/**206**	curved glass	------	14 fragments; 6 clear, 8 amber
		125/**207**	plastic	------	1 olive green fragment
		128/**212**	curved glass	------	4 fragments; 1 clear, 3 amber
Noncultural Intrusions					
2	1 (0-10)	122/**204**	bone	------	1 *Buteo Jamaicensis* specimen (Appendix A)
	2 (10-20)	129/**213**	bone	------	1 *Lepus* sp. (Appendix A)

Table 6. Cultural material recovered in Structure A (Original Residence) tests.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Personal Items					
A	Surface	1001/293	cartridge	1867-1911	1 .30-30 or .30 WCF centerfire with headstamp "U.M.C./30-30."
A-2	1 (0-10)	97/**169**	cartridge	post-1871	1 .22 long or long rifle; headstamp = "H".
		97/**169**	cartridge	post-1887	1 .22 extra long; headstamp = "U".
Food Items					
A-1	1 (0-10)	59/**108**	bone	------	1 unidentifiable mammal specimen (Appendix A)
		62/**114**	peach pit	------	1 fragment
A-2	1 (0-10)	79/**139**	bone	------	2 unidentifiable mammal specimens (Appendix A)
		80/**141**	peach pit	------	1 complete specimen
		80/**140**	foil	------	1 fragment beverage/food foil
		99/**171**	bone	------	1 unidentifiable, burned mammal specimen (Appendix A)
	2 (10-20)	101/**173**	tin can lid	------	1 highly fragmented specimen
Construction Materials					
A-1	1 (0-10)	61/**110**	wire nail	post-1900	1 ferrous ring-shanked 6d specimen with lead washer (for attaching galvanized metal siding/roofing)
		61/**111**	wire nails	post-1900	3 8d common specimens
		61/**111**	felting tack	post-1900	1 galvanized 2d tack
		61/**61**	lead washers	------	2 flattened specimens identical to washer with 61/**110**
	2 (10-20)	67/**120**	flat glass	------	1 fragment
A-1	3 (20-30)	84/**147**	flat glass	------	1 fragment

Table 6. Concluded.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Construction Materials (continued)					
A-2	1 (0-10)	63/**115**	flat glass	------	57 fragments
		78/**138**	wire nails	post-1900	11 specimens; 2 30d common, 1 20d common, 4 8d common, 1 7d common, 1 4d common, 1 6d dome-headed
		78/**138**	cut nail	pre-1900	1 head/shaft fragment
		78/**138**	unid. nails	------	7 specimens; 5 head fragments, 2 shaft fragments
		80/**142**	concrete	------	3 red painted fragments
		81/**143**	flat glass	------	63 fragments
		82/**145**	wood	------	4 olive green painted fragments
		96/**167**	flat glass	------	4 fragments
		98/**170**	wire nail	post-1900	1 9d common
	2 (10-20)	105/**177**	flat glass	------	1 fragment
Agriculture/Animal Husbandry					
A-1	3 (20-30)	83/**146**	nut	------	1 ½-in-square ferrous specimen with 3/16-in-diameter hole
Lithic Tools and By-Products					
A-1	1 (0-10)	60/**109**	tertiary flakes	------	2 chert fragments; 1 butterscotch & 1 gray
Unidentified					
A-1	1 (0-10)	62/**113**	rubber	------	1 black fragment
		63/**116**	curved glass	------	5 fragments; 2 clear, 2 lt. green, 1 amber
	2 (10-20)	67/**121**	curved glass	------	1 clear fragment
A-2	1 (0-10)	78/**137**	wire	------	3 ferrous fragments
		81/**143**	curved glass	1915-modern	170 fragments; 15 amber (1 with raised "N"), 1 sun-altered yellow (Munsey 1970:55), 1 lt. green, 153 clear (2 with screw-threads)
		96/**168**	curved glass	------	6 fragments; 1 amber, 5 clear

Table 7. Cultural material recovered in Structure C (Bunkhouse) tests.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Personal Items					
C-1	1 (0-10)	38/**58**	cartridge	------	1 .22 short; headstamp = "P"
		40/**68**	cartridges	------	2 .22 long specimens; headstamp = "F"
		48/**84**	beer bottle	modern	17 amber body and basal fragments; 1 with raised Anheuser Busch beer trademark.
	2 (10-20)	94/**163**	cartridge	------	1 .22 short; headstamp = "P"
C-2	1 (0-10)	47/**82**	shell button	------	2 sew-thrus in lens-shaped well; gray; 1.32 cm/0.52 in
	2 (10-20)	55/**101**	cigarette filter	modern	1 specimen
	3 (20-30)	64/**117**	cartridge	1897-1934	1 .38 Smith & Wesson centerfire; headstamp reads "PETERS/.38 S & W"
Domestic Furnishings					
C-2	2 (10-20)	53/**94**	furniture tack	------	1 ferrous specimen
Culinary Items					
C-1	1 (0-10)	42/**72**	stoneware ceramic	------	1 sherd; dk. brown glaze both surfaces
	2 (10-20)	93/**160**	stoneware ceramic	------	1 sherd; dk. brown glaze both surfaces
C-2	1 (0-10)	44/**76**	stoneware ceramic	ca. 1900	1 ceramic bottle base; exterior clear glaze; interior brown glaze
C-2	2 (10-20)	52/**93**	stoneware ceramic	ca. 1900	1 sherd (prob. from bottle); exterior clear glaze; interior brown glaze

Table 7. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Gustatory Items					
C-1	1 (0-10)	42/**71**	porcelain	------	1 dk. blue decorated sherd
		48/**84**	soft drink bottle	post-1930	2 clear fragments; 1 with painted label element
		38/**57**	soft drink	modern	16 green Coca-Cola bottle fragments including base marked "....GS/....[C]OLO."
		38/**57**	soft drink	post-1930	41 clear fragments, 1 with painted label element
	2 (10-20)	93/**159**	whiteware ceramic	post-1860	1 sherd
C-2	1 (0-10)	44/**75**	whiteware ceramic	post-1860	4 sherds; 1 plain body sherd; 1 plain rim; 1 rim decorated w/decalcomania flower; 1 decorated w/delicate curved repousse line
	2 (10-20)	52/**92**	whiteware ceramic	1880-1930	1 burned rim decorated with floral decalcomania and delicate curvilinear repousse (Majewski and O'Brien 1984:36)
		52/**92**	whiteware ceramic	post-1860	3 sherds
		52/**92**	whiteware ceramic	1900-1910	1 blue hand-painted band on flowblue rimsherd (Derven 1980:138)
Food Items					
C-1	1 (0-10)	40/**65**	key opener	post-1900	1 coffee can key for strip opener (Rock 1987:107)
		41/**69**	bone	------	3 *Ovis aries* specimens (Appendix A)
		41/**69**	bone	------	1 *Sylvilagus* floridanus specimen (Appendix A)
		41/**69**	bone	------	1 unidentifiable mammal specimen (Appendix A)
	2 (10-20)	95/**165**	bone	------	1 *Ovis aries* specimen (Appendix A)
C-2	1 (0-10)	50/**87**	bone	------	3 *Sus scrofa* elements (Appendix A)
		50/**87**	bone	------	2 *Bos taurus* elements (Appendix A)

Table 7. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Food Items (continued)					
C-2	1 (0-10)	50/**87**	bone	------	7 *Ovis aries* specimens (Appendix A)
		50/**87**	bone	------	1 unidentifiable mammal element (Appendix A)
	2 (10-20)	54/**96**	bone	------	11 unidentifiable mammal specimens (Appendix A)
		54/**96**	bone	------	1 *Sus scrofa* element(fits Cat.50/**96**; Appendix A)
		54/**96**	bone	------	4 *Ovis aries* specimens (Appendix A)
Construction Materials					
C-1	1 (0-10)	38/**56**	flat glass	------	762 fragments
		38/**59**	concrete	------	1 specimen w/red paint
		40/**66**	wire nails	post-1900	6 specimens; 1 3d common, 1 7d common, 3 8d common, 1 16d common
		40/**66**	roofing tack	post-1900	1 6d galvanized wire
		40/**66**	cut nail	pre-1900	2 specimens, shafts removed
		42/**73**	concrete	------	1 specimen w/red paint
		43/**74**	pipe	------	1 copper pipe fragment
	2 (10-20)	92/**157**	concrete	------	3 fragments
		91/**155**	flat glass	------	62 fragments
		94/**162**	cut nail	pre-1900	1 head fragment
C-2	1 (0-10)	41/**70**	wood	------	1 sample
		45/**77**	wood	------	8 fragments
		47/**80**	plastic	------	3 yellowed Plexiglas fragments similar to plastic used as glazing in horse barn windows
		48/**83**	flat glass	------	33 fragments
		49/**86**	wire nails	post-1900	8 specimens; 1 2d common, 1 6d common, 4 8d common, 1 8d finishing, 1 30d common

Table 7. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Construction Materials (continued)					
C-2	1 (0-10)	49/**86**	roofing nails	post-1900	3 specimens; 1 2d wire tack, 2 6d wire dome-headed
	2 (10-20)	51/**90**	flat glass	------	223 fragments
		51/**89**	cut nail	pre-1900	1 shaft fragment
		53/**95**	wire nails	post-1900	10 specimens; 2 16d common, 2 8d common, 1 6d finishing, 1 6d common nail shaft, 3 4d common, 1 3d common
		53/**95**	roofing nail	post-1900	1 ferrous ring-shanked 6d specimen with lead washer (for attaching galvanized metal siding/roofing)
		53/**95**	roofing nails	post-1900	3 specimens; 2 2d wire tacks, 1 5d wire dome-headed
		53/**95**	cut nail	pre-1900	1 head-shaft fragment
		55/**98**	concrete	------	1 specimen w/red paint
	3 (20-30)	57/**103**	flat glass	------	5 fragments
		65/**118**	flat glass	------	1 fragment
Electrical Materials					
C-1	1 (0-10)	48/**84**	light bulb	modern	1 clear glass fragment
Personal and Domestic Transportation					
C-2	1 (0-10)	49/**85**	tie rod	------	1 ferrous automobile tie rod
Agriculture/Animal Husbandry					
C-1	1 (0-10)	40/**65**	fencing staples	------	2 ferrous specimens
	2 (10-20)	94/**161**	fencing staples	------	2 ferrous specimens

Table 7. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Agriculture/Animal Husbandry (continued)					
C-2	1 (0-10)	49/**85**	fencing staples	------	3 ferrous specimens
		49/**85**	strap loop	------	1 ferrous, V-shaped loop for attaching one strap to a pair of straps. Similar loops used to attach hand loops to driving lines (Montgomery Ward 1969:317).
	2 (10-20)	55/**97**	halter rosette	------	1 1¼-in-diameter lead filler
		55/**100**	plastic dowel	modern	1 olive green fiberglass dowel fragment notched with hot wire. Electric fencing?
Lithic Tools and By-Products					
C-1	1 (0-10)	46/**78**	secondary flake	------	1 black chert specimen
Unidentified					
C-1	1 (0-10)	38/**60**	clinkers?	------	2 fragments
		38/**61**	rubber	------	5 fragments, some with red or silver paint
		38/**61**	sheet metal	------	1 ferrous fragment
		39/**64**	hard rubber?	------	4 fragments, some with red or white paint
		39/**63**	rubber	------	1 black fragment
		39/**62**	ferrous metal	------	1 fragment
		40/**67**	non-ferrous metal	------	1 white metal clip
		38/**57**	curved glass	------	2 fragments; 1 clear basal fragment, 1 amber
		48/**84**	curved glass	1880-1915	1 sun-altered purple fragment
		48/**84**	curved glass	1904-1950	1 clear basal sherd with Owens suction scar
		48/**84**	curved glass	post-1904	1 clear basal sherd with machine-made valve mark
		48/**84**	curved glass	------	29 fragments; 9 lt. green, 1 green, and 17 clear body sherds; 1 clear round basal sherd; 1 clear screw-thread finish

Table 7. Concluded.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Unidentified (continued)					
C-1	2 (10-20)	91/**156**	curved glass	------	6 fragments; 2 lt. green, 4 clear
		92/**158**	asphalt/pumice	------	2 fragments
		95/**166**	rubber	------	1 black fragment
C-2	1 (0-10)	47/**81**	hard rubber?	------	8 fragments with red, silver and/or white paint
		47/**79**	rubber	------	3 fragments; 1 white, 2 black
		48/**85**	hard rubber?	------	3 fragments with silver paint
		49/**85**	wire	------	4 ferrous small-gauge fragments
		49/**85**	wire	------	4 ferrous large-gauge fragments
		49/**85**	sheet metal	------	2 ferrous fragments
		49/**85**	tack	------	1 ferrous tack
		49/**85**	staple	------	1 ferrous cardboard box fastener
		51/**91**	curved glass	post-1930	26 fragments; 2 amber, 2 milk, 9 lt. green (2 with fragments of blue-painted label elements), 13 clear
		51/**91**	curved glass	1880-1915	2 sun-altered purple fragments
	2 (10-20)	51/**88**	sheet metal	------	1 zinc(?) fragment
		53/**94**	wire	------	2 ferrous specimens
		55/**99**	hard rubber?	------	2 fragments with silver paint
		55/**101**	rubber	------	1 black fragment
		94/**164**	hard rubber?	------	1 fragment with red paint
	3 (20-30)	56/**102**	sheet metal	------	2 ferrous fragments
		57/**104**	curved glass	------	1 clear fragment
		66/**119**	sheet metal	------	3 ferrous fragments
Noncultural Intrusions					
C-1	2 (10-20)	95/**166**	bone	------	1 *Lepus* sp. (Appendix A)

Table 8. Cultural material recovered in Structure E (Main Residence) tests.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Personal Items					
E-2	2 (10-20)	136/**229**	cartridge	post-1845 to ca. 1940	1 .22 BB cap; no headstamp.
	3 (20-30)	141/**238**	cartridge	1867-1911	1 .30-.30 or .30 WCF centerfire; headstamp = "U.M.C./30-30."
		141/**238**	cartridge	1874-1911	1 .38-40 centerfire; headstamp = "U.M.C./.38 C.F.W."
		141/**238**	cartridge	1861-1970s	1 .32 short rimfire; the headstamp = "H".
Domestic Furnishings					
E-1	2 (10-20)	113/**187**	pressed glass	1930s	2 fragments lt. green Depression glass
Gustatory Items					
E-1	2 (10-20)	114/**191**	pull-tab	modern	1 aluminum specimen
	3 (20-30)	120/**202**	whiteware ceramic	1840-1860/ ca. 1900+	1 flow blue rim
E-2	1 (0-10)	133/**219**	whiteware ceramic	post-1860	1 burned sherd
	2 (10-20)	135/**224**	porcelain	------	1 undecorated sherd
	4 (30-40)	154/**257**	whiteware ceramic	?	1 transfer-printed sherd
Food Items					
E-1	2 (10-20)	116/**195**	bone	------	1 *Bos taurus* element (Appendix A)
		116/**195**	bone	------	5 unidentifiable mammal specimens (Appendix A)

Table 8. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Food Items (continued)					
E-1	2(10-20)	116/**195**	bone	------	7 *Ovis aries* specimens (Appendix A)
	3 (20-30)	119/**199**	bone	------	1 unidentifiable mammal specimen (Appendix A)
		119/**199**	bone	------	2 *Ovis aries* specimens (Appendix A)
E-2	1 (0-10)	134/**221**	bone	------	1 unidentifiable mammal specimen (Appendix A)
		134/**221**	bone	------	1 *Ovis aries* specimen (Appendix A)
	2 (10-20)	137/**231**	bone	------	3 unidentifiable mammal specimens (Appendix A)
		137/**231**	bone	------	1 *Ovis aries* specimen (Appendix A)
	3 (20-30)	139/**236**	bone	------	1 unidentifiable mammal specimen (Appendix A)
		139/**236**	bone	------	7 *Ovis aries* specimens (Appendix A)
	4 (30-40)	156/**260**	bone	------	3 unidentifiable mammal specimens (Appendix A)
		156/**260**	bone	------	5 *Ovis aries* specimens (Appendix A)
Construction Materials					
E	Rafter	106/**58**	cut nail	pre-1900	1 10d common nail pulled from rafter over south center of northwest room
		107/**179**	cut nails	pre-1900	7 specimens; 1 10d common, 6 4d common from upper ceiling surface in northeast corner of northeast room
E-1	1 (0-10)	108/**180**	flat glass	------	7 fragments
	2 (10-20)	113/**186**	flat glass	------	8 fragments
		114/**190**	cut nail	pre-1900	1 16d specimen bent 90 degrees at 2 in from head

Table 8. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Construction Materials (continued)					
E-1	2 (10-20)	114/**190**	wire nails	post-1900	2 specimens; 1 16d common bent 90 degrees at 2½" from head, 1 4d common
		114/**190**	roofing nail	post-1900	1 galvanized wire 2d common
		115/**194**	concrete	------	2 fragments; 1 white over red; 1 red
		115/**193**	window caulk	------	2 dark green painted fragments
	3 (20-30)	118/**197**	flat glass	------	1 fragment
		120/**200**	roofing nail	post-1900	1 galvanized wire 2d common
E-2	1 (0-10)	132/**216**	flat glass	------	45 fragments
		133/**220**	window caulk	------	3 dark green painted fragments
		133/**218**	wire nail	post-1900	1 6d galvanized common
	2 (10-20)	135/**222**	flat glass	------	13 fragments
		136/**226**	wire nail	post-1900	1 8d common
		137/**232**	window caulk	------	1 dark green painted fragment
	3 (20-30)	117/**196**	brick	------	6 fragments
		138/**233**	flat glass	------	16 fragments
		141/**239**	nails	------	6 highly rusted specimens; 1 30d common, 1 10d common bent 1½" from head, 1 8d common, 1 5d common, 1 4d common, 1 head
		141/**239**	bolt	------	1 threaded shaft fragment
E-2	4 (30-40)	153/**254**	wood stake	------	4 fragment
		154/**255**	flat glass	------	3 fragments
		155/**259**	nail	------	1 ferrous round head
		155/**259**	cut nails	pre-1900	7 specimens; 2 16d common (1 bent 90 degrees 2 in from head), 2 head/shaft fragments, 3 shaft fragments
		156/**261**	window caulk	------	1 dark green painted fragment

Table 8. Continued.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Electrical Materials					
E-1	2 (10-20)	115/**192**	insulation	------	1 specimen green plastic (wire) insulation
E-2	2 (10-20)	136/**228**	wire	------	3 fragments ferrous wire covered with lead solder
	4 (30-40)	155/**258**	wire	------	1 fragment of cupric wire with black plastic insulation shaped into a hook
Agriculture/Animal Husbandry					
E-1	2 (10-20)	114/**189**	fencing staple	------	1 ferrous specimen
E-2	1 (0-10)	133/**217**	fencing staple	------	1 ferrous specimen
	2 (10-20)	136/**227**	rivet	------	1 cuprous rivet head
Lithic Tools and By-Products					
E-2	3 (20-30)	140/**237**	secondary flake	------	1 granular black chert specimen
Unidentified					
E-1	1 (0-10)	108/**181**	curved glass	------	4 fragments; 2 clear, 1 lt. green, 1 milk glass
	2 (10-20)	113/**188**	clinker	------	1 sample
		113/**187**	curved glass	------	3 clear (1 with screw threads), 1 lt. green, 1 milk glass
	3 (20-30)	118/**198**	curved glass	1916-1930	8 fragments; 7 clear, 1 sun-altered yellow
		120/**201**	washer	------	1 cuprous metal specimen; 0.4 in outside diameter, 0.1 inside diameter

Table 8. Concluded.

Bldg. Test	Level (cm)	Field Cat./ **PCMS No.**	Identification	Period	Description/Comment
Unidentified (continued)					
E-1	4 (30-40)	130/**214**	curved glass	------	1 clear prescription bottle finish fragment
E-2	1 (0-10)	133/**217**	staple	------	1 small ferrous wire specimen
	2 (10-20)	135/**223**	curved glass	1916-1930	10 fragments; 1 black (dk. green), 2 amber, 1 lt. green, 3 clear, 3 sun-altered yellow
		136/**230**	rubber	------	2 fragments
		136/**225**	sheet metal	------	4 ferrous strip fragments
	3 (20-30)	138/**235**	plastic	modern	1 milk-colored fragment
		138/**234**	curved glass	1916-1930	19 fragments; 1 sun-altered yellow prescription finish, 14 sun-altered yellow, 2 amber
	4 (30-40)	154/**256**	curved glass	1916-1930	3 fragments; 1 clear, 1 sun-altered yellow, 1 sun-altered yellow prescription-finish fragment
Noncultural Intrusions					
E-1	2 (10-20)	116/**95**	bone	------	1 *Cynomys ludovicianus* (Appendix A)

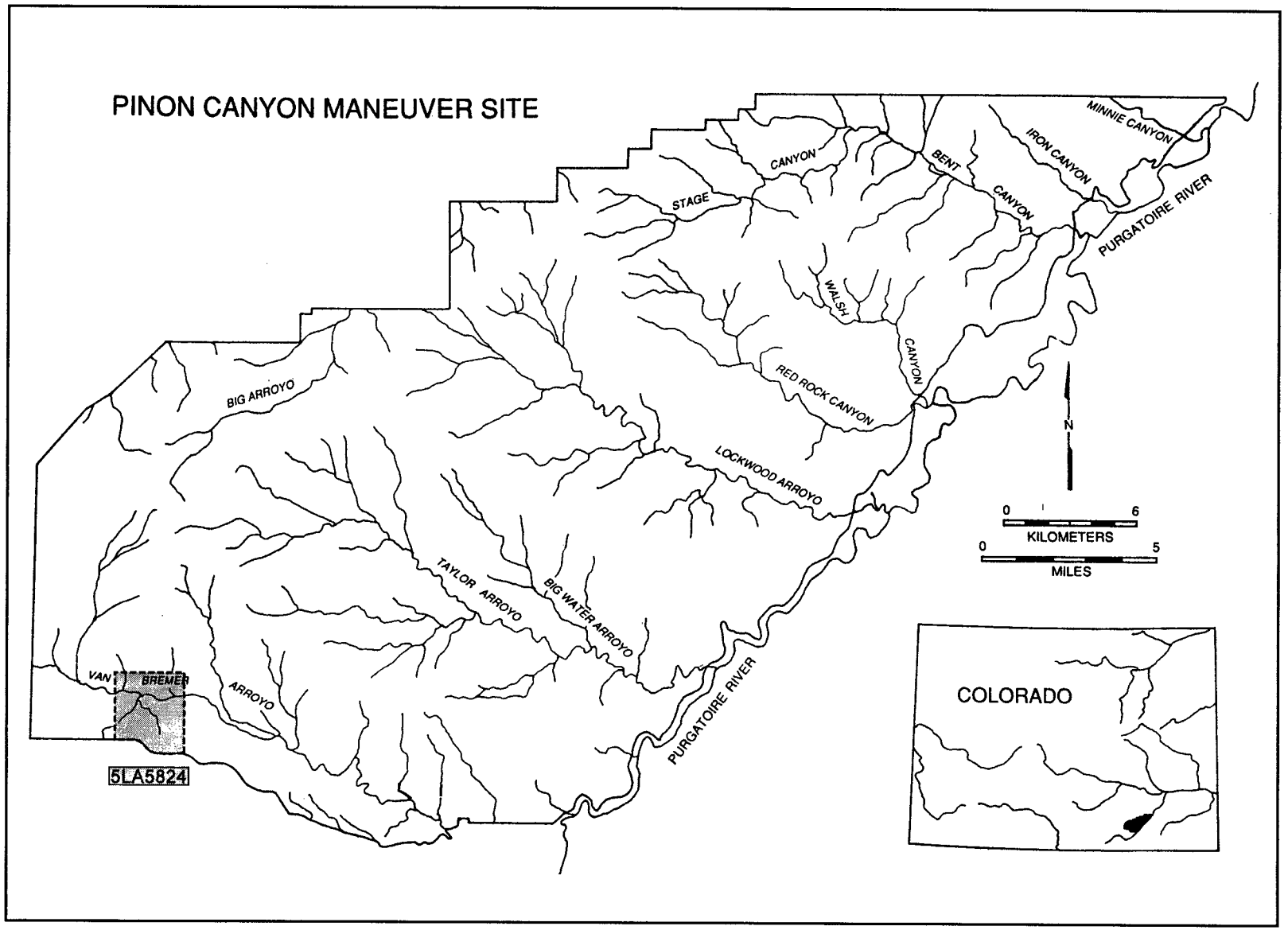


Figure 1. General location of Brown Sheep Camp site, 5LA5824, Pinon Canyon Maneuver Site, Las Animas County, Colorado.

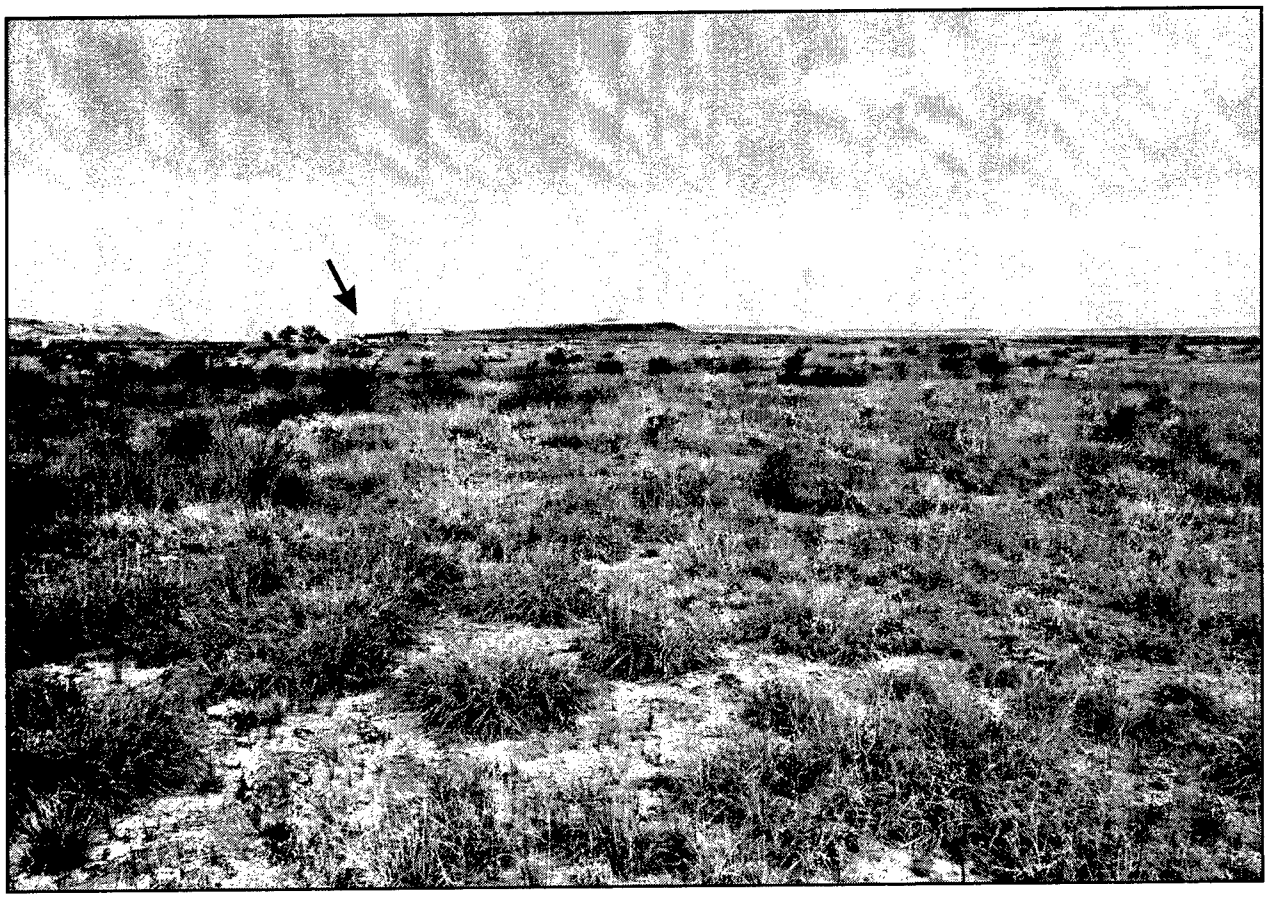


Figure 2. Short-grass grassland of the Northern Temperate Grassland, *needlegrass-pronghorn grass* biome at the Pinon Canyon Maneuver Site. Arrow points to Brown Sheep Camp site in background.

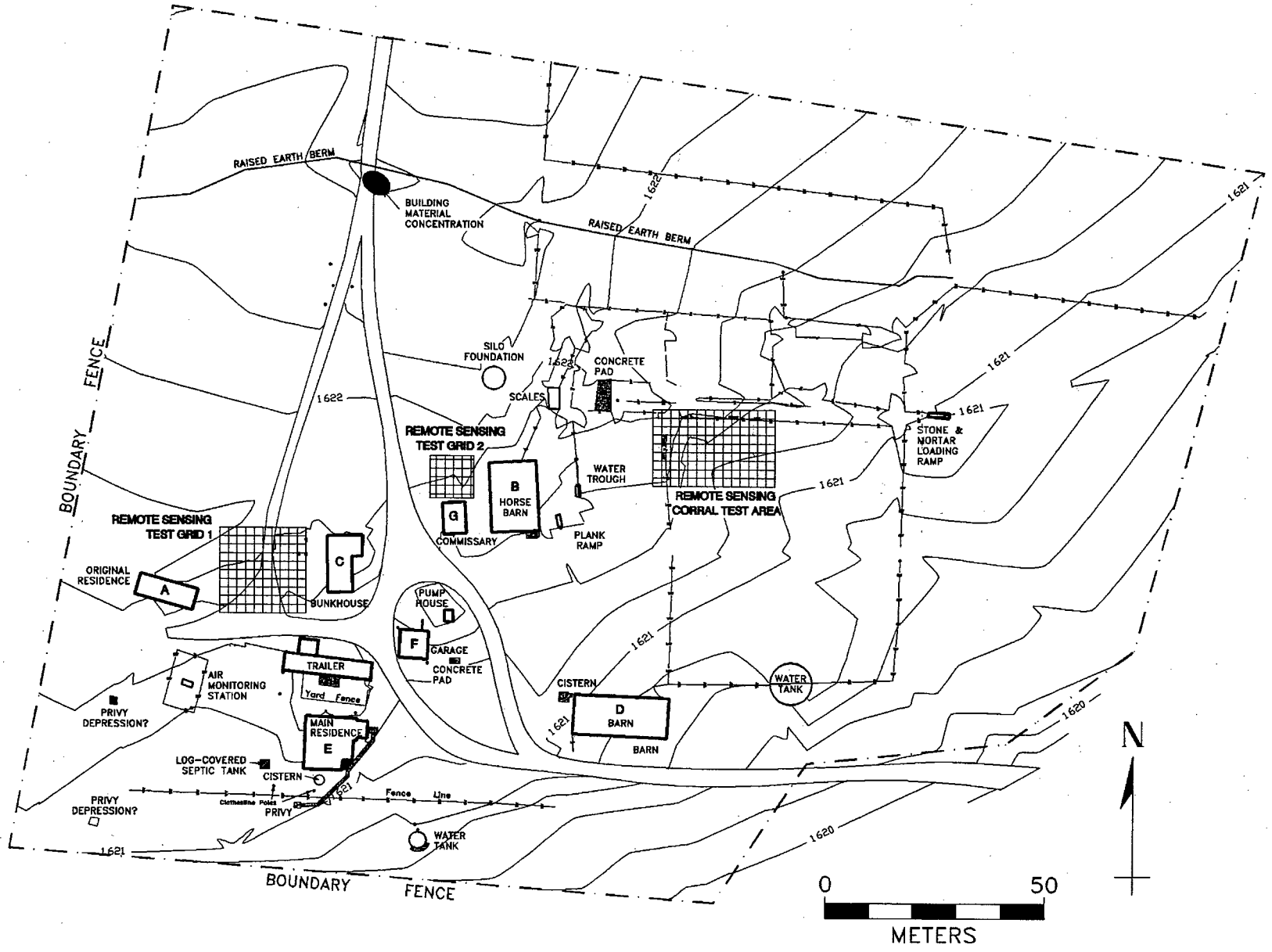


Figure 3. Map of Brown's Sheep Camp site showing remote-sensing test area locations.

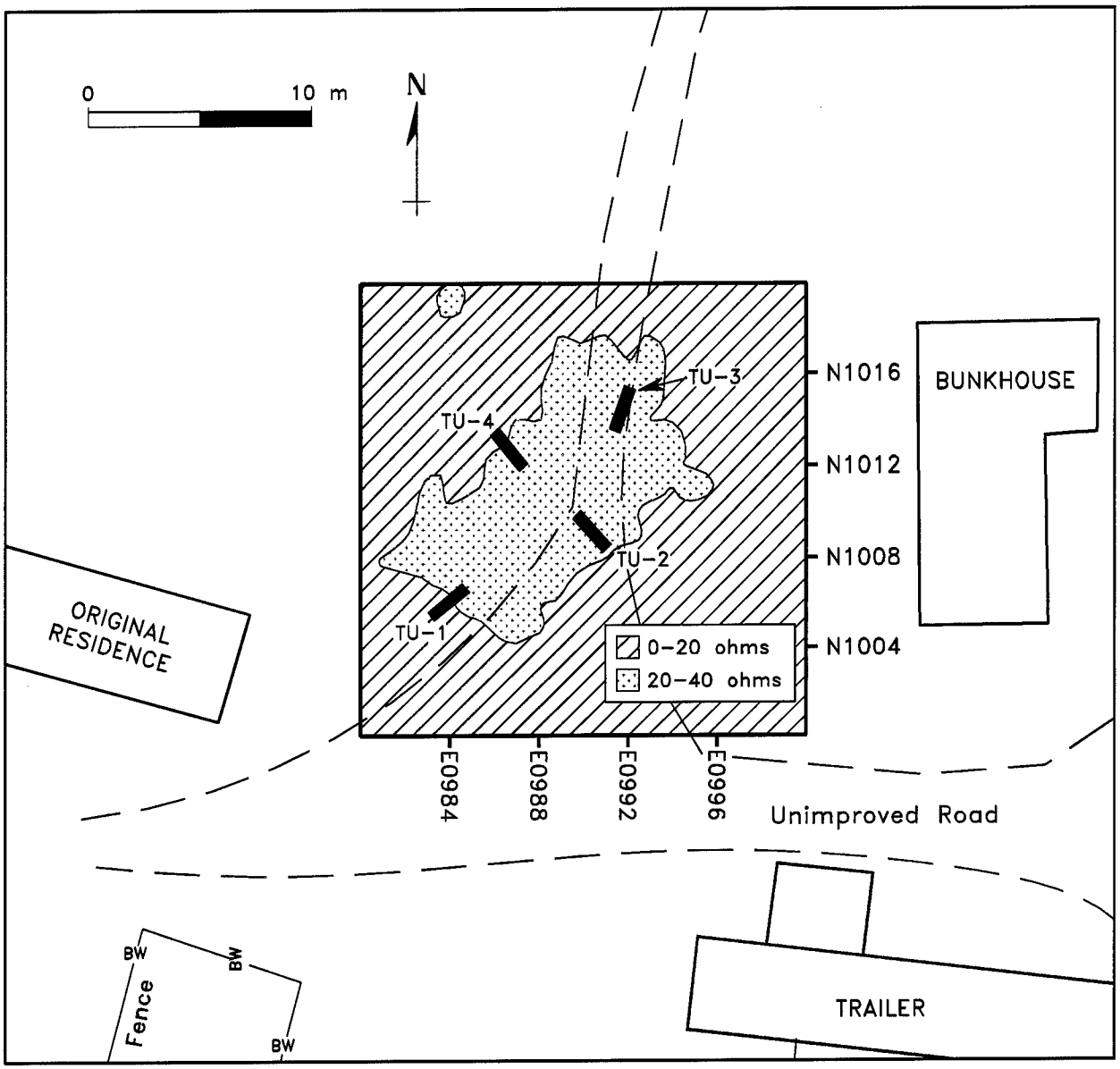


Figure 4. Anomaly identified in Remote-Sensing Grid 1 and location of test units.

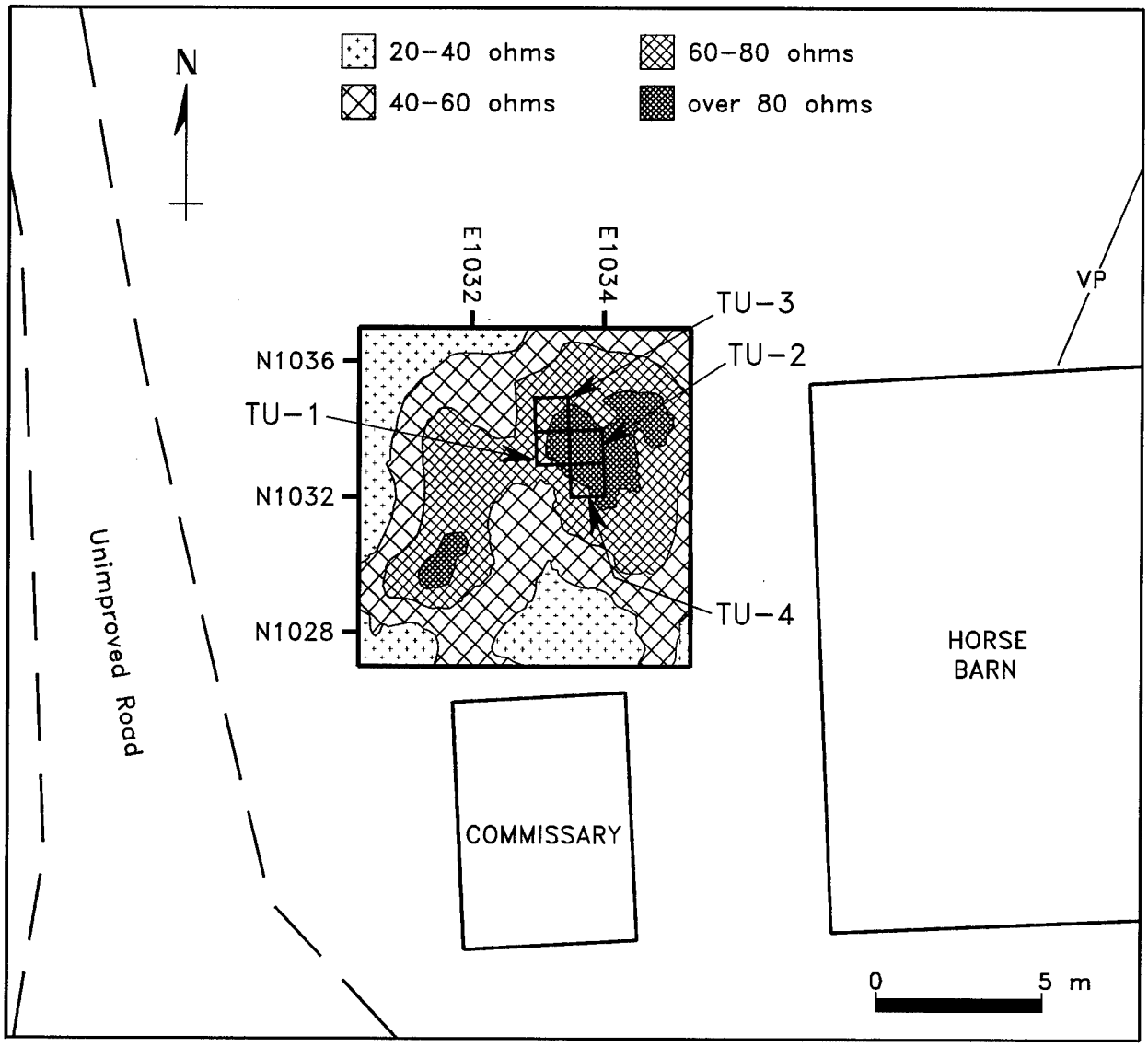


Figure 5. Anomaly identified in Remote-Sensing Grid 2 and location of test units.

Figure 6. Artifacts and cultural features exposed in Remote-Sensing Grid 2 test units.

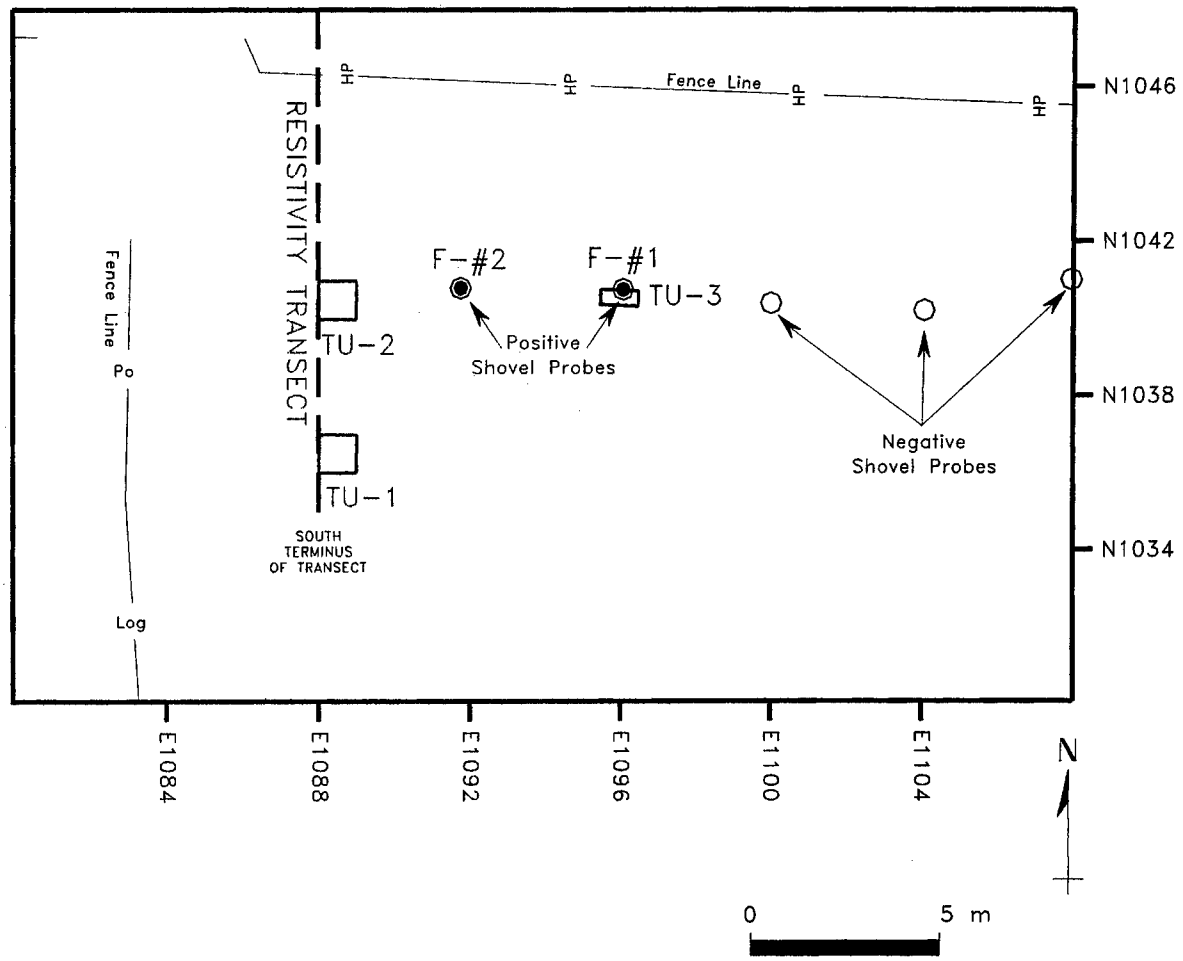
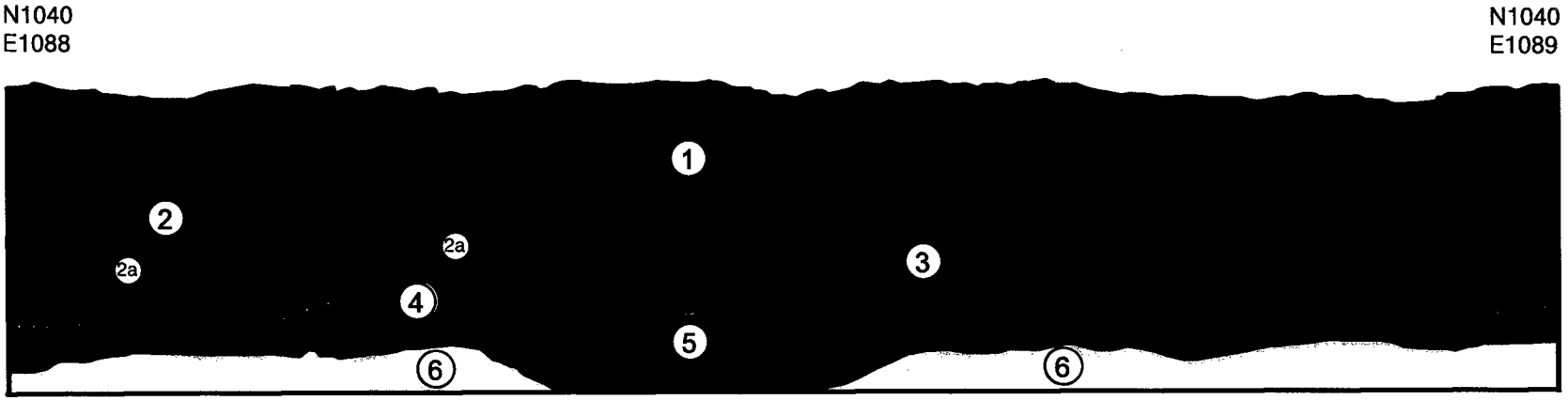


Figure 7. Location of test units, shovel probes, and features identified in Remote-Sensing Grid 3 (Corral) test area.



Strata #1 Dark brown, 10YR 3/3, manure and compost
2 Dark yellow brown, 10YR 4/4, loam
2a Disturbance
3 Dark brown, 10YR 3/3, humus
4 Yellowish brown, 10YR 5/6, clay
5 Dark yellow brown, 10YR 4/6
6 Brown, 10YR 5/3, clay

0 10 cm

Figure 8. Stratigraphic profile of north wall, Remote-Sensing Grid 3 (Corral) test area, Test Unit 2.

Figure 9. Post mold (Feature 2) located with shovel probe at N1041/E1092, Remote-Sensing Grid 3 (Corral) test area.

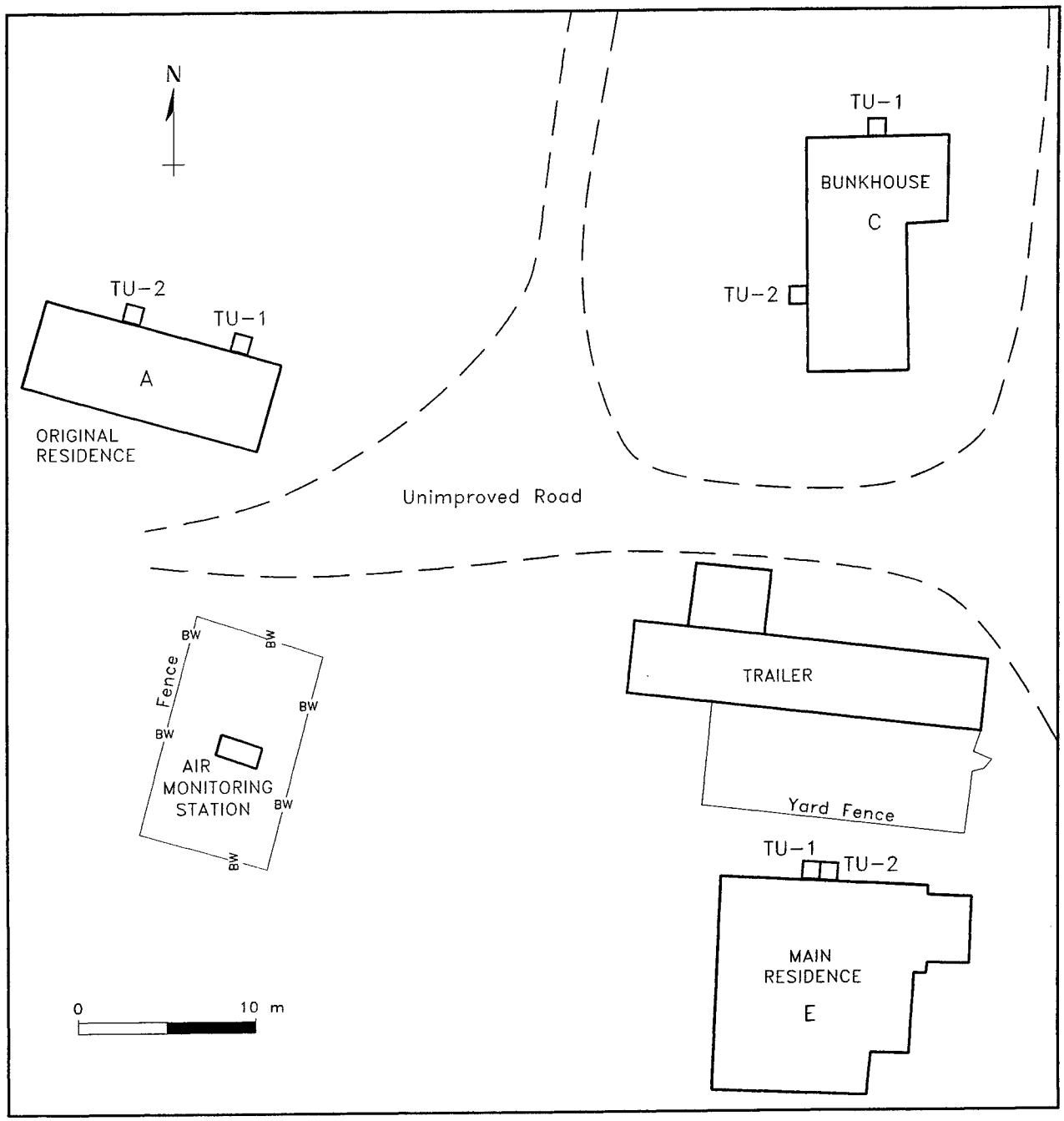


Figure 10. Test unit locations at Structures A, C, and E.

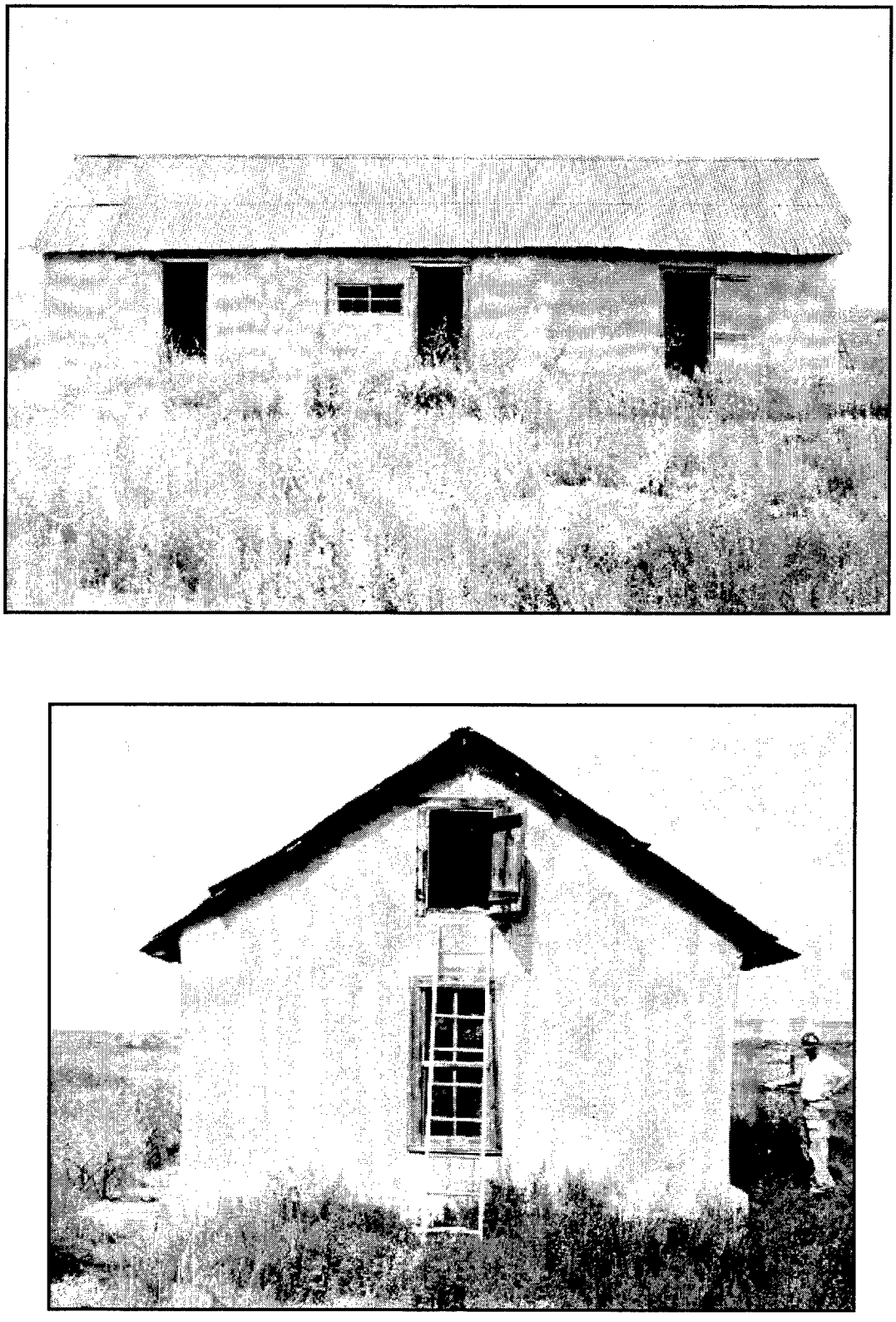


Figure 11. Structure A (Original Residence) south face (top) and east face (bottom) showing alto and gate at left.

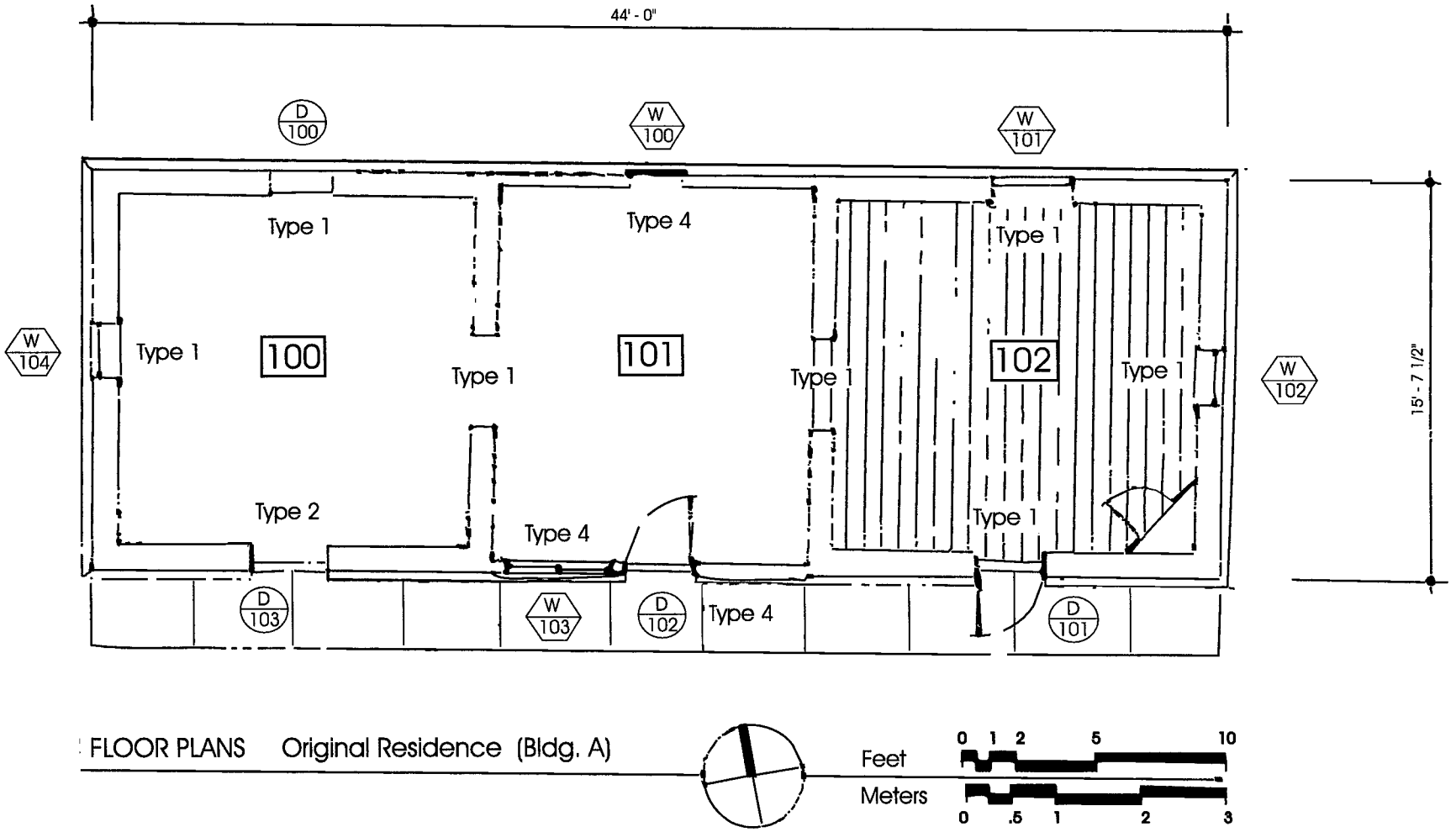


Figure 12. Structure A (Original Residence) floor plan. Illustration based on a measured drawing by A. Narvaez for the Rocky Mountain Regional Office, NPS, Denver, 1990.

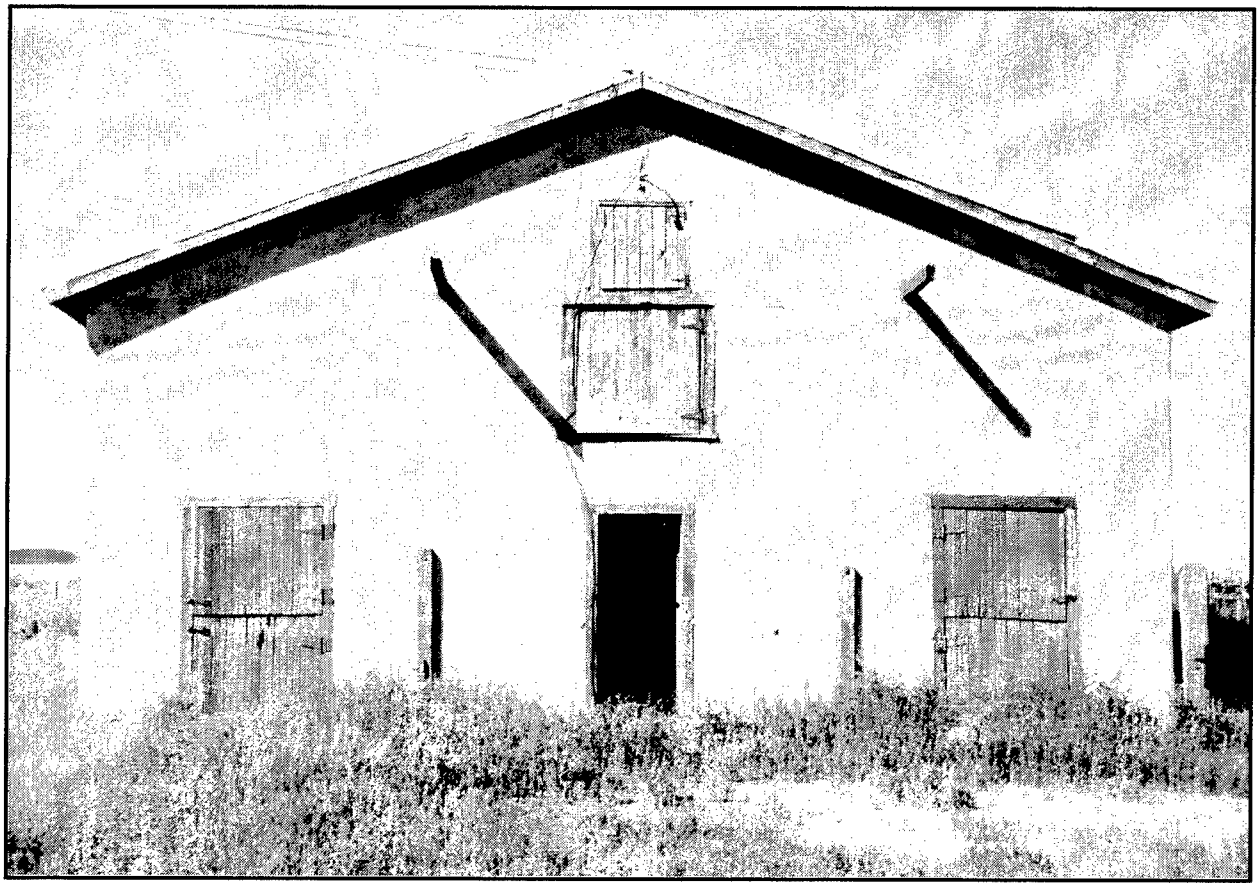


Figure 13. Structure B (Horse Barn), south face.

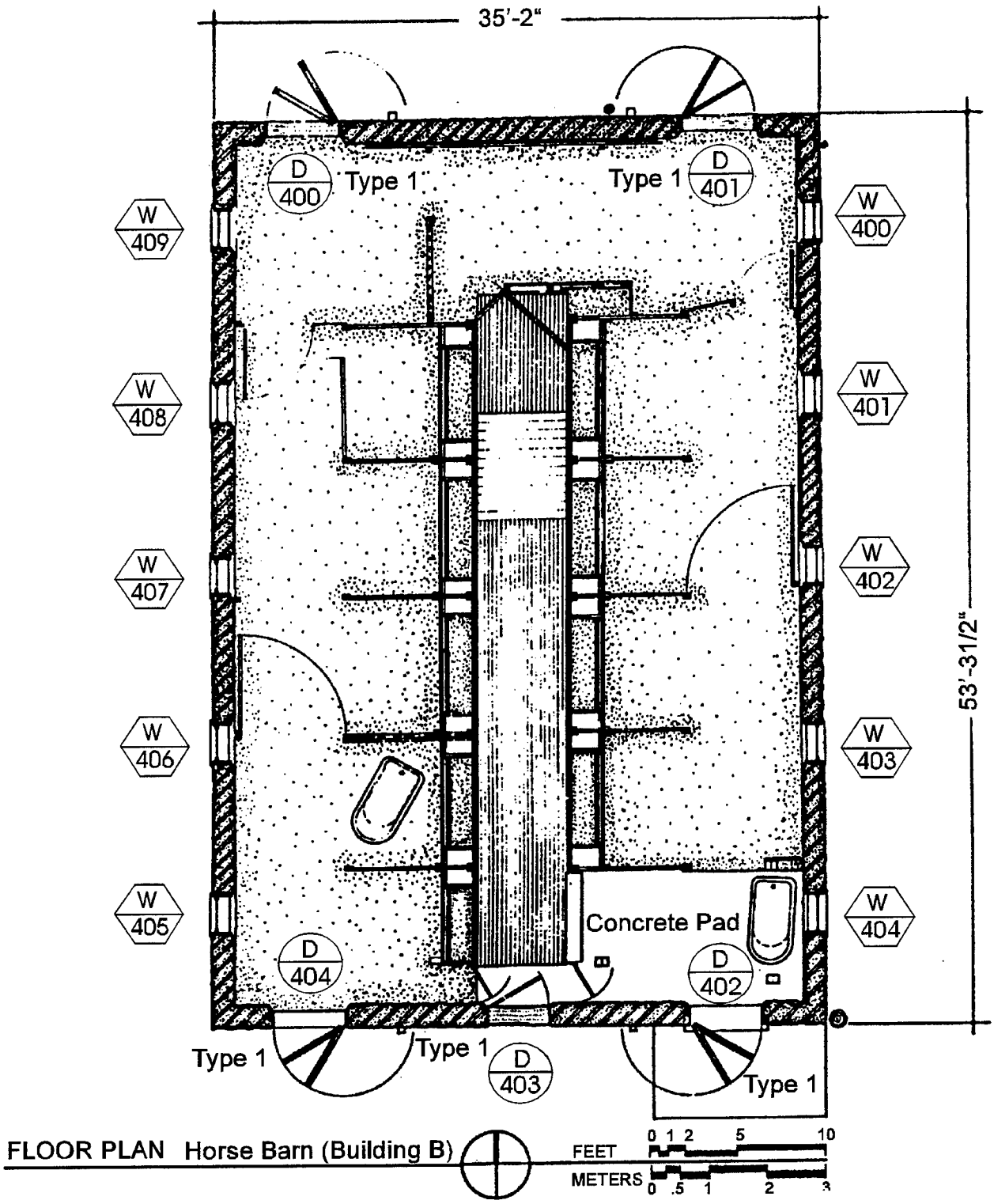


Figure 14. Structure B (Horse Barn) floor plan. Illustration based on measured drawing by A. Narvaez for the Rocky Mountain Regional Office.

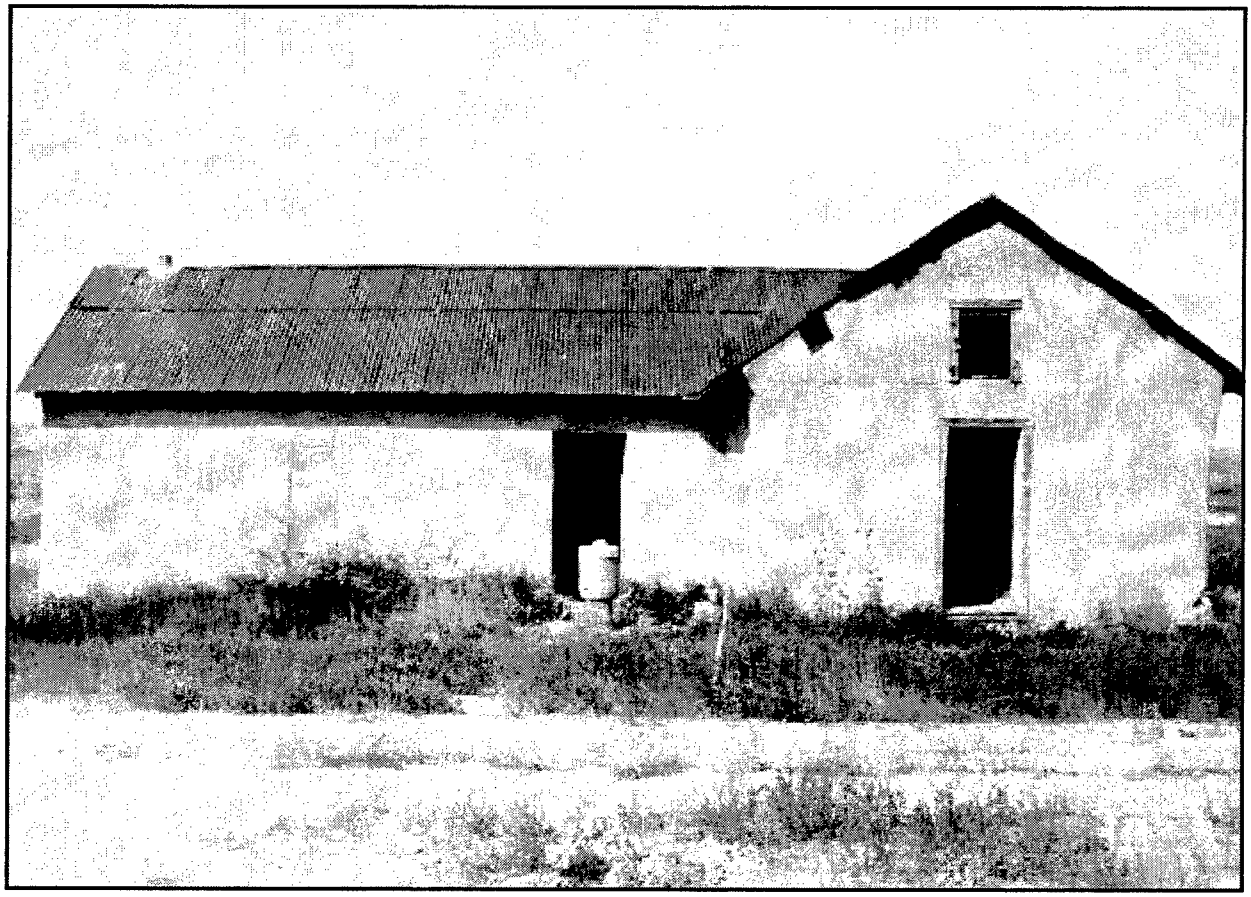


Figure 15. Structure C (Bunkhouse), east face.

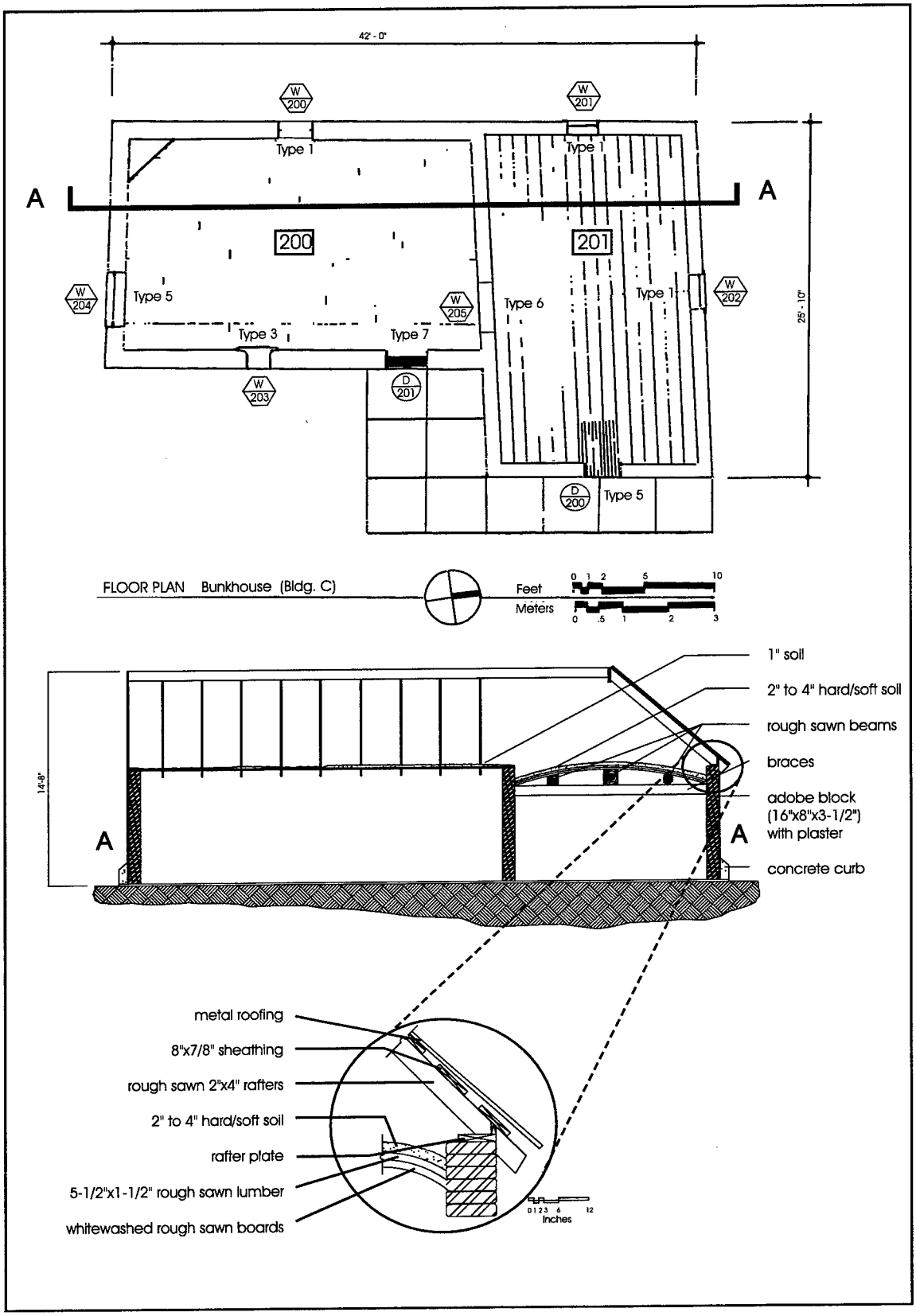


Figure 16. Structure C (Bunkhouse) floor plan and roof structure. Illustration based on a measured drawing by A. Narvaez for the Rocky Mountain Regional Office.

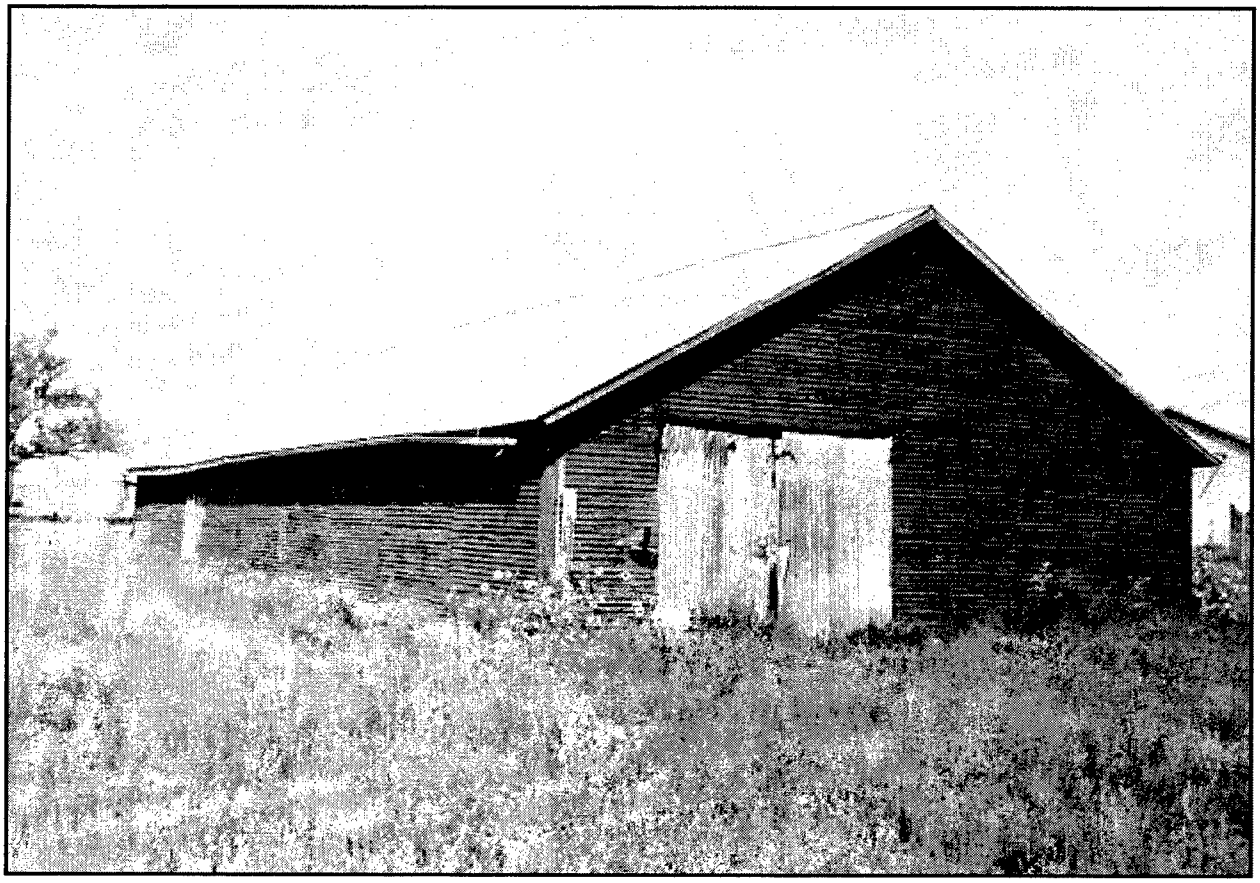


Figure 17. Structure D (Frame Barn), south and east faces.

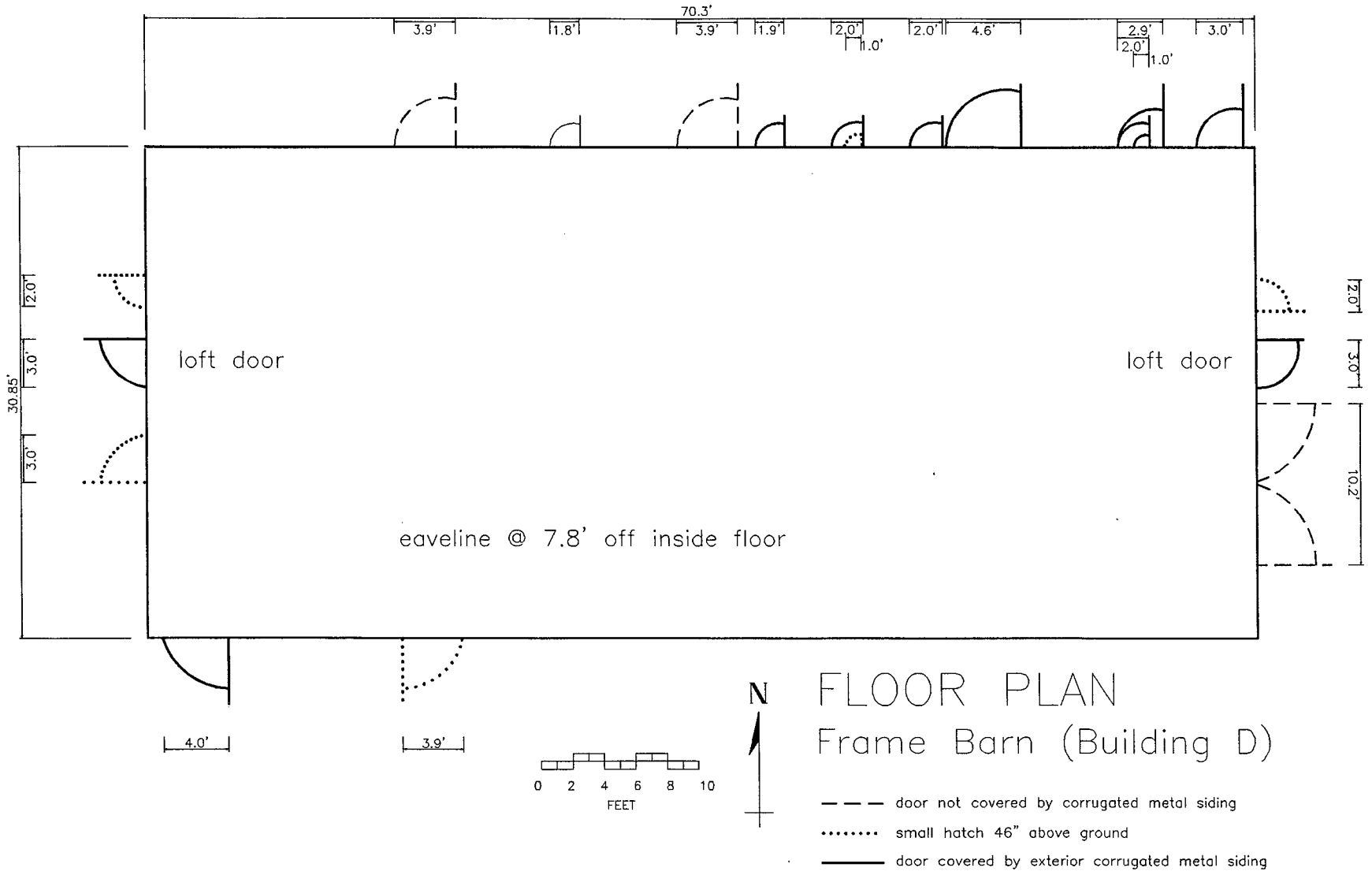


Figure 18. Floor plan of Structure D (Frame Barn).

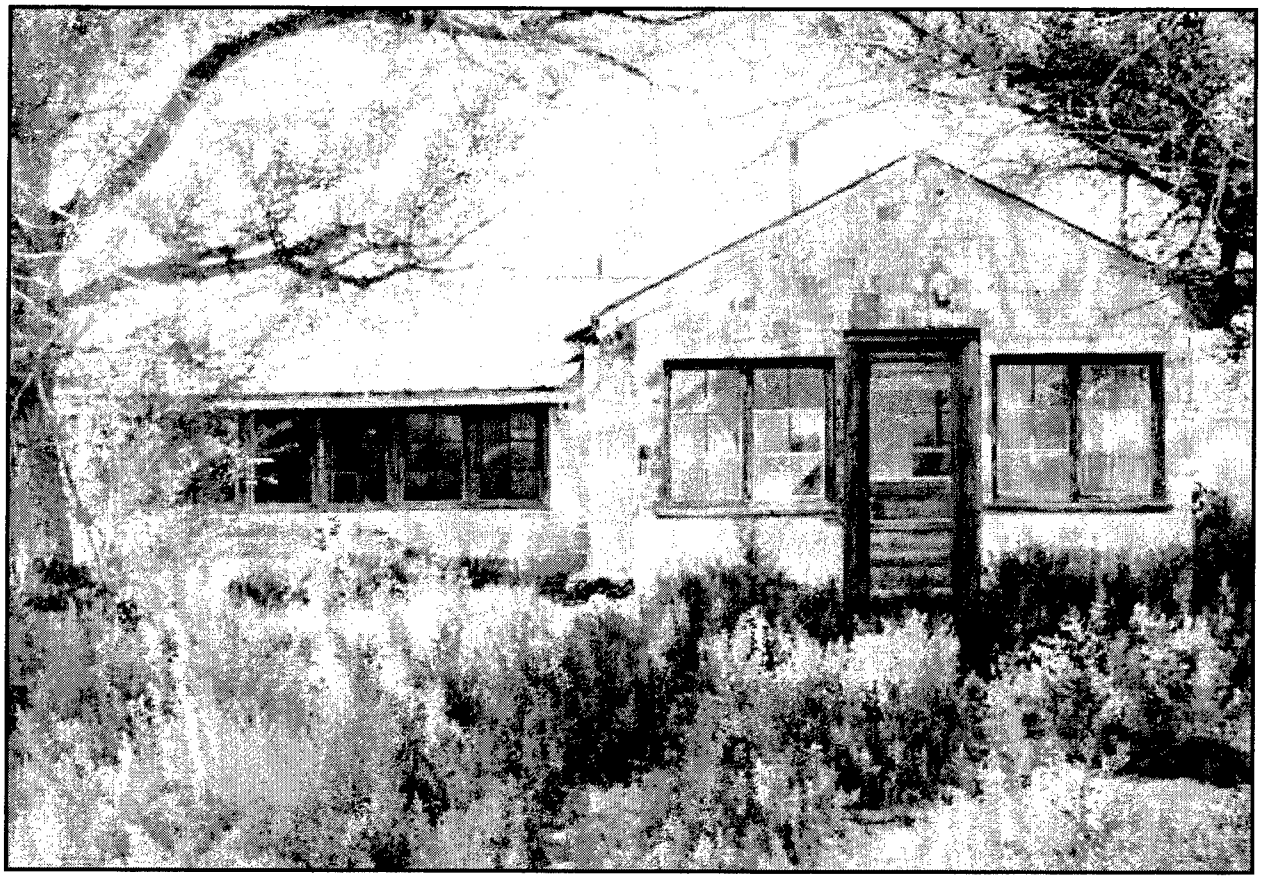


Figure 19. Structure E (Main Residence), east face.

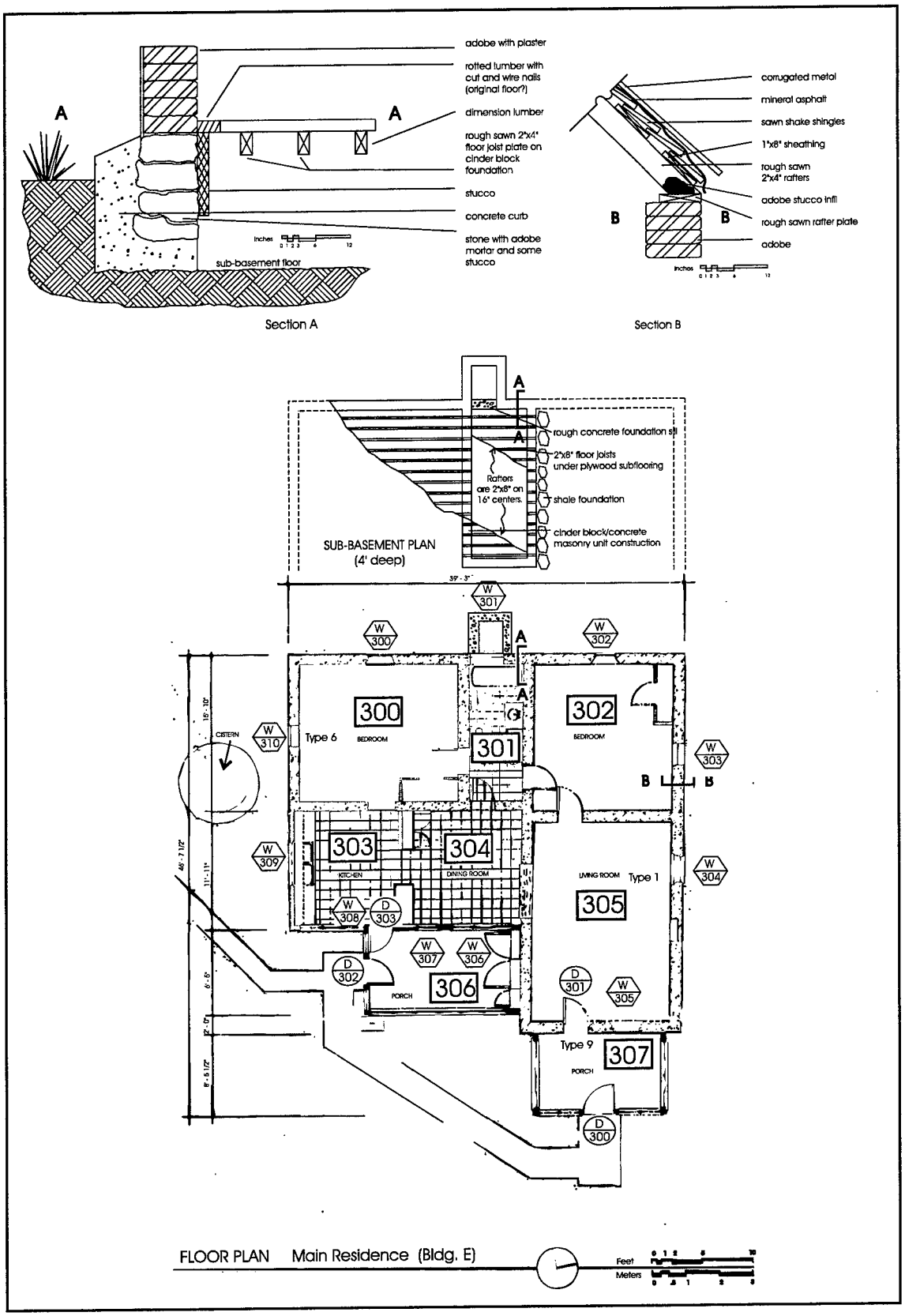


Figure 20. Structure E (Main Residence) floor plan with roof and floor sections. Illustration based on measured drawing by A. Narvaez for the Rocky Mountain Regional Office, NPS, Denver, 1990.

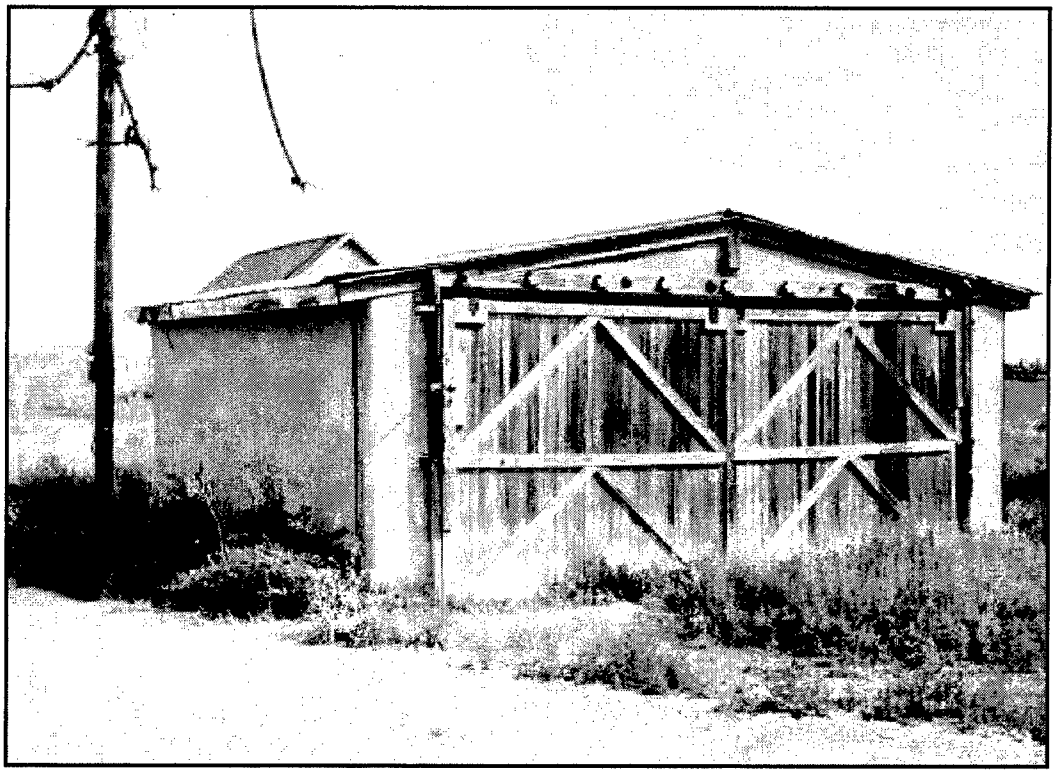


Figure21. Structure F (Garage), west and south faces.

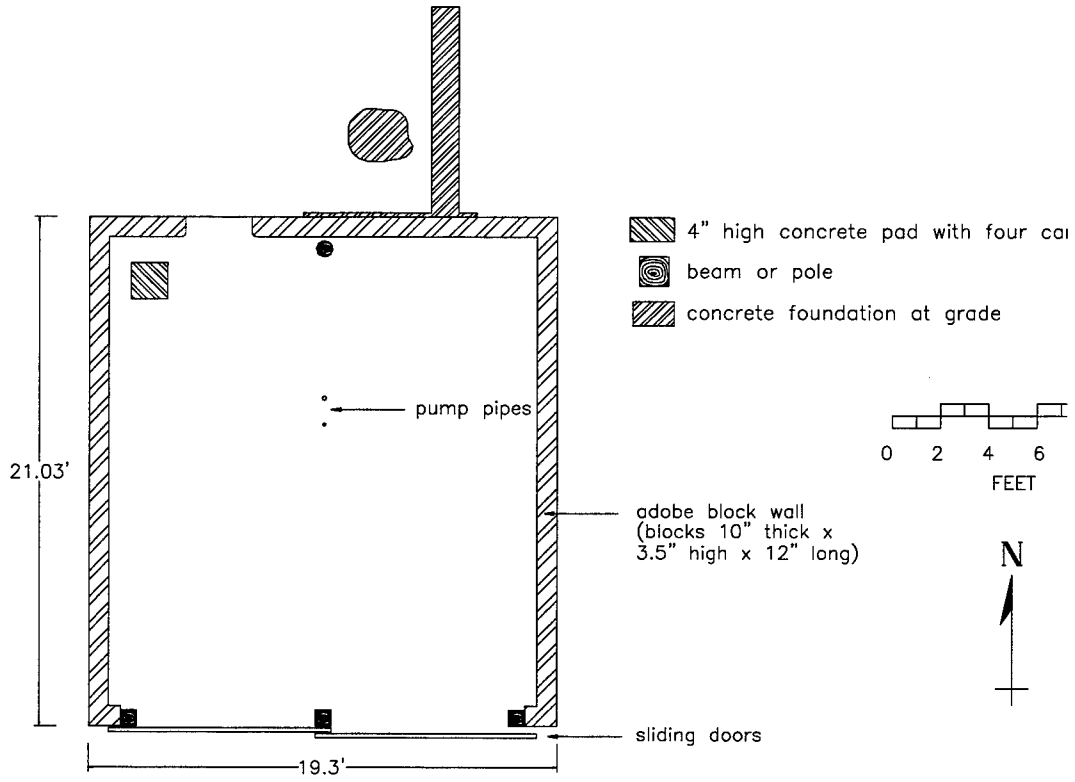


Figure 22. Floor plan for Structure F (Garage).

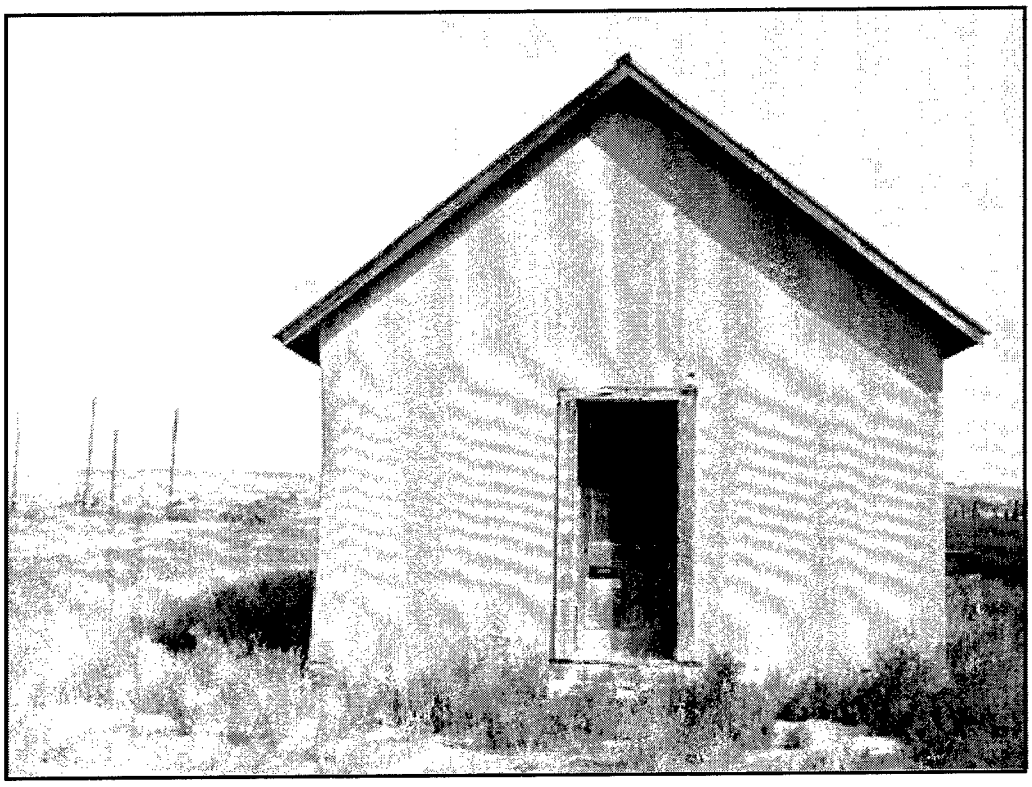


Figure 23. Stucture G (Commissary), south face.

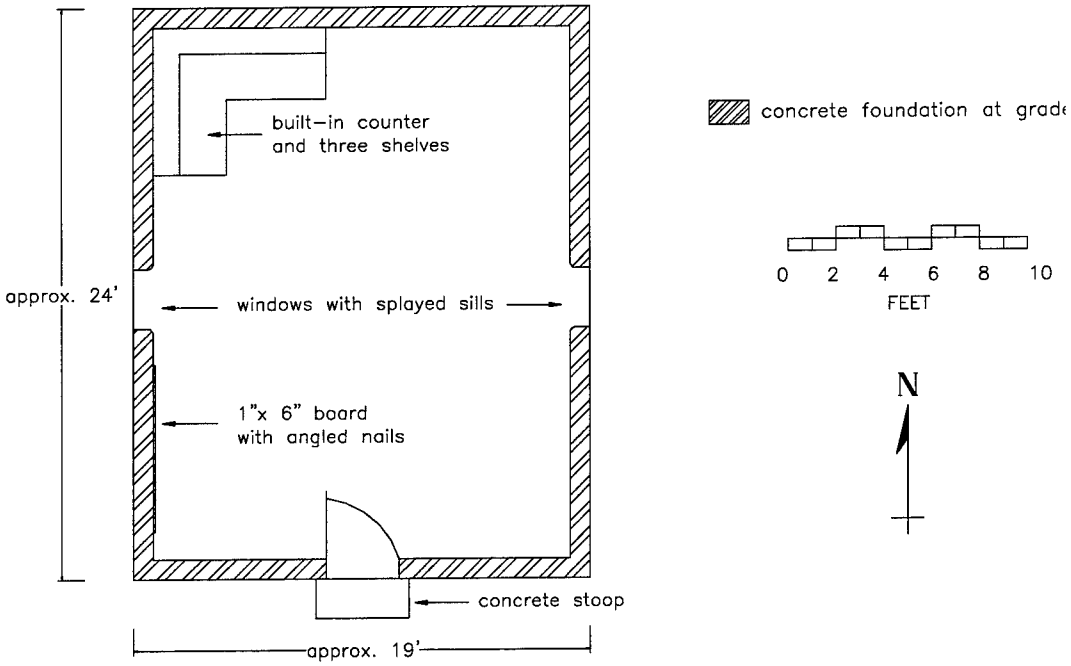


Figure 24. Floor plan for Structure G (Commissary).

Appendix A

Vertebrate Remains From 1995 Test Excavations at 5LA5824, Pinon Canyon Maneuver Site, Fort Carson, Colorado

Amy Koch and John R. Bozell
Independent Consultants
Lincoln, Nebraska

Introduction

This report considers the vertebrate faunal remains retrieved from site 5LA5824 during 1995 archeological survey and testing at Pinon Canyon Maneuver Site, Fort Carson, Colorado. The sample was recovered from test units associated with a late-nineteenth- or early-twentieth-century historic component. Site 5LA5824 is believed to have served as a stage station during the 1870s. From the 1880s to the early decades of this century, the site functioned as a sheep ranch. The most recent use of the area was for cattle ranching. This report is primarily a descriptive treatment of the sample. Observations regarding subsistence activity, distribution, and sample origin/modification are presented briefly.

Laboratory Procedures

The sample was washed, cataloged, and sorted from other material classes by Midwest Archeological Center staff prior to submission to the authors in January of 1997. Provenience information and site numbers were recorded on the exterior of bags as well as on tags inside them. Upon receipt, bag contents were examined and potentially identifiable specimens set aside for further consideration.

A specimen was considered "identifiable" if the element, side, and portion could be determined and assigned to a taxonomic grouping at the genus level or below. Those items separated as "unidentifiable" were minimally grouped into a taxonomic class. Specimen identifications were made through comparison with modern collections curated at the Nebraska State Historical Society and the National Park Service (Midwest Archeological Center), both in Lincoln, Nebraska. Variables recorded for each identified item include: catalog number, provenience, taxon, element, side/portion, aspect, and comment. Comment entries recorded natural or cultural modifications such as butchering marks, erosion, and carnivore gnawing. Immature specimens were also noted. These data were placed on a computerized database (dbase format) using a coding system designed by Falk et al. (1979) for use with archeological faunas.

The identified portion was quantified using the number of identified specimens (NISP) and minimum number of individuals (MNI) for each taxon (Grayson 1984). MNI values were calculated using the method derived from White (1953) of determining the side, element, and portion that occurs in the greatest frequency for a particular taxon. Relative age was also taken into consideration. Sorting and identifications were completed by the authors. Following analysis, the sample was returned to the Midwest Archeological Center for permanent curation.

Results

The vertebrate sample is well preserved and comprised of 259 bone fragments weighing 605.6 grams. Just over half of the sample could only be assigned as "mammal," although most of this portion is likely sheep. The majority of the fauna (62.5%) was recovered from test units within Grid 2 (Table 1).

The identified portion includes 115 elements from seven taxonomic groupings representing 10 individuals (Table 2). Sheep remains comprise about 29.5% of the total number of specimens, representing a minimum number of two individuals. Elements representing one cow and one pig comprise 2.3% and 3.5% of the total number of specimens, respectively. The remaining portion of the sample includes non-domestic species such as hawk, rabbit, and prairie dog.

Sample Characteristics and Preservation Factors

The sample is generally well preserved. Only a few of the domestic animal elements display cracking, decortication, and bleaching indicative of surface exposure or weathering. Several sheep bones are root etched. Five unidentifiable mammal bone fragments are burned. The majority of remains appear to be present as a result of subsistence activities. A complete prairie dog humerus and hawk wing digit may represent natural intrusions. Rabbit bones may have been introduced as hunted food remains, deposited by predators, or died naturally. Open foundations or piles of rubble associated with once standing structures might have attracted these animals.

Meat Cut Values for Domestic Stock

The following comments briefly characterize large mammal carcass reduction patterns represented at 5LA5824. The location of sawing and chopping marks was noted during identification. All identified cattle elements, over half (55.6%) of the swine elements, and 9.2% of the sheep remains are sawed (Tables 3–5). A single sheep element displays a chop mark from an ax or cleaver.

Meat cut categories represented by pig, sheep, and cattle remains were established from a variety of USDA and historic-era zooarcheological research project sources (Eakens 1924; Heulsbeck 1991; Levie 1979; Snyder 1982; U.S.D.A. 1977a, 1977b, 1983). Generally, the higher grades are represented by lumbar and thoracic vertebrae, medial ribs, pelves, scapulae, and upper limb bones. Lower value cuts are reflected by lower leg, neck, and cranial elements. Since not all portions have an equal number of bones represented in the mammalian skeleton, a procedure was used to normalize the values. The expected frequency (fe) of various cuts was compared with the actual or observed frequency (fo) of these elements. The expected frequency is the number of elements that would be found if all bones from individual animals had been recovered.

The sample frequencies were then segregated into major skeletal portions: skull, ribs/vertebra, upper forelimb, lower forelimb, upper hindlimb, lower hindlimb, and feet. Swine remains consist of vertebra/rib, upper forelimb, and hindlimbs units. These portions represent moderate to higher grade cuts including stew meat, spare ribs, roasts, chops, and hams (Table 3). Cattle vertebra/rib and upper hindlimb elements also represent moderate to higher grade cuts including soup or stew bones, steaks and roasts (Table 4). Sheep remains differ from cattle and swine in that a greater variety of cuts are represented (Table 5). These include neck bones, several different roasts and chops, as well as fore and hind shank portions. The relative low frequency of sheep elements with butchering marks may indicate that some body portions were not utilized for food and discarded as waste.

Concluding Remarks

This report has provided a preliminary descriptive account of unmodified vertebrate faunal remains recovered from a late-nineteenth- or early-twentieth-century ranch located at Pinon Canyon Maneuver Site, Fort Carson, Colorado. Conclusions based on the analysis of these remains are summarized below.

1. The faunal sample recovered from 5LA5824 includes 259 bone fragments weighing 605.6 grams. The majority is mammal and most were recovered from excavation units within Grid 2. Slightly less than one-half of the sample was identified to a taxonomic category at the genus level or below. The identified portion is dominated by sheep remains.

2. Domestic sheep, cattle, and swine remains can be directly associated with subsistence pursuits. The presence of wild resources (hawk, rabbit, and prairie dog) indicates that these animals may have been pursued as food, although direct evidence (cut marks or burning) does not exist.

3. Butchering marks and elements represented for sheep, cattle, and swine suggest that both low and high quality portions are present. A greater variety and number of cuts are represented by the sheep remains. Based upon observed versus expected element MNI values, it appears that sheep may have been butchered and consumed at the ranch. Beef and pork may have been purchased commercially in partially butchered units and consumed later on the ranch.

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Table 1. Distribution of recovered fauna from 5LA5824, Pinyon Canyon Maneuver Site, Fort Carson, Colorado.

Bldg. A		Bldg. C		Bldg. E		Corral		Grid 1		Grid 2		Total	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
4	1.5	36	13.9	38	14.7	12	4.6	7	2.7	162	62.5	259	100.0

Table 2. Summary of vertebrate fauna recovered from 5LA5824, Pinon Canyon Maneuver Site, Fort Carson, Colorado.

Taxon	Number of Specimens	Percent of Total	Minimum Number of Individuals
Buteo jamaicensis (red-tailed hawk)	1	0.4	1
Sylvilagus sp. (cottontail rabbit)	15	5.8	3
Lepus sp. (jackrabbit)	7	2.7	1
Cynomys ludovicianus (prairie dog)	1	0.4	1
Sus scrofa (domestic pig)	9	3.5	1
Bos taurus (domestic cow)	6	2.3	1
Ovis aries (domestic sheep)	76	29.3	2
mammal	144	55.6	—
TOTAL	259	100.0	10

Table 3. Meat cuts represented by *Sus scrofa* remains recovered from 5LA5824, Pinon Canyon Maneuver Site, Fort Carson, Colorado.

Type of Cut and Associated Elements	Number of Specimens	Sawed/Chopped	
		No.	Percent
Neck bones, stew meat thoracic vertebra	1	—	—
Spare ribs lateral rib	2	2	100.0
Roasts, chops medial rib	4	4	100.0
Shoulder/picnic ham scapula	1	—	—
Ham/butt portion pelvis (posterior)	1	—	—

Note: Principal cuts generalized from Eakins 1924; Levie 1979; USDA 1983.

Table 4. Meat cuts represented by *Bos taurus* remain recovered from 5LA5824, Pinon Canyon Maneuver Site, Fort Carson, Colorado.

Type of Cut and Associated Elements	Number of Specimens	Sawed/Chopped No.	Sawed/Chopped Percent
Soup/stew bones cervical vertebra	2	2	100.0
Steak thoracic vertebra	2	2	100.0
Sirloin pelvic section (sacrum)	1	1	100.0
Round roast femur (diaphysis)	1	1	100.0

Note: Principal cuts generalized from Eakins 1924; Levie 1979; USDA 1977a.

Table 5. Meat cuts represented by *Ovis aries* remains recovered from 5LA5824, Pinon Canyon Maneuver Site, Fort Carson, Colorado.

Type of Cut and Associated Elements	Number of Specimens	Sawed/Chopped No.	Sawed/Chopped Percent
Neck bones cervical vertebra	7	—	—
Rib roast, chops thoracic vertebra	7	—	—
Loin roast, chops lumbar vertebra	6	2	33.3
Rib roast, chops rib (medial, lateral)	6	2	33.3
Shoulder roast, blade chops scapula	4	—	—
Arm chop humerus (proximal)	1	—	—
Foreshank humerus (distal), radius,	10	—	—
Loin roast pelvis, sacrum	6	1	16.7
Leg roast Femur	2	2	100.0
Hindshank tibia, tarsal, metatarsal	8	1	12.5

Note: Principal cuts generalized from Eakins 1924; Levie 1979; USDA 1977b.