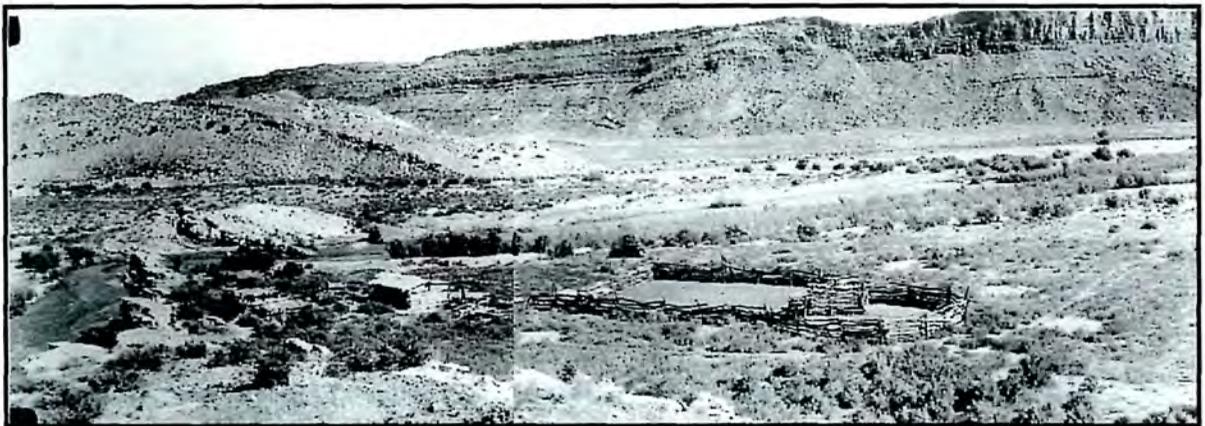


Wolfe Ranch
Historic Structures Report
Arches National Park



Prepared for Arches National Park

by
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EXECUTIVE SUMMARY

The Wolfe Ranch Historic District has long been used by Arches National Park as an interpretive site through which to tell the story of the early, Euroamerican settlement period in southern Utah. The park service intends to continue using the ranch as an interpretive site. It is seeking alternatives for the long-term preservation of the qualities that make the site eligible for listing in the National Register of Historic Places, while at the same time, meeting other legislative requirements such as compliance with the American with Disabilities Act (ADA). Of specific concern to park managers is whether the restoration of these small-scale buildings will result in the loss of a significant amount of historic fabric — taking into consideration that previous stabilization efforts have already resulted in the removal of historic materials.

This Historic Structures Report for the Wolfe Ranch is based upon a review of archival and administrative data maintained by the National Park Service at the Southeastern Utah Group (SEUG) headquarters in Moab, Utah. Project Historian Ann Hubber reviewed historical photographs and data files located in the SEUG archives as well as documents available in active maintenance files on May 7th, 1998. Nancy Coulam, then SEUG Archaeologist, also provided information from various cultural resource files. Plans and drawings were also obtained from the National Park Service, Technical Information Center, in Denver, Colorado.

On May 18th, 1998, Historical Architect James R. McDonald conducted a field investigation of the three historical resources remaining at Wolfe Ranch, in order to assess their current condition. McDonald measured and photographed the resources, and gathered sufficient information to complete the major components of the Historic Structures Report including a description of existing conditions, preferred and alternative recommendations for treatment, and government “Class C” cost estimates.

ADMINISTRATIVE DATA

Common Name: Wolfe Ranch

Other Names: Turnbow Cabin

Smithsonian Number: None assigned

Historic Structure Numbers: Wolfe Log Cabin, HS-1 (LCS# 10472); Wolfe Dugout, HS-2 (LCS#23038); Wolfe Corral, HS-3 (LCS# 23042).

Locational data: The Wolfe Ranch Historic District is located in the SE¼ NE¼ NE¼ of Section 7, T24S, R22E (UTM Zone 12/628720mE, 4288360mN), Grand County, Utah. (7.5 minute USGS Quad is The Windows Section.)

Proposed Treatment: The proposed treatment for this property is preservation. Since its acquisition by the park service in 1948, the Wolfe Ranch has been used to interpret the homestead/settlement era. Fortuitously positioned near the trail head to Delicate Arch, the ranch figured prominently in planning documents from the 1930s, which noted that the buildings and the area in general should be protected during development of park infrastructure. Between 1968 and 1978, the Wolfe Ranch was designated an “environmental study area,” used by local elementary schools as a subject of study and to “encourage creative thinking.” Two major stabilization efforts have been conducted for the buildings

and structures at this property, however, they are once again in need of repair. The most recent plans for the Wolfe Ranch Historic District are outlined in a Resource Management Plan "Problem Statement" dated 12/30/1997. That document states that the "most important need is stabilization of the dugout and the cabin, including reroofing [sic] both structures." The site is mentioned in the 1989 General Management Plan, as the only historical resource listed in the National Register. Due to the historical significance of this property, the proposed treatment is preservation.

Related Studies

Joseph, Maureen, *Cultural Landscape Inventory: Wolfe Ranch Area, Arches National Park*. Denver Service Center, Washington Office, 1997. On file, Southeast Utah Group Headquarters, Moab, Utah.

Loope, David B., National Register Nomination for Wolfe Ranch Historic District, 1974. On file at Southeast Utah Group Headquarters, Moab, Utah.

Mehls, Steven F. "Historic Resource Study Canyonlands National park, Arches National Park, and Natural Bridges National Monument." Western Historical Studies, Inc., 1225 Atlantis Av., Lafayette, CO., 1985. On file at Southeast Utah Group Headquarters, Moab, Utah.

USDI, National Park Service, *Resource Management Plan, Arches National Park* (updated 12/30/1997). On file, Southeast Utah Group Headquarters, Moab, Utah.

USDI, National Park Service, *General Management Plan*, 1989. On file, Southeast Utah Group Headquarters, Moab, Utah.

CULTURAL RESOURCE DATA

Date of listing in the National Register: November 20, 1975 (NR ID# 75000167)

Period of Significance: The National Register data base lists two periods of significance for the district, 1875-1899 and 1900-1924. However, there is no explanation in the nomination itself to support these periods of significance. Specific significant dates listed in the data base include 1888 and 1907, presumably because the nomination states that John Wesley Wolfe came to the area in 1888, and that the existing cabin was constructed in 1907. However it should be noted that there is some disagreement regarding the year in which the Wolfes came to Utah. The National Register nomination uses 1888, while the 1997 Cultural Landscape Inventory sites 1898 as the correct date. A more extensive discussion of the date of the Wolfes' arrival in Utah can be found in endnote 4 of the latter document. It may be appropriate to amend the existing nomination to incorporate this new information.

National Register Criteria and Area(s) of Significance: The district is listed under National Register criterion A under the "agriculture," and "architecture" areas of significance. The summary statement of significance contained within the National Register Nomination is as follows:

Historically, the activities of man on the Colorado Plateau have been a function of his ability to exploit and control its meager water resources. Wolfe's ranching operation on Salt Wash is an excellent example of early subsistence farming and grazing in a marginal environment.

The crudeness of the remaining structures reflects the harshness of the environment, not a lack of skill in construction. Because building materials were so scarce, no two logs used were of the same size or shape. By expertly fitting the logs together, these men created durable, unique structures, which are all that remains of one of the earliest ranches in Southeast Utah.

The Wolfe Ranch Historical District is significant as an example of how man learned, despite the harshness of the environment, to exploit and control this country in southeast Utah; man's survival in this country was constantly threatened by hostile Indians, the rugged terrain, and the absence of an adequate water supply. The structures the settlers like John Wesley Wolfe erected are a testimonial to their ingenuity. Moreover, because of the scarcity of building materials, which required a great measure of implementation to "make do" with what they had, the structures erected while durable were unique. They reflected little uniformity in construction as no two logs were of the same size or shape. Such structures as still stand are all that remains of the earliest ranches in this country.

PART 1. DEVELOPMENTAL HISTORY

A. Historical Background and Context

John Wesley Wolfe, a disabled veteran of the Civil War, left his family and home in Etna, Ohio in the early 1880s to travel west in search of a drier, healthier climate. John Wolfe returned to Ohio for a short time, but left again, this time taking his 16-year-old son, Thomas Fred, with him. In 1898, Wolfe and his son settled on the west bank of Salt Wash, a tributary of the Colorado River.¹ It is likely that Wolfe selected the site based on the presence of a reliable, year-round water source. During their residency in Utah, the Wolfes operated a cattle ranching venture and may also have engaged in limited, small-scale mining activities. The infrastructure needed to support their ventures was simple, and included a small cabin, at least two small dugouts (used for storage), a chicken coop, a corn crib, a corral and an outhouse.

The first cabin occupied by the Wolfes was located northeast of the existing cabin (HS-1). Like HS-1, it was a small rectangular building constructed of logs, with a sod roof, however this building had a dirt floor. There is conflicting information regarding the origin of this cabin, some references indicate that it may have been built by a previous squatter and simply taken over by the Wolfes after they moved to Salt Wash. Other sources indicate that the Wolfes built the first cabin. (This building is no longer present at the site, having been destroyed by a flood soon after John Wesley Wolf left the area in 1910.)

Other improvements included a dam across Salt Wash, that impounded water to irrigate a large garden (located southeast of the extant cabin HS-1), as well as a small field of rye hay. The Wolfes owned a variety of livestock including chickens, pigs, cattle and horses — which were turned loose to graze the lands surrounding the buildings. Drinking water was obtained from a nearby spring, while the livestock drank from Salt Wash.

In 1906, John Wolfe wrote to his married daughter Flora Stanley, requesting that she bring her family to live on the ranch (referred to by its registered cattle brand, Bar DX). Flora, her husband Ed, and their two children, Ester and Ferol, moved to Utah the following year. The addition of four people to the ranch necessitated the construction of an additional dwelling. Initially, the Stanley family lived in a tent, however in 1907, Ed Stanley and Fred Wolfe constructed the cabin currently referred to as the Wolfe Cabin (HS-1). John Wolfe, who had worked as a carpenter while in the Union Army, reportedly supervised the construction of the building. The cottonwood logs used to construct the building are reported to have been brought by wagon from the banks of the Colorado River, some seven miles distant. This small building had amenities that the first cabin did not, including a board floor. The construction of HS-1 completed the improvements directly attributable to Wolfe family (Figures 1 and 2).

¹ Undated, Anonymous history of Wolfe Ranch, possibly by Maxine Newell, Folder 1, ARCH1800, Arches National Park Archives, Southeast Utah Group Headquarters, Moab, Utah.



Figure 1. Ester and Ferol Stanley on their burro “Jennie” outside the cabin soon after completion. Note the tent to the right of the cabin (ARCH Photo 1800.1245). Photo taken between 1907 and 1910.



Figure 2. Ester and Ferol having a tea party in front of the cabin (HS-1). Note the mud daubing and rough chinking on the wall logs behind Ester’s right shoulder (ARCH photo 1800.1241). Photo taken between 1907 and 1910.

The Stanley family did not stay long at the ranch. In 1908, they moved to Moab where Ed Stanley operated a blacksmith shop. In 1910 the Stanleys decided to return to the Midwest, John Wolfe decided to leave his remote ranch and go with them. John’s son Fred also left the Bar-DX ranch, reportedly moving to Montana. Before leaving the area John Wolfe sold his “settlement rights” and improvements to Thomas Larsen. Apparently, Larsen never resided on the property; he reportedly removed some of the fencing materials for use on his own ranch, but made few other alterations.

In 1916 Larsen sold the rights to Wolfe's improvements to James M. ("Marve") Turnbow, who once again used the buildings on Salt Wash as the headquarters for a ranching venture. Between 1916 and 1920,² Turnbow occupied the cabin constructed in 1907 (HS-1), and ran cattle on the adjacent range during the fall, winter and early spring. In written testimony supplied in his 1935 Petition for Designation for a 640-acre stock raising homestead claim, Turnbow indicated that he kept all stock off the range during the summer growing season — only moving his cattle into the area in the fall (Figure 3). By using the range in this manner, Turnbow was able to support 100 head of cattle for up to five months a year without having to resort to supplemental feeding. Turnbow did not attempt to farm the area, and never reestablished the dam or irrigation system employed during the Wolfes' tenure at the site.

As indicated above, Turnbow filed his petition for a stock-raising homestead in 1935 — after he had been using the property for nearly two decades. The lack of a government survey precluded Turnbow from filing a formal claim to the property during his first twelve years of occupation. However the General Land Office survey of the area was completed in 1928, after which time Turnbow could have filed his claim. The timing of Turnbow's filing may have been prompted by the imminent implementation of the Taylor Grazing Act, passed into law in 1934. Section 3 of the Act stated that:

Preference shall be given in the issuance of grazing permits to those within or near a district who are landowners engaged in the livestock business, bona fide occupants or settlers, or owners of water or water rights, as may be necessary to permit the property use of land, water or water rights, owned, occupied, or leased by them³

Turnbow stated that he used the area in the vicinity of his homestead claim only as winter range, therefore he would have been dependent upon public lands for his summer pasture. Turnbow may have felt that his position would have been stronger as a land owner than as a "squatter," when applying for federal grazing leases under the Taylor Grazing Act.

The timing of Turnbow's petition continued to be a complicating issue. A 1938 change in the boundary of Arches National Monument placed the lands claimed by Turnbow inside the monument. By 1940, Turnbow had not yet received his patent to the property and his death in an automobile accident that year left his wife Susie with the task of completing the petition process. When the Final Proof of Entry papers were filed, the Register of the GLO notified the custodian of Arches National Monument to determine if the park service had any objections to the issuance of a patent. It was the opinion of Hugh M. Miller, the Superintendent of the Southwestern National Monuments, that Mrs. Turnbow was pursuing a patent to the property only for the purposes of selling it back to the park service. Consequently, the National Park Service filed a formal appeal to the issuance of a patent to Susie Turnbow. The appeal was

² In part of her testimony to secure the patent on her deceased husband's homestead claim, Susie Turnbow stated that she resided at the old Wolfe Ranch during the first year of her marriage, from the fall of 1919 to the spring of 1920. After that, she and her children resided in Moab, and spent only a part of each summer at the ranch on Salt Wash, while her husband spent nearly half of his time there. Richard D. Welsh (Special Agent) to Mr. Dale B. Whiteside, (Direct of Investigations, Dept. of the Interior, Washington D.C.), August 26, 1941, Folder 15, ARCH-1800, Arches National Park Archives, SEUG Headquarters, Moab, UT.

³ 48 Stat. 1269.

based upon the fact that the family no longer resided on the property, and that the “establishment of a homestead within the boundaries of Arches National Monument is contrary to the purpose for which it was created.”⁴

Ultimately, the park service appeal was ignored and Mrs. Turnbow received a patent to the property in 1942. In 1946, she sold the homestead property to Emmett Elizondo, a sheep rancher. Apparently, Elizondo was really only interested in the use of the forage on the property, having previously purchased the rights to the Turnbow grazing leases on public lands outside the monument. There is no indication that Elizondo ever occupied the buildings at the property, neither did he add any new infrastructure nor alter the old. In 1948, Elizondo sold the property patented by Turnbow to the U.S. Government, for inclusion in Arches National Monument.⁵ At the time of that transfer, the majority of the improvements constructed by Wolfe remained intact. The exception is the first cabin occupied by John and Fred Wolfe, which was destroyed by a flood. Figure 3 shows the site circa 1940.



Figure 3. Looking north at the Wolfe cabin (HS-1) and two dugouts (HS-2 to the left). Arches National Park photo #1800.1, ca. 1940.

⁴ Petition for Designation No. 58762, dated 26 December, 1935; Hugh M. Miller (Superintendent of NPS Southwestern Monuments) to Acting Register, District Land Office, US General Land Office, SLC, Utah, August 11, 1949; USDI, NPS Arches and Canyonlands National parks, Natural Bridges National Monument, Moab, Utah, James M. Turnbow Homestead Entry Index, 7/11/1979; Folder 15, ARCH-1800, Arches National Park Archives, SEGU Headquarters, Moab, Utah.

⁵ Apparently, Elizondo retained grazing leases on public lands within and outside the monument. As late as 1968, Elizondo’s employees were using the cabin (HS-1) to store grain, and the corral (HS-3) to contain their horses, while herding in the area. Roger J. Coster (Acting Superintendent) to Emmet Elizondo, February 6, 1968, Folder 16, ARCH-1800, Arches National Park Archives, SEUG Headquarters, Moab, UT.

From 1948 until 1967 the park service used the ranch (located near the trail head for the Delicate Arch Trail) as an interpretive site, but did little to alter the buildings. However since the early 1970s, subsequent development of visitor facilities has greatly affected the setting of the property. Although the buildings have not been directly affected by development, some small-scale elements such as the corn crib, the outhouse and one of the root cellars are no longer present. There is no documentation regarding who removed these improvements from the site; they may have been removed prior to the park service assuming ownership of the property.

Since the 1948 sale to the federal government, the Wolfe Ranch has been the subject of two park service stabilization efforts, one in 1967 and the most recent in 1976-1977. Bill Brown of the Southwest Regional Office summarized the intent and content of the 1967 effort. He stated that since the park service had not completed a historic structures report for the Wolfe Ranch buildings, their efforts would be limited to "emergency stabilization and repair of the historic structures, and environmental rehabilitation."⁶ Brown was not overly concerned by this limitation however, as is evidenced from the following:

This gives us a relatively free hand, however, to make the Cabin structurally sound and shipshape in appearance; to in essence reconstruct the caved-in dug-out or cellar behind the Cabin; and to stabilize and restore to historic appearance the corral — this latter work would include getting rid of modern sawed posts, modern wire, and so on, and substituting hewn posts and wooden cross pieces. The abiding criterion for all the work that you might do, including substituting (sic) of materials, is to come up with historic appearance.

(We assume that Brown's reference to "historic appearance," was specific to the buildings and structures being stabilized, rather than to a general notion of what historic buildings should look like.)

Another issue of concern for Brown was the location of the Delicate Arch Trail parking lot, which he felt was far too close to the cabin. Brown attached to his memorandum a plan for the site, which Paul Fritz (also of the SWRO) had drafted two years earlier. This plan shows the "future parking area," in the same location as the current parking area.

Finally, Brown offered his opinion of the appropriate interpretive theme for the site:

The overriding theme of the interpretive text, whatever particular historic facts you might put into it, should be, it seems to me, the notion of pioneer ranchers coming into a rather forbidding and marginal country and making a go of it by hook or by crook.

This initial stabilization effort was completed in November and December of 1967, and summarized in a "Completion Report" written by Wayne Norton, District Ranger for Arches National Monument. The majority of Brown's suggestions were carried out. The following summary comes from Norton's 1968 report:

⁶ William E. Brown (SWRO) to Roger Contor (Canyonlands) October 27, 1967, Folder 16, ARCH 1800, Arches National Park Archives, SEUG Headquarters, Moab, UT.

Turnbow (Wolfe) Cabin — Work involved jacking up ridge pole and plumbing front wall and door frame. Ridge pole was then lowered on plumbed wall. Roof overhang poles were spiked to ridge pole beams. Additional juniper bark and mud packing was placed on exposed parts of roof to prevent moisture from entered cabin. Exterior walls were chinked, using local mud-clay similar to existing chinking. “Dutch” door installed at cabin entrance to prevent entry but permit view of cabin interior.

Root cellar – Front wall by entry was plumbed. Cellar earth floor excavated and excess dirt removed to a depth of approximately 2 ½ feet. Juniper bark and mud packing applied to holes in roof. Rocks reset around building exterior. Plastic sheeting secured to exterior ground level around walls. Dirt covering then applied to exterior walls over plastic protection. Drainage ditch dug around outside of root cellar.

Pole Corral – All log posts and poles initially removed. Posts were reset, using existing posts where practical. New posts, secured from similar corral on BLM [Bureau of Land Management] land, replaced rotten posts. Corral poles restored on reset posts. Secured by vintage barbed wire. Log water trough (secured from BLM) installed in corral. Vintage wagon, donated by Capitol Reef NM, placed outside of corral.

Additional landscaping – Vehicle parking lot moved south of cabin site. New foot trail constructed from parking lot to cabin. Directional signs were relocated from cabin area to trail head at the parking lot.⁷

In 1976, the park service undertook another stabilization effort, which had been first proposed in 1974. As was the case with the 1967 work, the outline included both site and building maintenance items. The work specified for the cabin, included changing the then-existing roof structure (consisting of oak *vigas*, covered with a layer of burlap and a final layer of mud and gravel) to the type of roof found in the dugout (oak *vigas* covered with two layers of cedar bark and a final layer of earth and gravel).

Restoration of the cabin’s roof structure to be based on Juniper bark chinked roof structure of the root cellar. This will necessitate removal of the existing, unstripped oak *vigas*, which support burlap covered with mud and gravel.⁸

(The use of burlap in the design of the roof may date to the 1907 construction of the building or it may be attributable to Turnbow’s tenure at the site.)

The work was begun in November of 1976, discontinued during the winter months and completed in July of 1977. A summary of the 1976-1977 stabilization effort is provided in an undated, anonymous “narrative”:

⁷ H. Wayne Norton, Completion Report, June 5, 1968, Folder 16, ARCH 1800, Arches National Park Archives, SEUG Headquarters, Moab, Utah.

⁸ Lynn H. Thompson, Regional Director, Rocky Mountain Region to Dr. Melvin T. Smith, Director, Division of State History, SLC, Utah, September 13, 1974. Folder 16, ARCH 1800, Arches National Park Archives, SEUG Headquarters, Moab, Utah.

The roof was removed from Wolfe Cabin. Reusable material was saved and unusable material discarded. A new ridge beam was installed. A support pole for the ridge beam was set on a concrete base at the front of the cabin. The support pole base and concrete base are well below ground level. . . .

New oak rafter vigas were installed on the north half of the roof. Oak and cedar bark was stuffed between the rafter vigas. The chimney parts were replaced with new ones. The original oak rafter vigas were placed on the southern half of the roof. Again, the cracks were stuffed with cedar bark. Next, two layers of cedar bark were placed on the roof, each layer running a different direction. . . .

The area around the cabin was cleaned up. The floor of the cabin cleaned and floor boards removed A concrete block was poured below ground level to serve as a base for the ridge beam support post. Floor boards were rearranged by putting good ones from in front of the door into empty spots throughout the cabin where rotten ones were removed.

During the month of November suitable material was sought for the floor, glass was inserted into the original window frame, the window was placed in the cabin, missing floor boards were replaced, the door was rehung with leather hinges, and bleaching oil was applied to all raw edges of the ridge beam and rafter vigas. All walls were chinked inside and out. Grading was done to improve drainage away from the cabin.⁹

Stabilization work on the root cellar (dugout HS-2) resumed in July and included the removal of 18 inches of fill from the floor, and the placement of flat stones for the entrance steps. The roof was patched with cedar bark and covered with 4 to 5 inches of "matching" dirt (presumably the green Morrison Shale). Workers also installed a door frame and chinked the walls with cedar bark and small pieces of wood. Drainage around the building was improved by digging a trench around the entire perimeter.¹⁰

Since this 1976-1977 effort, little additional work has been done to the buildings. However, the site as a whole has changed rather dramatically. The parking lot south of the buildings has been enlarged and paved, as has the road to the Delicate Arch overlook. The Delicate Arch Trail has been rerouted to bypass the west edge of the building complex; a rock-lined side trail now accesses the buildings. Most recently, during the summer of 1998, the park service replaced the old suspension bridge over Salt Wash with a new, prefabricated truss bridge.

B. Chronology of Development and Use

Site

The current appearance of the Wolfe Ranch site is much different than during the historical period. Historical photographs of the area taken during the 1910s show little vegetation in the

⁹ Anonymous, undated report 1977?, Folder 16, ARCH 1800, Arches National Park Archives, SEUG Headquarters, Moab, Utah. Whether or not the "replacement" stove parts matched the original is unknown.

¹⁰ Ibid. Since there is no mention of the addition of corrugated metal drainage pipe, it is assumed that the pipe currently present dates to a later, undated effort to control drainage at the site.

immediate vicinity of the buildings—likely due to the impact of constant human activity on the fragile desert flora. Similarly, the dense stands of tamarisk that currently line Salt Wash were absent. As late as the 1940s, the surface of the interior of the corral was completely devoid of vegetation and the area as a whole lacked the dense stands of greasewood and sagebrush that now occur in the area.

In addition, the ranch lacks the many small-scale features and artifacts that contribute to one's understanding of the everyday life of its residents. When the Wolfe and Stanley families occupied the site, and later, when Turnbow used the property seasonally, the immediate vicinity of the cabin would have contained the many implements necessary for the completion of everyday chores (Figure 4). Gone also is a variety of small-scale structures mentioned in oral history accounts and shown in historical photographs of the ranch. These include the corn crib, the outhouse, as well as a second dugout structure that is visible in a circa 1940 overview photograph of the ranch site (Figure 5). In addition, a close examination of Figure 4 shows another notched log building directly adjacent to the west side of the 1907 cabin (HS-1). By the 1940s, this building had been reduced to a ruin (see Figure 5). Currently, there is no indication of the building on site.

Perhaps the greatest change to the site has resulted from the development of infrastructure associated with the trailhead to Delicate Arch. The conflict between retaining the integrity of the ranch site and providing parking for hikers is a long-standing issue. To some degree, the impacts associated with the parking lot were mitigated in the 1960s, when the original parking area was moved to its current location. However, the increase in visitor use has led to the need for improvements and enlargement of the parking area. The park service-installed split-rail fencing has further impacted the historical appearance of the site. Currently, the site lacks the sense of isolation that would have been experienced by the Wolfe and Stanley families. Figure 6 shows the chronology of development and use of the site.



Figure 4. Marve Turnbow and son Bruce in front of HS-1, ca. 1935. Note the shovel leaning against the site of the building, and the tack hanging from the wall behind Marve Turnbow. Arches National Park photo #3368.

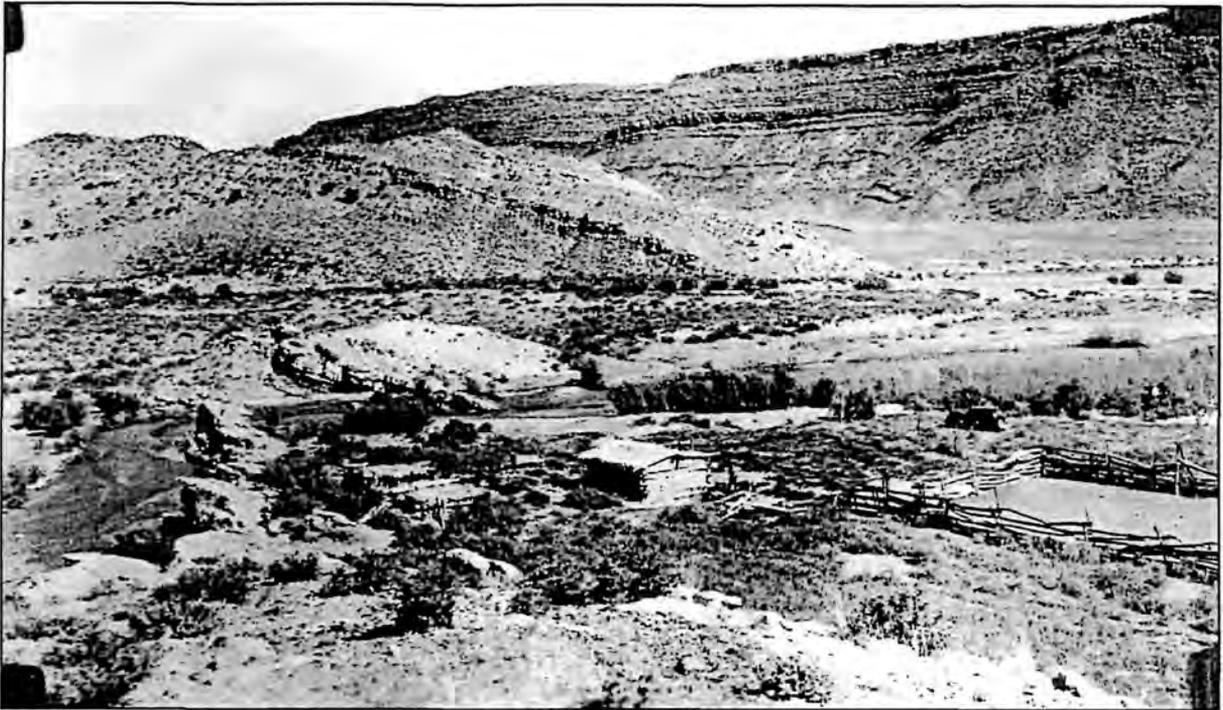
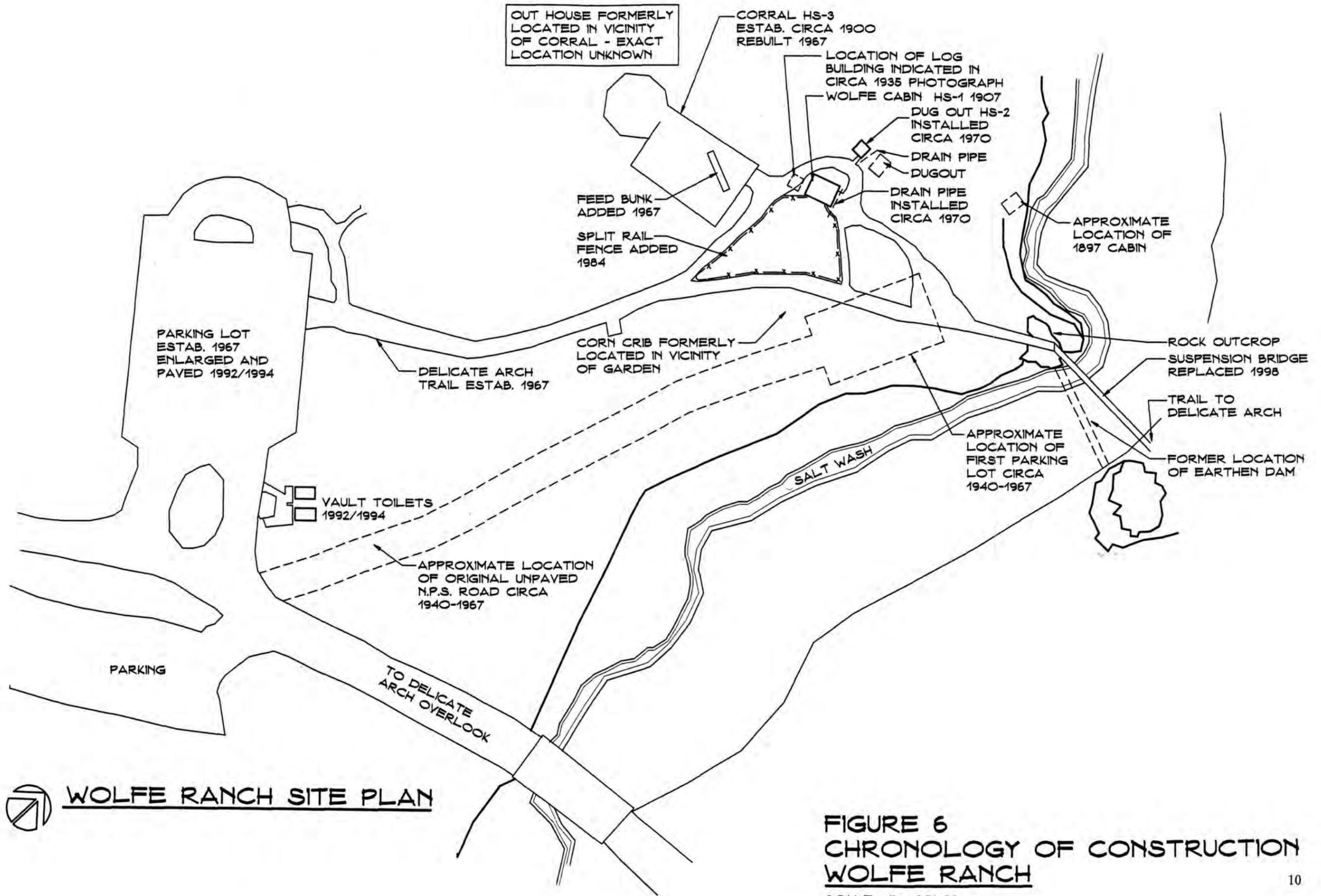


Figure 5. Wolfe Creek Ranch, ca. 1940. Note the two roofed dugouts behind the 1907 cabin, and the ruins of the notched log building between the cabin and the corral. Arches National Park photo #1800-2.



 **WOLFE RANCH SITE PLAN**

**FIGURE 6
CHRONOLOGY OF CONSTRUCTION
WOLFE RANCH**

SCALE 1" = 60'-0"

Wolfe Cabin (HS-1)

Ed Stanley constructed this cabin in 1907. In 1967, the park service conducted the first stabilization effort that included: repairing the roof with “juniper bark and mud packing,” the application of new mud-clay daubing to the exterior walls, the installation of a new “Dutch,” door in the original entry, and, plumbing of the front wall. It should be noted that the original roof system, which incorporated a layer of burlap between oak *vigas* and the overlying dirt was not modified in 1967.

In 1976-1977, the park service conducted more work on the cabin. During this effort, the then-existing roofing system was replaced with the style of roof found in the dugout (HS-2). All of the roof materials were removed. Salvageable oak *vigas* were replaced on the south half of the roof, while new ones were placed on the north half. Then, instead of applying a layer of burlap over the *vigas*, two layers of cedar bark were laid in alternating directions on top of the *vigas*, and the entire surface covered with mud and gravel. In addition, the old stove parts were replaced with new ones. Whether or not the “new” parts matched the old ones is not clear.

Other work conducted in 1976-1977 include the replacement of the north ridgepole and the pouring of a concrete base below grade to support the ridge beam support post. Both the inside and outside walls were chinked, and the board floor on the interior was replaced. For the latter task, salvageable boards from in front of the door were inserted into spaces left by the removal of rotten boards towards the rear of the building. New glass was inserted into the existing window frame, and the area was graded to improved drainage away from the cabin. Figures 7-9 show the chronology of construction for the cabin.

Wolfe Dugout (HS-2)

The exact date of construction of this structure is unknown; it may pre-date the construction of the cabin. This building was subjected to the same series of stabilization efforts as the cabin. In 1967 the front wall was plumbed, and the holes in the roof were repaired with juniper bark and mud packing. A layer of plastic was applied to the exterior walls and then dirt was applied to cover the plastic. About 2 ½ feet of dirt was excavated from the interior of the building and rocks were reset around the exterior. Drainage around this building was also improved by excavating a ditch around the perimeter.

In 1976-1977, workers repeated many of the repairs conducted ten years earlier. Specifically, they excavated 18 inches of fill from the interior of the building, and again patched the roof with cedar bark and covered it with about five inches of “matching dirt.” (The matching dirt may refer to the green Morrison Shale applied to the top.) At this time a door frame was added to the building and the walls were chinked with cedar bark and small pieces of wood. Again, workers tried to improve drainage around the building by digging a trench – presumably around the east side of the building. Figures 10-12 show the chronology of construction for the dugout.

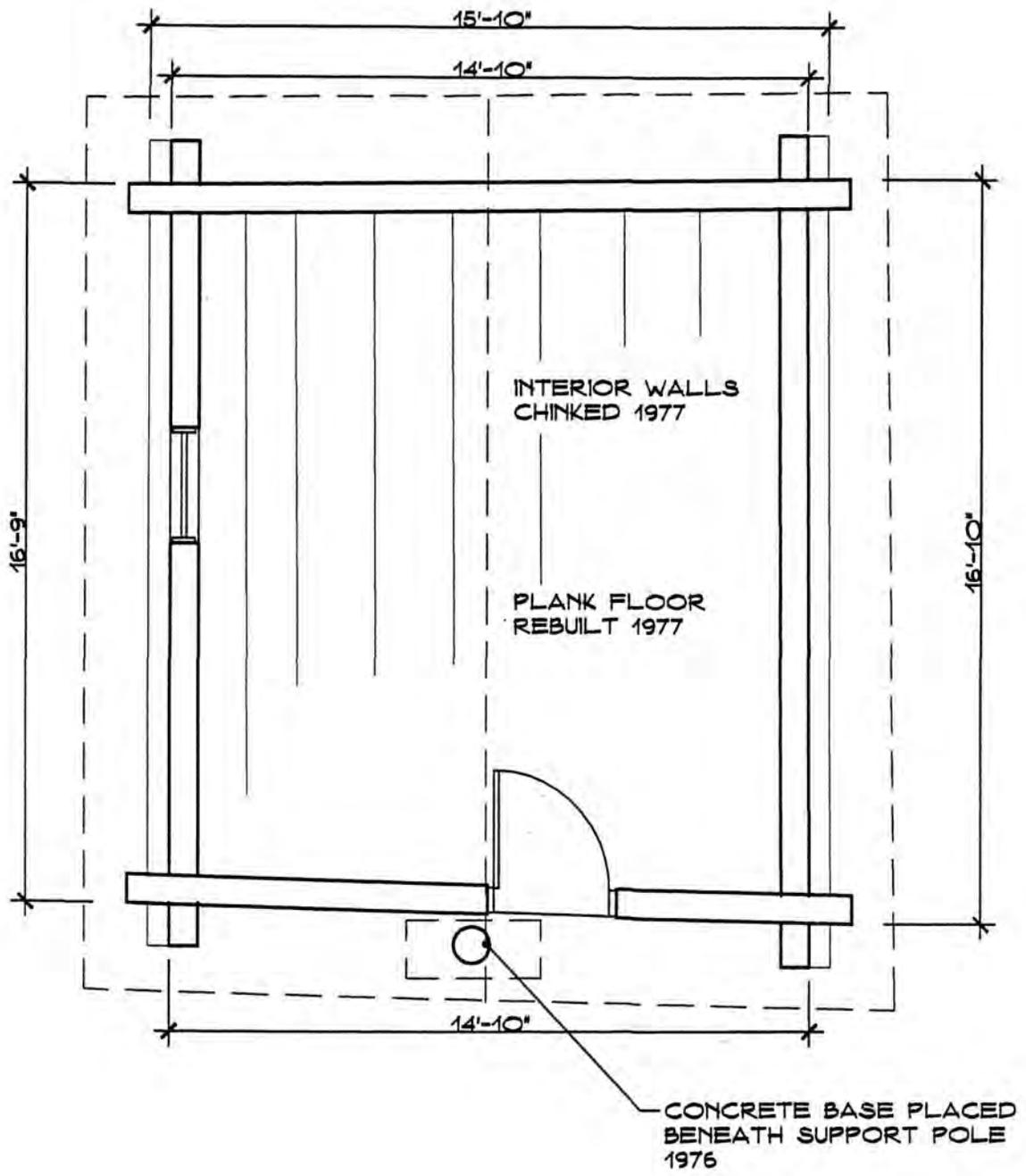


FIGURE 7
CHRONOLOGY OF CONSTRUCTION
WOLFE CABIN HS-1 FLOOR PLAN



SCALE: 1/4" = 1'-0"

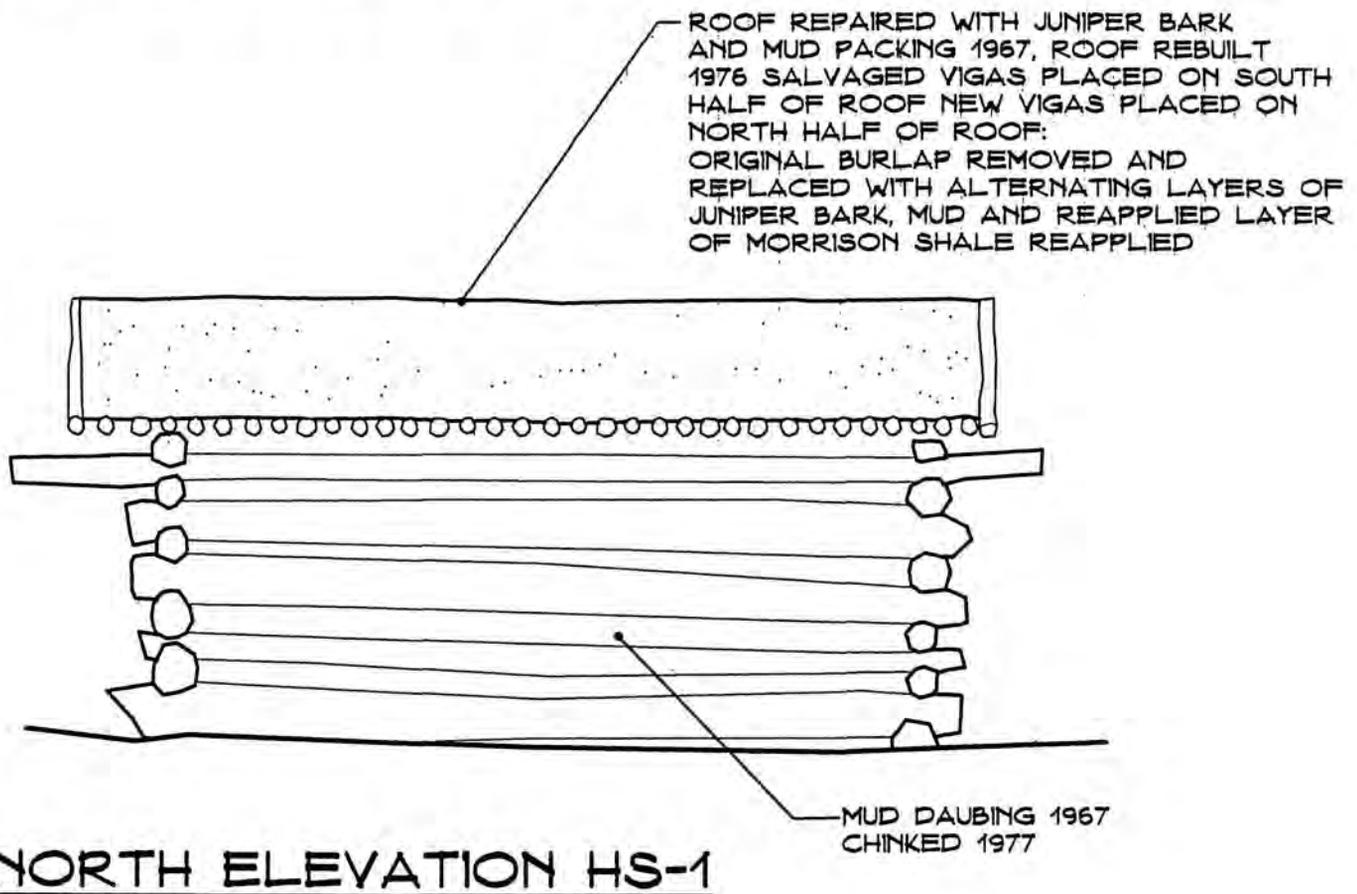
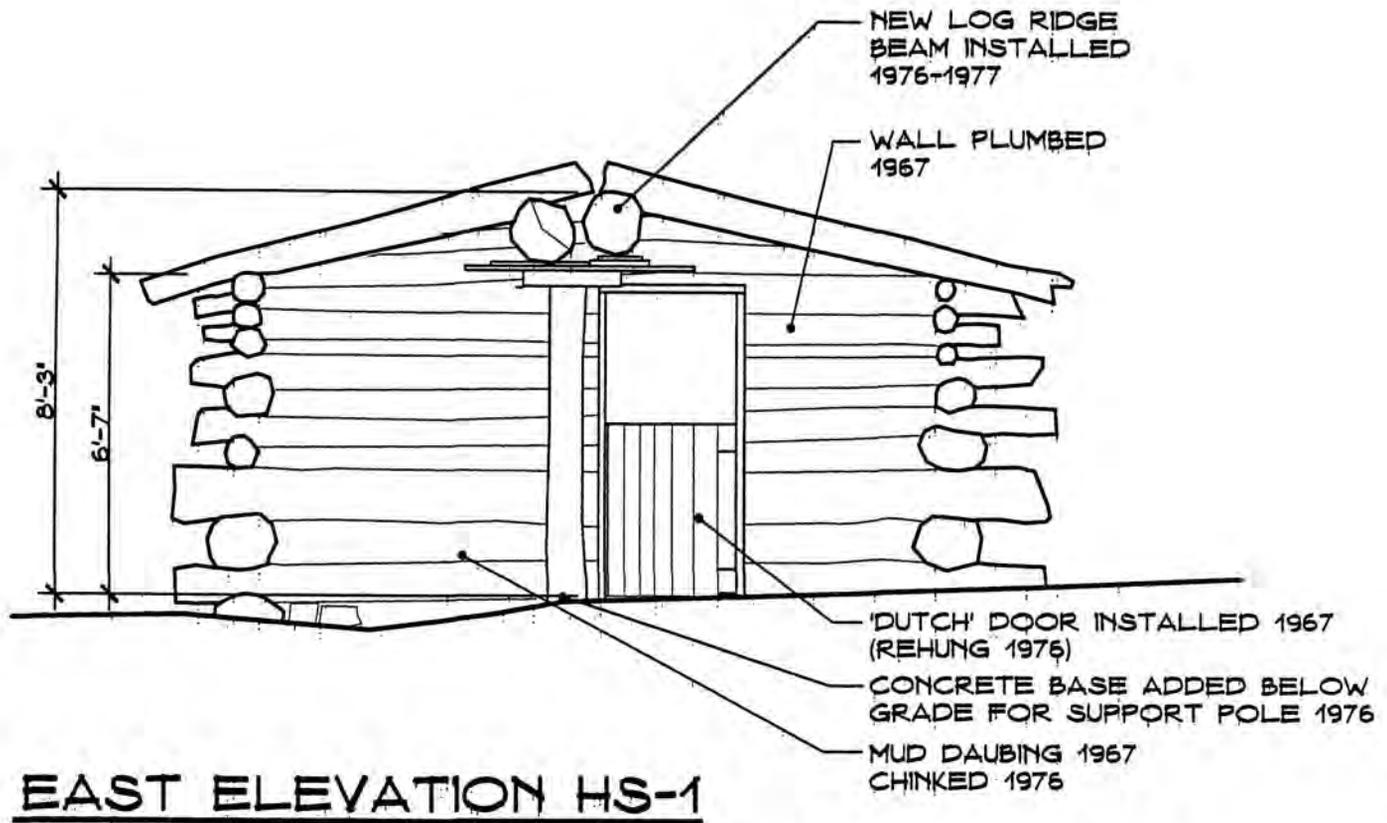
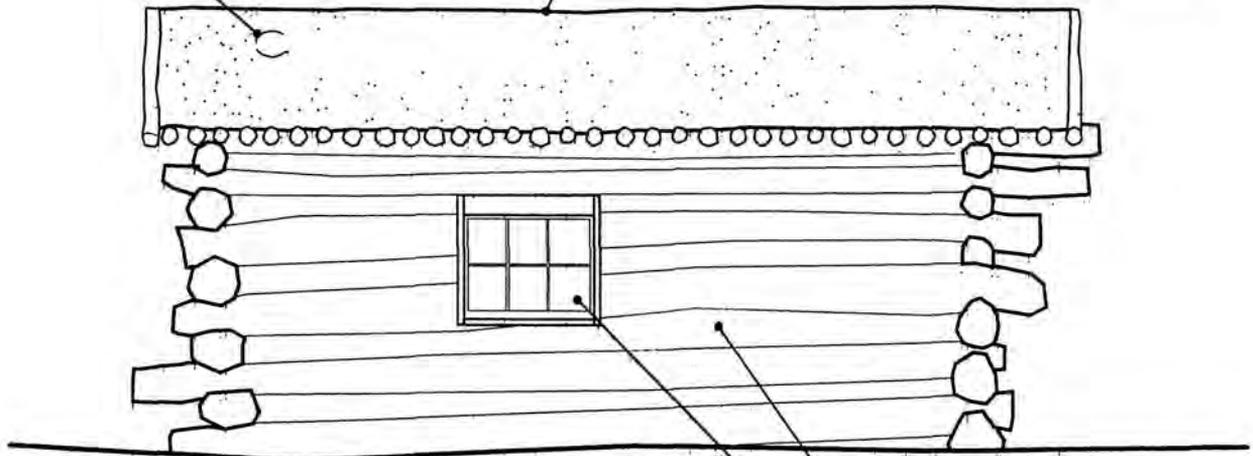


FIGURE 8
CHRONOLOGY OF CONSTRUCTION
WOLFE CABIN HS-1 ELEVATIONS

SCALE: 1/4" = 1'-0"

CHIMNEY PARTS REPLACED
1967 AND 1977

ROOF REPAIRED WITH JUNIPER BARK
AND MUD PACKING 1967, ROOF REBUILT
1976 SALVAGED VIGAS PLACED ON SOUTH
HALF OF ROOF NEW VIGAS PLACED ON
NORTH HALF OF ROOF:
ORIGINAL BURLAP REMOVED AND
REPLACED WITH ALTERNATING LAYERS OF
JUNIPER BARK, MUD AND REAPPLIED LAYER
OF MORRISON SHALE REAPPLIED



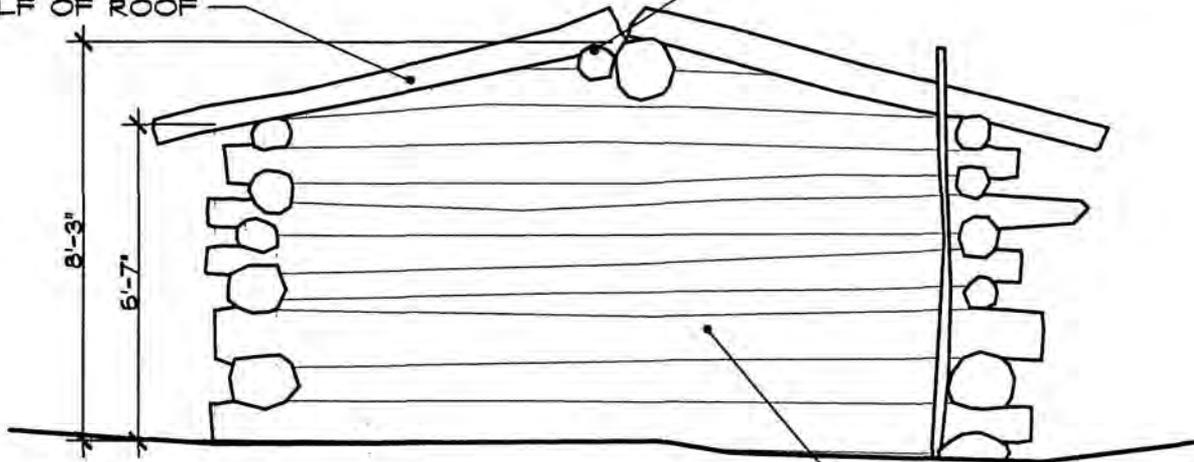
MUD DAUBING 1967
CHINKED 1976

NEW GLASS
1976

SOUTH ELEVATION HS-1

1976 NEW OAK VIGAS
INSTALLED ON NORTH
HALF OF ROOF

NEW LOG RIDGE
BEAM INSTALLED 1976



8'-3"

6'-7"

MUD DAUBING 1967
CHINKED 1977

WEST ELEVATION HS-1

FIGURE 9
CHRONOLOGY OF CONSTRUCTION
WOLFE CABIN HS-1 ELEVATIONS

SCALE: 1/4" = 1'-0"

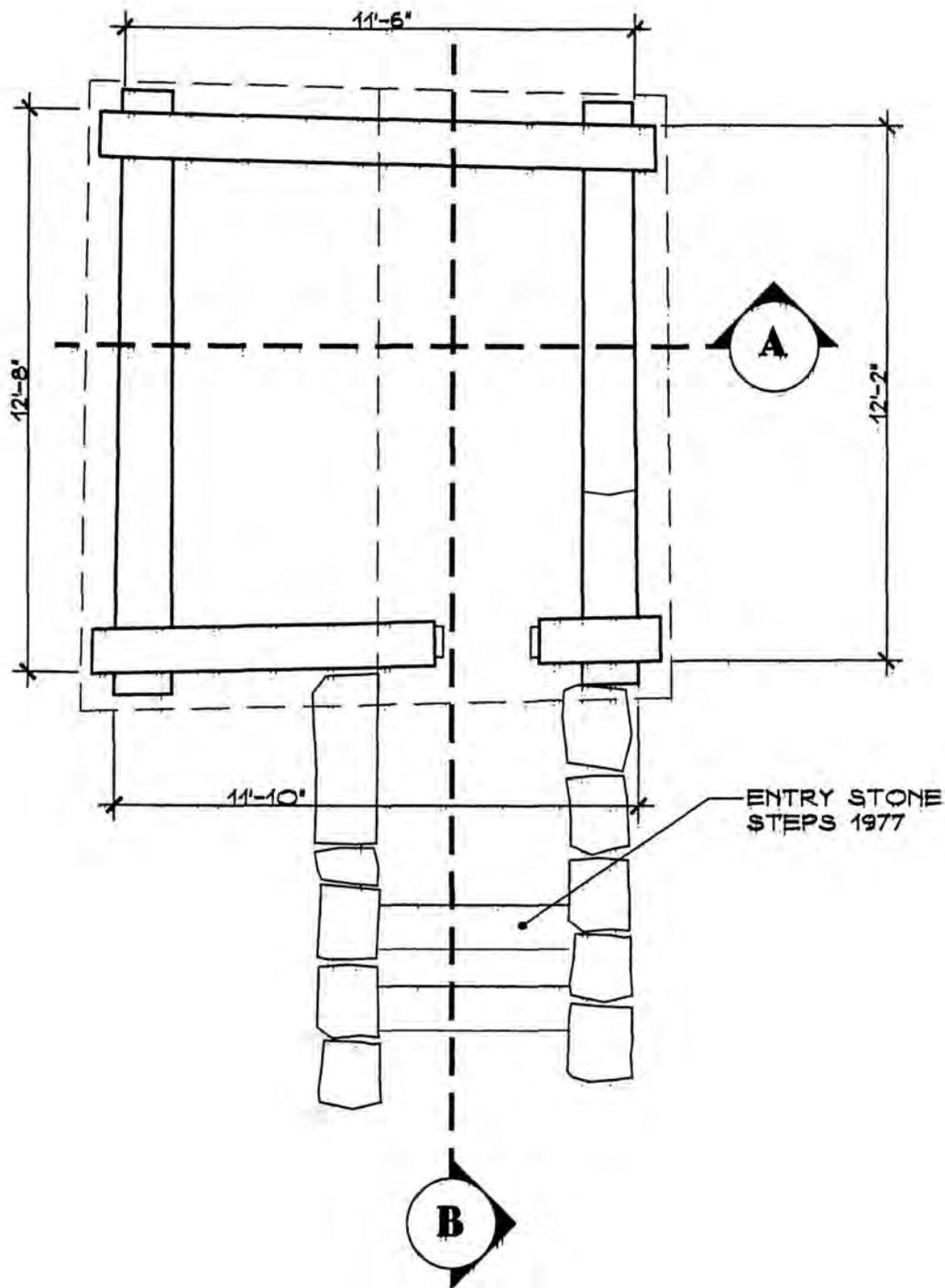
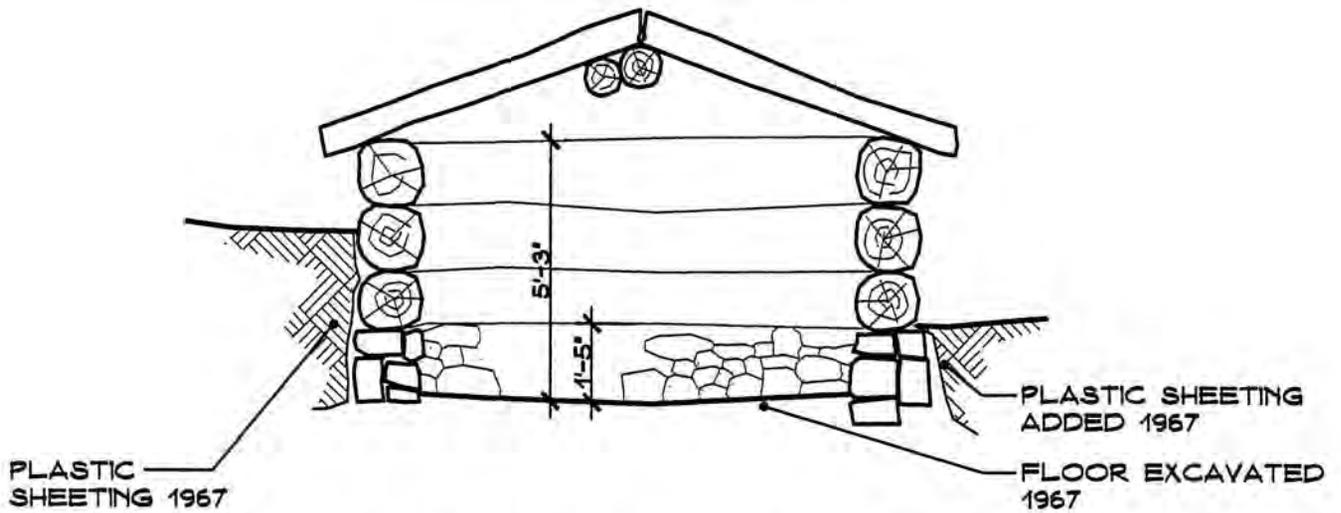


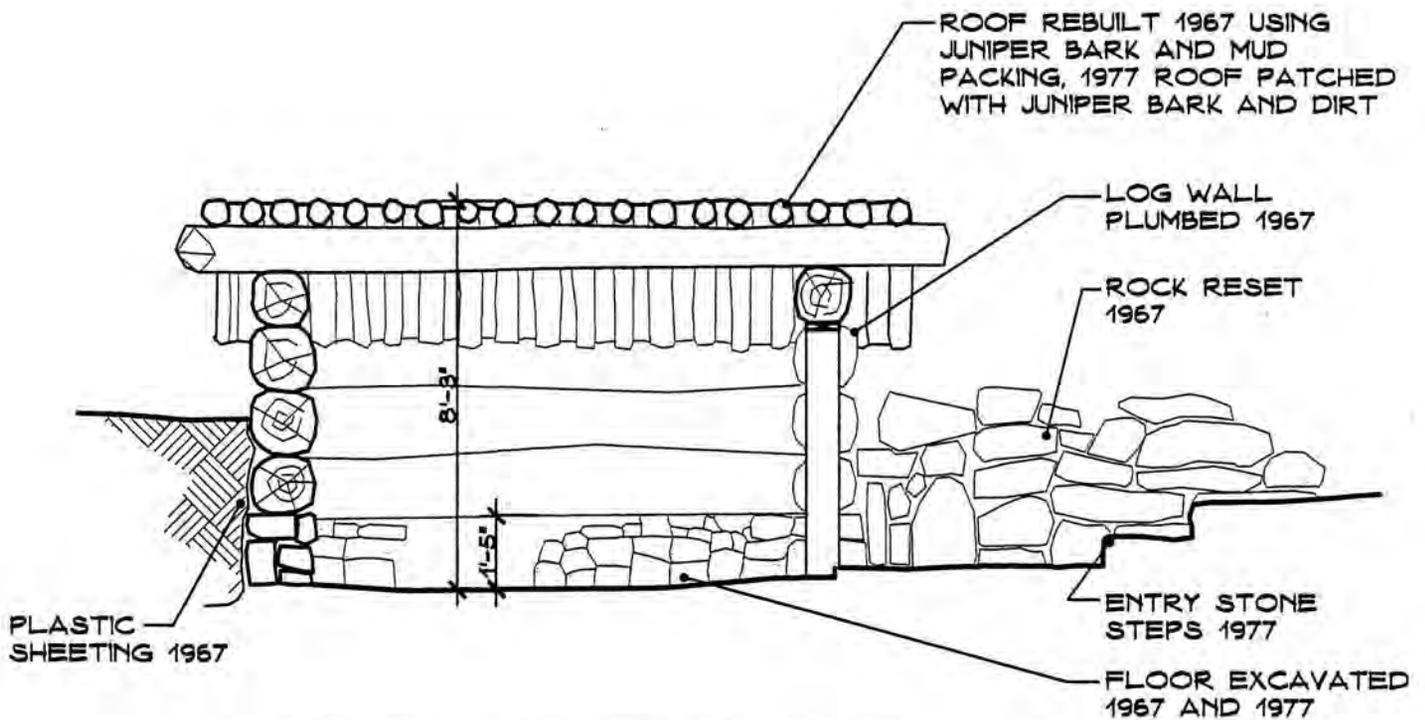
FIGURE 10
CHRONOLOGY OF CONSTRUCTION
DUGOUT HS-2 FLOOR PLAN



SCALE: 1/4" = 1'-0"



DUGOUT HS-2 SECTION A



DUGOUT HS-2 SECTION B

**FIGURE 11
 CHRONOLOGY OF CONSTRUCTION
 WOLFE DUGOUT HS-2 SECTIONS**

SCALE: 1/4" = 1'-0"

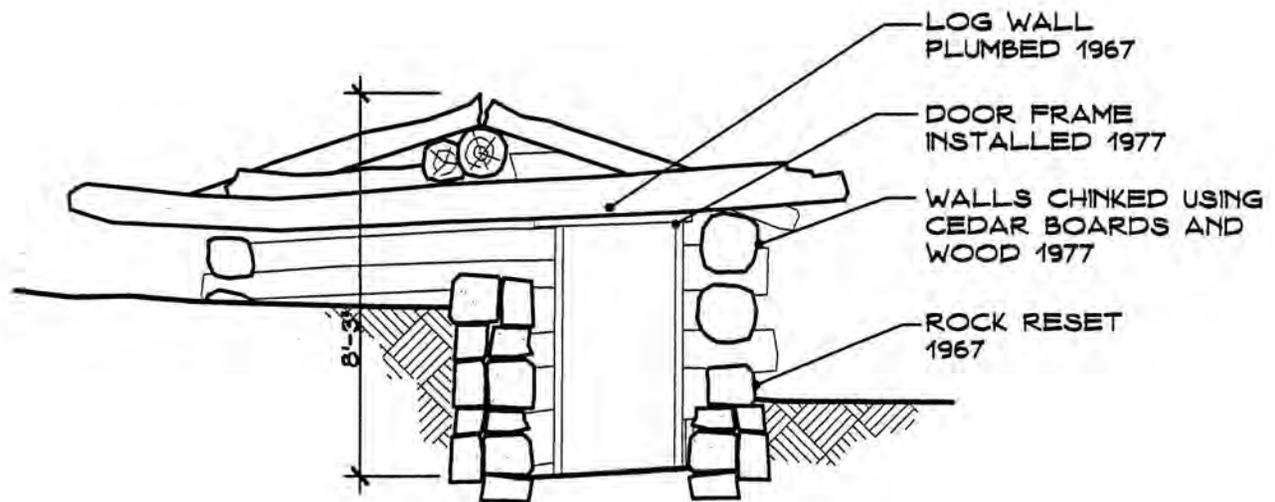


FIGURE 12
CHRONOLOGY OF CONSTRUCTION
DUGOUT HS-2 NORTH ELEVATION

SCALE: 1/4" = 1'-0"

Wolfe Corral (HS-3)

Like the dugout, the exact date of construction of this structure is unknown. It is believed to have been originally constructed by the Wolfes, prior to the Stanley family arriving at the site in 1906. In 1967, the park service completely reconstructed the corral. All of the posts were removed. Rotted posts were replaced with posts salvaged from BLM land, while those that were sound were reset. New and salvaged rails were then rewired to the posts using “vintage” barbed wire. It was also at this time that the “water trough” was introduced to the corral.

Although the form of the original corral was retained, the removal of “galvanized metal sheeting, mining rails, and any other inconsistent material in and around the corral”¹¹ inevitably altered its appearance. The use of galvanized metal sheeting and mining rails as structural members of the corral may have represented historical fabric, at least from the period of time when Turnbow occupied the property. It is not uncommon to find a variety of salvage materials incorporated into rural agricultural sites located in isolated areas of the West, where building materials were scarce and often reused. Apparently, the park service has not conducted further work on the corral since 1967. Figure 13 shows the chronology of construction for the corral.

C. Physical Description (existing condition)

Site

The Wolfe Ranch Site is located on the west bank of Salt Wash, a perennial tributary of the Colorado River. The site is accessed from the southeast via the paved park service road that dead-ends at the Delicate Arch view point. The area is characterized by heavily eroded topography of Morrison Formation. The building complex is located below the confluence of two intermittent drainages, on an alluvial deposit of poorly developed sandy soils. The current vegetation reflects these natural conditions, but also the area’s history of livestock grazing which had a direct and adverse effect on the native grasses of the region. Current plant species, including rabbitbush, sagebrush, greasewood, Mormon tea, Indian ricegrass, and three-awn grass currently grow in the vicinity of the ranch buildings. Stands of tamarisk (an introduced, invasive species) now line the banks of Salt Wash.

The ranch is located at the trailhead to Delicate Arch and is used by the park service as a site to interpret early, non-Indian settlement of the area. A large paved parking area, with handicap accessible vault toilets is located about 300 feet southwest of the ranch buildings. A gravel path, with an interpretive panel specific to Wolfe Ranch, leads to the site. The park service has formalized the trail system that leads to and through the ranch site, by lining the gravel pedestrian paths with rocks. In addition, an area on the south side of the cabin has been enclosed with a split rail fence (1984) to discourage people from looking in the window of the cabin, climbing on its roof, and, in the process, destroying vegetation along the south side of the building. Figure 14 shows the existing condition of the Wolfe Ranch site. Figures 15-24 show various aspects of the ranch site.

¹¹ Roger J. Contor, to Chief I&RM, Canyonlands, November 1, 1967. Folder 16, ARCH 1800, Arches National Park Archives, SEUG Headquarters, Moab, Utah.

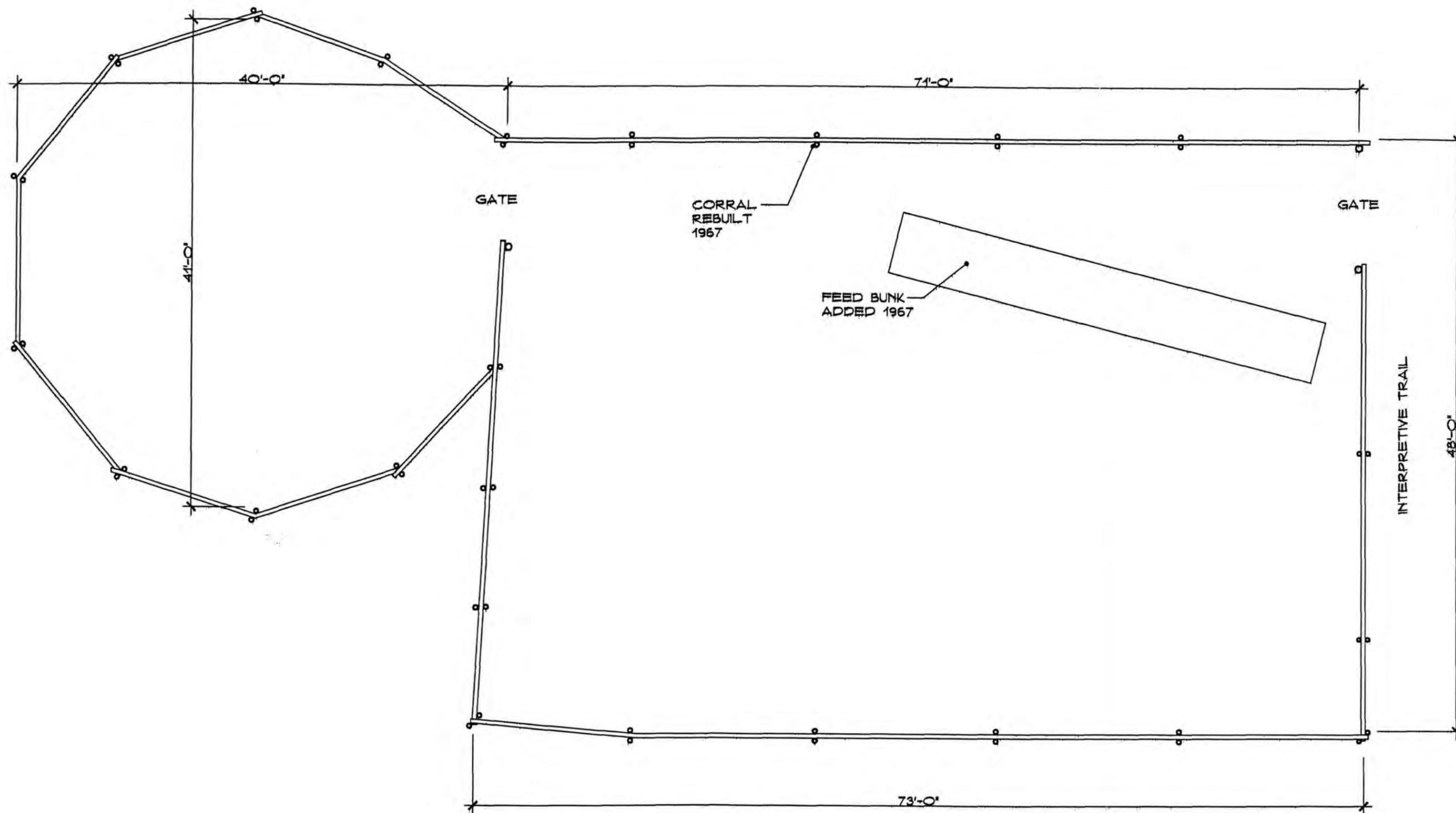
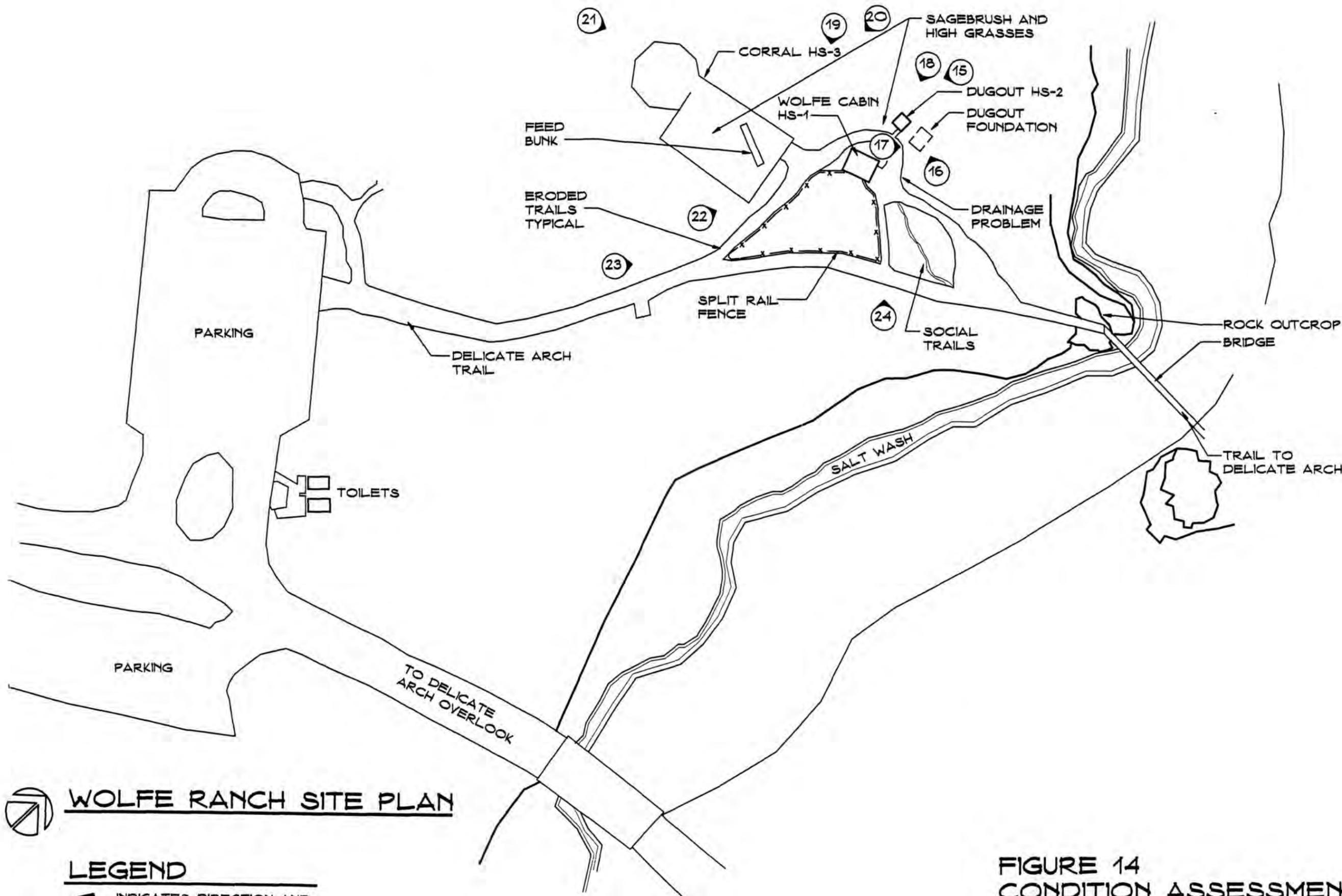


FIGURE 13
CHRONOLOGY OF CONSTRUCTION
CORRAL PLAN HS-3



SCALE: 1/8" = 1'-0"



WOLFE RANCH SITE PLAN

LEGEND

10 INDICATES DIRECTION AND FIGURE NUMBER OF PHOTO REFERENCED IN TEXT

**FIGURE 14
CONDITION ASSESSMENT
WOLFE RANCH**

SCALE 1" = 60'-0"



Figure 15. Looking southwest at the cabin (HS-1) and dugout (HS-2) with the corral (HS-3) in the background. Note the sandy, eroded trails around the buildings. (1998 photo)

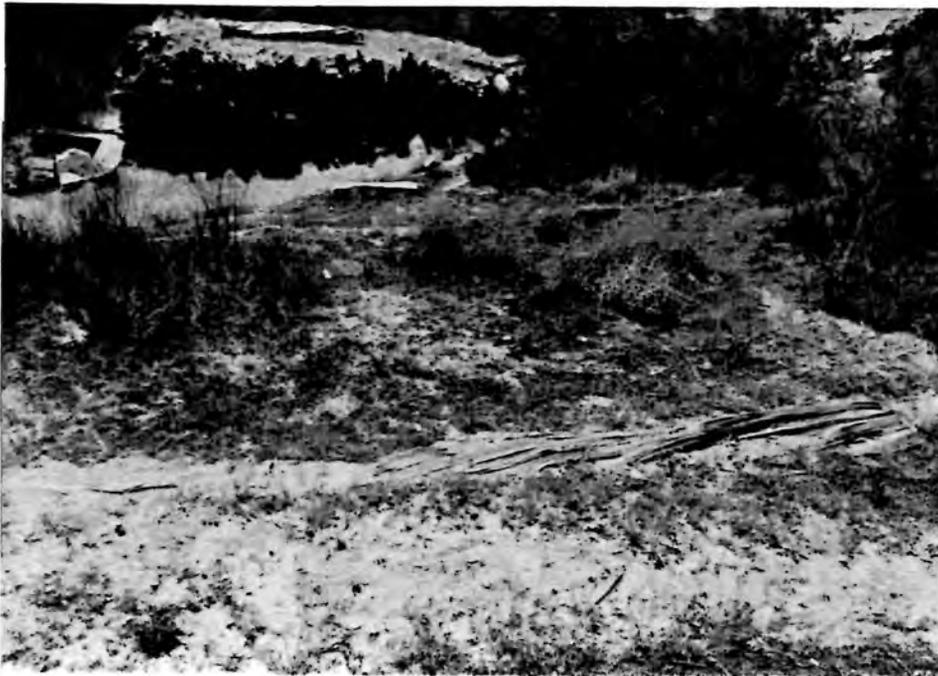


Figure 16. Looking west at remains of the second dugout located adjacent to the east side of HS-2. (1998 photo)



Figure 17. Looking northeast at the remains of the second dugout. (1998 photo)



Figure 18. Looking south at the dugout (HS-2) and cabin (HS-1) with the corral (HS-3) to the right. Note the greasewood and high grasses around the structures. (1998 photo)



Figure 19. Looking southeast at the area around the building complex. (1998 photo)



Figure 20. Looking southeast at the Wolfe Ranch buildings, from hill to the north of the site. (1998 photo)



Figure 21. Looking northeast at the corral (HS-3); cabin roof in the center of the photograph. (1998 photo)



Figure 22. Looking northeast at the interpretive trail between the corral (HS-3) and the cabin (HS-1). The fence to the right was added to protect the vegetation in front of the cabin. (1998 photo)



Figure 23. Looking northwest at the site with the main trail from the bridge to the parking lot to the left. The post and pole fence was added to help protect vegetation around the south side of the cabin. (1998 photo)



Figure 24. Looking northwest at the interpretive trail to the cabin and dugout on the east side of the site. (1998 photo)

Wolfe Ranch Cabin HS-1

DESCRIPTION

The Wolfe cabin is a one-story, log building, with a rectangular plan, originally constructed on a stone pier foundation (Figures 25-27). The shallow front-gable roof dates to the 1976/77 stabilization effort. Its structure represents a deviation from the original roof, which consisted of unpeeled oak *vigas* covered with a layer of burlap and finally by a layer of mud and gravel. The current roof consists of oak *vigas* laid perpendicular to the two ridge poles and overlain with two layers of juniper bark. A layer of earth covers the second layer of juniper bark. The only original fabric remaining in the roof is the oak *vigas* on the south slope, which were salvaged and reused during the 1976/77 restoration. A large vertical timber (possibly original) supports the weight of the eave at the front (west) elevation.

The cottonwood wall logs are joined at the corners with rough V-notches and have chopper-cut ends. Some of the split pole and juniper bark chinking added in 1976 remains, as does a portion of the mud daubing applied in 1967. Both the mud daubing and the pole chinking appear to be consistent with the historical appearance of the building as shown in historical photographs. The wall logs represent the bulk of original fabric that remains in the building.

Fenestration includes a door opening offset north of center in the west elevation. The opening currently contains the bottom half of the "Dutch" or two-leaf door added in 1967.¹² The south elevation contains a horizontal window opening in the west half of the wall that contains the original six-light, fixed wooden sash. The glass is new. The rear (west) and north side elevations contain no openings.

The interior of the building contains one room with a board floor. The walls and the ceiling are unfinished. The hole and flashing for the stovepipe is still visible in the southwest corner of the roof. The board floor was replaced in 1976, during which time, salvageable original boards were relaid at the back (west) of the floor and new boards were added to the front (east) of the floor. The walls contain a little of the chinking added in 1977. Figures 28-50 show various architectural details and illustrate the poor condition of the cabin.

CONDITION

Based upon the List of Classified Structures (LCS) condition definitions¹³, the cabin is in poor condition. Specific problems include the following:

¹² This two leaf door was originally installed by the park service in order to let visitors look inside the building without actually entering. The character of the original cabin door is unknown.

¹³ The condition assessments included in this report follow the List of Classified Structures condition definitions, which are as follows:

Good; The structure and significant features are intact, structurally sound, and performing their intended purpose. The structure and significant features need no repair or rehabilitation, but only routine or preventative maintenance.

Fair; A structure is in fair condition if there are early signs of wear, failure, or deterioration though the structure and its features are generally structurally sound and performing their intended purpose; or, there is failure of a significant feature of the structure.

Poor. A structure is in poor condition if any of the following conditions is present: a) the significant features are no longer performing their intended purpose; or, b) significant features are missing; or, c) deterioration or damage affects more than 25% of the structure; or, d) the structure or significant features show signs of imminent failure or breakdown.

Exterior:

Roof: The roof, rebuilt in 1976, is beginning to fail (both the structure and the covering). It appears that the layers of juniper bark hold the moisture against the oak *vigas* causing them to rot from the top. The ridge appears to be opening up causing water to penetrate into the ridge beams — again resulting in some rot in the beams. Water appears to be leaking into the structure through holes in the covering, even though the interior was dry at the time of the survey.

Walls: The walls appear to be mostly original to the building with new material limited to the log chinking. The logs of the north and east walls and part of the south wall all have surface rot, and both sill logs are also rotten. Termite activity was apparent in the north and east walls at the time of the survey, possibly due to these walls staying wet longer after rain or snow. Although the south and west walls did not exhibit termite damage, the infestation may spread to these walls. Even though this area is semi-arid and the humidity and moisture is low, it appears that the texture and nature of the logs allows even the limited amount of available precipitation to penetrate the surface. Rot, along with the termite infestation, has contributed to the failure of the wall logs.

Foundation: The stone foundation piers appear to be in place but the stones that were added between the piers have fallen out from under the logs. The grade on all sides does not provide positive drainage away from the building. The corrugated metal pipe installed to improve drainage away from the site has silted-in.

Windows and Doors: The deteriorated window and door, both of which are beginning to fall apart, need some preservation maintenance. The interior floor boards appear to be set on the ground surface and could be rotting from below.

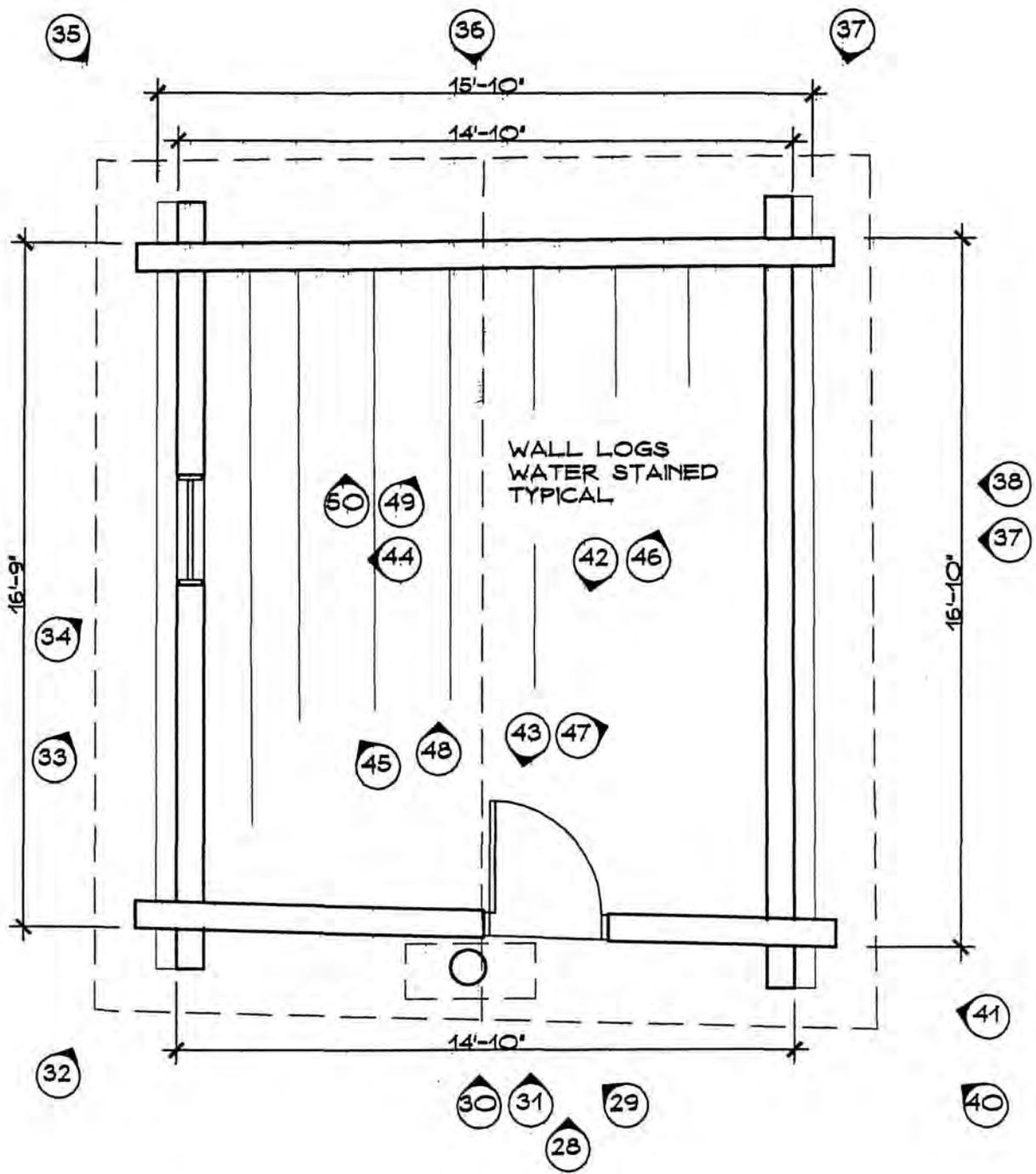
Interior

Ceiling: The ridge beams and *vigas* are water-stained.

Walls: Some of the chinking and daubing has fallen out, and the wall logs are water stained.

Floor: Some of the floorboards are missing and/or warped.

Windows and Doors: The interior window sill and door frame are badly deteriorated.



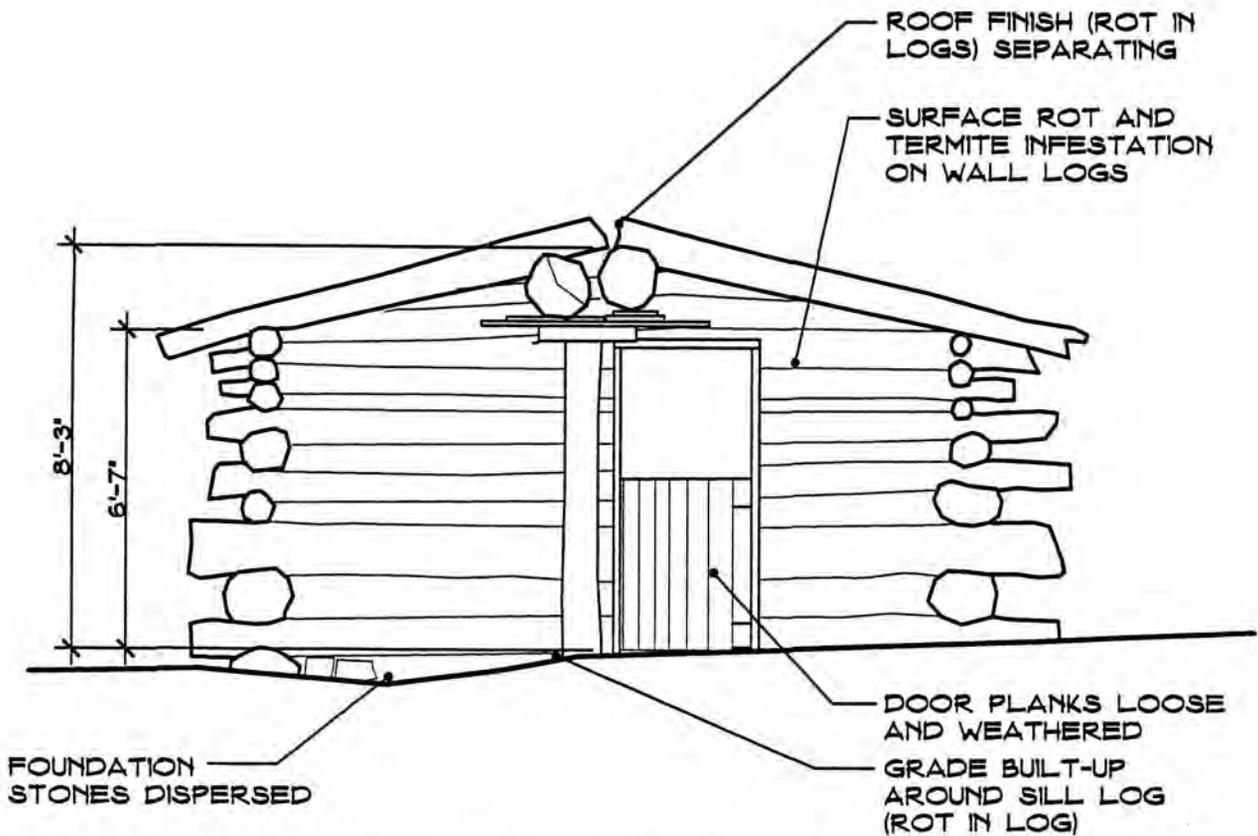
LEGEND

10 INDICATES DIRECTION AND FIGURE NUMBER OF PHOTO REFERENCED IN TEXT

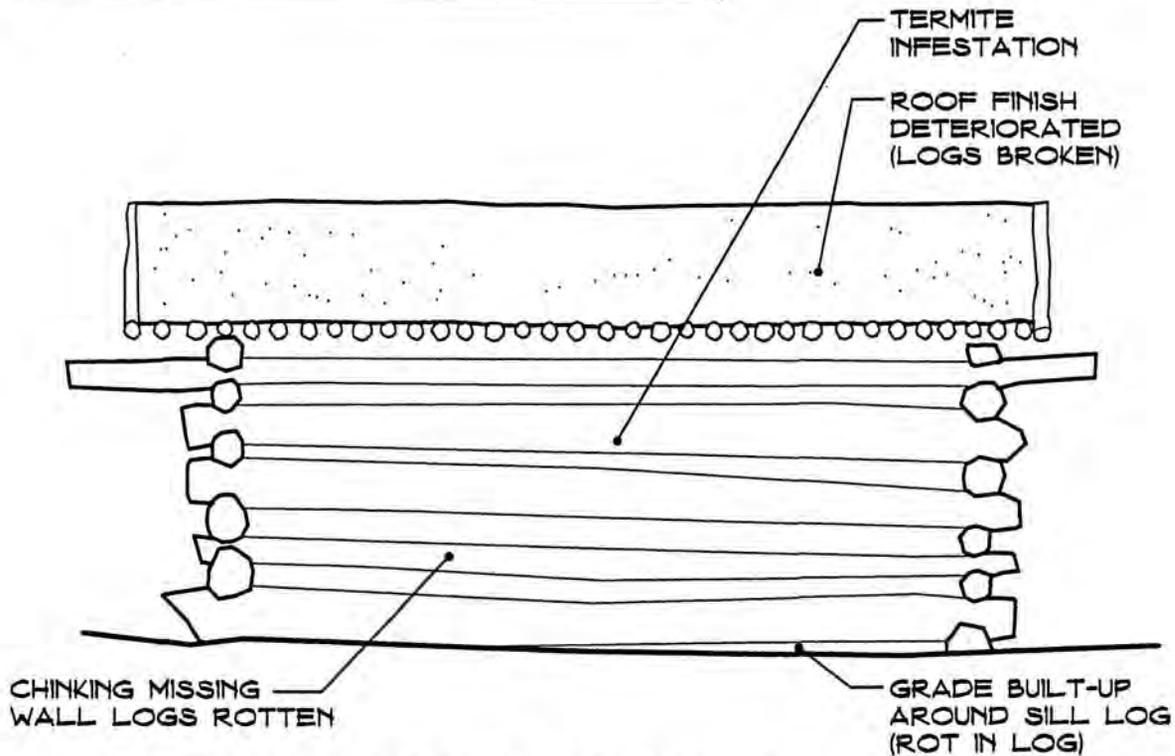
**FIGURE 25
CONDITION ASSESSMENT
WOLFE CABIN HS-1 FLOOR PLAN**



SCALE: 1/4" = 1'-0"



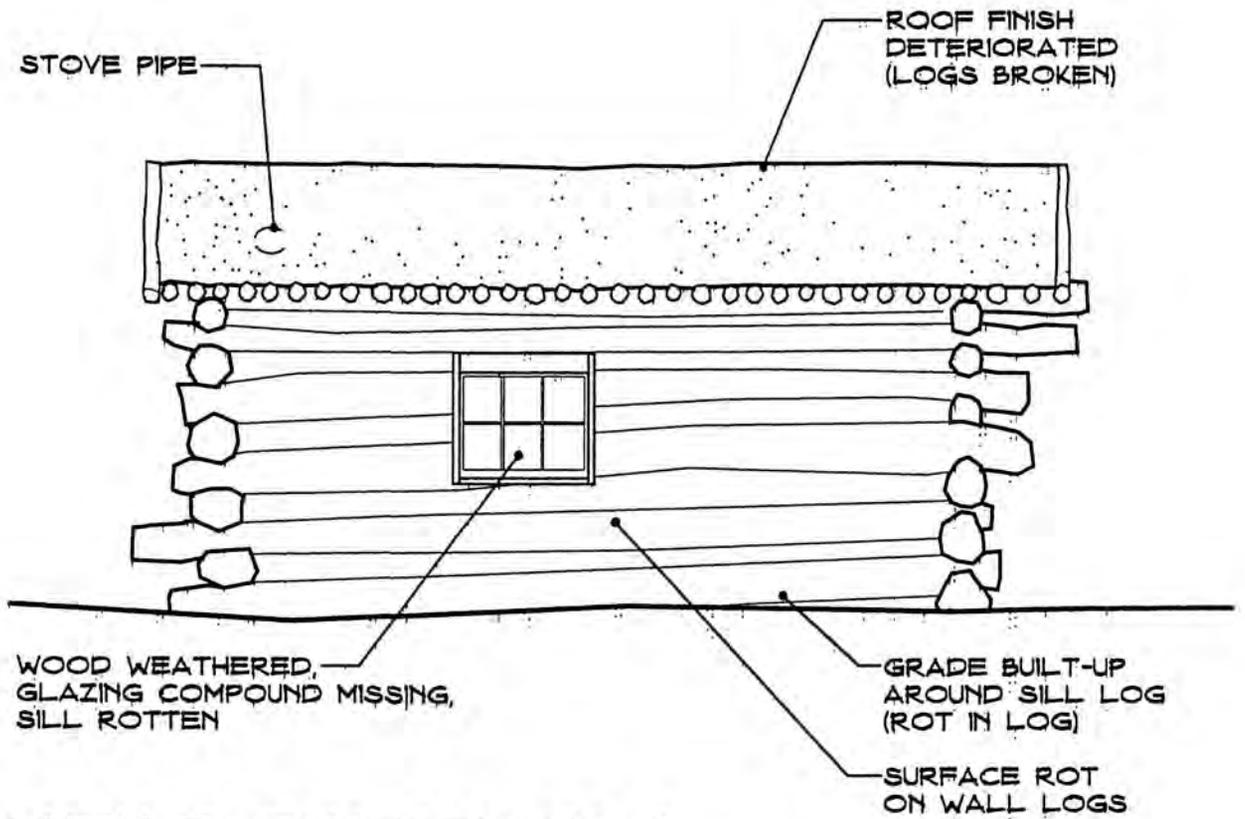
EAST ELEVATION HS-1



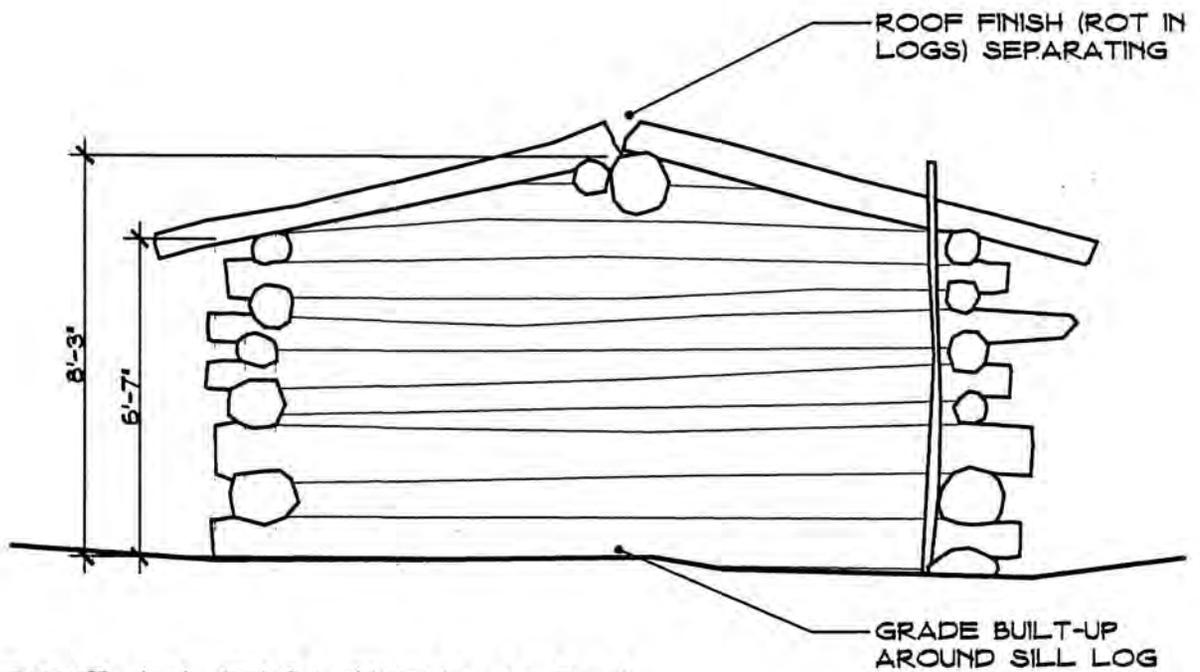
NORTH ELEVATION HS-1

**FIGURE 26
CONDITION ASSESSMENT
WOLFE CABIN HS-1 ELEVATIONS**

SCALE: 1/4" = 1'-0"



SOUTH ELEVATION HS-1



WEST ELEVATION HS-1

**FIGURE 27
CONDITION ASSESSMENT
WOLFE CABIN HS-1 ELEVATIONS**

SCALE: 1/4" = 1'-0"



Figure 28. Looking west at the front elevation of the cabin (HS-1). Note the grade up over the right side of the sill log. (1998 photo)



Figure 29. Looking southwest at the ends of the two ridge beams and the support post. (1998 photo)

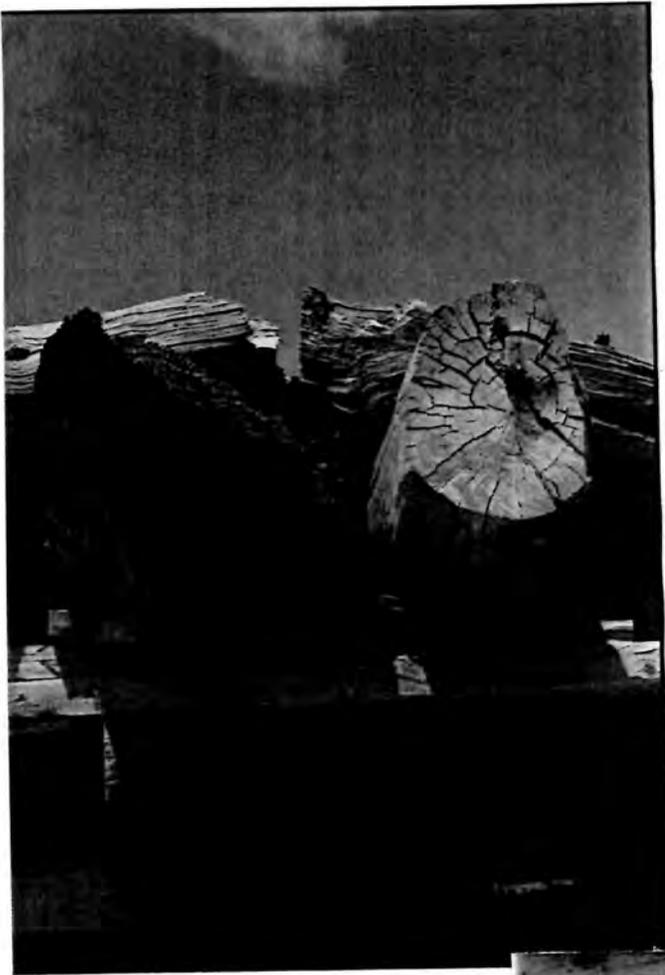


Figure 30. Looking west at the ridge beams and post. Note the separation of the roof at the top. Water is falling onto the logs at this point causing rot in the structure and wall members. (1998 photo)

◀◀◀

Figure 31. Looking west at the entrance. The door (added in 1967) is falling apart. (1998 photo)

▶▶▶





Figure 32. Looking northwest at the cabin (HS-1). Note the fence to keep people out of this side of the site. Also, note that the stones along the base of the cabin have fallen away. (1998 photo)



Figure 33. Looking north at the cabin (HS-1). Note the sill log partially covered with dirt and the juniper bark roof. Both are rotted due to moisture. (1998 photo)



Figure 34. Looking north at the window. Note the rough and missing glazing compound. The wood is weathered and checked. (1998 photo)

◀◀◀

Figure 35. Looking northeast at the cabin. Note the wood chinking and mud daubing. The daubing was applied between the chinking and the wall logs to seal the building. (1998 photo)

▶▶▶





Figure 36. Looking east at the rear of the cabin (HS-1). Note the short sections of logs and chinking used to fill the spaces between the wall logs. (1998 photo)



Figure 37. Looking southeast at the cabin (HS-1). Note the bent logs at the edge of the roof and the opening that lets water onto the wall logs. The grade is better on this side of the building, although earth has accumulated against the sill log. (1998 photo)



Figure 38. Looking south at the north side elevation of the cabin (HS-1). Note the missing chinking and rotted logs near the top of the wall. Also, note the juniper bark roof. (1998 photo)



Figure 39. Looking south at a detail of the roof and rot in the upper wall logs. (1998 photo)



Figure 40. Looking southwest at the cabin (HS-1). The purlin along this side was replaced along with the roof. (1998 photo)



Figure 41. Looking southwest at a corner notch detail. (1998 photo)



Figure 42. Looking east at the interior of the cabin and the main entrance. Note the staining on the walls from water penetrating the interior. (1998 photo)



Figure 43. Looking northeast at the interior of the door. (1998 photo)



Figure 44. Looking south at the interior. Note the roof logs and stove pipe surround. (1998 photo)



Figure 45. Looking south at the inside of the window. Note the weathered and rotted sill. (1998 photo)



Figure 46. Looking northwest at the interior. Note the log *vigas* and roof structure. (1998 photo)

◀◀◀

Figure 47. Looking north at the interior. Note the missing chinking. This wall has a lot of termite infestation, possibly due to the north side of the building staying moist longer after periods of precipitation (snow in winter, rain in spring and summer). (1998 photo)

▶▶▶

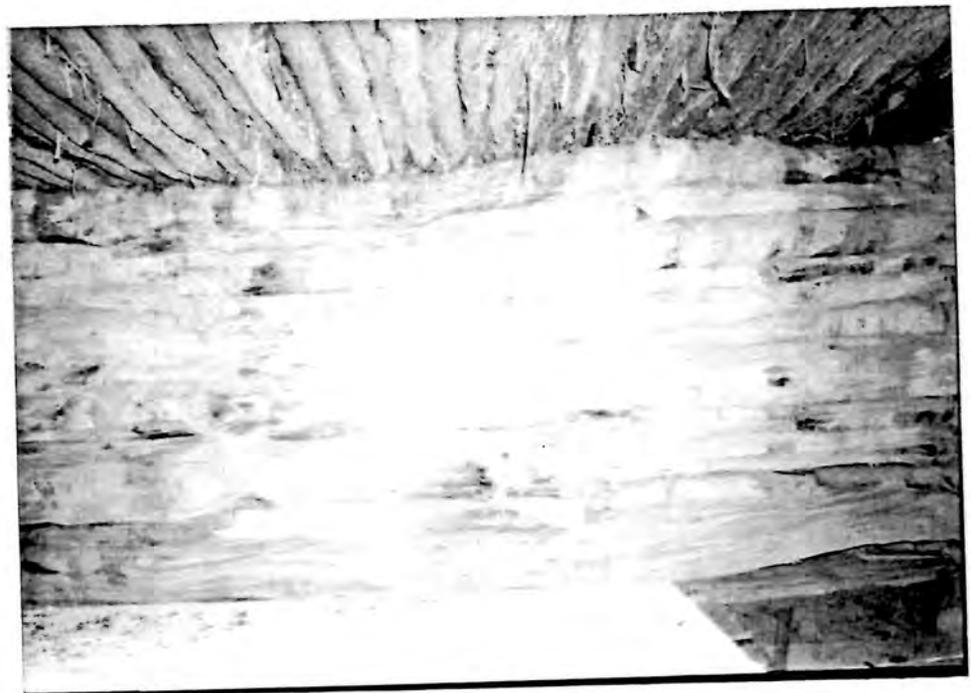




Figure 48. Looking west at the interior showing the roof structure and the wood floor to the left of the table. (1998 photo)



Figure 49. Looking west at the roof beams. The left (south) beam is rotted. The right (north) beam was replaced in 1976. (1998 photo)



Figure 50. Detail of the opening for a metal stove pipe. (1998 photo)

Wolfe Dugout (HS-2)

DESCRIPTION

The Wolfe dugout is a small rectangular building, the walls of which lie below the surrounding grade (Figures 51-53). These walls consist of cottonwood logs joined at the corners with shallow irregular notches. They are supported by a stacked stone foundation. During the 1967 restoration effort, the earth around the exterior walls was removed, and a layer of black plastic was applied to the outside surface of the wall logs. Earth was then reapplied to the bottom half of the side and rear exterior walls. The current roof, a shallow gable with a central log support, was repaired in 1967. This roof consists of a layer of pole *vigas* laid perpendicular to the ridge pole, with juniper bark on top of the *vigas* and finally, a layer of earth and rock.

Fenestration includes a door opening offset to the west of center in the south elevation. The door frame was added in 1977. The opening, which has no door, is accessed via a path excavated through the surrounding grade. The path is lined with dry-laid stacked stone. Several shallow stone steps lead from the top of the path to the dugout entrance. Other than the doorway, the building contains no other door or window openings.

The interior of the dugout consists of one room with a dirt floor, and unfinished walls and ceiling. The walls are chinked with whole and split poles, and some of the mud daubing remains. The black plastic applied in 1967 shows in some areas on the interior walls. Figures 54-72 show various architectural details and conditions of the dugout.

CONDITION

Based upon the LCS condition definitions, the dugout is in poor condition. Specific problems include the following:

Exterior

Roof: Water appears to be entering the building through the damaged roof. At the time of the survey, we observed rodents removing the juniper bark from the roof — presumably to use as nesting material. There are several holes in the roof where the surface layer of earth and rock has either been eroded away or removed by rodents to access the juniper bark. The ridgepoles are rotting from the top, due to moisture being held against the log by the juniper bark and mud covering.

Walls: The wall logs on the north and west sides are in such poor condition that they are beginning to fall apart; on the southeast corner there is hardly any material holding the corner together. Also, some of the logs are missing.

Foundation: The stone foundation is in good condition and the membrane that was added between the logs and grade appears to be keeping surface water out. However, the grade on the south, west and north sides of the dugout channels water toward the building. The corrugated metal pipe installed to improve drainage away from the site has silted-in.

Interior

Ceiling: The ridge beams and *vigas* are water-stained and rotted from water leaking inside.

Walls: Some of the chinking and daubing has fallen out on the interior wall surface. Also, a few of the wall logs are missing.

Windows and Doors: The building is once again out of plumb causing the door frame to pull apart.

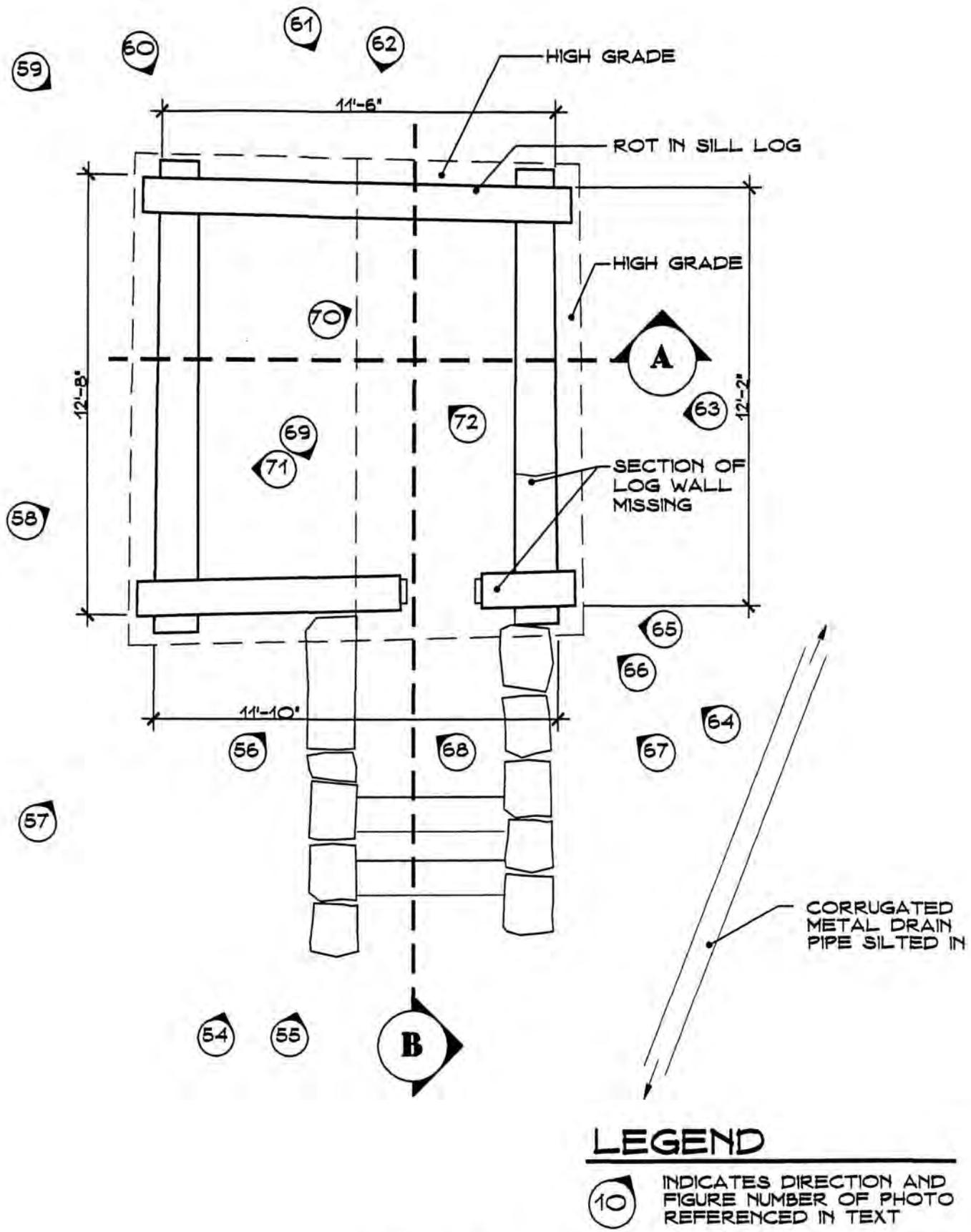
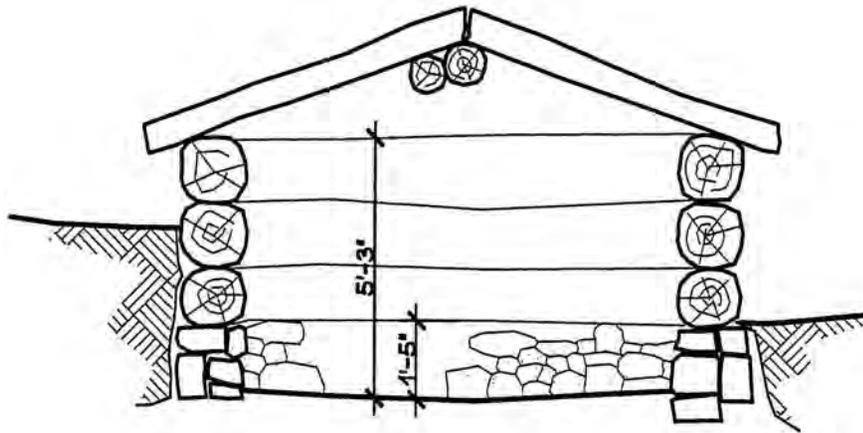


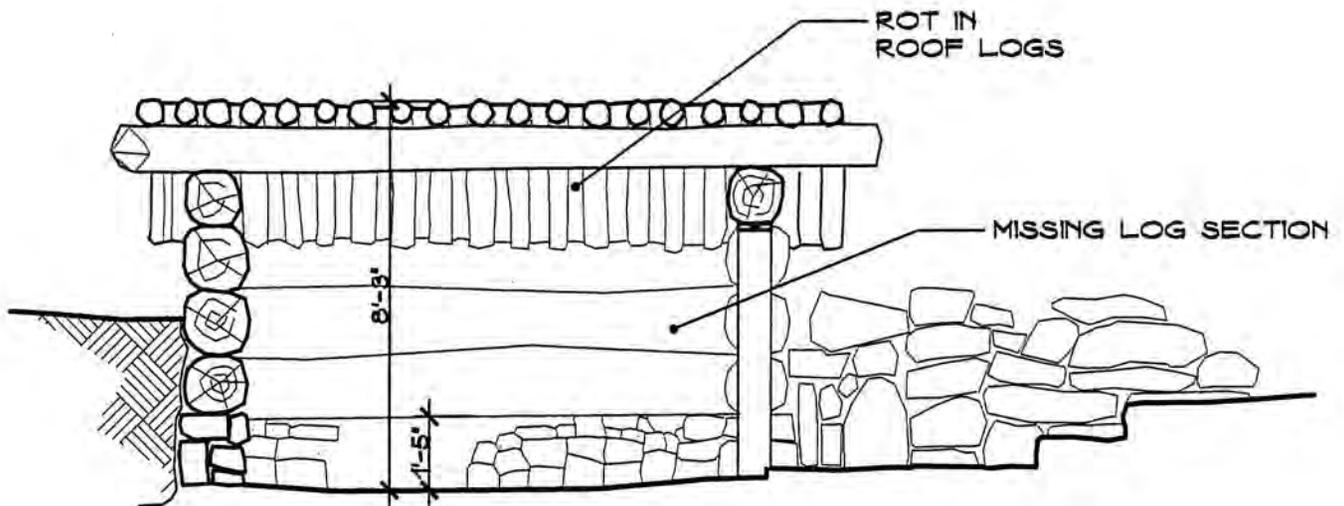
FIGURE 51
CONDITION ASSESSMENT
DUGOUT HS-2 FLOOR PLAN



SCALE: 1/4" = 1'-0"



DUGOUT HS-2 SECTION A



DUGOUT HS-2 SECTION B

**FIGURE 52
CONDITION ASSESSMENT
WOLFE DUGOUT HS-2 SECTIONS**

SCALE: 1/4" = 1'-0"

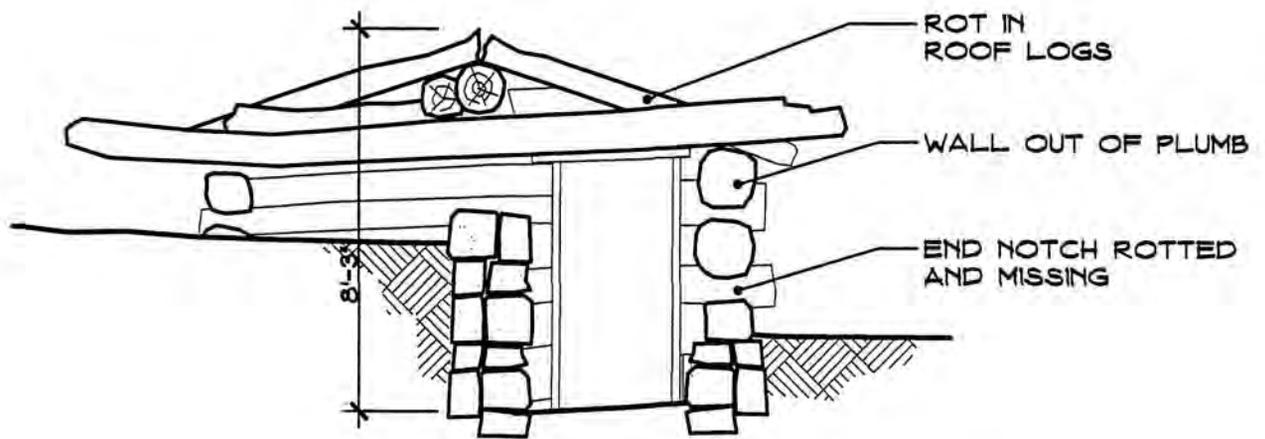


FIGURE 53
CONDITION ASSESSMENT
DUGOUT HS-2 NORTH ELEVATION

SCALE: 1/4" = 1'-0"



Figure 54. Looking north at the entrance to the dugout (HS-2). Note the settlement of the structure on west corner. (1998 photo)



Figure 55. Looking north at the entrance to the dugout (HS-2). Note the slope of the headpiece. Also, note the silt has covered the sill of the doorway. (1998 photo)



Figure 56. Looking north at the ridge beams and the roof material. Note the checked and weathered wood and separation of the ridge poles. (1998 photo)

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Figure 57. Looking northeast at the dugout (HS-2). Note the roof with the juniper bark covering. This is in poor condition. (1998 photo)

▶▶▶





Figure 58. Looking east at the dugout (HS-2). Note the holes in the roof where bark is missing and sections of the logs have collapsed. (1998 photo)



Figure 59. Looking southeast at the dugout (HS-2). Note the high grade around these two sides of the structure. (1998 photo)



Figure 60. Looking southeast along the base of the structure where the bottom log is rotted. (1998 photo)



Figure 61. Looking south at the dugout (HS-2). Note the sag in the roof and the open area where the top log is rotted. (1998 photo)



Figure 62. Detail of damage to roof. Note exposed juniper bark. (1998 photo)



Figure 63. Looking west at the dugout. Note the missing section of wall to the left and the high grade along the base to right. (1998 photo)



Figure 64. Looking northwest at the dugout. (1998 photo)



Figure 65. Looking northwest at a typical corner notch detail. Note the rotted and missing end notches. (1998 photo)



Figure 66. Looking northwest at the ends of the juniper logs and bark detail. Note the rotted and checked logs. (1998 photo)

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Figure 67. Looking northwest at the stone lined log steps down into the dugout. (1998 photo)

▶▶▶▶





Figure 68. Looking northwest at the logs imbedded to hold back the silt as you step down into the dugout. (1998 photo)

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Figure 69. Looking southeast towards the entrance opening from the interior of the dugout. Note the stone foundation. (1998 photo)

▶▶▶▶

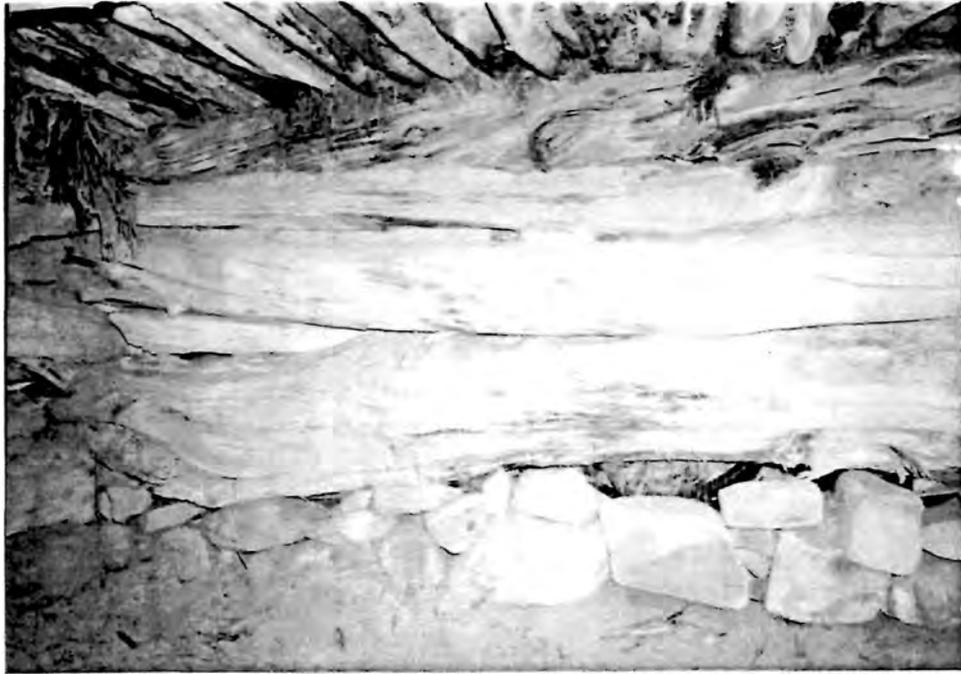


Figure 70. Looking east at the log wall with the stone foundation. A plastic membrane has been added on the outside of the logs to keep the moisture from penetrating to the interior of the building. (1998 photo)



Figure 71. Looking west at the log wall with the stone foundation. Note the rotted roof structure. (1998 photo)



Figure 72. Looking northwest at the interior of the dugout. Note the rotted roof structure. (1998 photo)

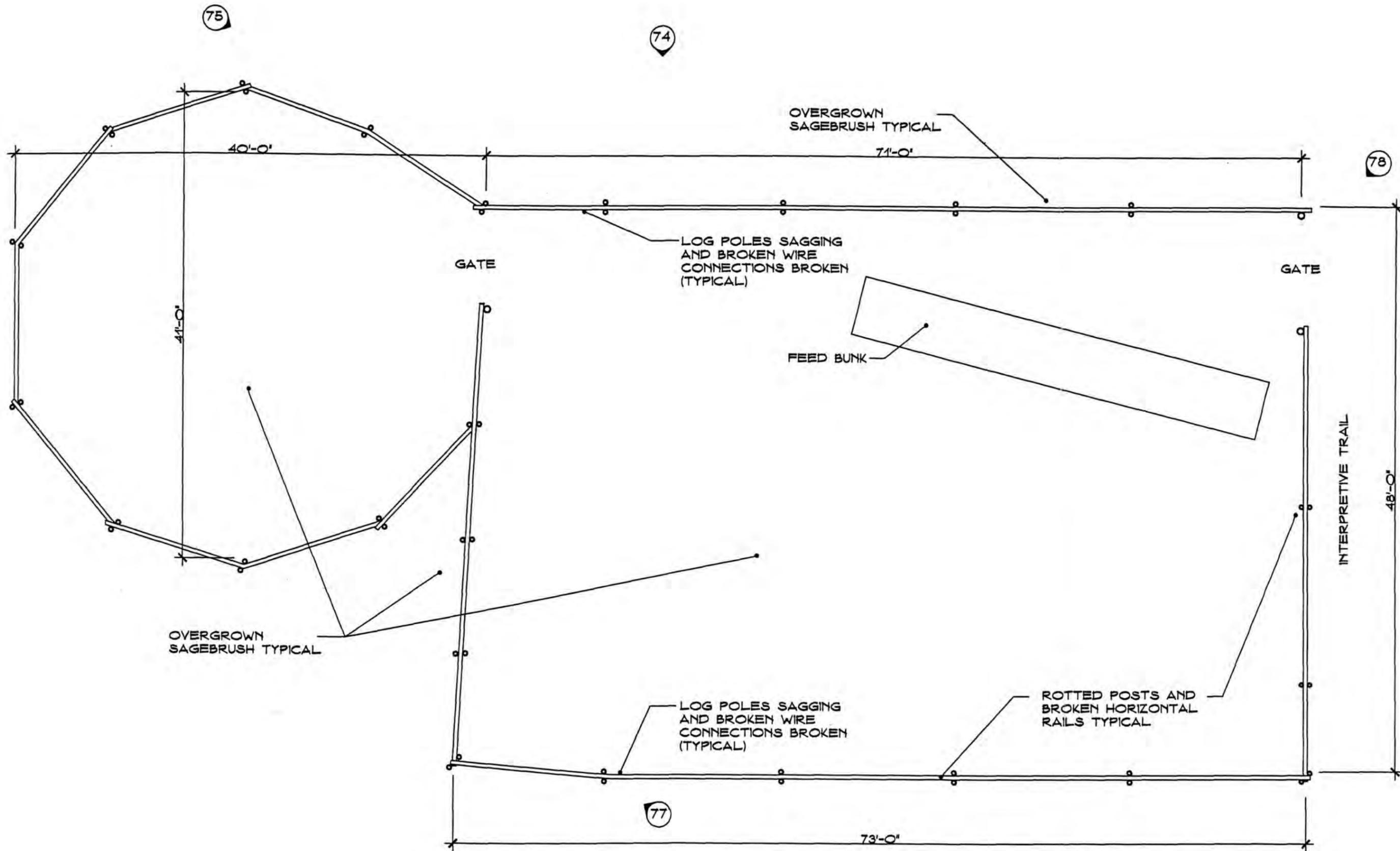
Wolfe Corral (HS-3)

DESCRIPTION

The corral system at the Wolfe Ranch consists of two components, a rectangular component on the east end and a circular component on the west end (Figure 73). The fences of both components have juniper posts with cottonwood rails. Barbed and smooth wire strung between the two vertical posts supports the rails. This corral was completely reconstructed during the 1967 restoration effort, and it is not possible to distinguish the original fabric from the fabric salvaged from the BLM corral. Figures 74-78 show various structural aspects of the corral.

CONDITION

The corrals were completely rebuilt during the 1967 restoration effort. Although salvageable material was reused, currently there is no way to determine which material is new and which material came from the cannibalized BLM corral. Currently, the corrals are once again in poor condition with rotted posts, broken horizontal rails, and broken wire connections. The deterioration appears to be due to a simple lack of maintenance.



LEGEND

10 INDICATES DIRECTION AND FIGURE NUMBER OF PHOTO REFERENCED IN TEXT

**FIGURE 73
CONDITION ASSESSMENT
CORRAL PLAN HS-3**

SCALE: 1/8" = 1'-0"



Figure 74. Looking south at the corral. Note the sagebrush and greasewood that has grown up inside and outside of the fence. (1998 photo)



Figure 75. Looking east along the corral. Note the sagging and broken rails. (1998 photo)



Figure 76. Looking north at the corrals. Note the sagging and broken rails. (1998 photo)



Figure 77. Looking northwest at structural detail typical in this corral; horizontal rails wired between two vertical posts. (1998 photo)



Figure 78. Looking southwest at a gate detail where poles are laid between the corral fence to close the opening. (1998 photo)

PART 2. TREATMENT AND USE

A. Ultimate Treatment

The Wolfe Ranch is listed in the National Register of Historic Places. The site has long been used for interpretive purposes, and it is the intention of Arches National Park to continue that use. Although not officially stated in any planning document, park staff consider the ultimate treatment for this site to be preservation and/or stabilization.¹⁴ Preservation maintenance, where all work is done in-kind and does not adversely affect the historical integrity of the buildings, falls under the memorandum of agreement between the National Park Service and the Utah State Historic Preservation Office. However, the Wolfe Ranch buildings (all of which are in poor condition) will require a major preservation effort and some reconstruction in order to maintain their historical and architectural integrity. The materials (historic fabric) and the architectural features of the buildings represent the principal character-defining features of the property as a whole, and are essential to its National Register eligibility. The recommendations for the preservation of the Wolfe Ranch are based upon the need to protect the historic site from further deterioration in order to continue its use for interpretive purposes.

As indicated previously in the condition assessment, the buildings are in poor condition and are in need of stabilization and preservation. However, the extent to which the buildings can be stabilized or preserved, and the historic fabric retained, is problematic. The only historic fabric remaining in the cabin (HS-1) and the dugout (HS-2) are the wall logs. In the cabin especially, the irregular form of the cottonwood wall logs contributes to the character of the building. Most of the other materials have been replaced over the years, either in 1967 or in 1976/77. Given these considerations, it appears that there are four alternatives to treatment of the buildings at Wolfe Ranch:

1. Leave the buildings as they are and allow them to continue to deteriorate. Provide minimal maintenance to slow the deterioration. Minimal maintenance would include cyclical attention to drainage problems, and perhaps the application of wood preservative to the wood surfaces. This alternative would likely constitute an "adverse effect," under current Section 106 guidelines, and would require some type of mitigation effort.
2. Completely reconstruct the buildings, replacing all remaining historic fabric, as well as the materials added during the two previous stabilization efforts. Although this alternative would provide for the continued use of the property for interpretive purposes, much of the character of the property would be lost since it would be difficult to duplicate the remaining historic fabric (the cottonwood wall logs). It is our opinion that this alternative would also constitute an adverse effect.
3. Institute a stabilization effort that preserves the remaining historic fabric to the maximum extent possible. This alternative would include the preservation of as many of the wall logs as possible, replacing or repairing with an epoxy

¹⁴ See Appendix A for a definition of the Secretary of the Interior's levels of preservation treatment.

consolidant, only those that are in an advanced state of deterioration. The epoxy consolidant would be used to glue back elements and give some structural support to the logs in the buildings. Under this alternative, the epoxy would be injected into the logs, not brought to the surface to form new parts of the members. Epoxy that is exposed to the weather or direct sunlight will deteriorate if not painted. This alternative would also involve construction of a new roof on the cabin, in accordance with the original design, not the design of the 1976 reconstruction. (As stated above, the roof system that was in place when the park service replaced it in 1976 incorporated a layer of burlap between the *vigas* and the mud covering.) The wall structure of both the cabin and the dugout could be protected by the construction of a separate metal support structure inside of the buildings, designed to carry the weight of the roof and hold the deteriorated logs together. This alternative would preserve the remaining historic fabric to the maximum extent possible and slow further deterioration. It will also restore the original architectural design features of the cabin roof.

4. Develop a plan for major stabilization of the logs within the buildings using some log replacement but also the use of epoxy injections—including the use of fillers to form new parts of the logs. Even though this alternative may retain proportionately more of the historic fabric than other alternatives, it results in the addition of a modern element to the logs. The epoxy used by itself as an adhesive, or with fillers to fill in voids, is a good material—as long as it is not exposed to weather or sunlight. It works well under painted surfaces and does not deteriorate if maintained. However, in a building such as the Wolfe cabin, which has no painted surfaces, we would not recommend its use as a total cure-all. Under this alternative all of the other elements of roofing and drainage around the building would also need to be part of the plan.

We recommend the use of alternative Treatment No. 3. This alternative eliminates the use of large amounts of epoxy (Treatment No.4) as well as the wholesale replacement of the remaining historic fabric (Treatment No. 2). Even though a new element would be added in the form of the internal metal structure, it would protect the integrity of the original materials while providing a system to hold the structure in place. It would have good interpretive value, in that it would illustrate a method of to save a historic building without rebuilding it, and losing much of the historic fabric.

B. Requirements for Treatment

The following specific recommendations are based upon alternative Treatment No. 3, as described above:

Site

1. Continue to maintain the trails around the site since they serve to protect the buildings. Although they paths are accessible in terms of grade, they should be improved to provide a more regular, solid surface in order to make them fully meet accessibility standards. The use of crushed gravel with some clay for binding is a good method to provide a hard surface without the expense of asphalt or concrete. The latter elements would not be appropriate to the historic character of the site.

2. Provide positive drainage around the immediate edges of the buildings by making sure that water channels flow away from the buildings. The water channels that are in place provide for surface water from the site to flow through the building area and away from the building site itself.
3. To enhance the interpretation of the site, remove some of the sagebrush, especially around the buildings and in the corrals. Historical photographs of the ranch show that the area in the immediate vicinity of the buildings and the interior of the corral were heavily used and devoid of vegetation.
4. We also recommend that the public continue to observe the buildings from the outside. This could be enhanced by providing access to the south side window — creating two views of the interior. Other than the interior of the dugout, the site as a whole is handicap accessible already with some improvements needed to the paths (see item #1 above). For the protection of the resources and park visitors, it may be necessary to limit access to the dugout — certainly until the structural problems have been stabilized.

Cabin HS-1

1. Provide for positive drainage around the building.
2. Reset the cabin on a stone pier foundation and clean out all silt that has spread in and around the sill logs and under the building. Replace the stones in between the piers to provide a more solid foundation.
3. Replace or repair with epoxy, the rotted sill logs and the major rotted wall logs that may be crushed by the weight of the roof. The rotted wall logs occur mainly on the north and east elevations.
4. Rid the logs of termites. Provide a termite eradication system (i.e. Sentracon or equal). It will be important to keep the logs from getting wet especially during the winter months when the snow may lay against the building on the north and east sides. These areas need to be covered as part of the cyclical maintenance of the site in order to minimize further deterioration of the wall logs.
5. A new roof needs to be added to the building. The new roof should be constructed according to the original design, i.e., oak *vigas* laid perpendicular to the ridge poles, followed by a layer of burlap and then the application of earth and gravel. The new roof could incorporate a waterproof membrane by applying In addition a waterproof membrane should be added between the burlap and the earth. This design should keep water from the roof from rotting the burlap and the *vigas*.
6. Design a structure within the cabin to support the roof and take the weight off of the deteriorating wall logs. Tie the wall logs into the structure so that they do not pull away from the structure. The support structure should be simple and not designed to blend with the original materials and design of the building. Although the structure will be visible, its purpose can be explained into the park service interpretive materials available at the site.
7. Rebuild the front door and continue to use the half door for the purposes of interpretation. However, the door opening should be covered with a historic-

appearing replacement door during the winter and during spring rains in order to keep water out of the building.

8. Reglaze the window.

9. Experiment with the application of wood preservative — preferably an FPL treatment. The basic recipe for FPL calls for 50% boiled linseed oil, and 50% gum turpentine, with 1 ounce of melted paraffin added for each gallon applied. The ingredients are mixed together and applied when the temperature is at least 70 degrees or above. The range of proportions of linseed oil to turpentine can vary from 60% linseed oil/40% turpentine to 40% linseed oil/60% turpentine, depending upon the climate. The correct proportion for a particular building can be selected by applying various samples with a hand sprayer. The mixture that soaks into the wood without leaving an oily residue on the surface is the one to use. The object should be to select the mixture with the highest proportion of linseed oil. (Although linseed oil sometimes attracts insects, this is usually a problem in humid environments. In moist conditions, fungus grows on the oil, thus providing food for certain insects.)

Dugout HS-2

1. Provide for positive drainage around the building.
2. Replace the rotted sill and wall logs that may crush under the weight of the roof. The rotted wall logs occur on the north, west and east elevations. Raise the structure in the southwest corner to partially straighten the south elevation. Do not overcorrect the straightening as it may cause other damage to the building.
3. Even though there was no evidence of active termite infestation at the time of the field examination, it may be appropriate to treat the logs in order to limit early infestation. Keep water and snow away from the wall logs on the north and east sides. These areas need to be covered as part of the maintenance of the site and the building protected to minimize the deterioration.
4. The roof needs to be reconstructed. It is unclear as to whether or not the 1967 reconstruction was an “in-kind” effort, or simply based upon a design that was “typical” for the area. We recommend staying with the existing design, but adding a waterproof membrane between layers of juniper bark.
5. Design a support structure as identified for the cabin.

Corral HS-3

1. Rebuild the corrals by replacing rotted posts and rotted and/or broken horizontal poles. Rewire the posts and poles together matching the existing conditions and details.
2. Remove brushy vegetation from the interior of the corral. Establish a routine vegetation management plan.

General

1. Provide a preservation maintenance plan for the site and buildings. This should include not only typical maintenance but a major plan for the protection of the buildings during the winter or seasons of high moisture. This may require

covering the parts of the buildings where snow lays up against the logs, or for the continual regular removal of snow.

2. Integrate the challenges of the preservation effort into park service interpretive literature.

PART 3. COST ESTIMATES

The following costs estimates are for the stabilization, preservation and partial reconstruction of the three principal resources located at Wolfe Ranch, as described under alternative treatment No. 3. The costs reflect labor and material costs for the basic needs to preserve the buildings. They do not reflect contract administrative costs or other fees for contractors or architects. Complete cost estimating worksheets for all four treatment alternatives are provided in Appendix B to this document. Please note that the treatment for the corral would be the same under all three of the action alternatives.

Resource Name and No.	Cost
Wolfe Cabin (HS-1)	\$53,344.00
Wolfe Root Cellar (HS-2)	\$25,604.00
Wolfe Corral (HS-3)	\$12,200.00
Total Cost of Preservation	\$91,148.00

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Archival Collections

Arches National Park Archives, SEUG Headquarters, Moab, UT. ARCH 1800.

Appendix A

Secretary of the Interior's Levels of Preservation

In order to preserve a historic structure, various levels of preservative treatment are considered in making decisions based upon available evidence. The levels of preservation treatment are defined by the Secretary of the Interior as follows:

1. **Stabilization** is defined as the act or process of applying measures designed to re-establish a weather-resistant enclosure and the structural stability of an unsafe or deteriorated property, while maintaining the essential form as it exists at present.

Stabilization shall re-establish the structural stability of a property through the reinforcement of load-bearing members or by arresting material deterioration leading to structural failure. Stabilization shall also reestablish weather-resistant conditions for the property. Stabilization shall be accomplished in such a manner that it detracts as little as possible from the property's appearance. When reinforcement is required to re-establish structural stability, such work shall be concealed wherever possible so as not to intrude upon or detract from the aesthetic and historical quality of the property, except where concealment would result in the alteration or destruction of historically significant material or spaces.

2. **Preservation** is defined as the act or process of applying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include initial stabilization work, where necessary, as well as on-going maintenance of the historic building materials. Preservation shall maintain the existing form, integrity, and materials of a building, structure or site. Substantial reconstruction or restoration of lost features generally is not included in a preservation undertaking.

Preservation shall include techniques of arresting or retarding the deterioration of a property through a program of on-going maintenance.

3. **Rehabilitation** is defined as the act or process of returning a property to a state of utility through repair or alteration which makes possible an efficient contemporary use while preserving those portions or features of the property which are significant to its historical, architectural, and cultural values. Another name for rehabilitation is adaptive reuse.

Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historic, architectural, or cultural materials and such design is compatible with the size, scale, color, material, and character of the property, neighborhood, or environment.

Whenever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

4. **Restoration** is defined as the act or process of accurately recovering the form and details of a property and its setting as it appeared at a particular time by removing later work or by replacing missing, earlier work.

Every reasonable effort shall be made to use a property for its originally intended purpose or to provide a compatible use that will require minimum alteration to the property and its environment.

Reinforcement required for structural stability or the installation of protective or code required mechanical system shall be concealed whenever possible so as not to intrude or detract from the property's aesthetic and historical qualities, except where concealment would result in the alteration or destruction of historically significant materials or spaces.

5. **Reconstruction** is defined as the act or process of reproducing by new construction the exact form and detail of a structure or object, or a part thereof, as it appeared at a specific period of time. Reconstruction is a very difficult level of treatment that requires a great deal of documentation about the integrity of each aspect of the structure. The National Park Service does not generally encourage the reconstruction of historic structure. Reconstruction would be needed if it helps the integrity of the structure or each of its elements.

Reconstruction of all or a part of a historic property shall be appropriate when the reconstruction is essential for understanding and interpreting the value of a historic district, or when no other building, structure, object, or landscape feature with the same associative value has survived and sufficient historical documentation exists to insure an accurate reproduction of the original.

The reproduction of missing elements accomplished with new materials shall duplicate the composition, design, color, texture, and other visual qualities of the missing element. Reconstruction of missing architectural features shall be based upon accurate duplication of original features substantiated by historical, physical, or pictorial evidence rather than upon conjectural designs or the availability of different architectural features from other building.

Reconstruction shall include measures to preserve any remaining original fabric, including foundations, subsurface, and ancillary elements. The reconstruction of missing elements and features shall be done in such a manner that the essential form and integrity of the original surviving features are unimpaired.

Some of these items come under separate categories in the budgeting and improvement work to be done on a historic structure. There are three areas to consider:

1. **Preservation:** This includes the major work to be done to maintain the existing form, integrity, and materials of a structure within the context of a new use change. The new use change must be consistent with the original historic character of the structure.
2. **Preservation Maintenance:** This includes the maintenance of items that are failing in their performance and making necessary alterations, like in-kind replacement, before major problems occur (i.e. roof repair, balcony and decks, etc.).

3. Cyclical Maintenance: This includes the annual maintenance of items to keep them in good shape (i.e., winterizing, painting windows, adjusting locks, etc.). This is done before there is a problem.

Appendix B

**Cost Estimating
Worksheets**

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Cabin Treatment #1				
BUILDING NUMBER:	HS-1				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)					
Repair/Replace Roofing	\$ 7.00	SF	\$	\$ -	
Roof Structural System	8.00	LF	-	-	
Replace Log Rafter Tails	8.50	LF	-	-	
Repair Log Rafter Tails	200.00	EA	-	-	
Replace Fascias	23.00	LF	-	-	
Repair Chimney	25.00	SF	-	-	
Repointing	10.00	SF	-	-	
Replace Deteriorated Caps	100.00	EA	-	-	
Repair Siding	6.00	SF	-	-	
Repair Board & Batten	6.00	SF	-	-	
Repoint Mortar Joints	8.00	SF	-	-	
Replace Brick	50.00	EA	-	-	
Replace Stone	400.00	CF	-	-	
Stucco	7.00	SF	-	-	
Round Log (Dutchman)	400.00	EA	-	-	
Round Log (Full Splice)	640.00	EA	-	-	
Replace Sill Log	1,000.00	EA	-	-	
Replace Mid-Wall	1,000.00	EA	-	-	
Replace Top Plate	1,000.00	EA	-	-	
Crown Ends (Saddle/Half)	325.00	EA	-	-	
Crown Ends (Dovetail)	475.00	EA	-	-	
Hewn Log Work	11.00	LF	-	-	
Replace Daubing	4.80	LF	-	-	
Replace Chinking	2.00	LF	-	-	
Repair Chinking	4.00	LF	-	-	
Replace Glass	65.00	EA	-	-	
Repair Sills/Sash	35.00	LF	-	-	

BUILDING NAME:	Wolfe Ranch Cabin Treatment #1			
Replace Windows	\$ 500.00	EA	-	\$ -
Recondition Door	1,000.00	EA	-	-
Recondition Frame	300.00	EA	-	-
Repair Floor Boards	9.00	SF	-	-
Repair Railings	3.00	LF	-	-
Replace Post & Bracing	200.00	EA	-	-
Replace Stone	400.00	CF	-	-
Replace/Patch Wood	25.00	SF	-	-
Level & Brace Foundation	20.00	LF	-	-
Pour New Foundation	135.00	CF	-	-
Patch Concrete Foundation	13.00	SF	-	-
Repair Stone Foundation	40.00	SF	-	-
Wood on Grade	27.00	LF	-	-
Foundation Drainage	20.00	LF	98	1,960.00
Refinish Windows	300.00	EA	-	-
Refinish Doors	400.00	EA	-	-
Refinish Siding	5.00	SF	-	-
Other:			-	-
Repair Wall/FPL	-	LS		1,000.00
Clean Up Site		LS		1,000.00
TOTAL COST PER BUILDING				\$ 3,960.00

SITE:	Wolfe Ranch Historic District			
BUILDING NAME:	Cabin Treatment #2			
BUILDING NUMBER:	HS-1			
DESCRIPTION	COST		UNIT	BUILDING
Square Ft (Unit)			272	
Repair/Replace Roofing*	\$ 14.00	SF	380	5,320.00
Roof Structural System	8.00	LF	40	320.00
Replace Log Rafter Tails	8.50	LF	-	-
Repair Log Rafter Tails	200.00	EA	-	-
Replace Fascias	23.00	LF	-	-
Replace Chimney	200.00	LS	1	200.00
Repointing	10.00	SF	-	-
Replace Deteriorated Caps	100.00	EA	-	-
Repair Siding	6.00	SF	-	-
Repair Board & Batten	6.00	SF	-	-
Repoint Mortar Joints	8.00	SF	-	-
Replace Brick	50.00	EA	-	-
Replace Stone	400.00	CF	-	-
Stucco	7.00	SF	-	-
Round Log (Dutchman)	400.00	EA	-	-
Round Log (Full Splice)	640.00	EA	-	-
Replace Sill Log	1,000.00	EA	-	-
Replace Mid-Wall	1,000.00	EA	20	20,000.00
Replace Top Plate	1,000.00	EA	-	-
Crown Ends (Saddle/Half)	325.00	EA	-	-
Crown Ends (Dovetail)	475.00	EA	-	-
Hewn Log Work	11.00	LF	-	-
Replace Daubing	4.80	LF	980	4,704.00
Replace Chinking	2.00	LF	980	1,960.00
Repair Chinking	4.00	LF	-	-
Replace Glass	65.00	EA	-	-
Repair Sills/Sash	35.00	LF	-	-

SITE:	Wolfe Ranch Historic District			
BUILDING NAME:	Cabin Treatment #3			
BUILDING NUMBER:	HS-1			
DESCRIPTION	COST		UNIT	BUILDING
Square Ft (Unit)			272	
Repair/Replace Roofing*	\$ 14.00	SF	380	5,320.00
Roof Structural System	8.00	LF	40	320.00
Replace Log Rafter Tails	8.50	LF	-	-
Repair Log Rafter Tails	200.00	EA	-	-
Replace Fascias	23.00	LF	-	-
Replace Chimney	200.00	LS	-	-
Repointing	10.00	SF	-	200.00
Replace Deteriorated Caps	100.00	EA	-	-
Repair Siding	6.00	SF	-	-
Repair Board & Batten	6.00	SF	-	-
Repoint Mortar Joints	8.00	SF	-	-
Replace Brick	50.00	EA	-	-
Replace Stone	400.00	CF	-	-
Stucco	7.00	SF	-	-
Round Log (Dutchman)	400.00	EA	-	-
Round Log (Full Splice)	640.00	EA	-	-
Replace Sill Log	1,000.00	EA	2	2,000.00
Replace Mid-Wall	1,000.00	EA	6	6,000.00
Replace Top Plate	1,000.00	EA	2	2,000.00
Crown Ends (Saddle/Half)	325.00	EA	-	-
Crown Ends (Dovetail)	475.00	EA	-	-
Hewn Log Work	11.00	LF	-	-
Replace Daubing	4.80	LF	980	4,704.00
Replace Chinking	2.00	LF	980	1,960.00
Repair Chinking	4.00	LF	-	-
Replace Glass	65.00	EA	4	260.00
Repair Sills/Sash	35.00	LF	24	840.00

BUILDING NAME:	Wolfe Ranch Cabin Treatment #3			
Replace Windows	\$ 500.00	EA	-	\$ -
Replace Door	1,000.00	EA	1	1,000.00
Recondition Frame	300.00	EA	1	300.00
Replace Floor Boards	9.00	SF	136	1,224.00
Repair Railings	3.00	LF	-	-
Replace Post & Bracing	200.00	EA	-	-
Replace Stone Pier Foundation	400.00	CF	-	-
Replace/Patch Wood	25.00	SF	-	-
Level & Brace Foundation	20.00	LF	-	-
Pour New Foundation	135.00	CF	-	-
Patch Concrete Foundation	13.00	SF	-	-
Repair Stone Foundation	40.00	SF	24	960.00
Wood on Grade	27.00	LF	48	1,296.00
Foundation Drainage	20.00	LF	98	1,960.00
Refinish Windows	300.00	EA	-	-
Refinish Doors	400.00	EA	-	-
Refinish Siding	5.00	SF	-	-
Other:				
Repair Wall/FPL		LS		1,000.00
Epoxy Consolidant		LS		4,000.00
New Steel Structure		LS		12,000.00
Termite		LS		5,000.00
Clean Up Site		LS		1,000.00
* Special Roof				
TOTAL COST PER BUILDING				\$ 53,344.00

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Cabin Treatment #4				
BUILDING NUMBER:	HS-1				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)			272		
Repair/Replace Roofing*	\$ 14.00	SF	380	5,320.00	
Roof Structural System	8.00	LF	40	320.00	
Replace Log Rafter Tails	8.50	LF	-	-	
Repair Log Rafter Tails	200.00	EA	-	-	
Replace Fascias	23.00	LF	-	-	
Replace Chimney	200.00	LS	1	200.00	
Repointing	10.00	SF	-	-	
Replace Deteriorated Caps	100.00	EA	-	-	
Repair Siding	6.00	SF	-	-	
Repair Board & Batten	6.00	SF	-	-	
Repoint Mortar Joints	8.00	SF	-	-	
Replace Brick	50.00	EA	-	-	
Replace Stone	400.00	CF	-	-	
Stucco	7.00	SF	-	-	
Round Log (Dutchman)	400.00	EA	-	-	
Round Log (Full Splice)	640.00	EA	-	-	
Replace Sill Log	1,000.00	EA	2	2,000.00	
Replace Mid-Wall	1,000.00	EA	12	12,000.00	
Replace Top Plate	1,000.00	EA	2	2,000.00	
Crown Ends (Saddle/Half)	325.00	EA	-	-	
Crown Ends (Dovetail)	475.00	EA	-	-	
Hewn Log Work	11.00	LF	-	-	
Replace Daubing	4.80	LF	980	4,704.00	
Replace Chinking	2.00	LF	980	1,960.00	
Repair Chinking	4.00	LF	-	-	
Replace Glass	65.00	EA	4	260.00	
Repair Sills/Sash	35.00	LF	24	840.00	

BUILDING NAME:	Wolfe Ranch Cabin Treatment #4			
Replace Windows	\$ 500.00	EA	-	\$ -
Replace Door	1,000.00	EA	1	1,000.00
Recondition Frame	300.00	EA	1	300.00
Replace Floor Boards	9.00	SF	136	1,224.00
Repair Railings	3.00	LF	-	-
Replace Post & Bracing	200.00	EA	-	-
Replace Stone Pier Foundation	400.00	CF	-	-
Replace/Patch Wood	25.00	SF	-	-
Level & Brace Foundation	20.00	LF	-	-
Pour New Foundation	135.00	CF	-	-
Patch Concrete Foundation	13.00	SF	-	-
Repair Stone Foundation	40.00	SF	24	960.00
Wood on Grade	27.00	LF	48	1,296.00
Foundation Drainage	20.00	LF	98	1,960.00
Refinish Windows	300.00	EA	-	-
Refinish Doors	400.00	EA	-	-
Refinish Siding	5.00	SF	-	-
Other:				
Repair Wall/FPL		LS		1,000.00
Epoxy Consolidant		LS		10,000.00
Termite		LS		5,000.00
Clean Up Site		LS		1,000.00
* Special Roof				
TOTAL COST PER BUILDING				\$ 53,344.00

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Dugout Treatment #1				
BUILDING NUMBER:	HS-2				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)					
Repair/Replace Roofing*	\$ 14.00	SF		\$	
Roof Structural System	8.00	LF	-	-	
Replace Log Rafter Tails	8.50	LF	-	-	
Repair Log Rafter Tails	200.00	EA	-	-	
Replace Fascias	23.00	LF	-	-	
Replace Chimney	200.00	LS	-	-	
Repointing	10.00	SF	-	-	
Replace Deteriorated Caps	100.00	EA	-	-	
Repair Siding	6.00	SF	-	-	
Repair Board & Batten	6.00	SF	-	-	
Repoint Mortar Joints	8.00	SF	-	-	
Replace Brick	50.00	EA	-	-	
Replace Stone	400.00	CF	-	-	
Stucco	7.00	SF	-	-	
Round Log (Dutchman)	400.00	EA	-	-	
Round Log (Full Splice)	640.00	EA	-	-	
Replace Sill Log	1,000.00	EA	-	-	
Replace Mid-Wall	1,000.00	EA	-	-	
Replace Top Plate	1,000.00	EA	-	-	
Crown Ends (Saddle/Half)	325.00	EA	-	-	
Crown Ends (Dovetail)	475.00	EA	-	-	
Hewn Log Work	11.00	LF	-	-	
Replace Daubing	4.80	LF	-	-	
Replace Chinking	2.00	LF	-	-	
Repair Chinking	4.00	LF	-	-	
Replace Glass	65.00	EA	-	-	
Repair Sills/Sash	35.00	LF	-	-	

BUILDING NAME:	Wolfe Ranch Dugout Treatment #1				
Replace Windows	\$ 500.00	EA	-	\$ -	
Replace Door	1,000.00	EA	-	-	
Recondition Frame	300.00	EA	-	-	
Replace Floor Boards	9.00	SF	-	-	
Repair Railings	3.00	LF	-	-	
Replace Post & Bracing	200.00	EA	-	-	
Replace Stone Pier Foundation	400.00	CF	-	-	
Replace/Patch Wood	25.00	SF	-	-	
Level & Brace Foundation	20.00	LF	-	-	
Pour New Foundation	135.00	CF	-	-	
Patch Concrete Foundation	13.00	SF	-	-	
Repair Stone Foundation	40.00	SF	-	-	
Wood on Grade	27.00	LF	-	-	
Foundation Drainage	20.00	LF	50	1,000.00	
Refinish Windows	300.00	EA	-	-	
Refinish Doors	400.00	EA	-	-	
Refinish Siding	5.00	SF	-	-	
Other:					
Repair Wall/FPL		LS		500.00	
Clean Up Site		LS		1,000.00	
TOTAL COST PER BUILDING				\$ 2,500.00	

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Dugout Treatment #2				
BUILDING NUMBER:	HS-2				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)			144		
Repair/Replace Roofing*	\$ 14.00	SF	202	\$	2,828.00
Roof Structural System	8.00	LF	32		256.00
Replace Log Rafter Tails	8.50	LF	-		-
Repair Log Rafter Tails	200.00	EA	-		-
Replace Fascias	23.00	LF	-		-
Replace Chimney	200.00	LS	-		-
Repointing	10.00	SF	-		-
Replace Deteriorated Caps	100.00	EA	-		-
Repair Siding	6.00	SF	-		-
Repair Board & Batten	6.00	SF	-		-
Repoint Mortar Joints	8.00	SF	-		-
Replace Brick	50.00	EA	-		-
Replace Stone	400.00	CF	-		-
Stucco	7.00	SF	-		-
Round Log (Dutchman)	400.00	EA	-		-
Round Log (Full Splice)	640.00	EA	-		-
Replace Sill Log	1,000.00	EA	-		-
Replace Mid-Wall	1,000.00	EA	12		12,000.00
Replace Top Plate	1,000.00	EA	-		-
Crown Ends (Saddle/Half)	325.00	EA	-		-
Crown Ends (Dovetail)	475.00	EA	-		-
Hewn Log Work	11.00	LF	-		-
Replace Daubing	4.80	LF	150		720.00
Replace Chinking	2.00	LF	250		500.00
Repair Chinking	4.00	LF	-		-
Replace Glass	65.00	EA	-		-
Repair Sills/Sash	35.00	LF	-		-

BUILDING NAME:	Wolfe Ranch Dugout Treatment #2				
Replace Windows	\$ 500.00	EA			
New Door	1,000.00	EA	0.5	\$ 500.00	
Recondition Frame	300.00	EA	1	300.00	
Replace Floor Boards	9.00	SF	-	-	
Repair Railings	3.00	LF	-	-	
Replace Post & Bracing	200.00	EA	-	-	
Replace Stone Pier Foundation	400.00	CF	-	-	
Replace/Patch Wood	25.00	SF	-	-	
Level & Brace Foundation	20.00	LF	-	-	
Pour New Foundation	135.00	CF	-	-	
Patch Concrete Foundation	13.00	SF	-	-	
Repair Stone Foundation	40.00	SF	50	2,000.00	
Wood on Grade	27.00	LF	-	-	
Foundation Drainage	20.00	LF	50	1,000.00	
Refinish Windows	300.00	EA	-	-	
Refinish Doors	400.00	EA	-	-	
Refinish Siding	5.00	SF	-	-	
Other:					
Repair Wall/FPL		LS			
Clean Up Site		LS		1,000.00	
* Special Roof					
TOTAL COST PER BUILDING				\$ 21,104.00	

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Dugout Treatment #3				
BUILDING NUMBER:	HS-2				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)			144		
Repair/Replace Roofing*	\$ 14.00	SF	202	\$	2,828.00
Roof Structural System	8.00	LF	32		256.00
Replace Log Rafter Tails	8.50	LF	-		-
Repair Log Rafter Tails	200.00	EA	-		-
Replace Fascias	23.00	LF	-		-
Replace Chimney	200.00	LS	-		-
Repointing	10.00	SF	-		-
Replace Deteriorated Caps	100.00	EA	-		-
Repair Siding	6.00	SF	-		-
Repair Board & Batten	6.00	SF	-		-
Repoint Mortar Joints	8.00	SF	-		-
Replace Brick	50.00	EA	-		-
Replace Stone	400.00	CF	-		-
Stucco	7.00	SF	-		-
Round Log (Dutchman)	400.00	EA	-		-
Round Log (Full Splice)	640.00	EA	-		-
Replace Sill Log	1,000.00	EA	-		-
Replace Mid-Wall	1,000.00	EA	6		6,000.00
Replace Top Plate	1,000.00	EA	-		-
Crown Ends (Saddle/Half)	325.00	EA	-		-
Crown Ends (Dovetail)	475.00	EA	-		-
Hewn Log Work	11.00	LF	-		-
Replace Daubing	4.80	LF	150		720.00
Replace Chinking	2.00	LF	250		500.00
Repair Chinking	4.00	LF	-		-
Replace Glass	65.00	EA	-		-
Repair Sills/Sash	35.00	LF	-		-

BUILDING NAME:	Wolfe Ranch Dugout Treatment #3			
Replace Windows	\$ 500.00	EA	-	-
New Door	1,000.00	EA	0.5	\$ 500.00
Recondition Frame	300.00	EA	1	300.00
Replace Floor Boards	9.00	SF	-	-
Repair Railings	3.00	LF	-	-
Replace Post & Bracing	200.00	EA	-	-
Replace Stone Pier Foundation	400.00	CF	-	-
Replace/Patch Wood	25.00	SF	-	-
Level & Brace Foundation	20.00	LF	-	-
Pour New Foundation	135.00	CF	-	-
Patch Concrete Foundation	13.00	SF	-	-
Repair Stone Foundation	40.00	SF	50	2,000.00
Wood on Grade	27.00	LF	-	-
Foundation Drainage	20.00	LF	50	1,000.00
Refinish Windows	300.00	EA	-	-
Refinish Doors	400.00	EA	-	-
Refinish Siding	5.00	SF	-	-
Other:				
Repair Wall/FPL		LS		500.00
Epoxy Consolidant		LS		2,000.00
New Steel Structure		LS		5,000.00
Termite		LS		3,000.00
Clean Up Site		LS		1,000.00
* Special Roof				
TOTAL COST PER BUILDING				\$ 25,604.00

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Dugout Treatment #4				
BUILDING NUMBER:	HS-2				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)			144		
Repair/Replace Roofing*	\$ 14.00	SF	202	\$	2,828.00
Roof Structural System	8.00	LF	32		256.00
Replace Log Rafter Tails	8.50	LF	-		-
Repair Log Rafter Tails	200.00	EA	-		-
Replace Fascias	23.00	LF	-		-
Replace Chimney	200.00	LS	-		-
Repointing	10.00	SF	-		-
Replace Deteriorated Caps	100.00	EA	-		-
Repair Siding	6.00	SF	-		-
Repair Board & Batten	6.00	SF	-		-
Repoint Mortar Joints	8.00	SF	-		-
Replace Brick	50.00	EA	-		-
Replace Stone	400.00	CF	-		-
Stucco	7.00	SF	-		-
Round Log (Dutchman)	400.00	EA	-		-
Round Log (Full Splice)	640.00	EA	-		-
Replace Sill Log	1,000.00	EA	-		-
Replace Mid-Wall	1,000.00	EA	6		6,000.00
Replace Top Plate	1,000.00	EA	-		-
Crown Ends (Saddle/Half)	325.00	EA	-		-
Crown Ends (Dovetail)	475.00	EA	-		-
Hewn Log Work	11.00	LF	-		-
Replace Daubing	4.80	LF	150		720.00
Replace Chinking	2.00	LF	250		500.00
Repair Chinking	4.00	LF	-		-
Replace Glass	65.00	EA	-		-
Repair Sills/Sash	35.00	LF	-		-

BUILDING NAME:	Wolfe Ranch Dugout Treatment #4			
Replace Windows	\$ 500.00	EA	-	-
New Door	1,000.00	EA	0.5	\$ 500.00
Recondition Frame	300.00	EA	1	300.00
Replace Floor Boards	9.00	SF	-	-
Repair Railings	3.00	LF	-	-
Replace Post & Bracing	200.00	EA	-	-
Replace Stone Pier Foundation	400.00	CF	-	-
Replace/Patch Wood	25.00	SF	-	-
Level & Brace Foundation	20.00	LF	-	-
Pour New Foundation	135.00	CF	-	-
Patch Concrete Foundation	13.00	SF	-	-
Repair Stone Foundation	40.00	SF	50	2,000.00
Wood on Grade	27.00	LF	-	-
Foundation Drainage	20.00	LF	50	1,000.00
Refinish Windows	300.00	EA	-	-
Refinish Doors	400.00	EA	-	-
Refinish Siding	5.00	SF	-	-
Other:				
Repair Wall/FPL		LS		500.00
Epoxy Consolidant		LS		4,000.00
Termite		LS		3,000.00
Clean Up Site		LS		1,000.00
* Special Roof				
TOTAL COST PER BUILDING				\$ 22,604.00

SITE:	Wolfe Ranch Historic District				
BUILDING NAME:	Corral				
BUILDING NUMBER:	HS-3				
DESCRIPTION	COST		UNIT	BUILDING	
Square Ft (Unit)					
Repair/Replace Roofing*	\$ 14.00	SF	-	\$ -	
Roof Structural System	8.00	LF	-	-	
Replace Log Rafter Tails	8.50	LF	-	-	
Repair Log Rafter Tails	200.00	EA	-	-	
Replace Fascias	23.00	LF	-	-	
Replace Chimney	200.00	LS	-	-	
Repointing	10.00	SF	-	-	
Replace Deteriorated Caps	100.00	EA	-	-	
Repair Siding	6.00	SF	-	-	
Repair Board & Batten	6.00	SF	-	-	
Repoint Mortar Joints	8.00	SF	-	-	
Replace Brick	50.00	EA	-	-	
Replace Stone	400.00	CF	-	-	
Stucco	7.00	SF	-	-	
Round Log (Dutchman)	400.00	EA	-	-	
Round Log (Full Splice)	640.00	EA	-	-	
Replace Sill Log	1,000.00	EA	-	-	
Replace Mid-Wall	1,000.00	EA	-	-	
Replace Top Plate	1,000.00	EA	-	-	
Crown Ends (Saddle/Half)	325.00	EA	-	-	
Crown Ends (Dovetail)	475.00	EA	-	-	
Hewn Log Work	11.00	LF	-	-	
Replace Daubing	4.80	LF	-	-	
Replace Chinking	2.00	LF	-	-	
Repair Chinking	4.00	LF	-	-	
Replace Glass	65.00	EA	-	-	
Repair Sills/Sash	35.00	LF	-	-	

BUILDING NAME:	Wolfe Ranch Corral			
Replace Windows	\$ 500.00	EA	-	\$
New Door	1,000.00	EA	-	-
Recondition Frame	300.00	EA	-	-
Replace Floor Boards	9.00	SF	-	-
Repair Railings	3.00	LF	-	-
Replace Post & Bracing	200.00	EA	-	-
Replace Stone Pier Foundation	400.00	CF	-	-
Replace/Patch Wood	25.00	SF	-	-
Level & Brace Foundation	20.00	LF	-	-
Pour New Foundation	135.00	CF	-	-
Patch Concrete Foundation	13.00	SF	-	-
Repair Stone Foundation	40.00	SF	-	-
Wood on Grade	27.00	LF	-	-
Foundation Drainage	20.00	LF	-	-
Refinish Windows	300.00	EA	-	-
Refinish Doors	400.00	EA	-	-
Refinish Siding	5.00	SF	-	-
Other:				
Repair Wall/FPL		LS		
Repair/Replace Fence	20.00	LF	460	\$ 9,200.00
Clean Up Site		LS		\$ 3,000.00
TOTAL COST PER BUILDING				\$ 12,200.00