

**THE ORVAL A. ROBERTSON HOMESTEAD
DATA RECOVERY AT SUN CITY WEST,
MARICOPA COUNTY, ARIZONA**

**Preliminary Report
DRAFT**

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Introduction

At the request of the Del Webb Corporation, Archaeological Consulting Services, Ltd. (ACS) conducted data recovery projects at two sites prior to the expansion of the Sun City West development. AZ T:7:50(ASM) is a historic homestead dating to the early 1900s, and AZ T:7:51(ASM) is an associated trash scatter. The purpose of the excavation was to more fully understand the general homesteading process, to retrieve as much information as possible about this particular southern Arizona homestead, and to define the factors which contributed to its success.

Project Area

The project area encompasses 160 acres directly north of Deer Valley Road, including half of the western half of Section 15 and a small portion of the northeast corner of Section 16 within Township 4 North, Range 1 West (Gila and Salt River Baseline and Meridian) (Figure 1). The area has a gentle slope to the southeast, with elevations ranging from 1,230 ft. to 1,270 ft. Major washes flow toward the southeast. The creosote flats are typical of the lower basin zones within the Sonoran Desert and creosotebushes are the dominant vegetation. There are short grasses on the alluvial flats and mesquite and palo verde trees grow along the washes. Disruption of the natural drainage patterns, due to the construction of the Beardsley Canal and the McMicken Dam outlet channel, in combination with deep well pumping and cattle grazing, has probably diminished the natural vegetation (Stone 1991).

Small gravel-covered rises are scattered throughout the fertile sandy loam. The lower soil surfaces are subject to sheet wash. Modern ground disturbance has resulted from the construction of the Deer Valley Road along the southern edge of the property and a small vehicle trail that crosses the homestead. Many current erosion patterns are a result of the agricultural modifications constructed by the homesteader. Grazing cattle and hunters have also minimally impacted the area.

The Sites

Prior to excavation, the sites had been essentially undisturbed. The preliminary survey of AZ T:7:50(ASM), known to be the remains of a homestead, located two wells, a trash scatter, and several agricultural features. AZ T:7:51(ASM) was a 20 x 30 ft. surface trash scatter dating to the same time period as AZ T:7:50(ASM) and assumed to be an associated dump. Because of their potential to contribute to our knowledge of the past, both sites were deemed eligible for inclusion in the National Register of Historic Places (Stone 1991). Previously undetected domestic and agricultural features were identified, mapped and excavated during data recovery.

Documentary Research

The first National Homestead Act of 1862 entitled heads of households or persons at least 21 years of age to file for 160 acres of uninhabited land that had been surveyed and designated for homesteading by the General Land Office. This land had a market value of \$1.25 per acre but could be obtained free provided the homesteader occupied the land continuously for five years and cultivated a portion of it for four of those years. A 1912 change in the law reduced the residency requirement to three years and permitted an individual to leave the claim for up to five months of the year (Stein 1989).

According to documents on file in the government archives in Washington D.C., Orval A. Robertson, a resident of Peoria, Arizona, received homestead entry Number 015603 on September 27, 1911. He was over 21 years of age, was married, and began his residence on the property at this time. Five years later, on September 2, 1916, he filed notice of intent to make his Five Year Final Proof on the land. Notice of this intent was published in the Glendale News on September 8 through October 6, 1916. Witnesses of his fulfillment of the requirements for proof were Fred Bunker and James H. Hodges of Peoria, and J.D. Mitchell of Glendale. A fourth witness, Walter H. Tucker, is recorded as being both from Peoria and Glendale. The application warranted no field investigation, and on July 3, 1917, Robertson was granted title Number 590595 to 160 acres of Section 15.

Included in the documents are the testimonies of Walter H. Tucker, Fred Bunker, and the claimant. The standard form required a series of questions be answered concerning applicant background and performance, land under cultivation, and improvements made to the land. This data adds to the information retrieved archaeologically.

Orval A. Robertson was born in Mississippi in or before 1890. He was living in Peoria at the time he filed his initial entry and had most likely been there for at least six years before moving to his claim, as Mr. Bunker had known him for 12 years in 1917. He was married by 1911 and had one child sometime before 1917. He and his family lived in a tent house from September until October 1911, when they completed their permanent residence. The family was never absent from the homestead during the five proving years.

By 1912, Robertson had 20 acres under cultivation, possibly the bermed fields to the west and south of the residential area. Here he planted milo maize, sorghum, millet, pumpkins, and other unspecified crops, and harvested a "good crop." In 1913 he had increased his acreage by another 20 acres, where he planted the same crops. By this time he must have been clearing other areas of the land, establishing fields and constructing field borders to the south of the original acreage. He reports harvesting "some crop" this year. By 1915, he had 80 acres under cultivation, half of the entire parcel of land. Thirty-five acres were in barley, the balance in other unnamed plants, all of which produced a "fair crop." The western and southern fields are bordered in such a way that barley would have grown very well there. By this time Robertson established an effective water control system utilizing both run-off and well water, as barley required "from six to ten acre-inches to insure a crop" (Agua Fria Water and Land Company 1895). In 1916, he reported 60 acres planted in barley, three acres in sugar beets, two acres in milo maize, one acre in onions, and one acre in cabbage. Additional fields were most likely in the same varieties of crops reported for previous years, as he lists a total of over 80 acres under cultivation.

The witnesses also report the presence of a garden, beans, and cane. Sugar cane was becoming a significant crop in the immediate area in 1915. The Glendale News reported on August 27, 1915, that there were 1,400 acres in cane on a tract near Marinette, a small community located a few miles south of the homestead (it has since disappeared with the development of modern communities). The farm land was owned by the Western Sugar and Land Company, an organization that was encouraging individuals to engage in cane growing. Apparently Robertson tried his hand at raising the experimental crop, which was being processed at a sugar factory in Glendale.

Improvements to the property included a house, reported to be about 20 x 30 ft., a drilled well 170 ft. deep, an engine and pump, 120 acres fenced, three corrals, hog pens, and chicken houses, with a total estimated value of from \$1500 to \$2000. It is interesting to note that the hand-dug well found during excavation is not mentioned, possibly because it was dry and therefore could not be considered an improvement.

Though situated in an unincorporated area of the county, the homestead was not totally isolated (Figure 2). The small settlements of Beardsley and Marinette lay to the south and west. A small road between Beardsley and Frog Tanks (Pratt) to the northeast, passed within one mile of the homestead. The Santa Fe, Prescott, and Phoenix Railroad passed through Beardsley, and the communities of Peoria and Glendale were only six to eight miles to the southeast (Figure 2). Mr. Fred Bunker reported in his sworn statement that he lived only one and one half miles from the Robertsons and had seen them nearly every week for six years, and Mr. Tucker visited twice a month. The closest post office was established in Marinette in 1912 (Granger 1960), although both Bunker and Robertson claimed to be residents of Peoria as late as 1916. All these settlements were close enough to have been reached by either wagon or automobile in a half day's travel. By modern standards this would be considered isolated, but living conditions such as these were quite common at this time.

Commercial goods and services that would have contributed to the development and maintenance of the homestead were readily available in area communities. Items such as hog fencing, cedar fence posts, and barley seed were regularly advertised for sale in the Glendale News, along with instructions on the home-canning of food. A variety of fresh and commercial food stuffs could be purchased in Glendale and Peoria, and the technology to drill and utilize a deep well was also available to Robertson and other farmers in the area (Glendale News Aug. 27, 1915).

Farming the soils of the desert Southwest has always been a difficult and dangerously uncertain operation. The heat and unreliable water supply temper the advantage of a rich and fertile soil. The Agua Fria River lay to the east, but not close enough to be of use, even though it ran year-round prior to the construction of dams upstream. The water table was approximately 150 ft. in the early 1900s (Hermann Kakacsi, personal communication 1992). A 170-foot well with a pump would provide enough pressure to produce an adequate stream for supplemental irrigation and, provided rainfall amounts were reliable, farming would be possible. The drainage basin of the Agua Fria River draws water from the Bradshaw Mountains where the average annual rainfall in the last years of the 1800s was 15 inches per year. Rainfall in the desert was measured at not less than four inches (The Agua Fria Water and Land Company 1895). Because of the gradual inclination of 12 to 15 ft. per mile, both the mountain run-off and the rainfall could be channeled and utilized without danger of excessive erosion. The land is free from killing frosts (Arizona Republican 1927) and through prudent crop management would have been very productive. Provided nothing interrupted the water supply, the homestead was secure.

Field Methods

The excavation of both historic sites was conducted during June 1992 under the direction of Shereen Lerner (Principal Investigator). Karolyn Jackman Jensen (Project Director) and a crew of four spent 85 person-days in the field.

AZ T:7:51(ASM) is located in the northeastern corner of Section 16, on a gravel rise west of the small drainage that flows into Feature 14. It was a light scatter of cans, whiteware, stoneware, "black glass," and fragments of sun-colored amethyst glass covering a 20 x 30 ft. area with no associated features. Crew members collected all artifacts and dug a small 1 x 1 ft. test pit into the desert pavement to test for site depth. A preliminary analysis of the artifacts suggests that they may date to the earliest years of the Robertson homestead. This may then be a dump used before the dry well was available for use at the homestead.

The first priority at AZ T:7:50(ASM) was to locate domestic features. Through careful surface observation and testing, three structures, the home, a pumphouse, and a hog pen were identified, and therefore the grid system and shovel-scraping proposed in the original data recovery plan (Green 1992) were not implemented. The Homestead Entry Form from the archives in Washington D.C. confirmed the presence of these and additional features.

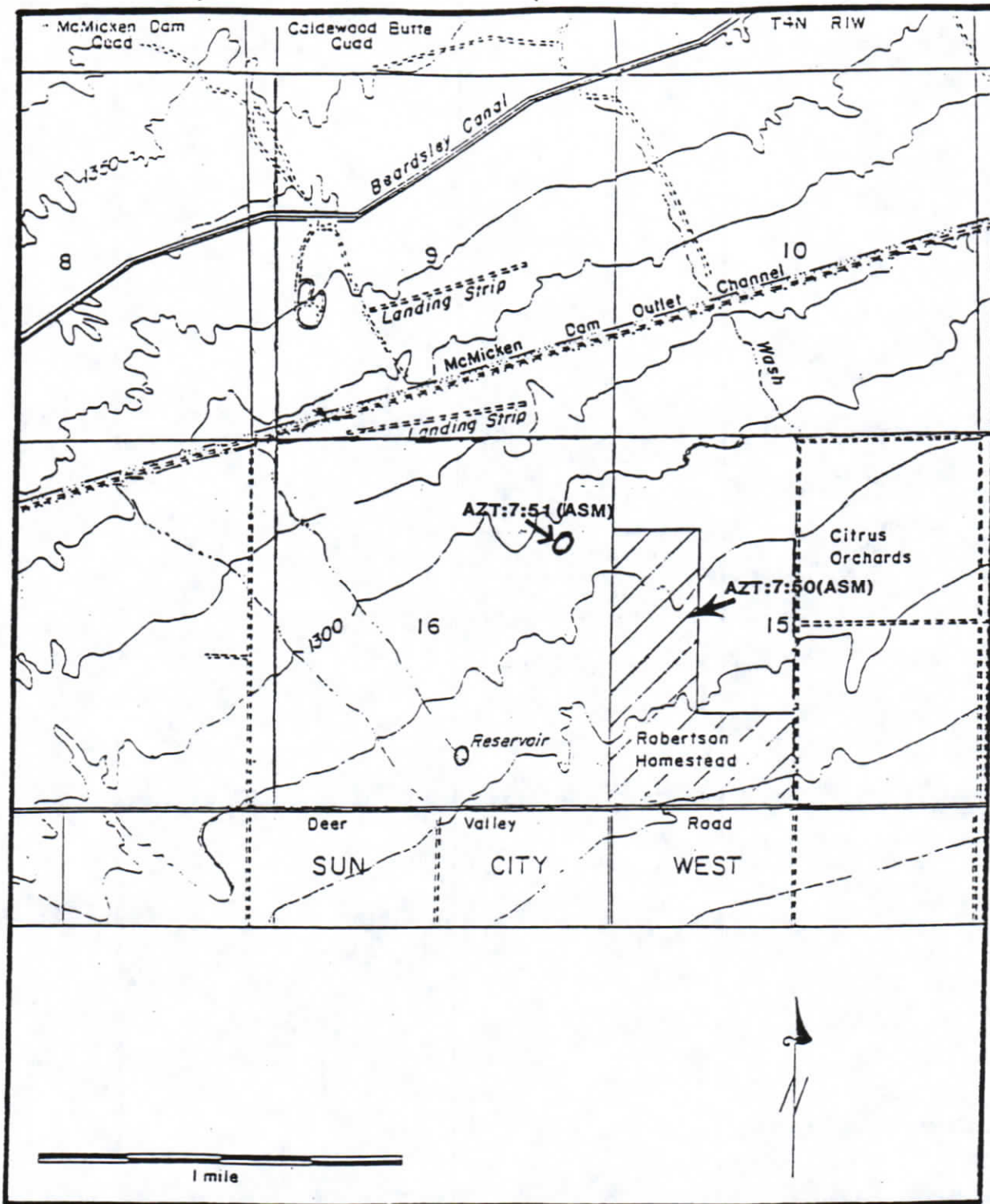


Figure 1. Portions of the USGS 7.5' McMicken Dam and Calderwood Butte topographic quadrangles showing the location of the project area, nearby archaeological sites, and the historic Robertson homestead.

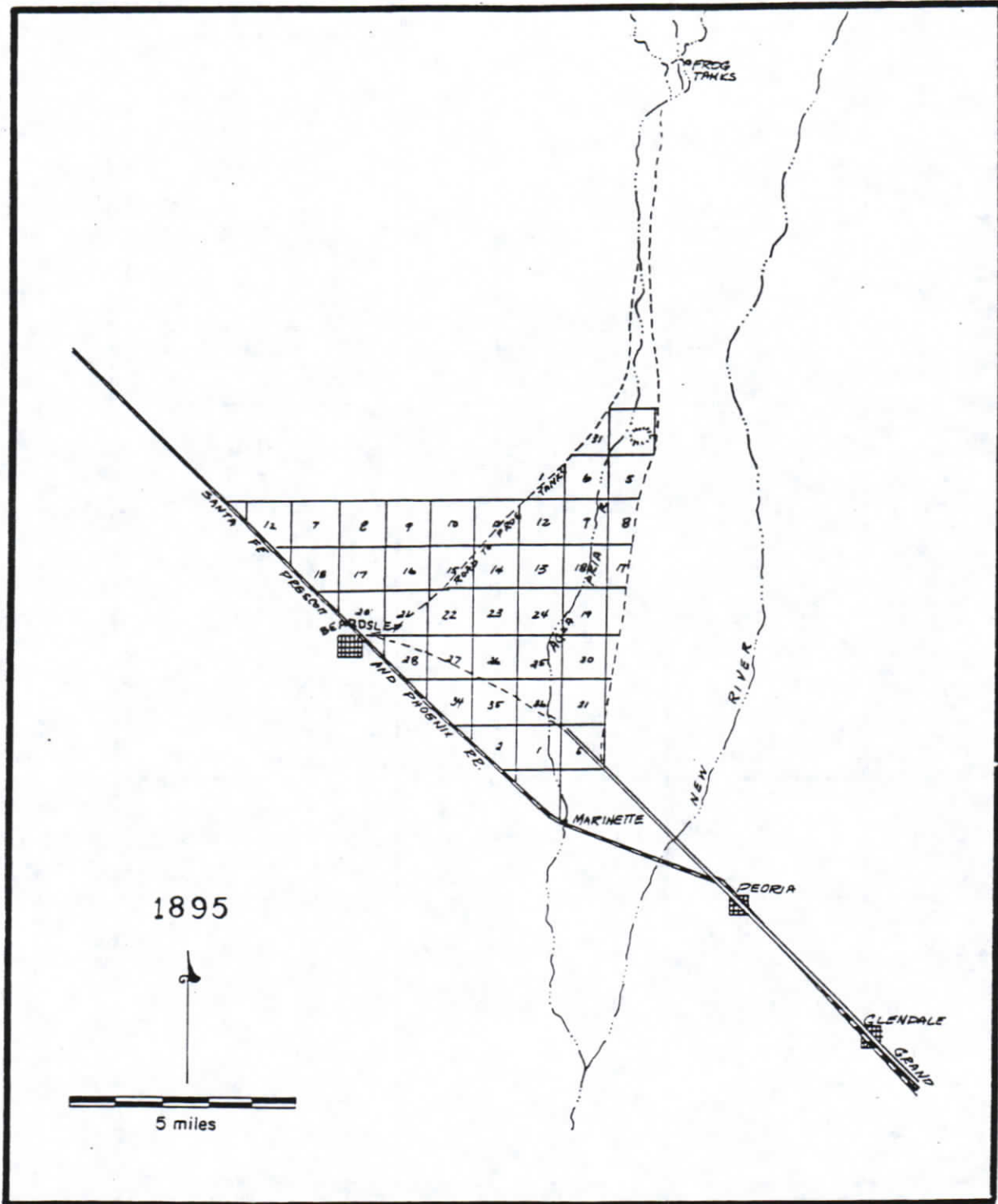


Figure 2

A site datum was established on the northern berm, with a supplemental datum at each excavated feature. As site mapping was to be done by engineers employed by the Del Webb Corporation, the only mapping done by the crew was for the purpose of depth measurement. The site was expected to have little depth, having been subject to surface erosion and sheetwash since abandonment, therefore excavation of all features except the hand-dug well was done by hand with flat shovels and trowels. Surface evidence and artifact location served as guides for the placement of excavation units. Soil was screened through a quarter-inch mesh, and, where possible, natural levels were followed.

Structural features were excavated in their entirety and portions of the agricultural berms and erosion checks were tested. The effort to empty the hand-dug well was abandoned after the backhoe reached a depth of 48 ft. Trash removed during this procedure dates to the modern period. Because of the cost of complying with OSHA regulations in attempting to deepen the excavation, it was impossible to complete this portion of the project. The Del Webb Corporation was very cooperative in providing employees and machinery to the effort, and the backhoe operators were as disappointed as the crew when attempts to reach the bottom of the well failed. All features and excavations were thoroughly photodocumented.

Pollen samples were taken from the agricultural fields and possible garden area. Flotation samples were taken in Features 3 and 9 (the house and hog pen). All artifact and sample bags and the excavation notes referenced feature number and depth in relation to the site datum. At the conclusion of the excavation, the entire site was mapped by engineers employed by Del Webb Corporation using a transit and stadia rod. A composite map including all cultural features, agricultural fields, and irrigation drainages will be compiled, using the engineers map, the excavation map, and the enlarged aerial photograph (Figure 3). This map will accompany the final report.

Features

Seventeen features were identified at the site. Five were located in the residential area of the homestead (Figure 4); the balance are related to agricultural and water control functions (Figure 3).

The Pump House

Feature 1 is a pump house constructed around the drilled well, and measuring approximately 10 x 12 ft. (Figure 5). The only surface evidence for this structure was the 10-inch diameter well pipe, a nearby railroad tie post, and an artifact scatter. Surface scraping with a flat shovel exposed an irregular level of fragmentary cut boards, black roofing paper, and nails, probably roof fall. Further excavation revealed additional roof fall and two railroad ties that could have served as stabilizers during drilling. They lie below the level of the drilling-mud spill that covers the original ground surface and are parallel to each other on the north and south sides of the structure. Four erratically positioned postholes surround the well, all containing remnants of railroad tie posts. Two postholes were excavated and found to be 2 ft. 3 inches and 2 ft. 7 inches deep. If the entire length of the ties was used, the posts would have extended approximately five ft. above the surface of the ground. As there were no remnants of these ties in the vicinity, it is assumed that they were broken off and taken away when the property was abandoned.

COMPOSITE MAP -
- all Features -
IN PROGRESS

Figure 3

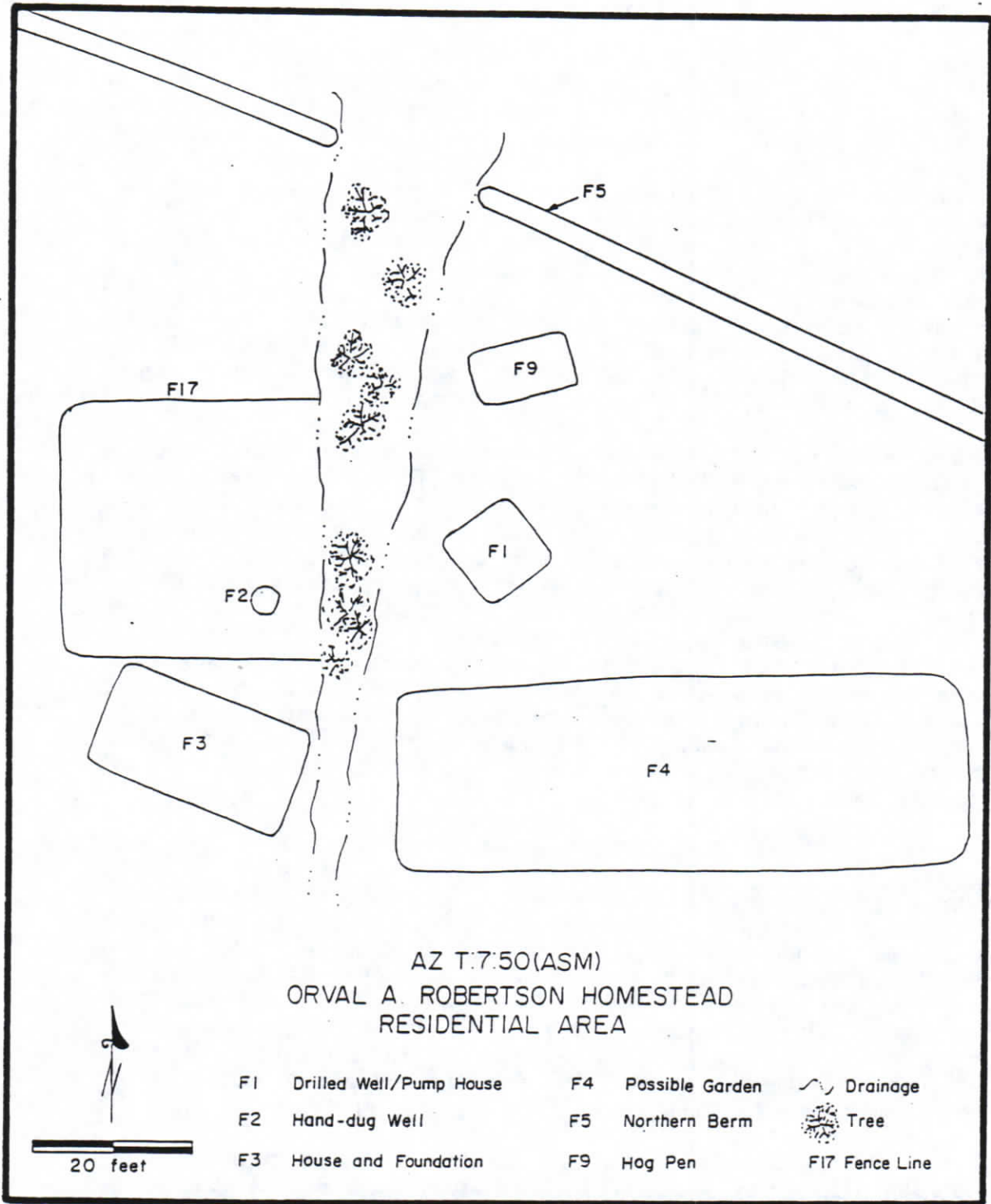


Figure 4

The Hand-dug Well

Feature 2 is a hand-dug well located north of the house and west of the drilled well (Figure 4). Extensive erosion had enlarged the mouth of the well to an irregular surface diameter, varying between nine and ten ft. The interior of the well had a diameter of four ft. and a depth of at least 50 ft. A 19-inch mound of soil surrounding the mouth was not sufficient to account for the soil removed by Robertson. It is assumed that the balance was used to construct the northern berm in the agricultural field (Feature 5). A large metal stock watering tank and a box springs covered the mouth and had to be removed prior to excavation. Erosion had exposed the remnants of eight railroad ties protruding out of the fill and into the mouth of the well. Three ties laid together on the northeastern side of the hole, creating a small platform. The others ties were fragmentary, but all had been buried in the excavated soil, suggesting that they had been part of a platform to support the equipment used during excavation of the well. Artifacts were scattered across the surface of the mound and the surrounding area. The fill itself was sterile. A fence (Feature 17) enclosed the well. A faint line on the ground surface marked the fence location and can be detected on the aerial photo. The northern and southern fence lines disappear into the central drainage, where evidence of the eastern fence may have been washed away.

Hand excavation of a well of this depth, though not impossible, would have been incredibly difficult and laborious, requiring the assistance of both people and machinery. The first 8.5 ft. of excavation cut through sandy silt and gravel, with occasional caliche inclusions. At this depth, a 3.5-foot layer of loose sand was found, which had been shored up with a three-tiered wall of railroad ties. Caliche lies below the sand. There was no indication that a drill or auger was used to dig the well. John Soto, a backhoe operator for Sun City West, stated that when he was a young boy, his family dug a similar well through similar soils, and reports that it was a very slow and difficult process. The soil had to be dug while dry to prevent wall collapse, placed into a bucket, and hauled to the surface. The small size of the Robertson well would allow only one person to dig at a time, working in a dark, hot, and extremely humid environment. It is unknown whether Robertson had any assistance in digging the well, but it is reasonable to assume that he was not alone. The depth of the drilled well indicates that the hand-dug well was dry, but it could have been used as a trash dump and privy. The actual function of the feature remains unknown. The effort and skill invested by Robertson in the construction of the well is reflected in the other features of the homestead.

The House Foundation

Feature 3, the house foundation, lay to the south of the hand-dug well and to the west of the central drainage (Figure 4). It was a rectangular gravel mound measuring approximately 24 x 34 ft. There is the stump of a large shade tree near the southeast corner. An artifact scatter covered the mound and extended several feet beyond in all directions. Broken pieces of concrete were concentrated in the southwestern quadrant of the foundation and scattered a few feet to the south. There was no construction debris or structural materials in the area, indicating that the house had been dismantled when abandoned. The center of the mound was extensively disturbed by rodent burrows. A concentration of window glass and fragments of roofing materials east of the foundation may identify the place where parts of the house were placed prior to being hauled away.

The excavation perimeters were established outside the mound and at the edge of the artifact scatter, resulting in a 30 x 38 ft. unit. The area was then divided into quadrants, and all artifacts collected according to their location. Beginning in the northeast corner, each quadrant was shovel scraped by natural levels. The levels and procedures for the remainder of the house were established in this quadrant.

The first level of excavation began on the surface and extended to a depth of 0.75 inches to removed the soil impacted by erosion and deposition since abandonment. All fill was screened for artifacts.

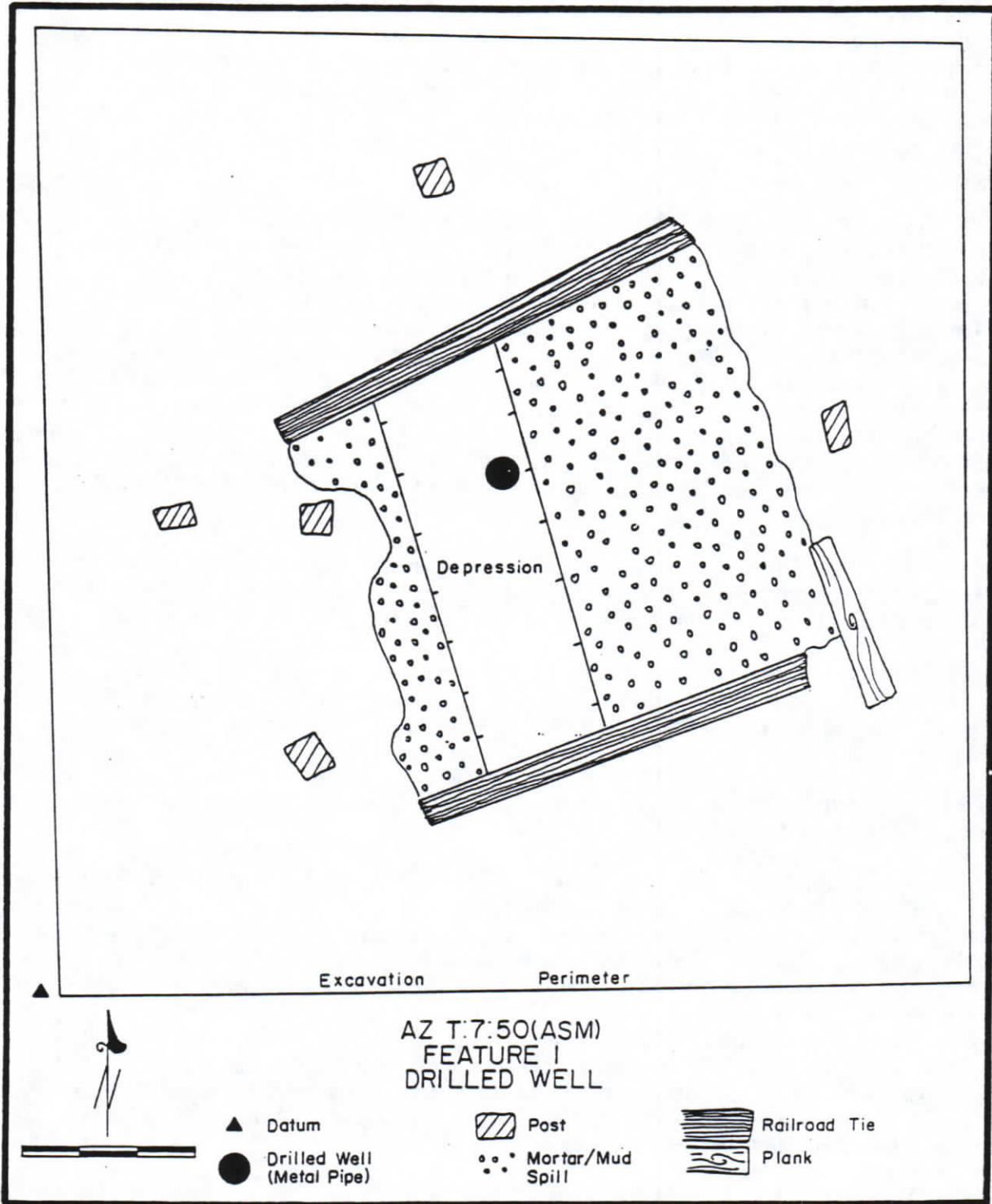


Figure 5

The second level varied from one to three inches in depth and consisted of all soil to and including a layer of roofing materials, i.e., board fragments, tar paper, and roofing nails. Though scattered throughout the mound, most of the material was concentrated on the exterior of the structure. Screening produced various household items, such as buttons, cartridges, a mouse trap, bottles, a girdle hook, and clock parts. The southern quadrants were not excavated below Level 2, leaving the foundation itself intact. The excavation on the exterior of the structure was deeper than the interior, following natural levels.

Both northern quadrants were excavated to Level 3, removing all soil below the roof fall to the construction level or sterile soil. Depth of the level varied from one to three inches. It was assumed that the roof fall dates to the dismantling of the house, and therefore was resting on the use surface. Any artifacts found underneath the roof fall would then date to the years between the construction and destruction of the house. Once Level 3 was excavated in the northwest quadrant, a wall was located. Shovel scraping of this area revealed that the gravel was much deeper toward the center of the mound, and the original wall was located by following the interface of gravel and soil, where traces of a foundation board, small uprights, and nails surrounded the gravel fill. Most cultural materials at this level were located on the exterior of the structure. The soil around the gravel foundation were generally sandy silt, often layered as it washed down from the north. Two areas on the northeastern side of the house were extremely hard, possibly indicating a back entrance where continual walking had compacted the earth.

The exterior of the northwest quadrant was dug two inches deeper to a fourth level to assure that the interpretation of the construction sequences was correct. The only artifacts found at this level were in the vicinity of a rodent burrow, and their provenience is therefore suspect.

To determine the depth of the gravel foundation, a 3 x 3 ft. test pit was placed near the center of the mound and excavated to a depth of 10 inches. The profile of this pit revealed that before construction of the house, three to seven inches of gravel were used to level the ground surface and provide drainage.

There was an irregularly shaped stain in the northeastern quadrant. A soil sample was taken in order to identify the origin of the stain.

The excavation of Feature 3 confirmed its preliminary identification as the home of the Robertson family. Actual evidence for the construction of the house is extremely sparse. The archaeological record suggests a wood frame structure placed on a gravel foundation. There are no postholes that would indicate a more substantial construction. The Homestead Patent reports a home 30 x 18 ft. This gravel foundation measures only 27 x 16 ft., but an attached porch or shed could have been included as a part of the home in the original measurements. The surface artifacts suggested such a possibility as there was a concentration of nails, railroad spikes, and similar debris on the western side of the mound. There was no subsurface evidence to support or refute this interpretation. It is also possible that the dimensions may have been exaggerated in the documents. The cement fragments in the south central part of the foundation were associated with artifacts that suggest that this area was used as a kitchen. Was the cement used to support a heavy stove? This interpretation will be explored after the complete analysis of the artifact assemblage.

The Garden

Feature 4 has been identified as a possible garden because of its size (25 x 100 ft.), location, and an earthen border that may indicate a fence line. As it is located to the south of the drilled well and east of the central drainage, it could have been watered from either or both sources. The area was measured, mapped, and sampled for pollen analysis.

Hog Pen

Feature 6, to the north of the drilled well, was probably an animal pen based on the presence of hog wire on the surface and subsurface fence posts. Two turtle shells were recovered in the area, but extensive rodent burrowing had disturbed any stratigraphy.

Fence Line

Feature 8, a fence line, is located in the north central part of the site, immediately east of the northern fields. Only three posts are in place, and no excavation was done to locate other posts. Robertson reported that he had 120 acres fenced, but it was beyond the scope of this project to locate all fence lines. It does appear that many naturally growing trees doubled as posts where possible. Commercial fence posts would have been an unnecessary investment when other materials were available.

Agricultural Features

The remaining 10 features are all parts of the agriculture and irrigation systems designed by Robertson. With the low water table and sparse rainfall, it was necessary to conserve and capitalize on all available resources. By modifying natural drainages, constructing berms, digging strategically placed ditches, and carefully selecting field location, he was able to cultivate at least 80 acres without the benefit of commercial irrigation water. A large portion of field time was dedicated to recording and interpreting these agricultural features in order to understand the elements of a successful homestead. All features and subfeatures were recorded and mapped, and portions of six were excavated or tested. All were also photographed either in part or in totality, depending on their size. A composite map using the aerial photo, topographic maps, and data compiled in the field, is in the process of being created as a part of the final report.

The Northern Berm

Feature 5 is a berm encompassing the northern and eastern boundaries of the residential area (Figure 5). It averages 3 ft. in width, has a varying height of 12 to 18 inches, and extends approximately 1,500 ft. to the south before gradually disappearing. Shallow ditches border both sides. Its location to the north of the structures provided protection from run-off and channeled the water into agricultural areas. It does not extend as far as the drainages to the west, allowing water to flow southward into the terraced fields of Feature 7. The opening above the central drainage permits water to flow into the residential area where it could be directed toward any animals corralled there, to any water retention facilities near the house, or into the garden. The run-off caught by the rest of the berm was channeled along the northern edge and then to the south where it was caught by the ditch along the northern edge of Feature 10. Any excess water flowing eastward across the garden area would also have been caught and channeled to the south along the interior edge of the berm.

Northern Ditch

Feature 6 originates 1,100 ft. north of the homestead and runs along the section/property line. When in use it was at least 4 ft. wide and 2 ft. deep, but the banks are badly eroded and precise measurement is no longer possible. From its point of origin, where three drainages were modified to channel run-off into one ditch, it carried water 1,200 ft south toward the northern agricultural fields. Approximately 100 ft. below the northern berm, it branched into three drainages, two of which delivered water to the fields (Feature 7), and one emptied into another drainage from the northwest. This carried water along the western edge of the field berms to the central fields. A test trench through the central portion of the ditch was profiled for information on construction and erosion. The original ditch was dug through sandy silt and was not deep enough to extend more than three inches into the underlying caliche. The soil shows no changes that would mark the sides of the original ditch.

Northern Fields

The agricultural fields of Feature 7 may have been the first cultivated lands on the homestead (Figure 3). They are located along the western property line and approximately 40 ft. south of the residential area. As the northernmost fields they would have been the first to benefit from the northern irrigation system (Feature 6). The 300 x 140 ft. area is terraced and divided by four berms or levies, each of which is protected from erosion by an extension of volcanic boulders on the east. All are connected to a north-south berm on the west.

The northern and southern rock alignments were excavated. The alignment at Feature 7.01, the northern berm, is 45 ft. long. One 7.5-foot section of stones had been buried, possibly to provide a stable spillway into the first field. The rocks protecting the southern berm, Feature 7.04, have an inverted U-shape, and extend from the end of the earthen berm both east and south (Figure 6). The purpose for this has not been determined, although it is assumed that it served as a special erosion check and water control.

There are breaks in both the third and fourth berms. The two openings through the earthen fill of the fourth berm may be a result of erosion, but as the eastern one aligns with the break in the rocks of the third berm, it seems to have been a part of the whole system and would have released excess water into the drainages leading into the southernmost fields. This alignment may explain the western branch of the U-shaped rock alignment. If fairly large amounts of water were flowing through the cut in the berm, it would tend to flow eastward with the natural slope of the land. The rocks would direct the flow to the south where additional crops could have been planted. The western cut appears to have been designed to remove excess water from the western end of the field and place it in the drainage running along the western edge of the north-south berm.

Two berms have been constructed to incorporate two existing trees. They were cut down to stumps to prevent their use of valuable irrigation water, but were probably left in place to stabilize the berm.

The feature was mapped, drawn, and photographed. A pollen sample was taken. It is interesting to note that the water collection system designed for this field still functions. The water collects along the northern portion of the berms, where the trees are larger and the undergrowth is much thicker and stays green far later in the season than in surrounding areas.

Central Fields

This five-acre parcel of land (Feature 10) is characterized by eight east-west and one north-south earthen berm of a design similar to those to the north (Figure 3). The berms are 18 to 24 inches high and approximately 3 ft. wide. The longest, 558 ft., is the furthest north, and the shortest, 286 ft., is the southernmost berm. The average distance between berms is 100 ft. The fields are designed to capture and hold run-off from the north. Water would flow along the northern edge of the berm and through strategically placed spillways into successively lower fields. Each eastern, or downstream, end of the central six berms has an earthen "hook" to prevent water loss and erosion.

The first and eighth berms were designed to control heavier flows. A carefully constructed rock-lined spillway in the northern berm directed all water flowing along the berm into the first field. An extension of the berm, in combination with a ditch along the upper or northern edge, collected additional water and directed it to the east and south toward the eastern fields. The lowest berm is not connected to the western border, but acted as a collector of the water flowing along the western edge of the north-south berm. This water flows through a shallow ditch along the northern edge of the berm, then is directed south and east through other drainages running to the southern fields (Feature 11). A series of small, badly eroded north-south berms on the eastern edge of the field system controlled excess water spilling from the fields and channeled it to the south, where it was picked up by natural

drainages carrying water to the southern fields. A backhoe cut through the northern berm confirmed that it is of solid earth construction. Trees have been utilized to stabilize the soil of several berms, but cut to stumps to prevent water use. No excavation was done in the area, but a trench was cut through the northern berm. Two pollen samples were taken from the northern and southern fields.

Southern Fields

This eight-acre field system (Feature 11) is located in the south central portion of the homestead. It measures approximately 600 x 600 ft. and is marked by a series of field borders identical to those found in modern fields. Some borders pass through gravelly desert pavement that could not have been cultivated and would have been bypassed if the work was being done with a shovel. This would suggest that Robertson was using a tractor. The fields were watered from the north, the northwest, and the west. The feature was mapped, and the central fields were sampled for pollen analysis.

Eastern Fields

Feature 12, the eastern fields, include nine acres located immediately to the east of the central field. A north-south drainage fed by run-off channeled along the northern berm (Feature 5), borders the northern part of the system and passes through the southern part. These fields were mapped, and the central fields were sampled for pollen analysis.

Central Berms

Feature 15 is located in the central part of the project area, directly above the northwestern corner of Feature 11, and consists of two parallel berms. Each is approximately 400 ft. long, 3 ft. wide, and 2 ft. high. They appear to have been constructed to channel water flowing from the central fields toward the southern fields. This feature appears on the topographic map.

Irrigation systems

Features 13, 14, and 16 (Figure 3) are additional irrigation systems. All are modified natural drainages combined with ditches and berms, designed to collect a maximum amount of rainfall and run-off, then channel it into the various agricultural fields. Features 13 and 16 are illustrated in Figure 7, a detailed reconstruction of an irrigation system.

Missing Features

In spite of the efforts of the crew and backhoe operators, neither the privy nor a trash dump was located. The backhoe scraped the area surrounding the house foundation and the hand-dug well to a depth of several inches in an unsuccessful effort to find these features. The only associated trash scatter was AZ T:7:51(ASM), which was too small to account for the amount of trash that would have been produced during the occupation of the site.

Given the depth of the watertable as reflected by the depth of the drilled well, and the reports of engineers who work in the area, it is assumed that the hand-dug well was dry. It is possible that it was used as a privy and/or a dump. It is far enough away from the house to have been private, but close enough to have been convenient. It is deep enough that there would be no odor problem and could have been used for a very long time. The artifact scatter on the surface of the backfill indicates that trash was being deposited there. Unfortunately the depth of the well prevented recovery of the materials and samples that could have substantiated this theory.

Discussion

The picture emerging from the documentary and archaeological study of the Robertson Homestead is one of industry and effort. From the time that the family applied for a homestead in 1911 until the final proof was entered five years later, 160 desert acres were transformed into a productive farm. As water was, and is, the most important element of survival in the desert, digging a well must have had first priority. How far did Robertson dig before abandoning his project and hiring a professional drilling company to do what he could not do?

To supplement the well water, Robertson took advantage of the natural slope of the land and the drainage systems already in place. He created both terraced and open fields, modified small streams, built berms to conserve and channel water, and dug ditches to divert run-off. He hauled volcanic stone and constructed erosion checks. He built a home and a pump house, constructed animal pens and corals, and fenced 120 acres. By 1916, he was harvesting good crops of barley, maize, pumpkins, and onions, and had a household garden. As long as the water kept coming, the land would be productive.

It had long been the plan of The Agua Fria Water and Land Company to dam the water of the Agua Fria River and create a huge system of canals to deliver it to the prospective farms throughout the area. The canal was completed in 1927, but no water was delivered to Section 15, the location of the Robertson homestead. Both the canal and the McMicken Outlet Channel interrupted the natural drainage pattern of the Bradshaw Mountains. As this was the primary source of Robertsons irrigation water, did this doom the fledgling enterprise?

Artifact Analysis

The analysis of all artifacts recovered from both sites is presently in process. The results of this analysis will be included in the final report.

References

Agua Fria Water and Land Company

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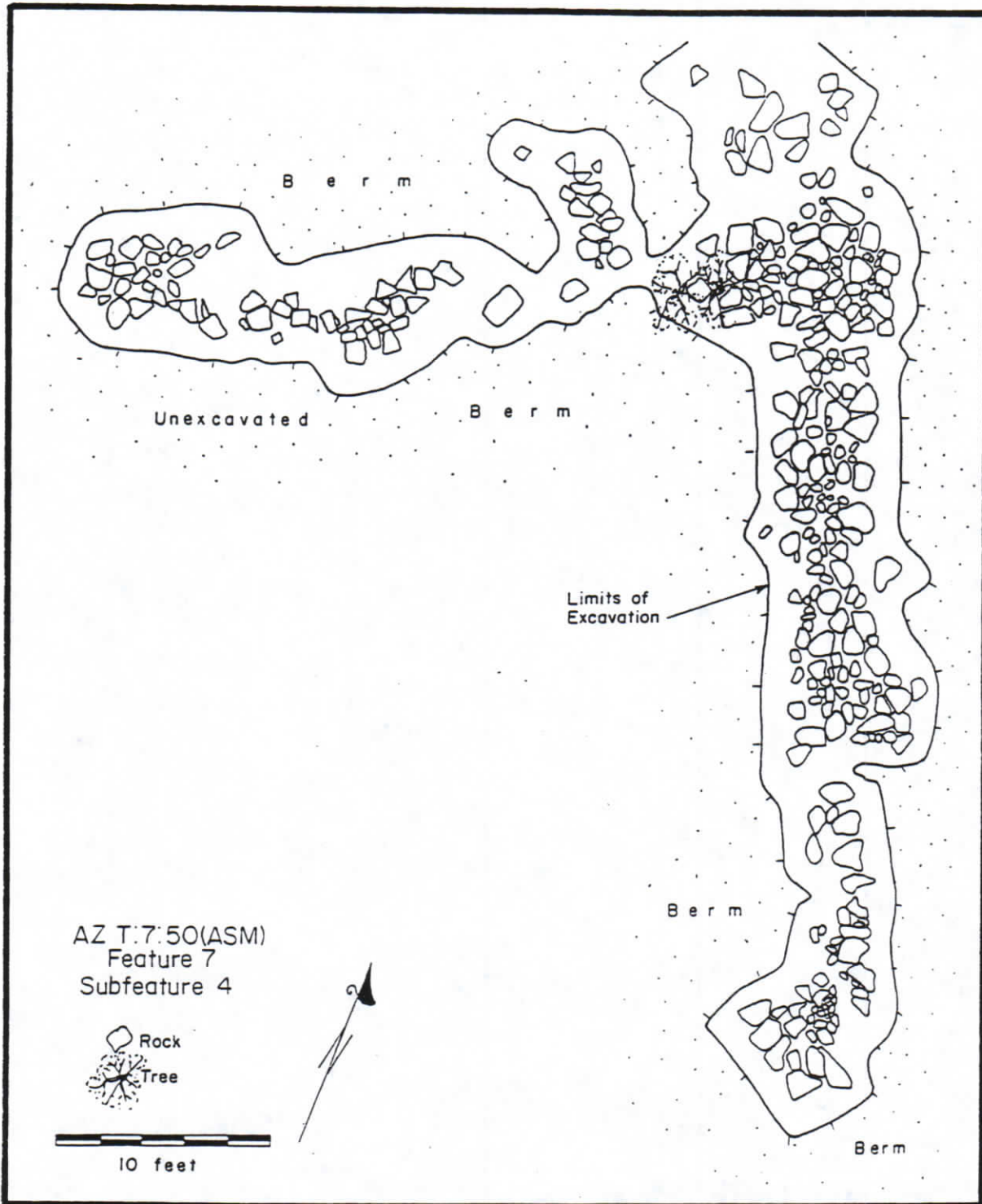


Figure 6

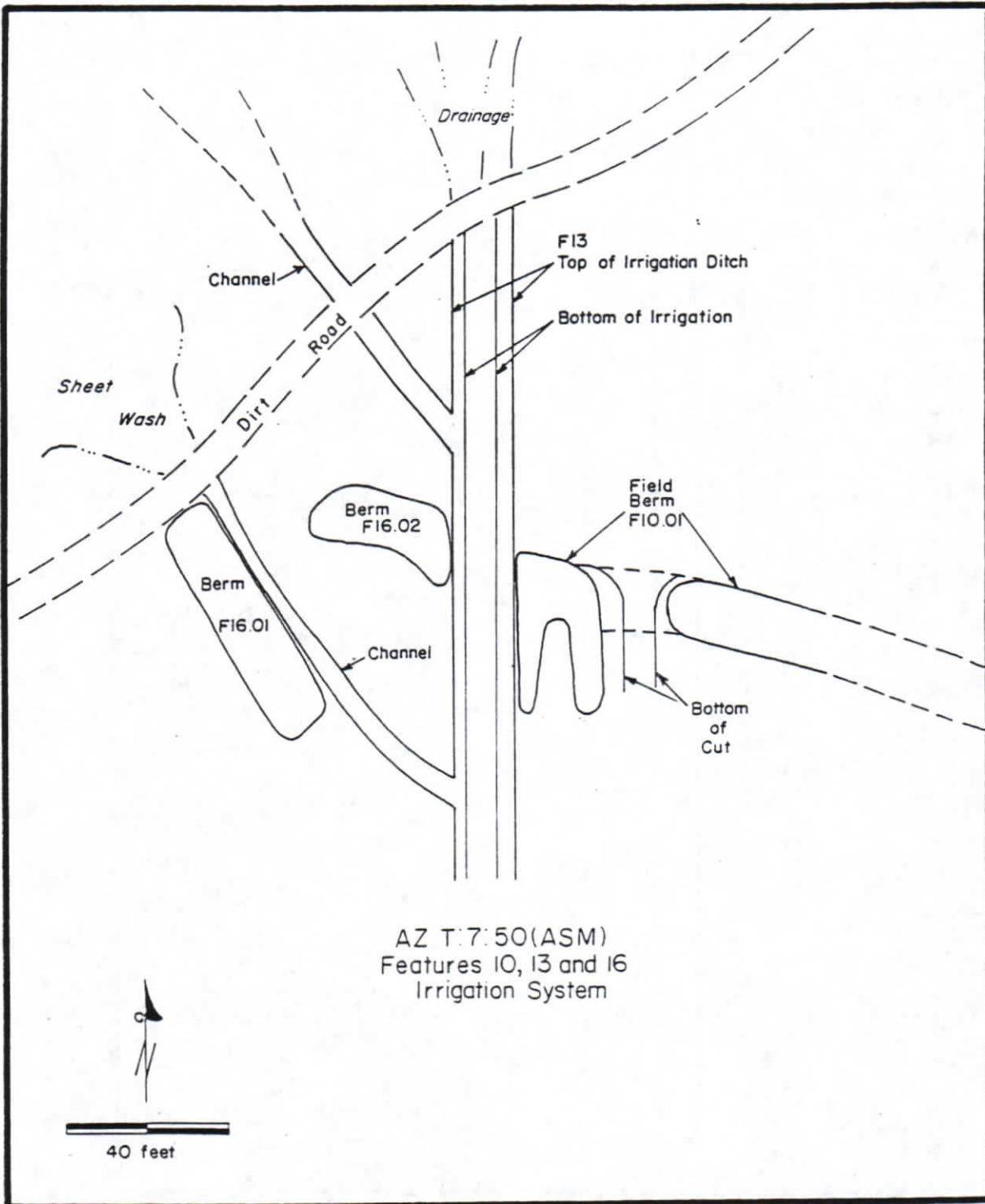


Figure 7