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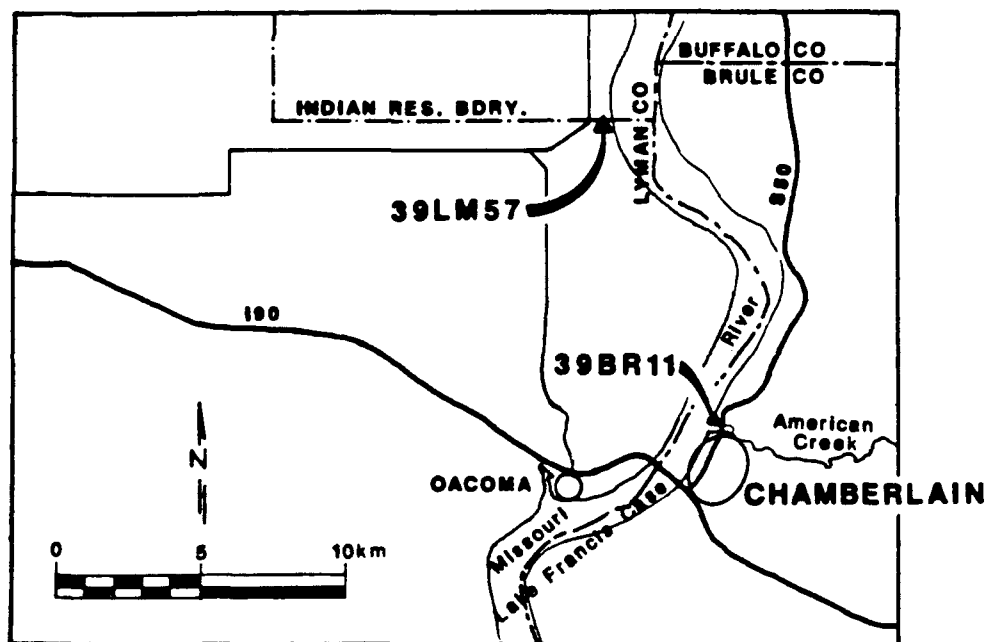
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Test Excavations At Sites 39BR11 and 39LM57 Brule And Lyman Counties, South Dakota

Final Report



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Huerfano Consultants, Inc.
Denver, Colorado

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ABSTRACT

Two sites, 39BR11 and 39LM57 were tested by Huerfano Consultants, Inc. of Denver, Colorado. This testing program produced the following results. Site 39BR11, or those portions tested proved to be sterile. On the other hand, site 39LM57 proved to be highly productive of cultural material. Evidence for prehistoric and historic occupations are present in the artifact inventory recovered during the course of this project. Documentary evidence exists that tends to identify this site with both Fort Lookout and Fort Kiowa. Based on our testing program and the literature search summarized in this document, Huerfano Consultants, Inc., recommends that site 39LM57 be nominated for placement on the National Register of Historic Places. At this time no management recommendations are made for further work at site 39BR11.

TEST EXCAVATIONS
AT
SITES 39BR11 AND 39LM57
BRULE AND LYMAN COUNTIES, SOUTH DAKOTA

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A special thanks to Ms. Margaret Goodrich, Librarian at the Frederick A. Douglas Library, Denver Art Museum, Denver, Co. for supplying space and research assistance for this project.

Finally, the biggest thanks goes to the crew members who participated in this project, archeology ultimately rests on the crew members back.

ABSTRACT

Two sites, 39BR11 and 39LM57 were tested by Huerfano Consultants, Inc. of Denver, Colorado. This testing program produced the following results. Site 39BR11, or those portions tested proved to be sterile. On the other hand, site 39LM57 proved to be highly productive of cultural material. Evidence for prehistoric and historic occupations are present in the artifact inventory recovered during the course of this project. Documentary evidence exists that tends to identify this site with both Fort Lookout and Fort Kiowa. Based on our testing program and the literature search summarized in this document, Huerfano Consultants, Inc, recommends that site 39LM57 be nominated for placement on the National Register of Historic Places. At this time no management recommendations are made for further work at site 39BR11.

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1.0 INTRODUCTION

Work for this project was performed under contract number DACW45- 86-M-2480 between the U.S. Army Corps of Engineers, Omaha District and Huerfano Consultants Inc. The purpose of the work was to meet the Omaha District's obligations to Federal preservation legislation and associated implementing regulations with respect to two previously recorded archeological sites (39BR11 and 39LM57) at Lake Francis Case, South Dakota.

The work undertaken by Huerfano Consultants consisted of five tasks. These included: site specific literature and records search; limited site mapping to determine site boundaries; and archeological excavation of features along the cutbank. This was followed by an analysis of diagnostic artifacts and the preparation of this report. Specific goals of the project included the relocation of both the positions and boundaries of the two sites, and determination of the nature of the deposits remaining therein. Huerfano Consultants was also charged with making recommendations concerning the possible need for future work at the two sites.

Immediately upon award of the contract, in September of 1986, the site specific literature and records search was undertaken by Huerfano Consultants. Repositories which were examined in the course of the contract included the South Dakota Archaeological Research Center, University of South Dakota; National Park Service, Midwest Archeological Center; National Park Service, Rocky Mountain Regional Office. The Omaha District Office, U.S. Army Corps of Engineers also supplied pertinent literature. Results of this records review are contained in the Previous Work chapter of this report.

As noted above, fieldwork performed for this project consisted of site mapping, surface collecting, and test excavation at both sites. This work was conducted from 19 to 29 October 1986. The crew for this consisted of E. Dederick Carrasco, Principal Investigator; Douglas C. McKay, Field Supervisor. Leann McClain, Elisa Keys, Katie Gofourth, and Reid Farmer served as Crew Members. In December of 1988, Dr. James Grady assumed the role of Co-principal Investigator. Information on this phase of the project is given in the Field Methods chapter of the report.

Analysis of artifacts recovered was conducted at the Huerfano Consultants laboratories located in Denver, Colorado, and Kemmerer, Wyoming. Laboratory analysis and initial report writing was conducted by Mr. McKay, Mr. Carrasco and Ms. McClain. Graphics work was done by David Walker, Elizabeth Kae Smith-McDonald, Mr. Carrasco and Ms. Keys.

Artifacts, original photographs, and field notes collected in the course of this project will be stored at the South Dakota Archaeological Research Center, Rapid City, South Dakota. These materials will, of course, remain the property of the United States Government.

The report which follows presents the results of the investigations conducted by Huerfano Consultants at the two sites and is organized in the following manner. Chapter One consists of this introductory statement. Chapter Two presents an overview of the sites' physical settings. Chapter Three provides an overview of prior work at the two sites under consideration. The information presented was collected in the course of the literature and records search. Chapter Four describes the fieldwork which was conducted for the project by Huerfano Consultants, Inc., and Chapter Five presents the results of the tests conducted at 39BR11. Chapter Six presents the analysis and descriptions of the features and

materials discovered in the course of the test excavations at site 39LM57. Chapter Seven deals with the fragmentary human remains recovered in the course of excavation. Finally, Chapter Eight summarizes the work that was conducted and presents Huerfano's recommendations for National Register eligibility and for future work at the two sites.

Appendix A, the analysis of the historic artifacts recovered at 39LM57, was written by Dr. Steve F. Mehls of Western Historical Studies, Inc. of Lafayette, Colorado. Appendix B contains the photographic plates of artifacts that illustrate this report.

2.0 ENVIRONMENT

2.1 GEOLOGY

Bedrock is made up by two major formations, the Niobrara chalk and the Pierre shale. The Niobrara is the older of the two and underlies the Pierre (Curtis 1950; Petsch 1951). These formations are Cretaceous in age and consist of fine-grained calcareous sedimentary rocks. This bedrock formation underlies the sites under consideration.

2.2 LOCATION AND PHYSIOGRAPHY

The project area (figure 1) is located in south central South Dakota in the physical division known as the Missouri River Trench. The trench bisects South Dakota running north-south but from Pierre south it trends to the southeast. The trench was formed marginal to a glacier that covered eastern South Dakota during the Wisconsin or the Illinoian epoch. The floor, flood plain and lower terraces of the trench average about two kilometers in width and the trench walls are about 100 to 150 meters high. These walls are cut by many small ravines hence the local name "the breaks" (Flint 1955; Warren 1952).

The specific landform where 39LM57 is located is the first terrace (Coogan's MT1, 1987) on the west bank of the Missouri River. This terrace's top surface at the site is 300m. in length running west-northwest from the cut-bank at the flood plain to a short slope of 45 degrees which begins the second terrace. The surface is generally flat, rising less than one degree of slope its entire length. The terrace surface in this area also serves as a divide between two unnamed ravines about 300m apart. The ravine to the south is about two

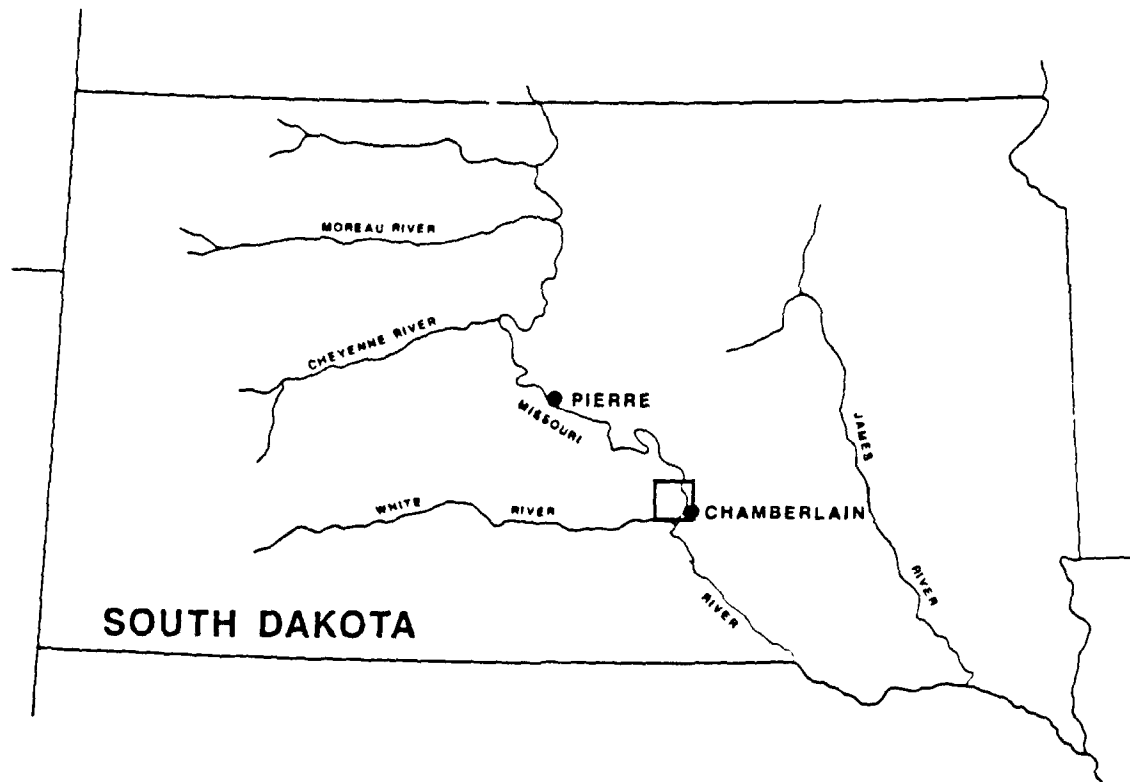
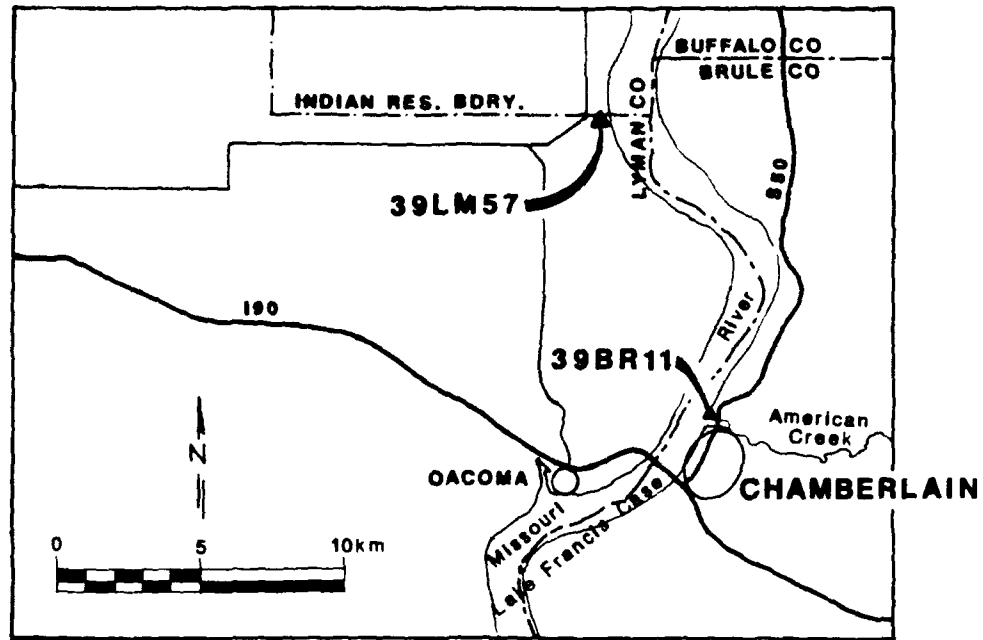


FIGURE 1: LOCATION OF PROJECT AREA
Figure 1, Project Area

miles in length and the one to the north is 50% longer. Drainages south of the site have shorter lengths because the western trench lip and the river are closer. The 1947 aerial photograph shows abandoned river channels closer to the site.

39BR11, if it still exists, is also located on the first terrace (again MT1, Coogan, 1987) on the east side of the Missouri River. The problems encountered by Huerfano consultants and the Corps of Engineers with this site are discussed in detail below.

The soil at 39LM57 is of the Carter Series which was defined by the Soil Conservation Service in 1984 as follows:

"The Carter series consists of deep, well drained and moderately well drained soils formed in clayey sediments on uplands. Permeability is very slow. Slopes range from 0 to 6 percent. Mean annual precipitation is about 20 inches and mean annual temperature is about 48 degrees F."

In terms of the Carter Series' geographical setting the Soil Conservation Service (1984) notes that these soils: "... are nearly level in slightly concave swales of the uplands and on long plane slopes."

Examination of the aerial photography provided by the U.S. Army Corps of Engineers, as well as examination of the soil at 39LM57 indicates there was little water induced sub-surface disturbance during the Holocene. This situation has changed drastically with the construction of the reservoir. The clay content of soil and underlying shale are being

eroded by wave action and the effects of the standing water from the lake.

2.3 CLIMATE

South Dakota has a continental climate. It is hot in the summer with temperatures reaching over 100° F on some days. The winters are very cold and arctic fronts can produce sub-zero temperatures. The average yearly precipitation is about 20 inches. Most comes as rainfall in the spring and early summer. The snowfall is light but there is an average of forty days a year with one inch or more of snow on the ground. The area is susceptible to blizzards, several of which occur each year (Soil Conservation Service 1983).

3.0 PREVIOUS WORK

In April of 1988, a literature and records search for sites 39BR11 and 39LM57 was ordered from the South Dakota Archaeological Research Center. The information obtained through this records search, as well as searches starting in 1986, conducted at the other sources mentioned above, revealed crucial data pertaining to the purpose and scope of work outlined in the Request for Quotation. Following is a description, on a site by site basis, of the previous work conducted at the two sites. Also included is a brief discussion of the general adequacy as well as the deficiencies of the work as specified in Article II (5) of the RFQ.

3.1 CULTURAL OVERVIEW

The prehistory of the study area can, for convenience sake, be divided into four main periods. These are the Paleo-Indian period, the Archaic period, the Plains Woodland period and the Plains Village tradition. These prehistoric periods are in turn followed by the contact period in which the role of Euro-American penetration and ultimate dominance of the Native American population by Euro-Americans becomes the dominant theme.

In general the periods mentioned above may be summarized as follows.

The Paleo-Indian Period

This period, ending about 6,000 B.C., is characterized by the hunting of the large animals of the Late Glacial and Post Glacial periods. The period is sub-divided on the basis of point typology and reliance on certain prey animals. Clovis points, for example, are usually associated with Elaphas, while the succeeding Folsom points are associated with Bison

antiquus.

Agate Basin, Angostura and Cody Complex points, often lumped under the general heading of Plano are associated with Bison occidentalis. In each sub-period the reliance seems to be on the largest animal present or available. This changes in the following period.

The Archaic Period

The Archaic tradition (Willey and Phillips 1958), and referred to by Lehmer (1971) as the Foraging period dates from 6,000 B.C. to 500 B.C.. It is marked by the shift in hunting emphasis from dependence on the Late Glacial and Post Glacial megafauna to the taking of modern game animals such as Bison bison, deer and elk.

Small game becomes more important and the presence of grinding stones argues for a greater reliance on plant material as a food source. There are many artifact styles associated with this period on the Plains, but in terms of life style they are, for the most part, variations on a theme.

Plains Woodland Period

Starting about 500 B.C., but with most dates in the Christian era, new ideas and concepts appear on the Plains and in the Middle Missouri valley. These include the appearance of pottery, the cultivation of some crops and the introduction of an elaborate burial rite. The burial rites are manifested in the erection of substantial burial mounds. The origins for all these new ideas is, of course, the Burial Mound Culture (Adena-Hopewell) of the eastern United States.

Plains Village Tradition

Spanning the period A.D. 900-1780 (Lehmer 1971:32) the Plains Village Tradition is marked by the establishment of large villages dependent on both gardening and hunting with, perhaps, gardening the more important of the two. If the Plains Woodland Tradition can be considered the attenuated manifestation of eastern Burial Mound culture on the

Plains, then the Plains Village Tradition can be considered the attenuated manifestation of the eastern Mississippian culture on the Plains.

In 1971, Don Lehmer produced a synthesis of cultural traditions for the Middle Missouri valley. This synthesis is summed up in the following table, Table 1.

Table 1 (Lehmer 1971)

Cultural traditions and variant in the Middle Missouri subarea.

Major Cultural Tradition (Pattern)	Tradition	Variant	Dates
		Disorganized	1780-1862
		Post-Contact	1675-1780
	Coalescent	Extended	1550-1675
		Initial	1400-1550
Plains Village		Terminal	1550-1675
	Middle Missouri	Extended	1100-1550
		Initial	900-1400

Detailed descriptions of each tradition and variant can be found in Lehmer (1971) and need not be repeated here. The middle Missouri Tradition represents the establishment of the overall Plains Village Tradition in the Middle Missouri Valley and the Coalescent Tradition is marked by the appearance of new traits in the Middle Missouri Valley (Central Plains Tradition) that have their origin in the Arkansas Valley to the south.

In the late 1700's smallpox, introduced by Euro-Americans into the New World, devastated the villages of the Middle Missouri valley. Trudeau in 1795 noted that the Arikara population had been dramatically reduced (Wedel 1960:203).

The late 1700's and early 1800's also saw the beginning of Euro-american penetration of the region. Beginning in the 1790's, Trudeau, Evans, D'Eglise of the Missouri Company

had been in the area and had written about it. Tabeau in 1803-1804, Lewis and Clark in 1804-1806, Bradbury and Brackenridge in 1811, Catlin in 1832, Maximillian in 1833-1834, Chardon in 1834-1839 and Culbertson in 1850 (Wedel 1960:203) all attest to the increasing penetration by Euro-americans and each left descriptions of the region that are invaluable sources of information about the Native American inhabitants of the region.

Concurrently with the Euro-american penetration, and due in part to the ravages of disease, and in part to Siouxan pressure, remnant populations formed large villages that were occupied well into the historic period; descendents of these people still occupy the area.

3.2 PREVIOUS WORK AT 39BR11

On June 26, 1947 Joe Bauxar and Paul Cooper (1947) recorded the site for the Smithsonian Institution, River Basin Surveys. Cooper and Bauxar recorded a series of five profiles of the cut bank of an old sand pit. These profiles revealed three separate stratigraphic horizons of cultural material buried beneath one to two feet of sterile overburden. They reported collecting samples of flint, sherds, and bone.

Unfortunately, no determination was made of the site size and no estimates of age and no analysis of the collected artifacts was attempted. The profile map (untitled map) for Profile 1(?), reveals some type of subsurface cultural anomaly which resembles a hearth or possibly a structure. This anomaly is located between 3 1/4 and 4 1/2 feet below the ground surface. No opinions were offered as to the nature or the age of this anomaly.

In conclusion, the investigations did provide limited vertical locational data. However, based on the documentation available, it is difficult to determine with any degree of confidence what was done, where it was done, and what was found.

In August of 1953, Harold A. Huscher (1953) of the Smithsonian Institution, River Basin Surveys, visited the site and opened three test units. These three test units measured 5x5 feet and were placed in the same vicinity as Cooper and Bauxar's profiles.

Huscher's test units yielded few artifacts. However an abundance of small diameter post holes were recorded. Unfortunately, Huscher did not profile any of the supposed post holes even after admitting that some were probably rodent burrows. The only profile drawn of the test units reveals a proliferation of bioturbation in the same level as that containing the post holes.

His supposition that the corner of an angular structure had been encountered is probably based on unsubstantiated data and poor field methods. He also failed to make any estimates as to size or age of the site.

In conclusion, Huscher's testing of the site yielded little additional information. No attempt was made to date or describe the occupational level or levels that were encountered.

In June of 1954, Paul L. Cooper (1954) of the Smithsonian Institution, River Basin Surveys, revisited the site. He excavated a trench approximately 3 feet wide and 140 feet long across the site. While it is difficult to tell from his notes, it would appear at least three 10x10 foot test units were also excavated. Cooper also reported that a sand pit

described by Huscher had been extended and that Huscher's excavation units were no longer intact.

Cooper found what appears to be two separate occupational levels at the site. The first occupational level, approximately 1 1/2 to 4 1/2 feet below ground surface, contained the majority of the cultural material. The second occupation level was found between 5 and 6 feet below ground surface. He reported that the extensive excavations recovered very few artifacts in general and no evidence of structural remains. Six basin-shaped hearths were found, as well as one roasting pit and one small bone scatter. Numerous rodent burrows were discovered, but no post molds were noted.

Cooper failed to provide a site sketch map with locational data regarding the placement of his excavation units. He also failed to address the age of the cultural components he excavated. He has provided a profile map which offers not only a good stratigraphic description of the depositional sequence of the site, but also an idea of the vertical extent of the cultural components he excavated. In conclusion, the 1954 Cooper excavations failed to properly address site dimensions and age.

In April of 1965, R.W. Neuman (1965) visited the site and photographed the cutbank of the river. He identified what he considered a cultural deposit of Plains Woodland material. No other information is available about this field visit. However, Neuman is the first investigator to assign any cultural affiliation to the site. It is not known what he based this determination on. The almost total lack of any documentation of this 1965 investigation renders any analysis of its adequacy impossible.

In 1978, Olson and Zimmerman (1979) of the University of South Dakota revisited the site area. They failed to find any cultural material and presumed that the site had eroded into the river.

In June of 1981, Tim Nowak of the Corps of Engineers (1985), examined an area south of 39BR11 that was to be impacted by boat ramp and parking lot construction. He reported finding features and artifacts 300 yards north of the proposed boat ramp. Based on the locational information, he assumed that the cultural material was part of site 39BR11.

The location of the site and description of observed cultural material is consistent with what has been previously recorded at 39BR11.

3.3 PREVIOUS WORK AT 39LM57

In September and October of 1950, T.R. Garth (1951) visited the site for the Smithsonian Institution River Basin Surveys. He recorded a historic and a prehistoric component on the site. Garth excavated a portion of the site and found what he interpreted to be a part of a stockade.

It is impossible to tell where on the site Garth excavated and to determine how large an area was excavated. No site map was drawn nor were any features profiled. Garth made no attempt to date the prehistoric component and suggests that the historic component is either the Fort Lookout Fur Trading Post or Military Post. He reports collecting gun flints, percussion caps, and a .45-75 cartridge and a Henry .44 cartridge. These artifacts suggest that at least two historic occupations occurred on the site. The rifle cartridges post-date both the Fort Lookout Trading Post and Military Post occupations.

In August of 1951, Carl Miller of the Smithsonian Institution River Basin Surveys visited the site. Miller excavated a large block area measuring approximately 70 X 100 feet. He uncovered what he believed to be four separate occupations. Miller felt that the data he recovered suggested a Woodland occupation followed by two historic occupations, i.e., Fort Kiowa, then Fort Lookout.

While Miller's excavations are more extensive than Garth's, the failure to include a site map makes it impossible to determine where on the site Miller excavated.

In November 1961, Harry Anderson published an article in Plains Anthropologist criticizing Miller's interpretation of the site. Anderson felt that Miller was wrong in interpreting the site as either Fort Lookout-II or Fort Lookout-Kiowa. While Anderson revealed some interesting historical documentation to support his claim that 39LM57 was neither of the Fort Lookouts Miller suggested, he did not offer any suggestion of what he felt the historic occupation at 39LM57 was.

On August 31, 1978, Joseph Lazio, an archeologist with the Corps of Engineers, prepared National Register Nomination forms for site 39LM57. In this nomination form, Lazio goes into great detail to outline the previous work conducted by Miller on the site. He outlines Miller's chronology and describes the problems this chronology presents. In addition, he proposes a more realistic chronology for the site. Unfortunately, the nomination forms were not filed at that time.

In 1983, Edward J. Lueck, (1984) published a paper in South Dakota Archaeology, further criticizing Miller's Fort Lookout-II designation at 39LM57. In agreement with Anderson, Lueck went a step further in suggesting that the historic occupation was actually Fort Lookout Military Post. Lueck interpreted Miller's Upper Republican rectangular house structure as the guard house for Fort Lookout Military Post. He suggested that the second historic occupation at the site was actually the White River Indian Agency.

In 1983, Winham and Lueck revisited the site for Augustana College. They mapped the areal extent of the site and identified features exposed in the cut bank. They produced an extensive records search of previous work and offered an accurate description of the cultural chronology of the site. The investigators believed the site to be eligible for nomination to the National Register of Historic Places and recommended immediate excavation. They also recovered a burial from the site (see Winham's 1983 "Report on the salvaging of Three burials exposed along the west bank of Lake Francis Case, North of Chamberlain, South Dakota).

Winham and Lueck were the first investigators to provide an accurate portrayal of the site. They tied together information from previous investigations at the site and produced much of the information which had been lacking for many years.

In July 1985, Tim Nowak (1985) of the Corps of Engineers revisited the site. He found features exposed in the cutbank, a slumping burial, which he salvaged, and an extensive amount of cultural material scattered along the beach. Nowak reported finding a large number of Post-Contact Coalescent period rim sherds, an occupation not previously identified by any of the prior investigators. He recognized that rapid erosion was destroying the site and recommended the site for immediate testing and salvage.

4.0 FIELD METHODS

Previous work conducted at both sites had identified features which were exposed in the cutbank profile. The Corps of Engineers selected one feature from 39BR11, and 9 features from 39LM57 to be excavated. The horizontal location of these features dictated where the units were to be placed and the number of units to be excavated. The vertical placement of the features dictated the maximum depth of each unit. In addition to the excavation, both sites were to be transit mapped and all surface artifacts plotted. Diagnostic artifacts found on the surface were to be collected.

The request for proposal outlined the field methods fairly specifically. The project was organized and budgeted according to Corps of Engineers requirements and specifications.

4.1 FIELD METHODS AT 39BR11

On October 22, 1986, Huerfano Consultants commenced work on site 39BR11 (Figure 2) and found that the site had been drastically altered. Prior to Huerfano Consultants' starting date, the Corps of Engineers had cut the terrace edge back and rip-rapped the exposed bank with large stones. This action had not only destroyed the one feature to be excavated, it rendered an examination of the bank for additional cultural material impossible. In an attempt to locate 39BR11 or any surviving vestiges of the site, a visual inspection of the presumed site area, covering some 25 acres, was undertaken. In the course of this inspection no cultural material was recovered. The fact that the presumed site area is a public recreational area, including picnic grounds, would tend to mitigate

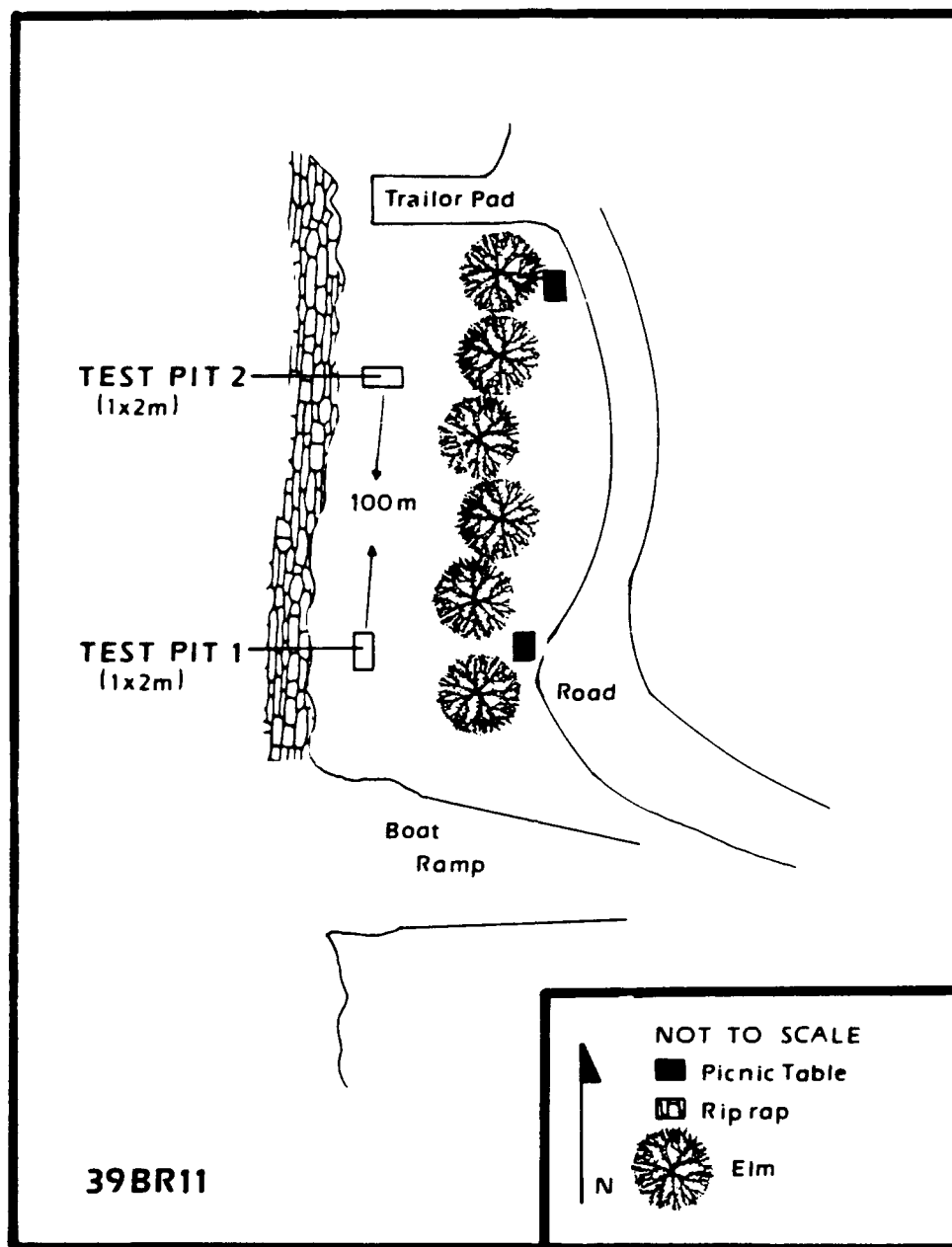


Figure 2, Site 39BR11. Layout of Test Units.

against the survival of any surface evidence. In other words, the site may very well be there, but there is no surface evidence to indicate either its size or extent.

With no surface or cutbank indications to guide test pit placement and after consultation with Becky Otto and Tim Nowak of the Corps of Engineers, Omaha District, it was agreed to change the testing program specified in the RFQ to the search for subsurface cultural material. The single 2x2 meter test unit, which the scope of work required, was changed to two 1x2 meter test units. On October 22, 1986, Corps of Engineers Ranger Dale Lundquist identified the general area to be tested.

On October 24, 1986, two 1x2 meter test units were excavated in arbitrarily placed units within the designated test area. These were excavated in 10 and 20cm levels to a maximum depth of 75cm below ground surface. All units were hand excavated using shovels and all fill dirt was dry screened through 1/4 inch wire mesh. No cultural material or indication of prehistoric or historic human activity were recovered in either test unit. At completion of the excavation, test unit walls were drawn and photographed in profile. Both units were back-filled by hand before leaving the site. A map (figure 2) indicates the test unit location.

4.2 FIELD METHODS AT 39LM57

On October 19, 1986, Huerfano Consultants conducted an extensive surface and shoreline inspection of 39LM57 (Figure 3). This inspection revealed that a large portion of the site had slumped into the reservoir. The original features which had been designated for excavation by the Request For Quotation were gone. However, new and previously

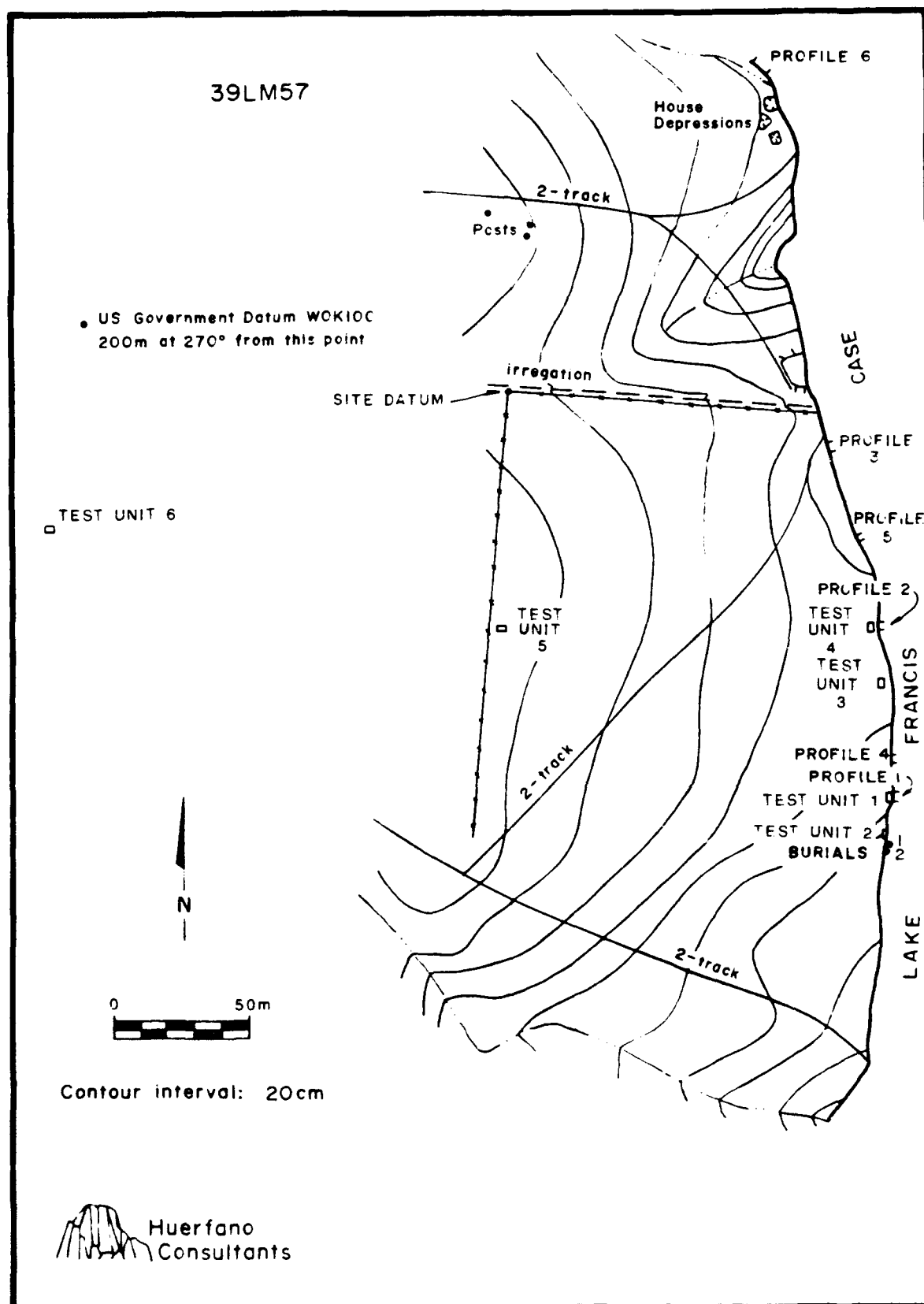


Figure 3, Site 39LM57. Layout of Test Units and Profiles.

unobserved features were now exposed. No surface artifacts were discovered on the terrace surface during the course of the inspection mentioned above. This situation required a reorganization of the testing strategy and field methods. After consultation with Becky Otto and Tim Nowak of the Corps of Engineers, Omaha District , it was agreed that a series of six 1x2 meter test units would be excavated on the site.

Four of the units were placed adjacent to the terrace edge (figure 3). Two of these four units would test the north/south (test pit 4, test pit 1, respectively) areal extent of the site, and two units were placed upslope and west of the terrace edge (test pits 5 and 6) to test the east/west areal extent of the site. In addition to the six excavation units a series of six units were profiled on the exposed cutbank (figures 13-18). These profiles were placed in areas of observable cultural material, and offer a vertical view of the site from present ground surface to subsurface sterile deposits. These profiles were also used to help define the northern boundary of the site.

The test units were excavated in arbitrary 10cm levels with the exception of one 20cm level in test unit 2. Shovels and trowels were used exclusively except for one level in test unit 2 where a small pick-mattock was used. All of the fill dirt was dry screened through 1/4 inch wire mesh.

In the test units, features were exposed to the maximum extent which occurred within the unit itself. The features were then drawn and photographed in plan-view and profile. A combination of pollen, flotation, and carbon-14 samples were taken when enough matrix and charcoal were present. One wood sample was taken from a post fragment in test unit 3.

In each of the six profiles, features were drawn and photographed in profile only. A combination of pollen, flotation, and carbon-14 samples were taken when enough matrix and charcoal were present.

Upon completion of the excavation, the site was mapped with a transit and stadia rod (figure 3). All test units, cutbank profiles and all pertinent topographic features were located on the map as well. Over 100 points were plotted on the site so that a contour map with 20cm intervals could be made. All test units were back filled by hand before leaving the site.

5.0 EXCAVATION AND ANALYSIS OF 39BR11

In this chapter we will examine the results of excavation and testing at site 39BR11. This will be accomplished by providing a descriptive statement about each test unit; a detailed soil description of each unit; an excavation level description listing all cultural materials recovered by level and finally a discussion as to each unit's cultural content and meaning.

5.1 39BR11 TEST UNIT ANALYSIS

5.1.1 ANALYSIS OF TEST UNIT ONE

Test Unit 1 was a 1x2m excavation unit with its long axis oriented north/south (Figure 2). Unit placement was chosen by the Corps of Engineers representative. It was approximately 25m east of the newly rip-rapped bank of Lake Francis Case Reservoir and approximately 75m north of the public recreation area marina. The unit was excavated in arbitrary 20cm levels to a maximum depth of 75cm below present ground surface (80cm below datum). Excavation was terminated at this point since it was obvious that we were digging in modern fill which contained a piece of red plastic, a filter from a filter-tipped cigarette (paper still fresh), and other non-collected modern rubbish.

Soil Stratigraphy: Only one soil stratum (figure 4) was identified and it seemed to be contemporary fill.

Stratum 1 Fill. 0-75cm thick, dark yellowish brown (10YR4/2).

Excavation Level Data: The unit datum was placed 5cm above present ground surface in the northwest corner. The surface is level. No cultural material was present on the surface.

Level 1 0-20cm below datum, 0-15cm below present ground surface.

Soil Stratum: 1.

Cultural Material: No cultural material recovered in this level.

39BR11 TEST UNIT 1

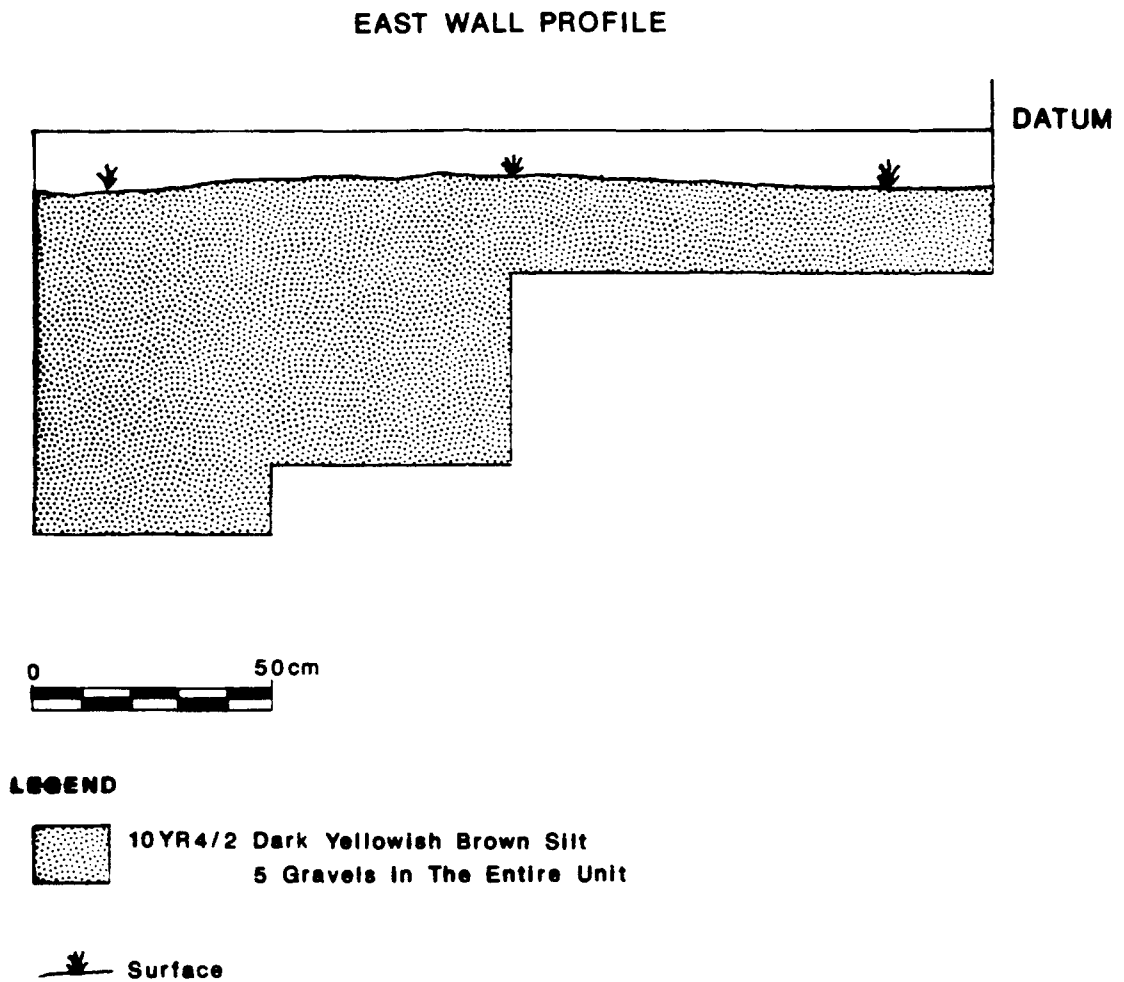


Figure 4, Site 39BR11. Profile Test Unit 1.

Level 2	20-40cm below datum, 15-35cm below present ground surface. <u>Soil Stratum</u> : 1. <u>Cultural Material</u> : Only modern trash was recovered which is totally consistent with modern fill.
Level 3	40-60cm below datum, 35-55cm below present ground surface. <u>Soil Stratum</u> : 1. <u>Cultural Material</u> : None.
Level 4	60-80cm below datum, 55-75cm below present ground surface. <u>Soil Stratum</u> : 1. <u>Cultural Material</u> : None.

Unit interpretation: Only modern trash was recovered in this unit. This is totally consistent with modern fill.

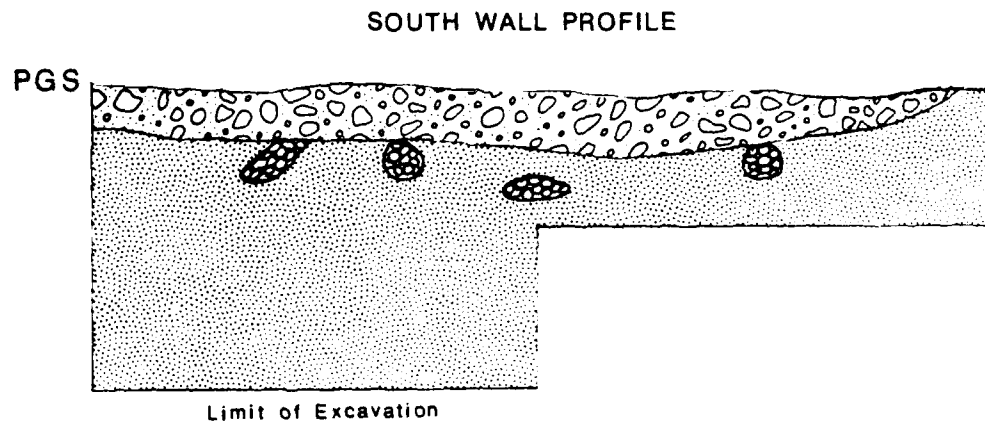
5.1.2 ANALYSIS OF TEST UNIT TWO

Test Unit 2 was a 1x2m excavation unit with its long axis oriented east/west (Figure 2) Placement of the unit was dictated by the Corps of Engineers representative. It was approximately 25m east from the newly rip-rapped bank of Lake Francis Case Reservoir and approximately 100m north of Test Unit 1. The unit was excavated in arbitrary 20cm levels to a maximum depth of 85 cm below datum. Excavation was terminated at this point since it was obvious that we were still digging in modern fill.

Soil Stratigraphy: Two soil strata were identified (fig. 5) and both seemed to be contemporary fill.

Stratum 1	Fill. 0-10cm thick, dark yellow brown (10YR4/2), with rounded gravel. Stratum 1 is a lense that covers only part of the surface of Stratum 2.
-----------	---

39BR11 TEST UNIT 2



LEGEND



Dark Yellow Brown w/ Rounded Gravel



Angular Gravel Lenses



5YR3/4 Moderate Brown



Datum in N.W. Corner of Test Unit

Figure 5, Site 39BR11. Profile Test Unit 2.

Stratum 2 Fill. 0-75+cm thick, moderate brown (5YR3/4), several small lenses of angular gravels were noted in the upper 10cm of the stratum and below stratum 1, as well.

Excavation Level Data: The unit datum was placed 10cm above present ground surface in the northwest corner. The surface is level. No cultural material was present on the surface.

Level 1 10-30cm below datum, 0-20cm below present ground surface.

Soil Stratum: 1 and 2.

Cultural Material: No cultural material recovered in this level.

Level 2 30-50cm below datum, 20-40cm below present ground surface.

Soil Stratum: 2.

Cultural Material: Again, only modern trash was recovered which is totally consistent with modern fill.

Level 3 50-70cm below datum, 40-60cm below present ground surface.

Level 4 70-85cm below datum, 60-75cm below present ground surface. This level consisted of a 50x50cm square by 15cm deep, shovel test. This level was placed in the southwest corner of level 3 of the test unit.

Unit Interpretation: As noted above, only modern trash was recovered. This is totally consistent with modern fill.

At this point the work specified by the Corps of Engineers was completed.

6.0 EXCAVATION AND ANALYSIS AT 39LM57

In this chapter, as in the previous chapter, we will examine the results of excavation and testing at site 39LM57. This will be accomplished by providing a descriptive statement about each test unit; a detailed soil description of each unit; an excavation level description listing all cultural materials recovered by level and finally a discussion as to each unit's cultural content and meaning. This will be followed by a discussion and description of the profiles drawn on the bank overlooking Lake Francis Case.

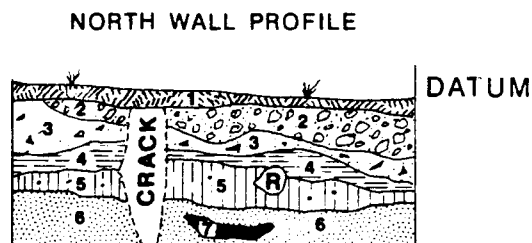
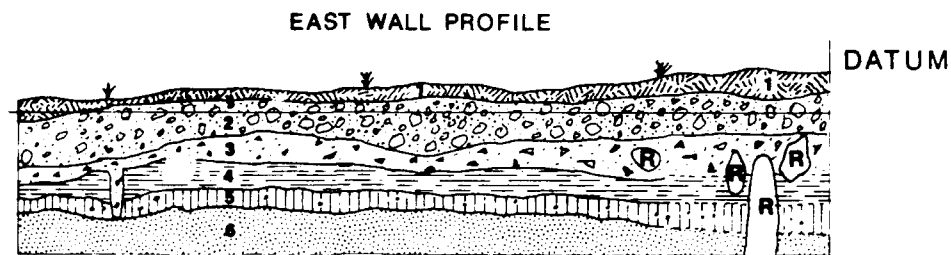
6.1 39LM57 TEST UNIT ANALYSIS

6.1.1 ANALYSIS OF TEST UNIT ONE

Test Unit 1 was a 1x2m excavation unit with its long axis oriented north/south (figure 3). The unit was placed adjacent to the terrace edge and directly above a structure-like feature observed in the cutbank profile (figure 13). The unit was excavated in arbitrary 10cm levels to a maximum depth of 45cm below present ground surface. Excavation was terminated at this point for safety reasons. A large and ever-widening crack developed in the floor of the unit threatening to exfoliate this area from the terrace.

Soil Stratigraphy: At termination of the unit, the north and east walls were profiled prior to backfilling. These profiles (figure 6) revealed six distinct strata. Four of these strata; 1, 4, 5 and 6, appear to be the result of horizontally laid deposits in a fluvial environment. However, two of these strata, 2 and 3, are undoubtedly cultural and probably represent an occupational level. In addition, Strata 1-5 constitute the A horizon while Stratum 6 represents the beginning of the B horizon. A description of each of the six strata follows:

39LM57 PROFILE UNIT 1



LEGEND

-  Surface
-  1 Root Zone
-  2 10YR4/2; Dark Yellowish Brown; Silty Loam With Numerous Gravels
-  3 10YR6/2; Pale Yellowish Brown Silty Loam Mottled, With Daub & Charcoal Flecks
-  4 10YR2/2; Dusky Yellowish Brown, Fine Grain Loamy Silt
-  5 10YR4/2; Dark Yellowish Brown Fine Grain Silty Loam, Very Few Gravels
-  6 5YR3/2; Greyish Brown Clayey Loam With Numerous Gravels
-  7 5YR2/1; Brownish Black; Loam Charcoal Stain
-  R Rodent

Figure 6, Site 39LM57. Profile Test Unit 1.

- Stratum 1 Root Zone. 2-7cm thick, predominantly 5cm thick. Loamy soil with numerous gravels.
- Stratum 2 9-17cm thick, predominantly 10cm thick. Dark yellowish/brown. Subangular to semi-Dark yellowish brown (10YR4/2) silty loam. Subangular gravels occur throughout the root zone (Stratum 1), and extend downward into the upper 5cm of Stratum 2.
- Stratum 3 10cm thick, predominantly 6-7cm thick. Pale yellowish brown (10YR6/2) silty loam, mottled with daub and flecks of charcoal. This stratum is a lens of cultural material (daub and charcoal) associated with Stratum 2 above. Two post molds were observed in this stratum. This suggests that Stratum 3 is possibly the floor of some structural feature.
- Stratum 4 3-8cm thick, predominantly 6-7cm thick. Dusky yellowish brown loamy silt.
- Stratum 5 Dark yellowish/brown (10YR4/2) fine-grained silty loam with an increasing gravel content. Gravels are very few in number and are associated with a thin, 3cm thick, CaCO₃ lens.
- Stratum 6 Grayish/brown (5YR3/2) clayey loam with numerous gravels. The soil has a "greasy" feel to it. There is a noticeable increase in artifact frequency below the upper 5-7cm of this stratum (see level discussion below).

Excavation Level Data: The unit datum was placed 10cm above present ground surface in the northwest corner. The surface of the unit rises gradually to the south and dips slightly to the east. This required that the first level be excavated from 6-10 cm in the northern portion of the unit and 14-15cm in the southern portion of the unit. No cultural material was present on the surface.

- | | |
|---------|--|
| Level 1 | 5-20cm below datum, 6-15cm below present ground surface.
<u>Soil Strata:</u> 1 and 2.
<u>Cultural Material:</u> This level produced daub, 5 pieces of unburned bone fragments, 1 Anderson Tool-Impressed rim sherd (Caldwell and Jensen 1969:112), 1 gun flint, 1 metal button, 2 staples, and 3 unmodified pebbles. |
| Level 2 | 20-30cm below datum, 16-25cm below present ground surface.
<u>Soil Strata:</u> 2, 3, and 4.
<u>Cultural Material:</u> This level produced 18 pieces of daub, 3 fragments of unburned bone (1 Bison phalange), 1 cord-impressed body sherd, 3 staples, and 1 square horseshoe nail. |
| Level 3 | 30-40cm below datum, 26-35cm below present ground surface.
<u>Soil Strata:</u> 3, 4, 5, and 6.
<u>Cultural Material:</u> This level produced 3 pieces of daub, 2 flakes, 1 body sherd (in two pieces), and 1 musselshell fragment. |

A small feature, feature 1 (Figure 7), was discovered in the northern 1/2 of the unit at 30-33cm below datum. In planview the feature measures 4x6cm and appears roughly circular. The feature is filled with daub and charcoal and corresponds with a similar feature observed in the east wall profile. Feature 1 is interpreted as being a post mold.

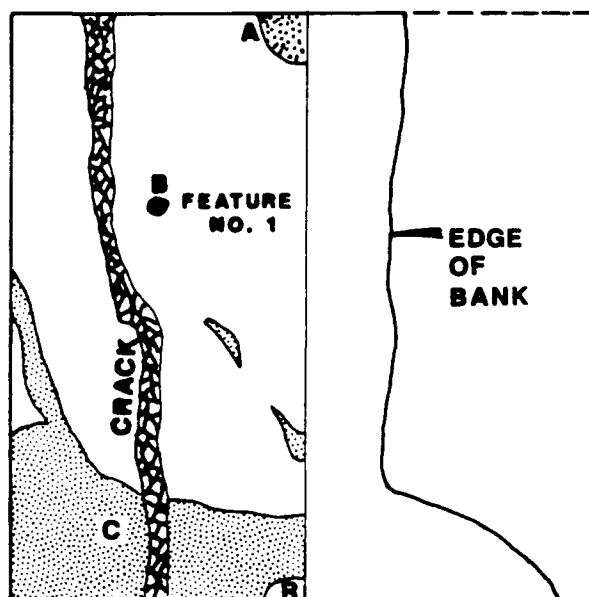
Level 4 40-50cm below datum, 36-45cm below present ground surface.
Soil Strata: 5 and 6.

Cultural Material: This level produced 7 body sherds (2 plain, 4 cord-roughened, and 1 cord-impressed), 1 flake, 2 bone fragments, and 1 piece of fire-cracked rock.

As noted above the unit was terminated at this point due to safety reasons.

Unit Interpretation: The data recovered from this unit indicates that two occupations are represented in the upper two levels and a third occupation is present in the lowest level.

The staples (Plate 1, Appendix B), nail, button, and gun flint (Plate 2, Appendix B) represent an historic occupation that might possibly correspond to or have been influenced by the Fort Lookout occupation. However, the ceramic artifacts found in the same levels as the historic artifacts date to a much earlier occupation.



PLAN VIEW

LEGEND

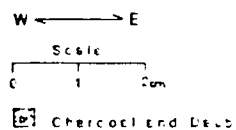
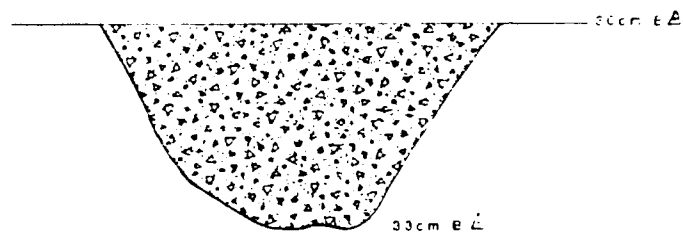
R Rodent Burrow

A 5YR2/2 Dusky Brown;
Continuation of 'Lens' in North Wall Profile

B 5YR2/2 Dusky Brown; Post Mold-Feature #1

C 10YR4/2 Dark Yellowish;
Possible 'Feature' Mottled Fill Rodent Burrow

A&B Matrix is a 'Cultural Fill' of Daub & Charcoal



FEATURE NO. 1

Figure 7, Site 39LM57. Test Unit 1, Feature 1.

The soil profiles suggest that Strata 2 represents the fill and Strata 3 the floor of an aboriginal structure. The only diagnostic aboriginal artifact from these strata (an Anderson Tool-Impressed rim sherd) (Caldwell and Jensen 1969:112), is indicative of an Initial Middle Missouri Tradition occupation. This would place the occupation of the house structure some 300-900 years before the occupation associated with the historic artifacts.

Soil profiles and lack of cultural material suggests that soil Strata 4 and 5 are culturally sterile and probably represent an alluvial depositional sequence on the site. Strata 6 appears to represent an earlier occupation. No diagnostic artifacts were recovered, however, the body sherds found in this level suggest a Woodland or Initial Middle Missouri Tradition occupation. (See Stratigraphic Record 1 for comparative data.)

6.1.2 ANALYSIS OF TEST UNIT TWO

Test Unit 2 was a 1x2 meter excavation unit with its long axis oriented north/south (figure 3). The unit was placed adjacent to the terrace edge and directly above a burial which was observed in the cutbank profile. The unit was excavated in arbitrary 10 cm levels to a maximum depth of 50cm below present ground surface. The unit was terminated at this point for safety reasons. A portion of the excavation unit fell away from the terrace. Large cracks developed in the unit threatening to exfoliate additional areas of the unit.

Soil Stratigraphy: No profile map was drawn for this unit due to the loss of a portion of the wall and continual "slumping" of the bank. The basic soil matrix of this unit is clay, with the southern half of the unit having a higher clay content than the northern half. Curiously enough, the majority of the cultural material appears to be coming from the

clayier matrix in the southern half of the unit.

Excavation Level Data: The unit datum was placed 10cm above present ground surface in the northwestern corner of the unit. The surface of the unit dips to the south. This required that the first level be excavated from 0-10cm in the northern half of the unit and 28-30cm in the southern half. No cultural material was present on the surface of the unit.

- | | |
|---------|--|
| Level 1 | <p>0-10cm below datum, 10-20cm below present ground surface.</p> <p><u>Soil Strata:</u> Unknown - clay matrix.</p> <p><u>Cultural Material:</u> This level yielded 24 pieces of daub, 3 pieces of lithic debitage (1 quartzite, 1 chert, 1 Knife River flint), 1 possible utilized flake, and 1 body sherd. Small amounts of fire-cracked rock, charcoal, and unidentifiable fragments of animal bone were present but not collected due to their nondiagnostic nature. These fragments were nothing more than small splinters of larger and incomplete bone material.</p> |
| Level 2 | <p>20-30cm below datum, 2-30cm below present ground surface.</p> <p><u>Soil Strata:</u> Unknown - clay matrix.</p> <p><u>Cultural Material:</u> This level yielded 1 quartzite flake, 2 body sherds (3 pieces), and 7 fragments of unburned bone. Small amounts of daub, charcoal, and fire-cracked rock were present but not collected.</p> |

- Level 3 30-40cm below datum, 10-30cm below present ground surface.
Soil Strata: Unknown - clay matrix, CaCO₃ in N 1/2.
Cultural Material: This level yielded 5 fragments of unburned bone, 3 ceramic body sherds (2 cord-roughened, 1 smoothed?), and 1 chert primary flake. An ash stained area was observed in the west wall profile in the north 1/2 of the unit. Flecks of charcoal were observed in the north 1/2 as well. A light scatter of daub was noted throughout the unit.
- Level 4 40-50cm below datum, 20-40cm below present ground surface.

Soil Strata: Unknown - clay matrix, CaCO₃ in N 1/2
Cultural Material: This level yielded 2 fragments of unburned bone, 1 plate metal fragment with two drilled holes (possible brace or hinge fragment), and a light scattering of daub.
- Level 5 50-70cm below datum (N 1/2 only), 30-50cm below present ground surface.

Soil Strata: Unknown - clay matrix.
Cultural Material: This level yielded no cultural material. Some charcoal flecking was noted; however, this is probably due to the downward movement of artifacts through cracks in the soil structure.

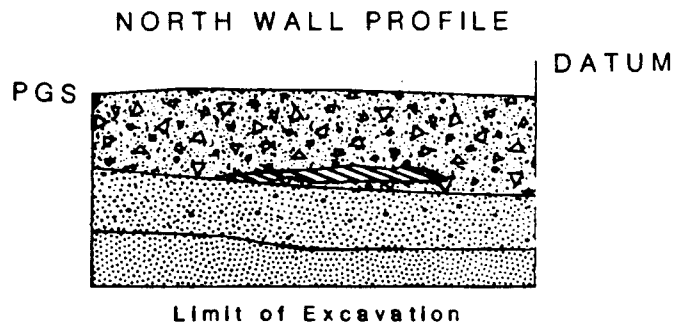
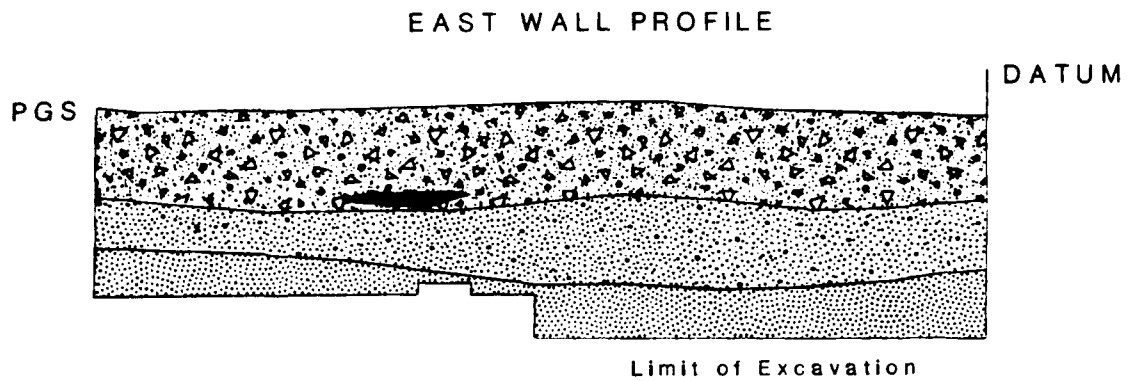
Excavation of the unit was terminated at this point.

Unit Interpretation: This unit was excavated in an attempt to locate the burial pit associated with the human remains observed in the cut bank. Unfortunately, no pit or similar feature was positively identified. The failure to discover the feature was the result of the natural "slumping" and exfoliating tendencies of the soil. However, based on the data recovered from this unit it appears that a burial pit or shaft was encountered. The presence of a higher clay content and artifacts in the S 1/2 of the unit coupled with the presence of a CaCO₃ lens only in the N 1/2 of the unit, suggests an intrusive subsurface disturbance is present in the N 1/2 of the unit. This may have been the result of a burial pit.

6.1.3 ANALYSIS OF TEST UNIT THREE

Test Unit 3 was a 1x2m excavation unit with its long axis oriented north/south (figure 3). The unit was placed approximately 2 meters west of the terrace edge and 45 meters north of Test Unit 1. This unit was not designed to test any cultural phenomenon observed in the cutbank. The placement of this unit was designed to test an area of the site between Test Unit 1 and the boundary of the Lower Brule Reservation (the authorized limit of our testing).

The unit was excavated in arbitrary 10cm levels to a maximum depth of 50cm below present ground surface. The unit was terminated at this point after having determined the presence and nature of an intact, significant, prehistoric structural feature. **Soil Stratigraphy:** At termination of the unit the north and east walls were profiled prior to backfilling. These profiles (figure 8) revealed three distinct strata. Of the the three strata, Stratum 2 appears to be the remains of a prehistoric structure and is cultural in



Legend

-  Dark Yellow with Daub
-  Darker Yellow with Brown Clay
-  Pale Yellow with Brown Clay
-  Ash Lense
-  Charcoal Lense

Figure 8, Site 39LM57. Profile Test Unit 3.

origin. Additionally, Stratum 1 represents the A horizon and Strata 2 and 3 represent the B horizon. A detailed description of the three strata follows.

- | | |
|-----------|---|
| Stratum 1 | Moderate brown (5YR3/4) silty loam. 20-25cm thick. This strata includes the root zone. |
| Stratum 2 | Dark dusky brown (5YR2/2) clayey loam. 10-20 cm thick. This strata represents the remains of a prehistoric structure. |
| Stratum 3 | Pale yellow/brown clay. 12-20cm thick. |

Excavation Level Data: The unit datum was placed 5cm above present ground surface in the northwest corner. The surface of the unit dips gradually to the south and east. This required that the first level excavated be 1-2cm thick in the S 1/2, and 4-5cm thick in the N 1/2 of the unit. No cultural material was present on the surface.

- | | |
|---------|---|
| Level 1 | 5-10cm below datum, 0-5cm below present ground surface.
<u>Soil Stratum:</u> 1.
<u>Cultural Material:</u> This level produced 1 piece of daub, 1 body sherd with incised lines, and a few small fragments of fire-cracked rock. |
|---------|---|

- | | |
|---------|--|
| Level 2 | 10-20cm below datum, 5-15cm below present ground surface.
<u>Soil Stratum:</u> 1.
<u>Cultural Material:</u> This level produced a light scatter of daub and charcoal flecks which increased in frequency with depth. In addition, five pieces of lithic debitage, one side scraper in two pieces, four undecorated body sherds, thirteen fragments |
|---------|--|

of bone, one musselshell fragment, one metal staple, two square nails, and three fragments of an historic clay pipe (Plate 3, Appendix B) were discovered.

Level 3

20-30cm below datum, 15-25cm below present ground surface.

Soil Strata: 1 and 2.

Cultural Material: This level produced seventeen pieces of lithic debitage, one Anderson Tool-Impressed (Caldwell and Jensen 1969:111) rim sherd, one ceramic node fragment, twenty-three body sherds (15 cord roughened, 1 cord impressed, 6 untreated, and 1 unknown), one end scraper, one side scraper, one mussel shell fragment, one piece of fragmented granite, and three small fragments of fire-cracked rock. A general scatter of daub, charcoal and fire-cracked rock was noted throughout the unit as well.

Two charcoal lenses were observed in this level. The first lens was noted in the north wall of the unit at 20-24cm below datum. This charcoal lens was 45cm in length, and ranged from 1-4cm in width. No samples were taken from this lens. The second charcoal lens was discovered at 25-42cm from the north wall in the northeast corner of the unit. This charcoal lens was 30cm in length and 1-4cm in width. Like the first lens it was located between 20-24cm below datum. A charcoal sample for C- 14 dating was taken from this second lens. The remainder of the fill was collected as a bulk soil sample.

Level 4 30-40cm below datum, 25-35cm below present ground surface.

Soil Stratum: 2.

Cultural Material: This level produced twelve pieces of lithic debitage, one end scraper, two pieces of daub, twenty-two pieces of fragmented bone, twenty-two body sherds (9 cord roughened, 6 cord roughened and smoothed, 6 untreated, and 1 unknown), and a general scatter of fire-cracked rock and charcoal.

Level 5 40-50cm below datum, 35-45cm below present ground surface.

Soil Stratum: 3.

Cultural Material: This level produced twenty-four fragments of bone, two musselshell fragments, seven pieces of lithic debitage, one Stuart Horizontal Incised rim sherd (Caldwell and Jensen 1969:44), fifteen ceramic body sherds (3 cord roughened, 5 cord roughened and smoothed, 4 smoothed, and 3 unknown), burned hulls, and charcoal. In addition to the artifact material recovered, two features and one ash-stained area were encountered.

Feature 3 (figure 9) is a post mold found in the east wall of the unit. A fragment of the post was collected. Feature 4 (figure 9) is a hearth found in the west wall. Five pieces of fire-cracked rock were observed surrounding a dark ash-stained area. A charcoal sample was taken from the feature for C-14 dating. This sample contained one cord roughened

39LM57 TEST UNIT 3

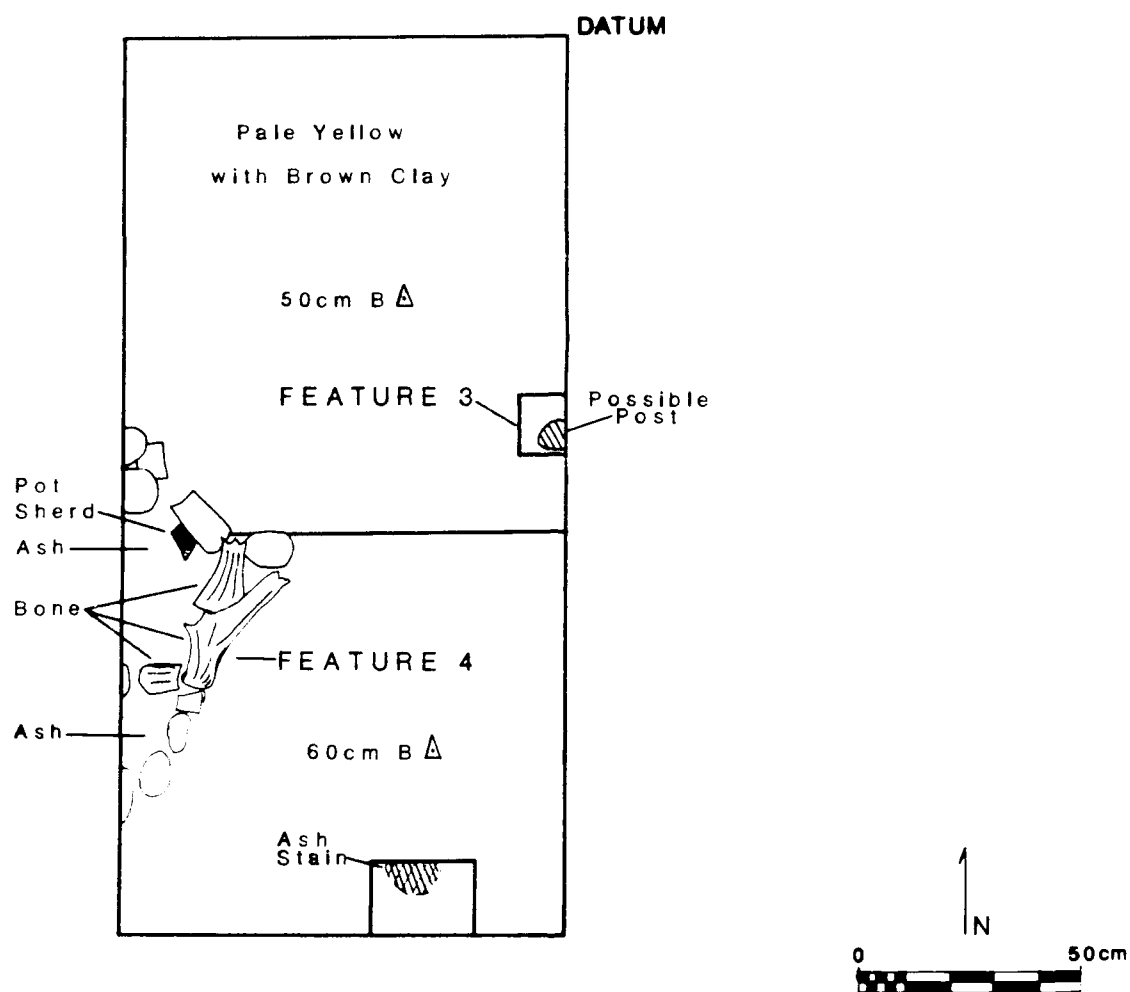


Figure 9, Site 39LM57. Features 3 & 4.

body sherd and approximately twelve fragments of Bison rib bone. An additional ash-stained area was discovered on the southern edge of the unit. It is believed this stain represents an additional post mold.

Level 6 50-60cm below datum, 45-55cm below present ground surface.

Soil Stratum: 3.

Cultural Material: This level produced one knife tip, one end scraper, three cord roughened body sherds, and two bone fragments.

The remainder of Feature 4 (figure 9) was excavated in this level. The artifacts were bagged separately from those recovered in the general level. Feature 4 was a hearth which had been lined with rock and large bison bone (a radius and ulna each from two separate individuals). No charcoal was recovered from the feature; however, the entire fill was collected for flotation. The feature contained one Anderson Plain rim sherd, one rim sherd from a miniature vessel of unknown type, twelve body sherds (11 cord roughened, 1 smoothed), one unidentifiable fragment of pottery, two retouched flakes with possible graver spurs, and nine fragments of bone.

Excavation of the unit was terminated at this point due to contractual obligations. As noted earlier, the purpose of this testing program was to determine site boundaries and the presence or absence of subsurface material. Once this determination was made no further work was deemed necessary.

Unit Interpretation: The data recovered from this unit indicates that at least two separate occupations are occurring on the site in the vicinity of this test unit. The first occupation is an aboriginal settlement dating to the Initial Middle Missouri Tradition (A.D. 900-1400). The second occupation is a Euro-American settlement dating to the early part of the 19th century.

Stratigraphic Level 1, 0-15cm, below present ground surface, produced a mixture of historic and prehistoric artifacts that were recovered in the screening process. The square nails, staples, and clay pipe fragments represent an historic occupation (Plate 1 & 3) that might possibly be associated with the Fort Lookout Military Post. The small amount of aboriginal cultural material produced in this level may be the result of a general churning effect in the soil.

Stratigraphic Level 2, 20-40cm, below present ground surface, produced a large amount of prehistoric cultural material. The presence of two post molds, a hearth, and two ceramic rim sherds, suggests that this stratigraphic level represents the floor and fill of an Initial Middle Missouri Tradition house.

6.1.4 ANALYSIS OF TEST UNIT FOUR

Test Unit 4 was a 1x2 meter excavation unit with its long axis oriented east/west (figure 3). The unit was placed two meters west of the terrace edge, and twenty-five meters north of Test Unit 3. This unit was not designed to test any cultural phenomenon observed in the cutbank profile. Rather it was designed to test an area of the site between Test Unit 3 and the Lower Brule Indian Reservation boundary (the authorized limits of our excavations).

The unit was excavated in arbitrary 10cm levels to a maximum depth of 30cm below present ground surface. The unit was terminated at this point as it became apparent that the edge of a large feature which lay to the west had been encountered.

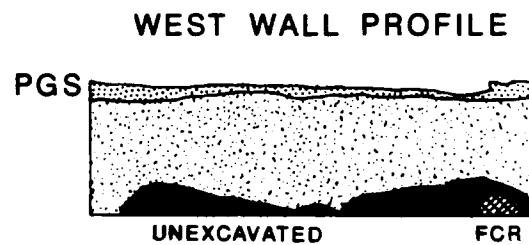
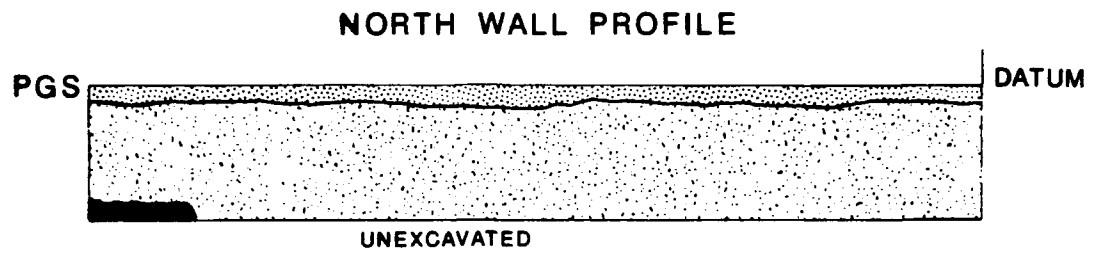
Soil Stratigraphy: At termination of the unit, the north and west walls were profiled prior to backfilling. These profiles (figure 10) revealed three distinct strata. Stratum 1 represents the root zone and stratum 2 represents a horizontally laid fluvial deposit. Stratum 3 is undoubtedly cultural and represents the edge of a midden, house, or similar feature. All three strata are in the A horizon. A description of three strata follows.

Stratum 1	Root zone - 5-7cm thick, dusty brown	5YR3/4 loam.
Stratum 2	23-26cm thick, moderate brown	5YR2/2 silty loam.
Stratum 3	2-9cm thick, olive black 5YR2/1 clayey loam.	

Excavation Level Data: The unit datum was placed 10cm above present ground surface in the northwest corner of the unit. The ground surface was fairly level. No cultural material was present on the surface.

Level 1	8-20cm below datum, 10-20cm below present ground surface.
	<u>Soil Strata:</u> 1 and 2.
	<u>Cultural Material:</u> This level produced 1 piece of daub, 1 bivalve shell fragment, 2 pieces of lithic debitage, 3 body sherds (1 cord roughened, 2 smoothed), 2 pieces of fire-cracked rock,

39LM57 TEST UNIT 4



LEGEND

-  5YR2/2 Dusky Brown Loam Root Zone
-  5YR3/4 Moderate Brown Silty Loam
-  5YR2/1 Olive Black Clayey Loam

Figure 10, Site 39LM57. Profile Test Unit 4.

and one piece of barbed wire.

Level 2 20-30cm below datum, 10-20cm below present ground surface.

Soil Strata: 2 and 3.

Cultural Material: This level produced 1 side-notched arrow point, 1 biface fragment, 12 pieces of unburned bone (bird and mammal), 1 granitic fragment, 7 pieces of lithic debitage, 12 pieces of fire-cracked rock, 16 body sherds (6 cord roughened, 4 cord roughened and smoothed, 6 smoothed), 1 rim sherd in two pieces (Marken Horizontal Incised) (Caldwell and Jensen 1969:40), 1 piece of window pane glass, 1 piece of wire, one metal bracket fragment, and one clay pipe bowl fragment.

Excavation of the unit was terminated at this level. Reasons for termination are discussed above (Test Unit Three).

Unit Interpretation: The data recovered from this unit indicates that two occupations have occurred on the site. The earlier occupation dates to the Initial Middle Missouri Tradition. The late occupation dates to the first half of the 19th century and is possibly associated with the Fort Lookout Military Post.

The artifacts from this unit suggests that two occupations are churned together. This is particularly true of the upper 20cm. The presence of a feature-like stain in the southwest corner of the unit, and an increase in artifacts from that corner, suggests that an aboriginal structure or midden exists just southwest of this unit. The data from this unit

is interpreted as indicating that the unit was placed on the edge of a midden or structure. In addition, this unit is interpreted as indicating the presence of intact, buried structures and or middens in this area of the site.

6.1.5 ANALYSIS OF TEST UNIT FIVE

Test Unit 5 was a 1x2 meter excavation unit with its long axis oriented east/west (figure 3). The unit was placed 145 meters west of the terrace edge and adjacent to a north/south running barbed wire fence. The unit was placed in this location to test for the western boundary of the site. The unit was excavated in arbitrary 10cm levels to a maximum depth of 16cm below present ground surface. At this point, the western 1/2 (1x1m) of the unit was excavated in an arbitrary 20cm level. The unit was terminated at this point after encountering a sterile soil horizon.

Soil Stratigraphy: At termination of the unit, the south wall was profiled (figure 11) prior to backfilling. This profile revealed two distinct strata. Both strata appear to be the result of horizontally laid deposits in a fluvial environment. Stratum 1 constitutes the A horizon and stratum 2 is the beginning of the B horizon. Following is a description of the soils.

Stratum 1	0-30cm below present ground surface, dark yellow brown (5YR5/2) clay.
Stratum 2	30-35cm below present ground surface, pale brown (5YR5/2) clay.

39LM57 TEST UNIT 5

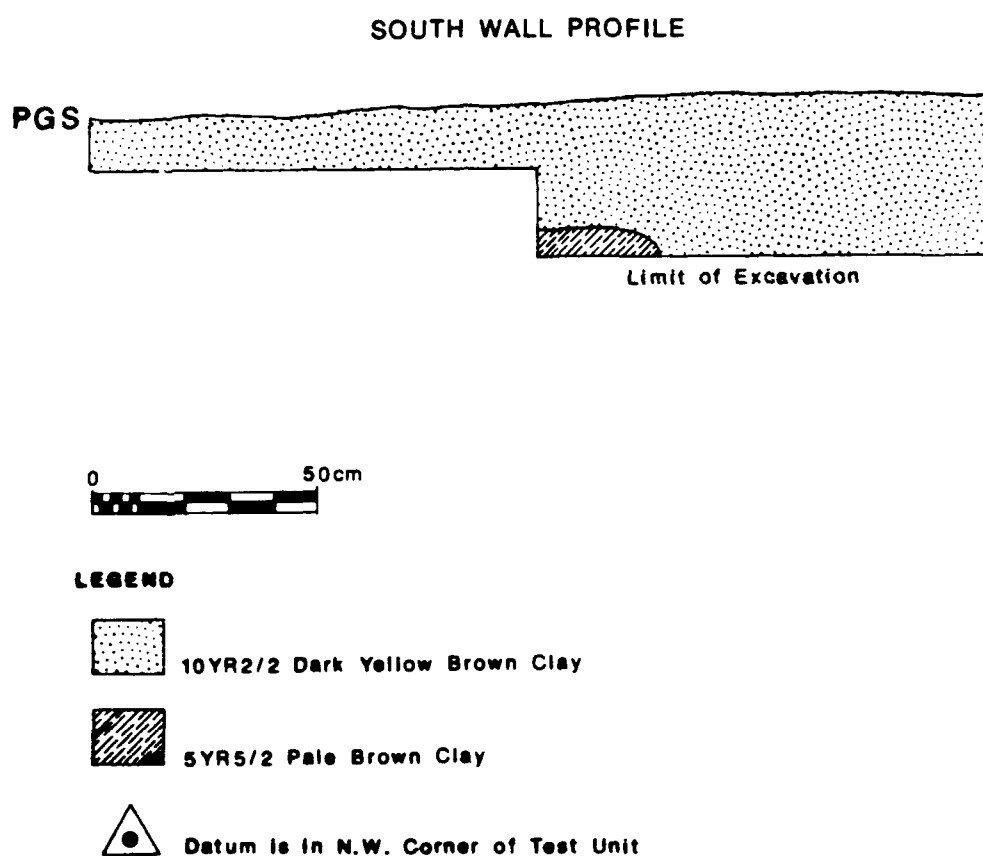


Figure 11, Site 39LM57. Profile Test Unit 5.

Excavation Level Data: The unit datum was placed 6cm above present ground surface in the northwest corner of the unit. The surface of the unit was fairly level. No cultural material was present on the surface.

- | | |
|---------|---|
| Level 1 | 3-10cm below datum, 5-7cm below present ground surface.
<u>Soil Stratum:</u> 1.
<u>Cultural Material:</u> No cultural material was recovered from this level. |
| Level 2 | 10-20cm below datum, 7-17cm below present ground surface.
<u>Soil Stratum:</u> 1.
<u>Cultural material:</u> This level produced one undiagnostic historic body sherd, 1 piece of historic ceramics, and 3 pieces of bottle glass. |
| Level 3 | 20-40cm below datum, 17-35cm below present ground surface, (west 1/2 only).
<u>Soil Strata:</u> 1 and 2.
<u>Cultural Material:</u> No cultural material was recovered in this level. |

Excavation of the unit was terminated at this point.

Unit Interpretation: The data recovered from this unit indicated that a single occupation is present in this area of the site. This historic occupation is hard to date from

the scanty artifacts present, however, it appears to date to the late part of the 19th century. It would appear that the prehistoric component does not exist in this area.

6.1.6 ANALYSIS OF TEST UNIT SIX

Test Unit 6 was a 1x2 meter excavation unit with its long axis oriented north/south (figure 3). The unit was placed 310 meters west of the terrace edge in an attempt to test for the western boundary of the site. The unit was excavated in arbitrary 10cm levels to a maximum depth of 30cm below present ground surface. Upon encountering the basal clay horizon in this area, the unit was terminated.

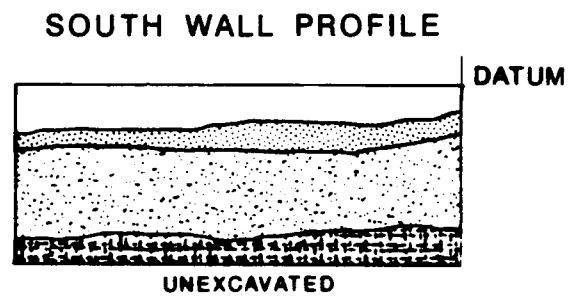
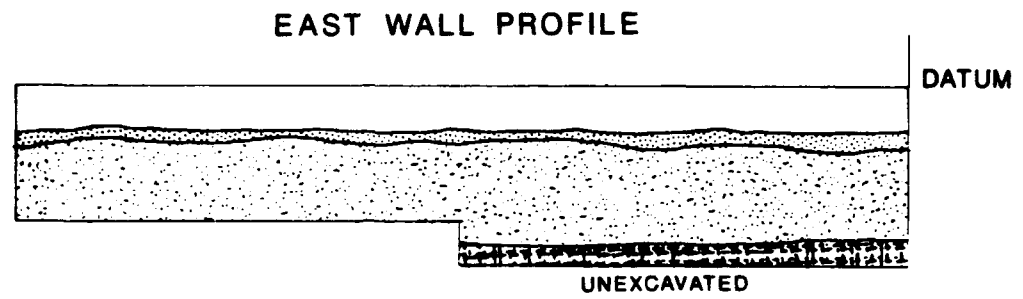
Soil Stratigraphy: At termination of the unit the south and east walls were profiled (figure 12) prior to backfilling. These profiles revealed two distinct strata. Stratum 1 constitutes the A horizon and Stratum 2 is the B horizon. Following is a description of the two strata.

Stratum 1	25cm thick, dusky brown (5YR2/2) silty loam.
Stratum 2	5cm thick, strong brown (5YR3/3) clay.

Excavation Level Data: The unit datum was placed 10cm. above present ground surface in the northwest corner. The surface of the unit was level. No cultural material was observed on the surface.

Level 1	10-20cm below datum, 0-10cm below present ground surface.
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39LM57 TEST UNIT 6



LEGEND

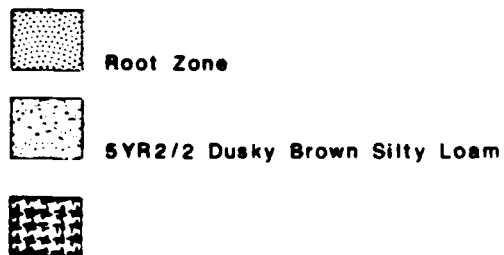


Figure 12, Site 39LM57. Profile Test Unit Six.

Soil Strata: 1.

Cultural Material: No cultural material was recovered in the level.

Level 2

20-30cm below datum, 10-20cm below present ground surface.

Soil Stratum: 1.

Cultural Material: This level yielded a small amount of daub-like material. The small fragments may be brick or burned mud from an historic log structure. No other cultural material was observed.

Level 3

30-40cm below datum, 20-30cm below present ground surface.

Soil Strata: 1 and 2.

Cultural Material: No cultural material was recovered from this level.

Excavation of the unit was terminated at this point.

Unit Interpretation: The data recovered from this unit indicates that the prehistoric component does not extend this far west. The material recovered from this unit is of unknown cultural affiliation and appears to have been deposited by plowing.

6.2 PROFILES FROM CUTBANK AT 39LM57

A series of stratigraphic profiles were drawn at a series of locations along the cutbank overlooking Lake Francis Case (fig. 3). All profiles were 2 meters wide and varied in

depth from 110 to 170cm below present ground surface. Wave action and changing water levels had created an erosional notch underlying profiles 1, 2, 3, and 4. The overhang created by this notch, ranging in depth from .5 meters to 1.5 meters, presented a safety hazard to the crew working there. There were no hazards in the areas where Profiles 5 and 6 were located.

It is important for the reader to remember that the profiles were drawn to record stratigraphic levels and, consequently, were not excavated by archeological level. Therefore, the following description is primarily of stratigraphic levels. When archeological material was recovered, its appearance was related to its appropriate stratigraphic position.

An examination of these stratigraphic profiles reveal five separate cultural features. Profile 1, (figure 13) provided evidence of a possible floor and hearth. In profile 2, (figure 14) a hearth feature with fire-cracked rock, an ash stain, and some non-diagnostic pot sherds were located on a possible living surface. Profile 3, (figure 15) contained a bell-shaped cache pit. In profile 4, (figure 16) a floor and pit were identified. And, finally, in profile 5, (figure 17) a ash lens was noted. No architectural features were noted in profile 6 (figure 18).

The method for selecting profile positions was as follows. Profiles 1 and 6 were chosen to represent the southern and northern perimeters of the site, respectively. The remaining profiles were placed in those locations that seemed to have, in the judgment of the field personnel, the greatest potential to provide useful information.

STRATIGRAPHIC PROFILE, WEST WALL OF CUTBANK, 39LM57, PROFILE 1

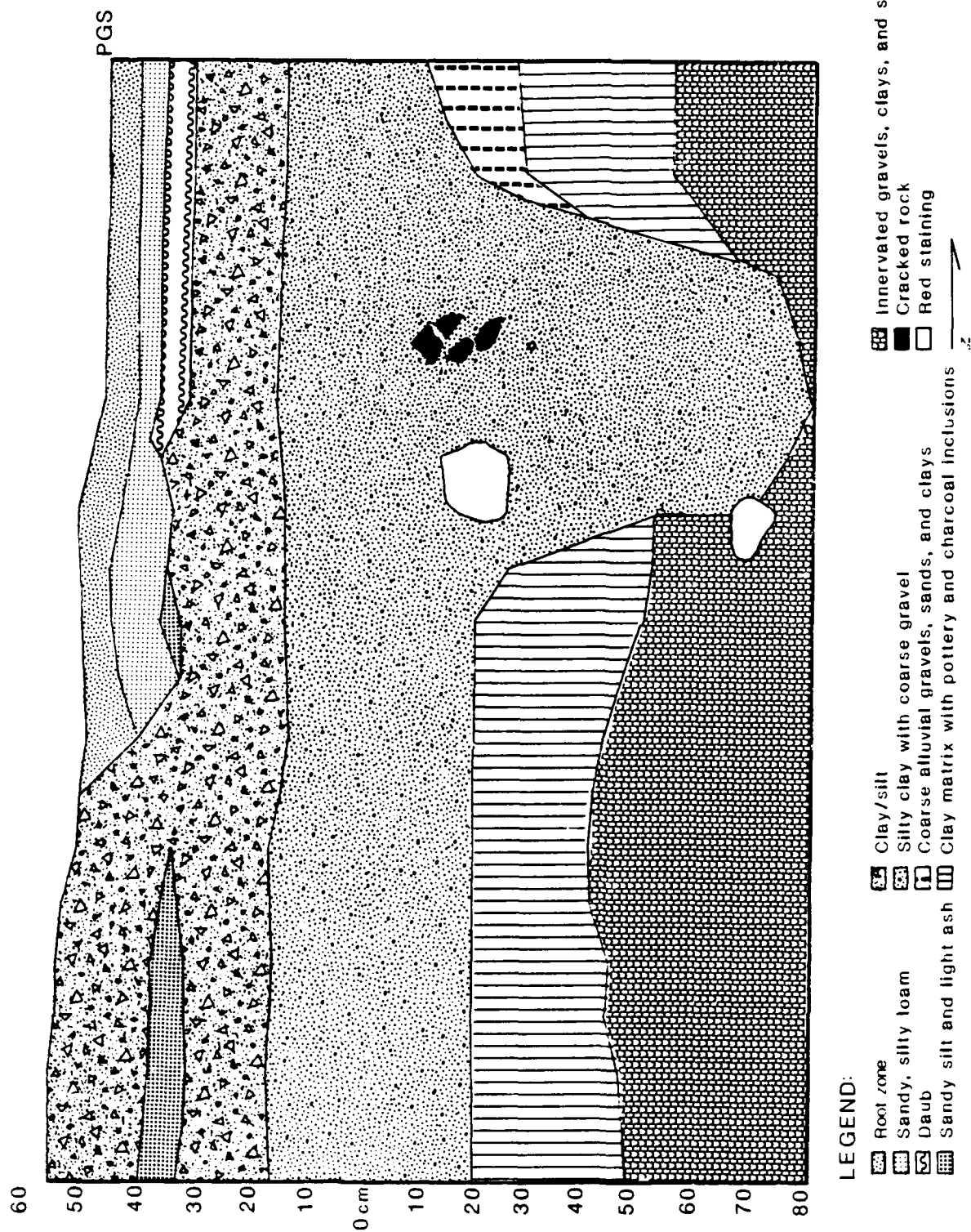


Figure 13, Site 39LM57. West Wall Profile 1.

STRATIGRAPHIC PROFILE, WEST WALL OF CUTBANK, 39LM57, PROFILE 2

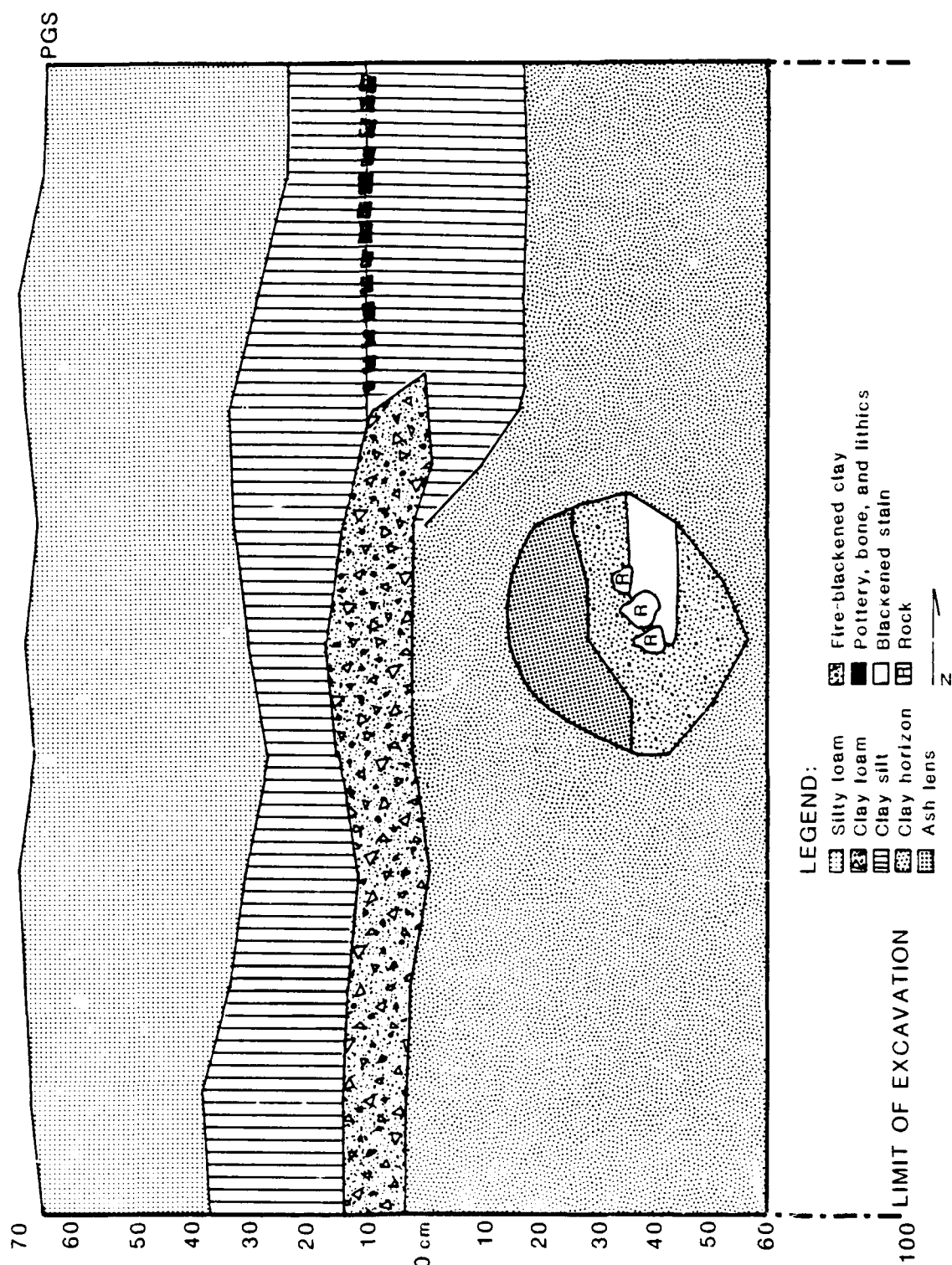


Figure 14, Site 39LM57. West wall Profile 2.

STRATIGRAPHIC PROFILE, WEST WALL OF CUTBANK, 39LM57, PROFILE 3

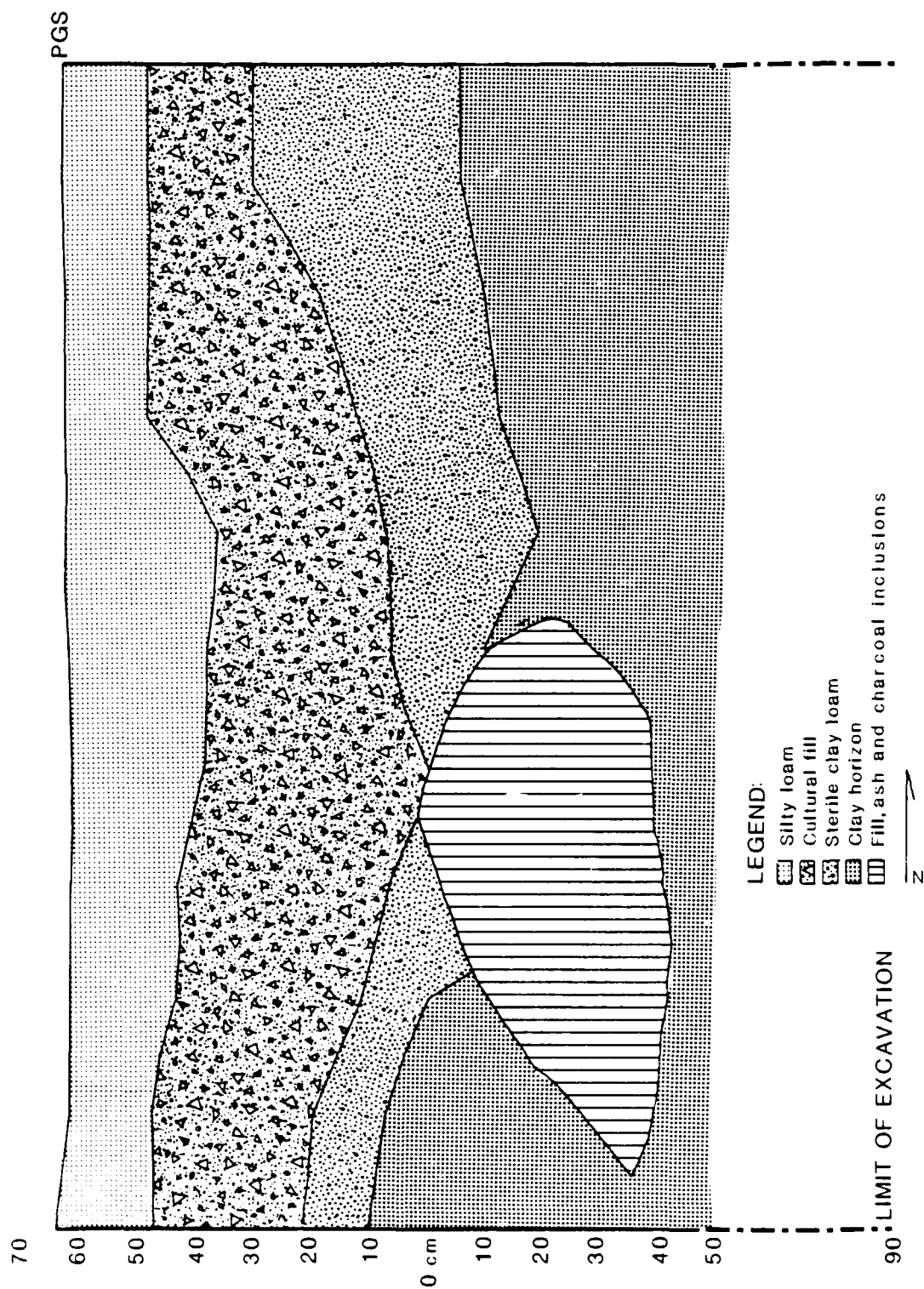


Figure 15, Site 39LM57. West Wall Profile 3.

STRATIGRAPHIC PROFILE, WEST WALL OF CUTBANK, 39LM57, PROFILE 4

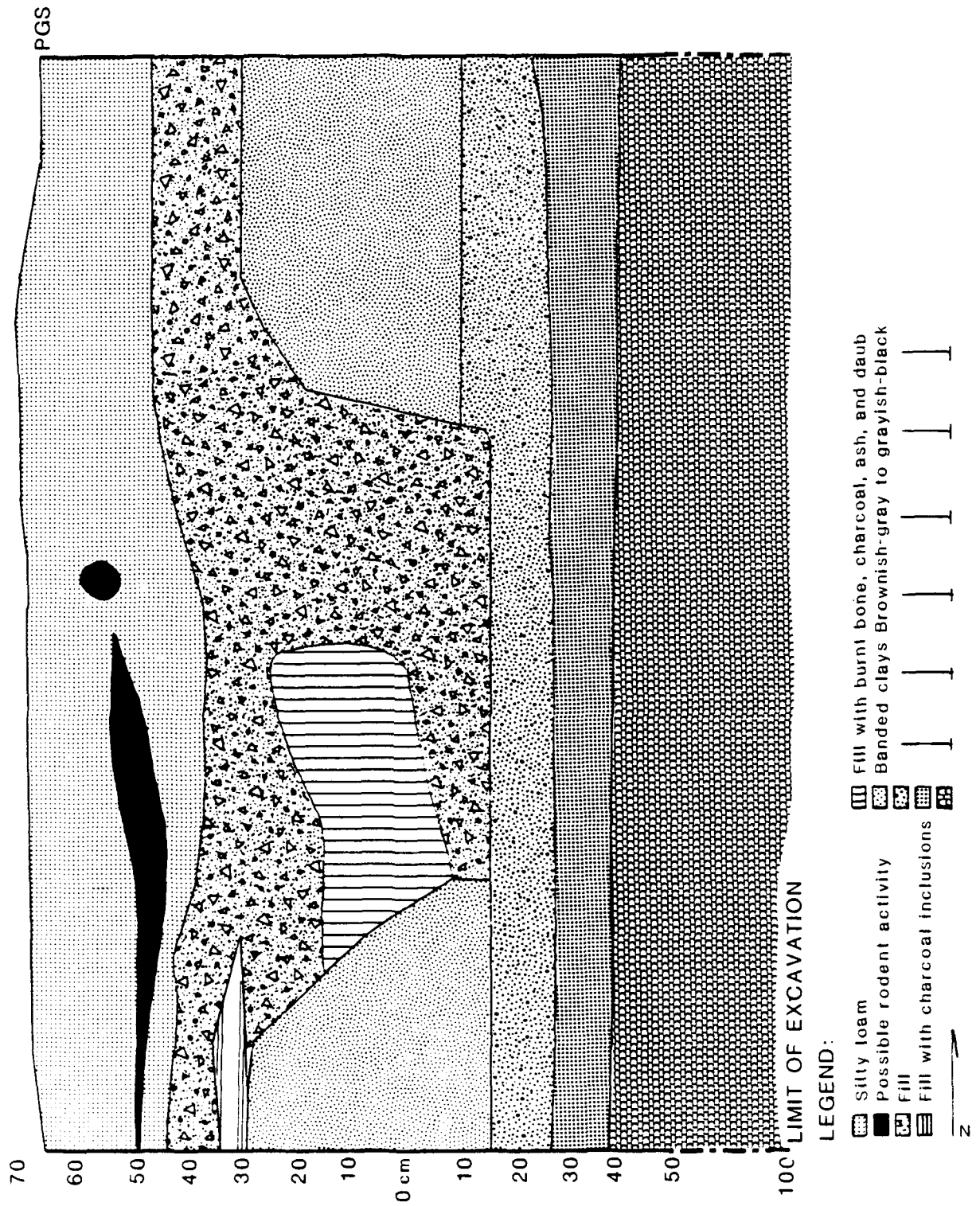


Figure 16, Site 39LM57. West Wall Profile 4.

STRATIGRAPHIC PROFILE, WEST WALL OF CUTBANK, 39LM57, PROFILE 5

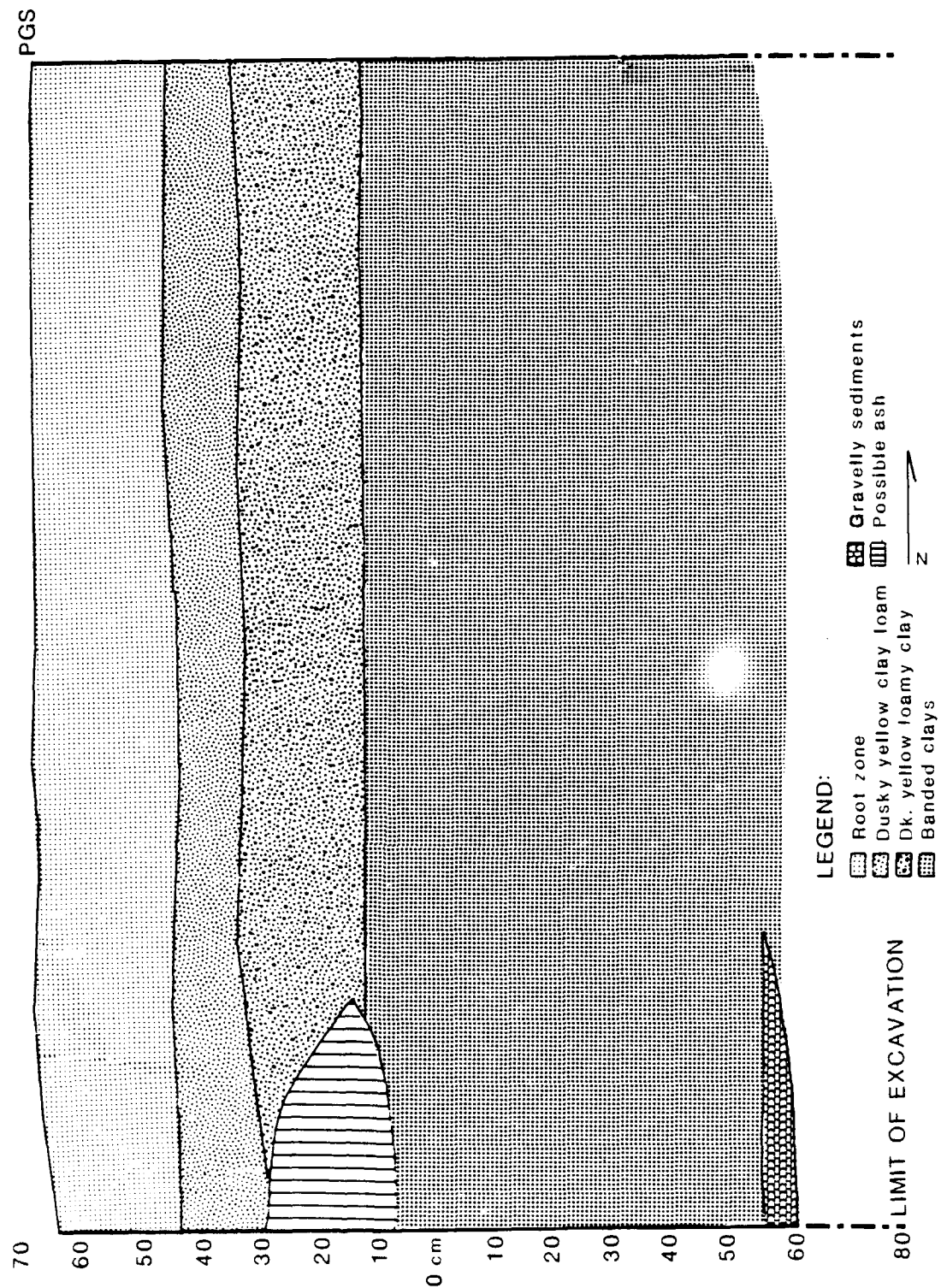


Figure 17. Site 39LM57. West Wall Profile 5.

STRATIGRAPHIC PROFILE, WEST WALL OF CUTBANK, 39LM57, PROFILE 6

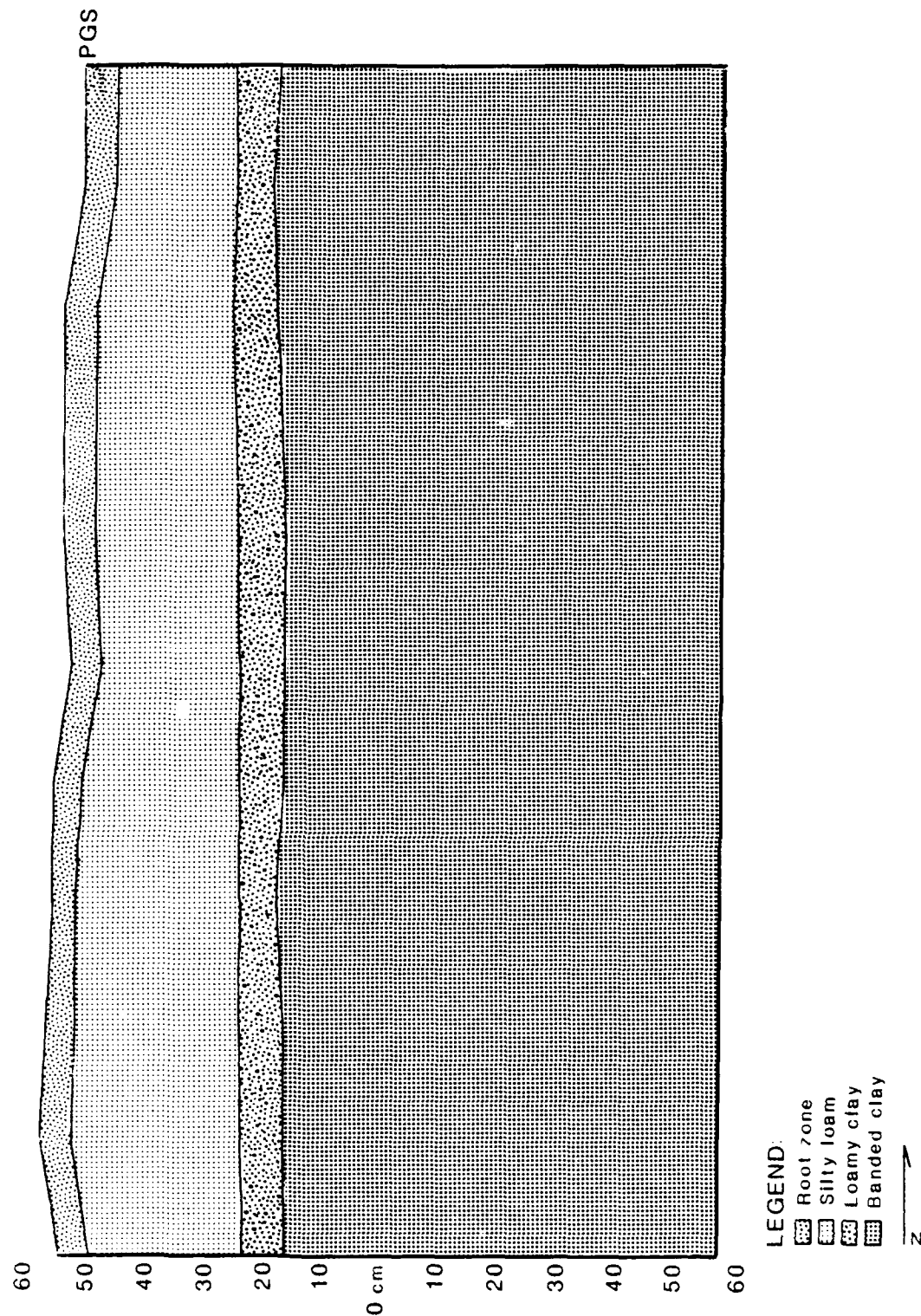


Figure 18, Site 39LM57. West Wall Profile 6.

6.2.1 STRATIGRAPHIC PROFILE 1

The following strata were noted in profile 1 (figure 13).

Stratum 1	Root zone, humus coarse to fine sand in a clay loam matrix, dark yellow brown (10 YR 4/Y to 10 YR 2/2).
Stratum 2	A sandy, silty loam, some clay (10 YR 6/2 to 10 YR 4/2).
Stratum 3	A dusty brown clay loam, (5 YR 2/2 to 10 YR 2/2).
Stratum 4	Same as C.
Stratum 5	A clay silt, (10 YR 4/2).
Stratum 6	Probable fill, silty clay with coarse gravel grains, (10 YR 2/2 to 10 YR 2/2).
Stratum 7	Coarse gravel, sand, and clay, poorly sorted.
Stratum 8	A clay matrix.

Cultural material was present in all strata above 6. Stratum 6 had the highest density of cultural materials which included non- diagnostic pot sherds, daub, ash, charcoal flakes, firecracked rocks and some fibrous possible bone material. The remaining upper strata contained only daub.

6.2.2 STRATIGRAPHIC PROFILE 2

The following strata were noted in profile 2 (figure 14).

Stratum 1	Silty, loam (10 YR 2/2).
Stratum 2	Clay silt, (5 YR 3/2).
Stratum 3	Clay loam, (10 YR 4/2).
Stratum 4	Clay, (10 YR).

Cultural materials and a feature were present in some of the strata. Between the surface and 30cm below surface, is a stratum of silty loam that contains fire-reddened daub. This

is followed by clay silt that extends to a depth of 85cm. This stratum contains charcoal flecks, lithic debitage, and ceramic body sherds. Under the southern 3/4 of the above stratum is a 10cm thick sterile clay loam. The last stratum exposed was a clay horizon that extends beyond 130cm in depth. Within this horizon is a 35cm in diameter circular feature. This feature has a minimum depth below surface of 90cm. In the upper half of this feature is an ash lens that is pale yellow brown (10YR 6/2) in color. The lower half is fire-blackened clay with "fire-reddened" rock. This feature is, in all probability, the remnant of an eroded hearth.

6.2.3 STRATIGRAPHIC PROFILE 3

The following strata were noted in profile 3 (figure 15).

Stratum 1	Silty loam (10 YR 2/2).
Stratum 2	Silt clay loam (10 YR 4/2).
Stratum 3	Clay horizon (10 YR 2/2).

The most significant feature in this profile is a bell-shaped cache pit dug into stratum 3. There is a possibility that the contact between stratum 3 and stratum 2, above, represents a living floor. An end scraper, several pieces of burnt bone and some non-diagnostic body sherds were found in stratum 2.

6.2.4 STRATIGRAPHIC PROFILE 4

The following strata were noted in profile 4 (figure 16).

Stratum 1	Silty loam (10 YR 2/2).
Stratum 2	Fill, sandy silt, multi-layer dusky brown (5 YR 2/2) to black with two lenses, 2a and 2b (see below).
Stratum 2a	Fill, silt sized ash, multi-layer dusky brown (5 YR 2/2) to black with charcoal inclusions.

Stratum 2b Fill, sandy silt, multi-layer dusky brown (5 YR 2/2) to black with burnt bone, charcoal, ash, and daub.

Strata 3, 4, & 5 Are banded clays, ranging in color from brownish grey to greyish-black.

Cultural materials and one feature were present in this profile. Stratum 1 has daub 25cm below the present surface. The fill from stratum 2 contains some bone fragments, charcoal, and ash. Stratum 2a is an ash lense. Stratum 2b has burnt bone (an ungulate tooth fragment, *Equus* sp.), daub, charcoal, and ash. All of stratum 2 represent debris resting on a floor on stratum 3 and a possible pit cutting through stratum 3, and 4. Strata 3, 4, and 5 are in themselves sterile.

6.2.5 STRATIGRAPHIC PROFILE 5

The following strata were noted in profile 5 (figure 17).

Stratum 1 Silty loam (10 YR 4/2).
Stratum 2 Loamy clay (10 YR 4/2).
Stratum 3 Clay (10 YR 2/2), banded with calcium carbonates.

Possible cultural feature, a ash lens that could be associated with Profile 1.

6.2.6 STRATIGRAPHIC PROFILE 6

The following strata were noted in profile 5 (figure 18).

Stratum 1 Silty loam (10 YR 4/2).
Stratum 2 Loamy clay (10 YR 4/2).
Stratum 3 Clay (10 YR 2/2).

This profile contained no cultural materials.

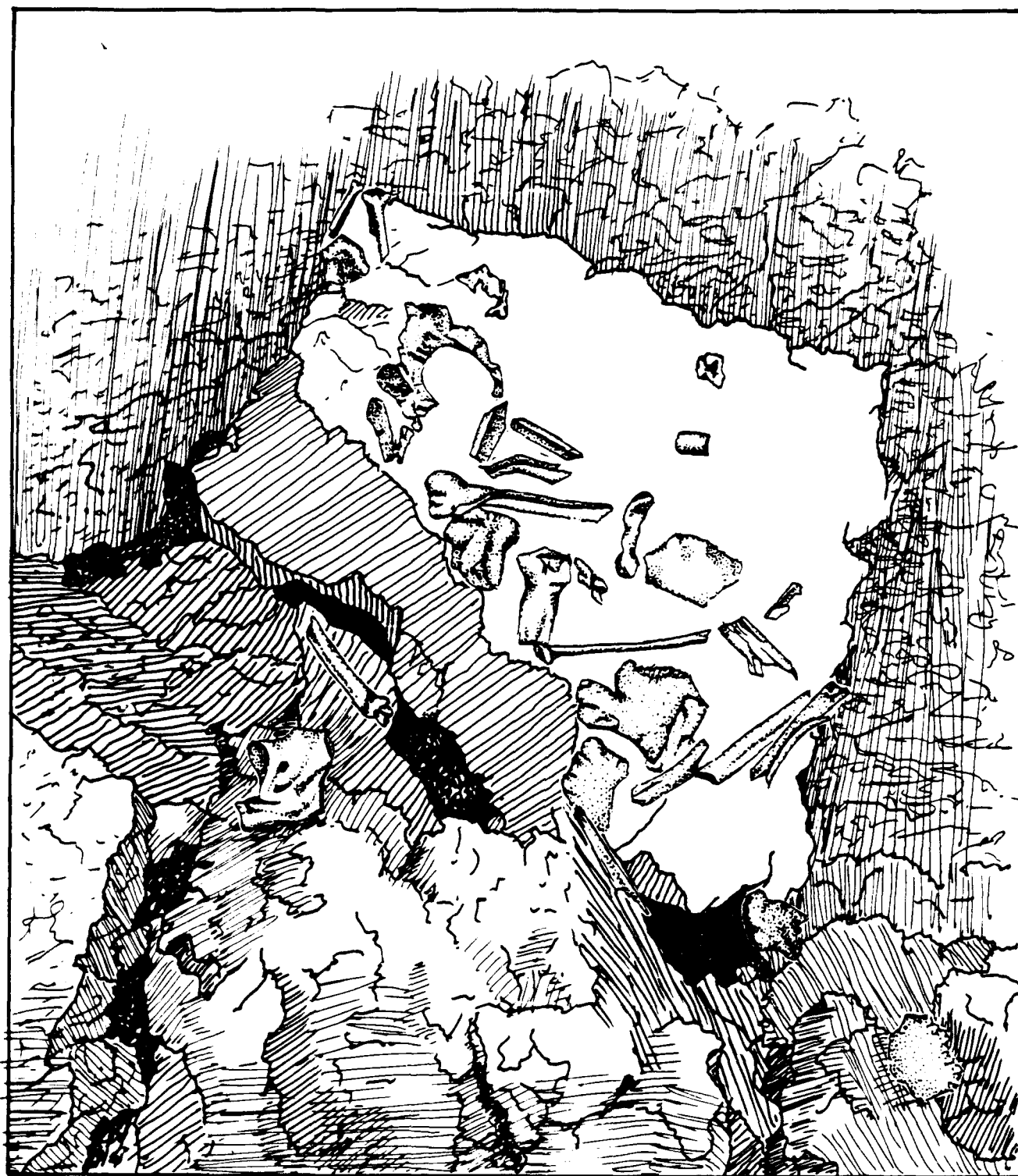
The historical material recovered at site 39LM57 is described in detail in Appendix A, by Dr. Steve Mehls, of Western Historical Studies, Inc. of Lafayette, Colorado. The fragments

of human remains recovered in Test Unit Two, site 39LM57, are described in the next chapter, Chapter Seven.

7.0 HUMAN REMAINS

Human skeletal fragments were found in a slump block below the terrace edge on the southern portion of the site. Test Unit 2 was placed adjacent to the scatter in an attempt to locate a burial pit or any in situ skeletal remains. This unit was abandoned after portions of the terrace began slumping over the edge, threatening to destroy the human remains, (see Test Unit 2 discussion above, for additional information). The skeletal fragments were separated into two scatters. These scatters, designated Burials 1 and 2 (Figure 19), were separated by approximately 50cm horizontally, and 100cm vertically. The two scatters are probably part of one burial; however, they were given two separate numbers as a means of controlling the collections.

To date, no analysis has been conducted on the human remains that were collected. The skeletal fragments are in a poor state of preservation due to erosion and exposure. The presence of several large cranial fragments suggests that at least two individuals were present. A single rim sherd was collected from Burial 1 that appears to be from a Marken Horizontal Incised vessel. The sherd, however, is small and is not from an in situ archeological context and therefore cannot be used to date the burial.



BONE DISTRIBUTION ON SURFACE SLUMP NEAR TEST UNIT 2

No Scale

Figure 19, Site 39LM57. Human remains, Test unit 2.

8.0 RECOMMENDATIONS

In Huerfano Consultants, Inc's. proposal, a three-goal research design was proposed that included the following:

- a) discover what types of remains are present and their condition,
- b) discover what chronological periods are represented at the site,
- c) and to assess the potential that those remains have for answering relevant research questions concerning the periods represented.

Relevant research questions are, in this case, those questions defined in the "Management Plan for Archaeological Resources in South Dakota. Part I: Study Units" prepared by Jeff Buechler of Dakota Research Services, of Rapid City, South Dakota for the South Dakota Archaeological Research Center, Ft. Meade, South Dakota, dated 10 November 1984. Research questions will be discussed below on a site by site basis.

In making our recommendations, the Code of Federal Regulations, 36CFR60.4, establishes a series of criteria that have to be met for an archeological site to be nominated to the National Register of Historic Places. Criterion D is of particular interest to the archeologist. It states: "A property may be registered if it has yielded, or may yield, information important in prehistory or history." (Parker 1987).

Under these criteria and based on the data collected during the field program, Huerfano Consultants makes the following management recommendations.

8.1 SUMMARY AND RECOMMENDATIONS FOR 39BR11

No cultural material was located at 39BR11. After review of the documentation of prior work conducted on site, it is clear that the field work conducted under this RFQ, at locations chosen by Corps of Engineers personnel, may have been conducted outside of the actual site boundary (Nowak 1982). Since the site is located within a park boundary maintained and protected by the Corps, it is felt that no further work is necessary at this time. However, if the status of the park should change, then the following recommendation is made.

Since the cutbank of 39BR11 has been rip-rapped and since it appears that the site's cultural material is buried below a layer (at least 75cm thick) of sterile fill, it is recommended that the site be extensively tested to determine both areal extent and age. Understanding the nature, extent, and age of the cultural remains at 39BR11 would be the first step towards determining the eligibility of the site for inclusion to the National Register of Historic Places.

8.2 SUMMARY and RECOMMENDATIONS FOR 39LM57

39LM57 extends north-south along the western shore of Lake Francis Case Reservoir for some 400m and inland for approximately 300m. Testing at 39LM57 revealed portions of six possible prehistoric houses overlaid by a thin scatter of historic artifacts.

Chronologically sensitive diagnostic artifacts which were recovered during the field work suggest that the prehistoric occupation dates to the Initial Middle Missouri period. Ceramic rim sherds (Plate 5) discovered at the site are similar to rim sherds reported for

the Grand Detour Phase (Caldwell and Jensen, 1969).

Historic artifacts recovered from the site during Huerfano's testing program suggest two nineteenth century occupations, one an early and transitory occupation (based on the presence of a gunflint) and a second, more permanent and probably domestic occupation (see Mehls, Appendix A of this report).

Previous investigations at this site have uncovered prehistoric houses, hearths, middens, caches, and human remains. In addition to the prehistoric remains, historic structural remains, trade beads, clay pipes and gun flints have also been recovered (see Chapter 3, Previous Work, above, and Millar 1960).

Based on the Management Plan for Archaeological Resources in South Dakota, Part I: Study Units, the site does have the potential to provide useful data on "...early indian/white relationships...examined from an archaeological perspective..." (Buechler 1984:64).

The amount of Initial Middle Missouri material recovered would also indicate that the site has the potential to provide data that could be used to develop a micro-style database that bears on Arikara group identification (Buechler 1984:63).

Finally, under criteria D, set forth in 36CFR60.4, this site, has in the past, yielded important information for both prehistory and history. The present field work conducted at the site further substantiates the presence of multiple cultural occupations and, it's obvious from Huerfano's work, that the site still has the potential to provide even more

data on the transition from the prehistoric Native American to the Euro-American historic period.

In 1978, nomination forms for the National Register of Historic Places were filled out for the site. These nomination forms should be updated and resubmitted for inclusion of this site to the National Register of Historic Places. Every effort should be made to prevent any further degradation or destruction of the site. In lieu of protection, then a major mitigative effort should be mounted to extract as much information as possible from this site.

APPENDIX A

INTRODUCTION (Editor's note)

The following report was prepared by Steve F. Mehls, of Western Historical Studies, Inc., of Lafayette, Co.. Steve holds a Ph.D. in Western American History from the University of Colorado at Boulder, Co..

HISTORIC ARTIFACT ANALYSIS FOR SITE 39LM57

In order to arrive at some understanding of the historic samples collected at site 39LM57 during October of 1986 by Huerfano Consultants, Inc., the artifacts have been grouped by material, i.e., glass, metal, ceramics, rubber and stone. What follows is a brief analysis of those materials to attempt to arrive at some type of chronological ordering and/or dating and functional analysis of the site.

Glass One piece of glass was collected from an eroded beach area of the site. The glass was a part of a bottle bottom. It had no markings or trade marks. It was a deep honey color with a slightly kicked-up base. Those last two factors would date the bottle bottom to the period 1914 to approximately 1930 (Gillio, n.d.:18-20; Rinker, 1988:265).

Metal Thirteen pieces of metal were recovered from the site. Of these, three were of little help in reaching a date, however, they do help imply a function. They were a portion (approximately 1/2) of a rectangular door lock cover plate popular from the 1870s into the mid-twentieth century, a deformed lead slug or bullet approximately .40 to .45 caliber, again popular and available from the 1870s to the present, a bit mount and bridle ring, and a scrap of thin sheetmetal similar to that used in cans. Unfortunately, the lettering on the door lock plate was too rusted to the point that almost no lettering remained legible. All that could read was "PATMA." However, from the lock plate it is assumed that a dwelling was located at or near the point of recovery. This is further supported by the recovery of three heavily rusted machine-cut nails. These nails were

popular and available between 1890 and 1900. However, it should be remembered that even though wire nails displaced machine-cut nails from the market place, some remained in dealers' stocks and on hand long after 1900, either left over from earlier purchases or as recycled nails. One wire fence wire staple, u-shaped, was also found at the site. This type of staple had been available since the 1870s. Also found were two small samples of barbed wire, which based on the twisted strands and flatbarbs, have patent dates from the 1870s and 1880s, but were in production until after the turn of the century. One machine drilled, four-holed, bowl-shaped button back was also recovered. This type dates to the period 1910 to 1930. Finally, two pieces of brass, one a cartridge case, and the other either the base of a small-bore shotgun shell or a cut-down portion of a once larger case, were retrieved from the site. The shot shell base appears to be no larger than .410 gauge. Its markings indicate it probably was the product of the Franklin Arsenal of Philadelphia, an ammunition manufacturer active between 1885 and about 1915. The second cartridge casing has a similar head stamp but is of dimensions close to that of a .45-70 cartridge. The casing also might be an example of a full length brass shot shell casing. Either way, it is most likely to have been produced between 1885 and 1915 (Barnes, 1978:167-173; Gillio, n.d.: 4-6, 21-25).

Ceramics Three examples of ceramics were found at the site, fragments of a clay pipe, a piece of glazed stoneware, and a fragment of a plate or saucer bottom. The clay pipe has an upper case "A" at the base of the bowl. The style of the letter and general dimensions of the pipe indicate a turn-of-the-century production time and it could have been used long after that. Generally, pipes tend to be highly curated items and it can be assumed that the pipe most likely broke at or near the site and was discarded. The stoneware fragment is of early twentieth century manufacture based on the materials and glazing. It has no markings. The final piece of material is a piece of flow blue semi-porcelain made by the

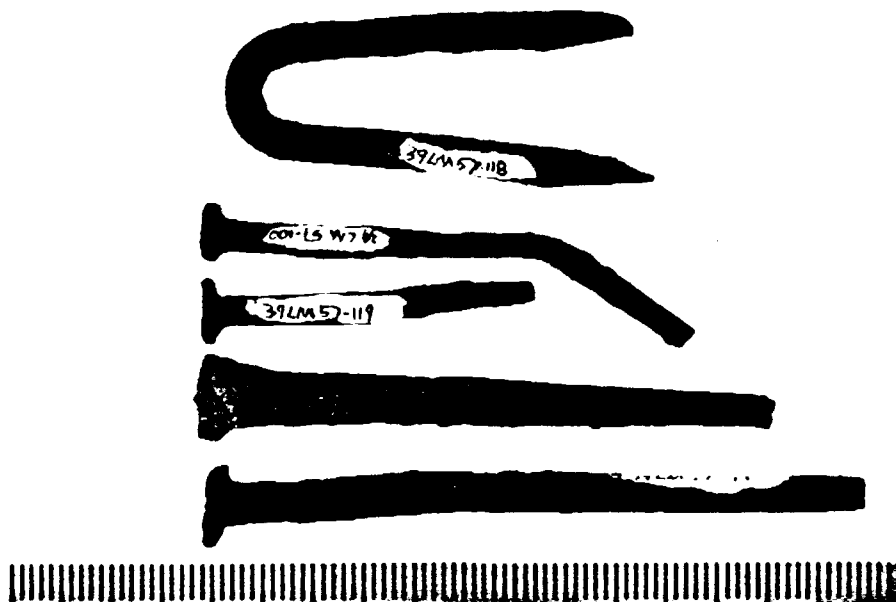
Johnson Brothers of England. This artifact also dates to the turn of the century. The implication of this artifact is the presence at one time of a domestic household that included a female presence (Rinker 1988:198-202; Hunt 1984:8-34).

Rubber One piece of what appears to be weather-hardened, sun bleached rubber was also found at the site. Its function and date of manufacture are impossible to determine.

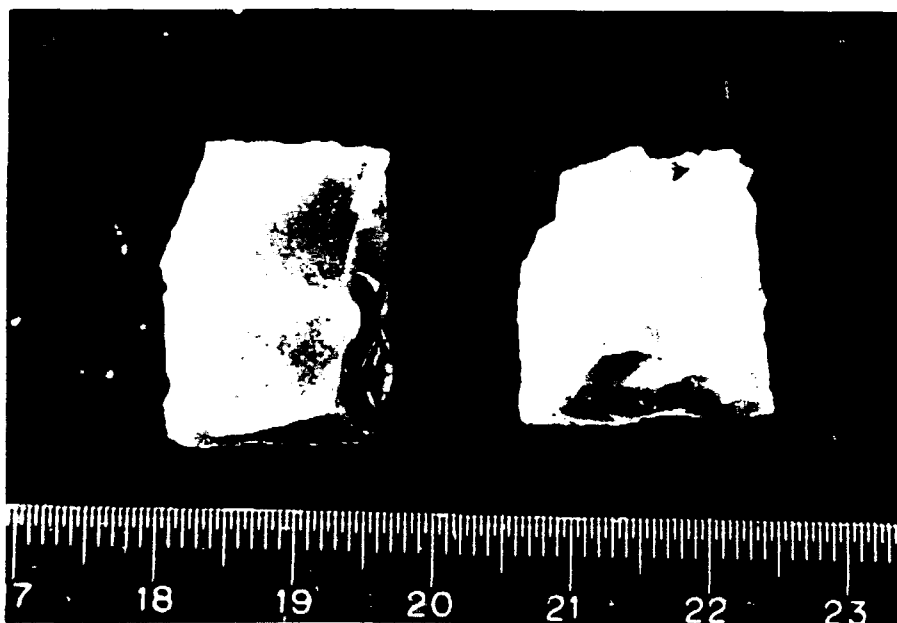
Stone One brown gun flint was also recovered at the site. Its presence would imply an earlier occupation of the site by either Native Americans who acquired the flint lock through trade or a visitation by Euro-American traders. Most likely the flint predates the late nineteenth century/early twentieth century occupation of the site. Metallic cartridges and priming caps dominated American shooting except for hobbyists by the 1870's.

Summary What appears to have been present at the site, from the historic artifacts recovered there, is a site that had two distinct occupations, one earlier and transitory, based on the gun flint, and one later more permanent domestic environment at about the turn of the century and lasting into the early twentieth century based on the plate fragment, door lock plate, and pipe pieces (Gillio, n.d.:34-40; Barnes 1978:2-6).

APPENDIX B
PLATES



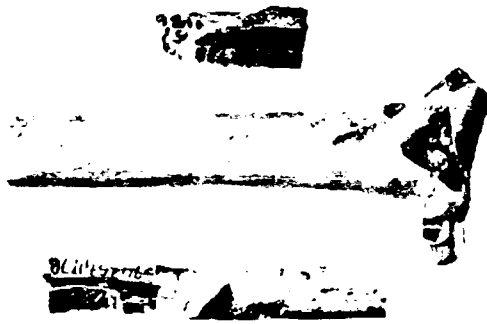
ASSORTED NAILS



GUN FLINTS

EXAMPLES OF HISTORIC ARTIFACTS FROM 39LM57.

Plate Nos. 1 & 2, Site 39LM57. Staples and Gun Flints



CLAY PIPE

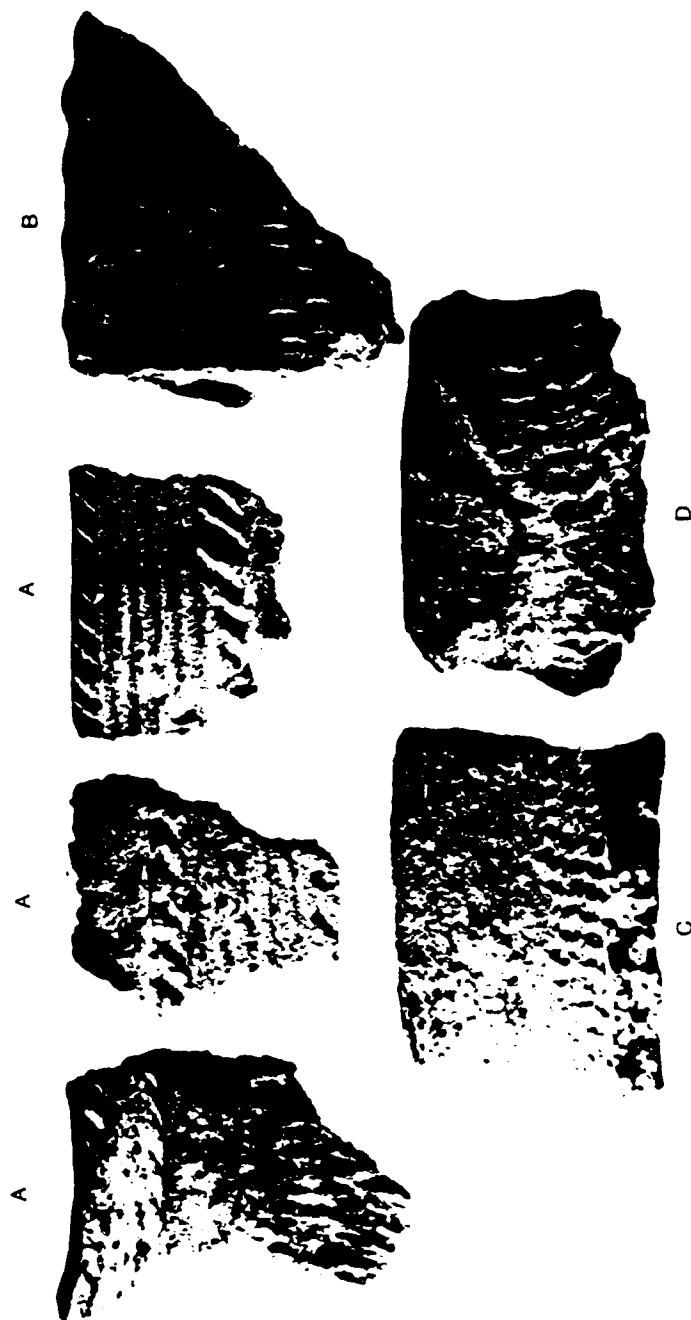


CERAMIC FRAGMENT

EXAMPLES OF HISTORIC ARTIFACTS FROM 39LM57.

Plates 3 & 4, Site 39LM57. Historic Ceramic Materials.

EXAMPLES OF PREHISTORIC CERAMICS FROM 39LM57



Foreman Horizontal Incised
 Either Talking Crow Straight or Anderson Tool Impressed
 Anderson Plain
 Anderson Tool Impressed

Plate 5, Site 39LM57. Prehistoric Ceramics Form Beach Area.

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